HAWAII-CALIFORNIA TRAINING AND TESTING

DRAFT ENVIRONMENTAL IMPACT STATEMENT/ OVERSEAS ENVIRONMENTAL IMPACT STATEMENT

www.nepa.navy.mil/hctteis/
December 2024
ID# EISX-007-17-USN-1724283453

Volume 4

Hawaii-California Training and Testing

Draft Environmental Impact Statement/ Overseas Environmental Impact Statement

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Appendix G Air Quality Supplemental Information, Emission Calculations, and Record of Non-Applicability

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Appendix G Air Quality Supplemental Information, Emissions Calculations and Record of Non-Applicability

This appendix discusses supplemental information, emission factor development, calculations, and assumptions used in the air quality analyses presented in Section 3.1 (Air Quality and Climate Change) of the Hawaii-California Training and Testing EIS/OEIS. Records of Non-applicability for the affected area are also included.

G.1 Air Quality Supplemental Information and Emission Calculations

Air pollution can damage the health of people, plants, animals, and water bodies as well as the exteriors of buildings, monuments, and statues. It also creates haze or smog that reduces visibility and interferes with aviation. A region's air quality is influenced by many factors, including the type and emission rate of pollutants, local meteorology, the size and topography of the air basin, and atmospheric chemistry. Wind speed and direction, the vertical temperature gradient of the atmosphere, and precipitation patterns affect the dispersal, dilution, and removal of air pollutant emissions from the atmosphere. Most air pollutants originate from human-made sources, including mobile sources (e.g., gasoline- or diesel-fueled vehicles) and stationary sources (e.g., power plants, refineries, etc.), as well as indoor sources (e.g., some building materials and cleaning solvents). Air pollutants are also released from natural sources such as volcanic eruptions and wildfires. Ambient air quality is reported as the atmospheric concentrations of specific air pollutants at a particular time and location. The units of measure are expressed as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million [ppm] by volume).

G.1.1 Emission Sources

Criteria air pollutants and HAPs are generated by the combustion of fuel by surface vessels and by fixed-wing and rotary-wing aircraft. They also are generated by the combustion of explosives and propellants in various types of munitions. Propellants used to fire small-, medium-, and large-caliber projectiles generate pollutants when detonated. Nonexplosive practice munitions may contain spotting charges and propellants that generate air pollutants when they function. Powered targets require fuel, generating air pollutants during their operation, and towed targets generate air pollutants secondarily because another aircraft or vessel is required to provide power. Stationary targets may generate air pollutants if all or portions of the item burn in a high-order detonation. Chaff cartridges used by ships and aircraft are launched by an explosive charge that generates small quantities of air pollutants. Chaff itself may also be a particles with aerodynamic diameters less than or equal to a nominal 10 micrometers (PM_{10})/ particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$) pollutant, depending on its size. Countermeasure flares, decelerators/parachute flares, and smoke floats are designed to burn for a prescribed period, emitting pollutants in the process. Emissions from activities related to modernization and sustainment of ranges are also estimated and the impacts analyzed.

G.1.2 Emissions Estimates

The emissions calculations performed for each alternative conservatively assume that each training and testing activity is separately conducted. In practice, a testing activity may be conducted during a training flight. It is also probable that two or more training activities may be conducted during one flight or one vessel movement (e.g., chaff or flare exercises may occur during electronic warfare activities; or air-to-surface gunnery and air-to-surface bombing activities may occur during a single flight operation, or ship may conduct large-, medium-, and small-caliber surface-to-surface gunnery exercises during one vessel movement). Conservative assumptions may produce elevated emissions calculations but account for the possibility, however remote, that each aircraft training and testing activity is separately conducted.

G.1.2.1 Aircraft Activities

Aircraft emissions were estimated based on the methodology described in the 2018 HSTT EIS/OEIS. Fleet training and Naval Air Systems Command testing use various aircraft, including the E/A-18G, P-8, and CH-60. Aircraft operations of concern are those that occur from ground level up to 3,000 feet (ft.) above ground level (AGL). The 3,000 ft. AGL altitude was assumed to be the ceiling of the mixing zone (known as the atmospheric mixing height) above which any pollutant generated would not contribute to increased pollutant concentrations at ground level. Pollutants emitted by aircraft above 3,000 ft. AGL are excluded from the analysis of compliance with National Ambient Air Quality Standards. The pollutant emission rate is a function of the aircraft engine's fuel flow rate and efficiency. Emissions for one complete training activity for a particular aircraft are calculated by knowing the specific engine pollutant emission factors for each mode of operation.

Emission factors for most military engines were obtained from the Navy's Aircraft Environmental Support Office memoranda. For those aircraft for which engine data were unavailable from Aircraft Environmental Support Office, emission factors from Air Emissions Guide for Air Force Mobile Source, June 2024 (U.S. Department of the Air Force, 2024), were used. Using these data, as well as the number of sorties, pollutant emissions for each aircraft were calculated by applying the equation below.

$$Emissions = N x FF \times EF \times ENG \times CF$$

Where:

Emissions = annual aircraft emissions (pounds [lb.]/yr.)

N = Hours of operation of aircraft operations per year for each type of aircraft per activity (hr./yr.)

FF = fuel flow at a specified power setting (gal./hr./engine)

EF = pollutant emission factor by engine type and power setting (lb./1,000 gal. of fuel used)

ENG = number of engines per aircraft

CF = conversion factor (0.001)

Hazardous Air Pollutant (HAP) emissions were estimated based on June 2024 Air Emissions Guide for Air Force Mobile Sources, Table 2-10 (Volatile Organic Compound and HAP Emission Factors for Select Engines) (Air Force Civil Engineer Center, 2023). HAP emissions from activities in the range areas occur well offshore and far from any publicly accessible areas. HAP emissions from activities that occur within 12 nautical miles (NM) may impact the publicly accessible areas on shore.

G.1.2.2 Military Vessel Activities

Military vessel traffic in the Study Area includes military ships and vessels providing security for military training and testing activities during transit from the pier to the range and back. Fleet training activities use a variety of marine vessels, including cruisers, destroyers, frigates, carriers, submarines, amphibious vessels, and small boats. Testing activities use a variety of marine vessels, including various testing support vessels, work boats, torpedo recovery vessels, unmanned surface vehicles, and small boats.

These vessels use diverse propulsion methods, including marine outboard engines, diesel engines, and gas turbines.

Emissions from military vessels and small boats are estimated based on the type of vessel, the anticipated activity, and the average operating hours in each operational area, both within state waters and beyond state waters. The types of military ships and boats as well as the numbers of activities for Alternatives 1 and 2 are derived from range records and Navy subject matter experts regarding ship participant data. Estimates of future military vessel activities are based on anticipated evolutionary changes in the military's force structure and mission assignments.

Emission factors for small surface craft involved in amphibious training and testing activities were obtained from the Navy and Military Sealift Command Marine Engine Fuel Consumption & Emission Calculator database Version October 2024. Emissions for surface craft using outboard engines were calculated using Navy and Military Sealift Command emission factors which are provided in terms of Vessel Emission Total per hour and multiplied by the hours of operation.

$$Emissions = HR/YR \times EF$$

Where:

Emissions = surface craft emissions (*pounds [lb.]/yr)*

HR/YR = hours per year per vessel per activity (hr/yr)

EF = emission factor for specific vessel (lb./hr)

Large vessel emissions were calculated in a similar fashion using emission factors from the Naval Sea Systems Command Navy and Military Sealift Command Marine Engine Fuel Consumption and Emission Calculator for the propulsion system and the supplemental ship service generator(s).

To obtain the total criteria pollutant emissions for the Proposed Action, emissions were calculated for each training or testing activity, type of surface vessel, and criteria pollutant. These individual estimates of emissions, in units of tons per year, were then summed by criteria pollutant to obtain the aggregate emissions for surface vessel emissions activities.

HAP emissions were estimated based on the speciation factors in the U.S. Environmental Protection Agency (USEPA) Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions (U.S. Environmental Protection Agency, 2022).

G.1.2.3 Munitions

Naval gunfire, missiles, bombs, and other types of munitions used in training and testing activities emit air pollutants. To estimate the amounts of air pollutants emitted by munitions, the numbers and types of munitions used during training or testing activities are first totaled. Then generally accepted emissions factors, such as those from USEPA AP-42, *Compilation of Air Pollutant Emission Factors* Section 15, for criteria air pollutants and HAPs are applied to the total amounts. These factors are multiplied by the net weight of the explosive and the number of items that were used per year. This calculation provides estimates of annual emissions.

$$Emissions = EXP/YR \times EF \times Net\ Wt$$

Where:

Emissions = annual ordnance emissions

EXP/YR = number of explosives, propellants, and pyrotechnics items used per year

EF = air pollutant emissions factor per item

Net Wt = net weight of explosive, propellant, or pyrotechnics per ordnance item

G.1.3 Port Damage Repair

The Proposed Action includes Port Damage Repair, conducted at Naval Base Ventura County Port Hueneme. The repair activities would include the use of diesel-fired construction equipment, including cranes, air compressors, and concrete pumps. Small boats would also be used for the duration of the repair. California Air Resources Board Off-Road Diesel Emission Factors were used to estimate the emissions.

G.1.4 Modernization and Sustainment of Ranges

The Proposed Action also includes modernization and sustainment of ranges activities that involve Navy and contractor vessels. These activities include the SOAR modernization; the installation, testing, maintenance, and use of two SWTRs; Additional activities include Maintenance of Underwater Platforms, Mine Warfare, and Other Training Areas.

G.1.5 Greenhouse Gas Emissions

The Proposed Action is anticipated to release greenhouse gases into the atmosphere. These emissions are quantified using the aircraft and vessel emission calculation methodologies described in Section G.1.2. The potential effects of proposed greenhouse gas emissions are by nature global and may result in cumulative impacts because most individual sources of greenhouse gas emissions are not large enough to have any noticeable effect on climate change. Therefore, the impact of proposed greenhouse gas emissions on climate change is discussed in the context of cumulative impacts. For the analysis of the effects on global climate change, all emissions of greenhouse gases from aircraft and vessels participating in training and testing activities, as well as targets and munitions expended, are applicable regardless of altitude. The Greenhouse Gas emissions from aircraft activities at Naval Air Station Lemoore were previously analyzed in the 2014 EIS for U.S. Navy F-35C West Coast Homebasing (U.S. Department of the Navy, 2014) and are therefore not included in this analysis.

G.1.6 Meteorological Conditions and Topography of the Study Area

Pollution dispersion in the air is influenced by meteorological conditions, such as temperature, wind speed and wind direction, and atmospheric stability. Warmer air traps cooler air near the surface and can slow dispersion, whereas unstable atmospheric conditions can facilitate dispersion. Topography is another factor that influences pollutant dispersion. Urban areas with tall buildings can disrupt wind patterns and trap pollutants. Mountains and valleys can channel air and promote dispersion or trap pollutants during inversions. Wind direction determines the dispersion path pollutants take. Higher wind speeds disperse pollutants over a larger area; stagnant conditions or light winds allow pollutant concentrations to build up due to a more coherent plume. A wind rose for a particular location provides a view of how wind speed and direction are typically distributed. The wind rose represents the directions around a compass, and the length of the petal or spoke indicates wind direction and frequency toward the center point. Individual segments of the spoke represent the frequency of winds for defined wind speed categories, with the slowest winds closest to and the fastest winds furthest from the center of the diagram. The Pacific Ocean and adjacent land areas are influenced by the temperatures of the surface waters and water currents as well as by wind blowing across the water. Offshore areas seldom have extreme seasonal variations because the ocean is slow to change temperature. Ocean currents move warm and cold water between regions. Adjacent land areas are affected by the wind that is cooled or warmed when blowing over these currents.

Atmospheric stability and mixing height provide measures of the amount of vertical mixing of pollutants. Over water, the atmosphere tends to be neutral to slightly unstable. Over land, atmospheric stability is more variable, being unstable during the day, especially in summer due to rapid surface heating, and stable at night, especially under clear conditions in winter. The mixing height over water typically ranges from 1,640 to 3,281 ft. with a slight diurnal (daytime) variation (U.S. Environmental Protection Agency, 1972). The air quality analysis presented in this EIS/OEIS assumes that 3,000 ft. (40 Code of Federal Regulations [CFR] 93.153(c)(2)(iii)) AGL is the typical maximum afternoon mixing height, and thus criteria pollutants and HAPs emitted above this altitude do not affect ground-level air pollutant concentrations.

Studies indicate that extreme weather events are likely to become more frequent or more intense with human-induced climate change (U.S. Environmental Protection Agency, 2024). Climate change can also have an influence on El Niño and La Niña cycles, which are natural climate phenomena in the Pacific Ocean. During El Niño, the surface winds across the entire tropical Pacific are weaker than usual and ocean temperatures in the central and eastern tropical Pacific Ocean are warmer than average. During La Niña, the surface winds across the entire tropical Pacific are stronger than usual, and most of the tropical Pacific Ocean is cooler than average. These cycles can influence meteorological conditions that affect pollutant dispersion.

G.1.6.1 Wind Roses

Figure G-1 through G-10 depict wind roses for data collected from January 2019 to December 2023 by the weather stations close to regions where the proposed activities would occur.

Winds and currents in the Pacific Ocean flow predominantly from east to west. Above the equator Pacific Ocean trade winds blow from the northeast. Figure G-11 depicts an example of the prevailing wind direction and intensity in the Pacific Ocean.

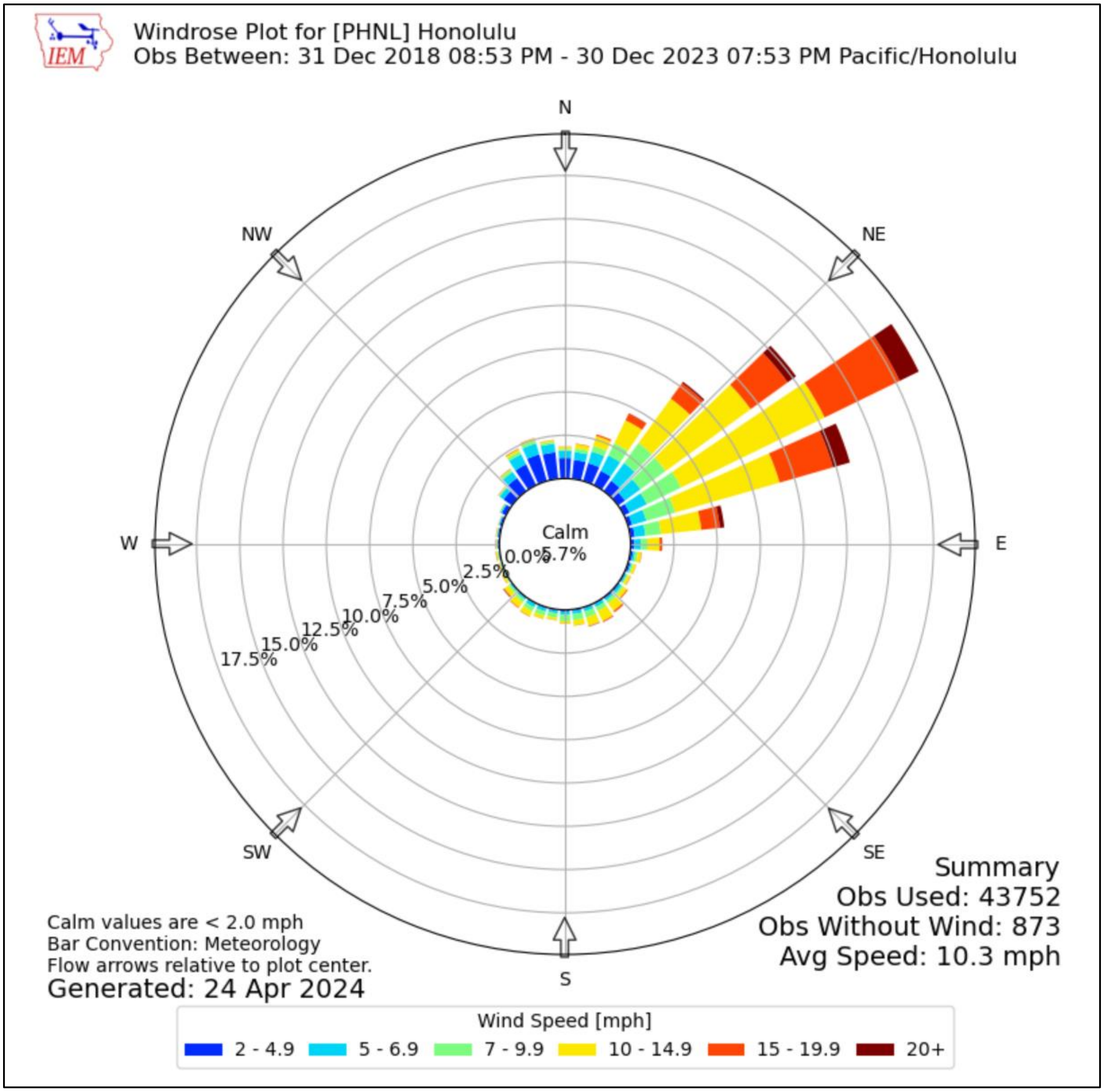


Figure G-1: Honolulu Wind Rose, PHNL Weather Station

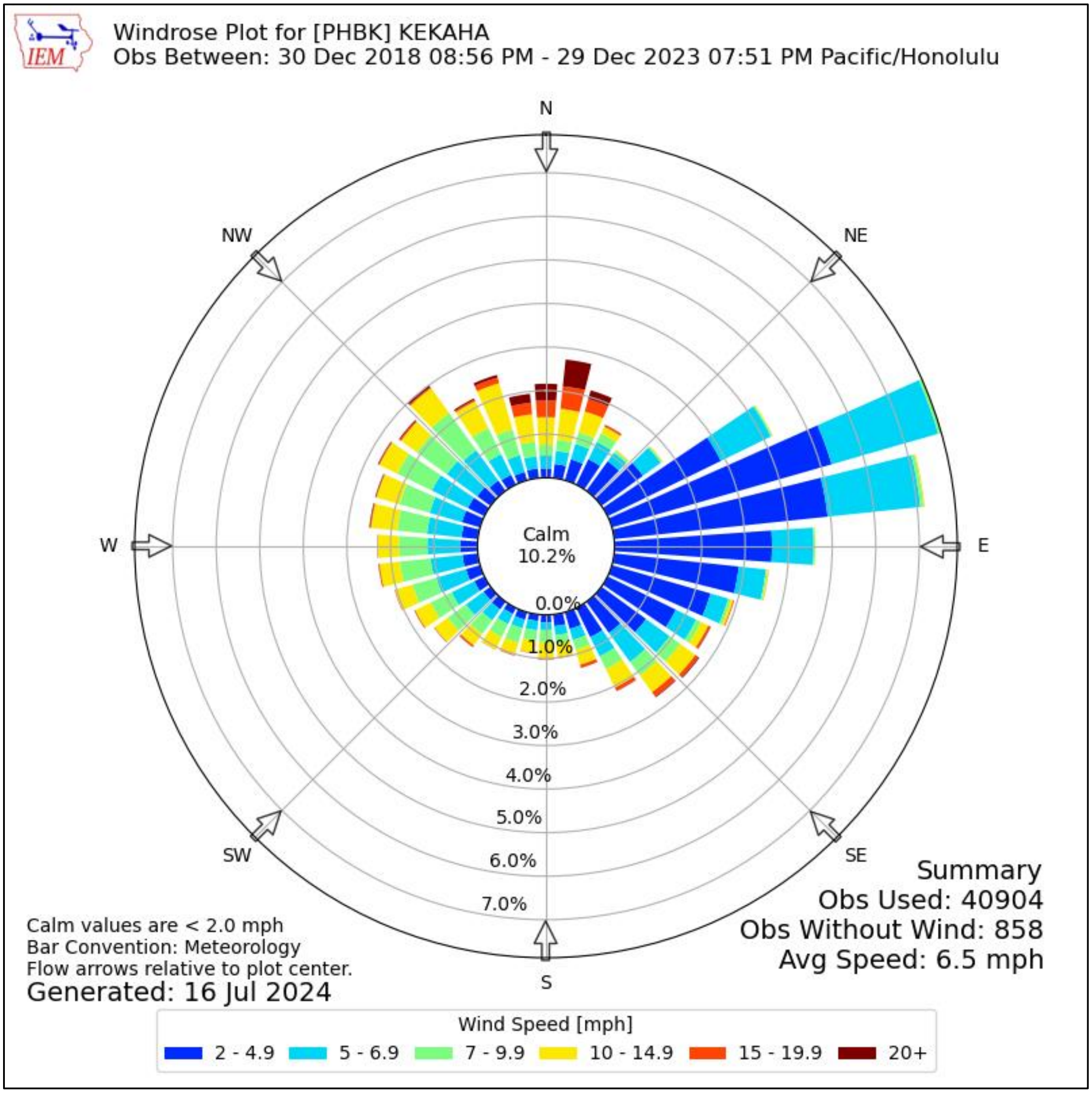


Figure G-2: Kauai Wind Rose, Kekaha Weather Station

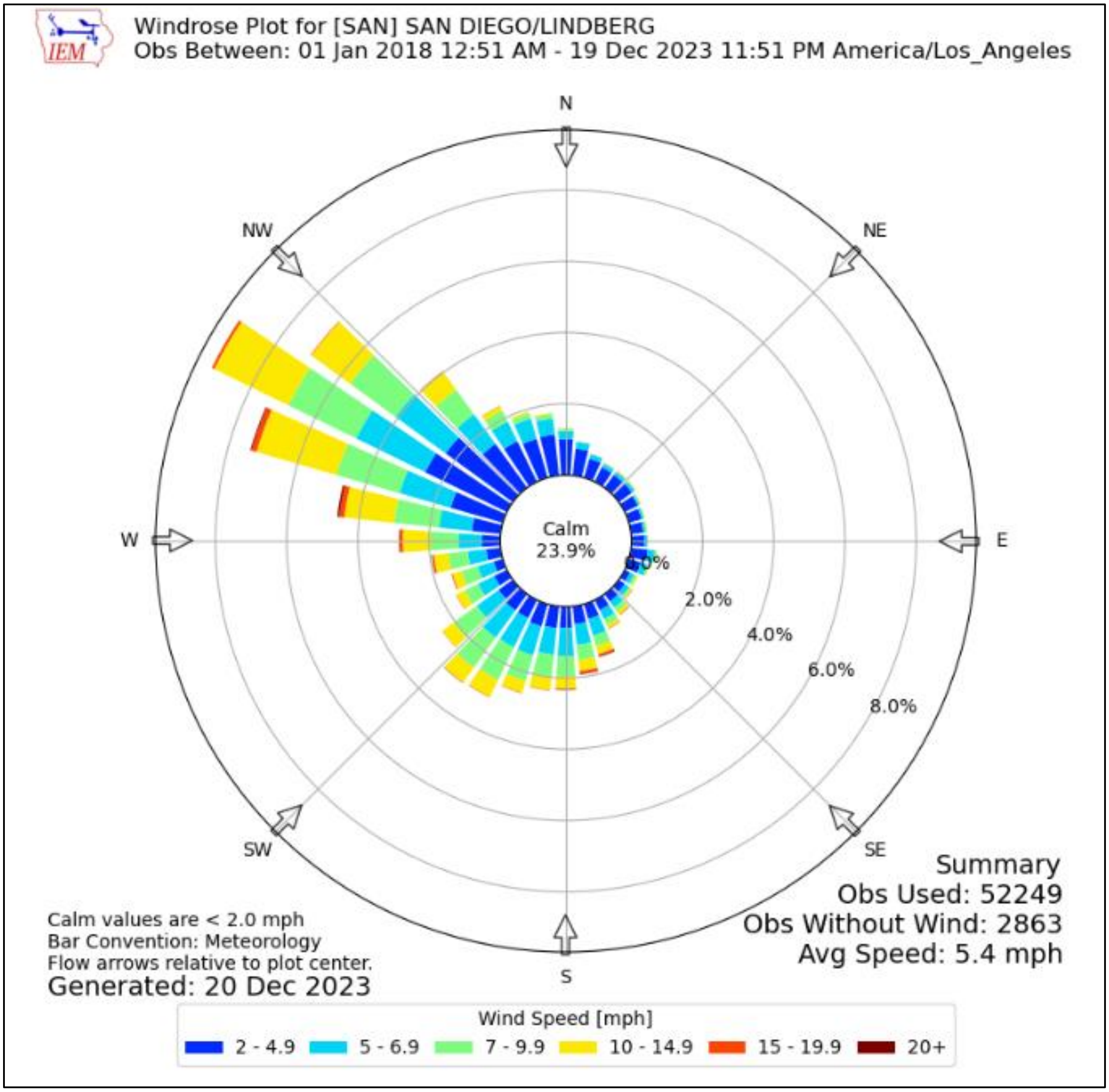


Figure G-3: San Diego Wind Rose, Lindberg Station

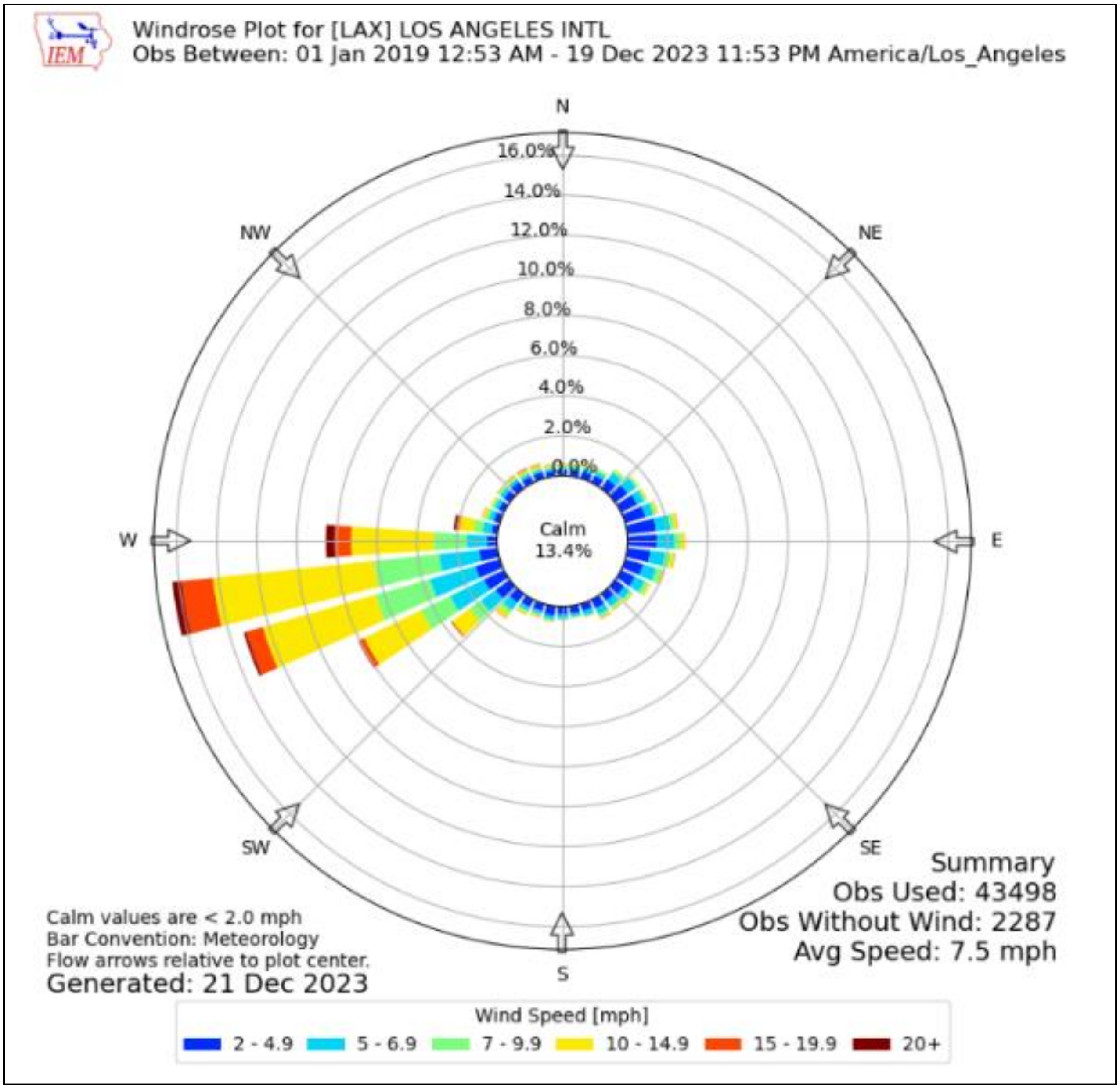


Figure G-4: Los Angeles Wind Rose, Los Angeles International Airport

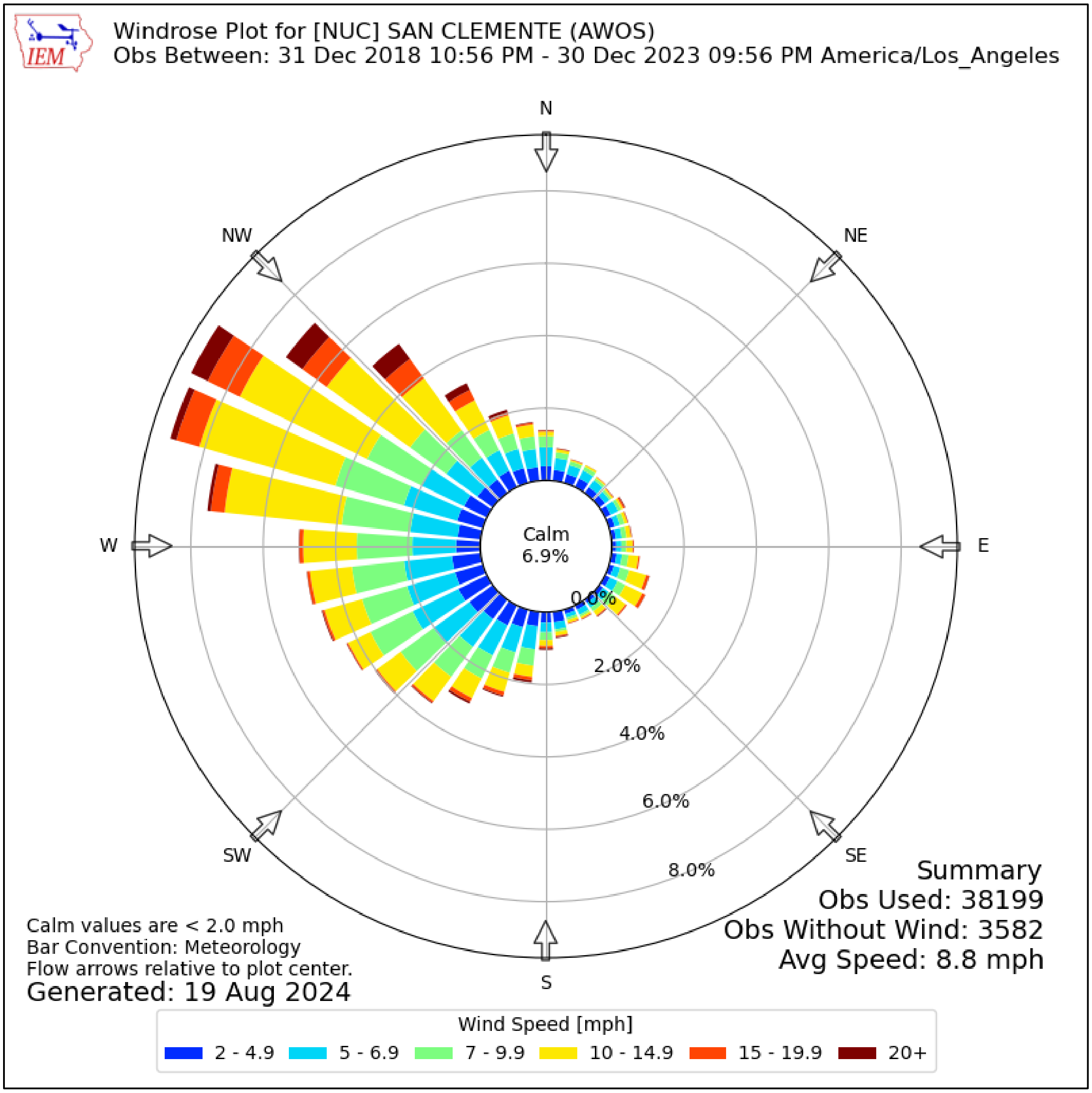


Figure G-5: San Clemente Island Wind Rose, San Clemente Island Airport

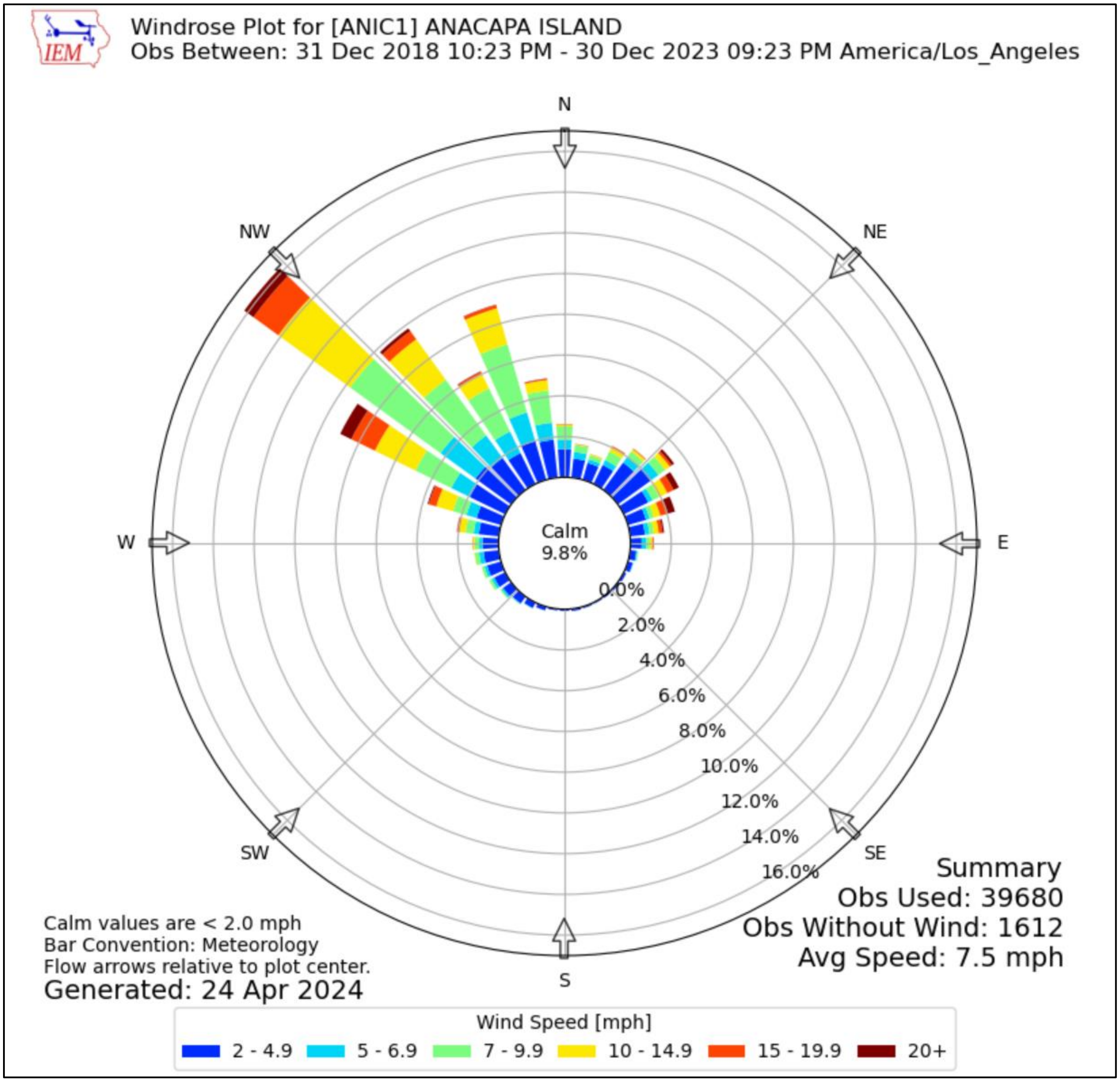


Figure G-6: Anacapa Island Wind Rose

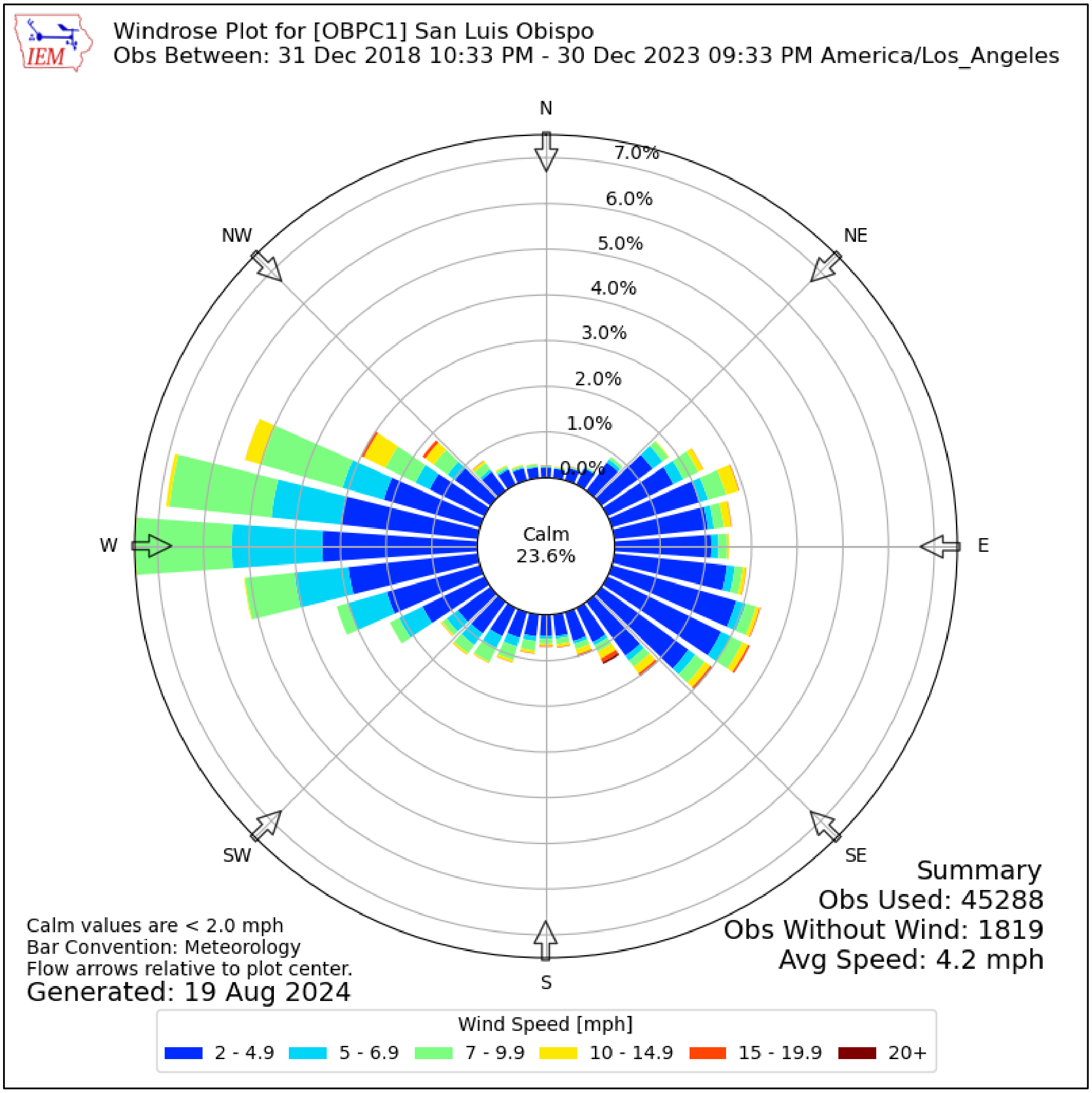


Figure G-7: San Luis Obispo Wind Rose - Rancho San Simeon Airport

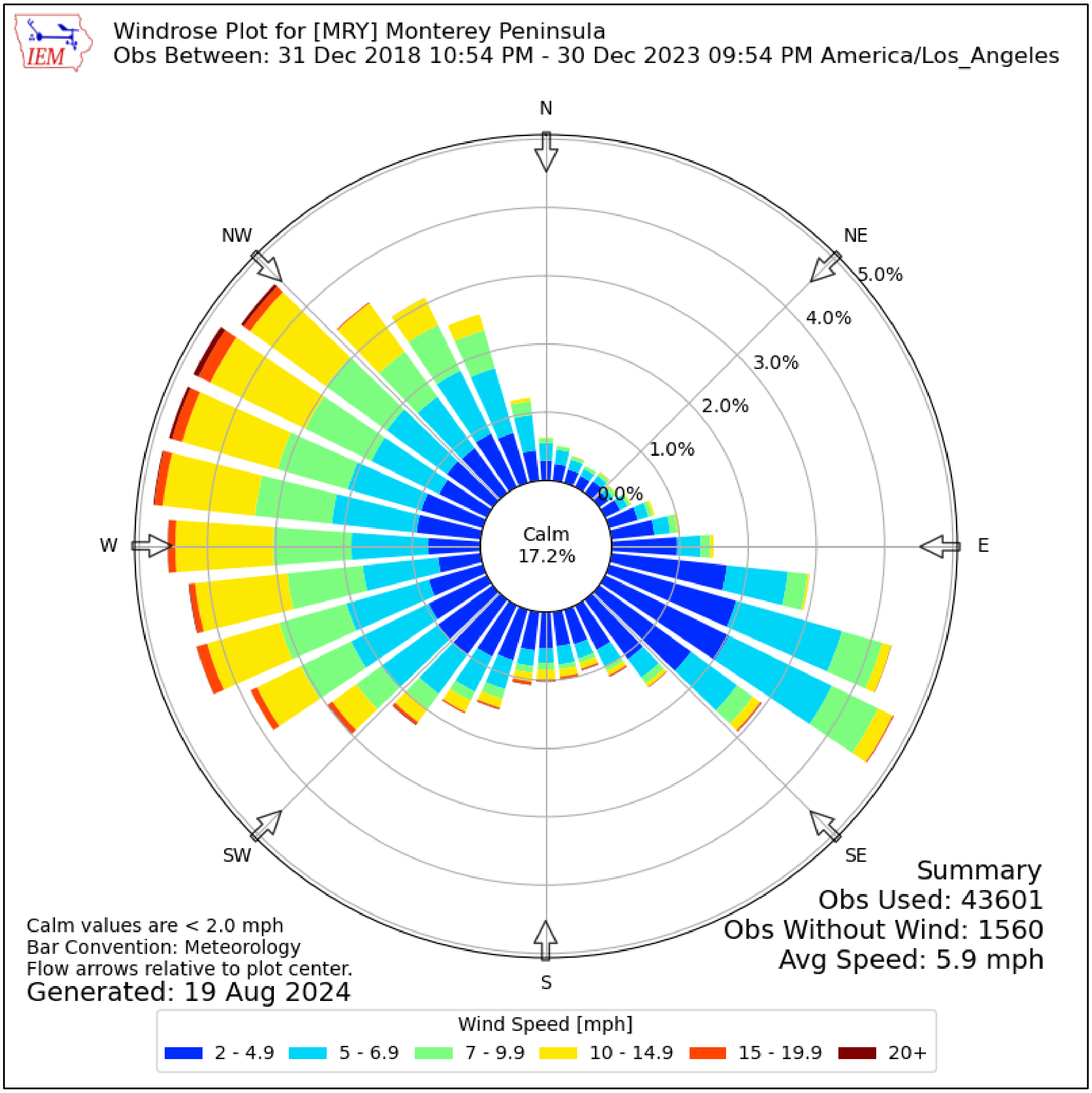


Figure G-8: Monterey Wind Rose - Monterey Regional Airport

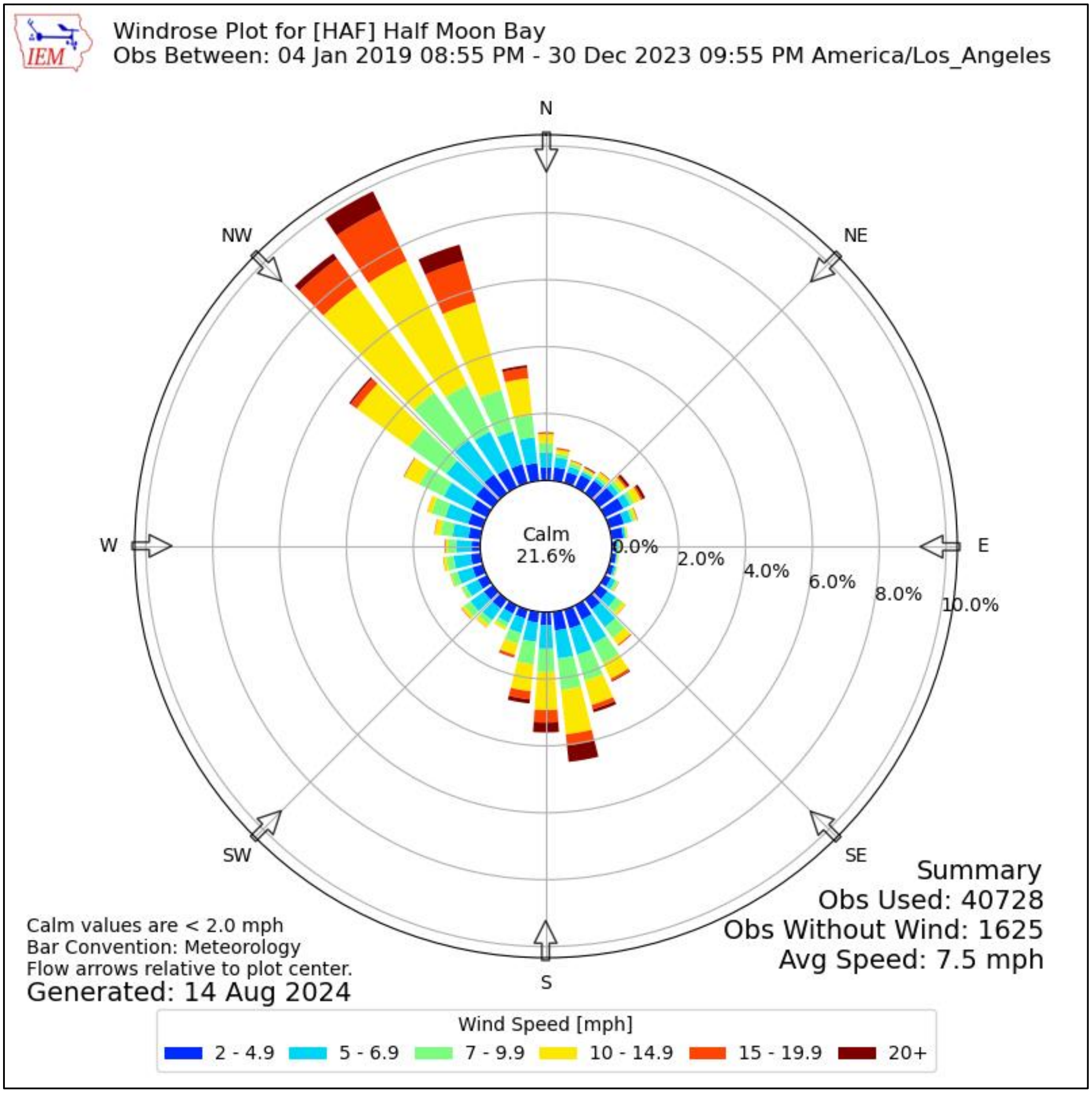


Figure G-9: Half Moon Bay Airport Wind Rose

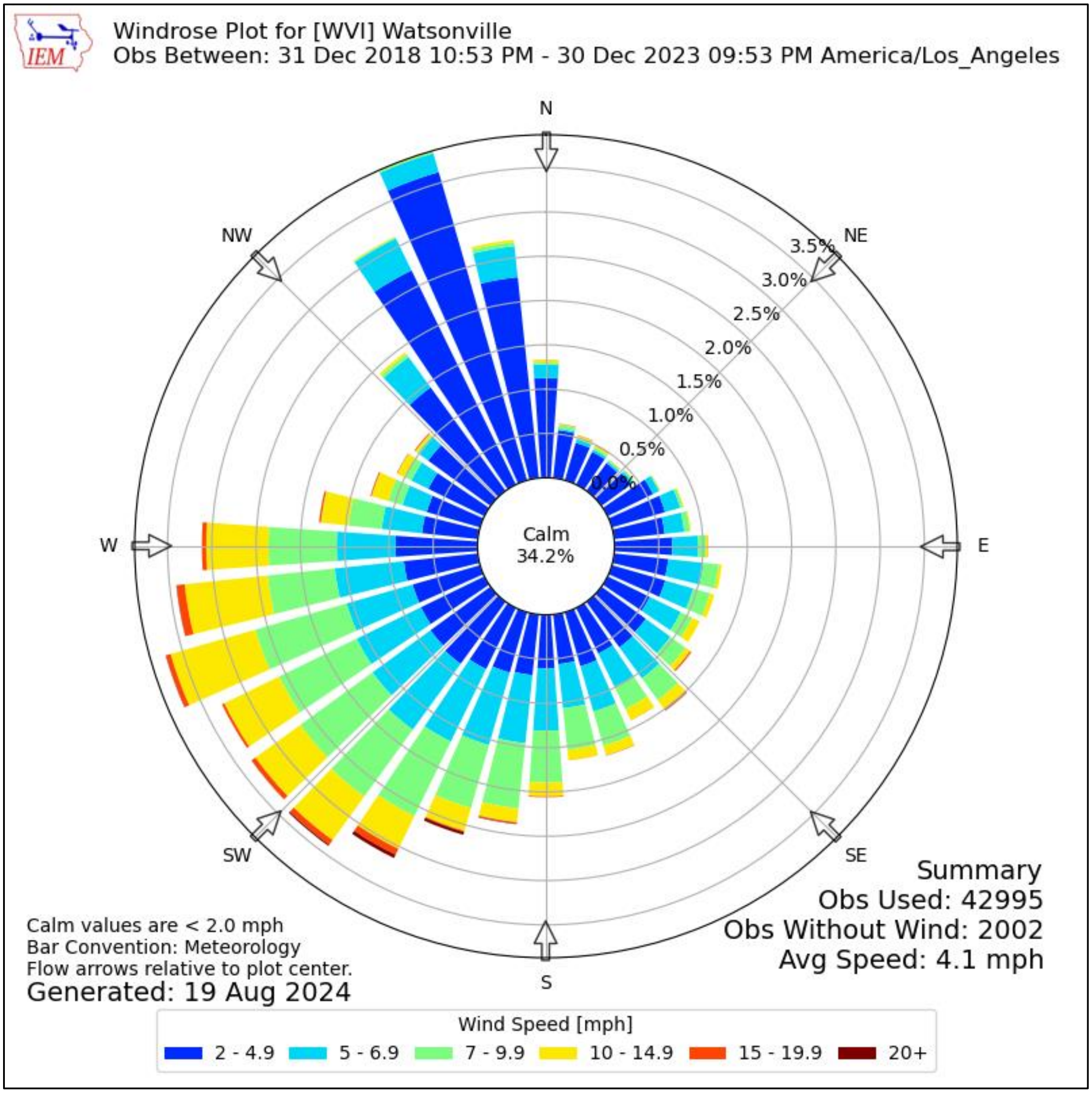
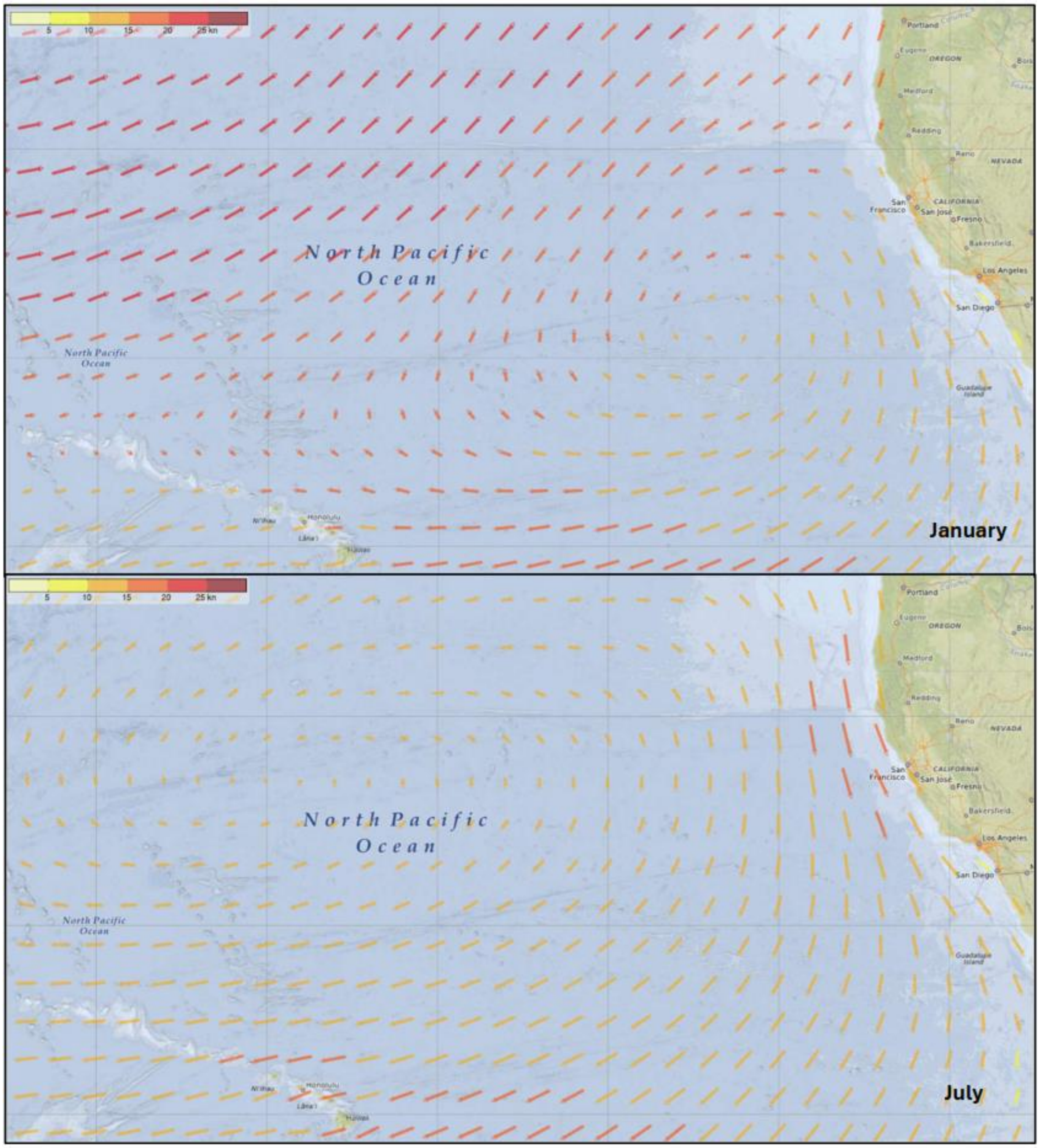


Figure G-10: Watsonville Municipal Airport Wind Rose



Source: https://www.pitufa.at/oceanwinds/

Figure G-11: Prevailing Wind Direction and Intensity in the Pacific Ocean

G.1.7 Existing Air Quality

G.1.7.1 Hawaii

With the exception of short-term SO2 measurements recorded in 2023 near volcanic activity, none of the air quality monitoring stations in Hawaii recorded criteria air pollutant concentrations that exceeded the Ambient Air Quality Standards (AAQS) (Hawaii Department of Health, 2016).

Table G-1 shows the 2022 Design Value for Honolulu, available via USEPA's Interactive Design Value Tool or from the State of Hawaii 2023 Air Monitoring Network Plan (State of Hawaii Department of Health, 2023). A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS).

Table G-1: Comparison of 2022 Honolulu Design Values with AAQS

Pollutant	Averaging Time	Most Stringent AAQS	Maximum Design Values (Station)	% of AAQS
CO	1-hour	9 ppm (State)	0.9 ppm (Honolulu)	10
	8-hour	4.4 ppm (State)	1.5 ppm (Honolulu)	34
NO_2	1-hour	0.100 ppm (NAAQS)	0.023 ppm (Kapolei)	23
	Annual	0.04 ppm (State)	0.003 ppm (Kapolei)	8
PM_{10}	24-hour	150 μg/m^3 (NAAQS)	51 μg/m^3 (Kapolei)	34
$PM_{2.5}$	24-hour	35 μg/m^3 (NAAQS)	6 μg/m^3 (Pearl City)	17
	Annual	9 μg/m^3 (NAAQS)	3.7 μg/m^3 (Kapolei)	41
O_3	8-hour	0.075 ppm (NAAQS)	0.044 ppm (Kapolei)	59
SO_2	1-hour	0.075 ppm (NAAQS)	0.004 ppm (Kapolei)	5
	3-hour	0.5 ppm (State)	0.003 ppm (Kapolei)	<1

Source: (State of Hawaii Department of Health, 2023).
Notes: Lead monitoring ended December 31, 2018, with EPA approval. Concentrations of Pb measured from 2012 to 2018 were approximately 1–2 percent of the standard. μg/m^3 =microgram per cubic meter; AAQS = ambient air quality standards; CO = carbon monoxide; mg/m^3= milligram per cubic meter; NAAQS = National Ambient Air Quality Standards; NO_2 = nitrogen dioxide; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ppm = parts per million; O_3 = ozone; SO_2 = sulfur dioxide.

Table G-2 shows the total criteria pollutant and top 10 HAP emissions for Honolulu based on the 2020 calendar year data for stationary, nonroad and mobile sources. Most of the criteria pollutant emissions are due to fuel combustion for electricity generation and mobile source operations.

Table G-2: Total Honolulu County Air Emissions for 2020

Criteria Pollutant and Precursors	Emissions, Tons/Year	HAP	Emissions, Tons/Year
Carbon Monoxide	77,700	Methanol	1,157
Nitrogen Oxides	20,652	Toluene	885
PM_{10} Primary	14,553	Formaldehyde	555
$PM_{2.5}$ Primary	4,369	Xylenes (Mixed Isomers)	577
Sulfur Dioxide	11,446	Acetaldehyde	358
Volatile Organic Compounds	37,295	2,2,4-Trimethylpentane	260
		Hexane	252
		Ethyl Benzene	127
		Ethylene Glycol	309

Source: USEPA 2020 National Emissions Inventory (NEI) Data
Notes: PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers

The Air Toxics Screening Assessment (AirToxScreen) is USEPA's screening tool to provide communities with information about health risks from air toxics. AirToxScreen gives a snapshot of outdoor air quality with respect to emissions of air toxics and is used as a screening tool for air agencies to prioritize pollutants and emission source types. Based on the 2019 emissions, the total cancer risk for Honolulu

County (including the airport) is 50 per million, with formaldehyde, hexavalent chromium, benzene, and carbon tetrachloride contributing to over 90 percent of the risk. The total non-cancer chronic respiratory hazard index for Honolulu County is one, with formaldehyde, acetaldehyde, and acrolein comprising over 90 percent of the risk. The hazard index is a ratio that compares a person's potential exposure to a chemical to the amount that could cause adverse health effects. A hazard index of one or lower means chronic adverse noncancer effects are unlikely.

G.1.7.2 South Coast Air Basin

In the 2018-2020 design value period, the South Coast Air Basin (SCAB) exceeded the 8- and 1-hour O_3 and annual $PM_{2.5}$ NAAQS, as shown in Figure G-12 (South Coast Air Quality Management District, 2022). Design values for CO, NO_2, lead and SO_2, obtained from USEPA's Interactive Design Value Tool are presented in Table G-3. Table G-4 presents the estimated 2020 emissions inventory for the SCAB in tons per day. In 2020, 31,144 tons of HAPs were emitted in the SCAB counties within the HCTT Study Area. Table G-5 presents the percentage of the top 10 HAPs that comprise 87 percent of the total HAPs emitted. USEPA AirToxScreen data indicate that Formaldehyde, carbon tetrachloride, benzene, and acetaldehyde are the main drivers for cancer risk in this air basin.

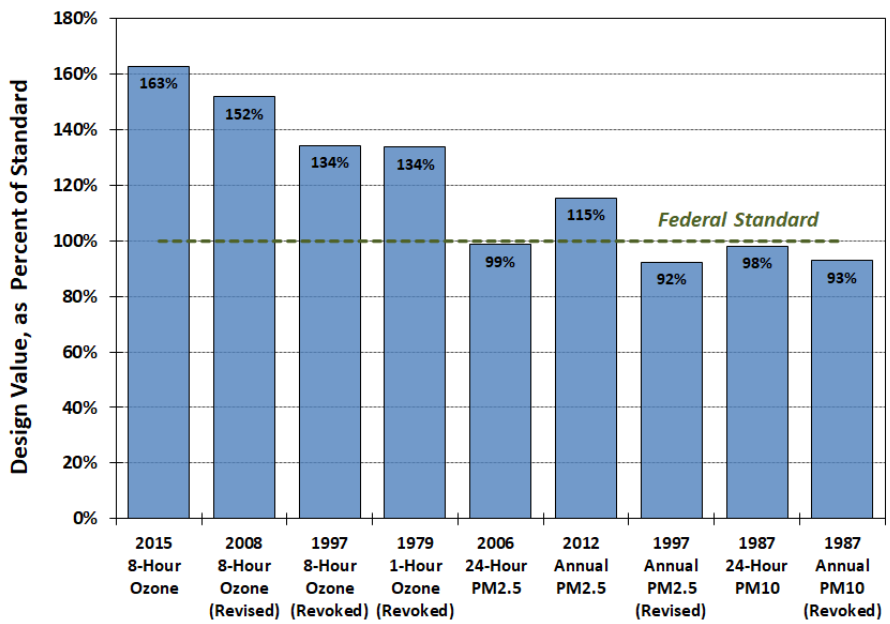


Figure G-12: South Coast Air Basin 2018–2020 3-Year Design Values for Ozone, PM_{10}, and $PM_{2.5}$

Table G-3: Maximum 2022 Design Values for CO, NO_2, Pb and SO_2 NAAQS

Pollutant	Averaging Time	NAAQS	Maximum Design Values (Station)	% of NAAQS
CO	8-hour	9 ppm	3.4 ppm (Compton)	38
NO_2	1-hour	0.100 ppm	0.08 ppm (Long Beach)	80
Pb	Annual	0.15 µg/m^3	0.06 µg/m^3 (Rehrig -Exide)	40
SO_2	1-hour	75 ppb	3 ppb (Los Angeles)	<1

Source: USEPA Interactive Design Value Tool, 2024.
Notes: µg/m^3 =microgram per cubic meter; NAAQS = National Ambient Air Quality Standards; CO = carbon monoxide; NO_2 = nitrogen dioxide; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide.

Table G-4: 2020 Estimated Annual Average Emissions, Tons per Day, South Coast Air Basin

Source Type	TOG	ROG	CO	NO_X	SO_X	PM	PM_{10}	$PM_{2.5}$	NH_3
Total Stationary Sources	907.8	90.0	85.0	43.9	9.3	27.1	18.7	13.2	22.4
Total Areawide Sources	199.8	141.9	58.1	23.1	0.4	273.3	143.4	35.6	36.8
Total Mobile Sources	190.4	168.7	1574.7	288.1	5.5	31.2	30.5	16.2	18.7
Total Natural Sources	187.5	161.7	255.0	5.9	2.2	27.2	26.2	22.2	6.5
Grand Total for South Coast Air Basin	**1485.5**	**562.3**	**1972.9**	**360.9**	**17.4**	**358.9**	**218.8**	**87.1**	**84.3**

Source: CEPAM2019v1.03 Emission Projection Data (California Air Resources Board, 2024); CO = carbon monoxide; NH3 = ammonia; NO_x = oxides of nitrogen; PM = particulate matter; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO_x = oxides of sulfur.

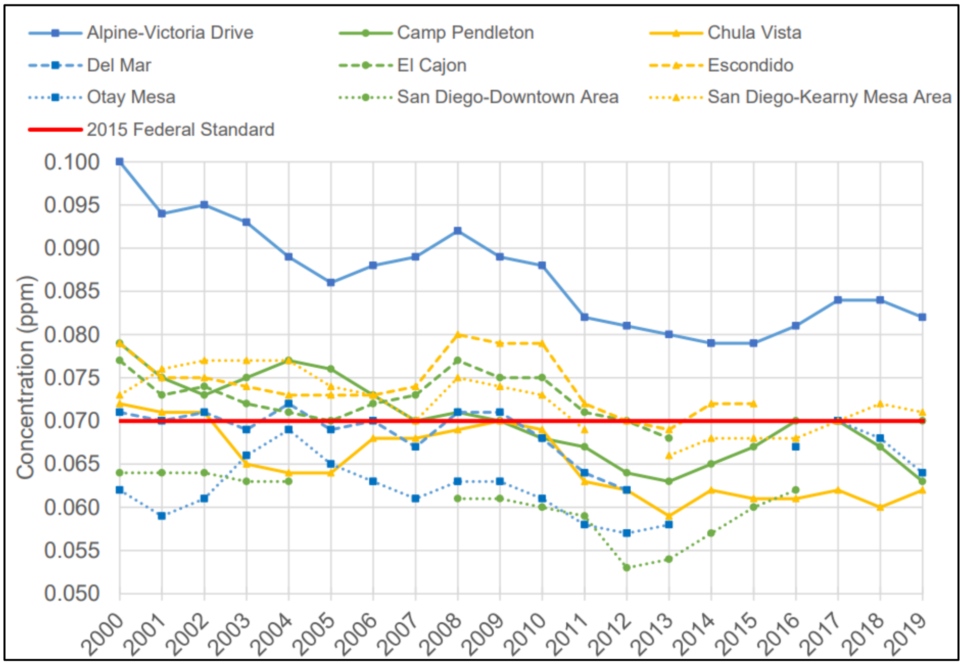
Table G-5: Top 10 HAPs Emitted in 2020 in Los Angeles and Orange Counties

Pollutant	Percentage of Total HAP Emitted in 2020
Methanol	19%
Toluene	15%
Formaldehyde	14%
Xylenes (Mixed Isomers)	11%
Acetaldehyde	9%
Benzene	5%
Hexane	4%
Ethylene Glycol	3%
2,2,4-Trimethylpentane	3%
Ethylbenzene	2%

Source: USEPA 2020 NEI Data Retrieval Tool

G.1.7.3 San Diego Air Basin

Figure G-13 presents the San Diego County ozone design values compared to the 2015 ozone NAAQS from 2000 to 2019. Design values for the attainment criteria pollutants, obtained from USEPA's Interactive Design Value Tool, are presented in Table G-6. Table G-7 presents the estimated 2020 emissions inventory for the San Diego Air Basin in tons per day. In 2020, 10,163 tons of HAPs were emitted in San Diego County. Table G-8 presents the percentage of the top 10 HAPs, which comprise more than 88 percent of the total HAPs emitted. Similar to the SCAB, USEPA AirToxScreen data indicate that formaldehyde, carbon tetrachloride, benzene, and acetaldehyde are the main drivers for cancer risk in this air basin.



Source: (San Diego County Air Pollution Control District, 2022)

Figure G-13: San Diego Air Basin Ozone Design Values, 2000–2019

Table G-6: Maximum 2022 Design Values for Attainment Pollutants in San Diego County

Pollutant	Averaging Time	NAAQS	Maximum Design Values (Station)	% of NAAQS
CO	8-hour	9 ppm	1.3 ppm (Rancho Carmel)	14
NO_2	1-hour	0.100 ppm	0.05 ppm (Donovan)	50
Pb	Annual	0.15 µg/m^3	0.02 µg/m^3 (Palomar Airport)	13
PM_{10}	24-hour	150 µg/m^3	4 µg/m^3 (Donovan)	<1
$PM_{2.5}$	• 24-hour	• 35 µg/m^3	• 30 µg m^3	• 86
	• Annual	• 9 µg/m^3	• 14.6 µg/m^3 (Donovan)	• 162
SO_2	1-hour	75 ppb	1 ppb (Carlsbad)	<1

Source: USEPA Interactive Design Value Tool, 2024.

Notes: µg/m^3 =microgram per cubic meter; NAAQS = National Ambient Air Quality Standards; CO = carbon monoxide; mg/m^3= milligram per cubic meter; NO_2 = nitrogen dioxide; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ppm = parts per million; O_3 = ozone; SO_2 = sulfur dioxide.

Table G-7: 2020 Estimated Annual Average Emissions, Tons per Day, San Diego Air Basin

Source Type	TOG	ROG	CO	NO_X	SO_X	PM	PM_{10}	$PM_{2.5}$	NH_3
Total Stationary Sources	300.7	26.6	14.1	4.2	0.3	17.4	8.5	2.8	1.2
Total Areawide Sources	62.6	39.3	17.4	3.5	0.2	123.6	65.4	11.9	8.8
Total Mobile Sources	49.4	44.5	359.4	75.5	1.0	8.3	8.1	5.1	3.7
Total Natural Sources	91.8	80.2	110.1	4.5	1.5	13.3	12.8	10.8	2.7
Grand Total for San Diego Air Basin	**504.4**	**190.5**	**501.0**	**87.7**	**3.0**	**162.7**	**94.8**	**30.6**	**16.4**

Source: CEPAM2019v1.03 Emission Projection Data

Notes: CO = carbon monoxide; NH_3 = ammonia; NO_x = oxides of nitrogen; PM = particulate matter; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO_x = oxides of sulfur.

Table G-8: Top Ten HAPs Emitted in 2020 in San Diego County

Pollutant	Percentage of Total HAP Emitted in 2020
Methanol	23%
Toluene	14%
Formaldehyde	14%
Xylenes (Mixed Isomers)	11%
Acetaldehyde	8%
Benzene	5%
Ethylene Glycol	3%
2,2,4-Trimethylpentane	3%
Hexane	3%
Ethylbenzene	2%

Source: USEPA 2020 NEI Data Retrieval Tool

G.1.7.3.1 San Diego Portside Environmental Justice Neighborhoods

Table G-9 summarizes the Sources of Criteria Pollutants in the Portside Community based on the 2018 emissions presented in the 2021 Community Emission Reductions Plan (CERP). Table G-10 presents selected TAC emissions by percentage and source, as presented in the 2021 CERP. These include Diesel PM, which the state has identified as a carcinogen, and hexavalent chromium, which can cause localized elevated cancer risk. Currently, Diesel PM is not identified as a HAP. Diesel PM from offroad and onroad mobile sources contributes 84 percent of cancer risk in the Portside Community. Diesel PM, manganese, nickel, and benzene are the largest contributors to non-cancer chronic risk. Nickel, benzene, formaldehyde, and acrolein are the largest contributors to non-cancer acute risk. The potential air quality impacts on the Portside Community that could result from implementing the proposed alternative will be analyzed in the Environmental Consequences section.

Table G-9: Sources of Criteria Pollutants in the Portside Community (2018 baseline)

Source Category	ROG	NO_X	PM_{10}	$PM_{2.5}$
Off-road mobile	317.8 (25.5%)	922.4 (63.1%)	36.2 (5.0%)	34.4 (17.7%)
On-road mobile	259.9 (20.8%)	462.8 (31.6%)	69.5 (9.5%)	32.1 (16.6%)
Stationary Source	215.1 (17.2%)	50.6 (3.5%)	33.2 (4.6%)	8.5 (4.4%)
Area Sources	455.0 (36.5%)	26.6 (1.8%)	589.2 (80.9%)	118.9 (61.3%)
Total, Tons per Year	**1,247.8**	**1,462.4**	**728.1**	**193.9**

Source: (San Diego County Air Pollution Control District, 2022)

Notes: NO_x = oxides of nitrogen; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases

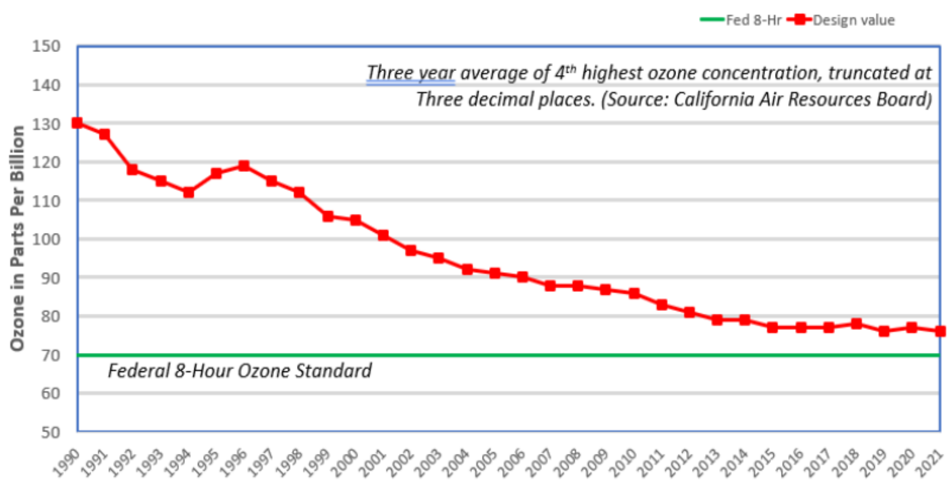
Table G-10: Portside Community Selected Toxic Air Contaminants, Pounds per Year

Source Category	*Arsenic*	*Benzene*	*1,3-Butadiene*	*Hexavalent chromium*	*DPM*
Off-road mobile	0.08 (0.2%)	17,196 (52.8%)	3,462 (63.3%)	0.56 (25.3%)	44,150 (78.0%)
On-road mobile	1.1 (2.9%)	14,601 (44.8%)	1,756 (32.2%)	0.21 (9.5%)	10,904 (19.3%)
Stationary Source	0.9 (2.4%)	409 (1.3%)	84 (1.5%)	1.40 (63.3%)	1,472 (2.7%)
Area Sources	37 (94.4%)	372 (1.1%)	164 (3.0%)	0.04 (1.8%)	0 (0%)
Total, Pounds per Year	39	32,578	5,466	2.21	56,526

Source: (Ventura County Air Pollution Control District, 2022)

G.1.7.4 South Central Coast Air Basin

Figure G-14 presents the Ventura County ozone design value for the 2015 eight-hour ozone NAAQS. Available design values for the attainment criteria pollutants, obtained from USEPA's Interactive Design Value Tool, are presented in Table G-11. Table G-12 presents the estimated 2020 emissions inventory for the South Central Coast Air Basin in tons per day. In 2020, 14,494 tons of HAPs were emitted in the South Central Coast Air Basin. Table G-13 presents the top 10 HAPs, which comprised 94 percent of the total HAPs emitted. USEPA AirToxScreen data indicate that formaldehyde, carbon tetrachloride, benzene, and acetaldehyde are the main drivers for cancer risk in this air basin.



Source: VCAPCD, 2022

Figure G-14: Ventura County APCD 2015 8-Hour Ozone Design Values

Table G-11: Maximum 2022 Design Values for Attainment Pollutants in Ventura County

Pollutant	Averaging Time	NAAQS	Maximum Design Values (Station)	% of NAAQS
NO_2	1-hour	0.100 ppm	0.03 ppm (Simi Valley)	30
PM_{10}	24-hour	150 µg/m^3	1 µg/m^3 (Oxnard)	<1
$PM_{2.5}$	24-hour	35 µg/m^3	21 µg m^3 (Thousand Oaks)	60
	Annual	9 µg/m^3	9.0 µg/m^3 (Ojai)	100

Source: USEPA Interactive Design Value Tool, 2024

Notes: µg/m^3 =microgram per cubic meter; NAAQS = National Ambient Air Quality Standards; CO = carbon monoxide; mg/m^3= milligram per cubic meter; NO_2 = nitrogen dioxide; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ppm = parts per million; O_3 = ozone; SO_2 = sulfur dioxide.

Table G-12: 2020 Estimated Annual Average Emissions, Tons per Day, California South Central Coast Air Basin

Source Type	*TOG*	*ROG*	*CO*	*NO_X*	*SO_X*	*PM*	*PM_{10}*	*$PM_{2.5}$*	*NH_3*
Total Stationary Sources	106.7	20.6	8.2	7.1	0.8	2.9	1.6	0.9	2.7
Total Areawide Sources	54.9	29.6	44.6	3.1	0.2	71.9	38.7	10.5	9.0
Total Mobile Sources	24.9	22.7	184.9	27.5	0.7	3.5	3.4	2.0	1.6
Total Natural Sources	282.4	192.6	212.1	5.3	2.0	22.9	22.0	18.7	5.8
Grand Total for South Central Coast Air Basin	**468.9**	**265.5**	**449.9**	**42.9**	**3.6**	**101.2**	**65.8**	**32.0**	**19.0**

Source: CEPAM2019v1.03 Emission Projection Data

Notes: (1) Numbers may not add up due to rounding. (2) CO = carbon monoxide; NH_3 = ammonia; NO_x = oxides of nitrogen; PM = particulate matter; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO_x = oxides of sulfur.

Table G-13: Top 10 HAPs Emitted in 2020 in South Central Air Basin

Pollutant	Percentage of Total HAP Emitted in 2020
Methanol	52%
Formaldehyde	14%
Acetaldehyde	10%
Toluene	6%
Xylenes (Mixed Isomers)	4%
Benzene	2%
2,2,4-Trimethylpentane	2%
Hexane	2%
Ethylene Glycol	1%
Ethylbenzene	1%

Source: USEPA 2020 NEI Data Retrieval Tool

G.1.7.5 North Central Coast Air Basin

Table G-14 presents the estimated 2020 emissions inventory for the North Central Coast Air Basin in tons per day. In 2020, 46,564 tons of HAPs were emitted in North Central Coast Air Basin. Table G-15 presents the top 10 HAPs that comprised 95 percent of the total HAPs emitted. USEPA AirToxScreen data indicate that formaldehyde is the main driver for cancer risk in this air basin.

Table G-14: 2020 Estimated Annual Average Emissions, Tons per Day, California North Central Coast Air Basin

Source Type	*TOG*	*ROG*	*CO*	*NO_X*	*SO_X*	*PM*	*PM_{10}*	*$PM_{2.5}$*	*NH_3*
Total Stationary Sources	266.8	10.9	12.6	17.4	1.0	8.7	4.8	1.7	2.1
Total Areawide Sources	47.8	22.8	22.4	1.7	0.1	75.6	38.3	8.2	10.7
Total Mobile Sources	13.1	11.9	96.9	13.5	0.1	1.5	1.5	0.9	0.7
Total Natural Sources	169.1	145.8	596.5	3.6	2.8	57.2	55.0	46.6	8.3
Grand Total for South Central Coast Air Basin	**496.8**	**191.4**	**728.4**	**36.2**	**4.1**	**143.0**	**99.5**	**57.4**	**21.8**

Source: CEPAM2019v1.03 Emission Projection Data; CO = carbon monoxide; NH_3 = ammonia; NO_x = oxides of nitrogen; PM = particulate matter; PM_{10} = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; $PM_{2.5}$ = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO_x = oxides of sulfur.

Table G-15: Top 10 HAPs Emitted in 2020 in North Central Coast Air Basin

Pollutant	**Percentage of Total HAP Emitted in 2020**
Methanol	30%
Formaldehyde	24%
Acetaldehyde	16%
Acrolein	4%
Naphthalene	4%
Benzene	4%
Toluene	4%
Xylenes (Mixed Isomers)	3%
Acetonitrile	3%
1,3-Butadiene	2%

Source: USEPA 2020 NEI Data Retrieval

G.2 Emissions Estimates Spreadsheets

Tables G-16 through G-31 provide proposed changes to training and testing activities, emissions factors, and example emissions summaries for aircraft, vessels, and ordnance for the Baseline and Alternatives 1 and 2.

Table G-16: Proposed Changes to Training Activities

Category	Activity Name	VESSELS Time on Range (hr)	VESSELS Activity Distribution (%) 0-3 nm from shore	VESSELS Activity Distribution (%) 3-12 nm from Shore	VESSELS Activity Distribution (%) >12 nm from Shore	AIRCRAFT Time on Range (hr)	AIRCRAFT Distribution (%) 0-3 nm from shore	AIRCRAFT Distribution (%) 3-12 nm from Shore	AIRCRAFT Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
Anti-Submarine Warfare	Independent Deployer Certification Exercise/Tailored Surface Warfare Training	72	0%	5%	95%	72	0%	5%	95%	Navy/MC	NOCAL	0	1	1	1	1
Anti-Submarine Warfare	Independent Deployer Certification Exercise/Tailored Surface Warfare Training	72	0%	5%	95%	72	0%	5%	95%	Navy/MC	PMSR	0	1	1	1	1
Anti-Submarine Warfare	Independent Deployer Certification Exercise/Tailored Surface Warfare Training	72	0%	5%	95%	72	0%	5%	95%	Navy/MC	SCAB	0	6	8	6	8
Anti-Submarine Warfare	Independent Deployer Certification Exercise/Tailored Surface Warfare Training	72	0%	5%	95%	72	0%	5%	95%	Navy/MC	SDAB	0	6	8	6	8
Anti-Submarine Warfare	Medium Coordinated Anti-Submarine Warfare	24	0%	0%	100%	24	0%	0%	100%	Navy/MC	Hawaii	2	15	17	13	15
Anti-Submarine Warfare	Medium Coordinated Anti-Submarine Warfare	24	0%	0%	100%	24	0%	0%	100%	Navy/MC	SOCAL	2	10	13	8	11
Anti-Submarine Warfare	Small Joint Coordinated Anti-Submarine Warfare	16	10%	10%	80%	16	10%	10%	80%	Navy/MC	Hawaii	2	1	1	-1	-1
Anti-Submarine Warfare	Small Joint Coordinated Anti-Submarine Warfare	16	0%	0%	100%	16	0%	0%	100%	Navy/MC	SOCAL	12	7	9	-5	-3

		VESSELS				AIRCRAFT										
			Activity Distribution (%)				Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Anti-Submarine Warfare	Composite Training Unit Exercise – Amphibious Ready Group/Marine Expeditionary Unit Emissions analyzed as unit-level training (gunnery, missile exercise, etc.)															
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	Hawaii	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	PMSR	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	SCI	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	SDAB	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	0%	0%	100%	2	10%	10%	80%	Navy/MC	Transit Corridor	0	1	1	1	1
Anti-Submarine Warfare	Integrated Air Missile Defense Exercise	8	0%	0%	100%	8	0%	0%	100%	Navy/MC	Hawaii	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	Hawaii	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	SDAB	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	SCI	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	PMSR	0	1	1	1	1
Anti-Submarine Warfare	Multi-Warfare Exercise Emissions analyzed as unit-level training		0													

		VESSELS				AIRCRAFT										
			Activity Distribution (%)				Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	**Activity Name**	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	**Service**	**Location**	**Current Activity Level**	**ALT 1**	**ALT 2**	**ALT 1**	**ALT 2**
	(gunnery, missile exercise, etc.)															
Air Warfare	Air Combat Maneuvers	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	Hawaii	814	2314	2314	1500	1500
Air Warfare	Air Combat Maneuvers	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	NOCAL	2000	3657	3800	1657	1800
Air Warfare	Air Combat Maneuvers	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	PMSR	2000	3657	3800	1657	1800
Air Warfare	Air Combat Maneuvers					1	0%	0%	100%	Navy/MC	SOCAL	2000	3657	3800	1657	1800
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	185	46	50	-139	-135
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	NOCAL	183	183	183	0	0
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	PMSR	183	183	183	0	0
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	183	183	183	0	0
Air Warfare	Gunnery Exercise Air-to-Air Medium-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	0	2	3	2	3
Air Warfare	Gunnery Exercise Air-to-Air Medium-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	5	2	2	-3	-3
Air Warfare	Gunnery Exercise Air-to-Air Medium-Caliber	2	0%	0%	100%	2	0%	0%	100%	Air Force	Hawaii	0	12	12	12	12
Air Warfare	Gunnery Exercise Air-to-Air Small-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	0	5	5	5	5
Air Warfare	Gunnery Exercise Air-to-Air Small-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	0	5	5	5	5
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Navy/MC	Hawaii	51	25	25	-26	-26
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Navy/MC	SOCAL	165	55	55	-110	-110

Category	Activity Name	VESSELS Time on Range (hr)	VESSELS Activity Distribution (%) 0-3 nm from shore	VESSELS Activity Distribution (%) 3-12 nm from Shore	VESSELS Activity Distribution (%) >12 nm from Shore	AIRCRAFT Time on Range (hr)	AIRCRAFT Distribution (%) 0-3 nm from shore	AIRCRAFT Distribution (%) 3-12 nm from Shore	AIRCRAFT Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Coast Guard	Hawaii	15	15	15	0	0
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Coast Guard	SOCAL	45	45	45	0	0
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Navy/MC	Hawaii	72	79	79	7	7
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Navy/MC	SOCAL	195	85	85	-110	-110
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Coast Guard	Hawaii	19	19	19	0	0
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Coast Guard	SOCAL	70	70	70	0	0
Air Warfare	Medium Range Interceptor Capability Establishment of and impacts from land based firing points covered in separate NEPA. Not analyzed here.															
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	Hawaii	62	26	28	-36	-34
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	NOCAL	1	40	40	39	39
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	SOCAL	2	40	40	38	38
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	PMSR	1	43	43	42	42
Air Warfare	Missile Exercise Man-portable Air Defense System	2	0%	0%	100%					Navy/MC	SCI	4	10	10	6	6
Air Warfare	Missile Exercise Man-portable Air Defense System	2	0%	0%	100%					Navy/MC	PMRF	0	7	7	7	7
Air Warfare	Missile Exercise Man-portable Air Defense System	2	0%	0%	100%					Army	PMRF	0	2	2	2	2

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	**Activity Name**		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	**Service**	**Location**	**Current Activity Level**	**ALT 1**	**ALT 2**	**ALT 1**	**ALT 2**
Air Warfare	Missile Exercise Surface-to-Air	2	0%	0%	100%					Navy/MC	Hawaii	30	30	30	0	0
Air Warfare	Missile Exercise Surface-to-Air	2	0%	0%	100%					Navy/MC	PMSR	18	18	18	0	0
Air Warfare	Missile Exercise Surface-to-Air	2	0%	0%	100%					Navy/MC	SOCAL	18	18	18	0	0
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	Hawaii	12	48	48	36	36
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	NOCAL	4	5	5	1	1
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	SDAB	5	6	6	1	1
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	SCAB	5	5	5	0	0
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	PMSR	4	5	5	1	1
Amphibious Warfare	Amphibious Operations in a Contested Environment	4	50%	25%	25%	4	50%	25%	25%	Navy/MC	Hawaii	0	15	15	15	15
Amphibious Warfare	Amphibious Operations in a Contested Environment	4	50%	25%	25%	4	50%	25%	25%	Navy/MC	SDAB - SSTC	0	5	5	5	5
Amphibious Warfare	Amphibious Operations in a Contested Environment	4	50%	25%	25%	4	50%	25%	25%	Navy/MC	SCAB	0	5	5	5	5
Amphibious Warfare	Amphibious Raid	2	50%	25%	25%	2	50%	25%	25%	Navy/MC	SDAB	2426	2404	2404	-22	-22
Amphibious Warfare	Amphibious Raid	2	50%	25%	25%	2	50%	25%	25%	Navy/MC	Hawaii	0	24	24	24	24
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	Hawaii	0	20	20	20	20
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	SCI	0	8	9	8	9
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	PMSR	0	8	9	8	9
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	NOCAL	0	8	9	8	9
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	SDAB	0	8	9	8	9
Amphibious Warfare	Expeditionary Fires Exercise/Supporting Arms Coordination Exercise	72	0%	100%	0%	3	0%	100%	0%	Navy/MC	SDAB	4	4	4	0	0
Amphibious Warfare	Expeditionary Fires Exercise/Supporting	72	0%	100%	0%	3	0%	100%	0%	Navy/MC	SCAB	4	4	4	0	0

		VESSELS				AIRCRAFT										
			Activity Distribution (%)				Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	**Activity Name**	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	**Service**	**Location**	**Current Activity Level**	**ALT 1**	**ALT 2**	**ALT 1**	**ALT 2**
	Arms Coordination Exercise															
Amphibious Warfare	Naval Surface Fire Support Exercise-At Sea	8	0%	0%	100%					Navy/MC	Hawaii	15	23	25	8	10
Amphibious Warfare	Naval Surface Fire Support Exercise – Land-Based Target	8	10%	60%	30%					Navy/MC	SOCAL	55	67	67	12	12
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%	Navy/MC	Hawaii	0	6	6	6	6
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%		NOCAL	1	1	1	0	0
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%		SCAB	1	1	1	0	0
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%		SDAB	1	1	1	0	0
Amphibious Warfare	Shore-to-Surface Artillery Exercise Shore based firing point impacts are addressed in other NEPA documentation.															
Amphibious Warfare	Shore-to-Surface Missile Exercise Shore based firing point impacts are addressed in other NEPA documentation.															
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Helicopter					2	0%	24%	76%	Navy/MC	Hawaii	6	4	5	-2	-1
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Helicopter					2	0%	24%	76%	Navy/MC	SCI	104	4	5	-100	-99

Category	Activity Name	VESSELS Time on Range (hr)	VESSELS Activity Distribution (%) 0-3 nm from shore	VESSELS Activity Distribution (%) 3-12 nm from Shore	VESSELS Activity Distribution (%) >12 nm from Shore	AIRCRAFT Time on Range (hr)	AIRCRAFT Distribution (%) 0-3 nm from shore	AIRCRAFT Distribution (%) 3-12 nm from Shore	AIRCRAFT Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	Hawaii	10	54	80	44	70
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	SCI	25	71	80	46	55
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Ship	8	0%	10%	90%					Navy/MC	Hawaii	50	34	34	-16	-16
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Ship	8	0%	10%	90%					Navy/MC	SCI	117	104	104	-13	-13
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Submarine	8	0%	10%	90%					Navy/MC	Hawaii	48	48	48	0	0
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Submarine	8	0%	10%	90%					Navy/MC	SCI	13	26	26	13	13
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Helicopter	2	0%	24%	76%	2	0%	24%	76%	Navy/MC	Hawaii	159	128	130	-31	-29
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Helicopter	2	0%	24%	76%	2	0%	24%	76%	Navy/MC	SCI	262	64	65	-198	-197
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Helicopter	2	0%	24%	76%	2	0%	24%	76%	Navy/MC	PMSR	262	64	65	-198	-197
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Long-Range Unmanned Surface Vessel									Navy/MC	SCI					
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Long-Range Unmanned Surface Vessel									Navy/MC						

Category	Activity Name	VESSELS: Time on Range (hr)	VESSELS: Activity Distribution (%) 0-3 nm from shore	VESSELS: Activity Distribution (%) 3-12 nm from Shore	VESSELS: Activity Distribution (%) >12 nm from Shore	AIRCRAFT: Time on Range (hr)	AIRCRAFT: Distribution (%) 0-3 nm from shore	AIRCRAFT: Distribution (%) 3-12 nm from Shore	AIRCRAFT: Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	Hawaii	32	179	200	147	168
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	SCI	28	100	100	72	72
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	PMSR	28	100	100	72	72
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Ship	2	0%	10%	90%					Navy/MC	Hawaii	224	94	119	-130	-105
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Ship	2	0%	10%	90%					Navy/MC	SCI	212	189	240	-23	28
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Ship	2	0%	10%	90%					Navy/MC	PMSR	212	189	240	-23	28
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	NOCAL	17	20	20	3	3
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	Hawaii	200	205	205	5	5
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	PMSR	17	20	20	3	3
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	SCI	17	24	24	7	7
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	Transit Corridor	6	9	9	3	3
Anti-Submarine Warfare	Training and End-to-End Mission Capability	8	0%	0%	100%	8	0%	0%	100%	Navy/MC	Hawaii	0	2	2	2	2

Category	Activity Name	VESSELS Time on Range (hr)	VESSELS Activity Distribution (%) 0-3 nm from shore	VESSELS Activity Distribution (%) 3-12 nm from Shore	VESSELS Activity Distribution (%) >12 nm from Shore	AIRCRAFT Time on Range (hr)	AIRCRAFT Distribution (%) 0-3 nm from shore	AIRCRAFT Distribution (%) 3-12 nm from Shore	AIRCRAFT Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
	Verification – Torpedo															
Anti-Submarine Warfare	Training and End-to-End Mission Capability Verification – Torpedo	8	0%	0%	100%	8	0%	0%	100%	Navy/MC	SOCAL	1	1	1	0	0
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	NOCAL	47	50	51	3	4
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	Hawaii	19	29	31	10	12
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	PMSR	47	50	51	3	4
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	SCI	47	50	51	3	4
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Navy/MC	Hawaii	37	37	37	0	0
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Navy/MC	SOCAL	125	125	125	0	0
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Coast Guard	Hawaii	5	5	5	0	0
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Coast Guard	SOCAL	20	20	20	0	0
Electronic Warfare	Counter Targeting Flare Exercise	2	50%	50%	0%	2	50%	50%	0%	Navy/MC	Hawaii	19	105	108	86	89
Electronic Warfare	Counter Targeting Flare Exercise	2	50%	50%	0%	2	50%	50%	0%	Navy/MC	SCI	130	120	123	-10	-7
Electronic Warfare	Counter Targeting Flare Exercise	2	50%	50%	0%	2	50%	50%	0%	Coast Guard	SCI	10	10	10	0	0
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	33	55	60	22	27
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	NOCAL	117	94	109	-23	-8
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	PMSR	117	94	109	-23	-8

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	117	94	109	-23	-8
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	Hawaii	12	18	18	6	6
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	SCI	0	2	3	2	3
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	SDAB	0	2	3	2	3
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	Ventura	0	2	3	2	3
Expeditionary Warfare	Underwater Construction Team Training	12	100%	0%	0%					Coast Guard	Hawaii	8	8	8	0	0
Expeditionary Warfare	Underwater Construction Team Training	12	100%	0%	0%					Coast Guard	PMSR	262	262	262	0	0
Expeditionary Warfare	Underwater Construction Team Training	12	100%	0%	0%					Coast Guard	NOCAL	262	262	262	0	0
Expeditionary Warfare	Underwater Construction Team Training	1	100%	0%	0%					Coast Guard	SDAB	474	474	474	0	0
Expeditionary Warfare	Underwater Construction Team Training	1	100%	0%	0%					Coast Guard	SCAB	50	50	50	0	0
Expeditionary Warfare	Gunnery Exercise Ship-to-Shore	1.0	33%	33%	34%					Navy/MC	SCI	0	437	480	437	480
Expeditionary Warfare	Obstacle Loading	1.0	100%	0%	0%					Navy/MC	Hawaii	0	70	70	70	70
Expeditionary Warfare	Obstacle Loading	1.0	100%	0%	0%					Navy/MC	SCI	0	67	78	67	78
Expeditionary Warfare	Obstacle Loading	1.0	100%	0%	0%					Navy/MC	SDAB	0	67	78	67	78
Expeditionary Warfare	Personnel Insertion/ Extraction – Air	1.5	50%	40%	10%	1.5	50%	40%	10%	Navy/MC	Hawaii	0	534	534	534	534
Expeditionary Warfare	Personnel Insertion/ Extraction – Air	1.5	50%	40%	10%	1.5	50%	40%	10%	Navy/MC	SCI	0	367	389	367	389
Expeditionary Warfare	Personnel Insertion/ Extraction – Air	1.5	50%	40%	10%	1.5	50%	40%	10%	Navy/MC	SDAB	0	1101	1166	1101	1166
Expeditionary Warfare	Personnel Insertion/Extraction – Surface and Subsurface	1.5	100%	0%	0%					Navy/MC	Hawaii	182	308	336	126	154

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Expeditionary Warfare	Personnel Insertion/Extraction – Surface and Subsurface	1.5	100%	0%	0%					Navy/MC	SCI	112	277	287	165	175
Expeditionary Warfare	Personnel Insertion/Extraction – Surface and Subsurface	1.5	100%	0%	0%					Navy/MC	SDAB	337	830	862	493	525
Expeditionary Warfare	Personnel Insertion/ Extraction – Swimmer/Diver	1.5	100%	0%	0%					Navy/MC	Hawaii	495	495	495	0	0
Expeditionary Warfare	Personnel Insertion/ Extraction – Swimmer/Diver	1.5	100%	0%	0%					Navy/MC	SCI	83	299	320	216	237
Expeditionary Warfare	Personnel Insertion/ Extraction – Swimmer/Diver	1.5	100%	0%	0%					Navy/MC	SDAB	248	896	960	648	712
Expeditionary Warfare	Small Boat Attack	6	10%	10%	80%					Navy/MC	Hawaii	6	6	6	0	0
Expeditionary Warfare	Small Boat Attack	2	10%	10%	80%					Navy/MC	SCI	29	29	29	0	0
Expeditionary Warfare	Small Boat Attack	2	10%	10%	80%					Navy/MC	SDAB	86	86	86	0	0
Mine Warfare	Airborne Mine Countermeasure – Mine Detection					1.5	100%	0%	0%	Navy/MC	Hawaii	0	20	20	20	20
Mine Warfare	Airborne Mine Countermeasure – Mine Detection					1.5	100%	0%	0%	Navy/MC	SCAB	5	10	10	5	5
Mine Warfare	Airborne Mine Countermeasure – Mine Detection					1.5	100%	0%	0%	Navy/MC	SDAB - SSTC	5	10	10	5	5
Mine Warfare	Airborne Mine Laying					1	10%	40%	50%	Navy/MC	Hawaii	0	4	4	4	4
Mine Warfare	Airborne Mine Laying					1	10%	40%	50%	Navy/MC	SCAB	9	3	3	-6	-6
Mine Warfare	Airborne Mine Laying					1	10%	40%	50%	Navy/MC	SDAB	9	3	3	-6	-6
Mine Warfare	Amphibious Breaching Operations	4	80%	20%	0%					Navy/MC	Hawaii	0	100	100	100	100
Mine Warfare	Amphibious Breaching Operations	4	80%	20%	0%					Navy/MC	SDAB	0	481	484	481	484

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Amphibious Breaching Operations	4	80%	20%	0%					Navy/MC	SCI	0	160	161	160	161
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	Hawaii	1	1	2	0	1
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	SCAB	1	1	1	0	0
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	SDAB	1	1	2	0	1
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	NOCAL	1	1	1	0	0
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	Ventura	1	1	1	0	0
Mine Warfare	Mine Countermeasure Exercise – Ship Sonar	1.5	0%	62%	38%					Navy/MC	Hawaii	30	72	72	42	42
Mine Warfare	Mine Countermeasure Exercise – Ship Sonar	1.5	0%	62%	38%					Navy/MC	SCAB	46	128	128	82	82
Mine Warfare	Mine Countermeasure Exercise – Ship Sonar	1.5	0%	62%	38%					Navy/MC	SDAB	46	128	128	82	82

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	Hawaii	6	7	8	1	2
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	SCI	124	10	11	-114	-113
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	SDAB - SSTC	124	10	11	-114	-113
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	SCAB	124	10	11	-114	-113
Mine Warfare	Mine Countermeasures – Towed Mine Neutralization					2	100%	0%	0%	Navy/MC	SCI	170	15	15	-155	-155
Mine Warfare	Mine Countermeasures – Towed Mine Neutralization					2	100%	0%	0%	Navy/MC	SDAB	170	15	15	-155	-155
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	Hawaii	20	13	15	-7	-5
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	SCAB	65	139	145	74	80
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	SDAB	65	139	143	74	78
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	Ventura	65	139	143	74	78
Mine Warfare	Submarine Mine Avoidance Exercise															

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Submarine Mobile Mine and Mine Laying Exercise	6	100%	0%	0%	6	100%	0%	0%	Navy/MC	Hawaii	1	20	20	19	19
Mine Warfare	Submarine Mobile Mine and Mine Laying Exercise	6	100%	0%	0%	6	100%	0%	0%	Navy/MC	SCI	1	15	15	14	14
Mine Warfare	Submarine Mobile Mine and Mine Laying Exercise	6	100%	0%	0%	6	100%	0%	0%	Navy/MC	PMSR	1	15	15	14	14
Mine Warfare	Surface Ship Object Detection	1	50%	25%	25%					Navy/MC	Hawaii	42	72	72	30	30
Mine Warfare	Surface Ship Object Detection	1	50%	25%	25%					Navy/MC	SDAB	164	256	256	92	92
Mine Warfare	Training and End-to-End Mission Capability Verification – Mobile Mine and Mine															
Mine Warfare	Underwater Demolition Qualification and Certification	8	100%	0%	0%					Navy/MC	Hawaii	25	5	5	-20	-20
Mine Warfare	Underwater Demolition Qualification and Certification	8	100%	0%	0%					Navy/MC	SDAB	120	40	44	-80	-76
Mine Warfare	Underwater Demolitions Multiple Charge – Large Area Clearance	8	100%	0%	0%					Navy/MC	SCI	18	6	6	-12	-12
Mine Warfare	Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	2	100%	0%	0%					Navy/MC	Hawaii	0	10	10	10	10
Mine Warfare	Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	2	100%	0%	0%					Navy/MC	SDAB	0	279	279	279	279
Mine Warfare	Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	2	100%	0%	0%					Navy/MC	SCAB	0	93	93	93	93

Category	Activity Name	VESSELS Time on Range (hr)	VESSELS Activity Distribution (%) 0-3 nm from shore	VESSELS Activity Distribution (%) 3-12 nm from Shore	VESSELS Activity Distribution (%) >12 nm from Shore	AIRCRAFT Time on Range (hr)	AIRCRAFT Distribution (%) 0-3 nm from shore	AIRCRAFT Distribution (%) 3-12 nm from Shore	AIRCRAFT Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	Hawaii	187	194	194	7	7
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	NOCAL	320	331	331	11	11
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SDAB	160	166	166	6	6
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SCAB	160	166	166	6	6
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	Hawaii	217	197	201	-20	-16
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SDAB	182	237	240	55	58
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SCAB	182	237	240	55	58
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Coast Guard	Hawaii	100	100	100	0	0
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Coast Guard	SDAB	60	60	60	0	0
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Coast Guard	SCAB	60	60	60	0	0
Surface Warfare	Gunnery Exercise Air-to-Surface Small Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	Hawaii	585	343	429	-242	-156
Surface Warfare	Gunnery Exercise Air-to-Surface Small Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SDAB	1020	302	345	-718	-675
Surface Warfare	Gunnery Exercise Air-to-Surface Small Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SCAB	1020	302	345	-718	-675
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Navy/MC	Hawaii	10	10	10	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Navy/MC	SDAB	7	7	7	0	0

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Navy/MC	SCI	7	7	7	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Coast Guard	Hawaii	2	2	2	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Coast Guard	SDAB	79	79	79	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Coast Guard	SCI	79	79	79	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Army	Hawaii	0	4	8	4	8
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Navy/MC	Hawaii	25	31	31	6	6
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Navy/MC	SDAB - SSTC	100	173	173	73	73
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Navy/MC	SCI	100	173	173	73	73
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	Hawaii	100	100	100	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	SDAB - SSTC	63	63	63	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	PMSR	63	63	63	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	NOCAL	63	63	63	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Army	Hawaii	0	4	8	4	8

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)									
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Navy/MC	Hawaii	32	32	32	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Navy/MC	SDAB	100	63	63	-37	-37
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Navy/MC	SCAB	100	63	63	-37	-37
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	0%	100%					Navy/MC	Transit Corridor	13	13	13	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	Hawaii	5	5	5	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	SDAB	8	8	8	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	PMSR	8	8	8	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	NOCAL	8	8	8	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	Hawaii	50	31	50	-19	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	SDAB	45	28	45	-17	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	SCAB	45	28	45	-17	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	PMSR	45	28	45	-17	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	NOCAL	45	28	45	-17	0

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	0%	100%					Navy/MC	Transit Corridor	40	25	40	-15	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Coast Guard	Hawaii	20	20	20	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Coast Guard	SCI	18	18	18	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Coast Guard	SDAB	18	18	18	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	2	0%	28%	72%					Navy/MC	Hawaii	65	65	65	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Navy/MC	SCI	142	142	142	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Navy/MC	PMSR	142	142	142	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Navy/MC	NOCAL	71	71	71	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	0%	100%					Navy/MC	Transit Corridor	20	20	20	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	2	0%	28%	72%					Coast Guard	Hawaii	100	100	100	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Coast Guard	SCI	165	165	165	0	0
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Coast Guard	NOCAL	55	55	55	0	0
Surface Warfare	Laser Targeting – Aircraft					2	0%	0%	100%	Navy/MC	Hawaii	50	79	100	29	50
Surface Warfare	Laser Targeting – Aircraft					2	0%	50%	50%	Navy/MC	SDAB	455	39	50	-416	-405

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Laser Targeting – Aircraft					2	0%	50%	50%	Navy/MC	SCAB	455	39	50	-416	-405
Surface Warfare	Laser Targeting – Ship	2	0%	0%	100%					Navy/MC	Hawaii	0	4	4	4	4
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Navy/MC	SDAB	0	2	2	2	2
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Navy/MC	SCAB	0	2	2	2	2
Surface Warfare	Laser Targeting – Ship	2	0%	0%	100%					Coast Guard	Hawaii	4	4	4	0	0
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Coast Guard	SDAB	2	2	2	0	0
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Coast Guard	SCAB	2	2	2	0	0
Surface Warfare	Maritime Security Operations	2	10%	10%	80%	2	33%	33%	34%	Navy/MC	Hawaii	70	70	70	0	0
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Navy/MC	NOCAL	63	63	63	0	0
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Navy/MC	SOCAL	188	188	188	0	0
Surface Warfare	Maritime Security Operations	2	10%	10%	80%	2	33%	33%	34%	Coast Guard	Hawaii	145	145	145	0	0
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Coast Guard	NOCAL	89	89	89	0	0
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Coast Guard	SOCAL	798	798	798	0	0
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	Hawaii	10	20	22	10	12
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	PMSR	70	32	33	-38	-37
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SDAB	70	32	33	-38	-37
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SCAB	70	32	33	-38	-37
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	Hawaii	227	120	129	-107	-98
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	PMSR	122	130	135	8	13
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SDAB	62	66	68	4	6

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SCAB	62	66	68	4	6
Surface Warfare	Missile Exercise Surface-to-Surface	11	0%	0%	100%	11	0%	0%	100%	Navy/MC	Hawaii	20	30	32	10	12
Surface Warfare	Missile Exercise Surface-to-Surface	11	0%	0%	100%	11	0%	0%	100%	Navy/MC	SOCAL	10	10	10	0	0
Surface Warfare	Sinking Exercise (SINKEX)	16	0%	0%	100%	16	0%	0%	100%	Navy/MC	Hawaii	1	2	3	1	2
Surface Warfare	Sinking Exercise (SINKEX)	16	0%	0%	100%	16	0%	0%	100%	Navy/MC	SOCAL	0	1	1	1	1
Surface Warfare	Surface Warfare Torpedo Exercise – Submarine	8	10%	10%	80%					Navy/MC	Hawaii	0	30	30	30	30
Surface Warfare	Surface Warfare Torpedo Exercise – Submarine	8	0%	0%	100%					Navy/MC	SOCAL	0	10	10	10	10
Surface Warfare	Training and End-to-End Mission Capability Verification – Submarine Missile Maritime	4	0%	0%	100%					Navy/MC	Hawaii	0	2	2	2	2
Surface Warfare	Training and End-to-End Mission Capability Verification – Submarine Missile Maritime	4	0%	0%	100%					Navy/MC	SOCAL	0	2	3	2	3
Other Training Exercises	Aerial Firefighting					8	100%			Navy/MC	Hawaii	0	4	4	4	4
Other Training Exercises	Aerial Firefighting	8	100%			8	100%			Navy/MC	SCI	0	4	4	4	4
Other Training Exercises	At-Sea Vessel Refueling Training	2	33%	33%	34%					Navy/MC	SDAB	0	5	5	5	5
Other Training Exercises	At-Sea Vessel Refueling Training	2	33%	33%	34%					Navy/MC	SCAB	0	5	5	5	5
Other Training Exercises	Combat Swimmer/Diver Training and Certification	4	100%							Navy/MC	Hawaii	0	395	395	395	395
Other Training Exercises	Combat Swimmer/Diver Training and Certification	4	100%	0%	0%					Navy/MC	SDAB - SSTC	0	320	320	320	320

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Other Training Exercises	Installation and Maintenance of Subsea and Seabed Warfare Training Areas	2	100%							Navy/MC	Hawaii	0	4	4	4	4
Other Training Exercises	Installation and Maintenance of Subsea and Seabed Warfare Training Areas	2	100%							Navy/MC	PMSR	0	2	2	2	2
Other Training Exercises	Installation and Maintenance of Subsea and Seabed Warfare Training Areas	2	100%							Navy/MC	SCI	0	2	2	2	2
Other Training Exercises	Kilo Dip					0.3	0%	24%	76%	Navy/MC	Hawaii	60	30	30	-30	-30
Other Training Exercises	Kilo Dip					0.3	0%	24%	76%	Navy/MC	SDAB	1200	15	15	-1185	-1185
Other Training Exercises	Kilo Dip					0.3	0%	24%	76%	Navy/MC	SCAB	1200	15	15	-1185	-1185
Other Training Exercises	Multi-Domain Unmanned Autonomous Systems	2	100%	0%	0%	2	100%	0%	0%	Navy/MC	Hawaii	0	79	100	79	100
Other Training Exercises	Multi-Domain Unmanned Autonomous Systems	2	100%	0%	0%	2	100%	0%	0%	Navy/MC	SCI	0	79	100	79	100
Other Training Exercises	Multi-Domain Unmanned Autonomous Systems	2	100%	0%	0%	2	100%	0%	0%	Navy/MC	SDAB	0	79	100	79	100
Other Training Exercises	Port Damage Repair									Navy/MC	Ventura	0	6	6	6	6
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Navy/MC	Hawaii	20	20	20	0	0
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Navy/MC	SDAB	75	43	48	-32	-27
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Coast Guard	Hawaii	9	9	9	0	0
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Coast Guard	SDAB	950	950	950	0	0
Other Training Exercises	Search and Rescue	2	40%	40%	20%	2	40%	40%	20%	Coast Guard	Hawaii	110	110	110	0	0
Other Training Exercises	Search and Rescue	2	40%	40%	20%	2	40%	40%	20%	Coast Guard	SDAB	522	522	522	0	0

Category	Activity Name	VESSELS Time on Range (hr)	VESSELS Activity Distribution (%) 0-3 nm from shore	VESSELS Activity Distribution (%) 3-12 nm from Shore	VESSELS Activity Distribution (%) >12 nm from Shore	AIRCRAFT Time on Range (hr)	AIRCRAFT Distribution (%) 0-3 nm from shore	AIRCRAFT Distribution (%) 3-12 nm from Shore	AIRCRAFT Distribution (%) >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events ALT 1	Proposed Annual # of Events ALT 2	Difference in Annual # of Events ALT 1	Difference in Annual # of Events ALT 2
Other Training Exercises	Search and Rescue	2	40%	40%	20%	2	40%	40%	20%	Coast Guard	SCAB	58	58	58	0	0
Other Training Exercises	Ship-to-Shore Fuel Transfer Training	12	100%	0%	0%					Navy/MC	Hawaii	0	4	4	4	4
Other Training Exercises	Ship-to-Shore Fuel Transfer Training	12	100%	0%	0%					Navy/MC	SDAB - SSTC	0	3	3	3	3
Other Training Exercises	Ship-to-Shore Fuel Transfer Training	12	100%	0%	0%					Navy/MC	SCI	0	3	3	3	3
Other Training Exercises	Submarine Navigation Exercise	4	100%	0%	0%					Navy/MC	Hawaii	220	220	220	0	0
Other Training Exercises	Submarine Navigation Exercise	4	100%	0%	0%					Navy/MC	SDAB - SSTC	80	80	80	0	0
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	Hawaii	520	520	520	0	0
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	SDAB	62	62	62	0	0
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	SCAB	62	62	62	0	0
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	PMSR	61	61	61	0	0
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	Transit Corridor	10	10	10	0	0
Other Training Exercises	Submarine Under Ice Training and Certification	4	0%	0%	100%					Navy/MC	Hawaii	12	12	12	0	0
Other Training Exercises	Submarine Under Ice Training and Certification	4	0%	0%	100%					Navy/MC	CA	6	6	6	0	0
Other Training Exercises	Submarine and UUV Subsea and Seabed Warfare Exercise	4	33%	33%	34%					Navy/MC	Hawaii	0	20	20	20	20
Other Training Exercises	Submarine and UUV Subsea and Seabed Warfare Exercise	4	33%	33%	34%					Navy/MC	NOCAL	0	6	6	6	6
Other Training Exercises	Submarine and UUV Subsea and	4	33%	33%	34%					Navy/MC	SDAB	0	8	8	8	8

Category	Activity Name	VESSELS: Time on Range (hr)	VESSELS: Activity Distribution (%): 0-3 nm from shore	VESSELS: Activity Distribution (%): 3-12 nm from Shore	VESSELS: Activity Distribution (%): >12 nm from Shore	AIRCRAFT: Time on Range (hr)	AIRCRAFT: Distribution (%): 0-3 nm from shore	AIRCRAFT: Distribution (%): 3-12 nm from Shore	AIRCRAFT: Distribution (%): >12 nm from Shore	Service	Location	Current Activity Level	Proposed Annual # of Events: ALT 1	Proposed Annual # of Events: ALT 2	Difference in Annual # of Events: ALT 1	Difference in Annual # of Events: ALT 2
	Seabed Warfare Exercise															
Other Training Exercises	Submarine and UUV Subsea and Seabed Warfare Exercise	4	33%	33%	34%					Navy/MC	PMSR	0	6	6	6	6
Other Training Exercises	Surface Ship Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	Hawaii	155	155	155	0	0
Other Training Exercises	Surface Ship Sonar Maintenance and Systems Checks	4	100%	0%	0%					Navy/MC	SDAB	500	500	500	0	0
Other Training Exercises	Surface Ship Sonar Maintenance and Systems Checks	4	0%	0%	100%					Navy/MC	Transit Corridor	8	8	8	0	0
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	Hawaii	0	20	20	20	20
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	NOCAL	0	6	6	6	6
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	SOCAL	0	8	8	8	8
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	PMSR	0	6	6	6	6

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	Hawaii	0	10	10	10	10
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	NOCAL	0	3	3	3	3
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	SOCAL	0	4	4	4	4
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	PMSR	0	3	3	3	3
Other Training Exercises	Underwater Survey	4	100%	0%	0%					Navy/MC	Hawaii	0	60	60	60	60
Other Training Exercises	Underwater Survey	4	100%	0%	0%					Navy/MC	SDAB	0	159	180	159	180
Other Training Exercises	Underwater Survey	4	100%	0%	0%					Navy/MC	SCI	0	159	180	159	180
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	Hawaii	20	216	234	196	214
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	SOCAL	4	48	48	44	44
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	NOCAL	2	24	24	22	22
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	PMSR	4	48	48	44	44
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	Transit Corridor	0	3	3	3	3

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	Hawaii	50	50	50	0	0
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	SOCAL	140	140	140	0	0
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	NOCAL	70	70	70	0	0
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	PMSR	140	140	140	0	0
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%	2	50%	25%	25%	Navy/MC	Hawaii	25	237	278	212	253
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%	2	50%	25%	25%	Navy/MC	SCI	3	184	222	181	219
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%	2	50%	25%	25%	Navy/MC	SDAB - SSTC	8	552	666	544	658
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	8	50%	25%	25%					Coast Guard	Hawaii	200	200	200	0	0
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%					Coast Guard	SCI	60	60	60	0	0
Other Training Exercises	Unmanned Underwater Vehicle	4	50%	25%	25%					Coast Guard	SDAB - SSTC	250	250	250	0	0

		VESSELS				AIRCRAFT										
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	**Activity Name**		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	**Service**	**Location**	**Current Activity Level**	**ALT 1**	**ALT 2**	**ALT 1**	**ALT 2**
	Training – Certification and Development Exercises															
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Navy/MC	Hawaii	500	24	30	-476	-470
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Navy/MC	SDAB	0	503	536	503	536
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Navy/MC	SCAB	0	168	179	168	179
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Coast Guard	Hawaii	69	69	69	0	0
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Coast Guard	SDAB	300	300	300	0	0
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Coast Guard	SCAB	136	136	136	0	0

Table G-17: Proposed Changes to Testing Activities

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Air Warfare	Air Combat Maneuver Test	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	Hawaii	22	23	24	1	2
Air Warfare	Air Combat Maneuver Test	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	PMSR	55	158	160	103	105
Air Warfare	Air Combat Maneuver Test	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	SOCAL	55	158	161	103	106
Air Warfare	Air Platform – Vehicle Test					4	0%	0%	100%	Navy/MC	Hawaii	0	7	8	7	8
Air Warfare	Air Platform – Vehicle Test					4	0%	0%	100%	Navy/MC	SOCAL	35	52	54	17	19
Air Warfare	Air Platform Weapons Integration Test					2	0%	0%	100%	Navy/MC	Hawaii	0	10	11	10	11
Air Warfare	Air Platform Weapons Integration Test					2	0%	0%	100%	Navy/MC	SOCAL	10	10	11	0	1
Air Warfare	Air-to-Air Missile Test					2	0%	0%	100%	Navy/MC	PMSR	0	49	49	49	49
Air Warfare	Intelligence, Surveillance, and Reconnaissance Test					6	0.0%	0.0%	100.0%	Navy/MC	Hawaii	14	14	15	0	1
Air Warfare	Intelligence, Surveillance, and Reconnaissance Test					6	0.0%	0.0%	100.0%	Navy/MC	SOCAL	254	254	279	0	25
Air Warfare	Surface-to-Air Gunnery Test – Large Caliber	2	0%	0%	100%					Navy/MC	PMSR	0	12	12	12	12
Air Warfare	Surface-to-Air Gunnery Test – Medium Caliber	2	0%	0%	100%					Navy/MC	PMSR	0	12	12	12	12
Air Warfare	Surface-to-Air High-Energy Laser Test	2	0%	0%	100%					Navy/MC	PMSR	0	50	50	50	50
Air Warfare	Surface-to-Air High-Power Microwave Test	2	0%	0%	100%					Navy/MC	PMSR	0	75	75	75	75
Air Warfare	Surface-to-Air Missile Test	2	0%	0%	100%					Navy/MC	PMSR	0	155	155	155	155
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Rotary-Wing)					2	0.0%	24.0%	76.0%	Navy/MC	Hawaii	0	70	73	70	73

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Rotary-Wing)					2	0.0%	24.0%	76.0%	Navy/MC	SCI	44	70	72	26	28
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Rotary-Wing)					2	0.0%	24.0%	76.0%	Navy/MC	PMSR	44	69	73	25	29
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Test (Aircraft)					6	10.0%	40.0%	50.0%	NAVAIR	PMRF	20	25	26	5	6
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Test (Aircraft)					6	10.0%	40.0%	50.0%	NAVAIR	SCI	28	38	39	10	11
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Test (Aircraft)					6	10.0%	40.0%	50.0%	NAVAIR	SDAB	28	38	39	10	11
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Fixed-Wing)					6	0.0%	10.0%	90.0%	Navy/MC	Hawaii	58	64	67	6	9
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Fixed-Wing)					6	0.0%	10.0%	90.0%	Navy/MC	SCI	32	36	38	4	6
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Fixed-Wing)					6	0.0%	10.0%	90.0%	Navy/MC	PMSR	32	36	38	4	6
Anti-Submarine Warfare	Kilo Dip Test					1.5	0.0%	24.0%	76.0%	Navy/MC	Hawaii	0	6	7	6	7
Anti-Submarine Warfare	Kilo Dip Test					1.5	0.0%	24.0%	76.0%	Navy/MC	SCI	0	3	4	3	4
Anti-Submarine Warfare	Kilo Dip Test					1.5	0.0%	24.0%	76.0%	Navy/MC	PMSR	0	3	3	3	3
Anti-Submarine Warfare	Sonobuoy Lot Acceptance Test					6	100.0%	0.0%	0.0%	Navy/MC	Hawaii	0	35	38	35	38
Anti-Submarine Warfare	Sonobuoy Lot Acceptance Test					6	100.0%	0.0%	0.0%	Navy/MC	SCI	80	169	176	89	96
Anti-Submarine Warfare	Sonobuoy Lot Acceptance Test					6	100.0%	0.0%	0.0%	Navy/MC	PMSR	80	169	176	89	96
Anti-Submarine Warfare	Anti-Submarine Warfare Mission Package Testing					3.6	0.0%	24.0%	76.0%	NAVSEA	Hawaii	22	1	1	-21	-21
Anti-Submarine Warfare	Anti-Submarine Warfare Mission Package Testing					3.6	0.0%	24.0%	76.0%	NAVSEA	SCI	23	1	1	-22	-22

		VESSELS				AIRCRAFT										
			Distribution (%)				Distribution (%)						Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Anti-Submarine Warfare	At-Sea Sonar Testing					10	0.0%	0.0%	100.0%	NAVSEA	Hawaii	17	10	11	-7	-6
Anti-Submarine Warfare	At-Sea Sonar Testing					10	0.0%	0.0%	100.0%	NAVSEA	SCI	21	36	43	15	22
Anti-Submarine Warfare	Pierside Sonar Testing	2	100.0%	0.0%	0.0%					NAVSEA	Hawaii	7	19	24	12	17
Anti-Submarine Warfare	Pierside Sonar Testing	2	100.0%	0.0%	0.0%					NAVSEA	SCI					
Anti-Submarine Warfare	Pierside Sonar Testing	2	100.0%	0.0%	0.0%					NAVSEA	SDAB	7	68	76	61	69
Anti-Submarine Warfare	Surface Ship Sonar Testing/Maintenance	2	90.0%	5.0%	5.0%					NAVSEA	Hawaii	17	6	6	-11	-11
Anti-Submarine Warfare	Surface Ship Sonar Testing/Maintenance	2	90.0%	5.0%	5.0%					NAVSEA	SDAB	6	6	6	0	0
Anti-Submarine Warfare	Torpedo (Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	Hawaii	8	1	2	-7	-6
Anti-Submarine Warfare	Torpedo (Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	SOCAL	10	1	2	-9	-8
Anti-Submarine Warfare	Torpedo (Non-Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	Hawaii	13	7	8	-6	-5
Anti-Submarine Warfare	Torpedo (Non-Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	SOCAL	13	8	9	-5	-4
Electronic Warfare	Radar and Other System Testing					12	0.0%	0.0%	100.0%	NAVSEA	Hawaii	10	18	25	8	15
Electronic Warfare	Radar and Other System Testing					12	0.0%	0.0%	100.0%	NAVSEA	PMSR	24	17	22	-7	-2
Electronic Warfare	Radar and Other System Testing					12	0.0%	0.0%	100.0%	NAVSEA	SCI	24	17	22	-7	-2
Electronic Warfare	Chaff Test					3	0.0%	0.0%	100.0%	Navy/MC	Hawaii	5	11	11	6	6
Electronic Warfare	Chaff Test					3	0.0%	0.0%	100.0%	Navy/MC	PMSR	10	15	16	5	6
Electronic Warfare	Chaff Test					3	0.0%	0.0%	100.0%	Navy/MC	SCI	10	15	16	5	6
Electronic Warfare	Electronic Systems Test					6	0.0%	62.0%	38.0%	Navy/MC	Hawaii	0	4	4	4	4
Electronic Warfare	Electronic Systems Test					6	0.0%	62.0%	38.0%	Navy/MC	PMSR	2	102	102	100	100
Electronic Warfare	Electronic Systems Test					6	0.0%	62.0%	38.0%	Navy/MC	SCI	2	102	102	100	100
Electronic Warfare	Flare Test					2	0.0%	0.0%	100.0%	Navy/MC	Hawaii	5	11	11	6	6
Electronic Warfare	Flare Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	8	15	16	7	8
Electronic Warfare	Flare Test					2	0.0%	0.0%	100.0%	Navy/MC	SCI	8	15	16	7	8

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Airborne Dipping Sonar Minehunting Test					2.5	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	19	20	19	20
Mine Warfare	Airborne Dipping Sonar Minehunting Test					2.5	50.0%	30.0%	20.0%	Navy/MC	SCAB	3	10	10	7	7
Mine Warfare	Airborne Dipping Sonar Minehunting Test					2.5	50.0%	30.0%	20.0%	Navy/MC	SDAB	3	10	10	7	7
Mine Warfare	Airborne Laser Mine Detection System Test					2	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	21	22	21	22
Mine Warfare	Airborne Laser Mine Detection System Test					2	50.0%	30.0%	20.0%	Navy/MC	SCAB	10	11	11	1	1
Mine Warfare	Airborne Laser Mine Detection System Test					2	50.0%	30.0%	20.0%	Navy/MC	SDAB	10	11	11	1	1
Mine Warfare	Airborne Mine Neutralization System Test					2	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	38	39	38	39
Mine Warfare	Airborne Mine Neutralization System Test					2	50.0%	30.0%	20.0%	Navy/MC	SCAB	11	41	42	30	31
Mine Warfare	Airborne Mine Neutralization System Test					2	50.0%	30.0%	20.0%	Navy/MC	SDAB	11	41	42	30	31
Mine Warfare	Airborne Sonobuoy Minehunting Test					2	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	10	10	10	10
Mine Warfare	Airborne Sonobuoy Minehunting Test					2	50.0%	30.0%	20.0%	Navy/MC	SCAB	3	5	5	2	2
Mine Warfare	Airborne Sonobuoy Minehunting Test					2	50.0%	30.0%	20.0%	Navy/MC	SDAB	3	5	5	2	2
Mine Warfare	Mine Laying Test					1	50.0%	30.0%	20.0%	Navy/MC	Hawaii	1	1	1	0	0
Mine Warfare	Mine Laying Test					1	50.0%	30.0%	20.0%	Navy/MC	SCAB	1	1	1	0	0
Mine Warfare	Mine Laying Test					1	50.0%	30.0%	20.0%	Navy/MC	SDAB	1	1	1	0	0
Mine Warfare	Mine Countermeasure and Neutralization Testing	8	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SCAB	6	17	23	11	17
Mine Warfare	Mine Countermeasure and Neutralization Testing	8	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SDAB	6	17	23	11	17
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	Hawaii	19	16	16	-3	-3

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	PMSR	19	9	9	-10	-10
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	SDAB - SSTC	19	9	9	-10	-10
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	SCI	19	9	9	-10	-10
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	Hawaii	3	8	10	5	7
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	PMSR	4	5	7	1	3
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SDAB	4	5	7	1	3
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SCI	4	5	7	1	3
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	Hawaii	8	9	9	1	1
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	PMSR	5	22	22	17	17
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	SDAB	5	22	22	17	17
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	SCAB	5	22	23	17	18
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	Hawaii	6	7	7	1	1
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	PMSR	16	24	25	8	9
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	SDAB	16	24	25	8	9
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	SCI	16	24	25	8	9
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	Hawaii	54	57	59	3	5
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	18	109	110	91	92
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	SDAB	18	109	110	91	92
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	SCI	18	109	110	91	92

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Air-to-Surface High-Power Microwave Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	0	25	25	25	25
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	Hawaii	0	6	6	6	6
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	PMSR	2	2	2	0	0
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	SDAB	2	2	2	0	0
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	SCI	2	2	2	0	0
Surface Warfare	Air-to-Surface Missile Test					2	0.0%	0.0%	100.0%	Navy/MC	Hawaii	18	19	20	1	2
Surface Warfare	Air-to-Surface Missile Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	27	96	97	69	70
Surface Warfare	Air-to-Surface Missile Test					2	0.0%	0.0%	100.0%	Navy/MC	SOCAL	27	96	97	69	70
Surface Warfare	Long-Range Weapons Delivery Systems (OTH)/ Hypersonic Vehicle Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	0	28	28	28	28
Surface Warfare	Long-Range Weapons Delivery Systems (OTH)/ Hypersonic Vehicle Test					2	0.0%	0.0%	100.0%	Navy/MC	SOCAL	0	28	28	28	28
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	Hawaii	2	2	2	0	0
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	PMSR	6	10	11	4	5
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	SCAB	6	10	11	4	5
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	SDAB	6	10	11	4	5
Surface Warfare	Subsurface-to-Surface Missile Test	2	0.0%	0.0%	100.0%					Navy/MC	PMSR	0	4	4	4	4
Surface Warfare	Surface-to-Surface Gunnery Test – Large-Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	0	10	10	10	10
Surface Warfare	Surface-to-Surface Gunnery Test – Medium-Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	0	26	26	26	26
Surface Warfare	Surface-to-Surface Gunnery Test – Small-Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	0	10	10	10	10

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Surface-to-Surface High-Energy Laser Test	1	0.0%	50.0%	50.0%	1	0.0%	50.0%	50.0%	Navy/MC	PMSR	54	50	50	-4	-4
Surface Warfare	Surface-to-Surface High-Power Microwave Test	1	0.0%	50.0%	50.0%					Navy/MC	PMSR	0	25	25	25	25
Surface Warfare	Surface-to-Surface Missile Test	3	0.0%	50.0%	50.0%					Navy/MC	PMSR	0	44	44	44	44
Surface Warfare	Gun Testing – Large Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	16	9	11	-7	-5
Surface Warfare	Gun Testing – Large Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SDAB	16	9	11	-7	-5
Surface Warfare	Gun Testing – Large Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SCAB	16	9	11	-7	-5
Surface Warfare	Gun Testing – Medium Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SDAB	16	6	7	-10	-9
Surface Warfare	Gun Testing – Medium Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SCAB	16	6	7	-10	-9
Surface Warfare	Gun Testing – Small Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SDAB	8	1	3	-7	-5
Surface Warfare	Gun Testing – Small Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SCAB	8	1	3	-7	-5
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	Hawaii	27	1	1	-26	-26
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	PMSR	11	78	79	78	79
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	SDAB	11	78	79	78	79
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	SCAB	11	78	79	78	80
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVAIR	Hawaii	2	2	2	0	0
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVAIR	SDAB	0	3	3	3	3
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVSEA	Hawaii	0	5	5	5	5

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVAIR	SCAB	0	1	1	1	1
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVSEA	SDAB	0	1	1	1	1
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVSEA	SCAB	0	1	1	1	1
Other Testing Activities	Air Platform Shipboard Integration Test					6	0.0%	0.0%	100.0%	NAVAIR	Hawaii	7	8	8	1	1
Other Testing Activities	Air Platform Shipboard Integration Test					6	0.0%	0.0%	100.0%	NAVAIR	SOCAL	110	144	150	34	40
Other Testing Activities	Undersea Range System Test	2	0.0%	0.0%	100.0%					NAVAIR	Hawaii	21	32	33	11	12
Other Testing Activities	Undersea Range System Test	2	0.0%	0.0%	100.0%					NAVAIR	SOCAL	0	20	21	20	21
Other Testing Activities	Undersea Range System Testing	2	0.0%	0.0%	100.0%					EXWC	PMSR	0	5	6	5	6
Other Testing Activities	Undersea Range System Testing	2	0.0%	0.0%	100.0%					EXWC	SOCAL	0	5	6	5	6
Other Testing Activities	Countermeasure Testing	2	0.0%	0.0%	100.0%					NAVSEA	Hawaii	0	3	4	3	4
Other Testing Activities	Countermeasure Testing	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	13	11	14	-2	1
Other Testing Activities	Insertion/Extraction	2	33.0%	33.0%	34.0%					NAVSEA	Hawaii	1	2	2	1	1
Other Testing Activities	Insertion/Extraction	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	5	2	2	-3	-3
Other Testing Activities	Non-Acoustic Component Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	SOCAL	17	2	4	-15	-13
Other Testing Activities	Semi-Stationary Equipment Testing															
Other Testing Activities	Simulant Testing	8	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	SOCAL	220	3	5	-217	-215
Other Testing Activities	Underwater Search, Deployment, and Recovery															
Other Testing Activities	Communications	8	100.0%	0.0%	0.0%					NIWC	Hawaii	0	4	4	4	4
Other Testing Activities	Communications	8	100.0%	0.0%	0.0%					NIWC	SCI	5	4	4	-1	-1
Other Testing Activities	Communications	8	100.0%	0.0%	0.0%					NIWC	SDAB	5	4	4	-1	-1

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	Hawaii	13	6	6	-7	-7
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	SCI	17	83	96	66	79
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	SDAB - SSTC	17	83	96	66	79
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	SDAB	17	83	96	82	96
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	Hawaii	4	20	23	16	19
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	SCI	83	24	26	-59	-57
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	SDAB	83	24	26	-59	-57
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	Transit Corridor	2	5	7	3	5
Vessel Evaluation	Air Defense Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	Hawaii	4	4	4	0	0
Vessel Evaluation	Air Defense Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	PMSR	5	12	14	7	9
Vessel Evaluation	Air Defense Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	SOCAL	5	12	14	7	9
Vessel Evaluation	In-Port Maintenance Testing	8	100.0%	0.0%	0.0%					NAVSEA	Hawaii	18	5	5	-13	-13
Vessel Evaluation	In-Port Maintenance Testing	8	100.0%	0.0%	0.0%					NAVSEA	PMSR	9	8	8	-1	-1
Vessel Evaluation	In-Port Maintenance Testing	8	100.0%	0.0%	0.0%					NAVSEA	SDAB	9	8	8	-1	-1
Vessel Evaluation	Propulsion Testing	4	0.0%	0.0%	100.0%					NAVSEA	Hawaii	8	23	41	15	33
Vessel Evaluation	Propulsion Testing	4	0.0%	0.0%	100.0%					NAVSEA	SOCAL	18	13	23	-5	5
Vessel Evaluation	Signature Analysis Operations	4	100.0%	0.0%	0.0%					NAVSEA	Hawaii	2	3	4	1	2
Vessel Evaluation	Signature Analysis Operations	4	100.0%	0.0%	0.0%					NAVSEA	SDAB	1	1	1	0	0
Vessel Evaluation	Small Ship Shock Trial	4	0.0%	0.0%	100.0%	4	0.0%	0.0%	100.0%	NAVSEA	SOCAL	0	1	1	1	1
Vessel Evaluation	Submarine Sea Trials – Weapons System Testing	2	0.0%	0.0%	100.0%					NAVSEA	Hawaii	1	3	4	2	3

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Vessel Evaluation	Submarine Sea Trials – Weapons System Testing	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	1	3	4	2	3
Vessel Evaluation	Surface Warfare Testing	2	0.0%	0.0%	100.0%					NAVSEA	Hawaii	45	11	16	-34	-29
Vessel Evaluation	Surface Warfare Testing	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	26	19	27	-7	1
Vessel Evaluation	Surface Warfare Testing	2	0.0%	0.0%	100.0%					NAVSEA	PMSR	26	19	27	-7	1
Vessel Evaluation	Undersea Warfare Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	Hawaii	16	9	13	-7	-3
Vessel Evaluation	Undersea Warfare Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	SOCAL	20	45	60	25	40
Vessel Evaluation	Vessel Signature Evaluation	2	100.0%	0.0%	0.0%					NAVSEA	PMSR	22	2	3	-20	-19
Vessel Evaluation	Vessel Signature Evaluation	2	100.0%	0.0%	0.0%					NAVSEA	SCI	22	2	3	-20	-19
Unmanned Systems	Ocean Energy and Cable System Research	2	33.0%	33.0%	34.0%					EXWC	Hawaii	0	3	4	3	4
Unmanned Systems	Ocean Energy and Cable System Research	2	33.0%	33.0%	34.0%					EXWC	SOCAL	0	4	6	4	6
Unmanned Systems	Unmanned Surface Vehicle System Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	PMSR	0	4	5	4	5
Unmanned Systems	Unmanned Surface Vehicle System Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	SCI	0	3	5	3	5
Unmanned Systems	Unmanned Underwater Vehicle Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	Hawaii	3	2	2	-1	-1
Unmanned Systems	Unmanned Underwater Vehicle Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	SDAB	146	341	342	195	196
Unmanned Systems	Unmanned Underwater Vehicle Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	SCAB	146	341	343	195	197
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	Hawaii	0	2	2	2	2

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	SCI	0	48	60	48	60
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	SDAB	0	48	60	48	60
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	PMSR	0	48	60	48	60
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	Hawaii	2	10	11	8	9
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	SDAB	1	4	5	3	4
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	SCAB	1	4	5	3	4
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	NOCAL	1	4	5	3	4
Acoustic and Oceanographic Science and Technology	Long Range Acoustic Communications	2	0.0%	62.0%	38.0%					ONR	Hawaii	3	151	165	148	162
Acoustic and Oceanographic Science and Technology	Mine Countermeasure Technology Research															
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	Hawaii	2	120	130	118	128
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	SDAB	0	91	99	91	99

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	SCAB	0	91	99	91	99
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	NOCAL	0	91	99	91	99

Table G-18: Aircraft Emission Factors

Aircraft Engine Emissions Indices/Factors and Sources

General information							Emission Indices, lb/1,000 lb fuel							Emissions Factors (lb/hr)						References
Aircraft	Engine Model	Engines (#)	Fuel Flow (lb/hr) /Engine	Fuel Flow (lb/hr) /Total	Fuel Flow (gal/hr)	Mode	CO	NOx	HC	VOC	SOx	PM	CO2	CO	NOx	VOC	SOx	PM	CO2	Source of Emissions Indices Information
AH-1W	T700-GE-401C (2)	2	406	812	121	approach	11.21	5.44		0.57	0.40	4.20	3214.50	9.10	4.42	0.46	0.32	3.41	2,610	AESO Memorandum Report No. 9961, Revision A, November 2009.
C-130 F/R/T	T56-A-16 Turboprop	4	1125	4500	672	circle	2.07	8.16	0.47	0.54	0.37	3.97	3213.00	9.32	36.72	2.43	1.67	17.87	14,459	AESO Memorandum Report No. 2000-09D, December 2015.
CH-53	T64-GE-415 (3)	3	1488	4464	666	Cruise	2.13	8.08	0.15	0.17	0.37	2.21	3221.35	9.51	36.07	0.77	1.65	9.87	14,380	AESO Memorandum Report No. 9822, Revision D, November 2009.
CH-60	T700-GE-401C	2	600	1200	179	Cruise					0.37			7.50	7.68	0.76	0.44	5.04	3,865	AESO Memorandum Report No. 9929 Revision D December 2019 , Table ES-2 VOC = THC x 1.15
E-2 / E-2C	T56-A-425, -427 (2)	2	1133	2266	338	approach	2.54	10.04	na	0.36	0.37	0.94	3251.78	5.76	22.75	0.82	0.84	2.13	7,369	AESO Memorandum Report No. 9943E, September 2015
EA-18G	F414-GE-400 (2)	2	3318	6636	990	approach Straight in	2.44	6.74	0.44	0.51	0.37	6.36	3154.00	16.19	44.73	3.36	2.46	42.20	20,930	AESO Memorandum Report No. 9815G, March 2011
EA-6B	J52-P-408A (2)	2	4227	8454	1262	Approach	5.19	6.77	0.84	0.97	0.37	10.48	3168.84	43.88	57.23	8.17	3.13	88.60	26,789	AESO Memorandum Report No. 9941, Revision B, December 2009.
F-15E	F100-PW-229 (2)	2	5745	11490	1715	military	0.33	29.29	na	0.31	0.37	1.33	3200.00	3.79	336.54	3.56	4.25	15.28	36,768	Air Emissions Guide for Air Force Mobile Source, July 2016. Assumed fuel flow rate is total for each mode, not per engine.
FA-18E/F	F414-GE-400 (2)	2	5169	10338	1543	approach	0.72	14.75	0.12	0.14	0.37	6.56	3191.30	7.44	152.49	1.43	3.83	67.82	32,992	AESO Memorandum Report No. 9815 I, June 2017, Table 5
Learjet	TFE731-2-2B	2	266	532	79	approach	22.38	5.90	4.26	4.90	0.37	0.09	3200.00	11.91	3.14	2.61	0.20	0.05	1,702	Air Emissions Guide for Air Force Mobile Source, July 2024. Assumed fuel flow rate is total for each mode, not per engine.
MV-22	T406-AD-400	2	1910	3820	570	Cruise					0.37			1.99	53.82	0.05	1.41	6.00	12,259	AESO Memorandum Report No. 9946 Revision G May 2017, Table ES-2 VOC = THC x 1.16 x 1.15
P-3C	T56-A-14 (4)	4	1025	4100	612	approach	2.51	7.73	0.58	0.67	0.37	3.97	3207.70	10.29	31.69	2.73	1.52	16.28	13,152	AESO Memorandum Report No. 9948, Revision C, March 2010.
P-8 MMA	Boeing 737-800 Series CFM56-7B27	2	2770	5540	827	approach	1.41	11.00	0.10	0.12	0.37	0.09	3161.00	7.81	60.94	0.64	2.05	0.49	17,512	AESO Memorandum Report No. 2017-09, April 2017
S-3	TF34-GE-400 (2)	2	1145	2290	342	approach	14.10	4.07	1.86	2.14	0.37	3.62	3200.00	32.29	9.32	4.90	0.85	8.29	7,328	AESO Memorandum Report No. 9915B, May 2010.
SH-60	T700-GE-401C (2)	2	600	1200	179	circle	6.25	6.40	0.55	0.63	0.37	4.20	3221.36	7.50	7.68	0.76	0.44	5.04	3,866	AESO Memorandum Report No. 9929, Revision B, January 2014.

Notes:
Fuel Sulfur Content is based on AESO Memorandum Report No. 2012-01 Revision H, JP-5, 2020
VOC = HC*1.15 (AESO Memoranda)
6.7 lb/gal Density of jet fuel

							Emissions (lb/op)							
		Engines (#)	Fuel Flow (lb/op)		Fuel Flow (gal/op)	Mode	CO	NOx	HC	VOC	SOx	PM	CO2	Source of Emissions Indices Information
F-35	F135-PW-400	1	1057		155	Military Takeoff	12.09	8.42	0.02	0.02	0.37	0.13	3336.76	AESO Memorandum Report No. 2017-18 Revision A, December 2017, Table 1
F-35	F135-PW-400	1	1220		179	Straight In Arrival	13.52	6.43	0.02	0.02	0.37	0.15	3849.45	AESO Memorandum Report No. 2017-18 Revision A, December 2017, Table 1
F-35	F135-PW-400	1	629		93	Touch and Go - Carrier Pattern	0.47	9.96	0.003	0.003	0.37	0.08	1986.01	AESO Memorandum Report No. 2017-18 Revision A, December 2017, Table 1
						Sum	26.08	24.81	0.04	0.05	1.11	0.36	9172.22	

Table G-19: Vessel Emission Factors

Vessel		VESSEL SPECIFICATIONS	EMISSIONS FACTORS (LB/HR)										
		Propulsion	CO	NOx	HC	SOx	PM10	PM2.5	CO2	Fuel Consumption at Speed (gal/hr)	CO2, LB/HR	Reference for Fuel Consumption Rate	Fuel Consumption Rate - based on CO2 emissions
Cruiser	CG-72	GE LM 2500	61.51	79.58	4.32	0.23	0.997	0.997	24,188	1159.20	24,188	Fuel flow rate calculated based on the SOx emission factor and	1,075
	CG- 72		27.73	285.54	2.46	0.47	4.38	4.38	69,839	2338.31	69,839		3,103
Destroyer	DDG-100	GE LM 2500	59.72	114.52	4.01	0.27	0.14	0.14	27,565	1323.38	27,565	Fuel flow rate calculated based on the SOx emission factor	1,225
	Not underway		0.36	25.65	0.04	0.02	0.12	0.12	3,669	89.55	3,669		163
	DDG-100 - RW		30.57	374.80	2.39	0.58	0.54	0.54	85,141	2860.70	85,142		3,783
USCG Cutter WHEC715, 378 feet - Hamilton Class	USCG	Fairbanks Morse T88-1-8, 3,600 hp	5.74	57.91	0.88	11.55	0.21	0.21	1778.22	79	79		
Amphibious Assault Ship - Tarawa	LHA-6	Steam Combustion Engineering	8.38	277.87	14.48	0.29	4.94	4.94	35,922	1422.89	35922.08		1,596
	LHA-6 -RW		18.73	199.99	15.15	0.21	3.38	3.38	28,059	1019.90	28059.16		1,247
Landing Helicopter Dock	LHD-2	ALCO 16-251C	8.08	47.83	5.77	0.41	28.58	28.58	47,633	2019.90	47,633	Fuel flow rate calculated based on the SOx emission factor	2,116
	LHD-2 - RW		7.66	45.12	5.72	0.41	28.55	28.55	47,490	2014.93	47,490		2,110
Amphibious Transport Dock	LPD-17	turbocharged marine Colt-Pielstick Diesels	31.61	272.28	16.86	0.16	1.36	1.36	16,767.15	796.02	16767.15	Navy database	745
	LPD-17 - RW		28.08	263.75	14.95	0.14	1.12	1.12	15,025.58	701.49	15025.58		668
Landing Craft, Air Cushion	LCAC-91	TF40B	18.32	114.54	3.49	0.16	2.33	2.33	20,693.35	905.20	20693.35	Navy database	919
		T-62T-40-7											
Mine Counter Measures	MCM -12	ID36SS6V-AM(M)	3.49	28.97	2.61	0.02	0.33	0.33	1,781	74.63	1,781	Fuel flow rate calculated based on the SOx emission factor	79
	MCM - RW		4.17	35.05	3.35	0.02	0.36	0.36	2,174	89.55	2,174		97
Landing Craft Utility	LCU	12V-71 7122-7000	5.06	15.704	1.274	0.009	0.604	0.60	923.57	40.4	923.57		41
	AAV-2	400 hp	0.76	6.22	0.82	0.0135	0.26	0.25	1389.56	67	1389.56	Sox emission factor, in lb/hr, was calculated based on the fuel flow rate and ULS fuel sulfur content.	62
	MK V-2	2,285 hp	3.86	29.49	0.99	4.73	0.40	0.40		14	14		
Rigid Inflatable Boat	RIB-4	QSB5.9M TIER 2	1.88	2.677	0.062	0.002	0.047	0.047	265.182	11.6	265.18	Navy database	12
	CRRC-5		0.2242	0.9538	0.0128	0.0005	0.0289	0.03	87.23	3	87.23	Atlantic Fleet Training and Testing Final EIS/OEIS, September 2018	4
	LCS -1	Rolls-Royce MT30 36	46.14	186.77	3.19	0.21	0.41	0.41	25,512	1054.73	25,512	Fuel flow rate calculated based on the SOx emission factor	1,133
	LCS - RW		79.12	152.60	6.12	0.099	0.62	0.62	11,116	492.54	11,116		494
	LSD-52		21.25	334.51	10.84	0.11	0.91	0.91	16263.96	522.39	16,264		723
	LSD-52-RW		40.02	604.28	20.43	0.19	1.68	1.68	21,126	965.17	21,126		939
	AS		3.38	21.34	2.53	0.18	12.57	12.57	20,947	890.55	20,947		931
	AS - RW		3.36	19.90	2.52	0.18	12.57	12.57	20,910	890.55	20,910		929
	SSN		3.24	2.39	0.17	0.00	0.01	0.01	112.62	4.98	112.62		5
	SSN - RW		0.32	0.23	0.02	0.001	0.001	0.00	11.06	4.98	11.06		0.5
	CVN-74		1.23	16.73	0.31	0.006	0.05	0.05	683.62	29.85	683.62	Fuel flow rate calculated based on the SOx emission factor	30
	CVN - RW		0.12	1.65	0.03	0.001	0.005	0.005	67.61	4.98	67.61		3

Notes:

1. Navy and MSC Marine Engine Fuel Consumption & Emission Calculator was used to update the emission factors.
2. All SO_x emission factors are based on F-76 (Marine Diesel) with a sulfur content of 0.0015%.
3. RW = Restricted Waters

			EMISSIONS FACTORS (lb/hr)							Fuel Flow (gph)	Fuel Flow (gph)
VESSEL	ENGINE	MODEL	CO	NO_x	VOC	SO_2	PM	PM2.5	CO2		
Mark VI Patrol Boat 78PB1201 (MkVI)	Main	MTU - 16V2000M94	42.42	81.81	1.88	11.73	3.93	3.93	6172.34	135	0

Table G-20: Munitions Emission Factors

Munitions Information							Emission Factor (lb/item)						
Munition Type	Munition	Component	Net Explosive Weight (lb NEW)	Type	Reference	Emission Factor Assumptions and Comments	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_2	CO_2
BOMB	MK82 INERT	spotting charge	3	Black powder	Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018	Assume Spotting Charge	0.26						
BOMB	MK82 HE				Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018	Calculate for 192 lb of PEP. 80% TNT, 20% Aluminum; TNT EF x 80% used; Data available in TR-83-240.	60.00						
C4			1		Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018		0.02625	0.007875		0.02625	0.01875		
LRG PROJ	155MM ILL		6		AP-42 Chapter 15, Table 15.4.1-1 EMISSION FACTORS FOR THE USE OF DODIC D505, M485A2 155-MM ILLUMINATION ROUND (PROJECTILE)		0.026	0.094	0.0015	3		0.0027	1.8
LRG PROJ	5.56						1.60E-03	8.50E-05		3.90E-05	2.80E-05		8.70E-04
MED PROJ	30MM		0.03		AP 42, Chapter 15, Table 15.2.1-1 EMISSION FACTORS FOR THE USE OF DODIC B129, M789 30-MM HIGH EXPLOSIVE DUAL PURPOSE		0.00086	0.0002		0.0039	0.0025	0	0.0044
SML PROJ	7.62						2.30E-03	9.70E-05		5.10E-05	3.80E-05		1.20E-03
SMOKE POT	ABC-M5 30-POUND HC SMOKE POT		1.10		AP 42, Chapter 15, Table 15.7.6-1, EMISSION FACTORS FOR THE USE OF DODIC K866, ABC-M5 30-POUND HC SMOKE POT	Net Explosive Weight for Smokey Sam is from Hazard Classification of United States Military Explosives and Munitions, Revision 15, June 2012	0.0275	0.0000924	0.000594	1.1	0.616	0.000154	0.0165
MISSILE	AIM-7	Fired well above 3,000 ft			Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018								
MISSILE	AGM-84		215		AP 42, Chapter 15, Table 15.9.1-1, DODIC M023, M112 Demolition Block Charge	Assume similar to C-4 emissions. Net Explosive Weight for AGM -84 is from Hazard Classification of United States Military Explosives and Munitions, Revision 15, June 2012	4.515	1.3545		4.515	3.225	0.0258	135.45
MISSILE	AGM-114B						0.7224	0.21672	0	0.7224	0.516	0.004128	
MISSILE	AGM-65 Maverick						2.1	0.63	0	2.1	1.5	0.012	
MISSILE	AGM-84						4.515	1.3545	0	4.515	3.225	0.0258	
MISSILE	AGM-88 HARM						1.008	0.3024	0	1.008	0.72	0.00576	
MISSILE	SM-3						630			1200	1200		69.6
Rocket	2.75" RKT HE	warhead			Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018		0.93	0.0056		0.4	0.29		5.5
Rocket	2.75" RKT Inert	INERT Warhead	Neg.		Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018		Negligible emissions						
TORPEDO	MK30		No emissions										
	MK46		No emissions										
	MK54		No emissions										

SAM-3

Reference: MDA provided emissions data from EA for Standard Missile (Naval Ordnance Missile Test Station, 1992). Emissions are multiplesd by a factor of three (3), since the reference indicates that the exhaust volume of SM-3 is three time larger than SM-1.

Emissions Factors in tons/launch							
NOx	SOx	CO	VOC	HAPs	PM10	PM2.5	CO_2e
		0.105		0.105	0.19479	0.19479	0.0116

HCL is the only HAP shown.

Assume PM_{10} and PM2.5 emissions= Ferric Oxide + Aluminum Chloride + Aluminum Oxide emissions

Adjustment for SM-3 versus SM-1 3

Table G-21: ALT 1 - Entire Action Emission Increase

Scenario	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Training	283	845	34	3	63	62
Testing	-6	1	-0.7	2	11	11
Range Modernization and Sustainment	1.1	14	0.4	1.0	0.4	0.4
Total Military Readiness Activities	278	860	33	6	74	73

Table G-22: ALT 2 - Entire Action Emission Increase

Scenario	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Training	379	1,015	40	6	70	69
Testing	5	27	1	3	17	17
Range Modernization and Sustainment	1	14	0	1	0.4	0.4
Total Military Readiness Activities	384	1,042	41	8	87	86

Table G-23: Entire Action Emission Increase by Source Type and Alternative

Mission Readiness- ALT 1

Emission Increase > 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	17	65	2	2	11	11
Vessel	113	359	14	0	8	8
Munitions	32	1	0	0	26	25
Range Modernization and Sustainment	0.4	4.6	0.1	0.3	0.1	0.1
Total	161	429	15	3	46	45

Emission Increase, Total Action

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	41	108	4	4	27	27
Vessel	195	736	29	1	18	18
Munitions	40	1	0	0	28	27
Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0
Range Modernization and Sustainment	1	14	0	1	0	0
Total	278	860	33	6	74	73
	58%	50%	46%	43%	62%	62%

Training Total -ALT 1 (Emission Increase)

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	26	45	2	2	18	18
Vessel	222	798	31	1	18	18
Munitions	33	1	0	0	26	26
Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0
Total	283	845	34	3	63	62

Testing Total -ALT 1 (Emission Increase)

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	15	63	1	2	10	10
Vessel	-27	-62	-2	-0.2	-0.1	-0.1
Munitions	7	0	0	0	2	1
Total	-6	1	-1	2	11	11

Range Modernization and Sustainment

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Range Modernization and Sustainment	1.11	13.93	0.37	1.03	0.37	0.37

Mission Readiness- ALT 2

Emission Increase > 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	26	83	3	3	19	19
Vessel	193	502	19	1	11	11
Munitions	32	1	0	0	26	25
Range Modernization and Sustainment	0.4	4.6	0.1	0.3	0.1	0.1
Total	252	590	22	5	56	55

Emission Increase, Total Action

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	55	130	5	5	38	38
Vessel	287	909	36	3	21	21
Munitions	40	1	0	0	28	27
Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0
Range Modernization and Sustainment	1	14	0	1	0	0
Total	385	1,056	41	9	88	87

Training Total -ALT 2 (Emission Increase)

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	35	54	3	2	24	24
Vessel	309	958	37	3	20	20
Munitions	33	1	0	0	26	26
Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0
Total	379	1,015	40	6	70	69

Testing Total -ALT 2 (Emission Increase)

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	20	76	2	3	14	14
Vessel	-22	-49	-1	0	2	2
Munitions	7	0	0	0	2	1
Total	5	27	1	3	17	17

Range Modernization and Sustainment

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Range Modernization and Sustainment	1	14	0	1	0	0

Table G-24: Summary of Emissions – Hawaii

Mission Readiness- ALT 1

Emission Increase Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	12	32	1	1	9	9
Vessel	35	258	11	0	8	8
Munitions	0.5	0.0	0.0	0.0	0.1	0.1
Range Modernization and Sustainment	0.3	3.9	0.1	0.3	0.1	0.1
Total	48	295	12	2	17	17
Honolulu County Air Emissions for 2020, tons/year	77,700	20,652	37,295	11,446	14,553	4,369
Percent of Existing Emissions	0.06%	1.43%	0.03%	0.02%	0.12%	0.40%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	8	14	1	1	6	6
Vessel	56	189	8	0	6	6
Munitions	7	0	0	0	6	6
Range Modernization and Sustainment	0	4	0	0	0	0
Total	71	207	9	1	19	19

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	20	46	2	2	15	15
Vessel	91	447	19	0	14	14
Munitions	8	0	0	0	7	6
Range Modernization and Sustainment	0	4	0	0	0	0
Total	119	498	21	3	36	36

Mission Readiness- ALT 2

Emission Increase Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	13	34	1	1	10	10
Vessel	37	265	11	0	8	8
Munitions	0.500	0.021	0.000	0.000	0.075	0.053
Range Modernization and Sustainment	0.31	3.88	0.10	0.29	0.10	0.10
Total	51	302	12	2	18	18
Honolulu County Air Emissions for 2020, tons/year	77,700	20,652	37,295	11,446	14,553	4,369
Percent of Existing Emissions	0.07%	1.46%	0.03%	0.02%	0.12%	0.41%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	10	18	1	1	8	8
Vessel	73	223	9	0	8	8
Munitions	7	0	0	0	7	6
Range Modernization and Sustainment	0	0	0	0	0	0
Total	90	241	11	1	22	22

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	23	51	2	2	18	18
Vessel	110	488	20	1	16	16
Munitions	8	0	0	0	7	6
Range Modernization and Sustainment	0	4	0	0	0	0
Total	141	543	23	3	41	40

Table G-25: Summary of Emissions – SDAB

Mission Readiness- ALT 1

Within 3 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	7	5	1	0	4	4
Vessel	13	8	0	0	0	0
Munitions	1	0	0	0	0	0
Range Modernization and Sustainment	0.004	0.05	0.0004	0.004	0.002	0.0016
Total	20.8	13.4	1.2	0.3	4.7	4.6
Portside Community Emission, 2018, TPY		1,462	1,248		728	194
Percent of Portside Community Emissions		0.9%	0.1%		0.6%	2.40%

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	11	8	1	1	6	6
Vessel	27	50	2	0.02	1	1
Munitions	1	0.1			0.2	0.1
Range Modernization and Sustainment	0.004	0.052	0.000	0.004	0.002	0.002
Total	38.2	58.8	2.9	0.5	7.6	7.5
Portside Community Emission, 2018, TPY		1,462	1,248		728	194
Percent of Portside Community Emissions		4.0%	0.2%		1.0%	3.9%
Total, tons/day	0.105	0.161	0.008	0.001	0.021	0.021
SDAB Air Emissions for 2020, tons/day	501	88	191	3	95	31
Percent of Existing Emissions	0.02%	0.18%	0.004%	0.05%	0.02%	0.07%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	4	18	0	1	2	2
Vessel	58	121	4	0	1	1
Munitions	4	0	0	0	6	6
Range Modernization and Sustainment	0	0	0	0	0	0
Total	66	140	5	1	8	8

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	15	26	1	1	8	8
Vessel	84	172	6	0	2	2
Munitions	5	0	0	0	6	6
Range Modernization and Sustainment	0.008	0.104	0.001	0.008	0.003	0.003
Total	104	198	8	1	16	16

Mission Readiness- ALT 2

Within 3 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	9	6	1	0	5	5
Vessel	15	15	1	0	0	0
Munitions	1	0.0	0.0	0.0	0.1	0.1
Range Modernization and Sustainment	0.004	0.05	0.0004	0.004	0.002	0.0016
Total	24	22	1	0	6	6
Portside Community Emission, 2018, TPY	0	1,462	1,248	0	728	194
Percent of Portside Community Emissions		1.5%	0.1%		0.8%	2.9%

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	13	10	1	1	8	8
Vessel	31	61	2	0	1	1
Munitions	1	0.1	0.0	0.0	0.2	0.1
Range Modernization and Sustainment	0.004	0.05	0.0004	0.004	0.002	0.0016
Total	44	71	3	1	9	9
Portside Community Emission, 2018, TPY		1,462	1,248		728	194
Percent of Portside Community Emissions		4.9%	0.3%		1.2%	4.6%
Total, tons/day	0.121	0.196	0.009	0.002	0.025	0.025
SDAB Air Emissions for 2020, tons/day	501	88	191	3	95	31
Percent of Existing Emissions	0.02%	0.22%	0.005%	0.07%	0.03%	0.08%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	6	23	1	1	3	3
Vessel	76	157	5	0	1	1
Munitions	4.0	0.0	0.0	0.0	6.1	6.0
Range Modernization and Sustainment	0	0	0	0	0	0
Total	87	180	6	1	10	10

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	19	33	2	2	11	11
Vessel	107	218	8	0	2	2
Munitions	5	0	0	0	6	6
Range Modernization and Sustainment	0.01	0.10	0.00	0.01	0.00	0.00
Total	131	251	9	2	19	19

Table G-26: Summary of Emissions – SCAB

Mission Readiness- ALT 1

Within 3 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	1	0.1	0.0	1	1
Vessel	5	2	0.4	0.4	-1	-1
Munitions	1	0	0.0	0.0	0	0
Range Modernization and Sustainment	0	2	0.1	0.2	0	0
Total	7.6	5.4	0.5	0.6	0.3	0.2

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	-0.3	0.3	-0.1	-0.1	-1	-1
Vessel	13	33	1.5	0.8	0.4	0.4
Munitions	2	0.2	0.00	0.00	0.4	0.3
Range Modernization and Sustainment	0	3	0.1	0.2	0.1	0.1
Total	15	37	2	1	0.3	0.2
Total, tons/day	0.041	0.101	0.004	0.003	0.001	0.000
SCAB Air Emissions for 2020, tons/day	1,973	361	562	17	219	87
Percent of Existing Emissions	0.002%	0.028%	0.001%	0.016%	0.000%	0.001%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	7	0	0	-1	-1
Vessel	45	100	4	0	1	1
Munitions	7	0	0	0	6	6
Range Modernization and Sustainment	0	5	0	0	0	0
Total	53	112	4	1	6	6

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	7	0	0	-1	-1
Vessel	58	133	5	1	1	1
Munitions	10	0	0	0	7	6
Range Modernization and Sustainment	1	10	0	1	0.3	0.3
Total	68	151	5	2	7	7

Mission Readiness- ALT 2

Within 3 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	2	2	0	0	1	1
Vessel	6	5	0	0	-1	-1
Munitions	1	0.1	0.0	0.0	0.3	0.2
Range Modernization and Sustainment	0	2	0	0	0	0
Total	9	9.2	0.7	0.7	0.9	0.8

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	2	0	0	0	0
Vessel	17	42	2	1	1	1
Munitions	2	0.2	0.0	0.0	0.4	0.3
Range Modernization and Sustainment	0	3	0	0	0	0
Total	20	47	2	1	1	1
Total, tons/day	0.054	0.128	0.005	0.003	0.003	0.003
SCAB Air Emissions for 2020, tons/day	1,973	361	562	17	219	87
Percent of Existing Emissions	0.003%	0.035%	0.001%	0.019%	0.002%	0.004%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	2	12	0	0	1	1
Vessel	67	141	5	1	1	1
Munitions	7.4	0.2	0.0	0.0	6.1	6.1
Range Modernization and Sustainment	0	5	0	0	0	0
Total	77	157	5	2	8	8

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	3	13	0	0	1	1
Vessel	83	182	7	2	2	2
Munitions	10	0	0	0	7	6
Range Modernization and Sustainment	1	10	0	1	0	0
Total	97	206	7	3	10	10

Table G-27: Summary of Emissions – SOCAL

Mission Readiness- ALT 1

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0
Munitions	2	0	0	0	1	0
Total	2	0	0	0	1	0

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	-1	9	0	0	0	0
Vessel	-64	-111	-4	0	0	0
Munitions	4	0	0	0	1	1
Total	-62	-102	-4	0	1	0

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	-1	9	0	0	0	0
Vessel	-64	-111	-4	0	0	0
Munitions	6	0	0	0	1	1
Total	-59	-102	-4	0	1	1

Mission Readiness- ALT 2

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0
Munitions	2.4	0.1	0.0	0.0	0.5	0.4
Total	2	0	0	0	1	0

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	0	11	0	0	1	1
Vessel	-49	-83	-3	0	0	0
Munitions	4	0	0	0	1	1
Total	-45	-72	-3	0	2	2

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	0	11	0	0	1	1
Vessel	-49	-83	-3	0	0	0
Munitions	6	0	0	0	1	1
Total	-43	-72	-3	0	3	2

Table G-28: Summary of Emissions – PMRS

Mission Readiness- ALT 1

Within 3 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	1	9	0	0	0	0
Munitions	0	0	0	0	0	0
Total	2	10	0	0	0	0

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	1	0	0	1	1
Vessel	7	33	1	0	1	1
Munitions	2	0	0	0	1	1
Total	11	34	1	0	2	2
Total, tons/day	0.03	0.09	0.004	0.0002	0.01	0.01
Air Emissions for 2020, tons/day	450	43	266	4	66	32
Percent of Existing Emissions	0.01%	0.22%	0.001%	0.005%	0.01%	0.02%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	6	16	0	1	4	4
Vessel	12	37	1	0	1	1
Munitions	8	0	0	0	6	6
Total	26	53	2	0	11	11

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	7	18	1	1	5	5
Vessel	20	69	3	0	2	2
Munitions	11	0	0	0	7	7
Total	37	87	3	1	14	13

Mission Readiness- ALT 2

Within 3 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	1	10	0	0	0	0
Munitions	0	0.0	0.0	0.0	0.0	0.0
Total	2	10	0	0	0	0

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	2	0	0	1	1
Vessel	8	35	1	0	1	1
Munitions	2	0.0	0.0	0.0	0.8	0.6
Total	12	37	1	0	3	2
Total, tons/day	0.03	0.10	0.004	0.0004	0.01	0.01
Air Emissions for 2020, tons/day	450	43	266	4	66	32
Percent of Existing Emissions	0.01%	0.24%	0.002%	0.01%	0.01%	0.02%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	7	19	1	1	6	6
Vessel	19	48	2	0	1	1
Munitions	8.1	0.0	0.0	0.0	6.3	6.2
Total	34	68	3	1	13	13

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	9	21	1	1	7	7
Vessel	27	83	3	0	2	2
Munitions	11	0	0	0	7	7
Total	46	105	4	1	16	15

Table G-29: Summary of Emissions – NOCAL

Mission Readiness- ALT 1

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0.08	0.20	0.01	0.01	0.06	0.06
Vessel	1	3	0.17	-0.05	0.06	0.06
Munitions	0.2	0.0	0.0	0.000	0.006	0.005
Total	1	3	0.2	0.0	0.1	0.1
Total, tons/day	0.0025	0.0084	0.0005	-0.0001	0.0003	0.0003
Air Emissions for 2020, tons/day	728	36	191	4	100	57
Percent of Existing Emissions	0.0003%	0.02%	0.0003%	-0.003%	0.0003%	0.001%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	1	0	0	0	0
Vessel	6	24	1	0	0	0
Munitions	1	0	0	0	0	0
Total	7	25	1	0	0	0

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	1	0	0	0	0
Vessel	7	27	1	0	0	0
Munitions	1	0	0	0	0	0
Total	8	28	1	0	1	1

Mission Readiness- ALT 2

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	1	4	0	0	0	0
Munitions	0.2	0.0	0.0	0.0	0.0	0.0
Total	2	4	0	0	0	0
Total, tons/day	0.0042	0.0121	0.0006	0.0000	0.0004	0.0004
Air Emissions for 2020, tons/day	728	36	191	4	100	57
Percent of Existing Emissions	0.0006%	0.03%	0.0003%	0.001%	0.0004%	0.001%

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	1	0	0	0	0
Vessel	8	16	1	0	0	0
Munitions	1	0	0	0	0	0
Total	9	17	1	0	0	0

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	1	1	0	0	0	0
Vessel	9	20	1	0	0	0
Munitions	1	0	0	0	0	0
Total	11	21	1	0	1	1

Table G-30: Summary of Emissions – Transit Corridor

Mission Readiness- ALT 1

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0
Munitions	0	0	0	0	0	0
Total	0	0	0	0	0	0

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	-1	-2	0	0	0	0
Munitions	0	0	0	0	0	0
Total	-1	-2	0	0	0	0

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	-1	-2	0	0	0	0
Munitions	0	0	0	0	0	0
Total	-1	-2	0	0	0	0

Mission Readiness- ALT 2

Within 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0
Munitions	0.1	0.0	0.0	0.0	0.0	0.0
Total	0	0	0	0	0	0

> 12 NM

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0
Munitions	0	0	0	0	0	0
Total	0	0	0	0	0	0

Total

Activity	Emissions by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0
Munitions	0	0	0	0	0	0
Total	0	0	0	0	0	0

G.3 Navy Record of Non-Applicability (RONA) for Clean Air Act Conformity of Non-Applicability

G.3.1 South Coast Air Basin Nonattainment Area

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

Proposed Action: Hawaii-California Training and Testing

Action Proponents: Commander U.S. Pacific Fleet, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, U.S. Marine Corps, U.S. Army, and U.S. Air Force

Proposed Action Name: Hawaii-California (HCTT) Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

Proposed Action and Emissions Summary:

The Proposed Action (Preferred Alternative, Alternative 1) consists of military readiness activities in the waters of the States of Hawaii and California, as well as in federal and international waters. The action involves the operation of military aircraft, vessels, and small boats to achieve requisite training and testing requirements. Small boats and vessels would be operational in locations within the South Coast Air Basin. These nearshore activities generate emissions primarily through fossil fuel combustion from engine operation. The region, managed by South Coast Air Quality Management District, is classified as an extreme non-attainment area for ozone (eight-hour average concentration), a carbon monoxide maintenance area, a maintenance area for nitrogen dioxide, a maintenance area for particulate matter with an aerodynamic size less than or equal to 10 microns (PM_{10}) and a serious non-attainment area for particulate matter with an aerodynamic size less than or equal to 2.5 microns ($PM_{2.5}$). As a result, Proposed Action emissions were evaluated to assess compliance with the General Conformity Rule *de minimis* thresholds for the above pollutants and their precursors. As shown in the table below, Proposed Action would result in no exceedance of the applicable *de minimis* thresholds. Therefore, emissions from the Proposed Action would show conformity under the Clean Air Act.

Table G-31: Estimated Net Change in Annual Criteria Air Pollutant Emissions from Military Readiness Activities in the South Coast Air Basin (Within 3 NM), Alternative 1[1]

Source	*Emissions Increase by Air Pollutant (TPY)*					
	CO	*NO_X*	*VOC*	*SO_X*	*PM_{10}*	*$PM_{2.5}$*
Net Change in Emissions from all Sources	7.6	5.4	0.5	0.6	0.3	0.2
De Minimis Threshold	100	10	10	70	100	70

[1] Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding.

Notes: CO = carbon monoxide, NO_X = nitrogen oxides, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, PM_{10} = particulate matter≤ 10 microns in diameter, SO_X = sulfur oxides (precursor to $PM_{2.5}$), TPY = tons per year, VOC = volatile organic compounds

Affected Air Basins: South Coast Air Basin

Date RONA prepared: November 13, 2024

RONA prepared by:

Proposed Action Exemptions

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action are below all *de minimis* thresholds.

Emissions Evaluation Conclusion

The U.S. Navy concludes that de minimis thresholds for nonattainment pollutants and their precursors would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion is shown in Table G-31 above. The calculations, methodology, data, and references contained in Section 3.1 (Air Quality and Climate Change) and Appendix G of the HCTT EIS/OEIS.

Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA Approval:

Signature: ____________________________________

Name/Rank: ___________________________ Date: _________________

Position: ____________ _________________ Activity: ________________

G.3.2 San Diego Air Basin Nonattainment Area

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

Proposed Action: Hawaii-California Training and Testing

Action Proponents: Commander U.S. Pacific Fleet, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, U.S. Marine Corps, U.S. Army, and U.S. Air Force

Proposed Action Name: Hawaii-California (HCTT) Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

Proposed Action and Emissions Summary:

The Proposed Action (Preferred Alternative, Alternative 1) consists of military readiness activities in the waters of the States of Hawaii and California, as well as in federal and international waters. The action involves the operation of military aircraft, vessels, and small boats to achieve requisite training and testing requirements. Small boats and vessels would be operational in locations within the San Diego Air Basin. These nearshore activities generate emissions primarily through fossil fuel combustion from engine operation. The region, managed by San Diego Air Pollution Control District, is classified as a severe non-attainment area for ozone (eight-hour average concentration). As a result, Proposed Action emissions were evaluated to assess compliance with the General Conformity Rule *de minimis* thresholds for ozone precursors, oxides of nitrogen (NO_x) and volatile organic compounds (VOC). As shown in the table below, Proposed Action would result in no exceedance of the applicable *de minimis* thresholds. Therefore, emissions from the Proposed Action would show conformity under the Clean Air Act.

Table G-32: Estimated Net Change in Annual Criteria Air Pollutant Emissions from Military Readiness Activities in the San Diego Air Basin (Within 3 NM), Alternative 1[1]

Source	Emissions Increase by Air Pollutant (TPY)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Net Change in Emissions from all Sources	21	13	1	0.3	5	5
De Minimis Threshold	N/A	25	25	N/A	N/A	N/A

[1] Table includes criteria pollutant precursors (e.g., volatile organic compounds). Individual values may not add exactly to total values due to rounding.
Notes: CO = carbon monoxide, NO_X = nitrogen oxides, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, PM_{10} = particulate matter≤ 10 microns in diameter, SO_X = sulfur oxides, TPY = tons per year, VOC = volatile organic compounds

Affected Air Basins: San Diego Air Basin

Date RONA prepared: November 13, 2024

RONA prepared by:

Proposed Action Exemptions

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action are below all *de minimis* thresholds.

Emissions Evaluation Conclusion

The U.S. Navy concludes that de minimis thresholds for ozone precursors would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion is shown in Table G-32 above. The calculations, methodology, data, and references contained in Section 3.1 (Air Quality and Climate Change) and Appendix G of the HCTT EIS/OEIS.

Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA Approval:

Signature: ____________________________________

Name/Rank: ___________________________ Date: _________________

Position: ____________ _________________ Activity: ________________

G.3.3 South Central Coast Air Basin Air Basin Nonattainment Area

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

Proposed Action: Hawaii-California Training and Testing

Action Proponents: Commander U.S. Pacific Fleet, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, U.S. Marine Corps, U.S. Army, and U.S. Air Force

Proposed Action Name: Hawaii-California (HCTT) Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

Proposed Action and Emissions Summary:

The Proposed Action (Preferred Alternative, Alternative 1) consists of military readiness activities in the waters of the States of Hawaii and California, as well as in federal and international waters. The action involves the operation of military aircraft, vessels, and small boats to achieve requisite training and testing requirements. Small boats and vessels would be operational in locations within the G.3.3 South Central Coast Air Basin. These nearshore activities generate emissions primarily through fossil fuel combustion from engine operation. The region, managed by Ventura County Air Pollution Control District, is classified as a serious non-attainment area for ozone (eight-hour average concentration). As a result, Proposed Action emissions were evaluated to assess compliance with the General Conformity Rule *de minimis* thresholds for ozone precursors, oxides of nitrogen (NO_x) and volatile organic compounds (VOC). As shown in the table below, Proposed Action would result in no exceedance of the applicable *de minimis* thresholds. Therefore, emissions from the Proposed Action would show conformity under the Clean Air Act.

Table G-33: Estimated Net Change in Annual Criteria Air Pollutant Emissions from Military Readiness Activities in the South Central Coast Air Basin (Within 3 NM), Alternative 1[1]

Source	*Emissions Increase by Air Pollutant (TPY)*					
	CO	*NO_X*	*VOC*	*SO_X*	*PM_{10}*	*$PM_{2.5}$*
Net Change in Emissions from all Sources	2	10	0.3	0.03	0.4	0.4
De Minimis Threshold	N/A	50	50	N/A	N/A	N/A

[1] Table includes criteria pollutant precursors (e.g., volatile organic compounds). Individual values may not add exactly to total values due to rounding.
Notes: CO = carbon monoxide, NO_X = nitrogen oxides, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, PM_{10} = particulate matter≤ 10 microns in diameter, SO_X = sulfur oxides, TPY = tons per year, VOC = volatile organic compounds

Affected Air Basins: South Central Coast Air Basin

Date RONA prepared: November 13, 2024

RONA prepared by:

Proposed Action Exemptions

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action are below all *de minimis* thresholds.

Emissions Evaluation Conclusion

The U.S. Navy concludes that de minimis thresholds for ozone precursors would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion is shown in Table G-33 above. The calculations, methodology, data, and references contained in Section 3.1 (Air Quality and Climate Change) and Appendix G of the HCTT EIS/OEIS.

Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA Approval:

Signature: ____________________________________

Name/Rank: ___________________________ Date: _________________

Position: ____________ _________________ Activity: ________________

References

Air Force Civil Engineer Center. (2023). *Air Emissions Guide for Air Force Mobile Sources: Methods for Estimating Emissions of Air Pollutants for Mobile Sources at United States Air Force Installations*. JBSA Lackland, TX: Compliance Technical Support Branch.

Hawaii Department of Health. (2016). *State of Hawaii Annual Summary, 2015 Air Quality Data*. Retrieved from https://health.hawaii.gov/cab/files/2016/12/aqbook_2015.pdf.

San Diego County Air Pollution Control District. (2022). *Annual Air Quality Report 2022*. San Diego, CA: San Diego County Air Pollution Control District.

South Coast Air Quality Management District. (2022). *2022 Air Quality Management Plan*. Diamond Bar, CA: South Coast Air Quality Management District.

State of Hawaii Department of Health. (2023). *State of Hawaii 2023 Air Monitoring Network Plan*. Honolulu, HI: Environmental Management Division, Clean Air Branch.

U.S. Department of the Air Force. (2024). *Air Emissions Guide for Air Force Stationary Sources*. Air Force Civil Engineer Center.

U.S. Department of the Navy. (2014). *US Navy F-35C West Coast Homebasing Environmental Impact Statement*. San Diego, CA: U.S. Department of the Navy, Naval Facilities Engineering Command Southwest.

U.S. Environmental Protection Agency. (1972). *Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States*. Research Triangle Park, NC: Environmental Protection Agency Office of Air Programs.

U.S. Environmental Protection Agency. (2022). *Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions*. Washington, DC: U.S. Environmental Protection Agency, Office of Transportation and Air Quality, Transportation and Climate Division.

U.S. Environmental Protection Agency. (2024). *Climate Change Indicators: Weather and Climate*. Retrieved April 25, 2024, from https://www.epa.gov/climate-indicators/weather-climate.

Ventura County Air Pollution Control District. (2022). *2022 Ventura County Air Quality Management Plan*. Ventura, CA: Ventura County Air Pollution Control Board.

Appendix H Description of Systems and Ranges

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

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APPENDIX H DESCRIPTION OF SYSTEMS AND RANGES

The Action Proponents have been conducting military readiness activities throughout the in-water areas around the Hawaiian Islands and off the coast of California for decades. The tempo and types of training and testing activities have fluctuated within the Hawaii-California Training and Testing (HCTT) Study Area (Study Area) due to changing requirements, the introduction of new technologies, the dynamic nature of international events, advances in warfighting doctrine and procedures, and force structure changes. Such developments have influenced the frequency, duration, intensity, and location of required training and testing.

H.1 DESCRIPTION OF SONAR, MUNITIONS, TARGETS, AND OTHER SYSTEMS EMPLOYED IN HAWAII-CALIFORNIA TRAINING AND TESTING EVENTS

The Navy uses a variety of sensors, platforms, weapons, and other devices, including ones used to ensure the safety of Sailors and Marines, to meet its mission. Training and testing with these systems may have the potential to introduce acoustic (sound) energy and expended materials into the environment. The environmental impact of these activities was analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of this Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS). This appendix presents and organizes sonar systems, munitions, targets, and other systems, including unmanned systems, in a manner intended to facilitate understanding of both the activities that use them and the analysis of their environmental effects, described in Chapter 3 (Affected Environment and Environmental Consequences) of this EIS/OEIS. The use of unmanned systems throughout all warfare areas has increased since the 2018 Hawaii-Southern California Training and Testing EIS/OEIS and is reflected in this EIS/OEIS. Because of the prevalence of unmanned systems use, the terms “aircraft” and “vessels” can also refer to their unmanned variants: unmanned aircraft systems (UASs), unmanned surface vessels (USVs), and unmanned underwater vehicles.

H.1.1 SONAR SYSTEMS AND OTHER ACOUSTIC SOURCES

Sonar. Sonar, originally an acronym for “SOund Navigation And Ranging,” is a technique that uses underwater sound to navigate, communicate, or detect underwater objects (the term sonar is also used for the equipment used to generate and receive sound). There are two basic types of sonar: active and passive.

Active sonar emits sound waves that travel through the water, reflect off objects, and return to a receiver. Sonar is used to determine the distance to an underwater object by calculating the speed of sound in water and the time for the sound wave to travel to the object and back. For example, active sonar systems are used to track targets or to aid in vessel navigation by identifying known ocean floor features. Some whales, dolphins, and bats use echolocation, a similar technique, to identify their surroundings and to locate prey.

Passive sonar uses listening equipment, such as underwater microphones (hydrophones) and receiving sensors on ships, submarines, aircraft, or autonomous vehicles, to pick up underwater sounds. The advantage of passive sonar is that it places no sound in the water, and thus does not reveal the location of the listening vessel. Passive sonar can indicate the presence, character, and direction noise-producing objects like ships and submarines; however, passive sonar is increasingly ineffective as modern submarines become quieter. Passive sonar has no potential acoustic impact on the environment, and therefore, is not discussed further or analyzed within this EIS/OEIS.

All sounds, including sonar, are categorized by frequency. For this EIS/OEIS, active sonar is categorized into four frequency ranges: low-frequency[1], mid-frequency, high-frequency, and very high-frequency.

- Low-frequency active sonar emits sounds at frequencies less than 1 kilohertz (kHz). Low-frequency active sonar is useful for detecting objects at great distances because low-frequency sounds do not dissipate as rapidly as higher frequency sounds.
- Mid-frequency active sonar emits sounds at frequencies from 1 to 10 kHz. Mid-frequency active sonar is the Navy's primary tool for detecting and identifying submarines. Active sonar in this frequency range provides a valuable combination of range and target accuracy.
- High-frequency active sonar emits sounds at frequencies greater than 10 kHz, up to 100 kHz. High-frequency sounds dissipate rapidly and have a small effective range; however, high-frequency sounds provide higher resolution of objects and are useful at detecting and identifying smaller objects such as sea mines.
- Very high-frequency sources are those that operate above 100 kHz but below 200 kHz[2].

Modern sonar technology includes a variety of sonar sensor and processing systems. In concept, the simplest active sonar emits sound waves, or "pings," sent out in multiple directions and the sound waves then reflect off of the target object in multiple directions (Figure H-1). The sonar source calculates the time it takes for reflected sound waves to return; this calculation determines the distance to the target object. More sophisticated active sonars emit a ping and then rapidly scan or listen to the sound waves in a specific area. This provides both distance to the target and directional information. Even more advanced sonars use multiple receivers to listen to echoes from several directions simultaneously and provide efficient detection of both direction and distance. It should be noted that active sonar is rarely used continuously throughout the listed activities. In addition, when sonar is in use, the sonar "pings" occur at intervals, referred to as a duty cycle, and the signals themselves are very short in duration. For example, a sonar that emits a 1-second ping every 10 seconds has a 10 percent duty cycle.

The Navy utilizes sonar systems and other acoustic sensors in support of a variety of mission requirements. Primary uses include detection of and defense against submarines (anti-submarine warfare) and mines (mine warfare), safe navigation and effective communications, and oceanographic surveys. Specific examples of how sonar systems are used for Navy activities are discussed in the following sections.

Activity tables in Section A.3 (Training Activities) and Section A.4 (Testing Activities) of Appendix A (Activity Descriptions) list sonar bin categories that include specific bins assessed for take of protected species under that activity. Bins are also discussed and defined in Section 3.0.3.3.1 (Acoustic Stressors) of this EIS/OEIS. Various activities may also use *de minimis* sound sources that are not expected to result in take of protected species.

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[1] Surveillance Towed Array Sensor System Low-Frequency Active sonar, which may be used in the Study Area, is not among the sources analyzed in this document. The potential environmental impacts from use of Surveillance Towed Array Sensor System Low-Frequency Active sonar are analyzed in a separate National Environmental Policy Act document. SURTASS was considered in the analysis of cumulative impacts in this EIS/OEIS.

[2] Frequencies above 200 kHz are not categorized because they are above the hearing threshold of most marine species.

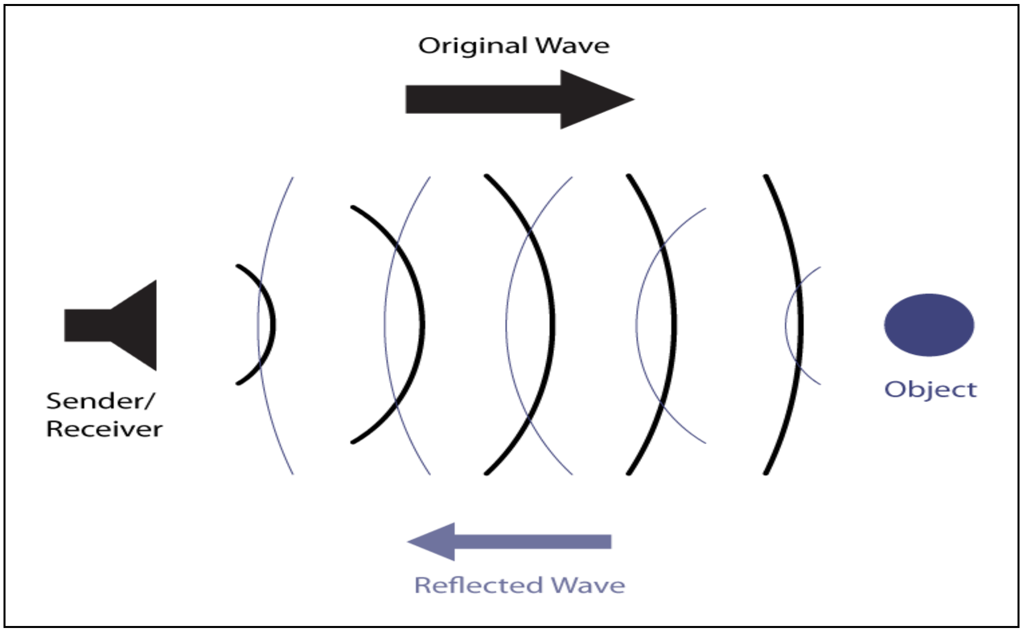


Figure H-1: Principle of an Active Sonar

Anti-Submarine Warfare. Systems used in anti-submarine warfare include sonars, torpedoes, and acoustic countermeasure devices. These systems are employed from a variety of platforms (surface ships, submarines, rotary-wing aircraft, fixed-wing aircraft, and unmanned vehicles). Surface ships conducting anti-submarine warfare are typically equipped with hull-mounted sonar (passive and active) for the detection of submarines (or submarine targets during training and testing events). Aircraft use dipping sonar or sonobuoys (passive and active) to locate submarines (or targets). Fixed-wing aircraft deploy both active and passive expendable sonobuoys to assist in detecting and tracking submarines (or targets). Submarines are equipped with hull-mounted sonars to detect, localize, and track other submarines and surface ships. Submarines primarily use passive sonar; active sonar is used mostly for navigation. There are also unmanned vehicles currently being developed to deploy anti-submarine warfare systems.

Anti-submarine warfare activities often use mid-frequency (1 to 10 kHz) active sonar, though low-frequency and high-frequency active sonar systems are also used for specialized purposes. Typical active sonar systems and acoustic sensors used during anti-submarine warfare sonar training and testing exercises include the following:

Surface Ship Sonar Systems: A variety of surface ships operate hull-mounted mid-frequency active sonar during training exercises and testing activities (Figure H-2). Typically, only cruisers and destroyers have surface ship sonar systems. Unmanned surface vessels can also include sonar systems, such as a towed sonar system.

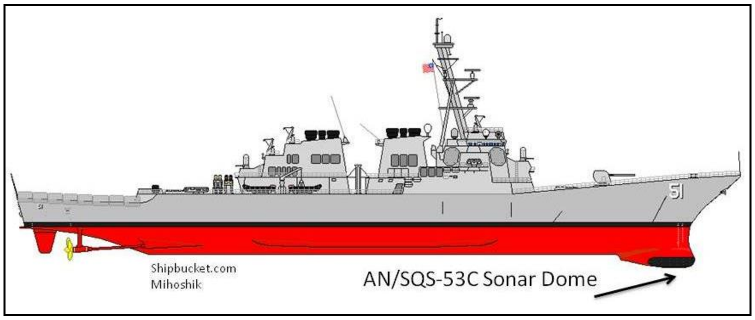


Figure H-2: Guided Missile Destroyer with an AN/SQS-53 Sonar

Submarine Sonar Systems: Submarines are equipped with hull-mounted mid-frequency and high-frequency active sonar (Figure H-3) used to detect and target enemy submarines and surface ships. A submarine's mission relies on its stealth; therefore, a submarine uses its active sonar sparingly because each sound emission gives away the submarine's location.

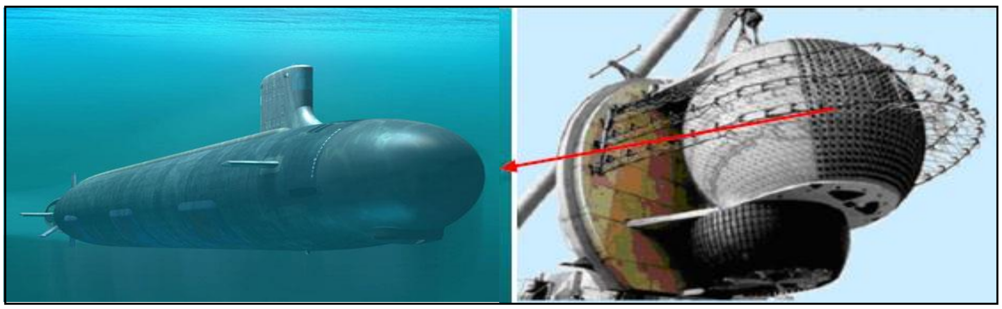


Figure H-3: Submarine AN/BQQ-10 Active Sonar Array

Aircraft Sonar Systems: Aircraft sonar systems include sonobuoys and dipping sonars.

- **Sonobuoys:** Active sonobuoys are expendable devices that contain a data transmitter and a hydrophone. The sounds collected by the sonobuoy are transmitted back to the operator (aboard ship or aircraft) for analysis. Sonobuoys allow for short and long-range detection of surface ships and submarines. These systems are deployed by ship or aircraft (Figure H-4).

Figure H-4: Loading a Sonobuoy in a P-8 Poseidon Aircraft

- **Dipping Sonars:** Dipping sonars are recoverable devices lowered into the water via cable from low-flying aircraft (Figure H-5). The sonar detects underwater targets and determines the distance and movement of the target relative to the position of the aircraft.

Figure H-5: Helicopter Deploys Dipping Sonar

Exercise Torpedoes: Some torpedoes used in training and testing activities may transmit active sonar signals. Surface ships, aircraft, and submarines primarily use torpedoes in anti-submarine warfare (Figure H-6). Recoverable, non-explosive torpedoes, categorized as either lightweight or heavyweight, are used during training and testing. Torpedoes operate autonomously, or in the case of heavyweight torpedoes, use a guidance system to operate the torpedo remotely through an attached wire (guidance wire). The autonomous guidance systems operate either passively (listening for sounds generated by the target) or actively (pinging to search for the target). Torpedo training in the Study Area is mostly simulated—solid masses that approximate the weight and shape of a torpedo are fired, rather than fully functional torpedoes. Testing in the Study Area mostly uses fully functional exercise torpedoes.

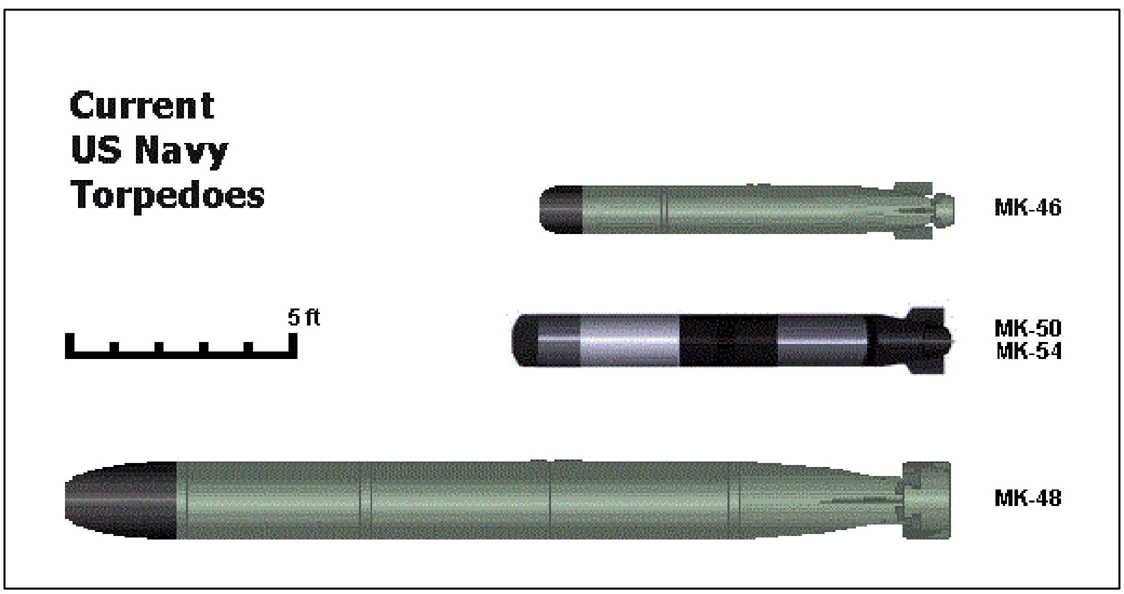


Figure H-6: Current United States Navy Torpedoes

Anti-Submarine Warfare Targets: Anti-submarine warfare training targets are autonomous undersea vehicles used to simulate target submarines (Figure H-7). The training targets are equipped with one or more of the following devices: (1) acoustic projectors emitting sounds to simulate submarine acoustic signatures, (2) echo repeaters to simulate the characteristics of the echo of a sonar signal reflected from a submarine, and (3) magnetic sources that mimic those of a submarine.

Figure H-7: Anti-Submarine Warfare Target

Mine Warfare. Mine warfare training and testing activities use a variety of different sonar systems that are typically high frequency (greater than 10 kHz) and very high frequency (greater than 100 kHz). These sonar systems are used to detect, locate, and characterize moored and bottom mines (Figure H-8). The majority of mine warfare sonar sensors can be deployed by more than one platform (e.g., helicopter, unmanned underwater and surface vehicle, or surface ship) and may be interchangeable among platforms. Surface ships and submarines use sonar to detect mines and objects.

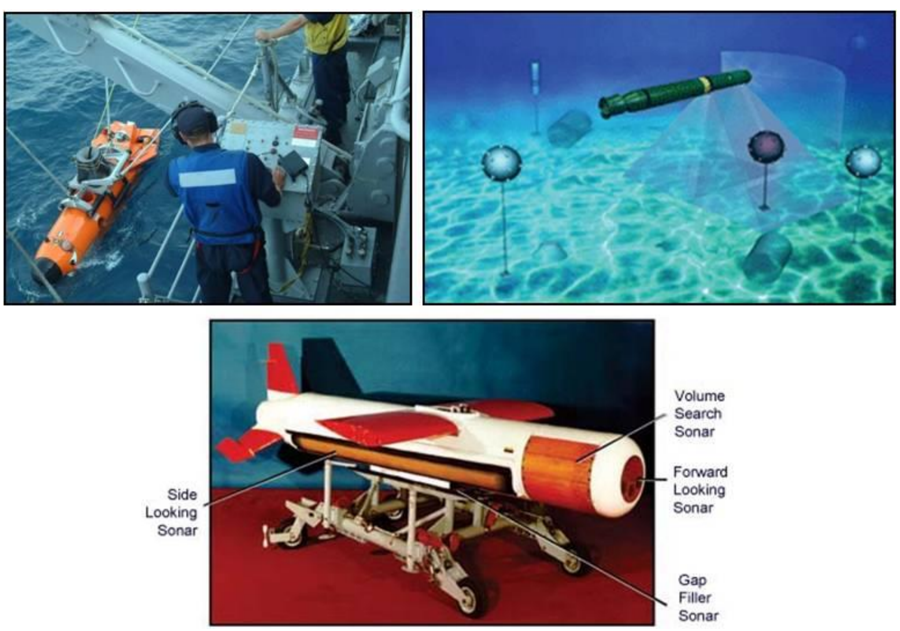


Figure H-8: Mine Warfare Systems
(Source: Graphic on upper right side from Lockheed Martin)

Safety, Navigation, Communications, and Oceanographic Systems. Naval ships, submarines, and unmanned surface and subsurface vehicles rely on equipment and instrumentation that use active sonar during both routine operations and training and testing events. Sonar systems are used to gauge water depth, and detect and map objects, navigational hazards, and the ocean floor, and transmit communication signals.

Other Acoustic Systems. The Navy uses a variety of other acoustic sensors to protect ships anchored or at the pier, as well as shore facilities. These systems, both active and passive, detect potentially hostile swimmers, broadcast warnings to alert Navy divers of potential hazards, and gather information regarding ocean characteristics (ocean currents and wave measurements). They are generally stationary systems in Navy harbors and piers. Navy marine mammals (Atlantic bottlenose dolphins [*Tursiops truncatus*]) are also used to detect hostile swimmers around Navy facilities. A trained animal is deployed under behavioral control of a handler to find an intruding swimmer. Upon finding the "target" of the search, the animal returns to the boat and alerts the animal handlers, and the animals are given a localization marker or leg cuff that they attach to the intruder. Swimmers that have been marked with a leg cuff are reeled in by security support boat personnel via a line attached to the cuff. In addition, the Navy's research and acquisition community uses sensors for a variety of tests, including tracking during testing activities and collecting data for test analysis.

H.1.2 MUNITIONS

Most ordnance and munitions used during training and testing events fall into three basic categories: projectiles, missiles, and bombs. Ordnance can be further defined by their net explosive weight, which is a measure of defining the explosive force of a munition without the packaging, casings, bullets, etc. Net explosive weight is the trinitrotoluene (TNT) equivalent of energetic material, which is the standard measure of strength of bombs and other explosives. For example, a 2,000-pound (lb.) bomb may have anywhere from 600 to 1,000 lb. of net explosive weight.

Projectiles. Projectiles are fired during gunnery exercises and testing events from a variety of weapons, including pistols and rifles to large-caliber, turret-mounted guns on the decks of Navy ships and mounted gun systems from aircraft. Projectiles can be either high-explosive munitions (e.g., certain gun shells), or non-explosive practice munitions (e.g., rifle/pistol bullets). Explosive rounds can be fused to either explode on impact or in the air (i.e., just prior to impact). Projectiles are broken down into three basic categories in this EIS/OEIS:

- **Small-Caliber Projectiles:** These projectiles are up to and including .50-caliber (approximately 1/2 inch [in.] diameter). Small-caliber projectiles (e.g., bullets), are primarily fired from pistols, rifles, and machine guns (i.e., small arms) and mostly during training events for an individual Sailor to become and remain proficient (Figure H-9).

Figure H-9: Shipboard Small Arms Training

- **Medium-Caliber Projectiles:** These projectiles are larger than .50-caliber, but smaller than 57 millimeter (mm) (approximately 2-1/4 in. diameter). The most common size medium-caliber projectiles are 20 mm, 25 mm, and 40 mm. Medium-caliber projectiles are fired from machine guns operated by one to two crewman and mounted on the deck of a ship, wing-mounted guns on aircraft, and fully automated guns mounted on ships for defense against missile attack (Figure H-10). Medium-caliber projectiles also include 40 mm grenades, which can be fired from hand-held grenade launchers or crew-served deck-mounted guns. Medium-caliber projectiles can be non-explosive practice munitions or high-explosive projectiles. High-explosive projectiles are usually fused to detonate on impact; however, advanced high-explosive projectiles can detonate based on time, distance, or proximity to a target.

Figure H-10: Shipboard Medium-Caliber Guns

- **Large-Caliber Projectiles:** These includes projectiles 57 mm and larger. The largest projectile currently in service has a 5 in. diameter. The most widely used large-caliber projectiles are 57 mm, and 5 in. (Figure H-11). The most common 5 in. projectile is approximately 26 in. long and weighs 70 lb. Large-caliber projectiles are fired exclusively from turret-mounted guns located on ship decks and can be used to fire on surface ships and boats, in defense against missiles and aircraft, and against land-based targets. Large-caliber projectiles can be non-explosive practice munitions or high-explosive munitions. High-explosive projectiles can detonate on impact or in the air.

Figure H-11: Shipboard Large-Caliber Gun and Projectiles

Missiles and Rockets. Missiles are rocket or jet-propelled munitions used to attack ships, aircraft, and land-based targets, as well as defend ships against other missiles. Guidance systems and advanced fusing technology ensure that missiles reliably impact on or detonate near their intended target.

Missiles are categorized according to their intended target, as described below, and can be further classified according to net explosive weight. Rockets are included within the category of missiles.

- **Air Missiles:** Air missiles are fired from ships and aircraft against enemy aircraft and incoming missiles (Figure H-12). Air missiles are configured to explode in the air near, or on impact with their intended target. Missiles are the primary ship-based defense against incoming missiles.

Figure H-12: Rolling Airframe Missile and Air-to-Air Missile

- **Surface Missiles:** Surface missiles are fired from aircraft, ships, and submarines against surface ships (Figure H-13). Surface missiles are typically configured to detonate on impact or just above the intended target.

Figure H-13: Surface Missile Fired from MH-60 Helicopter

- **Strike Missiles:** Strike missiles are fired from aircraft, ships, and submarines against land-based targets. Strike missiles are typically configured to detonate on impact or near their intended target. The AGM-88 High-Speed Anti-Radiation Missile, used to destroy enemy radar sites, is an example of a strike missile used during at-sea training, and is fired at a floating sea-borne target that replicates a land-based radar site.

Bombs. Bombs are unpowered munitions dropped from aircraft on land and water targets. The majority of bombs used during training and testing in the Study Area are non-explosive. However, explosive munitions are occasionally used for proficiency inspections and testing requirements. Bombs fall into two categories: general-purpose bombs and subscale practice bombs. Similar to missiles, bombs are further classified according to their net explosive weights.

- **General-Purpose Bombs:** General-purpose bombs consist of precision-guided and unguided full-scale bombs, ranging in size from 250 to 2,000 lb. (Figure H-14). Common bomb nomenclature used includes: MK 80 series, which is the Navy's standard model; Guided Bomb Units and Joint Direct Attack Munitions, which are precision guided (including laser guided) bombs; and the Joint Standoff weapon, which is a long-range "glider" precision weapon. General-purpose bombs can be either non-explosive practice munitions or high-explosive.

Figure H-14: F-35 Bomb Release and Loading General Purpose Bombs

- **Subscale Bombs:** Subscale bombs (Figure H-15) are non-explosive practice munitions containing a spotting (smoke) charge to aid in scoring the accuracy of hitting the target during training and testing activities. Common subscale bombs are 25 lb. and less and are steel-constructed. Laser guided training rounds are another variation of a subscale practice bomb. They weigh approximately 100 lb. and are cost-effective non-explosive weapons used in training aircrew in laser-guided weapons employment.

Figure H-15: Subscale Bombs for Training

Other Munitions. There are other munitions used in naval at-sea training and testing events that do not fit into one of the above categories, and are discussed below:

- **Demolition Charges:** Divers place explosive charges in the marine environment during some training and testing activities. These activities may include the use of timed charges, in which the charge is placed, a timer is started, and the charge detonates at the set time. Munitions of in up to, and sometimes exceeding, 60 lb. blocks of composition 4 (C-4) plastic explosive, with the necessary detonators and cords, are used to support mine neutralization, demolition, and other warfare activities. All demolition charges are further classified according to the net explosive weight of the charge.
- **Torpedoes:** Explosive torpedoes are required in some training and testing events. Torpedoes are described as either lightweight or heavyweight and are further categorized according to the net explosive weight.
- **Mines:** Naval mines are deposited and left in place until triggered by the approach of an enemy ship or are destroyed or removed. Naval mines can be laid by purpose-built minelayers, other ships, submarines, or airplanes.
- **Loitering Munitions:** UAS or USV weapons designed for remotely controlled or autonomous operation, with long dwell times and precision targeting. Loitering munitions are designed as non-recoverable unmanned vehicles with explosive charges built in that can be launched from land or at sea, typically by small boats or ships. During terminal phase, after a target has been identified, the loitering munition acts similarly to a bomb or missile to destroy or incapacitate its target.

H.1.3 Targets

Training and testing require an assortment of realistic and challenging targets. Targets vary from items as simple and ordinary as an empty steel drum used for small-caliber weapons training from the deck of a ship, to sophisticated, unmanned aerial drones used in air defense training. For this EIS/OEIS, targets are organized by warfare area.

Air Warfare Targets: Air warfare targets, tow target systems, and aerial targets, are used in training and testing events that involve detection, tracking, defending against, and attacking enemy missiles and aircraft. Aerial tow target systems include textile (nylon banner) and rigid (fiberglass shapes) towed targets used for gunnery events. Aerial targets include expendable rocket powered missiles and recoverable radio-controlled drones used for gunnery and missile exercises (Figure H-16, Figure H-17, and Figure H-18). Aerial targets and missiles are frequently launched from land; in the HCTT Study Area, launch sites are located at San Nicolas Island (SNI) and San Clemente Island (SCI) off the coast of Southern California (Figure H-19) and the Pacific Missile Range Facility (PMRF) on the island of Kauai in Hawaii (Figure H-20). Parachute flares are used as air-to-air missile targets. Manned high-performance aircraft may be used as targets—to test ship and aircraft defensive systems and procedures—without the actual firing of munitions.

Figure H-16: Deployment and Recovery of Air Warfare Targets

Figure H-17: BQM-177 (Aerial Target)

Figure H-18: LUU-2B/B Illuminating Flare (Aerial Target)

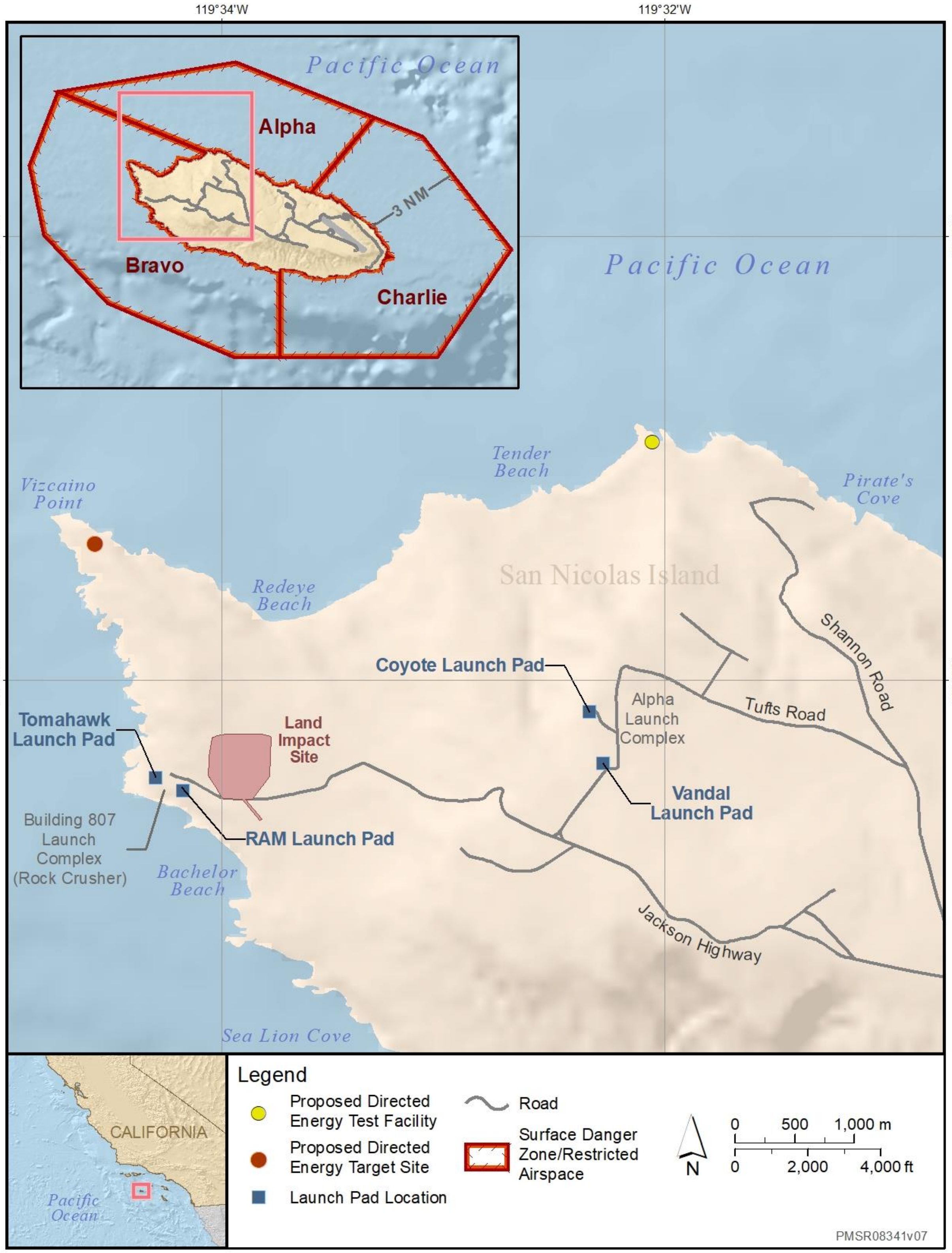


Figure H-19: San Nicolas Island Aerial Target and Missile Launch Sites

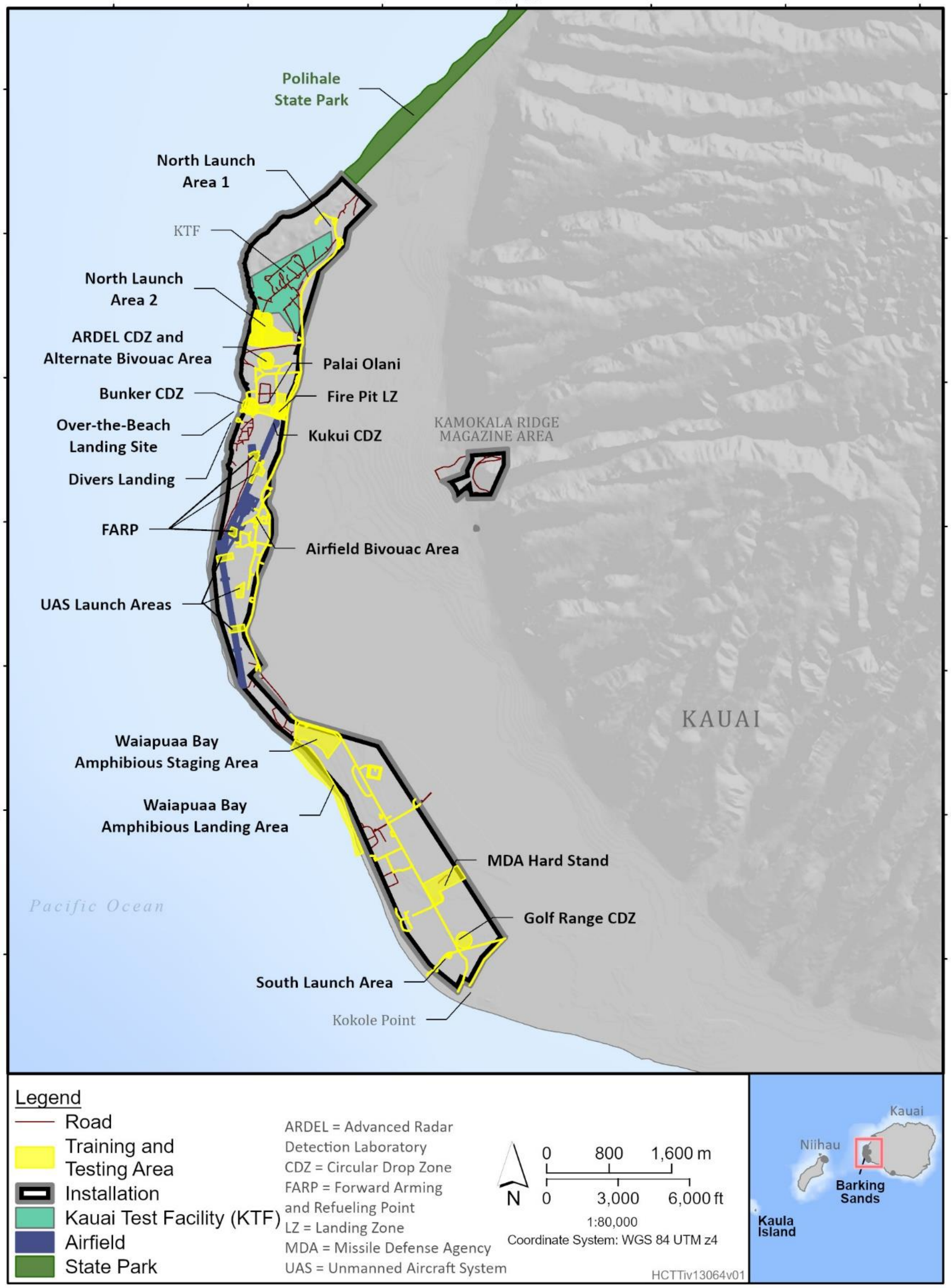


Figure H-20: Pacific Missile Range Facility Aerial Target and Missile Launch Sites

Surface Warfare Targets: Stationary and towed targets are used as surface warfare targets during gunnery events. Targets include floating steel drums, inflatable shapes or target balloons (e.g., Killer Tomato™) (Figure H-21), and towed sleds. Remote-controlled, high-speed targets, such as jet skis and motorboats, are also used (Figure H-22).

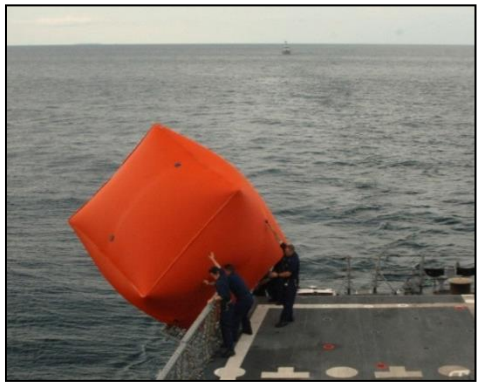


Figure H-21: Deploying a "Killer Tomato™" Floating Target

Figure H-22: Ship Deployable Surface Target and High-Speed Maneuverable Seaborne Target

Anti-Submarine Warfare Targets: Anti-submarine warfare uses multiple types of targets, including the following:

- **Submarines:** Submarines may act as tracking and detection targets during training and testing events.
- **Motorized Autonomous Targets:** Motorized autonomous targets simulate the acoustic and magnetic characteristics of a submarine, providing realism for exercises when a submarine is not available. These mobile targets resemble torpedoes, with some models designed for recovery and reuse, while other models are expendable.
- **Stationary Artificial Targets:** Stationary targets either resemble submarine hulls or are simulated systems with acoustic properties of enemy submarines. These targets either rest on the seafloor or are suspended at varying depths in the water column.

H.1.4 Defensive Countermeasures

Naval forces depend on effective defensive countermeasures to protect against missile and torpedo attack. Defensive countermeasures are devices designed to confuse, distract, and confound precision-guided munitions. Defensive countermeasures fall into five basic categories:

- **Chaff:** Chaff consists of reflective, aluminum-coated glass fibers used to obscure ships and aircraft from radar-guided systems. Chaff, which is stored in canisters, is either dispensed from aircraft or fired into the air from the decks of surface ships when an attack is imminent. The glass fibers create a radar cloud that masks the position of the ship or aircraft.
- **Flares:** Flares are pyrotechnic devices used to defend against heat-seeking missiles, where the missile seeks out the heat signature from the flare rather than the aircraft's engines. Similar to chaff, flares are also dispensed from aircraft and fired from ships.
- **Acoustic Countermeasures:** Acoustic countermeasures are used by surface ships and submarines to defend against torpedo attack (Figure H-23). Acoustic countermeasures are either released from ships and submarines or towed at a distance behind the ship.

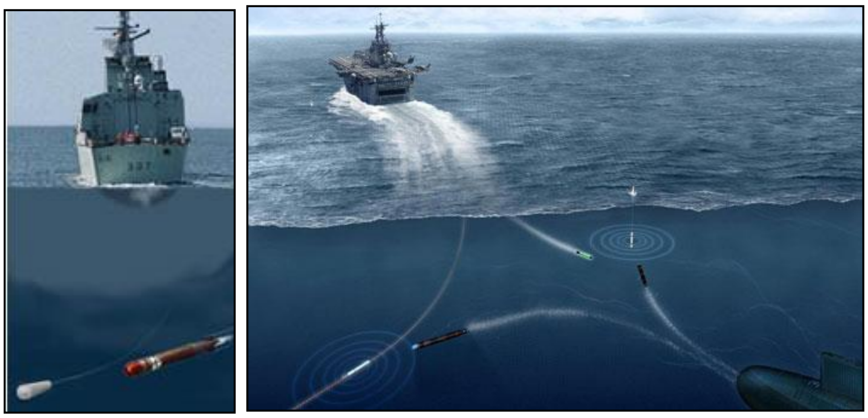


Figure H-23: Acoustic Countermeasures

- **Electromagnetic Countermeasures:** Electromagnetic countermeasures are used by surface ships and aircraft to defend against missile attacks. Electromagnetic countermeasures are also used in anti-submarine warfare activities.
- **Biodegradable Polymer:** Biodegradable polymer is a biodegradable vessel entanglement technology used to slow or stop specific maritime targets by entangling the propulsion mechanism.

H.1.5 MINE WARFARE

H.1.5.1 Training Mines

Training mines, also referred to as “mine shapes” or “mine countermeasure (MCM) targets,” are temporarily installed across mine warfare training areas in the Study Area. MCM targets contain no explosives but may contain instrumentation that can provide feedback during or after a training event. Training mines come in several shapes and sizes as shown in Figure H-24 and Figure H-25. Depending on the training objectives, specific MCM targets would be selected and placed at depths and locations appropriate to the training and the mine shape. See Section H.2 for locations of mine warfare training areas.

Figure H-24: Portfolio of Navy Training Mines

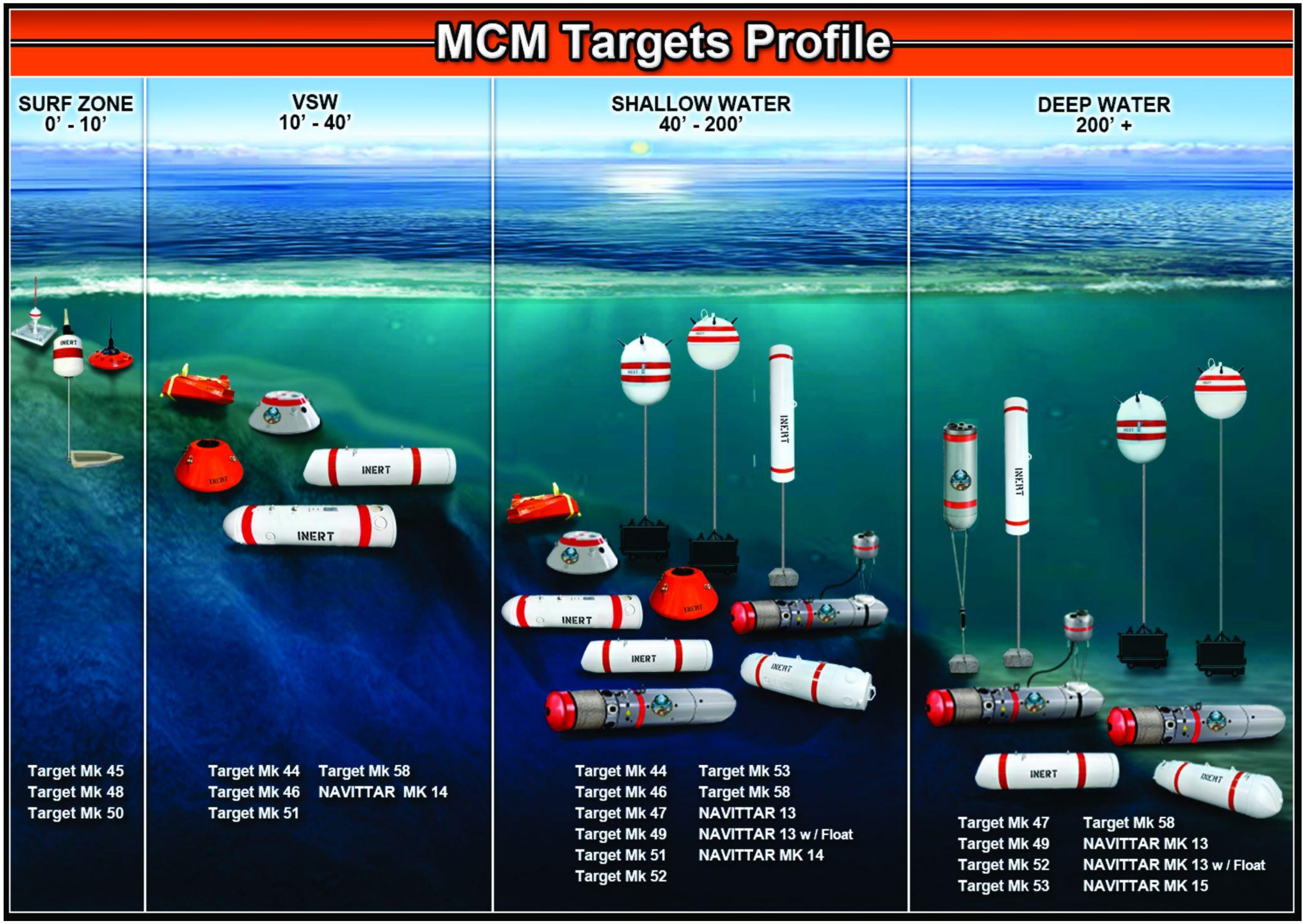


Figure H-25: Application (Location) of Navy Training Mines

H.1.5.2 Mine Warfare Systems

Mine warfare systems fall into two broad categories: mine detection and mine neutralization.

Mine Detection Systems. Mine detection systems are used to locate, classify, and map suspected mines. Once located, the mines can either be neutralized or avoided. These systems are specialized to either locate mines on the surface, in the water column, or on the seafloor.

- **Towed or Hull-Mounted Mine Detection Systems:** These detection systems use acoustic and laser or video sensors to locate and classify suspect mines. Ships and unmanned vehicles are used for towed systems, which can rapidly assess large areas (Figure H-26).

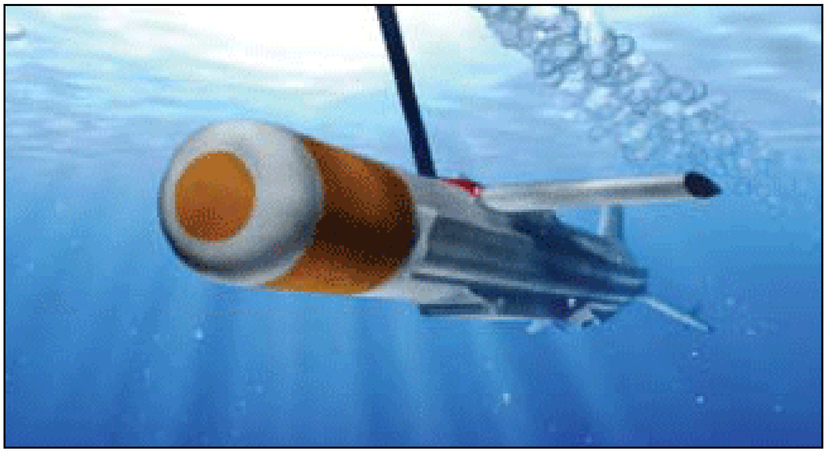


Figure H-26: Towed Mine Detection System

- **Airborne Laser Mine Detection Systems:** Airborne laser detection systems work in concert with neutralization systems. The detection system initially locates mines, and a neutralization system is then used to relocate and neutralize the mine (Figure H-27).

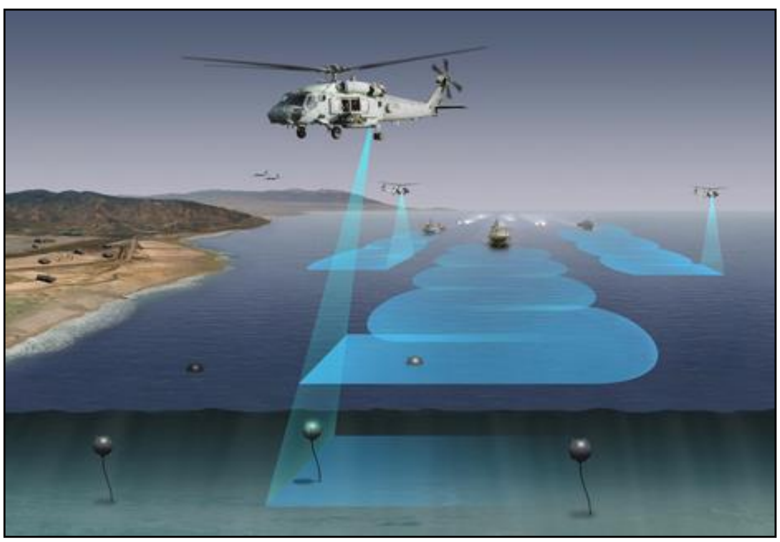


Figure H-27: AN/AES-1 Airborne Laser Mine Detection System

- **Unmanned/Remotely Operated Vehicles:** These vehicles use acoustic and video or lasers to locate and classify mines. Unmanned/remotely operated vehicles provide unique mine warfare capabilities in nearshore littoral areas, surf zones, ports, and channels.
- **Marine Mammal System:** Navy personnel and Navy marine mammals work together to detect specified underwater objects. The Navy deploys trained bottlenose dolphins as part of the marine mammal minehunting and object recovery system.
- **Dipping Mine Detection Systems:** Mine-hunting dipping sonar systems are deployed from helicopters and use high frequency sonar for the detection and classification of bottom and moored mines.

Mine Neutralization and Countermining Systems. These systems disrupt, disable, or detonate mines to clear ports and shipping lanes, as well as littoral, surf, and beach areas in support of naval amphibious operations. Mine neutralization systems can clear individual mines or a large number of mines quickly.

- **Towed Influence Mine Sweep Systems:** These systems use towed equipment that mimic a particular ship's magnetic and acoustic signature triggering the mine and causing it to explode (Figure H-28).

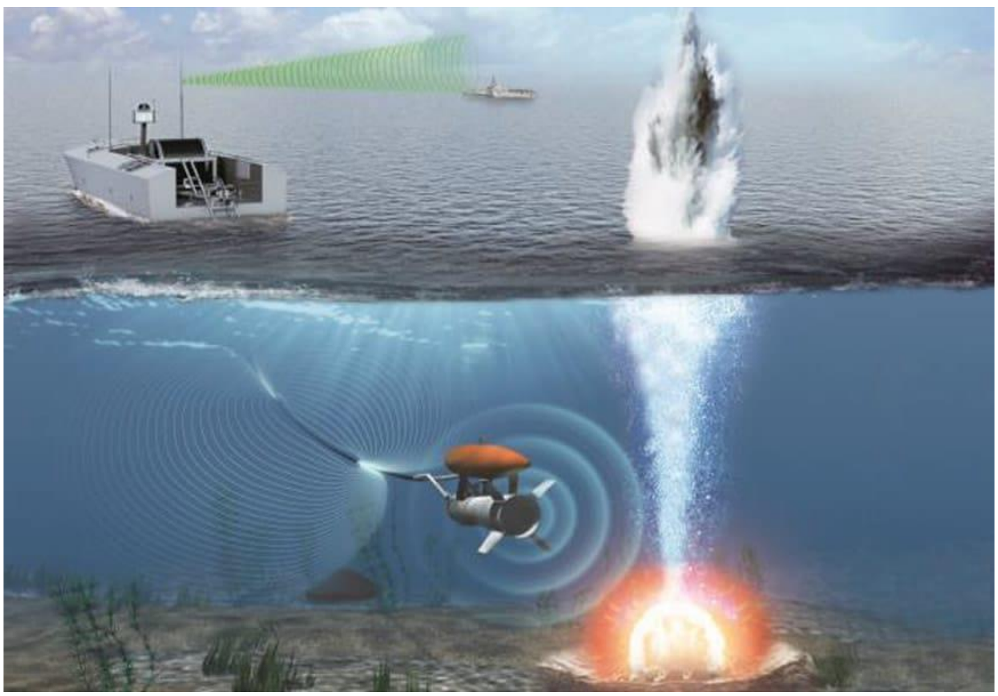


Figure H-28: U.S. Navy Unmanned Influence Sweep Minehunting System

- **Towed Mechanical Mine Sweeping Systems:** These systems tow a sweep wire to snag the line that attaches a moored mine to its anchor and then uses a series of cables and cutters to sever those lines. Once these lines are cut, the mines float to the surface where explosive ordnance personnel can neutralize the mines.
- **Unmanned/Remotely Operated Mine Neutralization Systems:** Surface ship and aircraft operate these systems, which place explosive charges near or directly against mines to destroy the mine (Figure H-29).

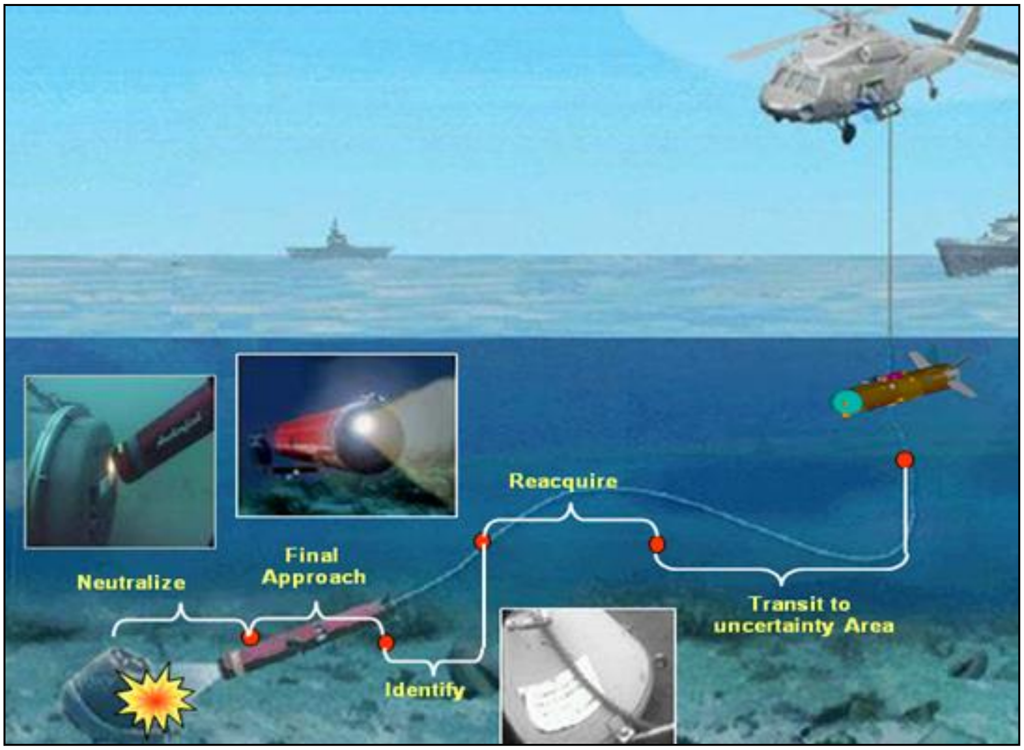


Figure H-29: Airborne Mine Neutralization System

- **Projectiles:** Small- and medium-caliber projectiles fired from surface ships or aircraft are used to neutralize floating and near-surface mines.
- **Diver Emplaced Explosive Charges:** Operating from small craft, divers place explosive charges, which may use time delay fusing, near or on mines to destroy the mine or disrupt its ability to function.
- **Other Systems:** Mat weave (charges laid in a pattern) are placed by Explosive Ordnance Personnel to destroy barriers or obstacles designed to block amphibious vehicle access to beach areas. Time delay fuses may be used on or near the mat weave. The Mine-Clearing Line Charge is a rocket-projected device used to create a breach in minefields. Many charges are connected on a line to be projected onto a minefield and then exploded, detonating buried mines.

H.1.6 Military Expended Materials

Navy training and testing events may introduce or expend various items, such as non-explosive munitions and targets, into the marine environment as a direct result of using these items for their intended purpose. In addition to the items described below, some accessory materials—related to the carriage or release of these items—may be released. These materials, referred to as military expended materials, are not recovered, and potentially result in environmental impacts. These impacts are analyzed in detail in Chapter 3 (Affected Environment and Environmental Consequences) of this EIS/OEIS. This section includes descriptions of a representative sample of military expended materials. A more comprehensive discussion can be found in Chapter 3 (Affected Environment and Environmental Consequences).

Military expended materials analyzed in this document include the following:

- **Sonobuoys:** Sonobuoys consist of decelerators/parachutes, wires, and the sonobuoys themselves.
- **Bathythermographs:** Bathythermographs as used by the Navy are similar to sonobuoys in that they consist of decelerators/parachutes, wires, and the buoy themselves. In the case of bathythermographs, the buoys are used to measure temperature information of the water column and transmit that information to the platform (usually a ship or aircraft) that deployed the bathythermograph.
- **Torpedo Launch Accessories:** Torpedoes are usually recovered; however, materials such as decelerators/parachutes used with air-dropped torpedoes, guidance wire used with submarine-launched torpedoes, and ballast weights are expended. Explosive filled torpedoes expend torpedo fragments.
- **Projectiles and Bombs:** Non-explosive projectiles, non-explosive bombs, or fragments from explosive projectiles and bombs are expended during training and testing exercises. These items are primarily constructed of lead (most small-caliber projectiles) or steel (medium- and large-caliber projectiles and all bombs).
- **Blank Ammunition:** Blank ammunition is used in some training activities when the sound or flash of gunfire adds to the realism of the training activity, but safety of personnel or nearby civilians is critical. Blank ammunition contains gunpowder, but no projectile is sent downrange upon firing the weapon. Casings are expended as a result of firing blank ammunition.
- **Missiles, Rockets, and Loitering Munitions:** Non-explosive missiles and missile fragments from explosive missiles are expended during training and testing events. Propellant, and any explosive material involved, is consumed during firing/detonation. Some missiles include a wire, which is also expended. Rockets are similar to missiles and both non-explosive and fragments may be expended.
- **Countermeasures:** Countermeasures (acoustic, chaff, flares, biodegradable polymer) are expended as a result of training exercises, with the exception of towed acoustic countermeasures. Chaff activities also include an expended canister, end caps, and pistons. Flares expend only end caps and pistons.
- **Targets:** Some targets are designed to be expended; other targets, such as aerial drones and remote-controlled boats, are recovered for re-use. Targets struck with ordnance will result in target fragments.

H.2 Study Area Description

The HCTT EIS/OEIS Study Area (Study Area) consists primarily of the Hawaii Study Area, the California Study Area, and the Transit Corridor connecting the two (Figure H-30). When compared to the Study Area analyzed in the 2018 Hawaii-Southern California Training and Testing EIS/OEIS (Phase III), the geographic boundary of the Hawaii Study Area is unchanged, but the California Study Area has been expanded.

H.2.1 The Hawaii Study Area

The Hawaii Study Area shown in Figure H-31 is comprised of the Hawaii Range Complex and the Temporary Operating Area (TOA).

H.2.1.1 The Hawaii Range Complex

Nearly all the training and testing activities in the Hawaii Study Area take place within the Hawaii Range Complex (Figure H-32), the area that immediately surrounds the island chain from Hawaii to Kauai (Figure H-33 through Figure H-35). The Hawaii Range Complex consists of 115,000 square nautical miles (NM^2) of special use airspace (Table H-1) and 235,000 NM^2 of sea and undersea space, including 1,100 NM^2 of instrumented underwater ranges at the PMRF. Within the Hawaii Range Complex are areas where specific training and testing activities occur, generally centered around the islands of Kauai, Oahu, and Maui.

H.2.1.1.1 Pacific Missile Range Facility Training and Testing Areas

See Table H-2 and Figure H-33 for descriptions of training and testing areas around Kauai.

H.2.1.1.2 Training and Testing Areas Around Oahu

See Table H-3 and Figure H-34 for descriptions of training and testing areas around Oahu.

H.2.1.1.3 Training and Testing Areas Around Maui

See Figure H-35 for descriptions of training and testing areas around Maui.

H.2.1.2 The Temporary Operating Area

The TOA, extending north and west from the island of Kauai and comprising over 2 million NM^2 of air and sea space, is used for Research, Development, Test & Evaluation activities such as missile testing by PMRF. For safety purposes, PMRF requests use of the airspace within the TOA from the Federal Aviation Administration (FAA) during times of missile defense testing. During testing, PMRF will control the airspace and the FAA will temporarily restrict an area of airspace within the TOA (typically not the entire area) until testing is complete. Due to the range and speed of weapons and missiles, this large area is required to ensure a safety area in which debris or expended materials could fall with minimal risk of damage or injury to humans. Training in the TOA can include live missile firing associated with ballistic missile defense exercises, and during vessel transits.

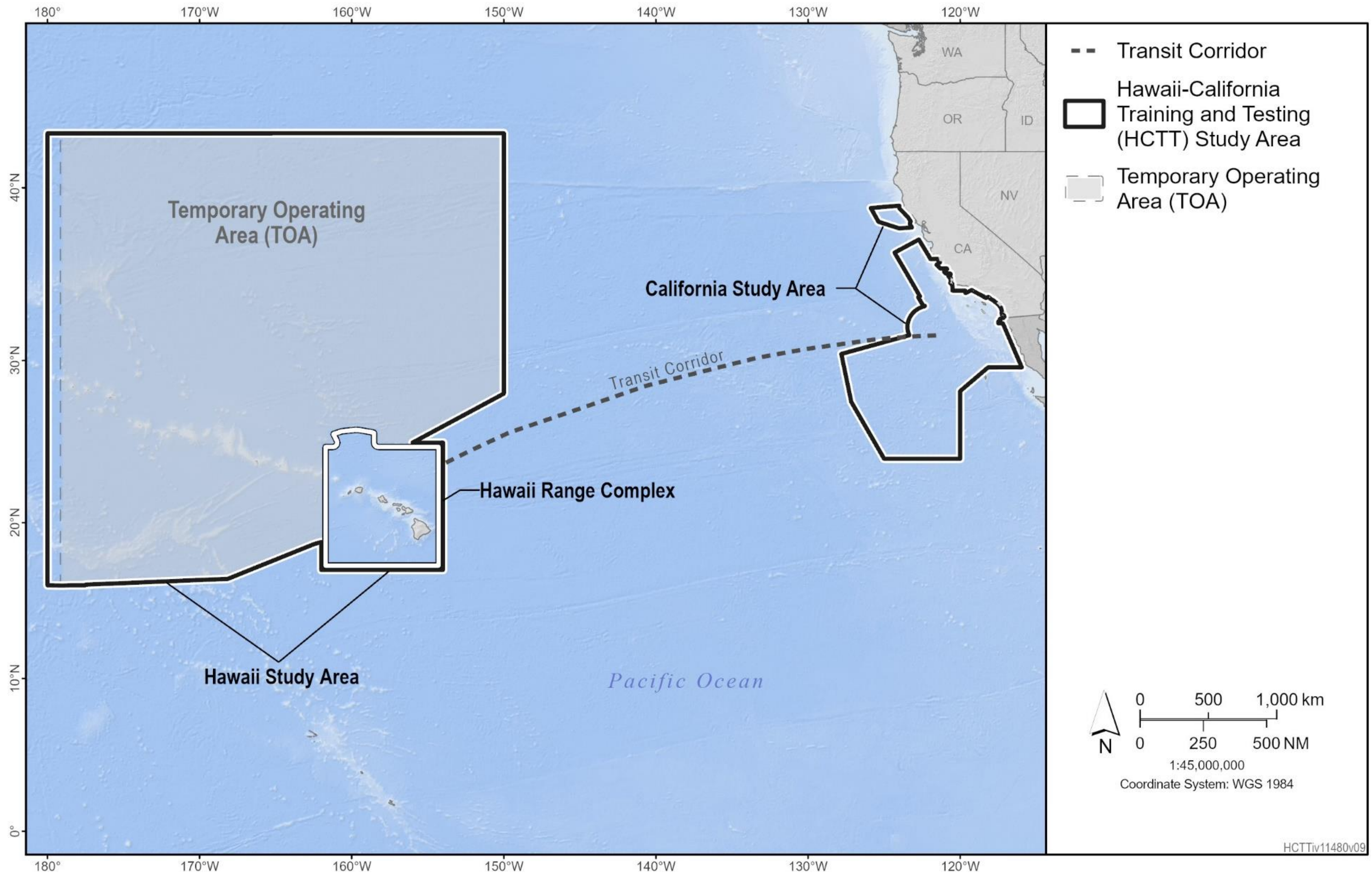


Figure H-30: The Hawaii-California Training and Testing Study Area

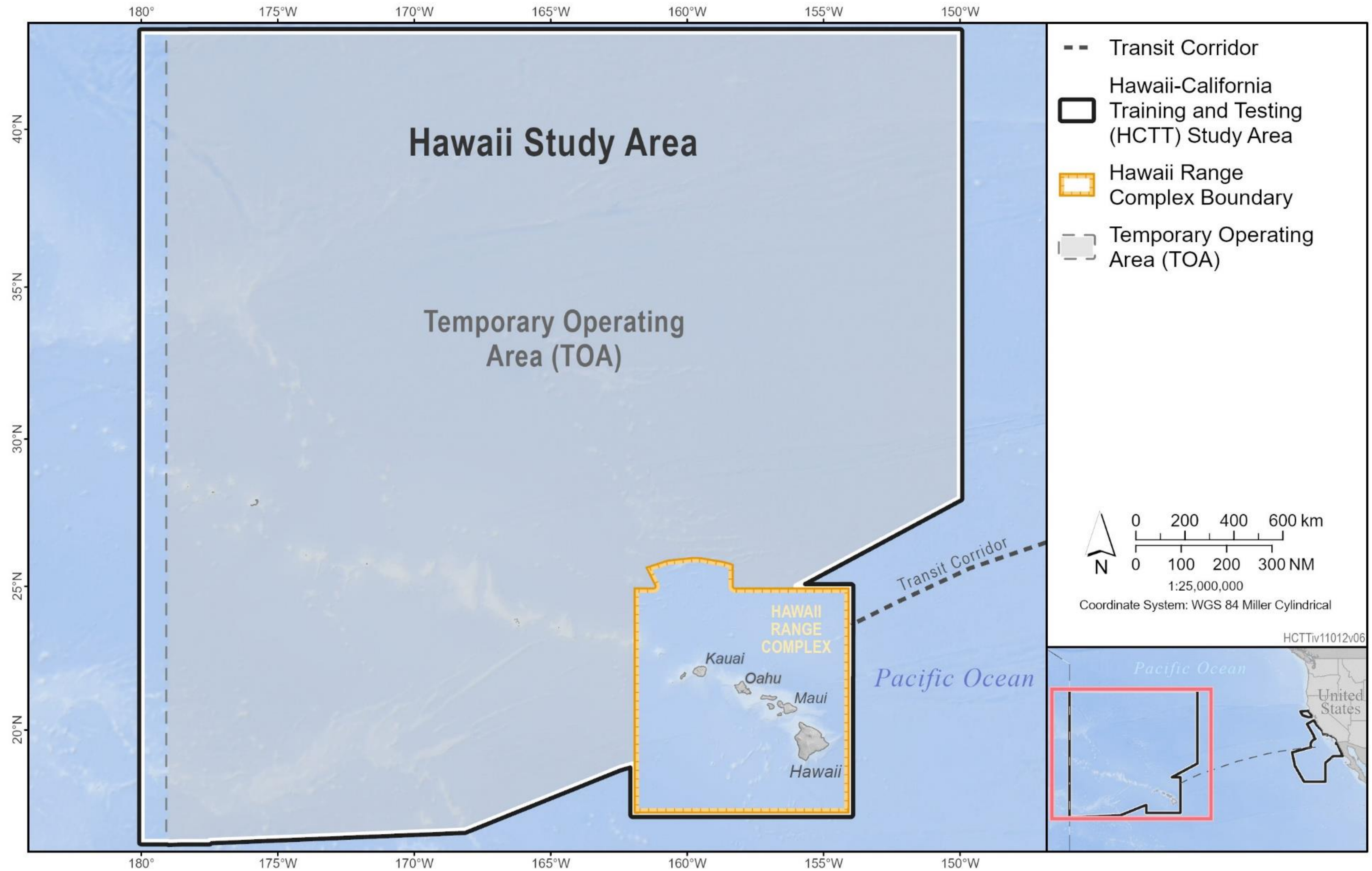


Figure H-31: The Hawaii Study Area

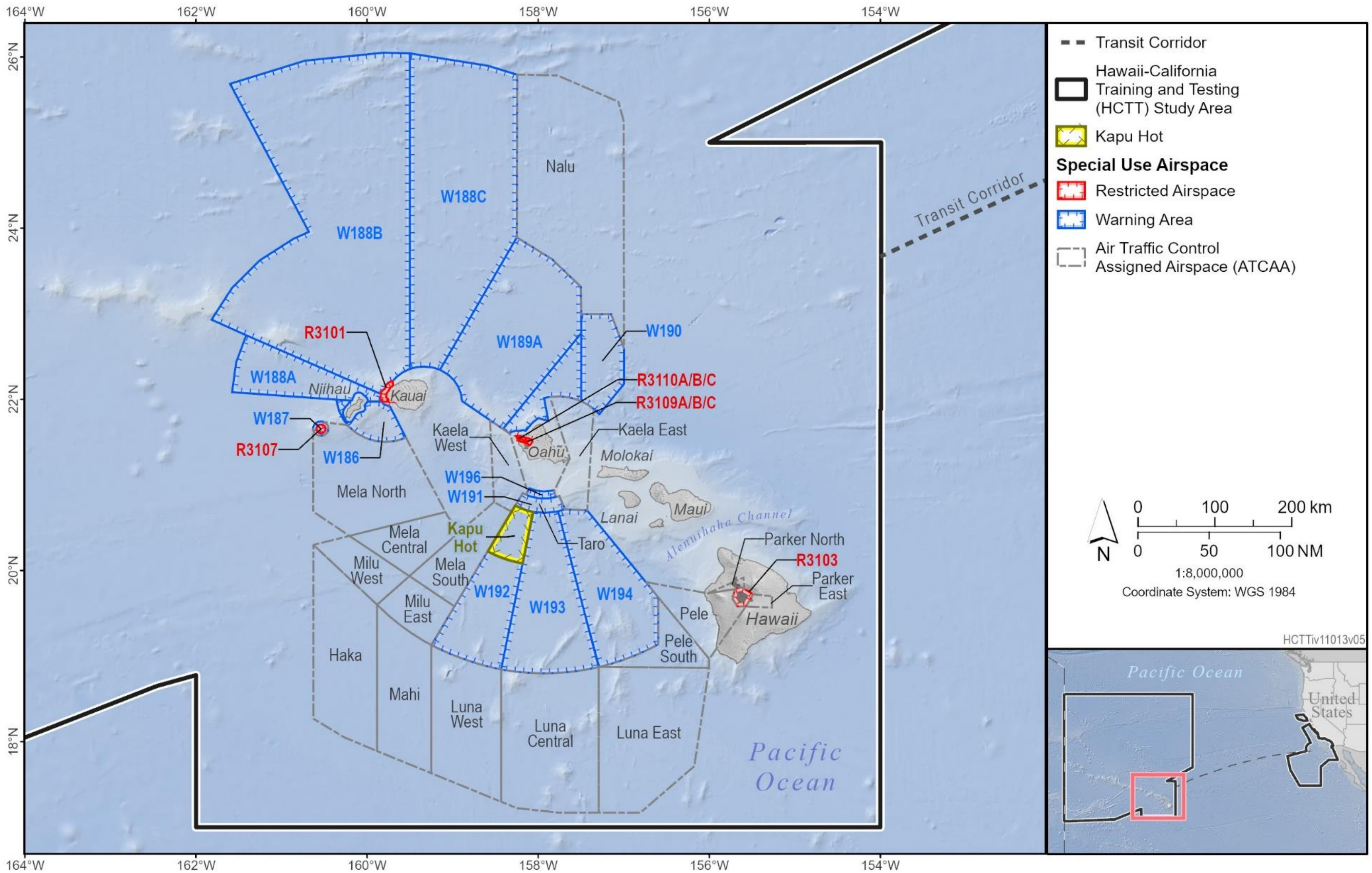


Figure H-32: Hawaii Range Complex

Table H-1: Hawaii Range Complex Airspace Descriptions

Area Name	Area Description
Northern Warning Areas	
W-188 Rainbow, W-189, W-190	The Northern Warning Areas lie north of Oahu. These areas are available from the surface to an unlimited altitude and are used for surface and air operations.
Southern Warning Areas	
W-192, W-193, W-194	The Southern Warning Areas are located south of Oahu. Available from the surface to an unlimited altitude and are used for surface and air operations.
W-191	W-191, located directly south of Oahu, is available from the surface to 3,000 feet (ft.) for air and surface operations.
W-196	W-196 is used only for surface and helicopter operations. The airspace extends from the surface to 2,000 ft. and is not available to fixed-wing aircraft.
Kapu Hot	Kapu Hot, located within W-192, is the primary live-fire range in the Hawaii Range Complex. Kapu Hot has a standing Local Notice to Mariners for the conduct of live-fire operations.
Air Traffic Control Assigned Airspace (ATCAA)	
Nene	Nene is the only ATCAA associated with the Northern Warning Areas. It is typically activated for use during Hawaii Air National Guard intercept training.
Pali	Pali is a roughly 40-nautical-mile (NM) circular area over Oahu, from 25,000 ft. to an unlimited altitude, although it is normally not available below 28,000 ft. Pali is used by high-altitude aircraft transiting between the Northern and Southern Warning Areas.
Taro	Taro overlies W-191, sharing the same borders and, when available, extending its airspace from 3,000 ft. to 16,000 ft. This airspace allows aircraft to remain in controlled airspace while testing above W-191's 3000-ft. ceiling.
Quint	Quint is located 45 nm southwest of Honolulu, with available airspace from flight level (FL) 250 to an unlimited altitude, although it is usually not available below FL 280.
Mela North, Mela Central, Mela South	The Mela ATCAAs connect the western border of W-192 with the southern border of W-186 (Pacific Missile Range Facility [PMRF]). They are available from the floor of controlled airspace (1,200 ft) to an unlimited altitude, except for Mela North, which has a ceiling of 15,000 ft.
Pele and Pele South	Pele provides a transit corridor from W-194 and Lono East into R-3103 airspace over Pohakuloa Training Area on Hawaii. When activated, Pele extends from 16,000 ft. to FL 290.
Milu (East & West), Haka, Mahi, Luna (West, Central, & East)	These ATCAAs are used along with the southern special use airspace (SUA) for air and surface operations. When activated, each area extends from 5,500 ft. to unlimited.
Nalu	Nalu is used along with the northern SUA for air and surface operations. When activated, the airspace extends from 5,500 ft. to FL 290.

Area Name	Area Description
Kaela (West & East)	Situated to the west and east of Oahu, these ATCAAs are used only during Rim of the Pacific exercises to facilitate movement between the North and South sections of the Hawaii Range Complex. When activated, the airspace extends from FL 250 to FL 290.
Kaula	
R-3107, W-187	Kaula is a 0.5 NM by 0.7 NM island surrounded by a 3 NM radius restricted area (R-3107), and a 5 NM radius warning area (W-187). Both R-3107 and W-187 extend from surface to 18,000 ft.

Table H-2: PMRF Training and Testing Area Descriptions

Area Name	Area Description
Barking Sands Tactical Underwater Range (BARSTUR)	BARSTUR is an instrumented underwater range that provides approximately 120 square nautical miles (NM^2) of underwater tracking of participants and targets.
Barking Sands Underwater Range Expansion (BSURE)	BSURE extends BARSTUR to the north, providing an additional 900 NM^2 of underwater tracking capability.
W-186, W-188	W-186 is warning airspace that extends from surface to 9,000 feet, and W-188 extends from surface to unlimited.
R-3101	R-3101 is restricted airspace that extends from surface to unlimited and provides necessary airspace to support training and Research, Development, Test, and Evaluation operations at Pacific Missile Range Facility.
Kingfisher Training Minefield	Kingfisher Training Minefield has historically provided training to surface warfare units in mine detection and avoidance. The range consisted of mine-like shapes moored to the ocean bottom by cables, but there are currently no permanent shapes in place. Placement of temporary mine training shapes would occur if this capability becomes needed.
Waiapuaa Beach	Waiapuaa Beach provides nearshore underwater space for mine detection training using divers, unmanned underwater vehicles (UUVs), remotely operated vehicles (ROVs), Airborne Laser Mine Detection Systems (ALMDS), Airborne Mine Neutralization System (AMNS) (non-explosive only). Airspace is laser certified. No permanent shapes are installed in this area.
PMRF Training Area	The PMRF Training Area provides nearshore underwater space for mine detection training using divers, UUVs, ROVs, ALMDS, AMNS (non-explosive only). No permanent shapes are installed in this area.

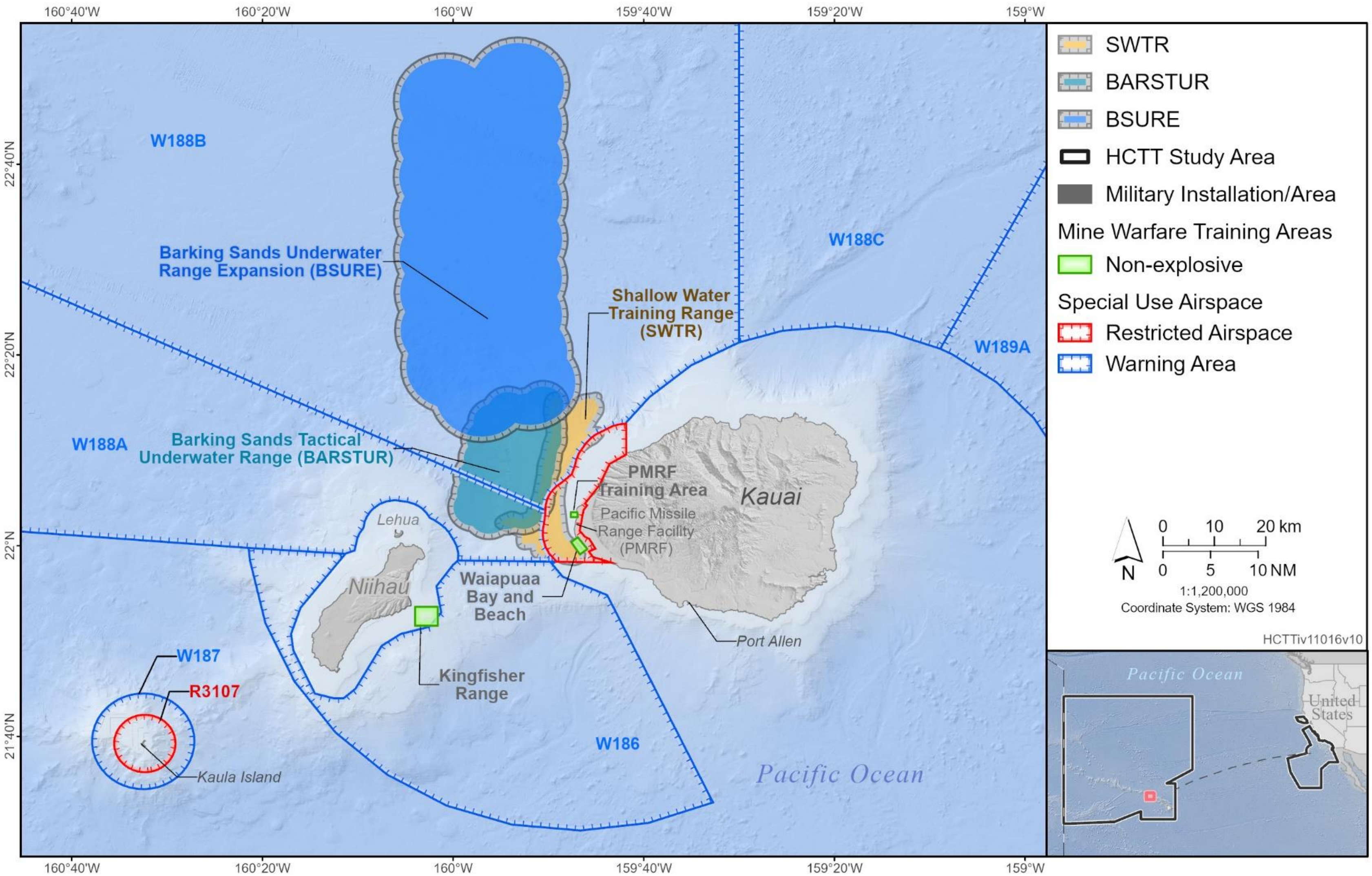


Figure H-33: Training and Testing Areas Around Kauai

Table H-3: Training and Testing Area Descriptions Around Oahu

Area Name	Area Description
Barbers Point Harbor to Lighthouse Training Area	The Barbers Point Harbor to Lighthouse Training Area provides nearshore underwater space for mine detection training and Civilian Port Defense training which includes the use of unmanned underwater vehicles (UUVs), remotely operated vehicles (ROVs), Airborne Mine Neutralization System (AMNS) and divers. No permanent shapes would be installed.
Barbers Point Underwater Range	The Barbers Point Underwater Range provides nearshore water space for mine neutralization training and underwater mine countermeasure raise, tow, beach, and exploitation.
Bellows Beach	Bellows Beach provides an amphibious landing site and nearshore water space for mine detection training using UUVs and ROVs, including airborne mine countermeasure training.
Ewa Training Minefield	The Ewa Training Minefield is an ocean area extending from Ewa Beach approximately 2 nautical miles (NM) toward Barbers Point, and out to sea approximately 4 NM. The area supports mine neutralization training, which includes UUV, ROV, divers, AMNS (explosive), and underwater mine countermeasure raise, tow, beach, and exploitation. No permanent shapes are installed in this area.
Fleet Operational Readiness Accuracy Check Site (FORACS)	The FORACS range is an approximately 5 NM by 5 NM ocean area just offshore of the southwestern coast of Oahu, near Nanakuli, and includes the Surface Ship Radiated Noise Measurement System. The electronic equipment at this site provides sensor accuracy checks and calibrations for sonar, radar, navigation, electronic counter measures, and other ship systems.
Kaneohe Bay	Training mines could be placed in Kaneohe Bay, providing mine detection training which includes the use of divers, UUVs, and ROVs. Includes civilian port defense, transit through Kaneohe Bay, and underwater mine countermeasure raise, tow, beach, and exploitation training.
Lima Landing	Explosive Ordnance Disposal divers conduct in-water explosives and demolition training at Lima Landing.
Marine Corps Base Hawaii	Small-scale amphibious training is conducted along the coastal areas of the base.
Marine Corps Training Area Bellows (MCTAB)	Amphibious training is conducted at MCTAB.
Naval Defense Sea Area	Located outside the mouth of Pearl Harbor, the Naval Defense Sea Area provides a shallow-water ocean area clear from non-military vessel traffic. Temporary mine shapes could be placed for training involving divers, UUVs, and ROVs conducting civilian port defense and underwater mine countermeasure raise, tow, beach, and exploitation training.
Pearl Harbor Naval Shipyard	Located within Pearl Harbor, where some activities like pierside sonar testing can occur.
Pearl Peninsula	Navy personnel conduct training involving small explosive charges at Victor pier on the south end of Pearl Peninsula, inside Pearl Harbor.

Area Name	Area Description
Puuloa Underwater Range	The Puuloa Underwater Range is a 1-square nautical mile area in the open ocean outside and to the west of the entrance to Pearl Harbor. Explosives training for divers, UUVs, and ROVs occurs here, with explosive charges up to 20 pounds net explosive weight. Could include underwater mine countermeasure raise, tow, beach, and exploitation training.
Shipboard Electronic Systems Evaluation Facility (SESEF)	The SESEF range, located off Barbers Point on Oahu, provides state-of-the-art test and evaluation of combat systems that radiate or receive electromagnetic energy. Ships operate and maneuver in this area as necessary to remain within electronic signal reception range of an associated shore facility.
Wave Energy Test Site (WETS)	At WETS, the Navy tests marine energy devices such as wave energy converters and conducts environmental monitoring of systems under test. The area has been expanded to test distribution of power to allow for autonomous system charging and testing.

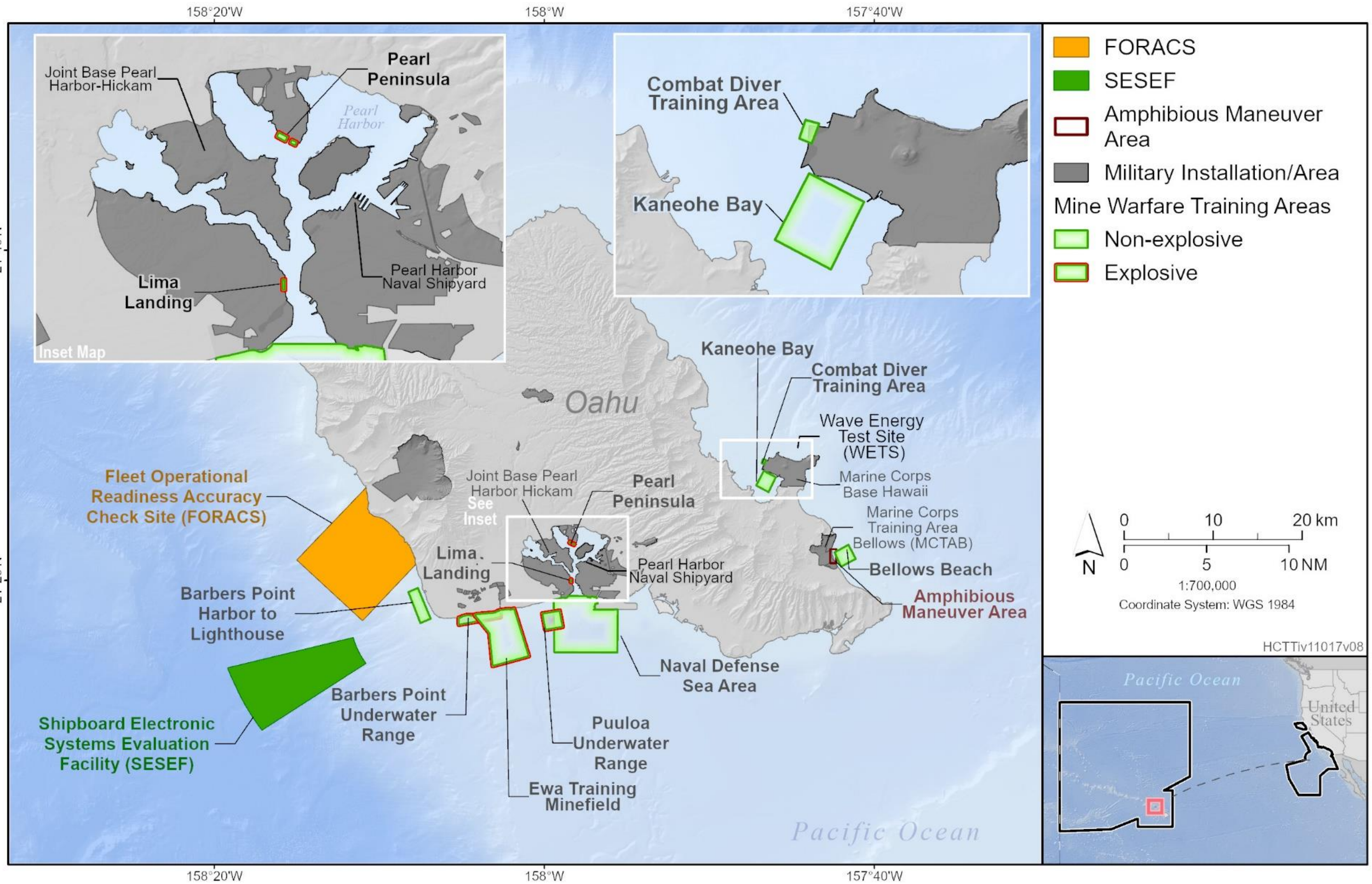


Figure H-34: Training and Testing Areas Around Oahu

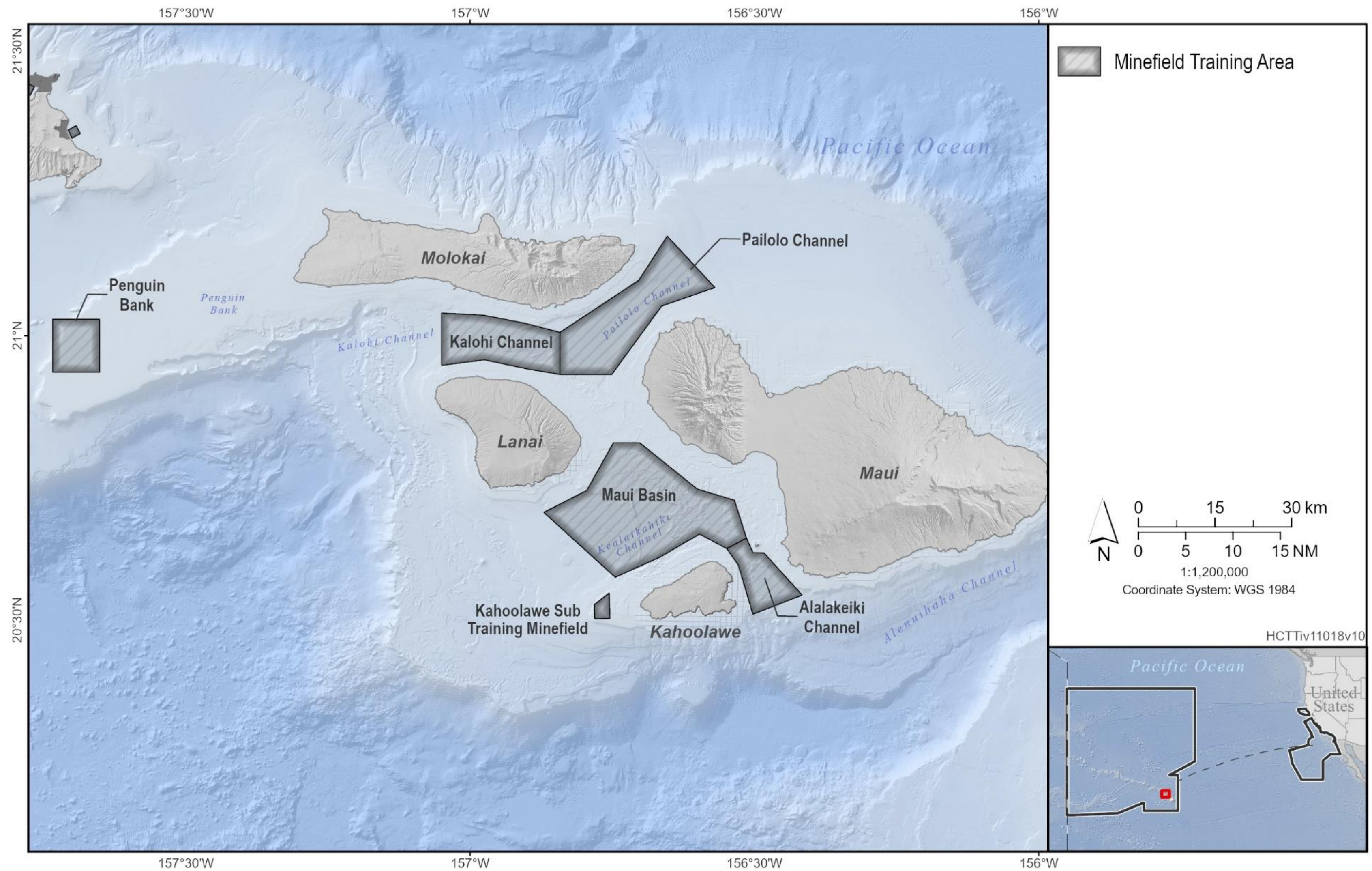


Figure H-35: Training and Testing Areas Around Maui

H.2.2 THE CALIFORNIA STUDY AREA

The California portion of the Study Area, referred to as the California Study Area (Figure H-36), is comprised of the Southern California (SOCAL) Range Complex, the Silver Strand Training Complex (SSTC), the Point Mugu Sea Range (PMSR), and the Northern California (NOCAL) Range Complex.

H.2.2.1 The Southern California Range Complex

The two primary components of the SOCAL Range Complex (Table H-4 and Figure H-37) are the ocean Operating Areas and the special use airspace. The airspace in the SOCAL Range Complex was originally developed to support a previous generation of aircraft, weapons and tactics. Today, the SOCAL Range Complex is still used as the tactical cornerstone for training and certifying all deploying Strike Groups in the Pacific. However, due to current airspace configuration constraints, the air and sea space no longer meets naval aviation training requirements conducted off the coast of Southern California. In addition, test parameters of a specific proposed testing activity require an area southwest of PMSR and north of the current SOCAL Range Complex boundary. Therefore, the Navy is proposing to expand the Study Area of the SOCAL Range Complex as depicted in Figure H-38. With the new extensions the proposed Study Area would encompass 217,000 NM^2 of sea space and 210,000 NM^2 of special use airspace. In addition, sea space in northwestern portion of the extension has been designated to facilitate testing activities by the Office of Naval Research (ONR). Testing activities conducted by ONR are described in Appendix A (Activity Descriptions). The various air and sea ranges associated with SCI are shown in Table H-5 and Figure H-39. The SOCAL Range Complex includes instrumented underwater training ranges, mine training ranges, laser training ranges, and access to the seaside of Naval Base Point Loma. The Study Area also extends to the pierside locations at Naval Base Point Loma and Naval Base San Diego.

The SOCAL Range Complex includes the SCI Range Complex, an integrated set of training areas and ranges located on and adjacent to SCI.

H.2.2.2 The Silver Strand Training Complex

The SSTC is an integrated set of training areas (Table H-6) located on and adjacent to the Silver Strand, a narrow, sandy isthmus separating the San Diego Bay from the Pacific Ocean. It is divided into two non-contiguous areas: SSTC-North and SSTC-South (Figure H-40). Training activities occur on the seaside of the Silver Strand and in San Diego Bay (bayside).

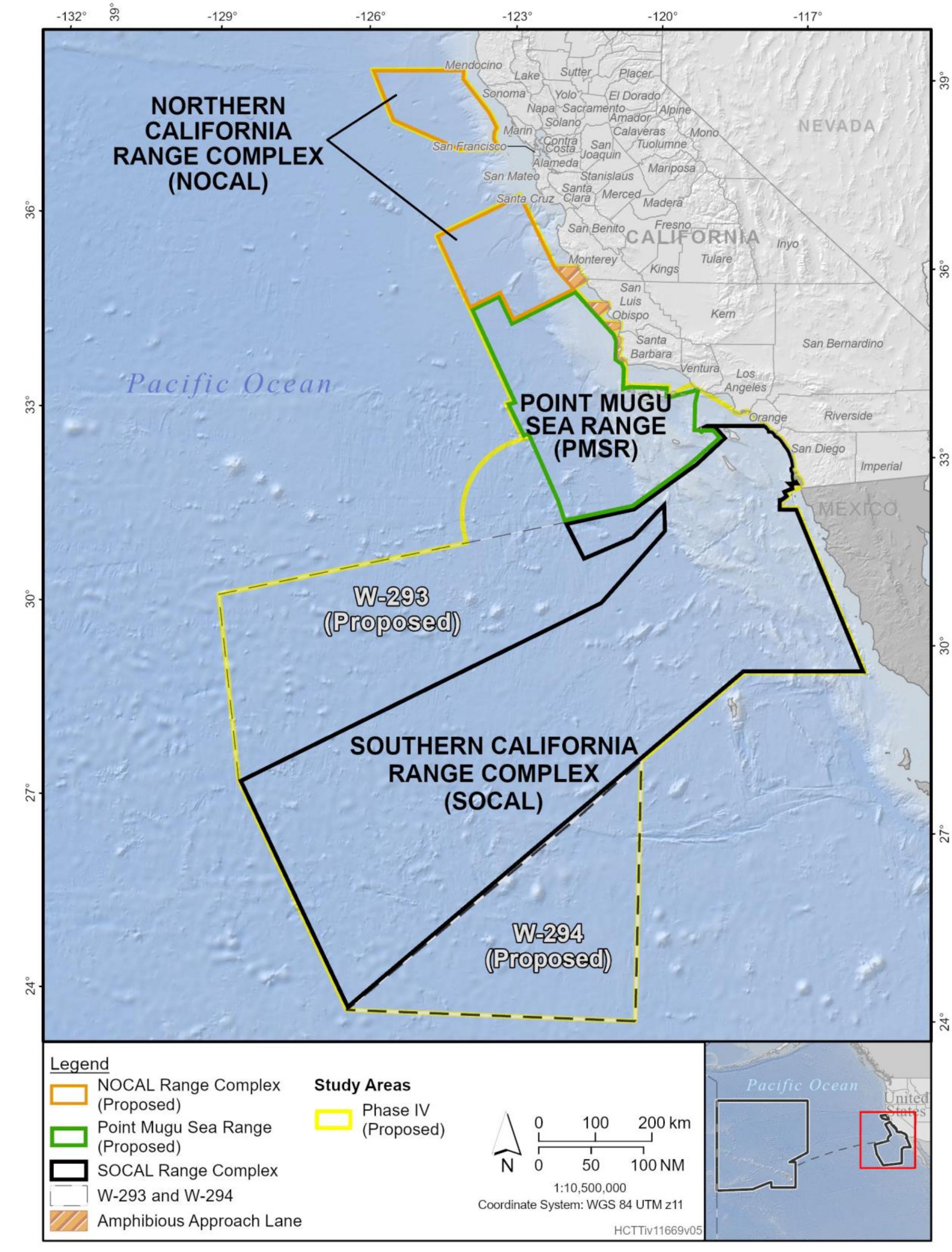


Figure H-36: The California Study Area

Table H-4: Southern California Range Complex Area Descriptions

Area Name	Area Description
Advanced Research Projects Agency (ARPA) Training Minefield	Located west of the La Jolla area of San Diego within the ENETA, the ARPA Training Minefield extends from the ocean bottom to the surface. Mine detection and avoidance exercises are conducted. Ordnance use is not permitted.
Airborne Mine Countermeasure (AMCM) Training Range	The AMCM Training Range, located off the coast of Imperial Beach, CA, is used for mine countermeasure training and aerial minesweeping. Underwater explosives up to 3.5 pounds net explosive weight may be authorized.
Camp Pendleton Amphibious Assault Area (CPAAA)	CPAAA is an open ocean area located approximately 40 nautical miles northwest of Naval Base Coronado (NBC), used for amphibious operations (Figure H-37). Ordnance use is not permitted.
Camp Pendleton Amphibious Vehicle Training Area (CPAVA)	CPAVA is an ocean area adjacent to the shoreline of Camp Pendleton used for amphibious operations and associated training.
Encinitas Electronic Training Area (ENETA)	The ENETA extends from the ocean bottom up to 700 feet (ft.) mean sea level (MSL) (Figure H-37). Exercises conducted include Fleet training and testing. Ordnance use is not permitted.
Fleet Training Area (FLETA) HOT	FLETA HOT is an open ocean area that extends from the ocean bottom to 80,000 ft. (Figure H-37). The area is used for hazardous operations, primarily surface-to-surface, surface-to-air, and air-to-air ordnance. Types of exercises conducted include Anti-Air Warfare, anti-submarine warfare (ASW), Naval Special Warfare, underway training, and Independent Steaming Exercises in which ships conduct onboard training, separate from other units. Ordnance use is permitted.
Helicopter Offshore Training Area (HCOTA)	Located in the ocean area off San Diego, the Helicopter Offshore Training Area is divided into "dipping areas" and extends from the surface to 700 ft. MSL. This area is designed for search and rescue and ASW training for helicopters with dipping sonar. Ordnance use is not permitted.
Imperial Beach Mine Training Range	The Imperial Beach Minefield is a concurrent use mine training range located off the coast of Imperial Beach, CA. It extends from the seafloor to the surface and is primarily used for mine detection, identification, and neutralization of bottom and tethered mine shapes.
Navy Test Area	Located offshore near Naval Base Point Loma, the Navy Test Area is a nearshore area used for in-water testing.
Ocean Beach Mine Training Area	Located approximately four miles west of the Ocean Beach and Point Loma area of San Diego, the Ocean Beach Mine Training Area is utilized for shallow water mine detection training and testing.
Shallow Water Training Ranges (SWTRs)	Tanner Bank SWTR and San Clemente Island SWTR are planned training ranges that will be instrumented with underwater hydrophones. This range would be used to evaluate the performance of aircraft, ships, and submarines conducting ASW training.
Tanner Bank Minefield	Located in the Tanner and Cortes Banks areas, the Tanner Bank Minefield is utilized for shallow water mine detection training and testing. Mine warfare training in this area has expanded beyond the boundaries depicted in Figure H-37, but remains contained within the proposed Tanner Bank SWTR.
Transit Lane	W-291 includes seven transit lanes that extend from the surface to 80,000 ft. MSL and provides Beaver a 5 nautical mile-wide corridor to transit users to and from the Operating Areas in the southern portion of the SOCAL Range Complex.
Warning Area (W-291)	W-291 encompasses 113,000 square nautical miles located off of the Southern California coastline, extending from the ocean surface to 80,000 ft. above MSL. W-291 supports aviation training and Research, Development, Test, and Evaluation conducted by all aircraft in the Navy and Marine Corps inventories. Ordnance use is permitted.

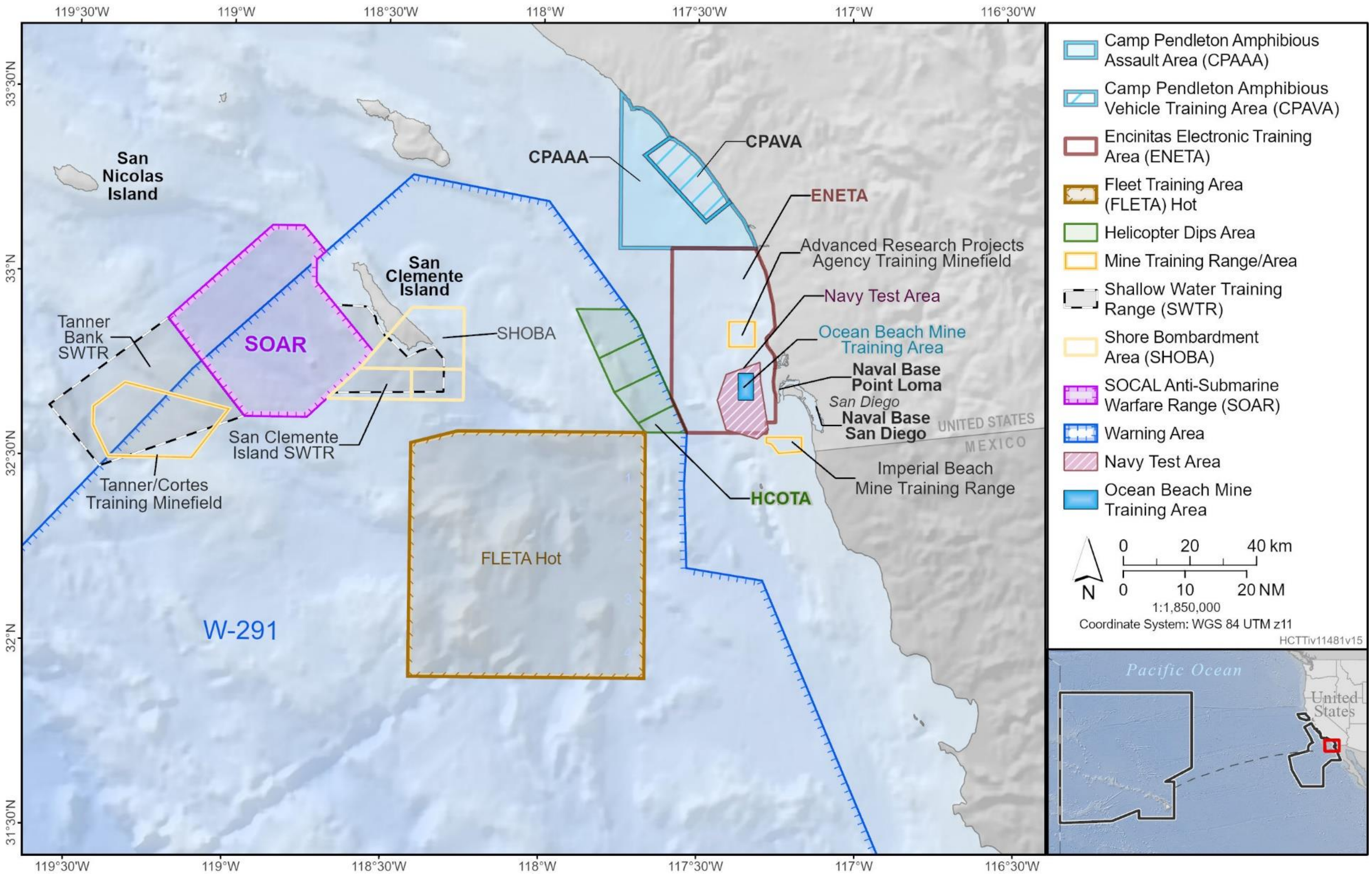


Figure H-37: Southern California Range Complex

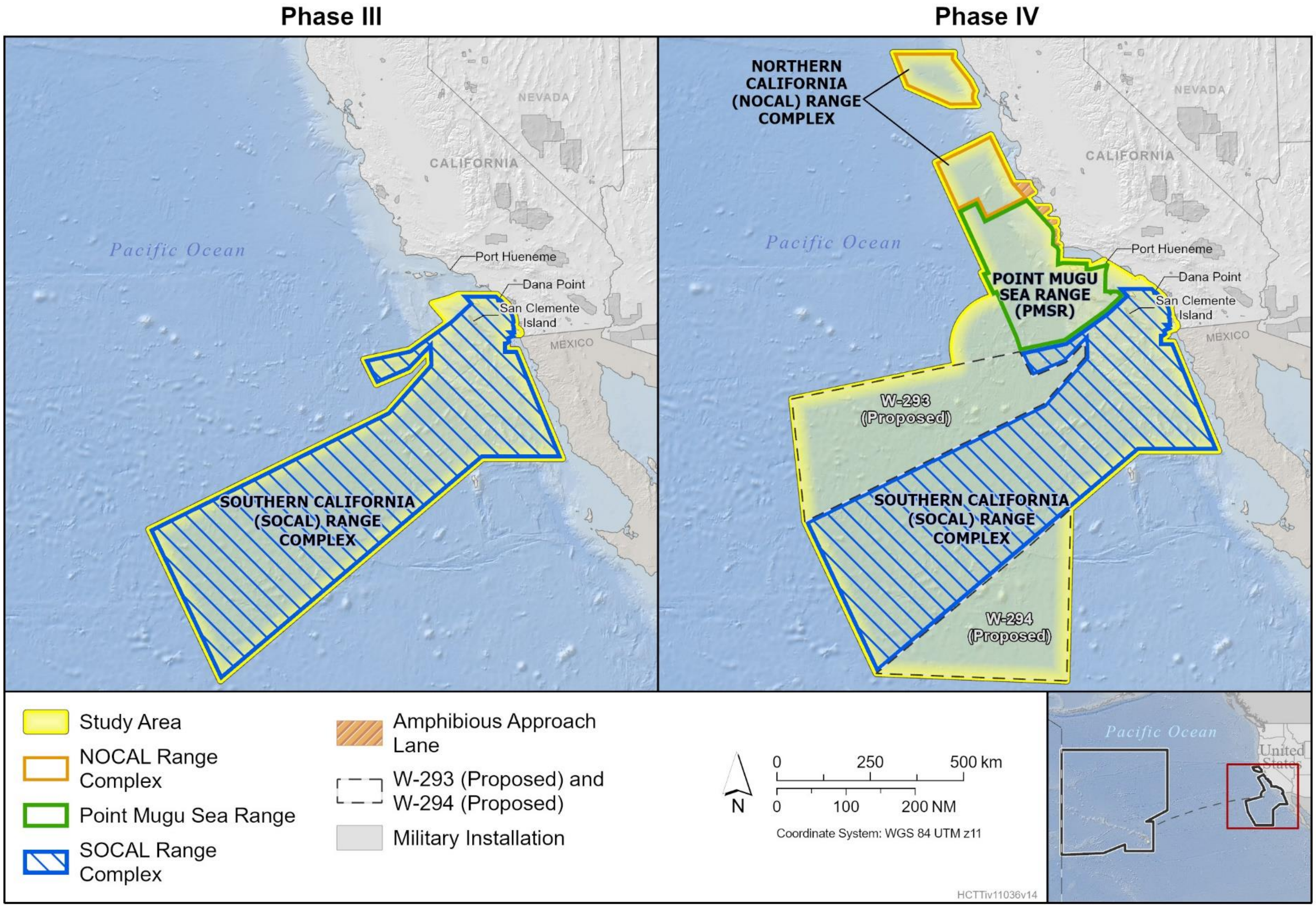


Figure H-38: Proposed Southern California Range Complex Expansion

Table H-5: San Clemente Island Offshore Training and Testing Area Descriptions

Area Name	Area Description
Mine Training Range (MTR)	Two MTRs and two mine laying areas are established in the nearshore areas of San Clemente Island (SCI). MTR-1 is the Castle Rock Mining Range off the northwestern coast of the island. MTR-2 is the Eel Point Mining Range off the midpoint of the southwestern side. These ranges are used for training of aircrews in offensive mine laying by delivery of inert mine shapes (no explosives) from aircraft. Underwater detonations up to 300 pounds (lb.) net explosive weight (NEW) are authorized.
Pyramid Cove Mine Training Range	This mine training range is located south of SCI and is used primarily for mine countermeasures training, mine detection, and neutralization of bottom and moored mine shapes. It includes a semi-permanent target minefield primarily for mine detection training using ALMDS. This range also includes the former China Point Mining Range, off the southwestern point of the island, and the Pyramid Head Mining Range, off the island's southeastern tip, to support training of aircrews in offensive aerial mine laying by delivery of live and inert mine shapes.
Shallow Water Training Ranges (SWTRs)	The SWTR is a range that currently supports anti-submarine warfare (ASW), mine warfare, and surface warfare (SUW) training. The Tanner Bank SWTR SCI SWTR are planned areas within the current SWTR and nearshore SCI where future underwater hydrophone instrumentation will be installed to support the evaluation of aircraft, ship, and submarine performance during ASW training.
Shore Bombardment Area (SHOBA) Impact Areas	SHOBA is the only eastern Pacific Fleet range that supports naval surface fire support training using on-the-ground spotters and surveyed targets. The southern one-third of SCI contains Impact Areas I and II, which comprise the onshore portion of SHOBA. (The offshore component provides designated locations [fire support areas] for firing ships to maneuver.) The main training activities that occur in SHOBA are naval gun firing, artillery, air-to-ground strikes (bombs, missiles, rockets, and gunnery), and air-to-surface maritime strikes (missiles, rockets, and gunnery). A variety of munitions, both live and inert, are expended in SHOBA. Naval special warfare operations also occur in this area.
Southern California Anti-Submarine Warfare Range (SOAR)	SOAR is located offshore to the west of SCI. The underwater tracking range covers over 670 NM^2, and consists of seven subareas. The range has the capability of providing three-dimensional underwater tracking of submarines, practice weapons, and targets with a set of 84 acoustic sensors (hydrophones) located on the seafloor. Communication with submarines is possible through use of an underwater telephone capability. SOAR supports various ASW and SUW training scenarios that involve air, surface, and subsurface units.
Tanner/Cortes Training Minefield	Located in the Tanner and Cortes Banks areas, the Tanner/Cortes Training Minefield is utilized for shallow water mine detection training and testing.
Training Areas and Ranges (TARs)	TARs are littoral operating areas that support demolition, over-the-beach, and tactical ingress and egress training for NSW and amphibious units. TAR-2 and TAR-3 provide underwater demolition areas where explosives up to 500 lb. NEW may be used.
Warning Area (W-291)	W-291 encompasses 113,000 square nautical miles (NM^2) located off of the Southern California coastline, extending from the ocean surface to 80,000 feet above mean sea level. W-291 supports aviation training and Research, Development, Test and Evaluation conducted by all aircraft in the Navy and Marine Corps inventories. Ordnance use is permitted.

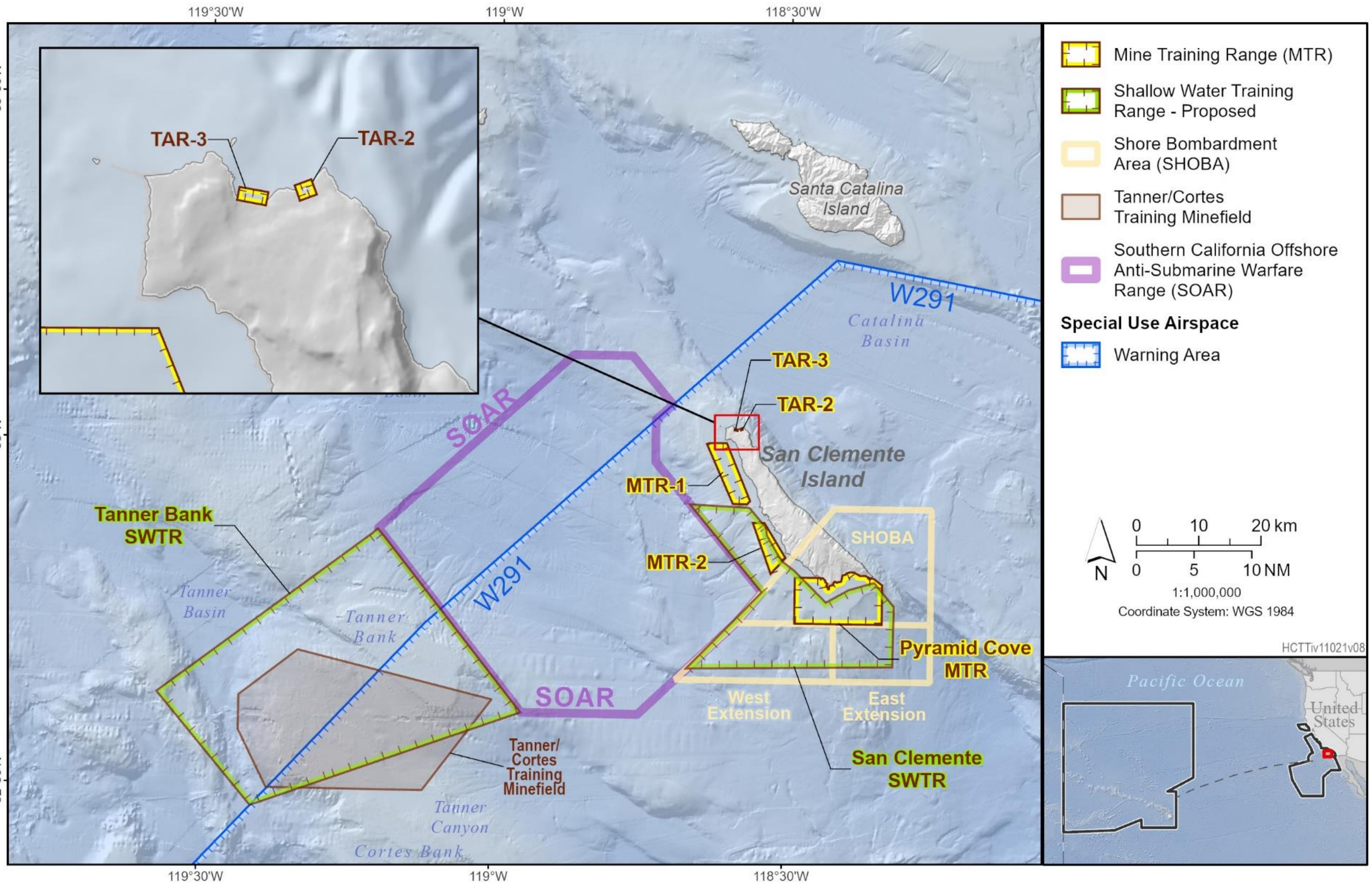
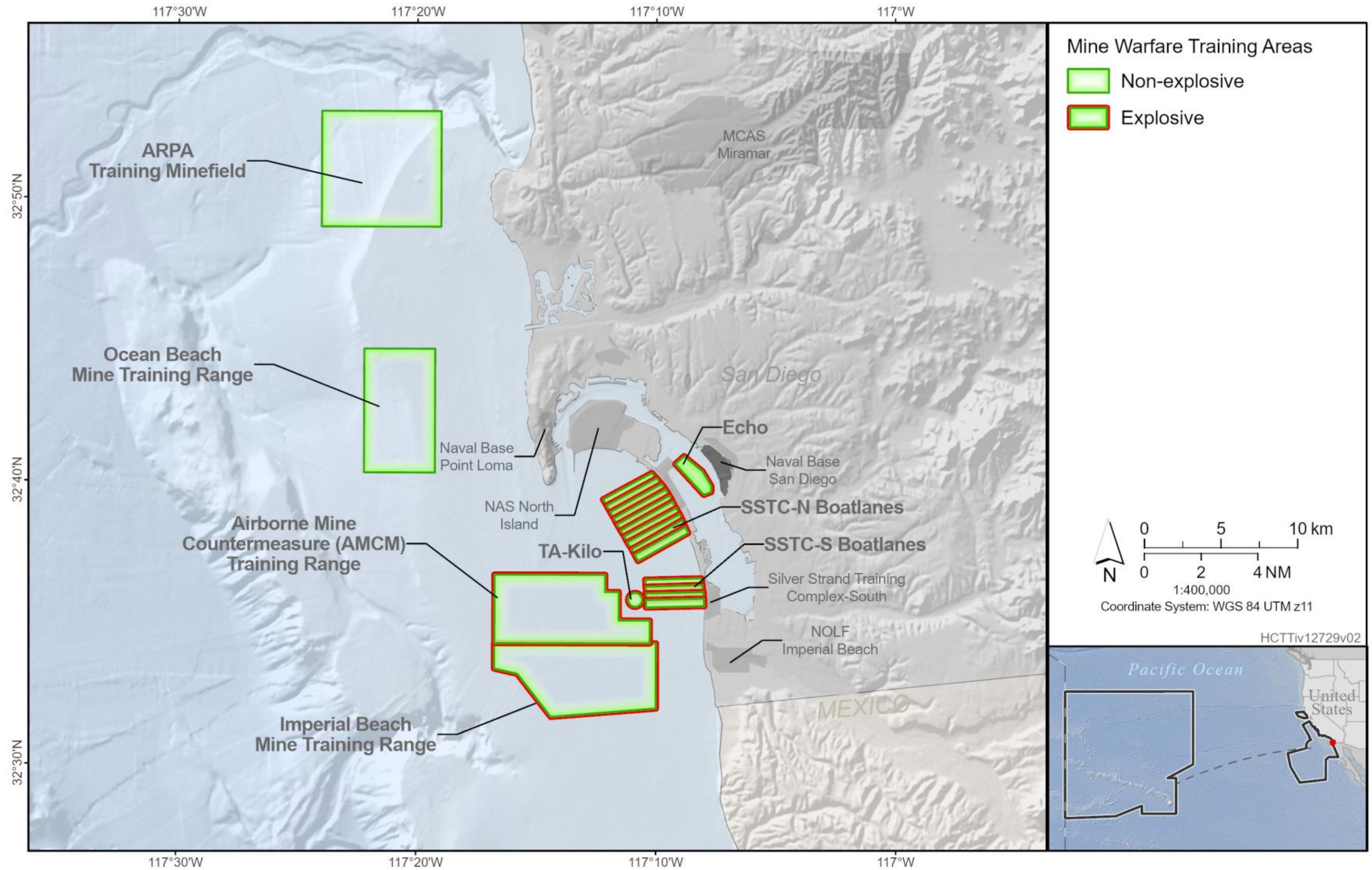


Figure H-39: San Clemente Island Offshore Training and Testing Areas

Table H-6: Silver Strand Training Complex Area Descriptions

Area Name	Area Description
Anchorages	Anchorages are numbered 101 through 178 and are 654 yards in diameter. They are grouped together in an area located primarily due west of Silver Strand Training Complex-North, east of Zuniga Jetty and the restricted areas on approach to the San Diego Bay entrance.
Bayside Training Areas	Bayside training beaches consist of Alpha, Bravo, and Charlie to the south, Delta, Echo (I-III), Foxtrot, Golf, and Hotel to the north. This area also includes the piers and Lilly Ann Drop Zone. Underwater explosives up to 0.5 pounds net explosive weight.
Lilly Ann Drop Zone	Within San Diego Bay, this area is used for a variety of Navy training, including insertion/extraction via parachute or helicopter.
Oceanside Boat Lanes	The 14 ocean training lanes are each 500 yards wide stretching 4,000 yards seaward and forming a 5,000-yard-long contiguous training area with the northern boat lanes and a 2,000-yard-long contiguous area with the southern boat lanes.
Training Area (TA) Kilo	TA Kilo is an exclusive use area for underwater detonation training. Inert bottom-laid, moored, or floating mine shapes can be used in this area.



Notes: TA = Training Area, NOLF = Naval Outlying Landing Field, NAS = Naval Air Station

Figure H-40: Nearshore In-Water Training Areas

H.2.2.3 Point Mugu Sea Range

PMSR is the Department of Defense's largest and most extensively instrumented over-water test range (Figure H-41). PMSR is located along the Pacific Coast of Central and Southern California and includes 27,000 NM^2 of air and sea space. The 27,000 NM^2 of PMSR-controlled airspace consists of 3 Restricted Areas and 11 Warning Areas. The Navy has been conducting testing and training activities on the PMSR since it was established in 1946. Testing activities are deemed necessary to accomplish Naval Air Systems Command's mission of providing for the safe and secure collection of decision-quality data; and developing, operating, managing, and sustaining the interoperability of the Major Range Test Facility Base at the PMSR into the foreseeable future.

During certain types of testing and under control of PMSR, the FAA will temporarily extend a restricted area of airspace westward beyond the defined PMSR boundaries until testing is complete. Due to the range and speed of weapons and missiles, this larger area is required to ensure a safety area in which debris or expended materials could impact outside of the PMSR with minimal risk of damage or injury to humans. PMSR supports training, testing, and evaluation of a wide variety of weapons, ships, aircraft, and specialized systems, as well as Department of Defense, Homeland Defense, foreign military sales, and commercial/private sector programs. The test range also includes portions of Naval Base Ventura County (NBVC) Point Mugu, NBVC Port Hueneme, and SNI. National Environmental Policy Act coverage of these land areas is included in the 2022 PMSR Final EIS/OEIS. In addition, sea space in the southwestern portion of PMSR has been designated to facilitate testing activities by ONR. Testing activities conducted by ONR are described in Appendix A (Activity Descriptions).

H.2.2.3.1 Naval Base Ventura County Port Hueneme

NBVC Port Hueneme is located 60 miles northwest of Los Angeles and 4 miles south of the city of Oxnard. NBVC Port Hueneme provides port and docking facilities for PMSR support ships, target surface craft, the Navy's Self Defense Test Ship, Fleet units, Naval Facilities Engineering & Expeditionary Warfare Center test vessels, and Naval Sea Systems Command unmanned surface and underwater vehicles using PMSR for testing and combat system qualification trials. NBVC Port Hueneme is also home to Naval Construction Group 1, the Seabees, who conduct important pre-deployment training in waterfront and in-water construction methods. The Study Area for this EIS/OEIS includes the port where support vessels and targets are located and transit to and from PMSR. Figure H-42 shows where within Port Hueneme Harbor the Navy would conduct pile driving activities as part of the Port Damage Repair activity.

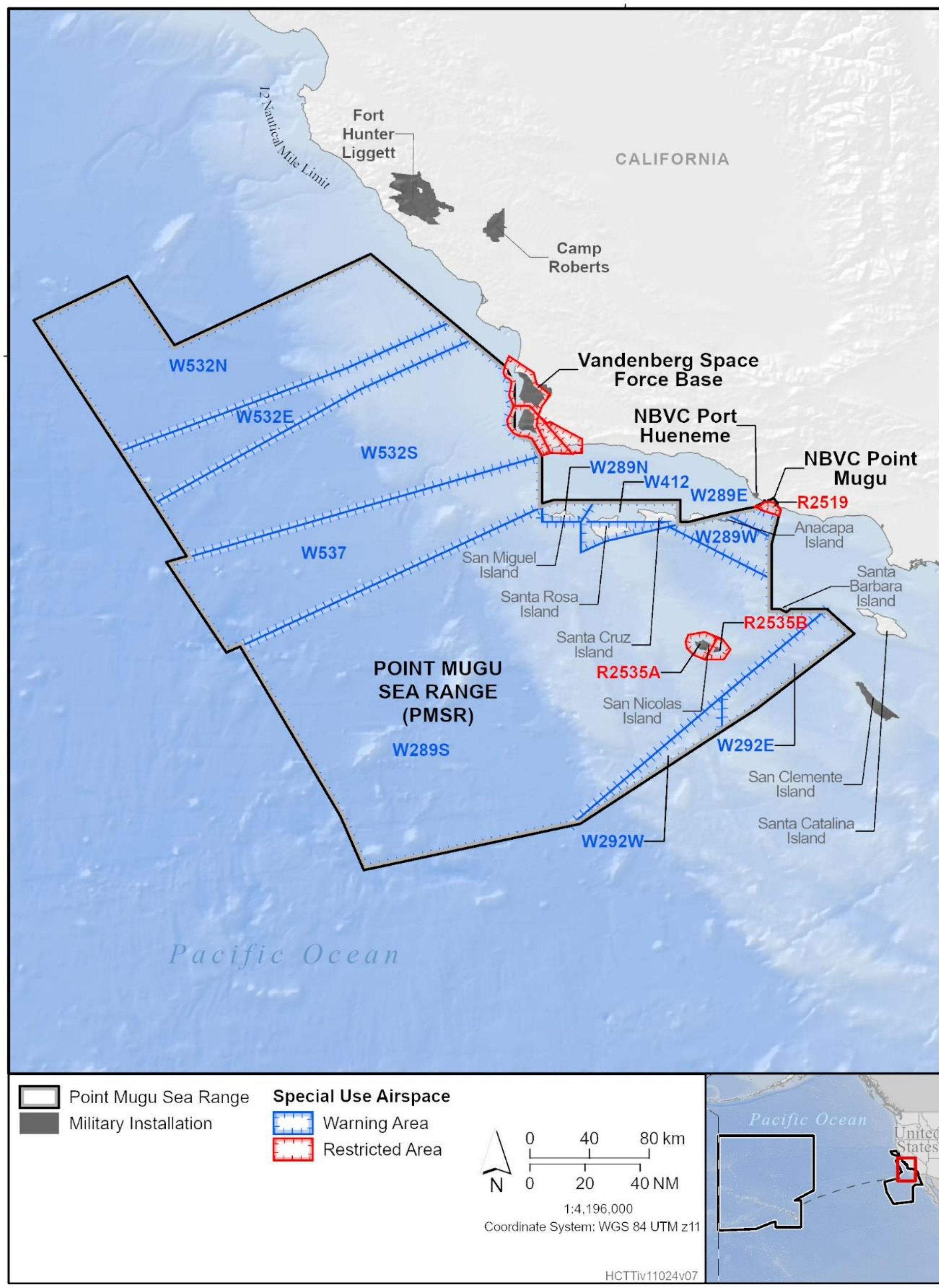
H.2.2.3.2 San Nicolas Island

SNI is Navy owned and located approximately 62 miles southwest of Point Mugu, California (Figure H-41). The island covers a total of 13,370 acres and is approximately 9 miles long and 3.6 miles wide. Restricted airspace and corresponding surface danger zones extend out to 3 NM offshore of SNI and preclude public and commercial aircraft and vessel entry into this area when active.

Due to its remote location, SNI can be used to simulate shipboard launches of missiles and serve as a target for a spectrum of inert weapons. The island is extensively instrumented with metric tracking radar, electro-optical devices, telemetry, and communications equipment necessary to support long-range and over-the-horizon weapons and combat systems testing. SNI provides test facilities that include buildings, launch areas, and the Land Impact Site, which is the only target area on the island.

The island also includes an airfield that supports day-to-day activities, as well as a pier structure for logistics barge landings. Activities occurring on land, including at the airfield and the pier (barge landings) are not part of the Proposed Action and are not analyzed in this EIS/OEIS. However, the effects of missiles, targets, or artillery projectiles fired from SNI in support of training and testing activities are analyzed in this EIS/OEIS due to the potential impact on pinnipeds hauled out on the coastline of SNI, in support of the Navy's request for an incidental take authorization pursuant to the Marine Mammal Protection Act for SNI launch activities. All other training and testing activities occurring from SNI are analyzed in the 2022 PMSR EIS/OEIS.

For additional description of the PMSR, see the 2022 PMSR EIS/OEIS.



Notes: NM = nautical miles, NBVC = Naval Base Ventura County

Figure H-41: The Point Mugu Sea Range

Figure H-42: Naval Base Ventura County Port Hueneme Harbor

H.2.2.4 The Northern California Range Complex

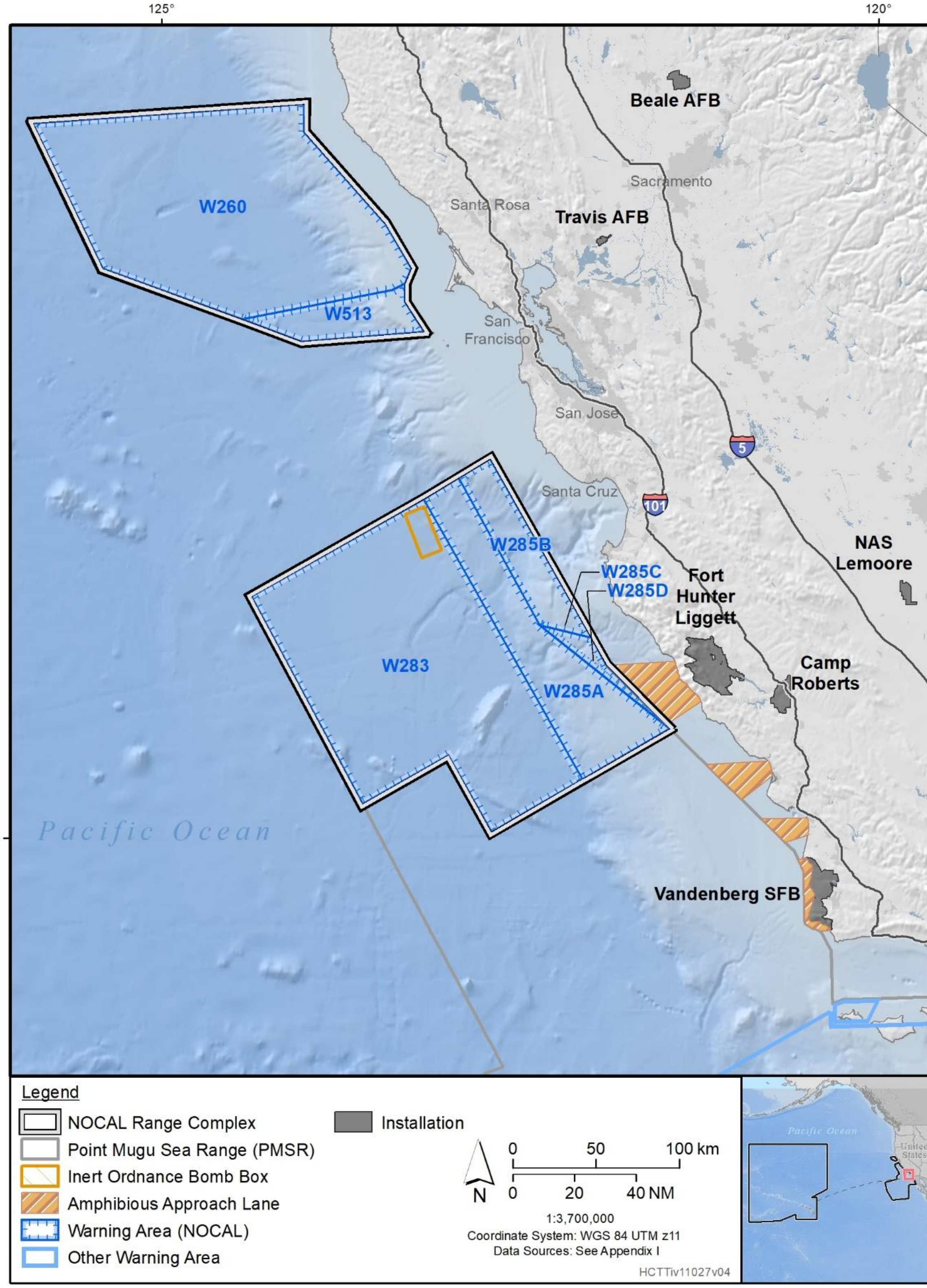
The NOCAL Range Complex consists of two separate areas located offshore of central and northern California, one northwest of San Francisco and the other southwest of Monterey Bay (Figure H-43). Each area includes special use airspace and the underlying sea space. The southern area includes approximately 10,000 NM^2 of airspace within Warning Area 283 (W283) and W285A/B/C/D. The northern area includes approximately 6,000 NM^2 of airspace within W260 and W513. Both components of the NOCAL Range Complex are located at least 12 NM from shore and extend from the ocean surface to at least 45,000 ft. altitude. W260, W283, and W513 have a ceiling of 60,000 ft.

These areas' proximity to Naval Air Station Lemoore, where the Navy's Pacific Fleet Strike Fighter squadrons are based, is particularly important for the support of critical Strike Fighter Wing training. These areas also provide air and sea space for Carrier Strike Groups[3] and Amphibious Ready Groups[4] to conduct training, certifications, and testing. As evolving naval tactics and new weapon systems strain the capacity of the SOCAL Range Complex, both PMSR and the NOCAL Range Complex give air and surface platforms the freedom to maneuver and position themselves optimally for large-scale at-sea training scenarios.

Amphibious Approach Lanes (Figure H-44) extend the Study Area from PMSR and the NOCAL Range Complex to the shore to facilitate amphibious training at these locations. Amphibious approach lanes are used by amphibious assault landing craft to approach and land on a beach to move personnel and equipment from ship to shore. In this EIS/OEIS, only the at-sea components of amphibious warfare activities utilizing the amphibious approach lanes (e.g., amphibious assault) are analyzed.

[3] A Carrier Strike Group is an operational composition of combat ships and aircraft, centered around an aircraft carrier.

[4] An Amphibious Ready Group is an operational composition of combat ships, aircraft, and Marines, centered around several amphibious ships.



Notes: NOCAL = Northern California, SFB = Space Force Base, AFB = Air Force Base, NAS = Naval Air Station

Figure H-43: Northern California Range Complex

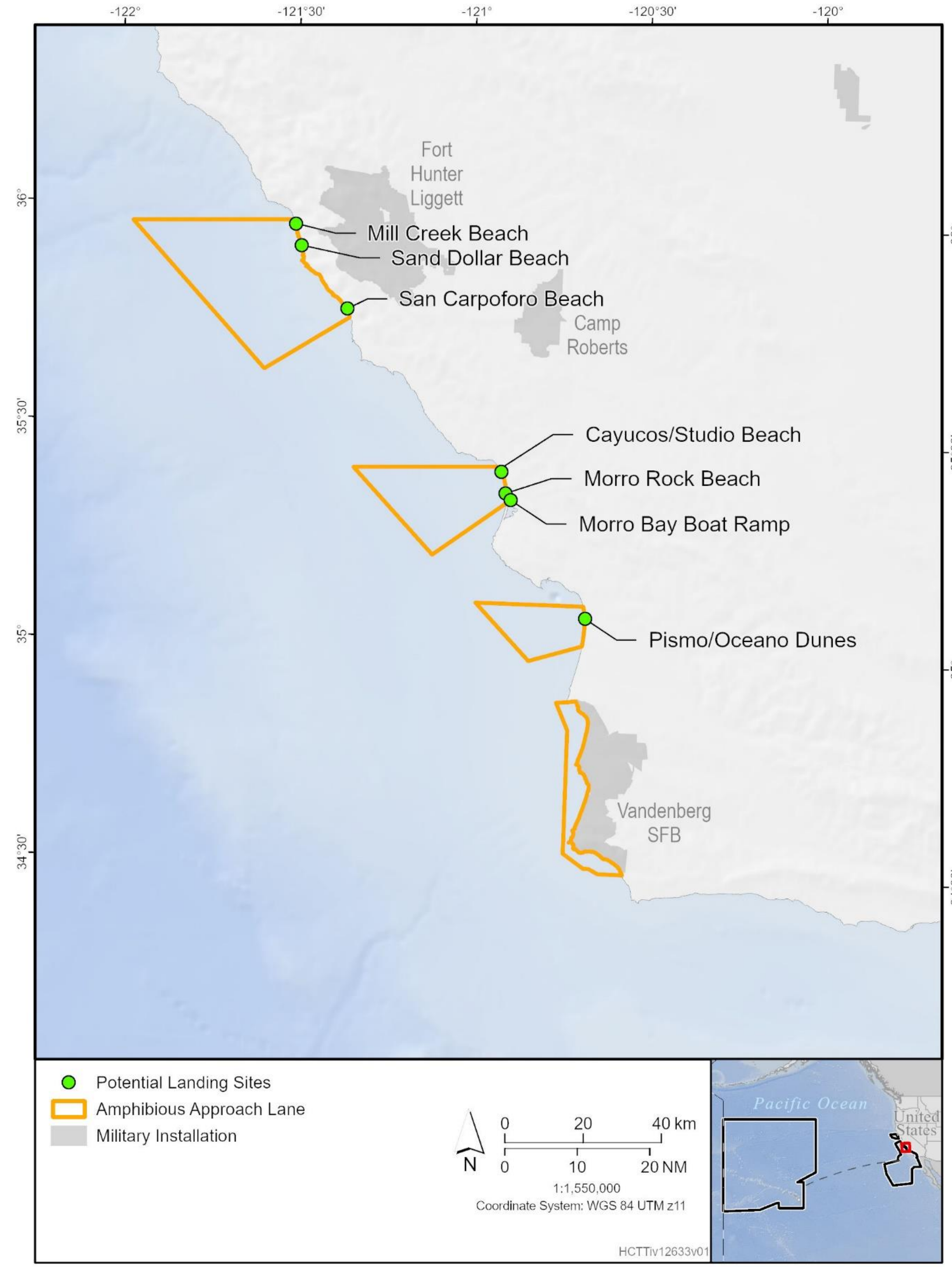


Figure H-44: Amphibious Approach Lanes

Appendix I Military Expended Materials, Direct Strike, and Ship Strike Effects Analysis

Environmental Impact Statement/
Overseas Environmental Impact Statement
Hawaii-California Training and Testing
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There are no figures in this appendix.

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APPENDIX I Military Expended Materials, Direct Strike, and Ship Strike Effects Analysis

I.1 Estimating the Effect of Military Expended Materials and Underwater Explosions on Abiotic Substrates as a Habitat for Biological Resources

This section discusses the methods and results for quantifying two scenarios under Alternative 1 and Alternative 2 of the Proposed Action: (1) the highly improbable worst-case scenario of all military expended materials or underwater explosions occurring on one particular substrate type; and (2) the unlikely, but slightly more realistic, scenario of uniform or proportional effect distribution within a particular area. Training and testing typically occurs in areas that are not called out or linked to specific activities for various reasons (e.g., flexibility and national security). Because training and testing activities would not be conducted under the No Action Alternative, it will not be discussed in this appendix.

This section describes the calculation of the disturbance footprint (i.e., military expended material footprint or explosive crater footprint) of an instantaneous effect of military expended materials or explosions on the substrate. The actual instantaneous effect on the bottom will depend on the number and location of military expended materials expended and not recovered, which is likely much lower and more concentrated than either scenario being analyzed. Longer-term effects on the bottom are far more difficult to quantify—refer to Section 3.2 (Sediments and Water Quality) and Section 3.5 (Habitats) of Chapter 3 (Affected Environment and Environmental Consequences) for qualitative discussion.

The analysis requires two data elements: (1) a tabular summary of the military expended material or crater (underwater explosions) footprints expected in training and testing areas; and (2) a tabular summary of analysis dimensions, which includes abiotic substrate areas. The data for (1) comes from the Hawaii-California Training and Testing (HCTT) action proponents and represents the most locational flexibility with regard to expenditure of military expended materials and underwater explosions. The data for both expended and recovered material is reported in Table I-1 through Table I-9 below. Appendix A (Activity Descriptions) of the HCTT Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) provides basic descriptions of military expended materials, and Section 3.0.3.3.2 (Explosive Stressors) provides basic descriptions of explosive categories. The data for number of military expended materials and underwater explosions are then multiplied by an estimate of the footprint size documented in Table I-1. The data for (2) comes from a compilation of abiotic substrate mapping presented in the Benthic Habitat Database Technical Report.

To determine the potential level of disturbance of military expended materials on marine substrates, it was assumed that the effect footprint of the expended material on the seafloor is twice the size of its footprint (unless specified otherwise in Appendix I notes). By doubling the footprint, the results should more accurately reflect the potential disturbance to soft bottom habitats (i.e., to account for sediment plumes), but should overestimate disturbance to hard bottom habitats (i.e., because sediment plumes are not expected) based on mitigation requirements. Items with casings (e.g., small-, medium-, and large-caliber munitions; flares; sonobuoys) have their effect footprints further doubled to account for both the item and its casing. To be conservative, items and their casings were assumed to be the same size, although in reality the items are a smaller size in order to fit in their casing.

Additionally, highly explosive munitions that explode either at the surface or in the water column were treated in the same manner as non-explosive practice munitions, although the explosions would result in smaller fragments reaching the substrate than expected by the fully intact non-explosive practice munitions.

The data for analysis dimensions (data element 2) comes from the Benthic Habitat Database Technical Report, in addition to spatial data depicting training and testing areas.

The combined analysis dimensions data was used to create a table of substrate category acreage by training and testing areas, and large marine ecosystems. Within the HCTT Study Area there are acreages of substrate that are included under Protective Measures Assessment Protocol (PMAP) categories from the Phase III HSTT EIS/OEIS. These PMAP categories indicate the amount of mapped substrate that may be protected by Navy mitigation measures. However, the PMAP areas were not excluded from the quantitative effects analysis due to how PMAP is implemented. For more information on the substrates protected under PMAP see Chapter 5 (Mitigation).

The percentage of affected substrate (Scenario 1) was calculated by totaling the effect footprint of individual activities divided by the total area of a given substrate in the training or testing area for which the effects could occur. The results are provided in Table I-6 through Table I-9.

Assumptions used in the Scenario 1 analysis included the following:

- Areas of unknown substrate type were not included in the analysis.
- The analysis focused on substrates that are likely to have habitat for sedentary benthic organisms; therefore, areas that are not likely to have substrate inhabited by these organisms (i.e., the Pacific Basin and Abyssal Zone open ocean areas) were excluded from the analysis.
- Artificial substrate was removed from the analysis because it was inconsistently mapped or mapped with a degree of uncertainty considered too high for quantitative analysis.

The above assumptions also applied to Scenario 2 (Proportional Effects), which used the proportion of a substrate type in an analysis dimension (i.e., training or testing area) multiplied by the total military expended material or crater footprints. The resulting acres indicated the effect area expected if the military expended materials or bottom explosions were distributed uniformly across the training or testing area. In other words, a majority proportion of the military expended material footprint would affect soft substrate if the majority of the analysis dimension was soft substrate. The results provided in the Table I-11 through Table I-14 scenario are considered more realistic than Scenario 1, yet still unlikely as they do not account for areas of concentrated training, nor do they account for the clumping of military expended materials and explosives in a particular area and over a particular substrate type where a training or testing activity occur.

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Bomb	Bombs (Explosive)	NA	NA	8.1203	112.9048	The MEM footprint was calculated using the bomb with the largest footprint in terms of material fragments, which in this case is the Rockeye which disperses 247 bomblets.
	Bombs (Non-explosive)	NA	NA	8.1203	112.9048	
Countermeasure	Acoustic Countermeasures	NA	NA	0.31107	1.2432	Includes all type of non-recoverable Acoustic Countermeasures.
	Chaff-Air Cartridge	NA	NA	0.0012	0.0022	Chaff is a radar reflector material made of thin, narrow, metallic strips cut in various lengths to elicit frequency responses, which deceive enemy radars. Chaff-Air is fired from an aircraft using a small cartridge.
	Chaff-Ship Cartridge	NA	NA	2.000	4.000	Chaff-Ship serves the same purpose of Chaff-Air. It is fired from a ship in cartridges.
	Anti-torpedo Torpedo	NA	NA	2.52	5.04	The Countermeasure Anti-torpedo consists of an anti-torpedo torpedo enclosed within All Up Round Equipment canister. The anti-torpedo torpedo is a 6.75-inch diameter high-maneuverability hard-kill torpedo designed to rapidly intercept and engage an incoming threat torpedo. The All Up Round Equipment consists of a nose sabot, ram plate, launch tube, muzzle cover, and breech mechanism to encapsulate, protect, and ultimately launch the anti-torpedo torpedo. Anti-torpedo torpedoes are frequently recovered; assume all are non-recoverable for worst-case.
	Anti-torpedo Torpedo Accessories	NA	NA	1.01	2.02	
Explosive Charge	Flares	NA	NA	1.2196	4.8782	Assumed to not have parachutes.
	0.5 lb. explosive charges	50%	12	NA	NA	None
	2.5 lb. explosive charges	50%	30	NA	NA	None
	5 lb. explosive charges	50%	54	NA	NA	None

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions (continued)

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Explosive Charge (continued)	10 lb. explosive charges	50%	85	NA	NA	None
	20 lb. explosive charges	50%	135	NA	NA	None
	60 lb. explosive charges	50%	281	NA	NA	None
Missiles	Missiles (Explosive)	NA	NA	37.3669	74.7338	MEM size based on SM-6.
	Missile (Non-explosive)	NA	NA	31.0011	62.0023	MEM size based on Tomahawk.
	Rockets (Explosive)	NA	NA	0.7987	1.5974	MEM sized based on Hydra 70.
	Rockets (Non-explosive)	NA	NA	0.7987	1.5974	MEM size based on Hydra 70. Also included flechette rockets.
	Rockets (Non-explosive): Flechette	NA	NA	0.7987	1.5974	MEM size based on Hydra 70. Included flechette darts in warhead.
Other	Air-launched lightweight (Explosive) torpedo	NA	NA	19.1199	38.2399	MEM size based on MK50/MK54.
	Air-launched lightweight (Non-explosive) torpedo	NA	NA	19.1199	38.2399	MEM size based on MK50/MK54. Typically recovered.
	AMNS/EMNS Neutralizer (Explosive)	50%	430.5564	1.6286	3.2572	AMNS is air deployed whereas EMNS is ship deployed.

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions (continued)

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Other (continued)	AMNS Neutralizer (Non-explosive)	NA	NA	0.1513	0.3026	The neutralizer itself is recovered, but the associated fiber-optic cable and the can that holds the fiber-optic cable is not.
	Anchor (Expendable)	NA	NA	6.2495	12.5001	Associated primarily with mine shapes.
	Anchor (Recoverable)	NA	NA	6.2495	12.5001	Associated primarily with mine shapes.
	Bottom-Placed Instruments	NA	NA	2.0000	4.000	Likely moored tracking beacons, so the footprint on the bottom would be approximately 2 square feet. It would weight approximately 50 lb.
	Buoy (Explosive)	NA	NA	0.9752	3.8987	Explosive buoys including mini-sound source and SUS. MEM-size based on Marine Marker.
	Buoy (Non-explosive)	NA	NA	0.9752	3.8987	These buoys are separate from sonobuoys, and are included for DWADS (expendable) or IMPASS (recovered). MEM size based on Marine Marker. Can be expended or recovered.
	Concrete slugs	NA	NA	0.0011	0.0022	Assume similar in dimensions to a chaff cartridge.
	Endcaps & Pistons – Non-Chaff & Flare	NA	NA	0.0043	0.0086	Applies only to where it cannot be associated to another object (e.g., endcaps and pistons associated with chaff would be covered by “chaff”). Used for testing.
	Endcaps – Chaff & Flare	NA	NA	0.00215	0.0043	Applies only to Chaff-Air and Flares. One Endcap is expended per chaff-air or flare.
	Flare O-Ring	NA	NA	0.0043	0.0086	Assumed similar 2-dimensional footprint as endcaps and pistons. Associated with flares. Assumed 1 Flare O-Ring per flare.
	Fiber-optic Can	NA	NA	0.0011	0.0022	Assumed similar 2-dimensional footprint as chaff-air cartridge. Associated with AMNS Neutralizer fiber-optic cable. Can that holds fiber-optic cable is expended.

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions (continued)

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Other (continued)	Bathythermograph – Expended	NA	NA	0.0258	0.0516	An instrument that is deployed from a ship to record temperature and depth measurements. Small wires transmit the temperature data from the probe to the ship. This item is fairly standard in terms of footprint; these are off the shelf commercial products.
	Fiber-optic cables	NA	NA	NA	NA	Associated with some rockets and AMNS neutralizers.
	Guidance wires	NA	NA	0	0	Fragments created for relatively small portion associated with explosive devices (associated with heavyweight torpedoes).
	Bathythermograph – Expended Wire	NA	NA	NA	NA	Single vertical wire
	Heavyweight (Explosive) torpedo	NA	NA	39.6155	79.2299	MEM size based on MK-48.
	Heavyweight torpedo accessories	NA	NA	0.1615	3.2367	MEM includes ballast weights, flex tubing.
	Heavyweight (Non-explosive) torpedo	NA	NA	NA	NA	Typically recovered
	Illumination flares	NA	NA	1.2196	4.8782	Flares that have a large parachute; MEM size based on half the surface area of an 18 ft. diameter parachute used with an LUU-2 illumination flare.
	Lightweight Torpedo Accessories	NA	NA	1.0107	2.0215	MEM includes ballast weights, flex tubing (parachute size not included)
	Marine marker			0.9752	3.8987	MEM footprint based on two Navy marine markers (MK25 and MK58
	Mine (Explosive)	50%	14,800.3763	25.7903	51.5806	Another name for a 650 lb. explosive charge including material based on the footprint of a mine shape.

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions (continued)

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Other (continued)	Parachute (Large)	NA	NA	283.9961	567.9932	MEM size based on diameter of LUU-2 illumination flare parachute (18 ft. diameter).
	Parachute (Medium)	NA	NA	9.0417	18.0834	Associated with air-launched torpedoes
	Small Decelerator/ Parachute	NA	NA	2.8438	5.6876	Associated with launched sonobuoys
	Sabot	NA	NA	1.2195	4.8782	An accessory used during projectile firing. Footprint similar in size to the projectile.
	Sonobuoys (Non-explosive)	NA	NA	1.2206	2.4413	Sonobuoys have an extra item footprint (half the dimensions of the sonobuoy) added in addition to the actual sonobuoy and casing to account for the items that are discarded from the sonobuoy following its release. MEM size does not include the associated Small Decelerator/Parachute (noted in table above).
	Sonobuoys (Explosive)	0	NA	1.2206	2.4413	
	Sonobuoy wires	NA	NA	NA	NA	One wire is associated with each sonobuoy.
	Surface-Launched Lightweight (Explosive) Torpedo	0	NA	10.0782	20.1576	MEM size based on MK50/MK54
	Surface-Launched Lightweight (Non-Explosive) Torpedo	NA	NA	10.0782	20.1576	Typically recovered
	Ship Hulk	NA	NA	316,136.036	632,272.073	None

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions (continued)

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Projectile	Grenades (Explosive)	0	NA	0.1044	0.2088	None
	Large Caliber (Explosive)	NA	NA	1.0097	4.0386	Item assumed to have a projectile and casing.
	Large Caliber (Non-explosive)	NA	NA	1.0097	4.0386	Item assumed to have a projectile and casing.
	Large Caliber (Casing only)	NA	NA	0.5048	1.0097	Used when the target is on land; no MEM from projectile
	Medium Caliber (Explosive)	NA	NA	0.0560	0.2239	Item assumed to have a projectile and casing.
	Medium Caliber (Non-explosive)	NA	NA	0.0560	0.2239	Item assumed to have a projectile and casing.
	Small Caliber (Non-explosive)	NA	NA	0.0301	0.1216	Item assumed to have a projectile and casing.
	Small Caliber (Casing only)	NA	NA	0.0151	0.0301	Used only for small-caliber "blanks." All other small-caliber rounds are included under NEPM
	Kinetic Energy Round	NA	NA	0.5048	1.0097	Item assumed to only have a projectile (no casing)—size of Large Caliber round.
Target	Aerial Drones – Expendable	NA	NA	294.6082	589.2164	MEM when specifically known it is an aerial drone; MEM size based on Firebee
	Aerial Drones – Recovered	NA	NA	294.6082	589.2164	MEM when specifically known it is an aerial drone; MEM size based on Firebee. Typically recovered.
	Air Target – Expended (Non-Drone)	NA	NA	42.1622	84.3244	MEM when specifically known it is an air-launched decoy. MEM size based on dimensions of Tactical Air Launched Decoy or Miniature Air-Launched Decoy.
	Metal Plates	NA	NA	2.7782	5.5563	Charges are secured to a 20" X 20" X 1/2" ferrous metal plate. The target unit (concrete blocks, metal plate, and any debris) is brought to the surface and analyzed.

Table I-1: Categories and Footprints for Various Materials and Underwater Explosions (continued)

Material Group	Material Category	Bottom Frequency[1]	Crater Footprint (ft.^{2})	MEM Size (ft.^{2})	MEM Footprint (ft.^{2})	Material Specific Notes
Target (continued)	Surface Target – Expended	NA	NA	5.7522	11.5034	Includes remote controlled or towed targets.
	Surface Target – Recovered	NA	NA	NA	NA	Reported as recovered.
	Surface Target (Mobile) – Expended	NA	NA	5.7522	11.5034	Includes remote controlled or towed targets.
	Surface Target (Stationary) – Expended	NA	NA	96.8752	193.7504	MEM when specifically known it is a stationary surface target. MEM size based on Killer Tomato.
	Subsurface Target (Mobile) – Expended	NA	NA	1.2206	2.4412	MEM when specifically known it is a sub-surface Motorized Autonomous Target
	Mine Shape – Expended	NA	NA	25.7903	51.5807	Mine shapes that were specifically identified as non-recoverable; footprint based on size of explosive mine; size not including anchor
	Mine Shape – Expended	NA	NA	25.7903	51.5807	Mine shape and associated anchor block that are recovered. The vast majority of practice mines have built-in anchors for placing on the bottom; relatively few are moored/floating, and none are drifting.

[1]Bottom frequencies (%) are only listed for underwater explosions; crater footprints are only listed for material that may be detonated on the bottom.
Notes: MEM = Military Expended Materials; AMNS/EMNS = Airborne Mine Neutralization System/Expendable Mine Neutralization System, ft. = foot/feet, ft.^{2} = square feet, lb. = pound(s), NA = not applicable

I.1.1 Military Expended and Recovered Materials – Training Activities

Table I-2 through Table I-5 show annual military expended and recovered materials and effect footprints within the HCTT Study Area.

Table I-2: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Training Activities Under Alternative 1

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Bombs								
Bombs (Explosive)	8.1203	112.9048	35	0.0907	-	-	124	0.3214
Bombs (Non-Explosive)	8.1203	112.9048	41	0.1050	-	-	64	0.1646
Projectiles								
Grenade (non-explosive)	0.1044	0.2088	1,450	0.0070	-	-	10,030	0.0481
Large-Caliber (Casing)	0.5048	1.0097	228	0.0053	25	0.0006	626	0.0145
Large-Caliber (Explosive)	1.0097	4.0386	2,160	0.2003	448	0.0415	7,965	0.7385
Large-Caliber (Non-Explosive)	1.0097	4.0386	1,456	0.1350	42	0.0039	1,717	0.1592
Medium-Caliber (Explosive)	0.056	0.2239	14,319	0.0736	60	0.0003	20,262	0.1041
Medium-Caliber (Non-Explosive)	0.056	0.2239	329,480	1.6935	3,600	0.0185	825,820	4.2447
Medium-Caliber Projectile Casings	0.0300	0.0600	5,473	0.0075	183	0.0003	22,534	0.0310
Missiles (Explosive)	37.3669	74.7338	444	0.7617	-	-	437	0.7497
Missiles (Non-Explosive)	31.0011	62.0023	2,148	0.0788	-	-	2,492	0.0914
Rockets (Explosive)	0.7987	1.5974	851	0.0312	-	-	1,857	0.0681
Rockets (Non-Explosive)	0.7987	1.5974	81,925	9.1746	-	-	116,845	13.0852
Small-Caliber (Non-Explosive)	0.0301	0.1216	2,175,350	6.0726	96,000	0.2680	7,933,342	22.1463
Small-Caliber (Casing Only)	0.0151	0.0301	443,370	0.3064	19,200	0.0133	1,726,408	1.1929
Countermeasures								
Acoustic Countermeasures	0.3111	1.2432	486	0.0139	-	-	314	0.0090
Chaff (Air cartridge)	0.0011	0.0022	930	0.0000	-	-	4,590	0.0002
Chaff (Ship cartridge)	2	4	790	0.0725	-	-	2,700	0.2479
Flares	1.2196	4.8782	12	0.0013	-	-	62	0.0069

Table I-2: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Training Activities under Alternative 1 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Targets								
Air Target – Expended (Decoy)	14.0216	28.0432	11	0.0071	-	-	61	0.0393
Air Target – Expended (Drone)	95.6400	191.2800	186	0.8168	-	-	725	3.1848
Mine Shapes – (Non-Explosive)	25.7903	51.5807	115	0.1359	-	-	350	0.4139
Sub-Surface Targets (Maneuvering)	8.755	17.51	330	0.1328	1	0.0004	751	0.3019
Surface Target – Floating (Large)	98	196	53	0.2374	10	0.0450	94	0.4245
Surface Target – Floating (Medium)	2.615	5.2300	252	0.0302	10	0.0012	903	0.1084
Surface Target – Floating (Small)	0.365	0.7300	420	0.0070	-	-	1,384	0.0232
Other								
AMNS/EMNS Neutralizer (Explosive)	1.6286	3.2572	18	0.0013	-	-	64	0.0048
Anchor (Expendable)	6.2495	12.5001	358	0.1027	-	-	2,248	0.6451
Bathythermograph – Expended	0.2777	0.5544	1,838	0.0234	18	0.0002	2,182	0.0278
Canister	2.0000	4.0000	40	0.0037	-	-	40	0.0037
Compression Pad/Piston	0.0043	0.0086	930	0.0002	-	-	4,590	0.0009
Endcaps	0.0021	0.0043	3,822	0.0004	-	-	8,552	0.0008
Fiber Optic Can	0.0011	0.0022	58	0.0000	-	-	1,520	0.0001
Flare O-Ring	0.0043	0.0086	12	0.0000	-	-	62	0.0000
Heavyweight Torpedo (Explosive)	39.6155	79.2299	6	0.0109	-	-	1	0.0018
Heavyweight Torpedo Accessories	0.1615	3.2367	6	0.0004	-	-	1	0.0001
Illumination Flare	1.2196	4.8782	12	0.0013	-	-	62	0.0069
JATO Bottle	3.6061	7.2134	2	0.0003	-	-	26	0.0043
Lightweight Torpedo Accessories	1.1011	2.0215	61	0.0028	-	-	201	0.0093

Table I-2: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Training Activities under Alternative 1 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Other (continued)								
Marine Marker	0.9752	3.8987	-	-	-	-	6	0.0005
Decelerator/Parachute (Large)	5,026.50	10,053.09	45	4.0567	-	-	63	5.6794
Decelerator/Parachute (Medium)	1,963.50	3,926.90	12	0.1402	-	-	62	0.7243
Decelerator/Parachute (Small)	254.5	508.9	5,928	7.6950	-	-	14,964	19.4229
Ship Hulk	316,136	632,272	2	29.0299	-	-	1	7.2575
Sonobuoy (Non-Explosive)	1.2207	2.4413	6,067	0.3400	-	-	14,956	0.8382
Total			**3,081,567**	**61.6984**	**119,596**	**0.3931**	**10,732,056**	**82.5483**

[1]Calculations for Effect (Acre) Column = [(Effect Footprint) x (Number)]/43560

Notes: HCTT = Hawaii-California Training and Testing, AMNS/EMNS = Airborne Mine Neutralization System/Expendable Mine Neutralization System

Table I-3: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Training Activities Under Alternative 2

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Bombs								
Bombs (Explosive)	8.1203	112.9048	37	0.0959	-	-	126	0.3266
Bombs (Non-Explosive)	8.1203	112.9048	46	0.1192	-	-	69	0.1788
Projectiles								
Grenade (non-explosive)	0.1044	0.2088	1,450	0.0070	-	-	10,230	0.0490
Large-Caliber (Casing)	0.5048	1.0097	253	0.0059	25	0.0006	626	0.0145
Large-Caliber (Explosive)	1.0097	4.0386	2,428	0.2251	448	0.0415	7,937	0.7359
Large-Caliber (Non-Explosive)	1.0097	4.0386	1,684	0.1561	42	0.0039	1,729	0.1603
Medium-Caliber (Explosive)	0.056	0.2239	15,901	0.0817	400	0.0021	23,292	0.1197
Medium-Caliber (Non-Explosive)	0.056	0.2239	369,600	1.8998	24,000	0.1234	1,018,750	5.2364
Medium-Caliber Projectile Casings	0.0300	0.0600	7,134	0.0098	1,220	0.0017	30,677	0.0423
Missiles (Explosive)	37.3669	74.7338	572	0.9814	-	-	458	0.7858
Missiles (Non-Explosive)	31.0011	62.0023	14	0.0199	-	-	-	0.0000
Rockets (Explosive)	0.7987	1.5974	2,288	0.0839	-	-	2,632	0.0965
Rockets (Non-Explosive)	0.7987	1.5974	1,061	0.0389	-	-	1,997	0.0732
Sabot – Kinetic Energy Projectile	2.4392	4.8782	85,300	9.5526	3,000	0.3360	129,070	14.4543
Small-Caliber (Non-Explosive)	0.0301	0.1216	2,736,350	7.6387	96,000	0.2680	8,492,342	23.7068
Small-Caliber (Casing Only)	0.0151	0.0301	555,570	0.3839	19,200	0.0133	1,858,208	1.2840
Countermeasures								
Acoustic Countermeasures	0.3111	1.2432	494	0.0141	-	-	318	0.0091
Chaff (Air cartridge)	0.0011	0.0022	930	0.0000	-	-	4,590	0.0002
Chaff (Ship cartridge)	2	4	790	0.0725	-	-	2,700	0.2479
Flares	1.2196	4.8782	14	0.0016	-	-	62	0.0069

Table I-3: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Training Activities under Alternative 2 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Targets								
Air Target – Expended (Decoy)	14.0216	28.0432	14	0.0090	-	-	61	0.0393
Air Target – Expended (Drone)	95.6400	191.2800	204	0.8951	-	-	825	3.6237
Mine Shapes – (Non-Explosive)	25.7903	51.5807	122	0.1449	-	-	498	0.5895
Sub-Surface Targets (Maneuvering)	8.755	17.51	376	0.1513	1	0.0004	756	0.3037
Surface Target – Floating (Large)	98	196	75	0.3386	27	0.1215	176	0.7912
Surface Target – Floating (Medium)	2.615	5.2300	274	0.0329	10	0.0012	948	0.1138
Surface Target – Floating (Small)	0.365	0.7300	535	0.0090	-	-	1,661	0.0278
Other								
AMNS/EMNS Neutralizer (Explosive)	1.6286	3.2572	20	0.0015	-	-	74	0.0055
Anchor (Expendable)	6.2495	12.5001	434	0.1244	-	-	3,683	1.0570
Bathythermograph – Expended	0.2777	0.5544	2,683	0.0341	18	0.0002	3,300	0.0420
Canister	2.0000	4.0000	40	0.0037	-	-	40	0.0037
Compression Pad/Piston	0.0043	0.0086	930	0.0002	-	-	4,590	0.0009
Endcaps	0.0021	0.0043	4,184	0.0004	-	-	8,942	0.0009
Fiber Optic Can	0.0011	0.0022	68	0.0000	-	-	1,550	0.0001
Flare O-Ring	0.0043	0.0086	14	0.0000	-	-	62	0.0000
Heavyweight Torpedo (Explosive)	39.6155	79.2299	8	0.0146	-	-	3	0.0055
Heavyweight Torpedo Accessories	0.1615	3.2367	8	0.0006	-	-	3	0.0002
Illumination Flare	1.2196	4.8782	14	0.0016	-	-	62	0.0069
JATO Bottle	3.6061	7.2134	6	0.0011	-	-	26	0.0042
Lightweight Torpedo Accessories	1.1011	2.0215	131	0.0061	-	-	226	0.0105
Marine Marker	0.9752	3.8987	1	0.0001	-	-	5	0.0004

Table I-3: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Training Activities under Alternative 2 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Other (continued)								
Decelerator/Parachute (Large)	5,026.50	10,053.09	82	7.4103	-	-	63	5.6614
Decelerator/Parachute (Medium)	1,963.50	3,926.90	14	0.1636	-	-	62	0.7243
Decelerator/Parachute (Small)	254.5	508.9	11,226	14.5711	-	-	18,866	24.4876
Ship Hulk	316,136	632,272	3	43.5449	-	-	1	14.5150
Sonobuoy (Non-Explosive)	1.2207	2.4413	11,296	0.6331	-	-	18,832	1.0554
Total			**3,223,790**	**87.7077**	**123,990**	**0.8087**	**10,979,196**	**98.4579**

[1]Calculations for Effect (Acre) Column = [(Effect Footprint) x (Number)]/43560

Notes: HCTT = Hawaii-California Training and Testing, AMNS/EMNS = Airborne Mine Neutralization System/Expendable Mine Neutralization System

Table I-4: Number and Effects[1] of Recovered Bottom-Placed Materials Proposed for Use During Training Activities in a Single Year Under Alternatives 1 and 2

Recovered Materials	*Size (ft.^{2})*	*Effect Footprint (ft.^{2})*	*Hawaii Study Area*		*HCTT Transit Lane*		*California Study Area*	
			Number	*Effect (Acre)*	*Number*	*Effect (Acre)*	*Number*	*Effect (Acre)*
Alternative 1								
Mine Shape (Recovered)	25.7903	51.5807	115	0.1362	-	-	350	0.4144
Total			**115**	**0.1362**	**-**	**-**	**350**	**0.4144**

Alternative 2								
Mine Shape (Recovered)	25.7903	51.5807	122	0.1445	-	-	498	0.5897
Total			**122**	**0.1445**	**-**	**-**	**498**	**0.5897**

[1]Calculations for Effect (Acre) Column = [(Effect Footprint) x (Number)]/43560

Table I-5: Annual Numbers of Recovered Materials Proposed for Use During Training Activities Under Alternatives 1 and 2

Recovered Materials	*Hawaii Study Area*		*HCTT Transit Lane*		*California Study Area*	
	Alternative 1	*Alternative 2*	*Alternative 1*	*Alternative 2*	*Alternative 1*	*Alternative 2*
Air Targets – Decoy	11	14	-		61	61
Air Targets – Supersonic Drone	0	4	-		-	-
Heavyweight Torpedo (Non-Explosive)	18	18	-		9	9
Lightweight Torpedo (Non-Explosive)	3	7	-		10	11
Sub-surface Target – Maneuvering*	330	376	1		751	756
Surface Device – Floating (Small)	110	110	-		580	580
Surface Target – Floating (Large)	53	75	10		94	176
Surface Target – Floating (Medium)	252	274	10		903	948
Surface Target – Floating (Small)	420	535	-		1,384	1,661

*Some portion of ASW targets are expendable and not recovered.

I.1.2 Military Expended and Recovered Materials – Testing Activities

Table I-6 through Table I-9 show annual military expended and recovered materials and effect footprints within the HCTT Study Area.

Table I-6: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Testing Activities Under Alternative 1

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Bombs								
Bombs (Explosive)	8.1203	112.9048	0	0.0000	-	-	54	0.1400
Bombs (Non-Explosive)	8.1203	112.9048	41	0.1050	-	-	64	0.1646
Projectiles								
Kinetic Energy Projectile (Explosive)	0.7400	1.4800	3	0.0001	-	-	3	0.0001
Large-Caliber (Casing)	0.5048	1.0097	84	0.0019	-	-	447	0.0104
Large-Caliber (Explosive)	1.0097	4.0386	480	0.0445	-	-	5,528	0.5125
Large-Caliber (Non-Explosive)	1.0097	4.0386	1,196	0.1109	-	-	3,408	0.3159
Medium-Caliber (Explosive)	0.056	0.2239	125	0.0006	-	-	24,757	0.1273
Medium-Caliber (Non-Explosive)	0.056	0.2239	35,000	0.1799	-	-	143,850	0.7394
Medium-Caliber Projectile Casings	0.0300	0.0600	901	0.0012	-	-	6,123	0.0084
Missiles (Explosive)	37.6691	74.7338	129	0.2207	-	-	848	1.4554
Missiles (Non-Explosive)	31.0012	62.0023	44	0.0626	-	-	255	0.3630
Rockets (Explosive)	0.7987	1.5974	3	0.0001	-	-	76	0.0028
Rockets (Non-Explosive)	0.7987	1.5974	157	0.0057	-	-	1,272	0.0466
Sabot – Kinetic Energy Projectile	2.4392	4.8782	-	0.0000	-	-	16,075	1.8002
Small-Caliber (Non-Explosive)	0.0301	0.1216	32,500	0.0907	-	-	189,500	0.5290
Small-Caliber (Casing Only)	0.0151	0.0301	6,500	0.0045	-	-	38,700	0.0267
Countermeasures								
Acoustic Countermeasures	0.3111	1.2432	448	0.0128	-	-	538	0.0154
Chaff (Air cartridge)	0.0011	0.0022	1,300	0.0001	-	-	3,696	0.0002
Chaff (Ship cartridge)	2	4	96	0.0088	-	-	144	0.0132
Flares	1.2196	4.8782	1,300	0.1456	-	-	6,456	0.7230

Table I-6: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Testing Activities Under Alternative 1 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Targets								
Air Target – Expended (Decoy)	14.0216	28.0432	-	-	-	-	18	0.0113
Air Target – Expended (Drone)	95.6400	191.2800	29	0.1256	-	-	308	1.3541
Mine Shapes – (Non-Explosive)	25.7903	51.5807	348	0.4123	-	-	1,365	1.6159
Sub-Surface Targets (Maneuvering)	8.755	17.51	206	0.0828	-	-	413	0.1660
Surface Target – Floating (Large)	98	196	13	0.0562	-	-	63	0.2835
Surface Target – Floating (Medium)	2.615	5.2300	34	0.0041	-	-	77	0.0093
Other								
AMNS/EMNS Neutralizer (Explosive)	1.6286	3.2572	72	0.0054	-	-	962	0.0719
Anchor (Recovered)	6.2495	12.5001	774	0.2221	-	-	2,097	0.6017
Anchors – Mine (Expended)	6.2495	12.5001	10	0.0029	-	-	160	0.0459
Anti-Torpedo Torpedo	10.0800	5.0400	4	0.0004	-	-	4	0.0004
Anti-Torpedo Torpedo Accessories	1.0100	2.0200	4	0.0002	-	-	4	0.0002
Bathythermograph – Expended	0.2777	0.5544	143	0.0018	-	-	421	0.0054
Buoy (Explosive)	0.9752	3.8987	360	0.0322	-	-	720	0.0644
Compression Pad/Piston	0.0043	0.0086	1,300	0.0003	-	-	3,696	0.0007
Endcaps	0.0021	0.0043	2,600	0.0003	-	-	10,152	0.0010
Fiber Optic Can	0.0011	0.0022	196	0.0000	-	-	220	0.0000
Flare O-Ring	0.0043	0.0086	1,300	0.0003	-	-	6,456	0.0013
Heavyweight Torpedo (Explosive)	39.6155	79.2299	0	0.0006	-	-	1	0.0012
Heavyweight Torpedo Accessories	0.1615	3.2367	222	0.0165	-	-	266	0.0197
JATO Bottle	3.6061	7.2134	63	0.0104	-	-	631	0.1045
Lightweight Torpedo Accessories	1.1011	2.0215	51	0.0024			144	0.0067

Table I-6: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Testing Activities Under Alternative 1 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Other (continued)								
Decelerator/Parachute (Large)	5,026.50	10,053.09	103	9.2836	-	-	713	64.2457
Decelerator/Parachute (Small)	254.5	508.9	16,925	21.9687	-	-	30,150	39.1346
Sonobuoy (Explosive)	1.2207	2.4413	864	0.0484	-	-	1,728	0.0968
Sonobuoy (Non-Explosive)	1.2207	2.4413	17,337	0.9717	-	-	30,682	1.7196
Total			**123,263**	**34.2450**	**0**	**0**	**533,241**	**116.5559**

[1]Calculations for Effect (Acre) Column = [(Effect Footprint) x (Number)]/43560

Notes: HCTT = Hawaii-California Training and Testing, AMNS/EMNS = Airborne Mine Neutralization System/Expendable Mine Neutralization System

Table I-7: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Testing Activities Under Alternative 2

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Bombs								
Bombs (Explosive)	8.1203	112.9048	-	0.0000	-	-	54	0.1400
Bombs (Non-Explosive)	8.1203	112.9048	46	0.1192	-	-	69	0.1788
Projectiles								
Kinetic Energy Projectile (Explosive)	0.7400	1.4800	10	0.0003	-	-	10	0.0003
Large-Caliber (Casing)	0.5048	1.0097	195	0.0045	-	-	631	0.0146
Large-Caliber (Explosive)	1.0097	4.0386	480	0.0445	-	-	8,092	0.7502
Large-Caliber (Non-Explosive)	1.0097	4.0386	3,408	0.3160	-	-	4,528	0.4198
Medium-Caliber (Explosive)	0.056	0.2239	250	0.0013	-	-	24,757	0.1273
Medium-Caliber (Non-Explosive)	0.056	0.2239	38,500	0.1979	-	-	167,950	0.8633
Medium-Caliber Projectile Casings	0.0300	0.0600	1,083	0.0015	-	-	7,328	0.0101
Missiles (Explosive)	37.6691	74.7338	133	0.2276	-	-	955	1.6390
Missiles (Non-Explosive)	31.0012	62.0023	51	0.0726	-	-	324	0.4612
Rockets (Explosive)	0.7987	1.5974	3	0.0001	-	-	82	0.0030
Rockets (Non-Explosive)	0.7987	1.5974	191	0.0070	-	-	1,804	0.0662
Sabot – Kinetic Energy Projectile	2.4392	4.8782	-	0.0000	-	-	18,025	2.0186
Small-Caliber (Non-Explosive)	0.0301	0.1216	32,500	0.0907	-	-	191,900	0.5357
Small-Caliber (Casing Only)	0.0151	0.0301	7,300	0.0050	-	-	40,340	0.0279
Countermeasures								
Acoustic Countermeasures	0.3111	1.2432	485	0.0138	-	-	562	0.0160
Chaff (Air cartridge)	0.0011	0.0022	1,464	0.0001	-	-	4,055	0.0002
Chaff (Ship cartridge)	2	4	144	0.0132	-	-	192	0.0176
Flares	1.2196	4.8782	1,390	0.1557	-	-	6,889	0.7715

Table I-7: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Testing Activities under Alternative 2 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Targets								
Air Target – Expended (Decoy)	14.0216	28.0432	-	0.0000	-	-	18	0.0113
Air Target – Expended (Drone)	95.6400	191.2800	40	0.1752	-	-	453	1.9870
Mine Shapes – (Non-Explosive)	25.7903	51.5807	490	0.5802	-	-	2,064	2.4444
Sub-Surface Targets (Maneuvering)	8.755	17.51	260	0.1044	-	-	633	0.2543
Surface Target – Floating (Large)	98	196	58	0.2610	-	-	104	0.4668
Surface Target – Floating (Medium)	2.615	5.2300	61	0.0073	-	-	102	0.0122
Other								
AMNS/EMNS Neutralizer (Explosive)	1.6286	3.2572	72	0.0054	-	-	2,260	0.1690
Anchor (Recovered)	6.2495	12.5001	1,384	0.3972	-	-	3,205	0.9198
Anchors – Mine (Expended)	6.2495	12.5001	10	0.0029	-	-	160	0.0459
Anti-Torpedo Torpedo	10.0800	5.0400	5	0.0006	-	-	5	0.0006
Anti-Torpedo Torpedo Accessories	1.0100	2.0200	5	0.0002	-	-	5	0.0002
Bathythermograph – Expended	0.2777	0.5544	209	0.0027	-	-	871	0.0111
Buoy (Explosive)	0.9752	3.8987	450	0.0403	-	-	900	0.0806
Compression Pad/Piston	0.0043	0.0086	1,464	0.0003	-	-	4,055	0.0008
Endcaps	0.0021	0.0043	2,854	0.0003	-	-	10,944	0.0011
Fiber Optic Can	0.0011	0.0022	208	0.0000	-	-	232	0.0000
Flare O-Ring	0.0043	0.0086	1,390	0.0003	-	-	6,889	0.0014
Heavyweight Torpedo (Explosive)	39.6155	79.2299	1	0.0012	-	-	1	0.0024
Heavyweight Torpedo Accessories	0.1615	3.2367	347	0.0258	-	-	434	0.0322
JATO Bottle	3.6061	7.2134	112	0.0185	-	-	696	0.1152
Lightweight Torpedo Accessories	1.1011	2.0215	63	0.0029	-	-	223	0.0103

Table I-7: Annual Number and Effects[1] of Military Expended Materials Proposed for Use During Testing Activities under Alternative 2 (continued)

Military Expended Materials	Size (ft.^{2})	Effect Footprint (ft.^{2})	Hawaii Study Area		HCTT Transit Lane		California Study Area	
			Number	Effect (Acre)	Number	Effect (Acre)	Number	Effect (Acre)
Other (continued)								
Decelerator/Parachute (Large)	5,026.50	10,053.09	137	12.3486	-	-	987	88.9588
Decelerator/Parachute (Small)	254.5	508.9	18,921	24.5595	-	-	33,961	44.0806
Sonobuoy (Explosive)	1.2207	2.4413	1,080	0.0605	-	-	2,160	0.1211
Sonobuoy (Non-Explosive)	1.2207	2.4413	19,379	1.0861	-	-	34,671	1.9431
Total			**136,633**	**40.9527**	**0**	**0**	**584,581**	**149.7317**

[1]Calculations for Effect (Acre) Column = [(Effect Footprint) x (Number)]/43560

Notes: HCTT = Hawaii-California Training and Testing, AMNS/EMNS = Airborne Mine Neutralization System/Expendable Mine Neutralization System

Table I-8: Number and Effects[1] of Recovered Bottom-Placed Materials Proposed for Use During Testing Activities in a Single Year Under Alternatives 1 and 2

Recovered Materials	*Size (ft.^{2})*	*Effect Footprint (ft.^{2})*	*Hawaii Study Area*		*HCTT Transit Lane*		*California Study Area*	
			Number	*Effect (Acre)*	*Number*	*Effect (Acre)*	*Number*	*Effect (Acre)*
Alternative 1								
Mine Shape (Recovered)	25.7903	51.5807	348	0.4121	-	-	1,365	1.6163
Total			**348**	**0.4121**	**-**	**-**	**1,365**	**1.6163**
Alternative 2								
Mine Shape (Recovered)	25.7903	51.5807	490	0.5802	-	-	2,064	2.4440
Total			**490**	**0.5802**	**-**	**-**	**2,064**	**2.4440**

[1]Calculations for Effect (Acre) Column = [(Effect Footprint) x (Number)]/43560

Table I-9: Annual Numbers of Recovered Materials Proposed for Use During Testing Activities Under Alternatives 1 and 2

Recovered Materials	*Hawaii Study Area*		*HCTT Transit Lane*		*California Study Area*	
	Alternative 1	*Alternative 2*	*Alternative 1*	*Alternative 2*	*Alternative 1*	*Alternative 2*
Air Targets – Decoy	0	0	-	-	3	5
Air Targets – Supersonic Drone	11	21	-	-	113	153
Heavyweight Torpedo (Non-Explosive)	53	100	-	-	41	76
Lightweight Torpedo (Non-Explosive)	3	3	-	-	7	11
Sub-surface Target – Maneuvering*	206	260	-	-	413	633
Surface Target – Floating (Large)	13	58	-	-	63	104
Surface Target – Floating (Medium)	34	61	-	-	77	102

*Some portion of ASW targets are expendable and not recovered.

I.2 Effects on Seafloor Habitats – Military Readiness Activities

Table I-10 shows the Study Area bottom types. Using the methodology and assumptions described under Section I.1 (Estimating the Effect of Military Expended Materials and Underwater Explosions on Abiotic Substrates as a Habitat for Biological Resources), Table I-11 through Table I-14 show single-year effects on applicable habitat types, from both explosive charges and military expended materials.

Table I-10: Area and Percent Coverage of Abiotic Substrate Types in the Study Area

Study Area	Habitat						Total Area (km^2)
	Hard		Mixed		Soft		
	Area (km^2)	%	Area (km^2)	%	Area (km^2)	%	
Hawaii	421,755	5.37	132,133	1.68	7,300,565	92.95	7,854,453
California	1,960	0.22	98,532	11.06	790,400	88.72	890,893
Total	423,715	4.85	230,665	2.64	8,090,965	92.52	8,745,346

Table I-11: Effect from Explosives on or Near the Bottom for Training Activities in Alternative 1 in a Single Year

Training Areas	Net Explosive Weight (lb.)	Number of Charges	Total Effect Footprint (Acre)	Effect by Bottom Type (Acre)		
				Hard	Mixed	Soft
Hawaii Study Area	0.5	750	0.2066	0.01851	0.02138	0.16668
	2.5	397	0.2731	0.02447	0.02827	0.22034
	5	8	0.0099	0.00089	0.00102	0.00799
	10	3	0.0049	0.00044	0.00051	0.00395
	20	98	0.3022	0.02708	0.03128	0.24381
	1,367	1	0.0230	0.00206	0.00238	0.01856
Total	***NA***	**1,256**	**0.8196**	**0.07344**	**0.08483**	**0.66125**
California Study Area	0.5	50	0.0138	0.00003	0.00143	0.01113
	2.5	20	0.0138	0.00003	0.00143	0.01113
	5	32	0.0397	0.00009	0.00411	0.03203
	10	17	0.0332	0.00007	0.00344	0.02679
	20	558	1.7293	0.00380	0.17898	1.39520
	500	3	0.0413	0.00009	0.00427	0.03332
	1,367	4	0.0803	0.00018	0.00831	0.06479
Total	***NA***	**684**	**1.9514**	**0.00429**	**0.20197**	**1.57439**

Table I-12: Effect from Explosives on or Near the Bottom for Training Activities in Alternative 2 in a Single Year

Training Areas	Net Explosive Weight (lb.)	Number of Charges	Total Effect Footprint (Acre)	Effect by Bottom Type (Acre)		
				Hard	Mixed	Soft
Hawaii Study Area	0.5	750	0.2066	0.01851	0.02138	0.16668
	2.5	462	0.3178	0.02847	0.03289	0.25640
	5	10	0.0124	0.00111	0.00128	0.01000
	10	3	0.0049	0.00044	0.00051	0.00395
	20	102	0.3146	0.02819	0.03256	0.25382
	1,367	1	0.0230	0.00206	0.00238	0.01856
Total	***NA***	**1,327**	**0.8792**	**0.07878**	**0.09100**	**0.70934**
California Study Area	0.5	75	0.0207	0.00005	0.00214	0.01670
	2.5	20	0.0138	0.00003	0.00143	0.01113
	5	36	0.0446	0.00010	0.00462	0.03598
	10	22	0.0429	0.00009	0.00444	0.03461
	20	646	2.0021	0.00440	0.20722	1.61529
	500	3	0.0413	0.00009	0.00427	0.03332
	1,367	4	0.0918	0.00020	0.00950	0.07406
Total	***NA***	**806**	**2.2572**	**0.00497**	**0.23362**	**1.82111**

Table I-13: Effect from Explosives on or Near the Bottom for Testing Activities in Alternative 1 in a Single Year

Testing Areas	Net Explosive Weight (lb.)	Number of Charges	Total Effect Footprint (Acre)	Effect by Bottom Type (Acre)		
				Hard	Mixed	Soft
Hawaii Study Area	0.5	360	0.0992	0.00889	0.01027	0.08003
	2.5	180	0.1240	0.01111	0.01283	0.10004
	5	37	0.0452	0.00405	0.00468	0.03647
Total	***NA***	577	**0.2684**	**0.02405**	**0.02778**	**0.21655**
California Study Area	0.5	720	0.1983	0.00044	0.02052	0.15999
	2.5	360	0.2479	0.00055	0.02566	0.20001
	5	482	0.5969	0.00131	0.06178	0.48158
Total	***NA***	1,562	**1.0432**	**0.00230**	**0.10797**	**0.84165**

Table I-14: Effect from Explosives on or Near the Bottom for Testing Activities in Alternative 2 in a Single Year

Testing Areas	Net Explosive Weight (lb.)	Number of Charges	Total Effect Footprint (Acre)	Effect by Bottom Type (Acre)		
				Hard	Mixed	Soft
Hawaii Study Area	0.5	450	0.1240	0.01111	0.01283	0.10004
	2.5	225	0.1550	0.01389	0.01604	0.12505
	5	37	0.0459	0.00411	0.00475	0.03703
	60	6	0.0387	0.00347	0.00401	0.03122
Total	***NA***	718	**0.3635**	**0.03257**	**0.03762**	**0.29327**
California Study Area	0.5	900	0.2479	0.00055	0.02566	0.20001
	2.5	450	0.3099	0.00068	0.03207	0.25003
	5	1,131	1.4021	0.00308	0.14512	1.13121
	60	6	0.0387	0.00009	0.00401	0.03122
Total	***NA***	2,487	**1.9986**	**0.00440**	**0.20686**	**1.61247**

I.3 Statistical and Probability Analysis for Estimating Direct Strike Effect and Number of Potential Exposures from Military Expended Materials

This section discusses the methods and results for calculating the probability of a direct strike of a marine animal from any military items resulting from the proposed training and testing activities falling toward (or directed at) the sea surface. For the purposes of this section, military items include non-explosive practice munitions, sonobuoys, acoustic countermeasures, targets, and high-energy lasers. Only marine mammals and sea turtles will be analyzed using these methods because animal densities are necessary to complete the calculations and density estimates are currently only available for marine mammals and sea turtles within the Study Area. The analysis conducted here does not account for explosive munitions because impacts from explosives are analyzed within the Navy Acoustic Effects Model as described in the report, Quantifying Acoustic Impacts on Marine Mammals and Sea Turtles: Methods and Analytical Approach for Phase IV Training and Testing (U.S. Department of the Navy, 2024). Table I-15 provides a list of symbols used in the equations located in the preceding sections.

Table I-15: A List of Symbols and Their Brief Descriptions as They Are Used in the Analysis

Symbol	Explanation
A_S	Area of an individual marine animal
L_S	Length of an individual marine animal
W_S	Width of an individual marine animal
N_S	Number of individual animals within a single marine species
D_S	Density of animals within a single marine species
A_{TotS}	The total footprint area of a single marine species
A_{RC}	The area of a single testing/training range
L_{mun}	The length of an individual piece of military expended material
W_{mun}	The width of an individual piece of military expended material
A_{mun}	The area of an individual piece of military expended material
N_{mun}	The total number of military expended materials used of a single type (e.g., non-explosive bomb)
A_I	The total area of military expended materials used of a single type (e.g., non-explosive bomb)
A_{TotI}	The area of impact for all types of military expended materials; the impact footprint
A_{BZ}	The area of the buffer zone around the impact footprint
A_{Final}	The total area of concern, including the buffer zone (A_{BZ}), the impact footprint (A_{TotI}), and the total animal footprint of a single marine species (A_{TotS})
R_{TotS}	The total footprint radius of a single marine species
R_{TotI}	The total footprint radius of the impact footprint for all types of military expended materials
R_{BZ}	The buffer zone radius of the impact footprint for all types of military expended materials
P	The probability of impacting a marine animal through a military expended material direct exposure impact
T	Total number of possible surface animal exposures associated with a direct impact from military expended materials

I.3.1 Direct Impact Analysis

A probability was calculated to estimate the impact probability (P) and number of exposures (T) associated with direct impact of military items on marine animals and sea turtles on the sea surface within the specified training or testing area (A_{RC}) in which the activities are occurring. The statistical probability analysis is based on probability theory with “footprint” areas for marine animals and total impact inscribed inside the training or testing area. The analysis is over-predictive and conservative, in that it assumes: (1) that all animals would be at or near the surface 100 percent of the time, when in fact, marine mammals spend the majority of their time underwater (e.g., Fonseca et al., 2022; Hochscheid, 2014; Irvine et al., 2017; Lagerquist et al., 2000; Mate et al., 1995), and (2) that the animals are stationary, which does not account for any movement or any potential avoidance of the training or testing activity area. There is some research that suggests marine mammals will avoid areas where there is sonar activity but not areas where there is just vessel traffic noise; so, avoidance behavior in marine mammals is situationally dependent (for review see (Ellison et al., 2011)). For sea turtles, research has demonstrated changes in behavior of sea turtles in response to anthropogenic sounds (O'Hara & Wilcox, 1990; Samuel et al., 2005), but more research is needed to determine if they portray avoidance behavior to any form of anthropogenic activity.

There are three types of areas incorporated into the analyses: species area (A_S), total impact footprint area (A_{TotI}), and the buffer zone of the impact area (A_{BZ}). For each calculation, a basic area is assessed using either the area calculation for a rectangle (A = length * width) or a circle ($A = \pi R^2$, where R is the radius of a circle). These area calculations were used in four different scenarios that make assumptions about the type of interaction between the marine animal and the military expended materials. For the initial three scenarios, all areas are calculated using the rectangular method. For the fourth scenario, all areas are calculated using the circular method.

- Scenario 1: Purely static, rectangular scenario. Impact is assumed to be static (i.e., direct impact effects only; non-dynamic; no explosions or scattering of military items after the initial impact) with a military expended material directly hitting a marine animal. This scenario assumes the marine animal is fully inside the impact area when contact with the military expended material is made.
- Scenario 2: Dynamic scenario with end-on collision. It is assumed that the military expended material is moving through the water, in the same direction as the length of the impact zone, for a distance of six times the initial length of the impact area. The concept here is that the military expended material has forward momentum along the length of the impact area and can make contact with the marine animal at any point inside of this new impact footprint area.
- Scenario 3: Dynamic scenario with broadside collision. It is assumed that the military expended material is moving through the water, in the same direction as the width of the impact zone, for a distance of six times the initial width of the impact area. The concept here is that the military expended material has forward momentum along the width of the impact area and can make contact with the marine animal at any point inside of this new impact footprint area.
- Scenario 4: Purely static, radial scenario, in which the rectangular animal, buffer zone, and impact footprints are replaced with circular footprints. Basically, the assumption is that the animal and the military expended materials are moving in circular patterns, rather than straight paths. This scenario assumes the marine animal is fully inside the impact area when contact with the military expended material is made.

Static impacts (Scenarios 1 and 4) assume no additional aerial coverage effects of scattered military items beyond the initial impact. For dynamic impacts (Scenarios 2 and 3), the distance of any scattered military items must be considered by increasing the length (Scenario 2) or width (Scenario 3), depending on orientation (broadside versus end-on collision), of the impact footprint to account for the forward horizontal momentum of the falling object. Forward momentum typically accounts for six times the impact area's length or width. Significantly different values may result from the static and dynamic orientation scenarios. Both types of collision conditions can be calculated each with 50 percent likelihood (i.e., equal weighting between Scenarios 2 and 3, to average these potentially different values).

The method of area (A_S, A_{TotI}, and A_{BZ}) calculation will vary slightly with each scenario. First, the basic concepts behind the area calculations are addressed below.

- The individual animal area (A_S) was calculated by multiplying the length and the width of the animal ($A_S = L_S * W_S$), where width was 20 percent of the length for marine mammals and 84% of the length for sea turtles. Then, the species density and the range complex (A_{RC}) size were incorporated to produce the species total area (A_{TotS}). A_S was multiplied by the number of animals (N_S) in the specified training or testing area, where N_S was the product of the highest average month animal density (D_S) and the area of the range complex ($A_{TotS} = A_S * N_S = A_S * D_S *$

A_{RC}). As a conservative scenario, the total animal footprint area was calculated for the species with the highest average monthly density in the training or testing area with the highest use of military items within the entire Study Area. For the remainder of the calculations A_{TotS} was used to represent the presence of the species within the area.

- To assess the impact footprint area (A_I) for a single type of munition used in the range complex, the area of the munition (A_{mun}) was calculated by multiplying the length and width of the munition ($A_{mun} = L_{mun} * W_{mun}$). Then, A_{mun} was multiplied by the total number of that munition type used in a year (N_{mun}). Thus, $A_I = N_{mun} * A_{mun}$ is the impact footprint for a single type of munition in a single range complex over a year.
- The A_I for each munition type used in the range complex was then summed across all munition types to get a total impact footprint (A_{TotI}) for a year within a single range complex. As a conservative scenario, the total impact footprint area was calculated for the training or testing area with the highest use of military items within the entire Study Area. This total impact footprint area was then converted back into the length-width assessment, with the ratio of the impact area mirroring the animal $\frac{W_S}{L_S} = \frac{W_{TotI}}{L_{TotI}}$.
- In addition to the impact footprint and the species footprint, a buffer zone around the impact area footprint was included in the analysis. The purpose of this buffer zone was to be overly protective of the species to ensure that any species just outside of the impact area were also included in the analysis. The buffer zone was simply calculated by taking half of the area of the total impact footprint ($A_{BZ} = A_{TotI} * 0.5$) for the rectangular scenarios. For the circular scenarios, an additional buffer zone radius (R_{BZ}) was calculated.

These calculations were then fed into the final calculation area (A_{Final}) for the three rectangular scenarios (Scenarios 1-3). So, $A_{Final1} = A_{BZ1} + A_{TotI1} + A_{TotS}$, where 1 designates Scenario 1. The same concept was applied for Scenarios 2 and 3, except the L_{TotI} for Scenario 2 was multiplied by 6 and the W_{TotI} for Scenario 3 was multiplied by 6, which influence both A_{TotI} and A_{BZ} for each of the scenarios. In each case, the buffer zone could also be calculated by simple subtraction $A_{BZ} = A_{Final} – A_{TotI} – A_S$, for each respective scenario. For Scenario 4, the radial scenario, the area calculation was based on a circle. $A_{Final4} = \pi * (R_{TotS} + R_{TotI} + R_{BZ})^2$. To calculate the buffer zone from the final area, the following equation could also be used: $A_{BZ4} = \sqrt{(\frac{A_{Final4}}{\pi})} - R_{TotI} - R_{TotS}$.

Impact probability (P) is the probability of impacting one animal at its species peak density, with the given number, type, and dimensions of all military items used in training or testing activities occurring in the area per year. Therefore, P is the ratio of the final area for each scenario, which includes the species area, the impact footprint, and the buffer zone of the impact footprint, and the range complex area ($P = \frac{A_{Final}}{A_{RC}}$, where A_{Final} is based on the value calculated in each scenario). The total number of possible exposures (T) within a given year is a product of the species density, the area of the range complex, and the impact probability ($T = (D_S * A_{RC})*P$). Using this procedure, P and T were calculated for each of the four scenarios, for the Endangered Species Act (ESA)-listed marine mammals and the non-ESA marine mammal and ESA-listed sea turtle species with the highest average month density (used as the annual density value) and for each military item type. The scenario-specific P and T values were averaged over the four scenarios (using equal weighting) to obtain a single scenario, averaged-annual estimate of P and T.

The analysis is expected to provide an overestimation of the probability of a strike for the following reasons: (1) it calculates the probability of a single military item (of all the items expended over the course of the year) hitting a single animal at its species' highest seasonal density; (2) it does not take into account the possibility that an animal may avoid military activities; (3) it does not take into account the possibility that an animal may not be at the water surface; (4) it does not take into account that most projectiles fired during training and testing activities are fired at targets, and so only a very small portion of those projectiles that miss the target would hit the water with their maximum velocity and force; and (5) it does not quantitatively take into account the Navy avoiding animals that are sighted through the implementation of mitigation measures.

I.3.2 Parameters for Analysis

Impact probabilities (P) and number of exposures (T) were estimated by the analysis for the following parameters:

- Two action alternatives: Alternative 1 and Alternative 2. Animal densities, animal dimensions, and military item dimensions are the same for the two action alternatives.
- Two training or testing areas: Hawaii Study Area and California Study Area. Areas are approximately 806,027 square kilometers and 912,350 square kilometers, respectively.
- The following types of non-explosive munitions or other items:
    - **Small-caliber projectiles**: up to and including 0.50 caliber rounds
    - **Medium-caliber projectiles:** larger than 0.50 caliber rounds but smaller than 57 millimeters (mm) projectiles
    - **Large-caliber projectiles:** includes projectiles greater than or equal to a 57 mm projectile
    - **Missiles:** includes rockets and jet-propelled munitions
    - **Bombs:** Non-explosive practice bombs and mine shapes, ranging from 10 to 2,000 pounds
    - **Torpedoes:** includes all lightweight torpedoes
    - **Sonobuoys:** includes all sonobuoys
    - **Targets:** includes expended airborne and surface, as well as mine shapes
    - **Lightweight torpedo accessories:** includes all accessories that are dropped along with the torpedo (e.g., nose cap, air stabilizer)
    - **Anchors:** includes blocks used to anchor mine shapes to the seafloor
    - **Acoustic countermeasures:** includes aircraft deployed acoustic countermeasures
    - **High-energy lasers**: includes high-energy laser weapons that are directed at a surface target
    - **Expended bathythermographs**: small sensor deployed from ships
- Animal species of interest: The species of ESA-listed marine mammals expected in the HCTT Study Area and the non-ESA listed marine mammal with the highest average month density in the Hawaii Study Area and the California Study Area.
- All sea turtles are ESA-listed and are included if their presence in each area is expected.

I.3.3 Output Data

Estimates of impact probability (P) and number of exposures (T) for a given species of interest were made for the specified training or testing area with the highest annual number of military items used for each of the two action alternatives. The calculations derived P and T from the highest annual number of military items used in the Study Area for the given alternative. Differences in P and T between the alternatives arise from different numbers of events (and therefore military items) for the two alternatives.

Results for marine mammals and sea turtles are presented in Table I-16 through Table I-19.

Table I-16: Estimated Representative Marine Mammal Exposures from Direct Strike of a High-Energy Laser by Area and Alternative in a Single Year

Hawaii Study Area				
Species	**Training**		**Testing**	
	Alternative 1	**Alternative 2**	**Alternative 1**	**Alternative 2**
Blue Whale	0.0000006	0.0000006	0.0000006	0.0000006
Fin Whale	0.0000026	0.0000026	0.0000027	0.0000027
Humpback Whale	0.0001250	0.0001250	0.0001273	0.0001277
Sperm Whale	0.0000683	0.0000683	0.0000699	0.0000702
Sei Whale	0.0000008	0.0000008	0.0000009	0.0000009
Killer Whale	0.0000017	0.0000017	0.0000019	0.0000019
False Killer Whale (MHI Insular DPS)	0.0000020	0.0000020	0.0000023	0.0000024
Hawaiian Monk Seal	0.0000460	0.0000460	0.0000507	0.0000516
Rough-toothed Dolphin	0.0022764	0.0022764	0.0040113	0.0047075
California Study Area				
Species	**Training**		**Testing**	
	Alternative 1	**Alternative 2**	**Alternative 1**	**Alternative 2**
Blue Whale	0.0021360	0.0021360	0.0026125	0.0027501
Fin Whale	0.0770323	0.0021360	0.0807100	0.0815756
Gray Whale	0.0398065	0.0021360	0.0452267	0.0466958
Humpback Whale	0.0016596	0.0021360	0.0022606	0.0024442
Sperm Whale	0.0001209	0.0021360	0.0002654	0.0003145
Sei Whale	0.0000006	0.0021360	0.0000078	0.0000106
Killer Whale	0.0000001	0.0021360	0.0000049	0.0000067
Guadalupe Fur Seal	0.0007741	0.0021360	0.0031727	0.0040357
Short-beaked Common Dolphin	1.4873838	1.4873838	1.5124785	1.5131423

Table I-17: Estimated Representative Sea Turtle Exposures from Direct Strike of a High-Energy Laser by Area and Alternative in a Single Year

Hawaii Study Area				
Species	**Training**		**Testing**	
	Alternative 1	**Alternative 2**	**Alternative 1**	**Alternative 2**
Green Turtle	0.0000001	0.0000001	0.0000002	0.0000002
Hawksbill Turtle	0.0000000	0.0000000	0.0000000	0.0000000
Leatherback Turtle	0.0000032	0.0000032	0.0000038	0.0000039
Loggerhead Turtle	0.0000029	0.0000029	0.0000037	0.0000039
Olive Ridley Turtle	0.0000014	0.0000014	0.0000021	0.0000023
California Study Area				
Species	**Training**		**Testing**	
	Alternative 1	**Alternative 2**	**Alternative 1**	**Alternative 2**
Green Turtle	0.0057387	0.0057387	0.0061786	0.0061921
Leatherback Turtle	0.0000019	0.0000019	0.0000042	0.0000043
Loggerhead Turtle	0.0001591	0.0001591	0.0002079	0.0002096

Table I-18: Estimated Representative Marine Mammal Exposures from Direct Strike of Military Expended Materials by Area and Alternative in a Single Year

Hawaii Study Area				
Species	Training		Testing	
	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Blue Whale	0.0000040	0.0000045	0.0000024	0.0000032
Fin Whale	0.0000077	0.0000085	0.0000055	0.0000066
Humpback Whale	0.0002346	0.0002492	0.0001881	0.0002124
Sperm Whale	0.0001560	0.0001680	0.0001180	0.0001378
Sei Whale	0.0000076	0.0000086	0.0000044	0.0000060
Killer Whale	0.0000196	0.0000223	0.0000113	0.0000156
False Killer Whale (MHI Insular DPS)	0.0000330	0.0000377	0.0000185	0.0000260
Hawaiian Monk Seal	0.0004796	0.0005445	0.0002783	0.0003825
Rough-toothed Dolphin	0.0053458	0.0057675	0.0040113	0.0047075
California Study Area				
Species	Training		Testing	
	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Blue Whale	0.0031050	0.0032710	0.0026125	0.0027501
Fin Whale	0.0836673	0.0845990	0.0807100	0.0815756
Gray Whale	0.0504150	0.0521321	0.0452267	0.0466958
Humpback Whale	0.0029248	0.0031521	0.0022606	0.0024442
Sperm Whale	0.0004465	0.0005101	0.0002654	0.0003145
Sei Whale	0.0000180	0.0000216	0.0000078	0.0000106
Killer Whale	0.0000118	0.0000143	0.0000049	0.0000067
Guadalupe Fur Seal	0.0063822	0.0075207	0.0031727	0.0040357
Short-beaked Common Dolphin	1.9583771	2.0361045	1.7250189	1.7907992

Table I-19: Estimated Representative Sea Turtle Exposures from Direct Strike of Military Expended Materials by Area and Alternative in a Single Year

Hawaii Study Area				
Species	Training		Testing	
	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Green Turtle	0.0000139	0.0000161	0.0000073	0.0000107
Hawksbill Turtle	0.0000025	0.0000029	0.0000013	0.0000019
Leatherback Turtle	0.0000652	0.0000746	0.0000360	0.0000511
Loggerhead Turtle	0.0001002	0.0001151	0.0000540	0.0000778
Olive Ridley Turtle	0.0000940	0.0001083	0.0000498	0.0000726
California Study Area				
Species	Training		Testing	
	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Green Turtle	0.0202469	0.0230685	0.0121948	0.0143809
Leatherback Turtle	0.0001430	0.0001730	0.0000596	0.0000818
Loggerhead Turtle	0.0025325	0.0030239	0.0011550	0.0015238

I.4 Statistical and Probability Analysis for Estimating Navy and Coast Guard Vessel Strike of Large Whale Species

To conduct a statistical analysis of future Navy ship strikes within HCTT, three basic components are required:

1. Number of Navy or Coast Guard ship strikes to large whales for the seven-year period prior to the period for which new MMPA authorization is being sought (2017–2023 for Navy and 2018–2024 for Coast Guard).
2. Amount of Navy or Coast Guard at-sea surface vessel days for the seven-year period (2017–2023) prior to the period for which new MMPA authorization is being sought.
3. Estimate of future Navy or Coast Guard at-sea surface vessel days for the requested new authorization seven-year period (December 2025–December 2032).

HCTT Strikes. There were three large whale strikes within HCTT by Navy surface ships over the seven years between 2017 and 2023. For the Coast Guard, there were four strikes over the same time period.

HCTT Number of At-Sea Days (7 Years from 2017 to 2023). The most recent seven-year period from 2017–2023 is used as the appropriate time frame to calculate the potential probability of a large whale ship strike from Navy or Coast Guard vessels in the HCTT Study Area over the term of anticipated new seven-year permit (December 2025-December 2032). The marine California Current Ecosystem off California has experienced significant variation since 2014 from short- and long-term oceanographic and climate change fluctuations (Amaya et al., 2021; Amaya et al., 2020; Ingman et al., 2021; Szesciorka et al., 2019; Weber et al., 2021). Some whale species have adjusted primary occurrence northward due to changing prey availability. Other whale species have shown increases in populations or regional distribution shifts (Markowitz et al., 2024). The effects of climate change impacts on oceanography and resulting marine mammal distributions in Hawaii are more subtle. Over the next permit period, patterns of species occurrence are likely to remain more consistent in Hawaii than in California. To support this assessment and determine the amount of 2017–2023 at-sea days, the Navy conducted a vessel traffic analysis specific to the new HCTT Study area. From this analysis, cumulative Navy at-sea days from 2017 to 2023 were calculated to be 15,834 days for Navy manned vessels greater than 150 m (492 ft. or destroyer size and above) and various sizes of USVs. For Coast Guard vessels greater than 100 m (328 ft.) the cumulative total was 1,936 days. Annual tracking data is available for Navy and Coast Guard manned surface vessels and used in the cumulative totals above. There is no corresponding tracking data available for USVs, so the Phase III USV estimate of 300 at-sea days per year is included in the Navy's 2017–2023 totals.

This analysis is specific to Navy larger size class vessels over 150 m (492 ft.) that have been involved with HCTT strikes in the past. There have been no Navy reports over the last 30 years of vessel strikes to whales in HCTT from smaller vessel and boat classes (e.g., tugs, service craft, landing craft, special operations Rigid Hull Inflatable Boat [RHIBs]). Furthermore, no tracking data is available for these smaller craft. In addition, during the HSTT Phase III permit period there have been no whale strikes from various size classes of Navy USVs. Tracking data for Coast Guard vessels is only available for larger ship classes greater than 100 m (328 ft.). All Coast Guard strikes were from small craft between (40–100 ft.) for which tracking data is not available. For calculation purposes the larger Navy and Coast Guard vessel tracking data is sufficient for worst case serious injury or mortality probability predictions. Smaller vessel and craft sizes at-sea time is relatively similar in both the prior permit period and forecasted future permit period.

HCTT Estimate of Future At-Sea Days (7 Years from December 2025 to December 2032). Navy surface vessel traffic within the HCTT Study Area has been consistent over the years, although there was a decrease in days at-sea across the seven-year period from 2017 to 2023 (Navy unpublished data). At-sea days steadily decreased from a high of 2,734 days in 2017 to 1,953 in 2023, a drop of 32 percent. However, the Navy believes an average of the seven-year cumulative total from 2017 to 2023 is a sufficient prediction of future at-sea days for manned surface ships from December 2025 to December 2032. The 2017–2023 average is 2,262 days (i.e., 15,834/7). Therefore, 2,262 days per year was used as the starting point for an annual estimate for the cumulative total of future at-sea days over the pending HCTT authorization. A new category of vessel type is soon to be transferred to HCTT for testing during the upcoming permit period. These are larger sized USVs longer than 61 m (200 ft.) in length. Although there has not been a whale ship strikes from USVs, out of an abundance of caution for this newer larger class of USVs, the Navy is adding large USV annual at-sea days with the manned annual at-sea days above (final annual at-sea days 2,262+728=2,990). Therefore, the cumulative total for the Dec 2025–Dec 2032 period for Navy manned and large USV at-sea days is 17,940 (2,990 times 7). Coast Guard annual at-sea days was consistent between 2017–2023 with an average value of 277 days per year. Therefore, 277 days per year is used for the annual at-sea days between Dec 2025 and Dec 2032. Therefore, the cumulative total for this period is 1,659 (277 times 7).

Calculations series. The probability of a vessel strike to whales is influenced by the amount of time at-sea for Navy or Coast Guard surface vessels within the HCTT Study Area and the number of strikes over those years. This generates a specific strike rate. For the period 2017–2023, there were three Navy strikes over 15,834 at-sea days. Dividing the Navy reported strikes by ship at-sea days (i.e., 3/15,834) results in a strike rate of 0.000189 strikes per day. For the period 2018–2024, there were three Coast Guard strikes over 1,936 at-sea days. Dividing the Coast Guard reported strikes by ship at-sea days (i.e., 3/1,936) results in a strike rate of 0.00155 strikes per day.

Navy. Estimated Navy cumulative ship at-sea days within HCTT for the period from December 2025 to December 2032 is 17,940 days. The previously calculated strike rate (0.000189 strikes per day) can be multiplied by the estimated at-sea days from December 2025 to December 2032 to estimate the number of predicted whale strikes anticipated over this period (0.000189 strikes per day x 17,940 days). This formula calculates up to 3.399 strikes from December 2025 to December 2032.

The probabilities of a specific number of strikes (e.g., n=0, 1, 2) over the period from December 2025 to December 2032 can be derived from a Poisson distribution. A Poisson distribution is often used to describe random occurrences when the probability of an occurrence is small; for example, count data such as cetacean sighting data, or in this case strike data, often described as a Poisson or over-dispersed Poisson distribution. The formula for a Poisson distribution is:

$$P\left\langle n \middle| \mu \right\rangle = \frac{e^{-\mu} \bullet \mu^{n}}{n!}$$

P(*n*/*μ*) is the probability of observing n events in some time interval, when the expected number of events in that time interval is *μ*. For this analysis, *μ* is the estimated December 2025–December 2032 strike rate of 2.571. Using this strike rate (2.571), the Poisson distribution can estimate the probability of *n* where n=0 (no strikes), 1 strike, 2 strikes, 3 strikes, 4 strikes, or 5 strikes for December 2025-December 2032:

P(0)= 0.034 or a 3 percent chance of zero strikes

P(1)= 0.113 or an 11 percent chance of one strike

P(2)= 0.193 or a 19 percent chance of two strikes

P(3)= 0.219 or a 22 percent chance of three strikes

P(4)= 0.186 or a 19 percent chance of four strikes

P(5)= 0.126 or a 13 percent chance of five strikes

(percentages above rounded to nearest whole value)

Coast Guard. Estimated Coast Guard cumulative ship at-sea days within HCTT for the period from December 2025–December 2032 is 1,659 days. The previously calculated strike rate (0. 00155 strikes per day) can be multiplied by the estimated at-sea days from December 2025 to December 2032 to estimate the number of predicted whale strikes anticipated over this period (0. 00155 strikes per day x 1,659 days). This calculation estimates up to 2.571 strikes from December 2025 to December 2032. Using this strike rate (2.571), the Poisson distribution can estimate the probability of *n* where n=0 (no strikes), 1 strike, 2 strikes, 3 strikes, 4 strikes, or 5 strikes for December 2025–December 2032:

P(0)= 0.076 or a 7 percent chance of zero strikes

P(1)= 0.197 or a 20 percent chance of one strike

P(2)= 0.253 or a 25 percent chance of two strikes

P(3)= 0.217 or a 22 percent chance of three strikes

P(4)= 0.139 or a 14 percent chance of four strikes

(percentages above rounded to nearest whole value)

I.4.1 Species

The Poisson distribution described above only calculates the probability of the number of strikes. It does not identify which species could be struck. Only some Navy and Coast Guard reported whale strikes are identified to the species level, making it difficult to predict which species of large whales are most likely to be struck during future training and testing activities.

From NMFS internal record keeping of ship strikes, the most commonly struck whales in Hawaii are humpback whales; and the most commonly struck whales in California are gray whales, fin whales, and humpback whales (Carretta et al., 2023a; Lammers et al., 2013; Scordino et al., 2023). Most of these strikes are from non-Navy commercial shipping. For Hawaii and California, higher strike rates to these species are largely attributed to higher species abundance in these areas.

To predict the likelihood of striking any species, NMFS compiled information from the latest NMFS SARs for each species or stock on detected annual rates of large whale serious injury and mortality from vessel collisions (National Marine Fisheries Service, 2018a). Not all instances of serious injury and mortality are represented in the annual rates reported in the SARs. However, the annual rates of large whale serious injury and mortality from vessel collisions in the SARs do provide a good representation of the relative susceptibility of large whale species to vessel strike in the Study Area. NMFS' analysis noted there were low probabilities of ship strikes to certain large whale species and stocks. NMFS further concluded and the Navy agreed that the stocks listed below would be the most likely struck, if a Navy or Coast Guard ship strike were to occur:

California

- Blue whale (Eastern North Pacific Stock)
- Fin whale (California/Oregon/Washington Stock)
- Grey whale (Eastern North Pacific Stock)
- Humpback whale (Mainland Mexico-California-Oregon-Washington Stock)

Hawaii

- Humpback whale (Central North Pacific Stock)
- Sperm whale (Hawaii Stock)

References

Ellison, W. T., B. L. Southall, C. W. Clark, and A. S. Frankel. (2011). A new context-based approach to assess marine mammal behavioral responses to anthropogenic sounds. *Conservation Biology 26* (1): 21–28.

Fonseca, C. T., S. Pérez-Jorge, R. Prieto, C. Oliveira, M. Tobeña, A. Scheffer, and M. A. Silva. (2022). Dive behavior and activity patterns of fin whales in a migratory habitat. *Frontiers in Marine Science 9*. DOI:10.3389/fmars.2022.875731

Hochscheid, S. (2014). Why we mind sea turtles' underwater business: A review on the study of diving behavior. *Journal of Experimental Marine Biology and Ecology 450* 118–136.

Irvine, L., D. M. Palacios, J. Urbán, and B. Mate. (2017). Sperm whale dive behavior characteristics derived from intermediate-duration archival tag data. *Ecology and Evolution 7* (19): 7822–7837. DOI:https://doi.org/10.1002/ece3.3322

Lagerquist, B. A., K. M. Stafford, and B. R. Mate. (2000). Dive characteristics of satellite-monitored blue whales (*Balaenoptera musculus*) off the central California coast. *Marine Mammal Science 16* (2): 375–391. DOI:https://doi.org/10.1111/j.1748-7692.2000.tb00931.x

Mate, B. R., K. A. Rossbach, S. L. Nieukirk, R. S. Wells, A. Blair Irvine, M. D. Scott, and A. J. Read. (1995). Satellite-monitored movements and dive behavior of a bottlenose dolphin (*Tursiops truncatus*) in Tampa Bay, Florida. *Marine Mammal Science 11* (4): 452–463. DOI:https://doi.org/10.1111/j.1748-7692.1995.tb00669.x

O'Hara, J. and J. R. Wilcox. (1990). Avoidance responses of loggerhead turtles, *Caretta caretta*, to low frequency sound. *Copeia 1990* (2): 564–567.

Samuel, Y., S. J. Morreale, C. W. Clark, C. H. Greene, and M. E. Richmond. (2005). Underwater, low-frequency noise in a coastal sea turtle habitat. *The Journal of the Acoustical Society of America 117* (3): 1465–1472. DOI:10.1121/1.1847993

U.S. Department of the Navy. (2024). *Quantifying Acoustic Impacts on Marine Mammals and Sea Turtles: Methods and Analytical Approach for Phase IV Training and Testing* (Technical Report prepared by Naval Information Warfare Center Pacific). San Diego, CA: Naval Undersea Warfare Center.

Appendix J Agency Correspondence

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

TABLE OF CONTENTS

List of Figures

There are no figures in this appendix.

List of Tables

There are no tables in this appendix.

Appendix J Agency Correspondence

Appendix J contains the correspondence between the Navy and federal or state agencies with respect to cooperating agency and joint lead agency status (Section J.1), Federal Aviation Administration Airspace Proposal Coordination (Section J.2), the Coastal Zone Management Act (Section J.3), the Endangered Species Act (Section J.4), the Magnuson-Stevens Fishery Conservation and Management Act (Section J.5), the Marine Mammal Protection Act (Section J.6), and the National Historic Preservation Act (Section J.7).

J.1 Cooperating Agency and Joint Lead Agency Status

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON DC 20350-2000

5090
Ser N4I/22U130252
November 15, 2022

Ms. Kimberly Damon-Randall
Director, Office of Protected Resources
NOAA Fisheries
1315 East West Highway
Silver Spring, MD 20910

Dear Ms. Damon-Randall:

SUBJECT: HAWAII-CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT - COOPERATING AGENCY

In accordance with the National Environmental Policy Act (NEPA), the Department of the Navy (Navy) is initiating the preparation of an Environmental Impact Statement/Overseas Environmental Statement (EIS/OEIS) to evaluate the potential environmental effects associated with military readiness training ("training") and research, development, testing, and evaluation (RDT&E, or "testing") activities around the Hawaiian Islands and off the coast of California within the Hawaii-California Training and Testing (HCTT) Study Area.

This HCTT EIS/OEIS represents the fourth phase (Phase IV) of ongoing NEPA and EO 12114 compliance for continuation of at-sea training and testing. It will evaluate military readiness activities from 2025 into the reasonably foreseeable future and incorporate evolving mission requirements associated with force structure changes, including those resulting from the development, testing, and ultimate introduction of new platforms (vessels, aircraft, and weapon systems) into the Pacific Fleet. The Phase IV HCTT EIS/OEIS will also combine the existing Point Mugu Sea Range (PMSR) EIS/OEIS into this new EIS, as well as include expansion of the Study Area in Southern California and Northern California.

The HCTT EIS/OEIS will provide analysis of military readiness training and testing requirements and is intended to serve as a basis for the issuance of regulatory permits and authorizations. The existing Marine Mammal Protection Act (MMPA) Final Rule and Letters of Authorization will expire in December 2025 for HSTT and in July 2029 for PMSR.

To better complete the analysis required within the permitting and consultation process pursuant to the MMPA and the Endangered Species Act (ESA), the Navy believes that participation in the development of the HCTT EIS/OEIS by National Marine Fisheries Service (NMFS) is essential. Therefore, in accordance with the Council on Environmental Quality's (CEQ's) NEPA guidelines (specifically 40 C.F.R. Part 1501) and CEQ's 2002 guidance on cooperating agencies, Navy requests that NMFS serve as a cooperating agency for the development of the Phase IV HCTT EIS/OEIS.

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As defined in 40 CFR Section 1501.6, the Navy is the lead agency for the Phase IV HCTT EIS/OEIS. As the lead agency, the Navy will perform the following:

a. Gather all necessary background information and prepare all necessary permit applications associated with the proposed action.

b. Work with NMFS personnel to determine the method of estimating potential effects to protected marine species, including threatened and endangered species.

c. Determine the scope of the HCTT EIS/OEIS, including the alternatives evaluated.

d. Circulate the NEPA document to the public and other interested parties.

e. Schedule and supervise meetings held in support of the NEPA process and compile comments received from the public.

f. Maintain an administrative record and respond to any Freedom of Information Act requests relating to the HCTT EIS/OEIS.

g. Maintain and execute an overall project planning schedule. The initial HCTT EIS/OEIS Stick Chart containing major milestones is provided in enclosure (1).

h. Maintain and execute an interagency permitting schedule for MMPA and ESA authorizations. The HCTT Interagency Permitting Milestone Schedule is provided in enclosure (2).

i. Track permitting schedule milestones via an online At-Sea Permitting Dashboard that will be updated by Navy and accessible by Navy and NMFS staff.

j. Provide proposed schedule changes, as necessary, to the Interagency Permitting Milestone Schedule.

Navy respectfully requests that NMFS, in its role as a cooperating agency, provide support as follows:

a. Provide timely comments on working drafts of the EIS/OEIS. The Navy requests that comments on draft EIS/OEIS documents be provided in accordance with approved project schedules.

b. Provide timely regulatory deliverables, such as draft and final Proposed Rules, in accordance with approved project schedules.

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c. Adhere to the overall schedule as set forth by the Navy and provide advance notification to the Navy when there is a likelihood of missing schedule milestones.

d. Respond to Navy requests for information, in particular related to review of the acoustic effects analysis and evaluation of the effectiveness of protective and mitigation measures.

e. Coordinate, to the maximum extent practicable, any public comment periods required in the MMPA permitting process with the Navy's NEPA public comment periods.

f. Participate, as necessary, in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.

g. Participate in project scoping and public meetings and attend any scheduled risk communication training in advance of those meetings.

h. Provide a formal, written response to this cooperating agency request.

Navy and NMFS have been working to develop the enclosed schedules integrating the requirements of NEPA, MMPA and ESA in support of environmental planning for the HCTT Study Area.

a. The schedules establish target milestones to facilitate coordination across the agencies' areas of responsibility. Each agency commits to support the target milestones within their area of responsibility, to notify other affected parties if a milestone within that signatory's area of responsibility is at risk, and to identify in-house schedule adjustments to achieve Record of Decision dates.

b. This commitment to support integrated scheduling in no way supersedes regulatory processes nor do the agencies assume the outcome of requisite regulatory analyses, agency determinations, public involvement processes or independent agency decision authorities.

c. Navy and NMFS agree to coordinate any significant changes to the schedules with their senior leadership. Proposed changes that require a waiver of the two-year CEQ timeline for completion of an Environmental Impact Statement will be forwarded to Navy and NMFS senior agency officials for approval.

d. The Navy views meeting the commitments in this agreement as critical to the successful completion of the environmental planning process for the HCTT EIS/OEIS. NMFS assistance will be invaluable in this endeavor.

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November 15, 2022

We appreciate your consideration of our request and look forward to your response. The Navy point of contact for this action is Ms. Kimberly Kler, who can be reached at (360) 865-5015 or kimberly.h.kler.civ@us.navy.mil.

Sincerely,

LEDERER.MARC.S.1015467122 Digitally signed by LEDERER.MARC.S.1015467122 Date: 2022.11.14 17:32:43 -05'00'

M. S. LEDERER
Director, Installations (N4I)

Enclosures: 1. HCTT EIS/OEIS Overall Project Schedule
2. HCTT EIS/OEIS Interagency Permitting Milestone Schedule

Copy to:
ASN (EI&E)
DASN (EM&R)
OAGC (EI&E)
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COMUSFLTFORCOM (N46)
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COMNAVSEASYSCOM
COMNAVAIRSYSCOM
COMNAVWARCOM
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COMNAVREG SW (N45)

4

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

May 17, 2023

Deputy Chief of Naval Operations
(Fleet Readiness and Logistics (CNO N4))
Attn: Mr. Mark Snider
2000 Navy Pentagon
Washington, DC 20350-200

Dear Mr. Snider,

Thank you for your letter requesting that the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) participate as a cooperating agency in the preparation of an Environmental Impact Statement (SEIS)/Overseas Environmental Impact Statement (OEIS) to evaluate potential environmental effects of military readiness activities, which consist of training and testing, conducted within the Hawaii-California Training and Testing (HCTT) Study Area. We reaffirm our support of the Navy's decision to prepare an EIS/OEIS for HCTT and agree to be a cooperating agency, due, in part, to our responsibilities under section 101(a)(5)(A) of the Marine Mammal Protection Act and section 7 of the Endangered Species Act.

In response to your letter, NMFS staff will continue to, to the extent possible, provide support as follows:

- Provide timely comments on working drafts of the EIS/OEIS in accordance with agreed-upon project schedules;
- Provide timely regulatory deliverables, such as draft and final proposed rules, in accordance with agreed-upon project schedules;
- Adhere to the overall schedule as agreed upon with the Navy and provide advance notification to the Navy when there is a likelihood of missing schedule milestones;
- Respond to Navy requests for information, in particular related to review of the acoustic effects analysis and evaluation of the effectiveness of protective and mitigation measures;
- Participate, as necessary, in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS; and
- Assess the need for participation in project scoping and public meetings and attend when agreed upon given staff workload and available funding.

Further, as noted in your letter, Navy and NMFS worked to develop the schedules included in Enclosures 1 and 2 to the Navy's letter (which have since been modified) integrating the requirements of NEPA, MMPA and ESA in support of environmental planning for the HCTT Study Area. NMFS commits to support the target milestones within its area of responsibility, to notify other affected parties if a milestone within our area of responsibility is at risk, and to identify in- house schedule adjustments to achieve Record of Decision dates. This commitment to support integrated scheduling in no way supersedes regulatory processes nor assumes the outcome of requisite regulatory analyses, agency determinations, public involvement processes or independent agency decision authorities. Additionally, the Navy and NMFS agree to coordinate any changes to the schedules with their senior leadership, if needed. Proposed changes that require a waiver of the two-year CEQ timeline for completion of an Environmental Impact Statement will be forwarded to Navy and NMFS senior agency officials for approval.

If you need any additional information, please contact Jolie Harrison, NMFS Office of Protected Resources, at (301) 427-8401.

Sincerely,

Kimberly Damon-Randall
Director, Office of Protected Resources

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON DC 20350-2000

5090
Ser N4I/24U132016
January 24, 2024

Ms. Natasha Durkins
Vice President, Mission Support
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Dear Ms. Durkins:

SUBJECT: HAWAII-CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT - COOPERATING AGENCY INVITATION

In accordance with the National Environmental Policy Act (NEPA), the Department of the Navy (Navy) is initiating the preparation of an Environmental Impact Statement/Overseas Environmental Statement (EIS/OEIS) to evaluate the potential environmental effects associated with military readiness training ("training") and research, development, testing, and evaluation (RDT&E, or "testing") activities around the Hawaiian Islands and off the coast of California within the Hawaii-California Training and Testing (HCTT) Study Area, see enclosure (1). The HCTT EIS/OEIS will evaluate training and testing activities from 2025 into the reasonably foreseeable future and incorporate evolving mission requirements associated with force structure changes, including those resulting from the development, testing, and ultimate introduction of new platforms (vessels, aircraft) and weapon systems into the Pacific Fleet.

In addition to training and testing activities, the Navy proposes to increase the offshore operating space of the SOCAL Range Complex by establishing new special use airspace proximate to the existing Warning Area 291 (W-291). The two proposed new Warning Areas (W-293 and W-294) are crucial to the Navy's ability to meet its mission because it provides the requisite maneuver space in support of advanced operational scenarios, latest generation aircraft tactics, and unmanned airspace system operations and counter-targeting. There are no other changes to the airspace.

The Navy has developed the proposal with early and ongoing coordination with multiple Federal Aviation Administration (FAA) offices. The following FAA and airspace organizations have been contacted in developing this proposal.

a. FAA Air Traffic Control Representative (ATREP), Western Service Area.

b. FAA Air Traffic Control Representative Western Service Area.

c. Oakland ARTCC.

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d. Los Angeles ARTCC.

e. Mazatlán ARTCC.

f. International Civil Aviation Organization.

As the FAA is the Federal Agency authorized to designate and manage U.S. airspace (14 CFR Parts 71, 73 and 91), the Navy views participation by the FAA as essential given the FAA's status as a Federal Agency with jurisdiction by law (40 CFR Section 1508.15) and your expertise in evaluation of airspace impacts. Therefore, in accordance with the Council on Environmental Quality's (CEQ's) NEPA guidelines (specifically 40 CFR Part 1501) and CEQ's 2002 guidance on cooperating agencies, Navy requests that FAA serve as a cooperating agency for the development of the HCTT EIS/OEIS. The Navy requests the FAA's cooperation in accordance with the guidelines described in the Memorandum of Understanding between the FAA and the Department of Defense Concerning Environmental Review of Special Use Airspace Actions, dated October 4, 2005 (and subsequent Change 1, effective August 2011).

The HCTT EIS/OEIS will provide analysis of military readiness training and testing requirements and is intended to serve as a basis for the issuance of regulatory permits and authorizations. The existing HSTT Marine Mammal Protection Act (MMPA) Final Rule and Letters of Authorization will expire in December 2025.

As defined in 40 CFR Section 1501.7, the Navy is the lead agency for the HCTT EIS/OEIS. As the lead agency, the Navy will perform the following:

a. Identify and provide the necessary background information, including the most up-to-date airspace utilization information, as well as scientific, encroachment and resource management analysis, as best available data, to prepare the EIS and the associated FAA Application. The EIS/OEIS will be prepared to meet FAA's NEPA requirements.

b. Work closely with the FAA on the Application for airspace expansion.

c. Determine the scope of the HCTT EIS/OEIS, including the alternatives evaluated.

d. Circulate the NEPA document to the public and other interested parties and perform public involvement under the CEQ regulations.

e. Schedule and supervise meetings held in support of the NEPA process and compile comments received from the public.

f. Maintain an administrative record and respond to any Freedom of Information Act requests relating to the HCTT EIS/OEIS.

2

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g. Maintain and execute an overall project planning schedule. The HCTT EIS/OEIS Stick Chart containing major milestones is provided in enclosure (2).

h. Track permitting schedule milestones via an online At-Sea Permitting Dashboard that will be updated by Navy and accessible by Navy and FAA staff.

i. Provide proposed schedule changes, as necessary, to the Interagency Permitting Milestone Schedule. Permitting Milestone Schedule based on the current project schedule is provided in enclosure (3).

Navy respectfully requests that FAA, in its role as a cooperating agency, provide support as follows:

a. Provide timely comments on working drafts of the EIS/OEIS and associated application documents. The Navy requests that comments on draft EIS/OEIS be provided in accordance with approved project schedule.

b. Respond to Navy requests for information, in particular those related to Federal management of airspace that support the Warning Area expansion.

c. Participate, as necessary, in document and comment review meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.

d. Participate in project scoping and public meetings and attend any scheduled risk communication training in advance of those meetings.

e. Prepare FAA-specific documents.

f. Maintain an administrative record and respond as appropriate to any Freedom of Information Act requests relating to this EIS.

g. Provide a formal, written response to this cooperating agency request.

The Navy views meeting the commitments in this agreement as critical to the successful completion of the environmental planning process for the HCTT EIS/OEIS. FAA assistance will be invaluable in this endeavor.

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January 24, 2024

The Navy published the EIS NOI on 15 December 2023 stating that FAA has been invited as a CA. We request your response in February 2024. We appreciate your consideration of our request and look forward to your response. The Navy point of contact for this action is Ms. Kimberly Kler, who can be reached at (360) 649-1160 or kimberly.h.kler.civ@us.navy.mil.

Sincerely,

SINDER.MARK.S.1277897365 Digitally signed by SINDER.MARK.S.1277897365 Date: 2024.01.24 16:41:55

M. S. SINDER
Director, Installations Division

Enclosures: 1. HCTT Study Area
2. HCTT EIS/OEIS Overall Project Schedule (Stick Chart)
3. HCTT EIS/OEIS Interagency Permitting Milestone Schedule

Copy to:
ASN (EI&E)
DASN (EM&R)
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4

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON DC 20350-2000

5090
Ser N4I/24U132018
January 24, 2024

Andrew Haley
Chief, Office of Environmental Management
Commandant (CG-47)
U.S. Coast Guard Headquarters, Stop 7714
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593

Dear Mr. Haley:

SUBJECT: HAWAII-CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT - JOINT LEAD AGENCY REQUEST

In accordance with the National Environmental Policy Act (NEPA), the Department of the Navy (Navy) is initiating the preparation of an Environmental Impact Statement/Overseas Environmental Statement (EIS/OEIS) to evaluate the potential environmental effects associated with military readiness training ("training") and research, development, testing, and evaluation (RDT&E, or "testing") activities around the Hawaiian Islands and off the coast of California within the Hawaii-California Training and Testing (HCTT) Study Area.

This HCTT EIS/OEIS represents the fourth phase (Phase IV) of ongoing NEPA and EO 12114 compliance for continuation of at-sea training and testing. It will evaluate military readiness activities from 2025 into the reasonably foreseeable future and incorporate evolving mission requirements associated with force structure changes, including those resulting from the development, testing, and ultimate introduction of new platforms (vessels, aircraft, and weapon systems) into the Pacific Fleet. The Phase IV HCTT EIS/OEIS will also combine the existing Point Mugu Sea Range (PMSR) EIS/OEIS into this new EIS, as well as include expansion of the Study Area in Southern California and Northern California. Modernization and sustainment of ranges to support military readiness activities will be included in the HCTT EIS/OEIS Proposed Action.

To include the analysis of potential impacts caused by the conduct of Coast Guard training activities in support of various Department of Defense statutory missions, the Navy believes that participation by the U.S. Coast Guard is essential. Therefore, in accordance with the Council on Environmental Quality's (CEQ's) NEPA guidelines (specifically 40 C.F.R. Part 1501) and NEPA (specifically 42 U.S.C. 4336a), Navy requests that U.S. Coast Guard serve as a joint lead agency for the development of the Phase IV HCTT SEIS/OEIS.

As defined in 40 C.F.R. Section 1501.7, the Navy is the lead agency for the Phase IV HCTT SEIS/OEIS. As the lead agency, the Navy will:

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a. Gather all necessary background information and prepare all necessary permit applications associated with the proposed action.

b. Work with NMFS personnel to determine the method of estimating potential effects to protected marine species, including threatened and endangered species.

c. Request the participation of each joint lead agency in the NEPA process at the earliest possible time.

d. Determine the scope of the HCTT EIS/OEIS, including the alternatives evaluated.

e. Circulate the NEPA document to the public and other interested parties.

f. Schedule and supervise meetings held in support of the NEPA process and compile comments received from the public.

g. Maintain an administrative record and respond to any Freedom of Information Act requests relating to the HCTT EIS/OEIS.

h. Maintain and execute an overall project planning schedule. Schedule changes will be coordinated between Navy project lead and U.S. Coast Guard project lead. The initial HCTT EIS/OEIS Stick Chart containing major milestones is provided in enclosure (1).

i. Track permitting schedule milestones via an online At-Sea Permitting Dashboard that will be updated by Navy and accessible by Navy and U.S. Coast Guard staff.

j. Provide proposed schedule changes, as necessary, to the Interagency Permitting Milestone Schedule.

Navy respectfully requests that U.S. Coast Guard, in its role as a joint lead agency, to:

a. Participate in the NEPA process at the earliest possible time.

b. Provide and review proposed training activities that will be conducted within the HCTT Study Area.

c. Provide timely comments on working drafts of the EIS/OEIS. The Navy requests that comments on draft EIS/OEIS documents be provided in accordance with approved project schedules (see enclosure (2)).

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January 24, 2024

d. Adhere to the overall schedule as set forth by the Navy and provide advance notification to the Navy when there is a likelihood of missing schedule milestones.

e. Utilize U.S. Coast Guard resources (including funding) to support role as a joint lead agency.

f. Participate, as necessary, in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.

g. Participate in project scoping and public meetings and attend any scheduled risk communication training in advance of those meetings.

h. Provide a formal, written response to this joint lead agency request.

The Navy views meeting the commitments in this agreement as critical to the successful completion of the environmental planning process for the HCTT EIS/OEIS. U.S. Coast Guard assistance will be invaluable in this endeavor.

We appreciate your consideration of our request and look forward to your response. The Navy point of contact for this action is Ms. Kimberly Kler, who can be reached at (360) 649-1160 or kimberly.h.kler.civ@us.navy.mil.

Sincerely,

SINDER.MAR
.S.1277897365
Digitally signed by
SINDER.MARK.S.1277897365
Date: 2024.01.24 16:42:24

M. S. SINDER
Director, Installations Division

Enclosures: 1. HCTT EIS/OEIS Overall Project Schedule (Stick Chart)
2. HCTT Master Project Schedule

4

5090
Ser N4I/24U132018
January 24, 2024

Copy to (w/o enclosures):
ASN (EI&E)
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OAGC (EI&E)
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COMUSFLTFORCOM (N46)
CNIC (N45)
COMNAVSEASYSCOM
COMNAVAIRSYSCOM
COMNAVWARCOM
ONR
COMNAVREG HI (N45)
COMNAVREG SW (N45)
MARFORPAC
PACAF
USARPAC

5

U.S. Department of Homeland Security

United States Coast Guard

Commandant
United States Coast Guard

2703 Martin Luther King Jr. Avenue SE
U.S. Coast Guard STOP 7714
Washington DC 20593-7714
Staff Symbol: CG-47D
Phone: (202) 475-5690
Fax: (202) 372-8419

5090
January 30, 2024

Mr. M.S. Sinder
Director, Installations Division (N4I)
Office of the Chief of Naval Operations
2000 Navy Pentagon
Washington DC 20350-2000

Dear Mr. Sinder:

The Coast Guard appreciates the Navy's 24 January 2024 request to join the Hawaii-California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (HCTT EIS/OEIS) team as a joint lead agency. In accordance with 40 CFR Section 1501.7, we recognize the Navy's role as the lead agency in the development of the HCTT EIS/OEIS which will cover training and testing activities from 2025 to the foreseeable future.

The Coast Guard is committed to being a meaningful partner in the development of the HCTT EIS/OEIS and related environmental compliance efforts. Specifically, the Coast Guard will:

a. Provide timely comments on working drafts of the EIS/OEIS and provide these comments in accordance with approved project schedules.

b. Adhere to the overall schedule as set forth by the Navy and provide advance notification to the Navy if there is a likelihood of missing schedule milestones.

c. Respond to Navy requests for information, in particular related to proposed training activities that will be conducted in the HCTT Study Area.

d. Participate, as necessary, in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.

e. Participate in project public meetings and attend any scheduled risk communication training in advance of those meetings.

f. Provide formal, written responses when requested.

The Coast Guard views this agreement as critical to the successful completion of the environmental planning process for the HCTT EIS/OEIS. We appreciate your invitation and look forward to working together. The Coast Guard's point of contact for this action is Mr. Neil Sheehan, (202) 714-7955, email: neil.a.sheehan@uscg.mil.

Sincerely,

A. S. Haley
Chief, Office of Environmental Management
U.S. Coast Guard

DEPARTMENT OF THE NAVY
COMMANDER
UNITED STATES PACIFIC FLEET
250 MAKALAPA DRIVE
PEARL HARBOR HI 96860-3131

IN REPLY REFER TO:
5090
Ser N46/0071
February 5, 2024

Major General James B. Bartholomees
Chief of Staff
U.S. Army Pacific
410 Wisser Rd, Bldg 600A, S2102
Fort Shafter, HI 96858

Dear Major General Bartholomees:

Subj: HAWAII-CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT – JOINT LEAD AGENCY

In accordance with the National Environmental Policy Act (NEPA), the Department of the Navy (Navy) is initiating the preparation of an Environmental Impact Statement / Overseas Environmental Statement(EIS/OEIS) to evaluate the potential environmental effects associated with military readiness training ("training") and research, development, testing, and evaluation (RDT&E, or "testing") activities around the Hawaiian Islands and off the coast of California within the Hawaii-California Training and Testing (HCTT) Study Area.

This HCTT EIS/OEIS represents the fourth phase (Phase IV) of ongoing NEPA and EO 12114 compliance for continuation of at-sea training and testing. It will evaluate military readiness activities from 2025 into the reasonably foreseeable future and incorporate evolving mission requirements associated with force structure changes, including those resulting from the development, testing, and ultimate introduction of new platforms (vessels, aircraft, and weapon systems) into the Pacific theater. The Phase IV HCTT EIS/OEIS will also combine the existing Point Mugu Sea Range (PMSR) EIS/OEIS into this new EIS, as well as include expansion of the Study Area in Southern California and Northern California. Modernization and sustainment of ranges to support military readiness activities will be included in the HCTT EIS/OEIS Proposed Action.

To include the analysis of potential impacts caused by the conduct of Army training activities in support of various Department of Defense statutory missions, the Navy believes that participation by the U.S. Army is essential. Therefore, in accordance with the Council on Environmental Quality's (CEQ's) NEPA guidelines (specifically 40 C.F.R. Part 1501) and NEPA (specifically 42 U.S.C. 4336a), Navy requests that U.S. Army serve as a joint lead agency for the development of the Phase IV HCTT SEIS/OEIS.

As defined in 40 CFR Section 1501.7, the Navy is the lead agency for the Phase IV HCTT SEIS/OEIS. As the lead agency, the Navy will:

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February 5, 2024

a. Gather all necessary background information and prepare all necessary permit applications associated with the proposed action.

b. Work with National Marine Fisheries Service personnel to determine the method of estimating potential effects to protected marine species, including threatened and endangered species.

c. Request the participation of each joint lead agency in the NEPA process at the earliest possible time.

d. Determine the scope of the HCTT EIS/OEIS, including the alternatives evaluated.

e. Circulate the NEPA document to the public and other interested parties.

f. Schedule and supervise meetings held in support of the NEPA process and compile comments received from the public.

g. Maintain an administrative record and respond to any Freedom of Information Act requests relating to the HCTT EIS/OEIS.

h. Maintain and execute an overall project planning schedule. The initial HCTT EIS/OEIS Stick Chart containing major milestones is provided in enclosure (1).

i. Track permitting schedule milestones via an online At-Sea Permitting Dashboard that will be updated by Navy and accessible by Navy and U.S. Army Pacific staff.

j. Provide proposed schedule changes, as necessary, to the Interagency Permitting Milestone Schedule.

Navy respectfully requests U.S. Army, in its role as a joint lead agency, to:

a. Participate in the NEPA process at the earliest possible time.

b. Provide and review proposed training activities that will be conducted within the HCTT Study Area.

c. Provide timely comments on working drafts of the EIS/OEIS. The Navy requests that comments on draft EIS/OEIS documents be provided in accordance with approved project schedules (see enclosure 2).

d. Adhere to the overall schedule as set forth by the Navy and provide advance notification to the Navy when there is a likelihood of missing schedule milestones.

e. Utilize U.S. Army resources (including funding) to support role as a joint lead agency.

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f. Participate, as necessary, in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.

g. Participate in project scoping and public meetings and attend any scheduled risk communication training in advance of those meetings.

h. Provide a formal, written response to this joint lead agency request.

The Navy views meeting the commitments in this agreement as critical to the successful completion of the environmental planning process for the HCTT EIS/OEIS. U.S. Army assistance will be invaluable in this endeavor.

We appreciate your consideration of our request and look forward to your response. The Navy point of contact for this action is Mr. Alexander Stone, who can be reached via phone at (619) 545-8128 or via email at alexander.m.stone6.civ@us.navy.mil.

Sincerely,

J. H. BEATTIE
Captain, U.S. Navy
Deputy Fleet Civil Engineer
By direction

Enclosures: 1. HCTT EIS/OEIS Overall Project Schedule (Stick Chart)
2. HCTT Master Project Schedule

Copy to: (w/o enclosures)
OPNAV N4I
ASN (EI&E)
DASN (EM&R)
OAGC (EI&E)
COMUSFLTFORCOM (N46)
CNIC (N45)
COMNAVSEASYSCOM
COMNAVAIRSYSCOM
ONR
COMNAVWARCOM
COMNAVREG HI (N45)
COMNAVREG SW (N45)
MARFORPAC
USCG
PACAF

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DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY PACIFIC
FORT SHAFTER, HAWAII 96858-5100

5090
March 8, 2024

Captain J.H. Beattie
Deputy Fleet Civil Engineer
250 Makalapa Drive
Pearl Harbor, HI 96860-3131

Dear Capt. Beattie,

U.S. Army Pacific (USARPAC) appreciates the Navy's 5 February 2024 request to join the Hawaii-California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (HCTT EIS/OEIS) team as a joint lead agency. In accordance with 40 CFR Section 1501.7 we recognize the Navy's role as lead agency in the development of the HCTT EIS/OEIS which will cover training and testing activities from 2025 to the foreseeable future.

USARPAC is committed to being a meaningful partner in the development of the HCTT EIS/OEIS and related environmental efforts. Specifically, USARPAC will:

a. Provide and review proposed Army training activities that are considered in the analysis within the HCTT study area.
b. Provide timely comments on working drafts of the EIS/OEIS and provide these comments in accordance with approved schedules.
c. Participate in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.
d. Participate in project public meetings and attend any scheduled risk communication training in advance of those meetings.
e. Provide formal, written responses when required.

USARPAC views this agreement as critical to the successful completion of the environmental analysis process for the HCTT EIS/OEIS. We appreciate your invitation and look forward to working on this collaborative effort. The point of contact for USARPAC for this action is Mr. Zack Walker, 808-786-0420, email: zachary.t.walker22.civ@army.mil.

Sincerely,

J. B. B

James B. Bartholomees
Major General, USA
Chief of Staff

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON DC 20350-2000

5090
Ser N4I/24U132017
January 24, 2024

Robert E. Moriarity
Deputy Assistant Secretary of the Air Force (Installations)
1665 Air Force Pentagon
Washington, DC 20330-1665

Dear Mr. Moriarity:

SUBJECT: HAWAII-CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT - JOINT LEAD AGENCY REQUEST

In accordance with the National Environmental Policy Act (NEPA), the Department of the Navy (Navy) is initiating the preparation of an Environmental Impact Statement/Overseas Environmental Statement(EIS/OEIS) to evaluate the potential environmental effects associated with military readiness training ("training") and research, development, testing, and evaluation (RDT&E, or "testing") activities around the Hawaiian Islands and off the coast of California within the Hawaii-California Training and Testing (HCTT) Study Area.

This HCTT EIS/OEIS represents the fourth phase (Phase IV) of ongoing NEPA and EO 12114 compliance for continuation of at-sea training and testing. It will evaluate military readiness activities from 2025 into the reasonably foreseeable future and incorporate evolving mission requirements associated with force structure changes, including those resulting from the development, testing, and ultimate introduction of new platforms (vessels, aircraft, and weapon systems) into the Pacific Fleet. The Phase IV HCTT EIS/OEIS will also combine the existing Point Mugu Sea Range (PMSR) EIS/OEIS into this new EIS, as well as include expansion of the Study Area in Southern California and Northern California. Modernization and sustainment of ranges to support military readiness activities will be included in the HCTT EIS/OEIS Proposed Action.

To include the analysis of potential impacts caused by the conduct of Air Force training activities in support of various Department of Defense statutory missions, the Navy believes that participation by the U.S. Air Force is essential. Therefore, in accordance with the Council on Environmental Quality's (CEQ's) NEPA guidelines (specifically 40 CFR Part 1501) and NEPA (specifically 42 U.S.C. 4336a), Navy requests that U.S. Air Force serve as a joint lead agency for the development of the Phase IV HCTT SEIS/OEIS. The HCTT team has been working with Pacific Air Force Airspace Manager, Mr. Steven York, to define those activities that need to be included in the proposed action.

As defined in 40 CFR Section 1501.7, the Navy is the lead agency for the Phase IV HCTT SEIS/OEIS. As the lead agency, the Navy will:

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Ser N4I/24U132017
January 24, 2024

a. Gather all necessary background information and prepare all necessary permit applications associated with the proposed action.

b. Work with NMFS personnel to determine the method of estimating potential effects to protected marine species, including threatened and endangered species.

c. Request the participation of each joint lead agency in the NEPA process at the earliest possible time.

d. Determine the scope of the HCTT EIS/OEIS, including the alternatives evaluated.

e. Circulate the NEPA document to the public and other interested parties.

f. Schedule and supervise meetings held in support of the NEPA process and compile comments received from the public.

g. Maintain an administrative record and respond to any Freedom of Information Act requests relating to the HCTT EIS/OEIS.

h. Maintain and execute an overall project planning schedule. Schedule changes will be coordinated between Navy project lead and U.S. Coast Guard project lead. The initial HCTT EIS/OEIS Stick Chart containing major milestones is provided in enclosure (1).

i. Track permitting schedule milestones via an online At-Sea Permitting Dashboard that will be updated by Navy and accessible by Navy and U.S. Air Force staff.

j. Provide proposed schedule changes, as necessary, to the Interagency Permitting Milestone Schedule.

Navy respectfully requests that U.S. Air Force, in its role as a joint lead agency, to:

a. Participate in the NEPA process at the earliest possible time.

b. Provide and review proposed training activities that will be conducted within the HCTT Study Area.

c. Provide timely comments on working drafts of the EIS/OEIS. The Navy requests that comments on draft EIS/OEIS documents be provided in accordance with approved project schedules (see Enclosure 2).

d. Adhere to the overall schedule as set forth by the Navy and provide advance notification to the Navy when there is a likelihood of missing schedule milestones.

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e. Utilize U.S. Air Force resources (including funding) to support role as a joint lead agency.

f. Participate, as necessary, in Tiger Team meetings hosted by the Navy for discussion of issues related to the EIS/OEIS.

g. Participate in project scoping and public meetings and attend any scheduled risk communication training in advance of those meetings.

h. Provide a formal, written response to this joint lead agency request.

The Navy views meeting the commitments in this agreement as critical to the successful completion of the environmental planning process for the HCTT EIS/OEIS. U.S. Air Force assistance will be invaluable in this endeavor.

We appreciate your consideration of our request and look forward to your response. The Navy point of contact for this action is Ms. Kimberly Kler, who can be reached at (360) 649-1160 or kimberly.h.kler.civ@us.navy.mil.

Sincerely,

SINDER.MAR
.S.1277897365
Digitally signed by SINDER.MARK.S.1277897365
Date: 2024.01.24 16:42:48

M. S. SINDER
Director, Installations Division

Enclosures: 1. HCTT EIS/OEIS Overall Project Schedule (Stick Chart)
2. HCTT Master Project Schedule

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5090
Ser N4I/24U132017
January 24, 2024

Copy to (w/o enclosure):
ASN (EI&E)
DASN (EM&R)
OAGC (EI&E)
COMPACFLT (N465)
COMUSFLTFORCOM (N46)
CNIC (N45)
COMNAVSEASYSCOM
COMNAVAIRSYSCOM
COMNAVWARCOM
ONR
COMNAVREG HI (N45)
COMNAVREG SW (N45)
MARFORPAC
USARPAC
USCG

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f. Participate in public meetings and attend any scheduled risk communication training in advance of those meetings.

My headquarters points of contact are Ms. Laura Yates at 703-223-1484, laura.yates.1@us.af.mil and Mr. Jack Bush at 703-867-1082, jack.bush@us.af.mil. For day-to-day Pacific region activities, please contact Mr. Steven York, (808) 789-7411, steven.york.5@us.af.mil.

Sincerely,

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2024.06.16 07:33:16 -04'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

cc:
SAF/GCN
AF/A4C/A3TI
NGB/A3/4/8
AFLOA/JAOE-FSC
HQ PACAF/A3/8
HQ AFIMSC/CC
HQ AFCEC/CC
AFIMSC, Det 2/CD

2

J.2 Coastal Zone Management Act

J.2.1 California

Placeholder

J.2.2 Hawaii

STATE OF HAWAI'I
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
INTERIM DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawai'i 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawai'i 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: https://planning.hawaii.gov/

Coastal Zone Management Program
Environmental Review Program
Land Use Commission
Land Use Division
Special Plans Branch
State Transit-Oriented Development
Statewide Geographic Information System
Statewide Sustainability Branch

DTS202312191034ME

December 20, 2023

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Dear Project Manager:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review Required for U.S. Navy Hawaii-California Training and Testing (HCTT) Activities

According to Vol. 88 Federal Register 86885 (December 15, 2023), the Department of the Navy has published a Notice of Intent to Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing Activities. The Office of Planning and Sustainable Development, CZM Program, is notifying you that we believe HCTT activities will have reasonably foreseeable coastal effects, and therefore, a Coastal Zone Management Act (CZMA) federal consistency determination is required to be submitted for review.

Environmental issues that need to be addressed in the HCTT EIS/OEIS include biological resources (including marine mammals and threatened and endangered species); sediments and water quality; air quality; noise, cultural resources; socioeconomic resources, and public health and safety. All these issues will be evaluated during the CZMA federal consistency review.

If you have any questions, please contact Debra Mendes of our CZM Program at (808) 587-2840 or Debra.L.Mendes@hawaii.gov.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Interim Director

c: Ms. Dawn N.S. Chang, Department of Land and Natural Resources

J.3 Endangered Species Act

J.3.1 California

Placeholder

J.3.2 Hawaii

Placeholder

J.4 Magnuson-Stevens Fishery Conservation and Management Act

J.4.1 California

Placeholder

J.4.2 Hawaii

Placeholder

J.5 Marine Mammal Protection Act

J.5.1 California

Placeholder

J.5.2 Hawaii

Placeholder

J.6 National Historic Preservation Act

J.6.1 California

DEPARTMENT OF THE NAVY
COMMANDER
UNITED STATES PACIFIC FLEET
250 MAKALAPA DRIVE
PEARL HARBOR HI 96860-3131

IN REPLY REFER TO:
5090
Ser N46/0321
May 10, 2024

Ms. Julianne Polanco
State Historic Preservation Officer
California Department of Parks and Recreation
1725 23rd Avenue, Suite 100
Sacramento, CA 95816

Dear Ms. Polanco:

SUBJECT: NATIONAL HISTORIC PRESERVATION ACT SECTION 106 CONSULTATION FOR THE HAWAII-CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT STUDY AREA

In accordance with its responsibilities to manage cultural resources, the United States (U.S) Navy (Navy) is reinitiating consultation with your office regarding activities associated with Hawaii-Southern California Training and Testing (HSTT) Study Area which, through previous consultation that occurred in 2012 and 2017, was determined to be an undertaking as defined in 36 Code Federal Regulations (CFR) 800.16(y). Due to a change in the area of potential effect (APE), the HSTT is now referred to as the Hawaii-California Training and Testing (HCTT) Study Area. The currently proposed undertaking represents Phase IV of the HCTT (formerly HSTT).

For the proposed undertaking, the Navy (including the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, will conduct at-sea military readiness activities in the HCTT Study Area. In accordance with 36 CFR 800.2(a)(2), the Navy will serve as the lead federal agency. In letters dated June 5, 2012, and October 20, 2017 (reference USN120509B), your office previously concurred with the Navy's finding of No Historic Properties Affected for this undertaking. However, a change in the undertaking's APE associated with the California Study Area necessitates further consultation with your office. Consistent with 36 CFR 800, the regulations for implementing Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108 [NHPA]), the Navy is providing: a description of the proposed undertaking, the APE, the identification of historic properties, a summary of consultation history, and the Navy's plan for consultation.

The Navy sent your office a Notice of Intent (NOI) letter to prepare the HCTT Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS), dated December 7, 2023, wherein the Navy invites comments on the scope of the EIS/OEIS including identification of potential alternatives and environmental concerns, information and analyses relevant to the Proposed Action, issues that should be addressed in the National Environmental

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Policy Act (NEPA) analysis, and the potential to affect historic properties pursuant to Section 106 of the NHPA. This EIS/OEIS will consolidate previously analyzed actions into one comprehensive environmental document. Additionally, the NOI letter informed your office that the Navy is coordinating Section 106 compliance and NEPA requirements, consistent with 36 CFR 800.8 by consulting with interested parties regarding potential effects to historic properties that may result from the proposed training and testing activities concurrent with the NEPA public involvement process.

DESCRIPTION OF THE UNDERTAKING

The subject undertaking is to continue military readiness activities within the Navy's existing at-sea Pacific Ocean training ranges, with some proposed increases in the number of training and testing activities. Military readiness activities consist of testing and training that may include the use of active sonar and other acoustic sources, the use of explosives, and modernization and sustainment of training ranges necessary to support military readiness. Enclosure 1 provides tables listing specific activities proposed and their descriptions.

The proposed undertaking includes at-sea training and testing activities previously analyzed in the 2013 HSTT EIS/OEIS, the 2018 HSTT EIS/OEIS, the 2022 Point Mugu Sea Range (PMSR) EIS/OEIS, and activities associated with other EIS or Environmental Assessments (EAs) previously completed for both ranges.

AREAS OF POTENTIAL EFFECTS

Consistent with 36 CFR 800.16(d), the APE for this project is defined as the geographic area within which the proposed undertaking may cause effects to historic properties. The HCTT Study Area consists of the Hawaii Study Area, the California Study Area, and the transit corridor connecting the two, as shown in enclosure 2 and 3.

The APE for this consultation is limited to the at-sea portions of the California Study Area shown in enclosure 3. The California Study Area includes four existing training and testing range complexes: The Southern California (SOCAL) Range Complex, the PMSR, the Northern California (NOCAL) Range Complex, and the Silver Strand Training Complex (SSTC). In addition to these four existing areas, the California Study Area includes new airspace: Warning Area 293 (W-293) and W-294. Amphibious Approach Lanes link the offshore ocean areas of central and northern California to the shore in four locations indicated in enclosure 3. Combined, the California Study Area is 172,000 square nautical miles of sea and airspace used for training and testing activities. The California Study Area is located off the coast of San Diego, Orange, Los Angeles, Ventura, Santa Barbara, San Luis Obispo, Monterey, Santa Cruz, Sonoma, and Mendocino counties, as depicted in enclosure 3.

The APE consists primarily of the at-sea components of the range complexes. It also includes Navy pierside locations and port transit channels, bays, harbors, inshore waterways, and civilian ports where training and testing activities occur, as well as transits between homeports and operating areas. While the majority of the proposed activities will occur in or over water,

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regarding historic properties which may be of religious and cultural significance to them, pursuant to 36 CFR 800.4(a)(4).

Within the California Study Area, most activities will take place within the at-sea ranges. Therefore, submerged shipwrecks and planes comprise all of the documented cultural resources. To date, there has been no systematic underwater survey of submerged resources within the California Study Area, and record of precise locations of wrecks is rare. Available information is largely limited to vague descriptive narratives of the areas in which ships or planes were last known, thought to have sunk, or crashed. Based on the information present in available studies, there are 300+ cultural resources located within the California Study Area, including but not limited to, aircraft, pleasure craft, sport and commercial fishers, and cargo and military vessels.

Known Submerged Resources:

a. SOCAL Range Complex. A cultural resources review completed in 2005 for the San Diego Deepening at Tenth Avenue Marine Terminal project identified three known cultural features: a shipwreck (the Della), an 1887 marine utility cable, and a sunken Ford Model T. An additional 24 cultural resources were identified with no locational data which are known to have been lost in the San Diego area. These include schooners, barges, clippers, gas and oil screws, a submarine, a yacht, a bark, a ferry, a ship, and a steamer.

b. PMSR

(1) There are 195 shipwrecks located within or near the PMSR, with 129 having plottable coordinates. The largest number of shipwrecks found within the PMSR is near Santa Rosa Island. These shipwrecks occurred in the vicinity of Talcott Shoal, Sandy Point, Bee Rock, East Point, and Becher's Bay. Thirty-two ships are known to have wrecked within 2 miles of SNI. In many cases, although a shipwreck is known to have occurred and its general coordinates are known, no wreckage has been located.

(2) Military watercraft and aircraft lost within or near the PMSR include 31 shipwrecks and 92 downed aircraft. Of the 31 shipwrecks, seven were involved in the 1923 "Honda Point disaster," the largest peacetime U.S. Navy accident which resulted in the loss of seven destroyers after they ran aground in dense fog on September 8, 1923. Another 22 ships were used as targets as part of fleet reductions. The remaining two military shipwrecks within or near the PMSR occurred prior to 1920 and there is little record of their sinking. The 92 identified aircraft losses all occurred before 1951, with 87 of the losses occurring during the 1942-1945 period. None of the losses has precise locational data, and it is unclear whether the aircraft were salvaged.

c. SSTC

(1) Three shipwrecks are located in or near the training beach on the bayside of the Silver Strand peninsula. Unnamed wrecks are recorded in shallow water at the northern end of

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Delta South beach, in the middle of San Diego Bay, and at the mouth of Fiddlers Cove. The age and significance of these wrecks are not known.

(2) Three shipwrecks are located near training areas on the oceanside of the Silver Strand peninsula: the bark Narwhale (sank in 1934); the submarine S-142; and the Subchaser YC689 (sank in 1943). Additionally, the destroyer USS Hogan (DD178), a military aircraft (S2F Tracker), and a sunken sailboat are located further offshore, south of SSTC and west of the city of Imperial Beach.

d. At-sea areas up to the coastline along Southern California from approximately Dana Point to San Luis Obispo.

(1) The oil tanker Montebello was torpedoed and sunk by a Japanese submarine on December 23, 1941, 7 miles off the coast of Cambria, CA.

(2) The U.S. Coast Guard Cutter McCulloch, which contributed to American victory at the Battle of Manila Bay, sank 4.5 miles off Point Conception, CA after colliding with a passenger ship on June 13, 1917. The location of the wreckage went unknown for nearly 100 years, until its discovery during a National Oceanic and Atmospheric Administration and U.S. Coast Guard training mission in 2016.

SUMMARY OF CONSULTATION HISTORY

Prior to the preparation of the draft HCTT EIS/OEIS, the Navy conducted previous evaluations of at-sea activities to include consultations with the California State Historic Preservation Officer (CA SHPO), under Section 106, for the same or similar activities in the Navy's proposed undertaking in the 2013 HSTT EIS/OEIS, the 2018 HSTT EIS/OEIS, and the 2022 PMSR EIS/OEIS.

Electronic copies of consultation letters between the Navy and your office regarding these undertakings are attached (enclosure 4). In addition to consultations for the above referenced EIS/OEIS, the Navy has also previously consulted with your office on a number of smaller scale undertakings included in the larger military readiness activities analyzed by the HCTT EIS/OEIS.

In consultation with the CA SHPO for the development and use of the SLAM site on SNI in 1998, the SHPO concurred with the Navy's findings of the likelihood of an adverse effect to historic properties within the APE. In consultation with the SHPO, the Navy conducted a data recovery program to mitigate the potential effects to one historic property within the undertaking's APE.

In January of 2002, the Navy submitted a letter to the CA SHPO seeking concurrence with a determination that the proposed activities addressed in the PMSR EIS would have no effect on National Register listed or eligible properties. The CA SHPO did not provide a response to the Navy's request.

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In September of 2004, the Navy submitted a letter to the CA SHPO seeking concurrence with a determination that activities analyzed in the 2007 final EA for the SSM-1 KAI would have no effect on National Register listed or eligible properties on SNI. The CA SHPO did not provide a response to the Navy's request for concurrence.

In 2006, the Navy submitted a letter to the CA SHPO seeking concurrence with a determination that the proposed activities analyzed in the Southern California Anti-Submarine Warfare Range (SOAR) Refurbishment Project EA would have no effect on National Register listed or eligible properties in the offshore or onshore area (SCI) of the undertaking. The CA SHPO concurred with the Navy's finding in June 2006.

In October of 2009, the Navy submitted a letter to the CA SHPO seeking concurrence with a determination that the proposed activities analyzed in the 2010 EA/Overseas EA for Laser Testing and Training on the PMSR would have no adverse effect on National Register listed or eligible properties. The CA SHPO did not provide a response to the Navy's request for concurrence.

In 2008 the Navy considered cultural resource impacts from training activities both at-sea in the Southern California Range Complex to include on land at San Clemente Island. In relation to this current undertaking for the at-sea training and testing, that evaluation determined that cultural resources in the open ocean were deeply submerged and based on the nature of the training activities these resources would not be impacted.

In 2012, the Navy consulted with the CA SHPO for activities analyzed in the 2013 HSTT EIS/OEIS. The Navy determined that no National Register listed or Eligible properties would be affected by the undertaking in the HSTT EIS/OEIS. The CA SHPO concurred with the Navy's findings in June 2012.

In March of 2013, the CA SHPO concurred with the Navy's finding of no adverse effect to National Register listed or eligible properties by the undertaking in the Countermeasures Testing and Training EA at the PMSR.

In August of 2013, the CA SHPO concurred with the Navy's findings of no adverse effect to National Register listed or eligible properties for the EA/Overseas EA for PMSR Expansion of Unmanned Systems Operations.

In December of 2014, the CA SHPO concurred with the Navy's findings of no adverse effect to National Register listed or eligible properties for the construction of or operations from a Directed Energy Test Facilities at SNI as analyzed in the Directed Energy Test Facility EA. The SNI Directed Energy Facility has yet to be constructed.

In 2017, the Navy consulted with the CA SHPO for at-sea activities analyzed in the 2018 HSTT EIS/OEIS. The Navy determined that the undertaking in the HSTT EIS/OEIS would have

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no adverse effect to submerged National Register listed or eligible properties. The CA SHPO concurred with the Navy's findings in October 2017.

In 2022, the Navy consulted with the CA SHPO for the PMSR EIS/OEIS and determined that there would be no adverse effects to the submerged National Register listed or eligible properties. The CA SHPO did not concur and recommended a Programmatic Agreement approach. The Pechanga Band of Indians also objected and requested that the Advisory Council on Historic Preservation (ACHP) review the Navy's finding of no adverse effect determination. In September of 2021, the ACHP found no basis to disagree with the Navy's finding.

PLAN FOR CONSULTATION

Pursuant to 36 CFR 800.8(a)(1), the Navy plans to hold Section 106 meetings in conjunction with the NEPA public meetings for the Draft HCTT EIS/OEIS. Comments received regarding historic properties in the APE during the NEPA and Section 106 process will be considered under Section 106.

In accordance with 36 CFR 800.3(f), the Navy has made efforts to identify consulting parties through: public notification within the Federal Register and five local and regional California newspapers of the Navy's notice of intent to prepare an EIS/OEIS; a news release by the Navy Region Southwest Public Affairs Officer (PAO); social media posts by the Commander, Navy Region Southwest PAO; emails to website subscribers from the 2018 HSTT EIS/OEIS and 2022 PMSR EIS/OEIS; a project website; a virtual open house presentation; and briefings. The Navy also requested a Sacred Lands File (SLF) search from the Native American Heritage Commission to identify tribes, organizations, or individuals that might attach religious or cultural significance to cultural resources within the proposed APE.

On December 14, 2023, the Navy sent a NOI letter to federally recognized tribes and non-federally recognized tribes, organizations, and individuals identified in the SLF (see enclosure 5) notifying them of the intent to prepare an EIS/OEIS. To date, the Navy has received two responses to the NOI letter. The Rincon Band of Luiseño Indians notified the Navy of their desire to in engage in Section 106 consultation for the proposed undertaking. Conversely, the Santa Ynez Band of Chumash Indians requested no further consultation on the undertaking unless new information is revealed or there is a change in scope of work.

The Navy recognizes the unique knowledge and perspectives tribes possess regarding the cultural landscape and resources within the APE. Accordingly, on May 16, 2024, the Navy sent federally recognized tribes which were identified in the SLF search a letter inviting them to enter into Government-to-Government consultation with the Navy for this Undertaking. The Santa Ynez Chumash were not sent this letter, per their request.

The Navy intends to continue sending updates to both federally recognized and non-federally recognized tribes, and other consulting parties, and provide opportunities for consultation on the HCTT EIS/OEIS if requested.

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Ser N46/0321
May 10, 2024

If you have questions or concerns, or require further information please contact Mr. Richard Bark, Region Archaeologist, Naval Facilities Engineering Systems Command Southwest, at (619) 705-5664, or richard.g.bark.civ@us.navy.mil.

Sincerely,

J. H. BEATTIE
Captain, U.S. Navy
Deputy Fleet Civil Engineer
By direction

Enclosures: 1. Table of Proposed Activity Descriptions
2. HCTT EIS/OEIS Study Area
3. HCTT EIS/OEIS California Study Area
4. Previous Section 106 Consultation
5. Notice of Intent Letter Recipients

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J.6.2 Hawaii

DEPARTMENT OF THE NAVY
COMMANDER
UNITED STATES PACIFIC FLEET
250 MAKALAPA DRIVE
PEARL HARBOR HI 96860-3131

IN REPLY REFER TO:
5090
Ser N46/0605
September 16, 2024

Ms. Dawn Chang
State Historic Preservation Officer
Department of Land and Natural Resources
Kakuhihewa Building, Room 555
Kapolei, HI 96707

Dear Ms. Chang:

SUBJECT: NATIONAL HISTORIC PRESERVATION ACT, SECTION 106 CONSULTATION FOR THE PROPOSED HAWAII-CALIFORNIA TRAINING AND TESTING

In accordance with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108) and the responsibilities with 36 Code of Federal Regulations (C.F.R.) § 800.3(a), the Department of the Navy (DON) is initiating consultation with your office regarding the proposed Hawaii-California Training and Testing (HCTT) military readiness activities. The proposed undertaking represents Phase IV of the HCTT (previously referred to as Hawaii-Southern California Training and Testing [HSTT]).

For the proposed undertaking, the DON (including the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, would continue to conduct at-sea military readiness activities within the HCTT Study Area. However, in accordance with 36 C.F.R. § 800.2(a)(2), the DON will serve as the agency official. The enclosure provides a description of the undertaking; the area of potential effects (APE); existing data on identified historic properties; and the approach to seek additional relevant information.

On December 7, 2023, pursuant to the National Environmental Policy Act (NEPA), the DON sent a letter with its Notice of Intent (NOI) to prepare the HCTT Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) to over 600 organizations and individuals to include government agencies (including your office), Native Hawaiian Organizations (NHOs), Interested Parties and the public. The DON invited comments on the scope of the EIS/OEIS proposed action to include the potential to affect historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Additionally, the NOI letter informed your office that the DON is coordinating Section 106 process with NEPA requirements, consistent with 36 C.F.R. § 800.8. This will be accomplished by consulting with interested parties and the public regarding potential effects to historic properties that may result from the proposed training and testing activities concurrent with the NEPA public involvement process.

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As the APE is unchanged from the 2018 HSTT consultation effort, the information on historic properties is already acquired, and past consultations with SHPD and NHOs have occurred on a similar undertaking, the finding of effect can be provided shortly.

At this time, the DON requests your input on the plan to involve the public in the Section 106 process per 36 C.F.R. § 800.3(e), the proposed APE, and the identification of historic properties as required by 36 CFR § 800.4. If you have questions or concerns, or require further information, please contact Dr. Paul Shawn Marceaux, Naval Facilities Engineering Systems Command Pacific, via phone at 808-472-1447 or via email at paul.s.marceaux.civ@us.navy.mil.

Sincerely,

J. H. BEATTIE
Captain, U.S. Navy
Deputy Fleet Civil Engineer
By direction

Enclosure: HCTT Section 106 Supplemental Information August 2024

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DELIBERATIVE PROCESS/PRE-DECISIONAL

ENCLOSURE 1: HCTT Section 106 Supplemental Information

Description of the Undertaking

The proposed Hawai'i -California Training and Testing (HCTT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS) includes the Hawaii study area, the California (CA) study area, and the transit corridor connecting the two (Figure 1). The Study Area includes the waters of the Pacific Ocean along the coast of California and the waters around the Hawaiian Islands; the high seas west of California and surrounding Hawaii; Navy pierside locations, within port transit channels and near civilian ports; and inshore waterways (e.g., San Diego Bay, Port Hueneme, and Pearl Harbor).

The current Phase IV of HCTT differs from the previously analyzed Phase III for the Hawaii-Southern California Testing and Training (HSTT) in that it includes extended areas in the CA study area. The Hawaii study area, as depicted in Figure 1, is unchanged from Phase III. Although this undertaking includes the Hawaii study area and the CA study area, this Section 106 letter is limited to consultation per the Hawaii State Historic Preservation Office's jurisdiction. This HCTT consultation also coincides with renewal of the Marine Mammal Protection Act authorization. As HCTT is at-sea, there are no assigned Hawaii Tax Map Keys (TMKs) except for the pier-side locations in Pearl Harbor [TMK (1)9-9-001:008].

Landing on shore and subsequent terrestrial activities are not included a part of this undertaking. As such, the Section 106 responsibilities for terrestrial training areas are managed by the respective military installations or Action Proponents for those terrestrial activities. To the extent an action originated from land but has impacts at sea, such as Pacific Missile Range Facility (PMRF), the land activities have been recently analyzed in the PMRF Land-Based Training EA (Department of the Navy 2024).

The HCTT undertaking proposes to continue military readiness activities comprised of training and testing the use of active sonar and other acoustic sources, and the use of explosives, as well as modernization and sustainment of ranges necessary to support these military readiness activities. HCTT proposed activities are listed in Tables 1-9 and organized by the implementing agency. Training and testing activities would be conducted at-sea and in designated airspace within the area of potential effects (APE).

The HCCT undertaking primarily includes training and testing activities previously analyzed in the 2018 Hawaii Southern California Training and Testing (HSTT) EIS/OEIS with the exception of those activities listed in Table 10. Some training and testing activities are proposed to increase in frequency but are still the same or similar activity that is currently occurring within the APE and has been occurring for decades. Military readiness activities can be divided into three main categories:

1. Training. These are activities conducted with the primary purpose of training military members in tactics, techniques, and procedures with certain weapon systems.

2. Testing. These activities are conducted to test how a new system may perform in the actual real-world setting, or to confirm that existing systems continue to function as expected.

3. Modernization and Sustainment of Ranges. These activities involve creating or improving certain components of ranges that enhance training and testing. For example, temporary training minefields may be installed that allow ships, submarines, and aircraft to practice locating and avoiding the mines.

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

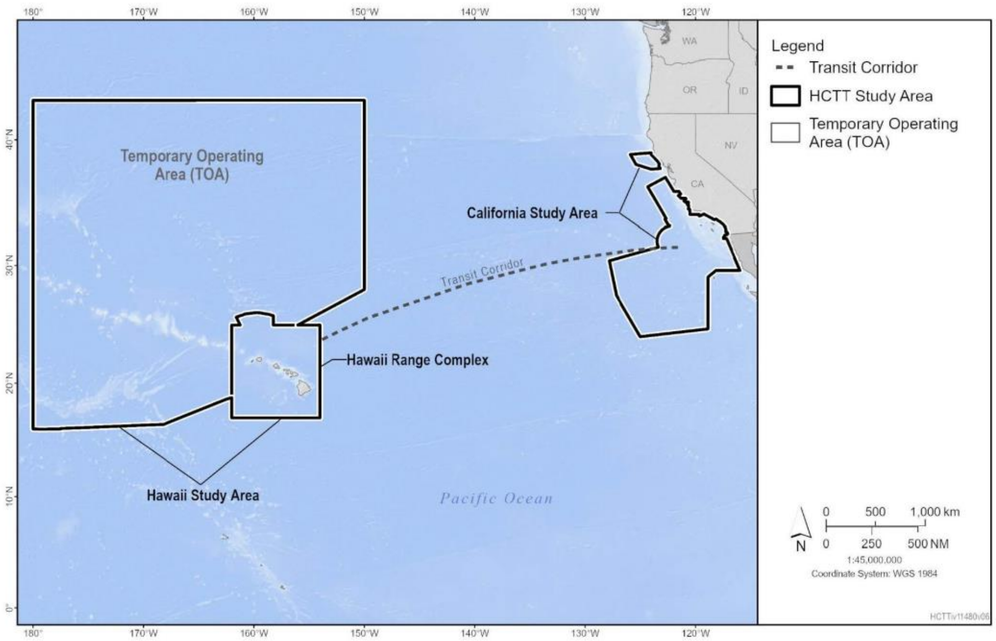

Figure 1: HCTT Study Area.

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Table 1: Navy and Marine Corps Proposed Training Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Major Training Exercises – Large Integrated Anti-Submarine Warfare		
Composite Training Unit Exercise – Strike Group	The Composite Training Unit Exercise is an integration phase, at-sea, major training exercise, designed to forge the aircraft carrier strike group into a cohesive fighting team before deployment. Composite Training Unit Exercise normally consists of four-week, schedule of event-driven scenarios. An exercise typically consists of seven surface ships, multiple fixed-wing and rotary-wing aircraft, up to two submarines, and various unmanned vehicles. The exercise integrates the aircraft carrier and carrier air wing with surface and submarine units to achieve certification prior to deployment.	Hawaii Study Area
Rim of the Pacific Exercise	A biennial multinational training exercise in which navies from Pacific Rim nations and other allies assemble in Pearl Harbor, Hawaii, to conduct training throughout the Hawaiian Islands in a number of warfare areas. Components of a Rim of the Pacific exercise may be conducted in the California Study Area.	Hawaii Study Area
Major Training Exercises – Medium Integrated Anti-Submarine Warfare		
Task Force/Sustainment Exercise	Aircraft carrier and its associated aircraft integrates with surface and submarine units in a challenging multi-threat operational environment in order to maintain their ability to deploy. Task Force Exercises and Sustainment Exercises are similar to Composite Training Unit Exercises, but are shorter in duration.	Hawaii Study Area
Integrated/Coordinated Anti-Submarine Warfare		
Independent Deployer Certification Exercise/Tailored Surface Warfare Training	Multiple ships, aircraft, and submarines conduct integrated multi-warfare training with a surface warfare emphasis. Serves as a ready-to-deploy certification for individual surface ships tasked with surface warfare missions.	Hawaii Study Area
Medium Coordinated Anti-Submarine Warfare	Typically, a 3–10-day exercise with multiple ships, ASW aircraft, and submarines integrating the use of their sensors, including sonobuoys and unmanned systems, to search, detect, and track threat submarines; event may include inert torpedo firings.	Hawaii Study Area
Small Joint Coordinated Anti-Submarine Warfare	Typically, a 2- to 4-day exercise with multiple ships, ASW aircraft and submarines integrating the use of their sensors, including sonobuoys, to search, detect, and track threat submarines.	Hawaii Study Area
Integrated/Coordinated Training – Other		
Large Amphibious Exercise	The Large Amphibious Exercise utilizes all elements of the Marine Air Ground Task Force (Amphibious) to secure the battlespace (air and sea), maneuver to and seize the objective, and conduct self-sustaining operations with logistic support of the Expeditionary Strike Group. This exercise could include manned and unmanned activities in multiple warfare areas to secure the battlespace (air and sea) and maneuver.	Hawaii Study Area

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	Activity Description	Location
Innovation and Demonstration Exercise	These exercises are conducted to demonstrate or test new capabilities, tactics, techniques, and procedures; and generate standardized, actionable data for evaluation.	Hawaii Study Area
Multi-Warfare Exercise	Live training events which could involve U.S., Joint, partner nations and allied forces operating across all warfare areas (e.g., amphibious, electronic and cyber, air, surface, sub-surface, special warfare, and expeditionary) with manned and unmanned platforms. Events could be comprised of small units up to and including Carrier and Amphibious Strike Groups. Live-fire events could be air-to-surface, ship-to-shore, shore-to-offshore target, and ship-to-ship utilizing live ordnance and laser systems.	Hawaii Study Area
Integrated Air Missile Defense Exercise	Missiles are launched from a ship against a dynamic test target, simulating an airborne threat to ships. These events could be U.S.-led with joint and Coalition forces.	Pacific Missile Range Facility (PMRF)
Air Warfare		
Air Combat Maneuver	Fixed-wing aircrews aggressively maneuver against threat aircraft to gain tactical advantage.	Hawaii Study Area
Air Defense Exercise	Aircrew and ship crews conduct defensive measures against threat aircraft or simulated missiles.	Hawaii Study Area
Gunnery Exercise Air-to-Air Medium-caliber	Fixed-wing aircraft fire medium-caliber guns at air targets.	Hawaii Study Area
Gunnery Exercise Air-to-Air Small-Caliber	Helicopter aircrews fire small-caliber guns at threat air targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Air Large-caliber	Surface ship crews fire large-caliber guns at air targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Air Medium-caliber	Surface ship crews fire medium-caliber guns at air targets.	Hawaii Study Area
Medium Range Interceptor Capability	Ground personnel defend against threat missiles and aircraft with vehicle-launched ground-to-air missile systems.	PMRF
Missile Exercise Air-to-Air	Fixed-wing and helicopter aircrews fire air-to-air missiles at air targets.	Hawaii Study Area
Missile Exercise Man-portable Air Defense System	Personnel employ shoulder-fired surface-to-air missiles at air targets.	PMRF
Missile Exercise Surface-to-Air	Surface ship crews fire surface-to-air missiles at air targets.	Hawaii Study Area

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	Activity Description	Location
Amphibious Warfare		
Amphibious Assault	Large unit forces move ashore from amphibious ships at sea for the immediate execution of inland objectives. Only at-sea activities are included. No activities would occur on land.	Hawaii Study Area
Amphibious Operations in a Contested Environment	Navy and Marine Corps forces conduct operations in coastal and offshore waterways against air, surface, and subsurface threats. Only at-sea activities are included. No activities would occur on land.	Hawaii Study Area
Amphibious Raid	Small unit forces move from amphibious ships at sea to shore locations for a specific short-term mission. These are quick operations with as few personnel as possible. Only at-sea activities are included. No activities would occur on land.	Marine Corps Base Hawaii (MCBH), Marine Corps Training Area Bellows (MCTAB), Waiapuaa Bay (PMRF)
Amphibious Vehicle Maneuvers	Small boat crews practice the employment of amphibious vehicles. Only at-sea activities are included. No activities would occur on land.	MCBH, MCTAB, Waiapuaa Bay (PMRF)
Naval Surface Fire Support Exercise – At Sea	Surface ship crews fire large-caliber guns at a passive acoustic hydrophone scoring system.	PMRF
Non-Combat Amphibious Operation	Amphibious vehicles move personnel and equipment from ships to shore and back. Only at-sea activities are included. No activities would occur on land.	Hawaii Study Area
Shore-to-Surface Artillery Exercise	Amphibious land-based forces fire artillery guns at surface targets. Only at-sea activities are included. No activities would occur on land.	PMRF
Shore-to-Surface Missile Exercise	Amphibious land-based forces fire anti-surface missiles, rockets, and loitering munitions at surface targets. Only at-sea activities are included. No activities would occur on land.	PMRF
Anti-Submarine Warfare		
Anti-Submarine Warfare Torpedo Exercise – Helicopter	Helicopter crews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets.	PMRF
Anti-Submarine Warfare Torpedo Exercise – Maritime Patrol Aircraft	Maritime patrol aircraft aircrews search for, track, and detect submarines. Recoverable air launched torpedoes are employed against submarine targets.	PMRF
Anti-Submarine Warfare Torpedo Exercise – Ship	Surface ship crews search for, track, and detect submarines. Exercise torpedoes are used.	PMRF
Anti-Submarine Warfare Torpedo Exercise – Submarine	Submarine crews search for, track, and detect submarines. Exercise torpedoes are used.	PMRF

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	*Activity Description*	*Location*
Anti-Submarine Warfare Tracking Exercise – Helicopter	Helicopter crews search for, track, and detect submarines.	Hawaii Study Area
Anti-Submarine Warfare Tracking Exercise – Long-Range Unmanned Surface Vessel	Unmanned surface vessels search for, detect, and track a sub-surface target simulating a threat submarine with the goal of determining a firing solution that could be used to launch a torpedo.	Hawaii Study Area
Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft	Maritime patrol aircraft aircrews search for, track, and detect submarines.	Hawaii Study Area
Anti-Submarine Warfare Tracking Exercise -Ship	Surface ship crews search for, track, and detect submarines.	Hawaii Study Area
Anti-Submarine Warfare Tracking Exercise - Submarine	Submarine crews search for, track, and detect submarines.	Hawaii Study Area
Training and End-to-End Mission Capability Verification – Torpedo	A submarine launches exercise and explosive torpedoes at a suspended target.	PMRF
Electronic Warfare		
Counter Targeting Chaff Exercise – Aircraft	Fixed-wing aircraft and helicopter aircrews deploy chaff to disrupt threat targeting and missile guidance radars.	Hawaii Study Area
Counter Targeting Chaff Exercise – Ship	Surface ship crews deploy chaff to disrupt threat targeting and missile guidance radars.	Hawaii Study Area
Counter Targeting Flare Exercise	Fixed-winged aircraft and helicopter aircrews deploy flares to disrupt threat infrared missile guidance systems.	Hawaii Study Area
Electronic Warfare Operations	Aircraft and surface ship crews control the electromagnetic spectrum used by enemy systems to degrade or deny the enemy's ability to take defensive actions.	Hawaii Study Area
Expeditionary Warfare		
Dive and Salvage Operations	Navy divers perform dive operations and salvage training.	Naval Defense Sea Area (NDSA)
Obstacle Clearance	Trains forces to create cleared lanes in simulated enemy obstacle systems to allow friendly forces safe transit from sea to shore.	FORACS, Lima Landing, Pearl Peninsula, Puuloa Underwater Range
Personnel Insertion/ Extraction – Air	Personnel are inserted into a water objective via fixed-wing aircraft using parachutes or by helicopters via ropes or jumping into the water. Personnel are extracted by helicopters or small boats.	Hawaii Study Area, Pearl Harbor

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	*Activity Description*	*Location*
Personnel Insertion/ Extraction – Surface and Subsurface	Personnel are inserted into and extracted from an objective area by small boats or subsurface platforms.	Hawaii Study Area
Personnel Insertion/ Extraction Training – Swimmer/Diver	Divers and swimmers infiltrate harbors, beaches, or moored vessels and conduct a variety of tasks.	Hawaii Study Area
Small Boat Attack	Small attacks are conducted on boats. For this activity, one or two small boats or personal watercraft conduct attack activities on units afloat.	Hawaii Study Area
Mine Warfare		
Airborne Mine Countermeasure – Mine Detection	Helicopter aircrews detect mines using towed or laser mine detection systems.	PMRF
Airborne Mine Laying	Fixed-wing aircraft drop explosive and non-explosive mine shapes.	Hawaii Study Area
Amphibious Breaching Operations	Amphibious forces use explosive clearing systems to clear simulated mines on beaches, shallow water, and surf zones for potential landing of personnel and vehicles.	Puuloa Underwater Range, Ewa Training Minefield, Barbers Point Underwater Range
Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	Maritime security personnel train to protect civilian ports against enemy efforts to interfere with access to those ports.	Pearl Harbor, Honolulu Harbor, Kaneohe Bay, MCTAB, Barbers Point Harbor, NDSA
Mine Countermeasure Exercise – Ship Sonar	Ship crews detect and avoid mines while navigating restricted areas or channels using active sonar.	Hawaii Study Area, Pearl Harbor
Mine Countermeasures Mine Neutralization Remotely Operated Vehicle	Ship, small boat, and helicopter crews locate and disable mines using remotely operated underwater vehicles.	Ewa Beach Training Minefield, Barbers Point Underwater Range, Puuloa Underwater Range, NDSA, MCTAB, Kaneohe Bay, PMRF Training Area, Waiapuaa Bay , Kingfisher Range

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	*Activity Description*	*Location*
Mine Neutralization Explosive Ordnance Disposal	Personnel disable threat mines using explosive charges.	Lima Landing, Pearl Harbor, Ewa Beach Training Minefield, Barbers Point Underwater Range, Puuloa Underwater Range, NDSA, MCBH, PMRF
Submarine Mine Avoidance Exercise	Submarine crews use active sonar or Unmanned Underwater Vehicles (UUVs), and shore-based personnel operate UUVs to detect and avoid training mine shapes or other underwater hazardous objects.	Hawaii Study Area, Maui Basin, Kingfisher Range
Submarine Mobile Mine and Mine Laying Exercise	Submarine crews and shore-based personnel operating a UUV deploy exercise (inert) mobile mines or mines.	Hawaii Study Area, Maui Basin
Surface Ship Object Detection	Ship crews detect and avoid mines while navigating restricted areas or channels using active sonar.	Kingfisher Range
Training and End-to-End Mission Capability Verification – Mobile Mine and Mine	Submarine crew launches explosive mobile mine(s), and shore-based personnel operating a UUV or a service craft deploy mine(s) to a planned location where the mines are detonated.	Hawaii Study Area
Underwater Demolition Qualification and Certification	Navy divers conduct various levels of training and certification in placing underwater demolition charges.	Lima Landing, Ewa Beach Training Minefield, Barbers Point Underwater Range, Puuloa Underwater Range
Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	Personnel locate mines, perform mine neutralization, raise, and tow mines to the beach, and conduct exploitation operations for intelligence gathering.	NDSA, Lima Landing, Ewa Beach Training Minefield, Barbers Point Underwater Range, Puuloa Underwater Range
Surface Warfare		
Bombing Exercise Air-to-Surface	Fixed-wing aircrews deliver bombs against surface targets at sea.	Hawaii Study Area
Gunnery Exercise Air-to-Surface Medium-caliber	Fixed-wing and helicopter aircrews fire medium-caliber guns at surface targets at sea.	Hawaii Study Area
Gunnery Exercise Air-to-Surface Small-caliber	Helicopter and tilt-rotor aircrews use small-caliber guns to engage surface targets at sea.	Hawaii Study Area

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	Activity Description	Location
Gunnery Exercise Surface-to-Surface Boat Medium-Caliber	Small boat crews fire medium-caliber guns at surface targets at sea.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Boat Small-Caliber	Small boat crews fire small-caliber guns at surface targets at sea.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Ship Large-caliber	Surface ship crews fire large-caliber guns at surface targets at sea.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Ship Medium-Caliber	Surface ship crews fire medium-caliber guns at surface targets at sea.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Ship Small-Caliber	Surface ship crews fire small-caliber guns at surface targets at sea.	Hawaii Study Area
Laser Targeting – Aircraft	Fixed-wing and helicopter aircrews illuminate surface targets at sea with lasers.	Hawaii Study Area
Laser Targeting – Ship	Surface ship crews illuminate air and surface targets at sea with high-energy laser systems.	Hawaii Study Area
Maritime Security Operations	Helicopter, surface ship, and small boat crews conduct security operations at sea, to include visit, board, search and seizure; maritime interdiction operations; force protection; and anti-piracy operations.	Hawaii Study Area
Missile Exercise Air-to-Surface	Fixed-wing and helicopter aircrews fire air-to-surface missiles at surface targets at sea.	Hawaii Study Area
Missile Exercise Air-to-Surface Rocket	Helicopter aircrews fire both precision-guided and unguided rockets at surface targets at sea.	Hawaii Study Area
Missile Exercise Surface-to-Surface	Surface ship crews defend against surface threats (ships or small boats) and engage them with missiles.	Hawaii Study Area
Sinking Exercise	Aircraft, ship, and submarine crews deliberately sink a seaborne target, usually a decommissioned ship made environmentally safe for sinking according to U.S. Environmental Protection Agency standards, with a variety of ordnance.	Hawaii Study Area
Surface Warfare Torpedo Exercise – Submarine	Submarine crews search for, detect, and track a surface ship simulating a threat surface ship with the goal of determining a firing solution that could be used to launch a torpedo with the intent to simulate destroying the targets.	PMRF

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	*Activity Description*	*Location*
Training and End-to-End Mission Capability Verification – Submarine Missile Maritime	Submarine crews launch missile(s) which may have an explosive warhead at a maritime target simulating an adversary surface ship with the goal of destroying or disabling adversary surface ship.	Hawaii Study Area
Other Training		
Combat Swimmer/Diver Training and Certification	Navy personnel conduct combat swimming conditioning swims and surf passage to execute a variety of tasks in the open water and littoral waterways.	Hawaii Study Area
Installation and Maintenance of Subsea and Seabed Warfare Training Areas	Navy personnel install, remove, and replace simulated adversary subsea and seabed infrastructure, to include cables of varying diameters and lengths.	Hawaii Study Area, Maui Basin
Kilo Dip	Functional check of the dipping sonar prior to conducting a full test or training event on the dipping sonar.	Hawaii Study Area
Multi-Domain Unmanned Autonomous Systems	Multi-domain (surface, subsurface, and airborne) unmanned autonomous systems are launched from land, ships, and boats, in support of intelligence, surveillance, and reconnaissance operations; and deliver munitions or other non-munition systems to support mission and intelligence requirements.	Hawaii Study Area
Precision Anchoring	Surface ship crews release and retrieve anchors in designated locations.	Oahu
Ship-to-Shore Fuel Transfer Training	Personnel train in the transfer of petroleum (though only sea water is used during training) from a ship to the shore.	Hawaii Study Area
Submarine Navigation Exercise	Submarine crews operate sonar for navigation and object detection while transiting into and out of port during reduced visibility.	Pearl Harbor
Submarine Sonar Maintenance and Systems Checks	Maintenance of submarine sonar systems is conducted pierside or at sea.	Hawaii Study Area, Pearl Harbor
Submarine Under Ice Training and Certification	Submarine crews train to operate under ice. Ice conditions are simulated during training and certification events.	Hawaii Study Area
Submarine and UUV Subsea and Seabed Warfare Exercise	Submarine crews and shore-based operators train to launch or recover and operate all classes of UUVs in the subsea and seabed environment in order to defend deep ocean and seabed infrastructure or take offensive action against a simulated adversary's subsea and seabed infrastructure.	Hawaii Study Area, Maui Basin
Surface Ship Sonar Maintenance and Systems Checks	Maintenance of surface ship sonar systems is conducted pierside or at sea.	Hawaii Study Area, Pearl Harbor

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Activity Name	*Activity Description*	*Location*
Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	Submarine crews or shore-based operators employ UUV with munitions or non-munition systems on the sea floor or in the water column.	Hawaii Study Area
Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	Submarine crews or shore-based personnel controlling a UUV launch a capsule containing a UAV. The canister is deployed underwater and ascends to a programmed depth. The canister subsequently launches a UAV, and the canister sinks.	Hawaii Study Area
Underwater Survey	Personnel perform methodical reconnoitering of beaches and surf conditions during the day and night to find and clear underwater obstacles and determine the feasibility of landing an amphibious force on a particular beach.	Hawaii Study Area
Unmanned Aerial System Training and Certification	Submarines launch unmanned aerial systems while submerged.	Hawaii Study Area
Unmanned Underwater Vehicle Training – Certification and Development Exercises	Unmanned underwater vehicle certification involves training with unmanned platforms to ensure submarine crew proficiency. Tactical development involves training with various payloads for multiple purposes to ensure that the systems can be employed effectively in an operational environment.	Hawaii Study Area
Waterborne Training	Small boat crews conduct a variety of training, including boat launch and recovery, operation of crew-served unmanned vehicles, mooring to buoys, anchoring, and maneuvering. Small boats include rigid hull inflatable boats, and riverine patrol, assault, and command boats up to approximately 50 feet in length.	Hawaii Study Area, Pearl Harbor

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ENCLOSURE 1: HCTT Section 106 Supplemental Information

Table 2: Coast Guard Proposed Training Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Air Warfare		
Gunnery Exercise Surface-to-Air Large Caliber	Surface ship crews fire large-caliber guns at air targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Air Medium Caliber	Surface ship crews fire medium-caliber guns at air targets.	Hawaii Study Area
Electronic Warfare		
Counter Targeting Chaff Exercise – Ship	Surface ship crews deploy chaff to disrupt threat targeting and missile guidance radars.	Hawaii Study Area
Expeditionary Warfare		
Underwater Construction Team Training	Coast Guard divers perform cutting, welding, assembly, and installation of deep-water structures, mooring systems, underwater instrumentation, and other systems as needed.	Hawaii Study Area
Surface Warfare		
Gunnery Exercise Air-to-Surface Medium Caliber	Fixed-wing and helicopter aircrews fire medium-caliber guns at surface targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Boat Medium Caliber	Small boat crews fire medium-caliber guns at surface targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Boat Small Caliber	Small boat crews fire small-caliber guns at surface targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Ship Large Caliber	Surface ship crews fire large-caliber guns at surface targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Ship Medium Caliber	Surface ship crews fire medium-caliber guns at surface targets.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Ship Small Caliber	Surface ship crews fire small-caliber guns at surface targets.	Hawaii Study Area
Laser Targeting – Ship	Surface ship crews illuminate air and surface targets with high-energy laser systems.	Hawaii Study Area

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Activity Name	*Activity Description*	*Location*
Maritime Security Operations	Helicopter, surface ship, and small boat crews conduct security operations at sea, to include visit, board, search, and seizure; maritime interdiction operations; force protection; maritime environmental response; oil platform defense; ship force protection; and anti-piracy operations.	Hawaii Study Area
Other Training		
Precision Anchoring	Surface ship crews release and retrieve anchors in designated locations.	Oahu
Search and Rescue	Navy and Coast Guard helicopter and ship crews practice the skills required to recover personnel lost at sea.	Hawaii Study Area
Unmanned Aerial System Training and Certification	Coast Guard crews launch unmanned aerial systems.	Hawaii Study Area
Unmanned Underwater Vehicle Training – Certification and Development Exercises	Unmanned underwater vehicle certification involves training with unmanned platforms to ensure submarine crew proficiency. Tactical development involves training with various payloads for multiple purposes to ensure that the systems can be employed effectively in an operational environment.	Hawaii Study Area
Waterborne Training	Small boat crews conduct a variety of training, including boat launch and recovery, operation of crew-served unmanned vehicles, mooring to buoys, anchoring, safety swimmer and safety lookout qualifications, shallow water training, and maneuvering. Small boats include rigid hull inflatable boats, and riverine patrol, assault, and command boats up to approximately 50 feet in length.	Hawaii Study Area

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Table 3: U.S. Army Proposed Training Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Air Warfare		
Missile Exercise – Man Portable Air Defense System	Army and Marine Corps personnel employ the Man-Portable Air Defense Systems, a shoulder fired surface to air missile, against threat missiles or aircraft. An exercise involves personnel firing the Man-Portable Air Defense System at remote piloted or other aerial targets. Activity is conducted by combat forces firing from shore or shipboard at targets over the water. Small boats are used to ensure range safety.	PMRF
Amphibious Warfare		
Shore-to-Surface Artillery Exercise	Army and Marine Corps crews engaging surface targets at sea with their main battery cannons (typically 105mm and 155mm) and mortars (typically 120mm). This exercise may involve a single-firing artillery battery, or be undertaken in the context of a coordinated larger exercise involving multiple batteries.	PMRF
Shore-to-Surface Missile Exercise	Army and Marine Corps units launch missiles from shore at surface maritime targets with the goal of destroying or disabling enemy ships or boats. Weapon systems include the HIMARS and NMESIS.	PMRF
Surface Warfare		
Gunnery Exercise Surface-to-Surface Boat Medium Caliber	Army, Navy, and Coast Guard small boat crews fire medium-caliber guns at surface targets. Boat crews may use high or low speeds to approach and engage targets simulating other boats, floating mines, or nearshore land targets with medium-caliber (up to and including 40 mm) weapons. A commonly used target is an empty steel drum.	Hawaii Study Area
Gunnery Exercise Surface-to-Surface Boat Small Caliber	Army, Navy, and Coast Guard small boat crews fire small-caliber guns at surface targets. Boat crews may use high or low speeds to approach and engage targets simulating other boats, swimmers, floating mines, or nearshore land targets with small-caliber (up to and including 0.50 caliber) weapons. A commonly used target is an empty steel drum.	Hawaii Study Area

Table 4: U.S. Air Force Proposed Training Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Air Warfare		
Gunnery Exercise Air-to-Air Medium Caliber	Fixed-wing aircrews fire medium-caliber guns at air targets. Navy, Marine Corps, and Air Force fixed-wing aircrews maneuver aircraft in a gunnery pattern to achieve a weapons firing solution with integrated medium-caliber guns. Typically involves two to eight fixed-wing aircraft and a target banner towed by a contract aircraft (e.g., Lear jet). The target banner is recovered after the exercise.	Hawaii Study Area

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Table 5: Naval Air Systems Command Proposed Testing Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Air Warfare		
Air Combat Maneuver Test	Aircrews engage in flight maneuvers designed to gain a tactical advantage during combat.	Hawaii Study Area
Air Platform – Vehicle Test	Testing performed to quantify the flying qualities, handling, airworthiness, stability, controllability, and integrity of an air platform or vehicle. No explosive weapons are released during an air platform-vehicle test.	Hawaii Study Area
Air Platform Weapons Integration Test	Testing performed to quantify the compatibility of weapons with the aircraft from which they would be launched or released. Non-explosive weapons or shapes are used.	Hawaii Study Area
Intelligence, Surveillance, and Reconnaissance Test	Aircrews use all available sensors to collect data on threat vessels.	Hawaii Study Area
Anti-Submarine Warfare		
Anti-Submarine Warfare Torpedo Test (Aircraft)	This event is similar to the training event torpedo exercise. Test evaluates anti-submarine warfare systems onboard rotary-wing and fixed-wing aircraft and the ability to search for, detect, classify, localize, track, and attack a submarine or similar target.	Hawaii Study Area, PMRF
Anti-Submarine Warfare Tracking Test (Fixed Wing)	The test evaluates the sensors and systems used by maritime patrol aircraft to detect and track submarines and to ensure that aircraft systems used to deploy the tracking systems perform to specifications and meet operational requirements.	Hawaii Study Area, PMRF
Anti-Submarine Warfare Tracking Test (Rotary Wing)	The test evaluates the sensors and systems used by helicopters to detect and track submarines and to ensure that aircraft systems used to deploy the tracking systems perform to specifications and meet operational requirements.	Hawaii Study Area, PMRF
Kilo Dip Test	Functional check of a helicopter-deployed dipping sonar system prior to conducting a testing or training event using the dipping sonar system.	Hawaii Study Area
Sonobuoy Lot Acceptance Test	Sonobuoys are deployed from surface vessels and aircraft to verify the integrity and performance of a lot or group of sonobuoys in advance of delivery to the fleet for operational use.	Hawaii Study Area
Electronic Warfare		
Chaff Test	This event is similar to the training event counter targeting chaff exercise – aircraft. Chaff tests evaluate newly developed or enhanced chaff, chaff dispensing equipment, or modified aircraft systems against chaff deployment. Tests may also train pilots and aircrew in the use of new chaff dispensing equipment. Chaff tests are often conducted with flare tests and air combat maneuver events, as well as other test events, and are not typically conducted as standalone tests.	Hawaii Study Area, PMRF
Electronic Systems Test	Test that evaluates the effectiveness of electronic systems to control, deny, or monitor critical portions of the electromagnetic spectrum. In general, electronic warfare testing will assess the performance of three types of electronic warfare systems: electronic attack, electronic protect, and electronic support.	Hawaii Study Area

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Activity Name	*Activity Description*	*Location*
Flare Test	This event is similar to the training event flare exercise. Flare tests evaluate newly developed or enhanced flares, flare dispensing equipment, or modified aircraft systems against flare deployment. Tests may also train pilots and aircrew in the use of newly developed or modified flare deployment systems. Flare tests are often conducted with chaff tests and air combat maneuver events, as well as other test events, and are not typically conducted as standalone tests.	Hawaii Study Area, PMRF
Mine Warfare		
Airborne Dipping Sonar Minehunting Test	A mine-hunting dipping sonar system that is deployed from a helicopter and uses high-frequency sonar for the detection and classification of bottom and moored mines	Hawaii Study Area
Airborne Laser Mine Detection System Test	An airborne mine hunting test of a laser-based mine detection system, that is operated from a helicopter and evaluates the system's ability to detect, classify, and fix the location of floating and near-surface, moored mines. The system uses a non-weaponized laser to locate mines.	Hawaii Study Area
Airborne Mine Neutralization System Test	A test of the airborne mine neutralization system evaluates the system's ability to detect and destroy mines from an airborne mine countermeasures capable helicopter. The Airborne Mine Neutralization System uses up to four unmanned underwater vehicles equipped with high-frequency sonar, video cameras, and explosive and non-explosive neutralizers.	Hawaii Study Area
Airborne Sonobuoy Minehunting Test	A mine-hunting system made up of sonobuoys deployed from a helicopter. A field of sonobuoys, using high-frequency sonar, is used to detect and classify bottom and moored mines.	Hawaii Study Area
Mine Laying Test	Fixed-wing aircraft evaluate the performance of mine laying equipment and software systems to lay mines. A mine test may also train aircrew in laying mines using a new or enhanced mine deployment system.	Hawaii Study Area
Surface Warfare		
Air-to-Surface Bombing Test	This event is similar to the training event bombing exercise air-to-surface. Fixed-wing aircraft test the delivery of bombs against surface maritime targets with the goal of evaluating the bomb, the bomb carry and delivery system, and any associated systems that may have been newly developed or enhanced.	Hawaii Study Area
Air-to-Surface Gunnery Test	This event is similar to the training event gunnery exercise (air to surface). Fixed-wing and rotary-wing aircrews evaluate new or enhanced aircraft guns against surface maritime targets to test that the gun, gun ammunition, or associated systems meet required specifications or to train aircrew in the operation of a new or enhanced weapon system.	Hawaii Study Area
Air-to-Surface High-Energy Laser Test	High-energy lasers would be employed from helicopters (e.g., MH-60) either hovering or in forward flight, targeting unmanned surface targets.	Hawaii Study Area
Air-to-Surface Laser Targeting Test	Aircrew use laser targeting devices integrated into aircraft or weapons systems to evaluate targeting accuracy and precision and to train aircrew in the use of newly developed or enhanced laser targeting devices designed to illuminate designated targets for engagement with laser-guided weapons.	Hawaii Study Area
Air-to-Surface Missile Test	This event is similar to the training event missile exercise air-to-surface. Test may involve both fixed-wing and rotary-wing aircraft launching missiles at surface maritime targets to evaluate the weapons system or as part of another system's integration test.	Hawaii Study Area

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Activity Name	*Activity Description*	*Location*
Rocket Test	Rocket tests evaluate the integration, accuracy, performance, and safe separation of guided and unguided 2.75-inch rockets fired from a hovering or forward flying helicopter.	Hawaii Study Area
Other Testing Activities		
Acoustic and Oceanographic Research	Active transmissions within the band 10 hertz-100 kilohertz from sources deployed from ships and aircraft	Hawaii Study Area
Air Platform Shipboard Integrate Test	Fixed wing and rotary wing aircraft are tested to determine operability from shipboard platforms and performance of shipboard physical operations, and to verify and evaluate communications and tactical data links.	Hawaii Study Area
Undersea Range System Test	Post installation node survey and test and periodic testing of range Node transmit functionality.	PMRF

Table 6: Naval Facilities Engineering and Expeditionary Warfare Center Proposed Testing Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Unmanned Systems		
Ocean Energy and Cable Systems Research	Testing of ocean and marine energy harvesting/producing systems, energy storage and distribution, and subsea cable network deployment and interoperability.	Hawaii Study Area

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Table 7: Naval Sea Systems Command Proposed Testing Activity Descriptions in the Hawaii Study Area

Activity Name	Activity Description	Location
Anti-Submarine Warfare		
Anti-Submarine Warfare Mission Package Testing	Ships and their supporting platforms (e.g., rotary-wing aircraft, unmanned aerial systems) detect, localize, and prosecute submarines.	Hawaii Study Area
At-Sea Sonar Testing	At-sea testing to ensure systems are fully functional in an open ocean environment.	Hawaii Study Area
Countermeasure Testing	Countermeasure testing involves the testing of systems that detect, localize, and engage incoming weapons, including marine vessel targets and airborne missiles. Testing includes surface ship torpedo defense systems, marine vessel stopping payloads, and airborne decoys against targets.	Hawaii Study Area, Maui Basin, PMRF
Pierside Sonar Testing	Pierside testing to ensure systems are fully functional in a controlled pierside environment prior to at-sea test activities and complete any troubleshooting.	Pearl Harbor
Surface Ship Sonar Testing/Maintenance	Pierside and at-sea testing of ship systems occur periodically following major maintenance periods and for routine maintenance.	Hawaii Study Area, Pearl Harbor
Torpedo (Explosive) Testing	Air, surface, or submarine crews employ explosive and non-explosive torpedoes against artificial targets.	Hawaii Study Area
Torpedo (Non-Explosive) Testing	Air, surface, or submarine crews employ non-explosive torpedoes against submarines, surface vessels, or artificial targets.	Hawaii Study Area, Maui Basin, PMRF
Electronic Warfare		
Radar and Other System Testing	Test may include use of military or commercial radar, communication systems (or simulators), passive and active electronic warfare systems, electro-optical/infrared systems, or high- and low-energy lasers. Testing may occur aboard a ship against drones, small boats, rockets, missiles, or other targets.	Hawaii Study Area, PMRF
Mine Warfare		
Mine Countermeasure Mission Package Testing	Vessels and associated aircraft conduct mine countermeasure operations.	Maui Basin, PMRF
Mine Detection and Classification Testing	Air, surface, and subsurface vessels and systems detect, classify, and avoid mines and mine-like objects. Vessels also assess their potential susceptibility to mines and mine-like objects.	Hawaii Study Area, Maui Basin
Surface Warfare		
Missile and Rocket Testing	Missile and rocket testing includes various missiles or rockets fired from submarines and surface combatants. Testing of the launching system and ship defense is performed.	Hawaii Study Area, PMRF
Unmanned Systems		
Unmanned Underwater Vehicle Testing	Testing involves the production or upgrade of unmanned underwater vehicles. This may include testing mine detection capabilities, evaluating the basic functions of individual platforms, or conducting complex events with multiple vehicles.	Pearl Harbor

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Activity Name	*Activity Description*	*Location*
Vessel Evaluation		
Air Defense Testing	Test the ship's capability to detect, identify, track, and successfully engage live and simulated targets. Gun systems are tested using explosive and non-explosive rounds.	PMRF
In-Port Maintenance Testing	Each combat system is tested to ensure they are functioning in a technically acceptable manner and are operationally ready to support at-sea testing.	Pearl Harbor
Propulsion Testing	Ship is run at high speeds in various formations (e.g., straight-line and reciprocal paths).	Hawaii Study Area
Signature Analysis Operations	Surface ship and submarine testing of electromagnetic, acoustic, optical, and radar signature measurements.	Hawaii Study Area
Submarine Sea Trials – Weapons System Testing	Submarine weapons and sonar systems are tested at-sea to meet integrated combat system certification requirements.	Hawaii Study Area
Surface Warfare Testing	Tests capability of shipboard sensors to detect, track, and engage surface targets. Testing may include ships defending against surface targets using explosive and non-explosive rounds, gun system structural test firing, and demonstration of the response to Call for Fire against land-based targets (simulated by sea-based locations).	Hawaii Study Area, PMRF
Undersea Warfare Testing	Ships demonstrate capability of countermeasure systems and underwater surveillance, weapons engagement, and communications systems. This tests ships' ability to detect, track, and engage undersea targets.	Hawaii Study Area, PMRF
Other Testing		
Acoustic and Oceanographic Research	Research using active transmissions from sources deployed from ships, aircraft, and unmanned underwater vehicles. Research sources can be used as proxies for current and future Navy systems.	Hawaii Study Area, PMRF
Insertion/Extraction	Testing of submersibles capable of inserting and extracting personnel and payloads into denied areas from strategic distances.	Hawaii Study Area
Semi-Stationary Equipment Testing	Semi-stationary equipment (e.g., hydrophones) is deployed to determine functionality.	Pearl Harbor

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Table 8: Naval Information Warfare Systems Command Proposed Testing Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Acoustic and Oceanographic Science and Technology		
Acoustic, Oceanographic, and Energy Research	Research using active transmissions from sources deployed from ships, aircraft, and unmanned underwater vehicles. Research sources can be used as proxies for current and future Navy systems. Active acoustic transmissions used for engineering tests of acoustic sources, validation of ocean acoustic models, tests of signal processing algorithms, and characterization of acoustic interactions with the ocean bottom, fish and ocean surface. Standard oceanographic research sensing (acoustic Doppler current profiler, fathometer-like systems) also to be employed.	Pearl Harbor
Other Testing		
Communications	Testing of maritime communications, underwater network systems with fiber optics cables, laser communications, acoustic modem networks, and launching of communication payloads and objects.	Hawaii Study Area
Intelligence, Surveillance, Reconnaissance	Testing deployable autonomous undersea technologies that may include mine detection and classification, detection and classification of targets of interest, sensors on the undersea systems testbed, expansion of the undersea systems testbed with fiber optic cables and nodes, sensor systems to detect mine shapes on ship hulls and pier structures, sensors for swimmer interdiction and other threats, and sensor systems that can detect explosive, radioactive, and other signatures of concern.	Hawaii Study Area, Pearl Harbor
Vehicle Testing	Testing of surface, subsurface and airborne vehicles, sensor systems, payloads, communications, and navigation which may involve autonomous underwater vehicles, autonomous surface vehicles, and autonomous aerial vehicles. Testing may involve evaluating individual vehicles and payloads or conducting complex events with multiple vehicles.	Hawaii Study Area

Table 9: Office of Naval Research Proposed Testing Activity Descriptions in the Hawaii Study Area

Activity Name	*Activity Description*	*Location*
Acoustic and Oceanographic Science and Technology		
Acoustic and Oceanographic Research	Research involving passive acoustic and oceanographic sensing, as well as active transmissions from sources deployed from ships, aircraft, and unmanned underwater vehicles. Research sources serve as proxies for current and future Navy systems.	Hawaii Study Area, Maui Basin
Large Displacement Unmanned Underwater Vehicle Testing	Autonomy testing and environmental data collection with Large Displacement Unmanned Underwater Vehicles	Hawaii Study Area
Long Range Acoustic Communications	Bottom mounted acoustic source will transmit a variety of acoustic communications sequences that will be recorded by a variety of fixed and mobile platforms at ranges from the 100s to the 1,000s of kilometers.	Hawaii Study Area

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Table 10: List of new testing/training activities.

Activity Name	*Activity Description*
Deployment of Seafloor Cables	New activities include placing items or cables on the seafloor.
Installation and Maintenance of Mine Training Areas	This activity could occur within the Maui Basin, no explosives associated with activity. Once the minefield is in place, submarines will attempt to detect the mines.
Gunnery and Missile firing from PMRF	Army and USMC forces will fire missiles and gunnery against air targets and surface targets.
Installation and Maintenance of an Underwater Platform	An underwater landing platform is required to facilitate underwater vehicle pilot proficiency training. The platform to be installed in Hawaii was previously approved in 1999, installed in 2001, and removed in 2009. The 2001 installation approval included a Categorical Exclusion, informal consultation with NMFS Pacific Islands Area Office, and approval by the Army pursuant to Section 10 of the Rivers and Harbors Act. The intent is to reinstall a newly designed platform in the previously approved location in the Naval Defense Sea Area outside the entrance to Pearl Harbor.
Use of unmanned air vehicles or systems (UAVs or UASs)	This is not necessarily new activities, but many existing activities will now include, UAVs, UASs, surface vessels (USVs), and underwater vehicles (UUVs).

Area of Potential Effects (APE)

Consistent with 36 CFR § 800.16(d), the APE for this project is defined as the geographic area within which the proposed undertaking may cause effects to historic properties. This Section 106 letter is geographically tied to consultation regarding Hawaii, a separate consultation has been prepared for California. The APE for this consultation is limited to the at-sea portions, which includes the Hawaii Range Complex (HRC), as depicted in Figure 2. The APE extends 12 nautical miles (nm) seaward from the high tide line along the shoreline, which is the limit of U.S. territorial waters. For Section 106 consultation purposes, the high tide line refers to the mean high tide, as defined by the U.S. Coast and Geodetic Survey as, "any place that is the average height of all the high waters at that place over a considerable period of time," that has been interpreted as a period of 18.6 years. Notwithstanding this definition, the undertaking's activities would occur far seaward of this boundary.

The APE includes:

a. The Northwest Hawaiian Islands is broadly described as a series of islands and atolls northwest of Kauai and Niihau. This part of the APE is the belt of coastal waters extending 12 nm from the shoreline, the Navy does not conduct shoreline activities in this area. While naval vessels could transit through the waters proximate to the Northwest Hawaiian Islands, there would be no training or testing activity that would approach the shoreline of these islands.

b. The waters off Niihau and Kauai contain ranges and training areas such as the Barking Sands Tactical Underwater Range, the Shallow Water Training Range, and the Kingfisher Mine Detection Range. While the APE around these islands is broadly described as the belt of coastal waters extending 12 nm from the shoreline, the Navy's primary training and testing activities occur proximate to Pacific Missile Range Facility (PMRF) and involve use of the underwater ranges and

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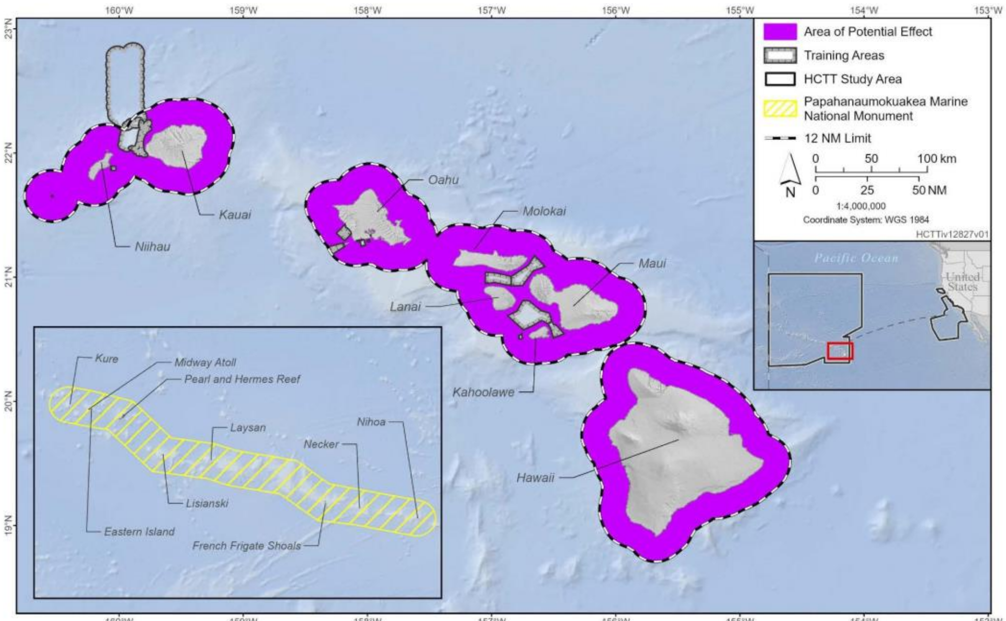

Figure 2: HCTT Proposed APE, Hawaii.

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Table 11. List of Previous Investigations

Reference	Source and Year	Type of Resource Identified	Number of Resources Identified in the Reference	Reference
The Unseen Landscape: Inventory and Assessment of Submerged Cultural Resources in Hawaii	H. Van Tillburg, J.P. Delgado; Bureau of Ocean Energy Management, 2017	Submerged ships, airplanes, submarines, fishponds	2,120	(Van Tilburg & Delgado, 2017)
Automated Wreck and Obstruction Information System	National Oceanic Atmospheric Administration, 2016 / 2017	Submerged ships, obstructions	10,000	(National Oceanic and Atmospheric Administration, 2018)
Office of Coast Survey Electronic Navigational Charts	National Oceanic and Atmospheric Administration, 2024	Submerged ships, obstructions	1,000	(Office of Coast Survey, 2024)
National Register of Historic Places	National Park Services, 2024	Historic Properties (Ships, fishponds)	98,000	(National Park Service, 2023)
Waterfront Facilities Maintenance and Improvements, Pearl Harbor Naval Complex, Oahu, Hawaii Environmental Assessment	U.S. Department of the Navy, 2005	Fishponds	25	(U.S. Department of the Navy, 2005)
Loko I'a: A manual on Hawaiian Fishpond Restoration and Management	University of Hawaii at Manoa, 2007	Fishponds	360	(Keala et al., 2007)
Statewide Programmatic General Permit and Programmatic Agreement for the restoration, repair, maintenance, and reconstruction or traditional Hawaiian fishpond systems across Hawaii	Hawaii Department of Land and Natural Resources, 2013	Fishponds	360	(Hawaii Department of Land and Natural Resources, 2013)

Five fishponds have been identified within the APE and are listed on the National Register of Historic Places (NRHP) (Table 12). He'eia, Huilua, and Kahaluu fishponds are on the eastern shore of O'ahu, and Okiokilepe fishpond is located within Pearl Harbor on the southwestern side of O'ahu. Kalepolepo fishpond is on the western shore of Maui.

Other submerged historic properties include wrecks. References used to identify potential historic properties include the Automated Wreck and Obstruction Information System, Region 16, last updated in 2016 and the 2017 U.S. Department of the Interior's Bureau of Ocean Energy Management Inventory and Assessment for Submerged Cultural Resources. Wrecks intentionally sunk to serve as artificial reefs or as a military target are not eligible to be placed on the NRHP.

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Table 12: List of Historic Properties with the APE.

Resource	Location	Description	National Register of Historic Places	Reference Number (Site Number)	National Historic Landmark/ Monument	Reference
Okiokilepe Pond	Oahu	Native Hawaiian Fishpond	Listed	73000673 (SIHP #50-80-13-0143)	No	(National Park Service, 2023b)
Heeia	Oahu	Native Hawaiian Fishpond	Listed	73000671 (SIHP #50-80-10-0327)	No	(National Park Service, 2023b)
Huilua	Oahu	Native Hawaiian Fishpond	Listed	66000295 (SIHP #50-80-06-0301)	No	(National Park Service, 2023b)
Kahaluu	Oahu	Native Hawaiian Fishpond	Listed	73000668 (SIHP #50-80-10-0319)	No	(National Park Service, 2023b)
Kalepolepo	Maui	Native Hawaiian Fishpond	Listed	96001503 (SIHP #50-50-09-1288)	No	(National Park Service, 2023b)
Pearl Harbor	Oahu	Strategic Naval Base and site of the December 7, 1941, attack by the Japanese in WWII	Listed	66000940	Yes	(National Park Service, 2023b)
Two Brothers Shipwreck	N. Hawaiian Islands	Whaling Ship, 1818–1823	Listed	100001416	No	National Park Service (2023a); (National Park Service, 2023b), (National Oceanic and Atmospheric Administration, 2021)
USS Arizona	Oahu	U.S Battleship, 1916-1941	Listed	89001083	Yes	(National Park Service, 2023b)
USS Utah	Oahu	U.S. Battleship, 1911-1941	Listed	89001084	Yes	(National Park Service, 2023b)

Papahanamokukea Marine National Monument

The Papahanaumokuakea Marine National Monument and World Heritage Site, encompasses the Northern Hawaiian Islands to include Midway Atoll. The ocean around the Papahanaumokuakea Marine National Monument can be treacherous for ships due to submerged reefs, seamounts, and shoals. Some of the earliest known shipwrecks in Hawaii are located at Kure Atoll and include the USS Saginaw, which sank in 1870 and the remains of what may be the whaleship Parker that sank in 1842. The monument contains the 19th century wreck of the whaleship Two Brothers, which is listed on the NRHP (Table 12).

Pearl Harbor

Pearl Harbor is listed on the NRHP and is considered a National Historic Landmark (NHL). Pearl Harbor also includes the sites of the USS Arizona and USS Utah which are both on the NRHP and NHLs.

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Traditionally, Pearl Harbor was called Ka-awa-lau-o-pu'uloa, which can be translated as the many harbored sea of Pu'uloa or the leaf-shaped lagoon of Pu'uloa. There are references to fishponds constructed in the harbor. Traditional Hawaiian fishponds were constructed along the shores between the 14th and 19th centuries in protected areas to raise fish.

Development of Pearl Harbor as a Navy base began in 1908. Pearl Harbor is most known as a target in the Japanese attack on Oahu on December 7, 1941. Pearl Harbor was designated as a NHL for the significance of its role in the attack. Other losses during the attack are situated within the waters around O'ahu and include flying boats from Naval Air Station Kaneohe that sank in Kaneohe Bay.

Previous Section 106 Consultation – HSTT

Prior to the preparation of the draft HCTT EIS/OEIS, the DON conducted previous consultations with the Hawaii State Historic Preservation Officer (SHPO), under Section 106, for the same or similar activities in the Navy's proposed undertaking in the 2018 HSTT EIS/OEIS. The DON met with the Hawaii State Historic Preservation Division (SHPD) on several occasions to resolve comments and the SHPO concurred with the Navy's finding of No Historic Properties Affected. As part of consultation efforts, the DON also attended meetings with other parties and the public in several locations around the main Hawaiian Islands.

Efforts to Seek Information

In accordance with 36 CFR § 800.3(f) the DON has made efforts to identify Native Hawaiian organizations (NHO). The DON seeks to gather information from NHOs, consulting parties, and other individuals and organizations likely to have knowledge of or concerns with historic properties in the APE pursuant to 36 CFR § 800.4(a)(3) and (4), that might attach religious and cultural significance to historic properties in the APE.

Pursuant to 36 CFR § 800.8(a)(1), the Navy plans to hold Section 106 meetings in conjunction with the public meetings for the Draft HCTT EIS/OEIS. Comments received regarding historic properties in the APE during the NEPA and Section 106 process will be considered under Section 106. The DON will ensure the public comment notification also specifies the request for public input under NHPA Section 106.

On December 15, 2023, the Navy sent a Notice of Intent letter to over 600 individuals and organizations, including State of Hawaii Government Agencies, NHOs, Non-Government Organizations, elected officials, community and business groups, universities, and the public. The distribution included representation across all main Hawaiian Islands. The letter informed recipients of the Navy's intent to prepare the HCTT EIS/OEIS and requested information on the identification of historic properties in the APE. In summary, the recipients' comments included the recommendation that the DON evaluate effects to the Papahānaumokuākea Marine National Monument, employ protections to cultural resources, conduct an archaeological literature review, consult with Native Hawaiians, and consider traditional cultural practices. The DON, in continuing consultation, is working through these comments and will provide summaries of the comments and the manner in which they have been addressed in a subsequent letter.

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Appendix K Geographic Mitigation Assessment

Environmental Impact Statement/

Overseas Environmental Impact Statement

Hawaii-California Training and Testing

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APPENDIX K GEOGRAPHIC MITIGATION ASSESSMENT

K.1 INTRODUCTION

The Action Proponents have been mitigating effects from their training and testing activities for more than two decades using a combination of activity-based mitigation (activity-based mitigation was referred to as "Procedural Mitigation" in the 2018 Hawaii-Southern California Training and Testing [HSTT] and 2022 Point Mugu Sea Range [PMSR] Environmental Impact Statement/Overseas Environmental Impact Statements [EIS/OEISs]) and geographic mitigation. Current activity-based mitigation measures (which apply throughout the Study Area) and geographic mitigation measures that apply to specific areas are reflected in the December 18, 2018, Record of Decision (ROD) for the HSTT EIS/OEIS.

All mitigation measures (activity-based and geographic) presented in this EIS/OEIS apply to both Alternative 1 and Alternative 2 and would be implemented as part of the Proposed Action, as discussed in Chapter 2 (Description of the Proposed Action and Alternatives). These mitigation measures are considered in the Chapter 3 (Affected Environment and Environmental Consequences) environmental analyses for each relevant biological resource and are discussed in detail in Chapter 5 (Mitigation).

Activity-based mitigation measures are tailored to specific training and testing activities and are implemented whenever and wherever those activities take place within the Study Area. The Action Proponents'[1] methods for developing activity-based mitigation measures for each specific activity are detailed in Chapter 5 (Mitigation) of the 2018 HSTT EIS/OEIS.

In addition to activity-based mitigation measures, the Navy implements specific mitigation measures in designated geographic locations within the Study Area, referred to as "mitigation areas." This appendix demonstrates the Navy's thorough consideration of specific mitigation areas during the planning process. This appendix contains background information and lays out the methodology used by the Navy in its scientific and operational analysis for assessing and developing proposed mitigation areas within the Hawaii-California Training and Testing (HCTT) Study Area to further avoid or reduce potential effects on marine mammals in key areas of biological importance.

For the purposes of this assessment, the term "geographic mitigation" means mitigation, beyond the activity-based mitigation described above, that has been tailored to geographic locations (mitigation areas), designed to benefit particular species and stocks of marine mammals, and which can include provisions to apply measures either year-round or seasonally, depending on the unique characteristics of the area. When committed to, for a particular species, such mitigation measures can also serve to provide benefits to other marine species, such as sea turtles, fish, corals, or other marine mammals. The mitigation areas assessed in this appendix are described in Section K.1.1 (Mitigation Areas Analyzed). Information on the approach to analysis is contained in Section K.2.1 (Approach to Analysis). The mitigation area assessments are presented in Sections K.3 (Biologically Important Areas Within the Hawaii Study Area) and K.4 (Biologically Important Areas Within the California Study Area).

[1] The Action Proponents include the U.S. Department of the Navy (Navy) (including both the U.S. Navy and the U.S. Marine Corps [USMC]) jointly with the U.S. Coast Guard (USCG), U.S. Army (Army), and U.S. Air Force (USAF). The Navy is the lead agency.

All final activity-based mitigation measures and geographic mitigation measures are coordinated with the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS), as appropriate, through the consultation and permitting process and will be documented and committed to in the Action Proponents' and NMFS RODs, NMFS Marine Mammal Protection Act (MMPA) Final Rule and Letters of Authorization (LOA), and the Endangered Species Act (ESA) Biological Opinions.

K.1.1 Mitigation Areas Analyzed

K.1.1.1 Biologically Important Areas

In 2011, the Cetacean Density and Distribution Mapping Working Group identified and categorized areas of importance for cetaceans. Areas identified through this process were termed "Biologically Important Areas" (BIAs) (Ferguson et al., 2015b; Van Parijs, 2015). The BIAs located in the main Hawaiian Islands (Kratofil et al., 2023), and off California (Calambokidis et al., 2024), have since been reviewed and revised based on new data and information collected since the original BIAs were defined based on how species use these areas. The original BIAs defined by Ferguson et al. (2015b) and Van Parijs et al. (2015), and those recently revised (Calambokidis et al., 2024; Kratofil et al., 2023), are defined as biologically important for a particular species or stock and for an associated behavior exhibited by the species in that area. The four types of BIAs are reproductive, feeding, migratory, and small and resident, as described below (Harrison et al., 2023).

- Reproductive Areas – Areas and times within which a particular species selectively mates, gives birth, or are found with neonates or calves.
- Feeding Areas – Areas and times within which aggregations of a particular species preferentially feed. These either may be persistent in space and time or associated with ephemeral features that are less predictable but are located within a larger area that can be delineated.
- Migratory Corridors – Areas and times within which a substantial portion of a species is known to migrate; the corridor is spatially restricted.
- Small and Resident Population – Areas and times within which small and resident populations occupy a limited geographic extent. (Note: for this category, the Cetacean Density and Distribution Mapping Working Group delineated biologically important areas for "populations or stocks whose range spans only a bay, an area around one or several islands, or a portion of what the Cetacean Density and Distribution Mapping Working Group define as a region. Each regional chapter provides an explicit definition of 'resident' for each small and resident biologically important area delineated").

BIAs are also delineated for a specific time during which the important behavior is occurring in the area (e.g., while the species is migrating through the area). However, BIAs are not regulatorily mandated exclusionary zones (closure areas) and are not analogous to marine protected areas or critical habitat under the ESA, but rather were identified as resource management tools to "aid the National Oceanic and Atmospheric Administration and other federal agencies in… analyses and planning as required under multiple U.S. statutes," such as the National Environmental Policy Act (NEPA), MMPA, and ESA, "to characterize and minimize the impacts of anthropogenic activities on cetaceans and to achieve conservation and protection goals" (Ferguson et al., 2015b).

Although NMFS considers each area's boundary to be dynamic and subject to change based on new information (Ferguson et al., 2015a), the Action Proponents' assessments in this appendix are based on the areas as they were originally described in 2015 and recently revised in Calambokidis et al. (2024) and Kratofil et al. (2023). As new data become available, the Action Proponents and NMFS will continue to reassess the data via the adaptive management process discussed in Section 5.5 (Monitoring, Research, and Adaptive Management) of Chapter 5 (Mitigation) of this EIS/OEIS.

Two new aspects of the BIA II delineation protocol are the options for identifying transboundary BIAs and "hierarchical" BIAs. Transboundary BIAs are BIAs that span more than one of the seven BIA regions (east coast, gulf of Mexico, west coast, Hawaii, gulf of Alaska, Aleutian islands and Bering sea, and arctic), and thus allow for continuity in a species' important area among BIA regions if necessary (e.g., for migration corridors). Delineated BIA boundaries can extend into international waters if supporting data is available (i.e., BIAs were not truncated at the U.S. Exclusive Economic Zone (EEZ), but BIAs were not identified solely within international waters (Harrison et al., 2023). Hierarchical BIAs are for situations where high-resolution data are available and it is appropriate and helpful to identify a gradation in animal use, available information, certainty in the spatial and/or temporal aspects of the boundary, or ecological characteristics across a broader area. For many species considered here, data were available to support the existence of core areas of use, or areas used notably more intensely, identified within a larger important area, which is termed "parent BIA" (Harrison et al., 2023) or "child BIA in Kratofil et al. (2023). In these cases and throughout this manuscript, these areas are referred to as "core BIAs" to more clearly represent that these areas were identified as a portion of the parent BIA with intensified use (e.g., higher density) by the given species and corresponding higher intensity scores based on the criteria evaluated. One exception to this was the delineation of the hierarchical migration BIA for (primarily) Eastern North Pacific gray whales, where one parent BIA temporally and spatially spans both northbound and southbound migrations, with a transboundary extension to the Gulf of Alaska. The parent BIA encompasses several smaller (spatially) and shorter (temporally) phase-specific BIAs (i.e., southbound, northbound phase for adults/juveniles, northbound phase for cow/calf pairs). In this situation, such nested BIAs are referred to as "child BIAs".

As discussed in Section C.6.1.2 (Habitat Use) of Appendix C of this EIS/OEIS, 35 BIAs were identified in Hawaii for 12 cetacean species (Figure K-1); these included 33 small resident BIAs for 11 odontocetes and 2 reproductive BIAs for humpback whales in the main Hawaiian Islands (Kratofil et al., 2023). Hierarchical BIAs were defined for 9 of the 12 species yielding between 1 and 3 child BIAs for each of the 9 parent BIAs, depending on the species. 10 non-hierarchical BIAs were defined for 6 species.

Twenty-eight BIAs were identified for four species off the U.S. West Coast in 2015 (Calambokidis et al., 2015c), with 5 of those areas located within or overlapping the California portion of the 2018 HSTT Study Area. The BIAs included 4 feeding areas for blue whales and a migration area for gray whales (Calambokidis et al., 2015c). NMFS recently updated the BIAs for cetaceans on the U.S. West Coast (Figure K-2) resulting in BIAs for two additional species, fin whales and Southern Resident killer whales that were not delineated in the original effort in 2015 (Calambokidis et al., 2024).

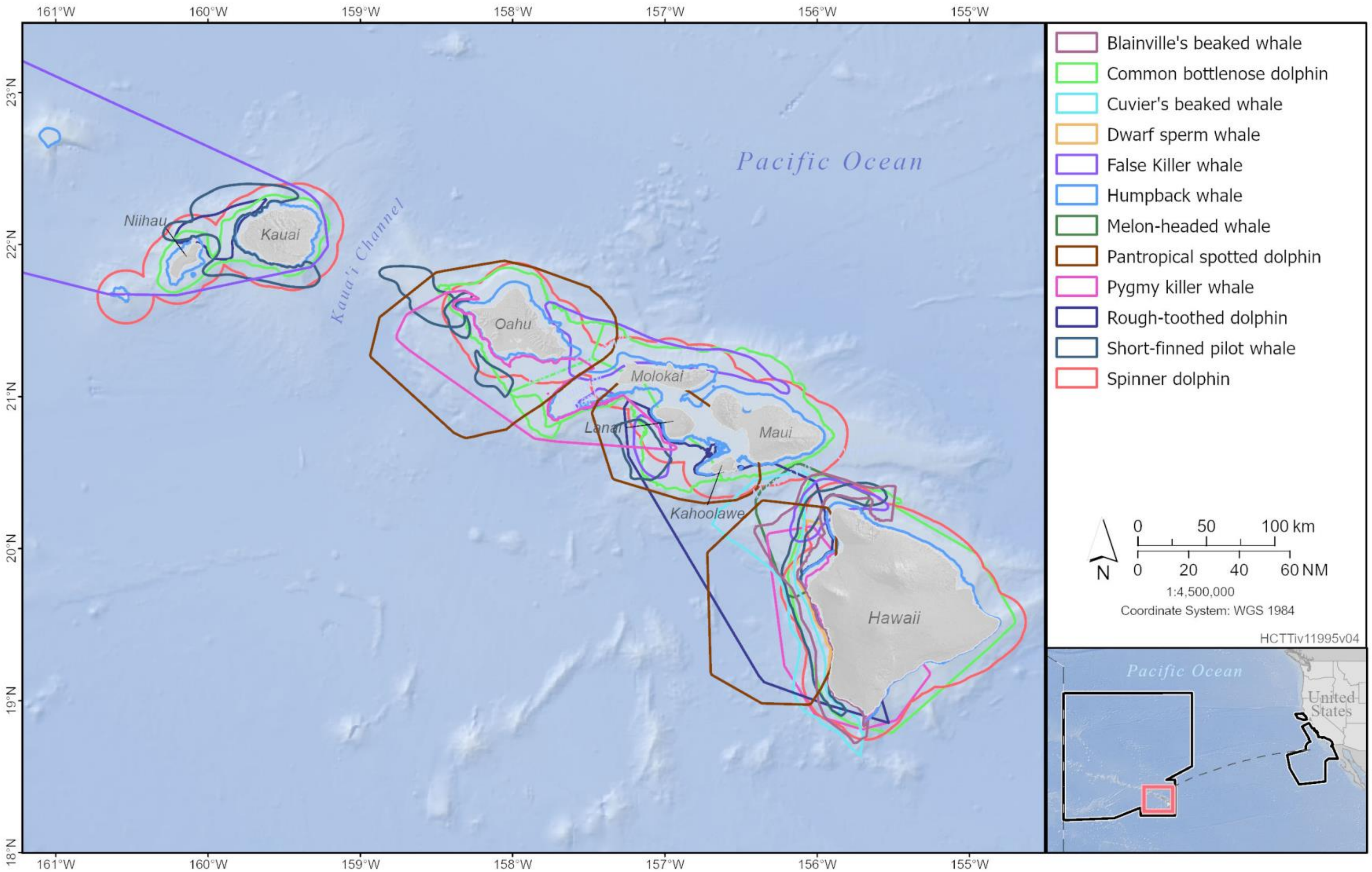

Figure K-1: Biologically Important Areas in the Hawaii Study Area

Note: Discrete maps of the individual areas are presented in the following subsections where those areas are discussed for each species.

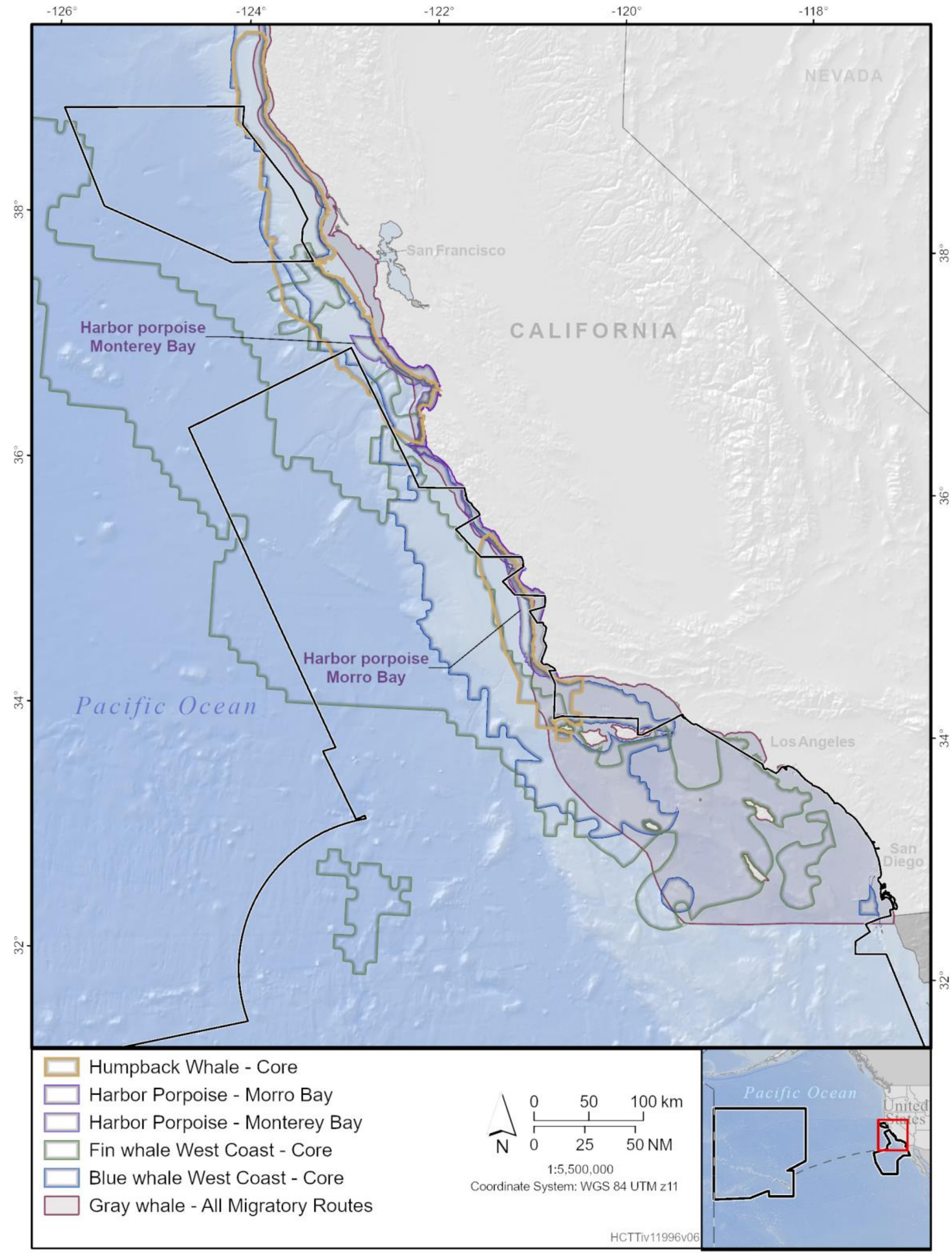

Figure K-2: Biologically Important Areas in the California Study Area

Note: Discrete maps of the individual areas are presented in the following subsections where those areas are discussed for each species.

For this assessment, the Action Proponents used the revisions to the Cetacean Density and Distribution Mapping Working Group source literature (Calambokidis et al., 2024; Kratofil et al., 2023) in combination with Navy marine species monitoring reports, available tagging data, and the most up-to-date scientific literature, to assess the potential likelihood that additional mitigation in these areas would be warranted. In many instances, data from the Navy's marine mammal tagging studies were particularly helpful in providing context about the full extent of habitats used by cetaceans for biologically important behaviors in the Study Area, since oftentimes the biologically important areas identified in Calambokidis et al. (2024) and Kratofil et al. (2023) represent only a portion of the habitats used by marine mammals throughout their range.

K.1.1.2 Areas Suggested During the Public Involvement Process

<<Placeholder until the conclusion of the public involvement process>>

K.1.1.2.1 Additional Mitigation Measures Suggested during the Draft EIS/OEIS Public Involvement Process

<<Placeholder until the conclusion of the public involvement process>>

K.1.1.3 Mitigation Areas Currently Implemented

During the 2018 HSTT EIS/OEIS (Phase III), seafloor resource mitigation areas (Table K-1, Figure K-3, and Figure K-4), as well as seven geographic mitigation areas (four in the Hawaii [Table K-2 and Figure K-5] and three in the Southern California [Table K-3 and Figure K-6] portions of the HSTT Study Area) were and continue to be implemented. In addition, the California Large Whale Real-Time Notification Mitigation Area (Table K-4) from the HSTT Biological Opinion reinitiation is currently being implemented.

The Northern California (NOCAL) Range Complex and the PMSR were not part of the HSTT Study Area and therefore no mitigation areas were implemented for those areas during Phase III. In addition, there was no geographic mitigation incorporated into the 2022 PMSR EIS/OEIS.

K.1.1.3.1 Mitigation Areas for Seafloor Resources

As outlined in Table K-1 and shown in Figure K-3 and Figure K-4, the Navy is currently implementing mitigation from Phase III to avoid or reduce potential effects on biological or cultural resources that are not observable by lookouts from the water's surface (i.e., resources for which activity-based mitigation measures cannot be implemented).

Table K-1: Mitigation Areas for Seafloor Resources in the Study Area

Mitigation Area Description
Stressor or Activity • Explosives • Physical disturbance and strikes
Resource Protection Focus • Shallow-water coral reefs • Precious coral beds • Live hard bottom • Artificial reefs • Shipwrecks
Mitigation Area Requirements (year-round) • **Within the anchor swing circle of shallow-water coral reefs, precious coral beds, live hard bottom, artificial reefs, and shipwrecks:** – The Navy will not conduct precision anchoring (except in designated anchorages in the Hawaii Range Complex and California Study Area, such as areas adjoining the boat lanes off Silver Strand Training Complex and Naval Amphibious Base Coronado). • **Within a 350-yd. radius of live hard bottom, artificial reefs, and shipwrecks:** – The Navy will not conduct explosive mine countermeasure and neutralization activities or explosive mine neutralization activities involving Navy divers (except in designated areas in the Hawaii Range Complex and California Study Area, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practicable). – The Navy will not place mine shapes, anchors, or mooring devices on the seafloor (except in designated areas in the Hawaii Range Complex and California Study Area, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practicable). • **Within a 350-yd. radius of shallow-water coral reefs and precious coral beds:** – The Navy will not conduct explosive or non-explosive small-, medium-, and large-caliber gunnery activities using a surface target; explosive or non-explosive missile and rocket activities using a surface target; explosive or non-explosive bombing and mine laying activities; explosive or non-explosive mine countermeasure and neutralization activities; and explosive or non-explosive mine neutralization activities involving Navy divers (except in designated areas in the Hawaii Range Complex and California Study Area, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practicable). – The Navy will not place mine shapes, anchors, or mooring devices on the seafloor (except in designated areas in the Hawaii Range Complex and California Study Area, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practicable).

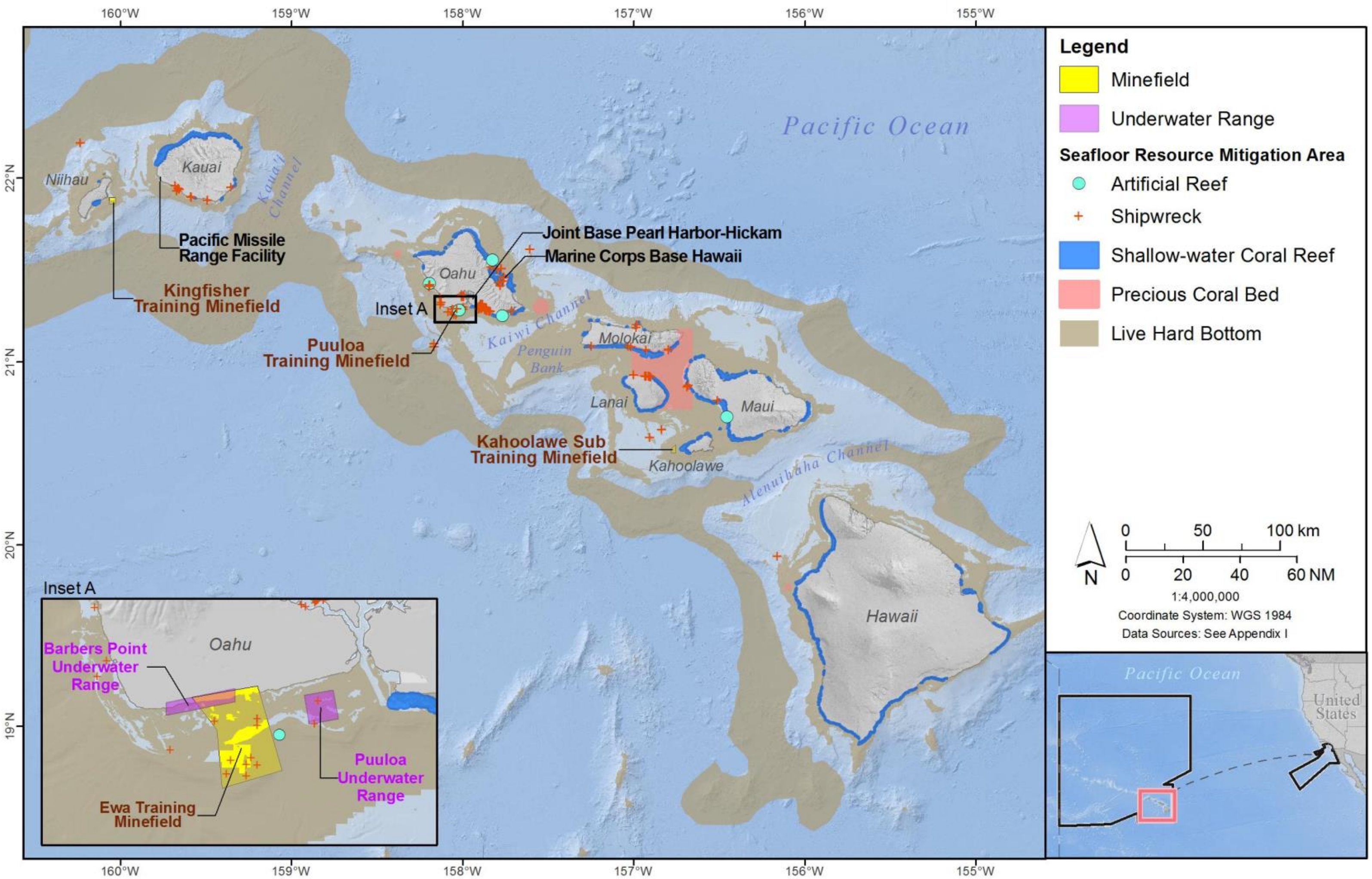

Figure K-3: Phase III Seafloor Resource Mitigation Areas off the Hawaiian Islands

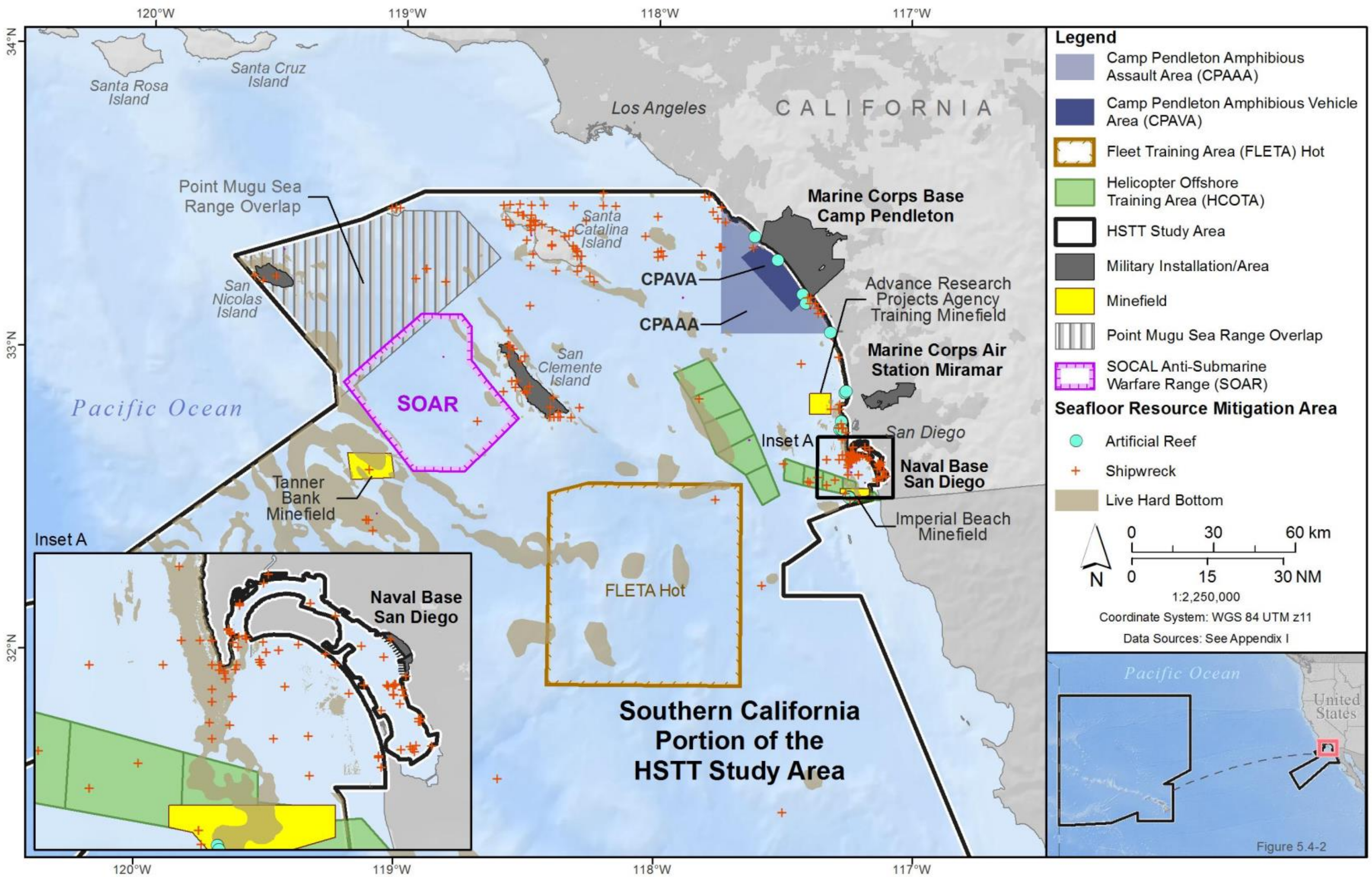

Figure K-4: Phase III Seafloor Resource Mitigation Areas off Southern California

Notes: HSTT = Hawaii-Southern California Training and Testing; MCAS = Marine Corps Air Station; MCB = Marine Corps Base; NB = Naval Base; SOCAL = Southern California

K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area

As described in Table K-2 and shown in Figure K-5, the Navy is currently implementing mitigation areas from Phase III in the Hawaii Study Area to, in combination with activity-based mitigation measures, effect the least practicable adverse impact on marine mammal species or stocks and their habitat and to provide additional mitigation for Endangered Species Act (ESA)-listed marine mammal species.

Table K-2: Mitigation Areas for Marine Mammals in the Hawaii Study Area

Mitigation Area Description
<u>**Stressor or Activity**</u> • Sonar • Explosives • Vessel strikes
<u>**Resource Protection Focus**</u> • Marine mammals
<u>**Mitigation Area Requirements**</u> • **Hawaii Island Marine Mammal Mitigation Area (year-round):** – The Navy will not conduct more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar or 20 hours of mid frequency dipping sonar, or use explosives that could potentially result in takes of marine mammals during training and testing. Should national security present a requirement to conduct more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar or 20 hours of MF4 dipping sonar, or use explosives that could potentially result in the take of marine mammals during training or testing, naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., sonar hours or explosives usage) in its annual activity reports submitted to NMFS. • **4-Islands Region Mitigation Area (November 15 – April 15 for active sonar; year-round for explosives):** – The Navy will not use MF1 surface ship hull-mounted mid-frequency active sonar or explosives that could potentially result in takes of marine mammals during training and testing. Should national security present a requirement to use MF1 surface ship hull-mounted mid-frequency active sonar or explosives that could potentially result in the take of marine mammals during training or testing, naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., sonar hours or explosives usage) in its annual activity reports submitted to NMFS. • **Humpback Whale Special Reporting Areas (December 15 – April 15):** – The Navy will report the total hours of surface ship hull-mounted mid-frequency active sonar used in the special reporting areas in its annual training and testing activity reports submitted to NMFS. • **Humpback Whale Awareness Notification Message Area (November – April):** – The Navy will issue a seasonal awareness notification message to alert ships and aircraft operating in the area to the possible presence of concentrations of large whales, including humpback whales. – To maintain safety of navigation and to avoid interactions with large whales during transits, the Navy will instruct vessels to remain vigilant to the presence of large whale species (including humpback whales), that when concentrated seasonally, may become vulnerable to vessel strikes. – Platforms will use the information from the awareness notification message to assist their visual observation of applicable mitigation zones during training and testing activities and to aid in the implementation of activity-based mitigation measures.

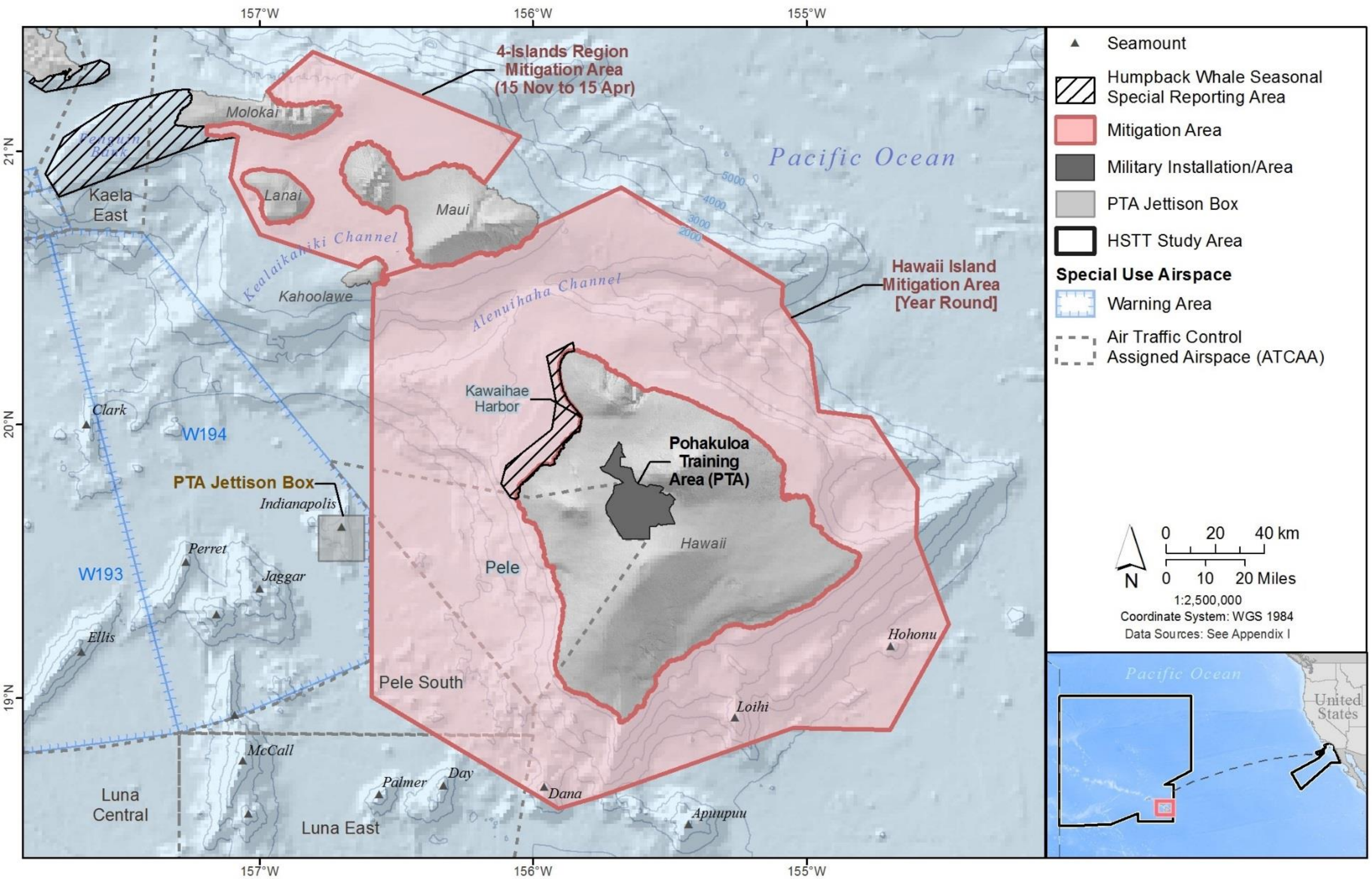

Figure K-5: Phase III Marine Mammal Mitigation Areas off the Hawaiian Islands

Notes: HSTT = Hawaii-Southern California Training and Testing

K.1.1.3.3 Mitigation Areas for Marine Mammals in the California Study Area

As described in Table K-3 and Figure K-6, the Navy is currently implementing mitigation areas from Phase III in the California Study Area to, in combination with activity-based mitigation measures, effect the least practicable adverse impact on marine mammal species or stocks and their habitat and to provide additional mitigation for ESA-listed marine mammal species.

Table K-3: Mitigation Areas in the California Study Area

Mitigation Area Description
Stressor or Activity • Sonar • Explosives • Vessel strikes
Resource Protection Focus • Marine mammals
Mitigation Area Requirements • **San Diego Arc, San Nicolas Island, and Santa Monica/Long Beach Mitigation Areas (June 1 – October 31):** – The Navy will not conduct more than a total of 200 hours of MF1 surface ship hull-mounted mid-frequency active sonar in the combined areas, excluding normal maintenance and systems checks, during training and testing. Should national security present a requirement to conduct more than 200 hours of MF1 surface ship hull-mounted mid-frequency active sonar in the combined areas during training and testing (excluding normal maintenance and systems checks), naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., sonar hours) in its annual activity reports submitted to NMFS. – Within the San Diego Arc Mitigation Area, the Navy will not use explosives that could potentially result in the take of marine mammals during large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training and testing. Should national security present a requirement to use explosives that could potentially result in the take of marine mammals during large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training or testing, naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., explosives usage) in its annual activity reports submitted to NMFS. – Within the San Nicolas Island Mitigation Area, the Navy will not use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training. Should national security present a requirement to use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training, naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., explosives usage) in its annual activity reports submitted to NMFS. – Within the Santa Monica/Long Beach Mitigation Area, the Navy will not use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training and testing. Should national security present a requirement to use explosives that could potentially result in the take of marine mammals during mine warfare, large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training or testing, naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., explosives usage) in its annual activity reports submitted to NMFS. • **Santa Barbara Island Mitigation Area (year-round):** – The Navy will not use MF1 surface ship hull-mounted mid-frequency active sonar during training or testing, or explosives that could potentially result in the take of marine mammals during medium-caliber or large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training. Should national security present a requirement to use MF1 surface ship hull-mounted mid-frequency active sonar during training or testing, or explosives that could potentially result in the take of marine mammals during medium-caliber or large-caliber gunnery, torpedo, bombing, and missile (including 2.75” rockets) activities during training, naval units will obtain permission from the appropriate designated Command authority prior to commencement of the activity. The Navy will provide NMFS with advance notification and include the information (e.g., sonar hours or explosives usage) in its annual activity reports submitted to NMFS.

Mitigation Area Description
• **Blue Whale (June – October), Gray Whale (November – March), and Fin Whale (November – May) Awareness Notification Message Areas:** – The Navy will issue a seasonal awareness notification message to alert ships and aircraft operating in the area to the possible presence of concentrations of large whales, including blue, gray, or fin whales. – To maintain safety of navigation and to avoid interactions with large whales during transits, the Navy will instruct vessels to remain vigilant to the presence of large whale species, that when concentrated seasonally, may become vulnerable to vessel strikes. Platforms will use the information from the awareness notification messages to assist their visual observation of applicable mitigation zones during training and testing activities and to aid in the implementation of activity-based mitigation measures.

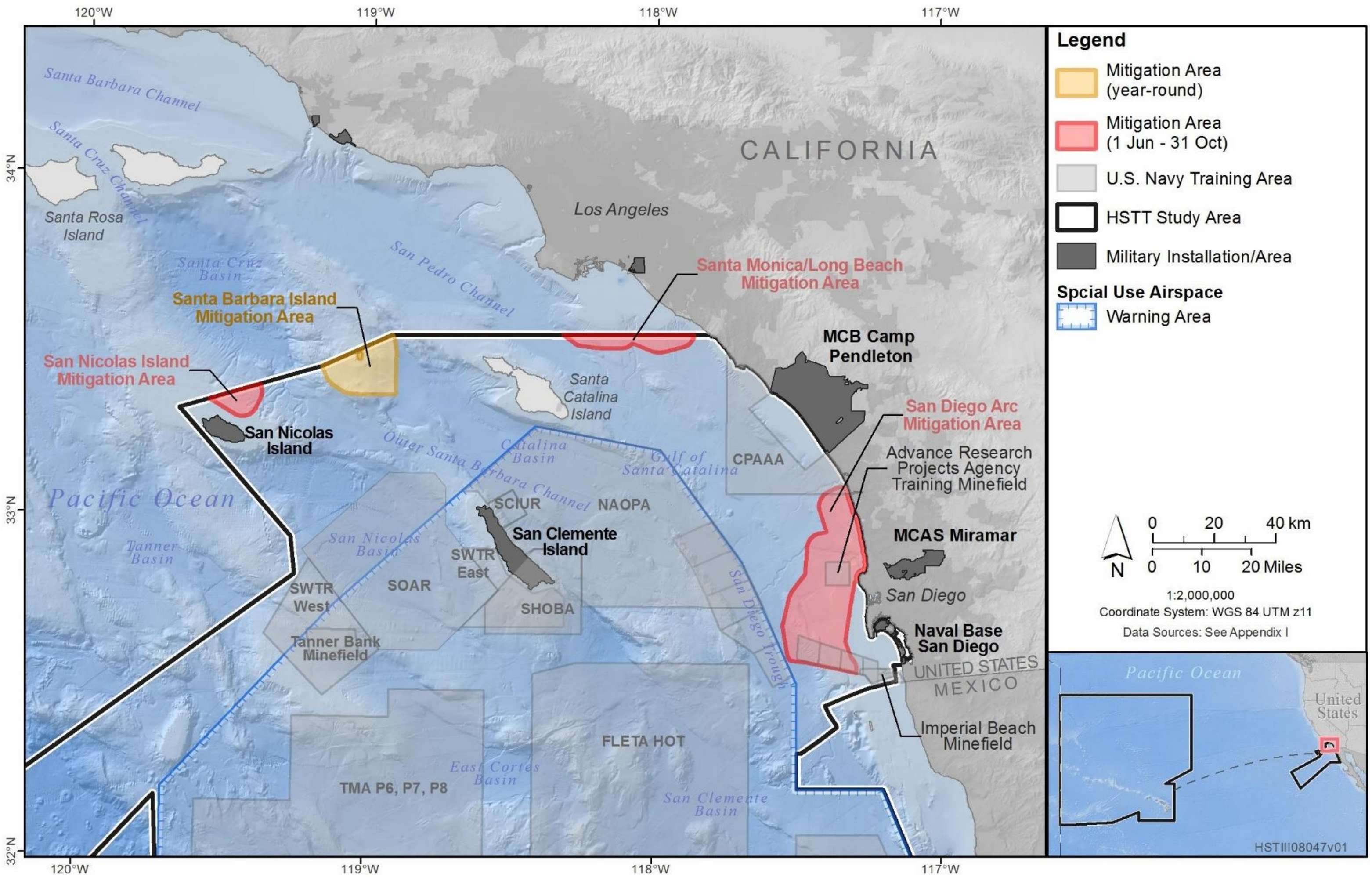

Figure K-6: Phase III Marine Mammal Mitigation Areas off Southern California

Notes: MCAS = Marine Corps Air Station; MCB = Marine Corps Base; NWS = Naval Weapons Station

K.1.1.3.4 California Large Whale Real-Time Notification Mitigation Area

Table K-4 details real-time notification requirements for a designated area within the SOCAL Range Complex. The mitigation is a continuation from National Marine Fisheries Service (2024).

Table K-4: California Large Whale Real-Time Notification Mitigation Area

Category	*Mitigation Requirements*	*Mitigation Benefits*

Physical disturbance and strike	• The Action Proponents will issue real-time notifications to alert Action Proponent vessels operating in the vicinity of large whale aggregations (four or more whales) sighted within 1 NM of an Action Proponent vessel within an area of the Southern California Range Complex (between 32–33 degrees North and 117.2–119.5 degrees West).
	  ○ The four whales that make up a defined "aggregation" would not all need to be from the same species, and the aggregation could consist either of a single group of four (or more) whales, or any combination of smaller groups totaling four (e.g., two groups of two whales each or a group of three whales and a solitary whale) within the 1 NM zone.
	  ○ Lookouts will use the information from the real-time notifications to inform their visual observations of applicable mitigation zones. If Lookouts observe a large whale aggregation within 1 NM of the event vicinity within the area between 32–33 degrees North and 117.2–119.5 degrees West, the watch station will initiate communication with the designated point of contact to contribute to the Navy's real-time sighting notification system.
		• The real-time notification area encompasses the locations of recent (2009, 2021) vessel strikes, and historic strikes where precise latitude and longitude were known.

K.2 Mitigation Area Assessment

K.2.1 Approach to Analysis

In developing mitigation areas, the Action Proponents considered the manner and degree to which a potential mitigation measure was likely to reduce effects on species and stocks, while still being practical and safe to implement, and not impacting the effectiveness of military readiness activity in an impractical manner. The Action Proponents used a qualitative assessment process when considering potential geographic mitigation areas based on the best available science, the analyses from Chapter 3 (Affected Environment and Environmental Consequences), available tagging data, Navy marine species monitoring data, and input from the training and testing community.

Potential mitigation options within specific geographic areas include reducing or modifying activities in order to reduce effects on marine species or stocks and their habitat. For example, mitigation could include: limiting the total amount of activity in an area, limiting activities such that a certain number of sonar hours would not be exceeded, using an area less often or for a shorter duration, complete restriction of certain activities or the use of certain systems that result in a stressor, limiting the time of year that an activity is conducted, limiting certain activities to daylight hours only, limiting or restricting major training exercises in certain areas, implementing special reporting requirements, or requiring approval from a designated Command authority for conducting activities in certain areas or during certain times of year. The Action Proponents' mitigation objectives in this assessment are to:

- Ensure that the Proposed Action has only a negligible impact on marine mammal species, stocks, and populations;
- Identify means of effecting the least practicable adverse impact upon the affected marine mammal species or stocks and their habitat (as required by Section 101(a)(5)(A) of the MMPA);

- Ensure that the Proposed Action does not jeopardize the continued existence of endangered or threatened species, or result in destruction or adverse modification of critical habitat (as required under ESA); and
- Avoid or reduce the level of impact of incidental take to individuals and their habitat to the extent reasonable and prudent.

K.2.1.1 Stressors Considered for Analysis

The Action Proponents considered, when combined with the activity-based mitigation measures currently implemented, if the addition of geographic mitigation would avoid or further reduce adverse effects to marine mammals for the following stressors:

- Acoustic: Sonar and other transducers
- Explosives: In-water (applies only to those activities for which the Action Proponents seek MMPA authorization)

Active sonar and other transducers have the potential to result in incidental takes of marine mammals by behavioral harassment, temporary hearing loss or auditory injury. Explosives may result in takes by behavioral harassment, temporary hearing loss, auditory injury, non-auditory injury, or mortality.

Geographic mitigation only applies to activities which could result in acoustic and explosive stressors, and this appendix specifically discusses the potential impacts from those stressors on marine mammals in the revised BIAs off the Hawaiian Islands and California discussed in Section K.1.1.1 (Biologically Important Areas). Mitigation not specific to sonar and other transducers, and in-water explosives, for species other than marine mammals, are discussed in Chapter 5 (Mitigation) of the HCTT Draft EIS/OEIS.

K.2.1.2 Biological Effectiveness Assessment

The first step of the mitigation area assessment was a biological effectiveness assessment (presented in the Biological Considerations sections) of each area identified in Section K.1.1 (Mitigation Areas Analyzed). This assessment considered if implementing geographic mitigation in these areas, in addition to activity-based mitigation measures which are implemented throughout the Study Area, would be effective at reducing adverse effects on marine mammal species or stocks and their habitat. Assessments of overlapping areas were combined whenever possible. The Action Proponents considered a specific mitigation area to be biologically effective if it met the following criteria:

1. The best available science suggests that the area is of biological importance to one or more species or resources for a biologically important life process (e.g., foraging, migration, or reproduction) or ecological function, year-round or for part of the year.
2. Implementing the mitigation would likely result in avoiding or minimizing injury or mortality; limiting interruption of known feeding, breeding, migratory, mother/young, or resting behaviors; minimizing the abandonment of important habitat (temporally and spatially); minimizing the number of individuals subjected to these types of disruptions; and limiting degradation of habitat.
3. Implementing the mitigation would not shift or transfer adverse effects from one species to another, or to a more vulnerable or sensitive species.

K.2.1.3 Operational Assessment

A second step, an operational assessment (presented in the Action Proponent Requirements for Area-Specific Training and Testing sections), considered what activities are conducted in specific geographic areas and assessed the importance of those areas for those specific activities. The Action Proponents assessed how and to what degree a specific mitigation measure would be compatible with planning, scheduling, and conducting military readiness activities under the Proposed Action in order to meet each military service's respective national defense missions in accordance with their Congressionally mandated requirements.[2]. In its operational assessment, the Action Proponents considered such things as cost, impact on operations, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity in accordance with 16 U.S.C. 1371(a)(5)(A)(ii). This part of the assessment also considered information from annual training exercise reports, testing event reports, monitoring reports, and feedback from members of the training and testing community who are responsible for implementing the mitigation.

It is vital that the Action Proponents effectively execute readiness activities to ensure forces can effectively execute military operations. The ability to schedule and locate training and testing without excessively burdensome restrictions within the Study Area is crucial to ensure those activities are practical, effective, and safe to execute. To meet their military readiness requirements, the Action Proponents require consistent access to a variety of realistic, tactically-relevant oceanographic and environmental conditions (e.g., bathymetry, topography, surface fronts, and variations in sea surface temperature), and sea space and airspace that is large enough or situated in a way that allows activities to be completed without physical or logistical obstructions, in order to achieve the highest skill proficiency and most accurate testing results possible in areas analogous to where the military operates. Some of the elements considered in selecting training and testing locations include:

- Proximity to training ranges, testing facilities, air squadrons, home ports, and existing infrastructure (e.g., instrumented underwater and land ranges);
- Availability of aircraft emergency landing fields;
- Access to a variety of realistic or unique tactical environments required to ensure training and testing effectiveness and meet testing program requirements;
- Ability to de-conflict participants (e.g., ships, aircraft, or submarines) or other users of the water and air space (e.g., commercial shipping, recreational boating, fishing, and commercial air traffic routes) during military activities to ensure the various training and testing events do not encroach on each other or other users.

The Action Proponents considered mitigation to be practical to implement if it met all criteria listed below (see Table 5-1 in Section 5.1, Practicality Assessment Criterion, for more details):

- Implementing mitigation must be safe: The mitigation must not increase safety risks to U.S. military personnel and equipment or the general public.

[2] See Title 10, Sections 8062 (Navy), 8063 (USMC), 7062 (Army), 9062 (USAF) United States Code (U.S.C.) and Title 14, Sections 101 and 102 U.S.C. (USCG) for each service's specific language. Army and USAF are included only for their activities in Hawaii with potential in-water impacts.

- Implementing mitigation must sustainable for the duration of the Proposed Action: The mitigation would not result in excessive time away from homeport or base for military personnel or an impracticable increase in resource requirements, such as wear and tear on equipment, additional fuel, additional personnel, additional funding, or undue shifting of time spent on operational obligations to other tasks (e.g., increased reporting requirements that take disproportionate time away from focusing on mission requirements).
- Implementing mitigation must allow for the Action Proponents to continue meeting mission objectives and statutory mandates: When assessing whether implementing mitigation would allow the Action Proponents to continue meeting their Congressionally mandated obligations, each individual measure was evaluated based on itsimpact to the effectiveness of the military readiness activity.

K.3 Biologically Important Areas Within the Hawaii Study Area

K.3.1 Main Hawaiian Islands Humpback Whale Reproduction Area

K.3.1.1 Biological Considerations Applicable to all Humpback Whale Reproduction Areas

NMFS recognizes 14 distinct population segments (DPS) of humpback whales worldwide, with four DPSs occurring in the North Pacific (Carretta et al., 2023). Humpback whales that occur seasonally in the HCTT Study Area are from three of the four DPSs identified by low-latitude wintering habitats: Hawaii DPS, Mexico DPS, and Central America DPS (Bettridge et al., 2015; Carretta et al., 2023; National Marine Fisheries Service, 2016b; Young, 2023). The three previously defined stocks of North Pacific humpback whales did not align with the DPS structure, so NMFS reevaluated the stock structure to incorporate both the locations of foraging and overwintering areas and population demographics. As a result, NMFS defined five stocks in the North Pacific:

1. Central America/Southern Mexico-California-Oregon-Washington stock
2. Mainland Mexico-California-Oregon-Washington stock
3. Mexico-North Pacific stock
4. Hawaii stock
5. Western North Pacific stock

Of the five stocks listed above, only the Hawaii stock is found in the Hawaii Study Area. Humpback whales wintering in Hawaii are identified as the Hawaii DPS and comprise the Hawaii stock. Humpback whales from the Hawaii DPS/stock forage across the North Pacific. Humpback whales in the Hawaii DPS are not listed under the ESA, because the population is believed to have fully recovered to its pre-whaling abundance (Barlow et al., 2011; Bettridge et al., 2015; Muto et al., 2017; National Marine Fisheries Service, 2016a; Wade et al., 2016).

Humpback whales that breed in Hawaii generally migrate to northern British Columbia and southeast Alaska to feed (Bettridge et al., 2015; Calambokidis et al., 2008). In the Hawaii portion of their range, peak densities are from February through March, although the breeding season typically spans December through April (Baird et al., 2015d; Mobley et al., 1999; Mobley et al., 2001; Norris et al., 1999). New survey data collected in offshore waters of the Main Hawaiian Islands in 2020 supported the development of the first habitat-based density model for humpback whale for the Hawaiian Islands EEZ (Becker et al., 2022b). This model provided further evidence that peak numbers of humpback whales occur within these waters from approximately 19 February through 22 March. Acoustic recordings near the northwestern Hawaiian Islands indicate that humpback whales were present in the Hawaii Study Area from early December through early June (Lammers et al. 2011). It is not yet known if this represents a previously undocumented breeding stock or if the whales occurring at the northwestern Hawaiian Islands are part of the same population that winters near the Main Hawaiian Islands (Bettridge et al., 2015). Acoustic recordings over multiple years (including 2016) using the Pacific Missile Range Facility hydrophones have demonstrated a seasonal presence of humpback whales off Kauai from November to May (Martin et al., 2016; Martin et al., 2017). The majority of humpback whales in Hawaii during the breeding season have been detected within the 200 m isobath (Mobley, 2005; Mobley et al., 2015; Mobley & Pacini, 2013; Mobley et al., 2001). This presence may include very nearshore and inland water areas (Richie et al., 2016).

There have been six locations identified in the main Hawaiian Islands as a single reproductive area for humpback whales (Baird et al. 2015). The greatest densities of humpback whales (including calves) have been in the four-island region consisting of Maui, Molokai, Kahoolawe, and Lanai, as well as Penguin Bank (Mobley et al., 2001) and around Kauai (Mobley, 2005). A March 2007 pilot survey across the Northwest Hawaiian Islands documented the existence of extensive wintering habitat used by humpback whales in the Northwest Hawaiian Islands (Johnston et al., 2007).

Two humpback whale reproductive BIAs (a parent and a child BIA) have been delineated in the main Hawaiian Islands during the overwintering breeding season (Kratofil et al., 2023)(Figure K-9). The BIAs were updated from the original BIAs (Baird et al., 2015b) based on satellite tag data collected from 1995 to 2019. The parent BIA encompasses 23,042 km^2 and the child BIA encompasses 6,679 km^2, including what are likely the most important reproductive areas for humpback whales in the Main Hawaiian Islands (Kratofil et al., 2023). The BIAs are in effect from December through May.

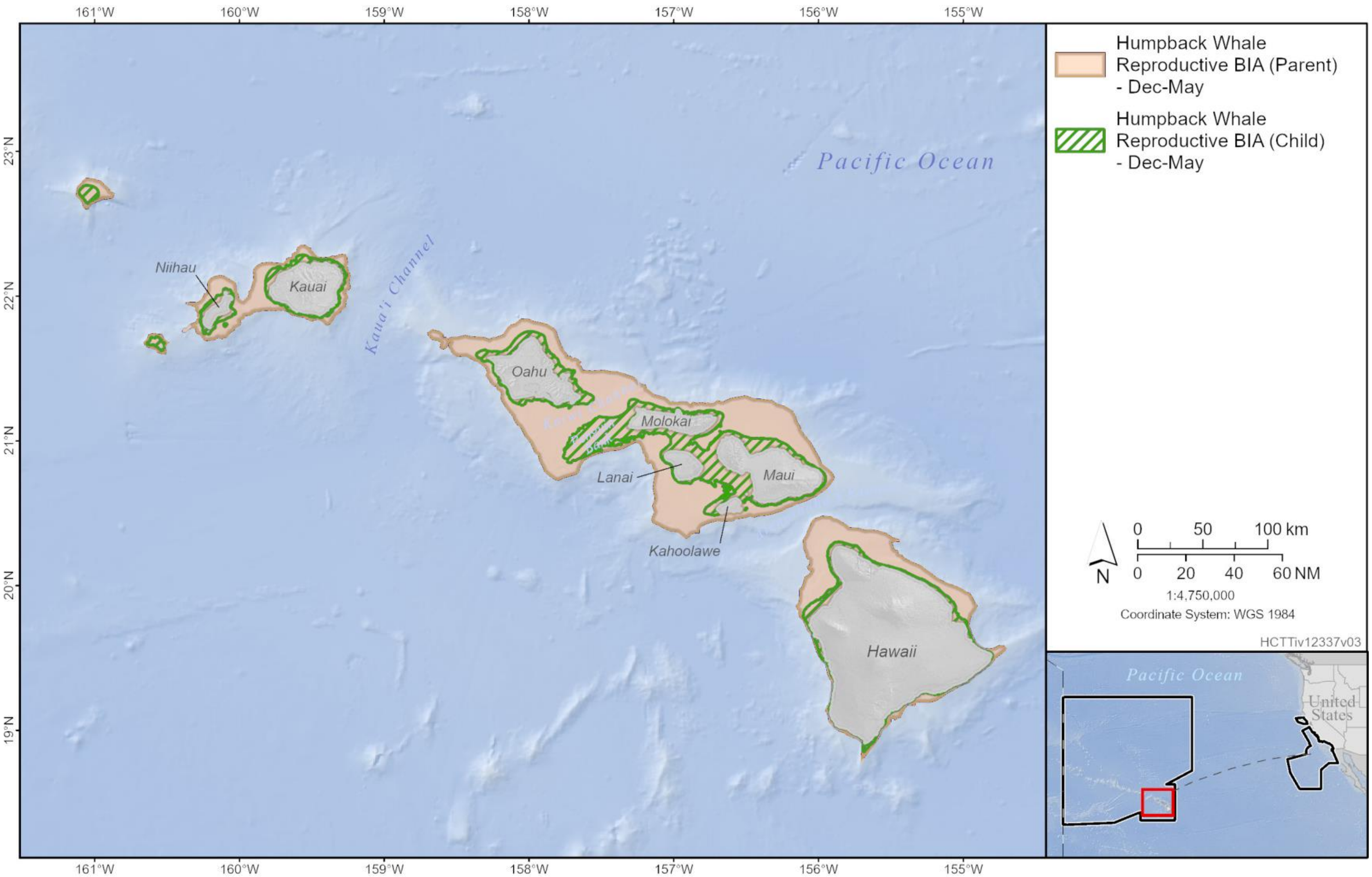

Figure K-7: Main Hawaiian Islands Humpback Whale Reproductive BIAs Off the Hawaiian Islands

K.3.1.2 Stressor Analysis

K.3.1.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other transducers create underwater acoustic energy potentially impacting humpback whales and their reproductive behavior. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 97 percent of effects are predicted to occur in the Hawaii Range Complex during the cold season. 93 percent of the behavioral, 95 percent of the temporary threshold shift, and 63 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only one take (behavioral) is predicted from the training and testing activities involving air guns.

On average, individuals in the Hawaii stock would be impacted less than once per year. These effects are most likely to occur in the cold season when humpbacks would be seasonally present in the area and engaged in breeding behavior. The average risk of injury is low, although it is likely that some auditory injuries could occur, particularly from sonar activities during Navy training events. The risk of injury may be reduced through activity-based mitigation.

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an auditory injury may experience minor energetic costs. Most predicted effects are temporary auditory effects that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to the stock are unlikely.

K.3.1.3 Action Proponent Requirements for Area-Specific Training and Testing

The main Hawaiian Islands humpback whale reproductive BIAs encompass waters around the islands of Hawaii, Oahu, Kauai, Maui, Molokai, Lanai, Kahoolawe, and Niihau within the Hawaii Study Area. These waters encompass many of the primary training sites within the Hawaii Range Complex. Spatially, Humpback whales may be present anywhere within the waters surrounding the Hawaiian Islands. Temporally, Humpback whales may be present most of the year, however breeding season (December through April) is when they are most likely to be present.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The training and testing areas encompassed by the humpback whale BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Pacific Range Missile Facility, shallow water training range and barking sands tactical underwater range west of Kauai, Ewa training minefield and Puuloa underwater range south of Oahu, the Kahoolawe sub training minefield, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

K.3.1.4 Humpback Whale Reproduction Area Mitigation Considerations

As discussed in Section K.3.1.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to humpback whales that would occur in the Hawaii Range Complex are from training and testing activities involving sonar during the cold season as humpback whales breed in the waters surrounding the Hawaiian Islands. Most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals.

Existing geographic mitigation areas resulting from the 2018 HSTT EIS/OEIS are currently in place in the waters surrounding the Hawaiian Islands and include the existing Hawaii 4-Islands Region Mitigation Area, Hawaii Island Marine Mammal Mitigation Area, and the Hawaii Humpback Whale Special Reporting Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area). These mitigation areas, as shown in Figure K-26, encompass some of the revised main Hawaiian Islands humpback whale child BIA and will continue to be implemented because they provide a benefit to the Hawaii stock of humpback whales during their breeding season. In addition, the Hawaii Humpback Whale Special Reporting Area will be expanded based on the revised humpback whale child BIA.

K.3.2 Hawaii Island Dwarf Sperm Whale Small and Resident Population Area

K.3.2.1 Biological Considerations Applicable to the Hawaii Island Dwarf Sperm Whale Small and Resident Population Area

NMFS recognizes two stocks of dwarf sperm whales within the Pacific U.S. Exclusive Economic Zone: the Hawaiian stock and the California, Oregon, and Washington stock (Carretta et al., 2023). Only the Hawaiian stock is present in the Hawaii Study Area.

There were a total of six pygmy sperm whale sightings during systematic ship surveys within the Hawaiian Islands EEZ in 2002, 2010, and 2017, and none of the sightings were in waters within 140 km of the Main Hawaiian Islands (Bradford et al., 2021). During small boat surveys between 2002 and 2012 in the main Hawaiian Islands, this species was the fifth most frequently encountered species of odontocete in waters shallower than 1,000 m with a strong peak in the sighting rate where depths are between 500 and 1,000 m (Baird et al., 2013b; Oleson et al., 2013a). Dwarf sperm whales have been seen near Niihau, Kauai, Oahu, Lanai, and Hawaii. Photo-identification of individuals off Hawaii Island since 2003 has provided evidence of long-term site fidelity, with a third of identified individuals being seen in more than one year, and therefore suggesting the existence of an island-resident population (Baird et al., 2015c; Oleson et al., 2013a).

BIAs were redefined for a year-round Small and Resident Population area for dwarf sperm whales off the west coast of the Island of Hawaii (Kratofil et al., 2023) which incorporated additional sighting data not available when the original BIA was defined (Baird et al., 2015c). The parent BIA is 1,341 km^2 in size and encompasses all sighting locations in waters less than 2,000 m (Figure K-10). The child BIA represents an area of intensified use relative to the entire range of this island-associated population and encompasses 457 km^2.

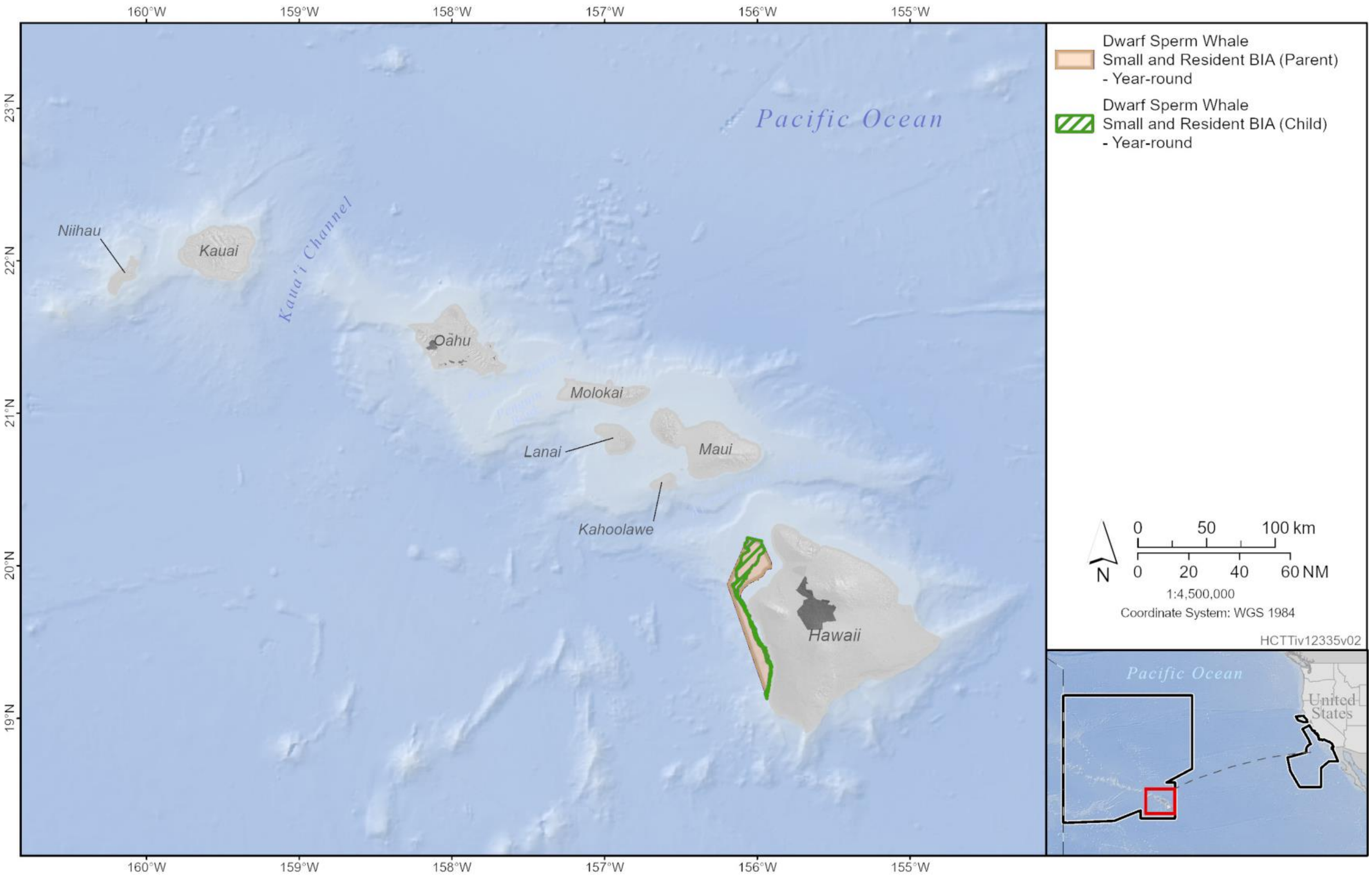

Figure K-8: Dwarf Sperm Whale Small and Resident BIAs Off Hawaii

K.3.2.2 Stressor Analysis

K.3.2.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting dwarf sperm whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 50 percent of effects are predicted to occur in Hawaii Range Complex during the cold season, and 43 percent would occur in the warm season. The remaining 7 percent would occur on the high seas, split approximately evenly between the cold and warm seasons. 96 percent of the behavioral, 98 percent of the temporary threshold shift, and 77 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Behavioral, temporary threshold, and acoustic injury takes are predicted to occur from the training and testing activities involving air guns, however, they would also be extremely infrequent.

On average, individuals in the Hawaii stocks could be impacted about once per year. The average risk of injury is low, although a few auditory and non-auditory injuries are predicted. The risk of any air gun auditory injury is negligible (less than one) in any year for the Hawaii stock of dwarf sperm whales, but an auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Likewise, the risk of a non-auditory injury from explosives is also incredibly low (less than one) in any year for the stock, but an auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach. These auditory and non-auditory injuries are shown in the maximum year of effects per the summation and rounding approach discussed above. Therefore, the risk of non-auditory injury from any source is unlikely. The risk of injury may be reduced through activity-based mitigation, although dwarf sperm whales have low sightability.

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an auditory or non-auditory injury may experience minor energetic costs. Most predicted effects are temporary auditory effects that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to these stocks are unlikely.

K.3.2.3 Action Proponent Requirements for Area-Specific Training and Testing

Hawaii Island is unique in that it is provides the only capable air-to-ground range able to conduct carrier and expeditionary strike group activities near a channel with unfettered access to the open ocean. Open ocean areas support strike group maneuvering, using mid-frequency active sonar to prosecute (detect/track) a submarine in the vicinity of a high value unit (e.g., carrier) as aircraft execute strikes into Pohakuloa Training Area. The area around Hawaii Island is also used by surface ships with anti-submarine warfare capability to train for clearing the sea space of any submarine threat before Marines go ashore at Kawaihae Harbor (part of Rim of the Pacific and Marine Corps unit-level training scenarios). There are limited locations for amphibious landings in Hawaii due to existing environmental concerns. The west coast of Hawaii is one of the best locations for integrated joint marine amphibious operations because of its close proximity to the Pohakuloa Training Area which is the only range in the Hawaii Range Complex that supports ground force and aviation live-fire training.

The Hawaii Island Dwarf Sperm Whale Small and Resident Population Area is adjacent to waters approaching Kawaihae Harbor, the point of amphibious insertion for forces proceeding to the live-fire range at Pohakuloa Training Area.

Activities utilizing explosives, such as underwater detonations, bombing or torpedo exercises, are not conducted in the waters within the Dwarf Sperm Whale Small and Resident Population Area since it is not within a designated underwater training range or within Special Use Airspace, typically necessary for explosive usage.

K.3.2.4 Dwarf Sperm Whale Small and Resident Population Area Mitigation Assessment

The Action Proponents have been training and testing in the area with the same basic systems for over 40 years and there is no evidence of any adverse effects having occurred, and there are multiple lines of evidence demonstrating the population’s high site fidelity to the area. The revised small and resident population area only takes up a very small portion of the Hawaii Range Complex, and sonar use in this area would be infrequent and typically only last for a short duration. Few, if any, Navy vessels are likely to be within the designated area using active mid-frequency sonar or other transducers. However, during the occasional use of mid-frequency active acoustic sonar during Undersea Warfare training, Independent Deployer Certification training, and Rim of the Pacific training, a small number of significant behavioral responses from dwarf sperm whales could occur within the small and resident population area. The majority of predicted effects on individuals in the dwarf sperm whale resident population are expected to be result in behavioral and temporary threshold shift takes as a result of military readiness activities that use sonar and other transducers.

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for dwarf sperm whales and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area (Figure K-26) (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area), which overlaps the entire revised small and resident child BIA. While this mitigation area is designed to provide additional protection for humpback whales, false killer whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including dwarf sperm whales without compromising military readiness. The Action Proponents will continue to implement this existing mitigation area to the benefit of the Hawaii stock of the dwarf sperm whales. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised Hawaii Island dwarf sperm whale child BIA are not being proposed.

K.3.3 False Killer Whale Small and Resident Population Area: Main Hawaiian Island Insular Stock

K.3.3.1 Biological Considerations Applicable to the Main Hawaiian Islands Insular Stock False Killer Whales Small and Resident Population Area

NMFS currently recognizes three stocks of false killer whale in Hawaiian waters: the Hawaii pelagic stock, the Northwestern Hawaiian Islands stock, and the Main Hawaiian Islands insular stock (Bradford et al., 2015; Carretta et al., 2015; Carretta et al., 2023; Forney et al., 2010; National Oceanic and Atmospheric Administration, 2012; Oleson et al., 2010). The Hawaii Pelagic stock and the Northwestern Hawaiian Islands stock of false killer whales are not listed as threatened or endangered under the ESA. The Main Hawaiian Islands insular stock is listed as endangered under the ESA as a DPS (National Oceanic and Atmospheric Administration, 2012).

The ranges and stock boundary descriptions for false killer whales in the Hawaiian Islands are complex and overlapping. For example, all three stocks are known to overlap in the vicinity of Kauai and Niihau, which is where the Navy's underwater instrumented range has been in use since the 1980s. All significant information regarding the range of the three stocks was presented in Bradford et al. (2015), and later updated for the pelagic stock (Bradford et al., 2020). A summary of the data used to delineate the stock boundaries, and the research supporting those data are provided in the Final 2022 Pacific Stock Assessment Report (Carretta et al., 2023) that is synthesized in the next few paragraphs for the stocks in the Hawaiian Islands.

The Main Hawaiian Islands insular stock is considered resident to the main Hawaiian Islands consisting of Kauai, Oahu, Molokai, Lanai, Kahoolawe, Maui, and Hawaii, although they have been satellite tracked as far as 115 km from the main Hawaiian Islands (Bradford et al., 2020; Bradford et al., 2012; Bradford et al., 2015; Carretta et al., 2015; Forney et al., 2010; National Oceanic and Atmospheric Administration, 2012; Oleson et al., 2010). The Main Hawaiian Islands insular stock boundary is a 72-km radius extending around the main Hawaiian Islands, with the offshore extent of the radii connected on the leeward sides of Hawaii Island and Niihau to encompass the offshore movements of Main Hawaiian Islands insular stock animals within that region.

False killer whales in the Northwestern Hawaiian Islands stock have been seen as far as 93 km from the Northwestern Hawaiian Islands and near shore around Kauai and Oahu (Baird et al., 2012; Bradford et al., 2015). The Northwestern Hawaiian Islands stock boundary is defined by a 93-km radius around Kauai, Niihau, and the Northwestern Hawaiian Islands, with the boundary around the Northwestern Hawaiian Islands expanded latitudinally at the eastern end to encompass animal movements observed outside the 93-km radius

Given new telemetry data that indicated that pelagic stock animals occurred within 5.6 km of the main Hawaiian Islands and throughout the Northwestern Hawaiian Islands, the previous inner pelagic stock boundary at 11 km from shore around each of the main Hawaiian Islands was removed (Bradford et al., 2020). The pelagic stock now has no inner or outer boundary within the Hawaiian Islands EEZ. There is now an overlap zone between the entirety of the Main Hawaiian Islands insular stock area and the pelagic stock area. There is also now an overlap zone between the entirety of the Northwestern Hawaiian Islands stock area and the pelagic stock area. All three stock boundaries overlap out to the Main Hawaiian Islands insular stock boundary between Kauai and Niihau and the Northwestern Hawaiian Islands stock boundary between Kauai and Oahu (Carretta et al., 2023).

Two year-round Small and Resident Population BIAs (a parent and a child BIA) have been delineated in the main Hawaiian Islands for the insular stock of false killer whales (Kratofil et al., 2023) (Figure K-11). The BIAs were updated from the original BIAs published by (Baird et al., 2015b) based on additional analysis of photo-identification, satellite tracking, and genetic studies. The parent BIA encompasses 94,217 km^2 and the child BIA encompasses 7,775 km^2, the latter representing the core high-use areas in the Main Hawaiian Islands (Kratofil et al., 2023). In addition, a year-round non-hierarchical Small and Resident Population BIA was delineated for the Northwestern Hawaiian Islands and encompasses 138,001 km^2 (Kratofil et al., 2023) (Figure K-11).

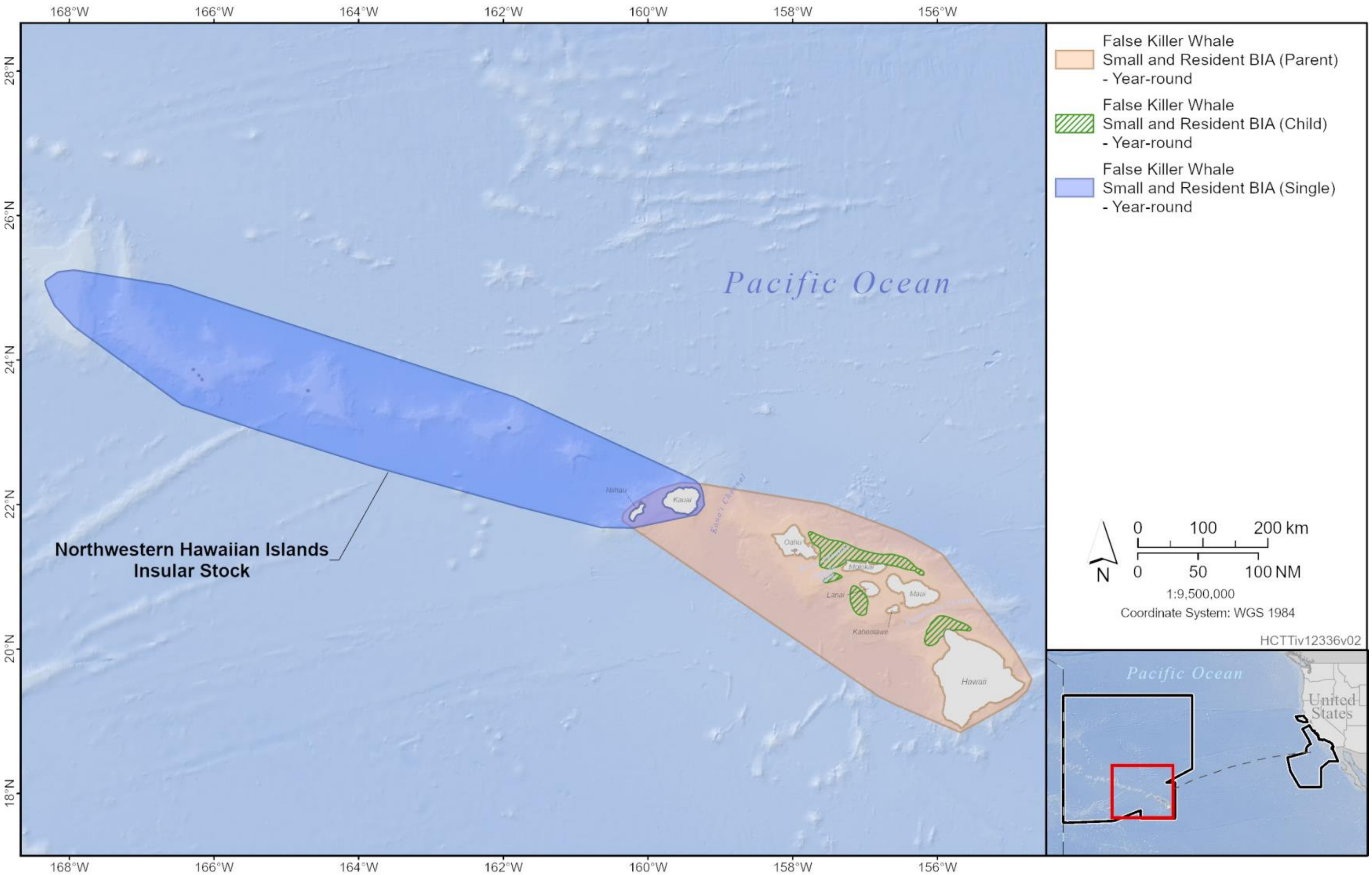

Figure K-9: False Killer Whale Small and Resident BIAs off the Hawaiian Islands

K.3.3.2 Stressor Analysis

K.3.3.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting false killer whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, the effects that are predicted to occur in Hawaii Range Complex to the three stocks of false killer whales present in the waters surrounding the Hawaiian Islands are distributed relatively evenly between the cold and warm seasons. The northwestern Hawaiian Islands stock has the biggest difference in effects between seasons, with 68 percent occurring during the cold season and 32 percent occurring during the warm season. For all the main Hawaiian Island insular stock and the Hawaii pelagic stock, 99 percent of the behavioral and 98 percent of the temporary threshold shift takes would result from training and testing activities involving sonar. 100 percent of behavioral and temporary threshold shift takes for the northwestern Hawaiian Islands stock would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. No effects are predicted to occur from the training and testing activities involving air guns to any of the three stocks.

On average, individuals in the Hawaii Pelagic stock and the Northwestern Hawaiian Islands stock would be impacted less than once per year. On average, individuals in the Main Hawaiian Islands insular stock would be impacted about once per year. The average individual risk of injurious effects in these three stocks is negligible, if even applicable. No auditory or non-auditory injuries are predicted for the Northwest Hawaiian Islands or the Main Hawaiian Islands Insular stocks, but a single auditory injury could occur to individuals in the Hawaii Pelagic stock. However, the risk of a non-auditory injury in Hawaii from explosive training is low (less than one) in any year, but single mortalities (from sonar testing in Hawaii) are shown in the maximum year of effects per the summation and rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of any auditory injury is unlikely for these stocks of false killer whales in the HCTT Study Area. The risk of auditory injury may also be reduced through activity-based mitigation.

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals. Long-term consequences to the Main Hawaiian Islands Insular, Hawaii Pelagic, and the Northwestern Hawaiian Islands stocks of false killer whales are unlikely.

K.3.3.3 Action Proponent Requirements for Area-Specific Training and Testing

The revised false killer whale small and resident BIAs within the Hawaii Study Area encompass every primary training site within the Hawaii Range Complex. Spatially, false killer whales may be present anywhere within the waters off surrounding the Hawaiian Islands. Temporally, false killer whales may be present throughout the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Action Proponent readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The training and testing areas encompassed by the revised false killer whale BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Pacific Range Missile Facility, shallow water training range and barking sands tactical underwater range west of Kauai, Ewa training minefield and Puuloa underwater range south of Oahu, the Kahoolawe sub training minefield, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

The Alenuihaha Channel and the waters west of Kawaihae Harbor are used for a broad spectrum of naval and amphibious training. Excessively limiting or restricting mid-frequency active sonar training in the Alenuihaha Channel could force the relocation of portions of Undersea Warfare training, Independent Deployer Certification training, Rim of the Pacific, and unit level training exercises to other channels in the Hawaiian Operating Areas (OPAREAs) further from the Pohakuloa Training Area range. Undersea Warfare certification training occurs up to three times per year, Rim of the Pacific occurs once every two years, and Independent Deployer Certification training occurs once per year. While the North and West of Hawaii Island False Killer Whale Small and Resident Population Area is not considered an area of high use for mid-frequency active sonar during these major training exercises, segmenting the scenarios within each of these training events over time and space would result in an unacceptable loss of training realism, degrade the training and would erode strike group readiness.

As it relates to anti-submarine warfare, the training value within the 4-Islands Region is much higher compared to other near shore environments within the Hawaii Range Complex, including the ranges at the Pacific Missile Range Facility, due to the challenging bathymetry. Shifting the location for Submarine Command Course would result in a loss of shallow water operating experience for prospective submarine Commanding Officers, which is an absolutely vital skill for these commanders to master. Such a shift in location would result in a loss of shallow water operating experience and would compromise a submarine crew’s ability to retain and improve their capabilities and to train with new emerging technologies.

K.3.3.4 False Killer Whale Small and Resident Population Area Mitigation Assessment

While the Action Proponents have been training and testing in the area with the same basic systems for over 40 years, there is no evidence of any adverse effects having occurred, and there are multiple lines of evidence demonstrating the population’s high site fidelity to the area. Individuals within the False Killer Whale Small and Resident Population Area could be exposed to sound from sonar or other transducers and some behavioral or temporary effects could occur as a result of sonar or other transducers.

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for false killer whales and other species, and therefore implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Region Mitigation Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area). These mitigation areas as shown in Figure K-26 both overlap some of the revised small and resident child BIA. While these mitigation areas are designed to provide additional protection to false killer whales and other species such as humpback whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including dwarf sperm whales, short-finned pilot whales, melon-headed whales, pantropical spotted dolphins, pygmy killer whales, and spinner dolphins occurring without compromising military readiness. The Action Proponents will continue to implement these existing mitigation areas to the benefit of the three stocks of false killer whales present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised false killer whale child BIA are not being proposed.

K.3.4 Hawaii Island Pygmy Killer Whale Small and Resident Population Area

K.3.4.1 Biological Considerations Applicable to the Pygmy Killer Whales Small and Resident Population Area

The pygmy killer whale is generally an open ocean deepwater species (Davis et al., 2000; McSweeney et al., 2009; Oleson et al., 2013a; Würsig et al., 2000). Movement patterns for this species are poorly understood. During a NMFS 2014 systematic ship survey off the U.S. west coast, when there were unusually warm water conditions, a group of 27 pygmy killer whales was sighted in offshore waters of southern California (Barlow, 2016). Given that there is a remote likelihood for this species to occur regularly off the U.S. west coast, the 2022 Pacific Stock Assessment report does not include pygmy killer whales as a managed stock in California waters (Carretta et al., 2023).

This species' range in the open ocean generally extends to the southern regions of the North Pacific Gyre and the southern portions of the North Pacific Transition Zone. Many sightings have occurred from cetacean surveys of the eastern tropical Pacific (Au & Perryman, 1985; Barlow & Gisiner, 2006; Wade & Gerrodette, 1993). This species is also known to be present in the western Pacific (Wang & Yang, 2006). Its range is generally considered to be south of 40° N and continuous across the Pacific (Donahue & Perryman, 2008; Jefferson et al., 2008). There was a total of 11 sightings of pygmy killer whales during three systematic ship surveys of the Hawaiian Islands EEZ in 2002 (3 sightings), 2010 (5 sightings), and 2017 (3 sightings), with average group size ranging from 14.6 to 25.7 animals (Bradford et al., 2021) .

A year-round Small and Resident Population area has been identified for pygmy killer whales off the Island of Hawaii (Baird et al., 2015a). The delineated area extends along the coast of Hawaii Island from northwest of Kawaihae to South Point and along the southeast coast of the island, as determined by locations from two satellite-tagged individuals, photo-identification data, extensive vessel-based survey data, and expert judgment (Baird et al., 2015a). Two year-round, non-hierarchical Small and Resident Population BIAs have been delineated in the main Hawaiian Islands for pygmy killer whales (Kratofil et al., 2023) (Figure K-12). The BIAs were updated from the original BIAs (Baird et al., 2015b) based on additional analyses. One BIA encompasses 7,416 km^2 of waters surrounding Oahu and Maui Nui, and the second BIA encompasses 5,201 km^2 around the Island of Hawaii (Kratofil et al., 2023).

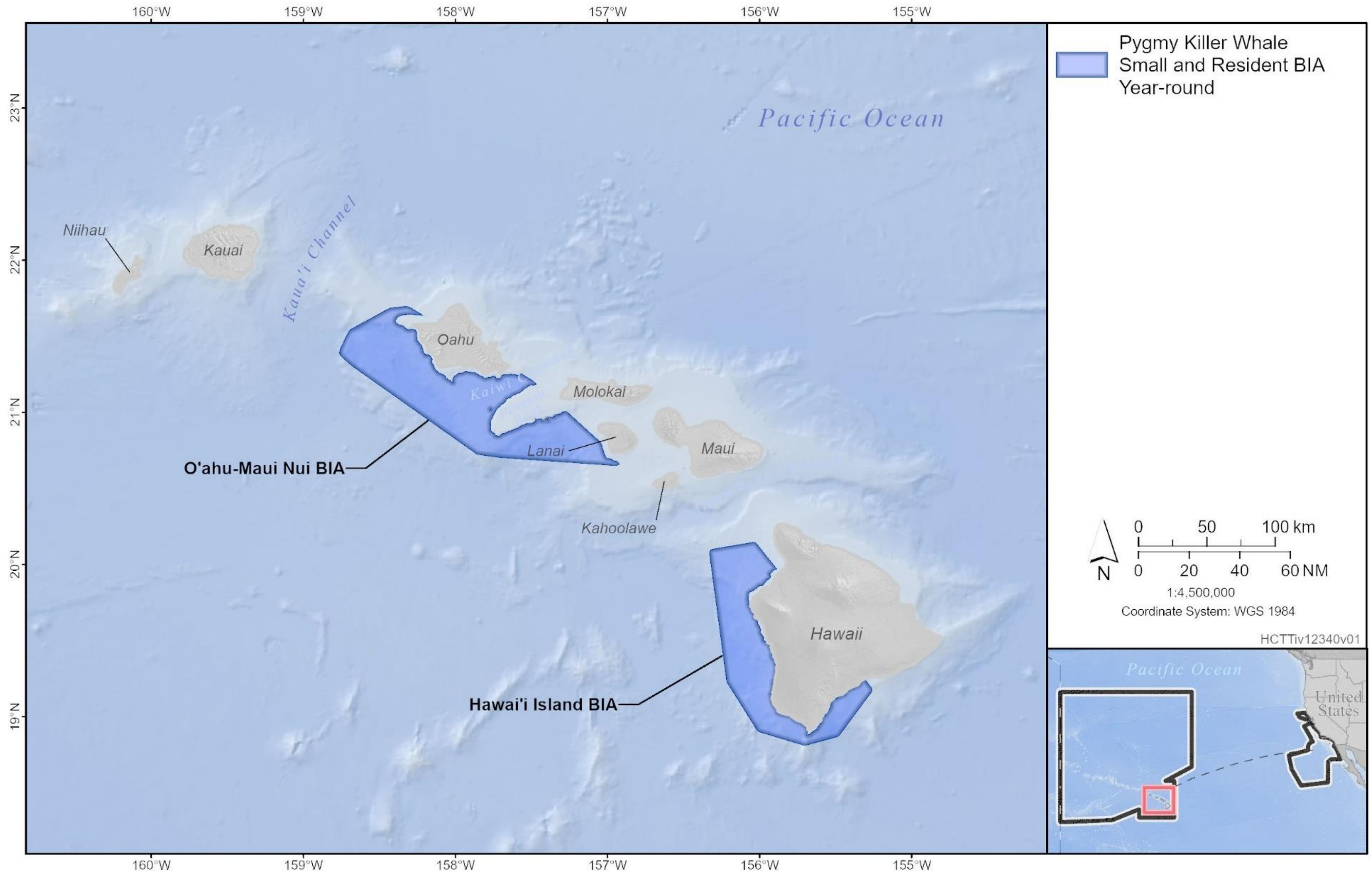

Figure K-10: Pygmy Killer Whale Small and Resident BIA Off the Hawaiian Islands

K.3.4.2 Stressor Analysis

K.3.4.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting pygmy killer whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 48 percent of effects are predicted to occur in Hawaii Range Complex during the cold season, and 47 percent would occur in the warm season. The remaining five percent would occur on the high seas, split evenly between the cold and warm seasons. 99 percent of the behavioral, 99 percent of the temporary threshold shift, and 66 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIA, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. No effects are predicted to occur from the training and testing activities involving air guns.

On average, individuals in the Hawaii stock would be impacted less than once per year. The average individual risk of injurious effects is negligible. A small number of auditory injuries could occur to individuals in Hawaii, however, the risk of auditory injuries in Hawaii from explosive training or sonar testing is low (less than one) in any year. For each stressor, a single auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of auditory injury is unlikely. The risk of injury may be reduced through activity-based mitigation.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals that experience auditory injury may incur energetic costs. Based on the above analysis, long-term consequences for the Hawaii stock of pygmy killer whales are unlikely.

K.3.4.3 Action Proponent Requirements for Area-Specific Training and Testing

The revised Hawaii Island Pygmy Killer Whale Small and Resident Population Area includes the area south and west of Kawaihae Harbor, as well as the waters west of Lanai in the 4-islands area, and the waters south and west of Oahu. Spatially, pygmy killer whales may be present anywhere within these waters, and temporally, pygmy killer whales may be present throughout the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The waters west of Hawaii and Kawaihae Harbor provide access for a broad spectrum of naval and amphibious training. Kawaihae Harbor is the point of amphibious insertion for forces proceeding to the live-fire range at Pohakuloa Training Area, and this training area is the only live-fire range in the Hawaii Range Complex that supports ground force and aviation live-fire training. Training in this area allows for the integration of carrier strike group operations and amphibious landings. Sea, air, and land-based units work in conjunction with one another in controlled airspace in close proximity to the Pohakuloa Training Area range, the only range of its kind in Hawaii. This is also an area outside of civilian air traffic corridors approaching the Honolulu International Airport which is necessary to safely de-conflict with civilian air traffic.

Carrier strike group training can include a full spectrum of the force – various ships, submarines, aircraft, and Marine Corps forces – –to ensure such forces obtain the required proficiency to conduct anti-submarine warfare in a controlled and observed environment prior to deployment to international straits across the globe, where operational Commanders require Naval forces to be able to conduct a range of military operations, including anti-submarine warfare. This required proficiency cannot be replicated by simulation and is most effectively obtained when conducted in a strait. Commanding Officers cannot be expected to effectively conduct such operations in a deployed environment if the first time they encounter a submarine in a strait is in a deployed setting. Access to the waters west of Kawaihae Harbor is vital for amphibious training. The west coast of Hawaii is one of the best locations for integrated joint marine amphibious operations because of its close proximity to the Pohakuloa Training Area. Also, due to its proximity to the Alenuihaha Channel, waters west of Hawaii and Kawaihae Harbor have strategic importance during portions of Undersea Warfare training, Independent Deployer Certification training, Rim of the Pacific, and unit level training and other exercises The area provides a unique and irreplaceable capability within the Hawaii Range Complex that allows naval forces to conduct realistic, integrated training in an environment that replicates the actual areas where they will be called to serve.

The training value within the 4-Islands Region is much higher compared to other near shore environments within the Hawaii Range Complex, including the ranges at the Pacific Missile Range Facility, due to the challenging bathymetry. Shifting the location for Submarine Command Course would result in a loss of shallow water operating experience for prospective submarine Commanding Officers, which is an absolutely vital skill for these commanders to master. Such a shift in location would result in a loss of shallow water operating experience and would compromise a submarine crew's ability to retain and improve their capabilities and to train with new emerging technologies.

K.3.4.4 Hawaii Island Pygmy Killer Whales Small and Resident Population Area Mitigation Assessment

As discussed in Section K.3.4.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to pygmy killer whales that would occur in the Hawaii Range Complex are from training and testing activities involving sonar during both the cold and warm seasons. Most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals.

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for pygmy killer whales and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Marine Mammal Mitigation Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area). The Hawaii Island Marine Mammal Mitigation Area, as shown in Figure K-26, overlaps all of the Hawaii Island BIA, and the Hawaii 4-Islands Marine Mammal Mitigation Area overlaps some of the Mau Nui BIA. While these mitigation areas are designed to provide additional protection for humpback whales, false killer whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including pygmy killer whales, without compromising military readiness. The Action Proponents will continue to implement these existing mitigation areas to the benefit of the pygmy killer whales present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised Hawaii Island pygmy killer whale BIAs are not being proposed.

K.3.5 Hawaii Island Short-Finned Pilot Whale Small and Resident Population Area

K.3.5.1 Biological Considerations Applicable to the Hawaii Island Short-finned Pilot Whales Small and Resident Population Area

Short-finned pilot whales in the Hawaiian Islands were the most commonly encountered species of odontocete during near-shore surveys in depths over 2,000 meters and were one of the most common species encountered during the NMFS 2002 (25 sightings), 2010 (36 sightings), and 2017 (35 sightings) systematic ship surveys of the Hawaiian Exclusive Economic Zone (Baird et al., 2013b; Barlow, 2006; Bradford et al., 2013; Bradford et al., 2021; Oleson et al., 2013a). Small boat surveys from 2003 through 2007 photo-identified 250 individuals seen in more than one year, suggesting site fidelity (Abecassis et al., 2015; Mahaffy et al., 2015; Oleson et al., 2013a). Habitat-based models developed from systematic ship survey data collected in the central North Pacific show some of the highest short-finned pilot whale densities around the Hawaiian Islands (Becker et al., 2012b; Forney et al., 2015). Sighting data from systematic ship surveys conducted within waters of the Hawaiian Islands EEZ from 2000 to 2020 supported the development of an updated habitat-based density model for short-finned pilot whale and confirmed the strong island association indicated from the previous models (Becker et al., 2022a).

A year-round Small and Resident Population parent BIA and three child BIAs have been delineated for short-finned pilot whales in waters of the Main Hawaiian Islands (Kratofil et al., 2023) (Figure K-13). The BIAs were updated from the original BIA (Baird et al., 2015b) based on additional analyses. The parent BIA encompasses 58,999 km^2 of waters surrounding all of the Main Hawaiian Islands. The child BIAs encompass three communities representing core habitat in the Main Hawaiian Islands: a western community (4,040 km^2), a central community (2,427 km^2), and an eastern community (2,658 km^2) that encompass waters mainly on the leeward sides of Kauai, Oahu. Lanai, and the Island of Hawaii (Kratofil et al., 2023) (Figure K-13).

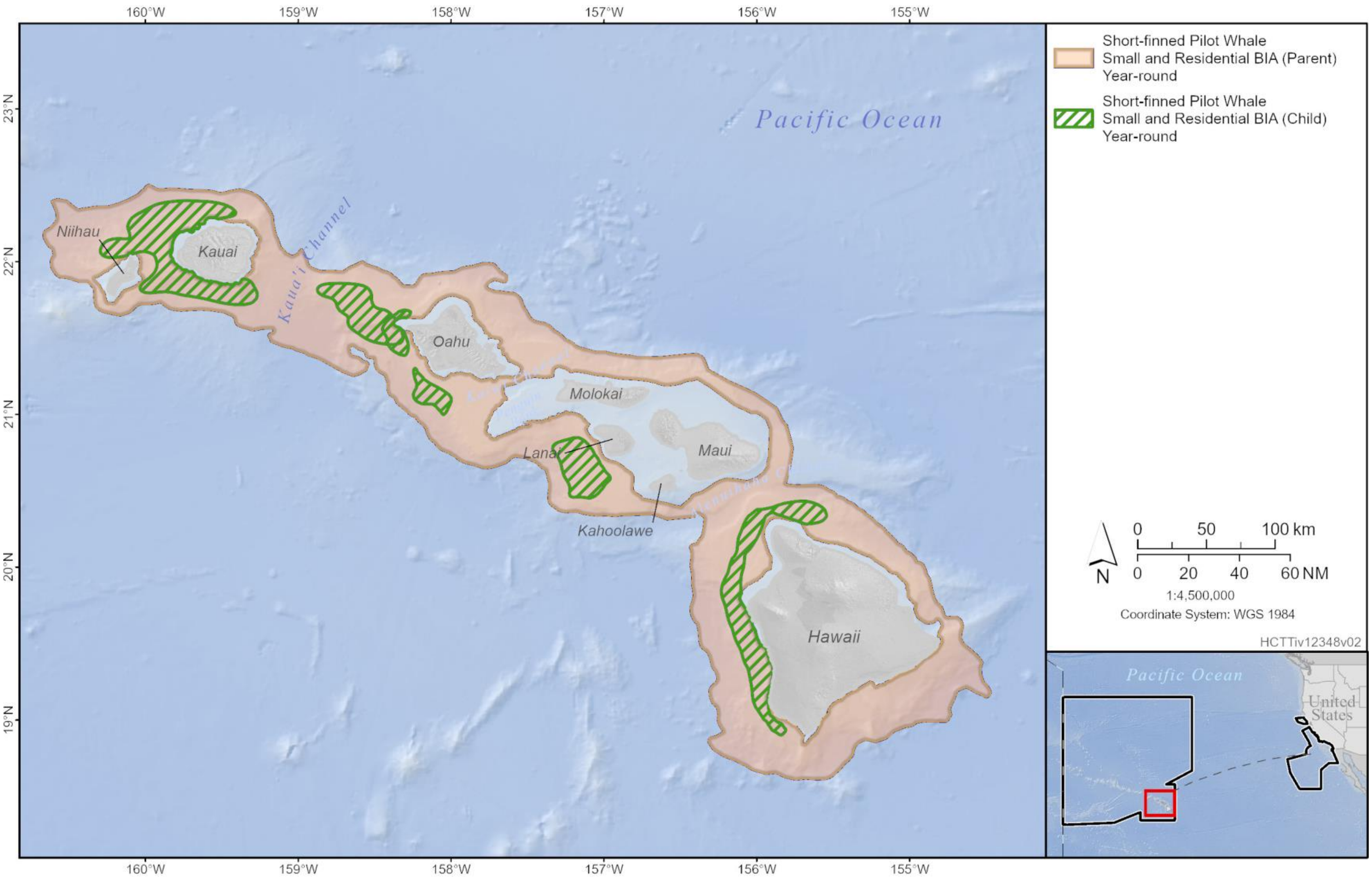

Figure K-11: Short-Finned Pilot Whale Small and Resident BIAs Off the Hawaiian Islands

K.3.5.2 Stressor Analysis

K.3.5.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting short-finned pilot whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 51 percent of effects are predicted to occur in Hawaii Range Complex during the cold season, and 46 percent would occur in the warm season. The remaining three percent would occur on the high seas, split approximately evenly between the cold and warm seasons. 99 percent of the behavioral, 99 percent of the temporary threshold shift, and 50 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only one take (behavioral) resulting from testing activities involving air guns is predicted to occur.

On average, individuals in the Hawaii stock could be impacted less than once per year. The average individual risk of injurious effects is very low, although a small number of auditory and non-auditory injuries could occur to individuals. The risk of a non-auditory injury in Hawaii from explosive training is low (less than one) in any year, but a single mortality from explosive training is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of any non-auditory injury is unlikely for the Hawaii stock of short-finned pilot whales. The risk of injury or mortality may be reduced through activity-based mitigation.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who experience auditory or non-auditory injury would incur energetic costs. Based on the above analysis, long-term consequences for the Hawaii stock of short-finned pilot whales are unlikely.

K.3.5.3 Action Proponent Requirements for Area-Specific Training and Testing

The main Hawaii Island short-finned pilot whale small and resident BIAs encompass waters around the islands of Hawaii, Oahu, Kauai, Maui, Molokai, Lanai, Kahoolawe, and Niihau within the Hawaii Study Area. These waters encompass many of the primary training sites within the Hawaii Range Complex. Spatially, Hawaii Island short-finned pilot whales may be present anywhere within the waters off surrounding the Hawaiian Islands. Temporally, the stock is present throughout the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The training and testing areas encompassed by the Hawaii Island short-finned pilot whale small and resident BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Pacific Range Missile Facility, shallow water training range and barking sands tactical underwater range west of Kauai, Ewa training minefield and Puuloa underwater range south of Oahu, the Kahoolawe sub training minefield, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

K.3.5.4 Hawaii Island Short-finned Pilot Whales Small and Resident Population Area Mitigation Assessment

The has Action Proponents have been training and testing in the Hawaiian Islands with the same basic systems for over 40 years and there is no evidence of any adverse effects having occurred, and there are multiple lines of evidence demonstrating the population's high site fidelity to the area. As discussed in Section K.3.5.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to short-finned pilot whales that would occur in the Hawaii Range Complex are from training and testing activities involving sonar during both the cold and warm seasons. Most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals.

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for short-finned pilot whales and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Marine Mammal Mitigation Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area). These mitigation areas, as shown in Figure K-26, overlap some of revised Hawaii Island short-finned pilot whales small and resident child BIAs. While these mitigation areas are designed to provide additional protection for humpback whales, false killer whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including short-finned pilot whales without compromising military readiness. The Action Proponents will continue to implement these existing mitigation areas to the benefit of short-finned pilot whales present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised Hawaii Island short-finned pilot whale child BIAs are not being proposed.

K.3.6 Hawaii Island Melon-Headed Whales Small and Resident Population Area

K.3.6.1 Biological Considerations Applicable to the Hawaii Island Melon-Headed Whales Small and Resident Population Area

NMFS recognizes two stocks of melon-headed whales within the Hawaiian Islands Exclusive Economic Zone: the Kohala Resident stock, which includes melon-headed whales off the Kohala and west coast of Hawaii Island in waters less than 2,500 m deep; and the Hawaiian Islands stock, which includes melon-headed whales inhabiting waters throughout the U.S. Exclusive Economic Zone of the Hawaiian Islands (Aschettino et al., 2012; Baird et al., 2015d; Carretta et al., 2017; Carretta et al., 2023; Oleson et al., 2013a).

The melon-headed whale is regularly found within Hawaiian waters (Baird et al., 2010; Baird et al., 2015e; Baird et al., 2003a; Baird et al., 2003b; Mobley et al., 2000; Shallenberger, 1981). Large groups are seen regularly, especially off the Waianae coast of Oahu, the north Kohala coast of Hawaii, and the leeward coast of Lanai (Baird, 2006; Oleson et al., 2013a; Shallenberger, 1981). There was a total of nine sightings of melon-headed whales during three systematic ship surveys of the Hawaiian Islands EEZ in 2002 (one sighting), 2010 (one sighting), and 2017 (seven sightings) (Bradford et al., 2021). The single sightings in 2002 and 2010 included groups of 89 (Baird, 2006) and 153 melon-headed whales (Bradford et al., 2013), respectively, and the mean group size in 2017 was 187.9 animals (Bradford et al., 2021).

A year-round, non-hierarchical Small and Resident Population BIA has been delineated for melon-headed whales off the Island of Hawaii (Kratofil et al., 2023) (Figure K-14). The BIA was updated from the original BIA (Baird et al., 2015b) based on additional analyses and encompasses 3,816 km^2 off the northwest coast of the Island of Hawaii (Kratofil et al., 2023).

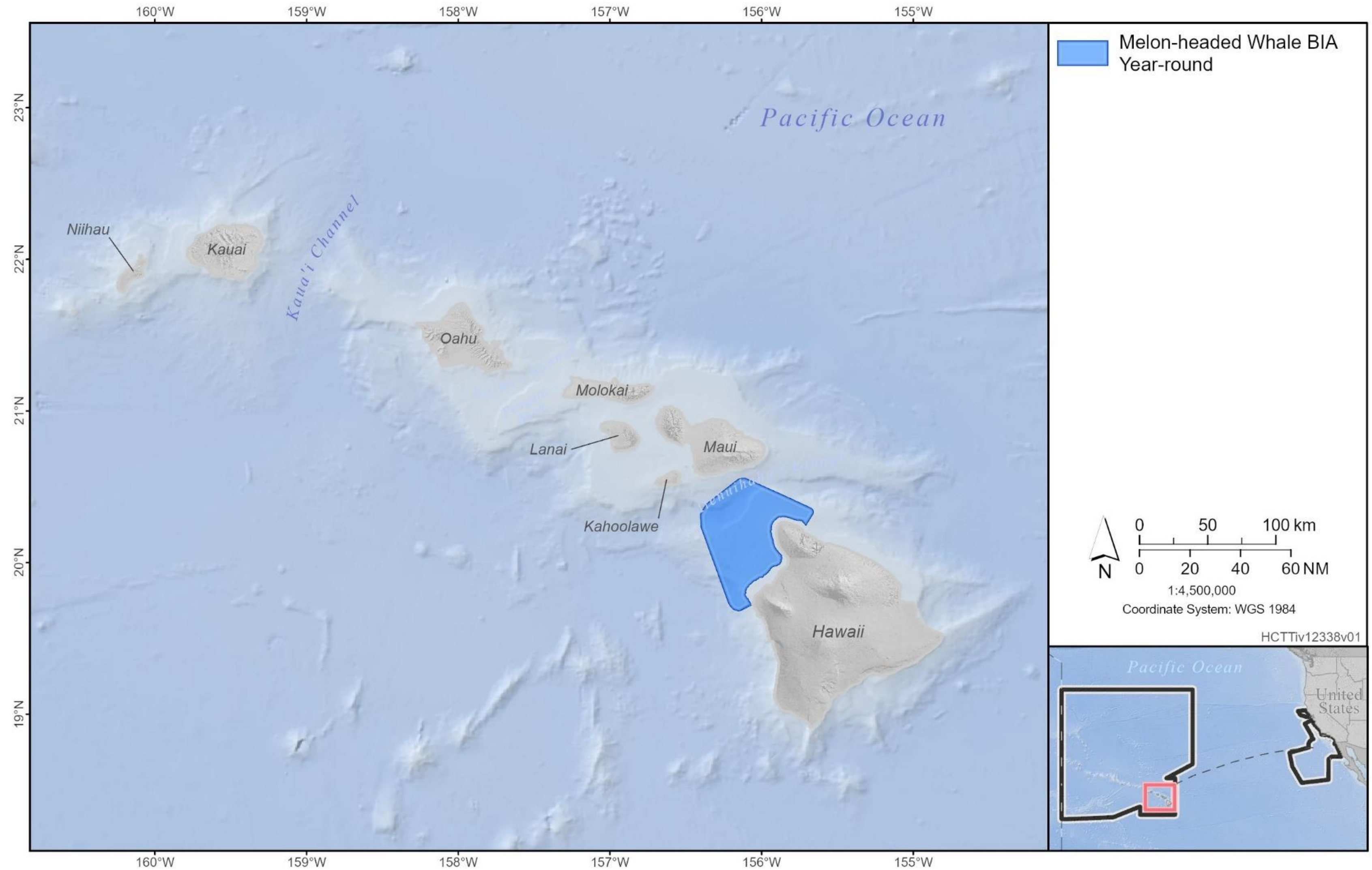

Figure K-12: Melon-Headed Whale Small and Resident BIA Off Hawaii

K.3.6.2 Stressor Analysis

K.3.6.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting melon-headed whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 51 percent of effects are predicted to occur in Hawaii Range Complex during the cold season, and 45 percent would occur in the warm season for the Hawaiian Islands stock. The remaining four percent would occur on the high seas, split evenly between the cold and warm seasons. 99 percent of the behavioral, 99 percent of the temporary threshold shift, and 77 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIA, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

For the Kohala Resident stock, 77 percent of effects are predicted to occur in Hawaii Range Complex during the warm season, and 23 percent would occur in the cold season. 98 percent of the behavioral and 93 percent of the temporary threshold shift takes would result from training and testing activities involving sonar.

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only one take (behavioral) resulting from testing activities involving air guns is predicted to occur to the Hawaiian Islands stock and no effects from air guns are predicted for the Kohala Resident stock.

On average, individuals in the Hawaiian Islands stock and the Kohala Resident stock would be impacted less than once per year. The average individual risk of injurious effects in both populations is negligible. No auditory or non-auditory injuries are predicted for the Kohala Resident stock, but a small number of auditory injuries could occur to individuals in the Hawaiian Islands stock. However, the risk of an auditory injury in Hawaii from explosive testing is low (less than one) in any year, but a single auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of receiving an auditory injury from explosive testing activities is unlikely for melon-headed whales in the Hawaiian Islands stock. The risk of injury may be reduced through activity-based mitigation especially since melon-headed whales tend to travel in large groups.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who experience auditory injury may incur energetic costs. Based on the above analysis, long-term consequences for the Hawaiian Islands and Kohala resident stocks of melon-headed whales are unlikely.

K.3.6.3 Action Proponent Requirements for Area-Specific Training and Testing

The Alenuihaha Channel, as well as the waters north and west of Hawaii Island, provides a unique training capability that does not exist elsewhere in the Hawaii Range Complex. The Alenuihaha Channel is an ideal location for strait transits using mid-frequency active sonar during training. The Alenuihaha

Channel is an actual channel that provides a vital and realistic analog for similar straits or restricted maneuvering areas where the Action Proponents operate worldwide, such as the East or South China seas. For example, transit training in the Alenuihaha Channel replicates these types of strait environments that meet the Navy's requirement to deploy Naval forces to ensure the free flow of commerce and the freedom of navigation by combatting piracy or mine threats. Naval forces are required to train to counter a submarine threat before deployment, to ensure such forces obtain the required proficiency to conduct anti-submarine warfare in a controlled and observed environment prior to deployment to international straits across the globe, where operational Commanders require Naval forces to be able to conduct a range of military operations, including anti-submarine warfare. This required proficiency cannot be replicated by simulation and is most effectively obtained when conducted in a strait. Commanding Officers cannot be expected to effectively conduct such operations in a deployed environment if the first time they encounter a submarine in a strait is in a deployed setting. There are few geographic areas that enable forces to do this type of training outside of the HCTT Study Area.

While there are other channels within the Hawaii Range Complex used for strait transit training and anti-submarine warfare training, none provide the important attributes of the Alenuihaha Channel. The Alenuihaha Channel's proximity to the Pohakuloa Training Area allows for realistic training and reduces time and fuel costs between these training areas. The channel between Niihau and Kauai is also acceptable from a training perspective, but this would add at least two days of transit during each Under Sea Warfare training exercise (time required to move through a different channel and reposition to operating areas near Pohakuloa Training Area). The Kaiwi Channel between Oahu and Molokai is also acceptable from some mid-frequency active sonar training perspective, but it is also a significant civilian air corridor, and raises safety concerns for anti-submarine warfare aircraft flying in that channel. In addition, the channel between Nihau and Kauai is proximate to the Pacific Missile Range Facility instrumented range) which would result in problems de-conflicting multiple activities and hazardous operations, raising safety concerns. For these reasons, Alenuihaha Channel is still the most suitable for anti-submarine warfare training during certain training scenarios. The Hawaii Island Melon-headed Whale Small and Resident Population Area is adjacent to waters approaching Kawaihae Harbor, the point of amphibious insertion for forces proceeding to the range at Pohakuloa Training Area, which is the only range in the Hawaii Range Complex that supports ground force and aviation live-fire training. Training in this area allows for the integration of carrier strike group operations and amphibious landings, working in conjunction within a controlled airspace west of Hawaii Island for military training near the Pohakuloa Training Area range. Carrier strike group training can include a full spectrum of the force–various ships, submarines, aircraft, and Marine Corps forces—to train in the complex command, control operational coordination, and logistics functions designed to prepare forces for deployment. As an air to ground range, Pohakuloa Training Area supports carrier strike group activities near a channel and near large open water areas for strike group maneuvering and submarine activities. Mid-frequency active sonar conducted to support strike maneuver and protect high value units (e.g., carrier) as aircraft go to strike at Pohakuloa Training Area is vital.

Access to both the Alenuihaha Channel and the waters west of Kawaihae Harbor is vital for a broad spectrum of naval and amphibious training. These areas provide a unique and irreplaceable capability within the Hawaii Range Complex that allows naval forces to conduct realistic, integrated training in an environment that replicates the actual areas where they will be called to serve.

K.3.6.4 Hawaii Island Melon-Headed Whale Small and Resident Population Area Mitigation Assessment

The Action Proponents have been training and testing in the Hawaiian Islands with the same basic systems for over 40 years and there is no evidence of any adverse effects having occurred, and there are multiple lines of evidence demonstrating the population's high site fidelity to the area. As discussed in Section K.3.6.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to melon-headed whales that would occur in the Hawaii Range Complex are from training and testing activities involving sonar during both the cold and warm seasons. Most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals.

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for melon-headed whales and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area) which overlaps all of the revised small and resident population area (Figure K-26). While this mitigation area is designed to provide additional protection for false killer whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including melon-headed whales without compromising military readiness. The Action Proponents will continue to implement this existing mitigation areas to the benefit of melon-headed whales present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised Hawaii Island melon-headed whale BIAs are not being proposed.

K.3.7 Common Bottlenose Dolphins Small and Resident Population Areas: Hawaiian Islands Stock Complex

K.3.7.1 Biological Considerations Applicable to all Common Bottlenose Dolphins Small and Resident Population Areas

NMFS recognizes five stocks of common bottlenose dolphins that occur in the Hawaii Study Area: the Kauai and Niihau, Oahu, Maui Nui, Hawaii Island, and the Hawaii Pelagic stock (Carretta et al., 2024). None of these stocks are listed under the ESA.

Common bottlenose dolphins occur throughout the Hawaiian Islands, and they are typically observed throughout the main islands and from the Island of Hawaii to Kure Atoll (Baird et al., 2013a; Shallenberger, 1981). In the Hawaiian Islands, this species is found in both shallow coastal waters and deep offshore waters (Baird et al., 2003b; Barlow et al., 2008; Bradford et al., 2013; Mobley et al., 2000). The offshore variety is typically larger than the inshore. Photo-identification and genetics indicate the presence of island associated populations of bottlenose dolphins in the Hawaiian Islands (Martien et al., 2012). During three systematic surveys of the Hawaiian Islands EEZ in 2002, 2010, and 2017, there were a total of 38 sightings of bottlenose dolphins, of which 27 groups were identified as members of the Hawaii pelagic stock and the rest identified as members of one of the four island-associated stocks (Bradford et al., 2021). Habitat-based models developed from systematic ship survey data collected in the central North Pacific show some of the highest common bottlenose dolphin densities around the Hawaiian Islands (Becker et al., 2012b; Forney et al., 2015). More recently, habitat-based density models were developed using systematic survey data collected within waters of the Hawaiian Islands EEZ from 2000 to 2020 using only those common bottlenose dolphin sightings identified as members of the

Hawaii pelagic stock (Becker et al., 2022a). Model predictions showed a strong island association for the pelagic stock, with highest densities occurring near all the islands within the EEZ.

Five year-round Small and Resident Population BIAs (a parent BIA, three child BIAs, and one non-hierarchical BIA) have been delineated in the main Hawaiian Islands for the populations of common bottlenose dolphins (Kratofil et al., 2023) (Figure K-15). The BIAs were updated from the original BIAs (Baird et al., 2015b) based on additional analyses. The parent BIA encompasses 36,634 km^2 of waters surrounding Niihau to the west and extending east to surround the island of Maui. The child BIAs encompass 2,772 km^2 around Kauai/Niihau, 8,487 km^2 around Oahu, and 10,622 km^2 around Maui Nui. In addition, a year-round non-hierarchical Small and Resident Population BIA was delineated and encompasses 8,299 km^2 around the Island of Hawaii (Kratofil et al., 2023) (Figure K-15).

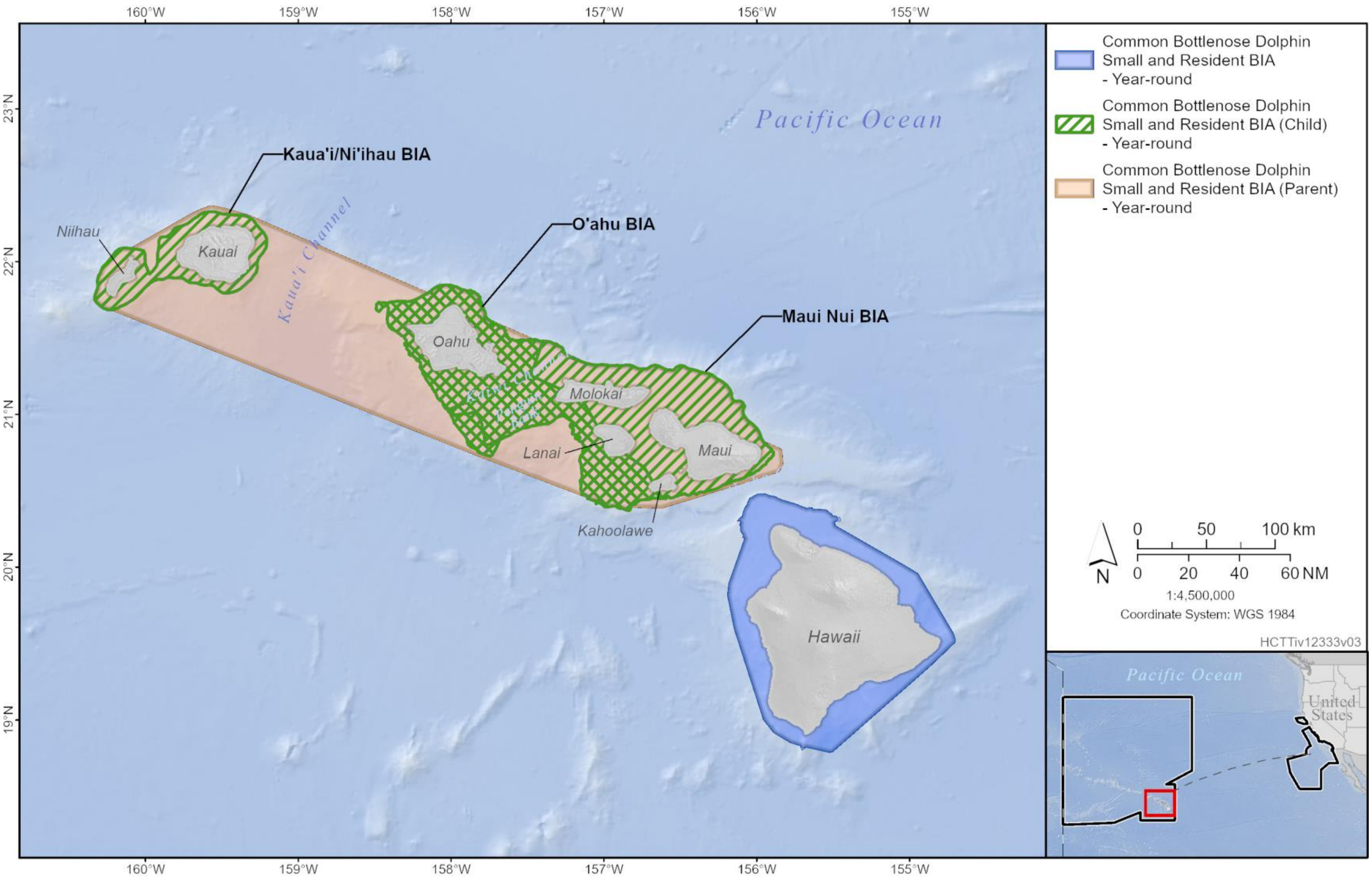

Figure K-13: Common Bottlenose Dolphin Small and Resident BIAs Off the Hawaiian Islands

K.3.7.2 Stressor Analysis

K.3.7.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting common bottlenose dolphins. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, the percent of effects that are predicted to occur in Hawaii Range Complex to the Oahu, Maui Nui, Hawaii Pelagic, and Kauai and Niihau stocks are split relatively evenly between the cold and warm seasons. For the Hawaii Island stock, 80 percent of the effects that are predicted to occur in the Hawaii Range Complex would occur during the cold season and 20 percent would occur during the warm season. Table K-4 provides a breakout of the percentage of takes that would result from training and testing activities involving sonar for each of the five stocks. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Table K-5: Common Bottlenose Dolphin Percent of Behavioral, Temporary Threshold Shift, and Auditory Injury Takes by Stock

Stock	Percent of Behavioral Takes	Percent of Temporary Threshold Shift Takes	Percent of Auditory Injury Takes
Oahu	99%	82%	20%
Maui Nui	99%	82%	100%
Hawaii Island	100%	75%	N/A
Hawaii Pelagic	99%	98%	17%
Kauai and Niihau	100%	99%	0%

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only the Hawaii Pelagic stock has predicted takes resulting from testing activities involving air guns, however effects would be limited to one behavioral take annually.

On average, individuals in the Oahu stock would be impacted over 60 times per year, although most of these effects would be behavioral. A small number of auditory and non-auditory injuries could occur to individuals in Oahu, although the average risk of injurious effects to individuals is negligible. The risk of a non-auditory injury or mortality from this activity is low (less than one) in any year for this stock, but a single non-auditory injury and mortality are shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Therefore, the risk of any non-auditory injury or mortality is unlikely for bottlenose dolphins in Oahu. The risk of injury or mortality may be reduced through activity-based mitigation.

On average, individuals in the Maui Nui stock and Kauai Niihau stock could be impacted several times per year, individuals in the Hawaii Pelagic stock would be impacted less than twice per year, and individuals in the Hawaii Island stock could be impacted less than once per year. There are no annual injuries predicted in the Maui Nui stock, Kauai Niihau stock, or the Hawaii Island stock. The average individual risk of injury is negligible in all four stocks, but a small number of injuries and one mortality could occur in the Hawaii Pelagic stock. For the Hawaii Pelagic stock, the risk of mortality is low (less than one) in any year, but a single mortality is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of a mortality is unlikely for the Hawaii Pelagic stock. The risk of injury or mortality may be reduced through activity-based mitigation, as bottlenose dolphins have relatively higher sightability.

Several instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who suffer a slight recoverable injury or an auditory injury may experience minor energetic costs. Because bottlenose dolphins are resilient to limited instances of disturbance, long-term consequences are unlikely for any stock in the Hawaii Study Area.

K.3.7.3 Action Proponent Requirements for Area-Specific Training and Testing

The main common bottlenose dolphin small and resident BIAs encompass waters around the islands of Hawaii, Oahu, Kauai, Maui, Molokai, Lanai, Kahoolawe, and Niihau within the Hawaii Study Area. These waters encompass many of the primary training sites within the Hawaii Range Complex. Spatially, common bottlenose dolphins may be present anywhere within the waters off surrounding the Hawaiian Islands. Temporally, all stocks of the species in the Hawaii Study Area are present throughout the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Pearl Harbor, HI.

The training and testing areas encompassed by the common bottlenose dolphin small and resident BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Pacific Range Missile Facility, shallow water training range and barking sands tactical underwater range west of Kauai, Ewa training minefield and Puuloa underwater range south of Oahu, the Kahoolawe sub training minefield, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

K.3.7.4 Common Bottlenose Dolphins Small and Resident Population Area Mitigation Considerations

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for common bottlenose dolphins and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Marine Mammal Mitigation Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area), which overlap some of the revised small and resident population areas (Figure K-26). While these mitigation areas are designed to provide additional protection for humpback whales, false killer whales, and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including common bottlenose dolphins without compromising military readiness. The Navy will continue to implement this existing mitigation area to the benefit of common bottlenose dolphins present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised common bottlenose dolphin BIAs are not being proposed.

K.3.8 Pantropical Spotted Dolphins Small and Resident Population Areas

K.3.8.1 Biological Considerations Applicable to all Pantropical Spotted Dolphin Small and Resident Population Areas

NMFS recognizes four stocks of pantropical spotted dolphins within the Hawaiian Islands Exclusive Economic Zone: the Oahu; Maui Nui; Hawaii island; and Hawaii Pelagic stocks. None of the stocks are listed under the ESA.

Based on sightings during small boat surveys from 2000 to 2012 in the main Hawaiian Islands, pantropical spotted dolphins were the most abundant species of cetacean, although they were frequently observed leaping out of the water which likely increased their detectability (Baird et al., 2013a). This species was also one of the most abundant based on analyses of line-transect data collected in the Hawaiian Exclusive Economic Zone in 2002, 2010, and 2017, with a total of 39 sightings during the three surveys (Barlow, 2006; Bradford et al., 2013; Bradford et al., 2021). Known habitat preferences and sighting data indicate the primary occurrence for the pantropical spotted dolphin in Hawaiian waters is shallow coastal waters to depths of 5,000 m, although the peak sighting rates occur in depths from 1,500 to 3,500 m (Baird et al., 2013c; Bradford et al., 2013; Oleson et al., 2013a). Habitat-based models developed from systematic ship survey data collected in the central North Pacific show relatively high pantropical spotted dolphin densities around the Hawaiian Islands, particularly around the Main Hawaiian Islands (Becker et al., 2012a; Forney et al., 2015). More recently, sighting data from systematic ship surveys conducted in waters of the Hawaiian Islands EEZ from 2000 to 2020 allowed for the development of separate habitat models for the pelagic and combined insular stocks of pantropical spotted dolphins (Becker et al., 2022a). Consistent with past observations (Baird et al., 2013c; Bradford et al., 2013; Oleson et al., 2013a), the model for the combined insular stocks showed peak abundance in depths from 1,500 to 3,500 m. The habitat model for the pelagic stock predicted low to mid-range density estimates for offshore waters of the Hawaiian Islands EEZ, with highest densities near all the islands, but particularly around the Main Hawaiian Islands (Becker et al., 2022a).

A year-round Small and Resident Population parent BIA and three child BIAs have been delineated in the main Hawaiian Islands for the populations of Pantropical spotted dolphins (Kratofil et al., 2023) (Figure K-16). The BIAs were updated from the original BIAs (Baird et al., 2015b) based on additional analyses. The parent BIA encompasses 57,711 km^2 of waters surrounding Oahu, Maui Nui, and the Island of Hawaii. The child BIAs encompass 12,952 km^2 around Oahu, 6,743 km^2 around Maui Nui, and 10,768 km^2 around the Island of Hawaii (Kratofil et al., 2023).

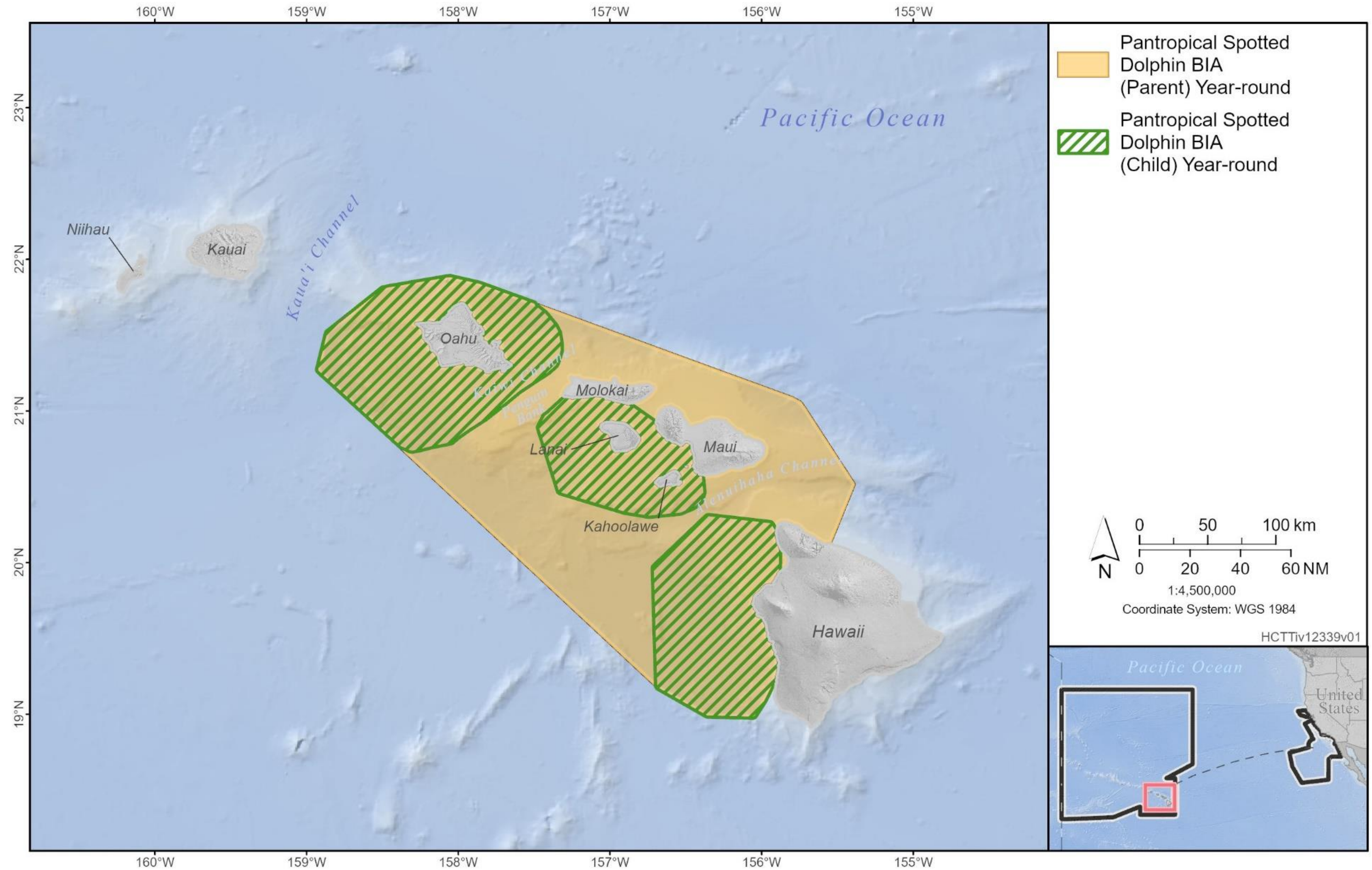

Figure K-14: Pantropical Spotted Dolphin Small and Resident BIAs Off the Hawaiian Islands

K.3.8.2 Stressor Analysis

K.3.8.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting pantropical spotted dolphins. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, the percent of effects that are predicted to occur in Hawaii Range Complex to the Oahu, Maui Nui, Hawaii Island, and Hawaii Pelagic stocks are split relatively evenly between the cold and warm seasons. Table K-5 provides a breakout of the percentage of takes that would result from training and testing activities involving sonar for each of the four stocks. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Table K-6: Pantropical Spotted Dolphin Percent of Behavioral, Temporary Threshold Shift, and Auditory Injury Takes by Stock

Stock	Percent of Behavioral Takes	Percent of Temporary Threshold Shift Takes	Percent of Auditory Injury Takes
Oahu	99%	91%	40%
Maui Nui	99%	94%	25%
Hawaii Island	99%	99%	50%
Hawaii Pelagic	99%	99%	69%

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only the Hawaii Island and Hawaii Pelagic stocks have predicted takes resulting from testing activities involving air guns, however effects would be limited to one behavioral take annually per stock.

On average, individuals in the Oahu stock could be impacted several times per year, and individuals in the Maui Nui stock, the Hawaii Island stock, and the Hawaii Pelagic stock would be impacted less than once per year. The average individual risk of injury is negligible in all four stocks, but a small number of injuries could occur to individuals in any of the four stocks of pantropical spotted dolphins in the Hawaii Study Area. In addition, one or two mortalities could occur to individuals in the Hawaii Pelagic stock. However, the risk of a mortality from explosive testing and training is low (less than one) in any year, but single mortalities are shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of any mortality is unlikely for all stocks pantropical spotted dolphins in the HCTT Study Area. Similarly, the risk of non-auditory injuries is low (less than one) in any year, but single non-auditory injuries are shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed above. The risk of injury and mortality may be reduced through activity-based mitigation, especially since Pantropical spotted dolphins tend to travel in large groups.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who experience auditory or non-auditory injury may incur energetic costs. The risk of mortality is extremely unlikely. Based on the above analysis, long-term consequences for the Maui Nui stock, the Hawaii Island stock, the Hawaii Pelagic stock, and the Oahu stock of Pantropical spotted dolphins are unlikely.

K.3.8.3 Action Proponent Requirements for Area-Specific Training and Testing

The pantropical spotted dolphin small and resident BIAs encompass waters around the islands of Hawaii, Oahu, Maui, Molokai, Lanai, and Kahoolawe within the Hawaii Study Area. These waters encompass many of the primary training sites within the Hawaii Range Complex. Spatially, pantropical spotted dolphins may be present anywhere within the waters off surrounding the Hawaiian Islands. Temporally, all stocks of the species in the Hawaii Study Area are present throughout the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The training and testing areas encompassed by the pantropical spotted dolphin small and resident BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Shipboard Electronic Systems Evaluation Facility and a small portion of the Fleet Operational Readiness Accuracy Check Site Range west of Oahu, waters approaching Kawaihae Harbor, Ewa training minefield and Puuloa underwater range south of Oahu, the Kahoolawe sub training minefield, waters approaching Kawaihae Harbor, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

K.3.8.4 Pantropical Spotted Dolphins Small and Resident Population Area Mitigation Considerations

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for pantropical spotted dolphins and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Marine Mammal Mitigation Area, (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area), which, as shown in Figure K-26, both overlap some of the revised small and resident population child BIAs. While these mitigation areas were designed to provide additional protection for humpback whales, false killer whales, and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including pantropical spotted dolphins, without compromising military readiness. The Navy will continue to implement these existing mitigation areas to the benefit of pantropical spotted dolphins present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised pantropical spotted dolphin child BIAs are not being proposed.

K.3.9 Spinner Dolphins Small and Resident Population Areas: Hawaiian Islands Stock Complex

K.3.9.1.1 Biological Considerations Applicable to all Spinner Dolphin Small and Resident Population Areas

NMFS recognizes six stocks of spinner dolphins within the Hawaii Study Area: the Hawaii Island, Oahu/4-Islands, Kauai and Niihau, Hawaii Pelagic, Kure and Midway, and the Pearl and Hermes Reef stocks (Carretta et al., 2023).

In the Hawaiian Islands, spinner dolphins occur along the leeward coasts of all the major islands and around several of the atolls northwest of the main Hawaiian Islands. Spinner dolphins occur year-round throughout the Hawaiian Islands, with primary occurrence from the shore to 4,000 m depth. This considers nearshore resting habitat and offshore feeding areas. Spinner dolphins are expected to occur in shallow water resting areas (about 50 m deep or less) throughout the middle of the day, moving into deep waters offshore during the night to feed (Heenehan et al., 2016; Heenehan et al., 2017; Norris & Dohl, 1980). Some of these resting areas are in proximity to bathymetric features that result in localized concentration of spinner dolphin prey. For example, there is an escarpment off Hawaii Island's Keahole Point that produces a locally enriched area that spinner dolphins exploit during nightly foraging trips from the nearby Makeko Bay (Heenehan et al., 2017; Norris & Dohl, 1980). Primary resting areas are along the west side of Hawaii, including Makako Bay, Honokohau Bay, Kailua Bay, Kealakekua Bay, Honaunau Bay, and Kauhako Bay, and off Kahena on the southeast side of the island (Heenehan et al., 2016; Heenehan et al., 2017; Norris & Dohl, 1980; Ostman-Lind et al., 2004; Tyne et al., 2017; Tyne et al., 2015). Along the Waianae coast of Oahu, Hawaii, spinner dolphins rest along Makua Beach, Kahe Point, and Pokai Bay during the day (Lammers, 2004). Kilauea Bay on Kauai is also a popular resting areas for Hawaiian spinner dolphins (U.S. Department of the Navy, 2006). Monitoring for the Rim of the Pacific Exercise in 2006 resulted in daily sightings of spinner dolphins within the offshore area of Kekaha Beach, Kauai, near the Pacific Missile Range Facility (U.S. Department of the Navy, 2006). Spinner dolphins have been observed during Navy monitoring surveys at Kaula Island in 2000, 2003, and 2009-2011 (Richie et al., 2012). Although sightings have been recorded around the mouth of Pearl Harbor, Hawaii, spinner dolphin occurrence is rare there (Lammers, 2004; Richie et al., 2016). Occurrence patterns are assumed to be the same throughout the year.

During three systematic ship surveys of waters within the Hawaiian Islands EEZ in summer/fall of 2002, 2010, and 2017, there was a total of 15 sightings of spinner dolphin, the majority from the pelagic stock (Bradford et al., 2021). Habitat-based models developed from systematic ship survey data collected in the central North Pacific show the strong island association of spinner dolphins (Becker et al., 2012b; Forney et al., 2015), consistent with previously documented distribution patterns (Barlow, 2006).

Five year-round, non-hierarchical Small and Resident Population BIAs have been delineated for spinner dolphins in Hawaiian waters (Kratofil et al., 2023) (Figure K-17). The BIAs were based on the current insular stock boundaries and include Kuaihelani/Holaniku (4,841 km^2), Manawai (2,094 km^2), Kauai/Niihau (7,233 km^2), Oahu/Maui Nui (14,651 km^2), and the Island of Hawaii (9,477 km^2).

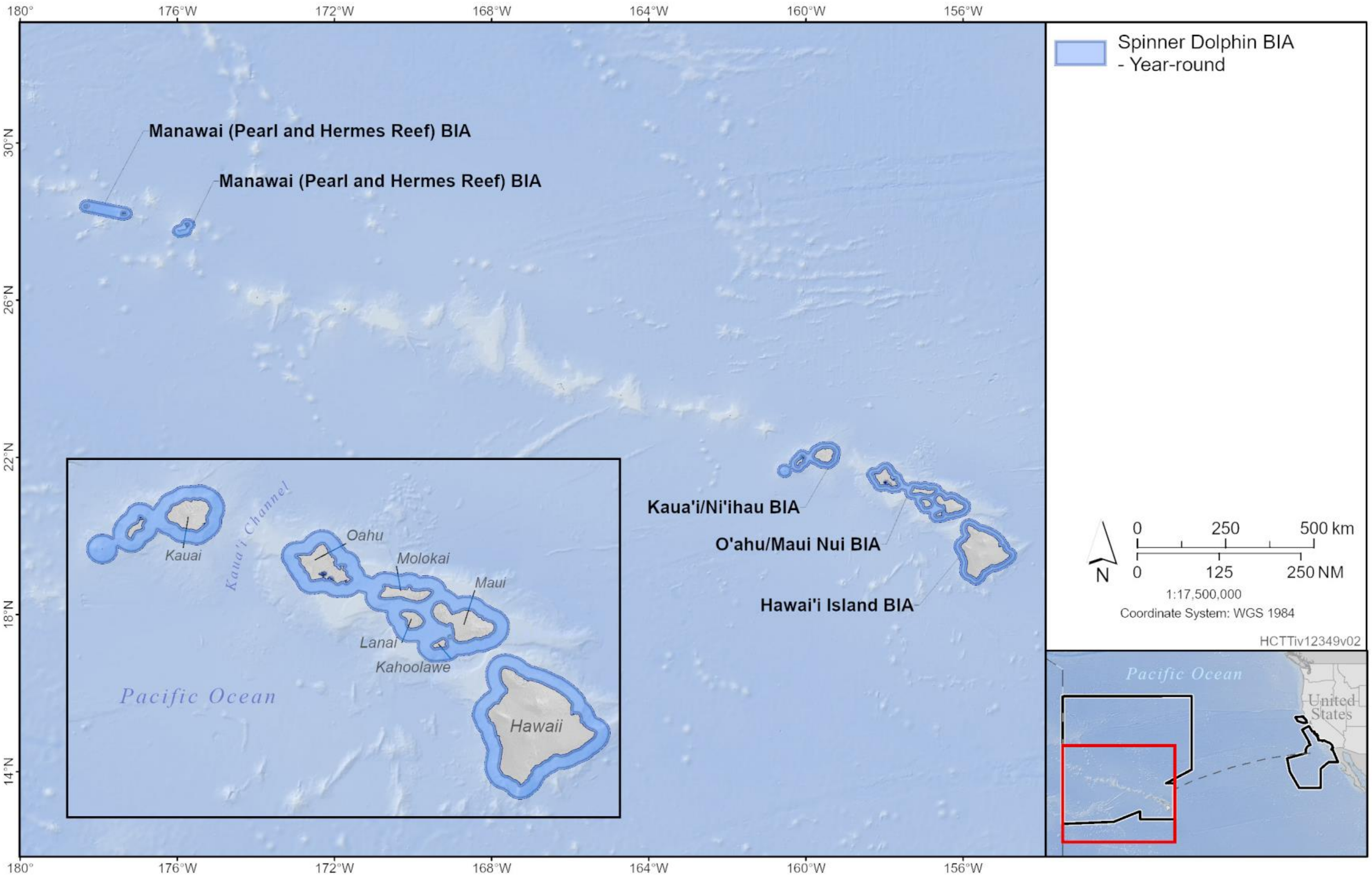

Figure K-15: Spinner Dolphin Small and Resident BIA Off the Hawaiian Islands

K.3.9.2 Stressor Analysis

K.3.9.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting spinner dolphins. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, there are no predicted effects to the Kure and Midway or the Pearl and Hermes Reef stocks. The percent of effects that are predicted to occur in Hawaii Range Complex to the Hawaii Island and Oahu/4-islands stocks is split with approximately 60 percent occurring during the warm season and 40 percent occurring during the cold season. For the Hawaii Pelagic and the Kauai and Niihau stocks, a greater percentage of the effects predicted to occur in the Hawaii Range Complex (65 percent for the Kauai and Niihau stock, and 52 percent for the Hawaii Pelagic stock) would occur during the cold season. Table K-6 provides a breakout of the percentage of takes that would result from training and testing activities involving sonar for each of the four stocks. For the quantitative analysis of effects to the species within the revised BIA, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Table K-7: Spinner Dolphin Percent of Behavioral, Temporary Threshold Shift, and Auditory Injury Takes by Stock

Stock	Percent of Behavioral Takes	Percent of Temporary Threshold Shift Takes	Percent of Auditory Injury Takes
Oahu/4-Islands	99%	91%	1%
Kauai and Niihau	99%	99%	50%
Hawaii Island	98%	98%	0%
Hawaii Pelagic	99%	99%	99%

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. None of the four stocks have predicted takes resulting from testing activities involving air guns.

On average, individuals in the Hawaii Island stock and Hawaii Pelagic stock would be impacted less than once per year, and individuals in the Kauai and Niihau stock and the Oahu/ 4-Islands stock could be impacted several times per year. The average individual risk of injury is negligible in all four stocks, but a small number of auditory injuries could occur. However, in four out of six instances of auditory injury, the risk of an injury is low (less than one) in any year, but single injuries are shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS. Therefore, the risk of any auditory injury from an explosive activity is unlikely for all stocks of spinner dolphins in the HCTT Study Area, and the risk of an auditory injury from sonar testing is unlikely for spinner dolphins in the Hawaii pelagic stock. The risk of injury may be reduced through activity-based mitigation, as spinner dolphins have relatively higher sightability.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who experience auditory injury may incur energetic costs. Based on the above analysis, long-term consequences for the Hawaii Island stock, Hawaii Pelagic stock, the Kauai and Niihau stock, and the Oahu/ 4-Islands stock of spinner dolphins are unlikely.

K.3.9.3 Action Proponent Requirements for Area-Specific Training and Testing

The Manawai small and resident BIAs are in the Hawaii Temporary OPAREA, which is composed of 2.1 million NM^2 of sea and airspace north and west of Kauai used predominately for research, development and test activities. It is mostly used for missile defense testing, which is not a part of the Proposed Action. Activities in the Temporary OPAREA that are covered in this EIS may include air, surface, and anti-submarine warfare activities. The training and testing activities that typically occur within the area include opportunistic training by individual ships transiting to and from the Western Pacific on deployment or occasional positioning of ships supporting testing or other events and are likely to occur in deeper waters of the large temporary operating area and would not overlap with the small and resident population area.

The Kauai/Niihau, Oahu/Maui Nui, and Hawaii Island small and resident BIAs encompass waters around the islands of Hawaii, Oahu, Kauai, Maui, Molokai, Lanai, Kahoolawe, and Niihau within the Hawaii Study Area. These waters encompass many of the primary training sites within the Hawaii Range Complex. Spatially, spinner dolphins may be present anywhere within the waters off surrounding the Hawaiian Islands. Temporally, spinner dolphins are present most of the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The training and testing areas encompassed by the spinner dolphin small and resident BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Pacific Range Missile Facility, shallow water training range and barking sands tactical underwater range west of Kauai, Ewa training minefield and Puuloa underwater range south of Oahu, the Kahoolawe sub training minefield, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

K.3.9.4 Spinner Dolphin Small and Resident Population Areas Mitigation Assessment

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for spinner dolphins and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Marine Mammal Mitigation Area, (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area), which, as shown in Figure K-26, both overlap some of the revised small and resident population area. While these mitigation areas were designed to provide additional protection for humpback whales, false killer whales, and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including spinner dolphins, without compromising military readiness. The Navy will continue to implement these existing mitigation areas to the benefit of spinner dolphins present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised spinner dolphin BIAs are not being proposed.

K.3.10 Hawaii Island Rough-Toothed Dolphins Small and Resident Population Area

K.3.10.1 Biological Considerations Applicable to the Rough-toothed Dolphins Small and Resident Population Area

Rough-toothed dolphins are among the most widely distributed species of tropical dolphins, and NMFS recognizes one stock of rough-toothed dolphins found within the U.S. Exclusive Economic Zone of the Hawaiian Islands: Hawaii stock (Carretta et al., 2023). Rough-toothed dolphins are not listed under the ESA.

Rough-toothed dolphins are well known in deep ocean waters off the Hawaiian Islands but are also seen relatively frequently during nearshore surveys (Baird et al., 2015f; Baird et al., 2008; Barlow et al., 2008; Bradford et al., 2013; Carretta et al., 2015; Pitman & Stinchcomb, 2002; Shallenberger, 1981; Webster et al., 2015). During three systematic ship surveys of waters within the Hawaiian Islands EEZ in summer/fall of 2002, 2010, and 2017, there was a total of 67 sightings of rough-toothed dolphin, with yearly mean group size estimates ranging from 15.7 to 25.3 animals (Bradford et al., 2021). Based on density estimates derived from these survey data, rough-toothed dolphin was one of the most abundant species present in the study area in each of the three years. Habitat-based models developed from systematic ship survey data collected in the central North Pacific show the strong island association of rough-toothed dolphins (Becker et al., 2012b; Forney et al., 2015). Sighting data from systematic ship surveys conducted within waters of the Hawaiian Islands EEZ from 2000 to 2020 supported the development of an updated habitat-based density model for rough-toothed dolphin and confirmed the strong island association indicated from the previous models (Becker et al., 2022a). Over a 10-day near-shore survey effort off Kauai in 2014, rough-toothed dolphins were encountered on two occasions and 7 of the 8 individuals photo-identified had been observed in previous years (Baird et al., 2015e). Data from 14 satellite tags deployed off Kauai between 2011–2015 on rough-toothed dolphins indicated a large portion of the core area for those animals overlaps the Pacific Missile Range Facility range and the channel between Kauai and Niihau (Baird et al., 2015e). The data presented by Baird et al. (2015e) and Webster et al. (2015) are indicative of residency on or near the Pacific Missile Range Facility range by some of those animals (see also (Baird et al., 2008).

A year-round Small and Resident Population parent BIA and child BIA have been delineated for waters off Kauai, Niihau, and Oahu for rough-toothed dolphins (Kratofil et al., 2023) (Figure K-18). A BIA was not identified for this population in the original BIA effort because there were insufficient data available at that time (Baird et al., 2015d). The parent BIA encompasses 25,083 km^2 of waters extending from the west coast of Oahu to the northwest and surrounding both Kauai and Niihau. The child BIA encompass 1,098 km^2 off the west coast of Kauai to capture the core range for this population (Kratofil et al., 2023). In addition, a year-round, non-hierarchical BIA was delineated for rough-toothed dolphins associated with Maui Nui and the Island of Hawaii. This BIA encompasses 15,112 km^2 of waters from the west coast of the Island of Hawaii, extending north to encompass waters off Maui Nui (Kratofil et al., 2023) (Figure K-18).

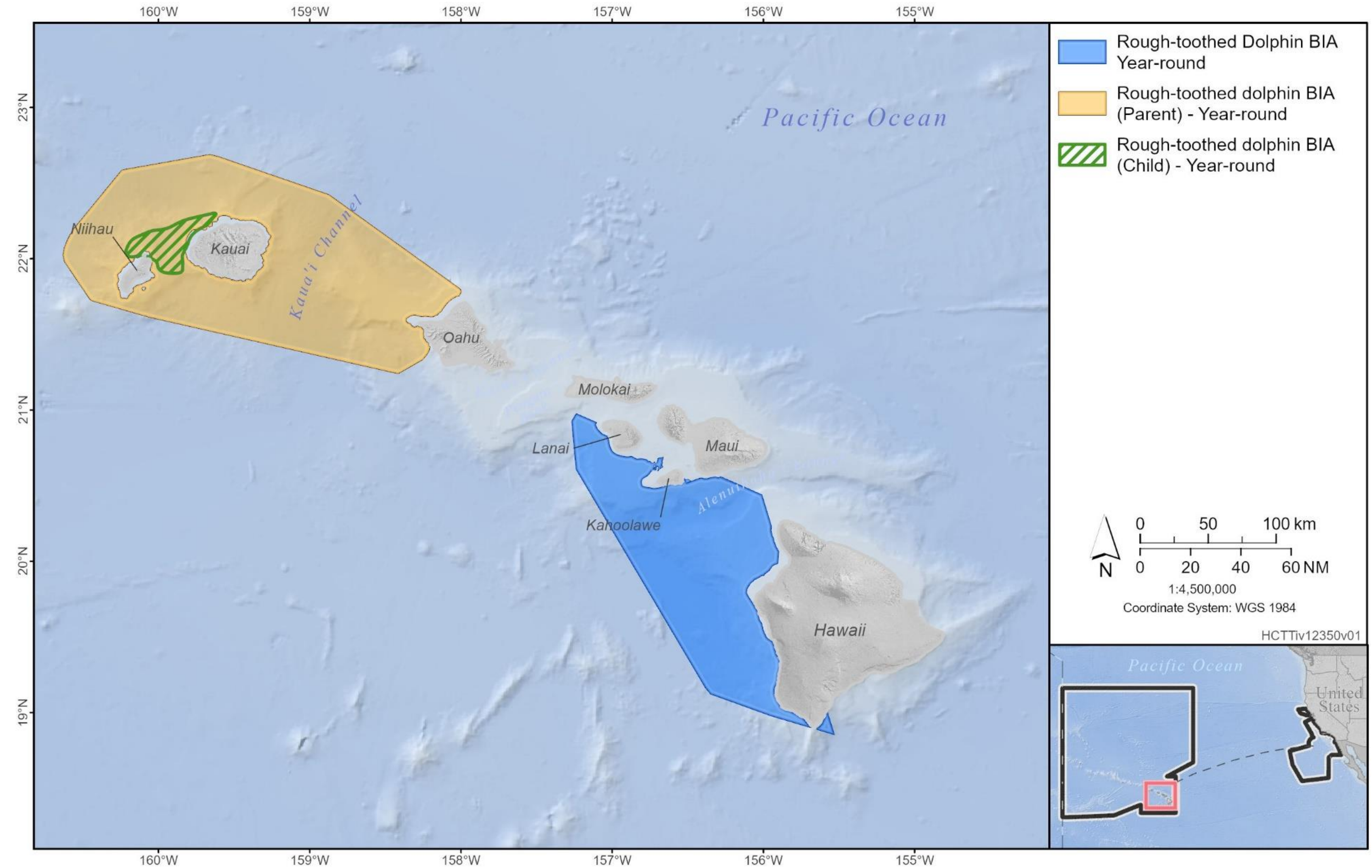

Figure K-16: Rough-Toothed Dolphin Small and Resident BIAs Off the Hawaiian Islands

K.3.10.2 Stressor Analysis

K.3.10.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting rough-toothed dolphins. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, the effects that are predicted to occur in Hawaii Range Complex to the Hawaii stock of rough-toothed dolphins present in the waters surrounding the Hawaiian Islands are distributed relatively evenly between the cold and warm seasons. 99 percent of the behavioral, 99 percent of the temporary threshold shift, and 68 percent of the auditory injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only one take (behavioral) is predicted to occur from the training and testing activities involving air guns to rough-toothed dolphins annually in the Hawaii Study Area.

On average, individuals would be impacted less than once per year. A small number of auditory and non-auditory injuries could occur to individuals, although the average individual risk of injury is negligible. In addition, a mortality could occur from explosive testing and training activities. However, the risk of a single mortality from either activity is low (less than one) in any year, but a mortality for both explosive activities is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of any mortality is unlikely for rough-toothed dolphins in the HCTT Study Area. The risk of injury may be reduced through activity-based mitigation, as rough-toothed dolphins are moderately sightable.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who experience injury may incur energetic costs. The risk of mortality is extremely unlikely. Based on the above analysis, long-term consequences for the Hawaii stock of rough-toothed dolphins are unlikely.

K.3.10.3 Action Proponent Requirements for Area-Specific Training and Testing

The rough-toothed dolphin small and resident BIAs encompass waters in the vicinity of the islands of Hawaii, Oahu, Kauai, Maui, Lanai, Kahoolawe, and Niihau within the Hawaii Study Area. These waters encompass many of the primary training sites within the Hawaii Range Complex. Spatially, rough-toothed dolphins may be present anywhere within the waters off surrounding the Hawaiian Islands. Temporally, all stocks of the species in the Hawaii Study Area are present throughout the year.

The waters surrounding the Hawaiian Islands have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like Oahu, HI.

The training and testing areas encompassed by the rough-toothed dolphin small and resident BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Hawaii and are not available elsewhere. They include the following: Pacific Range Missile Facility, shallow water training range and barking sands tactical underwater range west of Kauai, the Kahoolawe sub training minefield, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

K.3.10.4 Rough-toothed Dolphin Small and Resident Population Area Mitigation Assessment

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for rough-toothed dolphins and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area and the Hawaii 4-Islands Marine Mammal Mitigation Area (see Section K.1.1.3.2 Mitigation Areas for Marine Mammals in the Hawaii Study Area), which, as shown in Figure K-26, both overlap some of the revised rough-toothed dolphin small and resident population areas. While these mitigation areas were designed to provide additional protection for humpback whales, false killer whales, and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including rough-toothed dolphins without compromising military readiness. The Navy will continue to implement these existing mitigation areas to the benefit of rough-toothed dolphins present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised Hawaii Island rough-toothed dolphin BIAs are not being proposed.

K.3.11 Hawaii Island Cuvier's Beaked Whale Small and Resident Population Area

K.3.11.1 Biological Considerations Applicable to the Cuvier's Beaked Whale Small and Resident Population Area

NMFS recognizes a Hawaii stock of Cuvier's beaked whale that occurs in the Hawaii Study Area (Carretta et al., 2023). The stock is not listed under the ESA.

Cuvier's beaked whales are regularly found in waters surrounding the Hawaiian Islands (Baird et al., 2015d; Baird et al., 2009; Baird et al., 2013b; Barlow, 2006; Baumann-Pickering et al., 2010; Baumann-Pickering et al., 2014; Bradford et al., 2013; Lammers et al., 2015; Mobley, 2004; Oleson et al., 2013a; Oleson et al., 2015b; Shallenberger, 1981). In Hawaii, Cuvier's beaked whales have been occasionally observed breaching and this along with their large size and visible blows likely increases their detectability (Baird et al., 2013b). There was a total of 40 Cuvier's beaked whale sightings during systematic ship surveys within the Hawaiian Islands EEZ in 2002, 2010, and 2017, and none of the sightings were in waters within 140 km of the Main Hawaiian Islands (Bradford et al., 2021). Sightings have been reported off the Hawaiian Islands of Lanai, Maui, Hawaii, Niihau, and Kauai, providing strong evidence for both insular and offshore populations of Cuvier's beaked whales in waters of the Hawaiian Islands EEZ (Baird, 2013; Baird et al., 2015b; Baird et al., 2009; Mobley, 2004; Oleson et al., 2013b; Oleson et al., 2015a; Shallenberger, 1981).

BIAs were redefined for a year-round Small and Resident Population area for Cuvier's beaked whales in Hawaiian waters (Kratofil et al., 2023). The parent BIA is 37,157 km^2 in size and the child BIA encompasses 5,400 km^2 within this region (Figure K-19) The child BIA was defined based on occurrence data that indicate that Cuvier's beaked whales spend the majority of their time between the 2,000- and 3,500-meter isobaths off the leeward side of the Island of Hawaii.

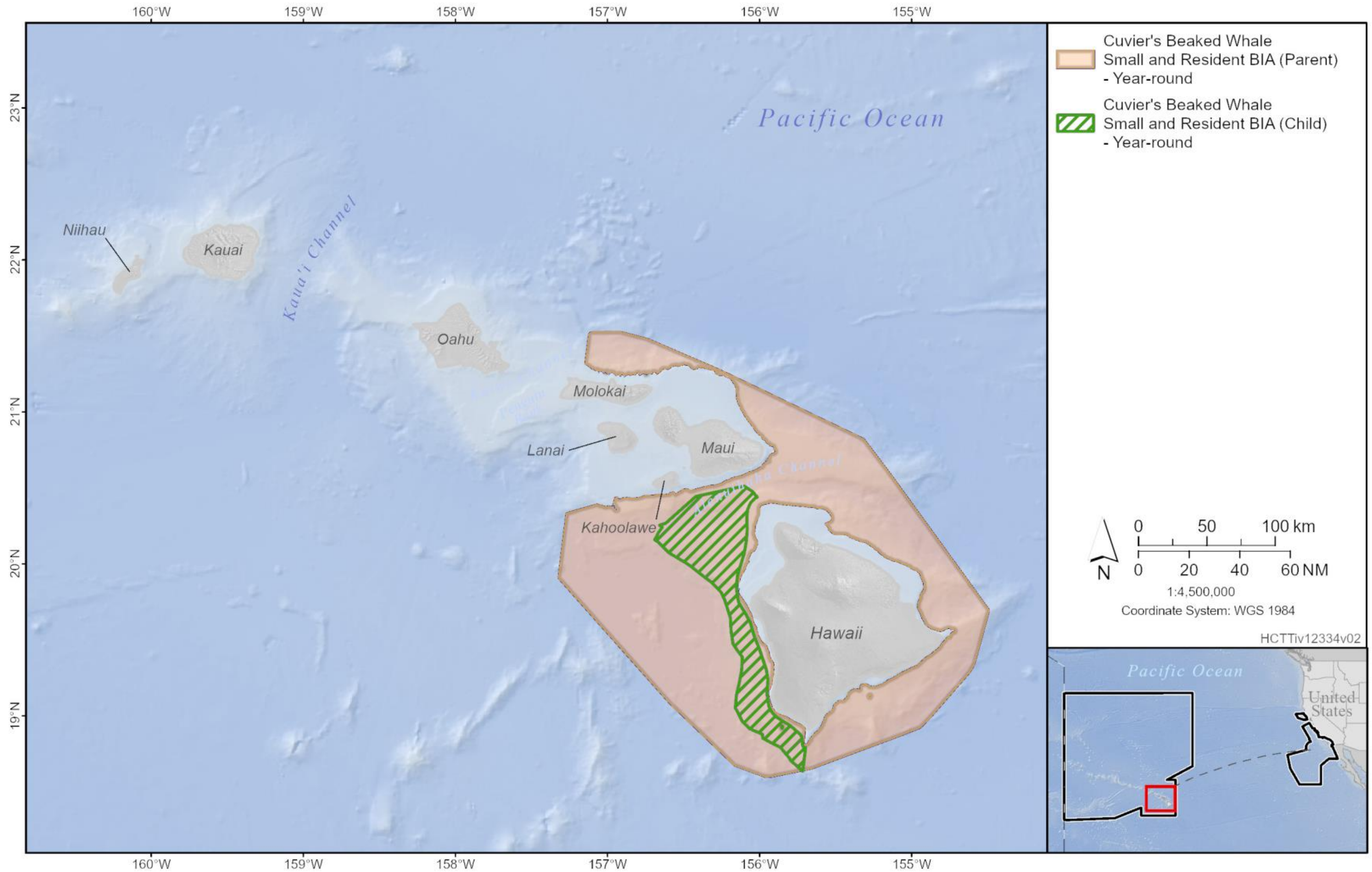

Figure K-17: Cuvier's Beaked Whale Small and Resident Population BIAs Off the Hawaiian Islands

K.3.11.2 Stressor Analysis

K.3.11.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting Cuvier's beaked whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, the effects that are predicted to occur in Hawaii Range Complex to the Hawaii stock of the Cuvier's beaked whale present in the waters surrounding the Hawaiian Islands are distributed relatively evenly between the cold and warm seasons. 99 percent of the behavioral, 98 percent of the temporary threshold shift, and zero percent of the auditory injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Only one take (behavioral) is predicted to occur from the training and testing activities involving air guns to Cuvier's beaked whales annually in the Hawaii Study Area.

On average, individuals in the Hawaii stock would be impacted several times per year, primarily due to behavioral responses. The average risk of injury for either stock is negligible, although a few auditory injuries are predicted. The risk of auditory injury from explosive training is low (less than one) in any year, but a couple auditory injuries are shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). These auditory injuries are shown in the maximum year of effects per the summation and rounding approach discussed above. Therefore, the risk of auditory injury from any source is unlikely. The risk of injury may be reduced through activity-based mitigation, although beaked whales have low sightability.

Several instances of behavioral disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who suffer an auditory injury may experience minor energetic costs. Most predicted effects are behavioral responses in an open ocean basin that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to these stocks are unlikely.

K.3.11.3 Action Proponent Requirements for Area-Specific Training and Testing

The Alenuihaha Channel, as well as the waters north and west of Hawaii Island, provides a unique training capability that does not exist elsewhere in the Hawaii Range Complex. The Alenuihaha Channel is an ideal location for strait transits using mid-frequency active sonar during training. The Alenuihaha Channel is an actual channel that provides a vital and realistic analog for similar straits or restricted maneuvering areas where the Navy operates worldwide, such as the East or South China seas. For example, transit training in the Alenuihaha Channel replicates these types of strait environments that meet the Navy's requirement to deploy Naval forces to ensure the free flow of commerce and the freedom of navigation by combatting piracy or mine threats. Naval forces are required to train to counter a submarine threat before deployment, to ensure such forces obtain the required proficiency to conduct anti-submarine warfare in a controlled and observed environment prior to deployment to international straits across the globe, where operational Commanders require Naval forces to be able to conduct a range of military operations, including anti-submarine warfare. This required proficiency cannot be replicated by simulation and is most effectively obtained when conducted in a strait. Commanding Officers cannot be expected to effectively conduct such operations in a deployed environment if the first time they encounter a submarine in a strait is in a deployed setting. There are few geographic areas that enable forces to do this type of training outside of the HCTT Study Area.

While there are other channels within the Hawaii Range Complex used for strait transit training and anti-submarine warfare training, none provide the important attributes of the Alenuihaha Channel. The Alenuihaha Channel's proximity to the Pohakuloa Training Area allows for realistic training and reduces time and fuel costs between these training areas. The channel between Niihau and Kauai is also acceptable from a training perspective, but this would add at least two days of transit during each Under Sea Warfare training exercise (time required to move through a different channel and reposition to operating areas near Pohakuloa Training Area). The Kaiwi Channel between Oahu and Molokai is also acceptable from some mid-frequency active sonar training perspective, but it is also a significant civilian air corridor, and raises safety concerns for anti-submarine warfare aircraft flying in that channel. In addition, the channel between Nihau and Kauai is proximate to the Pacific Missile Range Facility instrumented range) which would result in problems de-conflicting multiple activities and hazardous operations, raising safety concerns. For these reasons, Alenuihaha Channel is still the most suitable for anti-submarine warfare training during certain training scenarios. The Hawaii Island Cuvier's Beaked Whale Small and Resident Population Area is adjacent to waters approaching Kawaihae Harbor, the point of amphibious insertion for forces proceeding to the range at Pohakuloa Training Area, which is the only range in the Hawaii Range Complex that supports ground force and aviation live-fire training. Training in this area allows for the integration of carrier strike group operations and amphibious landings, working in conjunction within a controlled airspace west of Hawaii Island for military training near the Pohakuloa Training Area range. Carrier strike group training can include a full spectrum of the force–various ships, submarines, aircraft, and Marine Corps forces—to train in the complex command, control operational coordination, and logistics functions designed to prepare forces for deployment. As an air to ground range, Pohakuloa Training Area supports carrier strike group activities near a channel and near large open water areas for strike group maneuvering and submarine activities. Mid-frequency active sonar conducted to support strike maneuver and protect high value units (e.g., carrier) as aircraft go to strike at Pohakuloa Training Area is vital.

Access to both the Alenuihaha Channel and the waters west of Kawaihae Harbor is vital for a broad spectrum of naval and amphibious training. These areas provide a unique and irreplaceable capability within the Hawaii Range Complex that allows naval forces to conduct realistic, integrated training in an environment that replicates the actual areas where they will be called to serve.

K.3.11.4 Cuvier's Beaked Whale Small and Resident Population Area Mitigation Assessment

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for Cuvier's beaked whale and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area (see Section K.1.1.3.2, Mitigation Areas for Marine Mammals in the Hawaii Study Area), which, as shown in Figure K-26, overlaps all of the revised small and resident population child BIA. While this mitigation area was designed to provide additional protection for false killer whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including Cuvier's beaked whales without compromising military readiness. The Navy will continue to implement these existing mitigation areas to the benefit of Cuvier's beaked whales present in the Hawaii Study Area. However, because most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals, additional mitigation areas based on the revised Hawaii Island Cuvier's beaked whale child BIA are not being proposed.

K.3.12 Hawaii Island Blainville's Beaked Whale Small and Resident Population Area

K.3.12.1 Biological Considerations Applicable to the Blainville's Beaked Whale Small and Resident Population Area

NMFS recognizes one stock of Blainville's beaked whale in the waters surrounding the Hawaiian Islands: Hawaii stock (Carretta et al., 2023). The stock is not listed under the ESA.

Blainville's beaked whales are regularly sighted in Hawaiian waters (Baird et al., 2015a; Baird et al., 2003b; Baird et al., 2006; Barlow, 2006; Bradford et al., 2017; McSweeney et al., 2007), and their vocalizations have been routinely detected in acoustic monitoring in the Hawaiian Islands (Henderson et al., 2015; Klinck et al., 2015; Lammers et al., 2015; Manzano-Roth et al., 2016; Manzano-Roth et al., 2013; Rankin & Barlow, 2007). There were a total of 15 Blainville's beaked whale sightings during systematic ship surveys within the Hawaiian Islands EEZ in 2002, 2010, and 2017, and none of the sightings were in waters within 140 km of the Main Hawaiian Islands (Bradford et al., 2021).

Blainville's beaked whale has been detected off the coast of Oahu, Hawaii for prolonged periods annually, and this species is consistently observed in the same site off the west coast of the Island of Hawaii (Abecassis et al., 2015; Baird et al., 2006; McSweeney et al., 2007). Thirteen Blainville's beaked whales were satellite tagged off Hawaii Island between 2006 and 2012 with data records ranging from 15 to 159 days (Baird et al., 2015a; Baird et al., 2011). One tagged individual ranged from approximately 18 km to 573 km from land and moved a total of over 900 km from the initial tag location in 20 days. Similar data over an 8-day period for an individual tagged off Kauai showed movement on and off the Navy's instrument range at PMRF three times before transiting to the southwest over a distance of approximately 100 km from the original tag location (Baird et al., 2015e).

BIAs were redefined for a year-round Small and Resident Population area for Blainville's beaked whales off the west coast and North Kohala portion of the Island of Hawaii, extending to the west and north to encompass waters off Maui Nui and Oahu (Kratofil et al., 2023). The parent BIA is 78,714 km^2 in size and the child BIA encompasses 4,214 km^2 within this region, representing an area of intensified use off the west coast and North Kohala portion of the Island of Hawaii (Figure K-20).

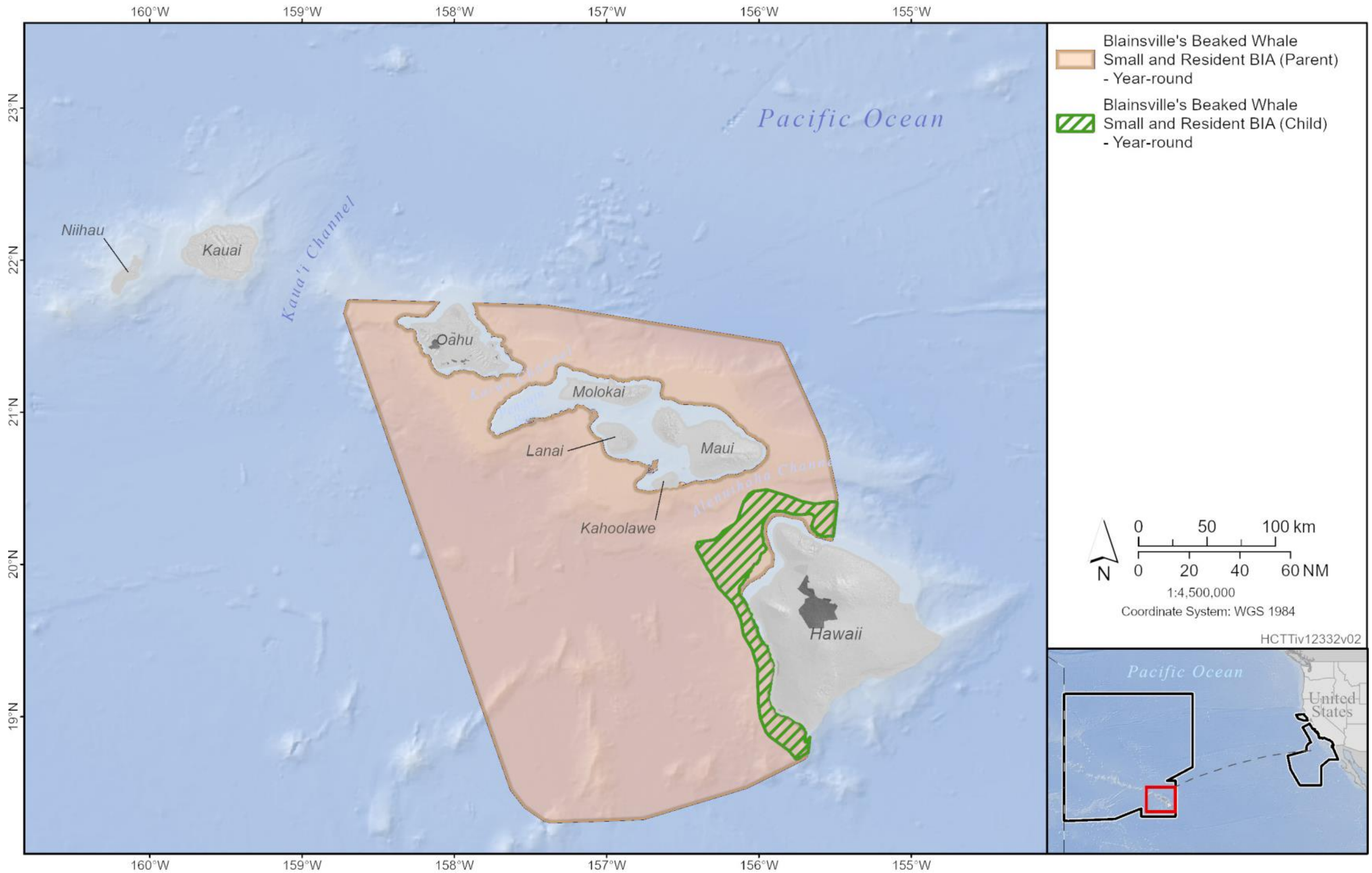

Figure K-18: Blainville's Beaked Whales Small and Resident BIAs Off the Hawaiian Islands

K.3.12.2 Stressor Analysis

K.3.12.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting Blainville's beaked whales. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, the effects that are predicted to occur in Hawaii Range Complex to the Hawaii stock of Blainville's beaked whale present in the waters surrounding the Hawaiian Islands are distributed relatively evenly between the cold and warm seasons. 99 percent of the behavioral and 97 percent of the temporary threshold shift takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. No effects are predicted to occur from the training and testing activities involving air guns.

On average, individuals in the Hawaii stock of Blainville's beaked whales could be impacted several times per year, primarily due to behavioral responses from training and testing activities involving the use of sonar. There are no predicted effects resulting in auditory injury, physical injury, or mortality takes.

A few instances of disturbance over a year are unlikely to have any long-term consequences for individuals, although individuals who suffer an auditory injury may experience minor energetic costs. Based on the above analysis, long-term consequences for the Hawaii stock of Blainville's beaked whales are unlikely.

K.3.12.3 Action Proponent Requirements for Area-Specific Training and Testing

The Alenuihaha Channel, as well as the waters north and west of Hawaii Island, provides a unique training capability that does not exist elsewhere in the Hawaii Range Complex. The Alenuihaha Channel is an ideal location for strait transits using mid-frequency active sonar during training. The Alenuihaha Channel is an actual channel that provides a vital and realistic analog for similar straits or restricted maneuvering areas where the Navy operates worldwide, such as the East or South China seas. For example, transit training in the Alenuihaha Channel replicates these types of strait environments that meet the Navy's requirement to deploy Naval forces to ensure the free flow of commerce and the freedom of navigation by combatting piracy or mine threats. Naval forces are required to train to counter a submarine threat before deployment, to ensure such forces obtain the required proficiency to conduct anti-submarine warfare in a controlled and observed environment prior to deployment to international straits across the globe, where operational Commanders require Naval forces to be able to conduct a range of military operations, including anti-submarine warfare. This required proficiency cannot be replicated by simulation and is most effectively obtained when conducted in a strait. Commanding Officers cannot be expected to effectively conduct such operations in a deployed environment if the first time they encounter a submarine in a strait is in a deployed setting. There are few geographic areas that enable forces to do this type of training outside of the HCTT Study Area.

While there are other channels within the Hawaii Range Complex used for strait transit training and anti-submarine warfare training, none provide the important attributes of the Alenuihaha Channel. The Alenuihaha Channel's proximity to the Pohakuloa Training Area allows for realistic training and reduces time and fuel costs between these training areas. The channel between Niihau and Kauai is also acceptable from a training perspective, but this would add at least two days of transit during each Under Sea Warfare training exercise (time required to move through a different channel and reposition to operating areas near Pohakuloa Training Area). The Kaiwi Channel between Oahu and Molokai is also acceptable from some mid-frequency active sonar training perspective, but it is also a significant civilian air corridor, and raises safety concerns for anti-submarine warfare aircraft flying in that channel. In addition, the channel between Nihau and Kauai is proximate to the Pacific Missile Range Facility instrumented range) which would result in problems de-conflicting multiple activities and hazardous operations, raising safety concerns. For these reasons, Alenuihaha Channel is still the most suitable for anti-submarine warfare training during certain training scenarios. The Hawaii Island Blainville's Beaked Whale Small and Resident Population Area is adjacent to waters approaching Kawaihae Harbor, the point of amphibious insertion for forces proceeding to the range at Pohakuloa Training Area, which is the only range in the Hawaii Range Complex that supports ground force and aviation live-fire training. Training in this area allows for the integration of carrier strike group operations and amphibious landings, working in conjunction within a controlled airspace west of Hawaii Island for military training near the Pohakuloa Training Area range. Carrier strike group training can include a full spectrum of the force–various ships, submarines, aircraft, and Marine Corps forces—to train in the complex command, control operational coordination, and logistics functions designed to prepare forces for deployment. As an air to ground range, Pohakuloa Training Area supports carrier strike group activities near a channel and near large open water areas for strike group maneuvering and submarine activities. Mid-frequency active sonar conducted to support strike maneuver and protect high value units (e.g., carrier) as aircraft go to strike at Pohakuloa Training Area is vital.

Access to both the Alenuihaha Channel and the waters west of Kawaihae Harbor is vital for a broad spectrum of naval and amphibious training. These areas provide a unique and irreplaceable capability within the Hawaii Range Complex that allows naval forces to conduct realistic, integrated training in an environment that replicates the actual areas where they will be called to serve.

K.3.12.4 Blainville's Beaked Whale Small and Resident Population Area Mitigation Assessment

During the 2018 HSTT EIS/OEIS, the Navy balanced the need for the use of the area to meet training and testing requirements with the biological importance of the area for Blainville's beaked whale and other species. The Navy implemented the Hawaii Island Marine Mammal Mitigation Area (see Section K.1.1.3.2, Mitigation Areas for Marine Mammals in the Hawaii Study Area), which, as shown in Figure K-26, overlaps all of the revised small and resident child BIA. While these mitigation areas were designed to provide additional protection for humpback whales, false killer whales and some beaked whale species, these measures will also reduce the number and level of effects to other species or stocks occurring within the area, including Blainville's beaked whales without compromising military readiness. Therefore, because the Hawaii Island Marine Mammal Mitigation Area overlaps all of the revised small and resident child BIA, and because most effects to Blainville's beaked whales from military readiness activities in the Hawaii Study Area are expected to be behavioral, non-injurious, and are unlikely to result in any long-term effects to individuals, the Navy will continue to implement the existing mitigation area to the benefit of Blainville's beaked whales present in the Hawaii Study Area and is not proposing additional mitigation areas.

K.4 Biologically Important Areas within the California Study Area

K.4.1 Blue Whale Feeding Areas

K.4.1.1 Biological Considerations Applicable to Blue Whale Feeding Areas

NMFS recognizes two stocks of blue whales in the North Pacific: the Eastern North Pacific and Central North Pacific stocks (Carretta et al., 2023). Both stocks of blue whales are listed as endangered under the ESA, but only the Eastern North Pacific stock could be present in the California Study Area.

The Eastern North Pacific Stock of blue whales includes animals found in the eastern north Pacific from the northern Gulf of Alaska to the eastern tropical Pacific (Carretta et al., 2023). Based on habitat models derived from line-transect survey data collected between 1991 and 2018 off the U.S. west coast, relatively high densities of blue whales are predicted off southern California during the summer and fall (Barlow et al., 2009b; Becker et al., 2010; Becker et al., 2016; Forney et al., 2012). Data from year-round surveys conducted off southern California from 2004 to 2013 show that the majority of blue whales were sighted in summer (62 sightings) and fall (9 sightings), with only single sightings in winter and spring (Campbell et al., 2015). In the Southern California Bight in summer and fall, the highest densities of blue whales occurred along the 200-m isobath in waters with high surface chlorophyll concentrations (Redfern et al., 2013). Campbell et al. (2015) documented blue whale sightings along both the Southern California shelf, and over deep ocean water (>2,000 m).

Abrahms et al. (2019) documented higher blue whale occurrence north of the Southern California (SOCAL) Range Complex and with critical areas located along shipping routes within the Santa Barbara Channel that provide access to the Ports of Los Angeles and Long Beach. Szesciorka et al. (2020) investigated the timing of blue whale migrations in association with environmental conditions and prey concentrations off southern California over a 10-year period. Their findings showed that blue whales were arriving up to one month earlier off southern California at the end of the study than they had been 10 years prior. However, the whales did not depart any earlier, leading to longer residency times in the Southern California Bight. Based on acoustic call detections, blue whales arrived in May and depart in November, remaining at the feeding grounds an average of 8.4 months. Blue whales demonstrated a flexible response to prey availability on an interannual basis based strongly on sea surface temperatures which are also correlated with krill biomass.

In 2015, feeding BIAs were delineated off the U.S. west coast for the Eastern North Pacific stock of blue whales (Calambokidis et al., 2015c). The BIAs were redefined for blue whale feeding behavior off the U.S. West Coast by Calambokidis et al. (2024) (Figure K-21) and incorporated tagging and additional line-transect survey data not previously considered (Calambokidis et al., 2015c). The parent BIA encompass 173,000 km^2 equivalent to 21 percent of the U.S. West Coast EEZ and include coastal, shelf beak, and offshore waters (Figure K-21). The core BIA, which is approximately 54,000 km^2, is 30 percent of the parent BIA but still larger than the previous blue whale feeding BIAs defined in 2015. The BIAs are in effect from June through November.

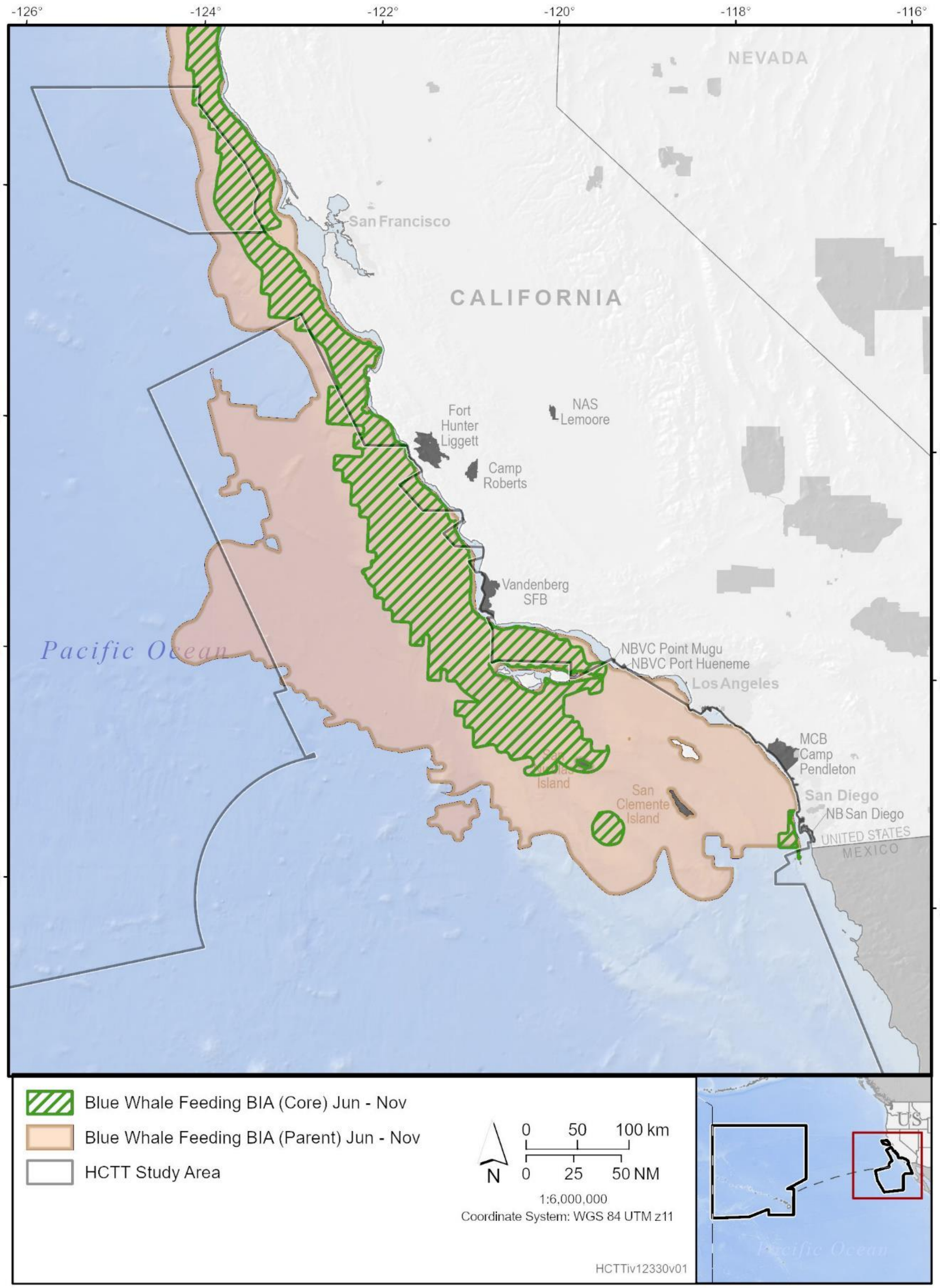

Figure K-19: Blue Whale Feeding Areas Off California

K.4.1.2 Stressor Analysis

K.4.1.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting blue whales and their feeding behavior. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 87 percent of effects are predicted to occur in the SOCAL Range Complex, with 44 percent occurring during the warm season as the whales spend time at feeding grounds in the Southern California Bight. 43 percent are predicted to occur in the cold season because the whales typically spend about 8 months at the feeding grounds before migrating farther south to breed in colder months. 94 percent of the behavioral, 97 percent of the temporary threshold shift, and 89 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Negligible effects are predicted from the training and testing activities involving air guns because less than one behavioral take is predicted per year.

On average, individuals in the Eastern North Pacific stock could be impacted a couple times a year. There are no non-auditory injuries predicted and the average individual risk of auditory injury is low. The risk of auditory injury may be reduced through activity-based mitigation because blue whales are moderately sightable.

A case study examined long-term effects of changing environmental conditions and exposure to military sonar for Eastern North Pacific blue whales on the SOCAL Range Complex based on the description of sonar use in the previous action (2018 Hawaii-Southern California Training and Testing EIS/OEIS). According to the model, only a ten-fold increase in sonar activity combined with a shift in geographical location to overlap with main feeding areas of blue whales would result in a moderate decrease in lifetime reproductive success. Even in such extreme instances, there was still no effect on survival (Pirotta et al., 2022).

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an auditory injury may experience minor energetic costs. Most predicted effects are temporary auditory effects that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to the stock are unlikely.

Additionally, the same hull-mounted active sonar systems present on ships homeported in the HCTT Study Area and elsewhere have been in common use for over 40 years. Blue whales have been feeding in the California Study Area for the past 40 years and there has been no evidence of any disruption to blue whale feeding caused by Navy training and testing activities. Recent information suggests blue whales in the Eastern North Pacific Stock have recovered and are at a stable level. In short, there has been no evidence to suggest any effect, let alone any significant impact, to blue whale feeding activity resulting from decades of Navy training and testing off California involving the use of sonar and other transducers. There is no evidence to suggest that limiting the use of sonar and other transducers in portions of the California Study Area that overlap with the revised blue whale BIAs would be beneficial to those behaviors. Therefore, the predicted temporary auditory effects on blue whales and behavioral responses by blue whales as they feed in the Study Area would be short-term and mild to moderate and are not expected to significantly disrupt feeding behaviors or impact overall species survivability.

K.4.1.3 Action Proponent Requirements for Area Specific Training and Testing

The portion of the revised blue whale BIAs within the California Study Area extends over 100 mi. from the coastline and encompasses every primary training site within the California Study Area. Spatially, blue whales may be present anywhere within the waters off California. Temporally, blue whales may be present for approximately 8 months of the year at feeding grounds in the Southern California Bight, mainly between June and November, before migrating farther south (Gulf of California) in colder months to breed.

The waters offshore of California have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like San Diego, CA.

The training and testing areas encompassed by the revised blue whale BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Southern California are not available elsewhere. They include the following: PMSR, the instrumented Southern California Offshore Anti-Submarine Warfare Range (SOAR); Shallow Water Training Range (SWTR); established helicopter sonar dipping areas, proximate to Naval Air Station North Island; Tanner Bank Minefield and mine training ranges; a sonobuoy test area; the Camp Pendleton Amphibious Assault Area; amphibious approach lanes; and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

Given the operating tempo requirements for maintaining continual cycles of training and testing in the California Study Area, rescheduling activities outside of the 6 months when blue whales would be accessing feeding grounds within the waters off California or reducing the number of training or testing activities during the warm season would not allow Navy to meet its readiness requirements. Similarly, Navy offshore instrumented ranges are typically used and scheduled for most of the year. There are no alternative instrumented ranges in the SOCAL Range Complex or PMSR, or elsewhere within close proximity to units homeported in Southern California, and there is insufficient excess capacity to avoid or reschedule training and testing cycles at these locations to occur outside the 6-months of the year when blue whales are feeding in the area.

K.4.1.4 Blue Whale Feeding Area Mitigation Assessment

As discussed in Section K.4.1.2.1. (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to blue whales would occur in the SOCAL Range Complex from training and testing activities involving sonar, split evenly between the warm and cold seasons. However, most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals. Scientific data does not support a conclusion that significant effects on blue whale feeding behavior are occurring from Navy training and testing activities. Therefore halting, reducing, or otherwise limiting the use of explosives, air guns, or sonar and other transducers in the area when blue whales may be generally present would not be effective at reducing effects on blue whale feeding activity.

As discussed in Section K.6 (Mitigation Areas to be Implemented), the existing California Large Whale Awareness Message Mitigation Area and Southern California Blue Whale Mitigation Area (Figure K-27), and the California Large Whale Real-Time Notification Mitigation Area, will continue to be implemented as they provide a benefit to blue whales when in the area feeding. In addition, the proposed Northern and Central California Large Whale Mitigation Areas (Figure K-27) would be implemented as described in Section K.6.1.1.1 (Northern and Central California Large Whale Mitigation Areas) to the benefit of multiple large whale species, including blue whales, when in the area.

K.4.2 Gray Whale Migratory and Reproductive Areas

K.4.2.1 Biological Considerations Applicable to the Gray Whale Migration and Reproduction Biologically Important Areas

NMFS recognizes two stocks of gray whales in the North Pacific: the Eastern North Pacific stock and the Western North Pacific stock (Weller et al., 2013). Both stocks could be present in the California Study Area during their northward and southward migrations (Mate et al., 2015a; Sumich & Show, 2011). The Western North Pacific Stock has previously been known as the Korean-Okhotsk population (Carretta et al., 2023). This stock is critically endangered, shows no apparent signs of recovery, and should be very rare in the California Study Area given their low abundance; however, gray whales from this stock are known to migrate along the West Coast (Calambokidis et al., 2024).

Gray whales are known to make one of the longest annual migrations of any mammal, 15,000–20,000 km roundtrip (Jefferson et al., 2015; Jones & Swartz, 2009). Eastern North Pacific gray whales begin their migration from breeding areas off Mexico and along the coast of North America in late fall through early spring to reach foraging areas by summer (Carretta et al., 2023; Urbán et al., 2021; Weller et al., 2012) and would only be present in the California Study Area during northbound and southbound migrations. A year-long (2013-2014) survey effort in the nearshore waters off San Diego within the HCTT Action Area encountered gray whales in January, February, and in the April-June timeframe (Graham & Saunders, 2015).

The timing of the October-July gray whale migrations that pass through the California Study Area can be loosely categorized into three phases (Calambokidis et al., 2015b; Jones & Swartz, 2009; Mate et al., 2013; Mate et al., 2015a; Mate & Urban-Ramirez, 2003; Rugh et al., 2008; Rugh et al., 2005; Urbán et al., 2021). Calambokidis et al. (2015b) noted these migration phases are not distinct; the timing for a phase may vary based on environmental variables, and that a migration phase typically begins with a rapid increase in migrating whales, followed by moderate numbers over a period of weeks, and then slowly tapering off. A southward migration from summer feeding areas includes all age classes as they migrate primarily to the nearshore waters and lagoons of Baja California, Mexico. During this southward migration from October through March, the whales generally are within 10 km of the coast (Calambokidis et al., 2015b) although there are documented exceptions where migrating gray whales have bypassed the coast by crossing sections of the open ocean (Mate et al., 2015a; Mate & Urban-Ramirez, 2003). In the HCTT Action Area, migrating gray whales may deviate farther from the mainland as some are routinely seen near the Channel Islands and to the west of San Clemente Island (Sumich & Show, 2011)

In 2015, four migratory BIAs were delineated off the U.S. West Coast for the Eastern North Pacific stock of gray whales (Calambokidis et al., 2015c). The four areas were defined by season as well as age and sex classes to capture the variation in migratory behavior of the species. Calambokidis et al. (2024) modified the BIA delineations by incorporating new data and historical sightings, focusing on regional differences in migratory behavior, considering that the Phase B northbound migration used by mother-calf pairs should also be treated as a reproductive BIA, and applying the new parent-child hierarchy to further define areas of use by migrating whales. The revised migratory BIAs are listed below in Table K-8 and shown in Figure K-22:

Table K-8: Gray Whale Revised BIAs

BIA Level	BIA Name	BIA Time Period	BIA Size (sq. km)
Parent	West Coast to Gulf of Alaska	June – November	167,103
Child	Southbound	November – February	70,112
Child	Northbound Phase A	January – May	65,048
Child	Northbound Phase B	March – May	51,949

The parent migratory BIA was revised from the original southbound BIA defined by Calambokidis et al. (2015c) and extended north to connect with the Gulf of Alaska migratory BIA (Wild et al., 2023). The revised BIA is also referred to as the transboundary migratory BIA. The southbound (child) BIA is for all age and sex classes and extends 10 km from shore off California (and broadens to 15 km off Oregon and 30 km off Washington). The Northbound Phase A (child) BIA, primarily for adults and juveniles, extends 8 km from shore off California, and broadens to 15 km off Oregon and 20 km off Washington. The Northbound Phase B (child) BIA is primarily for mother-calf pairs and extends 5 km from shore north of the Southern California Bight and falls entirely within the Northbound Phase A (child) BIA.

Calambokidis et al. (2024) noted that two satellite-tagged Western North Pacific gray whales were documented using migratory corridors off the U.S. West Coast; however, the data used to delineate the BIAs were almost entirely from gray whales in the Eastern North Pacific stock.

In addition to the migratory BIAs, a reproductive BIA was delineated to coincide with the Northbound Phase B (child) migratory BIA for mother-calf pairs (Figure K-23), and a feeding BIA, which is located north of the Action Area, off the coast of the Pacific Northwest.

Based on the identified migratory seasons, gray whales should occur off the California coast for most of the year with the exception of the July – October timeframe (Calambokidis et al., 2024; Calambokidis et al., 2015b).

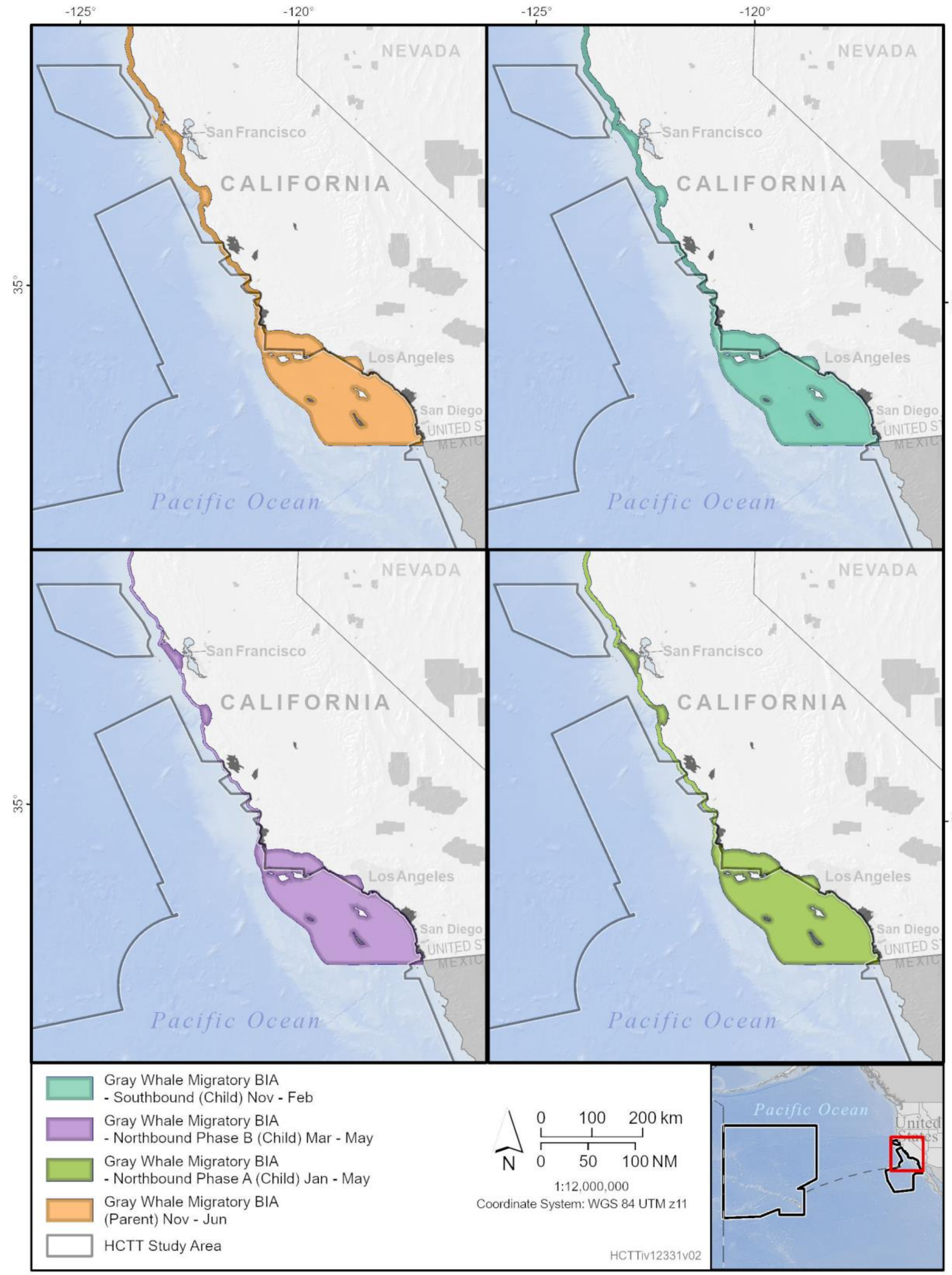

Figure K-20: Gray Whale Migratory BIAs Off California

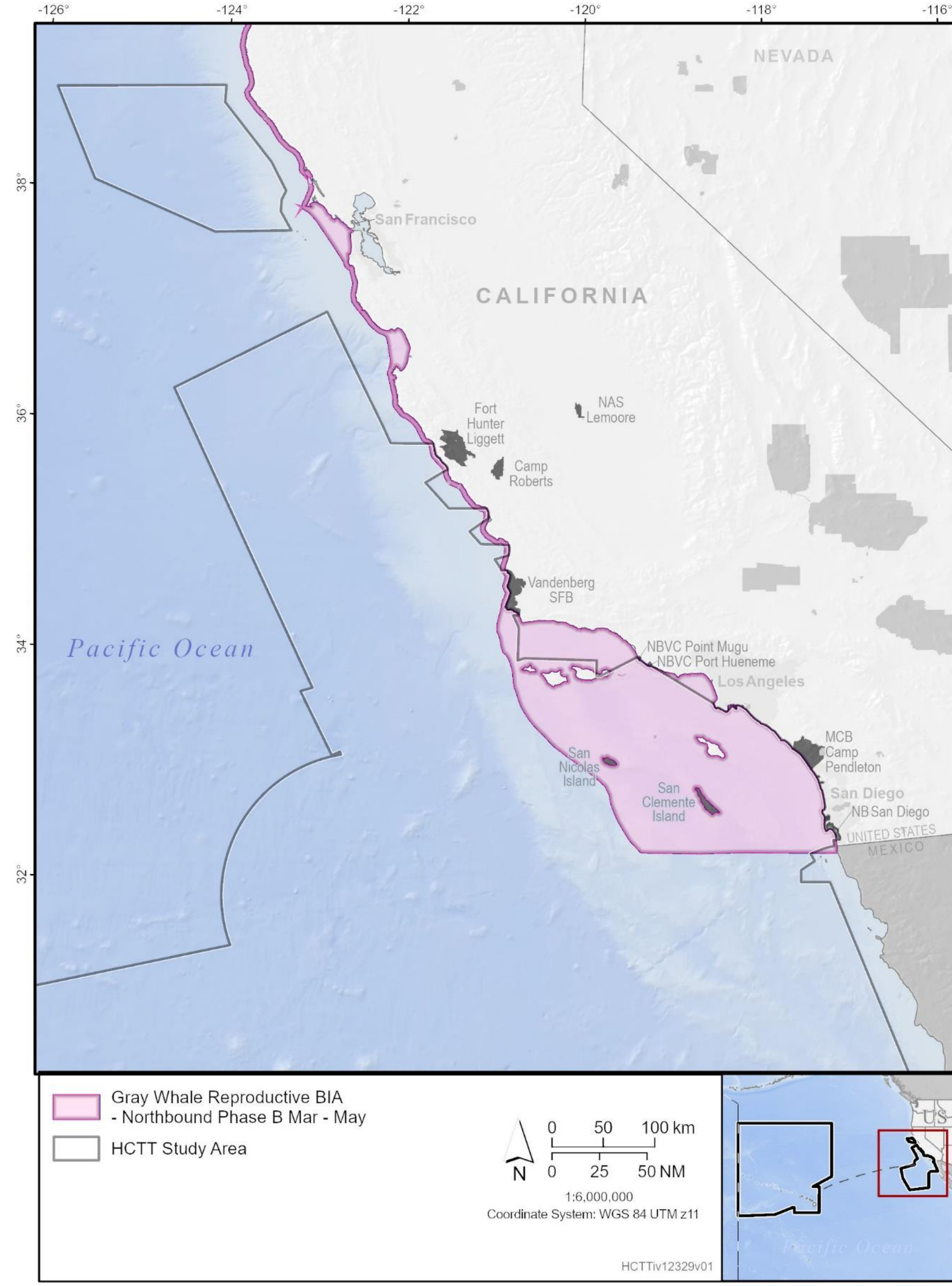

Figure K-21: Gray Whale Reproductive BIA Off California

K.4.2.2 Stressor Analysis

K.4.2.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting gray whales and their migration and reproductive behavior. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 97 percent of effects are predicted to occur in the SOCAL Range Complex during the cold season as the whales migrate north towards the Bering Sea to forage in the summer. 95 percent of the behavioral, 95 percent of the temporary threshold shift, and 77 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. No effects are predicted from the training and testing activities involving air guns.

On average, individuals in the Eastern North Pacific stock would be impacted less than once per year. The average risk of injury is very low, although it is likely that some auditory injuries could occur, particularly from sonar during anti-submarine warfare activities. The risk of injury for this stock of gray whales may be reduced through activity-based mitigation. The risk of repeated effects on individuals and consequences to populations from disturbances of individuals can be mediated by certain life history traits of a species. Gray whales are large capital breeders with a slow pace of life.

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an auditory injury may experience minor energetic costs. Most predicted effects are temporary auditory effects that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to the stock are unlikely.

Additionally, the same hull-mounted active sonar systems present on ships homeported in the HCTT Study Area and elsewhere have been in common use for over 40 years. Gray whales have been migrating directly through the California Study Area twice a year during the past 40 years and there has been no evidence of any disruption to gray whale migration or reproduction caused by Navy training and testing activities. During that time, gray whales in the Eastern North Pacific Stock have recovered to the point where they are no longer listed under the ESA. In short, there has been no evidence to suggest any effect, let alone any significant impact, to gray whale migration or reproduction activity resulting from decades of Navy training and testing off California involving the use of sonar and other transducers. There is no evidence to suggest that limiting the use of sonar and other transducers in portions of the California Study Area that overlap with the revised gray whale migratory and reproductive BIAs would be beneficial to those behaviors. Therefore, the predicted temporary auditory effects on gray whales and behavioral responses by gray whales as they migrate through the Study Area, almost exclusively on their northward migration, would be short-term and mild to moderate and are not expected to significantly disrupt migratory or reproductive behaviors.

K.4.2.3 Action Proponent Requirements for Area-Specific Training and Testing

The portion of the revised gray whale BIAs within the California Study Area extends over 100 mi. from the coastline and encompasses every primary training site within the California Study Area. Spatially, migrating gray whales may be present anywhere within the waters off California. Temporally, gray whales may be present most of the year, migrating north January through May and south November through February. While not illustrated or addressed in Calambokidis et al. (2024) these migration routes extend south of the U.S. border with Mexico along the Baja California Peninsula, Mexico and mostly shoreward of the SOCAL Range Complex (U.S. Department of the Navy, 2024).

The waters offshore of California have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like San Diego, CA.

The training and testing areas encompassed by the revised gray whale BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Southern California are not available elsewhere. They include the following: PMSR, the instrumented SOAR; SWTR; established helicopter sonar dipping areas, proximate to Naval Air Station North Island; Tanner Bank Minefield and mine training ranges; a sonobuoy test area; the Camp Pendleton Amphibious Assault Area; amphibious approach lanes; and other complex bathymetric features necessary to challenge anti-submarine warfare skills. South of the U.S. – Mexico border, the migration route overlaps the Tactical Maneuvering Areas and Missile Range Areas located offshore of the gray whale calving areas adjacent to the Baja California Peninsula.

Given the operating tempo requirements for maintaining continual cycles of training and testing in the California Study Area, rescheduling activities outside of the 5 months of the gray whale migration (cold season when most predicted effects would occur) or reducing the number of training or testing activities during that migration season would not allow Navy to meet its readiness requirements. Similarly, Navy offshore instrumented ranges are typically used and scheduled for most of the year. There are no alternative instrumented ranges in the SOCAL Range Complex or PMSR, or elsewhere within close proximity to units homeported in Southern California, and there is insufficient excess capacity to avoid or reschedule training and testing cycles at these locations to occur outside the 5-months of the year when gray whales are migrating through the area.

K.4.2.4 Gray Whale Migration and Reproduction Area Geographic Mitigation Assessment

As discussed in Section K.4.2.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to gray whales would occur in the SOCAL Range Complex from training and testing activities involving sonar during the cold season as the whales migrate north towards the Bering Sea to forage in the summer. However, most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals. Scientific data does not support a conclusion that significant effects on gray whale migratory or reproductive behavior are occurring from Navy training and testing activities. Therefore halting, reducing, or otherwise limiting the use of explosives, air guns, or sonar and other transducers in the area when gray whales may be generally present would not be effective at reducing effects on gray whale migration or reproduction.

Navy training and testing require the use of the California Study Area throughout the year. Restricting use of that area when gray whales are present would have significant effects on the Navy mission and readiness requirements. Geographic mitigation would not be effective at reducing significant effects on gray whale migration and reproduction within the California Study Area since none are occurring regardless of implementing mitigation. Therefore, based on the analysis presented above, additional specific geographic mitigation for gray whales is not recommended beyond what is currently being implemented.

As discussed in Section K.6 (Mitigation Areas to be Implemented), the existing California Large Whale Awareness Message Mitigation Area (Figure K-27) and the California Large Whale Real-Time Notification Mitigation Area will continue to be implemented as they provide a benefit to gray whales when migrating through the area or when engaged in reproductive activity in the area. In addition, the proposed Northern and Central California Large Whale Mitigation Areas (Figure K-27) would be implemented as described in Section K.6.1.1.1 (Northern and Central California Large Whale Mitigation Areas) to the benefit of multiple large whale species, including gray whales, when in the area.

K.4.3 Fin Whale Feeding Areas

K.4.3.1 Biological Considerations Applicable to the Fin Whale Feeding Areas

NMFS recognizes three stocks of fin whales in the North Pacific, all of which are listed as endangered under the ESA: the Northeast Pacific stock in Alaska; the California, Oregon, and Washington stock; and the Hawaii stock (Carretta et al., 2023; Young, 2023). Although some fin whales migrate seasonally (Falcone et al., 2011; Mate et al., 2016; Mate et al., 2015b), only the California, Oregon, and Washington stock could be present in the California Study Area.

Fin whales calls have frequently been recorded in waters within the California Study Area (Barlow & Forney, 2007; Campbell et al., 2015; Jefferson et al., 2014; Mate et al., 2016, 2017; Mizroch et al., 2009; Širović et al., 2016; Širović et al., 2004; Širović et al., 2015; Smultea & Jefferson, 2014). As demonstrated by satellite tags and discovery tags[3], fin whales make long-range movements along the entire U.S. west coast (Falcone et al., 2011; Mate et al., 2015b; Mizroch et al., 2009). However, photo-identification studies of fin whales off the U.S. west coast suggest that not all fin whales undergo long seasonal migrations, but instead make short seasonal trips in spring and fall (Falcone et al., 2011; Falcone & Schorr, 2011).

Based on predictive habitat-based density models derived from line-transect survey data collected between 1991 and 2018 off the U.S. west coast, relatively high densities of fin whales are predicted off southern California during the summer and fall with fewer occurring in winter and spring (Barlow et al., 2009a; Becker et al., 2020; Becker et al., 2012a; Becker et al., 2022a; Calambokidis et al., 2024; Forney et al., 2012). Aggregations of fin whales are present year-round in southern and central California (Campbell et al., 2015; Douglas et al., 2014; Forney & Barlow, 1998; Forney et al., 1995; Jefferson et al., 2014), although their distribution shows seasonal shifts. Sightings from year-round surveys off southern California from 2004 to 2013 show fin whales farther offshore in summer and fall and closer to shore in winter and spring (Campbell et al., 2015; Douglas et al., 2014).

[3] As a means of data collection starting in the 1930s, discovery tags having a serial number and return address were shot into the blubber of the whale by scientists and if that whale was later harvested by the whaling industry and the tag "discovered" during flensing, it could be sent back to the researchers providing data on the movement of individual whales.

During the first phase of BIA development, the best available science was not sufficient to define BIAs for fin whale behavior off California (Calambokidis et al., 2015b). A combination of sightings, satellite tagging data, and habitat-based distribution models has since enabled researchers to define fin whale feeding BIAs along the west coast (Calambokidis et al., 2024) (Figure K-24). The parent BIA encompasses approximately 315,000 km^2 and 38 percent of the U.S. West Coast EEZ and is the largest BIA designated off the West Coast. The core BIA is 49 percent of the parent BIA (approximately 155,000 km^2) (Calambokidis et al., 2024). The BIAs are in effect from June through November.

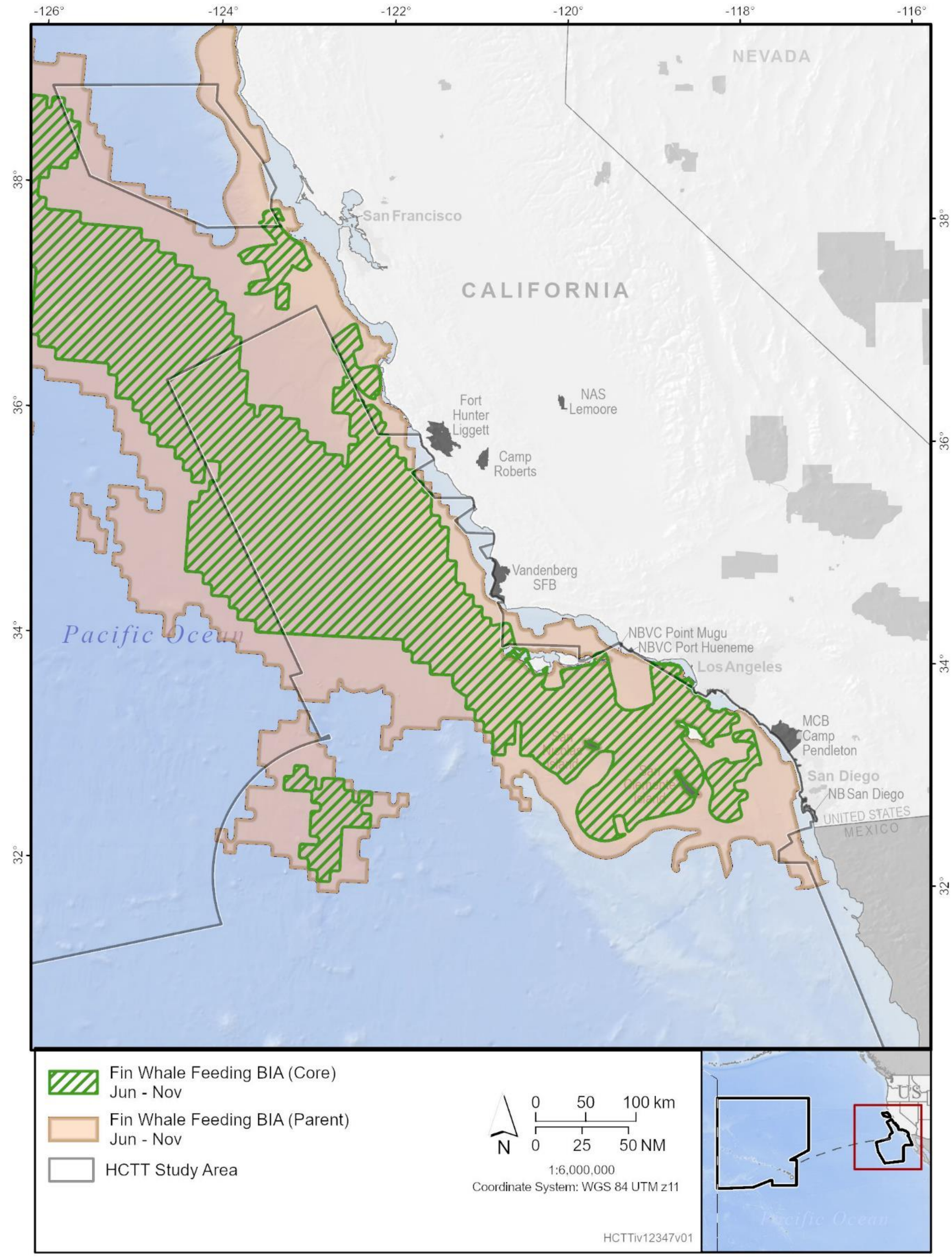

Figure K-22: Fin Whale Feeding BIAs Off California

K.4.3.2 Stressor Analysis

K.4.3.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting fin whales and their feeding behavior. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 51 percent of effects are predicted to occur in the SOCAL Range Complex, with 28 percent occurring during the warm season and 23 percent occurring during the cold season. 23 percent and 25 percent of effects are predicted to occur in PMSR and the NOCAL Range complex, respectively, with the vast majority of those effects occurring during the warm season while fin whales spend time at feeding grounds off the U.S. West Coast. 95 percent of the behavioral, 98 percent of the temporary threshold shift, and 80 percent of the acoustic injury takes would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Negligible effects are predicted from the training and testing activities involving air guns because less than one behavioral and temporary threshold shift takes are predicted per year.

On average, individuals in the California, Oregon, and Washington stock could be impacted about once a year. The average risk of injury is low, although auditory injuries are predicted for the California, Oregon, and Washington stock. The stock's risk of auditory injury from Navy testing sonar is also low (less than one) in any year, but an auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). The impact from Navy training explosives is very low (less than one) in any year, but a non-auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach. The risk of these injuries may be reduced through activity-based mitigation.

On average, the limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an injury may experience minor energetic costs. Most predicted effects are temporary auditory effects that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to the stock are unlikely. Therefore, long-term consequences to fin whales are unlikely.

Additionally, the same hull-mounted active sonar systems present on ships homeported in the HCTT Study Area and elsewhere have been in common use for over 40 years. Fin whales have been feeding in the California Study Area for the past 40 years and there has been no evidence of any disruption to fin whale feeding caused by Navy training and testing activities. In short, there has been no evidence to suggest any effect, let alone any significant impact, to fin whale feeding activity resulting from decades of Navy training and testing off California involving the use of sonar and other transducers. There is no evidence to suggest that limiting the use of sonar and other transducers in portions of the California

Study Area that overlap with the revised fin whale BIAs would be beneficial to those behaviors. Therefore, the predicted temporary auditory effects on fin whales and behavioral responses by fin whales as they feed in the Study Area would be short-term and mild to moderate and are not expected to significantly disrupt feeding behaviors or impact overall species survivability.

K.4.3.3 Action Proponent Requirements for Area-Specific Training and Testing

The portion of the fin whale BIAs within the California Study Area extends over 100 mi. from the coastline and encompasses every primary training site within the California Study Area. Spatially, fin whales may be present anywhere within the waters off California. Temporally, fin whales may be present most of the year, but would most likely be present within the waters off California while at feeding grounds between the months of June and November.

The waters offshore of California have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like San Diego, CA.

The training and testing areas encompassed by the fin whale BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Southern California are not available elsewhere. They include the following: NOCAL Range Complex, PMSR, the instrumented SOAR; SWTR; established helicopter sonar dipping areas, proximate to Naval Air Station North Island; Tanner Bank Minefield and mine training ranges; a sonobuoy test area; the Camp Pendleton Amphibious Assault Area; amphibious approach lanes; and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

Given the operating tempo requirements for maintaining continual cycles of training and testing in the California Study Area, rescheduling activities outside of the 6 months when fin whales would be accessing feeding grounds within the waters off California (warm season when most predicted effects would occur) or reducing the number of training or testing activities during the warm season would not allow Navy to meet its readiness requirements. Similarly, Navy offshore instrumented ranges are typically used and scheduled for most of the year. There are no alternative instrumented ranges in the SOCAL Range Complex or PMSR, or elsewhere within close proximity to units homeported in Southern California, and there is insufficient excess capacity to avoid or reschedule training and testing cycles at these locations to occur outside the 6-months of the year when fin whales are feeding in the area.

K.4.3.4 Fin Whale Feeding Area Geographic Mitigation Assessment

As discussed in Section K.4.3.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that approximately 50 percent of effects to fin whales would occur in the SOCAL Range Complex from training and testing activities involving sonar during either the warm or cold season. The other 50 percent of effects are split evenly between PMSR and the NOCAL Range Complex and would predominantly occur during the warm season in both areas. However, the overwhelming majority of effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals. Scientific data does not support a conclusion that significant effects on fin whale feeding behavior are occurring from Navy training and testing activities. Therefore halting, reducing, or otherwise limiting the use of explosives, air guns, or sonar and other transducers in the area when fin whales may be generally present would not be effective at reducing effects on fin whale feeding activity.

Navy training and testing require the use of the California Study Area throughout the year. Restricting use of that area when fin whales are present would have significant effects on the Navy mission and readiness requirements. Geographic mitigation would not be effective at reducing significant effects on fin whale feeding activity within the California Study Area since none are occurring regardless of implementing mitigation. Therefore, based on the analysis presented above, additional specific geographic mitigation for fin whales is not recommended beyond what is currently being implemented.

As discussed in Section K.6 (Mitigation Areas to be Implemented), the existing California Large Whale Awareness Message Mitigation Area (Figure K-27) and the California Large Whale Real-Time Notification Mitigation Area will continue to be implemented as they provide a benefit to fin whales when feeding in the area. In addition, the proposed Northern and Central California Large Whale Mitigation Areas (Figure K-27) would be implemented as described in Section K.6.1.1.1 (Northern and Central California Large Whale Mitigation Areas) to the benefit of multiple large whale species, including fin whales, when in the area.

K.4.4 HUMPBACK WHALE FEEDING AREAS

K.4.4.1 Biological Considerations Applicable to the Humpback Whale Feeding Areas

NMFS recognizes 14 DPSs of humpback whales worldwide, with four DPSs occurring in the North Pacific (Carretta et al., 2023). Humpback whales that occur seasonally in the HCTT Study Area are from three of the four DPSs identified by low-latitude wintering habitats: Hawaii DPS, Mexico DPS, and Central America DPS (Bettridge et al., 2015; Carretta et al., 2023; National Marine Fisheries Service, 2016b; Young, 2023). The three previously defined stocks of North Pacific humpback whales did not align with the DPS structure, so NMFS reevaluated the stock structure to incorporate both the locations of foraging and overwintering areas and population demographics. As a result, NMFS defined five stocks in the North Pacific:

6. Central America/Southern Mexico-California-Oregon-Washington stock
7. Mainland Mexico-California-Oregon-Washington stock
8. Mexico-North Pacific stock
9. Hawaii stock
10. Western North Pacific stock

Of the five stocks listed above, two are found in the California Study Area: Central America/Southern Mexico-California-Oregon-Washington and Mainland Mexico-California-Oregon-Washington. Humpback whales from the Mainland Mexico-California-Oregon-Washington stock, which are listed as threatened under the ESA, migrate to summer foraging habitat from California northward along the U.S. West Coast, Canada, Alaska, into the Bering Sea, and off the coast of Russia. Humpback whales from the Central America/Southern Mexico-California-Oregon-Washington stock, which are listed as endangered under the ESA, forage in waters off California and the Pacific Northwest (Carretta et al., 2023).

Off the U.S. west coast, humpback whales are more abundant in shelf and slope waters (<2,000 m deep), and are often associated with areas of high productivity (Becker et al., 2020; Becker et al., 2010; Becker et al., 2012b; Becker et al., 2014; Forney et al., 2012; Redfern et al., 2013). While most humpback whale sightings are in nearshore and continental shelf waters, humpback whales frequently travel through deep oceanic waters during migration (Calambokidis et al., 2001; Clapham, 2000; Clapham & Mattila, 1990; Mate et al., 1997). Humpback whales migrating from breeding grounds in Central America to feeding grounds at higher latitudes may cross the California Study Area including the Transit Corridor located farther offshore. While most humpback whales migrate, data from surveys conducted between 2004 and 2013 show that humpback whales occur year-round off southern California (Campbell et al., 2015). Peak occurrence during migration occurs in the California Study Area from December through June (Calambokidis et al., 2015a). During late summer, more humpback whales are sighted north of the Channel Islands, and limited occurrence is expected south of the northern Channel Islands (San Miguel, Santa Rosa, Santa Cruz) (Carretta et al., 2010). Based on aerial survey data collected between 2008 and 2012 in the California Study Area, Smultea and Jefferson (2014) determined that humpback whales ranked eighth in relative occurrence and concluded that this species has clearly increased their representation in the Navy's SOCAL Range Complex over the last several decades

Two BIAs (parent and core) for humpback whale feeding behavior have been identified in the California Study Area (Figure K-25). The parent BIA encompasses approximately 140,000 km^2 equivalent to 20% of the area of the U.S. West Coast EEZ, and the core BIA encompasses approximately 38,000 km^2 (Calambokidis et al., 2024). The BIAs are only in effect from March through November when foraging humpback whales are expected to be present. The core BIA is 27% of the parent BIA but is still a little over 50% larger than the previous Humpback Whale feeding BIAs defined in 2015.

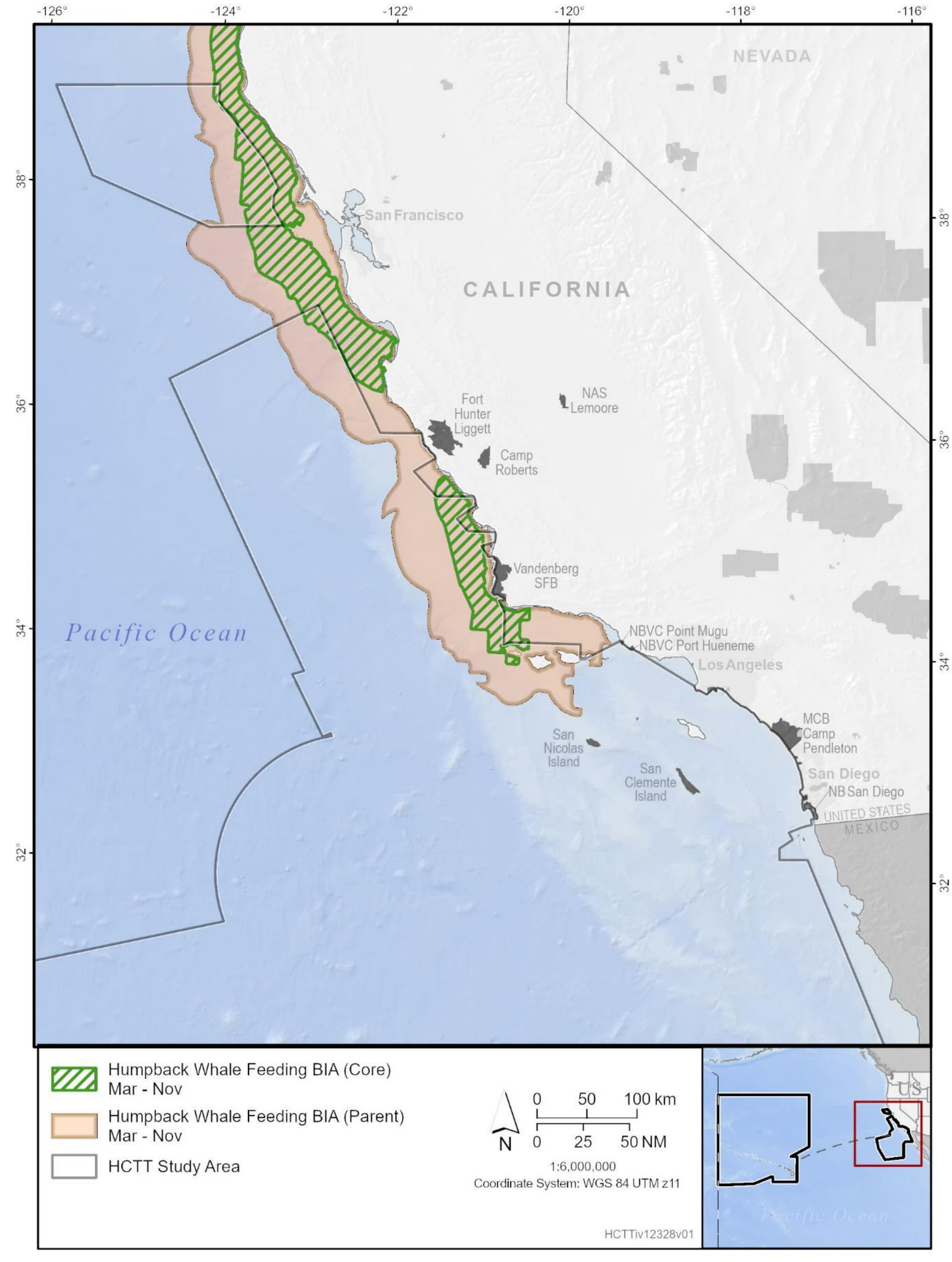

Figure K-23: Humpback Whale Feeding BIAs Off California

K.4.4.2 Stressor Analysis

K.4.4.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting humpback whales and their feeding behavior. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 51 percent of effects to the Central America/Southern Mexico-California-Oregon-Washington stock are predicted to occur in the SOCAL Range Complex during the cold season, and 5 percent would occur during the warm season. 14 percent of effects would occur in PMSR during the cold season, 6 percent would occur during the warm season, and 17 percent would occur in the NOCAL Range Complex during the warm season with 6 percent occurring during the cold season. 94 percent of the behavioral, 97 percent of the temporary threshold shift, and 89 percent of the acoustic injury takes to the Central America/Southern Mexico-California-Oregon-Washington stock would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIAs, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

For the Mainland Mexico-California-Oregon-Washington stock, 52 percent of effects are predicted to occur in the SOCAL Range Complex during the cold season, and 6 percent would occur during the warm season. 12 percent of effects would occur in PMSR during the cold season, 6 percent would occur during the warm season, and 17 percent would occur in the NOCAL Range Complex during the warm season with 6 percent occurring during the cold season. The remaining 1 percent of effects would occur on the high seas outside of the Study Area. 95 percent of the behavioral, 96 percent of the temporary threshold shift, and 91 percent of the acoustic injury takes to the Mexico-North Pacific and Mainland Mexico-California-Oregon-Washington stocks would result from training and testing activities involving sonar.

Any exposure to an explosive stressor would be highly infrequent as documented from multiple years of Navy-funded passive acoustic monitoring (Debich et al., 2014) and variable individual unit level training schedules with prolonged periods of absence at sea between successive events. In addition, modeled takes from training and testing activities involving explosives make up a small percentage of the overall takes as shown in the Acoustic and Explosive Effects Analysis Report. Negligible effects are predicted from the training and testing activities involving air guns because less than one behavioral and temporary threshold shift takes are predicted per year.

On average, individuals in the Central America/Southern Mexico-California-Oregon-Washington and Mainland Mexico-California-Oregon-Washington stocks humpback whales could be impacted about once a year. These effects are most likely to occur in the cold season when humpbacks would be feeding along California within the Study Area. The average risk of injury is low, although it is likely that some auditory injuries could occur, particularly from sonar activities during Navy training events. The risk of a single non-auditory injury from testing explosives is low (less than one) in any year for the Mainland Mexico-California-Oregon-Washington stock, but a non-auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). This auditory injury is shown in the maximum year of effects per the summation and rounding approach discussed above. The risk of injury may be reduced through activity-based mitigation.

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an auditory or non-auditory injury may experience minor energetic costs. Most predicted effects are temporary auditory effects that are unlikely to contribute to any long-term effects to individuals. Long-term consequences to the stocks are unlikely.

Additionally, the same hull-mounted active sonar systems present on ships homeported in the HCTT Study Area and elsewhere have been in common use for over 40 years. Humpback whales have been feeding in the California Study Area during the past 40 years and there has been no evidence of any disruption to humpback feeding behavior caused by Navy training and testing activities. In addition, humpback whales abundance off the U.S. west coast has appeared to increase at a rate of approximately 8% per year since 1989 (Calambokidis & Barlow, 2020). However, since multiple humpback whale stocks occur in these waters, this overall trend cannot be assumed for each of the individual stocks. In short, there has been no evidence to suggest any effect, let alone any significant impact, to humpback whale feeding activity resulting from decades of Navy training and testing off California involving the use of sonar and other transducers. There is no evidence to suggest that limiting the use of sonar and other transducers in portions of the California Study Area that overlap with the revised humpback whale feeding BIAs would be beneficial to those behaviors. Therefore, the predicted temporary auditory effects on humpback whales and behavioral responses by humpback whales as they feed within the Study Area would be short-term and mild to moderate and are not expected to significantly disrupt feeding behaviors.

K.4.4.3 Action Proponent Requirements for Area-Specific Training and Testing

The portion of the humpback whale BIAs within the California Study Area extends over 100 mi. from the coastline and encompasses some training sites within the California Study Area. Spatially, humpback whales may be present anywhere within the waters off California. Temporally, humpback whales may be present most of the year, but would most likely be present within the waters off California while at feeding grounds within the California Study Area between the months of March and November.

The waters offshore of California have supported naval training and testing for decades and are used almost daily by naval forces to conduct all phases of training and testing, from basic unit level events to complex major training exercises. Military readiness depends on access to the training and testing areas in close proximity to force concentration areas like San Diego, CA.

The training and testing areas encompassed by the humpback whale BIAs provide critical capabilities necessary to conduct military readiness activities by forces homeported in Southern California are not available elsewhere. They include the following: NOCAL Range Complex, PMSR, amphibious approach lanes, and other complex bathymetric features necessary to challenge anti-submarine warfare skills.

Given the operating tempo requirements for maintaining continual cycles of training and testing in the California Study Area, rescheduling activities outside of the 9 months when humpback whales would be accessing feeding grounds within the waters off California or reducing the number of training or testing activities during the cold season when the majority of effects would occur would not allow Navy to meet its readiness requirements. Similarly, Navy offshore instrumented ranges are typically used and scheduled for most of the year. There are no alternative instrumented ranges in the SOCAL Range Complex or PMSR, NOCAL Range Complex, or elsewhere within close proximity to units homeported in Southern California, and there is insufficient excess capacity to avoid or reschedule training and testing cycles at these locations to occur outside the 9-months of the year when humpback whales are feeding in the area.

K.4.4.4 Humpback Whale Feeding Area Geographic Mitigation Assessment

As discussed in Section K.4.4.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that approximately 58 percent of effects to humpback whales would occur in the SOCAL Range Complex from training and testing activities involving sonar during either the warm or cold season. However, the revised humpback whale feeding BIA does not overlap the SOCAL Range Complex. The other approximately 42 percent of effects are split relatively evenly between PMSR and the NOCAL Range Complex, which do overlap the BIA, and would occur during both the warm and cold season in both areas. The overwhelming majority of effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals. Scientific data does not support a conclusion that significant effects on humpback whale feeding behavior are occurring from Navy training and testing activities. Therefore halting, reducing, or otherwise limiting the use of explosives, air guns, or sonar and other transducers in the area when humpback whales may be generally present would not be effective at reducing effects on humpback whale feeding activity.

Navy training and testing require the use of the California Study Area throughout the year. Restricting use of that area when humpback whales are present would have significant effects on the Navy mission and readiness requirements. Geographic mitigation would not be effective at reducing significant effects on humpback whale feeding activity within the California Study Area since none are occurring regardless of implementing mitigation. Therefore, based on the analysis presented above, additional specific geographic mitigation for humpback whales is not recommended beyond what is currently being implemented.

As discussed in Section K.6 (Mitigation Areas to be Implemented), the existing California Large Whale Awareness Message Mitigation Area (Figure K-27) and the California Large Whale Real-Time Notification Mitigation Area will continue to be implemented as they provide a benefit to humpback whales when feeding in the area. In addition, the proposed Northern and Central California Large Whale Mitigation Areas (Figure K-27) would be implemented as described in Section K.6.1.1.1 (Northern and Central California Large Whale Mitigation Areas) to the benefit of multiple large whale species, including humpback whales, when in the area.

K.4.5 HARBOR PORPOISE SMALL AND RESIDENT POPULATION AREA

K.4.5.1 Biological Considerations Applicable to the Harbor Porpoise Small and Resident Population Area

Calambokidis et al. (2024) defined two non-hierarchical small and resident BIAs for the Monterey Bay and the Morro Bay stocks of harbor porpoise off California (Figure K-26). The Morro Bay BIA is 4,255 km^2 in size and the Monterey Bay BIA is 3,455 km^2 in size; both encompass waters from land to the 200-meter isobath within the defined ranges for the respective stocks, and are identical in size to the original BIAs defined in 2015 (Calambokidis et al., 2015c).

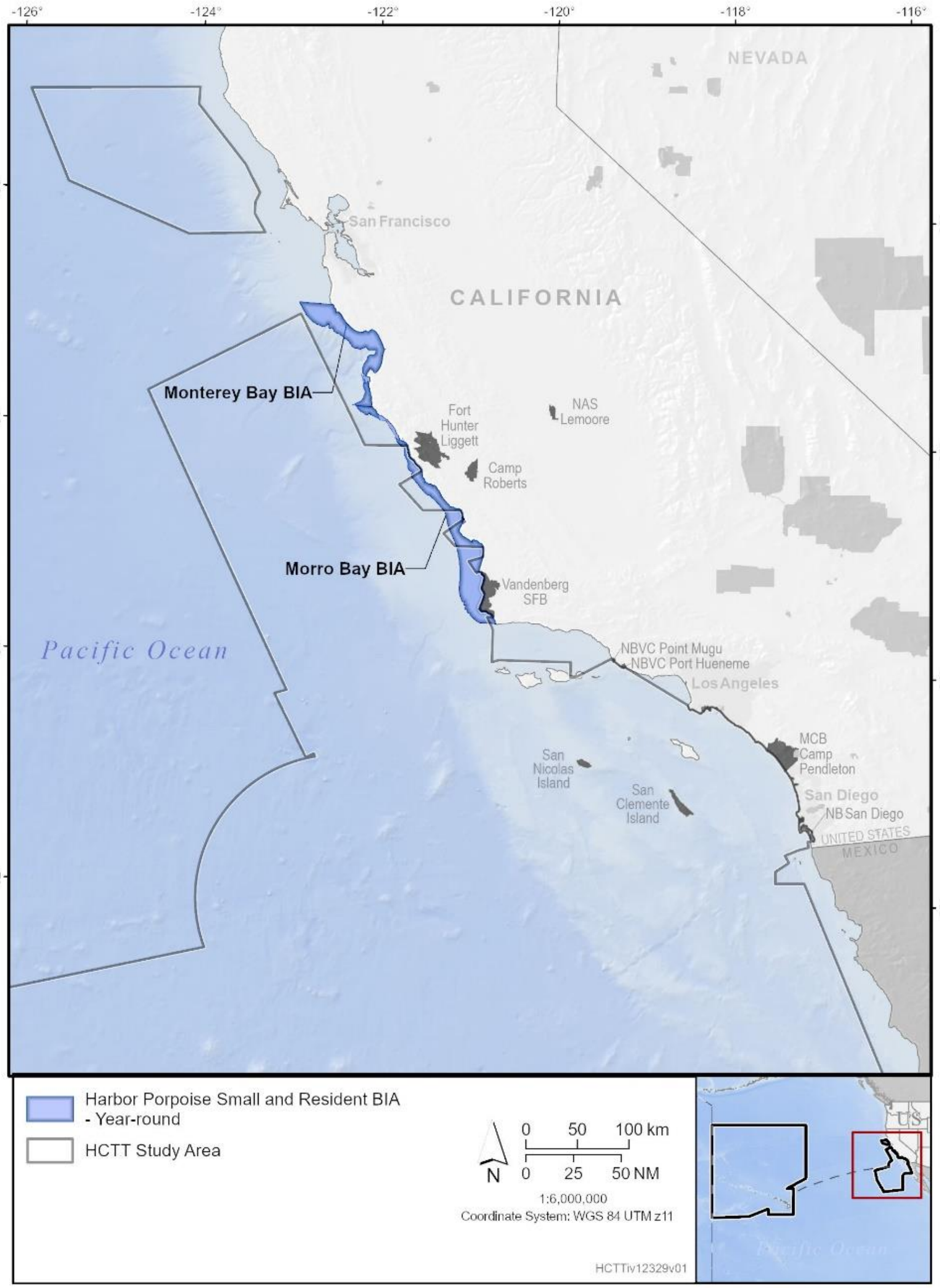

Figure K-24: Harbor Porpoise Small and Resident BIA Off California

K.4.5.2 Stressor Analysis

K.4.5.2.1 Explosives, Air Guns, and Sonar and Other Transducers

Explosives, air guns, and sonar and other active acoustic transducers create underwater acoustic energy potentially impacting the Monterey Bay and Morro Bay stocks of the harbor porpoise. Model-predicted effects from these stressors are presented in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

As shown in the Acoustic and Explosive Effects Analysis Report, 71 percent of effects to the Monterey Bay stock are predicted to occur in NOCAL Range Complex during the cold season, and the remaining 29 percent would occur in the same area during the warm season. Approximately 100 percent of effects were modeled to only result in behavioral takes, and less than one temporary threshold shift take would occur annually. No acoustic injury, physical injury, or mortality takes are expected. Additionally, approximately 100 percent of the behavioral takes to the Monterey Bay stock would result from training and testing activities involving sonar. For the quantitative analysis of effects to the species within the revised BIA, please see the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS).

For the Morro Bay stock, 73 percent of effects are predicted to occur in PMSR during the cold season, with 26 percent occurring during the warm season. The remaining one percent of effects would occur in the NOCAL Range Complex during the cold season. 98 percent of the behavioral, 22 percent of the temporary threshold shift, and 1 percent of the acoustic injury takes to the Morro Bay stock would result from training and testing activities involving sonar. The majority of temporary threshold shift and acoustic injury takes would result from training and testing activities involving explosives.

On average, individuals in the Morro Bay stock would be impacted about once per year and individuals in the Monterey Bay stock would be impacted less than once per year. The average risk of injury is negligible for both stocks, although injuries are predicted for the Morro Bay stock. The risk of a single non-auditory injury from explosive testing is low (less than one) in any year for the Morro Bay stock, but a non-auditory injury is shown in the maximum year of effects due to summing risk across seven years and following the rounding approach discussed in Section 2.4 (Species Impact Assessments) of the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS). Therefore, the risk of a non-auditory injury from explosives, is unlikely for the Morro Bay stock of harbor porpoises. The risk of auditory or non-auditory injury may be reduced through activity-based mitigation.

The limited instances of predicted behavioral and non-injurious auditory effects are unlikely to result in any long-term effects to individuals, although individuals who suffer an auditory injury in the Morro Bay stock may experience minor energetic costs. Long-term consequences to the stock are unlikely.

K.4.5.3 Action Proponent Requirements for Area-Specific Training and Testing

The portion of the harbor porpoise BIAs within the California Study Area do not extend beyond 50 nautical miles from the coastline and have limited overlap with training sites within the California Study Area. Spatially, harbor porpoises may be present within the nearshore coastal and inland waters off California north of Point Conception. Temporally, harbor porpoises may be present year-round.

The training and testing areas encompassed by the harbor porpoise BIAs are relatively small but do provide critical water space (i.e., amphibious approach lanes) necessary to conduct amphibious training by forces from sea to inland military ranges in Central California (e.g., Fort Hunter Liggett and Camp Roberts). There are no alternate routes for amphibious forces to access the shore near the inland ranges.

K.4.5.4 Harbor Porpoise Small and Resident Area Geographic Mitigation Assessment

As discussed in Section K.4.5.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that the overwhelming majority of effects to the Monterey Bay and Morro Bay stocks of the harbor porpoise would occur in the NOCAL Range Complex and PMSR from training and testing activities involving sonar during the cold season. However, most effects are expected to be behavioral and non-injurious and are unlikely to result in any long-term effects to individuals. Scientific data does not support a conclusion that significant effects on harbor porpoises are occurring from Navy training and testing activities. Therefore halting, reducing, or otherwise limiting the use of explosives, air guns, or sonar and other transducers in the area when harbor porpoises may be generally present would not be effective at reducing effects on harbor porpoises.

Navy training and testing require the use of the California Study Area throughout the year. Restricting use of the area overlapped by the harbor porpoise BIAs when harbor porpoises are present would have significant effects on the Navy mission and readiness requirements. Geographic mitigation would not be effective at reducing significant effects on harbor porpoises within the California Study Area since none are occurring regardless of implementing mitigation. Therefore, based on the analysis presented above, geographic mitigation for harbor porpoises is not being proposed.

K.4.6 Killer Whale Small and Resident Population Area

K.4.6.1 Biological Considerations Applicable to the Killer Whale Small and Resident Population Area

NMFS recognizes eight killer whale stocks in the North Pacific U.S. Exclusive Economic Zone, three of which occur in the California Study Area: the West Coast Transient stock, the Eastern North Pacific Offshore stock, and the Eastern North Pacific Southern Resident stock (Carretta et al., 2023). For the Eastern North Pacific Southern Resident stock, Calambokidis et al. (2024) defined a small and resident BIA (parent and core) off the U.S. West Coast extending from Washington State south to Point Sur, California. Only the parent BIA is located within or adjacent to the Action Area (Figure K-27); the core BIA is north of the Action Area off the coast of Washington State. The BIA is the same spatial extent as the designated critical habitat for Southern Resident killer whales. Three separate pods comprise the Southern Resident stock, identified as the J, K, and L pods (Ford et al., 2000). The Southern Resident killer whale stock or DPS is listed as endangered under the ESA listed.

Southern Resident killer whales have seasonal shifts in distribution from the inland waters of the Salish Sea and Puget Sound in Washington and British Columbia to locations that can be up to hundreds of miles from Washington waters both north (as far as Southeast Alaska) or south as far as central California (Carretta et al., 2023; National Marine Fisheries Service, 2021). Of the three pods, the K and L pods appear to have a more extensive and seasonally variable offshore coastal distribution, with rare sightings as far south as Monterey Bay and central California in recent years; and the L pod has been observed in in Chatham Strait, Southeast Alaska (Hanson et al., 2017; National Marine Fisheries Service, 2021).

To better predict the pattern of distribution of the endangered Southern Resident killer whales off the Washington, Oregon, and Northern California coasts, researchers integrated visual sightings, location data obtained between 2012 and 2016 from satellite-tagged Southern Resident killer whales, and acoustic detections from underwater hydrophones obtained from 6 to 13 recorders deployed from 2011 to 2015 off the Washington, Oregon, and California coast (Hanson et al., 2018; U.S. Department of the Navy, 2018). Along the Pacific coast, the distribution of satellite-tag locations confirms that Southern

Resident killer whales generally inhabit nearshore waters over the continental shelf in waters less than 200 m deep and typically within 34 km from shore (Hanson et al., 2017). Over multiple years the data revealed that the killer whales spent the greatest amount of time near the mouth of the Columbia River and off Westport, Washington, north of the California Study Area (Hanson et al., 2018; Hanson et al., 2017; U.S. Department of the Navy, 2018). Based on the Hanson et al. (2018) analyses, members of the K and L pods may occur within the northern coastal portion of California Study Area from January to May.

Their seasonal range and preference for nearshore habitat reduces the likelihood that Southern Resident killer whales would occur in the Study Area, and, furthermore, that their occurrence would be limited to the southeasternmost portion of the NOCAL Range Complex and inshore of the PMSR in winter and early spring.

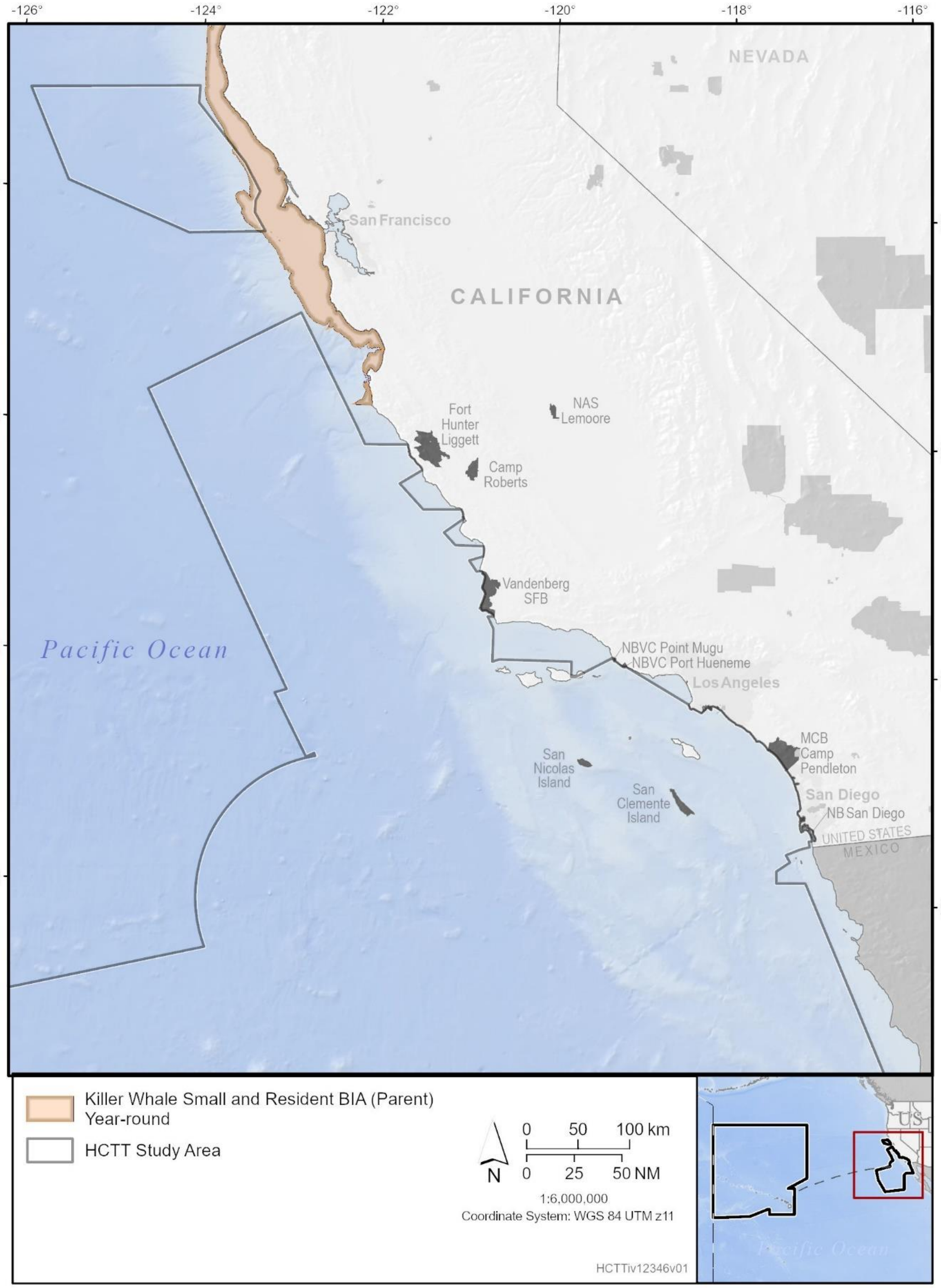

Figure K-25: Killer Whale Small and Resident BIA Off California

K.4.6.2 Stressor Analysis

K.4.6.2.1 Explosives, Air Guns, and Sonar and Other Transducers

The endangered southern resident stock of killer whales is largely residential to the Salish Sea, north of the HCTT Study Area. While a sub-set of Southern Resident killer whales (K and L pods) may travel into the NOCAL Range Complex from January to May, they typically do not travel south of Monterey, California. As shown in the Acoustic and Explosive Effects Analysis Report (Appendix E of this EIS/OEIS), there are no predicted effects to the endangered Southern Resident stock of killer whales.

K.4.6.3 Action Proponent Requirements for Area-Specific Training and Testing

The portion of the southern resident killer whale small and resident BIA within the California Study Area is only a small area the overlaps the southeasternmost portion of the NOCAL Range Complex. Spatially, this stock of killer whales may be present within the nearshore coastal waters off California north of Monterey Bay. Temporally, southern resident killer whales may be present from winter through early spring.

The training and testing areas in the NOCAL Range Complex encompassed by the southern resident killer whale BIA is relatively small but does provide critical capabilities necessary to conduct military readiness activities specific to aviation by forces homeported in Southern and Central California.

Given the operating tempo requirements for maintaining continual cycles of training and testing in the California Study Area, rescheduling activities outside or reducing the number of training or testing activities would not allow Navy to meet its readiness requirements. In addition, there is insufficient excess capacity to avoid or reschedule training and testing cycles at these locations given presence of the southern resident stock of killer whales from winter through early spring.

K.4.6.4 Killer Whale Small and Resident Area Geographic Mitigation Assessment

As discussed in Section K.4.6.2.1 (Explosives, Air Guns, and Sonar and Other Transducers), acoustic effects modeling indicates that there are no predicted effects to the southern resident stock of killer whales. Scientific data does not support a conclusion that effects on this stock of killer whales are occurring from Navy training and testing activities. Therefore halting, reducing, or otherwise limiting the use of explosives, air guns, or sonar and other transducers in the area when southern resident killer whales may be generally present would not be effective at reducing effects because none are occurring.

Navy training and testing require the use of the California Study Area throughout the year. Restricting use of the area overlapped by the southern resident killer whale BIAs when the stock is present would have significant effects on the Navy mission and readiness requirements. Geographic mitigation would not be effective at reducing effects on southern resident killer whales within the California Study Area since none are occurring regardless of implementing mitigation. In addition, the Northern California Large Whale Mitigation Area overlaps the portion southern resident killer whale BIA that is within the NOCAL Range Complex and provides benefit to the species by reducing the potential for adverse effects from military readiness activities using sonar. Therefore, based on the analysis presented above, specific geographic mitigation for southern resident killer whales is not being proposed.

K.5 Areas Identified during the NEPA Public Involvement Process

<<Placeholder until the conclusion of the public involvement process>>

K.6 Mitigation Areas to be Implemented

The existing and proposed mitigation areas identified in this section were developed to provide further protection for marine mammals during military readiness activities in areas that the best available science suggests are particularly important to species or stocks for foraging, migrating, or reproduction either year-round or for part of the year (depending on the species). Implementing these mitigation areas off of California and Hawaii would likely be effective in avoiding or reducing adverse effects on certain marine mammal species, stocks, or populations in these areas, and were determined to be practical to implement without impacting the effectiveness of military readiness. The mitigation could also help the Action Proponents avoid or reduce effects on other marine species that are present in the mitigation area during certain times of year or year-round.

The existing and proposed mitigation areas are designed to help the Action Proponents further avoid or reduce the level of adverse effects from sonar, explosives, or physical disturbance and strike on marine mammals that inhabit, feed in, reproduce in, or migrate through the areas. However, due to training requirements, the Action Proponents do not have the flexibility to relocate, restrict, or limit all military readiness activities throughout the entirety of the HCTT Study Area. The Action Proponents acknowledge the importance of certain habitats for species and stocks of marine mammals, particularly for certain biologically important life processes (e.g., foraging, migration, or reproduction) or ecological function, and have balanced the need for certain training and testing environments needed in order to achieve readiness and meet their Congressionally mandated obligations when establishing the proposed mitigation areas.

Training requirements are designed to provide the experience needed to ensure service members are properly prepared for operational success. Training requirements have been developed through many years of iteration, lessons learned, and refinement, and are designed to ensure service members achieve the levels of readiness needed to properly respond to the many contingencies that may occur during an actual mission. The Proposed Action does not include training beyond levels required for maintaining satisfactory levels of readiness due to the need to efficiently use limited resources (e.g., fuel, personnel, and time). Reductions in training would prevent service members from achieving satisfactory levels of readiness needed to accomplish their missions and would increase risk to service members when deployed.

Major training exercises, as defined in the EIS/OEIS, are training events that bring together the component elements of a large force (e.g., Strike Group) that could include the full spectrum of the force—various ships, submarines, aircraft, and Marine Corps and other military service's forces—to train in the complex command, control, operational coordination, and logistics functions designed to prepare the force for deployment. A Strike Group may be composed of up to four to six destroyers and a cruiser, 75 aircraft, and an aircraft carrier, with 7,500 Sailors and Marines participating. They also provide partner building with other maritime nations allowing U.S. military to learn to work with foreign partners across a range of military operations, building interoperability. Therefore, during these types of training events, the Action Proponents require vast areas of sea and air space which cannot be segmented without reducing the effectiveness of the training or decreasing the safety of personnel. The Action Proponents requires access to a variety of realistic tactical oceanographic and environmental conditions (e.g., varied bathymetry and open sea space) to maximize training effectiveness, meet testing program requirements, and to train to cover and defend large areas of ocean comparable to how the military operates during a conflict. With the few number of ships deployed at any given time, the Navy must be able to control the sea and airspace over thousands of square miles relying on sensors and networks.

Military readiness activities must also mimic real world conditions to ensure safety of personnel, skill proficiency, and validation of testing program requirements. Areas for military readiness activities are chosen to allow for the realistic representation of the myriad training and testing scenarios that military units are required to complete to be mission effective. Areas have been chosen and designated based on proximity to associated training ranges (e.g., Southern California Range Complex proximate to San Diego area Navy and Marine Corps bases), available airspace (e.g., avoiding airspace conflicts), unobstructed sea space, or due to safety concerns. For example, military aircraft emergency (divert) landing fields are located to allow for short transits to these fields and hopefully, allow for safe landings in the event of an emergency. These fields also are located away from populated areas in order to prevent mishaps that could put civilians in harm's way. Training areas are often also chosen to avoid areas popular for recreational boating and fishing.

Certain activities, such as deployment certification exercises using integrated warfare components, require large areas of the littorals and open ocean for realistic and safe training. The OPAREA within the Study Area represent critical sea space necessary to prepare naval forces for combat. Training and testing in these areas is vital to ensuring that Action Proponent units will be able to operate and defend the U.S. mainland from adversaries.

Expanding mitigation areas to encompass the Action Proponent's existing and proposed training and testing areas would require moving activities farther out to sea, which would reduce training and testing opportunities by taking time away from the intended activity to transit to a more distant area. This would also result in training or testing being conducted further offshore in bathymetric and oceanographic conditions that may not accurately reflect the types of environments where real world activities would occur. For example, conducting shallow water anti-submarine warfare training in deep water with simulating fathometer readings would promote bad habit patterns of ignoring critical depths, and in a real-world situation, those readings could be ignored as well, thereby jeopardizing safety and survival of the ship and crew.

Training in shallow water is necessary to develop proper crew coordination and exercise the tactics, techniques and procedures that ensure mission success. Realistic training is essential for crews to experience the effect of bottom topography (upslope vs. downslope) on sonar transmission/returns in general and when detecting targets in constrained environments that simulate environments where the Navy may operate, such as the East and South China Seas or the Strait of Hormuz. For example, transit training in the Alenuihaha Channel replicates those types of strait environments that may be contested by adversaries, and the Navy must learn to operate in them before facing hostile forces. Naval ships must train to counter submarine threats before deployment to ensure the first time a regularly rotating crew conducts anti-submarine warfare training in a strait is prior to being deployed to the Strait of Hormuz or similar areas. There are few geographic areas that enable forces to do this type of training outside of the HCTT Study Area. Newer-generation submarines, operated by more than 40 nations worldwide, continue to be a threat to global commerce, national security, and the safety of U.S. and our allied military personnel. As a result, defense against enemy submarines is a top priority for the Navy. While simulators provide early skill repetition and enhance teamwork, there is no substitute for live training in a realistic environment.

Increasing transit times would also result in additional fuel consumption, increase the Action Proponents' carbon footprint, and increase other expenditures due to wear and tear on equipment and personnel which serve as limiting factors for Action Proponent units, and could decrease valuable on-station training time. Additionally, unit-level training is constrained by the Optimized Fleet Response Plan timeline milestones and increasing time anywhere in the cycle exacerbates the challenges of meeting an already compact schedule. It is also likely that such a strategy would merely shift effects from one area or species/stock to another.

In summary, further restrictions on the level, number, or timing (seasonal or time of day) of military readiness activities could significantly impact a unit's ability to meet their individual training and certification requirements, the Navy's ability to certify strike groups for deployment in support of national security tasking, the Navy's ability to meet testing program requirements and required acquisition milestones, and operational costs due to increased fuel, maintenance, and time required to complete activities. Constraints on military readiness activities have the potential to increase safety risks when moving activity locations further offshore and accelerating the fatigue-life of aircraft and other equipment, and can reduce training and testing realism by limiting access to necessary environmental or oceanographic conditions for proper testing and training in tactics, techniques and procedures.

The Action Proponents' responsibility to the American people dictates an efficient use of fiscal resources and an approach that adapts to the evolving security environment, with the ability to make adjustments according to global events. The Action Proponents must be able to successfully operate across the range of military operations, from humanitarian assistance or disaster relief to deterring war or defeating an adversary. The military readiness activities under the Proposed Action balances the Action Proponents' need to train and test effectively with their commitment to environmental stewardship.

Based on the extensive review and analysis that is presented in sections K.3 (Biologically Important Areas Within the Hawaii Study Area) and K.4 (Biologically Important Areas within the California Study Area) of this appendix, the Action Proponents propose to continue implementing certain existing mitigation areas described in Table K-9 and shown in Figure K-26 and Figure K-27. The existing Humpback Whale Special Reporting Area in the Hawaii Study Area is proposed to be expanded, and two of the existing mitigation areas in the California Study Areas have new names: the Southern California Blue Whale Mitigation Area was previously referred to as the San Diego Arc Mitigation Area, and is proposed to be reduced; and the California Large Whale Awareness Message Mitigation Area which was previously referred to as the Blue Whale (June – October]), Gray Whale (November – March), and Fin Whale (November – May Awareness Notification Message Areas. The action proponents will also continue to implement geographic mitigation areas for seafloor resources (Table K-10) as discussed in Chapter 5.

Table K-9: Proposed Existing Mitigation Areas for Marine Mammals in the Hawaii and California Study Areas

Category	*Mitigation Requirements*	*Mitigation Benefits*
Hawaii Island Marine Mammal Mitigation Area		
Acoustic	• The Action Proponents will not use more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar or 20 hours of helicopter dipping sonar (a mid-frequency active sonar source) annually within the mitigation area.	• Mitigation is designed to reduce exposure of numerous small and resident marine mammal populations (including Blainville's beaked whales, bottlenose dolphins, Cuvier's beaked whales, dwarf sperm whales, false killer whales, melon-headed whales, pantropical spotted dolphins, pygmy killer whales, rough-toothed dolphins, short-finned pilot whales, and spinner dolphins), humpback whales within important seasonal reproductive habitat, and Hawaiian monk seals within critical

Category	Mitigation Requirements	Mitigation Benefits
		habitat, to levels of sound that have the potential to cause injurious or behavioral impacts.
Explosives	• The Action Proponents will not detonate in-water explosives (including underwater explosives and explosives deployed against surface targets) within the mitigation area.	• Mitigation is designed to prevent exposure of the species discussed above to explosives that have the potential to cause injury, mortality, or behavioral disturbance.
Hawaii 4-Islands Marine Mammal Mitigation Area		
Acoustic	• From November 15 – April 15, the Action Proponents will not use MF1 surface ship hull-mounted mid-frequency active sonar within the mitigation area.	• Mitigation is designed to minimize exposure of humpback whales in high-density seasonal reproductive habitats (e.g., north of Maui and Molokai) and Main Hawaiian Islands insular false killer whales in high seasonal occurrence areas to levels of sound that have the potential to cause injurious or behavioral impacts.
Explosives	• The Action Proponents will not detonate in-water explosives (including underwater explosives and explosives deployed against surface targets) within the mitigation area (year-round).	• Mitigation is designed to prevent exposure of humpback whales in high-density seasonal reproductive habitats (e.g., north of Maui and Molokai), Main Hawaiian Islands insular false killer whales in high seasonal occurrence areas, and numerous small and resident marine mammal populations that occur year-round (including bottlenose dolphins, pantropical spotted dolphins, and spinner dolphins, and Hawaiian monk seals) to explosives that have the potential to cause injury, mortality, or behavioral disturbance.
Hawaii Humpback Whale Special Reporting Mitigation Area		
Acoustic	• The Action Proponents will report the total hours of MF1 surface ship hull-mounted mid-frequency active sonar used December 15 – April 15 in the mitigation area in their training and testing activity reports submitted to NMFS.	• Special reporting requirements are designed to aid NMFS' and the Action Proponents' analysis of potential impacts in the mitigation area, which contains the Humpback Whale National Marine Sanctuary plus a 5-kilometer sanctuary buffer (excluding the Pacific Missile Range Facility).
Hawaii Humpback Whale Awareness Notification Mitigation Area		
Acoustic, Explosives, Physical disturbance and strike	• The Action Proponents will broadcast awareness notification messages to alert applicable assets (and their Lookouts) transiting and training or testing in the Hawaii Range Complex to the possible presence of concentrations of humpback whales from November through April. • Lookouts will use that knowledge to help inform their visual observations during military readiness activities that involve vessel movements, active sonar, in-water explosives (including underwater explosives and explosives deployed against surface targets), or the deployment of non-explosive ordnance against surface targets in the mitigation area.	• Mitigation is designed to minimize potential humpback whale vessel interactions and exposure to acoustic, explosive, and physical disturbance and strike stressors that have the potential to cause mortality, injury, or behavioral disturbance during the reproductive season. • The Hawaii Humpback Whale Awareness Notification Mitigation Area applies to the entire Hawaii Range Complex.
Southern California Blue Whale Mitigation Area		
Acoustic	• From June 1 to October 31, the Action Proponents will not use more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing within the combination of this	• Mitigation to limit use of MF1 active sonar is designed to reduce exposure of blue whales within important seasonal foraging habitats to levels of sound that have the potential to cause injurious or behavioral impacts.

Category	Mitigation Requirements	Mitigation Benefits
	mitigation area and the Central California Large Whale Mitigation Area.	
Explosives	• From June 1 to October 31, the Action Proponents will not detonate in-water explosives (including underwater explosives and explosives deployed against surface targets) during large-caliber gunnery, torpedo, bombing, and missile (including 2.75" rockets) training and testing.	• Mitigation to limit the use of in-water explosives is designed to reduce exposure of blue whales within important seasonal foraging habitats to explosives that have the potential to cause injury, mortality, or behavioral disturbance.
California Large Whale Awareness Message Mitigation Area		
Acoustic, Explosives, Physical disturbance and strike	• The Action Proponents will broadcast awareness notification messages to alert applicable assets (and their Lookouts) transiting and training or testing off the U.S. West Coast to the possible presence of concentrations of large whales, including gray whales (November–March), fin whales (November–May), and mixed concentrations of blue, humpback, and fin whales that may occur based on predicted oceanographic conditions for a given year (e.g., May–November, April–November). Notification messages may provide the following types of information which could vary annually: ○ While blue whales tend to be more transitory, some fin whales are year-round residents that can be expected in nearshore waters within 10 NM of the California mainland and offshore operating areas at any time. ○ Fin whales occur in groups of one to three individuals, 90 percent of the time, and in groups of four or more individuals, 10 percent of the time. ○ Unique to fin whales offshore southern California (including the Santa Barbara Channel and PMSR area), there could be multiple individuals and/or separate groups scattered within a relatively small area (1–2 NM) due to foraging or social interactions. ○ When a large whale is observed, this may be an indicator that additional marine mammals are present and nearby, and the vessel should take this into consideration when transiting. ○ Lookouts will use that knowledge to help inform their visual observations during military readiness activities that involve vessel movements, active sonar, in-water explosives (including underwater explosives and explosives deployed against surface targets), or the deployment of non-explosive ordnance against surface targets in the mitigation area.	• Mitigation to broadcast awareness notification messages to applicable assets, and to use that information to inform visual observations, is designed to minimize potential blue whale, gray whale, and fin whale vessel interactions and exposure to acoustic stressors, explosives, and physical disturbance and strike stressors that have the potential to cause mortality, injury, or behavioral disturbance during the foraging and migration seasons, and to resident whales.

Category	Mitigation Requirements	Mitigation Benefits
California Large Whale Real-Time Notification Mitigation Area		
Physical disturbance and strike	• The Action Proponents will issue real-time notifications to alert Action Proponent vessels operating in the vicinity of large whale aggregations (four or more whales) sighted within 1 NM of an Action Proponent vessel within an area of the Southern California Range Complex (between 32–33 degrees North and 117.2–119.5 degrees West). o The four whales that make up a defined "aggregation" would not all need to be from the same species, and the aggregation could consist either of a single group of four (or more) whales, or any combination of smaller groups totaling four (e.g., two groups of two whales each or a group of three whales and a solitary whale) within the 1 NM zone. Lookouts will use the information from the real-time notifications to inform their visual observations of applicable mitigation zones. If Lookouts observe a large whale aggregation within 1 NM of the event vicinity within the area between 32–33 degrees North and 117.2–119.5 degrees West, the watch station will initiate communication with the designated point of contact to contribute to the Navy's real-time sighting notification system.	• The real-time notification area encompasses the locations of recent (2009, 2021) vessel strikes, and historic strikes where precise latitude and longitude were known.
San Nicolas Island Pinniped Haulout Mitigation Area		
In-air vehicle launch noise	▪ Navy personnel shall not enter pinniped haulout or rookery areas. Personnel may be adjacent to pinniped haulouts and rookery prior to and following a launch for monitoring purposes. ▪ Missiles shall not cross over pinniped haulout areas at altitudes less than 305 m (1,000 ft.). ▪ The Navy may not conduct more than 10 launch events at night annually. ▪ Launch events shall be scheduled to avoid the peak pinniped pupping seasons from January through July, to the maximum extent practicable. The Navy shall implement a monitoring plan for beaches exposed to missile launch noise which that must obtain visual, video, and acoustic data during each launch event, to the maximum extent practicable.	• Mitigation is designed to minimize in-air launch noise and physical disturbance to pinnipeds hauled out on beaches, as well as to continue assessing baseline pinniped distribution/abundance and potential changes in pinniped use of these beaches after launch events.

Table K-10: Proposed Existing Mitigation Areas for Seafloor Resources in the Hawaii and California Study Areas

Category	Mitigation Requirements	Mitigation Benefits
Shallow-Water Coral Reef and Precious Coral Bed Mitigation Area		
Explosives	• The Action Proponents will not detonate any in-water explosives (including underwater explosives and explosives deployed against surface targets) within a horizontal distance of 350 yd. from shallow-water coral reefs and precious coral beds (except in designated areas of the Hawaii and California OPAREAs, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practical).	• The 350-yd. mitigation area radius for in-water explosives was conservatively designed to be several times larger than the impact footprint (e.g., crater and expelled material radius) of the largest bottom-laid explosive used in the Study Area. As described in Appendix I, that explosive is a 650-lb. NEW mine with an estimated impact footprint radius of 22.7 yd. The 350-yd. mitigation area radius is 11 times larger than the maximum estimated explosive impact footprint radius, and is even more conservatively sized when compared to the impact footprints of smaller explosives. Therefore, the mitigation will prevent direct impacts (and some level of indirect impacts) from explosives on shallow-water coral reefs and precious coral beds in the Study Area.
Physical disturbance and strike	• The Action Proponents will not set vessel anchors within the anchor swing circle radius from shallow-water coral reefs and precious coral beds (except in designated anchorages). • The Action Proponents will not place non-explosive seafloor devices or deploy non-explosive ordnance against surface targets (including aerial-deployed mine shapes) within a horizontal distance of 350 yd. from shallow-water coral reefs and precious coral beds (except in designated areas in the Hawaii and California OPAREAs, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practical).	• The anchor swing circle mitigation will ensure that vessel anchors do not come into contact with shallow-water coral reefs and precious coral beds when factoring in environmental conditions that could affect anchoring position, such as winds, currents, and water depth. • For ease of implementation, the 350-yd. mitigation area radius for explosives was also adopted for seafloor devices and non-explosive ordnance deployed against surface targets. This mitigation area radius is even more conservative when compared to the small impact footprints of these non-explosive stressors. Therefore, the mitigation will prevent direct impacts (and some level of indirect impacts) from seafloor devices and non-explosive ordnance deployed against surface targets on shallow-water coral reefs and precious coral beds.
Artificial Reef, Hard Bottom Substrate, and Shipwreck Mitigation Area		
Explosives	• The Action Proponents will not detonate explosives on or near the seafloor (e.g., explosive bottom-laid or moored mines) within a horizontal distance of 350 yd. from artificial reefs, hard bottom substrate, and shipwrecks (except in designated areas in the Hawaii California OPAREAs, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practical).	• The 350-yd. mitigation area radius will prevent direct impacts (and some level of indirect impacts) from explosives on artificial reefs, hard bottom substrate, and shipwrecks for the reasons described in Section 5.7.1.
Physical disturbance and strike	• The Action Proponents will not set vessel anchors within the anchor swing circle radius from artificial reefs, hard bottom substrate, and shipwrecks (except in designated anchorages). • The Action Proponents will not place non-explosive seafloor devices (that are not precisely placed) within a horizontal distance of 350 yd. from artificial reefs, hard bottom substrate, and shipwrecks	• Mitigation ensures that vessel anchors do not come into contact with artificial reefs, hard bottom substrate, and shipwrecks, when factoring in environmental conditions that could affect anchoring position, such as winds, currents, and water depth. • For ease of implementation, the 350-yd. mitigation area radius for explosives was also adopted for seafloor devices (that are not precisely placed), and is even more conservative when compared to the small impact footprints of non-explosive seafloor devices. • Mitigation specific to precisely placed seafloor devices was first developed and coordinated with NMFS for live hard bottom habitats

Category	Mitigation Requirements	Mitigation Benefits
	(except as described in the bullet above for vessel anchors, the bullet below for precisely placed seafloor devices, and in designated areas of the Hawaii and California OPAREAs, such as the nearshore areas of San Clemente Island and in the Silver Strand Training Complex, where these features will be avoided to the maximum extent practical). • The Action Proponents will not position precisely placed non-explosive seafloor devices directly on artificial reefs, hard bottom substrate, or shipwrecks. • The Action Proponents will avoid positioning precisely placed non-explosive seafloor devices near these resources by the largest distance that is practical to implement based on mission requirements.	during the 2022 HSTT Study Area's Essential Fish Habitat consultation reinitiation (U.S. Department of the Navy, 2022). That mitigation is being included in this document, and applied to the whole mitigation area category of hard bottom substrate as well as artificial reefs and shipwrecks, for consistency and practicality of implementation. Because precisely placed seafloor devices are deployed with a high degree of placement accuracy, the original intent of the mitigation (i.e., preventing direct physical strike and disturbance) will continue to be achieved. Therefore, the mitigation for seafloor devices that are either precisely placed or not precisely placed will collectively prevent direct impacts (and some level of indirect impacts) from seafloor devices on artificial reefs, hard bottom substrate, and shipwrecks.

In addition, the Action Proponents propose to introduce two new mitigation areas in the California Study Area: The Northern and Central California Large Whale Mitigation Areas (Table K-11 and Figure K-27). These new proposed mitigation areas are described in Section K.6.1.1.1 (Northern and Central California Large Whale Mitigation Areas). No new mitigation areas were proposed in the Hawaii Study Area, because the current areas continue to meet the biological effectiveness criteria and remain operationally practical to implement. The new proposed mitigation areas were developed because they met the biological effectiveness criteria when balanced against the operational practicality criteria noted above in Sections K.2.1.2 (Biological Effectiveness Assessment) and K.2.1.3 (Operational Assessment). As the existing and newly proposed mitigation areas will limit or prohibit a combination of acoustic and explosive sources, seasonally or year-round, all marine mammals and protected species present in the mitigation areas would benefit.

Table K-11: Proposed New Mitigation Areas for Marine Mammals in the California Study Areas

Category	*Mitigation Requirements*	*Mitigation Benefits*
Northern California Large Whale Mitigation Area		
Acoustic	• From June 1 to October 31, the Action Proponents will not use more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing within the combination of this mitigation area, the Central California Large Whale Mitigation Area, and the Southern California Blue Whale Mitigation Area.	• Mitigation to limit use of MF1 active sonar is designed to reduce exposure of blue whales, fin whales, gray whales, and humpback whales in important seasonal foraging, migratory, and calving habitats to levels of sound that have the potential to cause injurious or behavioral impacts.
Central California Large Whale Mitigation Area		
Acoustic	• From June 1 to October 31, the Action Proponents will not use more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing within the combination of this mitigation area, the Northern California Large Whale Mitigation Area, and the Southern California Blue Whale Mitigation Area.	• Mitigation to limit use of MF1 active sonar is designed to reduce exposure of blue whales, fin whales, gray whales, and humpback whales in important seasonal foraging, migratory, and calving habitats to levels of sound that have the potential to cause injurious or behavioral impacts.

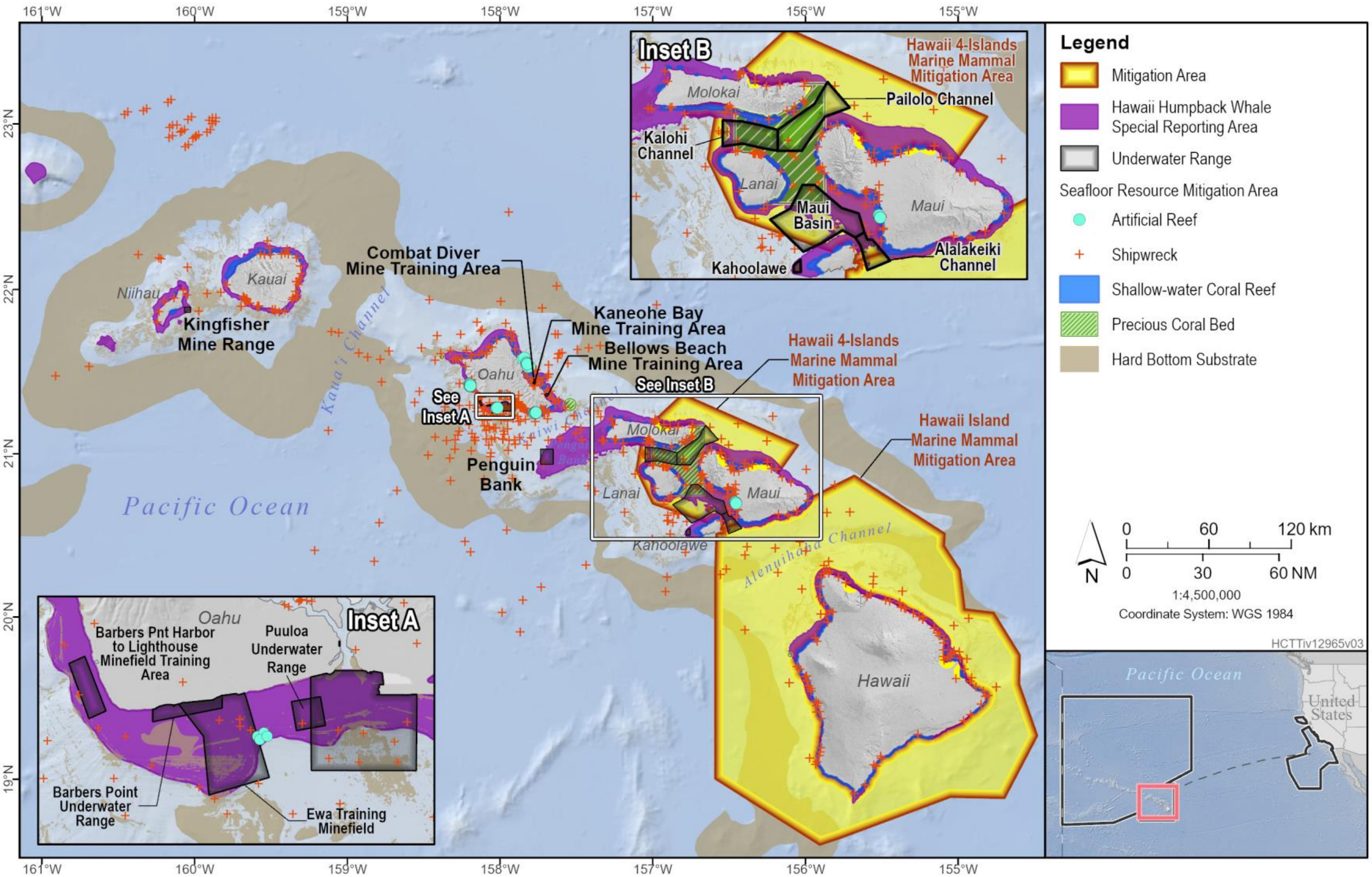

Figure K-26: Proposed Mitigation Areas in the Hawaii Study Area

K.6.1.1 Proposed New Mitigation Measures within the Mitigation Areas

The Action Proponents will limit the use of the more impactful acoustic sources (surface ship hull-mounted mid-frequency active sonar, dipping sonar, or certain types of explosives during specific activities where applicable) within proposed mitigation areas temporally or year-round when conducting military readiness activities under the Proposed Action. Annual limits for these sources within specific areas were informed by classified operational and historical reporting data. All other active sonar used by the Action Proponents is allowed within the mitigation areas. Additionally, the broadcasting of notification messages to alert applicable assets (and their lookouts) in certain proposed existing mitigation areas would help mitigate potential adverse effects from physical disturbance and strike due to vessel movements.

K.6.1.1.1 Northern and Central California Large Whale Mitigation Areas

The proposed Northern and Central California Large Whale Mitigation Areas are shown in Figure K-27. The Northern California Large Whale Mitigation Area is within the NOCAL Range Complex, generally extending from Point Arena south to an area west of the Farallon Islands. The Central California Large Whale Mitigation Area is within the PMSR and generally extends from Monterey Bay south to San Miguel Island. Within the proposed mitigation areas, the Navy would not use more than 300 hours of MF1 surface ship hull-mounted mid-frequency active sonar (excluding normal maintenance and systems checks) total during training and testing.

This proposed mitigation would be active seasonally, from June 1 through October 31, and overlaps the revised BIAs of four large whale species in the California Study Area: the Blue whale, Gray Whale, Fin Whale, and Humpback whale. The revised BIAs for Blue whales, Fin whales, and Humpback whales are all feeding areas, and the proposed mitigation areas are expected to reduce the potential for adverse effects resulting from military readiness activities using sonar on these species' feeding behavior when in the areas. For Gray whales, the revised BIA in the California Study Area is a migratory and reproductive area, and the proposed mitigation areas are expected to reduce the potential for adverse effects resulting from military readiness activities using sonar on Gray whale migratory and reproductive behavior when in the areas.

The proposed Northern and Central California Large Whale Mitigation Areas overlap southern resident killer whale critical habitat, providing a benefit southern resident killer whale to the species by reducing the potential for adverse effects from military readiness activities using sonar. They also overlap four National Marine Sanctuaries (NMS) (Chumash Heritage NMS, Cordell Bank NMS, Greater Farallones NMS, and Monterey Bay NMS), providing the same benefit to species and individuals within the portions of the mitigation areas that overlap the sanctuaries.

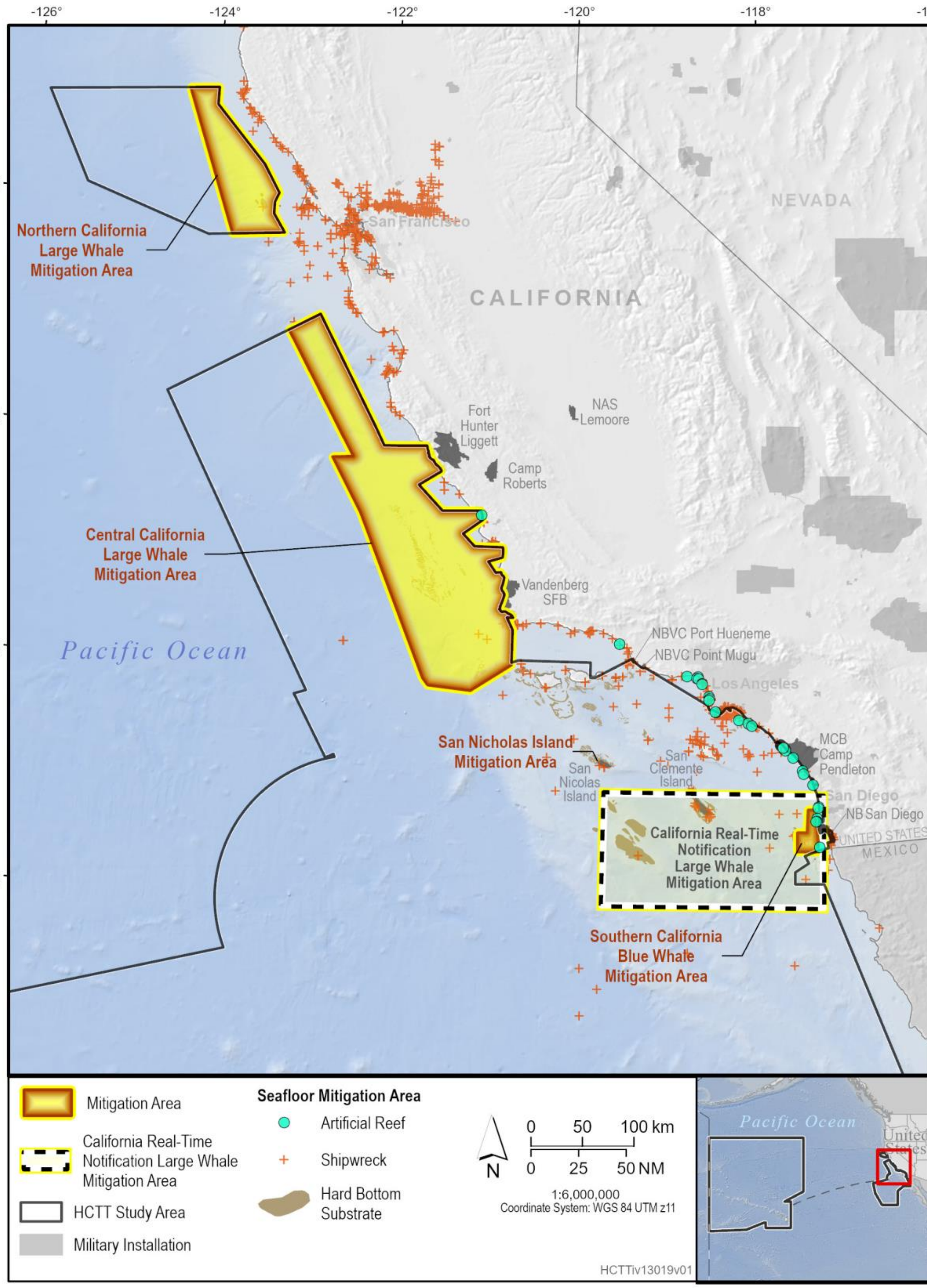

Figure K-27: Proposed Mitigation Areas in the California Study Area

K.6.1.2 Mitigation Areas Considered and Not Carried Forward

When assessing the revised BIAs in Sections K.3 (Biologically Important Areas Within the Hawaii Study Area) and K.4 (Biologically Important Areas Within the California Study Area), it was decided that the parent BIAs were too large and encompassed too much of the Hawaii and California Study Areas (Figure K-1 and Figure K-2) to be practical to implement per the mitigation considerations discussed in at the beginning of this section. NMFS also indicated that the parent BIAs provided less value to the species because the size of the areas, when compared with the child and/or core BIAs. In addition, because of the revisions made to the BIAs (e.g., blue whale core BIA geography shift) since the 2018 HSTT EIS/OEIS, the following existing mitigation areas in the California Study Area were considered and not carried forward: San Nicolas Island and Santa Monica/Long Beach Mitigation Areas, and the Santa Barbara Island Mitigation Area.

<<Placeholder, language will be updated after the public involvement process>>

K.6.1.3 Mitigation Summary

In summary, the Action Proponents have thoughtfully and thoroughly assessed each revised BIA. However, incorporating each BIA as a mitigation area in their totality would prohibit military readiness activities using sonar and explosives in much of the primary training and testing areas within the HCTT Study Area, leaving fragmented areas and timeframes that are not compatible with effective, realistic training and testing. The Action Proponents would be unable to effectively prepare their forces for operational employment without access to the ranges and locations that have been carefully developed over decades. These areas allow for military readiness activities to be conducted in a manner compatible with multiple other activities in the marine environment, such as energy exploration, alternative energy development, commercial fishing, recreational activities, and commercial shipping. As noted in Chapter 2 (Description of Proposed Action and Alternatives), the Action Proponents also require extensive sea space so that individual military readiness activities can occur at sufficiently safe distances such that these activities do not interfere with one another and so that military units can train to communicate and operate in a coordinated fashion over tens or hundreds of square miles, as they will have to do when in an operational theater.

REFERENCES

Abecassis, M., J. Polovina, R. W. Baird, A. Copeland, J. C. Drazen, R. Domokos, E. Oleson, Y. Jia, G. S. Schorr, D. L. Webster, and R. D. Andrews. (2015). Characterizing a Foraging Hotspot for Short-Finned Pilot Whales and Blainville's Beaked Whales Located off the West Side of Hawai'i Island by Using Tagging and Oceanographic Data. *PLoS ONE 10* (11): 1–22. DOI:10.1371/journal.pone.0142628

Abrahms, B., H. Welch, S. Brodie, M. G. Jacox, E. Becker, S. J. Bograd, L. Irvine, D. Palacios, B. Mate, and E. Hazen. (2019). Dynamic ensemble models to predict distributions and anthropogenic risk exposure for highly mobile species. *Diversity and Distributions 00* 1–12. DOI:10.1111/ddi.12940

Aschettino, J. M., R. W. Baird, D. J. McSweeney, D. L. Webster, G. S. Schorr, J. L. Huggins, K. K. Martien, S. D. Mahaffy, and K. L. West. (2012). Population structure of melon-headed whales (*Peponocephala electra*) in the Hawaiian Archipelago: Evidence of multiple populations based on photo identification. *Marine Mammal Science 28* (4): 666–689. DOI:10.1111/j.1748-7692.2011.00517

Au, D. W. K. and W. L. Perryman. (1985). Dolphin habitats in the eastern tropical Pacific. *Fishery Bulletin 83* 623–643.

Baird, R. (2013). Odontocete Cetaceans Around the Main Hawaiian Islands: Habitat Use and Relative Abundance from Small-Boat Sighting Surveys. *Aquatic Mammals 39* (3): 253–269. DOI:10.1578/am.39.3.2013.253

Baird, R. W. (2006). Hawaii's other cetaceans. *Whale and Dolphin Magazine 11* 28–31.

Baird, R. W., J. M. Aschettino, D. J. McSweeney, D. L. Webster, G. S. Schorr, S. Baumann-Pickering, and S. D. Mahaffy. (2010). *Melon-headed Whales in the Hawaiian Archipelago: An Assessment of Population Structure and Long-term Site Fidelity based on Photo-Identification*. La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Baird, R. W., D. Cholewiak, D. L. Webster, G. S. Schorr, S. D. Mahaffy, C. Curtice, J. Harrison, and S. M. Van Parijs. (2015a). 5. Biologically Important Areas for cetaceans within U.S. waters—Hawaii region. In S. M. Van Parijs, C. Curtice, & M. C. Ferguson (Eds.), *Biologically Important Areas for cetaceans within U.S. waters* (Vol. Aquatic Mammals (Special Issue) 41, pp. 54–64).

Baird, R. W., D. Cholewiak, D. L. Webster, G. S. Schorr, S. D. Mahaffy, C. Curtice, J. Harrison, and S. M. Van Parijs. (2015b). Biologically Important Areas for Cetaceans within U.S. Waters—Hawaii region. In S. M. Van Parijs, C. Curtice, & M. C. Ferguson (Eds.), *Biologically Important Areas for Cetaceans Within U.S. Waters* (Vol. 41, pp. 54–64). Olympia, WA: Cascadia Research Collective.

Baird, R. W., D. Cholewiak, D. L. Webster, G. S. Schorr, S. D. Mahaffy, C. Curtice, J. Harrison, and S. M. van Parijs. (2015c). Biologically important areas for cetaceans within U.S. waters - Hawai'i region. *Aquatic Mammals 41* (1): 54–64.

Baird, R. W., D. Cholewiak, D. L. Webster, G. S. Schorr, S. D. Mahaffy, C. Curtice, J. Harrison, and S. M. Van Parijs. (2015d). Biologically Important Areas for cetaceans within U.S. waters – Hawaii Region. *Aquatic Mammals 41* (1): 54–64. DOI:10.1578/am.41.1.2015.54

Baird, R. W., A. N. Dilley, D. L. Webster, R. Morrissey, B. K. Rone, S. M. Jarvis, S. D. Mahaffy, A. M. Gorgone, and D. J. Moretti. (2015e). *Odontocete Studies on the Pacific Missile Range Facility in*

February 2014: Satellite-Tagging, Photo Identification, and Passive Acoustic Monitoring. Pearl Harbor, HI: U.S. Navy Pacific Fleet.

Baird, R. W., M. B. Hanson, E. E. Ashe, M. R. Heithaus, and G. J. Marshall. (2003a). *Studies of Foraging in "Southern Resident" Killer Whales during July 2002: Dive Depths, Bursts in Speed, and the Use of a "Crittercam" System for Examining Sub-surface Behavior*. Seattle, WA: U. S. Department of Commerce, National Marine Fisheries Service, National Marine Mammal Laboratory.

Baird, R. W., M. B. Hanson, G. S. Schorr, D. L. Webster, D. J. McSweeney, A. M. Gorgone, S. D. Mahaffy, D. M. Holzer, E. M. Oleson, and R. D. Andrews. (2012). Range and primary habitats of Hawaiian insular false killer whales: Informing determination of critical habitat. *Endangered Species Research 18* (1): 47–61. DOI:10.3354/esr00435

Baird, R. W., S. D. Mahaffy, A. M. Gorgone, T. Cullins, D. J. McSweeney, E. M. Oleson, A. L. Bradford, J. Barlow, and D. L. Webster. (2015f). False killer whales and fisheries interactions in Hawaiian waters: Evidence for sex bias and variation among populations and social groups. *Marine Mammal Science 31* (2): 579–590. DOI:10.1111/mms.12177

Baird, R. W., D. J. McSweeney, G. S. Schorr, S. D. Mahaffy, D. L. Webster, J. Barlow, M. B. Hanson, J. P. Turner, and R. D. Andrews. (2009). Studies of beaked whales in Hawaii: Population size, movements, trophic ecology, social organization, and behaviour. In S. J. Dolman, C. D. MacLeod, & P. G. H. Evans (Eds.), *Beaked Whale Research* (pp. 23–25). San Sebastián, Spain: European Cetacean Society.

Baird, R. W., D. J. McSweeney, D. L. Webster, A. M. Gorgone, and A. D. Ligon. (2003b). *Studies of Odontocete Population Structure in Hawaiian Waters: Results of a Survey Through the Main Hawaiian Islands in May and June 2003*. Seattle, WA: National Oceanic and Atmospheric Administration.

Baird, R. W., G. S. Schorr, D. L. Webster, S. D. Mahaffy, D. J. McSweeney, M. B. Hanson, and R. D. Andrews. (2011). Open-ocean movements of a satellite-tagged Blainville's beaked whale (*Mesoplodon densirostris*): Evidence for an offshore population in Hawaii? *Aquatic Mammals 37* (4): 506–511.

Baird, R. W., G. S. Schorr, D. L. Webster, D. J. McSweeney, and S. D. Mahaffy. (2006). *Studies of beaked whale diving behavior and odontocete stock structure in Hawaii in March/April 2006* (Report prepared under Contract No. AB133F-06-CN-0053). Olympia, WA: Cascadia Research Collective.

Baird, R. W., D. L. Webster, J. M. Aschettino, G. S. Schorr, and D. J. McSweeney. (2013a). Odontocete Cetaceans Around the Main Hawaiian Islands: Habitat Use and Relative Abundance from Small-Boat Sighting Surveys. *Aquatic Mammals 39* (3): 253–269. DOI:10.1578/am.39.3.2013.253

Baird, R. W., D. L. Webster , J. M. Aschettino, G. S. Schorr, and D. J. McSweeney. (2013b). Odontocete cetaceans around the main Hawaiian islands: Habitat use and relative abundance from small-boat sighting surveys. *Aquatic Mammals 39* (3): 253–269. DOI:10.1578/am.39.3.2013.253

Baird, R. W., D. L. Webster, S. D. Mahaffy, D. J. McSweeney, G. S. Schorr, and A. D. Ligon. (2008). Site fidelity and association patterns in a deep-water dolphin: Rough-toothed dolphins (*Steno bredanensis*) in the Hawaiian Archipelago. *Marine Mammal Science 24* (3): 535–553. DOI:10.1111/j.1748-7692.2008.00201

Baird, R. W., D. L. Webster, S. D. Mahaffy, G. S. Schorr, J. M. Aschettino, and A. M. Gorgone. (2013c). *Movements and Spatial Use of Odontocetes in the western Main Hawaiian Islands: Results of a*

Three-year Study off O‘ahu and Kaua‘i (Final report under Grant No. N00244-10-1-0048 from the Naval Postgraduate School).

Barlow, J. (2006). Cetacean abundance in Hawaiian waters estimated from a Summer–Fall survey in 2002. *Marine Mammal Science 22* (2): 446–464. DOI:10.1111/j.1748-7692.2006.00032.x

Barlow, J. (2016). *Cetacean Abundance in the California Current Estimated from Ship-based Line-transect Surveys in 1991–2014.* (NOAA Administrative Report NMFS-SWFSC-LJ-1601). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Barlow, J., J. Calambokidis, E. A. Falcone, C. S. Baker, A. M. Burdin, P. J. Clapham, J. K. B. Ford, C. M. Gabriele, R. LeDuc, D. K. Mattila, T. J. Quinn, II, L. Rojas-Bracho, J. M. Straley, B. L. Taylor, J. Urbán R, P. Wade, D. Weller, B. H. Witteveen, and M. Yamaguchi. (2011). Humpback whale abundance in the North Pacific estimated by photographic capture-recapture with bias correction from simulation studies. *Marine Mammal Science 27* (4): 793–818. DOI:10.1111/j.1748-7692.2010.00444

Barlow, J., M. Ferguson, E. Becker, J. Redfern, K. Forney, I. Vilchis, P. Fiedler, T. Gerrodette, and L. Ballance. (2009a). *Predictive Modeling of Cetacean Densities in the Eastern Pacific Ocean* (NOAA Technical Memorandum NMFS-SWFSC-444). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Barlow, J., M. C. Ferguson, E. A. Becker, J. V. Redfern, K. A. Forney, I. L. Vilchis, P. C. Fiedler, T. Gerrodette, and L. T. Ballance. (2009b). *Predictive Modeling of Cetacean Densities in the Eastern Pacific Ocean* (NOAA Technical Memorandum NMFS-SWFSC-444). La Jolla, CA: Southwest Fisheries Science Center.

Barlow, J. and K. A. Forney. (2007). Abundance and population density of cetaceans in the California Current ecosystem. *Fishery Bulletin 105* 509–526.

Barlow, J. and R. Gisiner. (2006). Mitigating, monitoring and assessing the effects of anthropogenic sound on beaked whales. *Journal of Cetacean Research and Management 7* (3): 239–249.

Barlow, J., S. Rankin, A. Jackson, and A. Henry. (2008). *Marine Mammal Data Collected During the Pacific Islands Cetacean and Ecosystem Assessment Survey (PICEAS) Conducted Aboard the NOAA Ship McArthur II, July–November 2005*. NOAA.

Baumann-Pickering, S., L. K. Baldwin, A. E. Simonis, M. A. Roche, M. L. Melcon, J. A. Hildebrand, E. M. Oleson, R. W. Baird, G. S. Schorr, D. L. Webster, and D. J. McSweeney. (2010). *Characterization of Marine Mammal Recordings from the Hawaii Range Complex*. Monterey, CA: Naval Postgraduate School.

Baumann-Pickering, S., M. A. Roch, R. L. Brownell, Jr., A. E. Simonis, M. A. McDonald, A. Solsona-Berga, E. M. Oleson, S. M. Wiggins, and J. A. Hildebrand. (2014). Spatio-temporal patterns of beaked whale echolocation signals in the north Pacific. *PLoS ONE 9* (1): e86072. DOI:10.1371/journal.pone.0086072

Becker, E., K. Forney, D. Miller, P. Fiedler, J. Barlow, and J. Moore. (2020). *Habitat-based density estimates for cetaceans in the California Current Ecosystem based on 1991-2018 survey data* (Technical Memorandum NMFS-SWFSC-638). Silver Spring, MD: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Becker, E. A., K. A. Forney, M. C. Ferguson, J. Barlow, and J. V. Redfern. (2012a). *Predictive Modeling of Cetacean Densities in the California Current Ecosystem based on Summer/Fall Ship Surveys in 1991–2008* (NOAA Technical Memorandum NMFS-SWFSC-499). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Becker, E. A., K. A. Forney, M. C. Ferguson, D. G. Foley, R. C. Smith, J. Barlow, and J. V. Redfern. (2010). Comparing California Current cetacean–habitat models developed using in situ and remotely sensed sea surface temperature data. *Marine Ecology Progress Series 413* 163–183. DOI:10.3354/meps08696

Becker, E. A., K. A. Forney, P. C. Fiedler, J. Barlow, S. J. Chivers, C. A. Edwards, A. M. Moore, and J. V. Redfern. (2016). Moving Towards Dynamic Ocean Management: How Well Do Modeled Ocean Products Predict Species Distributions? *Remote Sensing 8* (2): 149. DOI:10.3390/rs8020149

Becker, E. A., K. A. Forney, D. G. Foley, and J. Barlow. (2012b). *Density and Spatial Distribution Patterns of Cetaceans in the Central North Pacific based on Habitat Models* (NOAA Technical Memorandum NMFS-SWFSC-490). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Becker, E. A., K. A. Forney, D. G. Foley, R. C. Smith, T. J. Moore, and J. Barlow. (2014). Predicting seasonal density patterns of California cetaceans based on habitat models. *Endangered Species Research 23* (1): 1–22. DOI:10.3354/esr00548

Becker, E. A., K. A. Forney, D. L. Miller, J. Barlow, L. Rojas-Bracho, J. Urbán R., and J. E. Moore. (2022a). Dynamic habitat models reflect interannual movement of cetaceans within the California Current ecosystem. *Frontiers in Marine Science 9*. DOI:10.3389/fmars.2022.829523

Becker, E. A., K. A. Forney, E. M. Oleson, A. L. Bradford, R. Hoopes, J. E. Moore, and J. Barlow. (2022b). *Abundance, distribution, and seasonality of cetaceans within the U.S. Exclusive Economic Zone around the Hawaiian Archipelago based on species distribution models*. Honolulu, HI: National Marine Fisheries Service, Pacific Islands Fisheries Science Center.

Bettridge, S., C. S. Baker, J. Barlow, P. J. Clapham, M. Ford, D. Gouveia, D. K. Mattila, I. Pace, R. M. , P. E. Rosel, G. K. Silber, and W. P. R. (2015). *Status Review of the Humpback Whale (Megaptera novaeangliae) Under the Endangered Species Act*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Bradford, A. L., E. A. Becker, E. M. Oleson, K. A. Forney, J. E. Moore, and J. Barlow. (2020). *Abundance Estimates of False Killer Whales in Hawaiian Waters and the Broader Central Pacific* (NOAA Technical Memorandum NMFS-PIFSC-104). Honolulu, HI: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Pacific Islands Fisheries Science Center.

Bradford, A. L., K. A. Forney, E. A. Oleson, and J. Barlow. (2013). *Line-Transect Abundance Estimates of Cetaceans in the Hawaiian EEZ*. Pacific Islands Fisheries Science Center.

Bradford, A. L., K. A. Forney, E. M. Oleson, and J. Barlow. (2012). *Line-transect Abundance Estimates of False Killer Whales (Pseudorca crassidens) in the Pelagic Region of the Hawaiian Exclusive Economic Zone and in the Insular Waters of the Northwestern Hawaiian Islands*. Honolulu, HI: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Pacific Islands Fisheries Science Center.

Bradford, A. L., K. A. Forney, E. M. Oleson, and J. Barlow. (2017). Abundance estimates of cetaceans from a line-transect survey within the U.S. Hawaiian Islands Exclusive Economic Zone. *Fishery Bulletin 115* (2): 129–142. DOI:10.7755/fb.115.2.1

Bradford, A. L., E. A. Oleson, R. W. Baird, C. H. Boggs, K. A. Forney, and N. C. Young. (2015). *Revised Stock Boundaries for False Killer Whales (Psuedorca crassidens) in Hawaiian Waters* (NOAA Technical Memorandum NMFS-PIFSC-47). Honolulu, HI: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Pacific Islands Fisheries Science Center.

Bradford, A. L., E. M. Oleson, K. A. Forney, J. E. Moore, and J. Barlow. (2021). *Line-transect Abundance Estimates of Cetaceans in U.S. Waters around the Hawaiian Islands in 2002, 2010, and 2017* (NOAA Technical Memorandum NMFS-PIFSC-115). Honolulu, HI: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Pacific Islands Fisheries Science Center.

Calambokidis, J. and J. Barlow. (2020). *Updated abundance estimates for blue and humpback whales along the U.S. West Coast using data through 2018* (NOAA Technical Memorandum NMFS-SWFSC-634). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Calambokidis, J., E. A. Falcone, T. J. Quinn, A. M. Burdin, P. J. Clapham, J. K. B. Ford, C. M. Gabriele, R. LeDuc, D. Mattila, L. Rojas-Bracho, J. M. Straley, B. L. Taylor, J. Urbán R., D. Weller, B. H. Witteveen, M. Yamaguchi, A. Bendlin, D. Camacho, K. Flynn, A. Havron, J. Huggins, and N. Maloney. (2008). *SPLASH: Structure of Populations, Levels of Abundance and Status of Humpback Whales in the North Pacific* (Final report for Contract AB133F-03-RP-00078). Olympia, WA: Cascadia Research.

Calambokidis, J., M. A. Kratofil, D. M. Palacios, B. A. Lagerquist, G. S. Schorr, M. B. Hanson, R. W. Baird, K. A. Forney, E. A. Becker, R. C. Rockwood, and E. L. Hazen. (2024). Biologically Important Areas II for cetaceans within U.S. and adjacent waters - West Coast Region. *Frontiers in Marine Science 11*. DOI:10.3389/fmars.2024.1283231

Calambokidis, J., G. H. Steiger, C. Curtice, J. Harrison, M. C. Ferguson, E. Becker, M. DeAngelis, and S. M. Van Parijs. (2015a). 4. Biologically Important Areas for selected cetaceans within U.S. waters – West coast region. *In S. M. Van Parijs, C. Curtice, & M. C. Ferguson (Eds.), Biologically Important Areas for cetaceans within U.S. waters Aquatic Mammals (Special Issue) 41* (1): 39–53. DOI:10.1578/AM.41.1.2015.39

Calambokidis, J., G. H. Steiger, C. Curtice, J. Harrison, M. C. Ferguson, E. Becker, M. DeAngelis, and S. M. Van Parijs. (2015b). Biologically Important Areas for Selected Cetaceans Within U.S. Waters – West Coast Region. *Aquatic Mammals 41* (1): 39–53. DOI:10.1578/am.41.1.2015.39

Calambokidis, J., G. H. Steiger, C. Curtice, J. Harrison, M. C. Ferguson, E. Becker, M. DeAngelis, and S. M. Van Parijs. (2015c). Biologically Important Areas for Selected Cetaceans Within U.S. Waters – West Coast Region. *Aquatic Mammals (Special Issue) 41* (1): 39–53. DOI:10.1578/am.41.1.2015.39

Calambokidis, J., G. H. Steiger, J. M. Straley, L. M. Herman, S. Cerchio, D. R. Salden, J. Urban R., J. K. Jacobsen, O. von Ziegesar, K. C. Balcomb, C. M. Gabriele, M. E. Dahlheim, S. Uchida, G. Ellis, Y. Miyamura, P. Ladron De Guevara, M. Yamaguchi, F. Sato, S. A. Mizroch, L. Schlender, K. Rasmussen, J. Barlow, and T. J. Quinn, II. (2001). Movements and population structure of humpback whales in the North Pacific. *Marine Mammal Science 17* (4): 769–794.

Campbell, G. S., L. Thomas, K. Whitaker, A. B. Douglas, J. Calambokidis, and J. A. Hildebrand. (2015). Inter-annual and seasonal trends in cetacean distribution, density and abundance off southern California. *Deep Sea Research Part II: Topical Studies in Oceanography 112* 143–157. DOI:10.1016/j.dsr2.2014.10.008

Carretta, J., E. M. Oleson, K. A. Forney, A. L. Bradford, A. Yano, D. Weller, A. Lang, J. Baker, A. Orr, B. Hanson, J. E. Moore, M. Wallen, and R. L. Brownell Jr. (2024). *Draft U.S. Pacific Marine Mammal Stock Assessments: 2023*. La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Carretta, J. V., K. A. Forney, M. S. Lowry, J. Barlow, J. Baker, D. Johnston, B. Hanson, R. L. Brownell, Jr., J. Robbins, D. Mattila, K. Ralls, M. M. Muto, D. Lynch, and L. Carswell. (2010). *U.S. Pacific Marine Mammal Stock Assessments: 2009* (NOAA Technical Memorandum NMFS-SWFSC-453). La Jolla, CA: Southwest Fisheries Science Center.

Carretta, J. V., E. Oleson, D. W. Weller, A. R. Lang, K. A. Forney, J. Baker, M. M. Muto, B. Hanson, A. J. Orr, H. Huber, M. S. Lowry, J. Barlow, J. Moore, D. Lynch, L. Carswell, and R. L. Brownell. (2015). *U.S. Pacific Marine Mammal Stock Assessments: 2014* (NOAA Technical Memorandum NMFS-SWFSC-549). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

Carretta, J. V., E. M. Oleson, J. Baker, D. W. Weller, A. R. Lang, K. A. Forney, M. M. Muto, B. Hanson, A. J. Orr, H. Huber, M. S. Lowry, J. Barlow, J. E. Moore, D. Lynch, L. Carswell, and R. L. Brownell, Jr. (2017). *U.S. Pacific Marine Mammal Stock Assessments: 2016* (NOAA Technical Memorandum NMFS-SWFSC-561). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Carretta, J. V., E. M. Oleson, K. A. Forney, D. W. W. A. R. Lang, J. Baker, A. J. Orr, B. Hanson, J. Barlow, J. E. Moore, M. Wallen, and R. L. B. Jr. (2023). *U.S. Pacific Marine Mammal Stock Assessments: 2022* (NOAA Technical Memorandum NMFS-SWFSC-684.). Washington, DC: U.S. Department of Commerce.

Clapham, P. J. (2000). The humpback whale: Seasonal feeding and breeding in a baleen whale. In J. Mann, R. C. Connor, P. L. Tyack, & H. Whitehead (Eds.), *Cetacean Societies: Field Studies of Dolphins and Whales* (pp. 173–196). Chicago, IL: University of Chicago Press.

Clapham, P. J. and D. K. Mattila. (1990). Humpback whale songs as indicators of migration routes. *Marine Mammal Science 6* (2): 155–160.

Davis, R. W., W. E. Evans, and B. Würsig, (Eds.). (2000). *Cetaceans, Sea Turtles and Seabirds in the Northern Gulf of Mexico: Distribution, Abundance and Habitat Associations*. New Orleans, LA: U.S. Geological Survey, Biological Resource Division; and Minerals Management Service, Gulf of Mexico Region.

Debich, A. J., S. Baumann-Pickering, A. Širović, J. A. Hildebrand, A. L. Alldredge, R. S. Gottlieb, S. Herbert, S. C. Johnson, L. K. Roche, B. Thayre, J. S. Trickey, and S. M. Wiggins. (2014). *Passive Acoustic Monitoring for Marine Mammals in the Northwest Training Range Complex 2012–2013*. La Jolla, CA: Marine Physical Laboratory, Scripps Institution of Oceanography, University of California San Diego.

Donahue, M. A. and W. L. Perryman. (2008). Pygmy killer whale, *Feresa attenuata*. In W. F. Perrin, B. Wursig, & J. G. M. Thewissen (Eds.), *Encyclopedia of Marine Mammals* (2nd ed., pp. 938–939). San Diego, CA: Academic Press.

Douglas, A. B., J. Calambokidis, L. M. Munger, M. S. Soldevilla, M. C. Ferguson, A. M. Havron, D. L. Camacho, G. S. Campbell, and J. A. Hildebrand. (2014). Seasonal distribution and abundance of cetaceans off Southern California estimated from CalCOFI cruise data from 2004 to 2008. *Fishery Bulletin 112* (2–3): 198–220. DOI:10.7755/fb.112.2-3.7

Falcone, E. A., B. Diehl, A. Douglas, and J. Calambokids. (2011). *Photo-Identification of Fin Whales (Balaeanoptera physalus) along the US West Coast, Baja California, and Canada*. Olympia, WA: Cascadia Research Collective.

Falcone, E. A. and G. S. Schorr. (2011). *Distribution and demographics of marine mammals in SOCAL through photo-indentification, genetics, and satellite telemetry: a summary of surveys conducted 15 July 2010 - 24 June 20111*. Monterey, CA: U.S. Navy Postgraduate School.

Ferguson, M. C., C. Curtice, and J. Harrison. (2015a). Biologically important areas for cetaceans within U.S. waters – Gulf of Alaska region. *Aquatic Mammals (Special Issue) 41* (1): 65–78.

Ferguson, M. C., C. Curtice, J. Harrison, and S. M. Van Parijs. (2015b). Biologically important areas for cetaceans within U.S. waters – Overview and rationale. *Aquatic Mammals (Special Issue) 41* (1): 2–16. DOI:10.1578/am.41.1.2015.2

Ford, J. K. B., G. M. Ellis, and K. C. I. Balcomb. (2000). *Killer Whales: The Natural History and Genealogy of Orcinus Orca in British Columbia and Washington State (Updated Edition)*. Seattle, WA: University of Washington Press.

Forney, K. A., R. W. Baird, and E. M. Oleson. (2010). *Rationale for the 2010 Revision of Stock Boundaries for the Hawaii Insular and Pelagic Stocks of False Killer Whales, Pseudorca crassidens*. La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Forney, K. A. and J. Barlow. (1998). Seasonal patterns in the abundance and distribution of California cetaceans, 1991–1992. *Marine Mammal Science 14* (3): 460–489.

Forney, K. A., J. Barlow, and J. V. Carretta. (1995). The abundance of cetaceans in California waters. Part II: Aerial surveys in winter and spring of 1991 and 1992. *Fishery Bulletin 93* 15–26.

Forney, K. A., E. A. Becker, D. G. Foley, J. Barlow, and E. M. Oleson. (2015). Habitat-based models of cetacean density and distribution in the central North Pacific. *Endangered Species Research 27* 1–20. DOI:10.3354/esr00632

Forney, K. A., M. C. Ferguson, E. A. Becker, P. C. Fiedler, J. V. Redfern, J. Barlow, I. L. Vilchis, and L. T. Ballance. (2012). Habitat-based spatial models of cetacean density in the eastern Pacific Ocean. *Endangered Species Research 16* (2): 113–133. DOI:10.3354/esr00393

Graham, S. E. and B. Saunders. (2015). *Occurrence, Distribution, and Population Estimates of Marine Mammals near Silver Strand Training Complex and San Diego Bay, CA* (Prepared for Commander, Pacific Fleet. Submitted to Naval Facilities Engineering Command (NAVFAC) Southwest, California, February 2015). San Diego, CA: SPAWAR Systems Center Pacific.

Hanson, M. B., E. J. Ward, C. K. Emmons, and M. M. Holt. (2018). *Modeling the occurrence of endangered killer whales near a U.S. Navy Training Range in Washington State using satellite-tag locations to improve acoustic detection data*. Seattle, WA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Fisheries Science Center.

Hanson, M. B., E. J. Ward, C. K. Emmons, M. M. Holt, and D. M. Holzer. (2017). *Assessing the movements and occurrence of Southern Resident Killer Whales relative to the U.S. Navy's Northwest Training Range Complex in the Pacific Northwest*. Seattle, WA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Fisheries Science Center.

Harrison, J., M. C. Ferguson, L. New, J. Cleary, C. Curtice, S. DeLand, E. Fujioka, P. N. Halpin, R. B. T. Moore, and S. M. Van Parijs. (2023). Biologically Important Areas II for cetaceans within U.S. and adjacent waters - Updates and the application of a new scoring system. *Frontiers in Marine Science 10*. DOI:doi.org/10.3389/fmars.2023.1081893

Heenehan, H. L., J. A. Tyne, L. Bejder, S. M. Van Parijs, and D. W. Johnston. (2016). Passive acoustic monitoring of coastally associated Hawaiian spinner dolphins, *Stenella longirostris*, ground-truthed through visual surveys. *The Journal of the Acoustical Society of America 140* (1): 206. DOI:10.1121/1.4955094

Heenehan, H. L., S. M. Van Parijs, L. Bejder, J. A. Tyne, and D. W. Johnston. (2017). Using acoustics to prioritize management decisions to protect coastal dolphins: A case study using Hawaiian spinner dolphins. *Marine Policy 75* 84–90. DOI:10.1016/j.marpol.2016.10.015

Henderson, E. E., R. Manzano-Roth, S. W. Martin, and B. Matsuyama. (2015, 13 December 2013). *Behavioral Responses of Beaked Whales to Mid-Frequency Active Sonar on the Pacific Missile Range Facility, Hawaii*. Presented at the Society for Marine Mammalogy 20th Biennial Conference,. Dunedin, New Zealand.

Jefferson, T. A., M. A. Smultea, and C. A. Bacon. (2014). Southern California Bight marine mammal density and abundance from aerial surveys, 2008–2013. *Journal of Marine Animals and Their Ecology 7* (2): 14–30.

Jefferson, T. A., M. A. Webber, and R. L. Pitman. (2008). *Marine Mammals of the World: A Comprehensive Guide to their Identification*. London, UK: Elsevier.

Jefferson, T. A., M. A. Webber, and R. L. Pitman. (2015). *Marine Mammals of the World: A Comprehensive Guide to Their Identification* (2nd ed.). Cambridge, MA: Academic Press.

Johnston, D. W., M. E. Chapla, L. E. Williams, and D. K. Matthila. (2007). Identification of humpback whale Megaptera novaeangliae wintering habitat in the Northwestern Hawaiian Islands using spatial habitat modeling. *Endangered Species Research*. DOI:10.3354/esr00049

Jones, M. L. and S. L. Swartz. (2009). Gray whale, *Eschrichtius robustus*. In W. F. Perrin, B. Wursig, & J. G. M. Thewissen (Eds.), *Encyclopedia of Marine Mammals* (2nd ed., pp. 503–511). Cambridge, MA: Academic Press.

Klinck, H., S. L. Nieukirk, S. Fregosi, D. K. Mellinger, S. Lastuka, G. B. Shilling, and J. C. Luby. (2015). *Cetacean Studies on the Hawaii Range Complex in December 2014–January 2015: Passive Acoustic Monitoring of Marine Mammals using Gliders. Final Report* (Prepared for Naval Facilities Engineering Command Pacific under HDR Environmental, Operations and Construction, Inc. Contract No. N62470-10-D-3011, CTO KB25). Honolulu, HI: HDR Inc.

Kratofil, M. A., A. E. Harnish, S. D. Mahaffy, E. E. Henderson, A. L. Bradford, S. W. Martin, B. A. Lagerquist, D. M. Palacios, E. M. Oleson, and R. W. Baird. (2023). Biologically Important Areas II for cetaceans within U.S. and adjacent waters – Hawaiʻi Region. *Frontiers in Marine Science 10*. DOI:10.3389/fmars.2023.1053581

Lammers, M. O. (2004). Occurence and behavior of Hawaiian spinner dolphins (*Stenella longirostris*) along Oahu's leeward and south shores. *Aquatic Mammals 30* (2): 237–250.

Lammers, M. O., L. M. Munger, J. N. Oswald, and T. M. Yack. (2015). *Passive Acoustic Monitoring of Cetaceans in the Hawaii Range Complex Using Ecological Acoustic Recorders (EARs)*. Pearl Harbor, HI: U.S Navy Pacific Fleet.

Mahaffy, S. D., R. W. Baird, D. J. McSweeney, D. L. Webster, and G. S. Schorr. (2015). High site fidelity, strong associations, and long-term bonds: Short-finned pilot whales off the island of Hawai'i. *Marine Mammal Science 31* (4): 1427–1451. DOI:10.1111/mms.12234

Manzano-Roth, R., E. E. Henderson, S. W. Martin, C. Martin, and B. M. Matsuyama. (2016). Impacts of U.S. Navy training events on Blainville's beaked whale (*Mesoplodon densirostris*) foraging dives in Hawaiian waters. *Aquatic Mammals 42* (4): 507–518. DOI:10.1578/AM.42.4.2016.507

Manzano-Roth, R. A., E. A. Henderson, S. W. Martin, and B. Matsuyama. (2013). *Impacts of a U.S. Navy training event on beaked whale dives in Hawaiian waters*. Pearl Harbor, HI: U.S. Navy Pacific Fleet.

Martien, K. K., R. W. Baird, N. M. Hedrick, A. M. Gorgone, J. L. Thieleking, D. J. McSweeney, K. M. Robertson, and D. L. Webster. (2012). Population structure of island-associated dolphins: Evidence from mitochondrial and microsatellite markers for common bottlenose dolphins (*Tursiops truncatus*) around the main Hawaiian Islands. *Marine Mammal Science 28* (3): E208–E232. DOI:10.1111/j.1748-7692.2011.00506

Martin, C. R., S. W. Martin, E. E. Henderson, T. A. Helble, R. A. Manzano-Roth, and B. M. Matsuyama. (2016). *SSC Pacific FY15 annual report on PMRF Marine Mammal Monitoring* (Submitted in Support of the U.S. Navy's 2015 Annual Marine Species Monitoring Report for the Pacific). San Diego, CA: National Marine Mammal Foundation.

Martin, C. R., S. W. Martin, E. E. Henderson, T. A. Helble, R. A. Manzano-Roth, B. M. Matsuyama, and G. C. Alongi. (2017). *SSC Pacific FY16 annual report on PMRF Marine Mammal Monitoring. Final Report*. San Diego, CA: National Marine Mammal Foundation; and Space and Naval Warfare Systems Center Pacific.

Mate, B., A. Bradford, G. Tsidulko, and V. Ilyashenko. (2013). *Late-Feeding Season Movements of a Western North Pacific Gray Whale off Sakhalin Island, Russia and Subsequent Migration into the Eastern North Pacific* (Paper SC/63/BRG23 presented to the International Whaling Commission Scientific Committee).

Mate, B. R., R. Gisiner, and J. Mobley. (1997). Local and migratory movements of Hawaiian humpback whales tracked by satellite telemetry. *Canadian Journal of Zoology 76* 863–868.

Mate, B. R., V. Y. Ilyashenko, A. L. Bradford, V. V. Vertyankin, G. A. Tsidulko, V. V. Rozhnov, and L. M. Irvine. (2015a). Critically endangered western gray whales migrate to the eastern North Pacific. *Biology Letters 11* (4): 1–4. DOI:10.1098/rsbl.2015.0071

Mate, B. R., D. M. Palacios, C. S. Baker, B. A. Lagerquist, L. M. Irvine, T. Follett, D. Steel, C. Hayslip, and M. H. Winsor. (2016). *Baleen (Blue and Fin) Whale Tagging in Southern California in Support of Marine Mammal Monitoring Across Multiple Navy Training Areas. Preliminary Summary* (Prepared for Naval Facilities Engineering Command Pacific for Commander, U.S. Pacific Fleet under Contract Nos. N62470-10-D-3011 (KB29) and N62470-15-D-8006 (KB01) issued to HDR, Inc.). San Diego, CA: HDR Inc.

Mate, B. R., D. M. Palacios, C. S. Baker, B. A. Lagerquist, L. M. Irvine, T. Follett, D. Steel, C. Hayslip, and M. H. Winsor. (2017). *Baleen Whale Tagging in Support of Marine Mammal Monitoring Across Multiple Navy Training Areas Covering the Years 2014, 2015, and 2016. Final Report* (Submitted to Naval Facilities Engineering Command Pacific, Pearl Harbor, Hawaii under Contract No. N62470-15-8006 (FZN1) issued to HDR, Inc.). San Diego, CA: Oregon State University Marine Mammal Institute.

Mate, B. R., D. M. Palacios, L. M. Irvine, B. A. Lagerquist, T. Follett, M. H. Winsor, and C. Hayslip. (2015b). *Baleen (Blue & Fin) Whale Tagging in Southern California in Support of Marine Mammal Monitoring Across Multiple Navy Training Areas (SOCAL, NWTRC, GOA); Final Report* (Prepared for Naval Facilities Engineering Command Pacific for Commander, U.S. Pacific Fleet under Contract No. N62470-10-D-3011, Task Orders JP03 and KB27 issued to HDR, Inc.). Honolulu, HI: HDR, Inc.

Mate, B. R. and J. Urban-Ramirez. (2003). A note on the route and speed of a gray whale on its northern migration from Mexico to central California, tracked by satellite-monitored radio tag. *Journal of Cetacean Research and Management 5* (2): 155–157.

McSweeney, D. J., R. W. Baird, and S. D. Mahaffy. (2007). Site fidelity, associations, and movements of Cuvier's (*Ziphius Cavirostris*) and Blainville's (*Mesoplodon Densirostris*) beaked whales off the island of Hawaii. *Marine Mammal Science 23* (3): 666–687. DOI:10.1111/j.1748-7692.2007.00135

McSweeney, D. J., R. W. Baird, S. D. Mahaffy, D. L. Webster, and G. S. Schorr. (2009). Site fidelity and association patterns of a rare species: Pygmy killer whales (*Feresa attenuata*) in the main Hawaiian Islands. *Marine Mammal Science 25* (3): 557–572. DOI:10.1111/j.1748-7692.2008.00267

Mizroch, S. A., D. W. Rice, D. Zwiefelhofer, J. Waite, and W. L. Perryman. (2009). Distribution and movements of fin whales in the North Pacific Ocean. *Mammal Review 39* (3): 193–227. DOI:10.1111/j.1365-2907.2009.00147.x

Mobley, J. R. (2004). *Results of Marine Mammal Surveys on U.S. Navy Underwater Ranges in Hawaii and Bahamas*. Arlington, VA: Office of Naval Research.

Mobley, J. R. (2005). Assessing responses of humpback whales to North Pacific Acoustic Laboratory (NPAL) transmissions: Results of 2001–2003 aerial surveys north of Kauai. *The Journal of Acoustical Society of America 117* 1666–1773. DOI:10.1121/1.1854475

Mobley, J. R., G. B. Bauer, and L. M. Herman. (1999). Changes over a ten-year interval in the distribution and relative abundance of humpback whales (*Megaptera novaeangliae*) wintering in Hawaiian waters. *Aquatic Mammals 25* (2): 63–72.

Mobley, J. R., M. H. Deakos, S. W. Martin, and R. Manzano-Roth. (2015). *Aerial Survey Monitoring for Marine Mammals and Sea Turtles in the Hawaii Range Complex in Conjunction with a Navy Training Event: SCC 18–20 February 2014, Final Report* (Prepared for Naval Facilities Engineering Command Pacific for Commander, U.S. Pacific Fleet under Contract No. N62470-10-D-3011, CTO KB26, issued to HDR, Inc.). Honolulu, HI: HDR Inc.

Mobley, J. R. and A. F. Pacini. (2013). *Aerial Survey Monitoring for Marine Mammals and Sea Turtles in the Hawaii Range Complex in Conjunction with a Navy Training Event, SCC February 19-21 and August 12-13, 2013, Final Field Report*. Pearl Harbor, HI: U.S. Navy Pacific Fleet.

Mobley, J. R., S. Spitz, and R. Grotefendt. (2001). *Abundance of Humpback Whales in Hawaiian Waters: Results of 1993–2000 Aerial Surveys*. Honolulu, HI: Hawaiian Islands Humpback Whale National Marine Sanctuary, Department of Land and Natural Resources, State of Hawaii.

Mobley, J. R., S. S. Spitz, K. A. Forney, R. Grotefendt, and P. H. Forestell. (2000). *Distribution and Abundance of Odontocete Species in Hawaiian Waters: Preliminary Results of 1993–98 Aerial Surveys*. Pearl City, HI; Colorado Springs, CO; La Jolla, CA; North Bend, WA; and Southampton, NY: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Muto, M. M., V. T. Helker, R. P. Angliss, B. A. Allen, P. L. Boveng, J. M. Breiwick, M. F. Cameron, P. J. Clapham, S. P. Dahle, M. E. Dahlheim, B. S. Fadely, M. C. Ferguson, L. W. Fritz, R. C. Hobbs, Y. V. Ivashchenko, A. S. Kennedy, J. M. London, S. A. Mizroch, R. R. Ream, E. L. Richmond, K. E. W. Shelden, R. G. Towell, P. R. Wade, J. M. Waite, and A. R. Zerbini. (2017). *Alaska Marine Mammal Stock Assessments, 2016* (NOAA Technical Memorandum NMFS-AFSC-323). Seattle, WA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Fisheries Science Center.

National Marine Fisheries Service. (2016a). Endangered and Threatened Species; Identification of 14 Distinct Population Segments of the Humpback Whale (*Megaptera novaeangliae*) and Revision of Species-Wide Listing. *Federal Register 81* (174): 62260–62320.

National Marine Fisheries Service. (2016b). *National Marine Fisheries Service, Alaska Region Occurrence of Endangered Species Act (ESA) Listed Humpback Whales off Alaska*. Silver Spring, MD: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Region.

National Marine Fisheries Service. (2021). *Status of Stocks 2020: Annual Report to Congress on the Status of U.S. Fisheries*. Silver Spring, MD: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

National Marine Fisheries Service. (2024). *Reinitiation of the Biological and Conference Opinion on (1) U.S. Navy Hawaii-Southern California Training and Testing, and (2) the National Marine Fisheries Service's Promulgation of Regulations and Issuance of a Letter of Authorization Pursuant to the Marine Mammal Protection Act for the U.S. Navy to "Take" Marine Mammals Incidental to Hawaii-Southern California Training and Testing Through December 2025*. Washington, DC: U.S. Department of Commerce.

National Oceanic and Atmospheric Administration. (2012). *Taking of Marine Mammals Incidental to Commercial Fishing Operations; False Killer Whale Take Reduction Plan; Final Rule*: Federal Register.

Norris, K. S. and T. P. Dohl. (1980). Behavior of the Hawaiian spinner dolphin, *Stenella longirostris*. *Fishery Bulletin 77* (4): 821–849.

Norris, T. F., M. McDonald, and J. Barlow. (1999). Acoustic detections of singing humpback whales (*Megaptera novaeangliae*) in the eastern North Pacific during their northbound migration. *The Journal of Acoustical Society of America 106* (1): 506–514.

Oleson, E. M., R. W. Baird, K. K. Martien, and B. L. Taylor. (2013a). *Island-associated stocks of odontocetes in the main Hawaiian Islands: A synthesis of available information to facilitate evaluation of stock structure* (PIFSC Working Paper WP-13-003). Pacific Islands Fisheries Science Center.

Oleson, E. M., R. W. Baird, K. K. Martien, and B. L. Taylor. (2013b). *Island-associated stocks of odontocetes in the main Hawaiian Islands: A synthesis of available information to facilitate evaluation of stock structure* (Pacific Islands Fisheries Science Center Working Paper WP-13-003). Honolulu, HI: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Pacific Islands Fisheries Science Center.

Oleson, E. M., S. Baumann-Pickering, A. Širović, K. P. Merkens, L. M. Munger, J. S. Trickey, and P. Fisher-Pool. (2015a). *Analysis of long-term acoustic datasets for baleen whales and beaked whales within the Mariana Islands Range Complex (MIRC) for 2010 to 2013* (Pacific Islands Fisheries Science Center Data Report DR-15-002). Honolulu, HI: Pacific Islands Fisheries Science Center.

Oleson, E. M., S. Baumann-Pickering, A. Širović, K. P. Merkens, L. M. Munger, J. S. Trickey, and P. Fisher-Pool. (2015b). *Analysis of long-term acoustic datasets for baleen whales and beaked whales within the Mariana Islands Range Complex (MIRC) for 2010 to 2013* (PIFSC Data Report DR-15-002).

Oleson, E. M., C. H. Boggs, K. A. Forney, M. B. Hanson, D. R. Kobayashi, B. L. Taylor, P. R. Wade, and G. M. Ylitalo. (2010). *Status Review of Hawaiian Insular False Killer Whales (Pseudorca crassidens) under the Endangered Species Act*. U.S. Department of Commerce.

Ostman-Lind, J., A. D. Driscoll-Lind, and S. H. Rickards. (2004). *Delphinid Abundance, Distribution and Habitat Use Off the Western Coast of the Island of Hawaii*. La Jolla, CA: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Pirotta, E., C. G. Booth, J. Calambokidis, D. P. Costa, J. A. Fahlbusch, A. S. Friedlaender, J. A. Goldbogen, J. Harwood, E. L. Hazen, L. New, J. A. Santora, S. L. Watwood, C. Wertman, and B. L. Southall. (2022). From individual responses to population effects: Integrating a decade of multidisciplinary research on blue whales and sonar. *Animal Conservation*. DOI:10.1111/acv.12785

Pitman, R. L. and C. Stinchcomb. (2002). Rough-toothed dolphins (*Steno bredanensis*) as predators of mahimahi (*Coryphaena hippurus*). *Pacific Science 56* (4): 447–450.

Rankin, S. and J. Barlow. (2007). Sounds recorded in the presence of Blainville's beaked whales, *Mesoplodon densirostris*, near Hawaii. *The Journal of Acoustical Society of America 122* (1): 42–45. DOI:10.1121/1.2743159

Redfern, J. V., M. F. McKenna, T. J. Moore, J. Calambokidis, M. L. Deangelis, E. A. Becker, J. Barlow, K. A. Forney, P. C. Fiedler, and S. J. Chivers. (2013). Assessing the risk of ships striking large whales in marine spatial planning. *Conservation Biology 27* (2): 292–302. DOI:10.1111/cobi.12029

Richie, M. W., R. K. Uyeyama, J. M. Aschettino, and M. A. Fagan. (2016). *Marine Species Surveys of Pearl Harbor, Nov 2013–Nov 2015, and Historical Occurrence of Marine Species in Pearl Harbor* (Submitted to: NAVFAC Hawaii for Commander, Navy Installation Command, Joint Base Pearl Harbor Hickam). Pearl Harbor, HI: NAVFAC Pacific.

Richie, M. W., R. K. Uyeyama, and J. Fujimoto. (2012). *Final Report Ka'ula Island ship-based marine mammal survey, July 6, 2012 Hawaii Range Complex Field Report*. Pearl Harbor, HI.

Rugh, D., J. Breiwick, M. Muto, R. Hobbs, K. Shelden, C. D'Vincent, I. M. Laursen, S. Reif, S. Maher, and S. Nilson. (2008). *Report of the 2006–2007 Census of the Eastern North Pacific Stock of Gray Whales*. Seattle, WA: NOAA, NMFS, Alaska Fisheries Science Center.

Rugh, D. J., R. C. Hobbs, J. A. Lerczak, and J. M. Breiwick. (2005). Estimates of abundance of the eastern North Pacific stock of gray whales (*Eschrichtius robustus*) 1997–2002. *Journal of Cetacean Research and Management 7* (1): 1–12.

Shallenberger, E. W. (1981). *The Status of Hawaiian Cetaceans*. Kailua, HI: Manta Corporation.

Širović, A., S. Baumann-Pickering, J. A. Hildebrand, A. J. Debich, S. T. Herbert, A. Meyer-Löbbecke, A. Rice, B. Thayre, J. S. Trickey, S. M. Wiggins, and M. A. Roch. (2016). *Passive Acoustic Monitoring for Marine Mammals in the SOCAL Range Complex July 2014–May 2015* (MPL Technical Memorandum #607). La Jolla, CA: Marine Physical Laboratory, Scripps Institution of Oceanography, University of California; Department of Computer Science, San Diego State University.

Širović, A., J. A. Hildebrand, S. M. Wiggins, M. A. McDonald, S. E. Moore, and D. Thiele. (2004). Seasonality of blue and fin whale calls and the influence of sea ice in the Western Antarctic Peninsula. *Deep Sea Research II 51* (17–19): 2327–2344. DOI:10.1016/j.dsr2.2004.08.005

Širović, A., A. Rice, E. Chou, J. A. Hildebrand, S. M. Wiggins, and M. A. Roch. (2015). Seven years of blue and fin whale call abundance in the Southern California Bight. *Endangered Species Research 28* 61–76. DOI:10.3354/esr00676

Smultea, M. A. and T. Jefferson. (2014). Changes in Relative Occurrence of Cetaceans in the Southern California Bight: A Comparison of Recent Aerial Survey Results with Historical Data Sources. *Aquatic Mammals 40* (1): 32–43. DOI:10.1578/AM.40.1.2014.32

Sumich, J. L. and I. T. Show. (2011). Offshore migratory corridors and aerial photogrammetric body length comparisons of southbound gray whales, *Eschrichtius robustus*, in the Southern California Bight, 1988–1990. *Marine Fisheries Review 73* (1): 28–34.

Szesciorka, A. R., L. T. Ballance, A. Širović, A. Rice, M. D. Ohman, J. A. Hildebrand, and P. J. S. Franks. (2020). Timing is everything: Drivers of interannual variability in blue whale migration. *Scientific Reports 10* (1). DOI:10.1038/s41598-020-64855-y

Tyne, J. A., D. W. Johnston, F. Christiansen, and L. Bejder. (2017). Temporally and spatially partitioned behaviours of spinner dolphins: Implications for resilience to human disturbance. *Royal Society Open Science 4* (1): 160626. DOI:10.1098/rsos.160626

Tyne, J. A., D. W. Johnston, R. Rankin, N. R. Loneragan, L. Bejder, and A. Punt. (2015). The importance of spinner dolphin (*Stenella longirostris*) resting habitat: Implications for management. *Journal of Applied Ecology 52* (3): 621–630. DOI:10.1111/1365-2664.12434

U.S. Department of the Navy. (2006). *Rim of the Pacific Exercise After Action Report: Analysis of Effectiveness of Mitigation and Monitoring Measures as Required Under the Marine Mammals Protection Act (MMPA) Incidental Harassment Authorization and the National Defense Exemption from the Requirements of the MMPA for Mid-Frequency Active Sonar Mitigation Measures*.

U.S. Department of the Navy. (2018). *2017 U.S. Navy Annual Marine Species Monitoring Report for the Pacific: A Multi-Range-Complex Monitoring Report For Hawaii-Southern California Training and Testing (HSTT), Mariana Islands Training and Testing (MITT), Northwest Training and Testing (NWTT), and the Gulf of Alaska Temporary Maritime Activities Area (GOA TMAA)*. Silver Spring, MD: National Marine Fisheries Service, Office of Protected Resources.

U.S. Department of the Navy. (2022). *Essential Fish Habitat Reinitiation for Submarine Mine Training Around Maui*. Pearl Harbor, HI: U.S. Department of the Navy.

U.S. Department of the Navy. (2024). *U.S. Navy Marine Species Density Database Phase IV for the Hawaii-California Training and Testing Study Area. Technical Report.* Pearl Harbor, HI: U.S. Pacific Fleet, Environmental Readiness Division,.

Urbán, J. R., E. Jiménez-López, H. M. Guzmán, and L. Viloria-Gómora. (2021). Migratory Behavior of an Eastern North Pacific Gray Whale From Baja California Sur to Chirikov Basin, Alaska. *Frontiers in Marine Science 8*. DOI:10.3389/fmars.2021.619290

Van Parijs, S. M. (2015). Letter of introduction to the Biologically Important Areas Issue. *Aquatic Mammals 41* (1): 1–128. DOI:10.1578/AM.41.1.2015.1

Van Parijs, S. M., C. Curtice, and M. C. Ferguson, (Eds.). (2015). Biologically Important Areas for cetaceans within U.S. waters. *Aquatic Mammals (Special Issue) 41* (1): 128. DOI:10.1578/AM.41.1.2015.1

Wade, P. R. and T. Gerrodette. (1993). Estimates of cetacean abundance and distribution in the eastern tropical Pacific. *Reports of the International Whaling Commission 43* 477–493.

Wade, P. R., T. J. Quinn II, J. Barlow, C. S. Baker, A. M. Burdin, J. Calambokidis, P. J. Clapham, E. A. Falcone, J. K. B. Ford, C. M. Gabriele, D. K. Mattila, L. Rojas-Bracho, J. M. Straley, and B. Taylor. (2016). *Estimates of abundance and migratory destination for North Pacific humpback whales in both summer feeding areas and winter mating and calving areas*.

Wang, J. Y. and S. C. Yang. (2006). Unusual cetacean stranding events of Taiwan in 2004 and 2005. *Journal of Cetacean Research and Management 8* (3): 283–292.

Webster, D. L., R. W. Baird, B. K. Rone, and D. B. Anderson. (2015, December 14–18, 2015). *Rough-toothed dolphins on a Navy range in Hawaii: using LIMPET satellite-tag data to assess movements, habitat use, and overlap with Navy activities.* Presented at the Poster presented at the 21st Biennial Conference on the Biology of Marine Mammals. San Francisco, CA. Retrieved from http://www.cascadiaresearch.org/Hawaii/Websteretal_2015_SMM.pdf.

Weller, D. W., S. Bettridge, R. L. Brownell, J. L. Laake, M. J. Moore, P. E. Rosel, B. L. Taylor, and P. R. Wade. (2013). *Report of the National Marine Fisheries Service Gray Whale Stock Identification Workshop* (NOAA Technical Memorandum NMFS-SWFSC-507). La Jolla, CA: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center.

Weller, D. W., A. Klimek, A. L. Bradford, J. Calambokidis, A. R. Lang, B. Gisborne, A. M. Burdin, W. Szaniszlo, J. Urban, A. Gomez-Gallardo Unzueta, S. L. Swartz, and R. L. Brownell Jr. (2012). Movements of gray whales between the western and eastern North Pacific. *Endangered Species Research 18* 193–199. DOI:10.3354/esr00447

Wild, L. A., H. E. Riley, H. C. Pearson, C. M. Gabriele, J. L. Neilson, A. Szabo, J. Moran, J. M. Straley, and S. DeLand. (2023). Biologically Important Areas II for cetaceans within U.S. and adjacent waters – Gulf of Alaska Region. *Frontiers in Marine Science 10*. DOI:10.3389/fmars.2023.1134085

Würsig, B., T. A. Jefferson, and D. J. Schmidly. (2000). *The Marine Mammals of the Gulf of Mexico*. College Station, TX: Texas A&M University Press.

Young, N. C., Brower, A. A., Muto, M. M., Freed, J. C., Angliss, R. P., Friday, N. A., Boveng, P. L., Brost, B. M., Cameron, M. F., Crance, J. L., Dahle, S. P., Fadely, B. S., Ferguson, M. C., Goetz, K. T., London,

J. M., Oleson, E. M., Ream, R. R., Richmond, E. L., Shelden, K. E. W., Sweeney, K. L., Towell, R. G., Wade, P. R., Waite, J. M., and Zerbini, A. N. (2023). *Alaska Marine Mammal Stock Assessments: 2022* (NOAA Technical Memorandum NMFS-AFSC-474). Washington, DC: U.S. Department of Commerce.

Appendix L Public Participation

Environmental Impact Statement/
Overseas Environmental Impact Statement
Hawaii-California Training and Testing
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Appendix L Public Participation

This appendix describes outreach efforts to involve the public during the development of the Hawaii-California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).

L.1 Project Website

A website was established to provide the public with project information and includes public notices, project fact sheet, maps, virtual open house scoping presentation, National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) Section 106 processes, and project video. The public was able to submit comments via the website and subscribe to receive future notifications via email. The project website is *www.nepa.navy.mil/hctteis/*.

L.2 Scoping Period

The public scoping period began with publication of the Notice of Intent in the *Federal Register* on December 15, 2023, (88 Federal Register 86885) and ran through January 29, 2024.

L.2.1 Public Notifications

The U.S. military services made significant efforts to notify the public to encourage participation during the scoping process. All public notices included information about the intent to prepare an EIS/OEIS; Proposed Action and its purpose and need; virtual open house scoping presentation; NEPA and NHPA Section 106 processes, including how to request information on the NHPA Section 106 consultation process and how to participate; how to submit public comments; and website address. A summary of these efforts follows.

L.2.1.1 Notification Letters

Tribal letters with a fact sheet enclosure were mailed to 79 federally recognized tribal chairpersons and tribal staff. Stakeholder letters (Table L-1) and fact sheets were mailed to 1,382 federal, state, and local elected officials and agencies; non-federally recognized tribes and tribal groups, and Native Hawaiian Organizations. Letters were mailed December 14, 2023. Entities that received a notification letter are listed in Table L-1.

Table L-1: Entities that Received the Scoping Notification Letter

California Federally Recognized Tribes, Non-Federally Recognized Tribes, and Tribal Groups	
Federally Recognized Tribes	**Non-Federally Recognized Tribes and Tribal Groups**
Barona Group of the Capitan Grande	Amah Mutsun Tribal Band
Bear River Band of Rohnerville Rancheria	Amah Mutsun Tribal Band of Mission San Juan Bautista
Cahto Tribe	Barbareño Band of Chumash Indians
Campo Band of Diegueno Mission Indians	Barbareño/Ventureño Band of Mission Indians
Cloverdale Rancheria of Pomo Indians	Chumash Council of Bakersfield
Coyote Valley Band of Pomo Indians	Coastal Band of the Chumash Nation
Dry Creek Rancheria Band of Pomo Indians	Costanoan Ohlone Rumsen-Mutsen Tribe
Ewiiaapaayp Band of Kumeyaay Indians	Costanoan Rumsen Carmel Tribe
Federated Indians of Graton Rancheria	Esselen Tribe of Monterey County
Guidiville Rancheria of California	Fernandeño Tataviam Band of Mission Indians
Hopland Band of Pomo Indians	Gabrieleno Band of Mission Indians Kizh Nation
Iipay Nation of Santa Ysabel	

Inaja-Cosmit Band of Indians Jamul Indian Village Kashia Band of Pomo Indians of the Stewarts Point Rancheria La Jolla Band of Luiseno Mission Indians La Posta Band of Diegueno Mission Indians Lytton Rancheria Manchester Band of Pomo Indians of the Manchester Rancheria Manzanita Band of Kumeyaay Nation Mesa Grande Band of Diegueno Mission Indians Middletown Rancheria of Pomo Indians Pala Band of Mission Indians Pauma Band of Luiseno Indians Pechanga Band of Indians Pinoleville Pomo Nation Potter Valley Tribe Redwood Valley or Little River Band of Pomo Indians Rincon Band of Luiseño Indians Robinson Rancheria of Pomo Indians Round Valley Reservation/Covelo Indian Community San Pasqual Band of Diegueno Mission Indians Santa Rosa Band of Cahuilla Indians Santa Ynez Band of Chumash Indians Sherwood Valley Rancheria of Pomo Soboba Band of Luiseño Indians Sycuan Band of the Kumeyaay Nation Tule River Indian Tribe Viejas Band of Kumeyaay Indians	Gabrieleno/Tongva San Gabriel Band of Mission Indians Gabrielino Tongva Indians of California Tribal Council Gabrielino/Tongva Nation Gabrielino-Tongva Tribe Indian Canyon Mutsun Band of Costanoan InterTribal Sinkyone Wilderness Council Juaneno Band of Mission Indians Juaneno Band of Mission Indians Acjachemen Nation – Belardes Juaneno Band of Mission Indians Acjachemen Nation 84A KaKoon Ta Ruk Band of Ohlone-Costanoan Indians of the Big Sur Rancheria Kwaaymii Laguna Band of Mission Indians Mishewal-Wappo Tribe of Alexander Valley Muwekma Ohlone Indian Tribe of the SF Bay Area Northern Chumash Tribal Council Noyo River Indian Community Ohlone/Costanoan-Esselen Nation Rumsen Ama Turataj Ohlone Salinan Tribe of Monterey, San Luis Obispo Counties San Fernando Band of Mission Indians San Luis Obispo County Chumash Council San Luis Rey Band of Mission Indians Serrano Nation of Mission Indians The Ohlone Indian Tribe Wishtoyo Chumash Foundation Wuksachi Indian Tribe/Eshom Valley Band Xolon-Salinan Tribe yak tityu yak tiłhini – Northern Chumash Tribe Yokayo Tribe
Federal Agencies – National	

Advisory Council on Historic Preservation
Bureau of Oceans and International Environmental and Scientific Affairs
Bureau of Safety and Environmental Enforcement
    Office of Offshore Regulatory Programs
Council on Environmental Quality
Federal Communications Commission
Federal Energy Regulatory Commission
Federal Maritime Commission
General Services Administration
    National Environmental Policy Act (NEPA) Implementation, NEPA Advisory Group
International Boundary and Water Commission
Marine Mammal Commission
National Science Foundation
Ocean Policy Committee
U.S. Army Corps of Engineers
U.S. Army National Guard
U.S. Department of Agriculture
    Animal and Plant Health Inspection Service, Wildlife Services	

- Natural Resources Conservation Service
- U.S. Department of Commerce
  - National Oceanic and Atmospheric Administration (NOAA) Fisheries
    - Headquarters Office
    - National Ocean Service
      - National Marine Sanctuaries
      - Office for Coastal Management
    - National Marine Protected Areas Center
    - Office of Habitat Conservation
      - Office of Protected Resources
        - Endangered Species Act Interagency Cooperation Division
        - Protected Resources Division
    - Environmental Observation and Prediction
- U.S. Department of Energy
  - NEPA Policy and Compliance (GC-54)
  - Office of Environment, Health, Safety & Security
- U.S. Department of Health and Human Services
- U.S. Department of Homeland Security
  - Federal Emergency Management Agency District 9
  - U.S. Coast Guard
    - Office of Environmental Management (CG-47)
    - Office of Operating and Environmental Standards (CG-OES-3)
- U.S. Department of Justice
  - Environment and Natural Resources Division
- U.S. Department of the Interior
  - Bureau of Indian Affairs
  - Bureau of Ocean Energy Management
    - Public Affairs
  - Bureau of Reclamation
  - Bureau of Safety and Environmental Enforcement
    - Office of Offshore Regulatory Programs
  - Environmental Policy & Compliance
  - U.S. Fish and Wildlife Service
  - U.S. Geological Survey
    - Pacific Coastal and Marine Science Center
    - Western Fisheries Research Center
    - Western Geographic Science Center
  - U.S. National Park Service
    - National Historic Landmarks
- U.S. Department of Transportation
  - Federal Aviation Administration
    - Airport Planning and Environmental Division (APP-400)
    - Office of Policy, International Affairs, Environment and Energy
  - Maritime Administration
- U.S. Environmental Protection Agency
  - NEPA Compliance Division
  - Office of Federal Activities

Hawaii Federal Elected Officials and Federal Agencies

- U.S. House of Representatives (Districts 1, 2)
- U.S. Senators
- Federal Aviation Administration
  - Honolulu Airport District Office

NOAA Fisheries
Hawaiian Islands Humpback Whale National Marine Sanctuary
Honolulu Service Center
Pacific Islands Fisheries Science Center
Pacific Islands Regional Office
Protected Resources Division, Kauaʻi
Papahānaumokuākea Marine National Monument
U.S. Coast Guard
District 14
U.S. Fish and Wildlife Service
Hakalau Forest National Wildlife Refuge
Kakahaiʻa National Wildlife Refuge
Kilauea Point National Wildlife Refuge
Kauaʻi National Wildlife Refuge Complex
Pacific Islands Fish and Wildlife Office
Pacific Region
U.S. Geological Survey
Pacific Islands Water Science Center
Hawaii State Elected Officials and State Agencies
Office of the Governor
Office of the Lieutenant Governor
State Senators (all districts)
State Representatives (all districts)
House Committee on Corrections
Military & Veterans
House Committee on Water and Land
Senate Committee on Water and Land
Department of Hawaiian Home Lands
Office of the Chairman
Department of Health
Environmental Health Administration
Environmental Management Division
Hazard Evaluation and Emergency Response Office
Office of Environmental Quality Control
Department of Land and Natural Resources
Division of Aquatic Resources
Division of Conservation and Resources Enforcement
Division of Forestry and Wildlife
Division of State Parks
Office of Conservation and Coastal Lands
State Historic Preservation Division
Department of Transportation
Airports Division
Harbors Division
Department of Agriculture
Office of the Chairperson
Department of Defense
Hawaiʻi Army National Guard
State of Hawaiʻi
Office of Planning and Sustainable Development
Department of Defense, Office of the Adjutant General

Land Use Commission, Department of Business, Economic Development & Tourism
Western-Pacific Regional Fishery Management Council
Hawaii Local Elected Officials and Local Agencies
City and County of Honolulu
City Council (all districts)
Environmental Services Department
Office of the Managing Director
Parks and Recreation Department
Planning and Permitting Department
Neighborhood Commission Office
County of Hawaiʻi
Planning Department
Department of Research & Development
County of Kauaʻi
Planning Department
County Council Kauaʻi
Police Department
County of Maui
Department of Environmental Management
Department of Planning
Native Hawaiian Organizations
ʻAha Kāne
ʻAhahui Siwila Hawaiʻi O Kapōlei (Kapolei Hawaiian Civic Club)
Aha Kukaniloko Koa Mana mea ola kanaka mauli
Aha Mālama, Corp.
Aha Moku O Kahikinui
Aha Moku o Kaupo
Aha Moku o Maui Inc.
Aha Wahine
Ahahui Kiwila Hawaiʻi O Moʻikeha
Ahahui Siwila Hawaiʻi O Kapolei
Ahonui Homestead Association
Ahupuaʻa o Molokaʻi
Ahupuaʻa O Nānākuli Homestead
ʻAi Noa Foundation
Āina Momona
Ala Kahakai Trail Association
Alaka`ina Foundation Inc.
Alepa Hou Foundation
Aliʻi Pauahi Hawaiian Civic Club
Aloha First
ʻAoʻao O Nā Loko Iʻa O Maui
Association of Hawaiian Civic Clubs
Association of Hawaiians for Homestead Lands
Au Puni O Hawaiʻi
Brian Kaniela Naeʻole Naauao
Captain Kimos Hawaiian Adventures
Charles Pelenui Mahi Ohana
Council for Native Hawaiian Advancement
E Ola Kākou Hawaiʻi
EAO Hawaiʻi Inc.
Elizabeth Kahanu Hawaiian Civic Club

Ewa-Puʻuloa Hawaiian Civic Club
Flores-Case ʻOhana
Friends of ʻIolani Palace
George K. Cypher ʻOhana
God’s Country Waimanalo
Hanalei Hawaiian Civic Club’
Hanalei River Heritage Foundation
Hanona Hauʻouiwi Homestead Association on Lānaʻi
Hawaiʻi – Moku o Keawe
Hawaiʻi Council of Hawaiian Civic Clubs | Moku o Keawe
Hawaiʻi Island Burial Council
Hawaiʻi State Aha Moku
Hawaiian Civic Club of Hilo
Hawaiian Civic Club of Honolulu
Hawaiian Civic Club of Kaʻū
Hawaiian Civic Club of Laupahoehoe
Hawaiian Civic Club of Wahiawa
Hawaiian Civic Club of Waimānalo
Hawaiian Islands Burial Council, Kauaʻi
Hawaiian Islands Burial Council, Maui
Hawaiian Islands Burial Council, Oʻahu
Hawaiian Kingdom Task Force
Ho Ohana
Hoʻokano Family Land Trust
Hoʻōla Lāhui Hawaiʻi
Hui Aloha Kīholo
Hui Hoʻoleimaluō
Hui Huliau Inc.
Hui Iwi Kuamoʻo
Hui Kaleleiki Ohana
Hui Mālama Ola Nā ʻŌiwi
Hui No Ke Ola Pono
Hui o Kuapā
Hui O Waʻa Kaulua
Hui ʻOhana O Hōnaunau
Hulu Mamo Hawaiian Civic Club
Imua Hawaiʻi
Independent District of Puna
Institute for Native Pacific Education and Culture
KAʻEHU
Kaho’olawe – Moku O Kanaloa
Kāhuli Leo Leʻa
Kailua Hawaiian Civic Club
Kākoʻo ʻŌiwi
Kalaeloa Heritage and Legacy Foundation
Kalamaʻula Homesteaders Association
Kalihi Palama Hawaiian Civic Club
Kamealoha
Kamehameha Schools
Kamiloloa One Aliʻi Homestead Association
Kanaka Economic Development Alliance
Kānehūnāmoku Voyaging Academy
Kanu o ka ʻĀina Learning ʻOhana

Kapolei Community Development Corporation
Kapolei Hawaiian Civic Club
Kauaʻi – Mano O Kalanipo
Kauaʻi Council of Hawaiian Civic Clubs
Kauaʻi Sea Farm
Kauhakō Ohana Association
Kaʻuikiokapō
Kauluakalana
Kaumualiʻi Hawaiian Civic Club
Kawaihapai Ohana
Kawaileo Law, LLC
Ke Kula Nui O Waimānalo
Ke One O Kakuhihewa, Oʻahu Council of the Association of Hawaiian Civic Clubs
Keaukaha Community Association
Keoni Kealoha Alvarez
Kiaʻi Kanaloa
Kimokeo Foundation
King Kamehameha Hawaiian Civic Club
Kingdom of Hawaiʻi
Kipuka Olowalu
Koʻolau Foundation
Koʻolauloa Hawaiian Civic Club
Koʻolaupoko Hawaiian Civic Club
Koa Ike
Kohala Hawaiian Civic Club
Kona Hawaiian Civic Club
Kuaʻāina Ulu ʻAuamo
Kuakini Hawaiian Civic Club of Kona
Kula no na Poʻe Hawaiʻi
Kuloloiʻa Lineage - I ke Kai ʻo Kuloloiʻa
Kupeke Ahupuaʻa
LaʻiʻŌpua 2020
Lāhaina Hawaiian Civic Club
Lahui Kakaʻikahi
Laʻiʻōpua Community Development Corporation
Las Vegas Hawaiian Civic Club
Maʻa ʻOhana c/o Lani Maʻa Lapilio
Machado-Akana-Aona-Namakaeha Ohana
Mahamoku Ohana Council
Mahu OhanaMakaha Hawaiian Civic Club
Makuʻu Farmers Association
Malama Anahola
Mālama Hulēʻia
Malama Kaʻu Foundation
Mālama Loko Ea Foundation
Maluʻōhai Residents Association
Mana Health Services, Inc.
Marae Haʻa Koa Maui Council of Hawaiian Civic Clubs | Nā Hono Aʻo Piʻilani
Maunalua Hawaiian Civic Club
Meje, Inc.
Meleana Kawaiaea, LLC
Menehune Foundation
Na Aikane O Maui

Na Koa Ikaika Ka Lahui Hawaiʻi
Na Kuʻauhau ʻo Kahiwakaneikopolei
Nā Kuleana o Kānaka ʻŌiwi
Na Kupuna Moku O Keawe
Na Mookupuna O Wailua
Na Ohana o Puaoi a me Hanawahine
Nā Puʻuwai
Nakupuna Foundation
Nānāikapono Hawaiian Civic Club
Nanakuli Housing Corporation
Native Hawaiian Chamber of Commerce
Native Hawaiian Church
Native Hawaiian Community Development Corporation
Native Hawaiian Education Council
Native Hawaiian Hospitality Association
Native Hawaiian Legal Corporation
Nekaifes Ohana
Niʻihau – Ni'ihau O Kahele Lani
Nohopapa Hawaiʻi, LLC
ʻOhana Keaweamahi
ʻO Makuʻu Ke Kahua Community Center
Oʻahu – Moku O Kakuhihewa
Oʻahu Canoe Racing Association
Oʻahu Council of Hawaiian Civic Clubs
Office of Hawaiian Affairs
Ohana Keohokālole
ʻOhana Lo
Order of Kamehameha I
PAʻI Foundation
Pacific Agricultural Land Management Systems
Pacific Justice & Reconciliation Center
Panaewa Hawaiian Home Lands Community Association
Papa Ola Lokahi
Papakōlea Community Development Corporation
Partners in Development Foundation
Paukukalo Hawaiian Homes Community Association
Peahi Ohana
Pearl Harbor Hawaiian Civic Club
Pele Defense Fund
Piihonua Hawaiian Homestead Community Association
Pōhaku Pelemaka
Polynesian Voyaging Society
Prince Kūhiō Hawaiian Civic Club
Protect Keopuka Ohana
Puʻuhonua o Wailupe
Queen Deborah Kapule Hawaiian Civic Club
Queen Emma Hawaiian Civic Club
Queen Julia Kapiʻolani Hawaiian Civic Club
Royal Hawaiian Academy of Traditional Arts
Sovereign Councils of the Hawaiian Homestead Associations
The Friends of Hokuleʻa and Hawaiʻiloa
The I Mua Group
The Makua Group

Wahiawa Ahupuaa LCA 7714B Apana 6 RP 7813 Wai Koa Kauaʻi Waiʻanae Hawaiian Civic Club Waialua Hawaiian Civic Club Waiehu Kou Phase 3 Association Waimānalo Hawaiian Homes Association Waimānalo Health Center Waimea Hawaiian Civic Club Waimea Hawaiian Homesteaders' Association, Inc.
California Federal Elected Officials and Federal Agencies

U.S. House of Representatives (Districts 2, 11, 15, 17, 18, 19, 24, 26, 27, 28, 29, 30, 32, 35, 36, 37, 41, 42, 43, 44, 45, 48, 49, 50, 51, 52)
U.S. Senators
Bureau of Indian Affairs
    Southern California Agency
Bureau of Land Management
Bureau of Ocean Energy Management
    Pacific Outer Continental Shelf Region
        Public Affairs
Bureau of Safety and Environmental Enforcement
    Pacific Region Office
Federal Aviation Administration
    Los Angeles Air Route Traffic Control Center
    Office of the Director, Western-Pacific Region, AWP-600
    San Francisco Air Route Traffic Control Center
NOAA Fisheries
    Alaska Fisheries Science Center
    California Coastal Area Office
    Channel Islands National Marine Sanctuaries, University of California at Santa Barbara
    Chumash Heritage National Marine Sanctuary (Proposed)
    Cordell Bank National Marine Sanctuary
    Greater Farallones National Marine Sanctuary
    Monterey Bay National Marine Sanctuary
    Oregon-Washington Coastal Office
    West Coast Region, Protected Resources Division
    Southwest Fisheries Science Center
Office of Environmental Policy and Compliance
    Region IX
Pacific Fishery Management Council
U.S. Army Corps of Engineer
    Los Angeles District
U.S. Coast Guard
    District 11
    Sector San Diego
    Channel Islands Harbor
    Los Angeles – Long Beach
    Santa Barbara
U.S. Environmental Protection Agency
    Region 9
        Natural Resources, Water, Aquaculture
        Military & Tribal
U.S. Fish and Wildlife Service

Carlsbad Office
Pacific Region
Sacramento Office
San Diego Bay National Wildlife Refuge
Ventura Office
U.S. Forest Service
Los Padres National Forest Headquarters
Pacific Southwest Region
U.S. Geological Survey
California Water Science Center
Northwest-Pacific Island Regional Director's Office
Southwest Region
Western Ecological Research Center
U.S. National Park Service
Channel Islands National Park
Pacific West Regional Office
Santa Monica Mountains National Recreation Area
California State Elected Officials and State Agencies
Office of the Governor
State Assembly Members (Districts 2, 12, 30, 37, 38, 42, 44, 54, 55, 61, 66, 69, 71, 72, 74, 75, 76, 77, 78, 79)
State Senators (Districts 2, 13, 17, 21, 24, 27, 33, 35, 36, 37, 38, 39)
Attorney General's Office, California Department of Justice
California Air Resources Board
Enforcement Division
California Coastal Commission
Energy, Ocean Resources and Federal Consistency Division
South Central Coast District
California Coastal National Monument (Bureau of Land Management)
California Department of Conservation
Geologic Energy Management Northern District
California Department of Education
California Department of Fish and Wildlife
Air Services Unit
Habitat Conservation Planning Branch
Marine Region
Field Office
Habitat Conservation Program
South Coast Region
Wildlife Branch
California Department of Industrial Relations
California Department of Parks and Recreation
Division of Boating and Waterways
Office of Historic Preservation
California Department of Public Health
California Department of Toxic Substances Control
California Department of Transportation
California Department of Water Resources
California Department of Veterans Affairs
California Energy Commission
California Environmental Protection Agency
Air Resources Board
California Fish and Game Commission

California Natural Resources Agency
Department of Conservation
Ocean Protection Council
California Regional Water Quality Control Board
Central Coast Region
Los Angeles Region
California Sea Grant
California State Coastal Conservancy
California State Lands Commission
California State Parks
Silver Strand State Beach
California Wildlife Conservation Board
Emergency Management Agency
Governor's Office of Planning and Research
California State Clearinghouse
Military Council
Native American Heritage Commission
Office of Environmental Health Hazard Assessment
Pacific States Marine Fisheries Commission
State Water Resources Control Board
Division of Water Quality
Division of Water Rights
California Local Elected Officials and Local Agencies
California American Water
Corporate Headquarters
Monterey County District
California Regional Water Quality Control Board
Los Angeles Region
North Coast Region
San Diego Region
California Water Service
Salinas District
City of Avalon
City Council
Harbor Department
City of Camarillo
City Council
Planning Division
City of Capitola
City Council
City of Carmel-by-the Sea
City Council
City of Chula Vista
City Council (Districts 1, 2, 3, 4)
City of Coronado
City Council
City of Dana Point
City Council
City of Del Rey Oaks
City Council
City of Fort Bragg
City Council

City of Huntington Beach
  City Council
City of Imperial Beach
  City Council (Districts 1, 2, 3, 4)
  Planning Department
City of Laguna Beach
  City Council
City of Long Beach
  City Council (Districts 1, 2, 3, 4, 5, 6, 7, 8, 9)
City of Los Angeles
  City Council (Districts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15)
City of Malibu
  City Council
City of Marina
  City Council (Districts 1, 2, 3, 4)
City of Monterey
  City Council (At-Large, Districts 1, 2)
  Fire Department
  Police Department
City of Morro Bay
  City Council
City of National City
  City Council (Districts 1, 3)
City of Newport Beach
  City Council (District 1, 2, 3, 4)
City of Oceanside
  City Council (Districts 1, 2, 3, 4)
City of Oxnard
  City Council (Districts 1, 2, 3, 4, 5, 6)
  Planning Division
  Police Department
City of Pacific Grove
  City Council
City of Port Hueneme
  City Council
  Planning & Zoning Division
City of Salinas
  City Council (Districts 1, 2, 3, 4, 5, 6)
City of San Diego
  City Council (District 1, 2, 3, 4, 5, 6, 7, 8, 9)
  Environmental Services Department
  Planning Department
City of San Luis Obispo
  City Council
City of Sand City
  City Council
City of Santa Barbara
  City Council (Districts 1, 2, 3, 4, 5, 6)
City of Sausalito
  City Council
City of Seaside
  City Council
City of Ventura

- City Council
Convention & Visitor Bureau of Oxnard
Fox Canyon Groundwater Management Agency
Gualala Municipal Advisory Council
Local Agency Formation Commission
Los Angeles County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)

Marin County
  - Board of Supervisors (District 1, 2, 3, 4, 5)
  - Parks
  - Public Works

Mendocino County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)
  - Parks
  - Planning and Building Services

Monterey County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)
  - Parks Department
  - Planning Services
  - Water Resources Agency

Monterey Peninsula Regional Airport
Monterey Peninsula Unified School District
Monterey Peninsula Water Management District
Orange County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)

Oxnard Visitors Bureau
Pacific Grove Unified
Peninsula Community Planning Board
Port of Benicia
Port of Hueneme
Port of Long Beach
Port of Los Angeles
Port of San Diego
San Diego Air Pollution Control District San Diego County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)
  - Department of Planning & Development Services

San Diego Harbor Police
San Diego Unified Port District
San Luis Obispo County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)
  - Environmental Health Services
  - Parks and Recreation Department
  - Planning and Building

Santa Barbara County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)
  - Planning and Development, Development Review Division
  - Air Pollution Control Board, Tech and EA Division
  - Association of Governments, Planning Division
  - Parks Administration
  - Public Health Department

Santa Barbara Waterfront Department
Santa Cruz County
  - Board of Supervisors (Districts 1, 2, 3, 4, 5)

Sonoma County
- Board of Supervisors (Districts 1, 2, 3, 4, 5)
- Regional Parks

Sonoma Public Infrastructure
Sonoma Water
South Coast Air Quality Management District
Southern California Association of Governments
Ventura Council of Governments
Ventura County
- Board of Supervisors (Districts 1, 2, 3, 4, 5)
- Air Pollution Control District
- Cultural Heritage Board
- Harbor Department
- Public Health Services
- Public Works Agency
  - Watershed Protection District
- Resource Management Agency
  - Planning Division

Ventura Visitors and Convention Bureau
Ventura Water

DEPARTMENT OF THE NAVY
COMMANDER
UNITED STATES PACIFIC FLEET
250 MAKALAPA DRIVE
PEARL HARBOR HI 96860-3131

IN REPLY REFER TO:
5090
Ser N46/0939
December 7, 2023

Dear Sir or Madam:

SUBJECT: NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT FOR HAWAII-CALIFORNIA TRAINING AND TESTING

The Department of the Navy (Navy) (including both the U.S. Navy and the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, announces its intent to prepare the Hawaii-California Training and Testing (HCTT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS) to assess the potential environmental effects associated with the Proposed Action to conduct at-sea military readiness activities within the Hawaii-California Training and Testing (HCTT) Study Area. The Navy also proposes to modernize and sustain its ranges in a manner necessary to support these readiness activities. The Proposed Action is needed to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions.

The Navy invites comments on the scope of the EIS/OEIS including identification of potential alternatives and environmental concerns, information and analyses relevant to the Proposed Action, issues that should be addressed in the National Environmental Policy Act (NEPA) analysis, and the project's potential to affect historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA). A virtual open house presentation is available on the project website at **www.nepa.navy.mil/hctteis**/ during the scoping period from December 15, 2023, to January 29, 2024. The presentation provides information about the Proposed Action, its purpose and need, environmental resource areas to be analyzed in the EIS/OEIS, the NEPA process, the NHPA Section 106 process, and public involvement opportunities. The public can view the virtual open house presentation and submit comments at **www.nepa.navy.mil/hctteis**/ anytime during the scoping period. Additional project information can also be found in the enclosed fact sheet (Enclosure).

The Navy welcomes and appreciates the public's participation during the scoping period. Comments must be postmarked or received online no later than 11:59 p.m. PST on **January 29, 2024**, for consideration in the Draft EIS/OEIS. Comments may be submitted via the project website at **www.nepa.navy.mil/hctteis**/ or by mail to:

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

This public scoping effort will also support consultation under Section 106 of the NHPA and its implementing regulations at 36 Code of Federal Regulations Part 800, as members of the

Figure L-1: Scoping Notification Letter

5090
Ser N46/0939
December 7, 2023

public are invited to participate, provide comments, or raise concerns. Comments submitted via the project website or by mail will be considered under NEPA and pursuant to Section 106 of the NHPA.

Visit the project website at **www.nepa.navy.mil/hctteis/** to learn more about the project, view maps of the Study Area, review prior NEPA-related documents, learn about the NHPA Section 106 consultation process, and submit comments. You may also contact Mr. Sean Gano, U.S. Pacific Fleet Command Environmental Public Affairs Specialist, 808-474-8441, sean.k.gano2.civ@us.navy.mil, if you have questions or would like to schedule a briefing.

Please help the Navy inform the community about the intent to prepare an EIS/OEIS for military readiness activities in Hawaii and California by sharing this information with your staff and interested individuals.

Sincerely,

J. H. BEATTIE
Captain, U.S. Navy
Deputy Fleet Civil Engineer
By direction

Enclosure: Hawaii-California Training and Testing EIS/OEIS fact sheet

2

Figure L-1: Scoping Notification Letter (continued)

L.2.1.2 Newspaper Advertisements

Display advertisements were placed in 10 newspapers as shown in Table L-2. An example of the advertisement is shown in Figure L-2.

Table L-2: Scoping Newspaper Advertisements

Oʻahu, Hawaii *Honolulu Star-Advertiser* Friday, December 15, 2023 Sunday, December 17, 2023 Monday, December 18, 2023	**Hawaiian Islands** *Ka Wai Ola News* Monday, January 1, 2024	**Ventura, California** *Ventura County Star* Friday, December 15, 2023 Sunday, December 17, 2023 Monday, December 18, 2023
Big Hawaiʻi, Hawaii *Hawaiʻi Tribune-Herald* Friday, December 15, 2023 Sunday, December 17, 2023 Monday, December 18, 2023	**Kauaʻi, Hawaii** *The Garden Island* Friday, December 15, 2023 Saturday, December 16, 2023 Monday, December 18, 2023	**Los Angeles, California** *Los Angeles Times* Friday, December 15, 2023 Saturday, December 16, 2023 Sunday, December 17, 2023
Mauʻi, Hawaii *The Mauʻi News* Friday, December 15, 2023 Saturday, December 16, 2023 Monday, December 18, 2023	**San Diego, California** *The San Diego Union-Tribune* Friday, December 15, 2023 Saturday, December 16, 2023 Sunday, December 17, 2023	**Monterey, California** *The Monterey Herald* Friday, December 15, 2023 Saturday, December 16, 2023 Sunday, December 17, 2023
		San Luis Obispo, California *The Tribune* Friday, December 15, 2023 Sunday, December 17, 2023 Monday, December 18, 2023

L.2.1.3 News Release

A news release was distributed to local, regional, and national print and broadcast media on December14, 2023. An example news release is shown in Figure L-3.

L.2.1.4 Social Media Posts

Social media posts were made December 14, 2023, and January 22, 2024, to established Navy social media pages, including the Navy Region Hawaii, Navy Region Southwest, and Stewards of the Sea Facebook pages.

L.2.1.5 Email Notifications

Email notifications were distributed December 15, 2023, and January 22, 2024, to 520 existing website subscribers.

The Department of the Navy
INVITES YOU TO PARTICIPATE
in the Public Scoping Process for the Hawaii-California
Training and Testing EIS/OEIS

The Department of the Navy (including both the U.S. Navy and the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, is preparing an Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) to assess the potential environmental effects associated with the Proposed Action to conduct at-sea military readiness activities within the Hawaii-California Training and Testing Study Area. The Navy also proposes to modernize and sustain its ranges in a manner necessary to support these readiness activities. The Proposed Action is needed to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions.

Public Involvement Opportunity

The Navy is hosting a virtual open house presentation on the project website during the scoping period from Dec. 15, 2023, to Jan. 29, 2024. The presentation provides information about the Proposed Action, its purpose and need, environmental resource areas to be analyzed in the EIS/OEIS, the National Environmental Policy Act (NEPA) process, the National Historic Preservation Act (NHPA) Section 106 process, and public involvement opportunities. The public can view the virtual open house presentation and submit comments at **www.nepa.navy.mil/hctteis/** anytime during the scoping period.

The Navy invites the public to comment on the scope of the EIS/OEIS including identification of potential alternatives and environmental concerns, information and analyses relevant to the Proposed Action, issues that should be addressed in the NEPA analysis, and the project's potential to affect historic properties pursuant to Section 106 of the NHPA.

Comments may be submitted via the project website at **www.nepa.navy.mil/hctteis/** or by mail to:

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

This public scoping effort will also support consultation under Section 106 of the NHPA and its implementing regulations at 36 Code of Federal Regulations part 800, as members of the public are invited to participate, provide comments, or raise concerns.

Comments must be postmarked or received online no later than 11:59 p.m. PST on Jan. 29, 2024, for consideration in the Draft EIS/OEIS.

Figure L-2: Scoping Newspaper Advertisement

Navy Region Southwest

Public Affairs Office

https://cnrsw.cnic.navy.mil

For Immediate Release **Dec. 14, 2023**

U.S. NAVY ANNOUNCES INTENT TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT FOR HAWAII-CALIFORNIA TRAINING AND TESTING; INVITES PUBLIC COMMENT ON UPCOMING ENVIRONMENTAL ANALYSIS

SAN DIEGO – The Department of the Navy (Navy) (including both the U.S. Navy and the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, is preparing an Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) to assess the potential environmental effects associated with the Proposed Action to conduct at-sea military readiness activities within the Hawaii-California Training and Testing (HCTT) Study Area (referred to as the "Study Area"). The Navy also proposes to modernize and sustain its ranges in a manner necessary to support training and testing activities. The Navy invites the public to comment on the scope of the EIS/OEIS including identification of potential alternatives and environmental concerns, information and analyses relevant to the Proposed Action, issues that should be addressed in the National Environmental Policy Act (NEPA) analysis, and the project's potential to affect historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA).

At-sea military readiness activities, which were last analyzed in the 2018 Hawaii-Southern California Training and Testing (HSTT) EIS/OEIS and the 2022 Point Mugu Sea Range (PMSR) EIS/OEIS, include training and research, development, testing, and evaluation activities (referred to as "training and testing"). Proposed training and testing activities may include the use of active sonar, explosives, and other sources of underwater sound. The Navy would continue to employ appropriate marine species protective mitigation measures when conducting these activities. Modernization and sustainment proposals include new special use airspace in Southern California, an expansion of an underwater training range near San Clemente Island, and installation and maintenance of mine training areas off Hawaii and Southern California. The Navy invited the National Marine Fisheries Service and the Federal Aviation Administration to be cooperating agencies in the preparation of the EIS/OEIS.

The Proposed Action is needed to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions in accordance with their Congressionally mandated requirements. Proposed training and testing activities are similar to those analyzed in previous environmental impact analyses and are representative of activities that have been conducted off Hawaii and California for more than 80 years.

The HCTT Study Area consists primarily of the Hawaii Operating Area (OPAREA) and Temporary OPAREA, the California OPAREA, and the transit corridor connecting the two. The Study Area includes only the at-sea components of the range complexes, Navy pierside locations and port transit channels, bays, harbors, inshore waterways, and civilian ports where training and testing activities occur, as well as transits between homeports and operating areas. For this EIS/OEIS, "at-sea components" include the marine environment around San Nicolas Island where marine mammals haul out on the shoreline. Missile

1

Figure L-3: Example of Scoping News Release

and target firings from San Nicolas Island that could disturb the marine mammals are included in this analysis. Aside from this one exception, no other terrestrial impacts will be covered in the EIS/OEIS.

The HCTT Study Area differs from the 2018 HSTT Study Area in that it includes:

- An extended Southern California Range Complex
- Special use airspace corresponding to the new extensions in California (the proposed W-293 and the proposed W-294)
- Two existing training and testing at-sea ranges, the PMSR and the Northern California (NOCAL) Range Complex
- Areas along the Southern California coastline from approximately Dana Point to Port Hueneme
- Four amphibious approach lanes providing land access from the NOCAL Range Complex and PMSR

Maps of the Study Area are available on the project website.

In the EIS/OEIS, the Navy will evaluate the potential environmental impacts from a No Action Alternative and two action alternatives. Resources to be evaluated include, but are not limited to, biological resources (including marine mammals, reptiles, fishes, vegetation, invertebrates, habitats, birds, and other protected species), sediments and water quality, air quality, cultural resources, socioeconomic resources, and public health and safety.

The development of the EIS/OEIS will help sustain the readiness of the Navy and other participating U.S. military services by supporting current and future training and testing requirements, increasing flexibility in conducting training and testing activities, modernizing and sustaining range capabilities, updating environmental impact analyses using the best available science and analytical methods, and supporting Marine Mammal Protection Act and Endangered Species Act consultations for the reissuance of federal regulatory permits and authorizations within the Study Area.

Public Participation

The Navy is hosting a virtual open house presentation on the project website during the scoping period from Dec. 15, 2023, to Jan. 29, 2024. The presentation provides information about the Proposed Action, its purpose and need, environmental resource areas to be analyzed in the EIS/OEIS, the NEPA process, the NHPA Section 106 process, and public involvement opportunities. The public can view the virtual open house presentation and submit comments at **www.nepa.navy.mil/hctteis/** anytime during the scoping period.

The Navy welcomes and appreciates the public's participation during the scoping period. Comments must be postmarked or received online no later than 11:59 p.m. PST on **Jan. 29, 2024**, for consideration in the Draft EIS/OEIS. Comments may be submitted via the project website at **www.nepa.navy.mil/hctteis/** or by mail to:

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

This public scoping effort will also support consultation under Section 106 of the NHPA and its implementing regulations at 36 Code of Federal Regulations part 800, as members of the public are invited to participate, provide comments, or raise concerns. Comments submitted via the project website or by mail will be considered under NEPA and pursuant to Section 106 of the NHPA.

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Figure L-3: Example of Scoping News Release (continued)

There will be a public comment opportunity when the Draft EIS/OEIS is available, which is scheduled for fall 2024.

Visit the project website at **www.nepa.navy.mil/hctteis/** to learn more about the project, view maps of the Study Area, review prior NEPA-related documents, learn about the NHPA Section 106 consultation process, and submit comments.

Media seeking further information should contact Sergio Hernandez, the Navy Region Southwest Environmental Public Affairs Officer, at Sergio.j.hernandez.civ@us.navy.mil or (619) 705-5242.

Please help inform your community by sharing the information in this news release.

– USN –

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Figure L-3: Example of Scoping News Release (continued)

L.2.2 Public Scoping Information

The military services developed informational materials for the public to learn more about the Proposed Action, the environmental impact analysis process, and public involvement opportunities.

L.2.2.1 Stakeholder Briefings

The Navy briefed project stakeholders, including national marine sanctuary managers, the California Coastal Commission, the Hawaii Department of Land and Natural Resources, the Hawaii Office of Planning and Sustainable Development, and the U.S. Environmental Protection Agency Region IX. Briefings were also offered upon request to recipients of the tribal and stakeholder letters.

L.2.2.2 Fact Sheet

Project fact sheets were mailed December 14, 2023, to 540 nongovernmental organizations, community groups, and business groups.

L.2.2.3 Project Video

The military services developed a video to provide information on the importance of training and testing in the Study Area. The project video was available on the project website.

L.2.2.4 Virtual Open House Presentation

The military services prepared a virtual open house presentation and made it available on the website to provide the public with more detailed information of the Proposed Action, its purpose and need, and the importance of training and testing in the Study Area; a list of resource areas to be analyzed in the EIS/OEIS; the Navy's marine species research and monitoring program; a summary of the NEPA and NHPA Section 106 processes; public involvement opportunities; and commenting information.

L.2.3 Public Scoping Comments

Public comments were accepted via the project website, email, and by postal mail. A total of 36 public comments were received. Comments received during the scoping period are found in Appendix L.1 (Public Scoping Comments). All comments submitted during the public scoping period are part of the public record, and relevant and substantive comments were considered during the development of the Draft EIS/OEIS. A summary of public comments is found in Table L-3.

Table L-3: Summary of Scoping Comments

Resource Area/Topic	Issue/Concern
Proposed Action and Alternatives	• Concerns about military training around the Hawaiian Islands, which are considered fragile environments. • Request for military training to be conducted away from the Hawaiian Islands, which are considered sacred lands. • Concerns about the impacts training with explosives may have on the Hawaiian Islands. • Concerns that proposed activities would be conducted within the California Coastal National Monument Corridor and would have an impact on migratory bird populations, marine mammal populations, and nearshore intertidal species. • Concerns that the Proposed Action would have negative impacts on coral reefs and other ocean wildlife, such as whales and dolphins.

Resource Area/Topic	Issue/Concern
	• Concerns about new training and testing technologies currently under development that have not been described or reviewed in current literature. • Concerns about Rim of the Pacific and international militaries training with the U.S. military and requesting analysis of international military activities in separate EISs. • Concerns about the perceived lack of clean-up for unexploded ordnance and other debris as a result of military activities. • Request for the Navy to research and develop an alternative to active sonar. • Question about why the Navy needs to use sonar since there have been no recent attacks on U.S. vessels. • Support of the No Action Alternative. • Request for greater detail on the locations of underwater detonation training and testing. • Concerns about using the Northern California Range Complex, especially since the range complex has not been included and analyzed in other Navy environmental analyses, and concerns about potential impacts on this area. • Questions about where amphibious landing areas in central California would be located, and request for improved figures in the Draft EIS/OEIS to allow for better understanding of the precise locations. • Concerns about any separate NEPA documents the U.S. Marine Corps may prepare for land-based amphibious landing activities once ashore. • Request to include maps and diagrams of the proposed testing areas, including all staging areas and access routes, to ensure minimal impacts on sensitive species, essential habitats, and state and federally listed species of the marine environment. • Request to include a range of feasible alternatives. • Request to evaluate specific alternative locations in areas with lower biological species or habitat sensitivity compared with the preferred or existing locations. • Question about why the Navy cannot use other areas of the ocean to train and test. • Recommendation of a more robust alternatives analysis. • Recommendation to evaluate an additional action alternative that incorporates temporal and geographic mitigation protections.
Air Quality/Climate Change	• Request for the Navy to evaluate all potential air quality impacts that may result from the project, both short term and long term. • Request for the Navy to consider reactive organic compounds, nitrogen oxide emissions, and particulate matter from proposed sea range operations, as well as any potential stationary source emissions located in Ventura County Air Pollution Control District Channel Islands. • Request for the Navy to conduct a NEPA Air Quality Analysis, including a Clean Air Act General Conformity Analysis and evaluation of potential exposures to toxic air pollutant emissions, to assess potential impacts of air pollutant emissions from proposed activities. • Request for the Navy to quantify the direct and indirect greenhouse gas emissions of the Proposed Action and alternatives, and how the Proposed Action would help meet or detract from achieving relevant climate action goals and commitments, including federal goals and international agreements. • Recommendation to apply the best available estimates of the social cost of greenhouse gases to the incremental metric tons of each individual type of greenhouse gas emissions to assess the significance of climate impacts.

Resource Area/Topic	Issue/Concern
	• Recommendation to refrain from comparing project emissions to global emissions to better characterize the extent of a Proposed Action's contributions to climate change. • Request to identify impacts of aviation emissions released at altitude and the impact of burning fossil fuels in the atmosphere versus burning the same fossil fuels at ground level. • Request for the Navy to follow Air Pollution Control Districting permitting requirements for applicable stationary engines and equipment. • Request for the Navy to clearly state in the Draft EIS/OEIS the amount of increase in stressors the Navy is proposing, and to evaluate the existing conditions, along with cumulative stressors, especially those from climate change.
Marine Mammals/Marine Species/Fishes	• Request for the Navy to use the most recent scientific research when analyzing impacts and behavioral responses on all marine mammals, marine species, fishes, sea turtles, invertebrates, and seabirds. • Request for information on how the Navy will assess potential impacts on marine species in the Draft EIS/OEIS. • Concerns that activities may kill, injure, disorient, or have long-lasting impacts on marine species and marine habitat. • Concerns about military underwater acoustical communication systems that may not be disclosed to the public and potential impacts on the environment. • Concerns about how the frequency of various military technologies may overlap with the communication and biosonar range of odontocetes and other species, including dolphins (including orcas), porpoises, melon-headed whales, pilot whales, beaked whales, grey whales, seals (including the critically endangered Hawaiian monk seal), and sea lions. • Concerns about military use of high kurtosis signals (a statistical parameter used to characterize a signal) versus low kurtosis signals and the behavioral impacts of those signals on marine species. • Request for the Navy to analyze the entire operational soundscape when assessing potential biological impacts, since many operating systems could be in use simultaneously. • Recommendation of early consultation with the Department of Fish and Wildlife if California Endangered Species Act-listed species may be taken. • Request to not only consider regulatory thresholds when evaluating technology noise profiles, but to also consider the "digital warfare soundscape." • Question on whether ultrasonic anti-fouling technology would be used on military vessels, and if yes, a request for detailed analysis for potential impacts on marine species. • Concerns about the rise in vessel strikes and the increase in numbers of incidental takes allowed. • Request for information on comprehensive research on cetacean mass stranding deaths as a result of military activities. • Concerns about "lumping" marine species and areas between Hawaii and California. • Request to ensure migratory species and patterns are properly analyzed. • Concerns about the short- and long-term effects of sonar on all marine mammals. • Request to include information unique to the California region, such as green sea turtles, California grunion, and southern sea otters.

Resource Area/Topic	Issue/Concern
	• Request to refer to the Department's California Natural Diversity Database for current information on California marine resources. • Recommendation that focused species-specific surveys be conducted at the appropriate time of year and time of day when species are active or otherwise identifiable. • Recommendation to clarify that any sonar-related impacts on species in the Northern California Range Complex would be new impacts. • Recommendation to summarize the latest scientific information regarding impacts from mid-frequency active sonar on marine mammals, including a history of strandings and mortalities that coincided in space and time with the deployment of military sonar regardless of geographic area. • Recommendation to consult with local biologists, researchers, and organizations on marine species for most current information. • Recommendation to account for recent Biologically Important Areas in Hawaii and watch list, both in evaluating potential impacts and environmentally preferred alternatives. • Request for the Navy to address impacts on specific training and testing locales rather than "averaging" impacts over large ocean areas, and to avoid using terminology such as "localized effects." • Concerns that the methodology for previous impact analyses may be underrepresenting the number of whales and other marine mammals that could be injured or killed during Navy activities.
Marine Sanctuaries	• Request for the Navy to include the Papahānaumokuākea Marine National Monument as a resource to be evaluated and analyzed in the EIS/OEIS. • Concerns about potential impacts on submerged maritime heritage resources, such as aircrafts, shipwrecks, and archaeological sites, within the waters of the Papahānaumokuākea Marine National Monument. • Request for the Navy to evaluate marine sanctuaries within the Hawaii Operating Area and California Operating Area as traditional cultural properties.
Habitats/Coral Reefs	• Concerns about how military activities may disrupt sensitive ecosystems along the California coastline. • Concerns about coral reefs from the effects of active sonar, explosives, or other sources of underwater sound. • Concerns about coral reefs affected by electrical currents discharged from Navy ships and submarines. • Concerns about Oahu shorelines and sand erosion due to the dying of coral reefs. • Request for the military to properly analyze the impacts on coral reef ecosystems from Navy ships and submarines. • Request for the Navy to conduct Essential Fish Habitat consultation. • Recommendation to clearly present the footprint, timing, and frequency of military activities that occur in waters shallower than 400 meters, which are essential fish habitat for bottomfish management unit species. • Concern about military activities conducted near Penguin Bank and other habitat areas of particular concern. • Request for the Navy to include a detailed discussion of what activities are proposed in Marine Protected Areas and how the Marine Life Protection Act would be considered.

Resource Area/Topic	Issue/Concern
	• Recommendation to map and analyze potential impacts on deep-sea coral and sponge habitats off Southern California. • Recommendation to avoid deep-sea coral and sponge habitats during underwater detonations, mine neutralization, and other activities that could impact the living sea floor.
Public Health and Safety	• Concerns about potential impacts from military training and testing activities on Comprehensive Environmental Response, Compensation, and Liability Act sites; hazardous substance sites; and military munitions response sites located within the Study Area. • Request for avoidance of these sites; however, if these sites are disturbed or hazardous substance spills occur, request that proper notification and response actions are taken, including notification to the State of Hawaii Department of Health and other appropriate state and federal agencies. • Concerns about the proper disposal of hazardous wastes, including the need for reporting to the Ventura County Certified Unified Program Agency, to minimize potential environmental impacts.
Noise	• Concerns about noise impacts on people and local communities. • Concerns about noise impacts on marine mammals, fishes, and seabirds in the Study Area, including the expanded airspace. • Concerns about noise impacts on submerged marine species, such as marine mammals and fishes. • Concerns about noise impacts on a largely “dormant” Northern California Range Complex. • Recommendation to assess noise impacts along expected flight paths and corridors, including from aircraft, surface vessels, and the new amphibious landing areas. • Request to assess noise impacts on children’s schools and learning. • Request to ensure the results of noise analyses are presented in the Draft EIS/OEIS in an understandable manner.
Cultural Resources/ National Historic Preservation Section (NHPA) 106 Process	• Request to engage in early consultation under Section 106 of the NHPA. • Concerns that the Study Area is within the Traditional Use Area of the Luiseño people. • Concerns about potential impacts on historic properties. • Request for tribal consultation to provide input on the technical studies in the EIS/OEIS. • Request for the Navy to consult with Native Hawaiians and homestead communities to better understand traditional and customary practices that take place at sea and how best to mitigate potential effects on the constitutionally protected rights of Native Hawaiians. • Request for the Navy to conduct an archaeological literature review of the Hawaiian Islands to better understand any possible impacts on historic properties. • Concerns about the Study Area, including the expanded areas in Southern California, containing known, and as-yet undiscovered or documented, historic resources, and the impact military activities may have on those resources. • Request that the Navy develop goals, policies, and programs for the treatment of historic and cultural resources within the Study Area and evaluate the historical significance of sites that contain objects that are 50 years of age or older.

Resource Area/Topic	Issue/Concern
	• Request for the Navy to consult with the Kanaka Maoli of Hawaii, the 'Iipai-Tiipai Kumeyaay of San Diego County, the Payomkawichum of the Southern California coast, and the Ventureño Chumash and North Coast Chumash. • Consider the Bureau of Indian Affairs' recently developed Best Practices Guide for federal agencies regarding tribal and Native Hawaiian sacred sites.
Environmental Justice	• Recommendation to analyze impacts on subsistence fishers in all locations and to consider impacts on Native Hawaiian populations. • Recommendation to review the Administrations' recently released Ocean Justice Strategy, which addresses environmental justice concerns related to the use of the ocean for economic, cultural, spiritual, and recreational purposes, and food security. • Recommendation to identify the approximate number of days per year that subsistence fishing would be affected for each subsistence fishing population. • Suggestion that the Navy utilize the information in the Environmental Protection Agency's environmental justice screening and mapping tool.
Mitigation Measures and Research	• Interest in what mitigation measures will be implemented to minimize impacts on sensitive ecosystems. • Interest in specific measures in place to protect marine life during training and testing activities. • Concerns about the effectiveness of the Navy's mitigation measures, including whether ship strikes occurring in 2021 and 2023 were a result of unsuccessful implementation of mitigation measures. • Request that the Navy consider mitigation that helps restore or enhance species and ecosystems, rather than just minimizing harm. • Request to research innovative mitigation measures. • Concerns about marine mammal observers determining behavioral impacts. • Request for the military to fund behavioral and metabolic observations of select marine mammals in the Study Area to determine how proposed activities would impact or disrupt normal marine mammal behaviors. • Request to consider baseline behavioral studies on coastal and pelagic odontocetes prior to conducting training and testing activities. • Request to consider remote sensing through drones for both aerial behavioral observations and serum sampling for more accurate data on marine mammal responses to military activities. • Request that activity-based mitigation zones be extended to the Papahānaumokuākea Marine National Monument to protect marine species and cultural and environmental resources. • Concerns about not allowing independent marine observers on Navy vessels during activities. • Concerns about the effectiveness of Navy Lookouts because many species are deep divers. • Questions about the lack of transparency and species specificity on threshold monitoring. • Request to include mitigation measures for adverse impacts on sensitive marine plants, animals, habitats, and ecosystems. • Request for the Navy to be a leader in protection of marine ecosystems of Hawaii.

Resource Area/Topic	Issue/Concern
	• Request for the Navy to provide funding to the Vessel Speed Reduction Program for Protecting Blue Whales and Blues Skies, as an air pollution mitigation measure. • Concerns about mitigation effectiveness in weather conditions with poor visibility and for marine mammals with a low probability of visual observation (e.g., beaked whales). • Consider time and area restrictions to protect marine mammals from noise and disturbance.

Cumulative Impacts	• Request that the Navy include in the cumulative impact analysis:
	  o Assessment of impacts on deep sea mining.
	  o Take of marine mammals by foreign vessels conducting military training.
	  o Impacts on Native Hawaiian cultural resources and NHPA Section 106 consultation.
	  o Discussion on marine debris and unexploded ordnance removal.
	  o Impacts on fishing fleets.
	  o Impacts on the aquarium trade.
	  o Impacts on sacred places.
	• Request to identify where quantitative data is used versus qualitative data.
	• Request to identify ways that quantitative data can be obtained through additional research.
	• Request to include cumulative stressors on all ocean resources.
	• Recommendation that each resource section conclude with a cumulative effects section instead of a separate cumulative impacts section.

National Environmental Policy Act (NEPA) Process	• Concerns about the NEPA process and the timing of the release of project information over the holiday season. • Concerns about how the Draft EIS/OEIS will be released without direct editing capabilities for interested commenters. • Appreciation of a 45-day comment period compared to the typical 30-day comment period, especially with the comment period overlapping numerous holidays. • Request that the Navy consult with the State of Hawaii Department of Land and Natural Resources Division of Aquatic Resources, the U.S. Fish and Wildlife Service, and other agencies regulating coasts, waterways, and ports. • Concerns that information on the Papahānaumokuākea Marine National Monument was not provided on the project website and virtual open house presentation. • Request to include various scientific literature in the Draft EIS/OEIS. • Confusion on whether the Draft EIS/OEIS was released for public review. • Concerns about the online comment form website functionality. • Concerns that the public information materials, including the virtual open house presentation, were vague and not informative for comment facilitation. • Concerns that no public meetings or briefings were offered to the public. • Request that the public have ample time to review the Draft EIS/OEIS because scoping information was too general. • Recommendation that the Navy consider a 60-day comment period for the EIS/OEIS. • Recommendation of a minimum 30-day notice prior to any public meetings. • Recommendation of public engagement meetings or consultations to allow speakers 5–10 minutes each to speak on topics.

Resource Area/Topic	Issue/Concern
	• Suggestions to include the Council on Environmental Quality's recent guidance on Indigenous Knowledge.
Other Regulations and Laws	• Request that the Navy comply with the State of Hawaii Environmental Policy Act (HEPA) requirements managed under the Environmental Review Program (ERP) and adhere to all HEPA and ERP requirements per Hawaii Administrative Rule Chapter 11-200 (administered by the Hawaii Office of Planning and Sustainable Development). • Request to include the California Coastal National Monument Corridor as an interested party or cooperating agency to the EIS/OEIS in compliance with the Memorandum of Understanding between the Navy and the Bureau of Land Management. • Concerns that military activities would have reasonably foreseeable coastal effects, requiring a Coastal Zone Management Act federal consistency determination submitted for review. Environmental issues of concern include biological resources (including marine mammals and threatened and endangered species), sediments and water quality, air quality, noise, cultural resources, socioeconomic resources, and public health and safety. • Request for compliance with applicable state and local regulations to reduce potential project-specific impacts and cumulative impacts. • Concerns about how the Clean Water Act Section 404 applies to the project and its expected permitting strategy.
Other	• Request to demilitarize the Hawaiian Islands, returning the land to the people of Hawaii with no trace of previous military activities. • Concerns about how the military is perceived to treat the Hawaiian Islands. • Concerns about the U.S. military and destruction caused to other countries. • Request to include updates on Navy-funded efforts since the 2018 Final HSTT EIS/OEIS. • Concerns about low-flying aircraft flying over Hawaii's national parks. • Recommendation to consider monitoring results as best available science.

Notes: U.S. = United States, EIS = Environmental Impact Statement, OEIS = Overseas Environmental Impact Statement, HSTT = Hawaii-Southern California Training and Testing

L.3 Notification of Availability of the Draft Environmental Impact Statement/Overseas Environmental Impact Statement

The Draft EIS/OEIS public review and comment period begins with the issuance of the Notice of Availability (NOA) and Notice of Public Meetings (NOPM) in the *Federal Register*. Comments will be accepted by mail, through the EIS/OEIS website at www.nepa.navy.mil/hctteis/, and at the in-person public meetings. The public is invited to review the Draft EIS/OEIS and provide comments, especially those that are substantive to the accuracy and adequacy of the environmental impact analysis.

L.3.1 Draft Environmental Impact Statement/Overseas Environmental Impact Statement and Public Meetings Notifications

The military services will make significant efforts to notify the public to encourage participation during the Draft EIS/OEIS public review and comment period. All public notices will coincide with publications of the NOA and NOPM in the *Federal Register* and include information about the availability of the Draft

EIS/OEIS and where it can be accessed; the Proposed Action and its purpose and need; the NEPA and NHPA processes; public commenting information; the locations, dates, and times of the in-person and virtual public meetings; and availability of a virtual open house presentation on the project website. The military services will also provide the public with project information and invite public review and comment. A summary of these efforts follows.

L.3.1.1 Notification Letters

Tribal letters will be mailed to federally recognized tribal chairpersons and tribal staff. Stakeholder letters will be mailed to federal, state, and local elected officials and agencies; non-federally recognized tribes and tribal groups; and Native Hawaiian Organizations. Entities that will receive a notification letter are listed in Table L-4:

Table L-4: Entities that Will Receive the Draft EIS/OEIS Notification Letter

California Federally Recognized Tribes, Non-Federally Recognized Tribes, and Tribal Groups	
Federally Recognized Tribes	**Non-Federally Recognized Tribes and Tribal Groups**
Barona Group of the Capitan Grande Bear River Band of Rohnerville Rancheria Cahto Tribe Campo Band of Diegueno Mission Indians Cloverdale Rancheria of Pomo Indians Coyote Valley Band of Pomo Indians Dry Creek Rancheria Band of Pomo Indians Ewiiaapaayp Band of Kumeyaay Indians Federated Indians of Graton Rancheria Guidiville Rancheria of California Hopland Band of Pomo Indians Iipay Nation of Santa Ysabel Inaja-Cosmit Band of Indians Jamul Indian Village Kashia Band of Pomo Indians of the Stewarts Point Rancheria La Jolla Band of Luiseno Mission Indians La Posta Band of Diegueno Mission Indians Lytton Rancheria Manchester Band of Pomo Indians of the Manchester Rancheria Manzanita Band of Kumeyaay Nation Mesa Grande Band of Diegueno Mission Indians Middletown Rancheria of Pomo Indians Pala Band of Mission Indians Pauma Band of Luiseno Indians Pechanga Band of Indians Pinoleville Pomo Nation Potter Valley Tribe Redwood Valley or Little River Band of Pomo Indians Rincon Band of Luiseño Indians Robinson Rancheria of Pomo Indians Round Valley Reservation/Covelo Indian Community San Pasqual Band of Diegueno Mission Indians	Amah Mutsun Tribal Band Amah Mutsun Tribal Band of Mission San Juan Bautista Barbareño Band of Chumash Indians Barbareño/Ventureño Band of Mission Indians Chumash Council of Bakersfield Coastal Band of the Chumash Nation Costanoan Ohlone Rumsen-Mutsen Tribe Costanoan Rumsen Carmel Tribe Esselen Tribe of Monterey County Fernandeño Tataviam Band of Mission Indians Gabrieleno Band of Mission Indians Kizh Nation Gabrieleno/Tongva San Gabriel Band of Mission Indians Gabrielino Tongva Indians of California Tribal Council Gabrielino/Tongva Nation Gabrielino-Tongva Tribe Indian Canyon Mutsun Band of Costanoan InterTribal Sinkyone Wilderness Council Juaneno Band of Mission Indians Juaneno Band of Mission Indians Acjachemen Nation – Belardes Juaneno Band of Mission Indians Acjachemen Nation 84A KaKoon Ta Ruk Band of Ohlone-Costanoan Indians of the Big Sur Rancheria Kwaaymii Laguna Band of Mission Indians Mishewal-Wappo Tribe of Alexander Valley Muwekma Ohlone Indian Tribe of the SF Bay Area Northern Chumash Tribal Council Noyo River Indian Community Ohlone/Costanoan-Esselen Nation Rumsen Ama Turataj Ohlone Salinan Tribe of Monterey, San Luis Obispo Counties

Santa Rosa Band of Cahuilla Indians Santa Ynez Band of Chumash Indians Sherwood Valley Rancheria of Pomo Soboba Band of Luiseño Indians Sycuan Band of the Kumeyaay Nation Tule River Indian Tribe Viejas Band of Kumeyaay Indians	San Fernando Band of Mission Indians San Luis Obispo County Chumash Council San Luis Rey Band of Mission Indians Serrano Nation of Mission Indians The Ohlone Indian Tribe Wishtoyo Chumash Foundation Wuksachi Indian Tribe/Eshom Valley Band Xolon-Salinan Tribe yak tityu yak tiłhini – Northern Chumash Tribe Yokayo Tribe

Federal Agencies – National

Advisory Council on Historic Preservation
Bureau of Oceans and International Environmental and Scientific Affairs
Bureau of Safety and Environmental Enforcement
 Office of Offshore Regulatory Programs
Council on Environmental Quality
Federal Communications Commission
Federal Energy Regulatory Commission
Federal Maritime Commission
General Services Administration
 National Environmental Policy Act (NEPA) Implementation, NEPA Advisory Group
International Boundary and Water Commission
Marine Mammal Commission
National Science Foundation
Ocean Policy Committee
U.S. Army Corps of Engineers
U.S. Army National Guard
U.S. Department of Agriculture
 Animal and Plant Health Inspection Service, Wildlife Services
 Natural Resources Conservation Service
U.S. Department of Commerce
 National Oceanic and Atmospheric Administration (NOAA) Fisheries
  Headquarters Office
  National Ocean Service
   National Marine Sanctuaries
   Office for Coastal Management
  National Marine Protected Areas Center
  Office of Habitat Conservation
   Office of Protected Resources
    Endangered Species Act Interagency Cooperation Division
    Protected Resources Division
  Environmental Observation and Prediction
U.S. Department of Energy
 NEPA Policy and Compliance (GC-54)
 Office of Environment, Health, Safety & Security
U.S. Department of Health and Human Services
U.S. Department of Homeland Security
 Federal Emergency Management Agency District 9
 U.S. Coast Guard
  Office of Environmental Management (CG-47)
  Office of Operating and Environmental Standards (CG-OES-3)

U.S. Department of Justice
Environment and Natural Resources Division
U.S. Department of the Interior
Bureau of Indian Affairs
Bureau of Ocean Energy Management
Public Affairs
Bureau of Reclamation
Bureau of Safety and Environmental Enforcement
Office of Offshore Regulatory Programs
Environmental Policy & Compliance
U.S. Fish and Wildlife Service
U.S. Geological Survey
Pacific Coastal and Marine Science Center
Western Fisheries Research Center
Western Geographic Science Center
U.S. National Park Service
National Historic Landmarks
U.S. Department of Transportation
Federal Aviation Administration
Airport Planning and Environmental Division (APP-400)
Office of Policy, International Affairs, Environment and Energy
Maritime Administration
U.S. Environmental Protection Agency
NEPA Compliance Division
Office of Federal Activities
Hawaii Federal Elected Officials and Federal Agencies
U.S. House of Representatives (Districts 1, 2)
U.S. Senators
Federal Aviation Administration
Honolulu Airport District Office
NOAA Fisheries
Hawaiian Islands Humpback Whale National Marine Sanctuary
Honolulu Service Center
Pacific Islands Fisheries Science Center
Pacific Islands Regional Office
Protected Resources Division, Kauaʻi
Papahānaumokuākea Marine National Monument
U.S. Coast Guard
District 14
U.S. Fish and Wildlife Service
Hakalau Forest National Wildlife Refuge
Kakahaiʻa National Wildlife Refuge
Kilauea Point National Wildlife Refuge
Kauaʻi National Wildlife Refuge Complex
Pacific Islands Fish and Wildlife Office
Pacific Region
U.S. Geological Survey
Pacific Islands Water Science Center
Hawaii State Elected Officials and State Agencies
Office of the Governor
Office of the Lieutenant Governor
State Senators (all districts)

State Representatives (all districts)
House Committee on Corrections
Military & Veterans
House Committee on Water and Land
Senate Committee on Water and Land
Department of Hawaiian Home Lands
Office of the Chairman
Department of Health
Environmental Health Administration
Environmental Management Division
Hazard Evaluation and Emergency Response Office
Office of Environmental Quality Control
Department of Land and Natural Resources
Division of Aquatic Resources
Division of Conservation and Resources Enforcement
Division of Forestry and Wildlife
Division of State Parks
Office of Conservation and Coastal Lands
State Historic Preservation Division
Department of Transportation
Airports Division
Harbors Division
Department of Agriculture
Office of the Chairperson
Department of Defense
Hawaiʻi Army National Guard
State of Hawaiʻi
Office of Planning and Sustainable Development
Department of Defense, Office of the Adjutant General
Land Use Commission, Department of Business, Economic Development & Tourism
Western-Pacific Regional Fishery Management Council
Hawaii Local Elected Officials and Local Agencies
City and County of Honolulu
City Council (all districts)
Environmental Services Department
Office of the Managing Director
Parks and Recreation Department
Planning and Permitting Department
Neighborhood Commission Office
County of Hawaiʻi
Planning Department
Department of Research & Development
County of Kauaʻi
Planning Department
County Council Kauaʻi
Police Department
County of Maui
Department of Environmental Management
Department of Planning
Native Hawaiian Organizations
ʻAha Kāne

ʻAhahui Siwila Hawaiʻi O Kapōlei (Kapolei Hawaiian Civic Club)
Aha Kukaniloko Koa Mana mea ola kanaka mauli
Aha Mālama, Corp.
Aha Moku O Kahikinui
Aha Moku o Kaupo
Aha Moku o Maui Inc.
Aha Wahine
Ahahui Kiwila Hawaiʻi O Moʻikeha
Ahahui Siwila Hawaiʻi O Kapolei
Ahonui Homestead Association
Ahupuaʻa o Molokaʻi
Ahupuaʻa O Nānākuli Homestead
ʻAi Noa Foundation
Āina Momona
Ala Kahakai Trail Association
Alaka`ina Foundation Inc.
Alepa Hou Foundation
Aliʻi Pauahi Hawaiian Civic Club
Aloha First
ʻAoʻao O Nā Loko Iʻa O Maui
Association of Hawaiian Civic Clubs
Association of Hawaiians for Homestead Lands
Au Puni O Hawaiʻi
Brian Kaniela Naeʻole Naauao
Captain Kimos Hawaiian Adventures
Charles Pelenui Mahi Ohana
Council for Native Hawaiian Advancement
E Ola Kākou Hawaiʻi
EAO Hawaiʻi Inc.
Elizabeth Kahanu Hawaiian Civic Club
Ewa-Puʻuloa Hawaiian Civic Club
Flores-Case ʻOhana
Friends of ʻIolani Palace
George K. Cypher ʻOhana
God's Country Waimanalo
Hanalei Hawaiian Civic Club'
Hanalei River Heritage Foundation
Hanona Hauʻouiwi Homestead Association on Lānaʻi
Hawaiʻi – Moku o Keawe
Hawaiʻi Council of Hawaiian Civic Clubs | Moku o Keawe
Hawaiʻi Island Burial Council
Hawaiʻi State Aha Moku
Hawaiian Civic Club of Hilo
Hawaiian Civic Club of Honolulu
Hawaiian Civic Club of Kaʻū
Hawaiian Civic Club of Laupahoehoe
Hawaiian Civic Club of Wahiawa
Hawaiian Civic Club of Waimānalo
Hawaiian Islands Burial Council, Kauaʻi
Hawaiian Islands Burial Council, Maui
Hawaiian Islands Burial Council, Oʻahu
Hawaiian Kingdom Task Force
Ho Ohana

Hoʻokano Family Land Trust
Hoʻōla Lāhui Hawaiʻi
Hui Aloha Kīholo
Hui Hoʻoleimaluō
Hui Huliau Inc.
Hui Iwi Kuamoʻo
Hui Kaleleiki Ohana
Hui Mālama Ola Nā ʻŌiwi
Hui No Ke Ola Pono
Hui o Kuapā
Hui O Waʻa Kaulua
Hui ʻOhana O Hōnaunau
Hulu Mamo Hawaiian Civic Club
Imua Hawaiʻi
Independent District of Puna
Institute for Native Pacific Education and Culture
KAʻEHU
Kaho’olawe – Moku O Kanaloa
Kāhuli Leo Leʻa
Kailua Hawaiian Civic Club
Kākoʻo ʻŌiwi
Kalaeloa Heritage and Legacy Foundation
Kalamaʻula Homesteaders Association
Kalihi Palama Hawaiian Civic Club
Kamealoha
Kamehameha Schools
Kamiloloa One Aliʻi Homestead Association
Kanaka Economic Development Alliance
Kānehūnāmoku Voyaging Academy
Kanu o ka ʻĀina Learning ʻOhana
Kapolei Community Development Corporation
Kapolei Hawaiian Civic Club
Kauaʻi – Mano O Kalanipo
Kauaʻi Council of Hawaiian Civic Clubs
Kauaʻi Sea Farm
Kauhakō Ohana Association
Kaʻuikiokapō
Kauluakalana
Kaumualiʻi Hawaiian Civic Club
Kawaihapai Ohana
Kawaileo Law, LLC
Ke Kula Nui O Waimānalo
Ke One O Kakuhihewa, Oʻahu Council of the Association of Hawaiian Civic Clubs
Keaukaha Community Association
Keoni Kealoha Alvarez
Kiaʻi Kanaloa
Kimokeo Foundation
King Kamehameha Hawaiian Civic Club
Kingdom of Hawaiʻi
Kipuka Olowalu
Koʻolau Foundation
Koʻolauloa Hawaiian Civic Club
Koʻolaupoko Hawaiian Civic Club

Koa Ike
Kohala Hawaiian Civic Club
Kona Hawaiian Civic Club
Kuaʻāina Ulu ʻAuamo
Kuakini Hawaiian Civic Club of Kona
Kula no na Poʻe Hawaiʻi
Kuloloiʻa Lineage - I ke Kai ʻo Kuloloiʻa
Kupeke Ahupuaʻa
LaʻiʻŌpua 2020
Lāhaina Hawaiian Civic Club
Lahui Kakaʻikahi
Laʻiʻōpua Community Development Corporation
Las Vegas Hawaiian Civic Club
Maʻa ʻOhana c/o Lani Maʻa Lapilio
Machado-Akana-Aona-Namakaeha Ohana
Mahamoku Ohana Council
Mahu OhanaMakaha Hawaiian Civic Club
Makuʻu Farmers Association
Malama Anahola
Mālama Hulēʻia
Malama Kaʻu Foundation
Mālama Loko Ea Foundation
Maluʻōhai Residents Association
Mana Health Services, Inc.
Marae Haʻa Koa Maui Council of Hawaiian Civic Clubs | Nā Hono Aʻo Piʻilani
Maunalua Hawaiian Civic Club
Meje, Inc.
Meleana Kawaiaea, LLC
Menehune Foundation
Na Aikane O Maui
Na Koa Ikaika Ka Lahui Hawaiʻi
Na Kuʻauhau ʻo Kahiwakaneikopolei
Nā Kuleana o Kānaka ʻŌiwi
Na Kupuna Moku O Keawe
Na Mookupuna O Wailua
Na Ohana o Puaoi a me Hanawahine
Nā Puʻuwai
Nakupuna Foundation
Nānāikapono Hawaiian Civic Club
Nanakuli Housing Corporation
Native Hawaiian Chamber of Commerce
Native Hawaiian Church
Native Hawaiian Community Development Corporation
Native Hawaiian Education Council
Native Hawaiian Hospitality Association
Native Hawaiian Legal Corporation
Nekaifes Ohana
Niʻihau – Niʻihau O Kahele Lani
Nohopapa Hawaiʻi, LLC
ʻOhana Keaweamahi
ʻO Makuʻu Ke Kahua Community Center
Oʻahu – Moku O Kakuhihewa
Oʻahu Canoe Racing Association

Oʻahu Council of Hawaiian Civic Clubs Office of Hawaiian Affairs Ohana Keohokālole ʻOhana Lo Order of Kamehameha I PAʻI Foundation Pacific Agricultural Land Management Systems Pacific Justice & Reconciliation Center Panaewa Hawaiian Home Lands Community Association Papa Ola Lokahi Papakōlea Community Development Corporation Partners in Development Foundation Paukukalo Hawaiian Homes Community Association Peahi Ohana Pearl Harbor Hawaiian Civic Club Pele Defense Fund Piihonua Hawaiian Homestead Community Association Pōhaku Pelemaka Polynesian Voyaging Society Prince Kūhiō Hawaiian Civic Club Protect Keopuka Ohana Puʻuhonua o Wailupe Queen Deborah Kapule Hawaiian Civic Club Queen Emma Hawaiian Civic Club Queen Julia Kapiʻolani Hawaiian Civic Club Royal Hawaiian Academy of Traditional Arts Sovereign Councils of the Hawaiian Homestead Associations The Friends of Hokuleʻa and Hawaiʻiloa The I Mua Group The Makua Group Wahiawa Ahupuaa LCA 7714B Apana 6 RP 7813 Wai Koa Kauaʻi Waiʻanae Hawaiian Civic Club Waialua Hawaiian Civic Club Waiehu Kou Phase 3 Association Waimānalo Hawaiian Homes Association Waimānalo Health Center Waimea Hawaiian Civic Club Waimea Hawaiian Homesteaders' Association, Inc.
California Federal Elected Officials and Federal Agencies

U.S. House of Representatives (Districts 2, 11, 15, 17, 18, 19, 24, 26, 27, 28, 29, 30, 32, 35, 36, 37, 41, 42, 43, 44, 45, 48, 49, 50, 51, 52)
U.S. Senators
Bureau of Indian Affairs
    Southern California Agency
Bureau of Land Management
Bureau of Ocean Energy Management
    Pacific Outer Continental Shelf Region
        Public Affairs
Bureau of Safety and Environmental Enforcement
    Pacific Region Office
Federal Aviation Administration

Los Angeles Air Route Traffic Control Center Office of the Director, Western-Pacific Region, AWP-600 San Francisco Air Route Traffic Control Center NOAA Fisheries Alaska Fisheries Science Center California Coastal Area Office Channel Islands National Marine Sanctuaries, University of California at Santa Barbara Chumash Heritage National Marine Sanctuary (Proposed) Cordell Bank National Marine Sanctuary Greater Farallones National Marine Sanctuary Monterey Bay National Marine Sanctuary Oregon-Washington Coastal Office West Coast Region, Protected Resources Division Southwest Fisheries Science Center Office of Environmental Policy and Compliance Region IX Pacific Fishery Management Council U.S. Army Corps of Engineer Los Angeles District U.S. Coast Guard District 11 Sector San Diego Channel Islands Harbor Los Angeles – Long Beach Santa Barbara U.S. Environmental Protection Agency Region 9 Natural Resources, Water, Aquaculture Military & Tribal U.S. Fish and Wildlife Service Carlsbad Office Pacific Region Sacramento Office San Diego Bay National Wildlife Refuge Ventura Office U.S. Forest Service Los Padres National Forest Headquarters Pacific Southwest Region U.S. Geological Survey California Water Science Center Northwest-Pacific Island Regional Director’s Office Southwest Region Western Ecological Research Center U.S. National Park Service Channel Islands National Park Pacific West Regional Office Santa Monica Mountains National Recreation Area
California State Elected Officials and State Agencies
Office of the Governor State Assembly Members (Districts 2, 12, 30, 37, 38, 42, 44, 54, 55, 61, 66, 69, 71, 72, 74, 75, 76, 77, 78, 79) State Senators (Districts 2, 13, 17, 21, 24, 27, 33, 35, 36, 37, 38, 39) Attorney General’s Office, California Department of Justice California Air Resources Board

- Enforcement Division
- Office of Community Air Protection

California Coastal Commission
- Energy, Ocean Resources and Federal Consistency Division
- South Central Coast District

California Coastal National Monument (Bureau of Land Management)
California Department of Conservation
- Geologic Energy Management Northern District

California Department of Education
California Department of Fish and Wildlife
- Air Services Unit
- Habitat Conservation Planning Branch
- Marine Region
  - Field Office
  - Habitat Conservation Program
- South Coast Region
- Wildlife Branch

California Department of Industrial Relations
California Department of Parks and Recreation
- Division of Boating and Waterways
- Office of Historic Preservation

California Department of Public Health
California Department of Toxic Substances Control
California Department of Transportation
California Department of Water Resources
California Department of Veterans Affairs
California Energy Commission
California Environmental Protection Agency
- Air Resources Board

California Fish and Game Commission
California Natural Resources Agency
- Department of Conservation
- Ocean Protection Council

California Regional Water Quality Control Board
- Central Coast Region
- Los Angeles Region

California Sea Grant
California State Coastal Conservancy
California State Lands Commission
California State Parks
- Silver Strand State Beach

California Wildlife Conservation Board
Emergency Management Agency
Governor's Office of Planning and Research
- California State Clearinghouse
- Military Council

Native American Heritage Commission
Office of Environmental Health Hazard Assessment
Pacific States Marine Fisheries Commission
State Water Resources Control Board
- Division of Water Quality
- Division of Water Rights

California Local Elected Officials and Local Agencies
California American Water
Corporate Headquarters
Monterey County District
California Regional Water Quality Control Board
Los Angeles Region
North Coast Region
San Diego Region
California Water Service
Salinas District
City of Avalon
City Council
Harbor Department
City of Camarillo
City Council
Planning Division
City of Capitola
City Council
City of Carmel-by-the Sea
City Council
City of Chula Vista
City Council (Districts 1, 2, 3, 4)
City of Coronado
City Council
City of Dana Point
City Council
City of Del Rey Oaks
City Council
City of Fort Bragg
City Council
City of Huntington Beach
City Council
City of Imperial Beach
City Council (Districts 1, 2, 3, 4)
Planning Department
City of Laguna Beach
City Council
City of Long Beach
City Council (Districts 1, 2, 3, 4, 5, 6, 7, 8, 9)
City of Los Angeles
City Council (Districts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15)
City of Malibu
City Council
City of Marina
City Council (Districts 1, 2, 3, 4)
City of Monterey
City Council (At-Large, Districts 1, 2)
Fire Department
Police Department
City of Morro Bay
City Council
City of National City

City Council (Districts 1, 3)
City of Newport Beach
City Council (District 1, 2, 3, 4)
City of Oceanside
City Council (Districts 1, 2, 3, 4)
City of Oxnard
City Council (Districts 1, 2, 3, 4, 5, 6)
Planning Division
Police Department
City of Pacific Grove
City Council
City of Port Hueneme
City Council
Planning & Zoning Division
City of Salinas
City Council (Districts 1, 2, 3, 4, 5, 6)
City of San Diego
City Council (District 1, 2, 3, 4, 5, 6, 7, 8, 9)
Environmental Services Department
Planning Department
City of San Luis Obispo
City Council
City of Sand City
City Council
City of Santa Barbara
City Council (Districts 1, 2, 3, 4, 5, 6)
City of Sausalito
City Council
City of Seaside
City Council
City of Ventura
City Council
Convention & Visitor Bureau of Oxnard
Fox Canyon Groundwater Management Agency
Gualala Municipal Advisory Council
Local Agency Formation Commission
Los Angeles County
Board of Supervisors (Districts 1, 2, 3, 4, 5)
Marin County
Board of Supervisors (District 1, 2, 3, 4, 5)
Parks
Public Works
Mendocino County
Board of Supervisors (Districts 1, 2, 3, 4, 5)
Parks
Planning and Building Services
Monterey County
Board of Supervisors (Districts 1, 2, 3, 4, 5)
Parks Department
Planning Services
Water Resources Agency
Monterey Peninsula Regional Airport
Monterey Peninsula Unified School District

Monterey Peninsula Water Management District
Orange County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
Oxnard Visitors Bureau
Pacific Grove Unified
Peninsula Community Planning Board
Port of Benicia
Port of Hueneme
Port of Long Beach
Port of Los Angeles
Port of San Diego
San Diego Air Pollution Control District San Diego County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
  Department of Planning & Development Services
San Diego Harbor Police
San Diego Unified Port District
San Luis Obispo County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
  Environmental Health Services
  Parks and Recreation Department
  Planning and Building
Santa Barbara County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
  Planning and Development, Development Review Division
  Air Pollution Control Board, Tech and EA Division
  Association of Governments, Planning Division
  Parks Administration
  Public Health Department
Santa Barbara Waterfront Department
Santa Cruz County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
Sonoma County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
  Regional Parks
Sonoma Public Infrastructure
Sonoma Water
South Coast Air Quality Management District
  Planning, Rule Development, and Implementation Department Southern California Association of Governments
Ventura Council of Governments
Ventura County
  Board of Supervisors (Districts 1, 2, 3, 4, 5)
  Air Pollution Control District
    Planning and Evaluation Division
  Cultural Heritage Board
  Harbor Department
  Public Health Services
  Public Works Agency
    Watershed Protection District
  Resource Management Agency
    Planning Division
Ventura Visitors and Convention Bureau
Ventura Water

L.3.1.2 Postcards

Postcards will be mailed to nongovernmental organizations; community groups; business groups; fishing, aviation, and recreation groups; private companies; and individuals.

L.3.1.3 Newspaper Advertisements

Display advertisements will be placed in 10 newspapers as shown in Table L-5.

Table L-5: Draft EIS/OEIS Newspaper Advertisements

O'ahu, Hawaii *Honolulu Star-Advertiser*	**Hawaiian Islands** *Ka Wai Ola News*	**Ventura, California** *Ventura County Star*
Big Hawai'i, Hawaii *Hawai'i Tribune-Herald*	**Kaua'i, Hawaii** *The Garden Island*	**Los Angeles, California** *Los Angeles Times*
Mau'i, Hawaii *The Mau'i News*	**San Diego, California** *The San Diego Union-Tribune*	**Monterey, California** *The Monterey Herald*
		San Luis Obispo, California *The Tribune*

L.3.1.4 News Release and Public Service Announcement

A news release and public service announcement will be distributed to local, regional, and national print and broadcast media.

L.3.1.5 Social Media Posts

Social media posts will be made to established Navy social media pages, including the Navy Region Hawaii, Navy Region Southwest, and Stewards of the Sea Facebook pages.

L.3.1.6 Email Notifications

Email notifications will be distributed to existing website subscribers.

L.3.2 Public Information

L.3.2.1 Stakeholder Briefings

The Navy will brief project stakeholders. Briefings will also be offered upon request to recipients of the tribal and stakeholder letters.

L.3.2.2 Fact Sheet

The military services will prepare a project fact sheet with detailed information about the Proposed Action and environmental impact analysis contained in this Draft EIS/OEIS. The fact sheet will be available on the project website.

L.3.2.3 Project Video

The military services developed a video to provide information on the importance of training and testing in the Study Area. The project video is available on the project website.

L.3.2.4 Virtual Open House Presentation

The military services will prepare a virtual open house presentation and make it available on the website to provide more information related to the Proposed Action, its purpose and need, and the importance of training and testing in the Study Area; environmental resource areas analyzed in the Draft EIS/OEIS and potential impacts; the Navy's marine species research and monitoring program; a summary of the NEPA and NHPA Section 106 processes; public involvement opportunities; and commenting information.

L.3.3 In-Person Public Meetings

The military services will hold three public meetings to inform the public about the Proposed Action and environmental analysis, and to solicit public comments on the environmental issues addressed and analyzed in this Draft EIS/OEIS. The in-person public meetings will include informational poster stations staffed by military representatives, a presentation, and formal oral comment session. A stenographer will be available during the formal oral comment session and during the open house for one-on-one oral comments; written comments can be submitted at any time during the meetings.

L.3.4 Virtual Public Meetings

The military services will also host one virtual public meeting. The virtual public meeting will consist of a presentation and question-and-answer session. Questions concerning the Draft EIS/OEIS will be accepted in advance via the question form on the project website. Questions may also be submitted in writing during the virtual public meeting. Questions submitted during the question-and-answer session will not be considered official public comments.

L.4 Distribution of the Draft Environmental Impact Statement/Overseas Environmental Impact Statement

Parties to be notified of the availability of this Draft EIS/OEIS will be directed to access the document electronically on the project website at www.nepa.navy.mil/hctteis/ or to access hard copies available at established information repositories.

L.4.1 Federal Agencies

This Draft EIS/OEIS will be distributed to federal agencies upon request.

L.4.2 Information Repositories

This Draft EIS/OEIS will be mailed in hard copy form to the information repository locations shown in Table L-6. These copies are to be made available to the public for a minimum of one year.

Table L-6: Information Repositories

Hawaii State Library (Oahu) Honolulu, HI	**City of San Diego Central Library** San Diego, CA
Hilo Public Library (Big Island) Hilo, HI	**Coast Community Branch of Mendocino County Library** Point Arena, CA
Kahului Public Library (Maui) Kahului, HI	**Coronado Public Library** Coronado, CA
Kailua-Kona Public Library (Big Island) Kailua-Kona, HI	**E.P. Foster Library** Ventura, CA
Lihue Public Library (Kauai) Lihue, HI	**Los Angeles Central Library** Los Angeles, CA
Billie Jean King Main Library Long Beach, CA	**Monterey Public Library** Monterey, CA
	San Luis Obispo Library San Luis Obispo, CA

Appendix L.1 Public Scoping Comments

Environmental Impact Statement/

Overseas Environmental Impact Statement

Hawaii-California Training and Testing

TABLE OF CONTENTS

List of Figures

There are no figures in this appendix.

List of Tables

There are no tables in this appendix.

L.1 Public Scoping Comments

The public scoping period began December 15, 2023, and ran through January 29, 2024. Thirty-six comments were received during the public scoping period. Comments were submitted via the project website's electronic comment form (22), email (9), and by postal mail (5).

L.1.1 Project Website Comments

Date/Time: 12-18-2023

Organization: Flatiron West

Name: Stacy Sinclair

City/State: Los Angeles/CA

Comment: Along the California coastline there are very sensitive ecosystem services, including the methane seeps off Pt. Magu. Some of the activities mentioned could impact these fragile systems. Please keep me informed of the mitigation measures under development to protect these areas both for the ecosystems in the area and the castcading impact, should the seeps be disrupted.

Attachments:

1

Date/Time: 12-21-2023

Organization: Hawaii Coastal Zone Management Program

Name: Debra Mendes

City/State: Honolulu/HI

Comment: Please see the attached.

Attachments: ! FC2302 HSTT EIS-NOI czm-fcrqd_12.20.23.pdf

2

STATE OF HAWAIʻI
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
INTERIM DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawaiʻi 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaiʻi 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: https://planning.hawaii.gov/

Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Branch

DTS202312191034ME

December 20, 2023

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Dear Project Manager:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review Required for U.S. Navy Hawaii-California Training and Testing (HCTT) Activities

According to Vol. 88 Federal Register 86885 (December 15, 2023), the Department of the Navy has published a Notice of Intent to Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing Activities. The Office of Planning and Sustainable Development, CZM Program, is notifying you that we believe HCTT activities will have reasonably foreseeable coastal effects, and therefore, a Coastal Zone Management Act (CZMA) federal consistency determination is required to be submitted for review.

Environmental issues that need to be addressed in the HCTT EIS/OEIS include biological resources (including marine mammals and threatened and endangered species); sediments and water quality; air quality; noise, cultural resources; socioeconomic resources, and public health and safety. All these issues will be evaluated during the CZMA federal consistency review.

If you have any questions, please contact Debra Mendes of our CZM Program at (808) 587-2840 or Debra.L.Mendes@hawaii.gov.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Interim Director

c: Ms. Dawn N.S. Chang, Department of Land and Natural Resources

Date/Time: 12-22-2023

Organization: yak tityu tityu yak tihini Northern Chumash Tribe San Luis Obispo County and Region

Name: Mona Olivas Tucker

City/State: San Luis Obispo Countty/CA

Comment: Regarding your letter dated December 7, 2023: We would like to know the specific processes that will be used to assess and protect marine life during the testing. We would like your assurance the the processes won't kill, injure, disorient or have long lasting impacts on marine life and marine habitat. Thank you.

Attachments:

3

Date/Time: 01-5-2024

Organization: Ocean Conservation resarch

Name: Michael Stocker

City/State: Lagunitas/CA

Comment: Comments with citations attached.

Attachments:

4

Naval Facilities Engineering Systems Command, Pacific,
Attention: HCTT EIS/OEIS Project Manager,
258 Makalapa Drive, Suite 100,
Pearl Harbor,
HI 96860–3134.

December 28, 2023

Dear HCTT EIS/OEIS Project Manager,

We appreciate the opportunity to express our concerns about the Hawaii-California Testing and Training Range review. The bulk of our work is focused on marine bioacoustics, and given that the preponderance of environmental compromise and impacts associated with warfare testing and training involves noise - from explosions to sonar, and underwater acoustical communications, we could have a lot of work on our hands expressing our concerns. But I am going to assume that the forthcoming DEIS will be built on the 2012 and 2018 Hawaii-Southern California Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statements (HSTT EIS/OEIS), and informed by the NRDC *et al*. v. Pritzker settlement[1] and the resulting research that followed.

My expanded acoustical concerns are the new technologies in development that will likely be included in the Navy Testing and Training operations going forward. I have been tracking some of these technologies, such as JANUS protocol – accepted by NATO in 2017,[2] and DARPA's POSYDON underwater GPS system.[3] Undoubtedly other systems will be deployed that have not yet been reviewed in the literature, including military underwater acoustical communication systems that would not be revealed for security reasons.

These would include experimental communication systems that would fall under the rubric of the "Underwater Internet of Things," used for any remote operation and monitoring of submersibles, surveillance equipment, stationary equipment state polling and control, and perhaps torpedo guidance.

Given the intersections between required data density, spatial resolution, useful range, and frequency-dependent acoustical absorption of seawater,[4] the frequencies of these various

[1] NRDC *et al*. v. Pritzker. Case No. 3:12-cv-05380-EDL
[2] https://www.nato.int/cps/en/natohq/news_143247.htm
[3] https://www.darpa.mil/program/positioning-system-for-deep-ocean-navigation
[4] Ainslie M.A, McColm J.G. (1998) A simplified formula for viscous and chemical absorption in seawater.

PO Box 559, Lagunitas, CA 94938 • 415.464.7220 • www.ocr.org

technologies would likely fall between 10kHz and 50kHz. This bandwidth unfortunately overlaps the communication and biosonar range of odontocetes. In the HCTT operations area, this would include dolphins (including orcas), porpoises, melon-headed whales, pilot whales, and beaked whales. It would also include seals, including the critically endangered Hawaiian Monk Seal, and sea lions.

So regardless of transmission levels of these various signals, they will run a high probability of masking or interfering with biologically important sounds for these protected marine mammals. Additionally, given the requirement of unambiguous state-announcement of these digital signals, they are characteristically modulated "square waves," and are thus streams of highly impulsive, high kurtosis signals found to be more damaging to hearing, and causing more "behavioral discomfort"[5] than equal energy low kurtosis signals.[6]

Furthermore, these signals are typically continuous in nature, thus from a regulatory perspective, they would fall under the 120dB "continuous noise exposure threshold" of the National Marine Fisheries Service (NMFS) acoustical exposure guidelines.[7]

And finally, in previous Environmental Impact Statements, these various communication technologies have been often considered independently from an entire operating system when assessing impact estimates for Incidental Harassment Authorizations (IHA),[8] or for Incidental Take Permits.[9] But as these systems operate simultaneously, and even in concert, the entire operational soundscape needs to be considered when evaluating the possible biological impacts, and authorizing their implementation.

There is an expanding use of ultrasonic anti-fouling gear on commercial ship hulls.[10] This is a rapidly growing technology world-wide that has largely escaped regulatory oversight. I am not yet aware if this technology is being used on US Naval vessels. But it is a strong point of concern. These systems operate in the 20kHz – 30kHz range – again overlapping the biosonar and communication range of protected marine mammals. If these systems are

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Journal of the Acoustical Society of America 103(3):1671-1672.

[5] Kastelein, R.A., W.C. Verboom, M. Muijsers, N.V. Jennings, S. van der Heul. (2005) The influence of acoustic emissions for underwater data transmission on the behavior of harbour porpoises (*Phocoena phocoena*) in a floating pen Marine Environmental Research 59 p.287–307

[6] Hamernik, R. P., Qiu, W., and Davis, B. 2003b . "The effects of the amplitude distribution of equal energy exposures on noise-induced hearing loss: The kurtosis metric," J. Acoust. Soc. Am. 114, 386–395.

[7] National Marine Fisheries Service. Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts; National Oceanic and Atmospheric Administration: Silver Spring, MD, USA, 2018; p. 167

[8] https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act

[9] https://www.fisheries.noaa.gov/permit/permits-incidental-taking-endangered-and-threatened-species

[10] Martin, S.B., MacGillivray, A.O., Wood, J.D., Trounce, K.B., Tollit, D.J., Angadi, K. (2023). Sound Emissions from Ultrasonic Antifouling Equipment. In: Popper, A.N., Sisneros, J., Hawkins, A.D., Thomsen, F. (eds) The Effects of Noise on Aquatic Life. Springer, Cham. https://doi.org/10.1007/978-3-031-10417-6_102-1

being deployed on the hulls of any US Naval vessels in the HCTT range, their noise contribution needs to be evaluated and included in any Draft Environmental Impact Statement.

It has been common practice in Environmental Impact Statements, as well as applications for Incidental Harassment Authorizations and Incidental Take Permits to evaluate noise profiles of each technology in the context of regulatory thresholds, rather than the contribution of the particular noise to the entire soundscape of concern. But the digital technologies used in the "Underwater Internet of Things" work in concert – an underwater GPS or local positioning matrix anchors the location of the equipment controlling, being controlled, or reporting. So in fact a digital warfare soundscape is a complex cacophony of really unpleasant (high kurtosis) noises.

Determining the behavioral impacts of this hostile soundscape may need more than onboard Marine Mammal Observers. Given the rapid introduction of some of these new technologies when there is still no regulatory metric on sound quality impact of behavioral disruption, it might be wise to fund concurrent behavioral and metabolic observations of select marine mammals in the operations areas to determine how the proposed activities impact or disrupt normal behaviors.

This might include some baseline behavioral studies on coastal and pelagic odontocetes prior to the Testing and Training exercises to determine if there are noticeable behavioral changes in foraging routines, or measured cortisol levels in feces or exhalate prior to, during, and after the exercises.

Warfare Testing and Training is, by definition, hostile and messy, and the last thing any field commander wants to contend with is scientists and marine mammologists in the field during operations. But there have been so many advances in remote sensing through drones – both in terms of aerial behavioral observations and serum sampling[11] which could be coordinated, and reveal a lot of important data on marine mammal responses to the exercises.

Respectfully,

Michael Stocker
Director

[11] https://whale.org/snotbot/

Date/Time: 01-05-2024

Organization: Hawaii Department of Health (HDOH) Hazard Evaluation and Emergency Response (HEER) Office

Name: Ms. Gracelda M. Simmons

City/State: Pearl City/HI

Comment: Good morning, Please see attached HDOH Comment Letter dated January 5, 2024 (ref. 205606 AH) regarding the Notice of Intent to Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing dated December 7, 2023. Thank you, Allison Hutto Remedial Project Manager HDOH HEER Office 808-586-4249 / allison.hutto@doh.hawaii.gov

Attachments: 205606 AH HCTT Study Area Final - signed.pdf

6

JOSH GREEN, M.D.
GOVERNOR OF HAWAI'I
KE KIA'ĀINA O KA MOKU'ĀINA 'O HAWAI'I

KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HO'OKELE

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
205606 AH

January 5, 2024

HCTT EIS/OEIS Project Manager
Naval Facilities Engineering Systems Command Pacific
285 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Facility/Site: Hawaii/California Training and Testing (HCTT) Study Area

Subject: Comments on Notice of Intent to Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing; dated December 7, 2023

Dear HCTT EIS/OEIS Project Manager,

The Hawaii Department of Health (HDOH) Hazard Evaluation and Emergency Response (HEER) Office has reviewed the above-referenced document and the Virtual Open House Presentation available on-line at https://www.nepa.navy.mil/hctteis/ and has the following comments:

1. In addition to National Environmental Policy Act (NEPA) requirements, the Navy must comply with the State of Hawaii Environmental Policy Act (HEPA) requirements managed under the Environmental Review Program (ERP). Please adhere to all HEPA and ERP requirements per Hawaii Administrative Rule (HAR) Chapter 11-200 which are administered by the Hawaii Office of Planning and Sustainable Development (https://planning.hawaii.gov/erp/).

2. There are CERCLA, hazardous substance, and military munitions response sites under water and on land in the areas identified (including Joint Base Pearl Harbor-Hickam, Oahu and Pacific Missile Range Facility, Kauai). The Navy should be aware of these sites and ensure that they are not disturbed. If disturbance of contaminated media and/or release(s) or spills of hazardous substances, including oil or other petroleum products, occur during the exercises, ensure proper notification and response actions are taken, including notification to the HDOH and other appropriate state and federal agencies. For information on HDOH HEER Office sites and regulations please visit our website, https://health.hawaii.gov/heer/.

   The HDOH notification procedures can be found in detail at https://health.hawaii.gov/heer/reporting/how-to-report-a-release-spill/#:~:text=The%20owner%20or%20operator%20of,equal%20to%20or%20exceeds%20the

January 5, 2024
Page 2 of 2

3. In addition to the National Oceanic and Atmospheric Administration (NOAA) Marine Fisheries Service, the Navy should be in consultation with the Hawaii Department of Land and Natural Resources Division of Aquatic Resources (DAR, https://dlnr.hawaii.gov/dar/), U.S. Fish and Wildlife Service, and any other agencies regulating coasts, waterways, ports, etc.

If you have any questions or should you need a hardcopy of this letter, please contact me at 808-586-4249 or by email at allison.hutto@doh.hawaii.gov.

Sincerely,

Gracelda Simmons

Gracelda M. Simmons, Environmental Mgt Program Manager
Hazard Evaluation and Emergency Response Office
Hawaii Department of Health

Date/Time: 01-07-2024

Organization: -

Name: Kristen Petroff

City/State: Honolulu/HI

Comment: Topic: The Environment. The environment is fragile on these islands and the Military has shown nothing but disregard to the land, animals, soil and water. I do not need to provide documentation, read the news. Yes, you need to train, but we are asking you to find somewhere else that is not considered sacred land. What were you thinking? First, you need to clean up your mistakes, leaving NO trace that you were here. Restore the land to it's natural beauty. Second: ho'ihi - Respect this island. Third: Give this island time to recover from your previous mistakes. Everything you do to train: Mines, shelling, etc., destroys this land which many of you are not a part of. Neither am I. I am a guest on this island and I treat it with respect. You, the military, have NOT treated this island with respect, therefore you should move your training elsewhere. Mahalo.

Attachments:

7

Date/Time: 01-09-2024

Organization: -

Name: Terry Lilley

City/State: Haleiwa/HI

Comment: I am a career marine biologist in Pupukea Oahu North Shore and Hanalei Kauai. I have over 1000 scuba dives showing the effects of the Navy operations on our coral reefs and marine life here in Hawaii and several documentary movies about the subject that have aired on TV, National Geographic and social media. I can prove that the discharge of an electrical current from Navy submarines kills our coral reefs. The electrical discharge grounds out into the reef causing the calcium carbonate bond in the coral to break down then the coral becomes diseased and dies. The electrical discharge from Navy ships, microwave towers and submarines is killing our coral reefs and the Navy has completely left out this problem from the EIS! The Navy needs to do a detailed study about its effects on our coral reefs due to electrical discharge into the sea. I can supply professional movies showing the process and I am also willing to testify in federal court using my many hours underwater. Please feel free to contact me to discuss this issue further at underwater2web@gmail.com.

Attachments:

8

Date/Time: 01-09-2024

Organization: Bureau of Land Management - California

Name: Leisyka Parrott

City/State: Coastal California/CA

Comment: The proposed activities lie within the California Coastal National Monument Corridor which is the geographic area in which the rocks and islands that make up the monument are located. This is the area, (delineated by Presidential Proclamation No. 7264 that established the CCNM on January 11, 2000), that extends 12 nautical miles off of the 1,100 mile shoreline of the State of California and encompasses more than 14,600 square nautical miles. The proposed activities may have measurable negative impacts on migratory bird populations, marine mammal populations and nearshore intertidal species that utilize the CCNM. The Navy is a Steward of the CCNM as referenced the attached MOU signed in 2007. Please include the CCNM as an interested party and/or cooperating agency. Sincerely, Leisyka Parrott California Coastal National Monument Manager U.S. Department of the Interior, Bureau of Land Management Mailing address: 1695 Heindon Road, Arcata, CA 95521 Mobile: 707-513-3891 Email: lparrott@blm.gov

Attachments: ccnm_mou_steward_final dates_US Navy_CA939-08-02_11.05.2007.pdf

9

BLM MOU No. CA-939-08-02

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES NAVY
AND THE
BUREAU OF LAND MANAGEMENT
REGARDING THE
CALIFORNIA COASTAL NATIONAL MONUMENT

I. PARTIES AND PURPOSE

The United States Navy, within the United States Department of Defense (DOD), and the Bureau of Land Management (BLM), within the United States Department of the Interior, enter into this Memorandum of Understanding (MOU) to establish an interim agreement whereby the Navy will serve as a Steward for the following areas of the California Coastal National Monument (CCNM): (1) the portions of the CCNM off the shoreline of San Clemente Island, (2) the portions of the CCNM off the shoreline of San Nicolas Island, (3) Begg Rock near San Nicolas Island, and (4) the portions of the CCNM off the western side of Naval Base Point Loma in San Diego, California.

II. INTRODUCTION

A. **BLM and the California Coastal National Monument.** By Presidential Proclamation on January 11, 2000, all unappropriated or unreserved lands and interest in lands owned or controlled by the United States in the form of islands, rocks, and pinnacles above mean high tide within 12 nautical miles of the shoreline of the State of California were designated as the CCNM. The CCNM was nationally recognized in the Presidential Proclamation as a biological and geological treasure, rich in biodiversity, and providing essential habitat for many species of scientific interest. The CCNM designation mandates the protection of historic and scientific objects, particularly wildlife species which normally inhabit the CCNM area, and limits management discretion that the Federal managers otherwise have. The Secretary of the Interior manages the CCNM through the BLM and under the BLM's existing authorities, subject to the overriding purpose of protecting the resources described in the Presidential Proclamation. The BLM is directed by Congress to administer the public lands so that all various land and resource uses and values are managed in combinations that will best meet the needs of the American people.

B. **Core-Managing Partners.** BLM, the California Department of Fish and Game (CDFG), and the California Department of Parks and Recreation (CDPR) serve as the "core-managing partners" of the CCNM. Through an interim MOU signed in the spring of 2000, BLM extended its partnership with CDFG and added CDPR, the State agency that administers 25% of the California coast. Collectively, BLM, CDFG, and CDPR are responsible for the management of the CCNM.

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C. **Stewardship.** With a national monument as extensive and connected to so many varied jurisdictions as the CCNM, the opportunities for partnerships are not only enormous, but also necessary. Although the Presidential Proclamation makes it very clear that the CCNM will remain under federal ownership and directs the Secretary of the Interior to manage the CCNM through the BLM, the BLM needs to continue existing partnerships and establish new ones with governmental agencies and others in order to effectively administer the CCNM. Consistent with appropriate authorities, stewardship agreements are being developed with select entities with management interests along the coast. CCNM "Stewards"[1] work in partnership with BLM to share information that assists the BLM in its management of a specific portion of the CCNM (See CCNM Stewardship Program Fact Sheet, Attachment A).

D. **San Clemente Island, San Nicolas Island, Begg Rock, and Naval Base Point Loma.** The Navy administers San Clemente Island (under jurisdiction of Naval Base Coronado) and manages the island as part of the San Clemente Island Range Complex, a major land, air, and sea training range complex. San Nicolas Island is also Navy administered (under jurisdiction of Naval Base Ventura County) and serves as the cornerstone for the Point Mugu Sea Range, primarily as an instrumentation site. Begg Rock is located approximately seven miles west northwest of San Nicolas Island. The western side of Naval Base Point Loma contains a variety of research and development facilities. The Navy has established integrated natural resources management plans for the three installations adjacent to the CCNM, and maintains an environmental staff to oversee the implementation and management of its plans and associated initiatives. Until jurisdiction of the rocks and exposed reefs associated with both islands and Naval Base Point Loma can be transferred to DOD, the Navy is agreeing to serve as a CCNM Steward for the BLM's management of the portion of the CCNM adjacent to San Clemente Island, San Nicolas Island, and Naval Base Point Loma, and Begg Rock. (See Map of Navy Stewardship Area of the CCNM, Attachment B).

III. AUTHORITIES

A. **BLM Authority;** The Federal Land Policy and Management Act of 1976, Section 307(b) provides that the Secretary of the Interior may undertake programs of resource management through cooperative agreements.

B. **Navy Authority:** Executive Order 13352 of August 26, 2004, Facilitation of Cooperative Conservation, requires the Secretaries of Defense and Interior to carry out activities of their respective agencies that relate to the environment and natural resources in a manner that facilitates cooperative conservation. Nothing in this MOU shall be construed or interpreted as preempting any otherwise applicable Federal, State, or local law or regulation relating to the management of natural and cultural resources on or off military installations.

IV. PRINCIPLES OF STEWARDSHIP AGREEMENT

A. **The Navy Agrees To:**

[1] A "Steward" is defined as the local CCNM point of contact for the assigned portion of the CCNM.

1. Serve as a CCNM Steward and work closely with the Core-Managing Partners of CCNM and other CCNM partners, as appropriate, in accordance with the paragraphs below.

2. Designate a contact person to serve as the U.S. Navy liaison with the CCNM.

3. Cooperate with the BLM on defining the monitoring and research needs for the CCNM and developing a strategy for implementing the protection, monitoring, and research needs consistent with the Navy's integrated natural resource management plans.

4. Provide information on existing and future Navy missions, subject to national security concerns, which could impact the CCNM, in order to assist the BLM in developing guidance on managing the CCNM.

5. Implement Navy activities to avoid or minimize negative impacts to the CCNM as practicable and consistent with the Navy mission.

6. Provide the BLM reasonable access, if needed, to the CCNM from San Clemente and San Nicolas Islands, Begg Rock, and Naval Base Point Loma, in a manner that is compatible with the Navy's activities, actions, schedules, and security.

7. Report to BLM on an annual basis on known impacts to the CCNM, and activities and/or actions related to the CCNM undertaken by the Navy.

B. The BLM Agrees To:

1. Respect any valid existing Navy rights[2] to the use of or access to the CCNM and surrounding coastal waters.

2. Provide the Navy with guidance regarding the role of a CCNM Steward (See Attachment A).

3. Keep the Navy informed and updated on matters related to the CCNM.

4. Honor Navy policies and procedures related to protecting the safety and security of San Clemente Island, San Nicolas Island, and Naval Base Point Loma, and the role they play in national defense.

5. Honor all agreements and policies of the Navy that are more protective of the CCNM than those of the BLM.

C. The Navy and the BLM Mutually Agree:

1. To seek opportunities to share information to enable BLM to carry out its protection,

[2] A "valid existing right" is defined as a legally binding property right of a person or entity at a particular point in time.

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monitoring, research, and/or public education initiatives associated with the CCNM and unique coastal habitats and resource values to the extent Navy resources are available.

2. To work together to ensure consistency and coordination in the protection and management of the CCNM.

V. OTHER PROVISIONS

A. Limits of Authority and Funding

1. Nothing in this MOU shall be construed as limiting or affecting in any way the respective authorities or legal responsibilities of the Parties.

2. Nothing in this MOU binds the Parties to perform beyond their respective authority of each.

3. Nothing in this MOU requires any Party to assume or expend any sum in advance of appropriations available nor does this agreement obligate the Parties to spend funds on any particular project or purpose, even if funds are available.

4. The mission requirements, funding, personnel, and other priorities of either Party may affect the ability of either Party to fully implement all the items and opportunities identified in this MOU.

5. This MOU is neither a fiscal nor a funds obligation document. Specific activities that involve the transfer of money, services, or property between the Parties shall require execution of separate agreement or contract.

6. Nothing in this MOU restricts the Parties from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.

7. BLM retains the sole decision-making authority for public lands and resources it administers.

8. Activities conducted under this MOU will be in compliance with the nondiscrimination provisions as contained in Titles VI and VII of the Civil Rights Act of 1964, as amended, the Civil Rights Restoration Act of 1987 (PL 100-259) and other nondiscrimination statues, namely Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, and in accordance with the regulations of 7 CFR 15, Subparts A and B, which provide that no person in the United States stall, on the grounds of race, color, national origin, age, sex, religion, marital status, or handicap be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance.

B. Amendment of Agreement. Amendments or supplements to this MOU may be proposed by either Party and shall become effective upon written approval of both Parties.

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C. **Dispute Resolution.** The Parties shall attempt to resolve controversies through alternative dispute resolution methods that are mutually acceptable to both Parties. Methods may include, but are not limited to, direct negotiation, facilitation or mediation, and non-binding arbitration.

D. **Termination of Agreement.** Either Party may terminate its participation in this MOU at any time through written notification to the other Party at least 90 days prior to termination.

E. **Effective Date of Agreement.** This MOU shall become effective upon signature by both Parties. This MOU may be executed in one or more counterparts, each of which will be considered an original document.

VI. APPROVALS

The Parties hereto have executed this agreement as of the last date shown below.

/s/ Leendart R. Hering 11/5/07

Rear Admiral Leendert R. Hering, Sr. Date
United States Navy
Commander, Navy Region Southwest

/s/ Mike Pool 11/5/07

Mike Pool Date
State Director
Bureau of Land Management

2 ATTACHMENTS:

Attachment A – CCNM Stewardship Program Fact Sheet
Attachment B - Map of Navy's Stewardship Area of the CCNM

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Attachment A

CALIFORNIA COASTAL NATIONAL MONUMENT
STEWARDSHIP PROGRAM
Fact Sheet

PURPOSE:

To establish a series of California Coastal National Monument (CCNM) "Stewards" to work with the U.S. Department of the Interior's Bureau of Land Management (BLM), California Department of Fish and Game (CDFG), California Department of Parks and Recreation (CDPR), and other CCNM partners in the long-term protection and management of the CCNM and its various resources and resource values.

GOALS & OBJECTIVES:

- Increase protection and monitoring of the CCNM.
- Involve adjacent landowners and resource managers of properties with various coastal and marine protection programs, initiatives, or interests associated with specific portions of the CCNM in the long-term management of the CCNM.
- Increase the knowledge and understanding of the various resources and resource values of the CCNM.
- Enhance the cooperative and collaborative management of the fragile ecosystems of California's coastline.

BACKGROUND & ORGANIZATION:

- The CCNM was established by Presidential Proclamation on January 11, 2000, and the BLM, under the Secretary of the Interior, was directed to provide long-term management of the monument.
- Through a memorandum of understanding (MOU) signed in the summer of 2000, CDFG and CDPR were brought in as managing partners to assist the BLM, who retains the ultimate legal responsibility for the CCNM, in "preserving the [CCNM's] objects of historic and scientific interest, ... mapping and understanding resources within the Monument, [and]... working with the public to explain the values of the Monument."
- In order to effectively deal with the wide array of partnership opportunities associated with the CCNM, three basic partnership categories have been developed:
    - Core-Managing Partner - Each of the three "core" agencies- -BLM, CDFG, and CDPR- - responsible for collaborating in the overall management of the entire CCNM.
    - Collaborative Partner - An organization, governmental or private, that is interested in collaborating with the core managing partners in any of a variety of programs, actions, and management elements associated with the long-term management of the CCNM.
    - Steward - A select entity with ownership and/or management responsibility for a portion of the coast that adjoins part of the CCNM and that is interested in serving as the local CCNM BLM point of contact for the adjacent portion of CCNM.

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- Each Steward will work with the BLM and other CCNM partners as appropriate, in a cooperative and collaborative management effort to ensure the long-term protection of their specific portion of the CCNM, a portion that is offshore of the Steward's onshore property.

METHODS:

BLM will invite various governmental, tribal, or private organizations that own or administer coastal lands and manage programs that provide for the protection and long-term management of a specific portion of the California coast adjacent to parts of the CCNM to be a CCNM Steward for that specific portion of the CCNM.

- A stewardship agreement will be developed with each approved Steward. Each agreement will identify the assigned portion of the CCNM for which the Steward will share information with the BLM to assist the BLM in its long-term management responsibilities, and outline the expected role and responsibilities in working with the BLM and its various CCNM partners.
- The Steward will serve as the local CCNM representative for the assigned portion of the CCNM by:
    - Designating a contact person to serve as the CCNM liaison.
    - Providing a local contact point for items and actions related to the CCNM.
    - Alerting BLM to known and potential problems.
    - Identifying specific management needs, including protection, monitoring, and research.
    - Reporting to BLM on at least an annual basis on any activity or action related to the CCNM.
- BLM will provide each Steward with guidance and direction regarding the role of a CCNM Steward and keep each Steward updated on the evolving protection and management needs and requirements related to the CCNM.

INTENDED OUTCOMES & BENEFITS:

- Increased monitoring and protection of the CCNM.
- Greater involvement of partners in the long-term management of the CCNM.
- Increased awareness and knowledge of the specific resources and resource values of the CCNM.
- Regular reports on the condition of the CCNM resources and on the activities in and around the CCNM.
- Identification of actions needed to enhance the long-term management of the CCNM.
- More effective use of limited funding and capabilities.

A Partnership in Protecting Unique California Coastal Resources

Date/Time: 01-12-2024

Organization: -

Name: Karie Wakat

City/State: Kailua Kona/HI

Comment: What you are proposing will kill our coral reefs and ocean wildlife, such as whales and dolphins. Take this activity elsewhere.

Attachments:

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Date/Time: 01-22-2024

Organization: State Dept. of Hawaiian Home Lands

Name: Ku'upuamaeole Kiyuna

City/State: Honolulu/HI

Comment: Aloha, Attached are DHHL comments for the above-cited OEIS project. Thank you for the opportunity to provide comments.

Attachments: PO-24-010 Navy OEIS Trng-Testing (part 1) - signed.pdf

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JOSH GREEN, M.D.
GOVERNOR
STATE OF HAWAII
Ke Kiaʻāina o ka Mokuʻāina ʻo Hawaiʻi

SYLVIA J. LUKE
LT. GOVERNOR
STATE OF HAWAII
Ka Hope Kiaʻāina o ka Mokuʻāina ʻo Hawaiʻi

KALI WATSON
CHAIRMAN, HHC
Ka Luna Hoʻokele

KATIE L. DUCATT
DEPUTY TO THE CHAIRMAN
Ka Hope Luna Hoʻokele

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka ʻOihana ʻĀina Hoʻopulapula Hawaiʻi
P. O. BOX 1879
HONOLULU, HAWAII 96805

January 18, 2024

DHHL ref: PO-24-010

Sent via email: www.nepa.navy.mil/hctteis

Naval Facilities Engineering Systems Command Pacific
Attn: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Aloha:

The Department of Hawaiian Home Lands (DHHL) is in receipt of your letter dated December 7, 2023 providing notice of intent to prepare an environmental impact statement/overseas environmental impact statement (EIS/OEIS) for the Hawaii-California Training and Testing (HCTT).

The proposed action will continue military training and testing activities, modernize and sustain ranges in the Study Area, add new special use airspace in Southern California, expand Southern California underwater training range, and install and maintain mine training areas off Hawaiʻi and Southern California.

At this time, the Navy is seeking information from DHHL regarding the scope of the EIS/OEIS pursuant to 40 CFR §1501.9, §1506.6, and §1501.2, and the project's potential to affect historic properties pursuant to Section 106 of the NHPA. Please see below for DHHL's comments:

1. Papahānaumokuākea Marine National Monument (PMNM) is one of the largest marine conservation areas in the world and the single largest in the United States. Important to Native Hawaiians, PMNM is an ancestral landscape wherein traditional cultural practices continue to take place and cultural resources exist. The Temporary Operation Area (TOA) encompasses the majority of PMNM and the Operating Boundary Area (OPAREA) includes the entirety of the main Hawaiian Islands and a portion of PMNM. Although not DHHL lands, PMNM is of critical importance to beneficiaries due to its role in Native Hawaiian culture, history, and on-going cultural practices. No information on PMNM has yet been provided on the project website nor in the virtual open house. DHHL recommends that the Navy include PMNM as a resource to be evaluated and analyzed to determine the direct, indirect, and cumulative impacts the proposed action may have on PMNM. Additionally, DHHL recommends that the activity-based mitigation zones that the Navy proposes to employ regarding marine species protection be extended to PMNM to safeguard the marine species and cultural and environmental resources therein.

HCTT EIS/OEIS Project Manager
January 18, 2024
Page **2** |

2. The OPAREA encompasses the entirety of the main Hawaiian Islands and its surrounding waters. Native Hawaiians have a rich history in natural and cultural marine resource management and stewardship of marine ecosystems, inclusive of deep-sea areas beyond coastal waters and shorelines. Traditional deep-sea practices that continue to be perpetuated by Native Hawaiians include but are not limited to fishing, long-distance paddling, performing burial ceremonies, and depositing piko (umbilical cord). These traditional and customary rights are acknowledged and protected under the Hawaiʻi Constitution. DHHL lands extend to coastal communities on Kauaʻi, Oʻahu, Molokaʻi, Maui, and Hawaiʻi Island. DHHL recommends that the Navy consult with Native Hawaiians and homestead communities to better understand traditional and customary practices that take place at sea and how best to mitigate project effects on those constitutionally protected rights of Native Hawaiians.

3. No historical or archaeological overview of the area has yet been provided. Included in the waters within PMNM are submerged maritime heritage resources including but not limited to aircrafts, shipwrecks, and archaeological sites. As previously discussed, the waters surrounding the main Hawaiian Islands are also home to burials and other cultural practices important to Native Hawaiians. DHHL recommends that the Navy consider conducting an archaeological literature review of the area to better understand any possible impacts on historic properties. Should the State Historic Preservation Division provide comments, please share those with DHHL as well.

Mahalo for the opportunity to provide comments. We look forward to continued participation. Please feel free to contact DHHL should you have any questions.

Aloha,

Kali Watson

Kali Watson, Chairman
Hawaiian Homes Commission

Date/Time:	01-22-2024
Organization:	-
Name:	Nina & David Monasevitch
City/State:	Lihue/HI
Comment:	See attached.
Attachments:	EIS comments 2024.docx

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Nina & David Monasevitch
4457 Laukini Rd.
Lihue, HI 96766
December 11, 2017

Naval Facilities Engineering Command Pacific
HSTT EIS/OEIS
Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

RE: Hawaii-Southern California Training and Testing EIS/OEIS 2024

To Project Manager,

The EIS is insufficient for the following reasons:

Missing comprehensive research on cetacean mass stranding deaths due to the following factors: panic, bubble formation and/or decompression sickness from Naval sonar:

1) Sonar caused panic reactions leading to strandings followed by death
2) Sonar caused decompression sickness (the bends) followed by death
3) The bends caused by sonar even in the absence of panic

Missing details on training activities, particularly RIMPAC activities—what are other countries are doing here in our waters during RIMPAC? Each RIMPAC should require it's own EIS including exactly what all other countries are doing.

Lack of process for truly independent observers.

Lack of information on Navy taking responsibility for cleaning up debris already left behind from previous activities including unexploded ordinance, cables etc.

Lumping of species and areas between Hawaii and California is highly unscientific. There are several marine mammal species that are endemic to Hawaii and only live in Hawaii.

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Insufficient details on how high seas migratory species are impacted.

Insufficient monitoring techniques. Many species are deep divers and very elusive and cannot be seen from the surface.

Lack of transparency/species specificity on threshold monitoring.

Take limits are arbitrarily high.

Lack of discussion on alternatives to active sonar. In this day and age there must be other ways to detect submarines that are less destructive to marine mammals and all marine life. You have affirmative duty to protect under the MMPA, a failure to minimize impact to "the least practical adverse impact." MMPA- Section 1371(a)(5)(A)(i)(II)(aa).

In relation to the above mentioned marine mammal deaths caused by panic reactions, decompression sickness and the bends caused sonar, in June 2012 I requested you include the following scientific literature in the EIS. As far as I can see they have not been included. I am again stating the findings in the following papers MUST be included in the EIS:

D.S. Houser, R. Howard and S. Ridgway, 'Can Diving-Induced Tissue Nitrogen Supersaturation Increase the Chance of Acoustically Driven Bubble Growth in Marine Mammals?' 213 Journal of Theoretical Biology 183, 190 (2001).

L.A. Crum, M.R. Bailey, J. Guan, P.R. Hilmo, S.G. Kargl, T.J. Matula, and O.A. Sapozhnikov, 'Monitoring Bubble Growth in Supersaturated Blood and Tissue ex vivo and the Relevance to Marine Mammal Bioeffects.' 6(3) Acoustics Research Letters Online 214 (2005).

J. R. Potter, 'A Possible Mechanism for Acoustic Triggering of Decompression Sickness Symptoms in Deep-Diving Marine Mammals' Paper presented at the IEEE International Symposium on Underwater Technology 2004, Taipei Taiwan, April 2004.

Also include the following research in the EIS analysis;

PARSONS, E. C. M.; SARAH J. DOLMAN; ANDREW J. WRIGHT; NAOMI A. ROSE and W. C. G. BURNS. MARINE POLLUTION BULLETIN 56(7):1248-1257. 2008. Navy sonar and cetaceans: Just how much does the gun need to smoke

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before we act?

TYACK, PETER L. JOURNAL OF MAMMALOGY 89(32):549-558. 2008. Implications for marine mammals of large-scale changes in the marine acoustic environment.

WRIGHT, A. J.; N. AGUILAR SOTO; A. BALDWIN; M. BATESON; C. BEALE; C. CLARK; T. DEAK; E. EDWARDS; A. FERNANDEZ; A. GODINHO; L. HATCH; A. KAKUSCHKE; D. LUSSEAU; D. MARTINEAU; L. ROMERO; L. WEILGART; B. WINTLE; G. NOTARBARTOLO DI SCIARA and V. MARTIN. INTERNATIONAL JOURNAL OF COMPARATIVE PSYCHOLOGY 20(2-3):274-316. 2007. Do marine mammals experience stress related to anthropogenic noise?

Faerber, M .M., R. W. Baird. 2010. Does a lack of observed beaked whale strandings in military exercise areas mean no impacts have occurred? A comparison of stranding and detection probabilities in the Canary and main Hawaiian Islands. Marine Mammal Science DOI: 10.1111/j.1748-7692.2010.00370.x

The EIS needs to include comprehensive research on the short and long term effects of sonar to all marine mammals, even if sonar activity does not cause stranding or death, or any other “obvious” signs of effects.

Given the above lack of sufficient science and precautions, we support the No Action Alternative.

A few realities about the state of our oceans—they are literally in crisis:

All cetacean species are well below pre-whaling numbers, many are endangered and threatened. Ninety percent of all large fish species are gone. There are now only one percent of sharks left worldwide. Green sea turtle (the principle grazers of the reefs) numbers are a fraction of their previous numbers. Coral reefs are critically endangered and one of the most threatened ecosystems on the planet.

What are the consequences of business as usual? We are looking at slime as the future ocean. For documentation on this see research by Dr. Jeremy Jackson at Scripps Institute of Oceanography, UCLA

As America's only island state, Hawaii is uniquely vulnerable to the consequences of ocean degradation and biological loss of species.
Given that Hawaii is an isolated state with stewardship responsibility over the largest marine areas in the nation, the U.S. Navy should be a leader in protection of this marine ecosystem. You have the budget, let's see some stewardship. In addition to the health and survival of protected and endangered species, Hawaii's food supply, recreational activities, and economy are all dependent upon a healthy ocean.

The use of active sonar to protect the aircraft carriers of the US Navy makes the assumption that there are countries with submarine technology we are at war or are potentially at war with.

We are not at war with Russia or China. Unless we are mistaken, the USA hasn't been attacked by a submarine since the Nazi Regime used U- Boats as part of their arsenal in their attempt to take over the world by force.

The reality is that there is no foreign submarine threat to American forces patrolling the oceans of the world.

The United States hasn't been attacked since 1941. The result- Hiroshima and Nagasaki.

The world has watched the USA destroy country after country for over 70 years. No one wants to attack the USA. No country wants to be provoked into attacking the US either.

Therefore, the wanton use of active sonar for US asset protection at the peril of marine life is a ruse.

There is a mass extinction happening now. The citizens and soldiers of United States have a responsibility to do every thing in their power to protect the remaining life on this planet great and small.

Find alternative technology. Abandon that which kills marine life. Learn to do more with less money like the rest of us have had to do since the lion's share of our taxes has been going to the military.

Sincerely,

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Nina Monasevitch

David Monasevitch

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Date/Time: 01-23-2024

Organization: self

Name: Robin Tierney

City/State: Daytona Beach/FL

Comment: Please do not engage in activities that harms whales and other sea life. They are thinking feeling beings just trying to live and they are good for the earth. Thank you.

Attachments:

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Date/Time: 01-23-2024

Organization: Shoreline Preservation Coalition (a Hawaii non-profit Group)

Name: Richard D Sterman

City/State: Haleiwa/HI

Comment: Aloha... I'm one of four Directors of a Hawaii non-profit group called "Shoreline Preservation Coalition", dealing with preserving our shorelines and - of course - the reefs that protect our shorelines. Of late - there seems to be a problem with our Coral Reefs dying. If they don't make a come-back, our houses will be falling into the ocean by the dozens! One has already fallen in! Right in front of these homes (Sunset Beach Area of the North Shore of Oahu) is a Coral Reef that has died. A respected Marine Biologist from our island has made a claim that it is the NAVY discharging large amounts of electricity and other forms of electro-magnetic discharges as part of their testing of their technology and maybe even electro-magnetic weapon testings that have caused the reefs to die. It has already been proven (off the coast of Hanalei on the North Shore of Kauai) that these emissions were killing THEIR reefs and the NAVY has stopped their testing off THAT coast - and miraculously, the reefs started to come back to life! WE WANT THAT for our own coastlines! If there's even a 'chance' that your 'testing' is 'killing' our reefs (not to mention our other sea-life) then we need the Environmental Assessment to include a study of the possible deterioration of Calcium Carbonate in these reefs due to your activities off our coast! NOTICE: If it is proven that NAVY activities is killing our reefs and the deterioration of our reefs is causing our accelerated Sand-Erosion and our homes and properties fall partially or fully into the ocean and onto our beaches ... then - you are put on notice that we WILL sue the EPA, U.S. Government and whoever else allowed these activities to be done without full consideration of the environmental impacts on not only our Sea-Life, but also our Coral-Reefs! THANK YOU from our group, made up of Beachfront Owners on the island of Oahu with the law firm of Starn O'Toole Marcus & Fisher.

Attachments:

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Date/Time: 01-23-2024

Organization: Property owner

Name: Tim Reed

City/State: Honolulu/HI

Comment: I have spoken to the marine biologist in depth and lived on the North shore of Oahu over the last 50 years. The reefs are dying and the erosion is a major concern. If the elimination or accommodation to move the testing further out to sea has proven positive on Kauai the absolutely the same adjustments need to be made for the North Shore of Oahu.

Attachments:

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Date/Time: 01-23-2024

Organization: HAWAII RESIDENT 60 YRS

Name: Martin Hoffman

City/State: Honolulu/HI

Comment: I am strongly against the testing off the coast of OAHU & Kauai the reefs are suffering and the shoreline is having asst issues and i believe these tests and release of electromagnetic energy into the ocean is a very bad problem for the environment , whales are effected im sure? Grey whales are in decline and were not sure of all the negative effects b this may babe one of many negative results. Please discontinue these test in Hawaii state waters Martin Hoffman 59-311 Ke-Nui Rd. Haleiwa Hi 96712. 949-547-8713 cell.

Attachments:

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Date/Time: 01-24-2024

Organization: -

Name: Terri Armao

City/State: Arlington/VA

Comment: I oppose any and all training exercises/at-sea military readiness activities in whale migration, feeding, and calving areas within the Hawaii-California Training and Testing (HCTT) Study Area. Your operations have been shown to stun, kill and or deafen whales and dolphins. Move your activities out of any sensitive areas. I also oppose any plans current or future by the Navy to modernize and sustain its ranges inane areas that harm marine mammals in any manner whether temporary or permanently.

Attachments:

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Date/Time: 01-24-2024

Organization: Packs Consulting

Name: Earl

City/State: Waialua/HI

Comment: Our North Shore coral reefs face a critical threat, with decay endangering homes. In Helms Bay near Dillingham Airfield, reef deterioration is linked to such erosion. A local Marine Biologist attributes the issue to discharges of electricity and other forms of electromagnetic energy, possibly from testing new technologies and electromagnetic weapons. Evidence from protests off Hanalei's coast led the NAVY to halt testing, resulting in reef recovery. We advocate for a similar resolution to revive our own coastline, preventing further erosion and home risks.

Attachments:

Date/Time: 01-29-2024

Organization: Sacred Places Institute for Indigenous People (SPI)

Name: Tina Calderon

City/State: Marina Del Rey/CA

Comment: To whom it may concern; As a Culture Bearer of Chumash and Tongva decent, and as the Director of Ocean Protectors Program for SPI, I have deep concerns about the safety of all ocean life, including key plant species such as coral reefs and kelp as well as sea animals. I also want to be assured that the local Tribes have been consulted and heard, most especially the Kanaka Maoli of Hawaii, the 'Iipai-Tiipai Kumeyaay of San Diego County, the Payomkawichum of the southern California coast as well as the Ventureno Chumash and North Coast Chumash. Thank you for the opportunity to submit my concerns as public comment. 'Aweeshkone xaa ~ Thank you, Tina Calderon

Attachments:

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Date/Time:	01-29-2024
Organization:	-
Name:	L. Osterer
City/State:	Koloa/HI
Comment:	See attached.
Attachments:	OEIS 2024.docx

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After reading the NEPA virtual open house presentation, I'd like you to consider the following:

Both prior EIS for Point Magu in 2002 and 2022 did not include the use of sonar or in-water explosives. Southern California and Hawaii are most similarly in need of whale protection from acoustical damage. However, lumping of species and areas between Hawaii and California is of concern since there are several marine mammal species that are endemic to Hawaii and migratory patterns vary.

Surface observation is insufficient to detect whales in these areas. It seems the areas were chosen historically for the convenience of nearby navy bases. Whereas, to avoid marine mammal harm and prevent further environmental effects, it would be preferable by far to utilize areas away from both mammal and human populations. 71% of the earth is ocean. Come on, why can't the navy use a place that is less inhabited and safer for all! This should be a number one priority for mitigation of environmental effects.

The military has been immune to normal EIS considerations with unlimited TAKES (killings) for their activities. No other organization would be given such liberties. It's time to be treated the same to maintain humane practices to preserve all species, to minimize damage, as would be required for any research. Comprehensive research is available and should be included on cetacean mass stranding deaths due to the following factors: panic, bubble formation and/or decompression sickness from Naval sonar:
1. Sonar caused panic reactions leading to strandings followed by death.
2. Sonar caused decompression sickness (the bends) followed by death.

These recurring maneuvers, appropriately named RIMPAC WAR GAMES, are not so much for training as show. These ships are out to sea on maneuvers and training constantly. They don't need an excuse to play and compare with 23 other countries.

Countries which have been and are potential adversaries are included in these practices. One has to question the benefits of sharing close observation of our most advanced equipment, weapons, and strategies, all in the guise of proving "friendly alliances." It's more like a show, a parade of strength, as China does in celebrations. Plus, popularizing these "war games" in the news puts these populated areas more at risk for spying and terroristic attacks.

Each RIMPAC should require its own EIS including all training activities of all countries participating.

Independent observers should be included in the training activities and clean up.

Clean-up activities should be described, required for mitigation and documented, including sunken vessels, unexploded ordinances, and cables. These factors were not necessarily handled sufficiently in prior RIMPAC events.

There is insufficient data on migratory patterns which must be updated.

There are insufficient monitoring techniques, which need to be developed to detect deep diving species.

Further mitigation needs to be addressed with alternatives to active sonar. Sonar detection of submarines has proven insufficient in cases where ships run silently to avoid detection. Other technologies may be more useful.

Under MMPA- Section 1371(a)(5)(A)(i)(II)(aa), participants have a duty to protect and minimize impact. Kindly refer to the 2008 article, "Navy sonar and cetaceans: Just how much does the gun need to smoke before we act?" PARSONS, E. C. M.; SARAH J. DOLMAN; ANDREW J. WRIGHT; NAOMI A. ROSE and W. C. G. BURNS. MARINE POLLUTION BULLETIN 56(7):1248-1257. 2008

The following literature should be included in the EIS as minimal evidence of your intention to protect marine mammals:

"Implications for marine mammals of large-scale changes in the marine acoustic environment." TYACK, PETER L. JOURNAL OF MAMMALOGY 89(32):549-558. 2008.

"Does a lack of observed beaked whale strandings in military exercise areas mean no impacts have occurred? A comparison of stranding and detection probabilities in the Canary and main Hawaiian Islands." Faerber, M .M., R. W. Baird. 2010. Marine Mammal Science DOI: 10.1111/j.1748-7692.2010.00370.x

The EIS needs to be preceded by comprehensive research on the short and long-term effects of sonar to all marine mammals, especially since many may go undetected when their dead bodies sink to the ocean floor.

Given the above lack of sufficient science and precautions, an alternative of "No Action" should be considered.

Please understand, the oceans are literally in crisis. Whaling decimated the cetacean species, and none has recovered to prior levels. Many are endangered and threatened. Ninety percent of all large fish species are gone. Only one percent of sharks are left, mainly due to shark fin takes. The remaining green sea turtles need protection after mass hunting. And all of our coral reefs are critically endangered due to climate warming. These facts make RIMPAC more devastating if left unchecked.

Will Hawaii beaches be covered with slime? Will algae block out the sunlight for phytoplankton? Dr. Jeremy Jackson research at Scripps Institute of Oceanography, UCLA has documented that Hawaii is uniquely vulnerable to the consequences of ocean degradation and biological loss of species. Mass extinctions are underway. The U.S. Navy could be a leader in protection of our marine ecosystem. Think of our military budget shared with environment protection so we have something left to protect.

In addition to the health and survival of protected and endangered species, Hawaii's food supply, recreational activities, and economy are all dependent upon a healthy ocean.

In summary, with the advent of hypersonic missiles and nuclear-powered submarines, these RIMPAC practices are incidental and have not been shown to be a deterrent to war. Wars are adding to the destruction of habitable areas and genocide. It's time to put military funding into alternative technology that does not kill marine life and dismiss the mindset that practicing war with other nations provides security.

Thank you for your consideration, from a concerned Hawaii resident.

Date/Time:	01-29-2024
Organization:	Office of Hawaiian Affairs
Name:	Kamakana Ferreira
City/State:	Honolulu/HI
Comment:	See attached PDF.
Attachments:	01.22.24 OHA Comment_NEPA Public Scoping for Navy Training OEIS.pdf

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PHONE (808) 594-1888 FAX (808) 594-1938

STATE OF HAWAIʻI
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAIʻI 96817

January 22, 2024

Naval Facilities Engineering Systems Command Pacific
ATTN: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Re: Notice of Intent to Prepare an EIS/Overseas EIS (NEPA)
Hawaiʻi-California Training and Testing Study Area

Aloha:

The Office of Hawaiian Affairs (OHA) is in receipt of your Notice of Intent (NOI) December 7, 2024, letter seeking comments on the scope of the Department of the Navy (DON) Hawaiʻi-California Training and Testing (HCTT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS) to assess potential environmental effects associated with the proposed action to conduct at-sea military readiness activities within the HCTT study area. The United States (U.S.) DON will be preparing this EIS/OEIS in accordance with the National Environmental Protection Act (NEPA). The NOI states that the current proposed activities are similar in scope to what was assessed in the 2018 HCTT EIS/OEIS. Thus, the new EIS/OEIS is characterized as a "follow on" NEPA analysis to support renewal of current Federal regulatory permits and authorizations that expire in December of 2025.

Proposed activities include training and research (i.e., sonar, explosives, and other underwater sounds), development, testing, and evaluation within the Hawaii Operating Area, the California Operating Area, and the Pacific Ocean transit corridor connecting the two. The DON further proposes to modernize and sustain its ranges in a manner to support these readiness activities. This will include new special use airspace in Southern California, an expansion of an underwater training range near San Clemente Island, and installation and maintenance of mine training areas off Hawaiʻi and Southern California.

The OHA is the constitutionally established body responsible for protecting and promoting the rights of Native Hawaiians.[1] OHA has substantive obligations to protect the cultural and natural resources of Hawaiʻi for its beneficiaries.[2] Accordingly, OHA is

[1] Haw. Const. Art. XII Sec. 5.
[2] See HRS § 10.

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required to (1) serve as principal public agency in the State of Hawaiʻi responsible for the performance, development and coordination of programs and activities relating to native Hawaiians and Hawaiians; (2) assess the policies and practices of other agencies impacting native Hawaiians and Hawaiians; and (3) conduct advocacy efforts for native Hawaiians and Hawaiians.[3]

OHA provides the following comments pertaining updated studies, marine sanctuaries, incidental take, cumulative impacts, and consultation planning:

Updated Studies

In review of the 2018 EIS/OEIS, OHA observes that most of the studies pertaining to marine mammal populations and migratory patterns relied on studies that took place between 2011 to 2015. Section 3.7 details that the information was used to determine seasonal mitigation areas that were developed in coordination with the National Marine Fisheries Service. The section further mentions that "Navy funded efforts" as being underway to further improve understanding and ability to predict how stressors ultimately effect marine mammal populations. OHA is further aware that the DON applied to increase the incidental take of large whales from 3 to 5 per year in 2021.

OHA would expect that the most up-to-date studies will be used in the forthcoming draft EIS/OEIS, with a clear discussion on how the DON's understanding of populations and migrations have changed (or not) since publication of the 2018 EIS/OEIS. With a projected publication of a draft EIS/OEIS in 2024, some of the studies referenced in the 2018 EIS/OEIS would be a decade old or more. The draft EIS/OEIS should further provide updates on the mentioned "Navy funded efforts" in the 2018 EIS/OEIS and share how such information has changed (or not) the DON's understanding and ability to predict how stressors effect marine mammal populations. While OHA specifically calls out examples pertaining to marine mammal population studies, our comment should be applicable to any study referenced as part of the assessment of impacts to all environmental components. In other words, the DON should always be using the most up to date information as possible and consistently provide discussion on how conditions and subsequent mitigation measures have changed (or not) or will change (or not).

Marine Sanctuaries

In the Culture Resources discussion, Section 3.10, of the 2018 EIS/OEIS, OHA observes that Papahānaumokuākea is actually discussed as a World Heritage Site within the context of National Historic Preservation Act Section (NHPA) 106 compliance. The monument was described as being within the Temporary Operating Area of the Hawaiʻi Range Complex and that it could be susceptible to sonic booms or utilized for emergency situations. However, an emphasis was placed on the fact that no actual physical activities

[3] HRS § 10-3.

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would occur in the monument area (unless there was an emergency), and that any possible impacts to cultural voyaging or wayfinding would be temporary. OHA believes the DON should reasonably disclose what qualifies as an emergency and what actions could occur in Papahānaumokuākea or any marine sanctuary as part of the NEPA process.

OHA does appreciate inclusion of the Papahānaumokuākea monument within the discussion of NHPA Section 106 compliance given the area's cultural importance and presence of numerous historic properties. However, we do question why other marine sanctuaries with similar characteristics within both the Hawai'i operating area (HOA) and California operating area (COA) were omitted. For example, both the South Molokai Reef and the Hawaiian Islands Humpback Whale National Marine Sanctuary are within the HOA. Notably, the South Molokai Reef has been described as a national treasure and is currently home to a number of historic fishponds. Further, it is believed to be sacred to Hina, the Hawaiian akua of the Moon. In regards to the COA, the Channel Islands National Marine Sanctuary exists off the coast of Southern California, which also hosts a number of cultural resources that are important to the Chumash tribe.[4] If not already done so, the Chumash, Pomo, Ohlone, Makah, and any other Pacific Coast tribes should be invited to consult as part of NEPA and NHPA processes. These sanctuaries should be included as part of the NEPA analysis and NHPA discussion as they are comprised of historic and cultural resources.

OHA further advises that these sanctuaries be evaluated as traditional cultural properties (TCP). Per the National Park Service's National Register Bulletin No. 38, a TCP is defined as:

> "A property that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identify of the community."

In specific regards to Papahānaumokuākea, it is a sacred place to Native Hawaiians that supports a diversity of life, including hundreds of native species and the largest extent of coral reefs in the archipelago.[5] The ancient belief system of Hawai'i still exists and acknowledges the island of Mokumanamana[3] as the potent portal that presides at the boundary between pō and ao. This boundary is the northern limit of the sun's journey on the horizon, the Tropic of Cancer, reverently referred to as Ke Alanui Polohiwa a Kāne, the dark glistening path of Kāne, whose kinolau as Kānehoalani details the sun and its movements on the horizon. Nihoa and Mokumanamana collectively contain more than 140 archaeological sites that evince the unique agricultural, religious, and settlement efforts

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[4] The Channel Islands National Marine Sanctuary has a Chumash community working group informing its sanctuary advisory council.

[5] See Mai Ka Po Mai, A Native Hawaiian Guidance Document for the Management of Papahānaumokuākea Marine National Monument, prepared by OHA in 2021.

of Native Hawaiians in this region. There is no question that Papahānaumokuākea would qualify as a TCP.

Similarly, its OHA's understanding that the other sanctuaries within the HOA and COA are utilized by cultural practitioners and contain numerous historic and cultural resources; thus, we do not see why these sanctuaries would not at least be considered as eligible for the National Register of Historic Places as TCPs as well.

Incidental Take

As mentioned above in our first comment, the DON had to increase their take of large whales due to incidences in 2021 in which two separate Navy vessels struck whales off the coast of Southern California in June and July. Separately, a foreign vessel struck two fin whales off the coast earlier in May 2021. Originally, the National Oceanic and Atmospheric Administration (NOAA) issued a take of 3 large whales per year, but had to increase this authorization to 2 additional whales per year for DON activities spanning 2018 to 2025.

To Hawaiians, whales are the largest ocean manifestation of the Hawaiian akua (god), Kanaloa – akua of the ocean realm, voyaging, ocean animals, and fresh underground water.[6] Some of his other forms or kinolau are known to include the nihui (white shark), he'e (octopus), hihimanu (sting ray), honu (turtle), and nai'a (dolphin). Kanaloa is one of the four major akua kāne (male gods) – Kāne, Kanaloa, Kū, and Lono. He is arguably the most common deity across Oceania with various names (e.g., Tangaroa, Takaroa, Tagaloa, Ta'aroa). Kanaloa was the creator of the world and superior god in many parts of Polynesia (e.g., Marquesas, New Zealand) except Hawai'i.[7] While not viewed as prominent throughout all of Hawai'i, it is believed that Kanaloa's importance was more pronounced on Lanai, Molokai, Maui, and Kaho'olawe. Coincidentally, these islands are also the same islands in which whales were found in significant numbers during the mid to late 19th century.[8]

Further alarming to OHA is the current incidental take authorization issued by NOAA that allows a cumulative take in the thousands of marine mammal species. According to a complaint filed by Earth Justice in December 2013,[9] "National Marine

[6] See Libo, Susan A. 2010. *A Local Perspective of Hawaii's Whaling Economy: Whale Traditions and Government Regulation of the Kingdom's Native Seamen and Whale Fishery.* Bishop Museum, Honolulu, Hawaii.
[7] See McKinzie, edit. N.D. N *a Mo'i o Kaho'olawe: The Administrators of Kaho'olawe*. Kaho'olawe Island Conveyance Commission, Consultant Report No. 15.
[8] See Herman, Louis. 1979. Humpback Whales in Hawaiian Waters: A Study in Historical Ecology. *Pacific Science, Vol 33, No 1.* University Press of Hawaii.
[9] Sese Conservation Council for Hawai'i, a non-profit corporation Animal Welfare Institute, a non-profit corporation; Center for Biological Diversity, a non-profit corporation; and Ocean Mammal Institute, a non-profit corporation, v. National Marine Fisheries Service; United States Department of Commerce; Penny Prtizker, Secretary of Commerce.

Fisheries determined that, over the next five years, the Navy's use of sonar, other active acoustic sources and explosives for training and testing in the [Hawai'i-Southern California Training and Testing] HSTT Study Area will likely result in the deaths of up to 140 marine mammals, cause permanent injury to more than 2,000 additional marine mammals, and inflict additional harm to marine mammals nearly 9.6 million times by disrupting vital behaviors such as migration, nursing, breeding, feeding, and sheltering." The take of Kanaloa is overwhelming.

OHA expects the matter pertaining to the DON's request for an increase in incidental take to be fully discussed within the EIS/OEIS as well as resolution on any filed complaints related to incidental take. The most up to date studies should be used to provide the most accurate incidental take request going forward. All efforts should be made to minimize take as much as possible, with a clear indication in the EIS/OEIS of how this is demonstrated. While administratively another incidental take could be requested if projected numbers are off again, this is not a preferable outcome nor a means to instill trust in the DON's research and modeling. As the kinolau of one of our akua, the DON must take more care to honor their commitments to not take more than is needed from Kanaloa.

Cumulative Impacts

OHA recommends that the DON's consideration of the cumulative impacts at a minimum must consider activities that are of an extraction nature (i.e., deep-sea mining) and that would further frustrate any kind of recovery and protection such as the following: the longliner fishing fleets (foreign and domestic) that harbor in Honolulu; the Aquarium Trade as it is extractive and effects near shore ocean life; and, Rim of the Pacific Exercise (RIMPAC) and other related exercises that occur by any of the other armed forces operating in Hawaiian waters and or on land that impact our fresh water and ocean systems. By cumulative, OHA specifically means the cumulative impact on any and all lifeforms, sacred places and spaces, and the health and wellbeing of all natural and cultural resources that will be affected by the DON's proposed training activities and modernization efforts.

In review of the 2018 EIS/OEIS, Table 4.2-1, activities like the aquarium trade, foreseeable future deep-sea mining activities[10], and annual RIMPAC activities do not appear to be acknowledged as a source of possible cumulative impacts. While commercial fishing is discussed, a greater level of specificity should be included to directly address longliner fishing, both from foreign and domestic parties.

The 2018 EIS/OEIS further mentions that the "quality" of information on past, present and reasonably foreseeable actions varies and that quantifications were done where possible. In the absence of quantitative data, a "qualitative assessment" was made by "professional judgement and experience." The document appears to concede that given the large-scale study area, that "analysis of the incremental contribution of cumulative

[10] Canadian based "The Metals Company" planned operations in the Clarion-Clipperton Zone and Honolulu Harbor.

stress that the proposed action may have on a given resources is largely qualitative and speculative." OHA finds this situation unfortunate as essentially DON training activities are continuing without solid quantitative analysis and potentially without appropriate mitigations. Minimally, the DON should indicate in the document, especially in regards to cumulative impacts, where quantitative data is used versus qualitative. If findings and information are speculative, then the DON must call out where such speculation exists. The DON should then indicate ways in which quantitative and non-speculative data can be obtained through additional research or a means of appropriate monitoring actions.

Further, it should be made clear to the reader how follow up research data and monitoring mechanisms can or could trigger amendments to existing mitigation measures. OHA would expect this to include a statement on what Federal processes and respective timelines would be triggered to incorporate new data and proposed mitigation measures.

Consultation Planning

The DON may want to craft an actual NEPA public participation plan as an optional tool pursuant to 32 CFR 775.11 as a means to set protocols (i.e., meeting minutes/notes, comment periods, speaking time allocations, engagement with Indigenous Peoples). All prior consulting parties that participated in the 2018 EIS/OEIS should serve as the starting pointing for current outreach efforts. As the 2018 EIS/OEIS was a very long document (in excess of 2000 pages), a longer comment period should be allotted for the current EIS/OEIS. 40 CFR 1506(d) requires a minimum comment period of 45 days, but subsection (e) goes on to state that the minimum comment period may be shortened or extended. The DON should consider a 60-day comment period in this case.

In regards to public meetings and consultation events, OHA recommends that minimally 30-day's notice be provided. As a means to assist the DON, OHA could be provided with advance notice of any such meetings so that we can plan to disseminate information via our monthly newspaper, *Ka Wai Ola*, and online social media outlets. This may assist with outreach to the Native Hawaiian community. Any public engagement meetings or consultations should allow speakers to speak on topics for at least 5 to 10 minutes given the voluminous amount of information that the EIS/OEIS will cover. Previously, OHA received concerns about speakers allegedly being only allotted 3 minutes of time during consultations for the 2018 EIS/OEIS.

OHA further notes that in November 2022, a memorandum was issued by the Executive Office of the President, Council on Environmental Quality, providing guidance to Federal departments and agencies on Indigenous Knowledges. Notably, this includes guidance on inclusion of such knowledge in the NEPA and NHPA processes, encouragement of early and sustained engagement, maintaining trust, and even developing an "Indigenous Knowledge Plan". Indeed, a public participation plan could include a robust Indigenous Knowledge component that specifically incorporates guidance from the CEQ November 2022 memo.

Closing Remarks

OHA looks forward to seeing our comments taken into consideration as the HCTT EIS/OEIS is being prepared. Mahalo for the opportunity to comment. Should you have any questions, please contact OHA's Lead Compliance Specialist, Kamakana C. Ferreira at (808) 594-0227 or by email at kamakanaf@oha.org.

ʻO wau iho nō me ka ʻoia ʻiʻo,

Stacy Ferreira
Ka Pouhana, Chief Executive Officer

SF:kf

CC: Carmen Hulu Lindsey, OHA Board of Trustees Chairperson

Date/Time:	01-29-2024
Organization:	Earthjustice
Name:	David Henkin
City/State:	Honolulu/HI
Comment:	See attached pdf.
Attachments:	

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January 29, 2024

Naval Facilities Engineering Systems Command, Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860–3134

Submitted via *http://www.nepa.navy.mil/hctteis*

Re: Scoping Comments on Hawaii-California Testing and Training Environmental Impact Statement/Overseas Environmental Impact Statement, 88 Fed. Reg. 86,885 (Dec. 15, 2023)

To Whom It May Concern,

On behalf of the Center for Biological Diversity and Conservation Council for Hawai'i, we are responding to the U.S. Navy's request for comments on the scope of the Hawaii-California Training and Testing (HCTT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS). *See* 88 Fed. Reg. 86,885 (Dec. 15, 2023). As detailed below, to comply with the National Environmental Policy Act (NEPA), the Navy must consider important new scientific information and examine alternatives that safeguard marine wildlife and habitat.

The proposed activities include an expansion of training and testing activities off California and Hawai'i, including active sonar and explosives. The Navy's proposal seeks to ramp up training and testing to include new special use airspace in Southern California, an expansion of water-based activities off California, and installation of mine training areas of Hawai'i and California. These expanded areas and activities threaten to expose more marine mammals and other protected species to risks from high-intensity noise, explosions, and vessel strikes.

The Navy must consider alternatives that focus on reducing harm to marine mammals and other protected species. Past experience demonstrates that the Navy can accomplish its mission while minimizing, if not eliminating entirely, destructive testing and training activities in biologically important areas. We urge the Navy to fully evaluate mitigation and alternatives that ensure the conservation and recovery of whales, sea turtles, corals, and other vulnerable marine species.

We want to bring several new scientific studies to the Navy's attention that warrant consideration. These concern the impacts of military activities on wildlife, new science on biologically important areas, and the status of wildlife that the proposed activities may adversely affect.

Scoping Comments on HCTT EIS/OEIS
January 29, 2024
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1. **The Navy Must Prepare a Robust Environmental Impact Statement under NEPA**

NEPA is our "basic national charter for protection of the environment."[1] Congress enacted NEPA to "promote efforts which will prevent or eliminate damage to the environment."[2] To that end, NEPA requires federal agencies to take a "hard look" at the environmental consequences of their actions before taking action.[3] In this way, NEPA ensures that federal agencies "will have available, and will carefully consider, detailed information concerning significant environmental impacts" and that such information "will be made available to the larger [public] audience that may play a role in both the decisionmaking process and the implementation of the decision."[4]

To this end, NEPA requires federal agencies to prepare a detailed environmental impact statement for any "major federal action significantly affecting the quality of the human environment."[5] An EIS must examine both the direct impacts of an agency action, as well as potential cumulative impacts.[6] Direct impacts are those "caused by the action and occur at the same time and place," while indirect impacts are those "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" and include growth inducing effects.[7] Cumulative impacts "are effects on the environment that result from the incremental effects of the action when added to other past, present, and reasonably foreseeable [future] actions."[8]

In addition, NEPA requires that an EIS "[e]valuate reasonable alternatives to the proposed action," discussing each alternative "in detail, … so that reviewers may evaluate their comparative merits."[9] This requirement ensures agencies do not undertake projects "without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means."[10] Importantly, this evaluation extends to considering more environmentally protective alternatives and mitigation measures.[11]

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[1] *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 734 (9th Cir. 2020) (citation omitted).

[2] 42 U.S.C. § 4321.

[3] *Kleppe v. Sierra Club*, 427 U.S. 390, 410, n. 21 (1976); 40 C.F.R. § 1500.1(a).

[4] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[5] 42 U.S.C. § 4332(2)(C).

[6] *Id.*; 40 C.F.R. § 1508.1(g).

[7] 40 C.F.R. § 1508.8.

[8] *Id.* § 1508.1(g)(3).

[9] *Id.* § 1502.14(a), (b).

[10] *Envt'l Def. Fund., Inc. v. U.S. Army Corps. of Eng'rs*, 492 F.2d 1123, 1135 (5th Cir. 1974); *see also City of New York v. U.S. Dept. of Transp.*, 715 F.2d 732, 743 (2d Cir. 1983) (NEPA's requirement for consideration of a range of alternatives is intended to prevent the EIS from becoming "a foreordained formality.").

[11] *See, e.g., Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1122-1123 (9th Cir. 2002) (and cases cited therein); *see also* 40 C.F.R. § 1502.14(e).

The public must be given adequate information about the project and its environmental effects to be able to provide meaningful input before the Navy makes a final decision regarding the course of action to adopt. "NEPA's public comment procedures are at the heart of the NEPA review process."[12] "This reflects the paramount Congressional desire to internalize opposing viewpoints into the decision-making process to ensure that an agency is cognizant of all the environmental trade-offs that are implicit in a decision."[13]

a. The Navy Must Consider New Information (Including New, Peer-Reviewed Studies) Regarding the Environmental Effects of Military Activities

The Navy must consider new, peer-reviewed scientific information on the adverse effects of active sonar on marine mammals and other wildlife.

Especially notable are the new recommendations by Southall et al. that describe a framework for determining the behavioral responses of marine mammals to sonar.[14] It also provides a severity scale for behavioral responses among other important developments that will assist the Navy in analyzing behavioral responses to sonar and other noise sources.[15] In addition, recent science raises serious concerns that using all-or-nothing thresholds may grossly underestimate effects.[16] The Navy's environmental review must contain a robust and meaningful analysis of not only the auditory injury that may result from sonar, but also of the behavioral responses that interfere with essential life functions like foraging, communication, and reproduction.

Blue Whales

Recent scientific research confirms that blue whales are extremely sensitive to military sonar.[17] A model of energetic costs from sonar disturbance found that lost feeding opportunities have a significant energetic cost, and, for example, blue whales with a mild response may suffer greater energetic costs than other species because of lost foraging opportunities.[18] A new study highlights that the adverse effects depend on the context, not just the intensity or duration of

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[12] *State of Cal. v. Block*, 690 F.2d 753, 770-71 (9th Cir. 1982).

[13] *Id.* at 771.

[14] Southall, Brandon L. et al., Marine Mammal Noise Exposure Criteria: Assessing the Severity of Marine Mammal Behavioral Responses to Human Noise, 47 *Aquatic Mammals* 5 (2021). Please note that the scientific papers referenced in this letter are attached hereto. Given the 20MB limit on uploaded files, we will provide the referenced papers in several installments.

[15] Southall et al., 2021, *see* Table 3.

[16] Tyack, Peter L. and Len Thomas, Using Dose–Response Functions to Improve Calculations of the Impact of Anthropogenic Noise, 29 *Aquatic Conservation: Marine and Freshwater Ecosystems* S1 (2019).

[17] Southall, Brandon L. et al., Behavioral Responses of Individual Blue Whales (*Balaenoptera Musculus*) to Mid-Frequency Military Sonar, 222 *Journal of Experimental Biology* 5 (2019).

[18] Czapanskiy, Max F. et al., Modelling Short-term Energetic Costs of Sonar Disturbance to Cetaceans Using High-resolution Foraging Data, 58 *Journal of Applied Ecology* 8 (2021); Southall, Brandon L. et al., Behavioural Responses of Fin Whales to Military Mid-Frequency Active Sonar, 10 *Royal Society Open Science* 12 (2023).

sonar exposure; some blue whales exposed to brief or even weak sonar can lose an entire day of foraging.[19]

Beaked Whales

Beaked whales, which are highly sensitive to sonar, occur in the action area. Beaked whale strandings have a highly significant co-occurrence with military active sonar use.[20] A recent study indicated that displacement of beaked whales from good foraging habitat could have detrimental population consequences, and researchers recommended locating sonar exercises outside of key foraging habitat and avoiding activities that disperse beaked whales into sub-optimal foraging areas.[21] Blainesville's beaked whales exposed to active sonar in the Bahamas fled the area and avoided it for up to three days after exposure, and such displacement can impair foraging activities and have energetic costs.[22]

Minke Whales

Minke whales occur in the action area and are extremely sensitive to sonar exposure. Researchers found significant behavioral changes in the movement and calling behavior of minke whales in response to sonar activities during U.S. Navy training at the Pacific Missile Range Facility in the waters off Kaua'i, Hawai'i.[23] This is particularly concerning as the behavior being disrupted was most likely related to breeding as it is believed that the calling of minke whales in the Hawai'i region from October through April relates to males calling to attract mates.[24] The cessation of calling as a result of sonar activities could ultimately lead to reduced reproductive output for this population.[25]

[19] Pirotta, E. et al., Context-dependent variability in the predicted daily energetic costs of disturbance for blue whales, 00 *Conservation Physiology* 1 (2021).

[20] Simonis AE, et al., Co-occurrence of beaked whale strandings and naval sonar in the Mariana Islands, Western Pacific, 287 *Proc. R. Soc. B*: 20200070 (2020).

[21] Benoit-Bird KJ, et al., Critical threshold identified in the functional relationship between beaked whales and their prey, 654 *Mar. Ecol. Prog.* Ser. 1-16 (2020).

[22] Jones-Todd, Charlotte M. et al., Discrete-space Continuous-time Models of Marine Mammal Exposure to Navy Sonar, 32 *Ecological Applications* 1 (2022).

[23] Durbach, Ian N. et al., Changes in the Movement and Calling Behavior of Minke Whales (*Balaenoptera Acutorostrata*) in Response to Navy Training, 8 *Frontiers in Marine Science* (2021).

[24] *Id.*

[25] Kratofil, Michaela A. et al., Biologically Important Areas II for Cetaceans within U.S. and Adjacent Waters – Hawai'i Region, 10 *Frontiers in Marine Science* (2023).

Pygmy Killer Whales

Pygmy sperm whales have been involved in stranding events associated with high-intensity mid-frequency sonar.[26] Recent research suggests that the rarity of pygmy sperm whales around Kaua'i and Ni'ihau, relative to the amount of survey effort off those islands, may be related to the regular Navy testing and training activities that occur there.[27] Additionally, because "pygmy killer whales are rarely encountered around Kaua'i and Ni'ihau, they are likely to be naïve animals that may be more susceptible to disturbance or mass strandings. Although no pygmy killer whale strandings have been documented on Kaua'i or Ni'ihau, the likelihood of stranded animals being detected in Hawai'i is low."[28]

Dwarf Sperm Whales

Dwarf sperm whales have also been involved in stranding events associated with high-intensity naval mid-frequency active sonar use.[29] While only a single stock of dwarf sperm whales previously was recognized in Hawaiian waters, new research indicates that there is also a small resident population.[30] Due to this species' susceptibility to strand in response to the use of military sonars, this population warrants not only recognition, but separate management from the much larger offshore population.[31]

Gray Whales

Gray whales have been observed to deflect from their normal migration path in response to high-frequency sonar signal ranging between 21 and 25 kHz at a received level of approximately 148 dB re 1 μPa^2 as far as 2 kilometers from the source.[32]

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[26] Baird, R. W., The lives of Hawai'i's dolphins and whales: natural history and conservation, University of Hawai'i Press (2016); Hohn, et al., Report on marine mammal unusual mortality event UMESE0501Sp: Multispecies mass stranding of pilot whales (*Globicephala macrorhynchus*), minke whale (*Balaenoptera acutorostrata*), and dwarf sperm whales (*Kogia sima*) in North Carolina on 15–16 January 2005 (NOAA Technical Memorandum NMFS-SEFSC-537) U.S. Department of Commerce (2006); *and* Simmonds, M. P., & Lopez-Jurado, L. F., Whales and the military. *Nature*, 351, 448 (1991).

[27] Baird RW et al., Long-term strategies for studying rare species: results and lessons from a multi-species study of odontocetes around the main Hawaiian Islands, 30 *Pacific Conservation Biology* PC23027 (2024).

[28] *Id.* at 18.

[29] Baird, et al., Site Fidelity, Spatial Use, and Behavior of Dwarf Sperm Whales in Hawaiian Waters: Using Small-Boat Surveys, Photo-Identification, and Unmanned Aerial Systems to Study a Difficult-to-Study Species. 38 *Marine Mammal Science* 326-348 (2021).

[30] *Id.*

[31] *Id.*

[32] Frankel, Adam S. and Peter J. Stein, Gray Whales Hear and Respond to Signals from a 21–25 KHz Active Sonar, 36 *Marine Mammal Science* 4 (2020).

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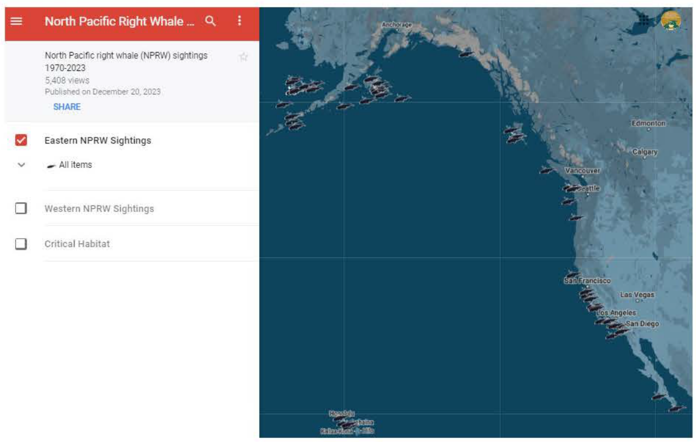
Sperm Whales

Active sonar continuously masks the echolocation of sperm whales at 160 dB re 1 μPa^2 and intermittently masks it at 120 dB re 1 μPa^2.[33] Such masking can disrupt sperm whales' ability to locate prey, with corresponding potential impacts on their foraging success.

North Pacific Right Whales

Recent observations demonstrate that North Pacific right whales overlap with the action area. *See map below*. In March 2023, a North Pacific right whale was spotted in Monterey Bay.[34] The North Pacific right whale is one of the most critically endangered whales in the world, with a total population hovering around only 26–31 individuals.[35] The serious injury or death of even one whale from this population—particularly if it is a reproductive-aged female—would have catastrophic consequences for this species' survival and recovery.[36]



Sightings of North Pacific Right Whale (Source: https://www.northpacificrightwhale.org/recent-sightings)

[33] Von Benda-Beckmann, A. M. et al., Modeling Potential Masking of Echolocating Sperm Whales Exposed to Continuous 1–2 kHz Naval Sonar, 149 *The Journal of the Acoustical Society of America* 4 (2021).

[34] Duggan, Tara, One of the rarest whales in the world was just spotted in Monterey Bay, San Francisco Chronicle (Mar. 6, 2023).

[35] Muto, M. et al., Alaska Marine Mammal Stock Assessments, 2019: NORTH PACIFIC RIGHT WHALE, NOAA-TM-AFSC-404 (2020).

[36] Wright, Dana L. et al. Acoustic detection of the critically endangered North Pacific right whale in the northern Bering Sea. 35 *Marine Mammal Science* 311 (2019). ("A single death of a NPRW (especially a reproductive female) from ship strike would be a major blow to this small population.").

Humpback whales

Humpback whales have newly designated critical habitat off California.[37] Additionally, new science signals that the Hawai'i DPS population is declining.[38] Researchers report that mother-calf encounter rates dropped by more than 76 percent between 2013 and 2018.[39] Acoustic monitoring similarly indicates that vocalizations off Maui declined 50 percent between 2014 and 2019.[40] This is particularly concerning as empirical evidence has demonstrated the importance of song within the humpback whale mating system.[41]

Southern resident killer whales

Southern Resident killer whales have critical habitat in the area that should be protected from noise pollution to ensure habitat suitable for echolocation when they are present.[42] Killer whales are believed to be particularly sensitive to sonar with severe flight responses.[43]

Seabirds

The Navy must analyze the impacts of proposed training and testing activities on seabirds and their prey. For example, the Navy should consider recent science that has found adverse seabird behavioral responses, such as startle and cessation of feeding, to underwater sonar.[44] A study of mid-frequency sonar demonstrated that murres had behavioral responses to received levels from 110 to 137 dB re 1 µPa.[45]

Invertebrates, Fish, and Sea Turtles

A recent review study determined that 81 and 82 percent of relevant studies have found significant impacts of noise on invertebrates and fish.[46] The Navy must also fully examine the impacts of its activities on sea turtles.

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[37] 86 Fed. Reg. 21,082 (Apr. 21, 2021).

[38] Cartwright R., et al., Fluctuating reproductive rates in Hawaii's humpback whales, Megaptera novaeangliae, reflect recent climate anomalies in the North Pacific, 6 *R. Soc. Open Sci.* 181463 (2019).

[39] *Id.*

[40] Kügler, A, et al. Fluctuations in Hawaii's humpback whale Megaptera novaeangliae population inferred from male song chorusing off Maui, 43 *Endangered Species Research* 421 (2020).

[41] Kügler A, et al. Diel spatiotemporal patterns of humpback whale singing on a high-density breeding ground, 11 *R. Soc. Open Sci.* 230279 (2024).

[42] 86 Fed. Reg. 41,668 (Aug. 2, 2021).

[43] Chouinard, Maya and Carolyn Binder, Effects of Military Sonar on Free-Ranging Cetaceans, 2023.

[44] Hansen, K.A., et al., The common murre (*Uria aalge*), an auk seabird, reacts to underwater sound, 147 *J. Acoust. Soc. Am.* 4069 (2020).

[45] *Id.*

[46] Duarte CM, et al., The soundscape of the Anthropocene ocean. 371 *Science* 6529 (2021).

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Vessel Strikes

In 2021, a military destroyer pulled into a Naval Base in San Diego with two dead endangered fin whales stuck to its hull.[47] The whales—likely a mother and her calf—were apparently killed by a collision with an Australian navy vessel that came to California to conduct military training exercises with the U.S. Navy.[48] For Santa Barbara Channel alone, scientists estimate that, in the summer and fall months (June–November), ship strikes kill an average of 8.9 blue whales, 4.6 humpback whales, and 9.7 fin whales each year, with an average of another 5.7 humpback whales dying annually due to ship strikes during winter and spring (January–April) .[49]

Redfern et al. (2020) found that vessel strike risk is highest for blue, humpback, and fin whales in the central region of California when vessel traffic occurs nearshore.[50] If vessel traffic instead follows an offshore route similar to those used by ships from 2009-2011 (to avoid California Air Resources Board regulations that applied within 24 nm of shore), mean risk for all three species can be reduced up to 35%. The Navy must consider alternatives that require its vessels to avoid nearshore areas where vessel strike risk is highest.

Additionally, the National Marine Fisheries Service reported that one of the most common causes of sea turtle stranding is due to vessel strikes, and it estimates that annually hundreds of sea turtles are struck by vessels in the United States.[51]

Aircraft Noise

A recent study that monitored military aircraft noise for 28 days in Washington State detected concerning noise levels 30 meters below the sea surface.[52] The researchers noted that the noise exceeded thresholds that can trigger behavioral responses in marine mammals, fish and sea birds. The study demonstrates that the sea surface does not serve as an acoustic barrier to military aircraft noise. The Navy must analyze the adverse impacts on marine life associated with the proposed expanded airspace activities.

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[47] Michael Chen, Two fin whales found dead under hull of Australian ship at Naval Base San Diego, ABC 10: San Diego, May 11, 2021, https://www.10news.com/news/local-news/two-fin-whales-found-dead-under-hull-ofaustralian-ship-at-naval-base-san-diego.

[48] *Id.*; 88 Fed. Reg. 68,290, 68,291, 68,294 (Oct. 3, 2023)

[49] Rockwood, R. Cotton et al., Modeling Whale Deaths From Vessel Strikes to Reduce the Risk of Fatality to Endangered Whales, 8 *Frontiers in Marine Science* (2021).

[50] Redfern, Jessica V., Elizabeth A. Becker, and Thomas J. Moore, Effects of Variability in Ship Traffic and Whale Distributions on the Risk of Ships Striking Whales, 6 *Frontiers in Marine Science* (2020).

[51] https://www.fisheries.noaa.gov/insight/understanding-vessel-strikes#:~:text=It%20is%20estimated%20that%20hundreds,stranding%20in%20the%20United%20States.

[52] Kuehne, Lauren, et al. Above and below: Military Aircraft Noise in Air and under Water at Whidbey Island, Washington, 8 *J. Mar. Sci. Eng.* 923 (2020).

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Biologically Important Areas Identified in Hawai'i

Biologically Important Areas (BIAs) include areas where cetaceans are known to congregate (either year-round or at certain times of the year) for vital activities such as feeding, mating, and migration, as well as known ranges of small and resident populations. BIAs play a crucial role in enhancing our comprehension and anticipation of how marine mammals might react to or be influenced by disturbances. Additionally, they help identify areas where populations could be more vulnerable to specific types of impacts.

For the Hawai'i region, thirty-five BIAs were recently outlined or updated from the original 2015 initiative, with thirty-three focusing on small and resident odontocete populations and two targeting humpback whale reproductive areas (BIA II).[53] Cetacean experts assigned an overall "Importance Score" to each BIA, considering both "Intensity" (the characteristics and intensity underlying an area's BIA designation) and "Data Support" (the quantity, quality, and type of information, along with associated uncertainties). Importance Scores, ranging from 1 to 3, reflect both the intensity of the area and the strength of data support, with higher scores indicating greater importance. There are four types of BIAs: 1) Reproductive Areas (R-BIA); 2) Feeding Areas (F-BIA); 3) Migratory Routes (M-BIA); and 4) Small and Resident Population (S-BIA). Hierarchical BIAs were established to represent core areas of use or population-specific ranges for nine species. Additionally, two reproductive watch list areas were identified for minke whales and humpback whales. "Watch lists" are areas that cetacean experts believe are likely BIAs, but currently lack sufficient information to meet the criteria for a BIA.

The Navy's EIS must take into account these recent BIAs and watch lists, both in evaluating potential impacts and in evaluating environmentally preferred alternatives. For example, the only hierarchical BIA with an Importance Score of 3 for both child and parent was the Hawai'i Island dwarf sperm whale S-BIA. Cetacean experts found that, due to "the small abundance and range size leading to the Importance score of 3, coupled with the apparent susceptibility of this species at large to a number of anthropogenic activities (e.g., high intensity military sonars, interactions with fisheries; Simmonds and Lopez-Juardo, 1991; Hohn et al., 2006; Baird, 2016; Baird et al., 2021c), there are clear conservation concerns for this island associated population."[54]

Notably, both the rough-toothed dolphin Kaua'i/Ni'ihau-O'ahu S-BIA and the Common bottlenose dolphin Kaua'i/Ni'ihau-O'ahu-Maui Nui S-BIA overlap with the action area around Kaua'i and Ni'ihau.[55] The Navy must take a hard look at the impacts and behavioral responses of

[53] Kratofil, Michaela A. et al., 2023.

[54] *Id.* at 20.

[55] *Id.*; *and* Baird, Robin W, Odontocete Studies on the Pacific Missile Range Facility in February 2020, 2021; Oedekoven, C., Effectiveness of Navy Lookout Teams in Detecting Cetaceans. Report Number CREEM-24289-1 (2022).

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these small and resident populations of delphinids to sonar, given their propensity for frequent exposure within their S-BIAs.[56]

Additionally, the minke whale reproductive watch list area, which is supported by acoustic detection rates during the minke whale breeding season (period spanning October through April), overlaps with the action area around Kaua'i and Ni'ihau.[57] A reproductive watch list area was delineated rather than a BIA due to the lack of available information on minke whale occurrence in Hawaiian waters for reproductive purposes. Regardless, documented acoustic detections, which appear to be concentrated around Kaua'i and Ni'ihau, coupled with minke whales' sensitivity to sonar exposure exhibited across different behavioral contexts including reproduction, raise concerns about the potential for significant impacts, which the Navy must analyze.

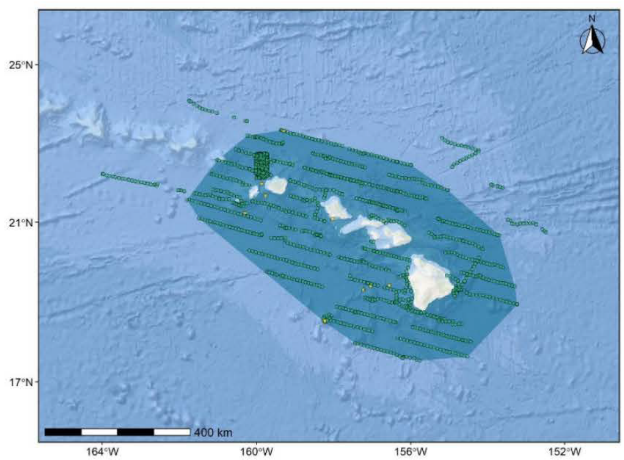

Figure 3. Watch list area boundary (blue polygon) for minke whales spanning October through April encompassing the majority of acoustic detection locations (green circles) and all sighting locations (yellow circles). Kratofil. et al., (2023), Supplementary File A: Detailed summaries of all Hawai'i BIAs at 219.

b. Alternatives and Mitigation That Should Be Evaluated

One of the most effective means to protect marine mammals from noise and disturbance associated with Navy training and testing activities is to impose time and area restrictions. The Navy should consider mitigation and time and area restrictions, including but not limited to:

[56] Durban, J.W. et al., Integrating Remote Sensing Methods During Controlled Exposure Experiments to Quantify Group Responses of Dolphins to Navy Sonar. 174 *Marine Pollution Bulletin* 113194 (2022).

[57] Kratofil, Michaela A. et al., 2023.

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- Extending mitigation areas to include a buffer zone to adequately protect biologically important areas from received levels that are above the take threshold.
- Prohibiting active sonar and explosives training in biologically important areas.
- Capping the maximum level of activities each year.
- Installing passive acoustic monitoring to alert Navy personnel regarding the presence of marine mammals.
- Increasing the size of exclusion zones to protect animals that are sensitive to sonar at low levels of exposure.
- Imposing a10-knot ship speed limit in Mitigation Areas to reduce vessel strikes.
- Minimizing Navy vessel traffic in nearshore areas where vessel strike risk is highest.
- Improving detection of marine mammals with restrictions on low-visibility activities and alternative detection such as thermal or acoustic methods.
- Adding mitigation for other marine mammal stressors such as dipping sonar and contaminants.

2. Conclusion

In conclusion, the Navy must undertake a comprehensive and meaningful environmental review of its proposed testing and training activities and evaluate a range of alternatives that incorporate effective steps to mitigate the harm of its activities on marine mammals, fish, birds, and other marine life.

Sincerely,

Miyoko Sakashita, Oceans Program Director, Center for Biological Diversity
Maxx Phillips, Hawai'i and Pacific Islands Director, Center for Biological Diversity
David Henkin, Senior Attorney, Earthjustice

Date/Time:	01-30-2024
Organization:	NATIONAL PARK SERVICE
Name:	DANETTE WOO/DAVID SZYMANSKI
City/State:	SAN FRANCISCO/CA
Comment:	See attached PDF.
Attachments:	Navy HI-CA Training and Testing EIS NOI-NPS comments.pdf

United States Department of the Interior

NATIONAL PARK SERVICE
Interior Regions 8, 9, 10, and 12
555 Battery Street, Suite 122
San Francisco, CA 94111

IN REPLY REFER TO:
1.D (PW-P)

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager or Mr. Sean Gano, Environmental Public Affairs Specialist
(Hawaii-Southern California Training and Testing EIS/OEIS (navy.mil))
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Dear HCTT EIS Project Manager:

Thank you for the opportunity to comment on the Department of the Navy's Notice of Intent to Prepare the Hawaii-California Training and Testing (HCTT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS).

The HCCT includes activities on the Island of Hawai'i over Hawai'i Volcanoes National Park, Kaloko-Honokōhau National Historical Park, Pu'uhonua o Hōnaunau National Historical Park, and Pu'ukoholā Heiau National Historic Site. The National Park Service (NPS) manages these parks for purposes identified in their enabling legislation, including providing a high-quality visitor experience, and preserving cultural resources and traditional uses, congressionally designated wilderness, natural sounds, and threatened and endangered wildlife. Although the Notice of Intent does not address any land-based activities, the map for the Hawai'i Operating Area indicates an area that traverses multiple park units labeled "Air Traffic Control Assigned Airspace."

Low level military flights have the potential to impact the purposes for which these units were established. We look forward to working with the Navy to identify actions or mitigations that allow both the Navy and the NPS to meet our respective objectives. Some of these measures could include:

- An orientation to park resources and values to be included in pilot briefings, which the NPS would be happy to provide.
- Avoiding flight paths over national park sites, when feasible.
- When necessary to transit over or adjacent to a national park unit, maintaining a minimum elevation, such as 5,000 feet Above Ground Level (AGL).

Resources and values specific to the four national park units on the Island of Hawai'i are described below, for consideration in the EIS/OEIS analysis.

Biological Resources, Physical Resources, and Wilderness
The parks' biological resources include an extraordinary assemblage of native plants and animals – more than 90% of which are endemic to the Hawaiian Islands and many of which are rare, endangered, and threatened with extinction. Physical resources that affect the biological resources and visitor experience include natural soundscapes which are dominated by the sounds of wind, ocean, native species, and natural process. Hawaiʻi Volcanoes National Park includes designated wilderness and is mandated to preserve wilderness character and values.

Cultural Resources and Traditional Uses
The recommended measures would also protect cultural resources and traditional uses. Native Hawaiian traditional uses in the parks perpetuate traditional practices, knowledge, and the cultural importance of these areas. These practices, including chants and dances, depend upon natural sounds, unobstructed views of mountain summits, and an environment that has not been greatly altered by human-caused changes. The entire parks' landscapes and all their inhabitants and features, including the sky as a layered extension of the landscape, are sacred to Native Hawaiians.

Historic Properties
Puʻukoholā Heiau National Historic Site is home to historically significant temples of the Hawaiian Kingdom. The temples are vulnerable to vibrations from low helicopter overflights that could cause shifts in their dry stacked rocks.

Thank you for inviting us to comment on the development of this EIS. For questions or additional information, please contact Danielle Foster (danielle_foster@nps.gov).

Sincerely,

David M. Szymanski
Regional Director

L.1.2 Emailed Comments

DAVID Y. IGE
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DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
EMD/CWB

05023PDCL.18

May 10, 2018

MEMORANDUM

SUBJECT: Clean Water Branch Standard Project Comments

TO: Agencies and Project Owners

FROM: ALEC WONG, P.E., CHIEF Alec Wong
Clean Water Branch

This memo is provided for your information and sharing. You are encouraged to share this memo with your project partners, team members, and appropriate personnel.

The Department of Health (DOH), Clean Water Branch (CWB) will no longer be responding directly to requests for comments on the following documents (Pre-consultation, Early Consultation, Preparation Notice, Draft, Final, Addendums, and/or Supplements):

- Environmental Impact Statements (EIS)
- Environmental Assessments (EA)
- Stream Channel Alteration Permits (SCAP)
- Stream Diversion Works Permits (SDWP)
- Well Construction/Pump Installation Permits
- Conservation District Use Applications (CDUA)
- Special Management Area Permits (SMAP)
- Shoreline Setback Areas (SSA)

For agencies or project owners requiring DOH-CWB comments for one or more of these documents, please utilize the DOH-CWB Standard Comments below regarding your project's responsibilities to maintain water quality and any necessary permitting. DOH-CWB Standard Comments are also available on the DOH-CWB website located at: http://health.hawaii.gov/cwb/.

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DOH-CWB Standard Comments

The following information is for agencies and/or project owners who are seeking comments regarding environmental compliance for their projects with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for point source water pollutant discharges into State surface waters (HAR, Chapter 11-55). Point source means any discernible, confined, and discrete conveyance from which pollutants are or may be discharged.

   For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for a NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee ($1,000 for an individual NPDES permit or $500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: https://eha-cloud.doh.hawaii.gov/epermit/. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

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Some of the activities requiring NPDES permit coverage include, but, are not limited to:

a. Discharges of Storm Water

   i. For Construction Activities Disturbing One (1) or More Acres of Total Land Area.

      By HAR Chapter 11-55, an NPDES permit is required before the start of the construction activities that result in the disturbance of one (1) or more acres of total land area, including clearing, grading, and excavation. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale.

   ii. For Industrial Activities for facilities with primary Standard Industrial Classification (SIC) Codes regulated in the Code of Federal Regulations (CFR) at 40 CFR 122.26(b)(14)(i) through (ix) and (xi). If a facility has more than one SIC code, the activity that generates the greatest revenue is the primary SIC code. If revenue information is unavailable, use the SIC code for the activity with the most employees. If employee information is also unavailable, use the SIC code for the activity with the greatest production.

   iii. From a small Municipal Separate Storm Sewer System (along with certain non-storm water discharges).

b. Discharges to State surface waters from construction activity hydrotesting or dewatering

c. Discharges to State surface waters from cooling water applications

d. Discharges to State surface waters from the application of pesticides (including insecticides, herbicides, fungicides, rodenticides, and various other substances to control pest) to State waters

e. Well-Drilling Activities

   Any discharge to State surface waters of treated process wastewater effluent associated with well drilling activities is regulated by HAR Chapter 11-55. Discharges of treated process wastewater effluent (including well drilling slurries, lubricating fluids wastewater, and well purge wastewater) to State surface waters requires NPDES permit coverage.

NPDES permit coverage is not required for well pump testing. For well pump testing, the discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices (BMPs) shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of the storm drain prior to discharge. Furthermore, BMPs shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.

3. A Section 401 Water Quality Certification (WQC) is required if your project/activity:

    a. Requires a federal permit, license, certificate, approval, registration, or statutory exemption; and

    b. May result in a discharge into State waters. The term “discharge” is defined in Clean Water Act, Subsections 502(16), 502(12), and 502(6).

    Examples of “discharge” include, but are not limited to, allowing the following pollutants to enter State waters from the surface or in-water: solid waste, rock/sand/dirt, heat, sewage, construction debris, any underwater work, chemicals, fugitive dust/spray paint, agricultural wastes, biological materials, industrial wastes, concrete/sealant/epoxy, and washing/cleaning effluent.

    Determine if your project/activity requires a federal permit, license, certificate, approval, registration, or statutory exemption by contacting the appropriate federal agencies (e.g. Department of the Army (DA), U.S. Army Corps of Engineers (COE), Pacific Ocean Division Honolulu District Office (POH) Tel: (808) 835-4303; U.S. Environmental Protection Agency, Region 9 Tel: (415) 947-8021; Federal Energy Regulatory Commission Tel: (866) 208-3372; U.S. Coast Guard Office of Bridge Programs Tel: (202) 372-1511). If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch regarding their permitting requirements.

    To request a Section 401 WQC, you must complete and submit the Section 401 WQC application. This application is available on the e-Permitting Portal website located at: https://eha-cloud.doh.hawaii.gov/epermit/.

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Please see HAR, Chapter 11-54 for the State's Water Quality Standards and for more information on the Section 401 WQC. HAR, Chapter 11-54 is available on the CWB website at: http://health.hawaii.gov/cwb/.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation and up to two (2) years in jail.

5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:

   a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

   b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g. minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.

   c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.

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d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.

e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

Rincon Band of Luiseño Indians
CULTURAL RESOURCES DEPARTMENT
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January 16, 2024

Sent via email: Richard.G.Bark.civ@us.navy.mil
Naval Facilities Engineering Systems Command Pacific
Attention : HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Re: Request Consultation under Section 106 of the National Historic Preservation Act (NHPA) on the Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing

Dear Mr. Bark:

This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Tribe"), a federally recognized Indian Tribe and sovereign government. We have received your notification regarding the **Preparation of an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing (EIS),** and we request to engage in early consultation under Section 106 of the National Historic Preservation Act for the proposed undertaking, the definition of the area of potential effects (APE), and the identification of historic properties. The identified location is in part within the Traditional Use Area (TUA) of the Luiseño people. As such, the Rincon Band is traditionally and culturally affiliated to the project area.

The Rincon Band would like to consult on the undertaking to learn more about any potential impacts to historic properties, as we encourage the development of the EIS to be guided through tribal consultation to allow for active participation and input on the technical studies considered for the EIS. Please also include the Tribe on all distribution lists for environmental document reviews, consultations, circulation of public documents, and notices for public hearings and scheduled approvals.

We are looking forward to working with you. If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 749 1092 ext. 323 or via electronic mail at cmadrigal@rincon-nsn.gov. Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

COUNTY *of* VENTURA

RESOURCE MANAGEMENT AGENCY
CHARLES R. GENKEL
Environmental Health Director

January 10, 2024

Naval Facilities Engineering Systems Command Pacific
Attn: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Hawaii - California Training and Testing, Notice of Intent to Adopt an Environmental Impact Statement, RMA REF #23-025

Ventura County Environmental Health Division (Division) staff reviewed the information submitted for the subject project.

The Division provides the following comments:

1. The project includes training and testing activities which may include the use of active sonar, explosives, and other sources of underwater sound. Hazardous wastes shall be properly disposed of and reported to the Ventura County Certified Unified Program Agency (CUPA). Improper storage, handling, and disposal of hazardous materials could result in the creation of adverse impacts to the environment. Compliance with applicable State and local regulations will reduce potential project-specific and cumulative impacts to a level considered less than significant.

https://vcrma.org/en/cupa

If you have any questions, please contact me at (805) 654-2830 or Roxy.Cabral@ventura.org.

Roxy Cabral, R.E.H.S.
Land Use Section
Environmental Health Division

CC G:\Admin\TECH SERVICES\FINALED Letters\Land Use\ SR0021595ODR RMA REF 23-025- Hawaii- California Training and Testing

Page 1

HALL OF ADMINISTRATION #1730
805-654-2813 • FAX 805-654-2480 • 800 South Victoria Avenue, Ventura, CA 93009 • vcrma.org

Ventura County
Air Pollution
Control District

4567 Telephone Rd
Ventura, California 93003

tel 805/303-4005
fax 805/456-7797
www.vcapcd.org

Ali Reza Ghasemi, PE
Air Pollution Control Officer

VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: HCTT EIS/OEIS Project Manager DATE: January 29, 2024

FROM: Nicole Collazo, Air Quality Specialist, Planning Division NC

SUBJECT: Request for Review of Notice of Intent to prepare an Environmental Impact Statement for the Hawaii-California Training and Testing Project (RMA #23-025)

Air Pollution Control District staff has reviewed the subject Notice of Intent to prepare an Environmental Impact Statement (EIS), which is a proposal of conducting at-sea military readiness activities within the Hawaii-California Training and Testing Study Area. The Navy also proposed to modernize and sustain its ranges in a manger necessary to support these readiness activities. The Lead Agency for this project is the Department of the Navy.

District staff recommends the EIS evaluate all potential air quality impacts that may result from the project, both short-term and long-term. Specifically, the air quality assessment should consider reactive organic compound, nitrogen oxide emissions and particulate matter from all proposed sea range operations (aircrafts, vessels, etc.) as well as any potential stationary source emissions located in VCAPCD Channel Islands.

In addition, a NEPA Air Quality Analysis, if applicable, must be conducted to assess the impact of air pollutant emissions from proposed sea range operations for those effects occurring within *and* outside U.S. Territory. The NEPA analysis includes a Clean Air Act (CAA) General Conformity Analysis to make an applicability determination pursuant to the General Conformity Rule (40 C.F.R. § 93[B]). The NEPA analysis also includes an evaluation of potential exposures to toxic air pollutant emissions.

The EIS should also include analysis of any stationary engines and equipment that may be subject to APCD permitting requirements. An APCD Authority to Construct shall be obtained for all equipment subject to permit, prior to construction and an APCD Permit to Operate shall be obtained for all equipment or regulated processes subject to permit, prior to operation. To determine if proposed new equipment is subject to APCD Permitting, the applicant should s contact District Staff at 805-303-3688.

Finally, APCD would like to inform the applicant that it participates in the Vessel Speed Reduction (VSR) Program or Protecting Blue Whales and Blues Skies. The VSR

Program is a partnership which provides public relations incentives to the operators of certain ocean-going vessels (OGV), cargo container ships and roll-on/roll-off (Ro-Ro) vessels, to reduce speeds in specified areas off the California coast. Reducing ship speeds cuts emissions of nitrogen oxides (NOx), toxic diesel particulate matter (DPM), sulfur compounds, and greenhouse gases (GHGs); reduces the risk of fatal ship strikes on whales; and reduces underwater acoustic impacts. The 2023 voluntary incentive program, where companies were asked to reduce speeds to 10 knots or less in both the Southern California Region and in the San Francisco Bay Area, started on May 1, 2023 and ended on December 15, 2023. For the 2023 season, the VSR zones were greatly expanded by including more navigable waters in Southern California and adding the area within the boundaries of the Monterey Bay National Marine Sanctuary. Please consider providing funding to the VSR Program as possible mitigation for reducing air pollutants from the project if approved, as the project description states 'For this EIS/OEIS, "at-sea components" include the marine environment around San Nicolas Island where marine mammals haul out on the shoreline. Missile and target firings from San Nicolas Island that could disturb the marine mammals are included in this analysis.'

Thank you for the opportunity to review this project. Should you have any questions, you may reach me via email at nicole@vcapcd.org.

From: Sean Hanser - NOAA Federal <sean.hanser@noaa.gov>
Sent: Monday, January 29, 2024 2:40 PM
To: Bostwick, Angela S CIV USN NAVFAC PAC PEARL HI (USA) <angela.s.bostwick.civ@us.navy.mil>; Scheimer, Elizabeth A CIV USN NAVFAC PAC PEARL HI (USA) <elizabeth.a.scheimer.civ@us.navy.mil>
Cc: Chow, Marguerite M CIV (USA) <malia.chow@noaa.gov>; Delaney, David G CIV (USA) <david.delaney@noaa.gov>; Bejder, Michelle M CIV USN NAVFAC PAC PEARL HI (USA) <michelle.m.bejder.civ@us.navy.mil>
Subject: [Non-DoD Source] NMFS PIRO Habitat Conservation Division public comments on the HCTT EIS NOI

Hi Angela and Liz,

We wanted to submit public comments for the HCTT EIS NOI and ended up trying to submit around 14:00 HST, after the comment period had apparently ended. We found that It says on the "Submit Comments" page "Comments must be postmarked or received online no later than 11:59 p.m. PST on Jan. 29, 2024, for consideration in the Draft EIS/OEIS." We had prepared comments from reading the Federal Register announcement and looking at the Fact Sheet, however we had not gone to the submit comments page because we were not prepared to submit until today. As you may recall, it states on the front web page "The Navy is accepting public comments through Jan. 29,. 2024." We had interpreted that to mean at least the entire business day in Hawaii would be included on Jan 29. However, it is clear that was not the case. With that understanding, we are providing the comments below to provide our input on the HCTT EIS NOI.

Comments:
National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO), Habitat Conservation Division (HCD) is anticipating the Navy will conduct an EFH consultation for Phase IV of the HCTT EIS. We will be interested in understanding the location of planned underwater detonation training (UNDET) and testing. For the EIS and the EFH consultation, the current condition and community composition of the benthic and fish resources at UNDET and bombing ranges that are used regularly should be provided.

Also, in the Hawaiian Islands, PIRO HCD recommends that the footprint, timing, and tempo of training and testing be clearly presented for locations that occur in waters shallower than 400 m. These waters are EFH for bottomfish management unit species (BMUS) and could need closer analysis for potential impacts. Pay special attention to the overlap of testing and training with Penguin Bank and other habitat areas of particular concern (HAPCs); maps that show the footprint of activities with respect to HAPCs would be a useful tool for understanding the interaction of the planned activities and that key habitat.

PIRO HCD is happy to participate in early coordination with the Navy for an EFH consultation. Please feel free to contact our division at EFHESAconsult@noaa.gov for commencing early coordination.

Please feel free to contact me or our office at the above email if you have any questions about the above comments or wish to start early coordination.

Sincerely,
Sean
--

Sean F. Hanser, PhD.
Resource Management Specialist, Habitat Conservation Division
Pacific Islands Regional Office
National Marine Fisheries Service | U.S. Department of Commerce
(808) 725-5091
www.fisheries.noaa.gov

COUNTY *of* VENTURA

RESOURCE MANAGEMENT AGENCY
DAVE WARD
Planning Director

SUSAN CURTIS
Assistant Planning Director

December 26, 2023

Anthony Ciuffetelli
RMA/Planning/EDR Coordinator

Sent via email: anthony.ciuffetelli@ventura.org

SUBJECT: Hawaii-California Training and Testing Project
RMA Ref# 23-025

To Whom It May Concern,

Ventura County Cultural Heritage Board (CHB) staff is in receipt of the invitation to comment on the above-referenced project and provides the following comments:

- The Hawaii-California Training and Testing Study Area contains known historic resources and may contain as-yet undiscovered resources that have not yet been documented. For example, the SS WINFIELD SCOTT (Steamship) site is listed in the National Register of Historic Places and currently rests underwater as part of the Channel Islands National Park and Marine Sanctuary. An expanded Study Area with additional or modified training activities could lead to direct and indirect impacts on known and as-yet undiscovered historic and cultural resources.
- The United States Department of the Navy should set forth goals, policies, and programs regarding the treatment of historic and cultural resources within the Study Area and evaluating the historical significance of sites that contain objects that are fifty years of age or older. Fifty years of age is a general estimate of the time needed to develop historical perspective and to evaluate significance. It is recommended that these sites be avoided to the greatest extent feasible to avoid potential direct and indirect impacts.

Thank you for the opportunity to comment on the proposed project. If you require anything further or have any questions, please contact Dillan Murray at (805) 654-5042 or at Dillan.Murray@ventura.org.

Sincerely,

Dillan Murray
Cultural Heritage Program Planner
Ventura County Planning Division

HALL OF ADMINISTRATION #1740
(805) 654-2481 • FAX (805) 654-2509 • 800 South Victoria Avenue, Ventura, CA 93009 • vcrma.org

REGION 9
SAN FRANCISCO, CA 94105

January 29, 2024

Alex Stone, HCTT EIS/OEIS Project Manager
Naval Facilities Engineering Systems Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860–3134

Subject: Scoping comments for Hawaii-California Training and Testing Activities Environmental Impact Statement (EIS)

Dear Alex Stone:

The U.S. Environmental Protection Agency has reviewed the Notice of Intent (NOI) published on December 15, 2023, regarding the Department of the Navy's decision to prepare an Environmental Impact Statement for the subject project. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act. The CAA Section 309 role is unique to EPA. It requires EPA to review and comment publicly on any proposed federal action subject to NEPA's environmental impact statement requirement.

The Department of the Navy is again renewing its authorizations under the Marne Mammal Protection Act (MMPA) and Endangered Species Act for the take of whales and other marine mammals during military training. Again the Navy is expanding its training areas and will evaluate a maximum training scenario as an alternative. We appreciate the briefing the Navy provided at our request since the scoping materials were vague and not sufficient to inform the preparation of scoping comments. We note that there are some areas where the Navy was not clear on its proposed actions. For example, the NOI indicates that the Northern California Range is an existing range; however, we have not seen this range in any previous EISs and during the briefing we learned that this range is largely not used except for limited aviation training, yet the NOI presents it as an active range suggesting there are no changes to current conditions under the proposed action. Additionally, the corridors being planned for amphibious landing areas in central California were mapped at such a large scale that it was not clear which areas the Navy is considering. Further, no live scoping meetings were offered, instead the website was to contain a virtual scoping meeting however, this consisted of slides that presented information similar to the scoping notice and was not informative. While EPA was afforded the opportunity to ask questions in our briefing, the public was denied this opportunity to learn more about the proposal. As such, the public will be learning about the specifics of the project at the draft EIS stage and should be afforded ample time to review the document and prepare comments.

We have the following suggestions for your consideration when preparing the Draft Environmental Impact Statement (DEIS):

Project Description, Scope, and Impact Assessment Methodology
The DEIS should include a clear project description that accurately presents the changes being proposed under the new MMPA authorization period. This includes accurately representing the current use of the Northern California range, as mentioned, as well as detailed maps of each proposed amphibious landing areas. During the EPA briefing, we learned that the amphibious landing corridors would be defined in this EIS, but the Marine Corps would prepare a separate NEPA document for the actions taking place on land once the amphibious vehicles are fully ashore. As we noted then, the designation of corridors in this EIS enables the future actions; thus, the impacts of using the corridors including approach of vehicles and their landings on shore, should be included in this EIS. Include maps of the landing areas at sufficient scale so the reader understands the precise locations.

The Navy frequently describes its proposed action as actions that have been taking place for decades;[1] however, as any toxicologist knows "the dose makes the poison", so this statement that actions are essentially the same as what has been occuring for decades is not informative and should not be used as part of the impact assessment methodology. The stressors that environmental resources can experience have a limit; because some resources have absorbed stressors without apparent significant impact does not mean they could continue to do so under a higher training tempo under the proposal. It is important that the EIS make clear the amount of increase in stressors the Navy is proposing, and to evaluate the existing conditions, along with cumulative stressors, especially those from climate change which are pervasive in the oceans, in predicting project-related impacts.

As the Navy expands its ranges to larger and larger sizes that cover thousands of miles, it is important that the Navy ensure the impact assessment is addressing impacts to specific training and testing locales. Past NEPA practice for range EISs has been to average impacts over very large areas of ocean and/or stating that impacts would occur only locally and therefore were not significant. Such averaging is not a meaningful way to assess the impacts to local resources such as coral reefs, sea mounts, and nearshore areas that might be utilized by fish and wildlife, and it does not assist in identifying potential measures to mitigate such localized effects. Further, simply stating that impacts are localized does not support a less-than-significant impact conclusion without additional support.

Alternatives
The NOI and project website indicate that the Navy plans to evaluate two alternatives and the required No Action alternative. According to the NOI, Alternative 1 reflects a representative year of training and Alternative 2 reflects the maximum number of training and testing activities that could occur within a given year for the seven-year period. Considering the importance of the alternatives analysis in environmental impact statements under NEPA, this is a very limited range and would offer no substantial differences in impacts if assessed in the manner that past range EISs have been, where the higher tempo alternative's impacts are described as being "slightly higher" than those under the other

[1] From project website: "Proposed training and testing activities are similar to those analyzed in previous environmental impact analyses and are representative of activities that have been conducted off Hawaii and California for more than 80 years "

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alternative but no substantial difference in impacts is predicted.[2] This is not a meaningful alternatives analysis. We note that the recent changes to the National Environmental Policy Act under the Fiscal Responsibility Act include additional references to alternatives – see Section 102 (C)(iii), and Section 102 (F) in addition to existing Section 102 (H). Consistent with this new focus on alternatives in the National Environmental Policy Act, a more robust alternatives analysis is needed for the DEIS.

We strongly recommend the Navy evaluate at least one additional action alternative that incorporates mitigation, consistent with 40 CFR 1502.14 (e) which states that agencies shall evaluate appropriate mitigation measures not already included in the proposed action or alternatives. We recommend evaluating an alternative with additional temporal and geographic mitigation protections from sonar and other wildlife impacts than what was authorized in the last EIS and MMPA rulemaking. The impact assessment informs the decision but is not the decision-making document; therefore, if the inclusion of some additional geographic and temporal exclusion areas for the protection of marine life could even partially meet the purpose and need, it should be considered in the alternatives analysis. The 2007 Marine Mammal Commission Report to Congress on Noise stated that experts in their workshop agreed that the "habitat avoidance" strategy of restricting sound generation geographically or seasonally offered the most benefits and fewest negative side effects of all the ocean noise mitigation options considered.[3]

Another option for a mitigated alternative is to hold mid-frequency active (MFA) sonar use at existing levels amid any training increases. The Navy utilized this approach under a previous Hawaii Range Complex EIS.

Include Monitoring Results
Because this is an ongoing action, the assessment of impacts need not be speculative as is the case for some project impact assessments that have not yet occurred; monitoring results from past and current training should inform the impact assessment. We recommend including a section in the DEIS, or in each resource section, that summarizes monitoring results and discusses any adaptive responses that have occurred. Monitoring results must be integrated into any analyses that would be considered best available science.

Impacts on Marine Mammals

Acoustic impacts from MFA sonar
The Proposed Action would continue or increase the use of MFA sonar in its training. The inclusion of the Northern California Range and the use of MFA sonar in that range is an entirely new activity compared to current conditions per the Navy's briefing to EPA (January 10, 2024). This was not made clear in the NOI; it should be clearly communicated that any sonar-related impacts to species in this area would be new impacts.

[2] See Mariana Islands Testing and Training Supplemental EIS; Hawaii-Southern California Testing and Training EIS etc.
[3] https://www.mmc.gov/wp-content/uploads/fullsoundreport.pdf, page 34

It is known, and the Navy has acknowledged in the past, that MFA sonar can be a source of acoustic or impulse trauma to marine mammals.[4] We recommend the DEIS summarize the latest scientific information regarding impacts from MFA sonar on marine mammals. After-action and monitoring reports from past training should be summarized in the DEIS. We also recommend that a history of strandings and mortalities coincident in space and time with the deployment of military sonar be disclosed, regardless of whether they occurred in the study area, with acknowledgment that severely injured animals rarely make it to shore.

The last MMPA permit authorization period (2018 through 2025) included geographic mitigation measures in the HSTT Study Area and stated that depending on the area, mitigation would be implemented year-round or seasonally during applicable activities involving active sonar, explosives, and physical disturbance and strike stressors. The Navy was to implement mitigation measures within certain mitigation areas and/or times where they are known to engage in biologically important behaviors (i.e., for foraging, migration, reproduction) where the disruption of those behaviors would be more likely to result in population-level impacts. Additional mitigation areas that were not evaluated, per the HSTT ROD, were included as a result of negotiations from a lawsuit. Despite these additional mitigations, more whales and marine mammals were killed than expected under the authorization. In 2021, two separate U.S. Navy vessels struck unidentified large whales on two separate occasions, one whale in June 2021 and one whale in July 2021, in waters off Southern California and then killed another large whale by ship strike in May 2023 – reaching its maximum allowable kill for the permit period with two additional years to go. As a result, the Navy has asked NMFS permission to kill 2 additional whales.[5] This doesn't count the two dead fin whales, a mother and her calf, that had to be dislodged from the hull of a Royal Australian Navy ship in San Diego after it was participating in joint exercises with the U.S. Navy in Southern California. More can be assumed to have died at sea.

This indicates that either mitigation measures are not effective or not being implemented, or that the impact assessment methodology is underrepresenting the number of whales and other marine mammals that would be killed during training. The DEIS for the updated term should incorporate this information and adjust its training and/or mitigation, as possible, instead of just adjusting its allowable take. The addition of new MFA sonar training off the Northern California at approximately Monterey and San Luis Obispo Counties, and Marin and Sonoma Counties is of concern as these areas include the Greater Farallones National Marine Sanctuary, Cordell Bank National Marine Sanctuary, and the Monterey Bay National Marine Sanctuary, all of which are rich with whale and other marine mammal activity.

Because these sections of the DEIS are highly technical, efforts should be made to present the information in a manner that is understandable to the general public (40 CFR 1502.8), with the more technical reports included as appendices to the DEIS.

[4] Joint Interim Report, Bahamas Marine Mammal Stranding, Event of 15-16 March 2000, page ii. Available: https://repository.library.noaa.gov/view/noaa/16198
[5] https://www.federalregister.gov/documents/2023/10/03/2023-21499/taking-and-importing-marine-mammals-taking-marine-mammals-incidental-to-the-us-navy-training-and

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Mitigation for marine mammal impacts
Mitigation measures to reduce MFA impacts should be identified in the DEIS. NEPA also requires that the effectiveness of proposed mitigation measures be discussed[6]. Mitigation measures that are untested should not be assumed to be effective. We recommend referencing monitoring and after-action reports, and other sources as appropriate, in this discussion of mitigation effectiveness. Incorporate the information gains from the recent ship strikes, including the assumption, now disproven by the Royal Australian Navy incident, that sailors aboard a ship would know if they had fatally struck a whale.

Since posting lookouts on vessels is the primary mitigation method the Navy uses, the DEIS should distinguish the effectiveness of mitigation measures for marine mammals with a low probability of visual observation (e.g., beaked whales) versus other easily observed marine mammals. Include the likely percentage of effectiveness when claiming mitigation measures would reduce impacts. For example, according to the study by Oedekoven and Thomas (2022), military personnel effectiveness of observing marine mammals ranged from 2 to 13%, and experienced marine mammal observers detected somewhat higher depending on the species but was never more than 54% effective. It is not enough to simply state in the impact assessment that impacts would not be significant due to mitigation measures without considering the limited effectiveness of certain mitigations.

Additionally, the DEIS should make clear the limitation of lookout mitigation in weather conditions with poor visibility. Based on the information in the NMFS Federal Register notice dated 10/3/23, it is clear that in conditions of poor visibility, lookout mitigation is largely ineffective. The DEIS should discuss and evaluate the addition of passive acoustic monitoring. Include data on when and where it has been used by other navies or entities. NEPA requires the discussion of mitigation measures, even if they are not adopted.

Impacts to marine ecosystems
Impacts to deep-sea coral and sponge (DSCS) habitat off southern California should be mapped and discussed. According to NOAA, vibrant deep-sea coral and sponge communities are present across a diversity of seafloor features throughout the West Coast, such as seamounts, basins, oil and methane seeps and submarine canyons. Deep-sea corals and sponges "provide a number of ecosystem services that are critical to the health of surrounding ecological communities." [7] These areas should be avoided for underwater detonations, mine neutralization activities, and other training that could impact the living sea floor. Provide maps of all the areas protected or proposed for protection, not just marine sanctuaries, in the DEIS.

Mitigation for cumulative DoD and ocean impacts
As mentioned above, NEPA requires that mitigation be discussed, even if not adopted, in the EIS. The Navy generally does not propose any innovative mitigations for these projects, but instead posits that permit/authorization compliance is sufficient. While compliance with the MMPA is obviously important, the only mitigation in the authorizations are attempts to minimize harm. Since recent

[6] The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. Methow Valley, 490 U.S. at 351-52, 109 S.Ct. 1835 (citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least some evaluation of effectiveness is useless in making that determination.
[7] See https://repository.library.noaa.gov/view/noaa/50942

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evidence suggests these attempts are not effective as previously assumed, the Navy should include mitigation that helps restore or enhance the species and/or ecosystems it is incidentally harming. We have never seen such innovation in EISs in Region 9, nor are aware of it elsewhere; however, NEPA is clear: the Federal Government is to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may fulfill the responsibilities of each generation as trustee of the environment for succeeding generations (42 U.S.C. 4331 (section 101) (b)). With increasing impacts from Navy and other training, coupled with the potentially devastating impacts of climate change on the oceans, more is needed if future generations would enjoy even a fraction of what the oceans have historically provided. We recommend discussing possible efforts that could help mitigate (enhance and restore) some of the ocean resource damages. For example, including proactive methods of seagrass or other restoration in the proposed action. Such "blue carbon" efforts can help store and sequester carbon, helping to mitigate climate change, support biodiversity, and provide valuable ecosystem services to coastal communities. Again, NEPA requires the discussion of mitigation, and the definition of mitigation under NEPA is broad and includes "Rectifying the impact by repairing, rehabilitating, or restoring the affected environment" (40 CFR 1508 (s)(3).

Clear Water Act, Section 404

EPA learned, during our December 10, 2023, briefing, that a small part of the proposed action off San Clemente Island involves laying a grid of cable on the sea floor to expand the hydrophone network. We learned that in the past, this activity was authorized under a CWA Section 404 Nationwide Permit. The DEIS should discuss how CWA Section 404 applies to the project and its expected permitting strategy. If the Corps of Engineers would require an individual CWA Section 404 permit, EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into waters of the U.S. must be the least environmentally damaging practicable alternative available to achieve the project purpose so long as the alternative does not have other significant adverse environmental consequences.

Climate Change and Greenhouse Gases

Greenhouse gas emissions

The Council of Environmental Quality's "Interim National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change" (88 FR 1196, January 9, 2023) is in effect, and we recommend it be referenced in the DEIS. The CEQ Guidance states that to ensure that Federal agencies consider the incremental contribution of their actions to climate change, agencies should quantify the reasonably foreseeable direct and indirect GHG emissions of their proposed actions and reasonable alternatives (as well as the no-action alternative) and could discuss significance by including a discussion of how the proposed action would help meet or detract from achieving relevant climate action goals and commitments, including Federal goals and international agreements[8] or by providing other measures of context to describe the effects associated with those projected

[8] Per CEQ Guidance, "Agencies also should discuss whether and to what extent the proposal's reasonably foreseeable GHG emissions are consistent with GHG reduction goals, such as those reflected in the U.S. nationally determined contribution under the Paris Agreement. US commitments in the Paris Climate Agreement may be found at: https://unfccc.int/sites/default/files/NDC/2022-06/United%20States%20NDC%20April%2021%202021%20Final.pdf.

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emissions in the NEPA analysis. Regarding the additional context, CEQ states that "In most circumstances, once agencies have quantified GHG emissions, they should apply the best available estimates of the social cost of GHGs (SC-GHG) to the incremental metric tons of each individual type of GHG emissions. [9] CEQ guidance indicates that "SC-GHG can assist agencies and the public in assessing the significance of climate impacts. This is a simple and straightforward calculation that should not require additional time or resources" (CEQ Guidance Section IV, B). CEQ indicates that other techniques can be used to provide context such as communicating a proposed action's GHG emissions in more familiar metrics such as household emissions per year, annual average emissions from a certain number of cars on the road, or gallons of gasoline burned.

When assessing the impacts of GHG emissions, CEQ dissuades agencies form comparing project emissions to global emissions, stating: "NEPA requires more than a statement that emissions from a proposed Federal action or its alternatives represent only a small fraction of global or domestic emissions. Such comparisons and fractions are not an appropriate method for characterizing the extent of a proposed action's and its alternatives' contributions to climate change."

We understand it might be difficult to account for all emissions from training exercises, but an accounting may already exist that could be utilized for creating estimates. We note that the CEQ regulations provide for when there is insufficient information available - see 40 CFR 1502.21 - *Incomplete or unavailable information*. Specific direction is provided in 40 CFR 1502.21 (c) 1 through 4.

Climate change effects
When discussing climate change effects, the DEIS should identify that there are unique impacts of aviation emissions released at altitude. The impact of burning fossil fuels high in the atmosphere is approximately double that of burning the same fuels at ground level.[10] In addition to carbon dioxide (CO_2) emissions, other factors increase the climate change impacts of aircraft emissions; the Intergovernmental Panel on Climate Change estimated aviation's total climate change impact could be from two to four times that of its CO_2 emissions alone. A research study found that two-thirds of the impact from aviation is attributed to contrails, NOx, water vapor, sulfate aerosol gases, soot, and other aerosols.[11] The remainder is due to the cumulative heat-trapping effects of long-lived CO_2 emissions.

Cumulative effects
As mentioned, climate change is having large effects on oceans. When evaluating project impacts to specific resources, include the cumulative stressors that are now playing on all ocean resources. This provides the context for the impacts and helps clarify the ability of the existing condition of the resource to absorb additional impacts from the project. We find that an effective presentation of cumulative effects is when the discussion occurs in each resource section following the description of project impacts, as opposed to a separate cumulative impacts section. The list of cumulative projects can be presented at the end of Chapter 2 or elsewhere.

[9] According to CEQ guidance, "SC-GHG estimates allow monetization (presented in U.S. dollars) of the climate change effects from the marginal or incremental emission of GHG emissions, including carbon dioxide, methane, and nitrous oxide."
[10] See http://web.mit.edu/aeroastro/sites/waitz/publications/Mil.paper.pdf
[11] See https://www.sciencedirect.com/science/article/pii/S1352231020305689?via%3Dihub
https://research.noaa.gov/2020/09/03/aviation-is-responsible-for-35-percent-of-climate-change-study-finds/

Environmental Justice
The DEIS should discuss environmental justice in the context of the project areas, including impacts to subsistence fishers in all locations and for all effects impacting Native Hawaiian populations. We note that environmental justice is now evaluated based simply on disproportionate and adverse impacts per Executive Order 14096 - *Revitalizing Our Nation's Commitment to Environmental Justice for All*. The Fact Sheet that accompanied the E.O. indicates that "The Executive Order uses the term "disproportionate and adverse" as a simpler, modernized version of the phrase "disproportionately high and adverse" used in Executive Order 12898. Those phrases have the same meaning but removing the word "high" eliminates potential misunderstanding that agencies should only be considering large disproportionate effects."

We recommend discussing the Administrations' recently released *Ocean Justice Strategy.*[12] According to the Strategy, ocean justice derives from environmental justice, with a specific focus on the ocean, and seeks to address environmental justice concerns related to the use of the ocean for economic, cultural, spiritual, and recreational purposes, and food security. Ocean justice provides the opportunity to work towards repairing past harms and a lens through which to think through past, current, or future impacts to the ocean. It also provides a framework with which to improve the well-being of people in coastal communities and other communities connected to and dependent on the ocean.

Sea mounts are often preferred fishing locations in the broad ocean areas. Identify the approximate number of days per year that subsistence fishing would be affected for each subsistence fishing population. Avoiding these areas for training exercises will reduce some EJ-related subsistence fishing impacts, as well as impacts to other fishers and to fish and wildlife. Identify other modifications that could ease the burden of project impacts on vulnerable populations. Assess all EJ impacts in consultation with the affected community and identify in the DEIS the feedback the Navy received. Conclusions regarding EJ impacts must consider the input of the affected community (See Ocean Justice Strategy, Section 1.1). Local communities are often best equipped to understand their own unique needs, dynamics, and goals and to recommend appropriate solutions. We recommend against an EJ methodology that evaluates all resources for significance and then simply transfers conclusions of less than significant to the EJ impact discussion. Impacts to EJ-affected communities must be seen through a different lens; one that considers the preexisting vulnerabilities that affect how impacts are experienced.

The Navy may want to utilize the information in the EPA tool EJ Screen. EJScreen is EPA's nationally consistent environmental justice screening and mapping tool that offers a variety of powerful data and mapping capabilities that enable users to understand details about the population of an area and its environmental conditions. The tool provides information on environmental and socioeconomic indicators as well as pollution sources, health disparities, critical service gaps, and climate change data.

[12]Ocean Justice Strategy, December 2023. See https://www.whitehouse.gov/wp-content/uploads/2023/12/Ocean-Justice-Strategy.pdf

Tribal/Native Hawaiian Sacred Sites and Traditional Ecological Knowledge
The Bureau of Indian Affairs recently developed a Best Practices Guide[13] for Federal agencies regarding tribal and Native Hawaiian sacred sites. This guide addresses indigenous knowledge and consultation requirements. We recommend the Navy include the feedback it has received from tribal and native Hawaiian populations in the DEIS and indicate how the Navy will be utilizing any indigenous knowledge shared or addressing any concerns identified.

Noise impacts to people
The utilization of the largely dormant Northern California Range will introduce new noise sources into the project area that have not been experienced previously. Assess noise impacts along expected flight paths and corridors, including from both aviation/aircraft, as well as surface vessels and the new amphibious landing areas. Present noise impacts in a manner that comports with how humans experience noise, and include maximum noise levels as well as averaging metrics. We note that the Government Accountability Office found that providing information on potential noise impacts grounded in average Day Night Level (DNL) was not clear enough for communities to understand planned changes.[14] Ensure noise is not averaged over long quiet periods but represents sound as closely to what would be experienced by individuals as possible. Identify whether children would experience new noise and if so, assess impacts on children's schools and learning.

The EPA appreciates the opportunity to comment on preparation of the DEIS. When the Draft EIS is released for public review, please send an electronic copy to me at vitulano.karen@epa.gov. If you have questions, please contact me at (415) 947-4178 or by email.

Sincerely,

KAREN VITULANO Digitally signed by KAREN VITULANO Date: 2024.01.29 17:48:42 -08'00'

Karen Vitulano
Environmental Scientist
Environmental Review Branch

cc: Leah Davis, Office of Protected Resources, National Marine Fisheries Service
Cassidy Teufel, California Coastal Commission

[13] BEST PRACTICES GUIDE For Federal Agencies Regarding Tribal and Native Hawaiian Sacred Sites. Available: https://www.bia.gov/sites/default/files/media_document/sacred_sites_guide_508_2023-1205.pdf
[14] See https://www.gao.gov/assets/gao-22-105844.pdf

COUNTY of VENTURA
RESOURCE MANAGEMENT AGENCY
DAVE WARD
Planning Director

SUSAN CURTIS
Assistant Planning Director

January 29, 2024

Attention: HCTT EIS/ OEIS Project Manager
Naval Facilities Engineering Systems Command Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860

SUBJECT: Response to Notice of Intent to Prepare an Environmental Impact Statement for the Hawaii- California Training and Testing

Dear HCTT EIS/ OEIS Project Manager,

Thank you for providing the Ventura County Planning Division (Planning Division) with the opportunity to comment regarding the Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Hawaii-California Training and Testing Activity (Proposed Activity). The Planning Division coordinates with neighboring jurisdictions and provides review and comment on environmental documents prepared for projects that could affect the unincorporated area.

The EIS will assess the potential environmental effects associated with the Proposed Activity, which is a plan to conduct at-sea military readiness activities within the Hawaii-California Training and Testing (HCTT) Study Area. The Navy also proposes to modernize and sustain its ranges in a manner necessary to support these readiness activities. The Proposed Activity is needed to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions. Modernization and sustainment proposals include new special use airspace in Southern California, an expansion of an underwater training range near San Clemente Island, and installation and maintenance of mine training areas off Hawaii and Southern California. The HCTT Study Area includes only at-sea components of the range complexes, Navy pierside locations and port transit channels. Bays, harbors, inshore waterways, and civilian ports where training and testing activities occur, as well as transits between homeports and operating areas.

Naval Base Ventura County Operations

Compatibility between military installations, adjacent land uses, and local communities is essential to protect military missions, the health of local economies and industries, and the quality of life for county residents. Ventura County General Plan Policy LU-21.4, as shown below, supports coordination with local jurisdictions to ensure military compatibility:

HALL OF ADMINISTRATION #1740
(805) 654-2481 • FAX (805) 654-2509 • 800 South Victoria Avenue, Ventura, CA 93009 • vcrma.org

General Plan Policy LU-21.4 – *The County shall work to enhance communication and coordination with Naval Base Ventura County (NBVC) and other jurisdictions in the county to enhance public knowledge and access to information regarding military operations and compatibility challenges while adhering to operational security requirements.*

The Proposed Activity may include actions at Naval Base Ventura County (NBVC), and the Broad Ocean Area off the coast of Southern California. If the Proposed Activity would increase noise effects on the local community, such as an increased frequency of flights to the NBVC military installations, particularly if the flights will emit sonic booms or fly low over residential areas, please provide advanced notification to local residents through multiple communication methods and languages. The County's Public Information Officer may also be able to assist with some types of communications.

Thank you again for the opportunity to comment on this Notice of Intent to Prepare a Draft Environmental Assessment. If you have any questions about this letter, please contact Joel Hayes at Joel.Hayes@ventura.org or 805.654.2834.

Sincerely,

Dave B Ward

Dave Ward, AICP I Planning Director
County of Ventura, Planning Division

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKAʻOLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

Date: 1/29/2024
DAR # AR 6538

MEMORANDUM

TO: Brian J. Neilson
DAR Administrator

FROM: Catherine Gewecke, Aquatic Biologist Catherine Gewecke

SUBJECT: Request for Comments - Intent to Prepare an Environmental Impact Statement (EIS) / Overseas EIS for Hawaii-California Training & Testing / Ref #: 5090 Ser N46/0939

Request Submitted by: Department of the Navy

Location of Project: Hawaii-California Training and Testing (HCTT) Study Area

Brief Description of Project:

The Department of the Navy (including both the U.S. Navy and the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, is preparing an EIS/OEIS to assess potential effects from conducting at-sea military readiness activities within the Study Area. The Proposed Action (consisting of sonar, missile/ artillery firing, mine training, etc.) is needed to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions in accordance with their Congressionally mandated requirements; realistic training and testing are crucial for military readiness, personnel safety, and national defense.

Comments:

☐ No Comments ☒ Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved: BJN Date: Jan 30, 2024
Brian J. Neilson
DAR Administrator

DAR# AR 6538

Brief Description of Project

The Department of the Navy (including both the U.S. Navy and the U.S. Marine Corps), in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, is preparing an EIS/OEIS to assess potential effects from conducting at-sea military readiness activities within the Study Area. The Proposed Action is needed to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions in accordance with their Congressionally mandated requirements; realistic training and testing are crucial for military readiness, personnel safety, and national defense.

These military readiness activities (as previously described in the EIS conducted in 2017) include the use of active sonar and explosives at sea off the coasts of Hawaii and Southern California, on the high seas during vessel transit between these areas. The newly proposed actions include the following (note: some actions do not apply to Hawaii):

1) Continuing military training and testing activities
2) Modernizing and sustaining ranges in the Study Area
3) Adding a new special use airspace in Southern California
4) Expanding the Southern California underwater training range
5) Installing and maintaining mine training areas off Hawaii and Southern California

See attachment for maps of proposed training and testing areas in Hawaii.

Specific New Activities for Hawaii include the following:

1) Increased use of unmanned systems –air, surface, subsurface
2) Cable/sensor installation east of Kaneohe
3) Installation and maintenance of mine training shapes in Maui Basin
4) Missile/Artillery firing from PMRF
4) U.S. Air Force Air-to-Air Gunnery
5) Use of new vessels during amphibious landings

DAR# AR 6538

Comments

DAR requests that any previous or updated information relevant to the potential biological impacts to marine organisms (including marine mammals, sea turtles, fish, corals and other invertebrates, algae and live rock), resulting from continued or newly proposed training and testing activities be provided in the Draft EIS for review by DAR biologists (including biologists from Hawaii, Maui/Molokai/Lanai/Kahoolawe, Oahu and Kauai and Protected Species Program biologists). Updated information could include information from newly published studies, results of monitoring / biological reporting from past training/testing or any observations relevant to potential impacts to marine organisms/resources during past training/testing.

DAR also requests information on the range (min / max distances from land out to sea) of proposed missile / artillery firing from PMRF (Kauai) and information on the material type and disposition of ocean debris that may result from any type of missile / artillery firing, information on materials used for mine training and information on coral or live rock benthic cover in areas where mine training, amphibious landings or cable placement will be conducted.

DAR requests that the Department of the Navy pre-consult with local marine mammal researchers / organizations, which currently conduct research (or have conducted research in recent years) on marine mammals or sea turtles in Hawaii, and DAR biologists (including biologists from Hawaii, Maui/Molokai/Lanai/Kahoolawe, Oahu and Kauai, and Protected Species Program biologists), while preparing the draft EIS, to discuss and evaluate potential areas to conduct certain kinds of training, in order to attain lower potential behavioral, TTS and PTS takes for marine mammals and sea turtles or other potential impacts to marine organisms/resources.

The following researchers / organizations may have the most current information related to the status and distribution of select marine mammal species. These researchers / organizations include but are not limited to the following: Robin Baird (Cascadia Research Collective), Ed Lyman (Hawaiian Island Humpback Whale National Marine Sanctuary), Adam Pack (University of Hawaii at Hilo), Rachel Cartwright (Keiki Kohola Project), Jens Currie (Pacific Whale Foundation), Jim Darling (Whale Trust), Joseph Mobley (University of Hawaii), Lars Bejder or Paul Nachitgall (Marine Mammal Research Program - UH), Ann Zoidis (Cetos Research Organization), Christine Gabriele (Hawaii Marine Mammal Consortium), Jason Turner (University of Hawaii - Hilo), Bruce Mate (Oregon State University-Marine Mammal Institute).

DAR# AR 6538

Comments

Note: Principle Investigators (PI) for each program / organization may have changed over time - please consult organizations directly for updated PI contact info.

DAR requests that the Navy integrate consideration of the vulnerable state of some cetacean populations in the Main Hawaiian Islands (MHI) (as discussed in the 2017 Draft EIS comments from DAR) including the MHI Insular Stock False Killer Whales (FKW), Kohala Resident Melon Headed Whales and potentially other species, while planning certain exercises and logistics.

Thank you for providing us the opportunity to review and comment on the Notice of Intent to Prepare an Environmental Impact Statement (EIS) / Overseas EIS for Hawaii-California Training & Testing. Should there be any changes, amendments or modifications to the current plans, DAR requests the opportunity to review and comment on those changes. DAR also requests the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) / Overseas DEIS for Hawaii-California Training & Testing, when completed.

L.1.3 Postal Mailed Comments

DEPARTMENT OF DESIGN AND CONSTRUCTION
KA 'OIHANA HAKULAU A ME KE KĀPILI
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAI'I 96813
PHONE: (808) 768-8480 • FAX: (808) 768-4567 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA

HAKU MILLES, P.E.
DIRECTOR
PO'O

BRYAN GALLAGHER, P.E.
DEPUTY DIRECTOR
HOPE PO'O

January 11, 2024

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawai'i 96860-3134

To Whom It May Concern:

Subject: Notice of Intent to Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawai'i-California Training and Testing

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any questions, please contact me at (808) 768-8480.

Sincerely,

Haku Milles, P.E., LEED AP
Director

HM:cf (914686)

Scoping comments by Kenneth A. Martyn
January 29, 2024

Hawaii-California Training and Testing ("HCTT")

I reside on the North Shore of the Island of Oahu. I am primarily concerned with the possible effects of the proposed continuation of the HCTT in Hawaii, and the need for careful study of the possible adverse effects of the HCTT on marine mammals, coral reefs, and other aquatic life in Hawaii.

In particular, I think it is important for the Draft EIS to give careful and detailed consideration of the possible effects on marine mammals, coral reefs, and other aquatic life from the active sonar, explosives and other sources of underwater sound, and to the possible effects of any electromagnetic discharges or stray electricity (including without limitation, microwave communication electrical energy), that may result from the proposed and continued HCTT "training and testing" that will be the subject of the Draft EIS/OEIS.

This should include careful consideration of the work by marine biologist Terry Lilley on the possible negative effects of the past military activities similar to the proposed HCTT on coral reefs in Hawaii, which also then may have possible adverse effects on the sandy beaches in Hawaii. Some of this work by Terry Lilley, which should be considered, is described in the following two URL sites:

https://www.youtube.com/watch?v=NCOVciuYjg8 (especially the portions of this video from minutes 2:30 to 7:45).

https://yourpositiveimprint.com/episodes/electromagnetic-energy-killing-hawaii-coral-reefs-marine-biologist-terry-lilley/ (especially the portions of this interview from minutes 19:54 to about 24:17).

The extensive data that that marine biologist has collected via underwater photography in Hawaii over many years should also be given careful consideration, along with any other available scientific data or analysis by other scientists, including marine scientists from the University of Hawaii.

The Draft EIS/OEIS should also consider various possible ways to mitigate possible adverse effects, and risks of possible adverse effects of the HCTT, including possibly restricting the HCTT (or some particular HCTT "training and testing" activities) to areas greater than 30 nautical miles and/or greater than 50 nautical miles from the island of Oahu.

Given the very large economic value, and cultural value, of Hawaii's coral reefs and sandy beaches, it is important to error on the side of caution before conducting any activities that may have any significant adverse effects on Hawaii's coral reefs and sandy beaches.

This should include the careful consideration in the Draft EIS/OEIS of the possible cumulative effects of the combination of the HCTT plus other likely stressors on Hawaii's coral reefs, such as warming ocean water, and ocean water pollution from various sources.

I also request that I receive notification of the Draft EIS/OEIS (and access to a copy of it) as soon as it is available. My e-mail address for sending me that notification is: kmhawhome-NEPA@yahoo.com

I attempted to submit these scoping comments via the website www.nepa.navy.mil/hctteis/ at about 8:45 pm PST time (6:45 pm HAST) on January 29, 2024, but that website said the scoping comment period had ended, and it would not accept my comments, even though the public announcement said the scoping comment period would end at 11:59 pm PST. So I will attempt to get this paper copy post marked at the Honolulu Airport Post Office before they close at 8 pm HST (10 pm PST).

NORTHWESTERN HAWAIIAN ISLANDS CORAL REEF ECOSYSTEM RESERVE
RESERVE ADVISORY COUNCIL

Naval Facilities Engineering Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

January 29, 2024

RE: SCOPING FOR ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT FOR THE UNITED STATES DEPARTMENT OF THE NAVY'S HAWAII CALIFORNIA TRAINING AND TESTING

To Whom it May Concern:

We write to you as the Northwestern Hawaiian Island Coral Reef Ecosystem Reserve Advisory Council (RAC) to provide comments regarding scoping for the United States Department of the Navy's Draft Hawaii-California Training and Testing (HCTT) Environmental Impact Statement/Overseas Environmental Impact Statement. The RAC is an advisory group to the Office of National Marine Sanctuaries consisting of representatives from various stakeholder groups, governmental agencies, and Native Hawaiian representatives. It includes fishing, business, conservation, science, education, and Kupuna interests.

On January 29, 2024, the RAC had a meeting at which time the preparation of the HCTT Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) was discussed.

Full compliance with the National Environmental Policy Act ("NEPA"), 42 U.S.C. 4321 et seq., is vital to ensuring that marine mammals and other marine life are protected from unnecessary harm. As Congress intended when it passed NEPA, the U.S. Navy is required to employ rigorous standards of environmental review, including a comprehensive analysis of all practical alternatives, a full explanation of potential impacts, a reasonable and objective accounting of cumulative impacts, and a thorough description of mitigation measures that will significantly lessen environmental impacts.

The RAC requests the following to be included in a Cumulative Impact Analysis:

- Assessment of the impacts of deep sea mining
- Take of marine mammals by foreign vessels involved in military training
- Assessment of areas where impacts have occurred in the past or are likely to occur to help inform future potential impacts
- Impacts on Native Hawaiian cultural resources and connection to the ocean
- NHPA Section 106 Consultation with Native Hawaiians, see 36 CFR §800.4(c)(1)
- Discussion on marine debris and related impacts such as increased entanglement, and unexploded ordnance removal, including that of all participants included in the exercise

Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve
Reserve Advisory Council

The RAC requests a review of these proposed areas as smaller subdivisions for evaluation. For example, the Southern California area differs from the Hawaiian archipelago in terms of impact and mitigation needed.

These are just a few examples of issues for consideration and reassessment, and are in no way comprehensive.

Thank you for your consideration of this matter. We look forward to receiving detailed information on the EIS.

Sincerely,

Linda Paul
Chair, Reserve Advisory Council

The Council is an advisory body to the Reserve/NOAA Monument superintendent. The opinions and findings of this document do not necessarily reflect the position of the Reserve, the Monument, or the National Oceanic and Atmospheric Administration.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Marine Region
1933 Cliff Drive, Suite 9
Santa Barbara, CA 93109
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

January 29, 2024

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134
www.nepa.navy.mil/hctteis/

**HAWAII-CALIFORNIA TRAINING AND TESTING ACTIVITIES
NOTICE OF INTENT OF A DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT**

Dear HCTT EIS/OEIS Project Manager:

The California Department of Fish and Wildlife (Department) received a Notice of Intent (NOI) of a Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) from the Department of the Navy (Navy) for the Hawaii-California Training and Testing Activities (Project).

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that the Department, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

DEPARTMENT ROLE

The Department is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the state (Fish and Game Code, Section 711.7, subd. [a] & 1802; Public Resources Code, Section 21070; CEQA Guidelines Section 15386, subd. [a]). The Department, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., Section 1802). Similarly for purposes of NEPA, the Department, under its Trustee authority, provides, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources. The Department is also responsible for marine biodiversity protection under the Marine Life Protection Act in coastal marine waters of California and ensuring fisheries are sustainably managed

Conserving California's Wildlife Since 1870

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
January 29, 2024
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under the Marine Life Management Act. Pursuant to our jurisdiction, the Department has the following comments and recommendations regarding the Project.

PROJECT DESCRIPTION SUMMARY

Proponent: Department of the Navy

Objective: The primary objective of the proposed Project is to ensure that U.S. miliary services are able to organize, train, and equip service members and personnel to meet their respective national defense missions in accordance with their Congressionally mandated requirements, and advance joint interoperability in Navy led exercises with other military service. The Navy plans to address environmental impacts associated with ongoing military readiness activities, which include training and research, development, testing and evaluation activities within the Hawaii-California Training and Testing Study Area (Study Area). Proposed training and testing activities may include the use of active sonar, explosives, and other sources of underwater sound. Modernization and sustainment proposals include new special use airspace in Southern California, an expansion of an underwater training range near San Clemente Island, and installation and maintenance of mine training areas off Hawaii and Southern California.

Location: The Study Area consists of the at-sea components of the Hawaii Operating Area (OPAREA) and Temporary OPAREA, the California OPAREA, and the transit corridor connecting the two. This includes areas along the Southern and Central California coastline, including the marine environment around San Nicolas Island, and the Northern California Range Complex. The Study Area also includes in-water areas of San Diego Bay, Port Hueneme, and Pearl Harbor, including select pier side facilities associated with Navy ports and naval shipyards, as well as four amphibious approach lanes along the central coast, providing land access from the Northern California Range Complex and Point Mugu Sea Range.

Timeframe: The NOI did not note when implementation of the Project would go into effect, however, the record for decision on the Final EIS/OEIS is anticipated to occur late 2025.

BIOLOGICAL SIGNIFICANCE

Discussion and Comment: California waters support many resident and migratory fish and special status wildlife, such as seabirds, marine mammals, and sea turtles. The marine and coastal habitats include the sandy seafloor, beaches, kelp forests, estuaries, seagrass meadows, and rocky reef. This variety of habitats provide fish and wildlife with nursery grounds, shelter, and areas to forage and reproduce, supporting the state's coastal economy, including numerous commercial and recreational fisheries.

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
January 29, 2024
Page 3 of 7

COMMENTS AND RECOMMENDATIONS

The Department offers the comments and recommendations below to assist the Navy in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife resources.

Biological Resources within the Area of Potential Effect

1. Include the following discussions from the standpoint of the protection of marine plants and animals:
   a) A complete discussion along with maps and diagrams of the proposed testing areas including all staging areas and access routes.

   b) A range of feasible alternatives to ensure that the proposed testing areas are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive species and their essential habitats and any state or federally listed species. Specific alternative locations should be evaluated in areas with lower biological species or habitat sensitivity compared with the preferred or existing locations.

2. Provide a complete assessment of the flora and fauna within and adjacent to the Study Area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and their habitats. The Draft EIS/OEIS should include the following information:

   a) Information on the regional setting is critical to an assessment of environmental impacts, with special emphasis placed on resources that are rare or unique to the region. Examples include:
      i) Green sea turtles are resident foragers in San Diego Bay (unique to the region).
      ii) California grunion (*Leuresthes tenuis)* spawning grounds and Pismo clam (*Tivela stultorum*) beds are locally and/or regionally unique on central and southern California beaches.
      iii) Southern sea otters (*Enhydra lutris nereis*) are endemic to California's central coast from San Mateo County to Santa Barbara County and San Nicholas Island.

   b) An updated inventory of the biological resources associated with each habitat type on site and within the area of potential explosion or sonar effects. The Department's California Natural Diversity Database (CNDDB) at https://wildlife.ca.gov/Data/CNDDB and Marine BIOS at https://wildlife.ca.gov/Conservation/Marine/GIS/MarineBIOS have publicly available data on previously reported listed, rare or sensitive species or habitats

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
January 29, 2024
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including sensitive marine fish, invertebrates, seabirds, sea turtles, and marine mammal species. The Department is available for any questions on California marine resources and recommends reaching out to other state and federal agencies to obtain additional current information on important California marine resources.

c) Focused species-specific surveys, conducted at the appropriate time of year and time of day when the species are active or otherwise identifiable, are recommended. Acceptable species-specific survey procedures should be developed in consultation with the Department, U.S. Fish and Wildlife Service and the National Marine Fisheries Service. These surveys should include endangered, threatened, sensitive, and locally unique species, including but not limited to the examples stated in 2a.

d) Marine Life Protection Act (MLPA): The Study Area may potentially conflict with the MLPA (Title 14 Section 632), which resulted in the creation of California's existing network of Marine Protected Areas (MPAs) MPAs are named, discrete geographic marine or estuarine areas designed to protect and conserve marine life, habitats, and ecosystems. The Study Area should be searched to determine if it overlaps any MPAs, including State Marine Reserves (SMR), State Marine Conservation Areas (SMCA), State Marine Recreational Management Areas (SMRMA), and State Marine Parks (SMP). A Special Closure (SC) is a unique designation used by the Fish and Game Commission under Title 14 Section 632 and is also part of the MPA network. The Draft EIS/OEIS should include a detailed discussion of what activities are proposed in MPAs.

e) Fully Protected Species: The Department has jurisdiction over fully protected species pursuant to Fish and Game Code Sections 3511,505, 4700, and 5515. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and certain relocation situations. Therefore "take" of any fully protected animal species is prohibited and must be avoided where take is likely. Fully protected marine species that may occur in the testing areas include: the southern sea otter (*Enhydra lutris nereis*), northern elephant seal (*Miroinga angustirostris*), Guadalupe fur seal (*Arctocephalus townsendi*), North Pacific right whale (*Eubalaena japonica*), and the California least tern (*Sterna antillarum browni*). The Department maintains a list of fully protected species that can be found on the Department's web site: https://wildlife.ca.gov/Conservation/Fully-Protected

f) Endangered Species: The California Endangered Species Act (CESA) is a California environmental law that conserves and protects plant and animal species at risk of extinction (Fish and Game Code Section 2050 et seq.). A CESA-listed species, or any part or product of the plant or animal, may not be

Naval Facilities Engineering Systems Command Pacific
Attention: HCTT EIS/OEIS Project Manager
January 29, 2024
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imported into the state, exported out of the state, "taken" (i.e., killed), possessed, purchased, or sold without proper authorization. If the Project may impact CESA listed species, early consultation with the Department is recommended, as modification to the Project and mitigation measures should be incorporated into the Draft EIS/OEIS. Additional information on CESA and CESA-listed species can be found at: https://wildlife.ca.gov/Conservation/CESA.

Analyses of Potential Impacts on Marine Biological Resources

3. Provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures and monitoring programs to offset such impacts. The following should be fully evaluated in the Draft EIS/OEIS:

   a) An analysis and discussion of potential adverse impacts from sonar, explosions, lighting, noise, human activity, exotic species, and oil spills should be included. Mitigation measures and best management practices proposed to alleviate such impacts should be included.

   b) An analysis of potential indirect impacts on biological resources, nearby MPAs, adjacent natural habitats and ecosystems, and wildlife movement/migration areas, including access to undisturbed habitats in adjacent areas.

   c) Testing areas that are within or nearby MPAs may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the Draft EIS/OEIS.

   d) A cumulative sonar and explosive effects analysis should be developed for local populations of marine fish communities, invertebrates, seabirds, sea turtles, and mammals where appropriate. General and specific plans, as well as past, present, and anticipated future plans for testing, should be analyzed relative to their impacts on marine life communities, habitats, and ecosystems.

   e) Long-term fish assemblage monitoring in the nearshore and other marine life communities monitoring are appropriate to detect long term cumulative effects from sonar or detonation testing. An adequate monitoring frequency should be developed to detect changes or trends over time within and adjacent to the testing areas.

   f) A commercial and recreational fisheries analysis that focuses on impacts to both federally and state-managed species and associated habitats should be included. The analysis should include anticipated changes to the fishing fleets' ability to access fishing grounds due to the Project. The Department recommends that the Navy consult the Department, commercial and recreational

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Attention: HCTT EIS/OEIS Project Manager
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fishermen, the National Marine Fisheries Service, the Pacific Fishery Management Council, and relevant data sources such as the California Cooperative Oceanic Fisheries Investigations (CalCOFI) larval fish data sets regarding potential impacts to fisheries from the Project.

Mitigation for Marine Biological Impacts

4. Canopy kelp (*Macrocystis pyrifera*), eelgrass (*Zostera* spp.) beds, and rocky reefs are sensitive marine habitats that occur or may occur in the Project area. These habitats have been designated as habitat areas of particular concern (HAPC) within the Pacific Coast Groundfish Fishery Management Plan under the Magnuson-Stevens Fishery Conservation and Management Act. HAPC, a subset of Essential Fish Habitat, are habitats of special importance to fish populations due to their rarity, vulnerability to development and anthropogenic degradation, and/or ability to provide key ecological functions. Canopy kelp and eelgrass have some of the highest primary productivity in the marine environment and provide a significant contribution to the marine and estuarine food webs. Native eelgrass species create large beds beneficial for fish habitat and have been identified as special aquatic sites and given protections by the Clean Water Act. Additionally, the importance of eelgrass protection and restoration, as well as the marine ecological benefits of eelgrass, is identified in the California Public Resources Code (PRC §35630). The Department uses the California Eelgrass Mitigation Policy (CEMP) (NOAA 2014), developed by the National Marine Fisheries Service (NMFS), for guidance on identifying eelgrass impacts, eelgrass mitigation measures and compensation, and for identifying appropriate eelgrass mitigation and donor sites. The proposed Project's plans and activities should avoid and minimize potential impacts to sensitive marine habitats, including canopy kelp, eelgrass beds, and rocky reefs, to the greatest extent possible. The Draft EIS/OEIS should include measures to fully avoid and otherwise protect regionally rare marine life communities and their habitats and MPAs from testing related impacts. The Department considers these habitats as having both regional and local importance.

5. The Draft EIS/OEIS should include mitigation measures for adverse impacts to sensitive marine plants, animals, and habitats. Mitigation measures should emphasize avoidance and minimization (reduced frequencies) of testing impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If compensation is not feasible or would not be biologically viable, and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be considered and discussed.

6. For proposed preservation and/or restoration, the Draft EIS/OEIS should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the habitat's qualitative or

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quantitative losses of marine water or bottom habitat values. Issues that should be addressed include restrictions on access, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

CONCLUSION

The Department appreciates the opportunity to comment on the NOI to assist the Navy in identifying and mitigating Project impacts on biological resources. Questions regarding this letter or further coordination should be directed to Leslie Hart and Amanda Canepa, Environmental Scientists at R7CEQA@wildlife.ca.gov.

Sincerely,

Becky Ota

Becky Ota
Habitat Conservation Program Manager
Marine Region

ec: Becky Ota, Program Manager
Department of Fish and Wildlife

Eric Wilkins, Senior Environmental Scientist
Department of Fish and Wildlife

Office of Planning and Research, State Clearinghouse
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STATE OF HAWAIʻI
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAIʻI 96817

January 22, 2024

Naval Facilities Engineering Systems Command Pacific
ATTN: HCTT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Re: Notice of Intent to Prepare an EIS/Overseas EIS (NEPA)
Hawaiʻi-California Training and Testing Study Area

Aloha:

The Office of Hawaiian Affairs (OHA) is in receipt of your Notice of Intent (NOI) December 7, 2024, letter seeking comments on the scope of the Department of the Navy (DON) Hawaiʻi-California Training and Testing (HCTT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS) to assess potential environmental effects associated with the proposed action to conduct at-sea military readiness activities within the HCTT study area. The United States (U.S.) DON will be preparing this EIS/OEIS in accordance with the National Environmental Protection Act (NEPA). The NOI states that the current proposed activities are similar in scope to what was assessed in the 2018 HCTT EIS/OEIS. Thus, the new EIS/OEIS is characterized as a "follow on" NEPA analysis to support renewal of current Federal regulatory permits and authorizations that expire in December of 2025.

Proposed activities include training and research (i.e., sonar, explosives, and other underwater sounds), development, testing, and evaluation within the Hawaii Operating Area, the California Operating Area, and the Pacific Ocean transit corridor connecting the two. The DON further proposes to modernize and sustain its ranges in a manner to support these readiness activities. This will include new special use airspace in Southern California, an expansion of an underwater training range near San Clemente Island, and installation and maintenance of mine training areas off Hawaiʻi and Southern California.

The OHA is the constitutionally established body responsible for protecting and promoting the rights of Native Hawaiians.[1] OHA has substantive obligations to protect the cultural and natural resources of Hawaiʻi for its beneficiaries.[2] Accordingly, OHA is

[1] Haw. Const. Art. XII Sec. 5.
[2] See HRS § 10.

required to (1) serve as principal public agency in the State of Hawaiʻi responsible for the performance, development and coordination of programs and activities relating to native Hawaiians and Hawaiians; (2) assess the policies and practices of other agencies impacting native Hawaiians and Hawaiians; and (3) conduct advocacy efforts for native Hawaiians and Hawaiians.[3]

OHA provides the following comments pertaining updated studies, marine sanctuaries, incidental take, cumulative impacts, and consultation planning:

Updated Studies

In review of the 2018 EIS/OEIS, OHA observes that most of the studies pertaining to marine mammal populations and migratory patterns relied on studies that took place between 2011 to 2015. Section 3.7 details that the information was used to determine seasonal mitigation areas that were developed in coordination with the National Marine Fisheries Service. The section further mentions that "Navy funded efforts" as being underway to further improve understanding and ability to predict how stressors ultimately effect marine mammal populations. OHA is further aware that the DON applied to increase the incidental take of large whales from 3 to 5 per year in 2021.

OHA would expect that the most up-to-date studies will be used in the forthcoming draft EIS/OEIS, with a clear discussion on how the DON's understanding of populations and migrations have changed (or not) since publication of the 2018 EIS/OEIS. With a projected publication of a draft EIS/OEIS in 2024, some of the studies referenced in the 2018 EIS/OEIS would be a decade old or more. The draft EIS/OEIS should further provide updates on the mentioned "Navy funded efforts" in the 2018 EIS/OEIS and share how such information has changed (or not) the DON's understanding and ability to predict how stressors effect marine mammal populations. While OHA specifically calls out examples pertaining to marine mammal population studies, our comment should be applicable to any study referenced as part of the assessment of impacts to all environmental components. In other words, the DON should always be using the most up to date information as possible and consistently provide discussion on how conditions and subsequent mitigation measures have changed (or not) or will change (or not).

Marine Sanctuaries

In the Culture Resources discussion, Section 3.10, of the 2018 EIS/OEIS, OHA observes that Papahānaumokuākea is actually discussed as a World Heritage Site within the context of National Historic Preservation Act Section (NHPA) 106 compliance. The monument was described as being within the Temporary Operating Area of the Hawaiʻi Range Complex and that it could be susceptible to sonic booms or utilized for emergency situations. However, an emphasis was placed on the fact that no actual physical activities

[3] HRS § 10-3.

would occur in the monument area (unless there was an emergency), and that any possible impacts to cultural voyaging or wayfinding would be temporary. OHA believes the DON should reasonably disclose what qualifies as an emergency and what actions could occur in Papahānaumokuākea or any marine sanctuary as part of the NEPA process.

OHA does appreciate inclusion of the Papahānaumokuākea monument within the discussion of NHPA Section 106 compliance given the area's cultural importance and presence of numerous historic properties. However, we do question why other marine sanctuaries with similar characteristics within both the Hawaiʻi operating area (HOA) and California operating area (COA) were omitted. For example, both the South Molokai Reef and the Hawaiian Islands Humpback Whale National Marine Sanctuary are within the HOA. Notably, the South Molokai Reef has been described as a national treasure and is currently home to a number of historic fishponds. Further, it is believed to be sacred to Hina, the Hawaiian akua of the Moon. In regards to the COA, the Channel Islands National Marine Sanctuary exists off the coast of Southern California, which also hosts a number of cultural resources that are important to the Chumash tribe.[4] If not already done so, the Chumash, Pomo, Ohlone, Makah, and any other Pacific Coast tribes should be invited to consult as part of NEPA and NHPA processes. These sanctuaries should be included as part of the NEPA analysis and NHPA discussion as they are comprised of historic and cultural resources.

OHA further advises that these sanctuaries be evaluated as traditional cultural properties (TCP). Per the National Park Service's National Register Bulletin No. 38, a TCP is defined as:

> "A property that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identify of the community."

In specific regards to Papahānaumokuākea, it is a sacred place to Native Hawaiians that supports a diversity of life, including hundreds of native species and the largest extent of coral reefs in the archipelago.[5] The ancient belief system of Hawaiʻi still exists and acknowledges the island of Mokumanamana[3] as the potent portal that presides at the boundary between pō and ao. This boundary is the northern limit of the sun's journey on the horizon, the Tropic of Cancer, reverently referred to as Ke Alanui Polohiwa a Kāne, the dark glistening path of Kāne, whose kinolau as Kānehoalani details the sun and its movements on the horizon. Nihoa and Mokumanamana collectively contain more than 140 archaeological sites that evince the unique agricultural, religious, and settlement efforts

[4] The Channel Islands National Marine Sanctuary has a Chumash community working group informing its sanctuary advisory council.
[5] See Mai Ka Po Mai, A Native Hawaiian Guidance Document for the Management of Papahānaumokuākea Marine National Monument, prepared by OHA in 2021.

of Native Hawaiians in this region. There is no question that Papahānaumokuākea would qualify as a TCP.

Similarly, its OHA's understanding that the other sanctuaries within the HOA and COA are utilized by cultural practitioners and contain numerous historic and cultural resources; thus, we do not see why these sanctuaries would not at least be considered as eligible for the National Register of Historic Places as TCPs as well.

Incidental Take

As mentioned above in our first comment, the DON had to increase their take of large whales due to incidences in 2021 in which two separate Navy vessels struck whales off the coast of Southern California in June and July. Separately, a foreign vessel struck two fin whales off the coast earlier in May 2021. Originally, the National Oceanic and Atmospheric Administration (NOAA) issued a take of 3 large whales per year, but had to increase this authorization to 2 additional whales per year for DON activities spanning 2018 to 2025.

To Hawaiians, whales are the largest ocean manifestation of the Hawaiian akua (god), Kanaloa – akua of the ocean realm, voyaging, ocean animals, and fresh underground water.[6] Some of his other forms or kinolau are known to include the nihui (white shark), heʻe (octopus), hihimanu (sting ray), honu (turtle), and naiʻa (dolphin). Kanaloa is one of the four major akua kāne (male gods) – Kāne, Kanaloa, Kū, and Lono. He is arguably the most common deity across Oceania with various names (e.g., Tangaroa, Takaroa, Tagaloa, Taʻaroa). Kanaloa was the creator of the world and superior god in many parts of Polynesia (e.g., Marquesas, New Zealand) except Hawaiʻi.[7] While not viewed as prominent throughout all of Hawaiʻi, it is believed that Kanaloa's importance was more pronounced on Lanai, Molokai, Maui, and Kahoʻolawe. Coincidentally, these islands are also the same islands in which whales were found in significant numbers during the mid to late 19th century.[8]

Further alarming to OHA is the current incidental take authorization issued by NOAA that allows a cumulative take in the thousands of marine mammal species. According to a complaint filed by Earth Justice in December 2013,[9] "National Marine

[6] See Libo, Susan A. 2010. *A Local Perspective of Hawaii's Whaling Economy: Whale Traditions and Government Regulation of the Kingdom's Native Seamen and Whale Fishery.* Bishop Museum, Honolulu, Hawaii.

[7] See McKinzie, edit. N.D. N *a Moʻi o Kahoʻolawe: The Administrators of Kahoʻolawe.* Kahoʻolawe Island Conveyance Commission, Consultant Report No. 15.

[8] See Herman, Louis. 1979. Humpback Whales in Hawaiian Waters: A Study in Historical Ecology. *Pacific Science, Vol 33, No 1.* University Press of Hawaii.

[9] Sese Conservation Council for Hawaiʻi, ä non-profit corporation Animal Welfare Institute, a non-profit corporation; Center for Biological Diversity, a non-profit corporation; and Ocean Mammal Institute, a non-profit corporation, v. National Marine Fisheries Service; United States Department of Commerce; Penny Prtizker, Secretary of Commerce.

Fisheries determined that, over the next five years, the Navy's use of sonar, other active acoustic sources and explosives for training and testing in the [Hawai'i-Southern California Training and Testing] HSTT Study Area will likely result in the deaths of up to 140 marine mammals, cause permanent injury to more than 2,000 additional marine mammals, and inflict additional harm to marine mammals nearly 9.6 million times by disrupting vital behaviors such as migration, nursing, breeding, feeding, and sheltering." The take of Kanaloa is overwhelming.

OHA expects the matter pertaining to the DON's request for an increase in incidental take to be fully discussed within the EIS/OEIS as well as resolution on any filed complaints related to incidental take. The most up to date studies should be used to provide the most accurate incidental take request going forward. All efforts should be made to minimize take as much as possible, with a clear indication in the EIS/OEIS of how this is demonstrated. While administratively another incidental take could be requested if projected numbers are off again, this is not a preferable outcome nor a means to instill trust in the DON's research and modeling. As the kinolau of one of our akua, the DON must take more care to honor their commitments to not take more than is needed from Kanaloa.

Cumulative Impacts

OHA recommends that the DON's consideration of the cumulative impacts at a minimum must consider activities that are of an extraction nature (i.e., deep-sea mining) and that would further frustrate any kind of recovery and protection such as the following: the longliner fishing fleets (foreign and domestic) that harbor in Honolulu; the Aquarium Trade as it is extractive and effects near shore ocean life; and, Rim of the Pacific Exercise (RIMPAC) and other related exercises that occur by any of the other armed forces operating in Hawaiian waters and or on land that impact our fresh water and ocean systems. By cumulative, OHA specifically means the cumulative impact on any and all lifeforms, sacred places and spaces, and the health and wellbeing of all natural and cultural resources that will be affected by the DON's proposed training activities and modernization efforts.

In review of the 2018 EIS/OEIS, Table 4.2-1, activities like the aquarium trade, foreseeable future deep-sea mining activities[10], and annual RIMPAC activities do not appear to be acknowledged as a source of possible cumulative impacts. While commercial fishing is discussed, a greater level of specificity should be included to directly address longliner fishing, both from foreign and domestic parties.

The 2018 EIS/OEIS further mentions that the "quality" of information on past, present and reasonably foreseeable actions varies and that quantifications were done where possible. In the absence of quantitative data, a "qualitative assessment" was made by "professional judgement and experience." The document appears to concede that given the large-scale study area, that "analysis of the incremental contribution of cumulative

[10] Canadian based "The Metals Company" planned operations in the Clarion-Clipperton Zone and Honolulu Harbor.

stress that the proposed action may have on a given resources is largely qualitative and speculative." OHA finds this situation unfortunate as essentially DON training activities are continuing without solid quantitative analysis and potentially without appropriate mitigations. Minimally, the DON should indicate in the document, especially in regards to cumulative impacts, where quantitative data is used versus qualitative. If findings and information are speculative, then the DON must call out where such speculation exists. The DON should then indicate ways in which quantitative and non-speculative data can be obtained through additional research or a means of appropriate monitoring actions.

Further, it should be made clear to the reader how follow up research data and monitoring mechanisms can or could trigger amendments to existing mitigation measures. OHA would expect this to include a statement on what Federal processes and respective timelines would be triggered to incorporate new data and proposed mitigation measures.

Consultation Planning

The DON may want to craft an actual NEPA public participation plan as an optional tool pursuant to 32 CFR 775.11 as a means to set protocols (i.e., meeting minutes/notes, comment periods, speaking time allocations, engagement with Indigenous Peoples). All prior consulting parties that participated in the 2018 EIS/OEIS should serve as the starting pointing for current outreach efforts. As the 2018 EIS/OEIS was a very long document (in excess of 2000 pages), a longer comment period should be allotted for the current EIS/OEIS. 40 CFR 1506(d) requires a minimum comment period of 45 days, but subsection (e) goes on to state that the minimum comment period may be shortened or extended. The DON should consider a 60-day comment period in this case.

In regards to public meetings and consultation events, OHA recommends that minimally 30-day's notice be provided. As a means to assist the DON, OHA could be provided with advance notice of any such meetings so that we can plan to disseminate information via our monthly newspaper, *Ka Wai Ola*, and online social media outlets. This may assist with outreach to the Native Hawaiian community. Any public engagement meetings or consultations should allow speakers to speak on topics for at least 5 to 10 minutes given the voluminous amount of information that the EIS/OEIS will cover. Previously, OHA received concerns about speakers allegedly being only allotted 3 minutes of time during consultations for the 2018 EIS/OEIS.

OHA further notes that in November 2022, a memorandum was issued by the Executive Office of the President, Council on Environmental Quality, providing guidance to Federal departments and agencies on Indigenous Knowledges. Notably, this includes guidance on inclusion of such knowledge in the NEPA and NHPA processes, encouragement of early and sustained engagement, maintaining trust, and even developing an "Indigenous Knowledge Plan". Indeed, a public participation plan could include a robust Indigenous Knowledge component that specifically incorporates guidance from the CEQ November 2022 memo.

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January 22, 2024
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Closing Remarks

OHA looks forward to seeing our comments taken into consideration as the HCTT EIS/OEIS is being prepared. Mahalo for the opportunity to comment. Should you have any questions, please contact OHA's Lead Compliance Specialist, Kamakana C. Ferreira at (808) 594-0227 or by email at kamakanaf@oha.org.

ʻO wau iho nō me ka ʻoia ʻiʻo,

Stacy Ferreira
Ka Pouhana, Chief Executive Officer

SF:kf

CC: Carmen Hulu Lindsey, OHA Board of Trustees Chairperson

Appendix M Federal Register Notices

Environmental Impact Statement/

Overseas Environmental Impact Statement

Hawaii-California Training and Testing

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APPENDIX M FEDERAL REGISTER NOTICES

M.1 NOTICE OF INTENT TO PREPARE AN EIS/OEIS

Federal Register / Vol. 88, No. 240 / Friday, December 15, 2023 / Notices 86885

Republic of Singapore Air Force (RSAF) F–15 fighter aircraft and constructing proposed infrastructure upgrades at Andersen AFB. The beddown of 12 RSAF F–15 fighter aircraft is in addition to what was previously proposed.

DATES: A public scoping period of 30 days, to update the public on changes to the DAF's proposal that have occurred since the original scoping period ended on May 30, 2021, will take place starting from the date of this NOI publication in the **Federal Register**. Comments will be accepted at any time during the environmental impact analysis process; however, to ensure the DAF has sufficient time to consider public scoping comments during preparation of the Draft EIS, please submit comments within the 30-day scoping period. The Draft EIS is anticipated mid-2024. The Final EIS and a decision on the Proposed Action are expected in early to mid-2025.

ADDRESSES: For EIS inquires or requests for printed or digital copies of scoping materials, please contact Mr. David Martin, phone: (210) 925–4266 or *david.martin.127@us.af.mil,* or postal address provided below. The project website (*www.AAFBInfraandF15EIS.com*) provides additional information on the EIS and can be used to submit scoping comments. Scoping comments may also be submitted via postal mail to 36th Civil Engineer Squadron, ATTN: CEV (AAFB F–15 and Infrastructure EIS), Unit 14007, APO, AP 96543–4007. For printed material requests, the standard U.S. Postal Service shipping timeline will apply. Please consider the environment before requesting printed material.

SUPPLEMENTARY INFORMATION: The DAF is proposing to beddown and support the mission of 12 RSAF F–15 fighter aircraft, and construct infrastructure upgrades at Andersen AFB, Guam. Following the initial scoping period conducted in April to May 2021 (86 FR 20487, April 20, 2021), the DAF placed the EIS on a strategic pause to further consider the scope of the EIS, including the requirements of evolving strategic initiatives in the Indo-Pacific region and how the Proposed Action could best support these initiatives. As a result of the strategic pause, the DAF revised the scope of the Proposed Action to include the beddown of 12 RSAF F–15 fighter aircraft and associated mission support. The purpose of the Proposed Action is to provide critical infrastructure that enhances U.S. posture west of the International Date Line. Additionally, the purpose of the Proposed Action is to beddown and operate Republic of Singapore Air Force fighter aircraft at Andersen AFB to support training requirements. The Proposed Action is needed to enhance DAF capability to support U.S. and partner nation forces within the Indo-Pacific region and strengthen the U.S.'s ability to respond regionally and worldwide, through construction of infrastructure upgrades and increased support of fighter aircraft, in alignment with evolving DAF and DoD strategies and initiatives for the region. Increasing and improving airfield and munitions infrastructure would address capability gaps and allow for greater efficiencies and agility in the way ground operations are conducted. The DAF is the National Environmental Policy Act (NEPA) lead agency, and the U.S. Navy is a cooperating agency for this EIS process.

Under this proposal, the DAF is considering the beddown and mission support of 12 RSAF F–15 fighter aircraft, increase in annual airfield operations, increase in personnel to support the mission, and new infrastructure upgrades adjacent to the northwest corner of the airfield and within the munitions storage area at Andersen AFB. Construction would take place over approximately 3 to 7 years and would include airfield pavements, an aircraft hangar, maintenance and utilities buildings, fuel systems, fencing and utilities, roadways and parking, stormwater management infrastructure, and earth covered magazines. Approximately 209 total acres would be disturbed during construction, which would be either developed sites or maintained vegetation once construction is complete. The proposed infrastructure has multiple uses and could support both the RSAF F–15 beddown and other DAF, service component, and partner nation aircraft or missions operating from Andersen AFB now or in the future. The DAF reviewed requirements for strategic capabilities within the Indo-Pacific region and identified Andersen AFB for enhanced capabilities, including beddown of 12 RSAF F–15 aircraft and upgrade of operationally relevant infrastructure, dismissing five other potential alternative locations within the Pacific Air Forces area of responsibility from consideration. Once Andersen AFB was identified for enhanced strategic capabilities, the DAF considered other locations on Andersen AFB for construction of infrastructure upgrades; however, only the Proposed Action locations were determined to meet the criteria for the infrastructure upgrades. The No Action Alternative will also be addressed in the EIS.

Additional review and consultation which will be incorporated into the preparation of the Draft EIS will include, but are not necessarily limited to, consultation under Section 7 of the Endangered Species Act and consultation under Section 106 of the National Historic Preservation Act. The DAF will conduct cultural and natural resources surveys in the areas proposed for upgrades and consult with appropriate resource agencies to determine the potential for significant impacts on those resources. The Draft EIS will present the analysis of the potential effects of the Proposed Action and alternatives, which may include effects on historic properties, sensitive species or habitat, socioeconomics, and the noise environment among other currently unknown potential effects. Any required permits or authorizations will be determined through the EIS analysis process and presented in the Draft EIS.

Scoping and Agency Coordination: To effectively define the full range of issues to be evaluated in the EIS, the DAF is soliciting comments from interested local, territorial, and federal elected officials and agencies, as well as interested members of the public and other stakeholders. Comments are requested on potential alternatives and impacts, and identification of any relevant information, studies, or analyses of any kind concerning impacts affecting the quality of the human environment. Concurrent with the publication of this Notice of Intent, public scoping notices will be announced locally. Public scoping updates will be accomplished via the project website at *www.AAFBInfraandF15EIS.com.* The website provides posters, an informational brochure, and other scoping materials, and the capability for the public to provide public scoping comments.

Tommy W. Lee,
Acting Air Force Federal Liaison Officer.

[FR Doc. 2023–27166 Filed 12–14–23; 8:45 am]
BILLING CODE 5001–10–P

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Intent To Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for Hawaii-California Training and Testing Activities

AGENCY: Department of the Navy (DoN), Department of Defense (DoD).

86886 Federal Register / Vol. 88, No. 240 / Friday, December 15, 2023 / Notices

ACTION: Notice.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, and regulations implemented by the Council on Environmental Quality, the Department of the Navy (DoN)(including both the U.S. Navy and the U.S. Marine Corps) in cooperation with the U.S. Coast Guard, U.S. Army, and U.S. Air Force, announces its intent to prepare the Hawaii-California Training and Testing (HCTT) Environmental Impact Statement (EIS)/ Overseas EIS (OEIS). The HCTT EIS/ OEIS will include an analysis of range sustainment and modernization activities, training activities; and research, development, testing, and evaluation activities (hereafter referred to as "testing") that will be conducted in the HCTT Study Area. When discussed together, training and testing are also referred to as "military readiness activities." The DoN is initiating a 45-day public scoping process to receive comments on the scope of the EIS/OEIS including identification of potential alternatives and environmental concerns, information and analyses relevant to the Proposed Action, issues the public would like to see addressed in the EIS/ OEIS, and the project's potential to affect historic properties pursuant to section 106 of the National Historic Preservation Act (NHPA) of 1966.

DATES: The 45-day public scoping period begins on December 15, 2023, and extends to January 29, 2024. The scoping period is extended 15 calendar days (from the usual 30-day period) since it overlaps with the holidays. Comments must be postmarked or submitted electronically via the website no later than 11:59 p.m. Pacific time on January 29, 2024 for consideration in the Draft EIS/OEIS. The DoN will host a virtual open house presentation on the project website during the scoping period to provide information related to the Proposed Action, its purpose and need, environmental resource areas to be analyzed in the EIS/OEIS, the NEPA process, the consultation under NHPA, and public involvement opportunities.

ADDRESSES: The DoN invites all interested parties to submit scoping comments on the EIS/OEIS or information regarding historic properties or section 106 consulting party interest through the project website at *http://www.nepa.navy.mil/hctteis* or by mail to: Naval Facilities Engineering Systems Command, Pacific, Attention: HCTT EIS/OEIS Project Manager, 258 Makalapa Drive, Suite 100, Pearl Harbor, HI 96860–3134.

FOR FURTHER INFORMATION CONTACT: U.S. Pacific Fleet Command, Attn: Mr. Sean Gano, Environmental Public Affairs Specialist, 808–474–8441, or visit the project website: *http://www.nepa.navy.mil/hctteis.*

SUPPLEMENTARY INFORMATION: Commander, U.S. Pacific Fleet is the DoN's lead action proponent. Additional DoN action proponents include Naval Sea Systems Command, Naval Air Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, Naval Facilities Engineering Expeditionary Warfare Center, and the U.S. Marine Corps (USMC). In addition, this EIS/ OEIS includes certain activities by the U.S. Coast Guard, U.S. Army, and U.S. Air Force when those activities are similar to Navy or Marine Corps activities and are scheduled on Navy controlled at-sea ranges.

Proposed military readiness activities are consistent with those analyzed in the 2018 Hawaii-Southern California Training and Testing (HSTT) EIS/OEIS and the 2022 Point Mugu Sea Range (PMSR) EIS/OEIS, and are representative of training and testing activities that have been conducted off Hawaii and California for more than 80 years.

The EIS/OEIS will include an analysis of military readiness activities using new information including an updated acoustic effects analysis, updated marine mammal density data, and evolving and emergent best available science.

The HCTT Study Area (hereafter referred to as the ("Study Area") is comprised of established operating and warning areas across the Pacific Ocean, from California west to Hawaii and the International Date Line. The HCTT Study Area differs from the HSTT Study Area in that HCTT includes an extended Southern California (SOCAL) Range Complex; special use airspace corresponding to the new extensions (Proposed W–293 and W–294); two existing training and testing ranges, the PMSR and Northern California (NOCAL) Range Complex; areas along the Southern California coastline from approximately Dana Point to Port Hueneme; and four amphibious approach lanes providing land access from the NOCAL Range Complex and PMSR. The Study Area also includes in-water areas of San Diego Bay, Port Hueneme, and Pearl Harbor, including select pierside facilities associated with DoN ports and naval shipyards and a transit corridor on the high seas and the channels and routes to and from those ports that are not part of the range complexes, where training and testing may occur during vessel transit.

The purpose of the Proposed Action is to ensure U.S. military services are able to organize, train, and equip service members and personnel to meet their respective national defense missions in accordance with their Congressionally mandated requirements [1] and advance joint interoperability in Navy led exercises with other military service.

The Proposed Action is to conduct at-sea military readiness activities and range modernization within HCTT the Study Area. Activities include the use of active sonar and explosives while employing marine species protective mitigation measures.

The Navy has identified two preliminary action alternatives to carry forward for analysis in the EIS/OEIS along with the No Action Alternative. Alternative 1 reflects a representative year of training and testing to account for the natural fluctuation of training cycles and deployment schedules that generally limit the maximum level of training occurring every year over any seven-year period. Alternative 2 reflects the maximum number of training and testing activities that could occur within a given year and assumes that the maximum level of activity would occur every year over any seven-year period. As required by NEPA for the purpose of establishing a baseline for analysis, a No Action Alternative will be evaluated which represents a scenario where no military readiness activities are conducted in the Study Area. The tempo and types of training and testing activities have fluctuated because of the introduction of new technologies, the evolving nature of international events, advances in war fighting doctrine and procedures, and changes in force structure (organization of ships, submarines, aircraft, weapons, and Sailors). Such developments influence the frequency, duration, intensity, and location of required training and testing activities. The HCTT EIS/OEIS will reflect the current compilation of training and testing activities required to fulfill the military readiness requirements, and therefore both action alternatives include the analysis of newly proposed activities and changes to previously analyzed activities. Additionally, both action alternatives will include modernization and sustainment of ranges necessary to support military readiness activities. Modernization and sustainment

[1] 10 United States Code (U.S.C.), sections 8062 (Navy), 8063 (USMC), 7062 (U.S. Army), 9062 (U.S. Air Force) and 14 U.S.C., sections 101 and 102 (USCG).

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proposals include new special use airspace in Southern California, an expansion of an underwater training range near San Clemente Island, and installation and maintenance of mine training areas off Hawaii and California.

Environmental resources that are determined to be potentially affected are carried forward for full analysis. Resources to be evaluated include, but are not limited to, biological resources (including marine mammals, reptiles, fishes, vegetation, invertebrates, habitats, birds, and other protected species), sediments and water quality, air quality, cultural resources, socioeconomic resources, and public health and safety. The EIS/OEIS will also analyze measures that would avoid, minimize, or mitigate environmental effects. The Navy will conduct all coordination and consultation activities required by the Marine Mammal Protection Act (MMPA), NHPA, Endangered Species Act (ESA), National Marine Sanctuaries Act, Magnuson-Stevens Fishery Conservation and Management Act, Clean Water Act, Rivers and Harbor Act, Coastal Zone Management Act, Clean Air Act, and other laws and regulations determined to be applicable to the project. As part of this process, the DoN will seek the issuance of regulatory permits and authorizations under MMPA and ESA to support at-sea mission readiness activities within the Study Area, beginning in December 2025.

Pursuant to 40 CFR 1501.8, the DoN invited the National Marine Fisheries Service and the Federal Aviation Administration to be cooperating agencies in preparation of the EIS/OEIS.

The scoping process invites comments on the scope of the EIS/OEIS including identification of potential alternatives, information and analyses relevant to the Proposed Action, identification of environmental concerns, issues the public would like to see addressed in the EIS/OEIS, and the projects potential to affect historic properties pursuant to Section 106 of the NHPA. Parties with demonstrated interest in the undertaking and its effects on historic properties may request to become a consulting party in the section 106 process. Federal agencies, State agencies, local agencies, Native American Indian Tribes and Nations, Native Hawaiian Organizations, the public, and interested persons are encouraged to provide comments.

Comments must be postmarked or submitted electronically via the website no later than 11:59 p.m. Pacific time on January 29, 2024 for consideration during the development of the Draft EIS/OEIS. Comments can be submitted electronically via the project website at *http://www.nepa.navy.mil/hctteis* or mailed to the address noted above.

After the scoping period, DoN will coordinate with participating and cooperating agencies to develop a Draft EIS/OEIS. The DoN intends to release the Draft EIS/OEIS in the fall of 2024, release the Final EIS/OEIS in the fall of 2025, and sign a Record of Decision following the 30-day Final EIS/OEIS wait period.

Dated: December 4, 2023.

J.E. Koningisor,

Lieutenant Commander, Judge Advocate General's Corps, U.S. Navy, Federal Register Liaison Officer.

[FR Doc. 2023–26905 Filed 12–14–23; 8:45 am]

BILLING CODE 3810–FF–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2023–SCC–0212]

Agency Information Collection Activities; Comment Request; U.S. Department of Education Grant Performance Report Form (ED 524B)

AGENCY: Office of Finance and Operations (OFO), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act (PRA) of 1995, the Department is proposing a revision of a currently approved information collection request (ICR).

DATES: Interested persons are invited to submit comments on or before February 13, 2024.

ADDRESSES: To access and review all the documents related to the information collection listed in this notice, please use *https://www.regulations.gov* by searching the Docket ID number ED–2023–SCC–0212. Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting the Docket ID number or via postal mail, commercial delivery, or hand delivery. If the regulations.gov site is not available to the public for any reason, the Department will temporarily accept comments at *ICDocketMgr@ed.gov.* Please include the docket ID number and the title of the information collection request when requesting documents or submitting comments. Please note that comments submitted after the comment period will not be accepted. Written requests for information or comments submitted by postal mail or delivery should be addressed to the Manager of the Strategic Collections and Clearance Governance and Strategy Division, U.S. Department of Education, 400 Maryland Ave. SW, LBJ, Room 6W203, Washington, DC 20202–8240.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Cleveland Knight, 202–987–0064.

SUPPLEMENTARY INFORMATION: The Department, in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. The Department is soliciting comments on the proposed information collection request (ICR) that is described below. The Department is especially interested in public comment addressing the following issues: (1) is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: U.S. Department of Education Grant Performance Report Form (ED 524B).

OMB Control Number: 1894–0003.

Type of Review: Revision of a currently approved ICR.

Respondents/Affected Public: State, Local, and Tribal Governments.

Total Estimated Number of Annual Responses: 13,300.

Total Estimated Number of Annual Burden Hours: 297,800.

Abstract: The ED 524B form and instructions are used by many ED discretionary grant programs to enable grantees to meet ED deadline dates for submission of performance reports to the Department.

As an interim (usually annual) performance report, ED uses the information submitted by grantees in the ED 524B to evaluate grantee performance and progress and to

Appendix N List of Preparers

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There are no figures in this section.

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