

**ENVIRONMENTAL ASSESSMENT
FOR
NAVAL SPECIAL WARFARE CENTER
DETACHMENT KODIAK,
COLD WEATHER MARITIME TRAINING,
KODIAK, ALASKA**

DRAFT ENVIRONMENTAL ASSESSMENT



MARCH 2015

FINAL ENVIRONMENTAL ASSESSMENT

KODIAK ISLAND COLD WEATHER MARITIME TRAINING

Lead Agency: Commander, Naval Special Warfare Command

Title of the Proposed Action: Naval Special Warfare Center Detachment Kodiak,
Cold Weather Maritime Training, Kodiak, Alaska

Affected Jurisdiction: Kodiak Island Borough, Kodiak, Alaska

Designation: Environmental Assessment

Abstract

This Environmental Assessment (EA) has been prepared to analyze potential environmental impacts of current and future Special Operations Forces (SOF) cold weather maritime training activities on and around Kodiak Island, Alaska, to include the adjacent near-shore water areas. The purpose of the Proposed Action is to sustain current training and support advanced Naval Special Warfare (NSW) and United States Special Operations Command (USSOCOM) component training in cold weather land and maritime environments. The Proposed Action is needed to maintain operational requirements under 10 United States Code §5062 to provide combat-ready, forward deployed forces. The Naval Special Warfare Center, Detachment Kodiak provides five to seven cold weather maritime training classes to 300–400 students annually. It also supports tailored equivalent cold weather maritime training for other NSW teams and USSOCOM units, as available. Four alternatives have been carried forward for analysis in this EA. Under the No Action Alternative, the baseline training activities, as accomplished at Kodiak Island over the past decade, would continue at the same level and in the same locations within the Training Study Area as currently conducted. Under Alternative 1, cold weather maritime training activities would increase by one class per training activity and approximately 20 students for each added NSW team or USSOCOM training. The increase in activities results from increased Navy requirements and for the addition of emergent USSOCOM requirements. Under Alternative 2, the baseline training activities, as conducted at Kodiak Island over the past decade, would continue at the same level, with approximately the same student class sizes. Training would occur in the same historically used locations and would also utilize added locations within the Training Study Area that provide additional opportunities to support specific training requirements. Under Alternative 3 (The Preferred Alternative), both the increased training tempo of Alternative 1 and Alternative 2's additional locations within the Training Study Area are combined to meet current and near-term cold weather maritime training requirements for NSW and other USSOCOM units. A thorough analysis of environmental resources determined that implementation of any of the alternatives would result in no significant impact on or harm to public health and safety, marine and terrestrial resources, cultural resources, regional economy, and recreation.

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EXECUTIVE SUMMARY

The United States (U.S.) Department of the Navy (Navy), Commander, Naval Special Warfare Command, prepared this Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (Title 40 Code of Federal Regulations [C.F.R.] Parts 1500–1508), and Department of the Navy Procedures for Implementing NEPA (32 C.F.R. Part 775). This EA satisfies the requirements of NEPA.

This EA analyzes the potential environmental effects of current and future Special Operations Forces (SOF) cold weather maritime training activities on and around Kodiak Island, Alaska, to include the adjacent near-shore water areas. The cold weather maritime training activities analyzed in this EA are predominately for the advanced overland and maritime cold weather training of students of the Naval Special Warfare Center (NSWCEN) Detachment Kodiak (Det Kodiak). Additional cold weather maritime training is provided on demand for units of the Naval Special Warfare Command (NSWC) and other U.S. Special Operations Command (USSOCOM) components consisting of SOF from U.S. Army Special Operations Command, Marine Corps Special Operations Command, Air Force Special Operations Command, and Joint Special Operations Command. Training activities covered in this EA include classroom training at the NSWCEN Det Kodiak “Spruce Cape Compound,” located on 130 acres (ac.) of land managed by U.S. Coast Guard (USCG) Base Kodiak. Training activities also include in-the-field training at various sites on and around Kodiak Island.

The nature and scope of the Proposed Action involving the continued cold weather maritime training of Naval Special Warfare (NSW) and USSOCOM students at NSWCEN Det Kodiak requires the participation of the USCG as a cooperating agency under the provisions of 40 C.F.R. 1501.5. Pursuant to 40 C.F.R. 1501.4(e), the Draft EA will be provided for public review for 30 days.

BACKGROUND

Kodiak Island is located approximately 250 miles southwest of Anchorage, Alaska. The NSWCEN Det Kodiak is located at Spruce Cape on the USCG Base Kodiak at the northeast tip of Kodiak Island near the City of Kodiak. In 2001, NSWC and the USCG entered into a 20-year interagency permit, under which the USCG granted NSWCEN permission to use the 130 ac. Spruce Cape Compound parcel as the base of operations for its cold weather overland and maritime training activities. The primary purpose for the NSWCEN Det Kodiak is to provide cold weather maritime training to NSWCEN students, with a secondary purpose of supporting proficiency and refresher cold weather maritime training activities for NSW personnel. Additionally, USSOCOM and other allied special operations units periodically conduct cold weather maritime training evolutions at NSWCEN Det Kodiak to meet emergent training requirements.

The Kodiak archipelago is a group of islands south of the main land mass of the state of Alaska. The entire archipelago contains 5,360 square miles (mi.²) of land. Training occurs at multiple locations throughout 548 mi.² of land, identified as the Training Study Area, on the Kodiak archipelago. Current training in the Training Study Area occurs on lands owned by federal, state, and local government, and Alaska Native Corporations. The Navy entered into real estate agreements with the USCG, BLM, the State of Alaska, and the City of Kodiak for training on properties within their respective ownerships. The Navy has initiated right of entry agreements with the Kodiak Island Borough, the Natives of Kodiak Corporation, the Leisnoi Native Corporation, and the Ouzinkie Native Corporation.

PURPOSE AND NEED

The purpose of the Proposed Action is to sustain current training and support advanced NSW and USSOCOM component training in cold weather land and maritime environments. The Proposed Action is needed to maintain operational requirements under 10 United States Code §5062 to provide combat-ready, forward deployed forces to the six Combatant Commanders, whose missions and geographic responsibilities directly link operational military forces to the Secretary of Defense and the President. The purpose and need for the Proposed Action takes into consideration the guiding principles, lines of effort, and supporting objectives set forth in the National Strategy for the Arctic Region (The White House 2013) and The U.S. Navy Arctic Roadmap for 2014–2030 (Chief of Naval Operations 2014).

PROPOSED ACTION

The Navy's Proposed Action is to continue basic and advanced NSW and USSOCOM component cold weather land and maritime training at NSWCEN Det Kodiak and associated training areas in and around Kodiak, Alaska, to include the adjacent near-shore water areas. The Proposed Action does not include any use of explosives or live ammunition. The Navy provides five to seven cold weather maritime training classes to 300–400 students annually. The Proposed Action includes a modest increase in the number of personnel, classroom courses, and future field training evolutions for NSW and USSOCOM components.

SUMMARY OF IMPACTS

This EA analyzes the potential impacts of actions associated with the continued use and a proposed modest increase in cold weather maritime training at NSWCEN Det Kodiak. A full range of environmental issues were considered for evaluation at the outset of the process. Certain resource areas were eliminated from detailed study in the EA because the analysis revealed that there would be no impacts, or impacts would be negligible. The resources that were not evaluated in this EA included geology and soils, water quality, air quality, noise, land use, transportation, and hazardous waste and materials. A summary of impacts for resource areas carried forward for analysis is provided below.

Marine Biological Resources. The Kodiak Training Study Area supports marine vegetation, invertebrates, fish, sea turtles, birds, and marine mammals. Six Endangered Species Act (ESA)-listed marine mammals and one ESA-listed sea turtle either occur or have the potential to occur in the area. Additionally, one ESA-listed bird, and one bird that is a candidate species occur or have the potential to occur in the area, with both birds utilizing tundra adjacent to inland waters for nesting. The Training Study Area extends through the jurisdiction of the North Pacific Fishery Management Council, which has designated Essential Fish Habitat and Habitat Areas of Particular Concern for Alaska groundfish, weathervane scallops, and Pacific salmon within the Training Study Area.

Critical habitat for Steller sea lions and northern sea otters also is designated within the area. Existing and proposed increased training activities would result in less than significant impacts based on the low intensity of the training activities, localized nature of the training activities, the infrequent nature in which they occur, and the brief duration of the activities. Pursuant to the ESA, training activities conducted in the Training Study Area may affect but are not likely to adversely affect critical habitat for Steller sea lions or the northern sea otter.

Under the Proposed Action, the number of students conducting activities could increase by 16–20 percent, as could the tempo of training events and training areas within the Training Study Area. Despite the addition of training areas and increased number of students and tempo of training events, the type

of training activities would remain the same and continue to result in minimal, short-term, and recoverable impacts from disturbance, physical strikes, or entanglement of marine resources. Therefore, the Proposed Action would have no significant impacts on marine resources. Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, training activities conducted in the Training Study Area would have no adverse effect on Essential Fish Habitat (EFH) for groundfish, Alaska weathervane scallops, or Pacific salmon. Pursuant to the ESA, training activities conducted in the Training Study Area may affect but are not likely to adversely affect the leatherback sea turtle, the Steller's eider, the humpback whale, the fin whale, the North Pacific right whale, the Western North Pacific gray whale, the Steller sea lion, or the northern sea otter.

Terrestrial Biological Resources. Direct impacts to vegetation from the Proposed Action could include damage to vegetation, soil compaction, and erosion. Four broad classes of vegetation cover the Training Study Area's uplands and valleys: herbaceous forb meadow, deciduous shrub-tree, crowberry, and Sitka spruce. Implementation of existing general management measures, as well as mitigation designed to avoid, minimize, and mitigate for impacts of the Proposed Action, would reduce impacts on vegetation to less than significant.

Indirect impacts to wildlife could include damage to habitat (terrestrial and aquatic) through loss of vegetation, soil compaction, and trail creation with consequent erosion. Direct impacts to wildlife, including special-status wildlife species, could include mortality of individual animals due to burrow collapse, nest destruction, trampling, or crushing by vehicles. Only six species of terrestrial mammals occur naturally on Kodiak Island: Kodiak brown bear, red fox, river otter, short-tailed weasel, tundra vole, and little brown bat. Other species' presence is the result of human introduction and includes reindeer, Roosevelt elk, Sitka black-tailed deer, mountain goat, red squirrel, muskrat, beaver, and snowshoe hare. Therefore, as was true for vegetation, implementation of existing general management measures, as well as mitigation designed to avoid, minimize, and mitigate for impacts of the Proposed Action through a "leave no trace" training standard, would reduce both direct and indirect impacts to wildlife to less than significant.

No terrestrial ESA species are present within the Training Study Area. Military readiness activities are exempt from the take prohibitions of the Migratory Bird Treaty Act (MBTA) provided they do not result in a significant adverse effect on a population of a migratory bird species. For those activities that are not related to military readiness training, compliance with the MBTA is required. The Bald and Golden Eagle Protection Act prohibits killing, selling, or otherwise harming eagles, their nests, or eggs. Therefore, no significant impacts on migratory birds, the bald eagle, or the golden eagle on Kodiak would occur as a result of implementation of the Proposed Action.

A Biological Evaluation (BE) was prepared for the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) for the Proposed Action to analyze the potential biological effects of the continued operation and potential student and training area additions within the Training Study Area of NSWCEN Det Kodiak, as well as to determine whether a proposed action will result in a trend toward a sensitive species becoming federally listed as threatened or endangered. The species addressed in this BE included those under the jurisdiction of both the USFWS and the NMFS. Under the jurisdiction of the USFWS are two threatened species (Steller's eider [*Polysticta stelleri*], northern sea otter [southwest Alaska Distinct Population Segment] [*Enhydra lutris kenoni*] and its critical habitat) and one candidate species (yellow-billed loon [*Gavia adamsii*]). Under the jurisdiction of NMFS, this consultation package covers four endangered whale species (humpback whale [*Megaptera novaeangliae*], fin whale [*Balaenoptera physalus*], North Pacific right whale [*Eubalaena japonica*],

Western North Pacific gray whale [*Eschrichtius robustus*]), one endangered sea lion (Steller sea lion [Western Stock] [*Eumetopias jubatus*] and its critical habitat), and one endangered sea turtle (leatherback sea turtle [*Dermochelys coriacea*]). The BE did not address sea turtles in the terrestrial environment because sea turtles do not nest in Alaska or occur in the terrestrial environment of the Action Area. The BE concluded that the effect determination for activities of the Proposed Action is “may affect, not likely to adversely affect” any of the ESA-listed species or their designated critical habitat, and is not likely to result in a federal listing of any candidate or unlisted species.

Cultural Resources. Over 195 archaeological sites have been previously recorded in the Training Study Area, including prehistoric villages, house pits and depressions, middens, burials, storage pits, rock cairns, and similar isolated finds. Additionally, the Training Study Area contains over 27 World War Two-era facility sites. Within a management approach based on applying avoidance measures to ensure no physical destruction, damage or alteration of all or any part of the identified cultural sites, the cold weather maritime training activities, as described in the Proposed Action, would have no adverse effects on historic properties. The spirit of “leave no trace” within the overall NSW training objectives fully supports the employment of avoidance measures towards cultural and historic sites. Collective consultation for the Proposed Action has been initiated with the State Historic Preservation Officer and Alaska Native tribes (Sun’aq Tribe of Kodiak, Tangirnaq Native Village, and Native Village of Ouzinkie) and corporations (Afognak Native Corporation; Koniag Incorporated; Leisnoi Incorporated; Natives of Kodiak, Inc.; and the Ouzinkie Native Corporation) with the purpose of determining a finding of “no adverse effect” for the Proposed Action, to be conditional upon implementation of General Protective Measures (GPMs) for the avoidance of adverse effects to historic properties. Implementation of the GPMs for proposed activities within the Area of Potential Effects would ensure that potential effects to historic properties associated with implementation of the Proposed Action would not be adverse. No Alaska Native protected tribal resources have been identified in existing and potential additional training sites within the land portion of the training study area. Therefore, there would be no significant impacts to cultural resources under NEPA.

Recreation. The cold weather maritime training activities that would be conducted under the Proposed Action on public and Alaska Native Corporation land that is open to the public for recreation activities are not inherently dangerous and pose no significant risks to the recreational users of these lands; the public would continue to have access to these open areas.

Public Health and Safety. The cold weather maritime training activities that would be conducted under the Proposed Action on public and Alaska Native Corporation land that is open to the public are not inherently dangerous and do not pose any significant public health and safety risks to civilian users of these lands; the public would continue to have access to these areas during all NSW training activities. To ensure continued public access, any potential conflicts are alleviated through changing the training location or suspending training. The general public would continue to be restricted from use of USCG land, including the Spruce Cape Compound. Aviation training events would always be conducted under Federal Aviation Administration aviation safety rules, including the issuance of appropriate Notices to Airmen, with a primary focus of completing the events in a thoroughly safe manner for the students, the support aircraft, and the private and commercial interests in Kodiak. The primary public health and safety issues associated with the Proposed Action are minimal and would be related only to isolated incidents of unintended contact between Det Kodiak students or staff and civilian users and/or residents within the Training Study Area. The potential for direct physical interaction between the public and aircraft, vessels, and personnel (students) is minimized by the continued implementation of strict operating procedures that protect public health and safety, including procedures to make sure training

areas are clear of nonparticipants prior to the commencement of the activity. No additional sources of hazardous materials or waste would be introduced as part of the Proposed Action. Therefore, impacts to public health and safety from the Proposed Action would be less than significant.

Environmental Justice. Implementation of the Proposed Action would not have a disproportionate effect on minority populations within the Training Study Area as existing training activities occur away from population centers. NSWCCN Det Kodiak course syllabus locations within the Training Study Area are by design physically difficult to access, are well removed from all urban areas, and have little to no permanent residences. All cold weather maritime training activity on Alaska Native property and the City of Kodiak land within the Training Study Area is designed to be limited to durations necessary to complete the specific training objectives and to have negligible adverse impacts to any facet of the training environment. It is authorized under individual Native Corporation and civic Land Use Agreements. Therefore, implementation of the proposed action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

Protection of Children. Implementation of the Proposed Action would not have a disproportionate effect on environmental health risks and safety risks to children within the Training Study Area. Existing training activities, excepting those conducted on site at the Spruce Cape Compound that are predominately classroom instruction, occur away from urban areas and have little to no visibility from the education facilities and residences of the children of Kodiak. No significant adverse impacts such as increases in noise, the emission of harmful substances, or the contamination of the soil or water in the residential areas closest to NSWCCN training areas are expected. All cold weather maritime training activities, by design, occur substantially removed from population centers and, under the Proposed Action, would not be conducted appreciably closer to schools in the area. For all the resources evaluated, implementation of the proposed action would not result in any environmental health risks and safety risks that may disproportionately affect children on Kodiak.

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ACRONYMS AND ABBREVIATIONS

°	degrees	in.	inch
µPa	micropascal	IRT	Innovative Readiness Training
AAC	Alaska Aerospace Corporation	ISC	Integrated Support Command
ac.	acre	KLC	Kodiak Launch Complex
ADF&G	Alaska Department of Fish and Game	km	kilometer
ADOT&PF	Alaska Department of Transportation and Public Facilities	L-DEO	Lamont-Doherty Earth Observatory
AHRS	Alaska Historic Resources Survey	lb.	pound
AMHS	Alaska Marine Highway System	LME	Large Marine Ecosystem
ANCSA	Alaska Native Claims Settlement Act	LOA	Letter of Authorization
ANILCA	Alaska National Interest Lands Conservation Act	m	meter
APE	Area of Potential Effects	MBTA	Migratory Bird Treaty Act
ATA	Alaska Training Area	MCMWTC	Marine Corps Mountain Warfare Training Center
BE	Biological Evaluation	mi.	mile
BP	before present	mi. ²	square miles
CEQ	Council on Environmental Quality	MMPA	Marine Mammal Protection Act
C.F.R.	Code of Federal Regulations	MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
CRRC	Combat Rubber Reconnaissance Craft	N	North
CZMA	Coastal Zone Management Act	n/a	not applicable
dB	decibel	NAGPRA	Native American Graves Protection and Repatriation Act
DEC	Direct Electric Control	Navy	United States Department of the Navy
Det Kodiak	NSWCEN Detachment Kodiak	NEPA	National Environmental Policy Act
DoD	Department of Defense	NHL	National Historic Landmark
DoN	Department of the Navy	NHPA	National Historic Preservation Act
DPS	Distinct Population Segment	nm	nautical mile
EA	Environmental Assessment	NMFS	National Marine Fisheries Service
EAP	Emergency Action Plan	NOTAM	Notice to Airmen
EFH	Essential Fish Habitat	NPFMC	North Pacific Fishery Management Council
EIS	Environmental Impact Statement	NRHP	National Register of Historic Places
EO	Executive Order	NSW	Naval Special Warfare
ESA	Endangered Species Act	NSWC	Naval Special Warfare Command
ESU	Evolutionary Significant Unit	NSWCEN	Naval Special Warfare Center
F	Fahrenheit	NTM	Notice to Mariners
F/V	Fishing Vessel	NWR	National Wildlife Refuge
FAA	Federal Aviation Administration	OEIS	Overseas Environmental Impact Statement
FMC	Fishery Management Council	OPNAVINST	Chief of Naval Operations Instruction
FMP	fishery management plan	OTB	Over-the-Beach
FONSI	Finding of No Significant Impact	OTH	Over-the-Horizon
FR	Federal Register	PCE	Primary Constituent Element
ft.	foot/feet	ppt	parts per thousand
GHG	greenhouse gas	PSP	Paralytic Shellfish Poison
GMU	Game Management Unit	PUTR	Portable Underwater Training Range
GOA	Gulf of Alaska	re	referenced to
GPM	General Protective Measure	RSA	Runway Safety Area
GPS	Global Positioning System	SEAL	Sea, Air, Land
ha	hectare	SECNAVINST	Secretary of the Navy Instruction
HAPC	Habitat Areas of Particular Concern	SHPO	State Historic Preservation Officer
Hz	Hertz		
IHA	Incidental Harassment Authorization		

SINKEX	Sink Exercise
SOF	Special Operations Forces
SQT	SEAL Qualification Training
SURTASS LFA	Surveillance Towed Array Sensor System Low-Frequency Active
SUV	Sport Utility Vehicle
TCP	Traditional Cultural Property
TMAA	Temporary Maritime Activities Area
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USSOCOM	United States Special Operations Command
W	West

PHOTOGRAPHS

All photographs used in this document have been approved for public release by the Naval Special Warfare Center Public Affairs Officer.

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1 PURPOSE OF AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

The United States (U.S.) Department of the Navy (Navy) prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] §4321 et seq.), the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (Title 40 Code of Federal Regulations [C.F.R.] §§1500–1508), Navy Procedures for Implementing NEPA (32 C.F.R. 775), and Navy instructions and guidance.

This EA analyzes the potential environmental effects of current and future Special Operations Forces (SOF) cold weather maritime training activities on and around Kodiak Island, Alaska, to include the adjacent near-shore water areas. The cold weather maritime training activities analyzed in this EA include advanced overland and maritime cold weather training of Naval Special Warfare Command (NSWC) and other U.S. Special Operations Command (USSOCOM) components consisting of SOF from United States Army Special Operations Command, Marine Corps Special Operations Command, Air Force Special Operations Command and Joint Special Operations Command. The cold weather maritime training activities covered in this EA begin with classroom training at the Naval Special Warfare Center (NSWCEN) Detachment Kodiak (Det Kodiak), also known as the “Spruce Cape Compound” and located on 130 acres (ac.) of land managed by U.S. Coast Guard (USCG) Base Kodiak. The training activities continue in the field at training sites on and around Kodiak Island.

Naval Special Warfare (NSW) personnel began training at Kodiak Island in 1987. The NSWCEN established Det Kodiak on the USCG Base Kodiak in 2000. The basic cold weather maritime training class was developed in 2002. For some time before the basic cold weather training course was developed, small numbers of Sea, Air, Land teams (SEALs) had been training on and around Kodiak Island to take advantage of the challenging environmental conditions and topography. Specifically, Kodiak’s average temperatures range from lows near 25 degrees Fahrenheit (°F) in January to highs near 62°F in August; the elevation ranges from sea level to 4,470 feet (ft.); and operating conditions include rain, snow, ice, and jagged, rocky terrain. The critical importance of the cold weather training that is supported by NSWCEN Det Kodiak was validated after the attacks of September 11, 2001, when SEALs found themselves deployed to the rugged snow-capped mountains of Afghanistan in what was among the first military actions of the Global War on Terror.

1.2 LOCATION AND DESCRIPTION OF TRAINING AREAS

As mentioned in the introduction, the training areas can be divided into two general categories: (i) classroom training held on the Spruce Cape Compound and its associated facilities, and (ii) field training areas. The regional location of the Spruce Cape Compound is shown in Figure 1.2-1, and additional description is provided in Section 1.2.1. The field training areas are contained within the Training Study Area depicted in Figure 1.2-2 and are further described in Section 1.2.2.

1.2.1 SPRUCE CAPE COMPOUND

In the 5-year aftermath of September 11, 2001, Operation Enduring Freedom requirements saw over 1,000 personnel trained in cold weather mountaineering and maritime activities at NSWCEN Det Kodiak. Subsequent throughput for NSW qualification training has remained at a consistent 300–400 students receiving cold weather maritime instruction each year, with additional small NSW and USSOCOM units conducting specific cold weather maritime training on a mission-needed basis.



Naval Special Warfare Detachment Kodiak
Compound Entrance

Kodiak Island is located approximately 250 miles southwest of Anchorage, Alaska. NSWCEN Det Kodiak is located at Spruce Cape on the USCG Base Kodiak at the northeast tip of Kodiak Island near the City of Kodiak (Figure 1.2-1). In 2001, the USCG granted NSWC permission to use the 130 ac. Spruce Cape Compound parcel as the base of operations for its overland and maritime training activities. The written agreement is a Permit for Use of Real Property by Other Federal Agencies and is for a term of 20 years. The permit is effective for the period May 1, 2001 through April 30, 2021. The Spruce Cape Compound parcel includes a 25,000-square-foot training building that provides berthing, classrooms, labs, and other NSWCEN Det Kodiak course support spaces.

NSW personnel conduct classroom training at the Spruce Cape Compound, which includes instruction and preparation for cold weather field and water training activities. The Spruce Cape Compound consists of seven structures that include a headquarters building, a boat storage building, two warehouses, a staff locker and supply building, and a small generator building.

1.2.2 FIELD TRAINING AREAS

Field training occurs at multiple locations throughout 548 square miles (mi.²) of land on the Kodiak archipelago (hereinafter identified as the Training Study Area). The Kodiak archipelago (shown in Figure 1.2-1) is a group of islands south of the main land mass of the state of Alaska. The archipelago stretches from the Barren Islands on the north to Chirikof Island on the south. Kodiak Island is part of the archipelago and is the second-largest island in the United States (second only to the island of Hawaii [Big Island]). The entire archipelago contains 5,360 mi.² of land.



Figure 1.2-1: Regional Location of the Naval Special Warfare Center Detachment Kodiak Spruce Cape Compound

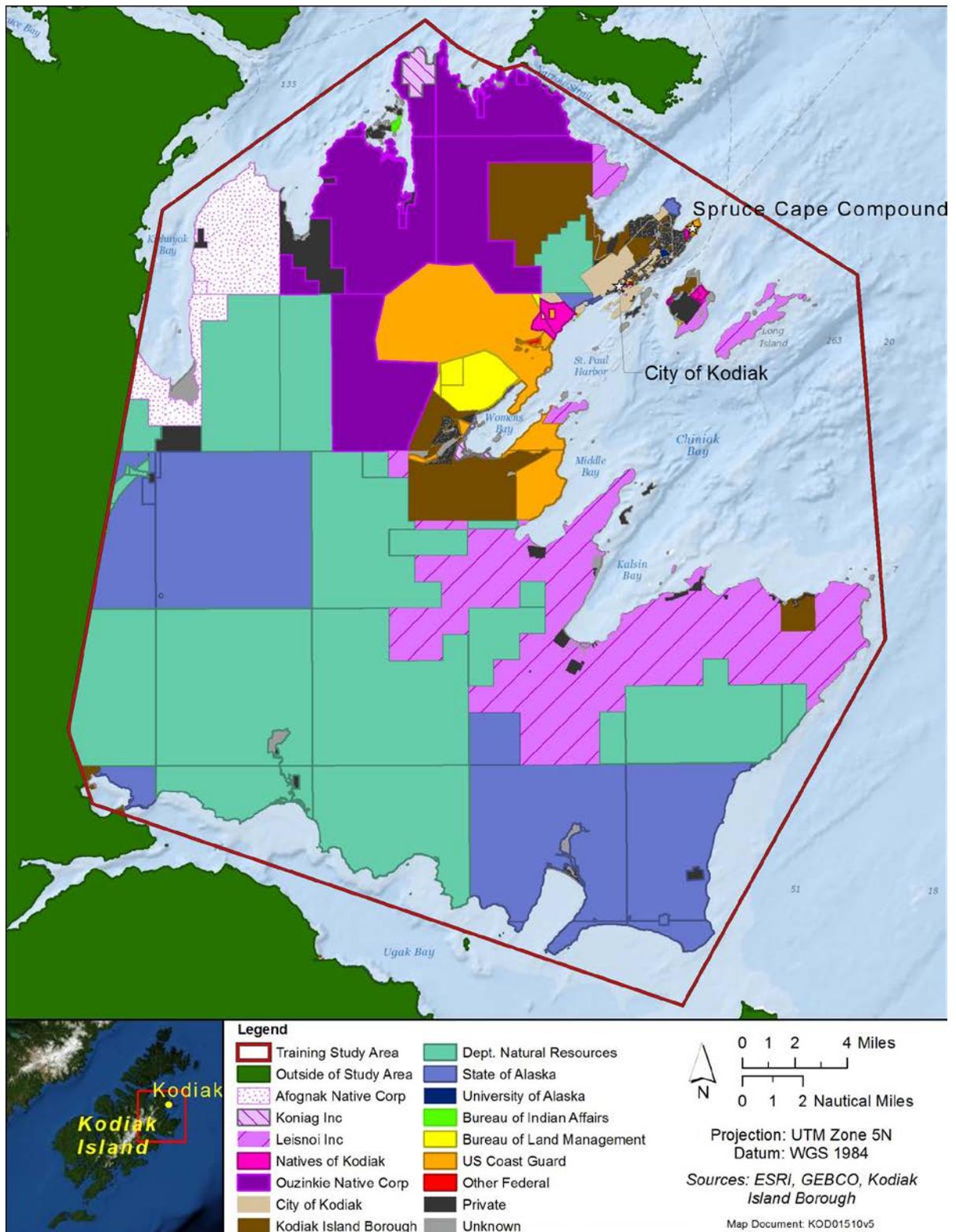


Figure 1.2-2: Land Ownership and Distribution of Cold Weather Maritime Training Study Area

Figure 1.2-2 illustrates the Training Study Area boundary and land ownership categories within the Training Study Area. As shown in Figure 1.2-2, the Training Study Area is generally located on the northeastern part of Kodiak Island. It is important to note that training takes place in areas rather than specific sites used repeatedly. Locations vary due to seasonal conditions, training qualifications, and unit mission requirements. Training value is maintained when training sites can be varied within an expansive area. Selection of sites in an expansive area also provides trainers with greater flexibility in their choice of challenges to set before the students. Additionally, a wider selection of training sites eliminates the potential for overuse of the land, thereby promoting natural habitat preservation. In contrast, training value can be degraded when the same activities are routinely conducted using the same sites. Figure 2.1-1 in Chapter 2 (Description of Proposed Action and Alternatives) shows an overview of the frequently used training areas within the Training Study Area. Then, for additional clarity, Chapter 2 contains details and smaller-scale maps of the frequently used training areas.

Current training in the Training Study Area occurs on lands owned by federal, state, and local government, and Alaska Native Corporations. Based on the nature of the requested use, no permit was deemed necessary for use of lands owned by the State of Alaska and Kodiak Island Borough. The Navy is in the process of establishing the appropriate land use agreements with the USCG, the Bureau of Land Management (BLM), Koniag, Inc., and the City of Kodiak for training on their respective properties. The Navy currently has right of entry agreements with the Veterans of Foreign Wars Post 7056, Kodiak Island Sportsman's Association, Natives of Kodiak, Inc., Leisnoi, Inc., and the Ouzinkie Native Corporation.

1.3 PROPOSED ACTION

The Navy's Proposed Action is to continue basic and advanced NSW and USSOCOM component cold weather land and maritime training at NSWCEN Det Kodiak and associated training areas in and around Kodiak, Alaska, to include the adjacent near-shore water areas. The Proposed Action does not include any use of explosives or live ammunition. NSWCEN Det Kodiak supports five to seven cold weather maritime training classes to 300–400 students annually. The Proposed Action includes an increase in the number of personnel, classroom courses, and future field training evolutions for NSW and USSOCOM components.

Training class blocks consist of 28 days, with approximately 16 days dedicated to the conduct of cold weather maritime and mountaineering skills instruction. The remaining days consist of travel, classroom training and periods of rest. The phases of training include

- Clothing and equipment classes, medical/hygiene classes, environmental classes
- Gear familiarization exercise and re-warming drill
- Maritime Assault Suit familiarization/Over-the-Beach (OTB)
- Survival training
- Land navigation—route finding, map and compass, dead reckoning, terrain association, Global Positioning System (GPS)
- Coastal/inland cliff negotiation with river and stream crossings
- Collective skills exercise, long-range navigation
- Maritime training activities

1.4 PURPOSE OF AND NEED FOR PROPOSED TRAINING ACTIVITIES

The purpose of the Proposed Action is to sustain current training and support advanced NSW and USSOCOM component training in cold weather land and maritime environments. The Proposed Action is

needed to maintain operational requirements under 10 U.S.C. §5062 to provide combat-ready, forward deployed forces to the six Combatant Commanders, whose missions and geographic responsibilities directly link operational military forces to the Secretary of Defense and the President. The purpose and need for the Proposed Action takes into consideration the guiding principles, lines of effort, and supporting objectives set forth in the National Strategy for the Arctic Region (The White House 2013) and the U.S. Navy Arctic Roadmap for 2014–2030 (Chief of Naval Operations 2014).

NSW must be ready for a variety of military operations—from large-scale conflict to maritime security and humanitarian assistance/disaster relief—to respond to the dynamic, social, political, economic, and environmental issues that may arise. To acquire and maintain the ability to achieve military objectives, personnel must train in various environments, including cold weather maritime climates. The training process provides personnel with an in-depth understanding of their individual limitations and capabilities, as well as their equipment, in high stress, austere environments. Past global conflicts and natural disasters have arisen in cold mountainous and cold maritime climates, and military personnel sent to respond to such situations need to be trained in a similar environment to survive and perform in those environments. For example, NSW and USSOCOM component personnel need to train in a cold weather land and maritime environment while learning and applying the applicable medical, survival, navigation, and gear familiarization skills in the event they are called upon for mission execution in a similar environment in another part of the world.

According to the National Military Strategy (Department of Defense 2011), SOF will remain decentralized and flexible, have regional expertise, and maintain a wide range of capabilities to support our Nation’s counter-terrorism efforts and other primary missions that require their specialized skills. Maintaining military readiness as the Naval component of USSOCOM, NSW specialized skills demand that personnel train with the appropriate gear in all environments (sea, air, and land), and under varying and specific harsh conditions, including extreme climates, hot and cold water temperatures, and treacherous terrain.

1.5 RELEVANT LAWS AND REGULATIONS

The Navy has prepared this EA based upon federal and state laws, statutes, regulations, and policies that are pertinent to implementation of the Proposed Action including, but not limited to: NEPA (42 U.S.C. 4321–4370h), which requires an environmental analysis for major federal actions that have the potential to significantly impact the quality of the human environment; CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 C.F.R. parts 1500–1508); Navy regulations for implementing NEPA (32 C.F.R. 775), which provides Navy policy for implementing CEQ regulations and NEPA; Coastal Zone Management Act (16 U.S.C. 1451 et seq.); National Historic Preservation Act (NHPA) (16 U.S.C. 470 et seq.); Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.); Marine Mammal Protection Act (16 U.S.C. 1361 et seq.); Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–712); Bald and Golden Eagle Protection Act (16 U.S.C. 668–668d); Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*; and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. A description of the Proposed Action’s consistency with these policies and regulations, as well as regulatory agencies responsible for their implementation, is presented in Chapter 4 (Table 4.6-1).

1.6 ENVIRONMENTAL REVIEW PROCESS

The NEPA requires federal agencies to examine the environmental impacts of major Federal actions within the United States and its territories. In accordance with CEQ regulations found at 40 C.F.R.

§1508.9, an EA is a concise public document that provides sufficient evidence and analysis to the decision maker for determining whether to prepare an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI). Further, an EA is the agency's compliance with the act when no EIS is necessary, and facilitates preparation of an EIS when one is necessary. The Navy undertakes environmental planning for major Navy actions in accordance with applicable laws, regulations, and EOs as presented in Chapter 4 (Cumulative Impacts and Other Considerations).

1.7 PUBLIC INVOLVEMENT

Regulations from CEQ (40 C.F.R. 1506.6) direct federal agencies to involve the public in preparing and implementing their NEPA procedures. The Navy is circulating the Draft EA for public review from March 30, 2015 to April 29, 2015. Notices to the public regarding the availability of this Draft EA for public review and comment have been provided in local or regional newspapers. Comments received during the published comment period will be analyzed and considered in the Final EA.

After evaluating the Final EA, the designated official shall decide whether a FONSI is appropriate or whether the Proposed Action would generate significant impacts requiring preparation of an EIS. The public will be notified if the decision maker signs a FONSI.

1.8 SCOPE AND CONTENT

In this EA, the Navy assesses the potential environmental impacts of conducting cold weather maritime training activities on land and in the waters surrounding Kodiak Island, Alaska. The range of alternatives includes the No Action Alternative and other reasonable courses of action. In this EA, the Navy analyzes potential direct, indirect, and cumulative impacts. This EA also considered environmental protection measures and best management practices implemented as part of the training activities for assessing environmental consequences. Chapter 3 (Affected Environment and Environmental Consequences) provides information on resources evaluated in this EA.

Resources evaluated in detail include biological resources (i.e., marine mammals, sea birds, terrestrial vegetation, marine vegetation, marine invertebrates, fish and wildlife), and cultural resources. Resource evaluations include:

- Potential effects to marine mammals and sea birds from sea-to-land training activities
- Potential effects to terrestrial vegetation, wildlife, or cultural resources that could occur from training activities ashore

Other resources evaluated include: recreation; public health and safety; EO 12898, *Environmental Justice*; and EO 13045, *Protection of Children*. A number of issues were considered for evaluation at the outset of the process, but were eliminated from detailed study within the EA because the analysis revealed that there would be no impacts, or impacts would be negligible. Resources considered but eliminated from detailed study include geology and soils, air quality, noise, hazardous waste and materials, water quality, land use, socioeconomics, and transportation. These resource issues were eliminated for the reasons set forth in Table 3.1-1.

1.9 INTERGOVERNMENTAL COORDINATION

The Navy is the action proponent and the lead agency for the preparation of the EA under the provisions of 40 C.F.R. §1501.5. The Navy's lead command for preparation of the EA is the NSWCEN. The USCG is a cooperating agency under the provisions of 40 C.F.R. §1501.6 and 40 C.F.R. §1508.5. Pursuant to 40

C.F.R. §1508.5, a cooperating agency may be any federal agency other than the lead agency that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. This is applicable to the USCG for the Proposed Action given its status as the permitter of the Spruce Cape Compound property and manager of other areas where current and proposed cold weather training activities may be held. The Navy requested the USCG participate as a cooperating agency via letter dated 24 September 2013. The USCG accepted this status via letter dated 17 December 2013. Copies of this cooperating agency intergovernmental correspondence are contained in Appendix B (Agency and Regulatory Correspondence). A lead agency must request the participation of cooperating agencies as early as possible in the NEPA process, use the environmental analyses and proposals prepared by cooperating agencies as much as possible, and meet with cooperating agencies at their request (40 C.F.R. 1501.6(a)). A cooperating agency's responsibility includes participation in the NEPA process as early as possible and at the lead agency's request, development of information to be included in the EA, and staff support in its preparation (40 C.F.R. 1501.6(b)).

The nature and scope of the Proposed Action also involves significant coordination and consultation with federal, state and local agencies, Alaska Native Tribes, and Alaska Native Corporations to ensure that regulatory and Navy policy requirements are met. For example, the Biological Evaluation (see Appendix A) was prepared for the consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). Regarding historic properties and archeological resources, consultations are also to be held with federally recognized Alaska Native tribes, Alaska Native Corporations and the Alaska State Historic Preservation Officer (SHPO). Copies of key intergovernmental communications are contained in Appendix B (Agency and Regulatory Correspondence).

2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 DESCRIPTION OF THE PROPOSED ACTION

2.1.1 PROPOSED COLD WEATHER MARITIME TRAINING OPERATIONS TEMPO

The Navy proposes continued existing and future training of Naval Special Warfare (NSW) personnel and other USSOCOM components in cold weather environments at NSWCEN Det Kodiak on and around Kodiak Island, at established levels, and increased capacities of 16 to 20 percent more students and added training locations, to accommodate future training needs and emerging mission requirements. The requirement for NSW personnel to operate in extreme environments, including cold water and cold weather, necessitates access to an area that readily provides all elements of the requisite training. Further, the ability to train NSW personnel to survive in a harsh cold weather environment is essential for realistic training that results in operational discipline, force preservation, and mission accomplishment.

The Proposed Action consists of:

- 1) Maintaining use of the existing Det Kodiak training areas (Table 2.1-1 and Figure 2.1-1) and activities:
 - a) *State of Alaska Land*. Retain land (66,003 ac. [26,710 hectares {ha}]) currently in use under existing land use agreement.
 - b) *City of Kodiak Land*. Retain land (1,902 ac. [770 ha]) currently in use under existing land use agreement.
 - c) *Borough of Kodiak*, Right of Entry Agreements currently in effect with the Veterans of Foreign Wars Post 7056, and the Kodiak Island Sportsman's Association.
 - d) *Bureau of Land Management Land*. Retain land (3,402 ac. [1,377 ha]) currently in use under existing land use agreement.
 - e) *Alaska Native Corporations Land*. Retain land (94,981 ac. [38,437 ha]) currently in use under existing land use agreements.
 - f) *U.S. Coast Guard Land*. Retain land (17,019 ac. [6,887 ha]) currently in use under existing land use agreement.
 - g) Maintaining current types of training activities for NSW units:
 - i) *SEAL Qualification Training (SQT)*: five to seven classes annually consisting of approximately 28 training days per 40-60 student class:
 - ii) Maritime Training Activities
 - (1) *NSW Group Team Training*. SQT basics with addition of water parachute operations, water helocast, and extended over-the-horizon (OTH) insertions/extractions. Historically these training events have been held two to three times annually for up to 15 days of training each and tailored to the team's specific requirements.
 - (2) *Other USSOCOM Unit Training*. Training objectives are consistent with SQT with the addition of parachute activities, water helocast, and extended OTH insertions/extractions.
- 2) Sustaining student annual throughputs at current levels, and accommodating a future increase of 16 to 20 percent.
- 3) Accommodating future training requirements for parachute activities. The requirements may evolve to support specific training goals.
 - a) Training may incorporate the use of rotary- and fixed-wing aircraft for insertion/extraction purposes.

- b) Training may incorporate the use of other Department of Defense (DoD)-approved air/land/maritime mobility platforms for insertion/extraction.
- 4) Accommodating the future training requirements of other USSOCOM components.
 - a) Up to six training events of varied size annually, up to 15 days training per event.
 - b) Training events would be of the same type as the SQT operations conducted at Det Kodiak.

The continued use would encompass a total area of approximately 548 mi.² within the Training Study Area, on lands owned by three Alaska Native Corporations, BLM, USCG, the State of Alaska, Kodiak Island Borough, and the City of Kodiak. Transit to training areas may include OTH boat exercises up to 12 nautical miles (nm) off the coast.

Table 2.1-1: Cold Weather Maritime Training Areas by Land Ownership

Ownership of Training Area	Acreage of Training Area	Agreement Type	Length of Agreement	Expiration Date
Leisnoi, Incorporated	49,898	Right of Entry Agreement	5 years	26 March 2018
Natives of Kodiak Inc.	994	Right of Entry Agreement	10 years	31 December 2023
Ouzinkie Native Corporation	44,089	Right of Entry Agreement	5 years	21 August 2019
U.S. Coast Guard	17,019	Real Estate Agreement	10 years	16 December 2023
State of Alaska	66,003	Real Estate Agreement	10 years	Awaiting Signature
Bureau of Land Management	3,402	Real Estate Agreement	10 years	Awaiting Signature
City of Kodiak	1,902	Real Estate Agreement	10 years	Awaiting Signature
Borough of Kodiak – Veterans of Foreign Wars	n/a	Right of Entry Agreement	10 years	04 May 2024
Borough of Kodiak – Kodiak Island Sportsman’s Association	n/a	Right of Entry Agreement	10 years	09 April 2024

Notes: n/a = not applicable, U.S. = United States



Figure 2.1-1: Existing Naval Special Warfare Center Cold Weather Maritime Training Areas

2.2 PRIMARY TRAINING ACTIVITIES OF THE PROPOSED ACTION

Under the Proposed Action, NSWCEN Det Kodiak would continue to train NSW personnel and other USSOCOM components in the conduct of basic cold weather activities at sea, in air, and on land. The following sections provide detailed descriptions of the primary training activities included in the Proposed Action.

2.2.1 TRAINING ACTIVITIES

Table 2.2-1 provides descriptions and locations of current and proposed training activities within the Training Study Area. The locations associated with these training activities are depicted in Figures 2.2-1 through 2.2-5. Table 2.2-2 lists the current and proposed pyrotechnic signaling devices, weapons, vehicles, boats, and aircraft used at Det Kodiak. All training activities involve students and other users carrying real or simulated personal weapons. Although some students would carry live ammunition to accurately represent the combat weight and balance of the weapon, there are no requirements in the NSWCEN course syllabus for live-fire training in the Training Study Area under the Proposed Action.

2.2.1.1 Qualification Training

2.2.1.1.1 Current Qualification Training Activities

Each Cold Weather Maritime Training Course is 28 days long, with the average class size ranging from 40 to 60 students. Within those 28 days, the students progress through numerous classes, out of which 8–12 days are in the field at the various training areas. Both night and day training occurs during these field-training phases.

Trucks and boats provide logistic support for the maritime training course using established roads and waterways.

Group training clinics teach the skills described in detail in Table 2.2-1. The typical, or predominate, training locations are noted in the table; however, virtually all of these skills can be accomplished throughout the Training Study Area, and have been on occasion.



34-Foot Rigid Support Craft



Cold Weather Gear Familiarization



Long Range Navigation

Table 2.2-1: Current and Proposed Cold Weather Maritime Training Activities

Training Activity	Figure	Description	Location within Training Study Area
Qualification Training			
Medical/Hygiene and Equipment Familiarization	n/a	This activity is academic; instructors teach students procedures for maintaining nutrition and hygiene in a cold weather environment, and discuss hydration, mental health, and fatigue. Additionally, students learn how to use and maintain cold weather equipment.	Spruce Cape Compound
Gear Familiarization	2.1-1	This activity provides the students practical instruction on the purpose and uses of their complete set of cold weather equipment in various cold-weather training environments.	Pyramid Mountain and condition-appropriate locations within the Training Study Area
Over-the-beach (OTB) 500-meter swim	2.1-1, 2.2-1	Students learn to utilize associated equipment for cold weather OTB operations using tactics, techniques, and procedures taught in classroom instruction periods, and to experience the limitations inherent in cold weather OTB operations. Typically, this activity includes instruction to groups of 15.	Long Island and condition-appropriate locations within the Training Study Area
Survival skills training (shelters, food gathering, fire building, teamwork)	2.1-1	<p>This class teaches basic shelter building techniques using only personal gear and objects acquired from the area; students must build a shelter to protect themselves from the elements. Objects acquired from the area include fallen branches, leaves, and other shrubbery. Students remove shelters at first light, and the area is “naturalized” to avoid leaving any evidence of the bivouac site. Students become skilled at and practice leaving no trace of their presence, complying with all federal and state human waste management guidance.</p> <p>Students acquire the basics of fire building. Each student must build and start a fire using primitive means with instructor supervision. Once started, the fires burn for only a short period and then are extinguished. This type of training is typically a group activity and each student would build at least one fire during the exercise. Use and control of all fires are in accordance with training area standard operating procedures established by NSWCCEN Det Kodiak and approved by the Officer in Charge.</p>	Long Island and condition-appropriate locations within the Training Study Area
Land Navigation	2.2-2	Land navigation is both academic and practical. After classroom instruction, students navigate in the field to a predetermined destination using only a generic map and compass.	Termination Point and condition-appropriate locations within the Training Study Area
Map and Compass Dead Reckoning, Terrain Association, Global Positioning System (GPS)	2.2-2	Students learn the basics of land navigation.	Termination Point and condition-appropriate locations within the Training Study Area
Long Range Navigation – 14,000 meters with a re-warming drill	2.2-3	This activity is both academic and practical. Students must navigate across difficult terrain in cold weather conditions. Emphasis on re-warming is critical in order for follow-on operational training actions.	Buskin River, Sargent Creek and condition-appropriate locations within the Training Study Area

Table 2.2-1: Current and Proposed Cold Weather Maritime Training Activities (continued)

Training Activity	Figure	Description	Location within Training Study Area
Coastal and Inland Cliff Negotiation with River and Stream Crossings	2.2-4	Students learn to negotiate sea cliffs safely using ropes for ascending, rappelling, and hauling of personnel and equipment.	Monashka Bay, Cliff Point and condition-appropriate locations within the Training Study Area
Survival, Evasion, Resistance, and Escape	2.1-1	Students are taught the Survival and Evasion portions of this training in Kodiak. They learn the basics of camouflage and evasion techniques. During this training activity, students attempt to evade simulated hostile forces searching for them. This type of training includes how to maneuver without giving one's position away. It also entails using the environment to one's advantage when conducting evasion procedures, as well as procedures to conceal evidence of one's presence.	Condition-appropriate locations within the Training Study Area
Collective Skills Exercise	2.2-5	Students participate in an exercise that tests all skills learned during the Cold Weather Maritime Training course in a 3-day/night evolution. This course involves OTB skills but is primarily a land exercise.	Condition-appropriate locations within the Training Study Area
Small Boat Maritime Over Water Navigation	2.1-1	Students utilize small inflatable Combat Rubber Reconnaissance Craft (CRRC) to maneuver across water to access training areas.	Condition-appropriate locations within the Training Study Area
Naval Special Warfare (NSW) Group Team Training (Approximately Three Events Annually)			
Clandestine insertion, Reconnaissance and Surveillance, and extraction training		Typically, NSW personnel team training occurs two to three times annually for approximately 15 days. Each team goes through a specifically tailored qualification training syllabus. Teams typically spend 3 weeks at Det Kodiak per event.	Condition-appropriate locations within the Training Study Area
Parachute Operations Training (Approximately Two Events Annually)			
Water Parachute Activities	2.1-1	NSW personnel parachute into waters in the vicinity of the Det Kodiak training areas.	Monashka Bay, Womens Bay, and Chiniak Bay
Inflatable Boat deployment and operational use	2.1-1	Parachutists jump with inflated boats, board the boats, and conduct clandestine movement OTB to other training areas.	Monashka Bay, Womens Bay, and Chiniak Bay
Other Unit Training (Approximately Two Events Annually)			
Cold Weather Maritime Training		Specific training would vary depending on the unit; however, it would be similar in nature to existing NSW qualification and team training described above.	Condition-appropriate locations within the Training Study Area

Notes: (1) Current and proposed training are exactly the same activities, with the differences being the tempo and locations within the Training Study Area. (2) Det Kodiak = Detachment Kodiak, n/a = not applicable, NSWCCN = Naval Special Warfare Center



Cliff Negotiation Preparation



Over-the-Beach Insertion Training



Collective Skills Exercise



Survival Skills Training

Table 2.2-2: Current and Proposed Equipment, Weapons, Vehicles, Boats, and Aircraft Used at Naval Special Warfare Center Detachment Kodiak

Equipment Type	Description	Location within Training Study Area
<p>Pyrotechnics/Weapons Pyrotechnics are only used for emergency use in accordance with training area standard operating procedures established by the Navy that are incorporated into the NSWCEN Det Kodiak Training Study Area User's Manual.</p>		
Day/Night Flares	Use of flares is for emergencies only.	Entire Training Study Area
Smoke Grenades	Use of smoke grenades for signaling is for emergencies only.	Entire Training Study Area
Approved Hand Carry Weapon System	<p>Students carry either rubber, simulated weapons or their real weapons throughout each training event to experience the considerations needed to maintain and keep functioning in cold weather maritime conditions.</p> <p><u>Qualification Training:</u> Each student carries a rubber simulated, or Approved Hand Carry Weapon System.</p> <p><u>Naval Special Warfare (NSW) Group Team Training, Parachute Operations, and Other Unit Training:</u> Each student carries their issued, M-4/M-16 rifle, which have a loaded magazine inserted to accurately represent the combat weight and balance of the weapon. Live-fire is not part of any NSWCEN Det Kodiak training event.</p>	Entire Training Study Area
<p>Boats</p>		
34-foot (ft.) Rigid Support Craft, trailerable	The 34 ft. Rigid Support Craft are the primary transport and delivery platform for Qualification Training Over-the-Beach and other water scenarios. They also support other NSW Team Training events.	Training Study Area Waters
Inflatable Boats	Use of inflatable boats occurs in certain events during training other than Qualification Training.	Entire Training Study Area Waters
<p>Vehicles Use of motorized vehicles is in accordance with training area standard operating procedures established by the NSWCEN Det Kodiak Training Study Area User's Manual.</p>		
Pick-up truck/Full-size Sport Utility Vehicle (SUV)	<u>Qualification, Team, and Parachute Operations Training:</u> Approximately 27 standard pickup trucks and SUVs are located at the Spruce Cape Compound, and automotive fuel is stored at the facility. Vehicles are for transportation of students to and from insert/extract points, and emergency medical extraction. The Coast Guard maintains the trucks at the Coast Guard base.	Established roads within the entire Training Study Area.
Snow Mobiles	Use of snowmobiles is only for direct support of emergency action plans (EAPs).	Spruce Cape Compound and emergency roads and trails as needed.
All Terrain Vehicles	Use of all terrain vehicles is only in direct support of EAPs.	Established roads and trails within the entire Training Study Area. Off trails if required by emergency.

Table 2.2-2: Current and Proposed Equipment, Weapons, Vehicles, Boats, and Aircraft Used at Naval Special Warfare Center Detachment Kodiak (continued)

Equipment Type	Description	Location within Training Study Area
Aircraft		
Helicopter	Infrequently, helicopters perform insertions, extractions, and parachute operations. Additionally used to support EAPs as required.	Over water training areas, the entire Training Study Area, and as required by emergency.
C-130	C-130 operations are limited to supporting Parachute Operations. All Department of Defense components supply the requested training support aircraft.	Over water training areas.

Notes: (1) Current and proposed training are exactly the same activities with the differences being the tempo and locations within the Training Study Area. (2) NSWCEN = Naval Special Warfare Center



Re-Warming Drill

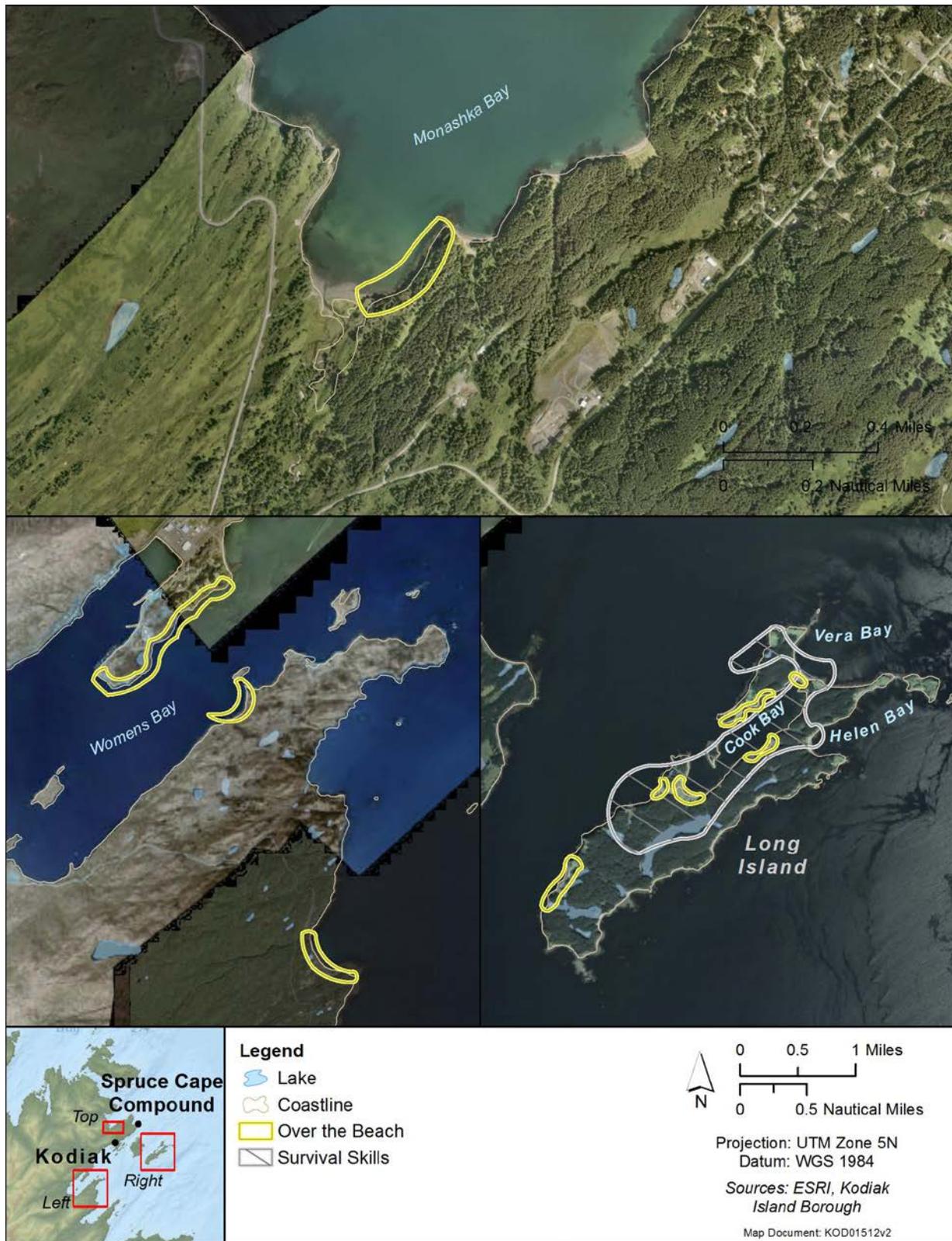


Figure 2.2-1: Existing Over-the-Beach and Survival Skills Training Areas



Figure 2.2-2: Existing Land Navigation Training Areas

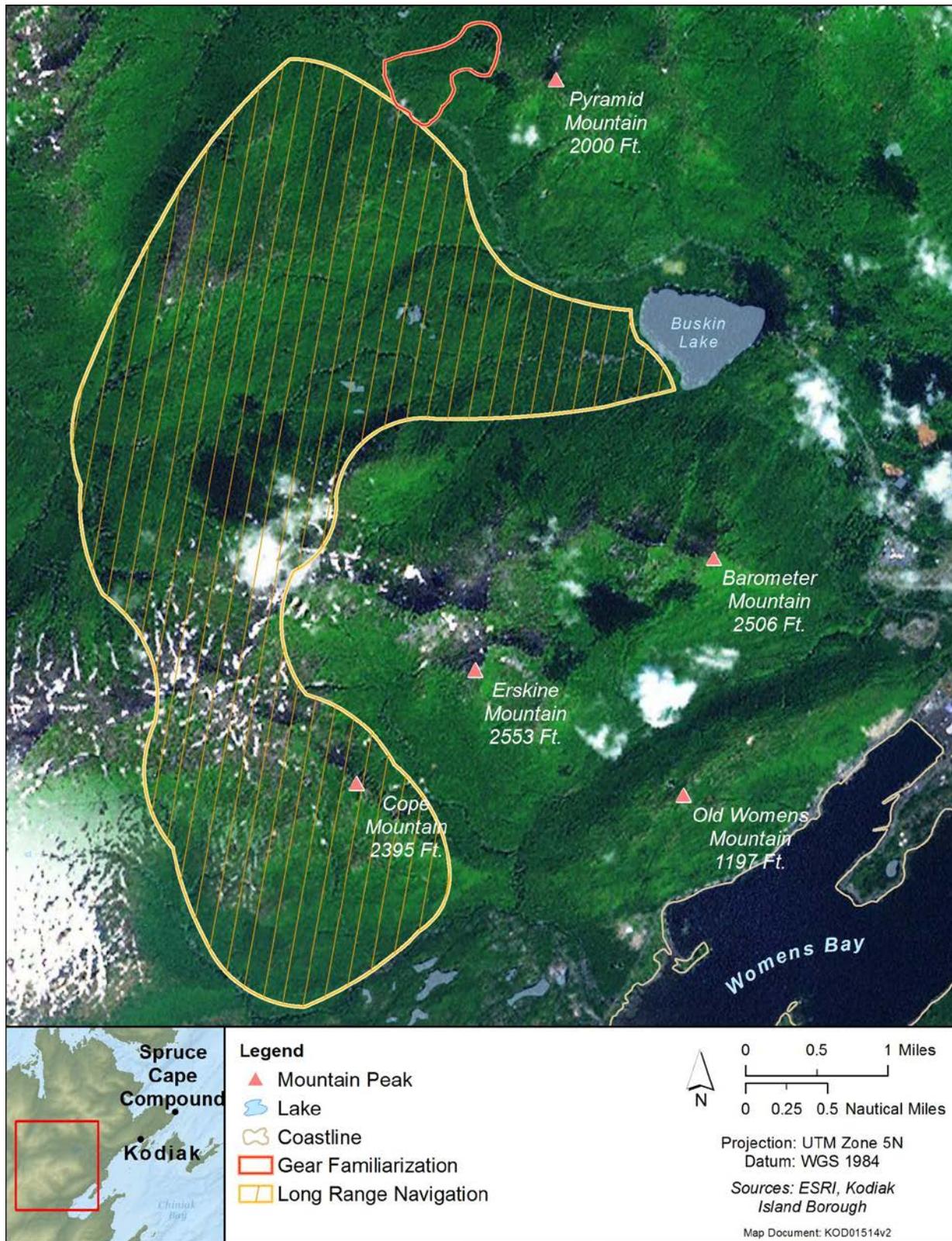


Figure 2.2-3: Existing Long Range Navigation Training Areas



Figure 2.2-4: Existing Cliff Negotiation Training Areas

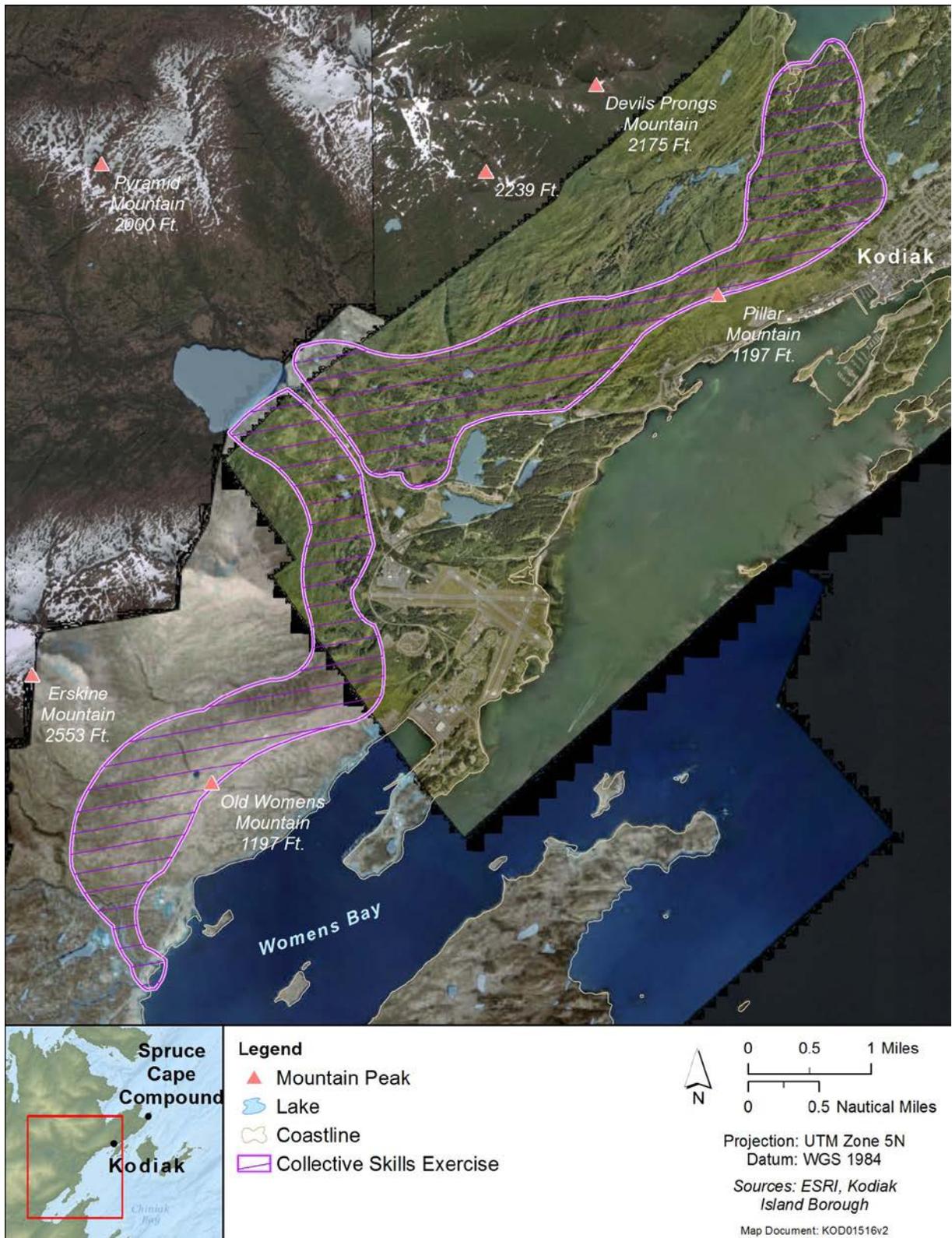


Figure 2.2-5: Existing Collective Skills Exercise Training Areas

2.2.1.2 Naval Special Warfare Command Current Training

2.2.1.2.1 Naval Special Warfare Command Group Team Training

NSW Group Team Training at NSWCEN Det Kodiak follows the same general courses of instruction as the Cold Weather Maritime Training course that is the qualification training core activity. The Navy uses Det Kodiak to provide periodic, refresher cold weather OTB and near-shore cold weather operations training to operational NSW units. The experience level of the units going through team training generally demands adjustment of refresher curriculum to focus on specific skill sets, which may change the frequency of use and number of training locations utilized by Det Kodiak in support of each unique team training evolution.

2.2.1.2.2 Naval Special Warfare Command and United States Special Operations Command Parachute Training

In conjunction with team training activities, the Navy periodically conducts cold weather/water parachute training activities. This training activity involves NSW and other USSOCOM personnel parachuting out of a variety of aircraft into the waters off any one of the existing NSWCEN Det Kodiak areas in and around Kodiak Island. In addition to personnel, these training activities involve the deployment of inflatable boats, regrouping the team in the boats, and subsequent clandestine movement OTB to other training activities in other areas. Parachutes are immediately recovered after water entry and training movement to allow for safety.

2.2.1.2.3 Proposed Training by United States Special Operations Command Units

The Navy periodically receives requests from other USSOCOM units to conduct cold weather maritime training at NSWCEN Det Kodiak, potentially in any of the training areas. These intermittent requests are often for one time training evolutions that arise from emergent training needs, or are due to scheduling conflicts at a unit's primary training area. The Navy must evaluate the requested training for suitability and for equipment and area availability. As a standard operating procedure, all instructors from other units must receive a training area brief by Det Kodiak staff personnel prior to training. Any training conducted by other units at NSWCEN Det Kodiak would be of the same type and compatible with current training operations already being conducted.

2.3 ALTERNATIVES DEVELOPMENT

The Navy must consider alternatives to the Proposed Action in accordance with the NEPA and CEQ regulations for implementing NEPA (Parts 1500–1509 of Title 40 of the U.S. C.F.R.). The potential environmental impacts of the Navy's Proposed Action to continue and enhance current training and support advanced training for NSW and USSOCOM personnel in cold weather environments are associated primarily with the in-water and overland movement and activities of personnel. Accordingly, the Navy focused its alternatives analysis on variances to the tempo and locations within the Training Study Area where these activities occur. The following provides the evaluation screening criteria used to identify a reasonable range of alternatives.

2.3.1 ALTERNATIVE SELECTION CRITERIA

Alternatives considered in this EA were developed by the Navy after careful assessment by subject-matter experts, including NSWC units and commands that utilize NSWCEN Det Kodiak, range management professionals, and Navy environmental managers and scientists. The Navy has developed a set of criteria for use in assessing whether a possible alternative meets the purpose of and need for the Proposed Action. Each of the alternatives must be reasonable and feasible. Reasonable alternatives

include those that are practical or feasible from a technical and economic standpoint and that use common sense, and meet the purpose and need for the Proposed Action.

Alternatives to continuing cold weather maritime training of NSW personnel at NSWCCEN Det Kodiak were evaluated based on their ability to meet the following selection criteria:

- Allow assured access to designated training areas that allows training to proceed on the SQT syllabus timeline
- Provide suitable terrain and be adequate in size to support day long and multi-day evolutions for Qualification Training, NSW Group Team Training, and Parachute Training syllabi as defined in Table 2.2-1
- Provide suitable cold weather training climatic conditions and variations as determined by NSWCCEN
- Include access to contiguous proximity maritime environments that support offshore and OTB training activity as defined in Table 2.2-1
- Provide adequate safety and security in accordance with Chief of Naval Operations Instruction (OPNAVINST) 5100.23G (Navy Safety and Occupational Health Program Manual) and OPNAVINST 5530.14E (Navy Physical Security and Law Enforcement Program)
- Be supported by adequate facilities and infrastructure as defined in Tables 2.2-1 and 2.2-2
- Be located on Navy or federally controlled property, or on property available for use under a real estate or right of entry agreement
- Have scheduling flexibility for short-notice and urgent use that maintains the SQT syllabus timeline, and accommodates without delay NSWCC and USSOCOM urgent and national mission requirements

2.3.2 ALTERNATIVE SITES ELIMINATED FROM FURTHER CONSIDERATION

The Navy considered alternative sites as potential locations for NSW cold weather maritime training activities. Within the State of Alaska, all military installations and training areas in the Joint Pacific Alaska Range Complex, with the exception of Coast Guard Air Station Sitka, were eliminated from consideration at the outset due to their lack of a contiguous proximate maritime component. The Marine Corps Mountain Warfare Training Center (MCMWTC) lacks any maritime training environment. The Training Study Area at Kodiak fulfills all of NSWCC Cold Weather Training requirements and is considered the only feasible site. It offers readily accessed remote cold weather terrain and environment. It also affords superb contiguous open water training space, with associated airspace. Additionally, the Spruce Cape Compound allows training to be supported with minimal interaction with civil and commercial activities in and around the City of Kodiak. Below is a summary of each of the alternative sites considered but eliminated from further consideration.

2.3.2.1 Marine Corps Mountain Warfare Training Center, Bridgeport, California

The NSWCCEN Det Kodiak instructors currently provide periodic cold weather training support to the Marine Corps at their mountain-warfare training site in the Sierra Nevada Mountains of California. While MCMWTC Bridgeport meets many of the cold weather training requirements with the exception of open water OTB, long-range open water small boat transit, and open water parachute operations; the need to conduct the training program sequentially and incorporate the OTB maritime events into a succinct syllabus, along with supporting NSWCC group and SOCOM unit training, eliminated MCMWTC Bridgeport from further consideration.

2.3.2.2 Coast Guard Air Station Sitka

The Coast Guard Air Station at Sitka, Alaska, offers a similar environment to Kodiak, but with a milder winter climate. It is roughly the same latitude and is adjacent to a maritime operating environment in the Sitka Sound and the Gulf of Alaska (GOA). Replicating facilities and functions there would result in a similar environmental footprint with the added burden of longer transit of students to acceptable cold weather training areas due to the proximity of the city of Sitka to the Air Station, and the milder local winter climate. This site was eliminated from further consideration because it does not offer timely access to the extreme cold conditions specifically needed for NSWCEN qualification training activities within a concise schedule, as well as close proximity to other unique training areas that support OTB transitions to follow-on skills training.

2.3.2.3 Joint Base Elmendorf-Richardson

The Navy considered Joint Base Elmendorf-Richardson because of the established large geographical footprint that the base maintains. Lack of a contiguous maritime operating environment eliminated the base from further consideration.

2.3.3 ALTERNATIVES CARRIED FORWARD

Kodiak was selected as the only feasible Cold Weather Maritime Training site as it possesses the following requirements:

- Readily accessed remote cold weather terrain and environment
- Contiguous open water training space with associated airspace
- A negligible impact on civil and commercial activities in and around the City of Kodiak

Four reasonable Kodiak alternatives have been carried forward for analysis in this EA: the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 (Table 2.3-1). A decrease in tempo of activities was considered as an alternative but was eliminated because it did not meet the purpose of the Proposed Action and the identified baseline needs of NSW. All four alternatives meet the purpose and need of the Proposed Action, with Alternative 3 identified as the Preferred Alternative.

Table 2.3-1: Baseline and Proposed Training Activities

Range Activity	No Action Alternative Baseline Training Activities			Alternative 1 Increased Tempo of Activities			Alternative 2 Current Training Tempo With Added Training Locations			Alternative 3 Increased Tempo and Added Training Locations		
	Events per year/ Students	Service/ Customer	Location	Events per year/ Students	Service/ Customer	Location	Events per year/ Students	Service/ Customer	Location	Events per year/ Students	Service/ Customer	Location
Qualification Training	6/300	Navy	Existing NSWCCN Det Kodiak Areas	7/350	Navy	Existing NSWCCN Det Kodiak Areas	6/300	Navy	Existing NSWCCN Det Kodiak Areas plus 20% more	7/350	Navy	Existing NSWCCN Det Kodiak Areas plus 20% more
NSW Group Team Training	3/60	Navy		4/80	Navy		3/60	Navy		4/80	Navy	
		DoD			DoD			DoD				
Parachute Operations	1/20	Navy and other DoD		2/40	Navy and other DoD		1/20	Navy and other DoD		2/40	Navy and other DoD	
Other Unit Training	2/40	Navy	3/60	Navy	2/40	Navy	3/60	Navy				
		Joint		Joint		Joint		Joint				

Notes: (1) Current and proposed training are exactly the same activities with the differences being the tempo and locations within the Training Study Area. (2) DoD = Department of Defense; Joint = Allied, Coalition, Other Government Agencies; Navy = United States Department of the Navy; NSW = Naval Special Warfare; NSWCCN = Naval Special Warfare Center.

The proposed NSWCCN Det Kodiak training alternatives described above in Table 2.3-1 meet all eight selection criteria as outlined in Section 2.3.1 (Alternative Selection Criteria). Locations (e.g., different alpine training routes or beach landing points) within the Training Study Area are expanded in Alternatives 2 and 3 beyond the current training areas to other sites within the Training Study Area as well as sites previously used. Implementation of the Proposed Action would allow continued cold weather maritime training as currently offered within the existing general training study area boundary and would accommodate anticipated future training requirements.

2.4 NO ACTION ALTERNATIVE – BASELINE TRAINING ACTIVITIES

Under the No Action Alternative, the baseline training activities (Table 2.2-1), as conducted at Kodiak Island over the past decade, would continue at the same level and in the same locations as currently conducted within the Training Study Area. The No Action Alternative serves as a baseline description from which to compare the potential impacts of the Proposed Action. NSW has been operating in Kodiak for personnel cold weather maritime training qualification and team training for more than 25 years and more extensively since September 11, 2001. Under the No Action Alternative, the effectiveness of NSW personnel cold weather maritime training would be sustained and NSWCCN Det Kodiak would continue to meet the Navy’s current cold weather maritime training needs, but would not be well positioned to support increased requirements or accommodate training for additional USSOCOM or allied forces.

2.5 ALTERNATIVE 1 – INCREASED TEMPO OF ACTIVITIES

Alternative 1 includes all activities as described under the No Action Alternative, plus additional annual activities of most events. The increase in activities results from increased Navy requirements and for the addition of other services' participation. Under Alternative 1, cold weather maritime training activities would increase by one class per training activity and approximately 50 students for each of those classes. Alternative 1 meets the Navy's purpose and need, and also satisfies all the selection criteria identified in Section 2.3.1.

2.6 ALTERNATIVE 2 – CURRENT TRAINING TEMPO WITH ADDED TRAINING LOCATIONS

Alternative 2 includes all activities as described under the No Action Alternative, with the same level of activities conducted in additional locations as determined by the Det Kodiak staff within the Training Study Area boundary. Under Alternative 2, the baseline training activities, as conducted at Kodiak Island over the past decade, would continue at the same level, with approximately the same student class sizes. Training would occur in the same historically used locations and would also utilize added locations within the Training Study Area. Adding additional training locales inside the Training Study Area under this alternative facilitates training occurring in unfamiliar environments for repeat students. Additionally, added locations provide the additional opportunities to match mission specific requirements (i.e., an environment that more closely matches that of an upcoming mission or emerging threat environment). This expansion of select training areas would require authorizations by all property authorities under both the existing land use agreements and requisite added agreements with any additional land owners within the Training Study Area.

Alternative 2 meets the Navy's purpose and need, and satisfies all the selection criteria identified in Section 2.3.1.

2.7 ALTERNATIVE 3 – INCREASED TEMPO WITH ADDED TRAINING LOCATIONS

Alternative 3 is a combination of Alternatives 1 and 2. Alternative 3 increases training tempo and adds additional locations within the Training Study Area to meet current and near-term cold weather maritime training requirements for NSW other USSOCOM units. Under Alternative 3, NSWCEN Det Kodiak would conduct cold weather maritime training exercises that combine NSW personnel with additional USSOCOM and USSOCOM-sponsored allied personnel at existing and added locations within the Training Study Area.

Alternative 3 meets the Navy's purpose and need, satisfies all the selection criteria identified in Section 2.3.1, and is the Navy's Preferred Alternative.

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3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.0 INTRODUCTION

This EA focuses on potential environmental impacts associated with the NSWCEN Det Kodiak current and proposed Cold Weather Maritime Training activities within the Training Study Area. The types of training associated with NSW would remain the same as those that have been conducted at Det Kodiak since its inception. In other words, the Proposed Action does not propose training activities that differ in scope, nature, or overall location from those conducted over the past 25 years by NSWCEN in Kodiak. Some training locations within the existing Training Study Area include areas that may have previously been used by NSWCEN for training at some time. Under the proposed action, these areas would become available for use again, with the same “leave no trace” practice applied to all current training venues.

This chapter describes relevant existing environmental conditions for resources potentially affected by the Proposed Action as described in Chapter 2 (Description of Proposed Action and Alternatives). In compliance with the NEPA, CEQ regulations, and Navy procedures for implementing NEPA, the description of the affected environment focuses only on those resources potentially subject to impacts. The following discussion of the affected environment and associated environmental analyses focuses primarily on marine and terrestrial biological resources, while also ensuring that cultural resources, public recreation, public health and safety, Environmental Justice (EO 12898), and Protection of Children (EO 13045) are fully considered.

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3.1 RESOURCES EVALUATED

A number of resource areas and potential impacts were considered for evaluation at the outset of the process. Certain resource areas were eliminated from detailed study within the EA because research revealed that the Proposed Action is unlikely to have any potential environmental impacts on these resources, or that impacts would be negligible. The following resources were not evaluated in this EA:

- Geology and Soils
- Water Quality
- Air Quality
- Noise
- Land Use
- Transportation
- Hazardous Waste and Materials

Table 3.1-1 provides a summary of resources considered and indicates what resources are carried forward for detailed analysis. The table also includes the rationale for why certain resources were not carried forward.

Table 3.1-1: Resources Considered for Analysis in the Naval Special Warfare Center Detachment Kodiak, Cold Weather Maritime Training, Kodiak, Alaska Environmental Assessment

Resource	Carried Forward for Detailed Analysis	Rationale
Geology and Soils	No	The Proposed Action does not include construction on undeveloped lands or ground-disturbing activities over an undisturbed area.
Water Quality	No	The Proposed Action would not impound, divert, drain, control, or otherwise modify the waters of any stream or other body of water. The proposed training activities do not involve changes to drainage patterns or the introduction of pollutants to Training Study Area surface waters or ground water. Water quality is not expected to undergo a measurable impact due to the Proposed Action. Therefore, this resource area was not carried forward for detailed analysis.
Air Quality	No	The air quality for Kodiak Island is classified as unimpaired, with no major stationary or mobile sources of air emissions to adversely affect air quality. The major natural source of air emissions is wind-blown volcanic dust. The proposed training activities involve few emissions within the Training Study Area. The infrequent aircraft, motor vehicle, and marine vessel engine emissions associated with the Proposed Action would not impact air quality over the Training Study Area. Therefore, this resource area was not carried forward for detailed analysis.
Noise	No	The proposed training activities involve minimal or no changes to ambient noise levels and occur in remote locations distant from sensitive receptors. Aircraft noise associated with water insertion training would be transitory, infrequent, and typically offshore. Boats used during nearshore insertion training are typically quieted for stealth. The Proposed Action would have negligible impact on the Training Study Area noise environment. Therefore, this resource area was not carried forward for detailed analysis.

Table 3.1-1: Resources Analyzed in the Naval Special Warfare Center Detachment Kodiak, Cold Weather Maritime Training, Kodiak, Alaska Environmental Assessment (continued)

Resource	Carried Forward for Detailed Analysis	Rationale
Land Use	No	The Proposed Action would not change the manner of use or quality of land, land encroachments, or land forms and soil. The Proposed Action does not include construction on undeveloped lands or permanent ground-disturbing activities over an undisturbed area.
Transportation	No	The Proposed Action would not change or alter the transportation and circulation of the City of Kodiak and surrounding areas within the Training Study Area. Therefore, this resource area was not carried forward for detailed analysis.
Hazardous Waste and Materials	No	The proposed training activities involve minimal or no changes to additional use of machinery, equipment, or vehicles; as such, no increases in the amount of hazardous waste produced would be expected.
Marine Biological Resources	Yes	Detailed analysis provided in Section 3.2 (Marine Biological Resources).
Terrestrial Biological Resources	Yes	Detailed analysis provided in Section 3.3 (Terrestrial Biological Resources).
Cultural Resources	Yes	Detailed analysis provided in Section 3.4 (Cultural Resources).
Recreation	Yes	Detailed analysis provided in Section 3.5 (Recreation).
Public Health and Safety	Yes	Detailed analysis provided in Section 3.6 (Public Health and Safety).
Environmental Justice	Yes	Detailed analysis provided in Section 3.7 (Executive Order 12898, Environmental Justice).
Protection of Children	Yes	Detailed analysis provided in Section 3.8 (Executive Order 13045, Protection of Children).

As shown in Table 3.1-1, the resource areas where there is potential environmental impact from the Proposed Action are as follows: marine biological resources, terrestrial biological resources, cultural resources, recreation, public health and safety, environmental justice, and protection of children.

Consultation and resource area data collection included liaison with or access to the following agencies: Alaska Department of Fish and Game (ADF&G), Alaska Department of Natural Resources, Alaska Department of Labor and Workforce Development, Alaska State Historic Preservation Office, Kodiak Island Borough, USCG, USFWS, the Navy, NSWC, and other organizations and agencies as appropriate. The resources are further described and analyzed in Sections 3.2 through 3.8.

3.2 MARINE BIOLOGICAL RESOURCES

3.2.1 DEFINITION OF RESOURCE

For this EA, marine resources are defined as the marine habitats, flora, and fauna, including special status species and their marine habitats, marine vegetation, marine invertebrates, fish, sea turtles, marine birds, and marine mammals that occupy the Training Study Area. For this EA, the term “special status” refers to plant and animal species that are listed as threatened and/or endangered under the federal Endangered Species Act (ESA) or are listed as candidate species. A general discussion of these marine resources is found in the Affected Environment section, along with detailed descriptions of ESA-listed species and their associated critical habitats, and designated Essential Fish Habitat (EFH). The Environmental Consequences section presents an analysis of the potential impacts of the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 on the marine biological resources in the Training Study Area.

3.2.2 REGULATORY REQUIREMENTS

Regulatory requirements that are applicable to the Proposed Action in the Training Study Area are listed below. A discussion of the project’s compliance with other Federal, state and local plans, policies, and regulations is provided in Section 4.6.1 (Possible Conflicts with Other Objectives of Federal, State and Local Plans, Policies, and Controls).

3.2.2.1 Endangered Species Act

The ESA of 1973 (16 U.S.C. 1531–1543) established protection over and conservation of threatened and endangered species and the ecosystems on which they depend. An “endangered” species is a species that is in danger of extinction throughout all or a significant portion of its range, while a “threatened” species is one that is likely to become endangered within the foreseeable future throughout all or in a significant portion of its range. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) administer the ESA. The USFWS has the primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and marine fish, including the anadromous salmon. In conjunction with making the determination that a species is an endangered or threatened species under ESA, a species may also have designated protected habitat, which is referred to as critical habitat. Critical habitat is defined as (1) specific areas within the geographical area occupied by the species at the time of listing, if those areas contain physical or biological features essential to conservation of the species, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. Potential impacts to critical habitat were assessed by determining the effects of the project on the Primary Constituent Elements (PCEs) of the critical habitat. PCEs are defined as sites or habitat components that support one or more life stages deemed essential to the conservation of the species. Critical habitat maps are provided for species in which the critical habitat extends into or adjacent to the Training Study Area (Figure 3.2-3).

Section 7(a)(2) of the ESA, as amended (16 U.S.C. §1531 et seq.), requires federal agencies to consult with USFWS and NMFS to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. When a federal agency makes the determination that an action “may affect but is not likely to adversely affect” a listed species or designated critical habitat, the agency is required to seek concurrence with their determination in an informal consultation process with NMFS for marine species, or with USFWS for freshwater and

terrestrial species. If the agency determines that the project may have an adverse effect, formal consultation with the appropriate Service(s) is required. Consultation is not required when an agency determines that the project will have “No Effect” on a listed species or designated critical habitat. For species that are proposed for listing as endangered or threatened, Section 7(a)(4) of the ESA requires agencies to confer with USFWS and NMFS if the action is likely to jeopardize the continued existence of the species.

Eight ESA-listed and one candidate species have the potential to occur in the Training Study Area. There are seven ESA-listed species of fish, and four ESA-listed species of sea turtle that are unlikely to occur in the Training Study Area; however, they are discussed in Section 3.2.3.4 (Fish), and Section 3.2.3.5 (Sea Turtles). Candidate species are those petitioned species that are actively being considered for listing as endangered or threatened under the ESA, as well as those species for which NMFS has initiated an ESA status review that it has announced in the *Federal Register*. Status of the species and the presence of critical habitat (if designated) in the Training Study Area is provided in Table 3.2-1.

Table 3.2-1: Endangered Species Act Species and Critical Habitat that have the potential to occur in the Training Study Area

Common Name	Scientific Name	Endangered Species Act Status	Critical Habitat Designation
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	Designated (not in the Training Study Area)
Steller’s eider	<i>Polysticta stelleri</i>	Threatened	Designated (not in the Training Study Area)
Yellow-billed loon	<i>Gavia adamsii</i>	Candidate	Not Designated
Humpback whale	<i>Megaptera novaeangliae</i>	Endangered	Not Designated
Fin whale	<i>Balaenoptera physalus</i>	Endangered	Not Designated
North Pacific right whale	<i>Eubalaena japonica</i>	Endangered	Designated (not in the Training Study Area)
Western North Pacific gray whale	<i>Eschrichtius robustus</i>	Endangered	Not Designated
Steller sea lion (Western stock)	<i>Eumetopias jubatus</i>	Endangered	Designated (in the Training Study Area)
Northern sea otter (Southwest Alaska Distinct Population Segment)	<i>Enhydra lutris kenoni</i>	Threatened	Designated (in the Training Study Area)

Note: See Table 3.2-3 for a list of ESA-listed fish species that are unlikely to occur in the TSA, and Section 3.2.3.5 (Sea Turtles) for a discussion of ESA-listed sea turtles that are extralimital to the Training Study Area.

Additional information regarding species distribution and presence in the Training Study Area is discussed in the Affected Environment Section. The Biological Evaluation to determine whether training activities would affect species and habitat is included in Appendix A (Biological Evaluation).

3.2.2.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson–Stevens Fishery Conservation and Management Act (MSFCMA) is the primary law governing marine fisheries management in the United States. In 1996, the MSFCMA was reauthorized and amended by the Sustainable Fisheries Act (Public Law 104-267). The reauthorized MSFCMA mandated numerous changes to the existing legislation designed to prevent overfishing, rebuild depleted fish stocks, minimize bycatch, enhance research, improve monitoring, and protect fish habitat.

One of the most significant mandates in the MSFCMA that came out of the reauthorization was the EFH provision, which provides the means to conserve fish habitat.

The EFH mandate requires that the regional Fishery Management Councils (FMCs), through federal fishery management plans (FMPs), describe and identify EFH for each federally managed species; minimize, to the extent practicable, adverse effects on such habitat caused by fishing; and identify other actions to encourage the conservation and enhancement of such habitats. Congress defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. §1802(10)). The term “fish” is defined in the MSFCMA as “finfish, mollusks, crustaceans, and all other forms of marine animals and plant life other than marine mammals and birds,” 16 U.S.C. 1802(12). The MSFCMA requires that EFH be identified and described for each federally managed species. The MSFCMA also requires federal agencies to consult with NMFS on activities that may adversely affect EFH or when the NMFS independently learns of a federal activity that may adversely affect EFH. The MSFCMA defines an adverse effect as “any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions” (50 C.F.R. §600.810).

In addition to EFH designations, areas called Habitat Areas of Particular Concern (HAPCs) are also designated by the regional FMCs. Designated HAPCs are discrete subsets of EFH that provide extremely important ecological functions or are especially vulnerable to degradation (50 C.F.R. §600.805–600.815). Regional FMCs may designate a specific habitat area as a HAPC based on one or more of the following reasons (National Marine Fisheries Service 2002):

1. Importance of the ecological function provided by the habitat
2. The extent to which the habitat is sensitive to human-induced environmental degradation
3. Whether, and to what extent, development activities are, or will be, stressing the habitat type
4. Rarity of the habitat type

Categorization of an area as a HAPC does not confer additional protection or restriction to the designated area. The area encompassed by the Training Study Area extends through the jurisdiction of the North Pacific Fishery Management Council (NPFMC). The NPFMC has designated EFH for Alaska groundfish, weathervane scallops, and Pacific salmon within or adjacent to the Training Study Area, as shown in Figure 3.2-1. There are no designated HAPCs in the Training Study Area. The three FMPs that are applicable include:

- Gulf of Alaska (GOA) Groundfish FMP (North Pacific Fishery Management Council 2014a)
- FMP for the Scallop Fishery off Alaska (North Pacific Fishery Management Council 2014b)
- FMP for the Salmon Fisheries in the Exclusive Economic Zone (EEZ) Off Alaska (North Pacific Fishery Management Council 2012)

3.2.2.3 Other Federal and State Regulations on Marine Resources

In addition to the regulations described above, additional regulatory requirements that are applicable to the Proposed Action in the Training Study Area are listed in Table 3.2-2.

Table 3.2-2: Other Federal and State Regulations on Marine Resources

Law	Citation	Summary
Fish and Wildlife Coordination Act	16 United States Code (U.S.C.) 661	Integrates fish and wildlife conservation programs with federal water development projects and conservation projects that affect water resources.
Migratory Bird Treaty Act	16 U.S.C. 703 et seq.	Conserves migratory birds by prohibiting the taking, killing, or possessing of migratory birds or the parts, nests, or eggs of such birds, unless permitted by regulation.
Marine Mammal Protection Act as amended	16 U.S.C. 1361 et seq.	Protects all marine mammals—including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears—within the waters of the United States.
Sustainable Fisheries Act	Public Law 104-297	Amends the habitat provisions of the Magnuson-Stevens Act. Protects, conserves, and enhances “essential fish habitat.” Essential fish habitat is defined by Congress for federally managed fish species as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

3.2.3 AFFECTED ENVIRONMENT

3.2.3.1 Marine Habitats

Under average annual flow conditions, the fresh water from the Buskin River shed and other tributaries on Kodiak mixes quickly with marine water, and the surface water salinity values increase with distance from the river mouth. The salt concentration in water along the barrier bar typically exceeds 20 parts per thousand (ppt), while the salinity of Chiniak Bay water is more typically around 32–33 ppt. In the nearshore marine habitat, the shoreline is altered by both anthropogenic and natural influences. Armor rock comprises approximately 48 percent of the shoreline. Armor rock is a man-made rough angular rock that is up to 6 ft. (1.8 meters [m]) in diameter and is placed on the exposed shoreline and embankments in order to protect them from erosion (Federal Aviation Administration 2012). The subtidal area continues from the intertidal beach as a flat, sandy area, gently sloping toward the bay. Bottom substrates are mostly sand, and there are some small clumps of kelp that are likely attached to larger substrates such as cobble or shell hash. All marine habitats in the Training Study Area have been designated as EFH (see Section 3.2.3.4.1, Essential Fish Habitat).

3.2.3.2 Marine Vegetation

Features that influence the distribution and abundance of marine vegetation in the Training Study Area are the availability of light, water quality, water clarity, salinity level, seafloor type (important for rooted or attached vegetation), currents, tidal schedule, and temperature (Green and Short 2003). Marine ecosystems depend almost entirely on the energy produced by marine vegetation through photosynthesis (Castro and Huber 2000), which is the transformation of the sun’s energy into chemical energy. In the lighted surface waters of the open ocean and coastal waters, marine algae provides oxygen and habitat for many organisms in addition to forming the base of the marine food web (Dawes 1998). The five major taxonomic groups of algae (dinoflagellates and blue-green, green, brown, and red algae) occur throughout the Training Study Area (Spalding et al. 2003). Brown algae, such as the kelp beds are among the most extensive and elaborate in the world. Rockweed (*Fucus gardneri*), and other vegetation such as ribbon kelp (*Alaria marginata*) and Split kelp (*Laminaria bongardiana*), may occur in the sea surface and sea floor of the Training Study Area (Guiry and Guiry 2013).

General threats to marine vegetation include human activities (industrial, residential, and recreational) and natural occurrences such as storms. Human-made stressors that act on marine vegetation include excessive nutrient input (fertilizers, etc.), siltation (the addition of fine particles to the ocean), pollution (oil, sewage, trash), climate change, overfishing (Mitsch et al. 2009, Steneck et al. 2002), shading from structures (National Marine Fisheries Service 2002), habitat degradation from construction and dredging (National Marine Fisheries Service 2002), and invasion by exotic species (Hemminga and Duarte 2000, Spalding et al. 2003). The seagrass, and cordgrass taxonomic group is more sensitive to stressors than the algal taxonomic groups. The great diversity of algae makes generalization difficult but, overall, algae are resilient and colonize disturbed environments (Levinton 2009). Seagrasses are uprooted by dredging and scarred by boat propellers (Hemminga and Duarte 2000, Spalding et al. 2003). Seagrass beds that are scarred from boat propellers can take years to recover.

The species and common names of marine vegetation that may occur in the Training Study Area are listed in Appendix E (Marine Biological Resources Species List). None of the marine vegetation that occurs in the Training Study Area is listed under ESA.

3.2.3.3 Marine Invertebrates

Marine invertebrates (animals without backbones) are a large, diverse group of at least 150,000 species inhabiting the marine environment (Brusca and Brusca 2003). Many of these species are important to humans ecologically and economically, providing essential ecosystem services (coastal protection) and income from tourism and commercial and recreational fisheries (Spalding et al. 2001; Anderson et al. 2011). Common invertebrates in the Training Study Area include crustaceans, bivalves, gastropods, jellyfish, annelid worms, octopus, and sea cucumbers. Invertebrates such as zooplankton and amphipods, which are prey for fish and marine mammals, also occur in the Training Study Area. Bivalves are common in the intertidal zone and nearshore waters of the Training Study Area, particularly in the barrier bar area. Beds of razor clams (*Siliqua patula*) have been previously identified from the intertidal and shallow subtidal areas near the mouth of the Buskin River (National Oceanic and Atmospheric Administration 1997). Some shellfish and other benthic, or bottom-dwelling, invertebrates are caught either commercially or for subsistence in the open waters of Chiniak Bay. These invertebrates include Dungeness crab (*Metacarcinus magister*), Tanner crab (*Chionoecetes bairdi*), red king crab (*Paralithodes camtschaticus*), and Pacific giant octopus (*Enterocopus dofeini*) (Federal Aviation Administration 2012).

General threats to marine invertebrates include overexploitation and destructive fishing practices (Jackson et al. 2001; Miloslavich et al. 2011; Pandolfi et al. 2003), habitat degradation from pollution and coastal development (Cortes and Risk 1985; Downs et al. 2009), disease, and invasive species (Bryant et al. 1998; Galloway et al. 2009; National Marine Fisheries Service 2010; Wilkinson 2002). These threats are compounded by global threats to marine life, including the increasing temperature and decreasing pH of the ocean from pollution linked to global climate change (Cohen et al. 2009; Miloslavich et al. 2011). In the Training Study Area, some marine invertebrates that are managed to ensure their sustainable harvest, have been used as characteristics to define groundfish essential fish habitat, which is designated by NMFS and regional fishery management councils. The sustainability and abundance of these organisms are vital to the marine ecosystem and to the sustainability of the world's commercial fisheries (Pauly et al. 2002).

Aquatic invertebrates may produce and use sound in territorial behavior, to deter predators, to find a mate, and to pursue courtship (Popper et al. 2001). Some crustaceans produce sound by rubbing or closing hard body parts together, such as lobsters and snapping shrimp (Latha et al. 2005; Patek and Caldwell 2006). Very little is known about sound detection and use of sound by aquatic invertebrates

(Budelmann 2010; Montgomery et al. 2006; Popper et al. 2001). Organisms may detect sound by sensing either the particle motion or pressure component of sound, or both. Aquatic invertebrates probably do not detect pressure since many are generally the same density as water and few, if any, have air cavities that would function like the fish swim bladder in responding to pressure (Budelmann 2010; Popper et al. 2001). Many aquatic invertebrates, however, have ciliated “hair” cells that may be sensitive to water movements, such as those caused by currents or water particle motion very close to a sound source (Budelmann 2010). These cilia may allow invertebrates to sense nearby prey or predators or help with local navigation.

Aquatic invertebrates that can sense local water movements with ciliated cells include cnidarians, flatworms, segmented worms, urochordates (tunicates), mollusks, and arthropods (Budelmann 2010; Popper et al. 2001). Both behavioral and auditory brainstem response studies suggest that crustaceans may sense sounds up to three kilohertz (kHz), but best sensitivity is likely below 200 Hertz (Hz) (Lovell et al. 2005; Lovell et al. 2006; Goodall et al. 1990).

A list of marine invertebrates that may occur in the Training Study Area is located in Appendix E (Marine Biological Resources Species List). Under the Magnuson-Stevens Act, the waters in and adjacent to the Training Study Area are designated as EFH for invertebrates that are prey for groundfish, and the Alaska Weathervane scallop (see Section 3.2.3.4.1, Essential Fish Habitat).

3.2.3.4 Fish

Fish are not distributed uniformly throughout the Training Study Area and are closely associated with a variety of habitats. Even within a single fish species, the distribution and specific habitats in which individuals occur may be influenced by its developmental stage, size, sex, reproductive condition, and other factors. A general list of fish that may occur in the Training Study Area is found in Appendix E (Marine Biological Resources Species List).

General threats to fish include, overfishing, bycatch, pollution, and other human-caused stressors. Overfishing is the most serious threat to fish (Crain et al. 2009; Kappel 2005; Jackson et al. 2001), with habitat loss also contributing to extinction risk (Cheung et al. 2007; Dulvy et al. 2003; Jonsson et al. 1999; Limburg and Waldman 2009; Musick et al. 2000). Overfishing occurs when fishes are harvested in quantities above a sustainable level. Overfishing impacts targeted species, and non-targeted species (or “bycatch” species) that often are prey for other fishes and marine organisms. Bycatch may also include seabirds, turtles, and marine mammals. Additionally, in recent decades the marine fishes being targeted have changed such that when higher-level predators become scarce, different organisms on the food chain are subsequently targeted; this has negative implications for entire marine food webs (Crain et al. 2009; Pauly and Palomares 2005). Other factors, such as fisheries-induced evolution and intrinsic vulnerability to overfishing, have been shown to reduce the abundance of some populations (Kauparinen and Merila 2007).

Pollution primarily impacts coastal fishes that occur near sources of run-off, such as cities and areas dense in agriculture. However, global oceanic circulation patterns result in a considerable amount of marine pollutants and debris being scattered throughout the open ocean (Crain et al. 2009). Other human-caused stressors on marine fishes are the introduction of non-native species, climate change, aquaculture, energy production, vessel movement, and underwater noise. Underwater noise is a threat to marine fishes. However, the physiological and behavioral responses of marine fishes to underwater noise (Codarin et al. 2009; Popper 2003; Slabbekoorn et al. 2010; Wright et al. 2010) have been investigated for only a limited number of species (Popper and Hastings 2009).

Many researchers have investigated hearing and vocalizations in fish species (e.g., Astrup 1999; Astrup and Muhl 1993; Casper et al. 2003; Casper and Mann 2006; Coombs and Popper 1979; Dunning et al. 1992; Egner and Mann 2005; Gregory and Claburn 2003; Hawkins and Johnstone 1978; Higgs et al. 2004; Iversen 1967, 1969; Jorgensen et al. 2005; Kenyon 1996; Mann et al. 2001; Mann et al. 2005; Mann and Lobel 1997; Meyer et al. 2010; Myrberg 2001; Nestler et al. 2002; Popper 2008; Popper and Carlson 1998; Popper and Tavolga 1981; Ramcharitar et al. 2006; Ramcharitar et al. 2001; Ramcharitar and Popper 2004; Remage-Healey et al. 2006; Ross et al. 1996; Sisneros and Bass 2003; Song et al. 2006; Wright et al. 2007; Wright et al. 2005). Bony fish can produce sounds in a number of ways and use them for a number of behavioral functions (Ladich 2008). Over 30 families of fish are known to use vocalizations in aggressive interactions, and over 20 families are known to use vocalizations in mating (Ladich 2008). Sound generated by fish as a means of communication is generally below 500 Hz (Slabbekoorn et al. 2010). Though fish can produce sounds in a number of ways, typically the air in the swim bladder is vibrated by the sound producing structures (often muscles that are integral to the swim bladder wall) and radiates sound into the water (Zelick et al. 1999).

All fish have two sensory systems to detect sound in the water: the inner ear, which functions very much like the inner ear in other vertebrates, and the lateral line, which consists of a series of receptors along the fish's body (Popper 2008). The inner ear generally detects relatively higher-frequency sounds, while the lateral line detects water motion at low frequencies (below a few hundred Hertz [Hz]) (Hastings and Popper 2005).

ESA-listed species of fish are unlikely to occur in the Training Study Area, however, they do occur in the open ocean, and therefore are presented here. Salmonids, Pacific eulachon, and green sturgeon have ESA-listed stocks that would be rare in the Training Study Area. The salmonids species range from San Francisco Bay, California northward around the Pacific Rim, and then southward along the coasts of Russia, Japan, and Korea (Eggers 2004). Salmonids are anadromous, meaning they rear in freshwater and spend a portion of their lives in the ocean. Juveniles and adults of the anadromous salmonid populations in the Training Study Area traverse estuaries en route to and from the Pacific Ocean. The length of time spent in a given estuary is determined by a combination of environmental conditions (i.e., river discharge, water temperature), intrinsic biological differences (sex and population), and physiological and energetic status.

Pacific eulachon is found along the Pacific coast of North America from northern California to Alaska (NOAA Fisheries 2014). Pacific eulachon, like salmonids, are anadromous. Eulachon typically spend 3–5 years in saltwater before returning to freshwater to spawn from late winter through mid spring. Juvenile eulachon move from shallow nearshore areas to mid-depth areas of the ocean (NOAA Fisheries 2014).

The green sturgeon is found along the west coast of Mexico, the United States, and Canada. They are the most broadly distributed, wide-ranging, and most marine-oriented species of the sturgeon family. Younger green sturgeon reside in fresh water, with adults eventually returning from marine waters to freshwater to spawn when they are about 15 years of age. The green sturgeon ranges from Mexico to at least Alaska in marine waters, and is observed in bays and estuaries up and down the west coast of North America (NOAA Fisheries Office of Protected Resources 2014).

For conservation efforts each species of salmonids, pacific eulachon, and green sturgeon is divided into either distinct population segments (DPS) or evolutionarily significant units (ESU), which are breeding groups, defined by the fresh water habitats the fish rear in. None of the salmonids, pacific eulachon, or green sturgeon originating from Alaskan waters are listed for protection under the ESA, and there is no

critical habitat designated in Alaska (National Oceanic and Atmospheric Administration 2014). ESA-listed salmonid species, pacific eulachon, and green sturgeon may be present in the open ocean but are unlikely to occur in the nearshore waters of the Training Study Area; therefore no effects are expected from the proposed activities and they are not analyzed further. Information on ESA-listed fish species that may occur in the open ocean, but that are unlikely to occur in the Training Study Area is provided in

Table 3.2-3.

Table 3.2-3: Federally Listed Fish Species that are Unlikely to Occur within the Training Study Area

Common Name (Scientific Name)	Distinct Population Segment (DPS) ¹ / Evolutionarily Significant Unit (ESU) ²	ESA Listing Status	Critical Habitat Designation
Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	Puget Sound ESU	T	Designated (not in the Training Study Area)
	Upper Columbia River spring-run ESU	E	Designated (not in the Training Study Area)
	Lower Columbia River ESU	T	Designated (not in the Training Study Area)
	Upper Willamette River ESU	T	Designated (not in the Training Study Area)
	Snake River spring/summer-run ESU	T	Designated (not in the Training Study Area)
	Snake River fall-run ESU	T	Designated (not in the Training Study Area)
	California Coastal ESU	T	Designated (not in the Training Study Area)
	Upper Klamath and Trinity Rivers Basin ESU	CS	Not Designated
	Central Valley, fall and late fall run ESU	SOC	Designated (not in the Training Study Area)
	Central Valley spring-run ESU	T	Designated (not in the Training Study Area)
	Sacramento River winter-run	E	Designated (not in the Training Study Area)
Chum Salmon (<i>Oncorhynchus keta</i>)	Hood Canal Summer-run ESU	T	Designated (not in the Training Study Area)
	Columbia River ESU	T	Designated (not in the Training Study Area)

Table 3.2-3: Federally Listed Fish Species that are Unlikely to Occur within the Training Study Area (continued)

Common Name (Scientific Name)	Distinct Population Segment (DPS) ¹ / Evolutionarily Significant Unit (ESU) ²	ESA Listing Status	Critical Habitat Designation
Coho Salmon (<i>Oncorhynchus kisutch</i>)	Lower Columbia ESU	T	Proposed
	Oregon coast ESU	T	Designated (not in Training Study Area)
	Southern Oregon/Northern California coast ESU	T	Designated (not in Training Study Area)
	Puget Sound/Strait of Georgia ESU	SOC	Not Designated
	Central California Coast	E	Designated (not in Training Study Area)
Sockeye Salmon (<i>Oncorhynchus nerka</i>)	Snake River ESU	E	Designated (not in the Training Study Area)
	Ozette Lake ESU	T	Designated (not in the Training Study Area)
Steelhead Trout (<i>Oncorhynchus mykiss</i>)	Puget Sound DPS	T	Proposed
	Upper Columbia River DPS	T	Designated (not in Training Study Area)
	Middle Columbia River DPS	T	Designated (not in Training Study Area)
	Lower Columbia River DPS	T	Designated (not in Training Study Area)
	Upper Willamette River DPS	T	Designated (not in Training Study Area)
	Snake River Basin DPS	T	Designated (not in Training Study Area)
	Northern California DPS	T	Designated (not in Training Study Area)
	Oregon Coast DPS	SOC	Not Designated
	California Central Valley DPS	T	Designated (not in Training Study Area)
	Central California Coast DPS	T	Designated (not in Training Study Area)
	South-Central California Coast DPS	T	Designated (not in Training Study Area)
	Southern California DPS	E	Designated (not in Training Study Area)
Pacific Eulachon (<i>Thaleichthys pacificus</i>)	Southern DPS	T	Designated (not in Training Study Area)
Green Sturgeon (<i>Acipenser medirostris</i>)	Southern DPS	T	Designated (not in Training Study Area))
	Pacific-northern DPS	SOC	Not Designated

¹ A species with more than one distinct population segment can have more than one ESA listing status, as individual distinct population segments can be either not listed under the ESA or can be listed as endangered, threatened, or a candidate species.

² Evolutionarily significant unit is a population of organisms that is considered distinct for purposes of conservation.
 Notes: ESA = Endangered Species Act, Federal Status: E = Endangered, T = Threatened, CS = Candidate Species, SOC = Species of Concern

3.2.3.4.1 Essential Fish Habitat

The three FMPs that NPFMC has designated EFH and HAPC for in the Training Study Area are the Alaska groundfish FMP, the weathervane scallops FMP, and the Pacific salmon FMP. The species included in

these FMPs are listed in Table 3.2-4, and discussed further in the subsequent sections. Figure 3.2-1 shows the Training Study Area and EFH for groundfish, weathervane scallops, and Pacific salmon.

Table 3.2-4: Species with Fishery Management Plans in the Training Study Area

FMP	Category	Species
Gulf of Alaska Groundfish	Target Species	Walleye pollock (<i>Theragra chalcogramma</i>)
		Pacific cod (<i>Gadus macrocephalus</i>)
		Sablefish (<i>Anoplopoma fimbria</i>)
		Flatfish (<i>Pleuronectiformes</i>) (shallow-water flatfish, deep-water flatfish, rex sole, flathead sole, arrowtooth flounder)
		Rockfish (<i>Sebastes</i>) (Pacific ocean perch, northern rockfish, shortraker and roughey, rockfish, other slope rockfish, pelagic shelf rockfish, demersal shelf rockfish, thornyhead rockfish)
		Atka mackerel (<i>Pleurogrammus monopterygius</i>)
		Skates (<i>Rajidae</i>) (big skates, longnose skates, and other skates)
		Squid (<i>Teuthida</i>)
		Sculpin (<i>Cottoidea</i>)
		Shark (<i>Selachimorpha</i>)
	Octopus (<i>Octopoda</i>)	
	Prohibited Species	Pacific halibut (<i>Hippoglossus stenolepis</i>),
		Pacific herring (<i>Clupea pallasii</i>)
		Pacific salmon (<i>Oncorhynchus</i>)
		Steelhead trout (<i>Oncorhynchus mykiss</i>)
		King crab (<i>Lithodidae</i>)
		Tanner crab (<i>Chionoecetes bairdi</i>)
	Forage Fish Species	Osmeridae family (eulachon, capelin, and other smelts)
		Myctophidae family (lanternfishes)
		Bathylagidae family (deep-sea smelts)
Ammodytidae family (Pacific sand lance)		
Trichodontidae family (Pacific sand fish)		

Table 3.2-4: Species with Fishery Management Plans in the Training Study Area (continued)

FMP	Category	Species
		Pholidae family (gunnels)
		Stichaeidae family (pricklebacks, warbonnets, eelblennys, cockscombs, and shannys)
		Gonostomatidae family (bristlemouths, lightfishes, and anglemouths)
		Order Euphausiacea (krill)
Alaska Weathervane Scallop	N/A	Alaska Weathervane Scallops (<i>Patinopecten caurinus</i>)
Pacific Salmon	N/A	Pink Salmon (<i>Oncorhynchus gorbuscha</i>)
		Chum Salmon (<i>Oncorhynchus keta</i>)
		Sockeye Salmon (<i>Oncorhynchus nerka</i>)
		Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)
		Coho Salmon (<i>Oncorhynchus kisutch</i>)

Notes: FMP = Fishery Management Plan, N/A = Not applicable

3.2.3.4.1.1 Gulf of Alaska Groundfish

The most diverse species in the GOA is the rockfish group (genus *Sebastes* and *Sebastolobus*). The relative abundance of fishes in the cod family (*Gadidae*) is different in the GOA compared to the other regions. Pacific hake (*Merluccius productus*) is present only in the southern portion of the GOA and would be unlikely to occur in the Training Study Area. Another groundfish that is the target of fisheries in the GOA is sablefish (*Anoplopoma fimbria*). Sablefish recovered to high levels of abundance through 1988 due to the strong 1977 year class but have declined each year through 1999. Weak recruitment has led to projections of continued decline. Many of the flounders present in the GOA also occur in the Bering Sea region; however, the relative abundance of different species varies greatly between areas. Atka mackerel, a member of the greenling family (*Hexagrammidae*), supported a targeted foreign fishery in the Central regulatory area in the 1970s, but abundance of this species has declined to negligible quantities. Elasmobranchs are represented in the GOA by several species of sharks and skates. Skates (*Rajidae*) are widely distributed throughout the GOA and are most abundant on the inner shelf (North Pacific Fishery Management Council 2014a). No designated groundfish HAPCs are found in the Training Study Area, however the Training Study Area does overlap with EFH for the GOA Groundfish FMP (Figure 3.2-1).

3.2.3.4.1.2 Alaska Weathervane Scallop

The highest densities of weathervane scallops in Alaska are found along the eastern gulf coast from Cape Spencer to Cape St. Elias, around Kodiak Island, and in the Bering Sea (North Pacific Fishery Management Council 2014b). EFH for late juvenile and adult weathervane scallops is the general distribution area for this life stage, located in the sea floor along the middle 160–330 ft. (50–100 m) deep, and outer 330–660 ft. (100–200 m) deep shelf in concentrated areas of the GOA where there are substrates of clay, mud, sand, and gravel that are generally elongated in the direction of current flow

(Figure 3.2-1) (National Marine Fisheries Service 2005). This habitat does not occur in the Training Study Area as shown in Figure 3.2-1.

3.2.3.4.1.3 Pacific Salmon

The NPFMC established the following areas that may serve as pacific salmon habitat in the open ocean: the Aleutian Islands Habitat Conservation Area, the Aleutian Islands Coral Habitat Protection Areas, and the GOA Slope Habitat Conservation Areas. The NPFMC also established HAPCs within pacific salmon EFH to protect those areas from fishing threats: the Alaska Seamount Habitat Protection Areas, the Bowers Ridge Habitat Conservation Zone, and the GOA Coral Habitat Protection Areas (North Pacific Fishery Management Council 2012). The Training Study Area does not overlap with any of these HAPC areas. Habitat for all five salmon species varies by age and level of maturation; however, for all of the Marine Immature and Maturing adults, EFH is the general distribution area for their life stage and is located outside of state waters, in marine waters off the coast of Alaska to depths of 200 m, ranging from the mean higher tide line to the 200 nm limit of the U.S. Exclusive Economic Zone (Figure 3.2-1) (National Marine Fisheries Service 2005).

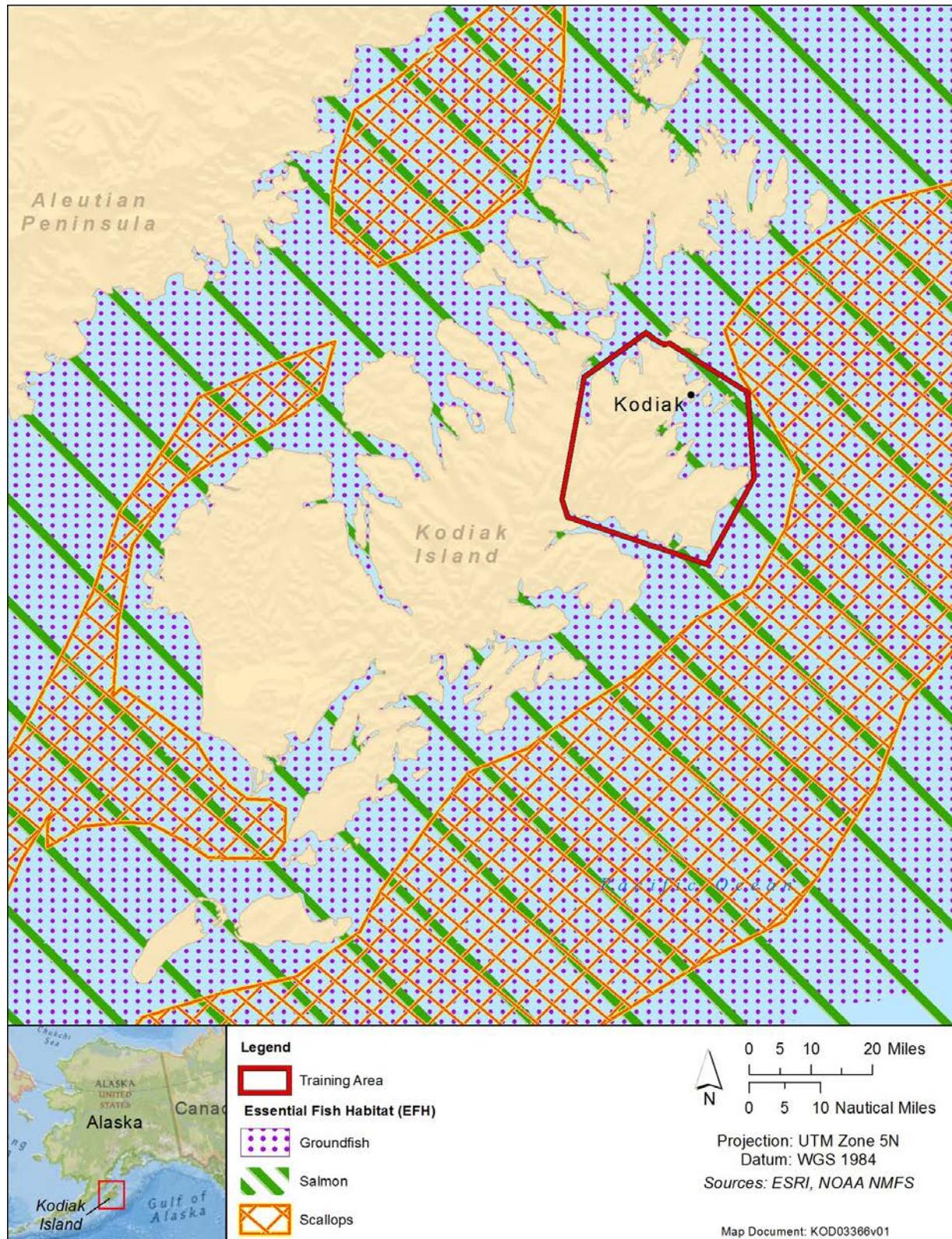


Figure 3.2-1: Essential Fish Habitat within and adjacent to the Training Study Area

3.2.3.5 Sea Turtles

Sea turtles are long-lived reptiles that are found throughout the world's tropical, subtropical, and temperate seas. Four of the seven species of sea turtles (leatherback [*Dermochelys coriacea*], loggerhead [*Caretta caretta*], olive ridley [*Lepidochelys olivacea*], and green [*Chelonia mydas*]) have the potential to be found in the Training Study Area. Sea turtles primarily use three types of habitat: terrestrial (oceanic beaches for nesting), tropical and subtropical open ocean, and foraging grounds in coastal areas. The hard-shell turtles of the Cheloniidae family (loggerhead, olive ridley, and green) are considered tropical, subtropical, and warm temperate species that rarely stray into cold waters (Eckert 1993). Most hard-shell turtles seek optimal seawater temperatures near 65 degrees Fahrenheit (°F) (18.3 degrees Celsius [°C]) and are cold-stressed at seawater temperatures below 50°F (10°C) (Mrosovsky 1980; Schwartz 1978).

Leatherback sea turtles are the only turtle in the family Dermochelyidae. Instead of a hard-shell, which is characteristic of the Cheloniidae family, a leatherback's top shell (carapace) is about 1.5 inches (in.) (4 centimeters [cm]) thick and consists of leathery, oil-saturated connective tissue overlaying loosely interlocking dermal bones. Because of this and other physiological differences, leatherbacks are adapted in a way that allows them to maintain a core body temperature higher than that of the surrounding water. Therefore, they are known to regularly occur in cold temperate waters of high latitudes (Eckert et al. 1989).

General threats to sea turtles include bycatch, marine debris, global climate change, and other human-caused stressors. Bycatch in commercial fisheries, ship strikes, and marine debris are primary threats to sea turtles in the offshore environment (Lutcavage et al. 1997). One comprehensive study estimated that, worldwide, 447,000 sea turtles are killed each year from bycatch in commercial fisheries (Wallace et al. 2010). Precise data are lacking for sea turtle mortalities directly caused by ship strikes. However, live and dead turtles are often found with deep cuts and fractures indicative of collision with a boat hull or propeller (Lutcavage et al. 1997; Hazel et al. 2007). Marine debris can also be a problem for sea turtles through entanglement or ingestion. Global climate change trends are toward increasing ocean and air temperatures, increasing acidification of oceans, and sea level rise; these trends may adversely impact turtles in all life stages (Chaloupka et al. 2008; Mrosovsky et al. 2009; Schofield et al. 2010; Witt et al. 2010). On nesting beaches (none of which are present in the Training Study Area), wild domestic dogs, pigs, and other animals ravage sea turtle hatchlings and nests. Humans continue to harvest eggs and nesting females in some parts of the world, threatening some Pacific Ocean sea turtle populations (Maison et al. 2010).

Sea turtles do not have external ears or ear canals to channel sound to the middle ear, nor do they have a specialized eardrum. Instead, fibrous and fatty tissue layers on the side of the head may serve as the sound-receiving membrane in the sea turtle (Ketten 2008), a function similar to that of the eardrum in mammals, or may serve to release energy received via bone conduction (Lenhardt et al. 1983). Investigations suggest that sea turtle auditory sensitivity is limited to low-frequency bandwidths (< 1,000 Hz), such as the sound of waves breaking on a beach. The role of underwater low-frequency hearing in sea turtles is unclear. It has been suggested that sea turtles may use acoustic signals from their environment as navigational cues during migration and to identify their natal beaches (Lenhardt et al. 1983) or to locate prey or avoid predators. Sound production has been recorded in nesting leatherback turtles. The recorded sounds are described as sighs or belch-like sounds with frequency content up to 1,200 Hz, but with most energy contained in a frequency band from 300 to 500 Hz (Cook and Forrest 2005). These noises are guttural exhalations made during the nesting process; leatherback sea turtles are not known to make audible sounds used in communication, navigation, or foraging.

The cold waters off the Training Study Area are above the typical northern limits for the loggerhead, olive ridley, and green sea turtles, and these species are considered rare in the Training Study Area. However, under certain oceanographic conditions (e.g., warmer currents), all four species could occasionally occur off the coast of Alaska. However, as water temperatures drop or other oceanographic changes occur, all except the leatherback become cold stressed and strand on the beaches with no way to survive the return to warmer waters.

Loggerheads are circumglobal and occur throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian oceans. In the eastern Pacific, loggerheads have been reported as far north as Alaska, and as far south as Chile (National Marine Fisheries Service and U.S. Fish and Wildlife Service 2007). Of the two loggerhead occurrences between 1960 and 1998 in Alaska reported by Hodge and Wing (2000), one was a carcass and the other was a live sighting. The olive ridley has only twice been documented in Alaskan waters between 1960 and 1998, and both were carcasses (Hodge and Wing 2000). Between 1960 and 1998, of the nine green sea turtle occurrences in Alaska (as reported in Hodge and Wing 2000), four were carcasses, one was cold-stressed and flown to San Diego for rehabilitation, and the remaining four were live sightings.

As described above, although sightings of sea turtles from the Cheloniidae family (loggerhead, olive ridley, and green) have been documented the Training Study Area, most of these involve individuals that were either cold stressed, likely to become cold stressed, or already deceased (Hodge and Wing 2000). Thus, the Training Study Area is considered to be outside the normal range for sea turtle species of the Cheloniidae family, and these species are not considered further for analysis in this EA. Leatherbacks however, because of their unique physiology among sea turtles, occur with more regularity in colder waters at higher latitudes (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1992).

3.2.3.5.1 Leatherback Sea Turtle (*Dermochelys coriacea*)

3.2.3.5.1.1 Status

The leatherback sea turtle (*Dermochelys coriacea*) is listed as endangered throughout its geographic range. Critical habitat is designated for the leatherback sea turtle, however it is not designated within the Training Study Area. A PCE that may occur in the Training Study Area by drifting into it is the jellyfish, scyphomedusae of the order Semaestomeae (*Chrysaora*, *Aurelia*, *Phacellophora*, and *Cyanea*), which is one of the leatherback sea turtles main prey items (National Marine Fisheries Service and U.S. Fish and Wildlife Service 2007; Turtle Expert Working Group 2007).

3.2.3.5.1.2 Presence in the Training Study Area

The leatherback sea turtle is the only turtle commonly found in the Training Study Area. Adult leatherback turtles forage in temperate and subpolar regions in all oceans and migrate to tropical nesting beaches between 30° North (N) and 30° South (Eckert 1995). The leatherback sea turtle is documented to deliberately return annually (only in the summer and fall) to feed on jellyfish aggregations off the southern Oregon and California coasts (National Marine Fisheries Service 2013a). It is likely the leatherback could travel farther north to Alaska waters during these foraging expeditions. Nineteen leatherback sea turtles have been reported in Alaska between 1960 and 2007 (Alaska Department of Fish and Game 2013). Sightings and incidental capture data indicate that leatherbacks are found in Alaska as far north as 60.34°N, 145.38° West (W) and as far west as the Aleutian Islands (Pacific Sea Turtle Recovery Team 1998). While leatherback sea turtles are capable of foraging in inland waters, they prefer offshore areas. Therefore, their presence in the Training Study Area would be rare.

3.2.3.5.1.3 Behavior and Ecology in the Training Study Area

Leatherback turtles engage in some of the longest migrations of any sea turtle species. These extensive journeys often run along distinct depth contours for hundreds to thousands of kilometers (Morreale et al. 1996; Hughes et al. 1998). Usually leatherback turtles feed on gelatinous zooplankton such as cnidarians (jellyfish and siphonophores) and tunicates (salps and pyrosomas); however, a wide variety of other prey items is known (Bjorndal 1997; National Marine Fisheries Service and U.S. Fish and Wildlife Service 1998). Leatherbacks feed throughout the water column and dive as deep as 3,937 ft. (1,200 m) (Davenport 1988). During migrations or long distance movements, leatherbacks maximize swimming efficiency by traveling within 16.4 ft. (5 m) of the surface (Eckert 2002).

3.2.3.6 Marine Birds

The Training Study Area provides abundant habitat for a variety of birds, including cliffs, inlets and bays, interior valleys, and alpine and tundra areas. Chiniak Bay was designated an Important Bird Area by the Audubon Society because it supports water bird breeding colonies and wintering habitat (National Audubon Society 2012). Womens, Middle, and Kalsin Bays are important waterfowl concentration zones during fall and spring. During winter, Chiniak Bay is a waterfowl concentration area (National Oceanic and Atmospheric Administration 1997). The Training Study Area is rich in wetland habitat that shorebirds, dabblers (i.e., ducks, geese), and other birds use to find food and for resting. Additional marine birds that may occur in the Training Study Area are listed in Appendix E (Marine Biological Resources Species List).

General threats to bird populations in the Training Study Area include human-caused stressors such as incidental mortality from interactions with commercial and recreational fishing gear, predation by introduced species, habitat loss, disturbance and degradation of nesting and foraging areas by humans and domesticated animals, noise pollution from construction and other human activities, nocturnal collisions with power lines and artificial lights, collisions with aircraft, and pollution such as that from oil spills and plastic debris (Carter and Kuletz 1995, Piatt and Naslund 1995, Burkett et al. 2003, Carter et al. 2005, U.S. Fish and Wildlife Service 2005, Anderson et al. 2007, U.S. Fish and Wildlife Service 2008, Clavero et al. 2009, California Department of Fish and Game 2010, International Union for the Conservation of Nature and Natural Resources 2010, North American Bird Conservation Initiative 2010). A recent review of reported bycatch estimates suggests that at least 400,000 birds die in gillnets each year (Zydalis et al. 2011). Disease, storms, and harmful algal blooms are also threats to birds (U.S. Fish and Wildlife Service 2005, Anderson et al. 2007, Jessup et al. 2009, North American Bird Conservation Initiative 2010). Bird distribution, abundance, breeding, and other behaviors are affected by cyclical environmental events such as the El Niño Southern Oscillation and Pacific Decadal Oscillation in the Pacific Ocean (Vandenbosch 2000). In the long term, climate change could be the largest threat to seabirds (North American Bird Conservation Initiative 2010).

Although hearing range and sensitivity has been measured for many land birds, little is known of seabird hearing. Most published literature on bird hearing focuses on terrestrial birds and their ability to hear in air. Hearing capabilities have been studied for only a few seabirds (Thiessen 1958, Wever et al. 1969, Beuter et al. 1986, Beason 2004); these studies show that seabird hearing ranges and sensitivity are consistent with what is known about bird hearing in general. There is little published literature on the hearing abilities of birds under water, and the manner in which birds may use sound under water is unclear (Dooling and Therrien 2012). In fact, there are no measurements of the underwater hearing ability of any diving birds (Therrien et al. 2011). There are some studies of bird behavior underwater when exposed to sounds, from which some hearing abilities of birds underwater could be inferred.

Common murre (*Uria aalge*) were deterred from gillnets by acoustic transmitters emitting 1.5 kHz pings at 120 decibels referenced to 1 micropascal; however, there was no significant reduction in rhinoceros auklet (*Cerorhinca monocerata*) bycatch in the same nets (Melvin et al. 1999). In another study, firing of guns over water deterred African penguins (*Spheniscus demersus*) from an area, but playback of Orca (*Orcinus orca*) vocalizations did not (Cooper 1982).

In the Training Study Area, there are two protected species of marine birds. The two birds are the threatened Steller's eider (*Polysticta stelleri*), and one candidate species for protection, the yellow-billed loon (*Gavia adamsii*). Information below was taken from Alaska Department of Fish and Game (2013), MacIntosh (1998), and SWCA Environmental Consultants (2009), unless otherwise stated.

3.2.3.6.1 Steller's Eider (*Polysticta stelleri*)

3.2.3.6.1.1 Status

Steller's eider (*Polysticta stelleri*) was listed as threatened in 1997 because of the reduction in breeding birds and breeding range in Alaska (U.S. Fish and Wildlife Service 1997). Critical habitat is designated for the Steller's eider, however it is not designated within the Training Study Area. In 1994, the USFWS also included Steller's eiders on the closed season species list under the MBTA, making it illegal to take this species during any season. Sport and subsistence harvest are also no longer permitted (Quakenbush and Suydam 1999). In addition, Steller's eiders are listed by the State of Alaska as a Species of Special Concern.

3.2.3.6.1.2 Presence in the Training Study Area

Steller's eiders are sea ducks known to occur in shallow marine habitats of Kodiak Island during the non-breeding season and arrive in late August or September. In the winter, Steller's eiders are common in the Training Study Area and can be found congregating along the Alaska Peninsula, Kodiak Island, eastern Aleutian Islands, and lower Cook Inlet (Corcoran et al. 2010; King and Dau 1981; Petersen 1981; Troy and Johnson 1987). They disperse from shallow lagoons on the north side of the Alaska Peninsula after molt and are not known to nest on Kodiak Island. In 2001, surveys within the Training Study Area found groups of up to 250 individuals (Larned and Zwiefelhofer 2001). In 2010, aerial surveys found that Chiniak and Uyak Bays had a total of 705 Steller's eiders. Flocks were observed to be on the smaller side, ranging from 1 to 130 individuals per observation (Corcoran et al. 2010).

3.2.3.6.1.3 Behavior and Ecology in the Training Study Area

Steller's eiders begin courtship in late winter, and most pair formation usually occurs prior to leaving for the breeding grounds (McKinney 1965). Wintering aggregations on the Alaska Peninsula begin dispersal to breeding grounds in mid- to late April (McKinney 1965). Nesting occurs in mid- to late June with five to eight eggs typically hatching in late June after an incubation of approximately 25 days (Quakenbush et al. 2004, U.S. Fish and Wildlife Service 1999). Nesting occurs in the maritime tundra of northeast Siberia and northwest Alaska, and therefore does not occur in the Training Study Area (Corcoran et al. 2010). Primary foods in marine areas include bivalves, crustaceans, polychaete worms, and mollusks (U.S. Fish and Wildlife Service 1997, 2003).

3.2.3.6.2 Yellow-Billed Loon (*Gavia adamsii*)

3.2.3.6.2.1 Status

The yellow-billed loon (*Gavia adamsii*) was listed as a candidate species in 2009. As a candidate species, no critical habitat has been designated for the yellow-billed loon.

3.2.3.6.2.2 Presence in the Training Study Area

Yellow-billed loons winter regularly in nearshore areas around Kodiak Island (Earnst 2004). Marine habitats off Kodiak Island are important for migrating, wintering, and nonbreeding yellow-billed loons (U.S. Fish and Wildlife Service 2009). In the Kodiak National Wildlife Refuge (NWR) and Kodiak Island Archipelago, the occurrence of yellow-billed loons is considered rare in the fall and spring, and accidental in summer (MacIntosh 1998). Surveys in the Kodiak area reported three sightings in November and four in February; these sightings were scattered around Kodiak Island Bay (Forsell and Gould 1981). In the winter, they are found usually in bays, and the greatest numbers occurred during the survey in Uganik Bay (Forsell and Gould 1981). They breed on arctic and subarctic tundra of northern Alaska, Canada, and Eurasia from June through September, so they are not known to nest in the Training Study Area.

3.2.3.6.2.3 Behavior and Ecology in the Training Study Area

The yellow-billed loon's diet consists mainly of fish and occasionally aquatic invertebrates. Prey species include sculpins (*Leptocottus armatus*, *Myoxocephalus* sp.); tomcod (*Microgadus proximus*) and rock cod (*Sebastes* sp.); invertebrates such as amphipods (*Gammarus* sp.), isopods (*Bathynomus* sp.), shrimp (*Palaemon* sp.), hermit crabs (*Pagurus* sp.), and marine worms (*Nereus* sp.); and Pacific sand dabs (*Citharichthys sordidus*). They nest in low-lying tundra near fish-bearing lakes. Yellow-billed loon migration routes are thought to be primarily marine, sometimes far offshore. Migration route and timing is possibly influenced by ocean ice conditions, although inland breeders may migrate along chains of inland lakes (Federal Register [FR] 72 (108): 31256, 6 June 2007).

3.2.3.7 Marine Mammals

Marine mammal species that may occur in the Training Study Area include the harbor seal (*Phoca vitulina*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*Phocoenoides dalli*), killer whale (*Orcinus orca*), Cuvier's beaked whale (*Ziphius cavirostris*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the minke whale (*Balaenoptera acutorostrata*) (Federal Aviation Administration 2012; SWCA Environmental Consultants 2009). A comprehensive list of species and common names of marine mammals that may occur in the Training Study Area can be found in Appendix E (Marine Biological Resources Species List). All marine mammals in the United States are protected under the Marine Mammal Protection Act (MMPA), and some species receive additional protection under ESA. The MMPA defines a marine mammal "stock" as "a group of marine mammals of the same species or smaller taxa (MMPA Section 3(11)) in a common spatial arrangement that interbreed when mature." For management purposes under the MMPA, a stock is considered an isolated population or group of individuals within a whole species that is found in the same area (Carretta et al. 2013).

Marine mammal populations can be influenced by various factors and human activities. These factors can affect marine mammal populations directly, by activities such as hunting and whale watching, or indirectly, through reduced prey availability or lowered reproductive success of individuals. Marine mammals are also influenced by natural phenomena, such as storms and other extreme weather patterns. Generally, not much is known about how large storms and other weather patterns affect marine mammals, other than that mass strandings (when two or more marine mammals become

beached or stuck in shallow water) sometimes coincide with hurricanes, typhoons, and other tropical storms (Marsh 1989; Rosel and Watts 2008). The global climate is changing and is having impacts on some populations of marine mammals (Simmonds and Elliott 2009; Salvadeo et al. 2010). Climate change can affect marine mammal species directly through habitat loss (especially for species that depend on ice or terrestrial areas) and indirectly via impacts on prey, changing prey distributions and locations, increased ocean acidification, and changes in water temperature. Changes in prey can impact marine mammal foraging success, which in turn affects reproduction success, and survival. Climate change also may influence marine mammals through effects on human behavior, such as increased shipping and oil and gas extraction, resulting from sea ice loss (Alter et al. 2010). Mass die offs of some marine mammal species have been linked to toxic algal blooms, that is, they consume prey that have consumed toxic plankton, such as die offs of California sea lions and northern fur seals because of poisoning caused by the diatom *Pseudo-nitzschia* spp. (Doucette et al. 2006; Fire et al. 2008; Torres de la Riva et al. 2009; Thomas et al. 2010; Lefebvre et al. 2010).

All marine mammals that have been studied can produce sounds and use sounds to forage, orient and navigate, monitor their environment, detect and respond to predators, and socially interact with others. Measurements of marine mammal sound production and hearing capabilities provide some basis for assessing whether exposure to a particular sound source may affect a marine mammal behaviorally or physiologically. Marine mammal hearing abilities are quantified using live animals either via behavioral audiometry or electrophysiology (see Schusterman 1981; Au 1993; Wartzok and Ketten 1999; Nachtigall et al. 2007).

Marine mammal species in the Training Study Area that are protected under the ESA include the endangered humpback whale (*Megaptera novaeangliae*), fin whale (*Balaenoptera physalus*), North Pacific right whale (*Eubalaena japonica*), Western North Pacific gray whale (*Eschirichtius robustus*), Steller sea lion (Western Stock) (*Eumetopias jubatus*), and the threatened Northern sea otter (Southwest Alaska Distinct Population Segment) (*Enhydra lutris kenoni*).

3.2.3.7.1 Humpback Whale (*Megaptera novaeangliae*)

3.2.3.7.1.1 Status

Humpback whales are listed as endangered under the ESA. Based on evidence of population recovery in many areas, the species is being considered by the NMFS for removal or down-listing from the U.S. Endangered Species List (National Marine Fisheries Service 2013b). Critical habitat has not been designated for the humpback whale.

3.2.3.7.1.2 Presence in the Training Study Area

Humpback whales are seen off Kodiak Island most often in the fall, and aggregations have been seen off Shuyak and Sitkalidak islands (Wynne and Witteveen 2005). Humpback whales have also been documented as early as April through December south of Kodiak Island (Fiscus et al. 1976; Consiglieri et al. 1982; Brueggeman et al. 1988). There are also documented sightings of summer feeding aggregations of humpback whales throughout the Kodiak archipelago in the western GOA, particularly in Marmot and Chiniak Bays (Baraff et al. 2005). A recent increase in the number of humpback whale entanglements in coastal fishing gear suggests that whales may be pursuing prey closer to shore. Some whales may winter in the inland waters of southeast Alaska, but most spend the winter months on breeding grounds off Mexico and the Hawaiian Islands (Consiglieri et al. 1982). Alaska brings two stocks of humpbacks together: the Central and Western North Pacific stocks, although some from the Eastern North Pacific or California/Oregon/Washington stocks can also be found there during summer (Allen and Angliss 2012).

3.2.3.7.1.3 Behavior and Ecology in the Training Study Area

Group size can range from single individuals to up to 20 or more whales. On the feeding grounds, relatively large numbers of humpbacks may be observed within a limited area to feed on a rich food source. Average group size near Kodiak Island ranges from two to four individuals; large aggregations have been observed near Shuyak and Sitkalidak islands in the Kodiak Archipelago (Wynne et al. 2005). Humpback whales feed on a wide variety of invertebrates and small schooling fish.

The most common invertebrate prey are euphausiids (krill); the most common fish prey are herring, mackerel, sand lance, sardines, anchovies, and capelin (Clapham and Mead 1999). These whales are lunge feeders, taking in huge batches of prey items as they lunge laterally, diagonally, or vertically through patches of prey (Clapham 2002). Feeding behavior is highly diverse, and humpbacks employ behaviors, such as bubble netting, to corral prey (Jurasz and Jurasz 1979; Weinrich et al. 1992). Humpback whales spend spring through fall on high-latitude feeding grounds, and winter on low latitude breeding grounds (Clapham 2002). In a study by Dietz, humpback whales used the majority of their dive time in the upper 20 m (65.6 ft.) of the water column. The humpback whales seldom dove from 300 to 500 m (984.3 to 1,640.4 ft.) and no dives were recorded deeper than 500 m (1,640.4 ft.) (Dietz et al. 2002).

3.2.3.7.2 Fin Whale (*Balaenoptera physalus*)

3.2.3.7.2.1 Status

Fin whales are classified as endangered under the ESA. Critical habitat has not been designated for the fin whale.

3.2.3.7.2.2 Presence in the Training Study Area

Fin whales have been observed year-round in waters around Kodiak Island (Baraff et al. 2005; Wynne and Witteveen 2005). They are most frequently encountered in April–September as fin whales generally mate and calve in temperate waters during the winter and migrate to northern latitudes during the summer to feed. Sightings have occurred along the west coast of Kodiak Island, including Uyak Bay on the northwestern side of Kodiak Island between the island and the Aleutians (Wynne and Witteveen 2005) and off the northeast coast in Marmot and Chiniak Bays (Baraff et al. 2005).

3.2.3.7.2.3 Behavior and Ecology in the Training Study Area

Near the Training Study Area at Uyak Bay on the northwest side of Kodiak Island, groups of fin whales often consist of 12–18 tightly associated individuals (Wynne and Witteveen 2005). Fin whales feed by lunge-feeding and “gulping” (Pivorunas 1979). Foraging fin whales reach average dive depths of 98 m (321 ft.) and average dive times of 6.3 minutes (Croll et al. 2001). The fin whale is a pelagic (open water) species and is seldom found in water less than 660 ft. (201.2 m) deep. The fin whale is found in continental shelf, slope, and oceanic waters (Gregg and Trites 2001; Reeves et al. 2002). In the North Pacific, they feed on krill, large copepods, herring, walleye pollock, and capelin (Nemoto and Kawamura 1977). They are most commonly sighted as single individuals or pairs (Panigada et al. 2005), but do gather in groups at times, especially when good sources of prey are aggregated.

3.2.3.7.3 North Pacific Right Whale (*Eubalaena japonica*)

3.2.3.7.3.1 Status

North Pacific right whales are classified as endangered under the ESA. The North Pacific right whale is one of the world’s most endangered large whale species (Perry et al. 1999; IWC 2001). Although

protected from commercial whaling since 1935, there has been little indication of recovery. Critical habitat was recently designated for the North Pacific right whale, which includes an area in the western GOA and southeastern Bering Sea. This critical habitat does not intersect with the Training Study Area (Figure 3.2-3). PCEs such as species of large zooplankton (i.e., copepods [*Calanus marshallae*, *Neocalanus cristatus*, and *N. plumchrus*], and a euphausiid [*Thysanoessa raschii*]) may occur in the Training Study Area, however, due to the higher density of zooplankton occurring outside of the Training Study Area (in the North Pacific Right Whale's Critical Habitat [Figure 3.2-3]), impacts to that PCE are not expected to occur from proposed activities.

3.2.3.7.3.2 Presence in the Training Study Area

The Training Study Area is located in the western part of the GOA, on Kodiak Island (see Figure 2.1-1). The sighting of a lone North Pacific right whale among humpback whales was made during an aerial survey southeast of Kodiak Island during July 1998. There are documented sightings of summer feeding aggregations of humpback whales throughout the Kodiak archipelago in the western GOA, particularly in Marmot and Chiniak Bays (Baraff et al. 2005). Acoustic detections were made of North Pacific right whales south of the Alaska Peninsula and to the east of Kodiak Island during August and September 2000 (Waite 2003). In March 1979, a group of four right whales was seen in Yakutat Bay (Waite 2003).

3.2.3.7.3.3 Behavior and Ecology in the Training Study Area

North Pacific right whales feed on calanoid copepods (Reeves and Kenney 2003), which concentrate based on the right conditions of sea surface temperature, stratification, bottom topography, and currents (Beardsley et al. 1996; Tynan et al. 2001). North Pacific right whales summer in the Sea of Okhotsk, the southeast Bering Sea, and the northern GOA. Wintering and breeding areas are unknown, but have been suggested to include the Hawaiian Islands, the Ryukyu Islands, and the Sea of Japan. Almost nothing is known of North Pacific right whale diving abilities. Dives of 5–15 minutes or even longer have been reported for North Atlantic right whales. Observations of North Atlantic right whales found that the average dive depth was strongly correlated with both the average depth of peak copepod abundance and the average depth of the bottom mixed layer's upper surface. North Atlantic right whale feeding dives are characterized by a rapid descent from the surface to a particular depth between 80 and 175 m (263 and 574 ft.), remarkable fidelity to that depth for 5–14 minutes, and then rapid ascent back to the surface. Longer surface intervals have been observed for reproductively active females and their calves (U.S. Department of the Navy 2006).

3.2.3.7.4 Western North Pacific Gray Whale (*Eschrichtius robustus*)

3.2.3.7.4.1 Status

There are currently two formally recognized North Pacific populations of gray whales: the Western Pacific subpopulation (also known as the Western North Pacific or the Korean-Okhotsk population) that is critically endangered and shows no apparent signs of recovery, and the Eastern Pacific population (also known as the Eastern North Pacific or the California-Chukchi population) that appears to have recovered from exploitation and was removed from listing under the ESA in 1994 (Swartz et al. 2006). All populations of the gray whale are protected under the MMPA; the Western Pacific subpopulation is listed as endangered under the ESA and is depleted under the MMPA, but there is no designated critical habitat for this species.

3.2.3.7.4.2 Presence in the Training Study Area

Gray whales from the Eastern North Pacific stock can be found feeding in the Training Study Area and surrounding waters in the winter and then leaving for summer calving grounds, although they were

recently observed feeding year-round off Kodiak Island, peak abundance is expected in April–May and November–December (Moore and Huntington 2008; Fiscus et al. 1976). Large feeding aggregations of 100–200 gray whales have been observed at the mouth of Ugak Bay on southeastern Kodiak Island (Wynne and Witteveen 2005), and sightings have been reported at 100 sightings per hour from June to August in Ugak Bay (Moore et al. 2007). Sightings in the Bering Sea are clustered in relatively shallow water (waters with a bottom depth of 164–62.5 ft. [50–80 m]) (U.S. Department of the Navy 2008).

Mate (2013) documented movement of western Pacific gray whale from Sakhalin Island to the nearshore waters off Washington State. This whale tracked via long-term satellite tag traveled directly across the southern Gulf of Alaska via a direct path from the Aleutian Islands to Washington State. Further, photo-catalog comparisons of eastern and western North Pacific gray whale populations suggest that there is more exchange between the western and eastern populations than previously thought, since “Sakhalin” whales were sighted off Santa Barbara, California; British Columbia, Canada; and Baja California, Mexico (Weller et al. 2013). Western North Pacific gray whales presence in the Training Study Area would be considered rare.

Southbound migration of Eastern North Pacific gray whales begins in early October, when they move from the Bering Sea through the Unimak Pass and along the coast of the GOA (Braham 1984, Rugh et al. 2001). Most gray whales follow the coast during migration and stay within 2 km of the shoreline, except when crossing major bays, straits, and inlets from southeastern Alaska to the eastern Bering Sea (Braham 1984, Brueggeman et al. 1989). However, gray whales are known to move farther offshore between the entrance to Prince William Sound and Kodiak Island and between Kodiak Island and the southern part of the Alaska Peninsula (Consiglieri et al. 1982, Moore et al. 2007).

3.2.3.7.4.3 Behavior and Ecology in the Training Study Area

Gray whales can be found in shallow water and usually remain closer to shore than any other large cetacean. On the feeding grounds, gray whales are often solitary but may be near each other while feeding (Leatherwood et al. 1988). Average group size in the GOA is 3–27 gray whales, and large feeding groups of 100–200 have been seen. Gray whales are mostly bottom feeders—they filter amphipods and other crustaceans by sucking up and engulfing sediments from the sea floor and straining the prey out with their baleen plates (Rice et al. 1984). When foraging, gray whales typically dive to 164–197 ft. (50–60 m) for 5–8 minutes. Gray whales are bottom feeders, and filter sediment and the bottom dwelling amphipods that are their prey between their coarse baleen plates, from the sea floor. The whales carry most of the sediment up with them when they surface to breathe, creating mud plumes (Rugh and Fraker 1981).

3.2.3.7.5 Steller Sea Lion (*Eumetopias jubatus*)

3.2.3.7.5.1 Status

The western U.S. stock of Steller sea lions is listed as endangered under the ESA. The most recent stock assessment revealed that the western stock is still declining (National Marine Fisheries Service 2013a). Critical habitat for Steller sea lions occurs in the Training Study Area and is shown in Figure 3.2-3. It was designated on 27 August 1993 (58 FR 45269) based on the location of terrestrial rookery and haulout sites, spatial extent of foraging trips, and availability of prey. Steller sea lion critical habitat includes a terrestrial zone that extends 914 m (3,000 ft.) landward from the baseline or base point of each major rookery and major haulout in Alaska as well as an air zone that extends 3,000 ft. above it, and seaward 37 km from haulout sites and rookeries. West of 144°W longitude, critical habitat includes an aquatic

zone that extends approximately 23 nm seaward in state and federally managed waters (50 C.F.R. 226) (Figure 3.2-3).

Critical habitat and designated haulout sites occur within the Training Study Area. Designated haulout sites within the Training Study Area exist on the northeast tip of Long Island, the tip of Cape Chiniak, and adjacent to the Training Study Area on Ugak Island and in Ugak Bay (Figure 3.2-2). In addition, “no approach” buffer areas around rookery sites of the western stock of Steller sea lions are identified in 50 C.F.R. 223.202. “No approach” zones are restricted areas wherein no vessel may approach within 3 nm of listed rookeries. There are no rookeries within the boundaries of the Training Study Area; the nearest rookery is on Marmot Island approximately 35 miles northeast of the Training Study Area.

3.2.3.7.5.2 Presence in the Training Study Area

Steller sea lions are likely to be present in the Training Study Area year-round. They congregate on land in colonies for resting, mating, birthing, and nursing the young. Sea lions can be found within a 37 km buffer around haulout sites and rookeries. This buffer takes into consideration that sea lions often feed 8–24 km offshore (Fiscus et al. 1976). There is one haulout site near the Spruce Cape Compound, one haulout site on Long Island, and one haulout site at Cape Chiniak (Figure 3.2-2); however, no rookeries occur within the Training Study Area (Wynne and Witteveen 2005).

3.2.3.7.5.3 Behavior and Ecology in the Training Study Area

Steller sea lions do not migrate but often disperse widely during the nonbreeding season (Loughlin 2002); nearshore movements from 120 to 1,785 km have been documented (Calkins and Pitcher 1982; Raum-Suryan et al. 2002; Raum-Suryan et al. 2004). They often haul out in large groups. At sea, groups usually consist of females and subadult males; adult males are typically solitary while at sea (Loughlin 2002). Steller sea lions haul out on beaches and rocky shorelines of remote islands, often in areas exposed to wind and waves (National Marine Fisheries Service 1992).

Steller sea lions feed primarily on fish and cephalopods. Diving and foraging activity vary by sex, age, and season. During the breeding season, females with pups feed mostly at night, while territorial males eat little or no food (Loughlin 2002). In the winter, females make long trips of around 130 km and dive deeply to locate prey (Merrick and Loughlin 1997; Loughlin 2002). In the summer, trip length is about 17 km and dives are shallower (Loughlin 2002).

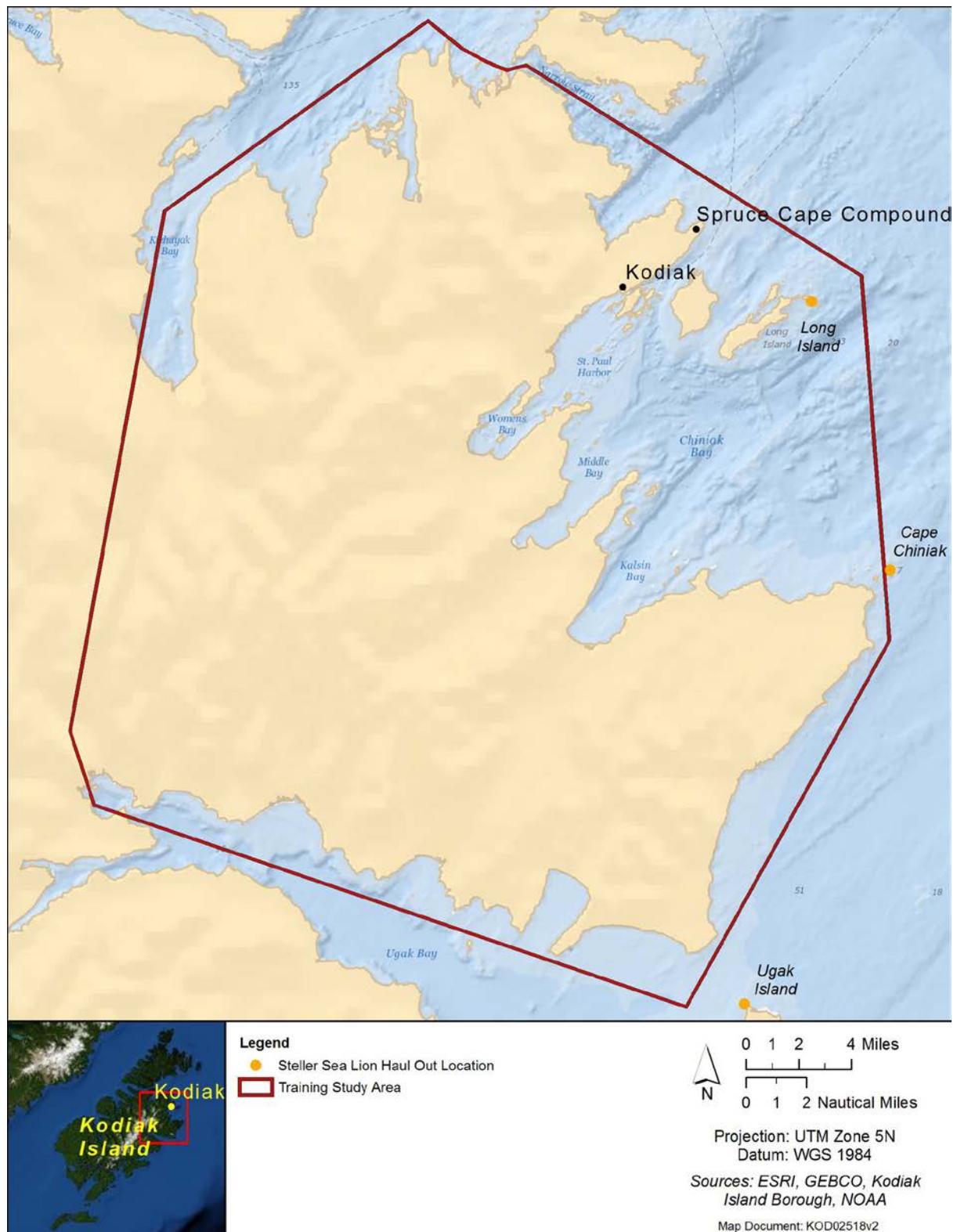


Figure 3.2-2: Steller Sea Lion Haulout Sites in the Training Study Area

3.2.3.7.6 Northern Sea Otter (*Enhydra lutris kenyoni*)

3.2.3.7.6.1 Status

The southwest Alaska distinct population segment (DPS) of northern sea otters (*Enhydra lutris kenyoni*) was listed as threatened in 2005. A draft recovery plan was developed in 2010 (U.S. Fish and Wildlife Service 2010). The Draft Recovery Plan reports the population of the Kodiak, Kamishak, Alaska Peninsula management unit as “stable or growing” (U.S. Fish and Wildlife Service 2010). Critical habitat has been designated for the northern sea otter in the Training Study Area (Figure 3.2-3).

Critical habitat for the northern sea otter in the Training Study Area includes all marine waters around Kodiak that are less than 66 ft. (20 m) deep, as shown in Figure 3.2-2. The PCEs for the Southwest Alaska DPS of the northern sea otter consist of (1) shallow rocky areas less than 6.6 ft. (2 m) deep where marine predators are less likely to forage, (2) nearshore waters within 328 ft. (100 m) of the mean high tide line, (3) kelp forests in water depths less than 66 ft. (20 m) that provide protection from marine predators, and (4) prey resources in the areas identified by PCEs 1–3 that are present in sufficient quantity and quality to meet the energetic requirements of the species.

3.2.3.7.6.2 Presence in the Training Study Area

The northern sea otter commonly occurs in nearshore environments, especially in more protected kelp beds, of the Training Study Area. They can be found in the bays and inlets and may rest on coastal rock outcroppings year-round. They are likely most numerous in Womens Bay just west of Chiniak Bay; however, they can be found in any portion of the Training Study Area. Kelp beds are an important component of sea otter habitat, and can be found in many nearshore areas within the Training Study Area, including Monashka Bay. An aerial survey of the Kodiak Archipelago, conducted in 2004, produced an adjusted population estimate of 11,005 sea otters for the Southwest Alaska DPS of northern sea otters (National Marine Fisheries Service 2008). Sea otters occupy nearly all coastal marine habitats, from bays and estuaries to rocky shores exposed to oceanic swells (Riedman and Estes 1990; U.S. Fish and Wildlife Service 2005). Although sea otters prefer rocky shoreline and relatively shallow water (< 131 ft. [< 40 m] deep) with kelp beds, this is not an essential habitat requirement, and some individuals use soft-sediment areas where kelp is absent (Riedman and Estes 1990). Sea otters seldom range more than 1.2 miles (2 km) from shore (Riedman and Estes 1990; U.S. Fish and Wildlife Service 2003).

3.2.3.7.6.3 Behavior and Ecology in the Training Study Area

In Alaska, pupping peaks in May and June, and mating peaks in October–December (Riedman and Estes 1990). Sea otters dive 5–250 ft. (1.5–76 m) for 1- to 2-minute foraging trips to catch prey on the sea floor. Prey items include sea urchins, crabs, clams, mussels, octopus, fish, and other marine invertebrates.

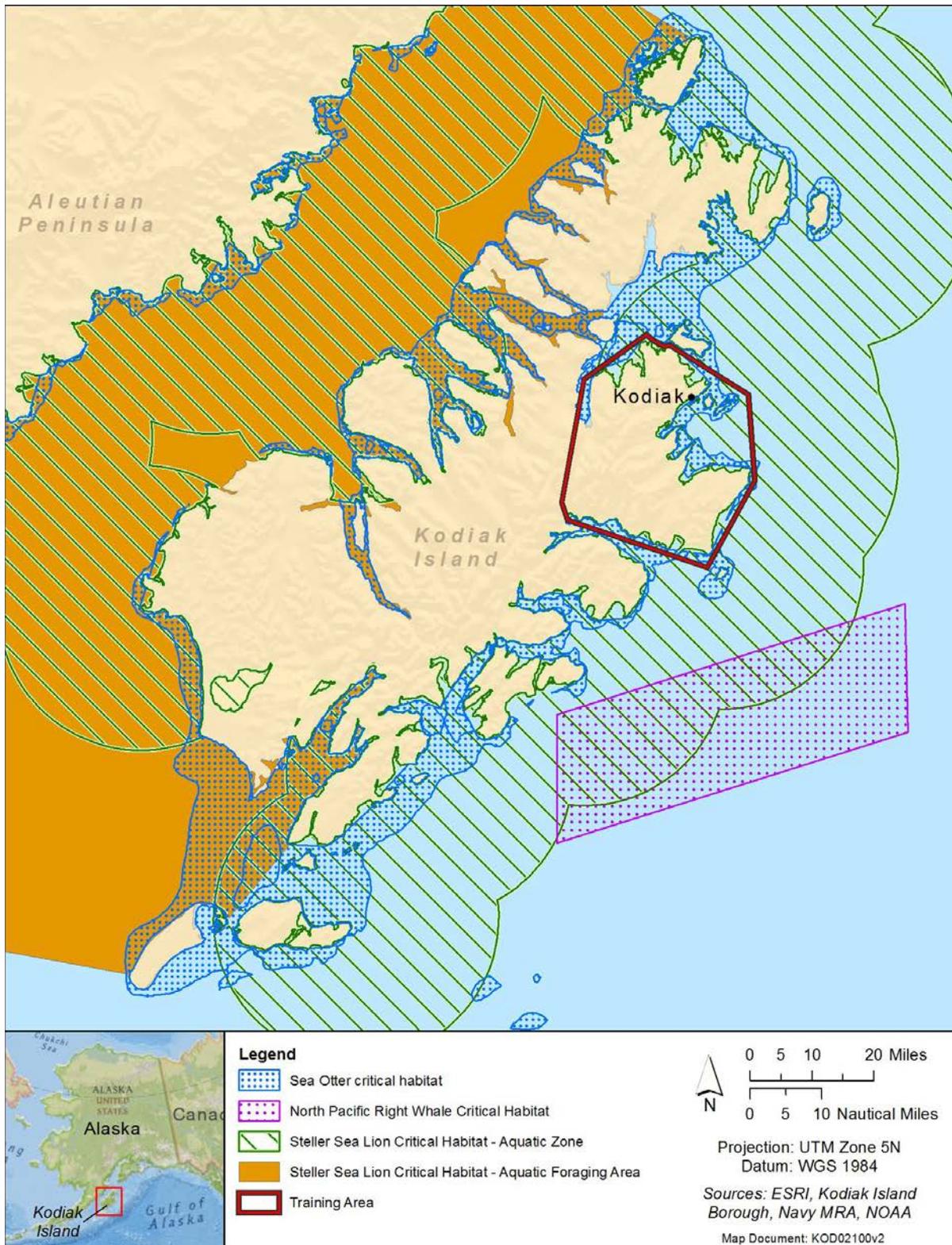


Figure 3.2-3: Critical Habitat in and near the Training Study Area

3.2.4 IMPACT ANALYSIS AND CONSEQUENCES

Factors considered in assessing the significance of potential impacts on marine resources were determined on the basis of the importance (i.e., legal, ecological, or scientific) of the resource, the portion of the resource that would be affected relative to its occurrence in the region, the sensitivity of the resource to existing and proposed activities, and the duration of ecological ramifications. Impacts on biological resources are considered significant if species or habitats of concern are adversely affected over relatively large areas or disturbances adversely affect the population or distribution of a species of concern.

This section analyzes the potential for impacts on biological resources from actions associated with the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3. Elements of the Alternatives that could have impacts on biological resources include potential strikes from vessels and aircraft, noise associated with aircraft and vessels, and entanglement in parachutes.

3.2.4.1 Determination of Significance

The impact analysis for marine resources considered effects of the Proposed Action on individual marine resources and populations. The analysis first looked at how individuals would respond to a stressor or combination of stressors and whether the response would affect the fitness of an individual. Fitness refers to changes in an individual's growth, survival, annual reproductive success, or lifetime reproductive success. If individual fitness is not affected, then no impacts to populations would be expected. The potential for impacts to occur at the population level depends on several things, including whether individual fitness has been reduced, the number of individuals affected, the size of the affected population, and numerous life history and ecological factors.

For purposes of ESA compliance, effects of the action were analyzed to make the Navy's determination of effect for listed species (either "no effect" or "may affect"). The definitions used in making the determination of effect under Section 7 of the ESA are based on the USFWS and NMFS *Endangered Species Consultation Handbook* (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1998). "No effect" is the appropriate conclusion when a listed species will not be affected, either because the species will not be present or because the training activities do not have any elements with the potential to affect the species. "No effect" does not include a small effect or an effect that is unlikely to occur. If effects are insignificant (in size) or discountable (extremely unlikely), a "may affect" determination is appropriate. Insignificant effects relate to the magnitude or extent of the impact (i.e., they must be small and would not rise to the level of a "take" of a species). Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. An ESA conclusion for each listed species is found in a text box after the analysis for each alternative.

An EFH conclusion is also provided under the marine habitat, vegetation, invertebrates, and fish analysis for each alternative. The MSFCMA defines an adverse effect as "any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions" (50 C.F.R. §600.810).

3.2.4.2 No Action Alternative

Under the No Action Alternative, activities that could impact marine biological resources include OTB Training Activities, Parachute Operations, NSW Group Team Training, and Qualification Training. OTB Activities involve the instruction of groups of 15 students at a time. The Navy uses Det Kodiak to provide periodic, refresher cold weather OTB and near-shore cold weather operations training to operational NSW units. Under the No Action Alternative, existing or ongoing Qualification Training events would continue to occur six times a year, with 300 students annually, and one parachute operation with 20 students. In addition, NSW Group Team Training events would remain at 3 events (60 students) and two Other Unit Training events (40 students) per year.

Marine Habitats. Activities proposed under the No Action Alternative that involve vessels and personnel in the water could impact the marine habitat types present in the Training Study Area. Such activities would include landing on shore with small inflatable boats and foot traffic from students swimming to beaches. These activities are proposed to occur in the nearshore environments of the Training Study Area. The shore environment is typically very dynamic because of its exposure to wave action and cycles of erosion and deposition. As a result, any areas disturbed by activities would be influenced by waves, tide, current, and storm energy shortly after the disturbance. Disturbances from activities under the No Action Alternative would not be expected to cause long term or permanent impairment to the surrounding marine habitats because of the dynamic nature of these nearshore habitats. Therefore, training activities would have no significant impact on marine habitats under the No Action Alternative.

Marine Vegetation. Under the No Action Alternative, activities that involve vessels and personnel in the water and on the seafloor could impact marine vegetation present in the Training Study Area. Such activities would include landing on shore with small inflatable boats and foot traffic from students swimming to beaches. These activities are proposed to occur in the nearshore environments of the Training Study Area. As general practice, Combat Rubber Reconnaissance Craft (CRRC) used during activities land at the more sandy areas where less vegetation is present. The shore environment is also typically very dynamic because of its exposure to wave action and cycles of erosion and deposition. As a result, any vegetation disturbed by activities would also be influenced by waves, tide, current, and storm energy shortly after the disturbance. Because this type of vegetation is already adapted to natural disturbances, disturbances from activities under the No Action Alternative would not be expected to cause long term or permanent impairment to the surrounding marine vegetation. Therefore, training activities would have no significant impact on marine vegetation under the No Action Alternative.

Marine Invertebrates. Activities proposed under the No Action Alternative that involve vessels and personnel in the water and on the sea floor could impact marine invertebrates present in the Training Study Area. Such activities would include landing on shore with small inflatable boats and foot traffic from students swimming to beaches. These activities are proposed to occur in the nearshore environments of the Training Study Area. As general practice, CRRC used during activities land at the more sandy areas where less invertebrates are present. The shore environment is also typically very dynamic because of its exposure to wave action and cycles of erosion and deposition, therefore marine invertebrates are well adapted to disturbed conditions. Activities involving vessels are not intended to make contact with the seafloor; therefore there is no potential strike impact and limited potential disturbance impact on benthic invertebrates. Many large invertebrates, such as crabs, shrimps, and clams, undergo massive disturbance during commercial and recreational harvests. Other invertebrates, such as the small soft-bodied organisms that live in the bottom sediment, are thought to be well-adapted to natural physical disturbances (Lindholm et al. 2011). Disturbances from activities under the No Action Alternative would not be expected to cause long term or permanent impairment to marine

invertebrates. Therefore, training activities would have no significant impact on marine invertebrates under the No Action Alternative.

Fish. Activities proposed under the No Action Alternative that involve vessels, personnel, and parachute operations in the water could impact fish present in the Training Study Area. Such activities would include landing on shore with small inflatable boats, foot traffic from students swimming to beaches, and students being deployed from aircraft into the water for parachute operations. These activities are proposed to occur in nearshore and in the waters off any one of the existing NSWCCN Det Kodiak areas in and around Kodiak Island.

Vessels do not normally collide with adult fish that are not large, slow-moving, or found at the surface since it is expected that they are capable of detection and avoidance. One study on fishes' behavioral responses to vessels showed that most adults exhibit avoidance responses to engine noise (Jørgensen et al. 2004), reducing the potential for vessel strikes. Vessel noise has the potential to expose fish to sound and general disturbance, which could result in short-term behavioral or physiological responses (e.g., avoidance, stress, increased heart rate). Activities involving vessel movements occur intermittently and range in duration from a few minutes to a few hours. While vessel movements have the potential to expose fish occupying the water column to sound and general disturbance, potentially resulting in short-term behavioral or physiological responses, such responses would not be expected to compromise the general health or condition of individual fish. Fish would not be at risk of entanglement by parachutes however, because they are recovered immediately after water entry, and do not sink or drift away.

The risk of physical disturbance or strike from vessels and people in the water during training activities under the No Action Alternative would be extremely low because (1) most fish can detect and avoid vessel movements, and human movements, and (2) activities occur at infrequent intervals and for a brief duration of time. Potential impacts of exposure to vessels are not expected to result in substantial changes to an individual's behavior, fitness, or species recruitment and are not expected to result in population-level impacts. Since impacts from strikes would be rare, impacts on fish or fish populations would be negligible. Therefore, training activities would have no significant impact on fish under the No Action Alternative.

Essential Fish Habitat. Pursuant to the EFH requirements of the MSFCMA and implementing regulations, activities proposed under the No Action Alternative that involve vessels and personnel in the water could impact the EFH present in the Training Study Area. Such activities would include landing on shore with small inflatable boats and foot traffic from students swimming to beaches. These activities are proposed to occur in the nearshore environments of the Training Study Area. Because as general practice, CRRC used during NSW Group Team Training and Parachute Operations Training land at the more sandy areas where vegetation and invertebrates that could be prey species for groundfish or pacific salmon in the EFH are not present, activities are not expected to have an adverse effect on EFH. The habitat where activities take place is typically very dynamic because of its exposure to wave action and cycles of erosion and deposition. As a result, any areas disturbed by activities would be also be influenced by waves, tide, current, and storm energy.

Disturbances from activities under the No Action Alternative would not be expected to cause long term or permanent impairment to the EFH because of the dynamic nature of these nearshore habitats, and standard operating procedures that would avoid impact to marine invertebrates, vegetation, and fish that are protected under EFH. Activities do not occur in areas where groundfish, weathervane scallops, or pacific salmon breed or spawn; therefore EFH would not be altered in that capacity under the NO

Action Alternative. The Proposed Action in the Training Study Area will have no direct or indirect changes to EFH that would have a considerable impact on waters, substrate, or prey necessary for spawning (fish, invertebrates, or vegetation), breeding, feeding, or growth to maturity of aquatic species. Therefore, effects to EFH from implementation of the No Action Alternative would not be significant.

Pursuant to the MSFCMA, training activities conducted in the Training Study Area under the No Action Alternative would have no adverse effect on EFH for groundfish, Alaska weathervane scallops, or Pacific salmon.

Sea Turtles. Activities proposed under the No Action Alternative that involve vessels, personnel, and parachute operations in the water could impact sea turtles present in the Training Study Area. Such activities would include small vessel movements, in water presence of students swimming to beaches, and students being deployed from aircraft into the water for parachute operations. These activities are proposed to occur nearshore and in the waters off any one of the existing NSWCEN Det Kodiak areas in and around Kodiak Island. Sea turtle presence in the Training Study Area would be rare, reducing the likelihood of encounter with any in-water training activities. Swimmer presence, boat traffic, and parachute operations have the potential to disturb turtles and elicit an alerting, avoidance, or other behavioral reaction. Turtles would not be at risk of entanglement by parachutes however, because they are recovered immediately after water entry, and do not sink or drift away.

Sea turtles spend a majority of their time submerged (Renaud and Carpenter 1994; Sasso and Witzell 2006). Because they spend the majority of their time submerged, and because aircraft overflights for parachute operations would be at higher altitudes, they would likely go undetected by Leatherback sea turtles. Leatherback sea turtles are more likely to feed at or near the surface in open ocean areas, and therefore are less at risk for vessel collision in the nearshore area. However, in northern latitudes they are more likely to spend more time at the surface to bask and help thermoregulate. Because sea turtles are so rare in the Training Study Area, and activities occur nearshore where sea turtles are likely to be submerged, it is highly unlikely that they would come into contact with vessels or students in the water.

Sea turtles can detect approaching vessels, likely by sight rather than by sound (Bartol and Ketten 2006; Hazel et al. 2007). Vessel-related injuries to sea turtles are more likely to occur in areas with high boating traffic. Because vessels used in these activities are small crafts and infrequent in an area of low boat traffic, and sea turtle presence is rare in the Training Study Area, they are unlikely to collide with sea turtles in the Training Study Area. Therefore, impacts on sea turtles, including the leatherback sea turtle, from implementation of the No Action Alternative would not be significant.

Pursuant to the ESA, training activities conducted in the Training Study Area under the No Action Alternative may affect but are not likely to adversely affect leatherback sea turtle.

Marine Birds. Activities proposed under the No Action Alternative that involve aircraft movements, vessel movement, personnel in water, and parachute operations could impact marine birds that are present in the Training Study Area. Such activities would include landing on shore with small inflatable boats, foot traffic from students swimming to beaches, and students being deployed from aircraft into the water for parachute operations. These activities are proposed to occur nearshore and in the waters off any one of the existing NSWCEN Det Kodiak areas in and around Kodiak Island.

Although birds likely hear and see approaching vessels and aircraft, they cannot avoid all collisions. Birds are known to be attracted to lights, which can lead to collisions, however, the activities proposed do not involve lighting that would attract marine birds (Poot et al. 2008, Gehring et al. 2009). High-speed collisions with large objects can be fatal to birds. Instruction 3750.6R (*A Naval Aviation Safety Program Instruction*) identifies measures to evaluate and reduce or eliminate bird/aircraft strike hazards to aircraft, aircrews, and birds and requires reporting all strikes when damage or injuries result. However, the numbers of bird deaths that occur annually from all Navy activities are insignificant from a bird population standpoint. During vessel movement and swimmer activities, birds may initially react to aircraft, swimmer, or vessel presence by leaving the area. This may impact feeding or resting behavior, however, activities are short in duration (see Table 2.2-1) so the marine birds would be able to return to the area in a short amount of time. Therefore, impacts from vessel, swimmer, and aircraft presence would be short term and too small to be measured (insignificant). Standard operating procedures also dictate that Navy vessels do not purposefully approach marine birds in the water. Entanglement by parachutes is also unlikely because the parachutes are collected immediately after they are deployed.

Activities do not occur in foraging areas, or migration corridors, therefore, air strikes are unlikely for marine birds in the Training Study Area. Furthermore, aircraft overflights for parachute operations would be at higher altitudes and would likely go undetected by marine birds on the water in the Training Study Area.

These physical disturbances may elicit short-term behavioral or physiological responses such as alert response, startle response, cessation of feeding, fleeing the immediate area, and a temporary increase in heart rate. However, effects to marine birds including the Steller's eiders and yellow-billed loons, and their prey and habitat, in the Training Study Area are insignificant because of the low frequency of activities, low impact of activities, and training objective to remain undetected and leave no trace behind. Therefore, impacts on marine birds from implementation of the No Action Alternative would not be significant.

Pursuant to the ESA, training activities conducted in the Training Study Area under the No Action Alternative may affect but are not likely to adversely affect Steller's eider.

Marine Mammals. Activities proposed under the No Action Alternative that involve vessels, personnel, and parachute operations in the water could impact marine mammals such as, ESA-listed humpback whales, fin whales, North Pacific right whales, Western North Pacific gray whales, Steller sea lions, and the northern sea otter Southwest Alaska DPS that are present in the Training Study Area. Such activities would include small vessel movements, in water presence of students swimming to beaches, air craft overflight, and students being deployed from aircraft into the water for parachute operations. These activities are proposed to occur nearshore and in the waters off any one of the existing NSWCEN Det Kodiak areas in and around Kodiak Island. Boats carrying students for specific qualification training activities comply with established boating laws and reduce speed in accordance with established safety procedures, avoiding contact and proximity to marine mammals.

Marine mammals engage in avoidance behavior when surface vessels move toward them (Au and Green 2000, Bejder et al. 2006, Hewitt 1985, Lusseau et al. 2009, Magalhães et al. 2002, Nowacek et al. 2004, Nowacek et al. 2007, Richter et al. 2006, Richter et al. 2003, Watkins 1986, Würsig and Richardson 2008). It is not clear whether these responses are caused by the physical presence of a surface vessel, the underwater noise generated by the vessel, or an interaction between the two. Though the noise

generated by the vessels is probably an important contributing factor to the responses of cetaceans to the vessels. In one study, North Atlantic right whales were documented to show little overall reaction to the playback of sounds of approaching vessels, but that they did respond to an alert signal by swimming strongly to the surface (Nowacek et al. 2004). Aside from the potential for a risk of collision, physical disturbance from vessel use is not expected to result in more than a short-term behavioral response because marine mammals engage in these avoidance behaviors. Furthermore, most vessel use will be nearshore and by small craft within the Training Study Area and the potential for contact with marine mammals, which generally occur in the offshore area, would be extremely low.

It is most likely that any marine mammals in the Training Study Area would have an initial reaction to the boat's presence, such as leaving the area, or tolerating the activity (i.e., continuing feeding, socializing, migrating, sleeping, etc.); a secondary reaction to the multiple students' presence in the water would not be likely to occur. Due to the passage of time (less than an hour) between the boat presence and students entering the water, animals are likely to continue with their initial reaction of either retreating from the area, or tolerating the activity at the site. Therefore, effects to marine mammals, and their prey and habitat, from implementation of the No Action Alternative would not be significant.

Humpback whales are found south of Kodiak Island near the Training Study Area between April and December; they may be present during in-water activities, however they are likely to avoid vessels and aircraft overflight noise. Marine mammals engage in avoidance behavior when surface vessels move toward them. It is not clear whether these responses are caused by the physical presence of a surface vessel, the underwater noise generated by the vessel, or an interaction between the two. Though the noise generated by the vessels is probably an important contributing factor to the responses of cetaceans to the vessels. In one study, North Atlantic right whales were documented to show little overall reaction to the playback of sounds of approaching vessels, but that they did respond to an alert signal by swimming strongly to the surface (Nowacek et al. 2004). Fin whales are observed year-round in waters around Kodiak Island but are most frequently encountered during April–September; therefore, they may be present during in-water activities, however they are likely to avoid vessels and aircraft overflight noise. Eastern North Pacific Gray whales can be found feeding in the area in the winter but were recently observed feeding year-round off Kodiak, so they may be present during in-water training activities; however Western North Pacific gray whales presence in the Training Study Area would be considered rare.

Vessel activity locations in the Training Study Area do not occur at or near Steller sea lion haulout sites or rookeries. Steller sea lions are tolerant of approaching vessels, especially when they are in the water. Standard operating procedures dictate that Navy vessels do not purposefully approach pinnipeds or cetaceans in the water or on land, and would not approach a haul-out or rockery site, which further reduces the potential for impacts due to training activities.

Steller sea lion critical habitat was designated based on the location of terrestrial rookeries and haulout sites, spatial extent of foraging trips, and availability of prey. Activities from the No Action Alternative will not impact the availability of prey (such as groundfish and Pacific salmon), as seen in the EFH determination of "no adverse effect" under the Fish analysis. As the nature of activities will be short in duration, infrequent, low intensity, and in a small area of the Training Study Area at a time, they will not impact the spatial extent of Steller sea lion foraging. No rookeries occur in the Training Study Area, therefore no impact to rookeries from training activities will occur. Standard operating procedures dictate that Navy vessels do not purposefully approach pinnipeds, and therefore would not approach a

haul-out; therefore there would be no impact to haul-outs from the No Action Alternative. Therefore, activities from the No Action Alternative may affect but are not likely to adversely affect the Steller sea lion or its critical habitat.

Aircraft overflights for parachute operations would be at high altitudes and would likely go undetected by Steller sea lions and other marine mammals in the Training Study Area given the proximity to the Kodiak Airport which is already a disturbance. There is no specific information available indicating that aircraft overflights of any kind have an impact on Steller sea lions. Further, fixed-wing aerial surveys are often recommended as a means to monitor populations of Steller sea lion populations. Any reactions to aircraft overflights by Steller sea lions are likely to be minor and short term, and would not lead to long-term consequences. None of the training areas or activities occurs in or adjacent to rookeries. Entanglement by parachutes is unlikely because the parachutes are collected immediately after they are deployed.

Most of the OTB locations in the Training Study Area occur in soft sediments; in general, sea otters prefer rocky habitats, and are therefore less likely to occur in OTB locations. Sea otters often become tolerant of various sounds and generally move only a short distance before resuming normal activity. Navy vessels also do not purposefully approach them in the water; this further reduces the potential for impacts due to training activities. Aircraft overflights for parachute operations would be at higher altitudes and would likely go undetected by sea otters in the Training Study Area given the proximity to the Kodiak Airport. Further, fixed-wing aerial surveys are often recommended as a means to monitor populations of sea otters. Training activities would not be conducted in kelp beds or have an impact on the otter's prey base. Therefore, activities from the No Action Alternative may affect but are not likely to adversely affect the sea otters and their critical habitat in the Training Study Area.

The MMPA defines two levels of harassment. Level A harassment is "any act that has the potential to injure a marine mammal or marine mammal stock in the wild." Level B harassment is defined as "any act that disturbs or is likely to disturb a marine mammal or marine mammal stock by causing disruption of natural behavioral patterns including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering to a point where such behaviors are abandoned or significantly altered (Public Law 108-136 (2004))." Public Law 108-136 (2004) amended the MMPA definitions of Level B harassment for military readiness activities to be "any act that disturbs or is likely to disturb a marine mammal or marine mammal stock by causing disruption of natural behavioral patterns including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering to a point where such behaviors are abandoned or significantly altered." Unlike MMPA Level A harassment, which is solely associated with physiological effects, both physiological and behavioral effects may cause MMPA Level B harassment. The disturbances described under the No Action Alternative are expected to be minimal, short term, recoverable, and should not result in the significant alteration of migration, surfacing, nursing, breeding, feeding, or sheltering behaviors based on the low probability of marine mammals being in the Training Study Area when these infrequent and brief activities are taking place. Because of the minimal impacts of activities, the No Action Alternative is not expected to result in Level A or Level B harassment of marine mammals. Therefore, impacts on marine mammals from implementation of the No Action Alternative would not be significant.

Pursuant to the MMPA, activities under the No Action Alternative, are not expected to result in Level A or Level B harassment of marine mammals.

Pursuant to the ESA, training activities conducted in the Training Study Area under the No Action Alternative may affect but are not likely to adversely affect the:

- *humpback whale, fin whale, North Pacific right whale, Western North Pacific gray whale, Steller sea lion (western stock), or the northern sea otter southwest Alaska DPS*
- *Steller sea lion critical habitat*
- *Northern sea otter southwest Alaska critical habitat*

3.2.4.3 Alternative 1

Under Alternative 1, Qualification Training, NSW Group Team Training, Parachute Operations, and Other Unit Training each increase by one class per year for an additional total of 110 students (a 26 percent increase from the No Action Alternative). Despite the increase in tempo of training activities due to the addition of one class per year per activity, no additional impacts on habitat, marine vegetation, invertebrates, fish, leatherback sea turtles, marine birds, or marine mammals and their critical habitat are expected beyond those described in the No Action Alternative. Therefore, impacts on marine biological resources from implementation of Alternative 1 would not be significant.

Pursuant to the MSFCMA, there will be no adverse effect on EFH from training activities conducted in the Training Study Area under Alternative 1.

Pursuant to the ESA, training activities conducted in the Training Study Area under Alternative 1 may affect but are not likely to adversely affect leatherback sea turtle, Steller's eider, humpback whale, fin whale, North Pacific right whale, Western North Pacific gray whale, Steller sea lion (western stock), or the northern sea otter southwest Alaska DPS.

Pursuant to the ESA, training activities conducted in the Training Study Area under Alternative 1 may affect but are not likely to adversely affect critical habitat for Steller sea lion or the northern sea otter southwest Alaska DPS.

Pursuant to the MMPA, training activities conducted in the Training Study Area under Alternative 1 are not expected to result in Level A or Level B harassment of marine mammals.

3.2.4.4 Alternative 2

Under Alternative 2, the baseline training activities described under the No Action Alternative, and as conducted at Kodiak Island over the past decade, would continue at the same level, with the same student class sizes. Training would occur in the same historically used locations and would also occur in additional locations within the Training Study Area boundary as determined by the Det Kodiak staff. The additional training areas are all terrestrial, therefore no additional impacts on marine habitat, marine vegetation, invertebrates, fish, leatherback sea turtles, marine birds, or marine mammals are expected beyond those described in the No Action Alternative. Therefore, impacts on marine biological resources from implementation of Alternative 2 would not be significant.

Pursuant to the MSFCMA, there will be no adverse effect on EFH from training activities conducted in the Training Study Area under Alternative 2.

Pursuant to the ESA, training activities conducted in the Training Study Area under Alternative 2 may affect but are not likely to adversely affect leatherback sea turtle, Steller's eider, humpback whale, fin whale, North Pacific right whale, Western North Pacific gray whale, Steller sea lion (western stock), or the northern sea otter southwest Alaska DPS.

Pursuant to the ESA, training activities conducted in the Training Study Area under Alternative 2 may affect but are not likely to adversely affect critical habitat for Steller sea lion or the northern sea otter southwest Alaska DPS.

Pursuant to the MMPA, Level A and Level B harassment of marine mammals are not expected to occur under the Alternative 2.

3.2.4.5 Alternative 3 (Preferred Alternative)

Alternative 3 (the Preferred Alternative) is a combination of Alternatives 1 and 2. Alternative 3 increases training tempo and adds additional locations within the Training Study Area to meet current and near-term cold weather maritime training requirements for NSW other USSOCOM units. Under Alternative 3, NSWCEN Det Kodiak would conduct cold weather maritime training exercises that combine NSW personnel with additional USSOCOM and USSOCOM-sponsored allied personnel at existing and added locations within the Training Study Area. As described in Alternative 1 and Alternative 2, despite the increase in tempo and the addition of training locations (all terrestrial locations), no additional impacts on marine habitat, marine vegetation, invertebrates, fish, leatherback sea turtles, marine birds, or marine mammals are expected beyond those described in the No Action Alternative. Therefore, impacts on marine biological resources from implementation of the Preferred Alternative would not be significant.

Pursuant to the MSFCMA, there will be no adverse effect on EFH from training activities conducted in the Training Study Area under Alternative 3.

Pursuant to the ESA, training activities conducted in the Training Study Area under Alternative 3 may affect but are not likely to adversely affect leatherback sea turtle, Steller's eider, humpback whale, fin whale, North Pacific right whale, Western North Pacific gray whale, Steller sea lion (western stock), or the northern sea otter southwest Alaska DPS.

Pursuant to the ESA, training activities conducted in the Training Study Area under Alternative 3 may affect but are not likely to adversely affect critical habitat for Steller sea lion or the northern sea otter southwest Alaska DPS.

Pursuant to the MMPA, Level A and Level B harassment of marine mammals are not expected to occur under the Alternative 3.

3.2.4.5.1 Summary of Effects

Table 3.2-5 summarizes the Navy's ESA determinations for marine mammals, sea turtles, and marine birds found in the Training Study Area. The Preferred Alternative may affect, and is likely to adversely affect, all of the listed species in the Training Study Area. The Navy has determined that the Preferred

Alternative would have no effect on designated critical habitat for the Steller sea lion (western stock), or the northern sea otter (southwest DPS). The Navy has determined that there will be no adverse effect on EFH for GOA Groundfish, Weathervane scallops, or Pacific Salmon under the Preferred Alternative. Under the Preferred Alternative, the Navy has determined that Level A and Level B harassment of marine mammals are not expected to occur. The Navy has initiated consultation for the Preferred Alternative with NMFS and the USFWS in accordance with Section 7 of ESA.

Table 3.2-5: Summary of Effect Determinations for Endangered Species Act-Listed Species

Species	Status	Navy Effect Determination
Sea Turtle		
Leatherback sea turtle	Endangered	May affect but not likely to adversely affect
Marine Bird		
Steller's eider	Threatened	May affect but not likely to adversely affect
Marine Mammals		
Humpback whale	Endangered	May affect but not likely to adversely affect
Fin whale	Endangered	May affect but not likely to adversely affect
Blue whale	Endangered	May affect but not likely to adversely affect
Sei whale	Endangered	May affect but not likely to adversely affect
North Pacific right whale	Endangered	May affect but not likely to adversely affect
Western North Pacific gray whale	Endangered	May affect but not likely to adversely affect
Steller sea lion (western stock)	Endangered	May affect but not likely to adversely affect
Steller sea lion (western stock) Critical Habitat	Designated (in the Training Study Area)	May affect but not likely to adversely affect
Northern sea otter (Southwest Distinct Population Segment)	Threatened	May affect but not likely to adversely affect
Northern sea otter (Southwest Distinct Population Segment) Critical Habitat	Designated (in the Training Study Area)	May affect but not likely to adversely affect

3.3 TERRESTRIAL BIOLOGICAL RESOURCES

3.3.1 DEFINITION OF RESOURCE

Terrestrial biological resources are defined as the terrestrial flora and fauna that occupy the Training Study Area. The Region of Influence for terrestrial biological resources is all land within the Training Study Area, which is 548 mi.² of land on Kodiak Island and Long Island.

3.3.2 REGULATORY REQUIREMENTS

Regulatory requirements applicable to the Proposed Action in the project area are listed below. A discussion of the project's compliance with applicable regulations is provided in Chapter 4 (Cumulative Impacts and Other Considerations).

3.3.2.1 Endangered Species Act

For a description of the ESA, please see Section 3.2.2 (Regulatory Requirements). No terrestrial ESA species are present within the Training Study Area. For a list of marine ESA species, including sea birds and marine mammals, refer to Section 3.2 (Marine Biological Resources) and the Biological Evaluation included in Appendix A (Biological Evaluation).

3.3.2.2 Migratory Bird Treaty Act

The MBTA of 1918 (16 U.S.C. 703 et seq.) and the Migratory Bird Conservation Act (16 U.S.C. 715–715d, 715e, 715f–715r) of 18 February 1929 (45 Stat. 1222) are the primary legislation in the United States established to conserve migratory birds, as discussed in Section 3.2.2 (Regulatory Requirements).

3.3.2.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits killing, selling, or otherwise harming eagles, their nests, or eggs. Specifically, the Eagle Act (16 U.S.C. 668–668c), enacted in 1940 and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts, nests, or eggs. The Act defines "take" as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

3.3.3 AFFECTED ENVIRONMENT

The terrestrial biological resources discussed below include a general description of the vegetation and wildlife species in the Training Study Area. A representative species list can be found in Appendix D (Terrestrial Biological Resources Species List).

3.3.3.1 Vegetation

Kodiak Island is dominated by forests and wetlands. Most of the archipelago is undeveloped, containing mostly native plant species. The Training Study Area gives NSW and USSOCOM students an opportunity to experience a broad range of environments in one general area: alpine slopes, thick forest stands draped in moss, cliffs, wet/moist tundra, and shoreline all within an extreme climate. This extreme environment also introduces students to toxic plants, including pootchki, stinging nettle, and devil's club.

Four broad classes of vegetation cover uplands and valleys: herbaceous graminoid-forb (e.g., meadow), deciduous shrub-tree, crowberry, and Sitka spruce. Most notably, the Training Study Area contains the only unmixed stand of Sitka spruce forest in the world. Lower elevations in the Training Study Area (sea level to 300 m [0–984 ft.]) will generally consist of a mixed forb meadow, open alder with forb meadow, and dense alder habitat types. Higher elevations in the Training Study Area are dominated by alpine tundra, alpine forb meadow, alpine heath, prostrate shrub tundra, exposed bedrock, talus slopes, and snow-covered habitat types (U.S. Fish and Wildlife Service 2008, SWCA Environmental Consultants 2009). A representative species list can be found in Appendix D (Terrestrial Biological Resources Species List).

3.3.3.2 Wildlife

Amphibians

Alaska's cold temperatures make it an unlikely place to find many species of amphibians; however, there are a few species found on Kodiak Island (U.S. Fish and Wildlife Service 2008, SWCA Environmental Consultants 2009). A representative species list can be found in Appendix D (Terrestrial Biological Resources Species List). Moist environments such as ponds and the many wetlands on Kodiak Island and areas along streams are used for breeding. Downed logs are used for egg cover during post-breeding. Given the infrequency of training in amphibious habitat and the small number of individual amphibians likely to occur in an area, it is unlikely that individual amphibians will co-occur with stressors (e.g., foot traffic) generated by the Proposed Action such that adverse or non-adverse effects would occur. Therefore, amphibians will not be analyzed further.

Fish

Salmonid species in the Training Study Area can be found in the rivers and streams seasonally as migrating juveniles and spawning adults. Salmonids try to reach lakes within the Training Study Area like Buskin, Louise, and Catherine, or travel through the Training Study Area to lakes outside the boundary of the Training Study Area. Given the infrequency of training in streams, rivers, and lakes, and the small number of individual fish likely to occur in the area, it is unlikely that individual fish will co-occur with stressors (e.g., foot traffic) generated by the Proposed Action such that adverse or non-adverse effects would occur. Therefore, fish will not be analyzed further in this section. A discussion of fish in the marine environment can be found in Section 3.2 (Marine Biological Resources).

Birds

Birds in the Training Study Area include, but are not limited to, songbirds (passerines), dabblers, marsh and water birds, shorebirds, and raptors. A representative species list can be found in Appendix D (Terrestrial Biological Resources Species List). The Training Study Area provides abundant habitat for a variety of birds, including cliffs, inlets and bays, interior valleys, and alpine and tundra areas. The Training Study Area is rich in wetland habitat that shorebirds, dabblers (i.e., ducks, geese), and other birds use to find food and for resting. A discussion of seabirds can be found in Section 3.2 (Marine Biological Resources).

Mammals

Only six species of terrestrial mammals occur naturally on Kodiak Island: Kodiak brown bear, red fox, river otter, short-tailed weasel, tundra vole, and little brown bat. Other species' presence is the result of human introduction to the island (e.g., reindeer, Roosevelt elk, Sitka black-tailed deer, mountain goat, red squirrel, muskrat, beaver, and snowshoe hare). A representative species list can be found in Appendix D (Terrestrial Biological Resources Species List). Habitats and distribution of species vary from

lowlands to upper elevations and woodland areas to riparian habitats. Species appearance in the area also varies from daytime (diurnal) to nighttime (nocturnal) as well as seasonal presence as the result of hibernation. A "Cultural Education Permit" has been issued to the Navy by the State of Alaska Department of Fish and Game. The permit allows deer harvests during training for educational purposes.

3.3.4 IMPACT ANALYSIS AND CONSEQUENCES

Factors considered in assessing the significance of potential impacts on terrestrial resources were determined on the basis of the importance (i.e., legal, ecological, or scientific) of the resource, the portion of the resource that would be affected relative to its occurrence in the region, the sensitivity of the resource to existing and proposed activities, and the duration of ecological ramifications. Impacts on terrestrial biological resources are significant if species or habitats are adversely affected over relatively large areas or disturbances adversely affect the population or distribution of a species.

This section analyzes the potential for impacts on terrestrial biological resources from actions associated with the Alternatives. Elements of Alternatives that could have impacts on terrestrial biological resources include foot traffic. Foot traffic, for purposes of this section, is defined to include hiking, skiing, snowshoeing, cliff negotiations, camping, OTB maneuvers, etc., where the impacts on terrestrial biological resources would be the result of student presence and movement of students through the area.

3.3.4.1 Determination of Significance

The impact analysis for terrestrial biological resources considered effects of the Proposed Action on individual terrestrial species and populations. The analysis first looked at how individuals would respond to a stressor or combination of stressors and whether the response would affect the fitness of an individual. Fitness refers to changes in an individual's growth, survival, annual reproductive success, or lifetime reproductive success. If individual fitness is not affected, then no impacts to populations would be expected. The potential for impacts to occur at the population level depends on several things, including whether individual fitness has been reduced, the number of individuals affected, the size of the affected population, and numerous life history and ecological factors.

3.3.4.2 No Action Alternative

Under the No Action Alternative, activities that could impact terrestrial biological resources include Qualification Training, NSW Training, and Other Unit Training. Six Qualification Training events, three NSW Training events, and two Other Unit Training events would continue to occur annually.

Vegetation. Foot traffic may impact vegetation; however, not all types of vegetation would be impacted by the training activities. Ground cover is most likely to be impacted by passing foot traffic, although it will quickly recover and would not impact the survival or function of the habitat. Shrubs may be impacted when students learn to make shelters using objects from the area (fallen branches, leaves, and other shrubbery). However, students learn to use fallen material rather than leaving fresh marks on vegetation to reduce evidence of their presence. Because the goal of training is for the students to be in the field undetected, the environment tends to be minimally disturbed and materials (e.g., gear and trash) are not left behind. In addition, identical travel routes are rarely used; the level of foot traffic associated with each group will not wear paths in the Training Study Area. Logistical support vehicles use established roads and, therefore, do not impact vegetation. Impacts to vegetation from the No Action Alternative are expected to be minimal, short term, and recoverable based on the (1) relatively low

intensity of the impacts, (2) localized nature of the impacts, (3) infrequent nature of the impacts, and (4) brief duration of the activities (see Table 2.2-1). For these reasons, long-term consequences to terrestrial vegetation are not expected to result from the activities under the No Action Alternative. Therefore, impacts on vegetation from implementation of the No Action Alternative would not be significant.

Birds. Foot traffic may impact birds which may flush/flee depending on proximity to the Proposed Action or may not respond as students approach and pass through an area. Once the group has passed, flushed birds will restore to previous activities once they feel the threat is gone (Beale 2007). Because the goal of training is for students to be in the field undetected, the environment tends to be minimally disturbed and materials (e.g., gear and trash) are not left behind to impact their habitat. In addition, identical travel routes are rarely used; students do not pass through the same areas in the Training Study Area. Because these are students in-training, support vehicles are on standby for safety and may disturb birds; however, the support vehicles stay on established roads. These disturbances are expected to be short term and infrequent. Impacts to birds in the terrestrial environment are expected to be minimal, short term, and recoverable based on the (1) relatively low intensity of the impacts, (2) localized nature of the impacts, (3) infrequent nature of the impacts, and (4) brief duration of the activities (see Table 2.2-1). For these reasons, long-term consequences to individuals or populations of birds in the terrestrial environment are not expected to result from the activities under the No Action Alternative. A variety of bird species would be encountered in the Training Study Area, including those listed under the MBTA. Under the MBTA regulations applicable to military readiness activities (50 C.F.R. Part 21), impacts from the activities under the No Action Alternative would not result in a significant adverse effect on migratory bird populations for the same reasons listed above. Therefore, impacts on birds from implementation of the No Action Alternative would not be significant.

Mammals. Foot traffic may impact mammals in the terrestrial environment. Animals may flush/flee or may not respond as students approach and pass through an area. Once the group has passed, animals can restore to previous activities once they feel the threat is gone (Beale 2007). Because the goal of training is for students to be in the field undetected, the environment tends to be minimally disturbed and materials (e.g., gear and trash) are not left behind to impact habitat. In addition, identical travel routes are rarely used; students do not pass through the same areas in the Training Study Area. Because these are students in-training, support vehicles are on standby for safety and may disturb terrestrial mammals; however, the support vehicles stay on established roads. These disturbances are expected to be short term and infrequent. Impacts to mammals in the terrestrial environment are expected to be minimal, short term, and recoverable based on the (1) relatively low intensity of the impacts, (2) localized nature of the impacts, (3) infrequent nature of the impacts, and (4) brief duration of the activities (see Table 2.2-1). For these reasons, long-term consequences to individuals or populations of terrestrial mammals are not expected to result from the activities under the No Action Alternative. Therefore, impacts on terrestrial mammals from implementation of the No Action Alternative would not be significant.

3.3.4.3 Alternative 1

Under Alternative 1, Qualification Training, NSW Group Team Training, Parachute Operations, and Other Unit Training each increase by one class per year for a total additional 110 students. Despite the slight increase in tempo of training activities, no new types of impacts on vegetation, birds, or mammals are expected beyond those described in the No Action Alternative. Therefore, impacts on terrestrial biological resources from implementation of Alternative 1 would not be significant.

3.3.4.4 Alternative 2

Under Alternative 2, Qualification Training, NSW Group Team Training, Parachute Operations, and Other Unit Training would be conducted in existing areas within the Training Study Area under the current tempo of training as described under the No Action Alternative. Furthermore, some training would be conducted in additional locations within the Training Study Area. The additional training areas will disperse impacts across a larger area. No additional impacts on vegetation, birds, or mammals are expected beyond those described in the No Action Alternative. Therefore, impacts on terrestrial biological resources from implementation of Alternative 2 would not be significant.

3.3.4.5 Alternative 3 (Preferred Alternative)

Under Alternative 3, Qualification Training, NSW Group Team Training, Parachute Operations, and Other Unit Training each increase by one class per year (with a total additional 110 students), and training would be conducted in existing and some additional training areas within the Training Study Area. The additional training areas will disperse impacts across a larger area. No new types of impacts on vegetation, birds, or mammals are expected beyond those described in the No Action Alternative. Therefore, impacts on terrestrial biological resources from implementation of the Preferred Alternative would be less than significant.

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3.4 CULTURAL RESOURCES

This section describes existing cultural resources located in the Training Study Area (see Figure 1.2-1) and assesses the possible consequences to these resources by the Proposed Action. The approach to assessing cultural resources includes defining the resource; presenting the regulatory requirements for identifying, evaluating, and treating the resource within established jurisdictional parameters; establishing the specific resource subtypes in the Training Study Area; identifying the data used to define the current conditions; and describing the method of impact analysis. Cultural resources currently identified within the Training Study Area consist of archaeological sites including submerged resources, historic architectural resources, Alaska Native traditional cultural properties (TCPs), and protected tribal resources related to subsistence activities.

3.4.1 DEFINITION OF RESOURCE

A “cultural resource” is any definite location or object of past human activity, occupation, or use, identifiable through inventory, historical documentation, or oral evidence. Cultural resources include buildings, structures, districts, archaeological sites, historic landscapes, TCPs, and objects of significance in history, architecture, archaeology, engineering, or culture. Cultural resources that are eligible for inclusion in or listed in the National Register of Historic Places (NRHP) are called historic properties. Cultural resources also include associated documents and records.

Archaeological resources include prehistoric and historic sites and artifacts. Archaeological resources can have a surface component, a subsurface component, or both. Prehistoric resources are physical properties resulting from human activities that predate written records; they include large coastal village sites with shell middens, streamside fish camps, fort sites, stone quarries, fish weirs, trails, rock cairns, petroglyphs, cave sites, and burials (Alutiiq Museum n.d.a). Historic resources postdate the advent of written records in a region, must be at least 50 years old, and can include building or cabin foundations, refuse scatters, and submerged resources such as shipwrecks.

Architectural resources are elements of the built environment consisting of standing buildings or structures from the historic period. Buildings provide shelter for human activity and may consist of, but are not limited to, residential buildings, commercial buildings, and military buildings, such as administrative buildings and other ancillary outbuildings such as concrete bunkers. Structures are defined as those that do not provide shelter for human activity and include, but are not limited to, transportation-related structures, such as roads and bridges.

Traditional cultural properties are resources that are associated with the beliefs and cultural practices of a living culture, subculture, or community. The beliefs and practices associated with the TCP and community must be rooted in the group’s history and important to maintaining the group’s cultural identity. TCPs are not limited to Alaska Natives but can represent any ethnic group with strong ties to the property (National Park Service 1998). TCPs that are listed in or eligible for listing in the NRHP are afforded the same protection as other types of historic properties. Alaska Native TCPs include, but are not limited to, archaeological sites and artifacts, locations of historic and contemporary events, sacred areas, landscapes, sources of raw materials used to produce tools and sacred objects, and traditional use areas (e.g., fishing areas, Native plant gathering areas, or wildlife habitat). Many resources are also sacred places important to Alaska Native tribes and may include mountain peaks, springs, and burial sites. Traditional uses may prescribe the use of particular native plants, animals, or minerals from specific places. Therefore, activities that may affect sacred areas or the availability of materials used in traditional practices may be of concern to Alaska Native tribes.

Protected tribal resources, as defined in DoD Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, are “those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by or reserved by or for Indian tribes through treaties, statutes, judicial decisions, or EOs, including tribal trust resources.” This section also addresses Alaska Native protected tribal resources and other traditional resources that are retained or reserved by or for Alaska Native tribes through state laws (Alaska Statehood Act of 1958, Alaska Native Claims Settlement Act [ANCSA], and Alaska National Interest Lands Conservation Act [ANILCA]). These resources include plants, animals, habitat, and locations associated with hunting, fishing, and gathering activities for subsistence or ceremonial use.

3.4.2 REGULATORY REQUIREMENTS

For the purposes of Section 106, the Training Study Area defined in Chapter 2 (Description of Proposed Action and Alternatives) of this document also serves as the Area of Potential Effects (APE). To summarize, the Training Study Area is composed of multiple trails, points, waters, mountains, and wild expanses of land throughout 548 mi.² of land on Kodiak Island and Long Island, nearshore areas defined as the low tide water line, and offshore transit areas up to 12 nm off the coast (see Figure 1.2-2).

Numerous laws and regulations mandate that possible effects on cultural resources be considered during the planning and execution of federal undertakings, including within state territorial waters (within 3 nm of the coast) and U.S. territorial waters (within 12 nm of the coast). These laws define the compliance process and federal agency responsibilities and prescribe the relationship among other involved agencies such as the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO). These laws include: the NHPA of 1966 as amended in 2006 (Public Law 89–665; 16 U.S.C. 470 et seq.), the NEPA (Public Law 91–190; 42 U.S.C. 4321 and 4331–4335), the Archeological and Historic Preservation Act of 1974 (Public Law 93–291; 16 U.S.C. 469-469c-2), the Archaeological Resources Protection Act of 1979 (Public Law 96–95; 16 U.S.C. 470aa–mm), the American Indian Religious Freedom Act of 1978 (Public Law 95–341; 42 U.S.C. 1996 and 1996a), the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (Public Law 101–601; 25 U.S.C. 3001 et seq.), the Submerged Lands Act of 1953 (43 U.S.C. §1301 et seq.), the Abandoned Shipwreck Act of 1987 (Public Law 100–298; 43 U.S.C. 2101–2106), and the Sunken Military Craft Act of 2004 (10 U.S.C. §§113 et seq.). The ACHP further guides treatment of archaeological and architectural resources through the regulations, *Protection of Historic Properties* (36 C.F.R. Part 800). The category of “historic properties” is a subset of cultural resources defined in the NHPA (16 U.S.C. §470w(5)) as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP, including artifacts, records, and material remains related to such a property or resource. TCPs are afforded the same protection as other types of historic properties. Key laws and regulations applicable to this Proposed Action are discussed in the following subsections.

3.4.2.1 National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to consider the effects of their actions on cultural resources listed in or eligible for inclusion in the NRHP. Regulations implementing Section 106 (36 C.F.R. Part 800) specify a consultation process to assist in satisfying this requirement. Consultation with the appropriate SHPO, the ACHP, Alaska Native tribes and corporations, the public, and state and federal agencies is required by Section 106 of the NHPA.

Resources are evaluated for eligibility for inclusion in the NRHP using the following criteria (36 C.F.R. §60.4(a)–(d)):

- Criterion A: Associated with events that have made a significant contribution to the broad patterns of American history.
- Criterion B: Associated with the lives of persons significant in the American past.
- Criterion C: Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: Yield, or may be likely to yield, information important in prehistory or history.

A historic property also must possess the aspects of integrity—location, design, setting, materials, workmanship, feeling, and association—to convey its significance and to qualify for the National Register. These seven aspects, in various combinations, define integrity. To retain integrity, a property will always possess several, and usually most, of these aspects.

Under Section 106, an undertaking (i.e., the Proposed Action under NEPA) is considered to have an effect on a historic property when the undertaking may alter characteristics of the property that may qualify it for inclusion in the NRHP. An effect is considered adverse when it diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association (36 C.F.R. §800.5(a)(1)).

Adverse effects as defined under 36 C.F.R. §800.5(a)(2)(i)–(vii) include, but are not limited to:

1. Physical destruction, damage, or alteration of all or part of the property.
2. Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NRHP.
3. Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.
4. Neglect of a property resulting in its deterioration or destruction.
5. Transfer, lease, or sale of the property.

Adverse effects under Section 106 of the NHPA also include reasonably foreseeable effects, both direct and indirect, caused by the alternatives, and those that could occur later in time, be farther removed in distance, or be cumulative (36 C.F.R. §800.5(a)(1)). Because cultural resources are typically nonrenewable, most adverse effects on NRHP-listed or -eligible resources in the APE would be irrevocable unless the project or activity can be redesigned to avoid the NRHP-listed or -eligible resource.

Section 106 consultation with the Alaska SHPO and Alaska Native tribes (Sun'aq Tribe of Kodiak, Tangirnaq Native Village, and Native Village of Ouzinkie) and corporations (Afognak Native Corporation; Koniag Incorporated; Leisnoi Incorporated; Natives of Kodiak, Inc.; and the Ouzinkie Native Corporation) is ongoing and will be completed prior to signing the FONSI.

3.4.2.2 National Environmental Policy Act

Under NEPA (Public Law 91–190; 42 U.S.C. 4321 and 4331–4335), an EA must address the adverse and beneficial effects of a proposed federal action on important historic and cultural aspects of our national heritage (40 C.F.R. §1508.8) (here defined as resources eligible for or listed in the NRHP). While NEPA and Section 106 of the NHPA represent two separate procedural laws, the public participation for the Proposed Action has been integrated to the greatest extent possible. The Draft EA public review process

will provide opportunities for the public to participate not only in the NEPA process, but also to contribute to public involvement in accordance with Section 106 of the NHPA.

Under NEPA, impacts on cultural resources and the subgroup of historic properties are explicitly identified as attributes that must be addressed to determine the significance of a project's anticipated environmental impacts. The potential for adverse effects on cultural resources is considered in this NEPA assessment. An adverse effect on a historic property, however, does not necessarily equate to a significant impact under NEPA. Under NEPA, a significant impact can be mitigated to less than significant through completion of the Section 106 process, which results in development of an agreement document that resolves the adverse effects through a form of mitigation which could include data recovery or other treatment measures. For the purposes of this document, a significant impact under NEPA is defined as an "unresolvable" adverse effect under Section 106 of the NHPA.

3.4.2.3 Department of Defense and Navy Instructions

Secretary of the Navy Instruction (SECNAVINST) 5090.8a, *Policy for Environmental Protection, Natural Resources and Cultural Resources Programs*, and OPNAVINST 5090.1D, OPNAV M5090.1 Chapter 13, *Cultural Resources Compliance and Management*, require the Navy to consider the effects of its undertakings on cultural resources in its planning and program efforts. SECNAVINST 4000.35a, *Department of the Navy Cultural Resources Program*, establishes policy and assigns responsibilities within the Navy for fulfilling the requirements of cultural resources laws such as the NHPA.

3.4.2.4 Alaska Native Subsistence Rights

The Alaska Statehood Act of 1958 (Public Law 85–508; 72 Stat. 339) stipulated that the United States holds and retains absolute jurisdiction and control of any lands or other property (including fishing rights), the right or title to which may be held by Alaska Native tribes, Eskimo, or Aleut populations or is held by the United States in trust for said groups (Jones 1981).

On 18 December 1971, after a lengthy history indicating that Alaska Native people had aboriginal claims to ancestral lands and resources, Alaska Native aboriginal claims were "settled" and extinguished by an Act of Congress and signed by President Nixon through the Alaska Native Claims Settlement Act (ANCSA) (Public Law 92–203; 43 U.S.C. 1613), the largest land claims settlement in U.S. history. Rather than designating reservations held in trust by the U.S. Government, as the majority of tribes in the Lower 48 states have, ANCSA created 12 regional profit-making Alaska Native corporations and over 200 village, group, and urban corporations to receive approximately 45.5 million ac. of land along with a cash payment of approximately \$1 billion. A 13th regional corporation headquartered in Seattle was later established for Alaska Natives who live outside of Alaska who participated in the cash settlement but did not receive land. ANCSA terminated all Indian reservations and reserves in Alaska with the exception of the Metlakatla Reservation on Annette Island. Tribes that had their reservations terminated had the option of keeping their former reservation land with both surface and subsurface ownership. If they chose that option, they did not receive a cash settlement or participate as shareholders in the regional corporations. ANCSA extinguished aboriginal claims to land and any aboriginal hunting and fishing rights that may have existed. The village corporations received only the surface estate surrounding each village; the regional corporations received the subsurface estate (Jones 1981). Surface estate is defined as land on the surface, excluding minerals, oil and gas, and sand and gravel. Subsurface estate is all or a variety of minerals, oil and gas, and sand and gravel. ANCSA lands are considered taxable corporate lands. Section 14(h)(1) of ANCSA provided for the corporations to select historic sites and cemeteries of significance to them.

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (Public Law 96–487; 16 U.S.C. 51) protected over 100 million ac. of federal lands in Alaska, doubling the size of the country’s national park and refuge system and tripling the amount of land designated as wilderness. ANILCA also addressed issues of Alaska Native land claims, the subsistence lifestyle, energy development, economic growth, and transportation planning by creating solutions that were meant to be compatible with each other. As defined in Title VIII, Section 803, subsistence uses are, “the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.”

Non-Alaska Native subsistence is presented in Section 3.5.2 (Affected Environment).

3.4.2.5 Alaska Native Tribal Consultation

The United States has a unique legal and political relationship with Alaska Native tribal governments and Native corporations. The United States recognizes Alaska Native tribes as sovereign governments that are self-governing under Federal law.

On 21 October 1998, DoD promulgated its American Indian and Alaska Native Policy (*American Indian and Alaska Native Policy and Department of Defense Instruction Number 4710.02: DoD Interactions with Federally-Recognized Tribes*) emphasizing the importance of respecting and consulting with tribal governments on a government-to-government basis (explanatory text was added on 21 November 1999). The Policy requires that DoD consult with federally recognized American Indian and Alaska Native tribes on a government-to-government basis when proposed actions have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands, prior to reaching a decision.

In 2005, the U.S. Navy updated its policy for consultation with federally recognized Native American tribes. SECNAVINST 11010.14A, *Department of the Navy Policy for Consultation with Federally Recognized Indian Tribes*, implements DoD policy within the Navy and encourages ongoing consultation. SECNAVINST 5090.8A, *Policy for Environmental Protection, Natural Resources, and Cultural Resources Programs*, dated 6 January 2006, also mandates American Indian consultation. DoD Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, provided further guidance on American Indian consultation. Commander, Navy Region Northwest (CNRNW) issued additional regional policy for conducting tribal government-to-government consultation in CNRNW Instruction 11010.14, *Policy for Consultation with Federally-Recognized American Indian and Alaska Native Tribes*, in November 2009.

Other federal laws, EOs, and memoranda include policies requiring consultation with Native American and Alaska Native tribes regarding concerns specific to Native interests. These include the NHPA; the American Indian Religious Freedom Act; the Archaeological Resources Protection Act; the NAGPRA; EO 12898, *Environmental Justice*; EO 13007, *Indian Sacred Sites*; EO 13175, *Consultation and Coordination with Indian Tribal Governments*; the Presidential Memorandum, dated 5 November 2009, emphasizing agencies’ need to comply with EO 13175; and the Presidential Memorandum, dated 29 April 1994, *Government-to-Government Relations with Native American Governments*.

The Navy will invite government-to-government consultation with the three federally recognized tribes—Sun’aq Tribe of Kodiak, Tangirnaq Native Village, and Native Village of Ouzinkie— and discuss details of the Proposed Action and any tribal concerns. In accordance with Section 106, the Navy has invited consultation with five Alaska Native corporations to discuss the details of the Proposed Action.

At the conclusion of consultation for the Proposed Action, correspondence related to review comments on this EA will be retained in Appendix B (Agency and Regulatory Correspondence).

3.4.3 AFFECTED ENVIRONMENT

Cultural resources are found throughout the Training Study Area (see Figure 1.2-1). This section presents discussions on cultural setting, previous investigations in the Training Study Area, the type and NRHP eligibility of recorded archaeological sites and architectural resources, identification of federally recognized Alaska Native Tribes and Alaska Native Corporations associated with the Training Study Area, and the presence of Alaska Native resources, including TCPs and protected tribal resources. As indicated in Section 3.4.2 (Regulatory Requirements), the APE coincides with the Training Study Area defined in Chapter 2 (Description of Proposed Action and Alternatives) and includes 548 mi.² on Kodiak Island and Long Island, nearshore areas defined as the low tide water line, and offshore transit areas up to 12 nm off the coast (see Figure 1.2-2).

3.4.3.1 Cultural Setting

The following context is excerpted and adapted from several secondary sources (Alaska Department of Natural Resources 1999; Alutiiq Museum n.d.a, n.d.b; Bureau of Land Management 2006; Department of Natural Resources 2010; Engineering Environmental Management, Inc. 2007; Kodiak Alaska Military History Museum 2013; National Park Service n.d., and Thompson 1984).

Overview of Regional Prehistory

The first occupants of the Kodiak archipelago arrived at least 7,500 years ago, colonizing an environment warmer and drier than today. Archaeologists believe these people came from southwestern Alaska and were well adapted to life along the coast. A maritime people, Alutiiqs share a cultural, linguistic, and biological heritage with neighboring Yupik and Aleut peoples. On Kodiak, archaeological work continues to reveal the long and complex history of the Alutiiq. The Ocean Bay Tradition (7,500–4,000 years before present [BP]) is characterized by a mobile hunting and gathering lifestyle; the Kachemak Tradition (4,000–1,000 years BP) by settled village life and an increased emphasis on fishing, and the Koniag Tradition (1,000 years BP–AD 1784) by ranked societies with hereditary chiefs who maintained power through trade, warfare, and ceremony.

Researchers have divided the earliest documented culture on Kodiak Island, Ocean Bay, into two stages: Ocean Bay I (e.g., Sitkalidak Island near mouth of Afognak River) and Ocean Bay II. Ocean Bay people occupied coastal areas for the purposes of sea mammal hunting, as well as the mouths of streams in the summer in order to exploit salmon runs. In addition, Ocean Bay people harvested sea mammals (e.g., seals, sea lions, sea otter, porpoise, and whales), birds, marine invertebrates, fish (cod, sculpin, halibut), and occasional land mammals (Clark 1984). Ocean Bay people used barbed harpoons, chipped stone points, and ground slate lances to hunt sea mammals, delicate bone hooks to jig for cod, and large bone picks to dig for clams. Some early residents probably lived in skin-covered tents, although oval, single-roomed houses with piled sod walls were in use by about 7,000 years ago. A transition from stone flaking to ground slate working gave rise to late Ocean Bay I and Ocean Bay II.

The Kachemak Tradition appeared on Kodiak Island around 4,000 years BP and lasted for more than 2,000 years (Clark 1984). The Kachemak Tradition is divided into two phases: Late Kachemak (regional) or Three Saints (local) and Early Kachemak (regional), also called Old Kiavak or Afognak Phase (local). Kodiak people began to focus more intensely on fishing, harvesting quantities of both cod and salmon. They developed nets to harvest large quantities of salmon, and slate ulus and smoke houses to process

these larger catches for storage. Over time, villages grew suggesting that the island's population was also growing and filling up the landscape. By the end of the Kachemak Tradition, people were trading for large quantities of raw materials from the Alaskan mainland. Antler, ivory, coal, and exotic stones were manufactured into tools and jewelry. Labrets, decorative plugs inserted in the face, become popular at this time, perhaps to signal the social ties of the person wearing the labret in a landscape where there was increasing competition for resources. The first signs of warfare appear in the Late Kachemak Tradition.

The Koniag Tradition followed the Kachemak Tradition, and was a blending of the Kachemak Tradition with cultural traits diffused from the Bering Sea region and the Cook Inlet and Prince William Sound areas. About 800 years ago, Kodiak's climate began to change dramatically. Temperatures cooled, the weather worsened, and small sea mammals became more difficult to catch. Alutiiq people responded by relocating their villages to the banks of productive salmon streams and hunting more whales. Fishing grew even more important as people harvested even greater quantities of salmon to feed their families and trade with neighbors. They migrated between sedentary winter and summer fish camps while harvesting fish, whales, and other sea mammals. Related families began living together in large, multiple-roomed sod houses and pooling resources and labor. Chiefs emerged, perhaps to organize labor. They led war and trading parties, and hosted elaborate winter ceremonies to display their wealth and power, honor ancestors, and ensure future prosperity. Cultural ancestors of the contemporary Koniag were living on the archipelago from at least AD 800 to 1300 (Clark 1984).

Overview of Regional History

Vitus Bering, a Danish explorer working for the Russian government, first explored Alaska in 1741. Shortly thereafter, the Russian American Company was established as a Russian commercial trading venture in Alaska, Hawaii, and California. Russian promyshlenniki (frontiersmen) were attracted to the Kodiak region by the reported abundance of sea otters, fish, and seals. In 1784, the first Russian settlement on Kodiak Island was established by Gregorii Shelikov on behalf of the Russian American Company at Three Saints Bay on the southwestern end of Kodiak near the present village of Old Harbor. Russian fur traders colonized the Alutiiq territory. Alutiiqs were quickly forced to adopt new social and economic practices, and many people died from starvation and infectious diseases like influenza. During the Russian period, Native people were forced to work in artels—camps dedicated to sea otter hunting, salmon fishing, and whaling. The Russian Orthodox missionaries established the first permanent religious mission at Kodiak in 1794; the first school for Native children and one of two hospitals in Russian America were also established at Kodiak (Smith 1986). The Russian Orthodox Church created profound cultural change in the Native populations through the introduction of Christianity, literacy, and health care (Lidfors 1987; Mobley et al. 1990). By the middle of the 19th century, the Alutiiq had consolidated their populations at seven sites that are the location of present-day villages.

The United States purchased Alaska from Russia in 1867. The development of commercial fishing and other extractive industries began during this time, where many Alutiiq people worked for wages in canneries. Alutiiqs moved gradually from a subsistence lifestyle into the Western market economy. From 1835 to 1869, the American whaling fleet operated in the Kodiak area and sea otter hunting continued until the late 19th century. With the decline in the fur trade, the focus shifted to salmon fishing, salmon canning, merchandising, and transportation (Mobley et al. 1990). In 1882, the first cannery on Kodiak Island was built on Karluk Spit. Other activities on Kodiak Island included raising sheep and cattle, and the ice industry on Woody Island (Mobley et al. 1990). At the turn of the 20th century, wood-framed houses began to replace sod structures. The 1912 eruption of Mt. Katmai, located on the Alaskan Peninsula approximately 100 miles (mi.) northwest of the Study Area, disrupted

the commercial fishing industry for several years through the destruction of many salmon spawning streams. The Katmai eruption also resulted in the relocation of Alaska Peninsula Alutiiq to Kodiak Island (e.g., Perryville). The commercial fishery brought outsiders onto Kodiak Island as cannery workers and fishermen. These non-Native fishermen often settled in the area and married Natives, further influencing changes in social organization. Other Kodiak Island industries included fox farming and trapping. The importation of cattle and sheep as livestock resulted in efforts to control bear populations in order to reduce bear predation of livestock. In 1941, concern for the welfare of bear populations resulted in the establishment of the Kodiak NWR.

The post-Russian era military history on Kodiak started with the establishment of Fort Kodiak in 1898, located in the APE in what became the City of Kodiak. From 1868 to 1879, Fort Kodiak, garrisoned by Battery G, U.S. Army 2nd Artillery, provided detachments of troops to the Privolof Islands to assist the Department of Treasury in controlling the harvest of fur seals. In 1911, the U.S. Navy established a radio facility on Woody Island located in the APE between the City of Kodiak and Long Island in Chiniak Bay.

During the 1930s, the War Department prepared War Plan Orange in case of a war in the Pacific. The plan concluded that the "strategic triangle" of Alaska, Hawaii, and Panama should form the main line of defense. Late in 1938, a naval board urged the establishment of a seaplane and submarine base at Kodiak. Congress approved, and a civilian contractor began construction at Kodiak in September 1939. Congress also appropriated funds to strengthen the Army in Alaska, including defenses for the Kodiak naval installation. Because the Navy's contractor was already at work at Kodiak, the Army employed them to construct its facilities, which were eventually named Fort Greely in honor of the Arctic explorer, Maj. Gen. Adolphus W. Greely.

The Kodiak Naval Operating Base eventually included a naval air station with facilities for conventional aircraft and seaplanes, a submarine base, a net depot, ammunition and fuel storage, docks and piers, and provisioning facilities. The first Army troops arrived at Kodiak in April 1941, and the post of Fort Greely was formally established that September. Construction of both permanent and temporary coastal gun batteries and antiaircraft positions was undertaken by the civilian contractor but completed by Seabees, all under the supervision of Col. B.B. Talley, U.S. Army Corps of Engineers. The permanent works consisted of three batteries, each with two guns in barbette emplacements and a casemated magazine to the rear:

- Fort Abercrombie at Miller Point, two 8-inch (in.) guns
- Fort J.H. Smith at Cape Chiniak, identical to Abercrombie
- Fort Tidball on Long Island, two 6 in. guns, steel turrets

Other coastal defenses located within the APE include three 155-millimeter (mm) batteries on Panama mounts (a gun mount developed by the U.S. Army in the 1920s for fixed coastal artillery that consisted of a circular steel track set in concrete with a center concrete column to support the gun and carriage, connected to the outside ring by beams that allowed for the guns to traverse) of four guns each, two 90 mm batteries (two fixed guns each), and tactical searchlights with direct electric control (DEC) bunkers (Table 3.4-1, Figure 3.4-1). A total of 52 .30 caliber machine guns were emplaced at strategic points. Also, an undetermined number of field artillery pieces were brought to Kodiak. At Fort Greely, the all-important harbor defense command post was constructed on Buskin Hill, overlooking the naval base.

Table 3.4-1: World War II-Era Facilities within the Area of Potential Effects – Kodiak Island, Alaska

World War II-Era Resource	Location	Function
Kodiak Naval Operating Base	Kodiak	Naval operating base including a seaplane station, submarine base, and land-plane airfield
Fort Abercrombie	Miller Point	Coastal Defense Station, Sub-installation of Fort Greely, Battery Command Station, 8" Battery No. 404, Tactical Searchlights and direct electric control (DEC) Bunkers
Piedmont Point	Mill Bay	Tactical Searchlights and DEC Bunkers
Spruce Cape	Spruce Cape	Two 90-millimeter (mm) Gun Mounts, Tactical Searchlights and DEC Bunkers
Kizhuyak Point	Kizhuyak Point	Harbor Defense Observation Post No. 3, Tactical Searchlights and DEC Bunkers
Fort Tidball	Long Island	Coastal Defense Station, Sub-installation of Fort Greely
North Cape	Long Island	Tactical Searchlights and DEC Bunkers
Castle Bluff	Long Island	Battery Command Station, 6" Battery No. 296
Point Head	Long Island	Tactical Searchlights and DEC Bunker
Point Curto	Long Island	Tide and Meteorological Station

Table 3.4-1: World War II-Era Facilities within the Area of Potential Effects – Kodiak Island, Alaska (continued)

World War II-Era Resource	Location	Function
Deer Point	Long Island	Battery Command Station, 155 mm Gun Emplacement Battery No. 4
Burt Point	Long Island	Tactical Searchlights and DEC Bunkers
Gibson Cove	St. Paul Harbor	Tactical Searchlights and DEC Bunkers
Artillery Hill	Fort Greely	Harbor Defense Command Post
Buskin Hill	Fort Greely	Battery Command Station, 155 mm Gun Mounts
Puffin Island	Puffin Island	90 mm Gun Mounts, Tactical Searchlight and DEC Bunker
Mansfield Ridge	Mansfield Ridge	Base End Station
Bald Hill	Chiniak Bay	Tactical Searchlight and DEC Bunker
St. Peters Head	Chiniak Bay	Battery Command Station, 8" Battery No. 403
Fort J.H. Smith	Cape Chiniak	Coastal Defense Station, Sub-installation of Fort Greely
Chiniak Point	Chiniak Bay	Battery Command Station, 155 mm Gun Emplacement Battery No. 2
Midway Point	Chiniak Bay	Tactical Searchlights and DEC Bunker
Cape and South Cape	Cape and South Cape	Tactical Searchlights and DEC Bunkers
Cape Greville	Cape Greville	Base End Station
Soquel Point	Soquel Point	Tactical Searchlights and DEC Bunkers
Round Top	Round Top	Group Command Station and Tower
Narrow Cape	Ugak Bay	Harbor Defense Observation Point No. 1, Tactical Searchlights and DEC Bunkers

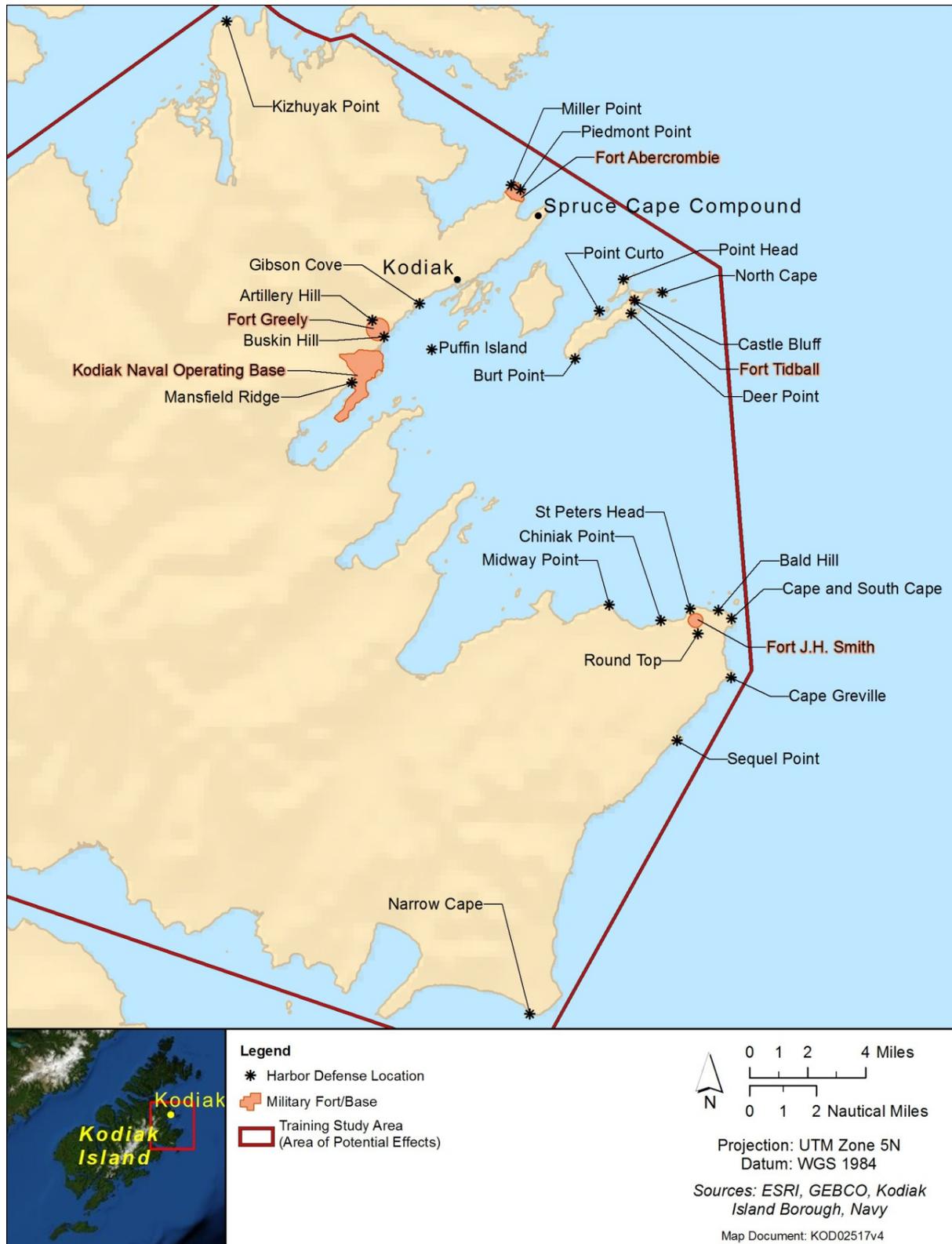


Figure 3.4-1: Location of World War II-Era Facilities within the Area of Potential Effects

At Miller Point, 4 mi. northeast of the City of Kodiak, the Army erected a permanent 8 in. gun battery (Battery No. 403) and established it as a sub-post of Fort Greely, naming it Fort Abercrombie in April 1943. One hundred fifty to 200 men were stationed at the height of Fort Abercrombie's occupancy, immediately following the attack on Pearl Harbor. Gun emplacements did not arrive at Fort Abercrombie until after the Japanese invasion of Attu and Kiska in the Aleutian chain. With the threat of attack suddenly imminent, guns expeditiously arrived in May 1943. The Army also deployed a radar unit and two searchlights with power plants at Fort Abercrombie, fully establishing a presence at the outpost. From 1943 to 1945, soldiers at Fort Abercrombie stood ready to defend Kodiak from Japanese invasion; during that period, Fort Abercrombie became the site for the first secret radar installation in Alaska.

The threat of Japanese aggression was ever present after the attack on Pearl Harbor. The Japanese occupied the Aleutian Islands of Attu and Kiska, but were never able to move further east up the Aleutian chain to Kodiak. In May 1943, American soldiers landed on Attu to retake the island; the battle lasted 19 days. In August 1943, Allied troops landed on Kiska but found the Japanese had evacuated the island 3 weeks previously. For 6 months, from October 1942 to March 1943, Kodiak was the Alaska Defense Command Center for the Aleutian campaign. In December 1944, most Kodiak installations were placed in caretaker status, and Fort Abercrombie was largely abandoned. In 1948, the guns at Abercrombie were destroyed, sending gun fragments over the cliffs.

The 1964 earthquake and subsequent tsunami damaged many parts of Kodiak Island, especially Alutiiq villages of Old Harbor, Kaguyak, Afognak, and Ouzinkie. Old Harbor was rebuilt in the same location, the residents of Kaguyak were relocated to Akhiok, and Port Lions was constructed to house the residents of Afognak. Some of the canneries destroyed were never rebuilt (e.g., Shearwater and Ouzinkie canneries). Downtown Kodiak was virtually leveled. The fishing fleet, processing plant, canneries, and 158 homes were destroyed, resulting in \$30 million in damage. The city infrastructure was rebuilt, and by 1968, Kodiak had become the largest fishing port in the United States in terms of dollar value.

3.4.3.2 Archaeological Sites

Approximately 1,640 cultural resources, which include prehistoric and historic resources, have been documented in the Kodiak region as listed in the Alaska Historic Resources Survey database overseen by the Office of History and Archaeology in the Department of Natural Resources (Bureau of Land Management 2006). Several cultural resources planning studies and field investigations have been conducted in the Training Study Area, including systematic shoreline surveys and subsequent archaeological monitoring activities along the Kodiak coastline as a result of the *Exxon Valdez* oil spill (Mobley et al. 1990; Haggerty et al. 1991), a survey of 3,100 ac. for the proposed Kodiak Launch Complex (KLC) (Brown & Root Environmental 1996), an environmental evaluation of 11 U.S. Army National Guard local training areas totaling over 47,000 ac. (Alaska Department of Natural Resources 1999), preparation of an integrated cultural resources management plan for the Alaska Army National Guard (Engineering Environmental Management, Inc. 2007), and a survey of 75 ac. for the expansion of the Kodiak Airport (SWCA Environmental Consultants 2009).

Over 195 archaeological sites have been previously recorded in the Training Study Area (Table 3.4-2) and include prehistoric villages, house pits and depressions, middens, burials, storage pits, rock cairns, and isolated finds such as stone lamps and projectile points, and historic house depressions and foundations, brick kilns, cemeteries and burials, submerged historic resources such as shipwrecks, stone walls, and concrete pads and piers. (Burwell 2011) Petroglyphs, pictographs, and cave sites also occur on Kodiak Island but have not been recorded in the APE (rock art is found in the Alitak Bay area and cave sites have

been identified along bays adjacent to the Shelikof Strait). Four prehistoric sites and seven historic sites (nine historic archaeological resources are associated with Fort Abercrombie) are considered eligible for listing in the NRHP (Table 3.4-2). In accordance with Section 304 of the NHPA, the locations of archaeological sites are considered proprietary and not for public dissemination.

Based on ethnographic literature and the documented site locations, prehistoric sites, such as large coastal village sites with shell middens, streamside fish camps, and fish weirs, will be concentrated along the coastline, along river mouths, and adjacent to inland streams (Alutiiq Museum n.d.a). Other prehistoric site types including stone quarries, trails, rock cairns, petroglyphs, cave sites, and burials, may be located along the coast and in upland areas (Alutiiq Museum n.d.a). Some of these prehistoric archaeological sites may contain sufficient research potential and physical integrity to be considered eligible for listing on the NRHP.

Table 3.4-2: National Register of Historic Places-Eligible or -Listed Archaeological Sites within the Area of Potential Effects – Kodiak Island, Alaska

AHRS Number	Resource Type	Affiliation	Description	NRHP/NHL Status
KOD-00011	Historic	AD 1790–1850; Colonial Russian	Brick Kiln	Listed 1980
KOD-00067	Prehistoric	Koniag	Village with house pits and midden	Eligible
KOD-00137	Historic	AD 1965	Boxed Aircraft Transport Ship, <i>Star of Kodiak</i>	Eligible
KOD-00190	Prehistoric	Koniag	Village with house pits, midden, and lithics	Eligible
KOD-00207	Historic	AD 1790–1850; Colonial Russian	Brick kiln	Listed 1978
KOD-00210	Prehistoric	Alutiiq	Midden	Eligible
KOD-00360	Historic	AD 1956–1957	Building foundations, Military Communication System	Eligible
KOD-00369	Historic	AD 1926	Four deck passenger ferry	Eligible
KOD-00560	Historic	Russian, Euroamerican	Russian cemetery	Eligible
KOD-00562	Prehistoric	500 BC–AD 1400 Kachemak	House pits, midden, and lithics	Eligible
KOD-00798, KOD-00799, KOD-00802, KOD-00803, KOD-00804, KOD-00807, KOD-00809, KOD-00821, KOD-00822	Historic	AD 1941	Numerous concrete foundations, concrete piers, and foundation outlines associated with Fort Abercrombie	Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL

Notes: AHRS = Alaska Historic Resources Survey, NHL = National Historic Landmark, NRHP = National Register of Historic Places

Historic archaeological resources are located primarily along the coast and include sites associated with, but not limited to, early commercial fishing and other extractive industries from the Russian or American periods, submerged historic resources such as shipwrecks, as well as concrete foundations and building depressions associated with World War II-era facilities located with the Training Study Area (Table 3.4-1; U.S. Army Corps of Engineers 1945). Some of these historic archaeological sites may contain sufficient research potential and physical integrity to be considered eligible for listing in the NRHP.

3.4.3.3 Architectural Resources

Architectural resources in the Training Study Area include mostly buildings and structures associated with the Kodiak Naval Operating Base, Forts Greely and Abercrombie, and buildings and structures such as the DEC bunkers and tactical searchlight shelters, associated with most of the 24 World War II-era facilities (Table 3.4-1). Kodiak Island was considered a strategic location during World War II, due to its position between Asia and the United States, and it became of particular interest after the events of 7 December 1941. Non-military architectural resources include residential buildings, churches, school complexes, barns, docks, dams, a mine adit (horizontal mine passage), and a rural airport hangar. More than 265 architectural resources have been previously recorded in the Training Study Area (Table 3.4-3).

The Kodiak Naval Operating Base and Forts Greely and Abercrombie were designated as a National Historic Landmark (NHL) in 1984 for their association under the NHL theme World War II and subtheme of War in the Pacific (Thompson 1984). Contributing elements identified within the NHL are two seaplane hangars, the aircraft parking area, three seaplane ramps, the engine overhaul and aircraft maintenance building, the industrial area, the power plant, and the tender and tanker pier and marginal pier at the submarine station at the Kodiak Naval Operating Base; the land airfield at the Naval Air Station to include three runways and aircraft revetments on north side of field (modern air terminal facilities at west end of the area are excluded); the Fort Greely Harbor defense installations on Artillery Hill and Buskin Hill; and the Fort Abercrombie 8 in. coastal gun battery and supporting facilities (Thompson 1984). As part of Fort Abercrombie, Spruce Cape held four 90 mm Anti Motor Torpedo Boat guns. Additionally, the cape held an array of associated buildings including a lighthouse, search light mounts, a mess hall, officers' quarters, Pacific huts, and two Quonset huts. Although some buildings are extant, they have had minimal maintenance.

Table 3.4-3: Architectural Resources within the Area of Potential Effects – Kodiak Island, Alaska

AHRS Number	Resource Type	Affiliation	Description	NRHP/NHL Status
KOD-00123	AD 1804–1867, AD 1867–1911; Historic	Russian American Company	Two-story log structure (Russian American Company Magazine, Erskine House)	NHL 1966
KOD-00124, KOD-00589-00597, KOD-00604, KOD-00608, KOD-00618-00625, KOD-00629-00636, KOD-00638-00644, KOD-00654-00656, KOD-00658-00661, KOD-00668, KOD-00689, KOD-00686-00690, KOD-00695-00698, KOD-00702, KOD-00704, KOD-00707-00726, KOD-00728-00741, KOD-00745-00747, KOD-00755, KOD-00758-00773, KOD-00780-00796	AD 1939–1945; Military	Kodiak Naval Operating Base and Forts Greely and Abercrombie		Listed 1982, NHL 1985
KOD-00137, KOD-00797, KOD-00800, KOD-00801, KOD-00805, KOD-00806, KOD-00808, KOD-00810- KOD-00817	AD 1941–1945; Military	Fort Abercrombie State Historic Site	Coastal gun battery	NHL 1970, Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL
KOD-00818-00820	AD 1941–1945; Military	Piedmont Point (Fort Abercrombie)	Tactical searchlights and DEC bunkers	Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL
KOD-00195	AD 1796, AD 1945; Historic	Holy Resurrection Church	Wood frame church	Listed 1977

Table 3.4-3: Architectural Resources within the Area of Potential Effects – Kodiak Island, Alaska (continued)

AHRS Number	Resource Type	Affiliation	Description	NRHP/NHL Status
KOD-00459	AD 1908–1931, Historic	Kodiak Agricultural Experimental Station	Wisconsin style dairy barn	Listed 2004
KOD-00460–KOD-00462	AD 1942, Military	U.S. Naval Operating Base		Eligible
KOD-00467, KOD-00468	AD 1940s, Military	Gibson Cove Base End Station		Eligible
KOD-00818–KOD-00820	AD 1941, Military	Piedmont Point (Fort Abercrombie)	Concrete DEC and searchlight bunkers and foundations	Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL
KOD-00835, KOD-00836	AD 1942, Military	Artillery Hill (Fort Greely)	Concrete buildings	Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL
KOD-00841	AD 1942, Military	Buskin Hill (Fort Greely)	Buried pipe magazine	Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL
KOD-00910	AD 1948	NWS Kodiak Upper Air Facility	Building	Part of The Kodiak Naval Operating Base and Forts Greely and Abercrombie NHL
KOD-01069	AD 1953	Bettinger Reservoir Timber Dam NE	Buttress design timber dam	Eligible
KOD-01070	AD 1953	Bettinger Reservoir Timber Dam SE	Buttress design timber dam	Eligible
KOD-01101	AD 1953		Single Family residence	Eligible

Notes: AHRS = Alaska Historic Resources Survey, NHL = National Historic Landmark, NRHP = National Register of Historic Places

3.4.3.4 Alaska Native Resources

Traditional territory of the Alutiiq encompassed all of Prince William Sound, the outer coast of the Kenai Peninsula, the Barren Islands, the Kodiak Archipelago, and the Pacific coast of the Alaska Peninsula from Kamishak Bay to Stepovak Bay (Haggerty et al. 1991). Three federally recognized Alutiiq tribes (Alaska Native Villages)—Sun’aq Tribe of Kodiak, Tangirnaq Native Village (Woody Island Tribe – Leisnoi), and Native Village of Ouzinkie—and five Alaska Native (Alutiiq) corporations—Afognak Native Corporation; Koniag Incorporated; Leisnoi Incorporated; Natives of Kodiak, Inc.; and the Ouzinkie Native Corporation—have historical ties or economic ties or retain lands within the Training Study Area (see Figure 1.2-2).

Federally Recognized Alaska Native Tribes

Sun'aq Tribe of Kodiak (previously known as the Shoonaq' Tribe of Kodiak) is one of 10 Alutiiq tribes that resided in large coastal villages along the Alaska Peninsula, Kenai Peninsula, and the Kodiak Archipelago. The tribe settled in the area that is now the City of Kodiak approximately 2,500 years ago (Sun'aq Tribe of Kodiak 2013). The Sun'aq Tribe of Kodiak followed a maritime subsistence of hunting, fishing, and gathering on a seasonal basis. Many tribal members fish independently or for local canneries. The Sun'aq Tribe of Kodiak is an embedded urban tribe residing in Kodiak (Tiller 2005a) with no residential territory of their own. Its ANCSA village corporation is the Natives of Kodiak, Inc.

The Tangirmaq Native Village (formerly the Leisnoi Village or Woody Island) represents an historic Native Alaskan village on Woody Island. The Alutiiq occupied Woody Island for over 1,000 years; however, by the 1960s, the public school closed and the ferry service was discontinued in 1970 (Tangirmaq Native Village 2013). Most of the residents moved to Kodiak; no Native Alaskan residents were identified in the 2000 Census (Tiller 2005a). The current tribal headquarters is located on Near Island. Its ANCSA village corporation is Leisnoi Incorporated.

Native Village of Ouzinkie (Tiller 2005c) (Alutiiq) is located on Spruce Island adjacent to northeast end of Kodiak Island. The village was founded by the Russian American Company in the early 1800s. The Alutiiq on Ouzinkie rely on commercial salmon fishing with subsistence activities including harvesting of salmon, crab, halibut, shrimp, clams, ducks, deer and rabbit (Tiller 2005c). Its ANCSA village corporation is the Ouzinkie Native Corporation.

Alaska Native Corporations

Koniag Incorporated is the ANCSA regional corporation for Kodiak Island (Tiller 2005b). It represents eight villages and the City of Kodiak, which includes seven village corporations (Tiller 2005b). Koniag Incorporated holds title to approximately 123,000 ac. of surface estate and 900,000 ac. of subsurface estate (see Figure 1.2-2 for holdings within the Training Study Area) (Only ANCSA regional corporations hold title for the subsurface estate). Most of Koniag's surface estate is on the west side of Kodiak Island, near the Sturgeon and Karluk rivers. The Kodiak Island village corporations also received title to surface estate through ANCSA, scattered throughout Kodiak and Afognak Islands, and much of Koniag's subsurface holdings are for those lands (Koniag Incorporated 2011).

Afognak Native Corporation (Port Lions) is an ANCSA village corporation (Tiller 2005a) and was organized in 1977 through a merger of two original village corporations: Port Lions Native Corporation and Natives of Afognak, Inc. The Afognak Native Corporation owns 248,000 ac. of land in the Kodiak Archipelago, primarily on Afognak Island (Afognak Native Corporation 2013) (see Figure 1.2-2 for holdings within the Training Study Area).

Leisnoi, Inc. is a village corporation (Tiller 2005a) that owns 50,000 ac. on Kodiak Island, Woody Island, and Long Island (Leisnoi, Inc. 2013) (see Figure 1.2-2 for holdings within the Training Study Area).

Ouzinkie Native Corporation is a village corporation (Tiller 2005c) and manages 115,200 ac. of surface estate on Spruce Island, Afognak Island, and Kodiak Island (Ouzinkie Native Corporation 2013) (see Figure 1.2-2 for holdings within the Training Study Area).

Natives of Kodiak, Inc. is the City of Kodiak Native corporation (Tiller 2005a) and manages 23,040 ac. on Kodiak and Afognak Islands (Natives of Kodiak 2013) (see Figure 1.2-2 for holdings within the Training Study Area).

Traditional Cultural Properties

Seven TCPs (identified as Section 14(h)(1) sites under ANSCA) have been previously recorded in the Training Study Area; additional TCPs may yet be identified through consultation with the Sun'aq Tribe of Kodiak, Tangirnaq Native Village (Woody Island Tribe – Leisnoi), and Native Village of Ouzinkie. One Native allotment has also been recorded in the APE. In accordance with Section 304 of the NHPA, the locations of TCPs are considered proprietary and not for public dissemination.

Protected Tribal Resources

The Alaska Department of Fish and Game gathers information of subsistence harvest of traditional resources by Alaska Native tribes including, but not limited to, salmon (red, king, silver, pink, and chum), herring, halibut, cod, flounder, bass, sole, snapper, Dolly Varden, steelhead/rainbow, pollock, rockfish, Irish lord (bullhead), razor clam, butter clam, cockle, geoduck, horse clam, mussel, octopus, shrimp, crab (king, Tanner, and Dungeness), gumbot, scallop, sea urchin, deer, brown bear, rabbit, ptarmigan, ducks, geese, fox, weasel, land otter, bird eggs, harbor seal, sea lion, and plants such as salmonberry, cranberry, blueberry, raspberry, currants, crowberry, watermelon berry, sourberry, blackberry, gooseberry, elder berry, strawberry, rosehip, fireweed, dandelion, fiddlehead, nettle, goosetongue, mushroom, kelp, chamomile, yarrow, wild cherry, petrouski, wild rice, beach greens, red clover, and elder blossoms (Kodiak Area Native Association 1983; Alaska Department of Fish and Game 1985a, 1985b, 1985c, 1985d; Fall et al. 2009; Fall et al. 2012; Williams et al. 2010; Wolfe et al. 2012). Any specific concerns regarding protected tribal resources or customary or traditional use areas will be identified through consultation with the Sun'aq Tribe of Kodiak, Tangirnaq Native Village (Woody Island Tribe – Leisnoi), and Native Village of Ouzinkie. Non-Alaska Native subsistence is presented in Section 3.5.2 (Affected Environment).

3.4.3.5 Current Management Practices

No specific management practices have been established for the protection of cultural resources during existing training activities. Cultural resources continue to be managed in accordance with the NHPA, the Archaeological Resources Protection Act, the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, NAGPRA, and appropriate Navy Instructions. Consultation with the federally recognized Alaska Native tribes and ANCSA corporations would continue to identify and protect TCPs as defined in accordance with NHPA and protected tribal resources in accordance with state laws (e.g., ANCSA and ANILCA).

3.4.4 IMPACT ANALYSIS AND CONSEQUENCES

The impacts analyzed for cultural resources are physical disturbance and visual intrusions during training. Physical disturbance to archaeological sites and TCPs may include naturalizing bivouac sites during survival training; increased access to areas during navigation activities resulting in inadvertent or intentional disturbance; disturbance of cliff faces during ascending, rappelling, and hauling of equipment and supplies during cliff negotiation activities; and beach disturbance from OTB activities. Physical disturbance to architectural resources may include modification or alteration of existing structures, and inadvertent or intentional disturbance of such structures (e.g., World War II-era concrete bunkers).

Visual intrusions to Alaska Native TCPs may create a loss of integrity, character, or feeling of the resource, resulting in a loss of cultural continuity. Temporary visual intrusions during training activities may disrupt the visual landscape or the viewshed of Alaska Native TCPs, which may require uninterrupted vistas and natural quiet. Any ground-disturbing action or audio or visual intrusion in the

area of an Alaska Native TCP can affect the physical integrity of that cultural resource, resulting in alteration or destruction of the special Alaska Native quality (sacredness) of the resource.

Any physical disturbance of a NRHP-listed or -eligible cultural resource, or modification to such a resource, can result in alteration or destruction of those characteristics or qualities that make it eligible for inclusion in the NRHP and, thus, would be an adverse effect under Section 106 of the NHPA. If unresolved by the Section 106 process, such adverse effects would be considered a significant impact under the NEPA process.

The Proposed Action does not include any use of explosives or live ammunition. Therefore, noise intrusions to cultural resources will not occur and no further analysis is required.

The impacts analyzed for Alaska Native protected tribal resources are based on the intensity, frequency, and duration of the proposed activity; and the location of the resource that would be affected; and whether access by tribal members to the resource would change.

3.4.4.1 No Action Alternative

Under the No Action Alternative, baseline training activities would continue at the same level and in the same general areas as conducted in the last 25 years (see Section 2.2, Primary Training Activities of the Proposed Action). Existing training occurs in areas rather than specific sites used repeatedly (see Figure 2.1-1). Locations vary due to seasonal conditions, training qualifications, and unit mission requirements. Most prehistoric and historic archaeological sites likely to be considered NRHP-eligible are located along the coastline; locations for OTB activities could create physical disturbance and disrupt vertical and horizontal patterning in the archaeological deposits along the coastline. However, NSW/SOF training by design incorporates a stealth “leave no trace” philosophy, diminishing the likelihood of any physical disturbance to archaeological sites or TCPs.

Most of the World War II-era architectural resources (i.e., the coastal defense resources) on Long Island and in other existing training areas are located along cliff edges with few resources, such as Fort Abercrombie, Fort Tidball, and Fort J.H. Smith, or located in inland areas adjacent to the coastal defense resources. Existing training activities occur adjacent to some World War II architectural resources; although some training could incorporate the use of these resources as map points or temporary shelters, no alteration or modification of these architectural resources occurs as a result of training.

Cold weather training classes are conducted five to seven times a year with approximately 16 days of each 28-day training cycle dedicated to the conduct of cold weather maritime and mountaineering skills instruction in the existing training areas (see Section 1.2, Location and Description of Training Areas). Training activities are designed to be non-intrusive, low-visibility, and transitory in nature. Protected tribal resources have not been identified by the Alaska Native Corporations (Leisnoi, Incorporated; Natives of Kodiak, Inc.; or the Ouzinkie Native Corporation [Table 2.1-1]) in their Rights-of-Entry for the land-based existing training areas. Transit to and use of offshore training areas, which may occur up to 12 nm off the coast, varies by location and represents temporary use of offshore areas. Overall, Alaska Native access to protected tribal resources, such as terrestrial or marine resources, is not impaired by existing training activities, nor do these existing training activities reduce or degrade harvestable marine resources (see Section 3.2.4, Impact Analysis and Consequences).

Therefore, no significant impacts to cultural resources would occur from implementation of the No Action Alternative, and no historic properties would be adversely affected in accordance with Section

106 of the NHPA. Significant impacts to Alaska Native protected tribal resources would not occur because no resources have been identified in existing training sites within the land portion of the training study area, and harvestable marine resources would not be reduced or degraded.

3.4.4.2 Alternative 1

Under Alternative 1, additional annual activities for most events defined in the No Action Alternative would be incorporated into the training (see Table 2.3-1). Under Alternative 1, cold weather maritime training activities would increase by one class per training activity and total approximately 110 students for those class increases. Even though Alternative 1 increases the tempo of activities, no additional locations would be used. Most prehistoric and historic archaeological sites likely to be considered NRHP-eligible are located along the coastline; locations for OTB activities could create physical disturbance and disrupt vertical and horizontal patterning in the archaeological deposits along the coastline. However, NSW/SOF training by design incorporates a stealth “leave no trace” philosophy, diminishing the likelihood of any physical disturbance to archaeological sites or TCPs.

Most of the World War II-era architectural resources (i.e., the coastal defense resources) on Long Island and in other existing training areas are located along cliff edges with a few resources, such as Fort Abercrombie, Fort Tidball, and Fort J.H. Smith, or located in inland areas adjacent to the coastal defense resources. Training activities occur adjacent to some World War II architectural resources; although some training could incorporate the use of these resources as map points or temporary shelters, no alteration or modification of these architectural resources would occur as a result of training under Alternative 1.

Protected tribal resources have not been identified by the Alaska Native Corporations (Leisnoi, Incorporated; Natives of Kodiak, Inc.; or the Ouzinkie Native Corporation [see Table 2.1-1]) in their Rights-of-Entry for the land-based existing training areas. Transit to and use of offshore training areas, which may occur up to 12 nm off the coast, varies by location and represents temporary use of offshore areas. Overall, Alaska Native access to protected tribal resources, such as terrestrial or marine resources, is not expected to be impaired by training activities under Alternative 1, nor do these training activities reduce or degrade harvestable marine resources (see Section 3.2.4, Impact Analysis and Consequences).

Therefore, no significant impacts to cultural resources would occur from implementation of Alternative 1, and no historic properties would be adversely affected in accordance with Section 106 of the NHPA. Significant impacts to Alaska Native protected tribal resources would not occur during training activities under Alternative 1 because no resources have been identified in existing training sites within the land portion of the training study area, and harvestable marine resources would not be reduced or degraded.

3.4.4.3 Alternative 2

Under Alternative 2, no increase in annual activities as defined in the No Action Alternative would occur (see Table 2.3-1); however, some additional locations (e.g., different alpine training routes or beach landing points) within the Training Study Area would be incorporated for use. Under Alternative 2, the baseline training activities, as conducted at Kodiak Island over the past decade, would continue at the same level, with approximately the same student class sizes (as identified in the No Action Alternative). Training would occur in the same historically used locations and would also utilize added locations within the Training Study Area.

Most prehistoric and historic archaeological sites likely to be considered NRHP-eligible are located along the coastline; additional locations for OTB activities could create physical disturbance and disrupt vertical and horizontal patterning in the archaeological deposits along the coastline. However, NSW/SOF training by design incorporates a stealth “leave no trace” philosophy diminishing the likelihood of any physical disturbance to archaeological sites or TCPs.

Most of the World War II-era architectural resources (i.e., the coastal defense resources) on Long Island and in other existing training areas are located along cliff edges with a few resources, such as Fort Abercrombie, Fort Tidball, and Fort J.H. Smith, or located in inland areas adjacent to the coastal defense resources. Training activities occur adjacent to some World War II architectural resources; although some training could incorporate the use of these resources as map points or temporary shelters, no alteration or modification of these architectural resources would occur as a result of training under Alternative 2.

Protected tribal resources have not been identified by the Alaska Native Corporations (Leisnoi, Incorporated; Natives of Kodiak, Inc.; or the Ouzinkie Native Corporation [see Table 2.1-1]) in their Rights-of-Entry for the land-based existing training areas. Transit to and use of offshore training areas, which may occur up to 12 nm off the coast, varies by location and represents temporary use of offshore areas. Overall, Alaska Native access to protected tribal resources, such as terrestrial or marine resources, is not expected to be impaired by training activities under Alternative 2, nor do these training activities reduce or degrade harvestable marine resources (see Section 3.2.4, Impact Analysis and Consequences).

Therefore, no significant impacts to cultural resources would occur from implementation of Alternative 2 and no historic properties would be adversely affected in accordance with Section 106 of the NHPA. Significant impacts to Alaska Native protected tribal resources would not occur during training activities under Alternative 2 because no resources have been identified in existing and potential additional training sites within the land portion of the training study area, and harvestable marine resources would not be reduced or degraded.

3.4.4.4 Alternative 3 (Preferred Alternative)

Under Alternative 3, additional annual activities for most events defined in the No Action Alternative would be incorporated into the training (see Table 2.3-1). Under Alternative 3, cold weather maritime training activities would increase by one class per training activity and total approximately 110 students for those class increases (identical to the increase in training activities associated with Alternative 1). Alternative 3 would also use additional locations within the Training Study Area as identified in Alternative 2.

Most prehistoric and historic archaeological sites likely to be considered NRHP-eligible are located along the coastline; locations for OTB activities could create physical disturbance and disrupt vertical and horizontal patterning in the archaeological deposits along the coastline. However, NSW/SOF training by design incorporates a stealth “leave no trace” philosophy, diminishing the likelihood of any physical disturbance to archaeological sites or TCPs.

Most of the World War II-era architectural resources (i.e., the coastal defense resources) on Long Island and in other existing training areas are located along cliff edges with a few resources, such as Fort Abercrombie, Fort Tidball, and Fort J.H. Smith, or located in inland areas adjacent to the coastal defense resources. Training activities occur adjacent to some World War II architectural resources; although

some training could incorporate the use of these resources as map points or temporary shelters, no alteration or modification of these architectural resources would occur as a result of training under Alternative 3.

Protected tribal resources have not been identified by the Alaska Native Corporations (Leisnoi, Incorporated; Natives of Kodiak Inc.; or the Ouzinkie Native Corporation [see Table 2.1-1]) in their Rights-of-Entry for the land-based existing training areas. Transit to and use of offshore training areas, which may occur up to 12 nm off the coast, varies by location and represents temporary use of offshore areas. Overall Alaska Native access to protected tribal resources, such as terrestrial or marine resources, is not expected to be impaired by training activities under Alternative 3 nor do these training activities reduce or degrade harvestable marine resources (see Section 3.2.4, Impact Analysis and Consequences).

Therefore, no significant impacts to cultural resources would occur from implementation of the Preferred Alternative, and no historic properties would be adversely affected in accordance with Section 106 of the NHPA. Significant impacts to Alaska Native protected tribal resources would not occur during training activities under the Preferred Alternative because no resources have been identified in existing and potential additional training sites within the land portion of the training study area, and harvestable marine resources would not be reduced or degraded.

3.5 RECREATION

3.5.1 DEFINITION OF RESOURCE

The primary recreational activities for both residents and visitors of Kodiak are the pristine hunting and fishing experiences available. Additionally, the unspoiled land area offers challenging hiking, camping, and all-terrain vehicle experiences. About 11,000 people live along the Kodiak road system, which is the only part of the Kodiak Archipelago that supports commercial, personal, and recreational vehicle transit.

This system, in turn, lies completely within the Training Study Area. Kodiak welcomes about 14,000 visitors every year, whose predominate purpose is to experience the unspoiled natural sights and wilderness activities offered in the Kodiak archipelago. Other than private air or seaborne transport to remote hunting and fishing recreation areas outside the Kodiak Island Road Zone (Figure 3.5-1), access to all recreational activities on Kodiak occurs within the Road Zone due to the accessibility by vehicle. The Road Zone is defined as all land and fresh waters of Kodiak island east of a line from Craig Point south to the westernmost point of Saltery Cove, including land and freshwaters of Woody, Long, and Spruce islands, as well as all saltwater bordering the road zone within 1 mile (mi.) of Spruce and Kodiak islands. The road system has approximately 70 mi. of paved and hard-packed gravel roads that also are the primary means for vehicle transportation of NSWCEN Det Kodiak students. This road system crosses 10 significant streams and provides access to over 20 stocked lakes and four boat launch ramps. The Kodiak Road Zone lies wholly within the Training Study Area and serves as a thorough illustration on the interfaces for the majority of Kodiak Island recreation use, access, and compatibility with the NSWCEN Det Kodiak, Cold Weather Maritime Training Environmental Assessment.



Figure 3.5-1: Kodiak Island Road Zone

This section evaluates the impact of the Proposed Action on public recreation activities in Kodiak, specifically within the Training Study Area.

3.5.2 AFFECTED ENVIRONMENT

The Training Study Area on the eastern end of Kodiak Island and the contiguous near shore waters and off shore islands, while not the most expansive portion of Kodiak's recreational venues, does support both sport hunting, and fishing. Within the boundaries of the Training Study Area, the ADF&G Game Management Unit (GMU) 8, Kodiak Road System Management Area controls the hunting of brown bear, deer, and mountain goats through registration, harvest ticket, and permit processes. Figure 3.5-2 details the specific permit area breakouts. (Alaska Department of Fish and Game 2013).

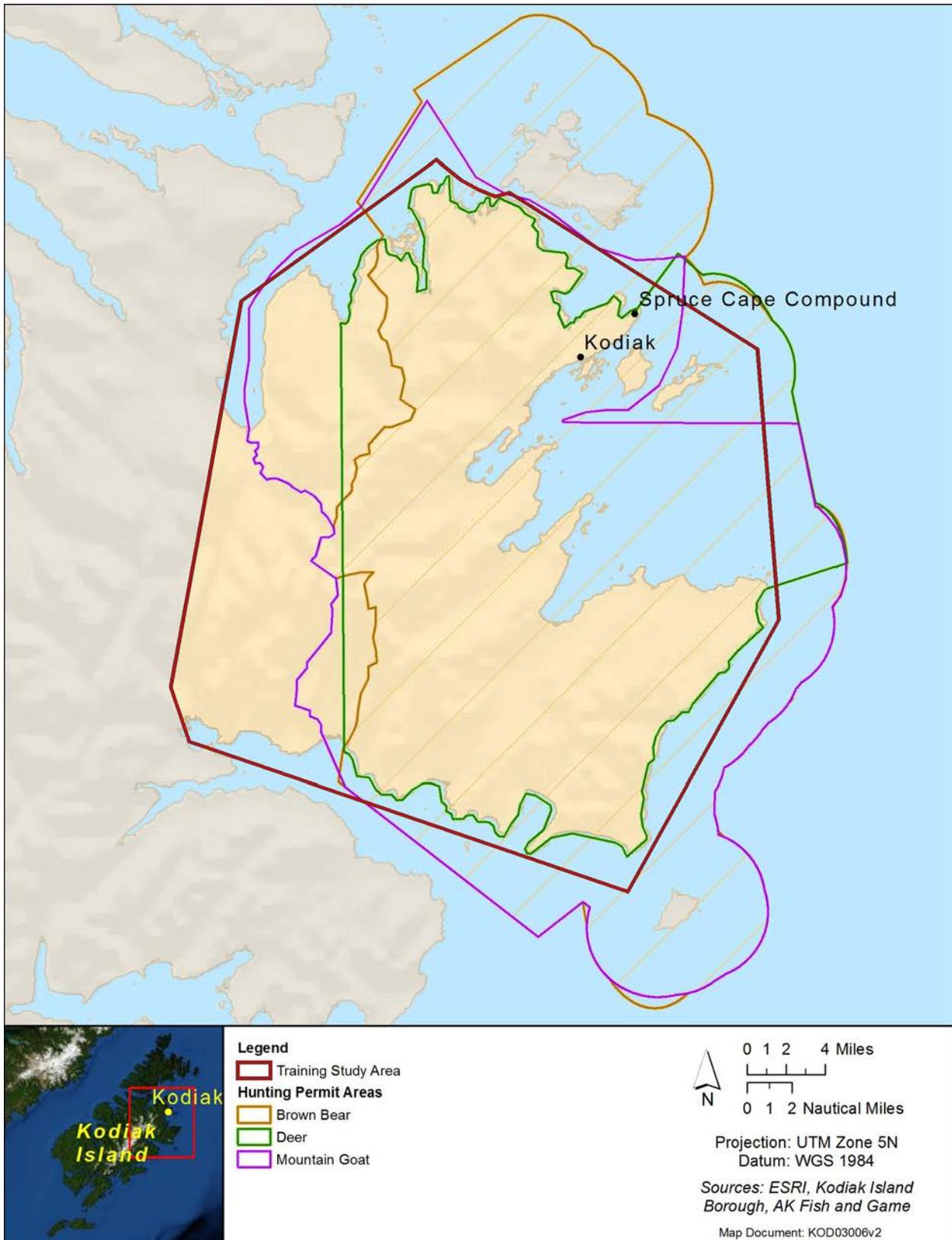


Figure 3.5-2: Training Study Area Alaska Department of Fish and Game Hunting Areas

The Buskin River State Recreation Site (Figure 3.5-4), north of the Kodiak Airport, is a 168 ac. parcel on land owned by the USCG and managed by the Alaska Department of Natural Resources under a permit from the USCG. This recreation area in the Training Study Area is a location for Det Kodiak training activities. The site contains parking and camping facilities and access to trails, fishing, and the beach. The Buskin River area is important to Kodiak residents as well as visitors for both recreation and subsistence activities. Additionally, the site is a large attraction for tourism during salmon spawning season. Beach areas around the Buskin River mouth and along Womens Bay adjacent to the airport are used for beachcombing, subsistence uses, and fishing.

Womens Bay and the northwest half of Middle Bay are part of the Alaska Maritime NWR and are located north and east of the airport (Figure 3.5-3). Womens Bay is a periodic location for parachute and OTB training.



Figure 3.5-3: Training Study Area Alaska Maritime National Wildlife Refuge

3.5.2.1 Subsistence, Commercial, and Recreational Fishing

Sport fishing in the broader vicinity of the Training Study Area, within the Kodiak Island Road Zone is seasonal year round by species, and is enjoyed by and available to both residents and visitors. There are 15 rivers and streams and 22 lakes available for fishing within the Training Study Area. Ocean fishing takes place in Ugak Bay, Chiniak Bay, Monashka Bay, and Anton Larson Bay within the Training Study Area.

The Kodiak Salt Water and Kodiak Island Fresh Water Fishing Seasons for all species are open year round. General and special regulations applicable to the Training Study Area on Kodiak are defined in the Alaska Department of Fish and Game (ADF&G) 2014 Alaska Sport Fishing Regulations Summary,

Southwest Alaska.¹ The U.S. Department of the Interior, Federal Subsistence Management Program and the Alaska Department of Fish and Game provide guidance for subsistence fishing in Kodiak waters.²

In addition to the robust recreational and subsistence fishing activity within the Training Study Area, commercial fishing and processing in Kodiak account for 55 percent of the private sector work force. During the commercial salmon fishing season (approximately June–September), up to 5,000 people may be involved in that industry, which includes fishing vessel transit into and out of Kodiak Harbor, and fishing activity in the ocean waters of the Training Study Area. Det Kodiak planning for specific overwater and in-water training is carefully scheduled around this important Kodiak resource.

3.5.2.2 Subsistence and Recreational Hunting

Local population subsistence hunting, as well as recreational hunting, occurs throughout the Training Study Area, which lies within the Alaska Department of Fish and Game’s Region 2, GMU 8. Deer, bear, and goat hunting allowances are depicted in Figure 3.5-2. NSWCEN training locations within the Training Study Area overlap into all of the permit hunting areas. Besides large game hunting, waterfowl and small game such as rabbit are popular with both subsistence and recreational hunters on Kodiak. State laws applicable to Native Corporation and Native allotment lands and USFWS, Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska, 1 July 2013–30 June 2014, can be found at www.adfg.alaska.gov/index.cfm?adfg=subsistence.main (Subsistence Hunting in Alaska). Federal subsistence harvesting regulations can be found at: <http://www.doi.gov/subsistence/index.cfm>. NSWCEN training activities have coexisted without incident throughout the existence of Det Kodiak with subsistence and recreational hunting within the Training Study Area. Training areas are selected and scheduled to be compatible with the various general, permitted, and subsistent type of hunts and hunting seasons. Det Kodiak training activities are sustained, while being compatible with GMU 8 hunting seasons, through careful and conscientious practices of avoidance and respect.

3.5.2.3 Camping

Tent camping is available and enjoyed in many areas of the Training Study Area. Figure 3.5-4 depicts the established sites, with the most accessible and highest used being at Buskin River State Recreation Site and Fort Abercrombie State Historic Park. Other good camping sites are near the river at the Pasagshak River State Recreation Site, and there is a private primitive camping area on the Chiniak Highway near the ocean. Other beaches, as well as remote sites in the interior of the Training Study Area, support primitive camping recreation; however, the majority of the land near the road system is privately owned and requires a permit in order to camp. Most of the permits are issued by the Leisnoi Native Corporation. Guidance for recreational camping is found at www.dnr.alaska.gov/parks.

3.5.2.4 Hiking

Hikers enjoy a network of trails around town and on the Kodiak road system worthy of exploration. Most trails are ranked moderately difficult, but easy, rolling trails are also available. Fort Abercrombie State Historic Park and North End Park on Near Island are favorites for easy walks. The local Audubon Society offers guided hikes most Saturdays from May through October. There are many more unimproved, unmaintained trails along the road system that are suitable for hikers of all skill levels. Most trails outside the established park boundaries are unmarked and unimproved.

¹ ADF&G 2013 Alaska Sport Fishing Regulations Summary

² Alaska Department of Fish and Game, Subsistence Fishing

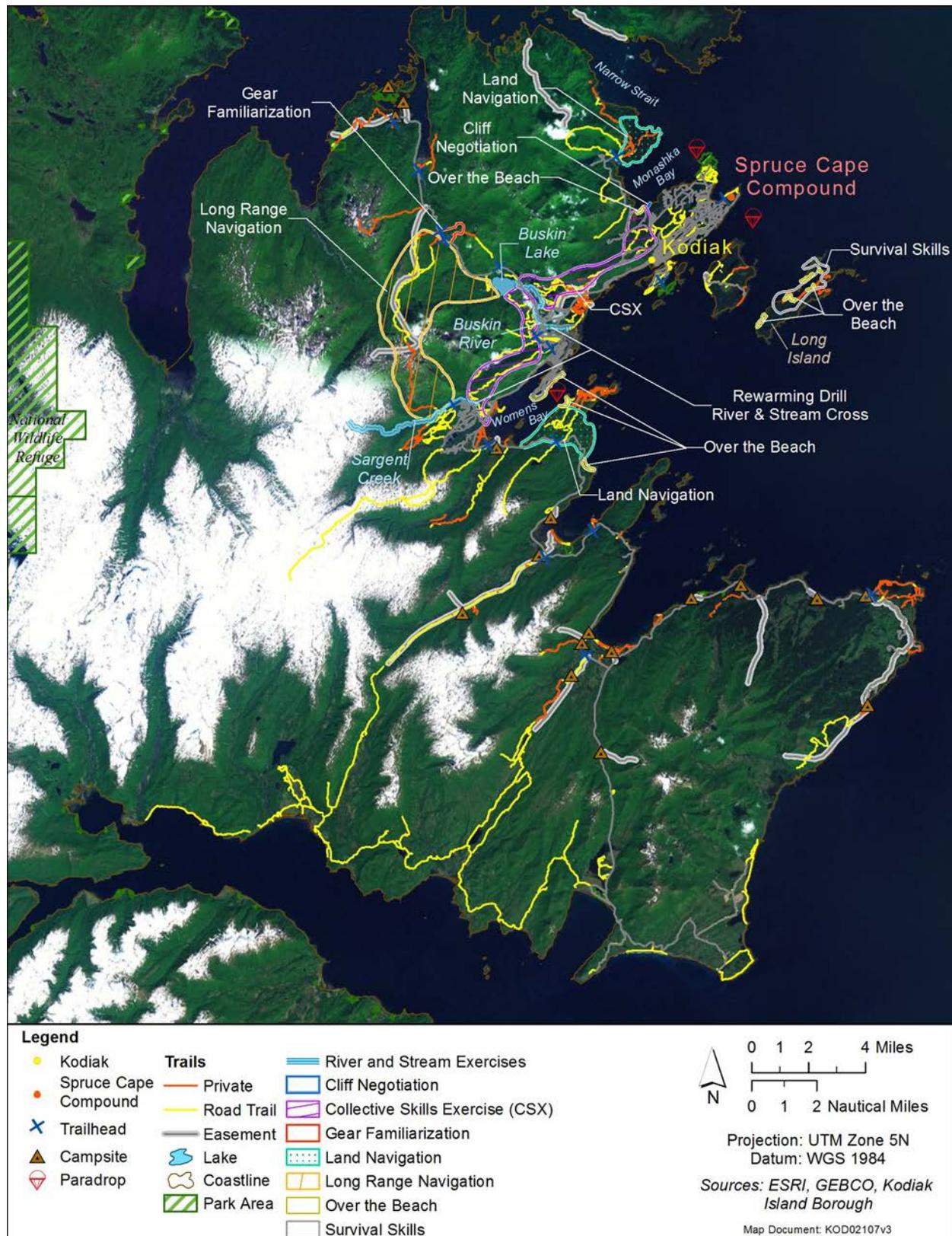


Figure 3.5-4: Training Study Area Public Recreation Sites

3.5.3 IMPACT ANALYSIS AND ENVIRONMENTAL CONSEQUENCES

For all the recreation factors evaluated, no impacts were identified. In addition, the need for an expansive or more detailed study of potential impacts or topics was discounted. Specifics to how Det Kodiak would ensure that all student training activities conducted will remain compatible with the continued sustainment of the superior recreational characteristics of Kodiak, within the Training Study Area include:

- Training activity presence near the rivers and lakes used for recreational and subsistence fishing would be infrequent and fleeting, with the stream crossing and re-warming drills occurring most frequently. Training activities in ocean waters would predominately occur in Monashka Bay, Womens Bay, and the vicinity of Long Island, and would be coordinated with the USCG through Notice to Mariners (NTM) to ensure deconfliction with recreational fishing.
- For all training air drops, NSWC Det Kodiak Standard Operating Procedures require the posting of a Drop Zone Safety Officer with the responsibility of ensuring the drop zone is clear and safe.
- NSWCEN training activities would always endeavor to remain clear of hunting parties and by design would be conducted to ensure that little to no disturbance of the environment would occur.
- All training activities over land are designed to be non-intrusive, low-visibility, and transitory in nature. They would not interact or interfere with any known or detected camping areas within the Training Study Area.
- Interaction with remote recreational hikers may occur; however, the active training activity would purposefully adjust route and/or area to not interfere with any hikers and would not prolong contact any longer than needed to depart the shared trail space.
- At no time during training activities would there be a restriction of access to the public.

The NSWCEN mission in Kodiak relies on the preservation of the unique natural Kodiak cold weather environment, to include all facets of recreation and subsistence hunting and fishing within the Training Study Area. Through a “leave no trace” philosophy, the mission ensures that disruption of recreation activities would be marginal and have no impact on personal and commercial recreation. The Navy achieves these conditions through an established process of training location selection, which includes designing the specific training syllabus event to avoid other potential users of an area and ensuring that an area is clear of nonparticipants. Important factors considered include the ability to control access to an area; schedule (time of day, day of week); frequency, duration, and intensity of activities; range safety procedures; operational control of activities or events; and safety history. Figure 3.5-4 shows the few identified and accessible public recreation sites within the Training Study Area, and aside from the previously depicted expansive hunting permit regions, illustrates the expansive areas available for the periodic placement of Det Kodiak training activity locations.

3.5.3.1 No Action Alternative

The NSWCEN Det Kodiak activities and training tempo within the Training Study Area under the No Action Alternative would continue to have no significant impacts on recreation activities. Figure 3.5-4 illustrates the current recreational areas within the Training Study Area. These recreational and subsistence areas have coexisted with NSWCEN activities since the establishment of the detachment, and the lack of conflict between training and recreation activities in the Training Study Area validates that NSWCEN training is compatible with all facets of recreational activities, including subsistence hunting and fishing.

The No Action Alternative for NSWCEN Det Kodiak training activities within the Training Study Area would not have a significant impact on recreation and subsistence activities for the following reason:

- NSWCEN activities by design occur in the same pristine, natural areas on Kodiak that support outdoor recreation and subsistence hunting and fishing. The NSWCEN Det Kodiak has over 20 years of experience co-existing with these activities, during which time there has not been a documented occurrence of NSWCEN training being detrimental to any recreational or subsistence hunting or fishing activities. Training locations within the Training Study Area are by design physically difficult to access, and training activities are similarly intended to leave the training environment completely undisturbed.

Activities within the Training Study Area historically have been welcomed by all landowners as they provide a persistent, authorized, unobtrusive presence that has and continues to discourage abuse of the abundant recreation and subsistence resources.

Under the No Action Alternative, the current, existing NSWCEN training activities would continue. Existing public recreational use would not be affected. Therefore, impacts relating to public recreation or subsistence hunting and fishing from implementation of the No Action Alternative would be less than significant.

3.5.3.2 Alternative 1

Under Alternative 1, there is the potential for adding an additional qualification training class and up to one each additional NSW Group Team Training, parachute activity, and other unit training annually. This modest increase in students and training over the course of the year would continue to have the same training perspective and considerations for recreation activities as the No Action Alternative, and would continue and maintain the status that impacts to public recreation or subsistence hunting and fishing from implementation of Alternative 1 would be less than significant.

3.5.3.3 Alternative 2

Under Alternative 2, the same training perspective and considerations for recreation activities as the No Action Alternative would take place, with the potential for adding additional, to include historically utilized, training locations within the overall Training Study Area. This modest increase in the number of potential training sites would allow for NSWCEN training events to be further separated from routine public interaction, increase the diversity of training locales within the approved Training Study Area, and would continue to ensure that impacts to public recreation or subsistence hunting and fishing from implementation of Alternative 2 would be less than significant.

3.5.3.4 Alternative 3 (Preferred Alternative)

Under Alternative 3, the training perspective and considerations for recreation activities evaluated in Alternatives 1 and 2 would take place. This alternative merges the potential for adding additional, to include historically utilized, training locations within the overall Training Study Area with adding an additional qualification training class and up to one each additional NSW Group Team Training, parachute activity, and other unit training annually. It affords NSWCEN with the most flexibility to support agile training requirements while at the same time preserving the same long-standing training perspective and considerations for recreation activities as the No Action Alternative. Therefore, this modest, balanced increase and dispersion in the number of potential training sites in concert with a

modest increase in the number of students being trained would continue to support a sustained Det Kodiak practice such that impacts to public recreation or subsistence hunting and fishing from implementation of the Preferred Alternative would be less than significant. By utilizing additional different, compatible training areas within the Training Study Area to support the increase in student throughput, the impact to each training locale within the Training Study Area would remain consistent with current and historical levels as the frequency of use for each would remain unchanged.

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3.6 PUBLIC HEALTH AND SAFETY

3.6.1 INTRODUCTION

This section of the NSWCEN Det Kodiak Cold Weather Maritime Training EA analyzes potential impacts on public health and safety within the Training Study Area.

Unlike military training and testing activities conducted within the boundaries of a fenced land installation, public access to ocean areas, public and private land training areas, or the overlying airspace within the Training Study Area cannot be physically controlled. Sensitivity to public health and safety concerns within the Training Study Area is heightened in areas where the public may be close to certain activities, or where the potential for public use of the same training locations exists.

Generally, the greatest potential for a proposed activity to affect the public is near the coasts and shorelines because that is where public activities are concentrated. These coastal and shoreline areas could include dive sites; Native American recreational, ceremonial, or extractive areas; or other recreational areas where the collective health and safety of groups or individuals that could be exposed to the hazards of training and testing would be of concern. Most commercial and recreational marine activities are close to shore and are usually limited by the capabilities of the boat used. Although both commercial and recreational fishing is conducted as far as 100 nm from shore, certain fishing practices, principally involving all salmon species, within the Training Study Area are concentrated near the coast. Training does occur in Alaska State waters (within 3 nm of shore) and areas where there could be interaction with the public.

Topics related to public health and safety within the Study Area includes safety standards, population centers, and public access. Figure 3.6-1 shows the portion of the Training Study Area containing the majority of municipal public activity on Kodiak (Alaska Department of Natural Resources. Mining, Land & Water 2013). Figure 3.6-2 shows the public recreation and access venues overlaid against the preferred Det Kodiak training sites. The two figures illustrate how little interaction between NSWCEN activity and the public can be routinely expected and that any encounters would be during remote, routine, and benign training activities, with the result being that public health and safety issues would be less than significant.

Issues related to EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, are analyzed in Section 3.7. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, is considered in Section 3.8.

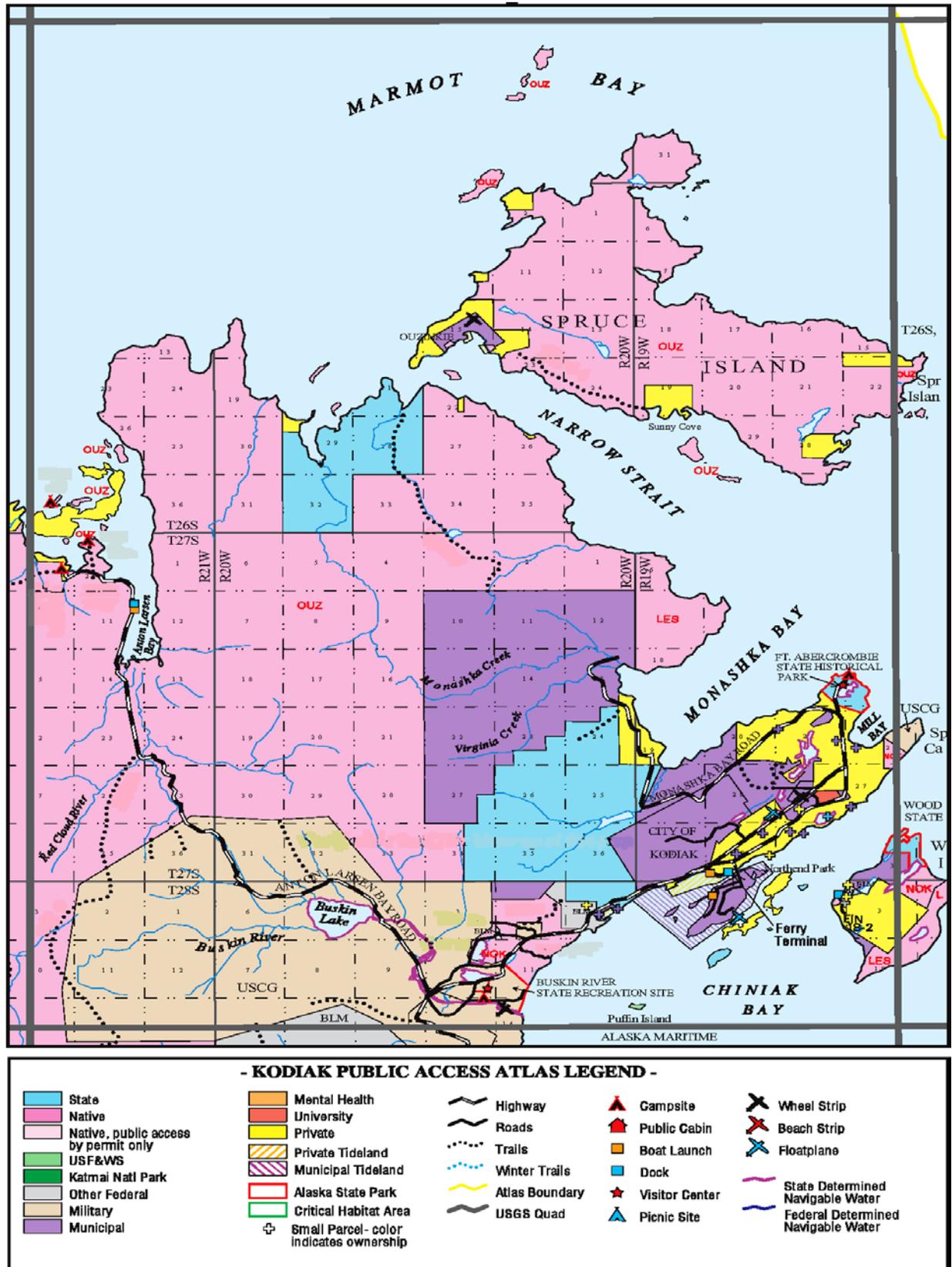


Figure 3.6-1: Northern Training Study Area Kodiak Public Access

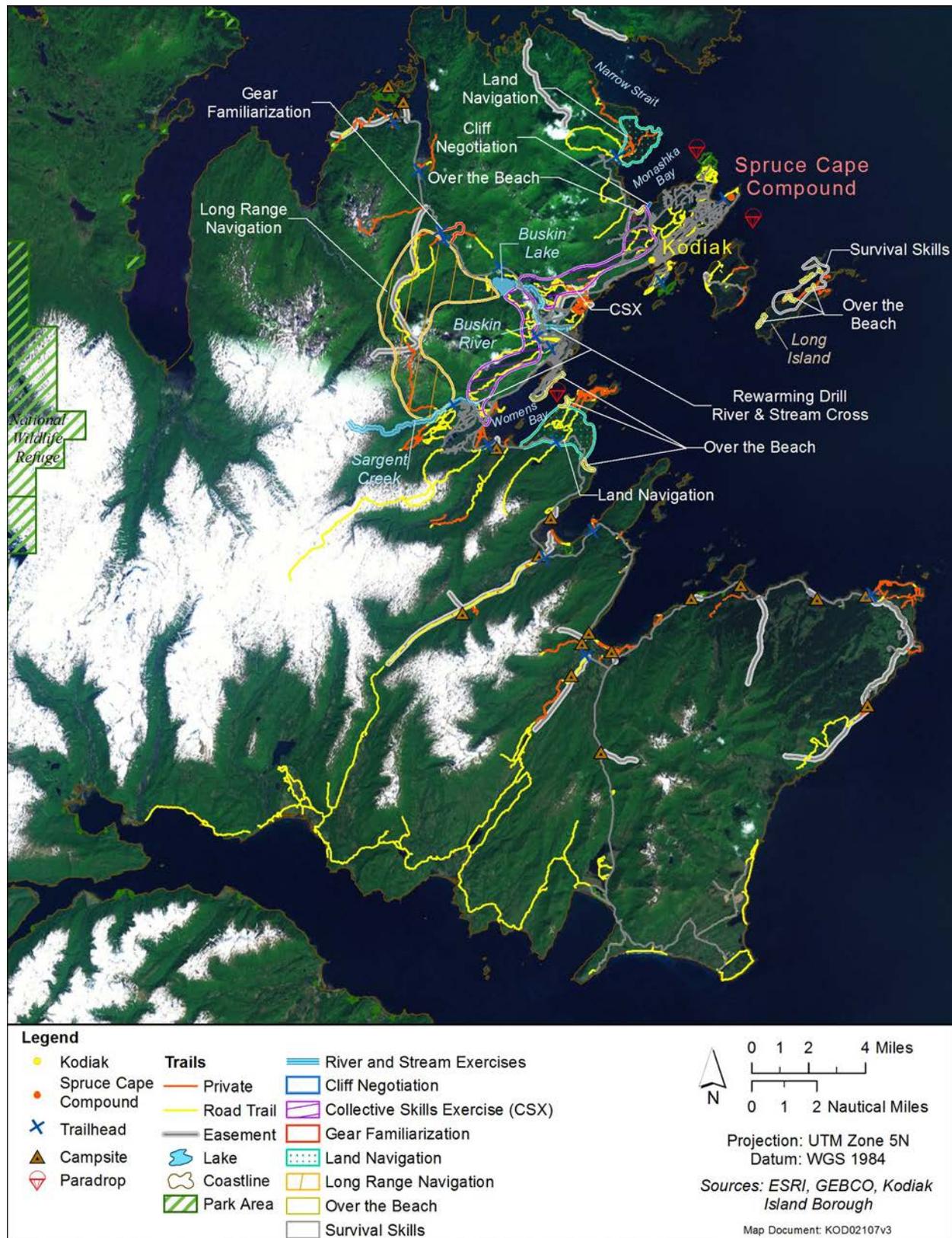


Figure 3.6-2: Recreation Sites and Cold Weather Maritime Training Areas

3.6.2 AFFECTED ENVIRONMENT

The area of interest for assessing potential impacts on public health and safety is the Training Study Area on the eastern end of Kodiak Island and the contiguous near shore waters and off shore islands. The Study Area encompasses a spectrum of populations and land ownership. Within the boundaries of the Training Study Area there is land owned by five Native Alaskan Tribes, two municipalities, two state agencies, five federal agencies, and some private landowners (see Figure 1.2-2 for specific land ownership breakouts). Descriptions of the affected environment are presented for two specific areas, offshore waters and the land areas. Additionally, the airspace over the various offshore training areas is addressed. Safety procedures are described for the specific area activities where appropriate; otherwise, the affected environment descriptions apply to all areas.

Commercial, institutional (including federally recognized Alaska Native Tribe activities), recreational, and military activities take place simultaneously in the Study Area (Figure 3.6-3) and have coexisted safely for decades because established rules and practices lead to safe use of the land areas, waterways, and airspace. The following paragraphs briefly discuss the rules and practices for recreational, commercial, institutional, and military use in sea surface areas and airspace. The safety and inspection procedures are designed and implemented by NSWCEN and Det Kodiak. The Officer-In-Charge of Det Kodiak is responsible for executing safety and inspection procedures for training activities within the Training Study Area. In the absence of specific guidance on matters of safety, the Navy follows the most prudent course of action to ensure safety of all training participants and the nonparticipating public.



Figure 3.6-3: Simultaneous Activities within the Training Study Area

Offshore Waters. All of the offshore navigable and public waters in the Study Area are freely accessible to the public for recreational and commercial activities. There are no restricted areas in the Training Study Area; however, for the periodic training events conducted, the USCG will ensure that private and commercial vessels are aware of the operations that could affect them and that they comply with all maritime regulations as administered by the USCG. The Navy's safety measures ensure public health and safety primarily through published and periodically reviewed standard operating procedures that are designed to minimize or avoid civilian exposure to training activities.

In accordance with Title 33 C.F.R. 72, Aids to Navigation, the USCG and the Department of Homeland Security inform private and commercial vessels about temporary closures via NTMs, which provide information about durations and locations of closures due to activities that are hazardous to surface vessels. Halting marine traffic is typically not required as a safety measure for private and commercial vessels. In cases where certain training activities involve navigational hazards, primarily parachute drops, the Navy coordinates with the USCG to issue NTMs that advise mariners on information concerning the safety of navigation. In other cases, NTMs identify locations of planned Navy activities and alert the public to the need to avoid those locations. Broadcast notices on maritime frequency radio, weekly publications by the appropriate USCG Navigation Center, and GPS navigation charts disseminate these navigational warnings. For all open water training events involving broadcast navigational hazards, NSWC Det Kodiak Standard Operating Procedures require the posting of a Safety Officer in a rigid support craft with the responsibility of ensuring the training area is clear and safe to conduct the event, to include moving to a designated alternate training area if required. Area clearance time is factored into the scenario. NSWCEN routine OTB scenarios associated with qualification training syllabus events generally do not meet the thresholds required for the issuance of NTMs.

Land Areas. All of the land areas in the Study Area accessed by NSWCEN students are fully accessible to recreational activities, along with some commercial uses, where authorized by the landowners. All training events on land areas are conducted under existing land use or right of entry agreements with the appropriate owner or agency. The Navy's safety measures on land ensure public health and safety primarily through standard operating procedures that are designed to minimize or avoid civilian exposure to training activities.

Watersheds. The public water system for the City of Kodiak and the USCG Base is a Class A water system that obtains water primarily from the Monashka Reservoir, approximately 5 miles (mi.) north of Kodiak. Water collected at the Monashka Reservoir is piped to the Upper Reservoir, where it is stored before treatment and distribution. The Monashka Reservoir drinking water protection area is approximately 4 mi.² in size, and the Upper Reservoir drinking water protection area is approximately 6 ac. in size. The Pillar Creek Reservoir is located approximately 1.5 mi. northwest of Kodiak and is used as an alternative water source for the system. The Pillar Creek Reservoir drinking water protection area is approximately 4 mi.² in size. These reservoirs are fed by protected watersheds. The Kodiak water system has developed watershed management plans for all of the city's water sources. The susceptibility rating of all protection areas is "very high." A rating of high to very high is typical for all systems with surface water intakes. These two watersheds remain natural and undisturbed and are of such high quality that the City is currently not required to filter the water before it is disinfected and delivered to the community.

Potential and existing sources of the following contaminants were evaluated for the Source Water Assessment: bacteria and viruses, nitrates or nitrites, heavy metals cyanide, and other inorganic chemicals, synthetic organic chemicals, volatile organic chemicals, and other organic chemicals. No potential contaminant sources were identified for the drinking water source. Combining the

susceptibility of the surface water source with the contaminant risks, this water system has received a vulnerability rating of “medium” for all six contaminant categories. This assessment can be used as a foundation for local voluntary protection efforts, to include NSWCCN standard training practices, as well as a basis for the continuous efforts on the part of the City of Kodiak to protect public health (City of Kodiak Public Works Department 2012).

The Navy’s safety management measures to ensure public watershed safety are published in OPNAVINST 5100.23G. NSWCCN Det Kodiak has developed supporting local standard operating procedures that are periodically reviewed and are designed to reinforce minimal training activity impacts on Kodiak’s primary watersheds.

Airspace. The airspace in the Training Study Area is accessible to general aviation (recreational, private, corporate) and commercial aircraft. There is no Special Use Airspace (airspace of defined dimensions within which activities must be confined because of their nature or within which limitations may be imposed upon aircraft operations that are not part of those activities [Federal Aviation Administration 2013]) within the Training Study Area or over any part of the Kodiak Archipelago.

Notices to Airmen (NOTAMs) are created and transmitted by government agencies and airport operators to alert aircraft pilots of any hazards en route to or at a specific location. The Federal Aviation Administration (FAA) issues NOTAMs to disseminate information on upcoming or ongoing military training exercises with airspace restrictions. Operators of civilian aircraft are responsible for being aware of any NOTAMs that are in effect. Pilots have a duty to abide by aviation rules as administered by the FAA. The infrequent parachute training operations conducted by Det Kodiak are accomplished with associated NOTAMs.

Weather conditions dictate whether aircraft (general aviation, commercial, or military) can fly under visual flight rules or whether instrument flight rules are required. Under visual flight rules, the weather is favorable and the pilot is required to remain clear of clouds by specified distances to ensure separation from other aircraft under the concept of see and avoid. Pilots flying under visual flight rules must be able to see outside of the cockpit, control the aircraft’s attitude, navigate, and avoid obstacles and other aircraft based on visual cues. Pilots flying under visual flight rules assume responsibility for their separation from all other aircraft and are generally not assigned routes or altitudes by air traffic control.

During unfavorable weather, pilots must follow instrument flight rules. Factors such as visibility, cloud distance, cloud ceilings, and weather phenomena cause visual conditions to drop below the minimum required to operate by visual flight referencing. Instrument flight rules represent the regulations and restrictions a pilot must comply with when flying in weather conditions that restrict visibility. Pilots can fly under instrument flight rules in visual flight rules weather conditions; however, pilots cannot fly under visual flight rules in instrument flight rules weather conditions. All NSWCCN aviation-related training is conducted under visual flight rules.

3.6.3 IMPACT ANALYSIS AND ENVIRONMENTAL CONSEQUENCES

During training, Navy policy is to ensure the safety and health of personnel and the general public. The Navy’s policy is to use every possible precaution in planning and executing all activities in order to prevent injury to people or damage to property. The Navy achieves these conditions at Kodiak through an established process of location selection for each training evolution, which includes designing the specific training syllabus event to avoid other potential users of an area and ensuring that an area is

clear of nonparticipants. Important factors considered include the ability to control access to an area; schedule (time of day, day of week); frequency, duration, and intensity of activities; range safety procedures; operational control of activities or events; and safety history. Training that occurs in Alaska State waters is benign in action and, by and large, is little noticed by the local population. The Navy also has a proactive and comprehensive program of compliance with applicable standards and implementation of safety management processes. In addition, established NSWCEN Det Kodiak safety Standard Operating Procedures (SOP) and Navy-wide safety directives provide comprehensive guidance to sufficiently ensure public safety.

The Navy implements a wide range of rules and practices for safe military use of training systems, to include delivery vehicles and specialized equipment. Training hazards and associated safety procedures are analyzed in detail by the NSWCEN and the Det Kodiak staff for an accurate assessment of public health and safety. The Navy follows OPNAVINST 5100.23G, *Navy Safety and Occupational Health (SOH) Program Manual, of 21 July 2011* for its work environment safety guidelines. This instruction affirms Navy safety policy and outlines the Navy safety program that features

- Compliance with applicable standards
- Implementation of safety management systems
- An annual inspection of all workplaces by qualified safety inspectors
- Prompt abatement of identified hazards and hazard reporting procedures
- Appropriate safety and health training
- Hazard review procedures
- Investigation and management information systems
- Occupational health surveillance programs
- Personnel performance measurement

As significant portions of the NSWCEN cold weather maritime training mission occur on public, or non-DoD property, the application of OPNAVINST 5100.23G guidelines assures a thorough consideration of public health and safety in conjunction with Navy personnel and their activities.

The following resources would not experience impacts from the Proposed Action, nor would the Proposed Action cause any noticeable adverse health and public safety effects on either residents of Kodiak or visiting tourists: ground safety, air quality, physical resources, water resources other than the two Kodiak city watersheds, hazardous materials and waste, infrastructure, and transportation. These resources are not addressed further.

As NSWCEN activities in the watershed may cause some damage to vegetation and induce erosion by exposing soil surfaces on the trails, as well as have the potential to increase fecal contamination through human waste, the persistent NSWCEN Det Kodiak practice of “leave no trace” for all training activities ensures that they present negligible impacts on the Kodiak watersheds in the Training Study Area.

The potential for impacts on public health and safety are negligible and effects on public health and safety would be less than significant as a result of implementation of training activities.

3.6.3.1 No Action Alternative

The Navy’s safety measures taken by the Det Kodiak staff to ensure public health and safety are published in OPNAVINST 5100.23G. NSWCEN Det Kodiak has developed over the history of the detachment, supporting local standard operating procedures that are periodically reviewed and

proactively updated to ensure a continued perfect public safety record, while emphasizing the minimizing or avoiding of civilian exposure to training activities. NSWCEN Det Kodiak has worked closely with the USCG over the past 20 years of NSW training in Kodiak to ensure that the required training is planned and accomplished safely and that it has the lowest possible impact on the private and commercial interests in Kodiak. The USCG is diligent in ensuring that all vessels are aware of the operations that could affect them, and informing those vessels via NTMs about temporary closures in support of periodic NSWCEN training events that present potential hazards to surface vessels.

The primary public health and safety issues associated with implementation of the Proposed Action are minimal and would be related only to isolated incidents of unintended contact between Det Kodiak students or staff and civilian users or residents within the Training Study Area. The potential for direct physical interaction between the public and aircraft, vessels, and personnel (students) would be similar to baseline conditions due to the continued implementation of strict operating procedures that protect public health and safety, including procedures to make sure training areas are clear of nonparticipants.

Similar to the relationship with the USCG, the detachment staff has ensured a longstanding relationship with the FAA to ensure that appropriate NOTAMS are issued for the periodic training events that utilize either fixed or rotary-wing aircraft within the Training Study Area. These training scenarios, while infrequent, have been conducted by the NSWCEN with a periodic recurrence since September 11, 2001. They would always be conducted under FAA aviation safety rules with a primary focus of completing the events in a thoroughly safe manner for the students, the support aircraft, and the private and commercial interests in Kodiak.

Therefore, NSWCEN activities and training tempo within the Training Study Area from implementation of the No Action Alternative would not have a significant impact on public health and safety. By design, training activities are conducted in locations within the Training Study Area that are purposefully isolated from both the residential areas of Kodiak, as well as the Parks and Recreation areas, with the exception of selected training events in the Buskin River State Recreation Area.

CWTF training activity within the Training Study Area would not have a significant impact on public health and safety for the following reasons:

- Activities by intent are conducted well-removed from population centers, are of limited duration, and have negligible adverse effects to any features of the training environment. Training locations within the Training Study Area are by intention physically difficult to access, have little to no permanent residences, and are purposely sited away from the principal recreational and commercial access areas on Kodiak.
- The activities would be completely consistent with the current NSWCEN training activities, which have had no significant adverse public health and safety impacts on residential, recreational, and commercial activities within the Training Study Area in the 20-plus-year existence of Det Kodiak.

Under the No Action Alternative, no modification of any of the current, existing NSWCEN training activities would take place and public access to the Training Study Area would not affect public health or safety or substantially increase risk to the public or environment. Therefore, impacts relating to public access from implementation of the No Action Alternative would be less than significant.

3.6.3.2 Alternative 1

Under Alternative 1, the same parameters and considerations as the No Action Alternative would take place, with the potential for adding an additional qualification training class and up to one each additional NSW Group Team Training, parachute operations, and other unit training annually. This modest increase in students and training over the course of the year would continue to have no impact on public health and safety impacts, as all of the same safety precautions would be implemented. Therefore, impacts relating to public access from implementation of Alternative 1 would be less than significant.

3.6.3.3 Alternative 2

Under Alternative 2, the same parameters and considerations as No Action Alternative would take place, with the potential for adding additional training locations within the overall Training Study Area. This modest increase in the number of potential training areas would allow for training events to be further separated from routine public interaction. Therefore, impacts on public health and safety from implementation of Alternative 2 would be less than significant, as all of the same safety precautions would occur.

3.6.3.4 Alternative 3 (Preferred Alternative)

Under Alternative 3, the same parameters and considerations evaluated in Alternatives 1 and 2 would take place. This alternative merges the potential for adding additional training locations within the overall Training Study Area with adding an additional qualification training class and up to one each annually. This modest, balanced increase in the number of potential training sites and students being trained would allow the continued the practice of separating training from routine public interaction. Public access to the Training Study Area would not affect public health and safety or substantially increase risk to the public or environment, as the same existing NSWCEN safety precautions would be sustained.

The modest increase in NSWCEN Det Kodiak use of similar and previously utilized training locations and the modest increase in tempo within the Training Study Area under Alternative 3 would not substantially increase risk to the public or environment. Therefore, public health and safety impacts relating to public access from implementation of the Preferred Alternative would be less than significant.

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3.7 EXECUTIVE ORDER 12898, ENVIRONMENTAL JUSTICE

3.7.1 DEFINITION OF RESOURCE

This EO was issued by President Clinton in 1994 and is designed to ensure that each federal program or activity being implemented focuses the appropriate attention within the scope of the federal activity on the environmental and human health conditions in minority and low-income communities.

Environmental justice refers to an equitable spatial distribution of burdens and benefits of a Proposed Action with respect to those communities, as well as the provision of opportunities for meaningful involvement in the Proposed Action decision-making process of all people regardless of race, color, national origin, or income.

3.7.2 REGULATORY REQUIREMENTS

This section evaluates the impact of the proposed activity on socioeconomic conditions in the Kodiak area, specifically within the Training Study Area. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs Federal agencies “to make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.”

3.7.3 AFFECTED ENVIRONMENT

The Training Study Area on the eastern end of Kodiak Island and the contiguous near shore waters and off shore islands encompasses a spectrum of populations and land ownership. Within the boundaries of the Training Study Area there is land owned by five Native Alaskan Tribes, two municipalities, two state agencies, five federal agencies, and some private landowners (see Figure 1.2-2 for specific land ownership breakouts).

3.7.4 IMPACT ANALYSIS AND CONSEQUENCES

The following resources would not result in disproportionately high and adverse human health or environmental effect on minority and low-income populations, or environmental health and safety risks that may significantly affect children: public health and safety, air quality, water resources, hazardous materials and waste, and transportation. These resources are not addressed further.

3.7.4.1 No Action Alternative

Under the No Action Alternative, cold weather maritime training activities and training tempo within the Training Study Area would continue at current levels and locations. As illustrated in Figure 1.2-2, the majority of land ownership within the Training Study Area is Native Alaska Tribes—a minority as defined in EO 12898. The preponderance of population within the Training Study Area is in the City of Kodiak. The 2010 United States Census for the City of Kodiak (Table 3.8-1) shows that, of the city’s 6,103 residents, 53 percent (3,235) of the population belongs to a minority group. A substantial portion of the City of Kodiak population, as well as the Training Study Area overall, meets the criteria for low income.

The No Action Alternative would not have a disproportionately high or adverse human health or environmental effect on these minority and low-income populations for the following reasons:

- Existing training activities, by design, occur substantially well-removed from population centers. They are designed to be limited to durations necessary to complete the specific training objectives and to have negligible adverse impacts to any facet of the training environment.

Naval Special Warfare Center (NSWCEN) Det Kodiak course syllabus locations within the Training Study Area are by design physically difficult to access and are well removed from all urban areas. The few, permanent remote residence locations are known and purposefully avoided.

- All activities would be completely consistent with both historic and current NSWCEN training activities within the Training Study Area.

Advocacy for the preservation of natural resources within the Training Study Area by Naval Special Warfare (NSW) would provide a persistent, authorized, unobtrusive presence on Alaska Native Tribe properties that may discourage abuse of the existing subsistence resources. Additionally, NSW presence is welcomed by the Alaska Native Tribe property owners as it assists in the general public conservation of minority population land ownership. That presence also aids in the stewardship of land resources by local, state, and federal authorities in support of the minority and low-income populations of the City of Kodiak.

The supported current, existing NSWCEN training activities would continue, and the No Action Alternative would not result in disproportionately high and adverse health and environmental effects on the minority and low-income population of Kodiak Island.

3.7.4.2 Alternative 1

Under Alternative 1, there is the potential for adding an additional qualification training class and up to one each additional NSW Group Team Training, parachute activities, and other unit training annually. This modest, consistent increase in students and other Special Operations Forces (SOF) personnel in the supported current, existing NSWCEN training activities from the No Action Alternative would continue under Alternative 1 to have no disproportionately high and adverse health and environmental effects on the minority and low-income population of Kodiak Island.

3.7.4.3 Alternative 2

Under Alternative 2, the same parameters and considerations as the No Action Alternative would take place, with the potential for adding additional training locations within the overall Training Study Area. Therefore, this modest increase in the number of potential training areas would allow for NSWCEN training events to be further separated from routine public interaction while conducting supported current, existing NSWCEN training activities. There would be no disproportionately high and adverse health and environmental effects on the minority and low-income population of Kodiak Island from Alternative 2.

3.7.4.4 Alternative 3 (Preferred Alternative)

Under Alternative 3, the same parameters and considerations evaluated in Alternatives 1 and 2 would take place. This alternative merges the potential for adding additional training locations within the overall Training Study Area with adding an additional qualification training class and up to one each additional NSW Group Team Training, parachute activities, and other unit training annually. This modest, balanced increase in the supported current, existing NSWCEN training activities, along with the option to increase the number of potential training locations within the Training Study Area would continue to sustain ongoing NSWCEN Det Kodiak training requirements. There would be no disproportionately high and adverse health and environmental effects on the minority and low-income population of Kodiak Island from the Preferred Alternative.

3.8 EXECUTIVE ORDER 13045, PROTECTION OF CHILDREN

3.8.1 DEFINITION OF RESOURCE

This section also addresses the potential to impact the health and safety of children. EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, requires federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children and to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

3.8.2 AFFECTED ENVIRONMENT

2010 Census data of the Kodiak Island Borough, as the most recent accurate data available, was used to evaluate the application of EO 13045 across the Training Study Area. The locations of populations of children were identified based on the Kodiak Island Borough Urban Zoning Map (Figure 3.8-1). The Zoning map was used as a guide to identify areas of residential population and schools and day care facilities where children are concentrated within the city of Kodiak and the Training Study Area.

The Training Study Area is contained wholly within the Kodiak Island Borough. Current training locations and Alternative 2 and 3 locations are in proximity to three of the 10 Borough communities: Chiniak (2010 population of 47), the City of Kodiak, and the United States Coast Guard (USCG) Kodiak Station. Table 3.8-1 shows the 2010 Census demographic breakout for the Kodiak Borough, the City of Kodiak, and the USCG Station. According to the Alaska Department of Labor and Workforce Development, the population of the Borough has remained essentially steady over the last 12 years.

3.8.2.1 Protection of Children – Schools

Nine public and private schools are located within the Training Study Area. Of these schools, all but the school in Chiniak lies within the City of Kodiak and none are in the vicinity of any current or projected training locales within the Training Study Area. Similarly, there are six identified preschools with the Kodiak City limits, all of which are well away from any current or projected training locales. Additionally, there is a school in the community of Port Lions, which lies outside the Training Study Area but is adjacent to waters that could be utilized for surface or air transit in support of other training under the No Action Alternative and any of the three action alternatives.

3.8.2.2 Protection of Children – Residential Areas

With the exception of the Spruce Cape Compound, which is immediately adjacent to single and multi-family residential zoning areas, the current or projected training locales within the Training Study Area are purposely located away from rural residential zoned areas and are predominantly sited in natural settings and on public use lands. Training activities on site at the Spruce Cape Compound are predominately classroom instruction. Students are transported to and from Training Study Area locations by Det Kodiak passenger vehicles utilizing existing public roadways in Kodiak, or over water in Det Kodiak boats.

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Figure 3.8-1: Kodiak Urban Area Zoning Map

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Table 3.8-1: Demographic Characteristics of Kodiak Island Borough, City Of Kodiak, and Kodiak Station, from the 2010 United States Census

	Borough		City		USCG Station	
	Number	Percent	Number	Percent	Number	Percent
Total Population	13,592	100.0	6,130	100.0	1,301	100.0
Age – Median Age	32.5		35.1		23.1	
Under 5 years	1,151	8.5	480	7.8	212	16.3
School age (5–18)	2,743	20.2	1,176	19.2	301	23.1
18 years and older	9,698	71.4	4,474	73.0	788	60.6
65 years and older	915	6.7	553	9.0	2	0.2
Sex						
Male	7,197	53.0	3,221	52.5	698	53.7
Female	6,395	47.0	2,909	47.5	603	43.3
Race						
White	7,522	55.3	2,469	40.3	1,118	85.9
Native American	1,797	13.2	607	9.9	11	0.8
Asian	2,660	19.6	2,294	37.4	17	1.3
Pacific Islander	87	0.6	63	1.0	3	0.2
Black	92	0.7	30	0.5	34	2.6
Other	397	2.9	280	4.6	18	1.4
Households – Total	4,630		2,039		332	
Average Household Size	2.9		2.9		3.5	
Owner-Occupied Housing Units	2,648	51.3	1,006	44.6	3.4	0.6

Note: USCG = United States Coast Guard
 Source: United States Census 2010

3.8.3 IMPACT ANALYSIS AND ENVIRONMENTAL CONSEQUENCES

3.8.3.1 No Action Alternative

The proposed NSWCCN activities are as described in Table 2.3-1. Except for indoor classroom training, all of the proposed No Action Alternative activities would occur away from residential zoned areas and are predominantly sited in natural settings and on public use lands, well distant from any concentrations of children, such as schools and preschools. As described in Chapter 2, the proposed training is the same as has been conducted on Kodiak Island for years, and is not inherently hazardous to non-participants.

The No Action Alternative for NSWCCN training activity within the Training Study Area would not result in environmental health risks or safety risks that would disproportionately affect children for the following reasons:

- The proposed activities would not overlap geographically with areas where children are present.
- All activities would be completely consistent with both historic and current training activities within the Training Study Area.
- The proposed activities would not be hazardous to non-participants.

3.8.3.2 Alternative 1

Under Alternative 1, the Navy proposes adding an additional qualification training class and up to one each additional NSW Group Team Training, parachute activities, and other unit training annually. The activities would be the same as in the No Action Alternative and would occur in the same locations. The

only change would be an increased annual tempo. Therefore, for the same reasons given previously, Alternative 1 would not result in environmental health risks or safety risks that would disproportionately affect children.

3.8.3.3 Alternative 2

Under Alternative 2, the Navy proposes to conduct the same activities and tempo as described under the No Action Alternative, but to include additional training locations within the overall Training Study Area. The proposed training areas would be further separated from residential and urban areas, and would result in even less probability of interaction with the public. Therefore, for the same reasons given previously, Alternative 2 would not result in environmental health risks or safety risks that would disproportionately affect children.

3.8.3.4 Alternative 3 (Preferred Alternative)

Under Alternative 3, the Navy proposes to conduct the same activities and tempo as described under the Alternative 1, but to include additional training locations as described under Alternative 2. Therefore, for the same reasons given previously, Alternative 3 would not result in environmental health risks or safety risks that would disproportionately affect children.

4 CUMULATIVE IMPACTS AND OTHER CONSIDERATIONS

4.1 INTRODUCTION

Analysis of cumulative impacts (or cumulative effects)³ presented in this section follows requirements of the NEPA and the CEQ guidance (Council on Environmental Quality 1997). The CEQ regulations (40 C.F.R. §§1500–1508) provide the implementing regulations for NEPA. The regulations define cumulative impacts as:

“...the impact on the environment which results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. §1508.7).”

While a single project may have minor impacts, overall impacts may be collectively significant when the project is considered together with other projects on a regional scale. A cumulative impact is the additive effect of all projects in the geographic area. The CEQ provides guidance on cumulative impacts analysis in *Considering Cumulative Impacts under the National Environmental Policy Act* (Council on Environmental Quality 1997). This guidance further identifies cumulative impacts as those environmental impacts resulting “from spatial and temporal crowding of environmental perturbations. The impacts of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the impacts of the first perturbation.” This guidance observes that “no universally accepted framework for cumulative impacts analysis exists” while noting that certain general principles have gained acceptance. The CEQ provides guidance on the extent to which agencies of the federal government are required to analyze the environmental impacts of past actions when they describe the cumulative environmental effect of an action. This guidance provides that an analysis of cumulative impacts might encompass geographic boundaries beyond the immediate area of an action and a timeframe that includes past actions and foreseeable future actions. Thus, the CEQ guidelines observe, “[it] is not practical to analyze cumulative impacts of an action on the universe; the list of environmental impacts must focus on those that are truly meaningful.”

4.2 APPROACH TO ANALYSIS

4.2.1 OVERVIEW

Cumulative impacts were analyzed for each resource addressed in Chapter 3 (Affected Environment and Environmental Consequences) for the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 in combination with past, present, and reasonably foreseeable future actions. The cumulative impacts analysis included the following steps:

³ Council on Environmental Quality Regulations provides that the terms “cumulative effects” and “cumulative impacts” are synonymous (40 C.F.R. §1508.8[b]); the terms are used interchangeably by various sources, but the term “cumulative impacts” is used in this document except for quotations, for continuity.

1. Identify appropriate level of analysis for each resource.
2. Define the geographic boundaries and timeframe for the cumulative impacts analysis.
3. Describe current resource conditions and trends.
4. Identify potential impacts of each alternative that might contribute to cumulative impacts.
5. Identify past, present, and other reasonably foreseeable future actions that affect each resource.
6. Analyze potential cumulative impacts.

4.2.2 POTENTIAL CUMULATIVE IMPACT ANALYSIS

The current impacts of past and present actions and the anticipated impacts of reasonably foreseeable future actions were characterized and summarized. The incremental impacts of each alternative were then added to the combined impacts of all other actions to describe the cumulative impacts that could result if the No Action Alternative, Alternative 1, Alternative 2, or Alternative 3 were implemented. The cumulative impacts analysis considered additive, synergistic, and antagonistic impacts. A qualitative analysis was conducted in most cases based on the available information. The analysis in Chapter 3 (Affected Environment and Environmental Consequences) indicates that direct and indirect impacts of the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 would be similar for many of the resources. Therefore, much of the cumulative impacts discussion applies to all four alternatives. Specific differences between the alternatives are discussed when appropriate.

4.3 OTHER ACTIONS ANALYZED IN THE TRAINING STUDY AREA

4.3.1 OVERVIEW

Coordination with Naval Facilities Engineering Command, Northwest, USCG, and NSW Center Det Kodiak staff assisted in identifying past, present, and reasonably foreseeable actions on, or proximal to, the Spruce Cape Compound and NSW/SOF Training Study Area. Past, present, or proposed projects within or near the Training Study Area that could directly or indirectly interact with the Proposed Action are presented in Table 4.3-1. Together, these actions define the cumulative impacts area of the Proposed Action. These actions, which are within the Training Study Area or proximal to it, are neither dependent on the Proposed Action addressed in this EA, nor are they part of it. Descriptions of each action and environmental consideration carried forward for analysis are provided in the following sections.

Table 4.3-1: Other Actions and Other Environmental Considerations Identified for the Cumulative Impacts Analysis

#	Name of Action	Lead Agency or Proponent	Location	Timeframe	Retained for Further Analysis?
Other Military Activities					
1	Construction of P-531 Cold Weather Training and Fitness Facility	U.S. Navy, Naval Special Warfare Command	Spruce Cape, Kodiak, Alaska	Present and future	Retained
2	Navy training in the Gulf of Alaska	U.S. Navy	Gulf of Alaska LME	Past, present, and future	Retained
3	Surveillance Towed Array Sensor System Low Frequency Active Sonar	U.S. Navy	All LMEs	Future	Retained
4	Air Force aircraft training in the Gulf of Alaska	U.S. Air Force	Gulf of Alaska LME	Past, present, and future	Dismissed. Over-water activities are limited to aircraft overflights.
5	Training conducted by Army Reserve vessels in the vicinity of Kodiak, Alaska	U.S. Army	Gulf of Alaska LME	Past, present, and future	Retained
6	Home porting of Coast Guard cutters (e.g., Legend-class National Security Cutter) at USCG Base Kodiak and homebasing of aircraft at Air Station Kodiak	U.S. Coast Guard	Gulf of Alaska LME	Past, present, and future	Retained
7	Coast Guard training conducted from USCG Base Kodiak and Air Station Kodiak	U.S. Coast Guard	Gulf of Alaska LME	Past, present, and future	Retained
Energy Exploration, Extraction and Production					
8	Outer Continental Shelf Oil and Gas Leasing Program	Bureau of Ocean Energy Management	Gulf of Alaska LME	Past, present, and future	Retained
9	Seismic Surveys	Bureau of Ocean Energy Management, oil and gas industry, National Science Foundation, and academic institutions	Gulf of Alaska LME	Past, present, and future	Retained
Power Generation					
10	Pillar Mountain Wind Farm	Kodiak Electric	Pillar Mountain,	Past, present, and	Dismissed because impacts are <i>de minimis</i> .

#	Name of Action	Lead Agency or Proponent	Location	Timeframe	Retained for Further Analysis?
		Association	Kodiak, Alaska	future	
11	Terror Lake Hydroelectric Power Facility	Kodiak Electric Association	Terror Lake, Kodiak, Alaska	Past, present, and future	Dismissed. Terror Lake hydroelectric power facility dam and any associated impacts to terrestrial wildlife are located outside of the Training Study Area.
12	Diesel Power Generation Facilities	Kodiak Electric Association	Kodiak Generating Station, Nyman Power Plant, Swampy Acres Plant and Port Lions, Kodiak, Alaska	Past, present, and future	Dismissed because impacts are <i>de minimis</i> .
13	Offshore Wind, Wave and Tidal Energy Plants	Bureau of Ocean Energy Management	Gulf of Alaska LME	Future	Dismissed because action is too speculative.
Harbor Improvement Operations					
14	Maintenance Dredging of St. Paul and St. Herman Harbors	U.S. Army Corps of Engineers (USACE)	St. Paul and St. Herman Harbors, Kodiak, Alaska	Past, present, and future	Retained
15	Port Lions Rubblemound Breakwater Construction	USACE	Port Lions Harbor, Kodiak Island, Alaska	Past, present, and future	Retained
16	Alaska Regional Ports Alaska Deep-Draft Arctic Ports Feasibility Report	USACE	Gulf of Alaska LME, West Bering Sea LME, East Bering Sea LME, Chukchi Sea LME, Beaufort Sea LME	Future	Dismissed because the action is a planning or policy action and impacts are speculative.
Shore Construction and Resource Extraction					
17	Development of Coastal Lands	Kodiak Island Borough	Kodiak Island	Past, Present, and Future	Retained
18	Runway Safety Area Improvements, Kodiak Airport	Federal Aviation Administration	Kodiak Airport	Future	Retained
19	2013 Sidewalk Curb and Gutter PN 14-01	City of Kodiak	City of Kodiak	Future	Retained
20	Harbor Projects 2013 PN 14-02 (fender repair, CTF demolition, fender replacement, pile removal and	City of Kodiak	Kodiak Harbor	Future	Retained

ENVIRONMENTAL ASSESSMENT

#	Name of Action	Lead Agency or Proponent	Location	Timeframe	Retained for Further Analysis?
	installation)				
21	Improvements to Accommodate Cruise Ship Activities and for City Waterfront Development PN 10-04	City of Kodiak	Kodiak Harbor and Waterfront	Future	Retained
22	Timber Sales	Alaska Native Corporations	Native Corporation Properties	Past, present, and future	Retained
	Environmental Regulations and Planning				
23	Kodiak NWR and Alaska Maritime NWR Comprehensive Conservation Plans	U.S. Fish and Wildlife Service (USFWS)	Kodiak NWR and Alaska Maritime NWR in the Kodiak Archipelago	Past, present, and future	Dismissed. Action is planning or policy, and the action is outside the Training Study Area.
24	Integrated Pest Management of Invasive Plants on Kodiak NWR and Vicinity	USFWS	Kodiak NWR and Alaska Maritime NWR in the Kodiak Archipelago	Past, present, and future	Dismissed because the action is outside the Training Study Area. The combined applications of IPM methods of treatment to all invasive species infestations over a period of years would cause negligible short-term negative impacts and minor to moderate long-term positive impacts to terrestrial wildlife.
25	Ring of Fire Proposed Resource Management Plan	Bureau of Land Management	BLM-managed parcels on Kodiak Island	Past, present, and future	Dismissed. Action involves only planning and policy-related activities.
26	Coastal and Marine Spatial Planning	Regional Ocean Commissions	All LMEs	Future	Dismissed. Action involves only planning and policy-related activities; specific future actions are speculative.
27	Marine Mammal Protection Act Incidental Take Authorizations, including, specifically Alaska Aerospace Corporation (for Kodiak Launch Complex Operations) and Lamont-Doherty Earth Observatory (for seismic surveys)	National Marine Fisheries Service	All LMEs	Past, present, and future	Retained
28	Kodiak Road System Trails Master Plan	Kodiak Island Borough	Kodiak Island Borough	Past, present, and future	Dismissed. Action involves only planning and policy-related activities; specific future actions are speculative.

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#	Name of Action	Lead Agency or Proponent	Location	Timeframe	Retained for Further Analysis?
29	Kodiak Area Plan for State Lands	Alaska Department of Natural Resources	Kodiak State-owned uplands and tidelands	Past, present, and future	Dismissed. Action involves only planning and policy-related activities; specific future actions are speculative.
	Other Environmental Considerations				
30	Commercial Fishing	National Marine Fisheries Service and private industry	All LMEs and open ocean areas	Past, present, and future	Retained
31	Maritime Traffic	n/a	All LMEs and open ocean areas	Past, present, and future	Retained
32	Ocean Noise	n/a	All LMEs and open ocean areas	Past, present, and future	Retained
33	Ocean Pollution (including Marine Debris, Nonpoint Source Pollution, and Cruise Ship Discharges)	n/a	All LMEs and open ocean areas	Past, present, and future	Retained
34	Oil and Hazardous Substances Spills	Alaska Department of Environmental Conservation	Alaska, including Kodiak Island subarea	Past, present, and future	Retained

Notes: BLM = Bureau of Land Management, C.F.R. = Code of Federal Regulations, LME = Large Marine Ecosystem, n/a = not applicable, NWR = National Wildlife Refuge, OPNAVINST = Chief of Naval Operations Instruction, U.S. = United States

4.3.2 OTHER MILITARY ACTIVITIES

4.3.2.1 Construction of P-531 Cold Weather Training and Fitness Facility

NSWCEN recently completed a Fiscal Year 2012 Military Construction project on the existing Spruce Cape Compound. The project consisted primarily of constructing a new 25,000-square-foot training building that would provide expanded berthing, classrooms, labs, and other NSWCEN Det Kodiak course support spaces. The building construction was previously analyzed pursuant to NEPA [*Record of Categorical Exclusion for P-531 Cold Weather Training & Fitness Facility Kodiak, Alaska*] (Naval Facilities Engineering Command Northwest 2011). This action was categorically excluded per 32 C.F.R. 775.6(f)(34) and OPNAVINST 5090.1C Chapter 5 Section 5-5.1(b) #34. Facts supporting the categorical exclusion included, but were not limited to the following:

- No long-term impact to on or off-based traffic circulation was expected.
- To protect against storm water contamination, the project followed established storm water best management practices. Best management practices were implemented to minimize the opportunity for erosion to occur or sediment laden water to enter the pond or the marine waters.
- The project would have no effect to threatened and endangered species because there are no federally threatened or endangered species on the uplands of Spruce Cape and best management practices minimize the threat of spills entering fresh or marine waters.
- There are no known archaeological resources in the construction location. It is an area of low probability for archaeological resources. On 20 January 2010, the Alaska State Historic Preservation Officer concurred with the Navy's determination of "no historic properties affected." In addition, the Navy consulted with potentially affected Native Alaskans. The Sun'aq, the Woody Island, and the Ouzinkie tribes were contacted and expressed no concerns about the project.

Given the foregoing facts supporting the categorical exclusion, Construction of P-531 Cold Weather Training and Fitness Facility does not individually or cumulatively have a significant effect on the environment.

4.3.2.2 Navy Training in the Gulf of Alaska

In a 2011 Record of Decision, the Navy, after carefully weighing the strategic, operational, and environmental consequences of the Proposed Action to improve the availability and quality of training opportunities in the Alaska Training Areas (ATAs), and, in particular, the Temporary Maritime Activities Area (TMAA) (an offshore area roughly rectangular and approximately 300 nm long by 150 nm wide, composed of surface and subsurface training areas as well as overlying airspace, oriented from northwest to southeast and situated south of Prince William Sound and east of Kodiak Island within the GOA), announced its decision to implement Alternative 2, the Navy's Preferred Alternative, as described in the *Final EIS/OEIS for the Gulf of Alaska Navy Training Activities* (11 March 2011) (U.S. Department of the Navy 2011). Under Alternative 2 of the EIS/Overseas EIS (OEIS), the Navy will be able to achieve and maintain fleet readiness using the ATAs to support current, emerging, and future training activities. This decision allowed the Navy to meet its statutory mission to deploy worldwide naval forces equipped and trained to meet existing and emergent threats and to enhance its ability to operate jointly with other components of the armed forces.

Alternative 2, the Preferred Alternative, was designed to meet Navy and DoD current and near-term operational training requirements. Under Alternative 2 of the 2011 Final EIS/OEIS, the Navy continued

training activities currently conducted, increased certain necessary training activities, and accommodated force structure changes associated with new weapon systems, vessels, aircraft, and training instrumentation. Alternative 2 included all baseline training activities (i.e., training in the five primary mission areas of air warfare, surface warfare, electronic combat, naval special warfare, and strike warfare) and two large-scale joint exercises (each occurring over a maximum time period of 21 days during the April–October time frame), including a sinking exercise with each joint force exercise within the TMAA. Alternative 2 also included anti-submarine warfare training activities, which include the use of sonar. In addition, training activities associated with force structure changes will be implemented for the EA-18G Growler, Guided Missile Submarine, P-8A Poseidon Multi-mission Maritime Aircraft, Guided Missile Destroyer 1000 (Zumwalt Class), and Unmanned Aircraft Systems. Force structure changes associated with new weapons systems would include new types of sonobuoys. Force structure changes associated with new training instrumentation include the use of a Portable Undersea Tracking Range.

The Navy is now preparing a Supplemental EIS/OEIS to supplement the analysis of the March 2011 Final EIS/OEIS for the Gulf of Alaska Navy Training Activities and May 2011 Record of Decision for Final Environmental Impact Statement/Overseas Environmental Impact Statement for the Gulf of Alaska Navy Training Activities (see <http://goaeis.com/>). The Supplemental EIS/OEIS will be used to renew current regulatory permits and authorizations and to support U.S. Pacific Command, Northern Command, and Joint Task Force Commander training requirements to achieve and maintain Fleet readiness as required by Title 10 of the U.S.C. Section 5062. The Navy's proposed action is to continue Navy training in the GOA as detailed under the preferred alternative in the 2011 EIS/OEIS and implemented with the 2011 EIS/OEIS Record of Decision. The Proposed Action does not alter the Navy's original purpose and need or alternative analysis as discussed in the 2011 EIS/OEIS; therefore, the alternative analysis presented in the EIS/OEIS remains relevant and is not proposed to be reanalyzed in the Supplemental EIS/OEIS. Continued conduct of at-sea joint exercises in the GOA is needed to support the training of combat-capable naval forces. A Supplemental EIS/OEIS is considered to be the appropriate document as the Navy's Proposed Action may significantly impact or harm marine resources.

The environmental analysis in the Final EIS/OEIS for the GOA Navy Training Activities found that there would be no significant impacts on the following resource areas: air quality, expended materials, water resources, acoustic environment (airborne), birds, cultural resources, transportation and circulation, socioeconomics, environmental justice and protection of children, public safety and cumulative impacts.

Those impacts associated with implementation of Alternative 2 considered to be potentially significant are summarized below. However, in all cases, with implementation of management practices and mitigation measures, there would be no significant impacts resulting from implementation of the Preferred Alternative (Alternative 2).

- Expended materials and the release of munitions constituents and other materials from activities included in Alternative 2 would be distributed across as much as 20 percent of the TMAA and would have minimal effects on pelagic and benthic communities. Localized and temporary impacts to benthic fauna may occur from use of the Portable Underwater Training Range (PUTR), but no long-term impact is anticipated. Although localized and temporary impacts to the pelagic environment would occur from a SINKEK, the relatively small quantities of materials expended coupled with dispersal over a very large area would have no adverse physical effects on marine biological resources.

- Vessel movement, aircraft overflight, weapons firing disturbance, and expended materials would result in minimal harm to fish. As a result of consultation, NMFS determined that Navy activities are not likely to jeopardize the ESA-listed fish.
- NMFS found that Alternative 2 is not likely to jeopardize ESA-listed leatherback turtles.
- For marine mammals, behavioral effects modeling shows that four MMPA Level A harassments are possible, as well as one exposure resulting in potential severe injury or mortality. A number of non-injurious behavioral takes (Level B) are also modeled. With implementation of mitigation measures, the four MMPA Level A harassments and one severe injury should not occur.

4.3.2.3 Surveillance Towed Array Sensor System Low Frequency Active Sonar

In August 2012, the Navy released a Record of Decision for the Final Supplemental EIS/Supplemental OEIS that evaluated the potential environmental impacts of employing the Surveillance Towed Array Sensor System Low-Frequency Active (SURTASS LFA) Sonar. The Navy currently plans to operate up to four SURTASS LFA Sonar systems for routine training, testing, and military operations. Based on current Navy national security and operational requirements, routine training, testing, and military operations using these sonar systems could occur in the Pacific Ocean, Atlantic Ocean, Indian Ocean, and Mediterranean Sea. The North Pacific right whale critical habitat is located in the Bering Sea and off the coast of Kodiak Island in the Gulf of Alaska. North Pacific right whale critical habitat is a recognized offshore biologically important area and certain SURTASS LFA Sonar seasonal restrictions apply in the twenty-two listed biologically important areas. As noted in Section 3.2, there is no critical habitat designated for the North Pacific right whale in the Training Study Area. The North Pacific right whale range extends across the entire North Pacific Ocean between 40° 0'0"N and 60° 0'0" N.

According to the SURTASS LFA Letters of Authorization, the Holder of the Authorization and any individuals operating under his authority will not operate SURTASS LFA sonar during routine training and testing such that the SURTASS LFA sonar sound field exceeds 180 dB re: 1 μ Pa (rms) less than or equal to 1 km seaward of the outer perimeter of the offshore biologically important areas (NOAA 2013). The seasonal restriction applies from March through August in the North Pacific right whale critical habitat. The GOA including the waters offshore Kodiak Island is not listed among the stipulated mission areas for SURTASS LFA training and testing (Chief of Naval Operations 2013). Potential impacts associated with SURTASS LFA training and testing include Level A and Level B takes of marine mammals within stipulated mission areas. The SURTASS LFA mission areas do not overlap with the Gulf of Alaska or the Training Study Area. Nevertheless, individual members of the migratory species which move between the stipulated SURTASS LFA mission areas and the Gulf of Alaska near the Training Study Area (e.g., North Pacific right whale) may be impacted by this other action.

4.3.2.4 Training Conducted by United States Army Reserve

The Army Reserves conduct training in Alaska, to include participation in the Assistant Secretary of Defense for Reserve Affairs Innovative Readiness Training (IRT), a Civil-Military program that provides real world training opportunities for reserve component service members and units to prepare them for their wartime missions while supporting the needs of America's underserved communities. The recently concluded U.S. Marine Corps-led, 5-year, ongoing, joint-service, training opportunity for Reserve components of all branches of the U.S. military, IRT Mertarvik, saw the Army Vessel Palo Alto get underway in Kodiak, Alaska. The crew of Army mariners, in partnership with the Marines and Navy, transported personnel, equipment, and supplies between various locations to help construct essential infrastructure to facilitate the town of Newtok's relocation efforts (201st Public Affairs Operations Center 2013). Newtok, Alaska is coastal community located hundreds of miles northwest of Kodiak at

the mouth of the Ninglick River on the Bering Sea. Kodiak's port is a strategically important refueling location for vessels serving Alaskan coastal communities.

Ship travel between the U.S. mainland, Kodiak Island and points west in Alaska is dangerous given variable weather producing high winds and high seas, cold temperatures, and the potential to contact shallow rock outcroppings. The Army Reserve Watercraft unit, having vessels capable of handling shallower waters, has a unique and demanding mission to provide critical logistical support to all U.S. and coalition forces around the world. A year earlier, another Army Reserve Vessel, the landing craft *Monterrey*, struck a rock in Chiniak Bay and spilled fuel into the Bay (Barrett 2012). The *Monterrey* was transporting heavy construction equipment from Port Hueneme, California, to Newtok on the coast between Yukon and Kushokwim rivers, in support of the IRT Mertarvik. Potential impacts associated with Army Reserve mariner training include aquatic habitat degradation from accidental releases of petrochemicals and marine mammal ship strikes.

4.3.2.5 Homeporting of United States Coast Guard Aircraft and Vessels

The Alaska legislature is encouraging the Congress to fully fund construction of the latest class of USCG cutter and homeport one in Kodiak (Housemajority.org 2013). The USCG's new "Legend-Class" National Security Cutters are designed to replace the aging fleet of High Endurance Cutters, such as the Kodiak-based Munro. A strong USCG presence is important as shipping and resource development increases in the thawing Arctic Ocean. With robust Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance equipment, stern boat launch and aviation facilities, as well as long-endurance station keeping, the National Security Cutters are afloat operational-level headquarters for complex law enforcement and national security missions involving multiple USCG and partner agency participation (U.S. Coast Guard 2013). Potential cumulative impacts issues associated with these possible actions include a slight increase in vessel traffic and increases in training activities. While specific training activities associated with the homeporting are not yet identified, it is possible that surface-to-surface gunnery training would be conducted by USCG vessels in the GOA. Modeling results for similar Navy training activities indicate a high level of certainty that marine mammals or sea turtles would not be struck by military expended materials.

4.3.2.6 United States Coast Guard Training in the Vicinity of Kodiak

Kodiak Island is home to the largest USCG base in the country. The installation is home to three cutters (USCG Cutter Spar, Munro, and Alex Haley), an Aids to Navigation team, a communications station, and an air station. Since the 1990s, the USCG has participated in all major exercises in the GOA that involve the Navy, Army, Air Force, and USCG participants, reporting to a unified or joint commander who coordinates the activities planned to demonstrate and evaluate the



United States Coast Guard Cutter Munro

ability of the services to engage in a conflict and carry out plans in response to a national security threat (U.S. Department of the Navy 2011). As part of the Joint Pacific Alaska Range Complex, the TMAA supports Coast Guard training in deck landing qualifications. When not included as part of the TMAA, Warning Area 612 (W-612) is used by U.S. Air Force aircraft to conduct training in Air Warfare and by the USCG to fulfill some of its training requirements. Hazardous training activities (e.g., surface-to-surface gunnery) are included in NTMs. Long-range advance notice of scheduled activities and times are made available to the public and the commercial fishing community via the Internet. The 17th District USCG NTMs may be found at <http://www.navcen.uscg.gov/?pageName=InmDistrict®ion=17>. USCG training activities were assessed in the *Final EIS/OEIS for the Gulf of Alaska Navy Training Activities* (11 March 2011).

4.3.3 ENERGY EXPLORATION, EXTRACTION, AND PRODUCTION

4.3.3.1 Outer Continental Shelf Oil and Gas Leasing Programs

The State of Alaska and the federal government are expanding their oil and gas leasing program in Alaska for exploration and extraction to meet the nation's energy demands, but there are no planned leases in either GOA or Kodiak planning areas (Minerals Management Service 2009). After the 20 April 2010 Deepwater Horizon oil rig explosion in the Gulf of Mexico, a ban on deepwater drilling was reinstated for 6 months. The Department of the Interior stated it will not decide whether to allow exploration drilling for oil and gas in the Alaska Arctic outer continental shelf until it has completed a review of safety issues relating to offshore drilling activities (Department of the Interior 2010). Water pollution could result from onshore and offshore oil and gas exploration and production.

4.3.3.2 Seismic Surveys

Seismic surveys are typically accomplished by towing a sound source such as an airgun array that emits acoustic energy in timed intervals behind a research vessel. The transmitted acoustic energy is reflected and received by an array of hydrophones. This acoustic information is processed to provide information about geological structure below the seafloor. The oil and gas industry uses seismic surveys to search for new hydrocarbon deposits. In addition, academic geologists use them to study plate tectonics and other topics. For example, the research vessel *Marcus G. Langseth* is owned by the National Science Foundation and operated by the Lamont-Doherty Earth Observatory (L-DEO) at Columbia University for

use by academic researchers from universities around the world. Underwater sound produced by these surveys could affect marine life, including marine mammals. For instance, the potential exists to expose some animals to sound levels exceeding 180 decibels (dB) referenced to (re) 1 micropascal (μPa) (root mean square), which could in turn potentially cause temporary or permanent loss of hearing (Bureau of Ocean Energy Management, Regulation and Enforcement 2011).

4.3.4 HARBOR IMPROVEMENT OPERATIONS

4.3.4.1 Maintenance Dredging of St. Paul and St. Herman Harbors

The U.S. Army Corps of Engineers (USACE) recently conducted maintenance dredging of 10,265 cubic yards of bedrock substrate in six locations in Kodiak's St. Paul and St. Herman harbors (U.S. Army Corps of Engineers 2012). Drilling and rock fracturing with a hydraulically driven rock hammer were necessary to fracture bedrock in all areas except Area 1 in St. Paul Harbor and Area 2 in South Herman Harbor. Excavated dredged materials were loaded into a transport barge via crane-mounted clamshell bucket or excavator and disposed in water in the southern end of St. Herman Harbor at an elevation of -50 ft. Mean Lower Low Water.

The environmental consequences of the dredging operation included some localized and short-term increased turbidity impacts to water quality; short-term marine mammal movements away from the construction site (but without long-term harm to any species); short-term displacement of waterfowl and sea ducks within their intended course as to ESA-listed, proposed, and candidate species (not likely to adversely affect); short-term impacts to marine-related subsistence resources or access to and competition for subsistence resources; no impact to cultural or historic resources; localized increases in noise; insignificant emissions; and short-term interference to commercial and recreational vessel traffic.

The dredging project was anticipated to have short-term alterations of EFH for marine species and species such as rockfish, flatfish, gadids, salmonids, and forage fish such as capelin and sand lance, as well as for species such as Pacific herring, which are important prey for species with designated EFH. USACE concluded that its federal action may affect, but is not likely to adversely affect, EFH and EFH-managed species/species complexes for GOA groundfish, Bering Sea/Aleutian Islands groundfish, and Alaska stocks of Pacific salmon.

4.3.4.2 Port Lions Rubblemound Breakwater Construction

Navigation improvements are proposed for Port Lions (located just outside of the Training Study Area to the northwest). Authority for the feasibility study was the "Rivers and Harbors in Alaska" study resolution adopted by the U.S. House of Representatives Committee on Public Works on 2 December 1970 (U.S. Army Corps of Engineers 2013). The project was authorized for construction in Section 1001 (2) of the Water Resources Development Act 2007. The Secretary of the Army supports the authorization and plans to implement the project through the normal budget process at the appropriate time, considering national priorities and the availability of funds. The non-federal sponsor was identified as the Alaska Department of Transportation and Public Facilities (ADOT&PF).

Port Lions is located in Settler Cove on the north coast of Kodiak Island (U.S. Army Corps of Engineers 2013). Due to the increase in demand for moorage facilities, a float system was installed that extended beyond the protection zone of the main breakwater. This extension exposed the floats and moored vessels to excessive wave energy. Damage to the float system is most prevalent on the outer portions of the three main floats. According to local harbor officials, wave heights of 3–5 ft. have been observed within the harbor limits. Additional protective structures are needed to provide wave protection for the

moorage area and to reduce damages to the vessels and the mooring system. Also, additional vessels may want to use the harbor. The recommended plan consists of a single rubblemound breakwater 1,360 ft. in length. The breakwater would protect the design fleet from northeast and southwest waves. No significant environmental issues were identified based on an EA. Near-shore breaches are to be provided to allow water circulation and minimize potential for icing. Breaches will also allow for near-shore fish passage for juvenile salmon.

4.3.5 SHORE CONSTRUCTION AND RESOURCE EXTRACTION

4.3.5.1 Development of Coastal Lands

The pace of coastal land development within the Training Study Area has slowed in recent years, but past development may continue to impact coastal resources through point and nonpoint source pollution, increased impervious surfaces, concentrated land use, and ship traffic using harbor facilities. Recent building permit activity in the Kodiak Island Borough, Alaska, peaked in 2004 with 74 permits and bottomed in 2011 with 13 permits (Homefacts.com 2013). The Training Study Area coastline also includes some degree of coastal tourism development (e.g., hotels, restaurants, food industry, vacation homes, and second homes) and the infrastructure supporting coastal development (e.g., retail businesses, marinas, fishing tackle stores, recreational boating harbors, beaches, and recreational fishing facilities).

Coastal development intensifies use of coastal resources, resulting in potential impacts on water quality, marine habitat, and air quality. Coastal development was traditionally regulated by Alaska through the Coastal Zone Management Act (Alaska Coastal Management Program) and associated local programs. However, the Alaska Coastal Management Program expired at 12:01 a.m., Alaska Standard Time, on 1 July 2011 per Alaska Statutes §44.66.030. New development in the coastal zone requires a building permit from the local government to which permitting authority was delegated.

4.3.5.2 Runway Safety Area Improvements, Kodiak Airport

In response to the congressional directive, and after finding that it is practicable to improve Kodiak Airport's runway safety areas (RSAs), the FAA prepared an EIS to assess all impacts associated with construction and operation of those airport features. Kodiak Airport needs to improve the safety areas around Runways 07/25 and 18/36 by 31 December 2015 to conform to the mandate by Congress applying to civil airports in the United States. The purpose of the RSA improvement project at Kodiak Airport is to meet the FAA's design standards to the extent practicable by that statutory deadline. Concerns about the construction project focused primarily on potential impacts to natural resources and recreation near the Buskin River; access to subsistence resources; effect on subsistence resources; effect on cultural/traditional practices; effect on the Buskin River; socioeconomic effects; and effect on threatened, endangered, and sensitive species. For the full environmental analysis, the reader is referred to the Draft EIS (Federal Aviation Administration 2012) and the project website at www.kodiakairporteis.com.

The recent proposed RSAs for the Kodiak Airport follow a series of other past projects at the airport, including removal of obstructions in 2002; runway rehabilitation in 2002; rehabilitation of the runway, apron, and taxiway in 2004; reconstruction of the terminal apron in 2004; phase 1 improvements in 2004; obstruction removal in 2007–2008; and chemical storage building and construction in 2010. Other recent airport projects have included runway repairs, pavement marking, and runway resurfacing.

4.3.5.3 Municipal and Borough Construction Projects

Past municipal and borough construction projects included extensive construction work at the trident seaplane base in 2009, including ramp and road construction, parking area improvements, float repair/replacement, fencing, paving, and lighting. In 2000, St. Paul Harbor was rehabilitated to accommodate 250 slips, service docks, and major vessel grid, accommodating vessels up to 60 ft. long. More recently, dry-dock capability was installed at St. Herman Harbor Loading Facility. The City of Kodiak built a new water treatment facility in 2009–2010. Several water/sewer project upgrades and extensions are planned for the period 2009–2019. Several roads and highways on Kodiak Island were also recently rehabilitated through the ADOT&PF.

The City of Kodiak’s Waterfront Master Plan recommends replacement of Pier 3 to support containerized cargo entering Kodiak (City of Kodiak 2010). Support for the fishing industry will require upgrading and replacing shore infrastructure. A new multipurpose dock may be required. Infrastructure improvements are also needed to support the tourism industry, especially the cruise ship industry.

4.3.5.4 Timber Harvests

Logging was important in the economy in the 1980s and 90s, as native corporations logged their holdings near Chiniak and on Afognak and exported round logs to Asia; however, harvest value peaked in 1993 and employment in 1996 (Goldsmith et al. 2003). The recession in Asia in the late 1990s depressed market demand, and Kodiak timber employment fell dramatically. The coastal management strategy for the Kodiak Island Borough recognizes the economical importance of the timber industry (Kodiak Island Borough 2007). At the same time, the Borough desires to balance the economic interests with other resources and uses. For example, the desire is for environmentally sensitive timber harvests, to include: maintenance of important fish and wildlife habitat; deconfliction with populated areas, road system usage, and designated recreation or public use areas; and minimizing impacts to water quality, community water supplies, and existing fish hatchery operations.

4.3.6 ENVIRONMENTAL REGULATIONS AND PLANNING

4.3.6.1 Marine Mammal Protection Act Incidental Take Authorizations

In 1981, Congress amended the MMPA to provide for “incidental take” authorizations for maritime activities, provided that NMFS found the takings would be of small numbers and have no more than a “negligible impact” on those marine mammal species not listed as depleted under the MMPA (i.e., listed under the ESA, and not having an “unmitigable adverse impact” on subsistence harvests of these species). These “incidental take” authorizations are also known as Letters of Authorization (LOAs). In 1986, Congress amended both the MMPA, under the incidental take program, and the ESA to authorize takings of depleted (and endangered or threatened) marine mammals, again providing that the taking (lethal, injurious, or harassment) was small in number and had a negligible effect on marine mammals. Most LOAs and Incidental Harassment Authorizations (IHAs) to date have involved incidental harassment of marine mammals by noise. Activities with the greatest potential to harass by noise include:

- seismic airguns
- ship and aircraft noise
- high energy sonars
- explosives detonations

For example, Alaska Aerospace Corporation (AAC), an entity of the State of Alaska, applied for a 5-year programmatic permit for the take of pinnipeds by harassment incidental to rocket launch operations from its KLC (Alaska Aerospace Corporation 2010). The KLC is within the Training Study Area. Launch operations are a major source of noise on Kodiak Island, as the operation of launch vehicle engines produces substantial sound pressures. Generally, four types of noise occur during a launch: (1) combustion noise, (2) jet noise from interaction of combustion exhaust gases with the atmosphere, (3) combustion noise proper, and (4) sonic booms. Wildlife generally exhibit a startle response to sudden loud, uncommon, and short-term noises such as occur during a rocket launch. Once in the water affected pinnipeds tend to mill around just off the beach in an alert posture, returning to shore within minutes to a few hours post disturbance. Out of a population of 1,500 harbor seals present on Ugak Island, AAC estimated that 125 individuals might be taken per launch operations. Out of an estimated 10 Steller sea lions present on Ugak Island, all might potentially be taken by harassment during launch operations. AAC did not anticipate any whales to be taken by harassment. In its Final Rule, the NMFS authorized the take, by Level B harassment of 32 Steller sea lions per year (National Marine Fisheries Service 2011). NMFS further authorized 1,125 harbor seal Level B takes per year during launch operations. In the unlikely event injury or mortality occurs to pups during the flight to the water from the haulout sites, NMFS authorized 17 harbor seal pup takes by Level A harassment or mortality annually, incidental to AAC's activities.

L-DEO, with research funding from the National Science Foundation, planned for a marine seismic survey in the western GOA during July–August 2011 (Lamont-Doherty Earth Observatory 2011). The survey took place around Kodiak Island in the Exclusive Economic Zone of the United States in water depths ranging from 25 to less than 6,000 m. The seismic study used a towed array of 36 airguns with a total discharge volume of ~6,600 cubic inches. L-DEO requested that it be issued an IHA allowing non-lethal takes of marine mammals incidental to the planned seismic survey. This request was submitted pursuant to Section 101 (a)(5)(D) of the MMPA, 16 U.S.C. §1371 (a)(5). The NMFS proposed to issue an IHA for the take by Level B harassment only of marine mammals during the marine geophysical survey (National Oceanic and Atmospheric Administration 2011). Survey lines ran on the eastern and western sides of Kodiak Island.

4.3.7 OTHER ENVIRONMENTAL CONSIDERATIONS

4.3.7.1 Commercial Fishing

Commercial fishing in Alaska appears to be a stable, mature industry, with year-to-year variations in total landings of particular species but no substantial increases in overall landings of commercial fish and other seafood (National Oceanic and Atmospheric Administration 2012). After a dip in landings in 2009 and 2010, the latest landings (2012) rebounded to levels recorded in the period 2003–2007. The overall numbers of fishing vessels engaged in major commercial fisheries and issued commercial fishing licenses in Alaska both declined substantially in the past 9 years (State of Alaska Commercial Fisheries Entry Commission 2011). On the basis of these trends, the level of commercial fishing in Alaska overall is not expected to increase substantially in the foreseeable future.

Marine waters around Kodiak are among the most productive in the North Pacific. Offshore upwelling combines with abundant freshwater runoff to make nearshore waters rich in nutrients. There are over 100 species of marine fish native to the Kodiak Management Area, including Pacific herring, and five species of salmon. Commercial herring and salmon fisheries in waters surrounding the Kodiak Archipelago and the northern Alaska Peninsula are managed by the Alaska Department of Fish and Game in Kodiak. The 2012 commercial salmon harvest in the Kodiak Management Area was 14,785

Chinook salmon, 2,231,044 sockeye salmon, 208,379 coho salmon, 16,873,171 pink salmon, and 866,334 chum salmon. The total harvest of approximately 20.2 million salmon is below the previous 10-year average of approximately 23.9 million salmon, but above the 2012 forecast (Alaska Department of Fish and Game 2012).

Historically, Kodiak waters supported significant red king crab and trawl shrimp fisheries (Alaska Department of Fish and Game 2010). The Kodiak Area red king crab stock has not supported a commercial fishery since the early 1980s. Shrimp stocks currently support only negligible harvests. Minor harvests of green sea urchin, golden king crab, and grooved Tanner crab have also occurred. Various clam species, primarily razor clams, were historically harvested in large quantities but are no longer targeted in commercial fisheries. The predominant commercial shellfish species harvested from Kodiak waters in 2009 were Tanner crab, Dungeness crab, giant Pacific octopus, and red sea cucumber. The Dungeness crab has replaced Tanner crab as the most valuable shellfish species in the area.

According to data from the 2009–2010 Kodiak District Dungeness Crab Fishery, vessels registered for Dungeness crab in the Kodiak District ranged from 24 to 95 ft. in total length, with a district-wide average of 54 ft. The number of pots ranged from 100 to 1,800 pots per vessel with a district-wide average of 750 pots per vessel. In total, 17 vessels harvested 1,335,503 pounds (lb.) from 108 landings. The majority of the harvest came from statistical area 545601 near Sitkinak and Tugidak Islands and statistical area 525701 inside Ugak Bay.

In addition to the target species, commercial fishing can result in incidental takes of marine mammals and birds. The MMPA directs the Secretary of Commerce to monitor marine mammal mortality and serious injury occurring incidentally to commercial fishing, and to monitor the progress of commercial fisheries in reducing these incidental takes to insignificant levels (Manly 2005). The Alaska Marine Mammal Observer Program has been in operation since 1990 to obtain reliable estimates of the levels of serious injury and mortality of marine mammals and birds, assess the reliability of injury and mortality reports by vessel owners and operators, identify new methods and technology for reducing incidental takes, collect relevant biological samples, and record data on bycatch and discard levels of all species. The Southeast Alaska salmon gillnet fishery is a Category II fishery subject to monitoring of marine mammal interactions under the MMPA. Category II fisheries are those with occasional incidental mortality or serious injury of marine mammals.

In 2005, estimates of the takes of different species, with estimated standard errors in parentheses were: unknown otters, 27.8 (27.1); harbor porpoises, 39.4 (27.1); pelagic cormorants, 178.0 (62.5); harlequin ducks, 19.7 (19.0); pigeon guillemots, 117.6 (46.4); marbled murrelets, 142.6 (67.4); Kittlitz's murrelets, 18.1 (16.8), common murre, 483.5 (156.2); thick-billed murre, 19.7 (19.3); tufted puffins, 95.9 (41.4); white-winged scoters, 21.5 (21.1); and all species of birds, 1,096.6 (195.4) (Manly 2005). The single unknown otter observed to be taken was released alive, apparently uninjured, while all four of the harbor porpoises observed to be taken were released dead. All birds observed to be taken were released dead.

4.3.7.2 Maritime Traffic

Vessel traffic in the Training Study Area consists of fishing vessels, as well as commercial (cargo) shipping, wildlife cruises, pleasure vessels, cruise ships, military vessels, and scientific research vessels. The GOA is a very busy shipping route. A total of 45.0 million tons of waterborne cargo were handled at Alaskan ports in 2010, including exports, imports, and intrastate shipments (U.S. Army Corps of Engineers 2010). Seven Alaskan ports were ranked among the busiest U.S. ports by cargo tonnage in

2011: Valdez, Nikishka, Kivilina, Anchorage, Seward, Ketchikan, and Unalaska Island (American Association of Port Authorities 2011). Valdez is in the top 10 for total domestic trade. Kodiak container traffic in 2011 consisted of 4,101 20 ft. equivalent units of inbound containers and 10,546 20 ft. equivalent units of outbound containers (U.S. Army Corps of Engineers 2011a). According to 2011 traffic statistics for Kodiak (the channel between Near Island and Kodiak Island to the King Crab, Inc. dock in St. Paul Harbor, including the boat basin), the foreign and domestic waterborne commerce trips totaled 748 (mostly self-propelled dry cargo ships and non-self propelled tanker liquid barges) (U.S. Army Corps of Engineers 2011b).

The Alaska Marine Highway System (AMHS) provides year-round service to over 33 Alaska ports by transporting passengers and vehicles between coastal communities (Alaska Marine Highway System 2012). The AMHS currently operates 11 vessels, and the busiest months are July and August. In 2012, the AMHS carried a total of 337,774 passengers and 115,448 vehicles. Disembarking passengers in Kodiak increased every year between 2005 and 2011, from 6,978 passengers to 11,599 passengers.

Vessel noise could affect marine animals in the Training Study Area. Noise from large vessels generally dominates ambient noise at frequencies from 20 to 300 Hertz (Hz) (Richardson et al. 1995). Kipple and Gabriele (2007) measured the noise of 38 vessels (14–962 ft.) at various speeds in Glacier Bay National Park, Alaska. At 10 knots, overall (10 Hz–3.5 kilohertz) source levels for all ships ranged from 157 to 182 dB re 1 μ Pa at 1 yard. Vessel sound levels generally increased substantially with speed.

Another concern with vessel traffic is the potential for striking marine mammals. Jensen and Silber (2004) assembled a database of whale strikes reported throughout the world. Of the 292 records of confirmed or possible ship strikes to large whales, most were reported in North America, but this may be an artifact of data collection procedures and/or decreased reporting in other global jurisdictions. The probability of a ship strike resulting in a lethal injury (mortality or severe injury) of a large cetacean increases with ship speed (Laist et al. 2001; Vanderlaan and Taggart 2007). Most lethal and severe injuries to large whales occur when vessels travel at 14 knots or faster, and the probability of severe or lethal injury to a whale approaches 100 percent in the event of a direct strike when a ship is traveling faster than 15 knots (Laist et al. 2001; Vanderlaan and Taggart 2007). The probability of a ship strike is a function of vessel density, animal density, and vessel speed.

4.3.7.3 Ocean Noise

Ambient noise is the collection of ever-present sounds of both natural and human origin. Ambient noise in the ocean comprises sound generated by natural physical, natural biological, and anthropogenic (human-generated) sources. Pre-industrial physical and biological noise sources in marine environments were often not high enough to interfere with the hearing and communication of marine animals (Richardson et al. 1995); however, the increase in anthropogenic noise sources in recent times is a concern (Clark et al. 2009).

In addition to sounds generated during Navy training and testing within the TMAA, anthropogenic sound is introduced into the ocean by a number of sources, including vessel traffic, industrial operations onshore (pile driving), seismic profiling for oil exploration, oil drilling, and underwater explosions. Noise levels resulting from human activities in coastal and offshore areas are increasing; however, there are few historical records of ambient noise data to substantiate the level of increase.

Andrew et al. (2002) compared ocean ambient sound from the 1960s to the 1990s from a receiver off the California coast. Data show an increase in ambient noise of approximately 10 dB in the frequency

ranges of 20–80 Hz and 200–300 Hz, and about 3 dB at 100 Hz over a 33-year period. A possible explanation for the rise in ambient noise is the increase in shipping noise. There are approximately 11,000 supertankers worldwide, each operating 300 days per year, producing constant broadband noise at source levels of 198 dB (Hildebrand 2004). Closer to the Training Study Area, the Kodiak Island County documented vessel count is 483, including 54 recreational boats, 395 commercial fishing boats, 23 passenger boats, and 11 others (Boatinfoworld.com 2013). Vessel traffic studies were also conducted for Southeast Alaska and the Aleutian Islands. A 2012 study of vessel traffic in Southeast Alaska found 450 cruise ship transits, 328 operating weeks for ferries, 74 transits for freight and cargo ships, 236 overnight passenger vessel operating-weeks, over 400 non-resident tug transits, and 24 tank barge transits (Nuka Research & Planning Group, LLC 2012). A 2010 study evaluating risk of vessel accidents and spills in the Aleutian Islands counted 2,219 large vessels transiting through the Aleutian Islands area (Det Norske Veritas & ERM – West, Inc. 2010). The North Pacific Great Circle Route is a major international shipping route, used as direct access to the west coast of North America by East Asian ports and vice versa. The largest number of vessels transiting the Aleutian Islands (nearly 70 percent) consists of bulk carriers, container vessels, general cargo vessels and Ro-Ro carriers. The greatest volume of commodities moved consists of dry cargoes, including commercial goods, machinery, wood, coal, and agricultural products. Liquid and gas cargo carriers (liquefied natural gas and gas carriers, crude oil, chemical, and product carriers) together made up less than 3 percent of the individual vessels and less than 1 percent of all recorded tracks during the analyzed period. The largest increase in traffic for any vessel category was for chemical carriers and container ships (> forty-five hundred 20 ft. equivalent unit) transits, which are forecasted to more than double in the next 25 years. Because it is expected that a conservative management culture of the fisheries will continue to be in place, no increase on the fishing fleet is forecasted because the current fleet size is adequate and is anticipated to be progressively updated as vessels are replaced over time.

4.3.7.4 Ocean Pollution

4.3.7.4.1 Overview

Pollution is the introduction of harmful contaminants that are outside the norm for a given ecosystem. Ocean pollution has and will continue to have serious impacts on marine ecosystems. Common ocean pollutants include toxic compounds such as metals, pesticides, and other organic chemicals; excess nutrients from fertilizers and sewage; detergents; oil; plastics; and other solids. Pollutants enter oceans from nonpoint sources (e.g., storm water runoff from watersheds), point sources (e.g., wastewater treatment plant discharges), other land-based sources (e.g., windblown debris), spills, dumping, vessels, and atmospheric deposition.

4.3.7.4.2 Nonpoint Sources, Point Sources, and Atmospheric Deposition

Hypoxia (low dissolved oxygen concentration) is a major impact associated with point and nonpoint sources of pollution. Hypoxia occurs when waters become overloaded with nutrients such as nitrogen and phosphorus, which enter oceans from nonpoint source runoff, point sources, and atmospheric deposition. Too many nutrients can stimulate algal blooms—the rapid expansion of microscopic algae (phytoplankton). When excess nutrients are consumed, the algae population dies off and the remains are decomposed by bacteria. Bacteria use oxygen from the surrounding water during decomposition, which causes dissolved oxygen in the water to decline to the point where marine life that depend on oxygen can no longer survive (Boesch et al. 2007).

Elevated nutrient loading was also identified as a cause of harmful algal blooms. Harmful algal blooms are proliferations of marine and freshwater algae (including cyanobacteria and nonphotosynthetic

algae-like organisms) that can produce toxins, causing human illness and massive animal mortalities. They also can accumulate in sufficient numbers to alter ecosystems in detrimental ways. These blooms are increasingly frequent in coastal waters around the world. Impacts include fish, bird, and marine mammal mortality (Anderson et al. 2010).

Localized marine conditions such as stable vertical stratification with a surface freshwater lens and nutrients, primarily from freshwater runoff, are thought to be conditions that foster *Alexandrium* blooms (Wright et al. 2013). These conditions are common occurrences in Alaska that likely produce the species responsible for paralytic shellfish poison (PSP). Focused localization of blooms could result in closely adjoining beaches having different PSP levels. This phenomenon appears to be the case in Alaska, with the most numerous recorded PSP events occurring in specific locations in Southeast Alaska, around Kodiak Island, the Alaska Peninsula, and in the eastern Aleutian Islands. Recent noteworthy occurrences of paralytic shellfish poisoning proliferated up the U.S. North Pacific Coast during spring and summer of 2010 from Washington, British Columbia, Southeast Alaska, continuing along the GOA coast to the Kodiak Islands and the Aleutians Islands. PSP levels finally peaked in the Aleutian Islands by July 2010. In Alaska, three illnesses were reported on Kodiak Island from eating butter clams. Historically, the occurrence of PSP in the viscera of Dungeness crab differs by region. In the commercial fishery around Kodiak Island and the southern Alaska Peninsula, PSP in crabs is a common occurrence; Dungeness crab are usually sold eviscerated and frozen. Researchers determined that Dungeness crab meat does not contain PSP, but the viscera can contain the toxin.

Nonpoint sources, point sources, and atmospheric deposition also contribute toxic pollutants such as metals, pesticides, and other organic compounds to the marine environment. Toxic pollutants may cause lethal or sub-lethal effects if present in high concentrations, and they can build up in tissues over time and suppress immune system function, resulting in disease and death.

4.3.7.4.3 Marine Debris

Marine debris is any manufactured or processed solid waste material (typically inert) that enters the marine environment from any source (Coe and Rogers 1997). Approximately 80 percent of debris originates onshore and 20 percent from offshore sources. A study of marine debris in the Bering Sea between 1986 and 1991 found that the marine debris composition consisted of fishing gear (10 percent), petrochemical (including fishing gear, Styrofoam, and other plastic debris) (60 percent), and natural objects (e.g., logs and seaweeds) (30 percent) (Coe and Rogers 1997). Marine debris degrades marine habitat quality and poses ingestion and entanglement risks to marine life and birds. Plastic debris is a major concern because it degrades slowly and many plastics float, allowing the debris to be transported by currents throughout the oceans. Marine debris has been discovered to be accumulating in gyres throughout the oceans.

The 2011 Japanese tsunami is estimated to have released two million tons of debris into the oceans, and a significant amount is washing ashore in Alaska (Alaska Fish Radio 2013). The state of Alaska is receiving \$1 million for tsunami debris clean up from the Government of Japan. The three debris hot spots are Kayak Island out of Prince William Sound, the outer coast of Hinchinbrook, the outer coast of the Kenai Peninsula, and the northeast coasts of Afognak and Shuyak.

The USCG Marine Safety Detachment participated with National Oceanic and Atmospheric Administration partners in a debris cleanup on Kodiak Island in 2012 (Mooers 2012). Crews worked through snowy conditions and freezing temperatures to sort approximately 800 lb. of line, plastics, and trash collected in Halibut Bay on the west coast of Kodiak along Shelikof Strait. Over the year, marine

debris stored at the NMFS facility in Gibson Cove, near Kodiak City totaled more than 9,000 lb. Debris in Kodiak waters threatens local wildlife ranging from bears to Steller sea lions and salmon.

4.3.7.4.4 Major Pollution Events

Oil and other chemical spills have negative effects on many marine species, as was illustrated by the *Exxon Valdez* spill. Shortly after midnight on 24 March 1989, the 987 ft. tank vessel *Exxon Valdez* struck Bligh Reef in Prince William Sound, Alaska. What followed was the largest oil spill in U.S. history (until the BP Deepwater Horizon Oil Spill in 2010). The spill released nearly 11 million gallons of crude oil into the environment. The oil slick spread over 3,000 mi.² and onto over 350 miles of beaches in Prince William Sound, one of the most pristine and magnificent natural areas in the country (The National Response Team 1989). By approximately day 20 after the accident, the oil slick had spread southwest to Kodiak/Afognak Islands. Impacts include those arising from direct exposure of marine life to oil and dispersants, habitat degradation, and disturbances caused by cleanup activities. A variety of indirect impacts such as changes in prey abundance and long-term disruption of other ecological processes could result from spills of this magnitude.

The *Exxon Valdez* oil spill impacts on wildlife were unfathomable. Carcass counts often understated the actual losses, since animal carcasses sank or were never discovered in the huge geographic area covered by the spill (*Exxon Valdez* Oil Spill Trustee Council 2009). Based on extrapolated studies, scientists estimate the total loss of murrelets at 250,000—about 40 percent of the pre-spill population—even though only about 21,000 murre carcasses were found. Carcasses recovered after the spill included: 1,000 sea otters, 151 bald eagles, 838 cormorants, 1,100 marbled murrelets, and over 33,189 other birds. According to the 2009 Annual Report (20 years after the spill), the remaining oil will take decades and possibly centuries to disappear entirely. Recovery from the spill continues. As part of a settlement agreement with Exxon, millions of dollars were spent on research, monitoring, restoration, a reserve fund, habitat protection, public information, science management, and administration. As of 2009, land preservation in the Kodiak Archipelago totaled 647,202 purchased acres for a total cost of nearly \$427 million.

4.3.7.5 Oil and Hazardous Substance Spills

The Alaska Department of Environmental Conservation, Prevention & Emergency Response Program prepared a 10-year spill data summary report for the period 1995–2005. Ten Alaska subareas are covered in the report. Major spills in the Kodiak Island Subarea between 1995 and 2005 include those listed in Table 4.3-2. According to the report, spills from unregulated vessels (< 400 gross tons) were most common in coastal subareas like Kodiak.

Table 4.3-2: Major Spills in the Kodiak Island Subarea (1995–2005)

Date	Spill Name	Product	Gallons
3/24/1989	T/V <i>Exxon Valdez</i>	Crude	11 million
4/1/1992	USCG Air Station	Diesel	46,200
9/1/1994	Bells Flats Construction Site	MC 70	10,500
1/1/1993	USCG Air Station	Jet A	10,000
7/1/1993	F/V Francis Lee	Diesel	10,000
4/20/2000	F/V <i>Destiny</i> sinking, Shelikof Strait	Diesel	7,000
1/1/1993	F/V Massacre Bay	Diesel	5,040
4/1/1992	USCG Air Station	JP-5	4,700
2/1/1994	F/V <i>Eagle</i>	Diesel	4,000
8/1/1994	F/V Knight Island	Diesel	4,000
1/1/1007	F/V <i>Sandra W.</i>	Diesel	2,800

Date	Spill Name	Product	Gallons
1/1/1992	F/V Mahato	Diesel	2,000
10/1/1992	F/V Miss Angel	Diesel	2,000
10/1/1995	F/V Royal Baron	Diesel	2,000
5/30/2003	F/V Rocona II sinking, Spruce Cape	Diesel	1,500
9/26/2002	F/V Dakota sinking, Ishut Bay	Diesel	1,400
6/1/1994	USCG ISC Kodiak	JP-5	1,300
1/25/1996	F/V Sally J	Diesel	1,175

Notes: F/V = Fishing Vessel, ISC = Integrated Support Command, USCG = United States Coast Guard, T/V = Tank Vessel
 Source: Alaska Department of Environmental Conservation 2007

The waters and coastline of the Kodiak Subarea are vulnerable to the introduction of petroleum products, oil, or hazardous chemicals from a variety of sources (Alaska Department of Environmental Conservation 2007). Marine vessel fuel, jet fuel, lubricants, toxic chemicals, crude oil, and other non-crude petroleum products are transported through the Kodiak Subarea and adjacent waters. Non-crude fuels and several hazardous chemicals are stored in facilities throughout the subarea in varying quantities. Pollution risks faced by the Kodiak Subarea include spills of all sizes and severity as well as chronic leaks or low-volume inputs. While chronic spills may be less noticeable than major spills, they can introduce potentially more oil into the marine and coastal environment and cause devastating long-term impacts. The Kodiak Subarea is also plagued by the threat of more acute spill events, from tank ships, barges, or freight vessels transiting nearby waters.

The following trends were observed in the 10-year report (Alaska Department of Environmental Conservation 2007):

- The average number of spills per year has been decreasing since Fiscal Year 2002. There also appears to be a seasonal decline in the number of spills between October and March.
- For facility types, the reported spills were evenly distributed between Storage (30 percent), Transportation (26 percent), Vessels (22 percent), and Other (22 percent). However, in terms of total volume, Vessels contributed 63 percent of the total volume spilled.
- Turning to causes, Structural/Mechanical (45 percent) and Human Factors (35 percent) were the primary causes in 80 percent of the spills, while Human Factors causes resulted in 62 percent of the total volume spilled, followed by Structural/Mechanical causes at 23 percent.
- Non-crude oil was the primary product spilled in 95 percent of the reported spills, and also accounted for 99 percent of the total volume.

The average number of spills had generally continued to decline in subsequent years. However, this trend reversed after a few major spills occurred in 2011 and 2012, including: a 4,500-gallon diesel fuel spill on 11 February 2011 by the Fishing Vessel (F/V) Midnite Sun grounding off Afognak Island (Alaska Department of Environmental Conservation 2012a), an 8,000-gallon diesel fuel spill on 25 January 2012 by the F/V Heritage (Alaska Department of Environmental Conservation 2012b), and an 8,000-gallon diesel fuel spill on 8 June 2012 by the Motor Vessel (M/V) Monterrey Fuel Tank Release (Alaska Department of Environmental Conservation 2012b).

4.4 RESOURCE-SPECIFIC CUMULATIVE IMPACTS

To quantify the contribution of past actions to the cumulative impacts of the Proposed Action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This approach has been taken because existing conditions reflect the aggregate impact of all

prior human actions and natural events that have affected the environment and might contribute to cumulative impacts.

This cumulative impacts analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions were impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful in predicting the cumulative impacts of the Proposed Action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions risks ignoring the important residual effects of past natural events (e.g., the Novarupta volcanic eruption of 1912 and the Alaska earthquake/tsunami of 1964), which may contribute to cumulative impacts just as much as human actions. By looking at current conditions, all the residual effects of past human actions and natural events are sure to be captured, regardless of which particular action or event contributed those effects. Finally, the CEQ issued an interpretive memorandum on 24 June 2005 regarding analysis of past actions, which states, "agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions."

With respect to past actions, during the scoping process and subsequent preparation of the analysis, the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative impacts. Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful in predicting the cumulative impacts of the proposal. CEQ regulations, however, do not require agencies to catalog or exhaustively list and analyze all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decision making (40 C.F.R. 1508.7). For these reasons, the analysis of past actions in this section is based on current environmental conditions.

NEPA requires only a discussion of those cumulative impacts with the potential for significance. Effects of the Proposed Action on marine biological resources, terrestrial biological resources, cultural resources, recreation, public health and safety, environmental justice, and the protection of children would not be significant. However, although these effects would not contribute to cumulative impacts associated with other past, present, and reasonably foreseeable future projects in the vicinity of the Proposed Action, discussion of them is prudent in order to fully illustrate the benign impact of the Proposed Action within the Training Study Area on Kodiak.

4.4.1 MARINE BIOLOGICAL RESOURCES

Cumulative direct impacts on marine biological resources may result from loss of habitat or impaired access to important life-cycle resources on a population scale for other projects (see Table 4.3-1) that include substantial maritime environment disturbing activities, such as spills of oil and hazardous substances, harbor improvements, coastal development, ocean pollution/marine debris, seismic surveys, oil/gas exploration, commercial fishing/bycatch, and military training exercises involving sonar or high explosives. Other project activities that reduce or encroach on seasonal maritime habitats have

direct, local impacts. These adverse effects, when added to other projects occurring within the same geographic area, may have significant impacts.

On the other hand, the goal of NSW/SOF training is for the students to be in the field undetected. The environment tends to be minimally disturbed and materials (e.g., gear and trash) are not left behind. As set forth in Section 3.2, the Proposed Action will have negligible impacts to marine vegetation, marine invertebrates, fish, essential fish habitat, marine birds, sea turtles, and marine mammals. Disturbances from proposed activities would not be expected to cause long term or permanent impairment to the surrounding marine vegetation. Disturbances from proposed activities would not be expected to cause long term or permanent impairment to marine invertebrates. Potential impacts of exposure to vessels are not expected to result in substantial changes to an individual fish's behavior, fitness, or species recruitment and are not expected to result in population-level impacts. Since impacts from strikes would be rare, impacts on fish or fish populations would be negligible. The Proposed Action in the Training Study Area will have no adverse effect on EFH because it would have no direct or indirect impact to water quality, substrate, or prey necessary for spawning (fish, invertebrates, or vegetation), breeding, feeding, or growth to maturity of aquatic species. Because sea turtles are so rare in the Training Study Area, and activities occur nearshore where sea turtles are likely to be submerged, it is highly unlikely that they would come into contact with vessels or students in the water. Effects to marine birds including the Steller's eiders and yellow-billed loons, and their prey and habitat, in the Training Study Area are insignificant because of the low frequency of activities, low impact of activities, and training objective to remain undetected and leave no trace behind. The disturbances described under the Proposed Action are expected to be minimal, short term, recoverable, and should not result in the significant alteration of migration, surfacing, nursing, breeding, feeding, or sheltering behaviors based on the low probability of marine mammals being in the Training Study Area when these infrequent and brief activities are taking place.

Training activities within the Training Study Area in conjunction with the identified cumulative projects (Table 4.3-1) would not result in significant cumulative impacts on marine biological resources. Many past, present and reasonably foreseeable future actions listed in Table 4.3-1 would elevate the potential for direct and indirect impacts on marine biological resources. But, few of the cumulative projects overlap with the existing training locations within the Training Study Area and most would have only temporary, localized impacts on marine biological resources. Furthermore, as noted in Section 3.2, the Proposed Action has negligible impact on marine biological resources and would not add to the impacts of other projects listed in Table 4.3-1. Therefore, in conjunction with past, present and reasonably foreseeable projects, the Proposed Action would not result in significant cumulative impacts on marine biological resources.

4.4.2 TERRESTRIAL BIOLOGICAL RESOURCES

Cumulative direct impacts on terrestrial biological resources may result from loss of habitat or impaired access to important life-cycle resources on a population scale for other (non-Navy) projects (see Table 4.3-1) that include substantial ground disturbing activities, such as development of coastal lands and spills of oil and hazardous substances. Non-Navy project-related developments that reduce areas of vegetation communities and/or reduce or encroach on seasonal wildlife habitats have direct, local impacts. These adverse effects, when added to other projects occurring within the same geographic area, may have significant impacts.

On the other hand, the goal of NSW/SOF training is for the students to be in the field undetected. The environment tends to be minimally disturbed and materials (e.g., gear and trash) are not left behind.

Logistical support vehicles use established roads and, therefore, do not impact vegetation. Ground cover is most likely to be impacted by passing foot traffic, although it will quickly recover and would not impact the survival or function of the habitat. Training areas in general retain a fairly open character that allows many species to resume the behaviors to which they are accustomed after completion of a training activity. Wildlife may flush/flee or may not respond as students approach and pass through an area. Once the group has passed, animals can return to previous activities once they feel the threat is gone.

The vegetation types and wildlife present in the cumulative impacts analysis area are generally widely distributed, and few limitations to their availability were identified. Indirect impacts on wildlife include the addition of NSW/SOF training activities and associated human presence, and other disturbances that may cause changes in resting or feeding cycles, displacement from habitat, masking of sounds and related changes in vocal behavior, or disrupted breeding or young-rearing activities.

The analysis in Section 3.3 (Terrestrial Biological Resources) indicates that impacts of the alternatives on terrestrial biological resources would be minimal, short term, and recoverable based on the (1) relatively low intensity of the impacts, (2) localized nature of the impacts, (3) infrequent nature of the impacts, and (4) brief duration of the activities. For these reasons, long-term consequences to individuals or populations of terrestrial biological resources are not expected to result from the Proposed Action NSW/SOF training activities. Therefore, impacts on terrestrial biological resources from proposed training activities would be less than significant.

Training activities within the Training Study Area in conjunction with the identified cumulative projects (Table 4.3-1) would not result in significant cumulative impacts on terrestrial biological resources. Few of the cumulative projects overlap with the existing training locations and most would have only temporary, localized impacts on terrestrial biological resources. Therefore, in conjunction with past, present and reasonably foreseeable projects, the Proposed Action would not result in significant cumulative impacts on terrestrial biological resources.

4.4.3 CULTURAL RESOURCES

As detailed in the Kodiak Airport EIS (Federal Aviation Administration 2012), past actions in and around northeast Kodiak Island (including the Proposed Action Training Study Area) resulted in impacts to historical, architectural, and archaeological sites associated with World War II development and occupation of the area, and to prehistoric archaeological sites associated with ancestral Alaska Native communities. These actions included road construction and improvement, construction of the Kodiak Naval Operating Base (now the USCG Base) during World War II, development and upgrade of the modern USCG Base and public airport facilities, relocation of the Buskin River during construction of the World War II base, and development of the Buskin River State Recreation Site.

For example, it is known that construction of the original military base in 1941 resulted in the exhumation of at least 20 burials near the east end of Runway 11/29 at the Kodiak Airport (Federal Aviation Administration 2012). Similarly, development of the modern USCG base and public airport resulted in modifications to or removal of several World War II-era resources, primarily in the context of projects that comply with the NHPA and Section 106 process.

The other currently proposed regional projects considered as part of cumulative impacts are, in most cases, difficult to assess in terms of potential effects on cultural resources. Many of these actions are private undertakings for which no federal laws, reporting requirements, or specific protections for

cultural resources are required. Those projects with state or federal involvement would be required to comply with the appropriate statutes involving avoidance, minimization, and/or mitigation of adverse impacts to cultural resources.

The Kodiak Airport runways are historic features of the Airport and contributing resources of the NHL encompassing the USCG base. The resurfacing project does not appreciably affect the overall design of the runways, their primary dimensions, or their configuration relative to each other and other airport features. As such, the runway resurfacing project would not adversely affect these historical resources and would not contribute meaningfully to cumulative loss of integrity for historical, architectural, archaeological, and cultural resources in the area.

Reasonably foreseeable future actions include actions with the potential to adversely affect historical, architectural, archaeological, and cultural resources. In particular, construction of a new ferry terminal, various roadway improvement and construction projects, and construction of a new taxiway and apron at the Kodiak Airport could affect such resources. However, the vast majority of these projects would be undertaken under federal jurisdiction and would require compliance with federal laws to avoid, minimize, or mitigate impacts to archaeological, historical, architectural, and cultural resources. Therefore, the net impact of these projects on such resources is not expected to be significant.

The analysis presented in Section 3.4 (Cultural Resources) indicates that the Proposed Action Alternatives 2 and 3 would involve additional locations for OTB activities. These activities could create physical disturbance and disrupt vertical and horizontal patterning in the archaeological deposits along the coastline. However, NSW/SOF training incorporates a stealth, "leave no trace" philosophy, which diminishes the likelihood of any physical disturbance. The Proposed Action does not have an effect on protected tribal resources because the current training activities do not change any tribe's access to exercise subsistence uses, nor does it reduce or degrade harvestable marine resources. Therefore, there would be no significant impacts on protected tribal resources from implementation of the Proposed Action.

Cultural resources are managed in accordance with the NHPA, the Archaeological Resources Protection Act, the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, the NAGPRA, and appropriate Navy Instructions. Consultation with the federally recognized Alaska Native tribes and ANCSA corporations would continue to identify and protect properties of traditional, religious or cultural importance and traditional cultural properties as defined in accordance with NHPA and protected tribal resources in accordance with state laws. Copies of the consultation correspondence are contained in Appendix B (Agency and Regulatory Correspondence).

No cumulative impacts to historic or cultural resources are expected to occur as a result of the Proposed Action. When considered in combination with past, present, and reasonably foreseeable actions, implementation of the Proposed Action for NSW/SOF cold weather training would not contribute to increased loss of any known historical, architectural, archaeological, or cultural resources for the reasons stated above.

4.4.4 RECREATION

The analysis in Section 3.5 (Recreation) indicates that the impacts of the alternatives on recreation resources would be negligible. NSW/CEN Det Kodiak training activities occur in pristine, natural areas on Kodiak Island, which areas also support outdoor recreation such as hunting, fishing, camping, photography, mountaineering, and cross country skiing. For over 20 years, NSW/CEN Det Kodiak training

has co-existed with these recreational activities, during which time there has been no known instance of recreation resource impact. Training locations within the Training Study Area are often physically difficult to access. Therefore, there is limited risk of interaction with the public enjoyment of recreation resources. As part of the curriculum, NSWCEN Det Kodiak students are instructed to leave the training environment undisturbed, thereby reducing potential impacts to recreation resources.

As noted in right of entry agreements, activities within the Training Study Area are appreciated by property owners, as NSWCEN Det Kodiak's presence discourages the abuse of the recreation resources by vandals and other trespassers. In this respect, the Proposed Action provides a beneficial impact to recreation resources.

Other actions identified in Table 4.3-1 within the vicinity of the Training Study Area with potential recreation impacts include coastal development, timber sales, ocean pollution, and oil and hazardous substance spills. Though rare, oil and hazardous substance spills from grounded commercial vessels can have catastrophic effects on local or regional habitats. Degraded habitats diminish the value of recreation resources for activities such as hunting and fishing. Coastal development can incrementally degrade recreation resources or cause shifts in recreation from one area to another. These potential impacts can be offset by positive initiatives such as Borough planning efforts, including tourism support and neighborhood, harbor, and trail plans. Recreation resources are further protected on Kodiak Island through its high governmental land ownership (federal lands [78 percent], state lands [5.1 percent] (Kodiak Island Borough 2008). These federal and state lands are protected from development and available for wildlife refuge and/or recreation. Based on the existing low incidence of spills, and an anticipated moderate increase in coastal development on limited private lands in the Training Study Area in the foreseeable future, the overall impact to recreation resources in the Training Study Area is expected to remain less than significant.

For the reasons mentioned earlier in this subsection, neither the No Action Alternative, nor Alternative 1, nor Alternative 2, nor Alternative 3 are expected to contribute incrementally to cumulative recreation impacts. Therefore, impacts on recreation from implementation of the Proposed Action, in combination with past, present, or planned projects and other activities within the Training Study Area, would not be cumulatively significant.

4.4.5 PUBLIC HEALTH AND SAFETY

The analysis presented in Section 3.6 (Public Health and Safety) indicates that the impacts of the alternatives on public health and safety would be negligible. All training activities would continue to be conducted in a safe and responsible manner. Given the remote locations (e.g., islands and mountainous areas), training activities are often conducted in areas with little public use, thus minimizing potential public health and safety concerns. Additionally, training conducted on Alaska Native Corporation lands is done pursuant to right of entry agreements. Use of these lands is limited to the Native Corporations and those granted permission by the corporations to use the lands. Right of entry agreements recognize the improved security, vandalism and trespassing deterrence afforded by NSWCEN Det Kodiak presence on the property as valuable consideration for grant of the right of entry.

The Navy's safety measures on land ensure public health and safety primarily through standard operating procedures that are designed to minimize or avoid civilian exposure to training activities. Furthermore, given their benign nature (e.g., gear familiarization, navigation, OTB, survival skills training, and re-warming), land training activities do not pose health or safety risks to non-participants within or near the Training Study Area boundary. Offshore water-based training activities are conducted pursuant

to Navy safety measures, standard operating procedures and all maritime regulations administered by the USCG. The presence of NSWCEN Det Kodiak students on land and the waters of the Training Study Area could have a beneficial effect on cumulative public safety risk because Navy personnel and assets could assist individuals or vessels in distress.

Notices to Airmen (NOTAMs) are created and transmitted by government agencies and airport operators to alert aircraft pilots of any hazards en route to or at a specific location. The infrequent parachute training operations conducted by Det Kodiak are accomplished with associated NOTAMs. The detachment staff has ensured a longstanding relationship with the FAA to ensure that appropriate NOTAMs are issued for the periodic training events that utilize either fixed or rotary-wing aircraft within the Training Study Area.

Other actions identified in Table 4.3-1 within the vicinity of the Training Study Area with potential public health and safety impacts include vessel groundings with associated oil and hazardous substance spills, maritime transportation or fishing vessel accidents, and aircraft accidents. Outside of the Training Study Area, Navy GOA training, USCG training, and Air Force training activities carry potential public health and safety impacts. These other actions that increase the number of vessels or aircraft and the number of individuals present in the Training Study Area or beyond could increase the public safety risk by increasing the population exposed to such risks.

Based on the existing low incidence of spills and vessel and aircraft accidents, and an anticipated moderate increase in aircraft and vessel activities in the Training Study Area and vicinity in the foreseeable future, the overall public safety risk in the Training Study Area is expected to remain less than significant. For the reasons mentioned earlier in this subsection, neither the No Action Alternative, nor Alternative 1, nor Alternative 2, nor Alternative 3 are expected to contribute incrementally to cumulative public health and safety impacts. Therefore, impacts on public health and safety from implementation of the Proposed Action, in combination with past, present, or planned projects and other activities within the Training Study Area, would not be cumulatively significant.

4.4.6 EXECUTIVE ORDER 12898, ENVIRONMENTAL JUSTICE

The analysis presented in this EA indicates that the impacts of the alternatives on environmental justice issues would be negligible. Populations within the Training Study Area are not affected by NSWCEN training activities because of the rare and inconsistent nature of the activities and the remote, highly inaccessible locations of the activities. As shown on Figure 2.1-1, existing training locations are typically: (i) at higher elevations or remote/uninhabited islands (i.e., Long Island); (ii) in remote/sparsely inhabited areas owned by federal or state agencies or Alaska Native Corporations; and (iii) far removed from population centers, such as the City of Kodiak, Womens Bay, Chiniak, and Pasagshak. Although much of the Kodiak Island population resides within the Training Study Area boundary, the existing and proposed training locations are far removed from human populations. No cumulative effects on environmental justice are possible without resident populations. Populations within the Training Study Area are not affected by the proposed training activities because of the relatively infrequent and inconsistent nature of these activities and the training philosophy to leave no trace. Based on these factors, the Proposed Action would not result in any disproportionately high and adverse human health or environmental effects on low-income or minority populations; therefore, Environmental Justice impacts would be less than significant.

The No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 are not expected to contribute incrementally to cumulative environmental justice impacts. Impacts on environmental justice from

implementation of the Proposed Action, in combination with past, present, and reasonably foreseeable future projects and other activities within the Training Study Area would not be cumulatively significant.

4.4.7 EXECUTIVE ORDER 13045, PROTECTION OF CHILDREN

The analysis presented in this EA indicates that the impacts of the alternatives on protection of children issues would be negligible. Populations within the Training Study Area are not affected by NSWCCM training activities because of the rare and inconsistent nature of the activities and the remote, highly inaccessible locations of the activities. As shown on Figure 2.1-1, existing training locations are typically: (i) at higher elevations or remote/uninhabited islands (i.e., Long Island); (ii) in remote/sparsely inhabited areas owned by federal or state agencies or Alaska Native Corporations; and (iii) far removed from population centers, such as the City of Kodiak, Womens Bay, Chiniak, and Pasagshak. Although much of the Kodiak Island population resides within the Training Study Area boundary, the existing and proposed training locations are far removed from human populations. No cumulative effects on children are possible without resident populations. Populations within the Training Study Area are not affected by the proposed training activities because of the relatively infrequent and inconsistent nature of these activities and the training philosophy to leave no trace. Based on these factors, the Proposed Action would not result in any disproportionate environmental health risks or safety risks to children; therefore EO 13045 impacts would not occur.

The No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 are not expected to contribute incrementally to cumulative environmental health risks or safety risks to children. When past, present and reasonably foreseeable future projects are analyzed together with the Proposed Action, significant adverse cumulative risks to children from the implementation of the Proposed Action would not occur.

4.5 CUMULATIVE IMPACTS SUMMARY

The cumulative impacts analysis evaluated the effects of implementing the Proposed Action alternatives in association with past, present, and reasonably foreseeable future Navy and other parties' actions within and adjacent to the project area. Past and present actions resulted in the present conditions in the Training Study Area. Reasonably foreseeable future actions considered included relevant foreseeable actions within and adjacent to the Training Study Area, including those of the Navy, other federal agencies, State and local agencies, and private and commercial entities. Cumulative impacts associated with implementation of the Proposed Action were evaluated with respect to each resource evaluation category, and no cumulatively significant adverse impacts were identified.

4.6 OTHER CONSIDERATIONS REQUIRED BY THE NATIONAL ENVIRONMENTAL POLICY ACT

This section addresses additional considerations required by NEPA, including:

- possible conflicts between the alternatives and the objectives of federal, regional, state, and local plans, policies, and controls
- energy requirements and conservation potential of alternatives
- irreversible and irretrievable commitment of natural or depletable resources
- short-term vs. long-term productivity
- any probably significant environmental impacts that cannot be avoided and are not amenable to mitigation

4.6.1 POSSIBLE CONFLICTS WITH OTHER OBJECTIVES OF FEDERAL, STATE AND LOCAL PLANS, POLICIES, AND CONTROLS

The parties implementing the Proposed Action would comply with existing federal regulations and state, regional, and local policies and programs. Table 4.6-1 provides a summary of environmental compliance requirements that may apply. No potential conflicts are anticipated between the Proposed Action and the land use plans and policies that address and guide uses within the Training Study Area.

Table 4.6-1: Summary of Environmental Compliance for the Proposed Action

Plans, Policies and Controls	Responsible Agency	Status of Compliance
National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] §§4321 et seq.) Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 C.F.R. §§1500–150) Navy Procedures for Implementing NEPA (32 C.F.R. §775)	Navy	This EA was prepared in accordance with the NEPA, 42 U.S.C. §§4321–4370d, as implemented by the CEQ Regulations, 40 C.F.R. Parts 1500–1508, and the Navy Regulations described in 32 C.F.R. Part 775. Executive Order 11991 of 24 May 1977 directed the CEQ to issue regulations for procedural provisions of NEPA; these are binding for all federal agencies.
Rivers and Harbors Act (33 U.S.C. §§401–426)	U.S. Army Corps of Engineers	No permit is required under the Rivers and Harbors Act as no construction in navigable waterways is proposed.
Coastal Zone Management Act (CZMA) (16 C.F.R. §§1451–1464)	Alaska Department of Natural Resources	By operation of Alaska State law, the federally approved Alaska Coastal Management Program expired on 1 July 2011, resulting in a withdrawal from participation in the CZMA's National Coastal Management Program. The CZMA federal consistency provision, Section 307, no longer applies in Alaska.
Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§1801–1891)	National Marine Fisheries Service (NMFS)	The Proposed Action would have no adverse effect on EFH. No reduction in the quality and/or quantity of EFH is expected. Therefore, EFH consultation with the NMFS is not required.

Table 4.6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies and Controls	Responsible Agency	Status of Compliance
Endangered Species Act (ESA) (16 U.S.C. §§1531–1544)	U.S. Fish and Wildlife Service (USFWS) NMFS	<p>The EA analyzes potential effects to species listed under the ESA. In accordance with ESA requirements, the Navy entered into informal consultation under Section 7 of the ESA with NMFS and USFWS on the potential that implementation of the Proposed Action may affect threatened and endangered listed species. The Navy prepared a Biological Evaluation as part of the EA analysis.</p> <p>Informal consultation for listed birds and the sea otter was initiated with USFWS. Correspondence is contained in Appendix B (Agency and Regulatory Correspondence).</p> <p>Informal consultation for listed marine species, including ESA-listed marine mammals and the leatherback sea turtle, was initiated with NMFS. The Proposed Action may affect, but is not likely to adversely affect ESA-listed marine mammals and the leatherback sea turtle.</p>
Marine Mammal Protection Act (MMPA) (16 U.S.C. §§1361–1407)	NMFS	<p>The MMPA governs activities with the potential to harm, disturb, or otherwise “harass” marine mammals. The Proposed Action is not expected to result in injury or harassment of any marine mammal as defined by the MMPA.</p>
The Sikes Act of 1960 (16 U.S.C. §§670a–670o, as amended by the Sikes Act Improvement Act of 1997, Pub. L. No. 105-85)	Navy	<p>No Navy installations are a part of the Proposed Action. Therefore, no trigger exists for Sikes Act compliance.</p>
National Historic Preservation Act (NHPA) (16 U.S.C. §§470 et seq.)	Navy	<p>The Navy determined that the Proposed Action would have no adverse effects on cultural resources within the Training Study Area. This conclusion will be forwarded to the Alaska State Historic Preservation Officer (SHPO). Alaska SHPO and Alaska Native tribal consultation correspondence is contained in Appendix B (Agency and Regulatory Correspondence).</p>

Table 4.6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies and Controls	Responsible Agency	Status of Compliance
EO 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i> (58 FR 7269 [16 February 1994])	Navy	The Proposed Action would not result in any disproportionately high and adverse human health or environmental effects on minority or low-income populations. No significant unavoidable impacts on traditional cultural resources or related Alaska Native activities are anticipated to result from the Proposed Action. In the event that previously unrecorded or unevaluated cultural resources are encountered, the Navy would manage these resources in accordance with the NHPA and other federal and State laws, Navy and DoD regulations and instructions, and DoD American Indian and Alaska Native Policy. Therefore, impacts on traditional cultural properties, if identified, would not result in disproportionate effects on Alaska Native tribes and Alaska Native Claims Settlement Act (ANCSA) corporations.
EO 13045, <i>Protection of Children from Environmental Health Risks and Safety Risks</i> (62 FR 19885 [23 April 1997])	Navy	The Proposed Action would not result in environmental health risks and safety risks that may disproportionately affect children.
ANCSA of 1971 (43 U.S.C. §§1601–1629)	Navy	In compliance with Section 106 of the NHPA, the Navy is consulting with the Alaska SHPO and potentially affected Alaska Native tribes, ANCSA corporations, and tribal government entities to identify historic properties that may be affected by the Proposed Action. All NHPA Section 106 consultation must be completed, prior to signing a Finding of No Significant Impact.
Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (16 U.S.C. §§3101–3233)	State of Alaska	The Proposed Action does not involve the request for use of federal conservation system unit lands for transportation systems, utility systems or facilities. Therefore, no trigger exists for ANILCA compliance.
EO 13089, <i>Coral Reef Protection</i>	Navy	No resources that are governed by this EO exist within the Training Study Area. Therefore, mitigation of effects will not be necessary for the protection of resources under EO 13089.
Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§703–711)	USFWS	Review of the actions under implementation of the alternatives presented shows there would not be a significant adverse effect on a migratory bird population. Therefore, under 50 C.F.R. §21.15, there is no need to confer with USFWS regarding MBTA species.
CEQ Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions (2010)	Navy	The Proposed Action involves <i>de minimis</i> GHG emissions associated with the participation of support vehicles, safety vessels, and insertion/extraction aircraft in some training activities. Because GHG emissions are not expected to be meaningful, the Navy is not required to quantify its estimate of the expected annual direct and indirect GHG emissions. GHG emissions are expected to be reduced over time upon implementation of the Proposed Action as newer, more efficient engines are introduced and cleaner fuels are utilized.

Notes: CEQ = Council on Environmental Quality, DoD = Department of Defense, EA = Environmental Assessment, EFH = Essential Fish Habitat, EO = Executive Order, FR = Federal Register, GHG = Greenhouse Gas, Navy = United States Department of the Navy, OPNAVINST = Chief of Naval Operations Instruction, U.S. = United States

4.6.2 ENERGY REQUIREMENTS, CONSERVATION POTENTIAL OF ALTERNATIVES

Energy required to successfully implement the Proposed Action would include fossil fuels used by vehicles, vessels, and aircraft used during training. Fuel for the vehicles, vessels, and aircraft is currently available and in adequate supply from Navy-owned sources. Energy use between the alternatives would

not differ substantially, and the Proposed Action would not result in an increase of energy usage over existing usage.

Direct energy requirements under the Proposed Action would be limited to those necessary to operate vehicles and equipment. No superfluous use of energy related to the Proposed Action was identified, and proposed energy uses would be minimized to the greatest extent possible without compromising integrity of the training. There are no conservation measures related to direct energy.

4.6.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF NATURAL OR DEPLETABLE RESOURCES

NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of non-renewable resources and the effects that the uses of these resources have on future generations. Irreversible commitments primarily result from the use or loss of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., disturbance of a cultural site).

For the Proposed Action, most resource commitments are neither irreversible nor irretrievable. Most impacts are short term and temporary, or long lasting but negligible. Since there would be no building or facility construction, the consumption of materials typically associated with construction (e.g., concrete, metal, sand) would not occur. Energy usage typically associated with construction activities would not be expended and irreversibly lost. Fuel expended by vehicles, vessels, and aircraft during training activities would be irreversibly lost.

The Proposed Action would result in negligible loss of habitat for plants or animals. The Proposed Action may affect, but is not likely to adversely affect threatened or endangered species. The training incorporates a stealth, "leave no trace" philosophy, which diminishes the likelihood of any physical disturbance to cultural resources. Current management practices incorporated into the training curriculum would ensure that all petroglyph, pictograph, or cave sites encountered would be avoided and if identified, reported to the Alaska State Historic Preservation Officer, the Alutiiq Museum, and appropriate Alaska Native tribes. Proposed training activities do not change any tribe's access to exercise subsistence uses. Nor do they reduce or degrade harvestable marine resources. Therefore, there would be no significant impacts on protected tribal resources from implementation of the Proposed Action. Moreover, there would be no changes in land use or preclusion of development of underground mineral resources that were not already precluded.

The amount of materials required for any training-related activities and energy used during the Proposed Action would be small. Although the proposed activities would result in some irreversible or irretrievable commitment of resources such as various metallic materials, minerals, and labor, this commitment of resources is not significantly different from that necessary for many other Navy training activities carried out over the past several years. Proposed activities would not commit natural resources in significant quantities.

4.6.4 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM BIOLOGICAL PRODUCTIVITY

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and of the effects these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development option reduces future flexibility in pursuing other options, or that giving over a parcel of land or other resource to a certain use eliminates the possibility of other uses being performed at the site. Military training activities of the Proposed Action would occur in areas that are relatively undisturbed; however, due to the "leave no trace" nature of the training activities (see Table 2.2-1), implementation of the Proposed Action would result in less than significant impacts on sensitive resources. As a result, it is not anticipated that the Proposed Action would result in any environmental impacts that would permanently narrow the range of beneficial uses of the environment, or pose long-term risks to health, safety, or the general welfare of the public.

4.6.5 PROBABLY SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED AND ARE NOT AMENABLE TO MITIGATION

Based on the analysis contained in this Draft EA, the Navy has determined that the alternatives would pose less than significant impacts; therefore, there are no probable significant environmental effects that cannot be avoided or reduced by mitigation.

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