

Subsistence Appendix: Sitka Airport EIS ANILCA 810 evaluation

1 Introduction

The Federal Aviation Administration (FAA) Airport Improvement Program and State of Alaska Department of Transportation and Public Facilities (ADOT&PF) recognized a need to improve safety aspects of the Sitka Rocky Gutierrez Airport. To that end, the FAA and ADOT&PF decided to examine ways to improve Runway Safety Areas, taxiways, seaplane pullout areas, airport lighting systems, the seawall adjacent to the runway, and to transfer property rights from the federal government to the state for airport uses.

Chapters 3 (Affected Environment) and 4 (Environmental Consequences) of the Sitka Rocky Gutierrez Airport Draft Environmental Impact Statement (Draft EIS) provide a detailed description of both the affected environment of the project area and the potential effects of the various alternatives on subsistence. For the purposes of this evaluation, the “project area” is defined as the existing airport property and the immediately adjacent land and marine areas that could potentially be affected by one or more of the proposed alternatives (including the land transfer alternatives). This appendix uses the detailed information presented in the EIS to evaluate the potential impacts to subsistence pursuant to Section 810(a) of the Alaska National Interest Land Conservation Act (ANILCA) (P.L. 96-487).

2 810 Evaluation Process

Section 810(a) of ANILCA states:

In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands . . . the head of the Federal agency . . . over such lands . . . shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency - (1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to section 805; (2) gives notice of, and holds, a hearing in the vicinity of the area involved; and (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

In order to understand what constitutes a significant restriction of subsistence uses to meet the terms of the 810 evaluation, the Alaska Land Use Council clarified the definition of a “significant restriction of subsistence use”:

A proposed action shall be considered to significantly restrict subsistence uses, if after any modification warranted by consideration of alternatives, conditions, or stipulations, it can be expected to result in a substantial reduction in the opportunity to continue subsistence uses of renewable resources.

The U.S. District Court Decision of Record in *Kunaknana v. Watt* provided additional clarification. In part, it states:

...restrictions for subsistence uses would be significant if there were large reductions in abundance or major redistribution of these resources, substantial interference with harvestable access to active subsistence sites, or major increases in non-rural resident hunting.

This evaluation focuses on subsistence resources most likely to be affected by habitat degradation associated with land development activities at the Sitka Airport. ANILCA specifically identifies three factors related to subsistence uses: 1) resource distribution and abundance, 2) access to resources, and 3) competition for the use of resources. The evaluation discusses these factors in general terms in the following paragraphs.

3 Definitions and Legal Context

While there are many popular cultural and sociological definitions and interpretations of subsistence, in 1980, Congress provided a legal description of subsistence in Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) (P.L. 96-487). Section 803 of ANILCA defines subsistence use as:

“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.”

ANILCA does not distinguish between native and non-native populations. ANILCA Section 801 provides for:

“(1) the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence and to non-Native physical, economic, traditional, and social existence;

(4) in order to fulfill the policies and purposes of the Alaska Native Claims Settlement Act and as a matter of equity, it is necessary for the Congress to invoke its constitutional authority over Native affairs and its constitutional authority under the property clause and the commerce clause to protect and provide the opportunity for continued subsistence uses on the public lands by Native and non-Native rural residents;”

ANILCA Section 802 states that:

“(1) consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands; consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for each unit established, designated, or expanded by or pursuant to Titles II through VII of this Act, the purpose of this title is to provide the opportunity for rural residents engaged in a subsistence way of life to do so;

(2) nonwasteful subsistence uses of fish and wildlife and other renewable resources shall be the priority consumptive uses of all such resources on the public lands of Alaska when it is necessary to restrict taking in order to assure the continued viability of a fish and wildlife population or the continuation of subsistence uses of such population, the taking of such population for nonwasteful subsistence uses shall be given preference on the public lands over other consumptive uses;”

ANILCA Section 102 defines public lands as:

“land situated in Alaska which, after the date of enactment of this Act, are Federal lands except--

(A) land selections of the State of Alaska which have been tentatively approved or validly selected under the Alaska Statehood Act and lands which have been confirmed to, validly selected by, or granted to the Territory of Alaska or the State under any other provision of Federal law;

(B) land selections of a Native Corporation made under the Alaska Native Claims Settlement Act which have not been conveyed to a Native Corporation, unless any such selection is determined to be invalid or is relinquished; and

(C) lands referred to in §19(b) of the Alaska Native Claims Settlement Act.”

In regard to consumptive uses, provisions in ANILCA state:

“...[t]he taking on public lands of fish and wildlife for nonwasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes. Whenever it is necessary to restrict the taking of populations of fish and wildlife on such lands for subsistence uses in order to protect the continued viability of such populations, or to continue such uses, such priority shall be implemented through appropriate limitations based on the application of the following criteria:

- 1. customary and direct dependence upon the populations as a mainstay of livelihood;*
- 2. local residency; and*
- 3. the availability of alternative resources.” (ANILCA Section 804)*

Finally, ANILCA Section 811(a) states that:

- (a) The Secretary shall ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands.

3.1 Additional Applicable Requirements

Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

(November 6, 2000) establishes principles and standards for government-to-government consultation with tribal governments on “policies that have tribal implications.” Consultation with tribal governments on subsistence, along with other issues, is an integral part of the public involvement process for an EIS. While Section 810 does not establish separate or additional requirements concerning consultation with tribal governments, the Section 810 review benefits from outreach to the tribal governments through the EIS. FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures, contains the FAA’s policy on consultation with tribal governments. The Department of the Interior has additional guidance in the Alaska Policy on Government-to-Government Relations with Alaska Native Tribes, in Section 8160 of the BLM Manual on Native American Coordination and Consultation, and in Section 8160-1 of the BLM Handbook – General Procedural Guidance for Native American Consultation.

Executive Order 12898: *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*

In addition to ANILCA, Environmental Justice, as defined in Executive Order 12898, also calls for an analysis of the effects of federal actions on minority populations with regard to subsistence. Specifically, Environmental Justice is:

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Section 4-4 of Executive Order 12898, regarding the Subsistence Consumption of Fish and Wildlife, requires federal agencies to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence, and to communicate to the public any risks associated with the consumption patterns. For this EIS, the subsistence analyses for all alternatives, located in Chapter 4 (Environmental Consequences), were prepared to comply with E.O. 12898.

3.2 Subsistence Evaluation Factors

Section 810(a) of ANILCA requires that the federal land management agency complete an evaluation of subsistence resources and uses for any federal determination to “withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands.” As such, an evaluation of potential impacts to subsistence under ANILCA Section 810(a) must be completed for the actions proposed in the EIS. ANILCA requires that this evaluation include findings on three specific issues:

- The effect of use, occupancy, or disposition on subsistence resources and uses;
- The availability of other lands for the purpose sought to be achieved; and
- Other alternatives that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes (16 USC § 3120).

The evaluation and findings required by ANILCA Section 810(a) are set out for each of the build alternatives considered in the EIS. If there is a finding that the proposed action may significantly restrict subsistence uses, additional requirements are imposed including provisions for notices to the State of Alaska and appropriate regional and local subsistence committees, a hearing in the vicinity of the area involved, and the making of the following determinations, as required by Section 810(a)(3):

- Such a significant restriction of subsistence uses is necessary, and consistent with sound management principles for the utilization of the public lands;

- The proposed activity would involve the minimal amount of public lands necessary to accomplish the purposes of use, occupancy, or other disposition; and
- Reasonable steps would be taken to minimize adverse effects upon subsistence uses and resources resulting from such actions.

To determine if a significant restriction of subsistence resources and uses may result from any one of the alternatives discussed in the EIS, including their cumulative effects, the following three factors in particular are considered:

- The reduction in the availability of subsistence resources caused by a decline in the population or amount of harvestable resources;
- Reductions in the availability of resources used for subsistence purposes caused by alteration of their normal locations and distribution patterns; and
- Limitations on access to subsistence resources, including from increased competition for the resources.

Chapter 3 (Affected Environment) of the EIS provides information on resources important for subsistence use within the project area. Chapter 4 (Environmental Consequences) provides data on the levels of reduction and limitation under each alternative, which was used to determine whether the action would cause a significant restriction to subsistence. The information contained in the EIS is the primary data used in this analysis.

A subsistence evaluation and findings under ANILCA Section 810 must also include a Cumulative Impacts analysis. Finally, this Appendix evaluates the most intensive cumulative case, as discussed in Chapter 4 (Environmental Consequences) and Chapter 5 Cumulative Impacts. This approach helps the reader to separate the subsistence restrictions caused by activities proposed under the build alternatives from those caused by past, present, and future activities that could occur, or have already occurred, in the surrounding area.

4 Subsistence Management

The Sitka Airport area is comprised of private, State, and federal lands. Different legal frameworks govern subsistence regulations on lands of different status. The State of Alaska administers the harvest of fish and wildlife, including for subsistence purposes, except as specifically superseded by federal law. When it is necessary to implement a federal subsistence priority under the terms of Title VIII of ANILCA, the Federal Subsistence Board regulates subsistence on Federal public lands and waters. State and Native-selected lands are generally not within the jurisdiction of the federal subsistence program.

The federal government implements a subsistence priority on marine waters in a small set of pre-statehood withdrawals, including the Makhnati Islands area within the existing airport boundaries (Executive Order 8877). In addition, the Bureau of Land Management determined that under Executive Order 8216, the federal government also owns lands encompassing a portion of submerged and filled lands surrounding Charcoal Island, Alice Island, portions of Japonski Island, the Airport Lagoon, and Mermaid Cove (see **Figure 1**). The Federal Subsistence Board has recently initiated action to include the waters within Executive Order 8216 as part of the federal fisheries jurisdiction. Until that action is complete, federal subsistence regulations would not apply to that area.

Subsistence activities occurring in offshore federal waters are not subject to ANILCA. However, offshore waters and all lands in Alaska are subject to the Marine Mammal Protection Act (16 U.S.C. 1361-1407), the Endangered Species Act, the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Migratory Waterfowl Hunting and Conservation Stamp Act (16 U.S.C. 718-718h). The Marine Mammal Protection Act and the Endangered Species Act forbid the harvest of marine mammals and endangered species except by Native Americans for non-wasteful subsistence purposes.

The Alaska Department of Fish and Game (ADF&G) administers the harvest of fish and wildlife, including for subsistence purposes, on all lands in Alaska except as specifically superseded by federal law. Under state law, subsistence uses are defined without reference to rural residency, in contrast to the federal law. Therefore, under state law, all Alaska residents are eligible for state general, drawing, Tier II, or registration hunts, and for subsistence fishing. Tier II hunts are hunts where the game population is not sufficient enough to provide a reasonable opportunity for all subsistence uses, so the Alaska Board of Game distinguishes among subsistence users through limitations based on (1) the user's customary and direct dependence on the game population by the subsistence user for consumption and (2) the ability of the subsistence user to obtain food if the resource is restricted or eliminated.

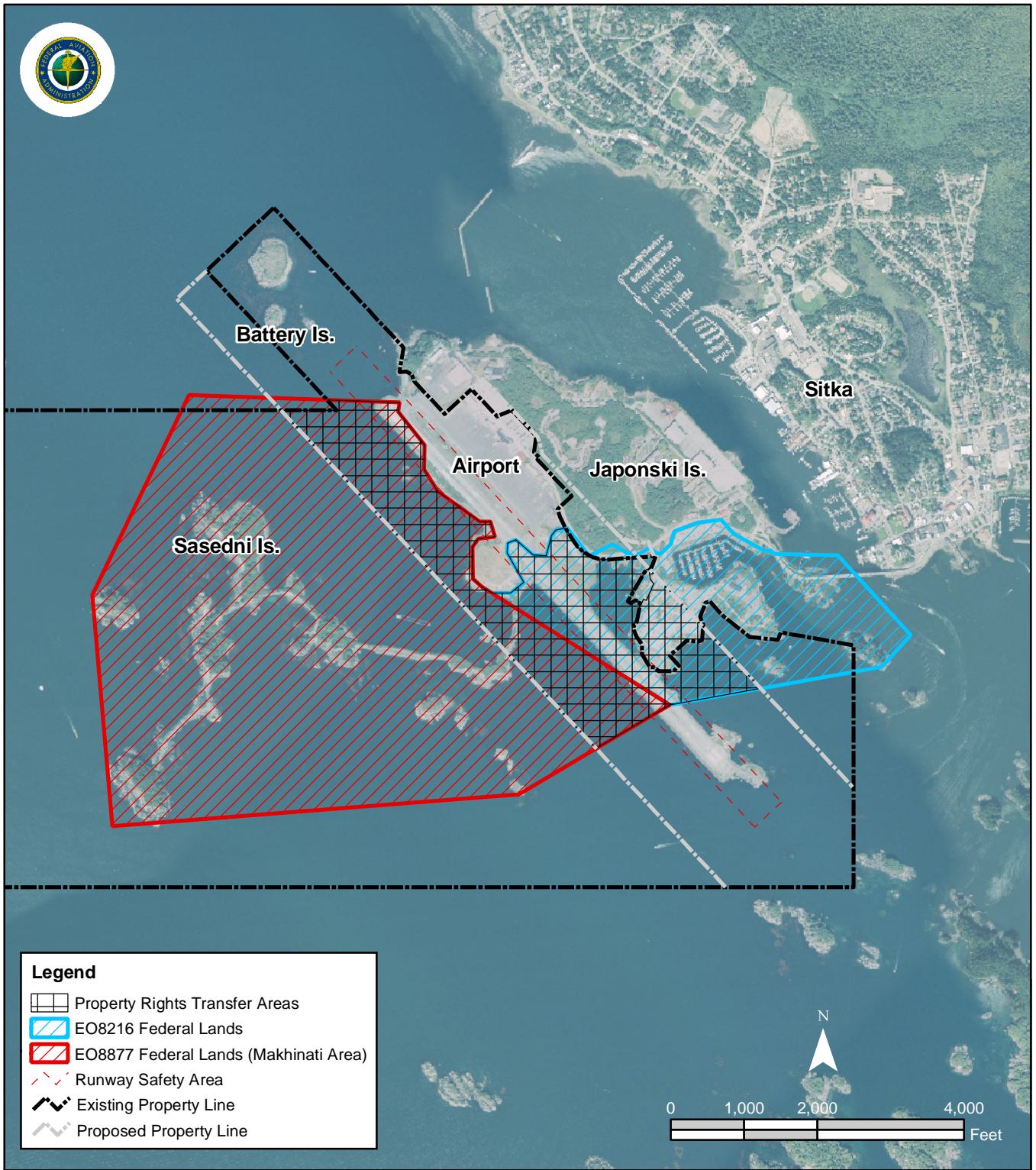


Figure 1 Federal Jurisdictions

Source: BLM, 2009.

Sitka EIS

5 Project Area Description and History

The project area is located in the city and borough of Sitka, Alaska, a community of 8,835 located in southeast Alaska. Sitka is located in the Alexander Archipelago on the west coast of Baranof Island and is approximately 95 air miles southwest of Juneau, and 185 miles northwest of Ketchikan (DCCED, 2007).

Native Tlingit Indians originally settled the Sitka area. The Kiks.adi Clan of the Tlingit Indians lived in and around Sitka centuries before the Russians or Americans. Choosing the seaward side of Baranof Island, which they named Shee, the Tlingits called their settlement Shee Atika, meaning, “people on the outside of Shee.” The name Sitka is a Russian contraction.

The Tlingits lived undisturbed on their island until 1799, when the Russians arrived. The Russians referred to the Tlingits as “Kolosh.” Old Sitka was founded in 1799 by Alexandr Baranov, Manager of the Russian-American Company, with establishment of a fort a few miles north of the present day Sitka. The Tlingits soon came to understand that submission to the Russians meant allegiance to Tzar Paul I and slave labor to the fur trade company. Their suspicions turned to violence; the Tlingits attacked the Russian outpost in 1802, killing nearly all of the Russians. Baranov was forced to levy 10,000 rubles in ransom for the safe return of the surviving settlers.

Baranov returned to Sitka in 1804 with a large contingent of Russians and Aleuts and attacked the Tlingits at Shis'k'i Noow (at present-day Sitka National Historic Park) and after a night of bombardment, the Kiks.adi left in what was known as the Kiks.adi Survival March across Baranof Island to settle temporarily near Kelp Bay. Following the Battle of Sitka the Russians established a permanent settlement in the form of a fort, named “Novo-Arkhangelsk” (or “New Archangel,” a reference to the largest city in the region where Baranov was born). The Kiks.adi returned to Sitka approximately 10 years after the Battle, and the Russians and Tlingit established a trading relationship. In 1808, with Baranov still governor, Sitka was designated the capital of Russian America.

The fur-trade flourished and the Russian-American Company became the most profitable fur trader in the world. However, by mid-century, over-hunting had diminished the number of sea otters, and thus the Russians’ interest in the new world. The Tlingit people, however, remained in Sitka and lived a separate but equal life during the Russian era with the walls of the “Ranch,” which today is known as the Sitka Indian Village.

Sitka was the site of the ceremony in which the Russian flag was lowered and the United States flag raised after Alaska was purchased by the United States in 1867. After the original ceremony, the U.S. government presence in Alaska diminished and consisted of a single customs inspector on the island until after the Klondike Gold Rush brought more government involvement to the area. Sitka would serve as the capital of the Alaska Territory until 1906, when the seat of government was relocated north to Juneau.

In 1885, Dr. Sheldon Jackson formed a school in Sitka, providing Alaska Natives an opportunity to learn western trades in exchange for abandoning their traditional culture. In the early 1900's, Territorial Governor Brady produced an order prohibiting the practice of native culture, and through other laws and orders issued by the new American government, Alaska Natives in Sitka were forced to conform to western ways. Today, the Alaska Native population in Sitka blends western culture with a strong tie to recapturing and maintaining their traditional culture.

In 1878, one of the first canneries in Alaska was built in Sitka. During the early 1900s, gold mines contributed to its growth, and the City was incorporated in 1913. World War II brought additional growth to Sitka, as the town was fortified and the U.S. Navy built an air base on Japonski Island across the harbor, employing 30,000 military personnel and over 7,000 civilians. After the war, the Bureau of Indian Affairs converted some of the buildings to be used as a boarding school for Alaska Natives, Mt. Edgecumbe High School. In 1977, the U.S. Coast Guard took over the buildings and facilities on Japonski Island and now maintains the air station and other facilities on the Island. In 1971, the City and Borough governments were unified.

As of the 2000 census, Sitka's population was 8,835 people, with approximately 68% of the population being Caucasian, 19% of the population being of Alaska Native or American Indian descent, and over five percent being of a variety of minority populations, including African-American, Asian, and Pacific Islanders, among others. A federally recognized tribe is located in the community - the Sitka Tribe of Alaska; Central Council Tlingit & Haida Indian Tribes of Alaska.

During the 2000 U.S. Census, total housing units numbered 3,650, and vacant housing units numbered 372. Vacant housing units used only seasonally numbered 169. U.S. Census data for Year 2000 showed 4,567 residents as employed. The unemployment rate at that time was 7.78%, although 31.84% of all adults were not in the work force. The median household income was \$51,901, per capita income was \$23,622, and 7.81 % of residents were living below the poverty level.

Sitka has one of the most stable and diverse economies in all of Alaska. A regional hospital and clinic, and a regional senior care home combine to make education and health services the largest industry in terms of employment. Local government has the second largest employment in Sitka, and includes the City and Borough of Sitka Offices, the local school district, City and Borough-run utilities, the Sitka Community Hospital, and the Sitka Tribe of Alaska (STA).

State and federal government facilities and functions include a branch of the University of Alaska, Southeast, a State Trooper Academy, Mt. Edgecumbe boarding high school, a large U.S. Forest Service (USFS) office, and several other state and federal agencies.

Other prominent industries include commercial fishing, manufacturing (which includes fish processing, bottled water production, and boat building), and tourism businesses including the large charter fishing industry. In addition, Sitka has a large retail and service sector, which serves the surrounding communities. U.S. Coast Guard Air Station Sitka and other Coast Guard offices (2005 employment of 191) are not counted with civilian employment, and so do not appear in this employment count. Also not included in this count are self-employed individuals such as commercial and charter fishers and some small businesses such as bed and breakfasts.

Sitka's economy largely depends on government, tourism, retail services, public/healthcare services, construction/manufacturing, and transportation/utilities sectors. In the past, Sitka's population also depended on the timber industry, but much of that economic sector disappeared when the Alaska Lumber and Pulp Company closed its doors in 1992. According to the Alaska Department of Labor statistics, in 2005, approximately 855 people were involved in public/healthcare services, which includes education, health, and social services. Government (federal, state, or local) employed another 1,187 people. The tourism sector, including recreation, hospitality, and other services employed an estimated 662 people in the city of Sitka. Retail services accounted for 560 people and the manufacturing/construction sector accounted for 536 residents. Finally, the transportation and utilities sector employed 237 people.

6 Importance of Subsistence

Subsistence hunting, fishing, trapping, and gathering activities are a major focus of life for many Alaska residents. Nearly all rural Alaska communities depend on subsistence resources to meet at least part of their nutritional needs (Wolfe 2000). The reasons for participating in subsistence are many and varied. Some individuals participate in subsistence activities to supplement personal income and provide needed food. Others pursue subsistence activities to continue cultural customs and traditions. Many others participate in subsistence activities for reasons unconnected with income or tradition. For many individuals, subsistence reflects deeply held attitudes, values, and beliefs about where their food comes from, as well as the ability to supply their family directly through their own work.

Within the context of Southeast Alaska's and specifically, the community of Sitka's seasonal and cyclical resource-based employment, subsistence harvest of fish and wildlife resources takes on special importance. The use of subsistence resources play a major role in supplementing cash incomes when the opportunity to participate in the wage economy is low. Because of the high prices of commercial products in remote Alaska communities, the economic role of locally available fish and game takes on added importance.

Rural communities have high subsistence participation rates and rely heavily on wild foods, with approximately 86% of rural Alaska households using wild game and 95% using fish (Wolfe 2000). The opportunity to participate in subsistence activities supports a variety of cultural and related values in rural communities. For example, the distribution of harvested fish and wildlife contributes to community stability through the sharing of resources. Subsistence resources also provide the foundation for Native Alaskan Tlingit culture in southeast Alaska, forming the basis for different clan and potlatch ceremonies, as well as strengthening respect for the earth and its resources.

7 Natural Resource Profile

The major ecosystems found in the Sitka area include the spruce-hemlock forest, freshwater streams and wetlands, coastal marshes and estuarine tidal flats, alpine tundra, muskeg, coastal shorelines, and open ocean (Gmelch, Gmelch, and Nelson . 1985).

The spruce-hemlock forest is habitat for Sitka black-tailed deer, brown bear, smaller furbearing mammals, such as marten, several species of songbirds, and many edible plants. Freshwater streams are habitat for many species of fish, including all five species of Pacific salmon found in Alaska, Dolly Varden, steelhead/rainbow trout, and cutthroat trout. Freshwater wetlands support mink, river otters, and waterfowl. Coastal marshes and estuarine tidal flats are among the richest ecosystems in the Sitka area. The marshes and estuarine areas provide habitat for waterfowl, shorebirds, juvenile fishes, invertebrates such as clams and mussels, mink, edible plants and seaweed, and other wildlife such as brown bears at certain times of the year. The alpine tundra ecosystem is habitat for primarily mountain goats and occasionally Sitka black-tailed deer and brown bear. Muskeg habitats are home to many edible plants and berries, deer, brown bear, and many birds. Finally, coastal shorelines and open ocean habitat support several species of edible seaweed, invertebrates (such as scallops, shrimp, crab, and abalone), many species of fish, and marine mammals such as seals, porpoises, sea otters, and whales.

Resource collection for plants and animals occur throughout the year in the Sitka area, with summer harvest being the most intense collection period. Springtime harvest in the Sitka area often involve collecting shoots of edible plants, herring harvest, and collection of herring eggs, seaweed, clams, and other intertidal resources. Residents primarily harvest fish resources in the summer harvest, either under subsistence, commercial, or sport fishing regulations. Fish harvest primarily involves salmon fishing, with the greatest amount of harvest reserved for sockeye and pink salmon. Fall harvest is primarily hunting, with many residents hunting for Sitka black-tailed deer or mountain goats. Some fishing also occurs in the fall, primarily for coho salmon. Winter is usually the lowest harvest period during the year. Winter harvest often includes trolling for king salmon, trapping, and some collection of intertidal resources. Residents harvest some resources year-round including halibut, herring, chitons, rockfish, Devil's club, and harbor seals (Gmelch, Gmelch, and Nelson 1985).

Sitka as a community is very dependent on resource harvest for subsistence. According to the ADF&G community profile database (ADF&G, 2001), in 1996 (the most representative year to date), approximately 97% of all residents in Sitka report using subsistence resources in any form. As shown in Table 1, approximately 85% of all residents report attempting harvest of subsistence resources, 83% report being successful in harvesting resources, 93% report receiving subsistence resources, and 74% report providing subsistence resources to others.

Table 1 - Sitka Resource Harvest by Major Resource Category

Resource	Percentage of Households					Per Capita Harvest in lbs.
	Use	Try to Harvest	Successful Harvesting	Receive	Give	
All Resources	97.40	84.90	83.20	92.90	74.00	205.01
Fish	95.40	67.10	64.50	81.60	67.20	111.68
Salmon	89.40	60.10	58.00	63.60	50.60	57.83
Non-Salmon Fish	91.70	60.20	57.30	66.80	47.40	53.86
Land Mammals	64.40	43.60	35.60	41.00	24.00	50.96
Large Land Mammals	64.40	43.60	34.80	40.60	23.20	50.88
Small Land Mammals	4.30	3.20	3.20	1.50	1.20	0.09
Marine Mammals	17.20	7.60	7.60	11.50	10.10	7.31
Birds and Eggs	8.20	8.70	7.80	0.70	4.90	0.59
Marine Invertebrates	72.40	44.90	43.70	60.70	32.10	27.47
Vegetation	69.60	60.60	60.20	29.40	28.30	6.99

Source: ADF&G, 2001

The following pages discuss subsistence resources and use in the project area. Much of the information was derived from the ADF&G community profile database (ADF&G, 2001) regarding a study completed in 1996 and an ADF&G Division of Subsistence Technical Report (Gmelch, Gmelch, and Nelson, 1985). The 1996 study is the most representative data on subsistence for the community of Sitka to date. Since that study, changes in subsistence effort, harvest of most species, and use have been minimal and would not change the results of the study. In addition, information was gathered from local residents to ground truth recent subsistence harvest efforts within the project area.

8 Subsistence Resources and Uses

8.1 Fisheries

Many commercial fishing operations throughout southeast Alaska are based in Sitka. Centrally located along the edge of the Gulf of Alaska, Sitka provides access to deepwater fisheries, such as black cod and halibut. In addition, the community is also centrally located on the outer coast of the Alexander Archipelago, providing access to many salmon fishing grounds throughout southeast Alaska.

In Alaska, state and federal regulations define three distinct types of fishing: 1) Fishing for profit (commercial fishing), 2) Fishing for sport by hook and line (sport fishing), and 3) Taking fish resources for personal use (subsistence) with prescribed gear (usually by permit). However, in many cases, the lines between commercial, sport, and personal use fishing are not quite as clearly defined. For example, commercial fishermen may keep a portion of their catch for personal consumption and sport anglers often consider filling the freezer just as important as the pleasure of catching fish (Gmelch, Gmelch, and Nelson, 1985).

In the 1996 ADF&G study (ADF&G, 2001), approximately 67% of all households in Sitka attempted to fish during that year, with approximately 65% harvesting fish (See Table 1). However, the importance of fishing is shown by the statistic that 95% of all households utilize fish resources in 1996. The importance of subsistence in the community's culture also is shown by the following statistic; 82% of residents receive fish from others and 67% give fish to others.

8.1.1 Salmon

In Sitka, as in most of coastal Alaska, salmon is the lifeblood of the community. In addition to sustenance for individuals and families in Sitka throughout the year, salmon provide job opportunities through commercial fishing, fish processing, sport fish guiding, and other ancillary jobs associated with fishing, such as hotels, restaurants, and other service industries. The salt and freshwaters around Sitka are home to all five species of Pacific salmon found in Alaska: the Chinook (or king) salmon, the sockeye (or red) salmon, the pink (or humpy) salmon, the coho (or silver) salmon, and the chum (or dog) salmon.

Residents of Sitka fish for salmon in many locations. Many people fish locally along most of the Baranof Island coast, particularly in Sitka Sound, for all species of salmon found in Alaska. These fishing locations include marine areas within the Airport project area. The most popular salmon in terms of harvest for the Sitka area is sockeye salmon, followed by pink salmon. Coho salmon were third in harvest per household, with king salmon and chum salmon being fourth and fifth, respectively.

8.1.2 Non-salmon fish

Of equal importance to Sitka residents is non-salmon fish, primarily species such as halibut, black cod, lingcod, rockfish, herring, rainbow trout, cutthroat trout, Dolly Varden, and eulachon. The vast majority of non-salmon fish harvest is herring and herring roe, followed by halibut, rockfish, lingcod, Dolly Varden, and rainbow/steelhead trout respectively. As with salmonids, commercial fishing includes species such as herring, halibut, rockfish, and black cod in the Sitka area. Fish such as halibut, rockfish, Dolly Varden, and trout are also sport fished. In terms of economic importance, non-salmon fishes are just as important as salmon to the economic well-being of the community. Locations for fishing non-salmon fish are similar to salmon fishing areas. In many cases, Sitka residents fish for multiple species in a single outing, particularly for ground fish such as halibut, rockfish, and lingcod.

8.1.2.1 Herring

Herring eggs are an important resource in Sitka, both for subsistence and commercial uses. In early spring, usually in April, herring spawn in the waters around Sitka. The male fish emit their milt (semen) into the water. The females then deposit their roe in the milt, completing the fertilization process. The developing eggs fasten to kelp, seaweed, rocks, or any object placed in the water. The eggs sometimes occur in such numbers that they form wave rows on the beach, and many local residents recall a time when the herring spawned in such numbers that bays and shoreline around Sitka turned white and milky.

The ADF&G regulates both the subsistence and commercial harvest of herring eggs in Sitka Sound. Current ADF&G regulations set the subsistence harvest limits for herring spawn on kelp to 32 pounds for an individual or 158 pounds per household. There are no harvest limits for herring or herring spawn on other egg deposition material. Table 2 shows the total subsistence harvest of herring roe on all material (or substrates) in Sitka Sound from 1997 and 2002 to 2008 (USFWS, 2008).

Table 2 – Subsistence Harvest of Herring Roe on All Substrates in Sitka Sound (USFWS, 2008)

Year	Total Roe Harvest (lbs.)
1997	127,174
2002	151,717
2003	278,799
2004	293,579
2005	75,572
2006	219,356
2007	87,211
2008	Pending
Average	176,201

Subsistence harvest of herring eggs is very important to many families in Sitka. In terms of the number of households harvesting and the quantities harvested, approximately 15% of Sitka households collected herring eggs in 1996, and the per capita harvest was 15 pounds.

Sitka residents harvest herring eggs for personal use in two ways: 1) by placing hemlock branches into the intertidal zone, and 2) by collecting the eggs that have formed naturally on seaweed or kelp. In Sitka, the first method (hemlock branches) is the preferred method of harvest. Hemlock branches or entire trees are cut, attached to a buoy or line from the beach, and lowered into the water. Collectors leave the branches or trees in the water to collect and then recover eggs from the branches. Residents also harvest herring eggs from kelp and seaweed. Most people go by boat to kelp beds and pull up the egg-laden kelp with hooks. A few people dive into kelp or seaweed and pull it up by hand. Still others bring kelp or seaweed into an area prior to the spawn and then collect it as they would hemlock branches. The most popular seaweed for eggs is maiden hair seaweed or "hair kelp". Residents collect the seaweed at low tide where the eggs show up as a large white ball or spot in the water. Other seaweeds from which eggs are collected include ribbon kelp, giant kelp, and eelgrass.

Herring eggs are collected many places in Sitka Sound, usually within 10 miles of town and often right along the city's shoreline. Areas noted in the 1985 Gmelch, Gmelch, and Nelson study include much of the Airport study area, including Japonski Island and Whiting Harbor. Actual harvest areas vary each year, depending on where the herring spawn.

The commercial harvest of herring roe also occurs throughout much of Sitka Sound. From 1992 to 2008, all or a portion of the federal public waters in areas encompassed by E.O. 8877 and E.O. 8216 were open to commercial harvest for 6 of the 17 years (1993, 1999, 2001, 2003, 2005, and 2006). State regulations require ADF&G to distribute the commercial harvest by changing fishing times and locations if the department (ADF&G) determines that it is necessary to ensure that subsistence users have a reasonable opportunity to harvest the amount of herring spawn necessary for subsistence uses (5 AAC 27.195).

The Sitka Sound herring roe fishery is the largest herring roe fishery in Southeast Alaska. In addition, the amount of herring biomass has increased over the past 30 years. Table 3 shows the statistics for the Sitka Sound commercial herring sac roe fishery from 1978 to 2008 (USWFS, 2008 & E. Coonradt, Fisheries biologist, ADF&G-Commercial Fisheries personal communication, January 12, 2008).

Table 3 – Commercial Sac Roe Herring Harvest and Herring Spawn Information, Sitka Sound (USFWS, 2008 and E. Coonradt, personal communication)

Year	Forecast Biomass (tons)	Quota (tons)	Harvest (tons)	Spawn Deposition Estimate (tons)	Catch + Escapement = Return (tons)	Roe Percent	Date CF opened	Date of First Spawn	Nautical Miles Spawn
1978	4,500	250	175	2,700	2,875	11.0	Apr 05	Apr 08	13
1979	20,300	2,000	2,250	17,750	20,000	9.3	Apr 12	Apr 13	41
1980	39,500	4,000	4,385	35,100	39,485	10.8	Apr 04	Apr 03	63
1981	27,000	3,000	3,506	30,000	33,506	11.0	Mar 24	Mar 22	60
1982	30,000	3,000	4,363	29,700	34,063	11.7	Mar 30	Mar 24	41
1983	32,850	5,500	5,450	23,250	28,700	11.1	Mar 26	Mar 21	68
1984	30,550	5,000	5,830	38,500	44,330	11.1	Mar 26	Mar 21	65
1985	38,500	7,700	7,475	30,950	38,425	11.3	Mar 29	Mar 29	61
1986	30,950	5,029	5,443	24,750	30,193	11.9	Apr 02	Mar 27	52
1987	24,750	3,600	4,216	46,050	50,266	9.9	Mar 31	Mar 21	86
1988	46,050	9,200	9,575	58,650	68,225	9.5	Apr 04	Mar 23	104
1989	58,500	11,700	12,135	27,200	39,335	9.4	Mar 31	Mar 19	66
1990	27,200	4,150	3,804	22,750	26,554	10.6	Apr 05	Mar 31	39
1991	22,750	3,200	1,908	23,450	25,358	8.9	Apr 10	Apr 01	45
1992	23,450	3,356	5,368	48,600	53,968	9.4	Apr 06	Mar 28	73
1993	48,500	9,700	10,186	35,500	45,686	10.7	Mar 27	Mar 24	55
1994	28,450	4,432	4,758	14,026	18,784	11.0	Mar 29	Mar 28	58
1995	19,700	2,609	2,908	40,169	43,077	11.8	Mar 25	Mar 21	37
1996	42,265	8,144	8,144	36,372	44,516	9.6	Mar 23	Mar 22	46
1997	54,500	10,900	11,147	27,126	38,273	11.5	Mar 18	Mar 19	41
1998	39,200	6,900	6,705	34,943	41,648	10.2	Mar 16	Mar 19	65
1999	43,600	8,476	9,136	44,610	53,746	10.7	Mar 22	Mar 22	60
2000	33,365	5,120	4,813	54,399	59,212	9.9	Mar 19	Mar 19	55
2001	52,985	10,597	11,972	51,000	62,972	10.9	Mar 22	Mar 23	61
2002	55,209	11,042	9,789	39,719	49,508	10.9	Mar 27	Mar 24	43
2003	39,319	6,969	7,051	54,875	61,926	10.7	Mar 22	Mar 23	47
2004	53,088	10,618	10,490	67,379	77,869	10.8	Mar 21	Mar 27	80
2005	55,962	11,192	11,366	101,305	112,671	11.5	Mar 23	Mar 24	40
2006	52,059	10,412	9,967	65,126	75,093	10.5	Mar 24	Mar 25	57
2007	59,519	11,904	11,571	79,598	91,169	11.4	Mar 26	Mar 28	50
2008	87,715	14,723	14,400	247,088*	70,183	11.5	Mar 25	Mar 27	55
Longterm Average	39,429	6,917	7,116	47,663	49,387	11.0			55.7
5-year Average	61,669	11,770	11,619	112,099	76,548	11.1	Mar 24	Mar 25	56.4

* Note – The 2008 spawn deposition survey showed record high level egg deposition. Due to uncertainty of the estimates, the forecast is based on a model that, for the first time in 2008, gives weight to spawn deposition estimates in proportion to uncertainty of the estimates. For 2008, the uncertainty was very high and the weight given to the spawn deposition survey, in the model, was very low.

The relative volume of subsistence and commercial harvest of herring eggs in Sitka Sound over the last 10 years has led to some dispute between ADF&G and the Sitka Tribe of Alaska (STA) on the management of herring roe harvest. The STA is concerned that the commercial harvest affects subsistence harvest of herring roe (USFWS, 2008). In response to a poor subsistence harvest in 2001, the STA submitted a proposal to the Board of Fisheries in 2002 requesting the herring sac roe commercial fishery be dispersed throughout Sitka Sound to avoid concentrating commercial harvest in traditional subsistence harvesting locations. In response to the STA's proposal, the Alaska Board of Fisheries removed the permit requirement for subsistence harvest and established a minimum for subsistence harvest of herring roe in Sitka Sound at 105,000 to 158,000 pounds (5 AAC 01.716). In 2002, ADF&G, the Alaska Board of Fisheries, and the STA signed a Memorandum of Agreement to collaborate, communicate, collect, and share data on herring spawn in Sitka Sound (USFWS, 2008). Data gathered by STA indicated that herring roe harvest met the established minimum subsistence harvest every year except for 2005 and 2007 (Table 2).

8.2 Terrestrial Mammals

Hunting is also an important activity to the community of Sitka. For many people, hunting is an important source of nutritious food and a highly valued outdoor pursuit. It is also a significant part of the community social network, as many hunters bond over experiences and share the proceeds of their success. The vast majority of hunting by Sitka residents is for large mammals, such as Sitka black-tailed deer or bear. Approximately 64% of households use large mammals for subsistence, and 44% of all households attempt to harvest large mammals (Table 1). Other than waterfowl, very few people hunt for small game, such as blue grouse or snowshoe hare. Deer is by far the primary species hunted, with waterfowl and mountain goat a distant second and third, respectively. While much of the project area is not habitat to most terrestrial mammals, deer and brown bear are occasionally seen in the area, and waterfowl often congregate at the Airport Lagoon during spring and fall migration. However, the Airport property is closed to the discharge of firearms, so no waterfowl hunting occurs at the Airport Lagoon.

8.3 Marine Mammals

Under the Marine Mammal Protection Act of 1972, only Alaskan Natives are permitted to harvest marine mammals. In the 1996 community study, approximately 8% of all Sitka households had harvested marine mammals, with 7% harvesting harbor seals, 3% harvesting sea otters, and less than 1% harvesting sea lions (ADF&G, 2001).

All seals harvested in the Sitka region are harbor seals. The average weight of an adult harbor seal is about 180 pounds and length is 5 to 6 feet (ADF&G, 1994). There is no bag limit, but hunters are required not to waste the carcass, which means using either the meat or hide. Seals are generally hunted from late fall through early spring.

During the cold weather season, the seals are fatter, so fewer seals will sink when shot. In addition, many Alaska Natives believe the hide is better quality during this period than in summer.

The Alaska Sea Otter Commission estimated that Alaska Natives harvested 66 sea otters in the Sitka area in 1996. Many harvest sea otters primarily for their fur to use in clothing or handicrafts. Alaska Natives rarely harvest sea lions because they currently have little use of them. The hide is not as useful as seal for clothing and crafts as sea lion hair is sparse and coarse, and Sitka Natives typically do not eat the meat. The only significant use of sea lions is the whiskers, Sitka Natives use in a type of dance headdress called a shak.ee.at (Gmelch, Gmelch, and Nelson, 1985). The Sitka Tribe has started a tannery to help tribal members process hides from marine mammals and other subsistence resources, such as deer, goat, and furbearers.

8.4 Collecting

8.4.1 Eggs

In the 1985 Gmelch, Gmelch, and Nelson study, less than 1% of the households surveyed had harvested seagull eggs the previous year and all were Native households. Seagull eggs are large, about twice the size of chicken eggs, and Alaska Natives used them in the same way as chicken eggs. Current migratory waterfowl management in Alaska prohibits the taking of seagull eggs. The 1985 study (Gmelch, Gmelch, and Nelson 1985) also identified favorite locations for gathering seagull eggs in the Sitka area, including Beili Rocks and Sea Lion Islands. There is no documentation of egg collection in the project area.

8.4.2 Marine Invertebrates

As a coastal community, residents of Sitka heavily utilize marine invertebrates. Sitkans harvest many types of marine invertebrates, including crabs, clams, cockles, abalone, gumboots (chitons), sea cucumbers, sea urchins, scallops, mussels, and octopus. Some of these resources, such as cockles and gumboots, are traditional Alaska Native foods that remain popular among Native people (Gmelch, Gmelch, and Nelson, 1985). Others, such as crabs and abalone, are popular amongst all residents. Table 2 lists the intertidal species targeted for harvest by Sitka residents and the percentage of Sitka households that harvested them in 1996. As seen in the table, crabs, clams, and shrimp, are the favored resources for harvest, closely followed by abalone.

Table 2 - Sitka Marine Invertebrates Resource Harvest

Resource	Percentage of Households					Per Capita Harvest in lbs.
	Use	Try to Harvest	Successful Harvesting	Receive	Give	
All Marine Invertebrates	72.40	44.90	43.70	60.70	32.10	27.47
Abalone	24.50	13.30	13.30	13.70	6.30	0.52
Chitons	14.80	8.90	8.60	9.40	7.00	1.07
Clams	43.60	32.10	31.70	14.40	12.90	4.65
Crabs	59.30	31.90	31.00	39.60	20.00	11.79
Geoducks	3.70	0.40	0.40	3.70	0.00	0.01
Mussels	2.90	2.90	2.90	0.00	0.40	0.06
Scallops	6.50	2.10	2.10	4.40	0.00	0.03
Shrimp	43.60	17.40	17.40	35.50	11.70	6.35

Source: ADF&G, 2001

Clams are the most commonly harvested intertidal resource and the second most common marine invertebrate in Sitka: 44% of survey households had harvested them in 1996. Several species are found in Sitka, including butter (or hardshell) clams, steamers (or Pacific littleneck) clams, razor clams, cockles, pinkneck (or Alaska surf) clams, soft-shell clams, and horse clams. The major target species discussed below are butter clams, littleneck clams, and cockles.

The butter or hardshell clam, also known as the northern quahog, is the most abundant species in the Sitka region in terms of its both availability and actual harvest levels. Adults average about four inches in diameter. Residents can easily find butter clams at low tide in the numerous gravel and rock beaches around Sitka.

The steamer or Pacific littleneck clam is smaller than the butter clam, averaging two inches in diameter, but it occupies the same habitat. The per capita harvest of butter and littleneck clams was approximately 4 pounds and 1 pound respectively.

Residents can find clams throughout the year, but only collect them during certain months due to the threat of paralytic shellfish poisoning (PSP). During the warm summer months and early autumn, phytoplanktons inundate the waters of many coastal areas. Some of the phytoplankton produces neurotoxins that mollusks ingest during feeding and concentrate in their tissues. The principal neurotoxin is saxitoxin, which is a strong natural poison. Of all marine invertebrates, clams and mussels are the most dangerous to consumers.

Many people, especially those without a boat, dig clams close to town. Those with boats travel further to some of the islands in Sitka Sound. Some individuals gather clams along portions of Japonski Island, directly adjacent to the Airport.

Abalone was the third most popular intertidal resource and the fifth most popular invertebrate harvested by Sitka residents. Thirteen percent of Sitka residents had gathered them in 1996. The per capita harvest over ½ pound. The species harvested is the pinto abalone, the only species of abalone found in Alaska. It is abundant along the coastal waters of southeastern Alaska from Icy Straits south to Dixon Entrance. Abalones are a delicacy and are highly prized. Collectors usually find the pinto abalone clinging to cracks and crevices in rocks in thick kelp beds where surging waves cannot easily dislodge them. On more exposed islands and rocks, residents often find abalone on the lee side where they can maintain their hold on the rocks. The pinto abalone grows to six inches in length, but collectors rarely find any longer than 5.5 inches. ADF&G personal use regulations for District 13, which includes Sitka, require that harvested abalone be at least 3.5 inches in diameter. In 2007, regulations allow collectors to gather a daily bag and possession limit of 50 abalone per person.

Residents can harvest abalone throughout the year. The primary method of harvest is hand picking in the intertidal zone. Intertidal collecting involves walking out onto the rocks at extremely low tides (minus 2-3 ft) and hand picking or prying the abalone off the rocks with a small knife or pry bar. Some people wear wetsuits and then snorkel around the rocks, prying off the abalone. Collectors find and collect abalone on rocks within the project area on portions of Japonski Island and Battery Island, adjacent to the Airport.

Residents also find chitons or gumboots in the Sitka area. Sitka residents harvest two species of chitons; the giant Pacific chiton or gumboot, and the lined chiton. All are edible, and people often use the term "gumboot" to describe both species. Approximately 9% of Sitka households collect gumboots according to the 1996 study (ADF&G, 2001). Per capita harvest is over one pound. Gumboots occupy boulder-strewn, wave-beaten outer beaches, not gravel, sand, or mud habitats like most other mollusks.

According to Gmelch, Gmelch, and Nelson (1985), gumboots are a special-occasion food, not a daily staple. Locals serve gumboots at feasts, potlucks, celebrations, holidays, and special Alaska Native events. Residents harvest gumboots on portions of Japonski Island, directly adjacent to the Airport.

Residents can find several species of sea cucumbers in the Sitka area, but only eat one, the Yein sea cucumber. Sea cucumbers present challenges for subsistence use as they require considerable effort to obtain and process for a small amount of food, and they are highly perishable. The sea cucumber is an echinoderm like starfish and sea urchins and resembles a bumpy cucumber. Those in the Sitka area average about four inches in length and residents can easily collect them in the intertidal zone. Approximately 4% of Sitka households harvested sea cucumbers (ADF&G, 2001). Some residents collect sea cucumbers in areas around the Airport.

Approximately 2% of Sitka households harvested sea urchins in the 1996 study. Several species occur in the project area, including the purple urchin, red urchin, and green urchin. Sea urchins have the same disadvantages as sea cucumbers for food in that they require considerable effort to obtain and process for a small amount of food, and they are highly perishable. Furthermore, the prime season for eating urchins, when the gonads mature, is approximately one month in duration. In addition, other more desirable resources are abundant and therefore the sea urchin is not commonly used.

About 3% of sample households collected mussels. Blue mussels are the primary species of harvest. Collectors can find mussels in intertidal waters throughout the project area. Like clams, residents only harvest mussels in winter or spring, as they are susceptible to PSP toxins.

Residents collect other intertidal resources like starfish, broken clamshells, herring, and fish heads for use as garden fertilizer. Approximately 35% of those households with gardens harvested starfish (11% of the entire sample) for this purpose. Starfish and shells are high in lime and nitrogen and make an excellent fertilizer. An additional 12% of survey households used fish heads (38% of those with gardens) and 7% used herring (22% of those with gardens).

8.5.3 Vegetation

Plant gathering is the second most popular resource use activity in Sitka when measured by the number of households that engage in it. Approximately 61% of Sitka households had gathered berries, greens, roots, or mushrooms in 1996. In addition, 16% of households had collected wood from local beaches, forests, and ocean beaches. Residents use wood for construction, handicrafts, and smoking fish and game. Edible plants are also abundant in the Sitka area. The main habitats where residents find edible plants in the Sitka region include bogs (muskeg), the upper beach rocks and meadows, old growth forest edges, logged areas, sub-alpine, and disturbed areas. Sitka residents gather plants along the roadside or in the forests of their immediate neighborhood.

Substantial travel is only necessary to find resources like cranberries, nagoonberries, strawberries, and certain mushrooms, which may be unavailable or scarce near Sitka. When this is the case, residents often gather plants and berries coincidentally to other activities such as boating, beachcombing, fishing, camping, or exploring (Gmelch, Gmelch, and Nelson, 1985).

Plant gathering is the easiest of the harvest activities, especially for the majority who only harvest berries. As mentioned above, it can be done close to home, equipment is minimal, and little experience is required. Other types of plant collection, however, often demand substantial knowledge. Making full use of the plants requires a familiarity with edible plant identification, productive locales, harvest times, preparation and preservation methods, and non-food uses (such as medicine or dyes).

In traditional times, the Tlingits used a wide assortment of plants. Modern residents of Sitka do not use as many plants as historical residents for subsistence. However, some residents still use an impressive range of plants, including a wide variety of berries, greens, roots, mushrooms, and wood.

Approximately 56% of Sitka households harvest berries during the summer and early fall, with the prime months being July and August. Residents use berries in a variety of ways. The most common use of berries is to eat them raw. Many people, however, bring back large quantities to freeze, make into pies, sauces, or preserve as jams and jellies. Others use berries to make liquors and wines.

The berries most commonly picked in the Sitka area are blueberries, salmonberries, and huckleberries. Other berries collected in the Sitka area include stink currants, cranberries, thimbleberries, red elderberries, cloudberry, strawberries, and nagoonberries. Of the different types of berries, residents only collect salmonberries within the project area. Salmonberries are orange and red berries that ripen in late June through July on large shrubs that form dense thickets in open areas such as roadsides, shorelines, and forest clearings.

The Sitka area contains many edible wild greens. Local residents regularly harvest 15 different species of greens (Gmelch, Gmelch, and Nelson, 1985). However, the percentage of households harvesting the various greens is substantially less than the number harvesting berries; only 20% of households harvest greens. The most commonly harvested greens in the project area are goosetongue, Devil's Club, beach asparagus, and Labrador Tea.

Goosetongue is a plantain that is abundant around Sitka, growing in the cracks of rocks just above the high tide line. A large patch grows on Japonski Island. It is popular because of its good taste and long edible season. Sitka residents harvest goosetongue from spring until August; although some residents claim that June is the best month for harvest.

Labrador Tea is the third most commonly used "green" in the Sitka area. Approximately 10% of survey households had collected it. It grows abundantly in muskegs and wetland alpine meadows. Residents can harvest the leaves year round. Once picked, they are dried and then boiled to make a tea.

Devil's Club is a member of the ginseng family. It grows abundantly in the moist, well-drained soils of forests around Sitka. The stalks are covered with sharp spines and grow up to 1.5 inches in diameter. Sitka residents collect both stalks and roots, primarily for medicinal use. The most common use is as an all-purpose elixir, usually made by heating the dried roots or stems in water just below the boiling point for several hours.

Sitka residents also harvest beach asparagus in the project area. Locals collect this small plant, which grows in thick bunches or mats on tidal flats. This delicious vegetable tastes like asparagus and residents commonly eat it raw as a salad green.

8.5.4 Wood

Approximately 16% of Sitka households had collected wood for use in handicrafts or had harvested wood for smoking fish or venison. The use of wood for handicrafts ranged from gathering small pieces of driftwood for use in dried flower arrangements and natural sculptures to special woods cut for crafts and carvings, such as totems. A small number of Alaska Natives still harvest spruce roots to make the traditional, finely woven Tlingit baskets. Many Sitka residents collect alder for smoking meat and fish.

The 1996 Sitka study (ADF&G, 2001) did not examine the use of wood for home heating and construction. However, the Gmelch, Gmelch, and Nelson (1985) study found that 69% of survey households collected wood in the last year (1982). The study found most residents gathered drift logs from Sitka's beaches, primarily from fugitive logs from the local pulp mill that is now closed. Other residents harvested wood from the forest, pulled logs from the water, or collected wood from other sources. The most important use of wood was for home heating: The mean percentage of home heat derived from harvested wood was 48%, with 12% of the survey households relying exclusively on wood heat.

8.5.5 Seaweed

Many Sitka households harvest seaweeds and kelp. The most popular species collected by the survey households in the 1996 study were black seaweed by 10%; red or ribbon seaweed by 5%; and bull kelp by 5% of households. The per capita harvest of black seaweed collected was 0.5 pounds; red seaweed it was 0.1 pounds; and for kelp, it was less than 0.1 pounds.

Residents harvest black seaweed at two times of the year: spring and winter. Households harvest the spring growth during a two-week period beginning in late April or early May. A second spring growth is ready a month later and residents harvest that growth for a two or three-week period only. Seaweeds come into season at slightly different times in different locations around Sitka, apparently depending on water temperature. Many residents consider May the best time to gather black seaweed. Winter seaweed, the third growth, is available in February. It is more tedious to harvest because it is shorter and harder to pull off the rocks.

Black seaweed acquires a washed out look when it is old and no longer growing and edible. Residents often pick black seaweed on a minus tide by pulling it off the rocks. There is access to black seaweed from several locations on Japonski Island within the project area. Many Alaska Natives consider seaweed a delicacy or prestige food. Black seaweed is very expensive to buy if a household cannot collect its own supply.

Red seaweed grows from 5 to 15 feet in length and is reddish-brown in color. It grows year round on rocks or on bull kelp in the intertidal and subtidal zones. As with black seaweed, it also acquires a washed out look when it/old and no longer growing and edible.

Bull kelp is usually collected from a boat when it is intended for use as food. Many residents use a long pole with a "T" on the end of it, twisting it up from the bottom. When they want to collect it for garden fertilizer or a soil substitute, many people wait until February and harvest it off the beach after big winter storms.

The most common use of kelp, however, is not as a food but as a fertilizer, and in some cases a soil substitute for gardens. In Gmelch, Gmelch, and Nelson (1985), 57% of survey households with gardens and 17% of the entire sample harvested kelp for use as fertilizer. According to the Sitka Cooperative Extension agent, kelps and seaweeds add body and nutrients to the soil, make plants more disease and frost resistant, and possibly, contribute to an improved shelf-life for fruits.

9 ANILCA § 810(a) Evaluations and Findings for All Alternatives and the Cumulative Case

The following evaluations are based on information relating to the environmental and subsistence consequences of all alternatives and the cumulative case as presented in Chapter 4 (Environmental Consequences) and Chapter 5, Cumulative Impacts of the EIS. This section also considers stipulations discussed in Chapter 2, Alternatives of the EIS for the alternatives to which they apply. The beginning of this Appendix provides information on what is required under ANILCA § 810 for an evaluation of "public lands," including the definition of "public lands." In contrast, Chapter 4 (Environmental Consequences) of the EIS evaluates the impacts to subsistence on all lands, not just federal lands. The evaluations and findings focus on potential impacts to the subsistence resources themselves, as well as access to resources, and changes to subsistence harvesting patterns.

The evaluation used the following definitions to determine level of impact for the evaluation and findings. The threshold of significance and the level of impact from the build alternatives were developed using acres of available habitat for all subsistence species impacted by the proposed actions within Sitka Sound and miles of shoreline used for herring spawn (an average of approximately 56 miles of shoreline used for herring spawn from 1978 to 2008), and best professional judgment combined with scoping comments submitted by Sitka residents and consultation with subsistence users.

Evaluation and Findings for RSA Alternative 1

RSA Alternative 1 of the EIS would result in no changes to the runway safety areas on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

RSA Alternative 1 would make no changes to the runway safety areas on federal public lands or waters at the Sitka Airport. For all lands in the project area, the analysis of RSA Alternative 1 presented in **Section 4.17.5.1.1** (RSA Alternatives, Subsistence) of the EIS concludes that this alternative would result in no short- and long-term impacts on subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

RSA Alternative 1 does not affect federal public lands, so there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes
RSA Alternative 1 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of the Airport property and the area immediately surrounding it would occur.

Findings

RSA Alternative 1 would not significantly restrict subsistence resources and uses as there would be no impacts to subsistence resources and access on federal public lands.

Evaluation and Findings for RSA Alternative 2

RSA Alternative 2 of the EIS would result in no changes to the runway safety areas on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

RSA Alternative 2 would make no changes to the runway safety areas on federal public lands or waters at the Sitka Airport. Ground disturbance related to this alternative would occur on existing land at the end of each runway and no subsistence resources are located in either of these areas.

For all lands in the project area, the analysis of RSA Alternative 2 presented in **Section 4.17.5.1.2** (RSA Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts on subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

RSA Alternative 2 does not affect federal public lands, so there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

RSA Alternative 2 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of the Airport property and the area immediately surrounding it would occur.

Findings

RSA Alternative 2 would not significantly restrict subsistence resources and uses as there would be no impacts to subsistence resources and access on federal public lands.

Evaluation and Findings for RSA Alternative 3

RSA Alternative 3 of the EIS would result in no changes to the runway safety areas on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

RSA Alternative 3 would include installation of a 40-knot EMAS bed on the Runway end 11 and a 55-knot EMAS on the Runway end 29 with a 60-foot landmass extension. This alternative would not construct additional landmass on the Runway end 11, and the alternative would limit all ground disturbances in this area to the existing graded area at the end of the runway. Ground disturbance would also occur within the existing graded area at the Runway end 29, and the alternative would place additional fill material below MHHW to extend the landmass. Placement of fill material on the sea floor below MHHW as part of the landmass extension would affect marine plant and animal habitat. Short-term impacts to these populations would be adverse, as fill material covers existing marine plants and animal habitats. Some loss of marine invertebrates of interest in subsistence harvests (e.g., abalone, chitons) would be expected due to crushing as the material is placed during construction. Over time (one or more years), marine plants would re-inhabit the new fill material and fill over soft seafloor would create additional rocky habitat for marine invertebrates and fish.

Fill material would cover approximately 1.66 acres over existing armor rock and 1.56 acres of natural sea floor adjacent to the runway. RSA Alternative 3 also affects 331 feet of shoreline. This represents approximately 0.005 percent of the 67,840 acres of marine habitat available for subsistence uses and 0.01 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

Very few subsistence users gather marine resources located immediately off Runway end 29, primarily because of contaminant concerns related to the city's sewer outfall. Further, access around the end of the runway to more preferred hunting, fishing, and gathering locations would not be restricted or altered from its current condition.

RSA Alternative 3 would make no changes to the runway safety areas on federal public lands or waters at the Sitka Airport. For all lands in the project area, the analysis of RSA Alternative 3 presented in **Section 4.17.5.1.3** (RSA Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts on subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

RSA Alternative 3 does not affect federal public lands, so there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

RSA Alternative 3 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of the Airport property and the area immediately surrounding it would occur.

Findings

RSA Alternative 3 would not significantly restrict subsistence resources and uses as there would be no impacts to subsistence resources and access on federal public lands.

Evaluation and Findings for RSA Alternative 4

RSA Alternative 4 of the EIS would result in no changes to the runway safety areas on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

RSA Alternative 4 would consist of the installation of a 70-knot EMAS bed on Runway end 29 with a 160-foot landmass expansion. This alternative would not undertake any ground disturbance or landmass extension at the Runway end 11. Ground disturbance would occur within the existing graded area at the end of Runway 29, and the alternative would place additional fill material off that runway end to extend the landmass.

Placement of fill material on the sea floor below MHHW as part of the landmass extension would affect marine plant and animal habitat. Short-term impacts to these populations would be adverse, as fill material covers existing marine plants and animal habitats. Some loss of marine invertebrates is expected due to crushing. Over time (one or more years), marine plants would re-inhabit the new fill material and fill over soft seafloor would create additional rocky habitat for marine invertebrates and fish.

Fill material would cover approximately 2.3 acres of existing armor rock below HTL and 2.90 acres of natural sea floor adjacent to the runway. RSA Alternative 4 would also affect approximately 488 feet of shoreline. This represents approximately 0.008 percent of the 67,840 acres of marine habitat available for subsistence uses and 0.16 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

Similar to RSA Alternative 3, very few subsistence users gather marine resources located immediately off Runway end 29, primarily because of contaminant concerns related to the city's sewer outfall. Further, access around the end of the runway to more preferred hunting, fishing, and gathering locations would not be restricted or altered from its current condition.

RSA Alternative 4 would make no changes to the runway safety areas on federal public lands or waters at the Sitka Airport. For all lands in the project area, the analysis of RSA Alternative 4 presented in **Section 4.17.5.1.4** (RSA Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts on subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

RSA Alternative 4 does not affect federal public lands, so there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

RSA Alternative 4 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of the Airport property and the area immediately surrounding it would occur.

Findings

RSA Alternative 4 would not significantly restrict subsistence resources and uses as there would be no impacts to subsistence resources and access on federal public lands.

Evaluation and Findings for RSA Alternative 5

RSA Alternative 5 of the EIS would result in no changes to the runway safety areas on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

RSA Alternative 5 would consist of the use of declared distances paired with a 280-foot landmass expansion on the Runway end 29 and installation of grooved pavement on the RSA ends. This alternative would not construct additional landmass on the Runway end 11, and it would limit all ground disturbances in this area to the existing graded area at the end of the runway. Ground disturbance would occur within the existing graded area at the Runway end 29, and the alternative would place additional fill material to extend the landmass. Placement of fill material on the sea floor below MHHW as part of the landmass extension would affect marine plant and animal habitat. Short-term impacts to these populations would be adverse, as fill material covers existing marine plants and animal habitats. Some loss of marine invertebrates is expected due to crushing. Over time (one or more years), marine plants would re-inhabit the new fill material and fill over soft seafloor would create additional rocky habitat for marine invertebrates and fish.

Fill material would cover approximately 2.65 acres of existing armor rock below HTL and 4.54 acres of natural sea floor adjacent to the runway. RSA Alternative 5 would also affect approximately 622 feet of shoreline. This represents approximately 0.01 percent of the 67,840 acres of marine habitat available for subsistence uses and 0.2 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

As with RSA Alternatives 3 and 4, very few subsistence users gather marine resources located immediately off Runway 29, primarily because of contaminant concerns related to the city's sewer outfall. Further, access around the end of the runway to more preferred hunting, fishing, and gathering locations would not be restricted or altered from its current condition.

RSA Alternative 5 would make no changes to the runway safety areas on federal public lands or waters at the Sitka Airport. For all lands in the project area, the analysis of RSA Alternative 5 presented in **Section 4.17.5.1.5** (RSA Alternatives, Subsistence) of the EIS concludes that this alternative would result low short-term and no long-term impacts on subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

RSA Alternative 5 does not affect federal public lands, so there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes
RSA Alternative 5 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of the Airport property and the area immediately surrounding it would occur.

Findings

RSA Alternative 5 would not significantly restrict subsistence resources and uses as there would be no impacts to subsistence resources and access on federal public lands.

Evaluation and Findings for RSA Alternative 6

RSA Alternative 6 would include the use of declared distances with a 170-foot landmass expansion on Runway end 11 and a 150-foot landmass extension on Runway end 29 with installation of grooved pavement on both of the RSA ends.

Ground disturbance would occur within the existing graded areas at the end of each runway, and this alternative would place additional fill material at both ends of the runway to extend the landmass. This alternative would disturb a small area of federal public lands at Runway end 11, so the impacts to subsistence on federal public lands from this alternative would be low.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

RSA Alternative 6 places a 170-foot landmass expansion on Runway end 11 and a 150-foot landmass extension on Runway end 29 with installation of grooved pavement on both RSA ends. Placement of fill material on the sea floor below MHHW as part of the landmass extension would affect marine plant and animal habitat. Short-term impacts to these populations would be adverse, as fill material covers marine plants and animal habitats. Some loss of marine invertebrates such as clams is expected due to crushing and removal of existing habitat. Over time (one or more years), marine plants would re-inhabit the new fill material and fill over soft seafloor would create additional rocky habitat for marine invertebrates and fish.

Fill material would cover approximately 4.68 acres over existing armor rock below HTL and 4.93 acres over natural sea floor. RSA Alternative 6 would also affect approximately 736 feet of shoreline. This represents approximately 0.01 percent of the 67,840 acres of marine habitat available for subsistence uses and 0.25 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

Very few subsistence users gather marine resources located immediately off Runway 29, primarily because of contaminant concerns related to the city's sewer outfall. More of these activities occur near the end of Runway 11, though primarily in areas further into Whiting Harbor or along John Brown's Beach. Access around both ends of the runway to more preferred hunting, fishing, and gathering locations would not be restricted or altered from its current condition.

For all lands in the project area, the analysis of RSA Alternative 6 presented in **Section 4.17.5.1.6** (RSA Alternative 6, Subsistence) of the EIS concludes that this alternative would result in medium short-term and no long-term impacts to subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. The Airport has no other lands that they could use for improvements to the runway safety areas without moving to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Of the RSA Alternatives, RSA Alternatives 1 through 5 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of federal public lands around the Airport property and the area immediately surrounding it would occur.

Findings

RSA Alternative 6 would not significantly restrict subsistence resources and uses on federal public lands, because this alternative only affects a small portion of public lands and users. Some subsistence users gather resources near Runway end 11. However, they primarily gather resources in areas further into Whiting Harbor or along John Brown's Beach, which would not be affected by this alternative. Access around both ends of the runway to more preferred hunting, fishing, and gathering locations would not be restricted or altered from its current condition.

Evaluation and Findings for Taxiway Alternative 1

Taxiway Alternative 1 (No-Action) of the EIS would result in no changes to the runway safety areas on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

The No Action Alternative for the Parallel Taxiway alternatives would result in the airfield remaining as it exists today. No project-related ground disturbance would occur. This alternative would not place project-related fill material on land or in adjacent waters, and there would be no change to access to customary and traditional resources around the Airport.

The analysis of Taxiway Alternative 1 on subsistence presented in **Section 4.17.5.2.1** (Taxiway Alternatives, Subsistence) of the EIS concludes that this alternative would result in no short-term and long-term impacts to subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. The Airport has no other lands that they could use for improvements to the parallel taxiway without moving to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Because the land under E.O. 8216 was determined to be under federal jurisdiction, Taxiway Alternative 1 would minimize the use of federal public lands. Taxiway Alternative 2 would require the most use of federal public lands.

Findings

Taxiway Alternative 1 would not significantly restrict subsistence resources and uses, because this alternative would not affect any federal public lands. This alternative is not expected to significantly restrict access to and competition for resources on federal public lands.

Evaluation and Findings for Taxiway Alternative 2

A section of land including submerged and filled lands surrounding Charcoal Island, Alice Island, portions of Japonski Island, the Airport Lagoon, and Mermaid Cove (see **Figure 1**) was determined to be federal land. Because this land was determined to be under federal jurisdiction based on Executive Order 8216, Taxiway Alternative 2 would result in fill on portions of federal public lands.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Parallel Taxiway Alternative 2 consists of a full parallel taxiway extending to the end of Runway 29. Construction of the taxiway under this alternative would result in the placement of fill material in the waters of the Airport Lagoon and parallel to the east side of Runway 29 in Mermaid Cove. This alternative would isolate an area of 3.1 acres of Mermaid Cove from free circulation with the remainder of the cove and the marine environment of Sitka Sound.

The fill would also cover approximately 22.6 acres of habitat area below HTL (12.9 acres in Mermaid Cove and approximately 9.7 acres of the Airport Lagoon). However, the Airport Lagoon is not a marine environment. Taxiway Alternative 2 would also affect approximately 2,950 feet of shoreline. The 12.9 acres of impact to marine areas represent approximately 0.02 percent of the 67,840 acres of marine habitat available for subsistence uses and 1.0 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

As a mitigation measure, it is assumed that at least one culvert would be placed through this fill to allow this isolated lagoon-like area to continue to experience tidal fluctuations. However, the restricted circulation would result in a less diverse biota relative to the surrounding freely circulating areas. Colonization of new rock surfaces within this lagoon would be limited to species capable both of passing through the fill and the culvert into the lagoon from the surrounding waters and of surviving in the poorly circulating, low energy waters within the lagoon. Marine mammals, primarily sea otters, utilize marine habitat and resources within Mermaid Cove.

This alternative would reduce the quality of habitat available for herring spawning over approximately ½-mile shoreline within Mermaid Cove. In addition to these impacts in Mermaid Cove, this alternative would also place fill in the existing Airport Lagoon. This alternative also would isolate the west side of the lagoon from connection with the rest of the lagoon.

Local subsistence users identified the waters around Mermaid Cove as one of several locations around the Airport where herring and herring eggs are sometimes harvested, depending on whether or not the herring congregate in that area. Although not one of the preferred harvesting locations because of the sewer outfall, this area is important for those subsistence users with small boats that cannot access deeper waters. The placement of fill for the full-length parallel taxiway would result in moderate adverse impacts to harvesting of herring and herring eggs along a half mile of shoreline in this area. Over time (one or more years), marine plants would re-inhabit the new fill material and fill over soft seafloor would create additional rocky habitat for marine invertebrates and fish.

This alternative would have a longer-term impact to subsistence resources or access to and collection of subsistence resources since this alternative would shorten the post-construction shoreline available for herring spawning and harvest by approximately 1,000 feet.

The same biota as reported in the existing lagoon would colonize rock placed within Airport Lagoon on the west side of the taxiway, since this area would continue to exchange water with the outside marine environment. The fill across the western third of Airport Lagoon could be expected to further reduce circulation in the eastern portion of the remaining lagoon and further reduce the already limited diversity and productivity of rock surfaces in the present lagoon.

Reduction in the extent of open water in Airport Lagoon, as well as frequent disturbance by taxiing aircraft would reduce the attractiveness of the lagoon as a foul weather resting area for a variety of waterfowl.

This lagoon supports heavy use by these birds during fall through spring, especially during periods of bad weather in Sitka Sound (**Appendix Wildlife Synthesis**). Although subsistence users do not harvest waterfowl that use the Airport Lagoon within the project area, the loss of waterfowl habitat would have an adverse impact to waterfowl resources that users harvest outside the project area. However, it is important to note that this area of the lagoon (10.15 acres) has been permitted for fill under a previous permit issued to help reduce wildlife hazards on the Airport.

Subsistence users did not identify any resources or uses for the Airport Lagoon. Thus, there would be no impacts to subsistence resources or access to and competition for subsistence resources are expected from placement of fill in this area for the taxiway.

The analysis of Taxiway Alternative 2 on subsistence presented in **Section 4.17.5.2.2** (Taxiway Alternatives, Subsistence) of the EIS concludes that this alternative would result in moderate short-term and long-term impacts to subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. The Airport has no other lands that they could use for improvements to the parallel taxiway without moving to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Because the land under E.O. 8216 was determined to be under federal jurisdiction, Taxiway Alternative 1 would minimize the use of federal public lands. Taxiway Alternative 2 would require the most use of federal public lands.

Findings

Taxiway Alternative 2 would not significantly restrict subsistence resources and uses, because, depending on the outcome of the land jurisdiction determination, these alternatives would only affect a small portion of federal public lands. This alternative is not expected to significantly restrict access to and competition for resources on federal public lands.

Evaluation and Findings for Taxiway Alternative 3

A section of land including submerged and filled lands surrounding Charcoal Island, Alice Island, portions of Japonski Island, the Airport Lagoon, and Mermaid Cove (see **Figure 1**) was determined to be under federal jurisdiction based on Executive Order 8216. Because this land was determined to be under federal jurisdiction, Taxiway Alternative 3 would result in fill on portions of federal public lands.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Parallel Taxiway Alternative 3 would consist of a partial parallel taxiway. This alternative would place fill within the lagoon and ground disturbance would occur on uplands adjacent to it. This alternative would have the same impacts on the Airport Lagoon as Taxiway Alternative 2, as described above. The fill would cover approximately 8.05 acres below HTL of the Airport Lagoon. However, the Airport Lagoon is not a marine environment. Existing benthos would be lost and the alternative would fragment bird-resting habitat. Aquatic biota would colonize the newly placed rock as described above for Alternative 2. There would be no effect on Mermaid Cove and its ecological functions.

Subsistence users did not identify any resources or uses for the Airport Lagoon or the land areas surrounding it. Thus, there are no anticipated impacts to subsistence resources or access to and competition for subsistence resources from placement of fill or ground disturbance in this area for the taxiway.

The analysis of Taxiway Alternative 3 on subsistence presented in **Section 4.17.5.2.3** (Taxiway Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts to subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. The Airport has no other lands that they could use for improvements to the parallel taxiway without moving to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Because the land under E.O. 8216 was determined to be under federal jurisdiction, Taxiway Alternative 1 would minimize the use of federal public lands. Taxiway Alternative 2 would require the most use of federal public lands.

Findings

Taxiway Alternative 3 would not significantly restrict subsistence resources and uses, because, depending on the outcome of the land jurisdiction determination, this alternative would only affect a small portion of federal public lands. This alternative is not expected to significantly restrict access to and competition for resources on federal public lands.

Evaluation and Findings for Seaplane Pullout Alternative 1

Seaplane Pullout Alternative 1 (No-Action) of the EIS would result in no changes to the seaplane pullout on federal public lands. Since this alternative would continue existing conditions, there would be no impacts to subsistence from this alternative on federal public lands and waters.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

The No Action for the Seaplane Pullout alternatives would result in the airfield remaining as it exists today, and this alternative would not alter the existing seaplane pullout. Seaplanes would continue to be pulled out from the existing ramp location, west of the runway in Whiting Harbor. No ground disturbance or changes in access to the Airport or lands and waters surrounding it would occur.

The analysis of Seaplane Pullout Alternative 1 on subsistence presented in **Section 4.17.5.3.1** (Seaplane Pullout Alternatives, Subsistence) of the EIS concludes that this alternative would result in no impacts to subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. Potential relocation sites were examined both on the northern portion of the airport and the eastern side of the airport, but no sites were identified that could provide direct access to the airport. Only the site on the southern portion of the airport provided direct access. The Airport has no other lands that they could use for improvements to the seaplane pullout without moving the Airport to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Because the land under E.O. 8216 was determined to be under federal jurisdiction, Seaplane Pullout Alternative 1 would minimize the use of federal public lands and Seaplane Pullout Alternatives 2 and 3 would require the most use of federal public lands.

Findings

Seaplane Pullout Alternative 1 would not significantly restrict subsistence resources and uses, because this alternative would not affect any federal public lands. This alternative is not expected to significantly restrict access to and competition for resources on federal public lands.

Evaluation and Findings for Seaplane Pullout Alternative 2

A section of land including submerged and filled lands surrounding Charcoal Island, Alice Island, portions of Japonski Island, the Airport Lagoon, and Mermaid Cove (**Figure 1**) was reviewed to determine the jurisdiction. Because this land was determined to be under federal jurisdiction based on Executive Order 8216, the Seaplane Pullout Alternative 2 would result in fill on portions of federal public lands.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Seaplane Pullout Alternative 2 would include constructing a seaplane pullout ramp on the eastern side of the runway (i.e., on Charcoal Island). The new facility would include a new 40-foot wide ramp from the uplands of Charcoal Island to approximately -8 feet MLLW, eliminating existing marine biota in the area. It is estimated that in-water construction would take approximately two to three weeks for the pullout ramp. Macro invertebrates would quickly recolonize the new concrete ramp. The edges and sides of the ramp would be colonized by the same species and assemblages now found on hard surfaces at similar elevations and with similar exposures elsewhere in Mermaid Cove. Heavy accumulations of algae or mussels that could interfere with traction on the ramp may require periodic removal from the ramp.

Construction of the Seaplane Pullout ramp would disturb 0.4 acres below HTL in Mermaid Cove. Seaplane Pullout Alternative 2 would also affect approximately 100 feet of shoreline. This represents approximately 0.0005 percent of the 67,840 acres of marine habitat available for subsistence uses and 0.03 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

Impacts to subsistence use and resources related to construction of the new seaplane pullout would occur in the general area around the pullout site, where herring and herring egg harvest occurs when the opportunity arises. Harvesting activities that might have occurred at the site of the seaplane pullout would likely be permanently displaced to other portions of Mermaid Cove, as harvesting around the seaplane pullout ramp may not be feasible. The seaplane pullout could reduce harbor seals or Steller sea lions feeding on herring from the presence/operation of the seaplane pullout, thereby displacing these marine mammals to other areas of Mermaid Cove. However, elimination of the existing seaplane pullout would eliminate ongoing disturbances of marine mammals that occur in Whiting Harbor because of that facility.

The analysis of Seaplane Pullout Alternative 2 on subsistence presented in **Section 4.17.5.3.2** (Seaplane Pullout Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts to subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. Potential relocation sites were examined both on the northern portion of the airport and the eastern side of the airport, but no sites were identified that could provide direct access to the airport. Only the site on the southern portion of the airport provided direct access. The Airport has no other lands that they could use for improvements to the seaplane pullout without moving to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Because the land under E.O. 8216 was determined to be under federal jurisdiction, Seaplane Pullout Alternative 1 would minimize the use of federal public lands and Seaplane Pullout Alternatives 2 and 3 would require the most use of federal public lands.

Findings

Seaplane Pullout Alternative 2 would not significantly restrict subsistence resources and uses, because, depending on the outcome of the land jurisdiction determination, this alternative would only affect a small portion of federal public lands. This alternative is not expected to significantly restrict access to and competition for resources on federal public lands.

Evaluation and Findings for Seaplane Pullout Alternative 3

A section of land including submerged and filled lands surrounding Charcoal Island, Alice Island, portions of Japonski Island, the Airport Lagoon, and Mermaid Cove (**Figure 1**) was reviewed to determine jurisdiction. Because this land was determined to be under federal jurisdiction based on Executive Order 8216, the Seaplane Pullout Alternative 3 would result in fill on portions of federal public lands.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Seaplane Pullout Alternative 3 consists of constructing a seaplane pullout ramp and floating dock on the eastern side of the runway (i.e., on Charcoal Island). The new facility would include the same 40-foot wide ramp from the uplands of Charcoal Island to approximately -8 feet MLLW described under Alternative 2. All of the fill would be over existing boulders, cobbles and most of the dredging would be in mixed-fine habitat. In-water construction is estimated to take approximately two to three weeks for the pullout ramp alone and an additional 4 weeks to complete the approach pier and float. (For a total of approximately 6 to 7 weeks). This alternative would place eight guide piles for the float by rock socket drilling and grouting technique. Placement would have little effect on underwater noise or water quality.

Construction of the Seaplane Pullout Alternative 3 would disturb 1.08 acres of Mermaid Cove below HTL with actual dredging occurring over 0.28 acres. Seaplane Pullout Alternative 3 would also affect approximately 253 feet of shoreline. This represents approximately 0.002 percent of the 67,840 acres of marine habitat available for subsistence uses and 0.09 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

The ramp would eliminate existing marine biota in the area. The access pier and float would affect additional acres by dredging, filling, and shading (by the float). Macro invertebrates would quickly colonize the new concrete ramp, floats, and pilings in the same manner as described for RSA Alternative 3 for rock placed with the RSA expansion. The edges and sides of the ramp and pilings, as well as the rock fill placed east of the ramp to support the float approach pier, would be colonized by the same species and assemblages now found on hard surfaces at similar elevations and with similar exposures elsewhere in Mermaid Cove. Heavy accumulations of organisms such as algae or mussels that could interfere with traction on the ramp may require periodic removal from the ramp.

The sides of the float would be colonized by different species, including kelp, and filter feeding animals. Productivity of these plants and animals would compensate, in part, for the loss of primary productivity that would result from shading of algae by the 3,200-square foot float.

Impacts to subsistence use and resources related to construction of Seaplane Pullout Alternative 3 would occur in the general area around the pullout site, where herring and herring egg harvest occurs when the opportunity arises. Harvesting activities that may have occurred in the area of the new seaplane pullout would likely be permanently displaced to other portions of Mermaid Cove, as harvesting around the seaplane pullout dock may not be feasible. The seaplane pullout could reduce harbor seals or Steller sea lions feeding from the presence/operation of the seaplane pullout, thereby displacing these marine mammals to other areas of the Cove. However, elimination of the existing seaplane pullout would eliminate periodic, ongoing disturbances of marine mammals that occur on the east side of the Runway in Whiting Harbor.

The analysis of Seaplane Pullout Alternative 3 on subsistence presented in **Section 4.17.5.3.3** (Seaplane Pullout Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and long-term impacts on subsistence resources or access to and competition for subsistence resources around the Airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. Potential relocation sites were examined both on the northern portion of the airport and the eastern side of the airport, but no sites were identified that could provide direct access to the airport. Only the site on the southern portion of the airport provided direct access.

The Airport has no other lands that they could use for improvements to the seaplane pullout without moving to another location. Moving to another location is not considered feasible due to financial and airspace constraints in the area.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Because the land under E.O. 8216 was determined to be under federal jurisdiction, Seaplane Pullout Alternative 1 would minimize the use of federal public lands and Seaplane Pullout Alternatives 2 and 3 would require the most use of federal public lands.

Findings

Seaplane Pullout Alternative 3 would not significantly restrict subsistence resources and uses, because, depending on the outcome of the land jurisdiction determination, this alternative would only affect a small portion of federal public lands. This alternative is not expected to significantly restrict access to and competition for resources on federal public lands.

Evaluation and Findings for Approach Light System Alternative 1

Approach Light System (ALS) Alternative 1 (No Action) would not result in any ground disturbance or changes in access on federal public lands and waters surrounding the Airport. Since this alternative would not disturb any federal public lands or waters, there would be no impacts to subsistence on federal public lands and waters from this alternative.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

The No Action for the Approach Light System alternatives would result in the airfield remaining as it exists today, with no approach lighting improvements. No ground disturbance or changes in access to the Airport or lands and waters surrounding it would occur.

The analysis of Approach Light System Alternative 1 on subsistence presented in **Section 4.17.5.4.1** (Approach Light System Alternatives, Subsistence) of the EIS concludes that this alternative would result in no short and long-term impacts to subsistence resources or access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

Since Approach Light System Alternative 1 does not affect federal public lands, there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes
Approach Light System Alternatives 1 through 3 would not use any federal public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of federal public lands around the airport property and the area immediately surrounding it would occur.

Findings

Approach Light System Alternative 1 would not significantly restrict subsistence resources and uses, as the alternative would not affect those resources and uses on federal public lands.

Evaluation and Findings for Approach Light System Alternative 2

Approach Light System (ALS) Alternative 2 would not result in any ground disturbance or changes in access on federal public lands and waters surrounding the Airport. Since this alternative would not disturb any federal public lands or waters, there would be no impacts to subsistence on federal public lands and waters from this alternative.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

ALS Alternative 2 would consist of installation of a medium intensity approach light system (MALS) off Runway 11. The piles for the light arrays would be driven into the seafloor and extend through the water column to a point above the water surface. Each light array would be spaced 200 feet from the adjacent array. The total length of the system would be 1,200 feet, meaning this alternative would install six arrays.

ALS Alternative 2 affects approximately 0.0018 acres of the sea floor and would not affect any shoreline. This represents approximately 0.000002 percent of the 67,840 acres of marine habitat available for subsistence uses within Sitka Sound.

Short-term impacts to subsistence resources would be adverse, as drilling would remove marine plants and animal habitats. Some loss of marine invertebrates such as clams is expected due to crushing and the removal of existing habitat. However, installation of the MALS system would affect a very small amount of habitat for marine plants and animals. Subsistence users identified limited subsistence hunting, fishing, or gathering practices within the area of the proposed system. Locals primarily use the area in question for transit of small boats into Whiting Harbor for subsistence harvesting. Installation of the MALS system would not substantially alter access conditions through this area, as small boats would still be able and permitted to travel between the light posts.

The analysis of Approach Light System Alternative 2 on subsistence presented in **Section 4.17.5.4.2** (Approach Light System Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts on subsistence resources or access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

Since Approach Light System Alternative 2 does not affect federal public lands, there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Approach Light System Alternatives 1 through 3 would not use any federal public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of federal public lands around the airport property and the area immediately surrounding it would occur.

Findings

Approach Light System Alternative 2 would not significantly restrict subsistence resources and uses, as the alternative would not affect those resources and uses on federal public lands.

Evaluation and Findings for Approach Light System Alternative 3

Approach Light System (ALS) Alternative 3 would not result in any ground disturbance or changes in access on federal public lands and waters surrounding the Airport. Since this alternative would not disturb any federal public lands or waters, there would be no impacts to subsistence on federal public lands and waters from this alternative.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

ALS Alternative 3 would consist of installation of a medium intensity approach light system with runway indicator lights (MALSR). The system would be similar to the MALS described for ALS Alternative 2 except that this alternative would install an additional five lights on single piles beyond the MALS. Therefore, ALS Alternative 3 would install 11 light arrays over a distance of approximately 2,200 feet. The last of the light arrays would be located in the intertidal zone just south of Battery Island.

ALS Alternative 3 would affect approximately 0.002 acres of the sea floor and would not affect any shoreline. This represents approximately 0.000003 percent of the 67,840 acres of marine habitat available for subsistence uses within Sitka Sound.

ALS Alternative 3 would install piles using the “rock socket” technique as described for Alternative 2. Placement of pilings on the sea floor as part of the medium intensity approach light system would affect marine plant and animal habitat. Short-term impacts to these populations would be adverse, as drilling would remove marine plants and animal habitats. Some loss of marine invertebrates such as clams is expected due to crushing and removal of existing habitat. However, installation of the MALS system would affect a very small amount of habitat for marine plants and animals.

Subsistence users identified limited subsistence hunting, fishing, or gathering practices within the area of the proposed system. Locals primarily use the area in question for transit of small boats into Whiting Harbor for subsistence harvesting. Installation of the MALS system would not substantially alter access conditions through this area, as small boats would still be able and permitted to travel between the light posts.

The analysis of Approach Light System Alternative 3 on subsistence presented in **Section 4.17.5.4.3** (Approach Light System Alternatives, Subsistence) of the EIS concludes that this alternative would result in low short-term and no long-term impacts on subsistence resources or access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

Since Approach Light System Alternative 3 does not affect federal public lands, there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Approach Light System Alternatives 1 through 3 would not use any federal public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of federal public lands around the airport property and the area immediately surrounding it would occur.

Findings

Approach Light System Alternative 3 would not significantly restrict subsistence resources and uses, as the alternative would not affect those resources and uses on federal public lands.

Evaluation and Findings for Seawall Alternative 1

Seawall Alternative 1 would result in the airfield remaining as it exists today, and only sufficient periodic maintenance as required to maintain the seawall would be conducted. Barring catastrophic failure of the existing seawall, no ground disturbance or changes in access to the Airport or lands and waters surrounding it would occur under this alternative. Since this alternative would not disturb any federal public lands or waters, there would no impacts to subsistence from this alternative.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

The No Action alternative for the Seawall Repair would result in the airfield remaining as it exists today, and only sufficient periodic maintenance as required to maintain the seawall would be conducted. Barring catastrophic failure of the existing seawall, no ground disturbance, or changes in access to the Airport or lands and waters surrounding it would occur under this alternative.

The analysis of Seawall Alternative 1 on subsistence presented in Section 4.17.5.5.1 (Seawall Alternative 1 Subsistence) concludes that this alternative would result in no impacts to subsistence resources or access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

Since Seawall Alternative 1 does not affect federal public lands or waters, there is no need to evaluate the availability of other lands for airport improvements.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Of all the Seawall Alternatives, only Seawall Alternative 1 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of public lands around the Airport property and the area immediately surrounding it would occur.

Findings

Seawall Alternative 1 would not significantly restrict subsistence resources and uses, as no changes to existing conditions and access to and competition for subsistence resources would occur on federal public lands or waters under this alternative.

Evaluation and Findings for Seawall Alternative 2

Seawall Alternative 2 would place a berm of rock fill along 3,100 feet of the exposed west side of the runway. This berm would cover the upper part of the existing runway fill along this portion of the runway and would extend downslope on the existing fill to depths of approximately 35 feet below mean low tide. Construction would result in some disturbance to federal public lands (E.O. 8877), but there would be low impacts to subsistence from this alternative, because few people use this seawall area for subsistence gathering.

A section of land including submerged and filled lands surrounding Charcoal Island, Alice Island, portions of Japonski Island (including part of the seawall), the Airport Lagoon, and Mermaid Cove (**Figure 1**) was reviewed to determine the jurisdiction. Because this land was determined to be under federal jurisdiction based on Executive Order 8216, Seawall Alternative 2 would result in a potential impact to a larger section of federal public lands when combined with the Makhnati Area.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Seawall Alternative 2 would place a berm of rock fill along 3,100 feet of the exposed west side of the runway, extending from the Runway end 29 to approximately 600 feet from the base of the causeway. This berm would cover the upper part of the existing runway fill along this portion of the runway and would extend downslope on the existing fill to depths of approximately 35 feet below mean low tide.

Placement of fill under this alternative would affect approximately 6.51 acres of marine habitat. Seawall Alternative 2 would also affect approximately 3,100 feet of shoreline. This represents approximately 0.01 percent of the 67,840 acres of marine habitat available for subsistence uses and 1.1 percent of the 56 miles of available shoreline for herring spawn within Sitka Sound.

During construction, this alternative would place new, unweathered, and abiotic rock from upland sources over existing rock fill that supports a diverse amount of marine plants and animals along the southwest shoreline of the runway. The placement of rock in the area would eliminate existing biota and provide opportunities for colonization similar to those described above for the RSA Alternative 3.

Placement of armor rock over each segment or lift of the new fill would initiate the recolonization of the area. As with the RSA alternatives, the last layer of armor rock would bury organisms colonizing intermediate layers or core material or smaller riprap. This alternative would displace herring spawning that occasionally occurs on kelp in the northern section of the seawall repair area for a year or two to other nearby areas of undisturbed habitat with no significant impact to subsistence use.

Placement of the new fill would alter the nature of the near shore migration corridor available to small salmon, and food production (primarily small crustaceans) on the newly placed rock along approximately 3,100 feet of shoreline would likely be less during the first year following placement than that currently available.

This reduced prey availability could cause slight, but likely immeasurable changes in the movements and feeding patterns of marine birds and mammals in the area. Vegetation that formed on the new seawall would be fully suitable for herring spawning after a year or two to with no significant impact to herring or spawn subsistence harvest.

The location of the seawall repair was not identified as an area where any substantial subsistence gathering occurs.

The analysis of Seawall Alternative 2 on subsistence presented in **Section 4.17.5.5.2** (Seawall Alternative 2, Subsistence) of the EIS concludes that this alternative would result in low impacts to subsistence resources or access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for seawall improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes
Of all the Seawall Alternatives, only Seawall Alternative 1 would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of public lands around the Airport property and the area immediately surrounding it would occur.

Findings

Seawall Alternative 2 would not significantly restrict subsistence resources and uses, as subsistence interviews did not identify the location of the seawall as an area where any substantial subsistence gathering occurs. This alternative either would affect a large portion of federal public lands along the seawall. This alternative is not expected to cause a significant restriction of access to and competition for resources on federal public lands.

Evaluation and Findings for Land Transfer Alternative 1 (No Action)

The Land Transfer Alternative 1 (No Action) would retain existing ownership of all lands within the airport boundary. All lands, including submerged and filled lands currently under BLM ownership (E.O. 8877) (**Figure 1**) would remain under BLM ownership. Additionally, based on the recent finding that lands under Executive Order 8216 are also under federal jurisdiction, those lands would also be retained by the federal government with the No Action Alternative. Under this alternative, all other alternatives under this EIS that impact federal public lands likely would not occur, as the FAA requires airport entities to either own the land needed for airport purposes or engage in a long-term (20 years or longer) lease with the landowner.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Land Transfer Alternative 1 would retain existing ownership of lands, including filled and submerged lands in and around the airport. As such, RSA Alternative 6 and Seawall Alternative 2, both of which would require the use of federal land within the boundaries of E.O. 8877, would not occur as currently designed unless, at a minimum, BLM executed a long-term lease of the federal lands by BLM to the ADOT&PF. Additionally, due to the federal land ownership under E.O. 8216, Taxiway Alternatives 2 and 3, Seaplane Pullout Alternatives 2 and 3, and Seawall Alternative 2 also would not occur as currently designed because of the FAA land ownership or long-term lease funding requirements. The analysis of Land Transfer Alternative 1 on subsistence presented in **Section 4.17.5.6.1** (Land Transfer Alternative 1, Subsistence) of the EIS concludes that this alternative would result in no impacts to subsistence resources or access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for airport improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

The FAA requires airport entities either own the land for airport purposes or engage in a long-term (20 years or longer) lease with the landowner. Of the two Land Transfer alternatives, only Land Transfer Alternative 1 (No Action) would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of public lands around the Airport property and the area immediately surrounding it would occur.

Findings

Land Transfer Alternative 1 would not significantly restrict subsistence resources and uses, or access to and competition for resources on federal public lands because this alternative would retain the existing land ownership pattern around the airport boundary.

Evaluation and Findings for Land Transfer Alternative 2

Land Transfer Alternative 2 would ensure the ADOT&PF has sufficient interest in the area immediately surrounding the existing airport to maintain object free areas, runway protection zones, other operational and safety areas and to implement needed airport improvements. This interest would be obtained through either a title transfer, a long-term lease from the BLM or a combination of both options (title transfer and lease) for a portion of the federal lands around the airport, including submerged and filled lands currently under BLM ownership (E.O. 8877 and E.O. 8216) (**Figure 1**).

Title Transfer Option

The probable mechanism for title transfer would be under the Airport and Airways Improvement Act of 1982, which allows the transfer of federal lands to other entities for airport purposes only. This alternative itself does not propose any construction, only the transfer of land from federal to state ownership. The EIS discusses potential impacts on subsistence from these alternatives in Chapter 4 Section 4.17.5 and the 810 Evaluation, Section 9.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Land Transfer Alternative 2 with the title transfer option would transfer lands, including submerged and filled lands currently under BLM ownership (E.O. 8877 and E.O. 8216) (**Figure 1**) to the ADOT&PF for airport uses.

Under the current regulatory structure for harvest of subsistence resources, on federal lands, certain rural residents may harvest salmon, Dolly Varden, trout, smelt, and eulachon under federal and state regulations. In addition, certain rural residents in Alaska may harvest other subsistence resources on federal lands under federal regulation.

The Federal Subsistence Board has not restricted taking of subsistence resources by any non-federally eligible user on the lands that would be transferred, therefore all State harvest regulations apply as well. To place this in context, Sitka residents (or rural Alaska residents, depending on the resource) have the option of harvesting subsistence resources on federal lands in the study area under either federal or state regulations.

All other Alaska residents (or non-residents) can also harvest resources on both the federal and non-federal lands within the project area under State regulations, including commercial harvest. Transferring the land within the boundaries of E.O. 8877 and E.O. 8216 would result in a change from federal to state jurisdiction and a loss in the ability to apply a subsistence priority for rural residents and application of federal regulations in this area.

The title transfer option would transfer approximately 112 acres of federal land within Executive Order 8216 and 86 acres of Executive Order 8877 to the ADOT&PF. This represents approximately 22.0 percent of the 898 acres of federal land and 0.3 percent of the 67,840 acres of lands available for subsistence harvest under all regulations within Sitka Sound.

The net effect of the title transfer is the loss of federal subsistence regulations applying on those lands, which would affect bag limits and timing of harvest for some subsistence species. In addition, the title transfer would cause the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. However, this option would not affect subsistence harvest under state regulations.

Depending upon the species, Land Transfer Alternative 2 (title transfer option) would cause a low, adverse, short- and long-term impact on subsistence uses by changing timing or quantity of the harvest through regulation. However, the opportunities and competition for subsistence resources would not change, as harvest of subsistence resources would still occur under existing state regulations. The use of subsistence resources would continue with the primary difference being the loss of opportunities for harvest under federal regulations and the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. No restrictions to implement a rural priority have been instituted in the area at this time. The Sitka Tribe has submitted a proposal to the Federal Subsistence Board (Federal FP 09-05) to close the waters within Executive Order 8877 and 8216 to non-federally eligible subsistence users. However, the Federal Subsistence Board has deferred any action to close the waters to non-federally eligible users until more data is gathered on herring stock and use patterns.

The analysis of Land Transfer Alternative 2 with the title transfer option on subsistence presented in **Section 4.17.5.6.2** (Land Transfer Alternative 2, Title Transfer Option, Subsistence) of the EIS concludes that this alternative would result in low short- and long-term impacts to subsistence resources or physical access to and competition for subsistence resources around the airport.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for airport improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

The FAA requires airport entities either own the land for airport purposes or engage in a long-term (20 years or longer) lease with the landowner. Of the two Land Transfer alternatives, only Land Transfer Alternative 1 (No Action) would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of public lands around the Airport property and the area immediately surrounding it would occur.

Findings

While the title transfer option under Land Transfer Alternative 2 would not directly affect subsistence resources or habitat, the transfer of federal lands into state ownership would potentially affect who can gather subsistence resources in and around the airport. Currently, Sitka residents (for salmon, Dolly Varden, trout, smelt, and eulachon) and all rural residents (for all other marine species) have the option of gathering subsistence resources on federal public lands in the area under both federal and state regulations. Under State ownership through a title transfer, everyone would be able to gather subsistence resources only under State regulations in the area. A transfer of title would cause the loss of federal subsistence regulations applying on those lands and the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. Because federal regulations do not currently close the waters around the airport to non-federally qualified users, the title transfer would not be expected to result in increased harvest of subsistence resources. Therefore, Land Transfer Alternative 2 with the title transfer option is not expected to significantly restrict physical access to and competition for resources on federal public lands or waters.

Long-term Lease Option

Land Transfer Alternative 2 with the lease option would result in the ADOT&PF entering into a long-term lease agreement with the BLM for a portion of the federal lands within E.O. 8877 and E.O. 8216 around the Airport, including submerged and filled lands currently under BLM management (**Figure 1**). Under the lease option, BLM would retain federal ownership and the ADOT&PF would obtain sufficient property rights to control lands immediately surrounding the Airport through a long-term lease or easement. This alternative itself does not propose any construction, only the lease of federal land by ADOT&PF.

However, a long-term lease would allow the Preferred Alternatives proposed in the EIS that would use federal lands (Taxiway Alternative 3 and Seaplane Pullout Alternative 2) to be carried forward for implementation. The EIS discusses potential impacts on subsistence from these alternatives in Chapter 4, Section 4.17.5 and the 810 Evaluation Section 9.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Land Transfer Alternative 2 with the lease option would lease lands, including submerged and filled lands currently under BLM ownership (E.O. 8877 and E.O. 8216) (**Figure 1**), to the ADOT&PF for airport uses.

Under the current regulatory structure for harvest of subsistence resources, on federal lands, certain rural residents may harvest salmon, Dolly Varden, trout, smelt, and eulachon under federal and state regulations. In addition, certain rural residents in Alaska may harvest other subsistence resources on federal lands under federal regulations. The Federal Subsistence Board has not restricted taking of subsistence resources by any non-federally eligible user on the lands that would be leased, therefore all State harvest regulations apply as well. To place this in context, Sitka residents (or rural Alaska residents, depending on the resource) have the option of harvesting subsistence resources on federal lands in the study area under either federal or state regulations. All other Alaska residents (or non-residents) can also harvest resources on both the federal and non-federal lands within the study area under State regulations.

Under a long-term lease option, there would be no change in allowable subsistence uses from current conditions as all federal subsistence regulations would still apply and a lease would preserve opportunities for a subsistence priority for rural residents by retaining federal ownership of public lands. Therefore, if the ADOT&PF gains sufficient operational interest in federal lands surrounding the airport through the long-term lease option, Land Transfer Alternative 2 would have no impacts on subsistence.

The analysis of Land Transfer Alternative 2 with the lease option on subsistence presented in **Section 4.17.5.6.2** (Land Transfer Alternative 2, Subsistence) of the EIS concludes that this alternative option would result in no short- and long-term impacts to subsistence resources or access to and competition for subsistence resources around the airport through a long-term lease.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for airport improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

The FAA requires airport entities either own the land for airport purposes or enter into a long-term (20 years or longer) lease with the landowner. Of the two Land Transfer alternatives, only Land Transfer Alternative 1 (No Action) would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of public lands around the Airport property and the area immediately surrounding it would occur.

Findings

A long-term lease option would retain the existing regulatory structure on the federal public lands. Currently, Sitka residents (for salmon, Dolly Varden, trout, smelt, and eulachon) and all rural residents (for all other marine species) have the option of gathering subsistence resources on federal public lands in the area under both federal and state regulations. A lease would continue federal subsistence regulations applying on those lands and preserve opportunities for a subsistence priority for rural residents by retaining federal ownership of public lands. Because federal regulations do not currently close the waters around the airport to non-federally eligible users, the lease option would not be expected to increase harvest of subsistence resources. Therefore, Land Transfer Alternative 2 with the lease option is not expected to significantly restrict access to and competition for resources on federal public lands.

Combination Title Transfer and Long-Term Lease Option

The third option is to transfer the title for a portion of the lands needed to the State and have BLM lease the remaining lands to the ADOT&PF. Under the combined title transfer and lease option, BLM would retain a portion of area currently under federal ownership and the ADOT&PF would obtain sufficient property rights with sufficient interest in the areas immediately surrounding the existing airport to maintain object free areas, runway protection zones, and other operational and safety areas and to implement needed airport improvements through long-term lease or easement. Under the combined option, title would be transferred from to ADOT&PF for all uplands, the Lagoon, and filled and/or submerged lands needed to encompass the runway, including areas within the FAA standard lateral safety area around the runway (extending 250 feet from the runway centerline on either side) and the area needed to implement the preferred alternative for the seaplane pullout. The ownership of all the submerged lands outside this area would be retained by the federal government.

With the full title transfer option, under this alternative, the portion of the area transferred to the state via title transfer would no longer be federal public lands and, therefore, federal subsistence regulations would not apply. Because of this, depending on the species, the transfer of the area would cause a low, adverse, short- and long-term impact on subsistence users by changing the timing or quantity of the harvest through regulation.

In addition, the title transfer would cause the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. However, this option would not affect subsistence harvest under state regulations. The harvest of subsistence resources would continue with the primary difference being the loss in opportunities for a subsistence priority for rural residents and for harvest under federal regulation from loss of federal public lands.

Additionally, the area transferred under this option (combined title transfer and long-term lease) would be substantially smaller than under the title transfer only option. Only a portion of lands directly surrounding the runway would change ownership. The remaining portion of the submerged lands would be placed under a long-term lease, retaining federal ownership of the area. A lease would continue federal subsistence regulations applying on those lands and preserve opportunities for a subsistence priority for rural residents by retaining federal ownership of public lands.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

Land Transfer Alternative 2 with the combination of title transfer and long-term lease option would transfer title of a portion of lands to ADOT&PF (including all uplands, the Lagoon and submerged lands needed for standard lateral safety area), and would lease the remaining submerged and filled lands currently under BLM ownership (E.O. 8877 and E.O. 8216) (**Figure 1**), to the ADOT&PF for airport uses.

This alternative would combine the previous two alternatives. Under the current regulatory structure for harvest of subsistence resources, on federal lands, certain rural residents may harvest salmon, Dolly Varden, trout, smelt, and eulachon under federal and state regulations. In addition, certain rural residents in Alaska may harvest other subsistence resources on federal lands under federal regulation. The Federal Subsistence Board has not restricted taking of subsistence resources by any non-federally eligible user on the lands that would be transferred, therefore all State harvest regulations apply as well. To place this in context, Sitka residents (or rural Alaska residents, depending on the resource) have the option of harvesting subsistence resources on federal lands in the study area under either federal or state regulations.

All other Alaska residents (or non-residents) can also harvest resources on both the federal and non-federal lands within the project area under State regulations. Transferring the land within the proposed boundaries (including the uplands, the Lagoon and the submerged lands within the area needed for standard lateral safety area) would result in a change from federal to state ownership and a loss in the ability to apply a federal subsistence priority and federal subsistence regulations in the area though the impacted area would be less than under the full title transfer option.

The title transfer portion of this combined option would transfer the uplands, the Lagoon, and the filled and/or submerged area needed to encompass the runway with a standard lateral safety area (extending 250 feet from the runway centerline) and the area needed to implement the preferred alternative for the seaplane pullout. The remaining land in the E.O. 8877 and E.O. 8216 would be leased from BLM to ADOT&PF.

The net effect of the combined land transfer option is the loss of federal subsistence regulations applying on those lands within the title transfer portion, which would affect bag limits and timing of harvest for some subsistence species. In addition, the title transfer would cause the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. However, this option would not affect subsistence harvest under state regulations.

Depending upon the species, Land Transfer Alternative 2 with the combined title transfer/lease option would cause a low, adverse, short- and long-term impact on subsistence uses by changing timing or quantity of the harvest through regulation on the portion of land encompassed by the title transfer. However, the opportunities and competition for subsistence resources would not change, as harvest of subsistence resources would still occur under existing state regulations. The use of subsistence resources would continue with the primary difference being the loss of opportunities for harvest under federal regulations and the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands.

No restrictions to implement a rural preference have been instituted in the area. The Sitka Tribe has submitted a proposal to the Federal Subsistence Board (Federal FP 09-05) to close the waters within Executive Order 8877 and 8216 to non-federally eligible subsistence users. However, the Federal Subsistence Board has deferred any action to close the waters to non-federally eligible users until more data is gathered on herring stocks and use patterns.

No impact would occur on the remaining land that would be leased from BLM to ADOT&PF since subsistence resources would remain under federal regulations and a lease would preserve opportunities for a subsistence priority for rural residents by retaining federal ownership of public lands.

The analysis of Land Transfer Alternative 2 with the title transfer option on subsistence presented in **Section 4.17.5.6.2** (Land Transfer Alternative 2, Subsistence) of the EIS concludes that this alternative would result in low short- and long-term impacts to subsistence resources or physical access to and competition for subsistence resources around the airport, located within a small area that would be reserved for standard lateral safety area around the runway. The Land Transfer Alternative 2 Combination Title Transfer and Long-Term Lease Option would result in similar impacts as those identified in **Section 4.17.5.6.2** (Land Transfer Alternative 2, Subsistence) of the EIS, although the impacts would affect a smaller area since only a small portion of federal lands would be transferred to ADOT&PF.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for airport improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

The FAA requires airport entities either own the land for airport purposes or engage in a long-term (20 years or longer) lease with the landowner. Of the two Land Transfer alternatives, only Land Transfer Alternative 1 (No Action) would not use any public lands needed for subsistence, since no ground disturbance, changes in operations, or allowable uses of public lands around the Airport property and the area immediately surrounding it would occur.

Findings

While the combined title transfer/long-term lease option under Land Transfer Alternative 2 would not directly affect subsistence resources or habitat, the transfer of federal lands into state ownership for a portion of the lands would potentially affect bag limits and timing of harvest for some subsistence resources in and around the airport. A transfer of title would also cause the loss of federal subsistence regulations applying on those lands and the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. However, this potential affect would be much smaller than under the direct title transfer option, since the area transferred would be limited to the uplands, the Lagoon, and a small area around the runway reserved for lateral safety area.

Currently, Sitka residents (for salmon, Dolly Varden, trout, smelt, and eulachon) and all rural residents (for all other marine species) have the option of gathering subsistence resources on federal public lands in the area under both federal and state regulations. Under State ownership through a title transfer, everyone would be able to gather subsistence resources under State regulations in the area. Because federal regulations do not currently close the waters around the airport to non-federally qualified users, the title transfer portion of this option would not be expected to increase non-rural use of subsistence resources.

Additionally, the change in jurisdiction would only apply to the within the title transfer portion of the lands; the remaining portion of submerged lands would remain under federal ownership through a lease agreement between BLM and ADOT&PF. The lease would preserve opportunities for a subsistence priority for rural residents by retaining federal ownership of public lands. Therefore, Land Transfer Alternative 2 with the combined title transfer/long-term lease option is not expected to significantly restrict physical access to and competition for resources on federal public lands.

Evaluation and Findings for the Preferred Alternatives

Implementation of all the preferred alternatives presented in the EIS (RSA 5, Taxiway 3, Seaplane Pullout 2, ALS 1, Seawall 1, and Land Transfer 2), would take place on federal public lands and on other lands (State of Alaska and private lands) within the Airport boundary. The preferred alternatives would disturb public lands and would affect locations where subsistence harvesting occurs, and this would have a moderate impact on subsistence.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

The preferred alternatives would implement all preferred alternatives assessed in the EIS, including title transfer of existing federal public land in the project area to the ADOT&PF. The preferred alternatives results in approximately 7.6 acres of impact to marine habitat for subsistence resources, which is approximately 0.01 percent of all such habitat in Sitka Sound.

The title transfer option would transfer approximately 112 acres of federal land within Executive Order 8216 and 86 acres of Executive Order 8877 to the Alaska ADOT&PF to protect lands for current and future aviation and airport uses. This represents approximately 22.0 percent of the total federal land available (898 acres) and 0.3 percent of the 67,840 acres of lands available for subsistence harvest under all regulations (state or federal) within Sitka Sound. Land Transfer Alternative 2 title transfer option would cause the loss of federal subsistence regulations applying on those lands. In addition, the title transfer would cause the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. However, this option would not affect subsistence harvest under state regulations.

The Land Transfer Alternative 2 lease option would retain federal regulations and opportunities for harvest under federal regulations on the federal public lands. The analysis of the preferred alternatives on subsistence presented in **Section 4.17.5.7, *Combined Effects of All Projects*** of the EIS concludes that this alternative would result in no significant impacts to subsistence resources or physical access to and competition for subsistence resources around the airport. The Land Transfer Alternative 2 Long-Term Lease Option in **Section 4.17.5.6.2** (Land Transfer Alternative 2, Subsistence) of the EIS would result in no short- and long-term impacts to subsistence resources or physical access to and competition for subsistence resources around the airport through a long-term lease. The Land Transfer Alternative 2 Combination Title Transfer and Long-Term Lease Option would result in similar impacts as those identified in **Section 4.17.5.6.2** (Land Transfer Alternative 2, Subsistence) of the EIS, although the impacts would affect a smaller area since only a small portion of federal lands would be transferred to ADOT&PF.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for Airport improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

A combination of RSA Alternatives 1 through 5, Taxiway Alternatives 1, Seaplane Pullout Alternatives 1, Approach Light System Alternatives 1 through 3, and Seawall Alternative 1 from the EIS, as well as a No-Action Alternative for the land transfer to the ADOT&PF would not use any federal public lands needed for subsistence.

Findings

While the combined effects of all preferred alternatives would result in a moderate impact on subsistence resources and minor impacts on physical access to and competition for resources, the amount of impact is not great enough to trigger the significance threshold measured as large reductions in abundance or major redistribution of these resources, substantial interference with access to active subsistence-use sites, or major increases in non-rural resident use. Therefore, the preferred alternatives would not significantly restrict subsistence resources and uses.

Transfer of title would cause the loss of federal subsistence regulations applying on those lands and the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. A long term lease would preserve opportunities for a subsistence priority for rural residents by retaining federal ownership of public lands.

Evaluation and Findings for the Cumulative Effects Analysis

The purpose of the cumulative analysis is to evaluate the incremental impact of the current action in conjunction with all past, present, and reasonably foreseeable future actions in or near the project area. The cumulative analysis considers in detail other activities that are not being evaluated in the Sitka Airport EIS as well as activities identified during scoping as being of concern to Sitka residents and members of the Sitka Tribe of Alaska.

The cumulative effects analysis examines the impact from implementing the maximum build alternatives presented in the EIS (RSA 6, Taxiway 2, Seaplane Pullout 3, ALS 3, Seawall 2, and Land Transfer Alternative 2). The implementation of these combined alternatives would use the greatest amount of federal public lands.

Past projects evaluated under the cumulative impacts analysis include:

- *Acquisition of Property for Future Airport Development – 2002* – The ADOT&PF acquired approximately 15 acres of property on Charcoal Island to remove six buildings that penetrated the surfaces affecting the airspace and to provide for future airport development. Five of the six buildings demolished were determined to be historic, and impacts to these historic structures were mitigated through recordation and development of interpretive materials in consultation with the Alaska State Historic Preservation Officer.

- *Mausoleum Removal* – The ADOT&PF demolished a military bunker near Runway end 29 that had been used as a mausoleum for victims of tuberculosis. Human remains were removed and repatriated to relatives and the native community.
- *Apron Reconstruction and Lease Lot Development – 2002* – The ADOT&PF reconstructed a portion of the aircraft apron, realigned a portion of the Airport Access Road, and developed lease lots for tenant use. Included in the project were the reconstruction of the existing partial parallel taxiway, widening/reconstruction of the USCG apron, construction of a new Airport Sand and Chemical Storage Building, transfer of property from USCG to the Airport, enlarging the aircraft apron areas, removal the existing USCG deluge pond, and other associated improvements. This project resulted in the filling of approximately 1.5 acres of wetlands for which a 404 Permit was obtained.
- *Sitka Runway 11 Approach Surface Obstruction Removal – 2004* – This project removed trees and brush from the summit of Battery and Line Islands to reduce the approach minimums for Alaska Airlines and increase the safety of aircraft operations.
- *New Thompson Harbor – 1990s* – The City and Borough of Sitka developed and then later improved New Thompson Harbor located on the northeast portion of Sitka Channel.
- *Sitka Channel Breakwater* – The U.S. Army Corps of Engineers developed and then later improved breakwater structures located on the northern portion of Sitka Channel between Baranof Island and Japonski Island.

When considering current projects, clarification is needed as to the time frame associated with “current.” For purposes of this cumulative effects analysis, current refers to projects that would be under construction during years 2006 through 2009, the time frame when this EIS is being prepared. At Sitka Airport, current projects include:

- *Release of Surplus Airport Lands* – The ADOT&PF is proposing to release portions of the Japonski Island Causeway from airport property to allow its use for non-aviation purposes.
- *Airport Lagoon Waste Disposal and Wildlife Hazard Abatement.* – The ADOT&PF has received a permit and is moving toward the filling of approximately 10.15 acres of the Airport Lagoon closest to the airport access road. The Lagoon is being filled to reduce wildlife hazards as well as to facilitate the planned future development of the site for airport uses sometime in the future.

- *Airport Access Road Relocation Phase 2* – The ADOT&PF proposes to relocate the existing airport roadway to the east (further away from, but parallel to, the runway) to provide additional lease lots for airport tenant use, as all available land adjacent to the apron has been leased. The first phase of this project has been completed with the relocation of a segment of the road. The second phase of the project will be undertaken to relocate the remaining portions.

In addition to current improvements at the Airport, improvements and development are occurring in the surrounding City and Borough of Sitka region. During the current time frame, improvements in the region are anticipated to include:

- *Federal Fishery Proposal 09-05* – The Sitka Tribe of Alaska has submitted a proposal to the Federal Subsistence Board to close harvest of herring and herring spawn in both Executive Orders 8877 and 8216 to non-federally eligible subsistence users. If the Federal Subsistence Board passes the proposal, only federally eligible subsistence users would be allowed to harvest herring and herring spawn in the Executive Orders 8877 and 8216 areas.
- *Sawmill Creek Road Dock – 2010* – A floating wood dock measuring 10 feet by 80 feet with a 20-foot long terminal structure is being constructed along Sawmill Creek Road.
- *Thimbleberry Bay Outfall and Utility Line – 2009* – This project would construct an outfall and utility line in the vicinity of Thimbleberry Bay.
- *Indian River Subdivision Expansion – 2008* – This project would develop an additional three lots within the Indian Creek Subdivision.
- *Upgrade of Sawmill Creek Road and Utilities – 2009* – Reconstruct and widen Sawmill Creek Road from Jeff Davis Street to the end and extend sewer lines.
- *Subdivision of 15 lots on Alice Island near existing townhomes – 2008* – recently completed.
- *Japonski Island Road and Utility Upgrades – 2009* – Upgrade streets and utilities to City and Borough of Sitka (CBS) standards and dedicate right of way for CBS assumption of maintenance.
- *Airport Terminal Expansion – 2009* – Upgrade and expand Sitka Airport terminal.
- *Campus Access Relocation – 2009* – Relocation of access roads to University of Alaska-Southeast and Mt. Edgecumbe School campuses on Japonski Island.

- *Continued residential development in the Indian River Valley and Sawmill Creek Road between the LDS Church and Whale Park.*
- *Residential development of benchlands on Halibut Point Road – 192 acres – 200 housing units or more; currently in the conceptual phase.*

A number of projects are expected during the reasonably foreseeable future at the Sitka Airport and in the surrounding airport environs, as outlined in **Chapter 5, Cumulative Impacts**. As noted in **Chapters 2 and 4** of the EIS, the period through 2023 has been determined to be reasonably foreseeable for the purposes of the cumulative effects analysis.

Chapter 2 notes that the Airport Master Plan has identified a number of improvements that are not ripe for consideration in the EIS and are independent of the proposed actions. Such reasonably foreseeable projects at Sitka Airport could include:

- *Commercial and Heavy Transit Apron Expansion and General Aviation (GA) Apron and Lease Lot Development* – To accommodate the forecast need for additional aircraft storage and parking, the existing GA apron and lease lot areas would be expanded between the existing aircraft apron and Charcoal Island. Charcoal Island would be developed first to include a GA apron, likely comprised of compacted gravel, with an apron expansion extending over time to include portions currently within the Airport Lagoon.

In addition to future airport projects, it is expected that other parties/agencies will undertake projects in the area. Potential projects identified at this time include:

- *Sitka Channel Breakwater Project* – This project would address existing issues with wave action continuing toward New Thompson Harbor and improve the breakwater in Sitka Channel. This project is planned to start during the next two years.
- *Development of a State Park on the Causeway* – This project would develop portions of the uplands and filled lands comprising the Japonski Island Causeway into a State Park accessible only by boat.
- *City and Borough of Sitka Seaplane Base Relocation* – This project would relocate the existing seaplane base from its current location in Sitka Channel onto Japonski Island adjacent to Mt. Edgecumbe School.
- *Mariculture expansions in Whiting Cove* – This project would expand the existing mariculture development to allow for increased production of oysters.

Cumulatively, these projects would disturb some public lands, primarily from the airport maximum build alternatives. With the exception of the STA fishery proposal and filling of the Airport Lagoon, most past, present, and reasonably foreseeable future actions do not affect federal public lands. The effects from the maximum build alternatives and past, present, and reasonably foreseeable future actions would affect some locations where subsistence harvesting occurs, and would have moderate short-term and minor long-term impacts to subsistence primarily from loss of subsistence resources and habitat during construction.

Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Resources and Uses

The cumulative effects analysis considers impacts associated with implementation of all maximum build alternatives assessed in the EIS and would implement all past, present, and reasonably foreseeable future actions discussed above. **Section 5.17, *Cumulative Impacts Subsistence*** of the EIS concludes that no significant impacts to subsistence resources or access to and competition for subsistence resources around the airport based on the low level of use in and around the airport for subsistence activities.

Evaluation of the Availability of Other Lands for Airport Improvements

The existing Airport is located on islands and filled lands between islands in Sitka Sound. The Airport has been in existence since 1969 and currently contains adequate infrastructure. There are no other lands that could be used for Airport improvements without moving the entire Airport to another location.

Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

A combination of RSA Alternatives 1 through 5, Taxiway Alternatives 1, Seaplane Pullout Alternatives 1, Approach Light System Alternatives 1 through 3, and Seawall Alternative 1 from the EIS, as well as a No-Action Alternative for the land transfer to the ADOT&PF would not use any federal public lands needed for subsistence.

Most past, present, and reasonably foreseeable future actions identified above do not affect federal public lands except for the STA fishery proposal and filling of the Airport Lagoon. The current permit to fill in the Airport Lagoon would affect federal public lands within the boundaries of E.O. 8216. However, there are no known subsistence resources located in or harvested in the Airport Lagoon. If the Federal Subsistence Board passes the fishery proposal submitted by the Sitka Tribe of Alaska, the transfer of property rights from the Federal government to the ADOT&PF (Land Transfer Alternative 2 title transfer option and the combined title transfer/ long term lease option) would eliminate an area set aside for subsistence only use.

The title transfer would cause the irreversible loss of opportunities for a subsistence priority for rural residents from loss of federal public lands. This could potentially increase competition for federally eligible subsistence users in the area, primarily from the herring commercial fishery. However, commercial fishing does not regularly occur in areas proposed for transfer to the State for airport purposes, as other more productive commercial fishing areas are available in Sitka Sound. Therefore, the cumulative effect of filling the lagoon, implementation of the STA fishery proposal, and implementation of the maximum build alternatives would not be expected to result in significant increases in competition.

Findings

When considered in combination with past, present, and foreseeable actions, implementation of the maximum build alternatives would have a moderate short-term and minor long-term impact on the loss of subsistence resources and uses. Further, there would be no known significant change in physical access to subsistence resources. Therefore, implementation of the maximum build alternatives, in combination with past, present, and future actions would not result in a significant impact as measured by large reductions in abundance or major redistribution of these resources, substantial interference with harvestable access to active subsistence-use sites, or major increases in non-rural resident use; and would therefore not significantly restrict subsistence resources and uses.

References

- ADF&G. 2001. Alaska Community Profile Database. Available online at: <http://www.subsistence.adfg.state.ak.us/geninfo/publctns/cpdb.cfm>
- ADF&G. 1994. Wildlife Notebook Series: Harbor Seals. Available online at: <http://www.adfg.state.ak.us/pubs/notebook/marine/harseal.php>
- DCCED. 2007. Alaska Community Database Community Information Summaries, Alaska Department of Commerce, Community, and Economic Development. Available online at: <http://www.commerce.state.ak.us/dca/commdb/CIS.cfm>
- Gmelch, G., Gmelch, S. B., & Nelson, R. 1985. Resource use in a small Alaskan city – Sitka. Division of Subsistence, Alaska Department of Fish and Game. Technical Paper Number 90. Available online at: <http://www.subsistence.adfg.state.ak.us/TechPap/tp090.pdf>
- U.S. Fish and Wildlife Service Office of Subsistence Management. 2008. Fishery Proposal 09-05, Closure of federal public waters in the Makhnati Island area to herring harvest except by federally-eligible subsistence users. Available online at: <http://alaska.fws.gov/asm/board.cfm>
- United States Census Bureau. 2000. 2000 Census Community Profile. Available online at: http://factfinder.census.gov/home/saff/main.html?_lang=en
- Wolfe, R.J. 2000. Subsistence in Alaska: a year 2000 update. Division of Subsistence, Alaska Department of Fish and Game. Available online at: <http://www.state.ak.us/adfg/subsist/geninfo/publctns/articles.htm>