

APPENDIX A  
Sec. 1113 of the Dingell Act:  
Chugach Region Land Study and  
Report  
SOCIOECONOMIC ASSESSMENT

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# SOCIOECONOMIC ASSESSMENT

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## I. INTRODUCTION

Twelve Alaska Native regional corporations were formed under Alaska state law after Congress passed the Alaska Native Claims Settlement Act (ANCSA), including the Chugach Natives, Inc. (CNI). The ANCSA settled land claims made by Alaska Natives while providing for the establishment of regional and village corporations to administer those claims. Consistent with sections 12(a) and 12(b) of ANCSA, the five village corporations in the Chugach Region were conveyed title to the surface and the CNI, as the regional corporation, received title to the subsurface of the village corporation-selected lands. In 1984, the CNI changed its name to Chugach Alaska Corporation (CAC).

Following the 1989 *Exxon Valdez* oil spill (EVOS), the Habitat Protection and Acquisition Program (Program) was established by the EVOS Trustee Council (EVOSTC) with settlement funds paid jointly to the United States (U.S.) and the State of Alaska (State) by Exxon, Inc. (Exxon). Under the Program, from 1994 to 2020, the U.S. and the State acquired approximately 650,000 acres of habitat conservation easements, timber rights, and surface from Native village corporations who identified themselves as willing sellers of their land. Under the Program, if the U.S. holds the deed to surface, the State holds a conservation easement and vice versa. Where a village corporation retained ownership of the surface, conservation easements or timber rights are held jointly by the U.S. and the State.

Section 1113(b)(2)(A) of the John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 (Dingell Act or Act) directs the Secretary of the Interior (Secretary) to, among other things, coordinate with the Secretary of Agriculture and consult with the CAC to “assess the social and economic impacts of the [P]rogram, including impacts caused by split estate ownership patterns created by Federal acquisitions under the [P]rogram, on the [Chugach] Region; and CAC and CAC land.”

Within the Chugach Region, the Program acquired land and established habitat conservation easements (and timber easements) on approximately 241,000 acres of village corporation land. The CAC did not sell any of its land interests. The Program did not create a split-estate ownership pattern with any of the acquisitions in question, though the acquisition of Village Corporation owned surface parcels by the State and Federal agencies through the program shifted the pattern of ownership involving two ANCSA corporations. The pattern of split-estate ownership was initially established by Congress through ANCSA without limiting regional and village corporations from alienating or encumbering their lands or interests in their land.

In accordance with the requirements of the Program, land interests were acquired to aid in the recovery of resources damaged by the EVOS and to help prevent additional injury to species due to intrusive development or habitat loss. These interests were acquired subject to valid existing rights, including those of the subsurface owner. In instances of split-estate, the subsurface is the dominant estate and carries with it the right to make such use of the surface as reasonably necessary to remove minerals. *See Norken Corp. v. McGahan*, 823 P.2d 622 (Alaska 1991). Acquisition of the surface subject to valid existing rights does not affect or limit the resource development rights of the subsurface owner.

The following socioeconomic impact assessment was initially developed by Environmental Management and Planning Solutions, Inc. (EMPSi), under contract with the Bureau of Land Management (BLM). The assessment, limited by a narrow data collection, relied heavily on a small number of key interviewees and entities. Contract researchers did not seek information about broader socioeconomic impacts of the Program on the Chugach Region from diverse stakeholders in the Region, including but not limited to local residents, local chambers of commerce, and governments.

## **II. SOCIAL AND DEMOGRAPHIC PROFILE**

The Chugach Region, served by the CNI at the passage of the ANCSA, extends from the southern tip of the Kenai Peninsula in the Gulf of Alaska, through Prince William Sound, to the 141<sup>st</sup> meridian west. The Chugach Region includes land near the Malaspina Glacier, between Icy Bay and Yakutat, and covers 5,000 miles of coastline.

The Chugach Region has five for-profit village corporations formed under the ANCSA, including Chenega, Eyak (Cordova), Nanwalek (English Bay), Port Graham, and Tatitlek. Section 7(g) of ANCSA stipulates that each regional corporation issue 100 shares of stock to each Alaska Native residing in a village at the time of incorporation. Alaska Natives with historical lineage from the Chugach Region and who were not residents of one of the recognized villages became “at-large” CAC shareholders. At-large shareholders did not receive any village corporation shares.

The CAC has more than 2,700 shareholders of Aleut, Eskimo, and Indian heritage, most of whom originate from the Chugach Region. Regional data include information for the Chugach Region, rather than comprehensive information for all shareholders. In addition to regional data, this Assessment provides social and demographic information at the community level for Chenega, Eyak (Cordova), Nanwalek (English Bay), Port Graham, Seward, Tatitlek, and Valdez.

Community data from the U.S. Census Bureau and other federal sources, such as the U.S. Bureau of Economic Analysis, remains limited. In addition, data can only be found on a subset of the population resulting in high margins of error because of the small sample size. Data provided below are from state data sources, including the Alaska Department of Labor and Workforce Development (ADOLWD).

This socioeconomic assessment provides a brief overview of the current social and economic setting, with additional details for components potentially affected by the Program.

## **A. COMMUNITY OVERVIEWS**

The following overviews only include the main communities in the Chugach Region.

### **1. CHENEGA**

An isolated community accessible only by air and water due to its location on Evans Island in Crab Bay, 42 miles southwest of Whittier in Prince William Sound and 104 air miles southeast of Anchorage, Chenega includes tribal members of the Native Village of Chenega. The original village of Chenega was destroyed in a tsunami in the aftermath of the 1964 Good Friday earthquake. The village was reestablished at its present location in 1982. Commercial fishing and subsistence activities continue to be an important part of the lifestyle of the people of Chenega. The local school, the Tribal Council, the health clinic, and commercial fishing operations provide other employment opportunities (The Chenega Corporation, n.d.).

### **2. CORDOVA AND EYAK**

A well-established community in the Chugach Region and located in the southeast area of Prince William Sound on Orca Inlet approximately 52 air miles southeast of Valdez and 150 miles southeast of Anchorage, Cordova covers 61.4 square miles of land and 14.3 square miles of water. Cordova and the surrounding area encompass the historical home of the Eyak, Chugach Region People, Tlingit, and Athabaskan (City of Cordova, 2021). In 1990, Cordova annexed the last traditional Eyak village. The Eyak Corporation represents the Eyak, Aleut, Tlingit, Athabaskan, and Yupik peoples with 515 enrolled members (The Eyak Corporation, 2021).

### **3. NANWALEK**

Located approximately 200 miles from Anchorage on the southwestern tip of the Kenai Peninsula in lower Cook Inlet and only four miles from Port Graham, Nanwalek, a census-designated place formerly known as English Bay, can only be accessed by air or water. Although the communities of Nanwalek and Port Graham do not have a maintained road between them, an all-terrain vehicle trail provides access for community members. The village includes members of the federally recognized tribe of the Native Village of Nanwalek. Subsistence activities, including hunting and fishing, remain important to the community's economy (Datawheel and Deloitte, 2021).

#### **4. PORT GRAHAM**

Port Graham at the southern end of the Kenai Peninsula, on the south shore of Port Graham Bay, approximately 20 air miles southwest of Homer and 180 air miles southwest of Anchorage. can only be accessed by air or water. The census-designated place includes members of the federally recognized tribe of the Native Village of Port Graham. The Port Graham Tribal Council serves the Alutiiq people of Port Graham. Subsistence activities are an important component of the village economy, while the local school, Tribal Council, health clinic, and commercial fishing operations provide most of the commercial employment opportunities. The fish cannery is owned and operated by The Port Graham Corporation, helping to make commercial fishing a vital part of the economy (Port Graham Corporation, 2021).

#### **5. SEWARD**

Located on Resurrection Bay on the Kenai Peninsula, Seward was founded in 1903 as the ocean terminus of a proposed railway to interior Alaska. Currently, the city provides a deep water, ice-free port, supporting rail, highway, and air transportation to Alaska's interior and population centers. In addition to now serving as the terminus for the Alaska Railroad, Seward acts as the gateway to Kenai Fjords National Park and provides numerous visitor attractions (City of Seward, n.d.). The Qutekcak Native Tribe provides services to the CAC shareholders in the area (Chugachmiut, n.d.).

#### **6. TATITLEK**

The Chugach Mountains form an impassable range to the north and then lower into a mountain ridge, which runs parallel with the Tatitlek Narrows. Located on the northeast shore of the Tatitlek Narrows on the Alaska mainland in Prince William Sound, 30 miles south of Valdez, Tatitlek was the closest village to the EVOS (The Tatitlek Corporation, 2019). Residents of Tatitlek include members of the federally recognized Native Village of Tatitlek tribe. The subsistence lifestyle and language revitalization are important cultural elements in the community.

#### **7. VALDEZ**

Valdez is on the northeast tip of Prince William Sound near the head of a fjord, approximately 305 road miles east of Anchorage and accessible by air, road, and water. The city was founded just



before the turn of the twentieth century as a gateway to gold and copper fields. It includes 222 square miles of land and 55 square miles of water. The economy is supported by commercial fishing, tourism, and the oil and gas industry (City of Valdez, 2021). The Valdez Native Tribe provides education and health services to the CAC shareholders in the area.

## **8. WHITTIER**

Whittier is near the head of Passage Canal, a fjord of Prince William Sound, and is approximately 47 air miles or 62 road or rail miles southeast of Anchorage. Whittier offers the closest year-round, ice-free port to Anchorage and has become a focal point for marine activity and freight transfer for sea-train barges servicing southcentral Alaska. The Alaska Engineering Commission first envisioned the community of Whittier in 1914. In the 1940s, the Army constructed deep water port facilities and a small network of roads, streets, and utility systems. At the height of military activities in the late 1950s, there were over 1,300 people living in Whittier; today, a little over 200 people live there year-round. Whittier covers approximately 17 square miles; however, with glaciers and open water covering approximately 20 percent of that area, there are only around 8,000 acres of land (City of Whittier, 2021).

## **B. DEMOGRAPHICS AND ECONOMIC OVERVIEW**

### **1. POPULATION**

As shown in **Table 1** below, between 2000 to 2018, the total population decreased in six of the nine Chugach Region communities. Population decreases ranged from 3.2 percent in Valdez to 34.9 percent in Chenega. In contrast, total population in Nanwalek during this time frame increased by 64.4 percent. Nanwalek remains the fourth most populous Chugach Region community, based on 2018 population levels. Population levels between 2000 and 2018 remained highest in Valdez, exceeding 3,900 consistently, followed by Cordova and Seward, which both maintained populations exceeding 2,200 throughout the time frame. Despite a population decline since 2000, Valdez remains the most populous geographic area, with an estimated 2018 population of 3,903, followed by Seward (2,584) and Cordova (2,360).

**Table 1. Population**

Geographic Area	2000	2010	2018	Percent Change 2000–2018
Chenega	86	76	56	-34.9
Cordova	2,454	2,239	2,360	-3.8
Eyak	168	128	135	-19.6
Nanwalek (English Bay)	177	254	291	64.4
Port Graham	171	177	179	4.5
Seward	2,830	2,693	2,584	-8.7
Tatitlek	107	88	90	-15.9
Valdez	4,036	3,976	3,903	-3.2
Whittier	182*	262	311	42.9
Chugach Region**	N/A	11,887	12,001	N/A
Alaska	628,346	713,913	734,055	16.8

Source: (Alaska Department of Labor & Workforce Development, Research and Analysis, 2019)

\*Data for 2000 obtained from 2010 Census for Whittier.

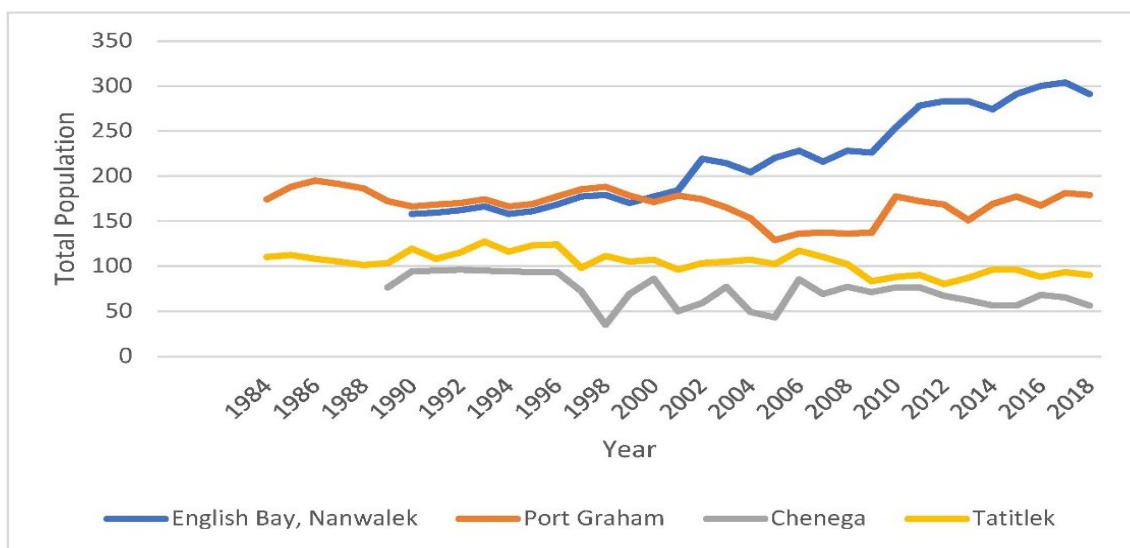
\*\*Chugach Region numbers equal total population, rural and urban

N/A – not applicable

**Figure 1** shows population trends from 1984 through 2018. From 1990 through 2018, Nanwalek experienced the largest percentage increase in total population. In a 2014 study involving Nanwalek community members, continuing population growth was attributed primarily to an increase in births, in combination with younger community members retaining residency rather than relocating (Jones & Kostick, 2016). In contrast, **Figure 1** reveals that the population fluctuated minimally in Tatitlek, increasing slightly in 1990. One explanation for increases in population in 1990 is the influx of temporary residents who came to work on the EVOS cleanup projects (Fall & Zimpelman, 2016).

**Figure 1** also shows a general decreasing trend in population since the early 2000s for Tatitlek. Several Tatitlek community members noted that it is becoming more common for Tatitlek residents to migrate out of the community for work opportunities, even though they may have plans to return (Fall & Zimpelman, 2016).

**Figure 1. Population Trends 1984–2018**



Source: (Alaska Department of Labor & Workforce Development, Research and Analysis, 2019)

## 2. POPULATION BY RACE AND ETHNICITY

**Table 2** describes the estimated 2018 racial and ethnic composition of the Chugach Region communities. In 2018, the largest minority group and largest segment of population for Chenega, Nanwalek, Port Graham, and Tatitlek was American Indian or Alaska Native (52.6 percent, 80.3 percent, 71.2 percent, and 60.2 percent, respectively).

In contrast, in Cordova, Seward, and Valdez, the minority populations comprised a low segment of the population, with 70.3 percent, 68.5 percent, and 81.5 percent of the total population being white. Overall, Port Graham had the highest percent minority population; however, minority populations represent a large segment of the population for all geographic areas, excluding Cordova, Seward, and Valdez.

Table 2. Population by Race/Ethnicity (Percentage of Total Population)

Population	Chenega	Cordova*	Nanwalek	Port Graham	Seward	Tatitlek	Valdez	Chugach Region	Alaska
<b>White</b>	30 (39.9)	1,573 (70.3)	27 (10.6)	15 (8.5)	1,844 (68.5)	27 (30.7)	3,242 (81.5)	9,090 (74.5)	478,834 (64.8)
<b>Black or African American alone</b>	0 (0)	10 (0.4)	0 (0)	2 (1.1)	83 (3.1)	0 (0)	24 (0.6)	85 (0.7)	24,129 (3.3)
<b>American Indian or Alaska Native</b>	40 (52.6)	198 (8.8)	204 (80.3)	126 (71.2)	451 (16.7)	53 (60.2)	325 (8.2)	1,341 (11.0)	106,660 (14.4)
<b>Asian</b>	0 (0)	244 (10.9)	0 (0)	0 (0)	64 (2.4)	1 (1.1)	76 (1.9)	583 (4.8)	46,556 (6.3)
<b>Native Hawaiian and Other Pacific Islander</b>	0 (0)	1 ( $<.05$ )	0 (0)	0 (0)	17 (0.6)	0 (0)	32 (0.8)	138 (1.1)	8,849 (1.2)
<b>Some other race</b>	0 (0)	12 (0.5)	0 (0)	0 (0)	16 (0.6)	1 (1.1)	26 (0.7)	112 (1.1)	11,027 (1.5)
<b>Two or more races</b>	6 (7.9)	201 (9.0)	23 (9.1)	34 (19.2)	218 (8.1)	5 (5.7)	251 (6.3)	853 (0.9)	62,461 (8.5)

Sources: (Research and analysis: Population and census, 2021);

\*Eyak data is contained within Cordova data; no separate data are available for Eyak.

### 3. INCOME AND EMPLOYMENT STATUS

**Table 3** shows employment status in 2018. For all geographic areas, employment exceeded 50 percent. Employment was highest in Nanwalek (69 percent), followed by Valdez (68 percent), and Port Graham (65 percent). These geographic areas also exhibited the highest number of unemployment insurance claimants. Median income in communities was higher than the State of Alaska average (\$76,715) for all but Nanwalek (\$49,063), Port Graham (\$29,375), Seward (\$76,410), and Tatitlek (\$75,833).

**Table 3. Employment Status and Income**

Geographic Area	Total Population Over 16	Number Employed	Percent Employed	Unemployed Insurance Claimants	Median Household income
Chenega	32	17	53	2	N/A
Cordova	1,757	1,077	61	206	\$85,970
Nanwalek (English Bay)	158	109	69	21	\$49,063
Port Graham	99	64	65	10	\$29,375
Seward	1,583	941	59	157	\$76,410
Tatitlek	60	34	57	5	\$75,833
Valdez	2,667	1,824	68	162	\$95,847
Chugach Region <sup>1</sup>	12,202	N/A	N/A	N/A	\$82,645
Alaska	572,880	265,075	46	N/A	\$76,715

Sources: (Research and analysis: Population and census, 2021)

Note: N/A indicates data not available. <sup>1</sup>Chugach Region represents U.S. Census Bureau data for Chugach Alaska Native Regional Corporation

### *Employment by Industry*

According to the Prince William Sound Economic Development District (2016), the area has a predominantly service-producing economy (48 percent). Goods-producing jobs account for 30 percent of the jobs and nearly one-quarter of the jobs are with federal, state, or local governments. Trade, transportation, and utilities (26 percent), seafood harvesting (21 percent), and local government (12 percent) are the top three industries in terms of the number of jobs and associated wages. Business and professional services (7 percent), manufacturing (5 percent), and educational and health services (5 percent) are the next three largest industries.

**Table 4** shows employment by industry for communities, as of 2018. Key economic sectors based on the number of jobs varied by community, but generally they included local government, trade, transportation, and utilities. It should be noted that fishing and tourism, two key industries in many communities, are not displayed here as they do not constitute standard industry categories collected by the ADOWLD. Fishing would fall within the natural resources and mining industry, while tourism includes multiple industries, primarily leisure and hospitality.

**Table 4. Employment by Industry<sup>1</sup> (Percentage of Total Employed Population)**

Industry <sup>1</sup>	Chenega	Cordova <sup>2</sup>	Nanwalek	Port Graham	Seward	Tatitlek	Valdez
Natural resources and mining	2	34	-	4	21	-	108
	(11.8)	(3.2)		(6.3)	(2.2)		(5.9)
Construction	-	62	-	-	37	-	73
		(5.8)			(3.9)		(4.0)
Manufacturing	-	170	-	-	46	-	81
		(15.8)			(4.9)		(4.4)
Trade, transportation, and utilities	-	212	3	11	218	3	498
		(19.7)	(8.8)	(17.2)	(23.2)	(8.8)	(27.3)
Information	-	21	-	-	4	-	57
		(1.9)			(0.4)		(3.1)
Financial activities	1	30	1	2	29	1	30
	(5.9)	(2.8)	(2.9)	(3.1)	(3.1)	(2.9)	(1.6)
Professional and business services	-	105	3	2	75	3	143
		(9.7)	(8.8)	(3.1)	(8.0)	(8.8)	(7.8)
Educational and health services	-	24	1	3	111	1	212
		(2.2)	(2.9)	(4.7)	(11.8)	(2.9)	(11.6)
Leisure and hospitality	1	68	-	2	159	-	183
	(5.9)	(6.3)		(3.1)	(16.9)		(10.0)
State government	-	54	-	-	103	-	87
		(5.0)			(10.9)		(4.8)
Local government	8	261	21	32	116	21	319
	(47.1)	(24.2)	(61.6)	(50)	(12.3)	(61.8)	(17.5)
Other	5	35	5	8	21	5	32
	(29.4)	(3.2)	(14.7)	(12.5)	(2.2)	(14.7)	(1.8)
Unknown	-	1	-	-	1	-	1
		(0.1)			(0.1)		(0.1)

Source: (Research and analysis: Population and census, 2021)

<sup>1</sup>Employment by Industry is based on employment by place of residence, as based on the Alaska Permanent Dividend Fund database. No data were available for the city of Whittier. Fishing and tourism are not displayed here as they do not constitute standards industry categories collected by the ADOWLD.

<sup>2</sup>Eyak data is included in the Cordova data; no separate data were available for Eyak.

According to the 2017 Prince William Sound Area Finfish Management Report from the Alaska Department of Fish and Game (2019), commercial fisheries in the Prince William Sound area display a wide range of harvest levels over the past 40 years. For example, from 1980 to 2017 commercial salmon harvest levels ranged from a low of approximately 10 million in 1992 to a high of over 100 million in 2015. A trend toward an overall increase in harvest can be seen

beginning around 1990, although the level of annual variation makes it difficult to determine any clear linkage with specific causes.

**Table 5** shows historical participation and earnings from fisheries permit holders in Native villages and other communities in the Chugach Region. From 1980 through 2009, the number of permits fished, pounds fished, and inflation-adjusted revenue from fishing decreased substantially for Nanwalek, Port Graham, and Tatitlek. From 1980 through 2005, Chenega experienced an increase in permits fished, pounds fished, and inflation-adjusted revenue. For Chenega and Port Graham, the largest increase in earnings and participation from fisheries permit holders was between 1980 and 1985, while the largest decrease was between 1990 and 1995.

**Table 5. Historical (1980–2009) Participation and Earnings  
From Fisheries Permit Holders for All Species<sup>1, 2</sup>**

	Permits Held	Permits Fished	Pounds	Inflation-adjusted Revenue (in Dollars)
<b>Chenega</b>				
<b>1980</b>	9	1	20,191	44,164
<b>1985</b>	3	2	228,370	244,203
<b>1990</b>	9	7	135,589	234,091
<b>1995</b>	12	7	168,545	309,741
<b>2000</b>	3	1	75,079	74,135
<b>2005</b>	1	1	67,883	69,463
<b>2009</b>	0	0	0	0
<b>Nanwalek</b>				
<b>1980</b>	15	12	235,140	511,611
<b>1985</b>	14	7	169,698	255,270
<b>1990</b>	12	3	96,946	115,787
<b>1995</b>	6	4	56,946	90,815
<b>2000</b>	7	3	43,315	67,138
<b>2005</b>	6	0	0	0
<b>2009</b>	6	2	60,630	108,910
<b>Port Graham</b>				
<b>1980</b>	38	21	723,579	1,048,936
<b>1985</b>	34	25	1,664,004	1,808,411
<b>1990</b>	33	19	886,871	1,141,794
<b>1995</b>	22	10	954,120	640,246
<b>2000</b>	15	5	147,309	119,578

	Permits Held	Permits Fished	Pounds	Inflation-adjusted Revenue (in Dollars)
<b>2005</b>	11	3	81,885	139,495
<b>2009</b>	7	1	26,010	93,687
<b>Tatitlek</b>				
<b>1980</b>	33	18	1,147,255	1,746,859
<b>1985</b>	17	13	965,180	1,126,134
<b>1990</b>	15	8	702,630	711,719
<b>1995</b>	5	2	59,570	106,246
<b>2000</b>	6	6	242,894	234,982
<b>2005</b>	5	5	177,202	238,063
<b>2009</b>	5	3	74,705	118,565
<b>Cordova</b>				
<b>1980</b>	1,317	710	48,029,354	67,981,904
<b>1985</b>	874	622	60,783,194	67,123,713
<b>1990</b>	967	696	59,111,740	63,313,087
<b>1995</b>	712	457	33,969,384	32,123,866
<b>2000</b>	622	427	61,326,997	30,498,058
<b>2005</b>	570	388	72,436,712	31,264,605
<b>2009</b>	534	375	28,572,011	30,009,670
<b>Seward</b>				
<b>1980</b>	319	112	6,405,105	11,008,887
<b>1985</b>	314	164	11,893,066	13,451,946
<b>1990</b>	317	179	15,572,472	22,097,923
<b>1995</b>	183	93	9,347,542	10,496,718
<b>2000</b>	164	86	9,219,602	10,669,651
<b>2005</b>	117	68	4,338,786	7,538,829
<b>2009</b>	112	71	7,305,975	8,591,682
<b>Valdez</b>				
<b>1980</b>	248	74	2,839,846	4,010,621
<b>1985</b>	215	86	6,378,850	5,102,951
<b>1990</b>	209	82	4,186,676	4,015,521
<b>1995</b>	92	45	3,835,901	2,146,970
<b>2000</b>	64	32	8,893,174	2,697,640
<b>2005</b>	65	34	17,186,507	3,883,497
<b>2009</b>	59	38	2,085,508	1,386,724
<b>Whittier</b>				
<b>1980</b>	25	7	30,594	116,572
<b>1985</b>	31	15	120,955	595,068
<b>1990</b>	71	29	161,950	253,217



	Permits Held	Permits Fished	Pounds	Inflation-adjusted Revenue (in Dollars)
<b>1995</b>	25	14	88,011	122,311
<b>2000</b>	18	2	NA	NA
<b>2005</b>	5	2	NA	NA
<b>2009</b>	5	4	NA	NA

Sources: (Alaska Commercial Fisheries Entry Commission, 2021)

NA: data not available

<sup>1</sup>Data are produced annually by the Alaska Commercial Fisheries Entry Commission (CFEC). Unavailable data were estimated, based on Northern Economics' proprietary algorithm.

<sup>2</sup>Halibut, salmon, sablefish, other ground fish, herring, crab, and other shellfish

For Nanwalek, the largest decrease in pounds fished occurred between 1985 and 1990, while the largest decrease in revenue happened between 1980 and 1985. For Tatitlek, the largest decrease in pounds fished occurred between 1990 and 1995, while the largest decrease in revenue happened between 1980 and 1985. The greatest increase for pounds fished, permits fished, and revenue earned for Tatitlek was from 1990 through 1995.

For other communities, total permits and number of permits fished decreased in all communities from 1980 through 2009. Pounds fished and inflation adjusted revenue had more variation in the communities. Cordova and Valdez experienced a general decrease in inflation-adjusted revenue earning over the same period, while Whittier and Seward had a higher degree of variability. Pounds fished were highest in 2005 for Cordova and Valdez, and highest in 1990 for Seward and Whittier.

**Table 5** reveals that participation and earnings from fisheries permit holders generally decreased in some of the Chugach Region communities. A decrease in salmon prices following the 1989 EVOS and subsequent difficulty earning revenue (Jones & Kostick, 2016) likely contributed to such trends. Without sufficient revenue, such operating costs as those for permit fees and equipment expenses influenced participation and earnings. Following the EVOS, most of Nanwalek's commercial fishermen sold their permits, equipment, and boats.

## C. SOCIAL SETTING

### 1. SOCIAL INDICATORS

The median age and the ratio of males to females were examined for the Chugach Region communities as seen in **Table 6**. There is a large degree of variation between communities, and the Chugach Region supports a population older than the Alaska comparison population. At the community level, the residents of Chenega and Tatitlek are younger than the state median age, and the residents of all other communities are older. The communities of Chenega, Nanwalek, and Tatitlek had a lower ratio of men to women than the state, while the remaining communities had a higher ratio. In addition, the population for the Chugach Region has notably more men than women, as compared with the Alaska population.

**Table 6. Age and Sex**

Geographic Area	Median Age	Sex Ratio (Males per 100 Females)
Chenega	29.6	100.0
Cordova	44.1	111.7
Nanwalek (English Bay)	36.4	81.2
Port Graham	34.9	156.0
Seward	37.6	148.9
Tatitlek	29.8	77.3
Valdez	37.9	115.8
Chugach Region	40.2	122.6
Alaska	34.0	109.2

Source: (Research and analysis: Population and census, 2021)

### 2. SUBSISTENCE OVERVIEW

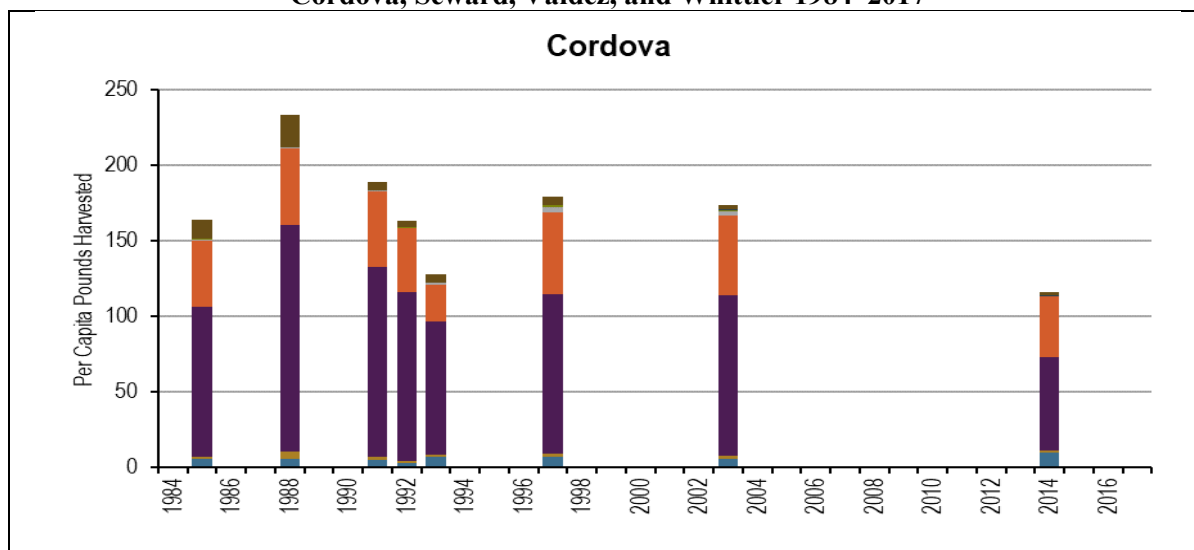
Subsistence use of resources is important for both Native villages and rural communities in the Chugach Region. The Alaska Department of Fish and Game (ADF&G) maintains the Community Subsistence Information System (CSIS) database of subsistence harvest data, collected using systematic household surveys (Alaska Commercial Fisheries Entry Commission, 2021). Harvest data are available by community and include several different resource types for each year that ADF&G conducts a subsistence harvest survey. Years with no data are years when no survey was conducted or years with only a marine mammal survey, which provides seal and sea lion harvest data only and does not include per capita data as reported. The information below illustrates the

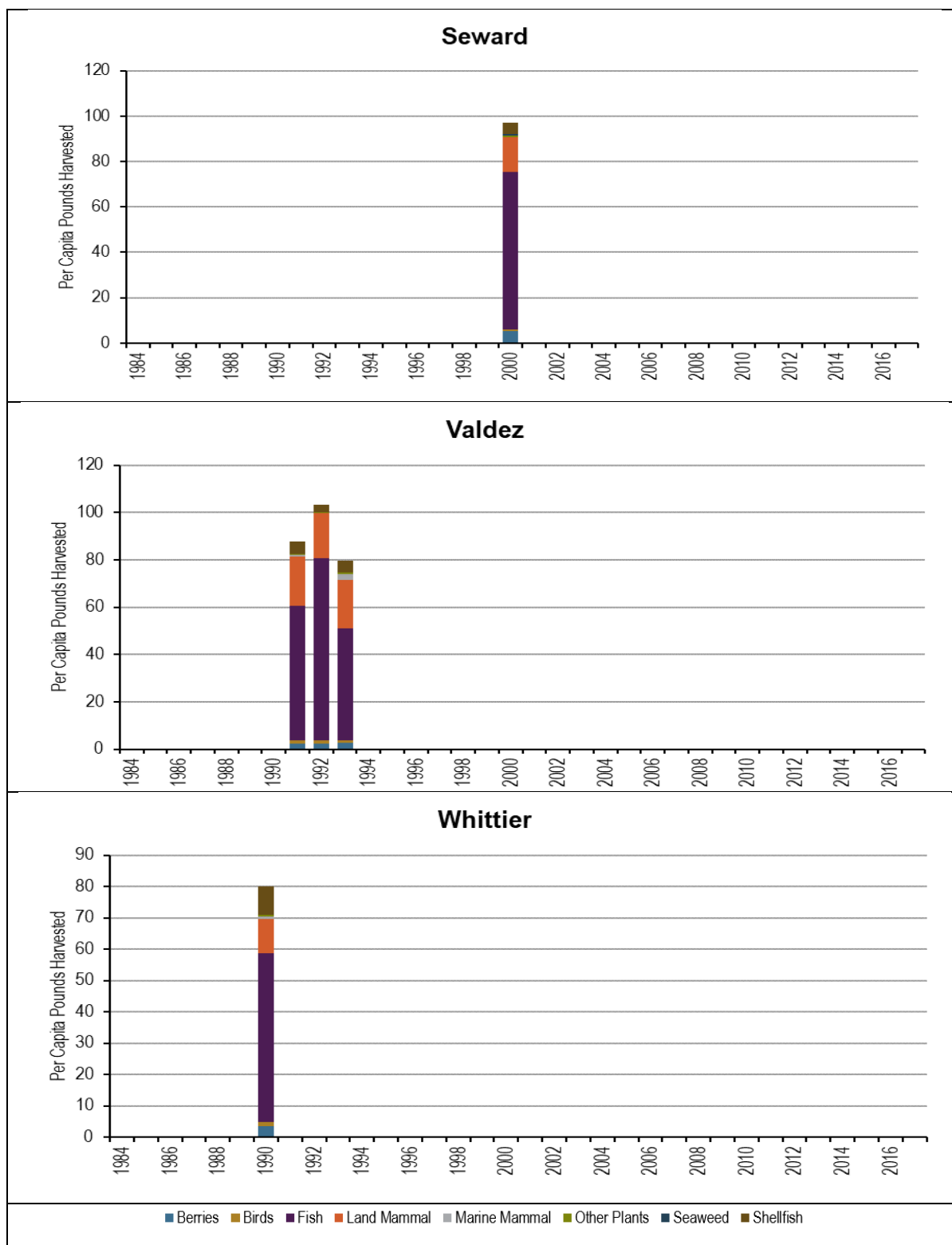
subsistence harvests for the rural communities of Cordova, Seward, Valdez, and Whittier and for the villages of Chenega, Nanwalek, Tatitlek, and Port Graham.

**Figure 2** shows subsistence harvest per capita for Cordova, Seward, Valdez, and Whittier by resource. For example, Whittier has only one year (1990) of subsistence data available overall. Seward has only one year of subsistence data covering all resource categories, but marine mammal surveys were conducted in Seward for several years.

Fish and land mammals comprise most of the harvest for Cordova, Seward, Valdez, and Whittier. Subsistence harvest per capita in Cordova was the lowest in 1993, and the peak harvest per capita was in 1988. Cordova's per capita subsistence harvest decreased from 1991 through 1993, before increasing in 1997. Subsistence harvest per capita in Valdez increased from 1991 to 1992, before decreasing to a low in 1993.

**Figure 2. All Resources Subsistence Harvest Per Capita in Pounds for Cordova, Seward, Valdez, and Whittier 1984–2017**





Source: ADF&G 2020a

Fall and Utermohle (1995) prepared a report detailing the 1991–93 study of the sociocultural consequences of outer continental shelf development in Alaska, including the 1989 oil spill. The authors noted that the 1993 decrease in Valdez subsistence harvest may have been a result of bias in the small sample size rather than a change in community harvest. Some Valdez respondents who participated in the Fall and Utermohle study did report concern about oil contamination of natural resources, but overall, the authors concluded there was “little evidence of major affects [sic] of the spill on wild resource uses in Valdez.”

**Figure 3** shows data for the Villages of Chenega, Nanwalek, Tatitlek, and Port Graham. Comparable data were not available for Eyak because it is part of the City of Cordova. The information includes all subsistence harvests and for key resources, including salmon, mollusks, seals and sea lions, and land mammals.

The tables below show subsistence harvest estimates per capita. The CSIS database also includes total harvest estimates and per-household harvest estimates, and EMPSi chose to use the per capita data to account for changing community populations and differing household sizes.

As noted in Fall and Zimpelman (2016), which summarizes the 2014 subsistence use survey for communities affected by the EVOS, separating the lingering effects of the oil spill from other environmental, economic, social, and cultural factors can be challenging. As a result, these subsistence data provide information on subsistence resources in affected communities; however, the information collected cannot definitively isolate the ongoing impacts of the oil spill and subsequent land acquisition from other factors that also affect subsistence harvest and use.

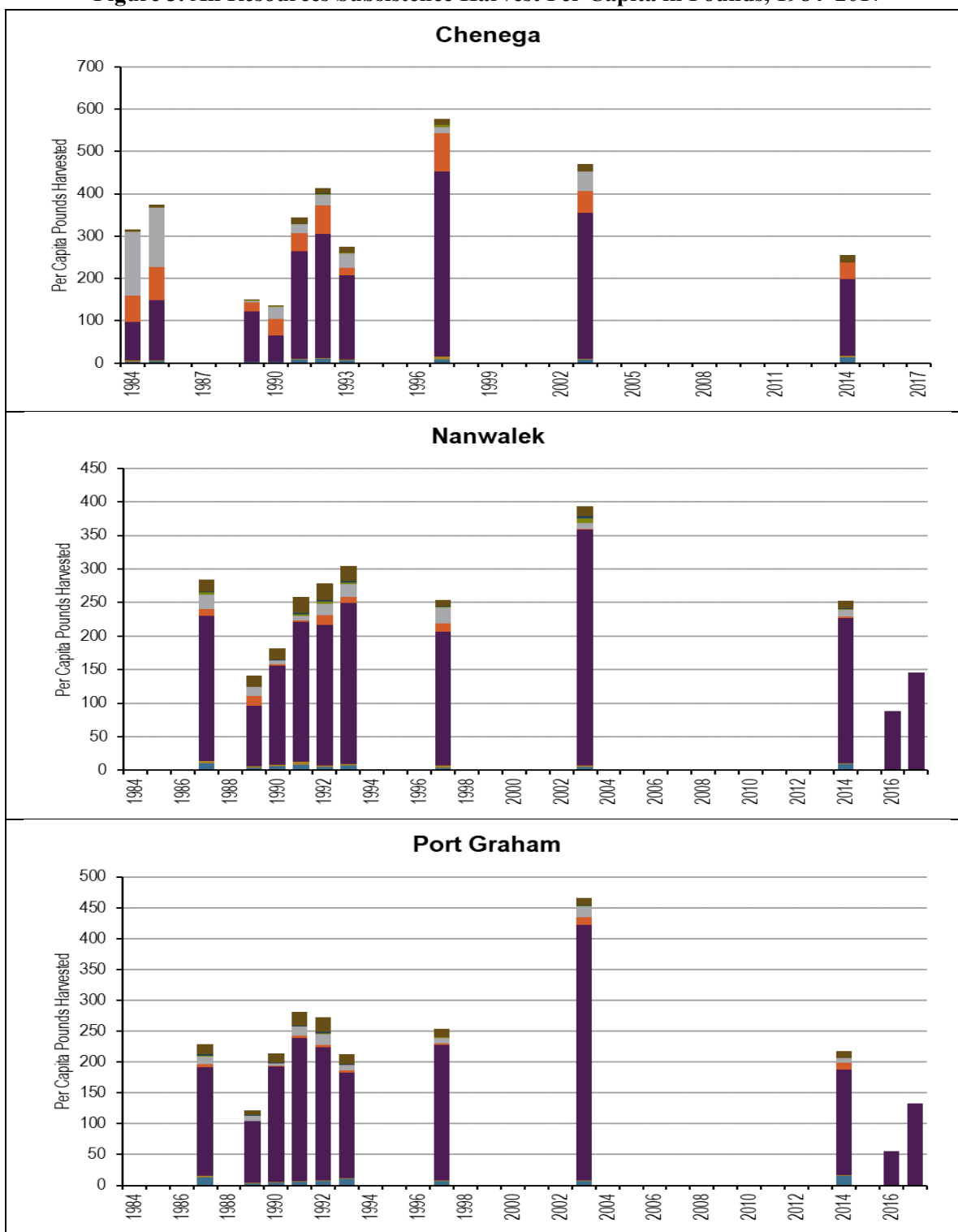
**Figure 3** shows subsistence harvest per capita for each community by resource. Years showing no data were years when no survey was conducted or years with only a marine mammal survey, which provides seal and sea lion harvest data only and do not include per capita data reported in CSIS. The subsistence harvest data show mixed trends after the lows in 1989–1990 immediately following the 1989 oil spill. Subsistence harvest in Chenega was the lowest in 1990, with an increase to pre-spill levels by the early 1990s and peak harvest in 1997. Subsistence harvest in Nanwalek and Port Graham was the lowest in 1989, with an increase to pre-spill levels by the early

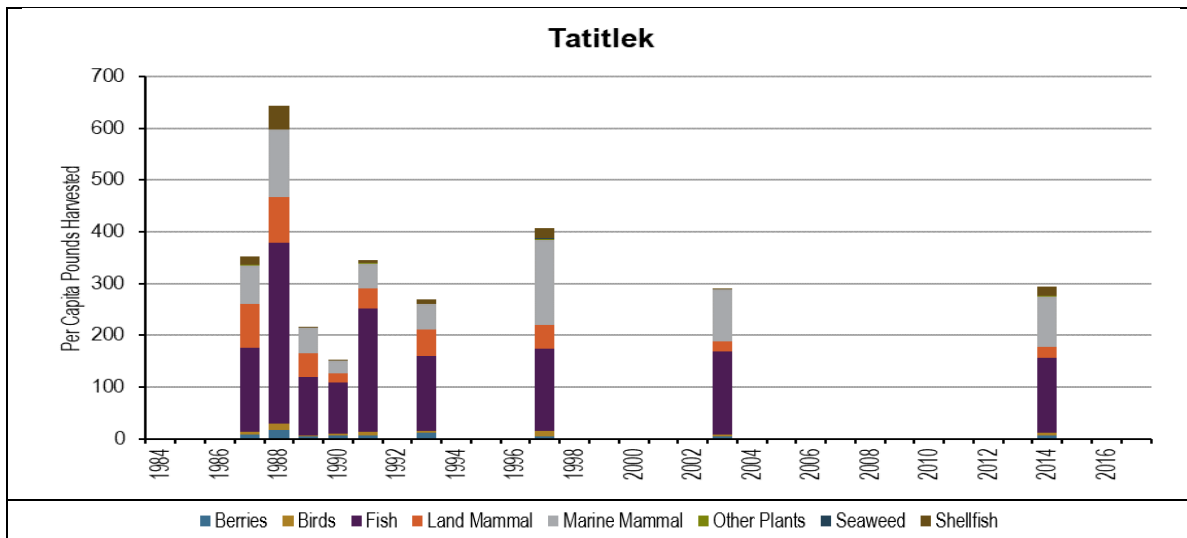
1990s and peak harvest in 2003. Subsistence harvest in Tatitlek peaked in 1988 before the lowest harvests in 1989–1990, followed by a slight increase in the early 1990s.

Fish comprise most of the harvest in Chenega, Nanwalek, and Port Graham; however, fish comprise closer to half of Tatitlek’s harvest, which includes larger portions of land and marine mammal harvest. Relative to Nanwalek and Port Graham, Chenega’s harvest has a higher portion of land and marine mammals.

Fall and Utermohle’s (1999) technical paper, detailing the 1997 subsistence survey results, notes that there was some recovery of subsistence harvests, as illustrated by higher per capita harvest and higher diversity indices than in 1989–90; for many communities, the 1997–98 levels were like pre-spill averages or at least one pre-spill year. Only Nanwalek had most households saying that their subsistence uses were lower overall than before the oil spill. Despite this potential recovery, the report also notes that “there remain important differences between pre-spill subsistence and the 1997–98 study year which can at least in part, be attributed to long-term effects of the oil spill” (Fall & Utermohle, 1999). The report authors note changing harvest composition, with more fish and fewer marine mammals, invertebrates, and birds. This is related to concerns about food safety, resource population declines, and salmon enhancement. The authors also note that most households link the oil spill with their reported lower use of at least one resource. They find that “this illustrates that 10 years after the spill, people continue to point to the spill as a source of changes to their subsistence uses. But these changes are no longer so great as to affect overall subsistence uses for most households and communities” (Fall & Utermohle, 1999).

**Figure 3. All Resources Subsistence Harvest Per Capita in Pounds, 1984–2017**





Source: (Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, 2019)

Note: The 2016 and 2017 survey data for Nanwalek and Port Graham show fish harvest only

Fall’s technical paper (2006) details the 2003 subsistence survey results and notes that “while overall community harvests [in 2003] approximated pre-spill estimates, about half the households reported lower total subsistence uses than before the spill and 39 percent blamed spill effects for continuing lower uses of at least one resource. Many respondents reported increased effort to harvest resources due to scarcities and competition. Respondents were often uncertain about the link between changes in their communities and the oil spill. Overall, 72 percent of respondents said that the traditional way of life has not recovered from the spill.”

The 2003 survey findings also included a reference to the Program. The authors noted that some of the survey responses, especially people in the Cordova area, identified the Program as being part of the reason for the increasing struggle for fish and game resources (Fall, 2006). This finding notes the potential impact of the Program on their subsistence use.

In their 2016 technical papers detailing the 2014 subsistence survey results, Fall and Zimpelman find evidence that subsistence uses are both potentially recovering and not recovering. Findings related to recovery include the following:

- Relatively high levels of harvests of a variety of resources.
- Widespread participation in harvest activities.
- Frequent sharing of fish and wildlife harvests.



- An increase in the number of resources classified as recovered or likely recovered by the EVOSTC; four are still classified as not recovering.

Findings related to a potential lack of recovery are as follows:

- Harvests in 2014, as estimated in pounds per capita, were down substantially from 2003 (ranging from 34 percent in Cordova to 53 percent in Port Graham; Tatitlek's harvest rose 1 percent), down from post-spill averages since 1991 (from 11 percent in Tatitlek to 39 percent in Chenega Bay), and down from pre-spill estimates (from 4 percent in Port Graham to 42 percent in Cordova).
- A much lower diversity of resource uses was documented in all study communities, compared with the pre-spill averages and annual post-spill averages from 1991 through 2003.
- In Nanwalek and Tatitlek, a notable drop occurred in the percentage of households receiving wild resources in 2014, compared with 2003; in all five communities, a lower percentage of households gave away wild resources, and the average number of resources received and given away per household dropped in all five communities as well.
- Many households reported their uses of wild resources were lower in 2014, compared with other recent years.
- Respondents overall said some natural resources had not recovered from continuing EVOS effects.
- According to respondents, availability to harvest is also low for some resources.

Fall and Zimpelman (2016) note that “this potential evidence of a lack of a full recovery from the *Exxon Valdez* oil spill effects is likely not solely related to the oil spill and some changes might not be connected to the oil spill conditions at all. As explanations for lower harvests and uses, respondents cited personal reasons, work commitments, and general lower levels of effort as often, or more often, than natural resource conditions, and few directly cited spill effects as a single or primary cause of changing subsistence patterns.” Again, this illustrates the difficulty of isolating the ongoing impacts of the oil spill or changes in land management from other factors that affect subsistence use over time.

### III. CHUGACH REGION HISTORY

Archaeological finds in the Chugach Region indicate that the Indigenous Peoples of the Chugach Region have occupied the area for thousands of years, from the time when Prince William Sound was still largely covered by glaciers during the last ice age. The natural wealth of the Chugach Region attracted early human settlement from all areas of what is now Alaska, and the Region became part of a migration and trading route that brought together various Native cultures.

At one time the Alutiiq population of Prince William Sound was divided into at least eight groups, with each group named after its principal village or some geographical aspect within its territory: Nuchek, Shallow Water, Sheep Bay, Port Gravina, Tatitlek, Kiniklik, Chenega, and Montague Island. These groups shared a common language and culture, but today they are politically independent, having their own chiefs or leaders (Simeone & Miraglia, 2000).

The Alutiiq people were the predominant culture of the Chugach Region, settling Prince William Sound more than 5,000 years ago. The eastern portion of the Region was also occupied by a smaller nation of Eyak Athabascans who migrated down the Copper River in cottonwood canoes. The Tlingit Indians, a maritime people from southeast Alaska, settled around the eastern mouth of the Copper River Delta, having traveled north along the coastline of the Gulf of Alaska in large war canoes (Chugach Alaska Corporation, 2021). Individuals from each of these groups are all now shareholders in CAC.

Native peoples in the Chugach Region were also the first to meet the European explorer, Vitus Bering, who was the first European to reach Alaska at Kayak Island in 1741 under the Russian flag. Since the founding of Fort Saint Constantine at Nuchek Village in 1793, the Russian culture has played an important role in Chugach Region history. Spanish, English, and American explorers have also left their marks on the history of the Region.

While many Alaska Natives in the Chugach Region have adapted to a more modern lifestyle, subsistence remains the cornerstone of the culture and provides a much-needed food source. Subsistence also binds the social fabric of the villages and communities together (Chugach Alaska Corporation, 2021).

## ***A. TRANS-ALASKA PIPELINE SYSTEM CONSTRUCTION AND CONTRACTS***

In 1963, Alaska began to realize an economic boom with discovery of oil reserves at Prudhoe Bay on Alaska's North Slope. Engineers determined the best way to move oil from Prudhoe Bay to market would be a pipeline stretching 800 miles to Valdez, which has a natural deep-water port. A terminal was to be built at Valdez to receive, process, and load the oil onto tankers bound for market. Major producers, including British Petroleum, Exxon, and Atlantic Richfield (now ConocoPhillips), would share ownership of the pipeline, dubbed the Trans-Alaska Pipeline System (TAPS).

In 1970, Alyeska Pipeline Service Company (Alyeska) was formed as the entity to design, build, maintain, and operate the TAPS (Kompkoff, 2018). Construction began on March 27, 1975, and was completed May 31, 1977. The first oil moved through the pipeline on June 20, 1977, (Alyeska Pipeline Service Company, 2021). The CNI was able to secure certain contracts with Alyeska, and other contractors, including other Alaska Native corporations, also secured contracts. While contracts for Chugach subsidiaries were signed, the CNI judged the number of contracts to be inadequate, relative to the promise of jobs and contracts. By the end of 1975, the bulk of the serious contracting had ceased. As Kompkoff noted in 2018, this prompted Cecil Barnes, then President of the CNI, to write Alyeska with a proposal involving camp maintenance, which Alyeska ultimately denied.

The CAC, through its contract with the TAPS operator, Alyeska, provides administrative and technical services through the CAC subsidiary, Chugach Alaska Services, LLC. The CAC also provides oil spill response in a partnership between the CAC and the village corporations for Tatitlek and Chenega. Both entities have been instrumental in meeting Alaska Native hiring provisions required by Section 29 of the TAPS agreement (Kompkoff, 2018).

## **B. ALASKA NATIVE CLAIMS SETTLEMENT ACT**

ANCSA was signed into law on December 18, 1971, and remains to date the largest settlement of aboriginal claims to land in U.S. history.<sup>1</sup> The settlement included payment of nearly \$1 billion through the Alaska Native Fund, and conveyance of approximately 46 million acres of land. In the ANCSA, Congress created split-estate ownership between the Alaska Native regional corporations and village corporations. Under the ANCSA's land selection provisions, village corporations were entitled to select the surface of approximately 22 million acres of land at established village sites and nearby lands. See 43 U.S.C.A. § 1611(a), (c). Upon conveyance of the selected surface to the village corporations, the subsurface in that same land was conveyed to the respective regional corporation per the ANCSA. See 43 U.S.C.A. § 1613(f).

Twelve regional corporations, approximately 230 local corporations<sup>2</sup>, and 15 individuals have received or are entitled to receive land and benefits pursuant to the ANCSA and related legislation. The amount of land an entity is entitled to depends on the type of entity, its location in the State<sup>3</sup>, the requirements and formula set out in the ANCSA, decisions made by the regional corporation, and other factors such as subsequent agreements and legislation.

The ANCSA required village corporations to select lands in the vicinity of their villages allowing discretion as to which lands to select within their designated selection area. The ANCSA directed the village corporations to select surface lands associated with their village sites and surrounding areas used, since time immemorial, for hunting, fishing, and other traditional surface uses.

Where village corporations selected and received title to the surface of lands, the regional corporations received the subsurface in those lands.<sup>4</sup> Thus, the surface of selected lands was severed from the subsurface, with village corporations generally owning the surface and regional corporations generally owning the subsurface of these same lands. The ANCSA gave village

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<sup>1</sup> ANCSA, 43 U.S.C. sections 1601 et seq., extinguished Native land claims based on aboriginal rights. See, e.g., *People of Vill. of Gambell v. Clark*, 746 F.2d 572, 574 (9th Cir. 1984). The aboriginal rights at issue were rooted in the Alaska Natives' actual, exclusive, and continuous use and occupancy of surface lands and waters, largely for subsistence hunting and fishing. See id. ("[a]boriginal title or right is a right of exclusive use and occupancy held by Natives in lands and waters used by them and their ancestors prior to the assertion of sovereignty over such areas by the United States.").

<sup>2</sup> For purposes of this discussion, the term "local corporations" includes 210 village corporations, nine group corporations, four urban corporations, and five reserve corporations.

<sup>3</sup> Entities in southeast Alaska are treated somewhat differently by the ANCSA due to a previous settlement of aboriginal rights.

<sup>4</sup> With certain exceptions not germane to Chugach Region.

corporations limited authority to control subsurface development only within the geographic boundaries of an actual village. See 43 U.S.C. § 1613(f). Outside the boundaries of the Native villages, subsurface development by the regional corporation (which requires use of the surface) does not require prior consent. See *Leisnoi v. Stratman*, 154 F.3d 1062 (9th Cir. 1998).

The ANCSA also established revenue sharing among regional corporations, and between regional corporations and village corporations, to more evenly distribute the potential unequal values of the subsurface and surface lands conveyed, and to ensure that all Alaska Natives generally received the same benefits under the ANCSA. See 43 U.S.C. § 1606(i)(1)(A); see also Senate Report 91-925 at 128. Section 7(i) of the ANCSA requires that the twelve land-owning regional corporations share 70 percent of the revenues generated from timber and certain subsurface resources in their ANCSA-patented lands. *Id.*

The CNI incorporated as a for-profit ANCSA regional corporation in June 1972. The ANCSA contains specific provisions authorizing regional corporations to receive lands in addition to the subsurface in village lands. Regional corporations generally made their selections after the village corporations selected their land entitlement.<sup>5</sup> Under the ANCSA, the CNI became entitled to approximately 383,000 acres<sup>6</sup> of full-estate and has received, or will receive, title to about 550,000 acres of subsurface.<sup>7</sup>

Village and regional corporations selected their land entitlements primarily from areas near the villages, or in other lands made available pursuant to the ANCSA. In the Chugach Region, national forest lands could be selected in the areas near the villages, but village selections had priority over the regional selections. Due to the coastal location of the villages in the Chugach Region, there was not enough land surrounding the villages to satisfy the village or regional corporations' land entitlements. Additional lands outside Chugach National Forest were made available for selection by the CNI, but the corporation judged these lands to be inadequate. The CNI sued the United

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<sup>5</sup> With certain exceptions not germane to Chugach Region.

<sup>6</sup> 338,665.08 acres of 12(c) (BLM notice published in the Federal Register July 15, 1982, 47 FR 30874), plus 44,356.51 acres of 14(h)(8) (BLM notice published in the Federal Register published December 29, 2005, 70 FR 77179, 77780).

<sup>7</sup> 460,800 acres of 12(a) (BLM notice published in the Federal Register February 2, 1977, 42 FR 6424) plus 89,311.06 acres of 12(b) (BLM notice published in the Federal Register July 15, 1982, 47 FR 30874), plus 125 acres for two Sec. 14(h)(5) Native Primary Places of Residence: D. J. Wallace, 80.00 acres; D. H. Wallace, 45 acres.

States in 1975, *Chugach Natives, Inc. v. Cecil B. Andrus*, Civ. No. 75-2113, over limits on its ability to select lands it desired.

Section 1430 of the Alaska National Interest Lands Conservation Act (ANILCA) sought to address the CNI's claims about undue limitations on its land selections. That section required a study to be conducted by the federal government, the State of Alaska, and the CNI to ascertain lands that might be made available for exchange to the CNI that were "to the maximum extent possible, lands of like kind and character to those traditionally used and occupied by the Chugach people, and shall be, to the maximum extent possible, coastally accessible and economically viable." In the ensuing two years following enactment of the ANILCA, representatives of the Departments of Agriculture and the Interior, the State, and the CNI worked hard to resolve the land selection issue. This process culminated in the 1982 Chugach Settlement Agreement, effective January 10, 1983, and generally referred to as the CNI Agreement (*See* Appendix D). The CNI Agreement was a 143-page contract that constituted the "full and final satisfaction of all rights and obligations of the United States to CNI." It set out lands and interests to be conveyed in fulfillment of the CNI's ANCSA section 12(c) and 14(h)(8) entitlements, identified access and site easements to be reserved on the conveyed lands, and included other provisions agreed upon by the parties. In addition to the CNI's land entitlements under ANCSA sections 12(c) and 14(h)(8), the CNI Agreement included a cash payment to the CNI of \$12 million.

Among other commitments in the CNI Agreement, the CNI agreed that it would not "assert or seek to acquire any other legal authority to make future selections pursuant to section 14(h) of the ANCSA within the national forests." As part of the consideration for the CNI Agreement, the CNI relinquished "[a]ll rights to future selections under section 14(h) of ANCSA or other provision of ANCSA or ANILCA, or other statutory authority within components of the National Forest System and the National Wildlife Refuge System." *See* CNI Agreement ¶ 12.G.<sup>8</sup> The CNI also agreed that it would manage both full fee and partial estate lands conveyed pursuant to the CNI Agreement "in cooperation and consultation with the appropriate state and federal agencies that have land management and resource planning responsibilities in the Chugach Region," and

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<sup>8</sup> Under the ANCSA, regional corporations were not allowed to make sec. 14(h) selections from village corporation withdrawal areas.

promised to “give due regard and consideration to views expressed by interested groups and the public” in resource development planning. *See* CNI Agreement ¶ 18.

### **1. COMMERCIAL FISHERIES AND TIMBER INVESTMENTS**

In 1984, the CNI was renamed the CAC. In 1985, the CAC began investing in timber in the Region and completed its first timber sale in 1987; at that time, the CAC declared its first shareholder dividend. In 1989, the CAC completed construction of a sawmill in Seward for harvested timber (Chugach Alaska Corporation, 2021). During this period, the CAC also invested in the commercial fishing industry. Seafood product sales alone accounted for 89 percent of the company’s corporate revenues in 1986. The CAC owned three canneries by 1989, including the Morpac and Orca Canneries in Cordova.

### **C. EXXON VALDEZ OIL SPILL AND RECOVERY**

On March 24, 1989, the largest oil spill in U.S. history to that date occurred when the *Exxon Valdez* tanker ran aground on Bligh Reef in Prince William Sound, 30 miles from the Valdez terminal and approximately 1 mile from the town of Tatitlek. More than 11 million gallons (roughly 250,000 barrels) of crude oil were released into the waters of Prince William Sound.

The incident devastated the subsistence lifestyle and fishing industries. While some Alaska Natives in the Chugach Region were able to obtain jobs or benefit from the cleanup response, many were negatively affected by the devastating effects of the spill on subsistence hunting and fishing, which persisted for many years following the incident.

The CAC filed for Chapter 11 bankruptcy in 1991, which it paid off in 2000 (Kompkoff, 2018). After the CAC’s bankruptcy, the CAC Board of Directors adopted a very conservative approach to developing its lands. Instead of land development, the advent of government contracting opportunities for disadvantaged businesses through the Small Business Administration’s section 8(a) program gave the CAC the impetus to focus on government contracting. The 8(a) program provided, and continues to provide, an overwhelming share of revenues.

The EVOS had severe social and economic effects on people in the Chugach Region. The harvest of wild resources in Tatitlek and Chenega Bay, for example, were culturally significant activities that were disrupted by the oil spill (Simeone & Miraglia, 2000). Although pre-season forecasts for Cordova's commercial fishery had predicted a record commercial salmon harvest in 1989, salmon fisheries were instead closed periodically. Also, the effects of the spill necessitated a full closure of the herring, shrimp, and sablefish seasons.

A study of social disruption and psychological stress resulting from the spill found that the significant levels of family, work, and personal disruption in affected communities persisted and increased in magnitude within 18 months of the spill (Picou, Gill, Dyer, & Curry, 1992). Another study conducted 15 years later by the same authors revealed that the oil spill litigation process itself was a source of chronic, continuing stress for victims of the disaster and, specifically, for litigants (Picou & Martin, 2007).

The Alaska Conference of Mayors, Oiled Mayors subcommittee, commissioned a study of the social and economic impacts of the spill and cleanup of communities of Prince William Sound. That study found that the privatized cleanup of Exxon and its contractors had fragmented communities, changed local economies, and generated social conflicts (Petterson, 1992). Other studies have similarly detailed the severe social impact on local populations from the oil spill and its impacts on the natural environment (Palinkas, Petterson, Russell, & Downs (1993) and Miraglia (2002)).

Oil from the spill disrupted subsistence activities for 15 predominantly Alaska Native communities in the oil spill area, four of which are in the Chugach Region. These residents rely heavily on harvests of subsistence resources, such as fish, shellfish, seals, deer, and waterfowl. In addition to the people of these villages, subsistence permit holders in the area were affected by the spill. Moreover, numerous sites of archaeological and historical significance in the oil spill area, with a number on public lands (Reger, McMahan, & Holmes, 1992).

The oil spill affected the subsistence economy through a variety of mechanisms, including the reduced availability of fish and wildlife harvests due to injury, the concern about possible health



effects of eating oil-contaminated fish and wildlife, and the disruption of the traditional lifestyle due to cleanup and related activities. The subsistence economy will be considered to have recovered when injured subsistence resources are healthy and productive and exist at pre-spill levels. As of 2014, the EVOSTC determined that subsistence is a recovering, but not yet fully recovered, resource in the oil spill area (Fall & Zimpelman, 2016).

The natural environment and economy of the Chugach Region has yet to fully recover from the oil spill. The Prince William Sound herring fishery failed in 1993 and has been closed for 15 of the 31 years since the spill. Research shows the decline most likely resulted from a poor food supply combined with other environmental factors (Pearson, Elston, Bienert, Drum, & Antrim, 2011). As of early 2019, commercial salmon fishing, recreation, and tourism are considered to be recovering and currently support the Prince William Sound economy. Residents living near the sound consume local salmon, shrimp, and other foods, while avoiding shellfish from beaches where oil still remains (Lydon, 2019).

Perceptions of quality of life in the Chugach Region remain tied to aspects of the natural setting. A 1999 study of residents in 12 communities neighboring the Chugach National Forest, regarding the importance of public land management and its possible effects on their quality of life (Reed & Brown, 2003), indicated that the five most important public land quality-of-life components to residents were clean air and water, fishing, viewing wildlife, hiking and backpacking, and undeveloped areas and wilderness. Residents indicated that they were most satisfied with the following five general quality-of-life components: beauty of the surrounding area, clean air and water, open and undeveloped areas, trustworthy neighbors, and local recreation trails.

## **1. EXXON VALDEZ OIL SPILL SETTLEMENTS OVERVIEW**

Numerous legal claims were brought against Exxon for damages related to the oil spill. The State and the U.S. brought civil and criminal claims against Exxon for damages and penalties related to the spill. Exxon settled in 1991 with funds disbursed in three discrete parts: criminal plea agreement (\$25 million), criminal restitution (\$100 million), and civil settlement (\$900 million)” to the Federal government and the State (National Oceanic and Atmospheric Administration, 2020).

Separately from the U.S. and State's settlements with Exxon, Alaska Natives filed class action lawsuits against Exxon seeking compensatory and punitive damages. Exxon ultimately settled with a class of 3,600 Alaska Natives for \$20 million in compensatory damages; Exxon paid another \$507.5 million in punitive damages to class action plaintiffs including Alaska Natives, Alaska Native corporations, and subsistence users. In 1991, Native corporations also filed claims for damages with the Trans-Alaska Pipeline Liability Fund (TAPL Fund or Fund); the Fund paid \$23,266,884 in settlement of those claims. In 1993, Exxon's codefendant Alyeska entered into a settlement with Alaska Native corporations, paying the corporations \$5,689,079 in exchange for a release of liability.

## **2. EVOSTC HABITAT PROTECTION PROGRAM (THE PROGRAM)**

The EVOSTC was formed pursuant to a memorandum of agreement and consent decree between the U.S. and State to oversee restoration of the ecosystem injured by the oil spill using the civil settlement funds as mandated in the U.S. Congressional Report 106-104. The agreement established a six-member Federal/State trusteeship, the EVOSTC, to review and approve expenditures of civil settlement funds for restoration projects. The three federal trustees are the Secretary of the Interior, the Secretary of Agriculture, and the Administrator of the National Oceanic and Atmospheric Administration, Department of Commerce, or their representatives. The three state trustees include the Commissioner of the Alaska Department of Fish and Game, the Commissioner of the Alaska Department of Environmental Conservation, and the Attorney General of the State of Alaska or their representatives (United States Congress, 1999).

In 1994, EVOSTC adopted a Restoration Plan to guide expenditure of the civil settlement funds after an extensive public process. The Restoration Plan included the Program, which was considered important not only as a means of restoring injured ecosystem resources, but also of restoring the human services (such as subsistence hunting and fishing, recreation, and tourism) dependent on those resources.

The EVOSTC works with the public to implement the Restoration Plan, including the Program. A Public Advisory Council advises the Trustee Council on decisions relating to allocation of funds

and the restoration and monitoring activities related to the oil spill. Members of the public may also attend the EVOSTC and Public Advisory Council meetings and provide comments. Under the Program, lands or interests in land are purchased for habitat protection and for the recovery of resources injured by the EVOS. Habitats are protected to help prevent additional injury to species due to intrusive development or loss of habitat. To accomplish this objective, the EVOSTC funds projects by acquiring title or creating conservation easements on land important for its restoration value (Exxon Valdez Oil Spill Trustees Council, 2022). Among the Program requirements, each parcel or property interest considered for acquisition must be offered by a willing seller; must contain key habitats that are linked to, replace, provide the equivalent of, or substitute for injured resources or services, based on scientific data or other relevant information; and those habitats must be determined likely to benefit from protection in addition to that provided by the owner and applicable laws and regulations.

Approximately 76% of the civil claim funds (\$687 million) was used to fund the Program to purchase surface estate for habitat conservation (EVOSTC 2007). Some of the lands purchased were owned by various village corporations, including those outside the Chugach Region. The Program did not purchase any surface or subsurface interests from the CAC. Alaska Native village corporations in the Region negotiated for the sale of land and land interests in 241,000 acres of surface with Program funds, with the intention that the lands would be held for conservation or excluded from commercial timber harvest. The subsurface interests conveyed to CAC pursuant to the ANCSA continue to be owned by the CAC and the Federal and State interests now overlie the CAC's dominant subsurface (Kompkoff, 2018).

All surface acres acquired through the Program by the U.S. are subject to a conservation easement held by the State. Surface acres acquired by the State became subject to a conservation easement held by the U.S. government. The conservation easements include certain use restrictions, prohibitions, and allowed activities for the acquired surface that are tied to the surface acres in perpetuity. With respect to the regional corporation's dominant legal right to develop its subsurface resources, all Program land purchase agreements include a provision identical or substantially similar to the following: "Nothing herein shall be deemed to affect or in any way limit the rights of the owner of the subsurface estate in accordance with applicable law." (See

Exhibit 1.) Native village corporation sellers retained the right afforded by the ANCSA section 14(f) to prohibit exploration, development, or removal of minerals from the subsurface in lands within the geographic boundaries of Native villages.

## IV. LAND OWNERSHIP, STATUS, AND MANAGEMENT

As noted in in **Table 7**, landowners and managers of fee simple properties in the Chugach Region include federal, state, and local governments, the ANCSA corporations, and other private parties. Conservation easements overlie some of these lands and are addressed in the subsequent section.

**Table 7. Chugach Region—Land Management Overview**

Land Ownership	Total GIS Surface Acres
U.S. Forest Service	4,188,200
U.S. National Park Service	1,959,000
State of Alaska	1,378,500
Bureau of Land Management	1,116,700
U.S. Fish and Wildlife Service	121,400
Local Government	29,200
Chugach Alaska Corporation	370,000
Chenega Village Corporation	39,200
English Bay Village Corporation	44,700
Eyak Village Corporation	91,100
Port Graham Village Corporation	100,000
Tatitlek Village Corporation	103,100
Private	16,600
Alaska Native Allotments	9,000
Other Federal <sup>1</sup>	600
Military <sup>2</sup>	1,600
Water <sup>3</sup>	235,400
<b>Total</b>	<b>9,804,300</b>

Sources: Chugach Alaska Corporation GIS 2020 and BLM GIS 2021

<sup>1</sup> Lands administered by the Federal Aviation Administration, and the U.S. Postal Service.

<sup>2</sup> Lands administered by the Department of the Air Force, Department of the Army, and U.S. Coast Guard.

<sup>3</sup> Navigability determination has not been made.

The National Forest Service manages approximately 116,876 acres of surface overlying subsurface owned by other entities (United States Forest Service, 2020). The CAC holds subsurface rights to approximately 115,231 of these acres, as well as additional full fee acres within the boundaries of the Chugach National Forest (there are approximately 840,504 acres of land within the boundaries of the Chugach National Forest but that are owned by other entities, including Native corporations, the State, Alaska Railroad, municipalities, and private individuals). The Chugach National Forest experienced a net decrease between 2002 and 2016 of nearly 18,512 acres of National Forest System lands due, in part, to conveyances authorized by the ANCSA and the Alaska Statehood Act. Special land status is accorded to National Forest System lands selected by the State or Alaska Native regional or village corporations under these acts during the interim period between selection and conveyance. The Chugach National Forest contains 5.4 million acres of National Forest System lands, 98.9 percent of which is in the Forest Service's inventoried roadless designation (Kompkoff, 2018).

Program-acquired lands are those in which the Program purchased surface interests in an effort to protect natural resources and allow for the recovery of damages caused by the EVOS. Management of the surface lands under the Program in the Chugach Region can be affected by the legal definitions and language in the deeds and conservation easement agreements for individual parcels. Program acquisitions are also supported by a unique variety of public expectations regarding non-development and ecosystem recovery.

Program-acquired interests in the Chugach Region can be classified into four main categories, as follows, based on EVOSTC (2022) definitions:

*Federal lands:* The surface was acquired by the U.S. from Native corporations. In the Chugach Region, these lands are managed by the Forest Service, FWS, and NPS; and the State holds a habitat conservation easement on the land. In most cases, specific rights in these lands are retained by village corporations, such as those important for subsistence, conservation, education, and revenue generation for village corporations. Native corporations retained rights to historic and cemetery sites. Details for specific parcels are in **Appendix A**.

*State lands:* Lands where the surface was acquired by the State from Alaska Native corporations with the goal of maintaining it in perpetuity for conservation and restoration. The Federal government holds a habitat conservation easement on the land.

*Native lands subject to conservation easement:* On these lands, the Native corporations retain all rights of surface ownership, except for the covenants placed on the lands and outlined in the habitat conservation easements held by both the U.S. and the State. These conservation easements were acquired by the Federal government with certain enforcement rights acquired by the State. Opportunities are present for use of the EVOSTC funds for improving and managing these lands to meet conservation goals, in collaboration with Native corporations and the land management agencies. Permitted public access, where applicable, is managed by the Native corporation through a permit/fee system. Areas with importance for the Native corporations for subsistence or cultural reasons generally do not allow for public access.

*Native lands subject to timber easement:* This category includes timber conservation easements acquired by the federal government. Native corporations retain all rights, except the right to cut and remove marketable timber for sale. Some timber conservation easements include permitted public access managed by the Native corporation through a permit/fee system.

Within each of these categories, specific deeds and easements may provide unique details; examples include restrictions on activities and specific rights retained by the selling party for access, such as for subsistence use and use of surface resources. As discussed above, all of the Program acquisition agreements explicitly state that they do not limit the rights of the subsurface owner.

Conservation easements prohibit certain activities on Program lands, including changing the topography, dumping trash, using biocides, removing or destroying plants (except for subsistence

or medicinal use), altering watercourses, using motorized vehicles (with the exception of floatplanes), introducing nonindigenous plants, and building facilities.

Rights of enforcement of the restrictive covenants are retained by the entity holding the easement and by the village corporation that sold the lands. The Federal government holds the conservation easement, including a right to enforce the terms and conditions described in the easement, on all State-acquired Program lands. On lands acquired by the Federal government, a like easement is held by the State (Exxon Valdez Oil Spill Trustees Council, 2022). In addition, the village corporation holds a right of reversion if there is a breach of the covenants, and the holder of the easement fails to enforce its terms.

Differences in management can exist for individual parcels, based on the specific agreements and the terms of the covenants and deeds. A summary of management restrictions and retained rights by village corporation grantors is included in **Appendix A** to this Assessment.

For all parcels, prior existing rights are maintained, including the rights of a subsurface owner to develop their dominant mineral estate regardless of Program restriction on the surface. Thus, where the CAC owns the subsurface beneath the Program-acquired land interests, the CAC has the dominant legal right to access the subsurface resources for exploration and development. All Program land acquisitions agreements for lands in the Chugach Region state that they do not affect or in any way limit the rights of the owner of the subsurface in accordance with applicable law. Access for development of subsurface rights is subject to Alaska law, which requires reasonable accommodation between any surface and subsurface owner.

The CAC's dominant legal right to use of the surface as reasonably necessary to access its mineral estate is not a guarantee of access across *adjacent* lands in which the CAC does not hold the subsurface. In the very rare circumstance where the only feasible access is across adjacent Program lands in which the CAC does not hold the subsurface, if the access is not a prior established right, it would be subject to the terms of any easement or other restriction placed on the land by the owner.

**Table 8** provides an overview of the current management of Program lands in the Chugach Region. An overview of each entity relevant for land management follows the table.

**Table 8. Program Land—Land Management Overview**

Large Parcel Grantor	Total Program Area, Acres	Forest Service Timber Easement, Acres	Forest Service Conservation Easement, Acres	Forest Service Fee, Acres	FWS Fee, Acres	NPS Fee, Acres	State of Alaska Fee, Acres
<b>Chenega</b>	60,001	-	22,297	21,414	-	-	16,289
<b>English Bay</b>	32,470	-	-	-	2,280	30,095	-
<b>Eyak</b>	76,086	12,587	8,315	50,853	-	-	4,331
<b>Tatitlek</b>	72,130	16,381	38,148	29,479	-	-	4,502
<b>Total</b>	<b>240,687</b>	<b>28,968</b>	<b>68,760</b>	<b>101,746</b>	<b>2,280</b>	<b>30,095</b>	<b>25,122</b>

Source: Recorded land conveyance documents

## **A. CHUGACH ALASKA CORPORATION**

The CAC is one of the twelve regional corporations formed under the ANCSA. Originally known as the CNI, the CAC holds title to approximately 378,000 acres of full fee estate and has a remaining entitlement of approximately 10,000 acres under the ANCSA Secs. 12(c) and 14(h), and the CNI Agreement (Appendix D). The CAC also holds title to approximately 550,000 acres of subsurface, of which approximately 241,000 acres are overlain by a combination of conservation easements (228,003 acres) and timber easements (28,968 acres) established under the Program. The village corporations in the Chugach Region have a combined remaining ANCSA entitlement of approximately 16,000 acres of surface. When those land selections are conveyed to the village corporations, the CAC will receive title to the subsurface.

## **B. VILLAGE CORPORATIONS**

### **1. THE EYAK CORPORATION**

The Eyak Corporation was formed on July 25, 1973, as a for-profit ANCSA corporation for the Native village of Eyak, with 326 original shareholders; as of 2016, The Eyak Corporation has 517 shareholders. The Eyak Corporation's mandate is to provide near-term financial support and long-term value for shareholders and their descendants. Through the Program, The Eyak Corporation



decided to sell 55,184 acres and to establish easements on 20,902 acres of its land. The Program total amounts to 76,086 acres, roughly half the land granted under the ANCSA. The Eyak Corporation currently owns the surface of approximately 91,000 acres. This includes lands subject to conservation easements.

The corporation offered to sell its timber interests in eastern Prince William Sound. It owned most of the land surrounding Cordova, which was dubbed “economic ground zero” of the *Exxon Valdez* oil spill affected area because of the oil spill’s impact on commercial fishing and its long-term effect on commercially harvestable species (Exxon Valdez Oil Spill Trustees Council, 2022).

The community at that time was split between those who wanted to prohibit logging in the area and those who supported logging or made their living as loggers. The Forest Service, on behalf of the EVOSTC, began negotiations with The Eyak Corporation in 1993. They focused on three core tracts for their habitat value and a fourth, known as Orca Narrows, for its proximity to Cordova and its importance to the community’s tourism industry. In 1995, a transaction that involved 2,000 acres along Orca Narrows was finalized. The remaining Eyak land deal was finalized in 1997, with the purchase of an additional 75,425 acres, including the watershed of Eyak Lake, next to Cordova. The package also protected Sheep Bay, ranked number one in Prince William Sound for its habitat value.

The EVOSTC paid \$45 million for the package, which included title to the surface of 55,357 acres, conservation easements on 6,667 acres, and timber-only easements on 13,401 acres. In addition, The Eyak Corporation retained small sites for shareholder use and compatible economic development (Hunt, 2009).

Most of the acquired *Exxon Valdez* oil spill lands are administered as part of the Chugach National Forest. One small tract is managed by the State in the legislatively designated Canoe Passage State Marine Park.

## **2. THE CHENEGA CORPORATION**

The Chenega Corporation was established in 1974 and is the village corporation for the community of Chenega. Under ANCSA, the original residents of Chenega were granted title to over 75,000 acres of land in Prince William Sound. The oil first came ashore in the Chenega area in western Prince William Sound and caused significant damage to the resources (Hunt, 2009).

The Chenega Corporation chose to participate in the Program, and in 1997, it sold a portion of its land to the U.S. (now managed by the Forest Service) and the State for \$34 million. The Chenega Corporation transferred to the U.S. title to the surface of 21,414 acres of land and a conservation easement on an additional 22,297 acres. The corporation also transferred to the State title to the surface to 16,289 acres of land. The total acreage protected is 60,001 acres, all in Prince William Sound. The Chenega Corporation currently owns the surface of approximately 39,000 acres, including lands with conservation easements.

The conservation easements allow for public access, except for 3,330 acres on the southern portion of Chenega Island in the vicinity of the original Chenega village site. Commercial recreation development sites were identified and continued to be managed by The Chenega Corporation to preserve economic opportunities for the corporation and residents. The land purchase agreement also provided for exclusive use by shareholders of several miles of shoreline for homes, fish camps, or other purposes. The corporation also retained several 10-acre sites for potential ecotourism operations and to provide for economic development opportunities for its residents (Exxon Valdez Oil Spill Trustees Council, 2022). The National Forest System lands adjacent to this parcel are managed in accordance with the 2020 Chugach National Forest Land Management Plan, Management Area 1, Wilderness Study Area.

## **3. THE TATITLEK CORPORATION**

The Tatitlek Corporation was established in 1973 and is the Native corporation for the community of Tatitlek. The corporation originally had 215 shareholders; today, there are about 400 shareholders.

The Tatitlek Corporation currently owns the surface of approximately 103,000 acres, including lands with conservation easements. The Tatitlek Corporation chose to participate in the Program and received \$34.7 million for a total of 72,130 acres. The acquisition included title to the surface estate of 33,981 acres of land, 38,148 acres of conservation easements, and 16,381 acres of timber easements. The Tatitlek Corporation also retained land for shareholder use and sites for future economic development and exclusive access to Bligh Island, which remains important for subsistence and historic uses.

#### **4. THE ENGLISH BAY CORPORATION**

The English Bay Corporation was established in 1974 and is the for-profit village corporation for the community of Nanwalek (formerly known as English Bay). The corporation had 73 original shareholders, and assets include a store and an RV park.

The English Bay Corporation currently owns the surface of approximately 45,000 acres, including lands with conservation easements. It is one of two Native corporations that selected lands in the Kenai Fjords area, which later was designated as a national park. The English Bay Corporation was conveyed 32,470 acres within the boundaries of the Kenai Fjords National Park. Because of the popularity of the Kenai Fjords National Park, the protection and acquisition of lands following the oil spill garnered significant nationwide support, as evidenced by a substantial letter writing campaign at the time.

In February 1997, the Program finalized the purchase of 30,095 acres of surface in the Kenai Fjords National Park and 2,280 acres of surface in the Alaska Maritime National Wildlife Refuge from The English Bay Corporation for \$15.37 million.

Subsistence rights for hunting, fishing, and gathering were reserved and retained by The English Bay Corporation on 6,068 acres in the Beauty Bay area of Nuka Bay. In addition, The English Bay Corporation retained certain rights to Indigenous cultural resources on all these lands.

When The English Bay Corporation negotiated the sale of its land in Kenai Fjords National Park, subsistence was a particular concern. Because subsistence, especially hunting on park land, was

not compatible with National Park Service rules, the Department of the Interior negotiated a sale of subsistence rights as a separate part of the package. The corporation sold rights on the central and eastern side of the park for subsistence but retained 9,000 acres on the western side of the park, an area closer to the village and frequented by subsistence users.

## **5. THE PORT GRAHAM CORPORATION**

The Port Graham Corporation was incorporated in 1973 and is the for-profit village corporation for the community of Port Graham. The corporation's business activities include oil and gas, commercial and institutional building construction, maintenance and repair, facilities support services, an array of program support and administration services, and professional and project management services.

The Port Graham Corporation, like The English Bay Corporation, has considerable inholdings in Kenai Fjords National Park; however, The Port Graham Corporation chose not to participate in the Program and has title to approximately 45,284 acres of surface within the boundaries of the Kenai Fjords National Park. A portion of The Port Graham Corporation's lands lie in the Cook Inlet Region. In total, The Port Graham Corporation has approximately 100,000 acres of surface.

## **C. U.S. GOVERNMENT**

### **1. BUREAU OF LAND MANAGEMENT**

The BLM administers approximately 1,116,700 acres in the Chugach Region, none of which was acquired through the Program. BLM-administered lands in the Chugach Region are managed under the East Alaska Resource Management Plan (BLM 2007) and the Ring of Fire Resource Management Plan (BLM 2008).

### **2. NATIONAL PARK SERVICE**

In the Chugach Region, the NPS administers approximately 1,959,000 acres of land in the Kenai Fjords National Park, as well as lands within the Wrangell-St. Elias National Park. Per the NPS, each national park operates under a Portfolio of Management Plans and follows actions outlined in ANILCA, with the intent to preserve in perpetuity mountains, glaciers, unique fjord and rainforest ecosystems, the vast Harding Icefield, rich and varied marine and terrestrial wildlife,

and historic and archaeological reminders of the Native peoples of the Alaska coast (National Park Service, 2021).

Approximately 45,000 acres of Port Graham surface holdings are within the boundaries of the national park. This area is managed in coordination with both entities to allow for consistent management of private Port Graham lands. In addition, the National Park Service acquired the surface to approximately 30,000 acres from the English Bay Corporation with Program funds. The State administers a conservation easement on this land. For both village corporation lands, the CAC owns the subsurface.

### **3. U.S. FISH AND WILDLIFE SERVICE**

The FWS administers approximately 121,400 acres in the Chugach Region in the Alaska Maritime National Wildlife Refuge.

The ANILCA set forth the following five major purposes for establishing and managing the Alaska Maritime National Wildlife Refuge:

1. Conserve the refuge's animal populations and habitats in their natural biodiversity . . . including, but not limited to marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou, and other animals.
2. Fulfill international treaty obligations of the United States relating to fish and wildlife and their habitats.
3. Provide opportunities for continued subsistence uses by local residents (in a manner consistent with purposes number 1 and 2).
4. Conduct national and international scientific research on marine resources (in a manner consistent with purposes number 1 and 2).
5. Ensure water quality and quantity within the refuge (to the maximum extent practicable and in a manner consistent with purpose number 1).

Program lands include approximately 2,300 acres acquired in fee simple from The English Bay Corporation, with a conservation easement administered by the State.

#### **4. FOREST SERVICE**

As displayed in **Table 8**, the Forest Service, on behalf of the U.S. government, acts as the land manager for 100,378 acres of Program-acquired surface. Under the Chugach National Forest Land Management Plan (Forest Plan), Program-acquired lands are managed as a Forest Service special management area (Management Area 6) (United States Forest Service, 2020). The Forest Plan “honors the continuing validity of private, statutory, or pre-existing rights,” including those for access to the subsurface mineral estate.

Management Area 6 was developed to specify management direction for lands or interests acquired with EVOSTC funds. Purchase agreements and related documents for the sale, purchase, protection of lands, and interests in lands among The Chenega Corporation, The Eyak Corporation, The Tatitlek Corporation, the U.S., and the State contain specific covenants that apply to each protected property. The Forest Plan describes Management Area 6 as follows:

##### *Desired Conditions*

1. Program-acquired lands will be managed consistent with the terms and conditions of the conservation easements that encumber the lands and the reserved rights of the grantors from whom the U.S. acquired lands or interests in lands.
2. Ecological processes dominate lands acquired with EVOSTC funding, subject to valid existing rights. In areas where soil, water, and timber resources have been impacted by previous management activities or by natural events, management activities focus on restoring watershed function and protecting riparian and wetland habitats.
3. Resources affected by the oil spill are restored or enhanced, and intact fish and wildlife habitats are maintained on all lands acquired with EVOSTC funding, subject to valid existing rights.
4. The Forest Service continues to support projects to improve acquired lands, including projects that will restructure habitat to restore fish and wildlife productivity on lands purchased and acquired with EVOSTC funds.

### *Objective:*

1. Within 10 years of land management plan approval, explore two land exchanges or acquisition projects with EVOSTC willing sellers to fulfill the intents and purposes of the EVOSTC restoration and habitat protection objectives.

### *Management Approaches:*

1. The U.S. Department of Agriculture appoints a trustee to the EVOSTC.
2. Special use permits may be issued to support surveys, studies, and other monitoring projects for the restoration of fish and wildlife that were injured by the oil spill and associated with National Forest System lands.
3. The Forest Service will continue to support and participate in the established organizations designed for spill prevention and response. Through the Alaska Regional Response Team and the Cook Inlet and Prince William Sound Subarea planning committees, contingency planning for oil spills in Prince William Sound and Cook Inlet will be maintained with Forest Service assistance. Planning for spill response, natural resource damage assessment, restoration, and participation in annual spill and damage assessment drills will continue.
4. The Forest Service will continue to support surveys funded by EVOSTC to locate, identify, and increase understanding of the persistence and toxicity of lingering oil on or adjacent to National Forest System lands.

### *Standards:*

1. All lands shall be managed consistent with the terms and conditions of the conservation easements that encumber the lands and the reserved rights of the grantors from whom the U.S. acquired the lands.
2. The Forest Service shall not authorize commercially operated flightseeing landings on federal lands acquired with EVOSTC funding. Alaska Native village corporations shall retain authority to permit landings on Native village corporation conservation easement lands.
3. Construction of power generation and transmission lines, communication sites, and utility corridors shall not be authorized unless specifically needed to develop the subsurface.

4. Methods of reasonable access, exploration, and development of the private subsurface will be negotiated according to the terms of the land conveyance documents.

#### *Guidelines:*

1. Permits should be issued for special uses on federal lands acquired with EVOSTC funding only when they do not conflict with conservation easement restrictive covenants and in coordination with other entities having management or ownership interests in the affected lands.
2. Management actions and authorized activities may be allowed that exceed the mapped scenic integrity objective to fulfill management intent of the federal lands acquired with EVOSTC funding and allow reasonable access and development of the subsurface. Reclamation activities should, to the extent practicable, be negotiated such that the affected area will meet at least a moderate scenic integrity objective within a reasonable time frame as determined by the reclamation plan (not to exceed 20 years).

### ***D. STATE OF ALASKA***

The State administers approximately 1,378,500 acres in the Chugach Region. Program-acquired lands within the Region include approximately 25,000 acres of surface, as well as 159,243 acres of conservation easements where the U.S. acquired the surface.

## **V. PHYSICAL CHARACTERISTICS OF CHUGACH REGION LANDS**

### ***A. SURFACE RESOURCES***

The Chugach Region includes roughly 10 million acres, with more than 5,000 miles of coastline along the southern tip of the Kenai Peninsula, through the Kenai Fjords, Prince William Sound, and the Gulf of Alaska. The Region contains a wealth of natural resources that have historically been important to support commercial development, as well as for cultural practices and subsistence use. Specific details for Program land resources are included below.

#### ***1. PROGRAM LANDS SURFACE RESOURCE OVERVIEW***

The discussion below provides an overview of relevant surface resources on Program lands categorized as “large parcels” acquired from The Chenega Corporation, The English Bay



Corporation, The Eyak Corporation, and The Tatitlek Corporation. **Table 9** provides an overview of the surface resources identified in Program transfer documents. A discussion of key surface land resources identified for each village corporation at the time of transfer follows **Table 9**.

**Table 9. Surface Resource Overview—Program Lands**

Parcel	Purchase Price	Resources Identified at Time of Transfer
<b>Chenega</b>	<p>\$8,854,400</p> <p>Appraisal does not include timber values that were significant but subject to dispute.</p>	<p>Sockeye salmon Pink salmon Dolly Varden Cutthroat trout Pacific herring Bald eagles Black oystercatchers Common murre Harbor seals Harlequin ducks</p> <p>Intertidal and subtidal resources: Marbled murrelets Pigeon guillemots River otters Sea otters</p> <p>Cultural resources: Recreation Wilderness Subsistence</p>
<b>English Bay</b>	<p>\$15,156,790</p>	<p>Sockeye salmon Pink salmon Dolly Varden Pacific herring Bald eagles Black oystercatchers Common murre Harbor seals Harlequin ducks</p> <p>Intertidal and subtidal resources: Marbled murrelets Pigeon guillemots River otters Sea otters</p> <p>Cultural resources: Recreation Wilderness Subsistence</p>

Parcel	Purchase Price	Resources Identified at Time of Transfer
<b>Eyak</b>	<p>Orca Narrows: \$3,100,000, with an additional \$350,000 adjustment</p> <p>\$11,800,000 for core lands</p> <p>The range of timber values (\$5 to \$30 million) was significant but not considered the highest and best use.</p>	<p>Sockeye salmon Pink salmon Dolly Varden Cutthroat trout Pacific herring Bald eagles Black oystercatchers Common murrelets Harbor seals Harlequin ducks</p> <p>Intertidal and subtidal resources: Marbled murrelets Pigeon guillemots River otters Sea otters</p> <p>Cultural resources: Recreation Wilderness Subsistence</p>
<b>Tatitlek</b>	<p>\$41,223,000</p> <p>The appraisal included lands not in the proposed acquisition package. The proposed acquisition package included lands not in the appraisal. The federal review appraiser estimated the value at \$33,000,000.</p>	<p>Sockeye salmon Pink salmon Dolly Varden Cutthroat trout Pacific herring Bald eagles Black oystercatchers Common murrelets Harbor seals Harlequin ducks</p> <p>Intertidal and subtidal resources: Marbled murrelets Pigeon guillemots River otters Sea otters</p> <p>Cultural resources: Recreation Wilderness Subsistence</p>

Source: (Exxon Valdez Oil Spill Trustees Council, 2022)

## Chenega

The Chenega lands are in western Prince William Sound and include parts of Evans, Latouche, Flemming, and Knight Islands. They also include significant areas on the mainland, on the west

side of Dangerous Passage, the body of water between Chenega Island and the mainland. The area is characterized by mountains with elevations up to 2,500 feet above sea level. The lower slopes of this area, next to lakes, streams, and bays, are forested with old growth Sitka spruce and mountain hemlock. The Jackpot and Eshamy Bays contain important sockeye salmon spawning and rearing habitat and support sport fishing, commercial fishing, subsistence, and recreation.

In addition, Eshamy Bay has the highest population of cutthroat trout in western Prince William Sound and is the northern and westernmost extent of that species' range. The Eshamy/Jackpot Bay areas also support strong populations of Dolly Varden, and there were 14 documented bald eagle nests and important feeding areas in 2007. Jackpot Bay has a large colony of pigeon guillemots next to the parcel. Eshamy Bay also has high concentrations of river otters, based on pre-*Exxon Valdez* oil spill observations (Hunt, 2009).

### *English Bay*

The Program acquisition parcels for restoration purposes are on the deepwater fjords of Kenai Fjords National Park. An irregular coastline, interspersed with protected waters, rugged shorelines, and scenic uplands characterize these parcels. Many of the fjords contain tidewater glaciers. The uplands are predominantly steeply sloped, although there are several relatively flat areas with shallow soils. A sparse forest of Sitka spruce and western hemlock covers most of the area.

State waters next to Kenai Fjords National Park are rich with marine life, such as harbor seals, sea otters, northern sea lions, porpoises, and humpback and orca whales. Uplands contain streams supporting anadromous pink and red salmon. The area is well known for birding and provides habitat for marbled murrelets, pigeon guillemots, harlequin ducks, bald eagles, black oystercatchers, and other marine and shore birds. The area also contains rich intertidal and subtidal habitat, with dense mussel beds, kelp, and eelgrass areas. The area is an increasingly popular recreation and tourist destination and is rich in historic and cultural sites, including some from the Russian historic period (Hunt, 2009).

## *Eyak*

In 1995 and again in 1997, the EVOSTC created timber easements and conservation easements on land purchased from The Eyak Corporation in the Chugach Region (Exxon Valdez Oil Spill Trustees Council, 2022). The area contains anadromous fish streams, active bald eagle nests, and favorable habitat for marbled murrelet nesting. Additional lands with conservation easements and fee simple purchases have similar wildlife habitat.

Protected habitat includes lands in the Orca Narrows, the wooded shoreline areas of Nelson Bay, Eyak Lake, and Hawkins Island, much of it visible from Cordova. The lands in this area of Eastern Prince William Sound are characterized by a less rugged coastline, with low forested hills dissected by streams, low marsh lands and tidal flats with muskeg bogs, and large areas of boreal forest covering entire hillsides extending to 2,000 feet in elevation.

Over 30 anadromous fish streams have been documented that provide important spawning habitat for pink and sockeye salmon, cutthroat trout, and Dolly Varden. Pacific herring occasionally spawn in several of the bays in this area. The mature forests provide important habitat for bald eagles and marbled murrelets. Harlequin ducks feed and molt along the shorelines and nearshore rocks, with potential nesting areas along anadromous fish streams. River otters feed along the shoreline, and most likely den in this area as well. Sea otter use is also high. Much of this area supports wilderness-based recreation, including hunting, fishing, sea kayaking, and camping. This area remains of high importance to the community of Cordova for subsistence, recreation, tourism, scenic and cultural values, and watershed protection (Hunt, 2009).

## *Tatitlek*

Tatitlek lands acquired in Eastern Prince William Sound extend from smaller parcels near Valdez in Sawmill Bay to Hell's Hole north of Port Gravina and between Knowles Bay and St. Matthews Bay. These parcels have historically supported high-value wilderness-based subsistence food gathering and recreation, including hunting, boating, and fishing.

The Sawmill Bay parcel has a rocky shoreline heavy with kelp beds, eelgrass, and invertebrates that support harlequin ducks, marbled murrelets, black oystercatchers, and pigeon guillemots.

Marbled murrelets may also nest in the area, and river otters and sea otters feed along the shoreline. Pacific herring also spawn near this shoreline.

Hell's Hole provides important habitat for bald eagles, black oystercatchers, marbled murrelets, and pigeon guillemots. Harbor seals feed and haul out on these beaches. This area also provides salmon spawning and cutthroat trout spawning and rearing habitat; 28 anadromous streams were documented on this parcel. The parcel is also important for herring spawning and spring feeding of humpback whales in the adjacent marine waters of Prince William Sound. Hunt (2009) notes this area also provides valuable recreation-based services such as sport fishing, sea kayaking, and camping.

Other parcels in Galena Bay, Two Moon Bay, Snug Corner Cove, and Bligh Island have similar resource values. The Tatitlek parcels provide feeding, nesting, molting, and wintering habitat for harlequin ducks, bald eagles, black oystercatchers, marbled murrelets, and pigeon guillemots. The highest nesting concentrations of pigeon guillemots in Prince William Sound are on Bligh Island. Harbor seal haul-outs and rich intertidal and subtidal biota are found along these shorelines. The parcels also provide shelter and feeding areas for river otters and sea otters. This area has high scenic values and supports high value wilderness-based recreation, including hunting, fishing, subsistence hunting and gathering, sea kayaking, and camping. In addition, the Tatitlek lands were noted for high values of subsistence and cultural resources (Exxon Valdez Oil Spill Trustees Council, 2022).

## ***B. COMMERCIAL TIMBER AND CARBON CREDIT***

Timber represents one key surface resource of lands in the Chugach Region. Identified tree species with marketability for commercial timber cover approximately one million acres of the CAC lands in the Region, including 170,000 acres on current CAC or village corporation surface (Alaska's Forest Products Industry, 2020; Friedman, 2019; United States Forest Service, 2014). Actual value per acre for commercial forestry depends on current market and transportation costs.

Areas with sufficient forest resources may also qualify for sale in the carbon credit market (Friedman, 2019). Under this market, companies have the option of compensating for their own

carbon pollution by paying for a project that helps reduce greenhouse gases somewhere else in the world. California established a cap-and-trade program in 2012 in association with other measures to ensure that California cost-effectively meets its goals for greenhouse gas emissions reductions. CAC began its first carbon offset project associated with California's Cap and Trade Program on 115,000 acres in 2017. This project provides revenue as carbon credits are sold, while maintaining the land for other development, cultural and subsistence use, and future timber harvest. To date, CAC has been issued 6.386 million carbon credits on 49,996 acres of forested lands inventoried (Phillips, 2020). Also, within the Chugach Region, The Port Graham Corporation has 2.374 million offset credits on 18,165 acres of lands and The English Bay Corporation has 1.429 million offset credits on 12,761 acres of forest lands inventoried.

The requirements of Program lands preclude development of commercial timber or additional sales of carbon credits on these lands.

### **C. SUBSURFACE RESOURCES**

The value of the subsurface resources of any given unexplored parcel of land is often highly uncertain and, in many cases, entirely speculative. The Chugach Region has a known history of exploration and commercial production of subsurface resources. Aside from scattered small-scale placer gold mining, however, commercial mining is nonexistent in the Chugach Region at the present time and exploration continues at a relatively low level.

Subsurface mineral resources can be grouped into three major categories: locatable minerals, including hardrock minerals mined and processed for metals, such as gold, silver, copper, uranium, and some types of nonmetallic minerals; leasable minerals, including coal, oil, gas, oil shale, sodium, phosphate, potassium, and geothermal; and salable/mineral materials/common variety minerals, which have a relatively low value per volume, such as sand and gravel. An overview of the three classes of minerals in the Chugach Region is included below, with additional information for subsurface mineral occurrences on Program lands.

#### **D. LEASABLE MINERALS**

Extensive coal occurrences in the Bering River area have been known since at least 1896. However, rapid changes in thickness are common features of the coal seams, making them difficult to mine. Between 1910 and 1920, 18,000 to 20,000 tons of coal was shipped from the Bering River area, since that time there has been no coal development.

Petroleum exploration began in the Katalla area in 1901, and in 1902, oil was struck at shallow depth. Between 1901 and 1930, 44 wells were drilled, 18 of which produced oil commercially at one time or another. Enough oil was pumped in the early 1900s to justify a local refinery. The refinery burned down in 1933 and was not rebuilt. Total oil production amounted to 153,922 barrels (Nelson & Miller, 2000).

The 1982 CNI Settlement Agreement gave the CNI (now CAC) rights to drill from a private portion of the mineral estate beneath the Chugach National Forest; the rights would be extinguished if the CAC did not establish a producing well by December 31, 2004. A producing well was not established, and the rights have expired. The settlement agreement also gave the CAC the first opportunity to acquire, through exchange, the rights to explore, develop, and produce oil and gas in the area, if the Secretary of Agriculture elected to make all or any part of the area available for oil and gas leasing. The settlement agreement further stated that the U.S. “shall not be obligated to make a management decision on opening all or part of the Katalla Exchange Preference Area.” The exchange rights terminated on January 2, 2008, 25 years from the date of the CNI settlement agreement (United States Forest Service, 2020).

As noted earlier, the CAC has previously solicited exploration partners to evaluate and develop leasable mineral prospects in the Chugach Region but minimal exploration and development has occurred on the CAC lands. At this time, no coal or oil and gas development or exploration has been identified or proposed on Program lands in the Chugach Region.

#### **E. SALABLE MINERALS**

Sand, gravel, and other mineral materials sites are found throughout the Region. The CAC’s subsurface includes small mine sites not identified in this study that supply sand, gravel, and rock to villages in the Region for local infrastructure projects.

One proposed granite quarry on Program lands, Port Gravina, is 16 miles west/northwest of Cordova in the Secret Cove of Port Gravina. The project area is approximately 145 acres: 96 acres are Forest Service land in which the CAC owns the subsurface; 43 acres in which the CAC owns the full fee estate, and 6 acres are tidelands owned by the State. If developed, materials mined from this locale could potentially provide for infrastructure, development, construction, and repair projects in southeast Alaska. The CAC began development at the quarry site in 2018 (Lasley, 2019; U.S. Army Corps of Engineers, 2016; U.S. Forest Service, 2017).

#### ***F. LOCATABLE MINERALS***

The Chugach Region was an important mining district in Alaska up to the closure of Kennecott Copper Corporation's mines near McCarthy in 1938. Kennecott Copper acquired the Beatson Mine on LaTouche Island and the Ellamar Mine near Tatitlek and between 1903 and 1930 produced 182.6 million and 15.8 million pounds of copper, respectively (Jansons et al., 1984). These mines, as well as a few similar but substantially smaller copper mines in the Chugach Region, produced a few hundred thousand ounces of by-product gold and a few million ounces of by-product silver (Chugach Alaska Corporation, 2008). However, the closure of Kennecott's mines at McCarthy did end that chapter of large-scale mining in the region.

Placer gold miners were active in the Kenai Peninsula area in the 1890s and remain so to this day. In the early 1900s, prospectors discovered lode gold deposits on the Kenai Peninsula, near Girdwood, in northern Prince William Sound, and near Valdez. Beach placers have been mined for gold intermittently since that time in the Yakataga district. The most recent significant lode gold production from the Chugach National Forest was in the 1930s and 1940s at the Cliff Mine near Valdez and the Granite Mine in the Port Wells area. Little or no production from lode gold deposits has taken place since 1956. Besides gold and copper resources, there are also notable deposits of chromium, cobalt, molybdenum, manganese, nickel, tin, tungsten, antimony, silver, zinc, and lead in the Chugach Region (Jansons et al., 1984).

Government agencies conducted field investigations of the region as soon as mining activities in the region initiated, around 1900 with a more intense assessments of geology and mineral potential taking place in the late 1970s and into the 1980s as a part of the Wilderness Act (PL 88-577)



roadless-area assessments. In the interagency assessments of the Chugach Region, the USGS prioritized investigations into the geology and the potential for undiscovered mineral occurrences. The USGS determined areas around Latouche Island, Knight Island, the Ellamar mine area, and the Port Fidalgo area as having high potential for the occurrence of Cyprus-type copper, lead, zinc, gold, and silver deposits. The Bureau of Mines focused on evaluating known deposits. The Nelson and Miller's (2000) report for the Bureau, Mineral Land Assessment Report (MLA) #05-84, provided a compilation of past mineral production and estimates of the mineral resources remaining at sites. The results have been the primary source for mineral data in subsequent agency and industry reports.

The most recent data found was from 1984 when the USBM also published Open-File Report 125-84: Feasibility of Gold and Copper Mining in the Chugach National Forest, Alaska (Hoekzema & Sherman, n.d.). The report concluded that, at 1982 prices, an open-pit polymetallic lode mine could be marginally feasible. The open-pit model assumed a mine of 24 million tons of 1 percent copper, 1.5 percent zinc, and with additional gold and silver values. There are no deposits within the area of this assessment that meet the criteria of the model proposed in 1984 report.

Fieldwork conducted by Alaska Earth Sciences (AES) in 2015 on CAC lands identified potential mineral resources in the area between Silver Lake and Copper Mountain, in the Boulder Bay region of Port Fidalgo. The CAC fieldwork conducted in 2019 and detected mineralization on in the Nuka/Harris Bay area near the Kenai Fjords National Park. Three occurrences, on NPS inholdings within Port Graham lands, Sonny Fox (Map ID #4.13), Goyne (Map ID #4.15), and Glass & Heifner (Map ID #4.11) were identified as having the higher mineral potential. This was based on geologic observations, sample analyses from limited ridge and shoreline traverses, and exploration sampling around Alaska Resource Data File (ARDF) prospects and mines per one CAC key interviewee (2020).

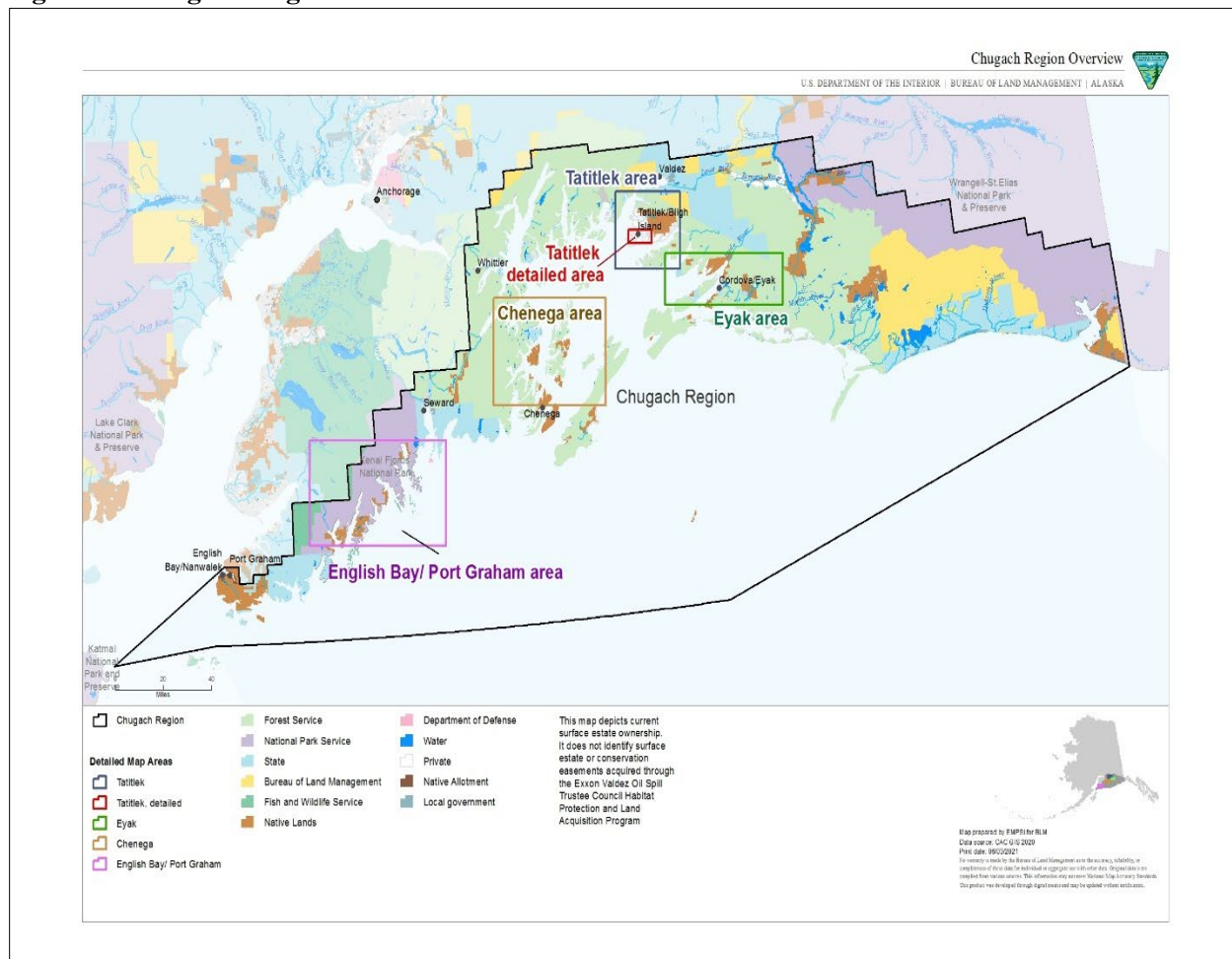
## **1. KNOWN MINERAL OCCURRENCES—CAC SUBSURFACE OWNERSHIP**

The CAC provided a list of mineral occurrences in the Chugach Region for use in this analysis. A total of 75 occurrences were identified on CAC-owned subsurface, including where the Program acquired surface interests. The CAC and its contractor, AES, provided information related to their

assessment of development potential for the occurrences, referring to the presence or abundance of past exploration or mining activity, good metal grades, or mine workings (Chugach Alaska Corporation, 2008). Development potential, as defined in the CAC report, does not imply that any site is a development-level deposit, but that those sites designated as higher potential have characteristics that might compel someone to continue to explore and characterize the subject sites. The costs of extracting, milling, and transporting minerals cannot be determined due to non-existent or out-of-date existing feasibility studies. Mining costs would vary based on site-specific conditions that have not been developed. As a result, it would be difficult to apply a competent valuation to these deposits.

The CAC provided data for 29 occurrences where the CAC does not own the subsurface. These deposits appear with the white symbol in the maps below; white stars indicate deposits that the AES judged as having higher mineral potential, white diamonds indicate deposits with a moderate mineral potential, and white triangles indicate deposits with a lower mineral potential (see **Appendix B** for additional explanation). Note that the AES developed these rankings without consideration of the actual subsurface owner.

**Figure 4: Chugach Region Mineral Overview.**



Tatitlek, Mineral Occurrences

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**Legend:**

- ★ Mineral sites assigned a high development probability on CAC subsurface estate
- ◊ Mineral sites assigned a moderate development probability on CAC subsurface estate
- ▲ Mineral sites assigned a low development probability on CAC subsurface estate
- ★ Mineral sites assigned a high development probability on Non-CAC subsurface estate
- ◊ Mineral sites assigned a moderate development probability on Non-CAC subsurface estate
- ▲ Mineral sites assigned a low development probability on Non-CAC subsurface estate
- Yellow: CAC surface and subsurface
- Orange: Tatitlek surface and CAC subsurface
- Pink: Tatitlek surface and subsurface
- Green: Tatitlek surface with timber conservation easement acquired through EVO/STC HPP, CAC subsurface
- Dark Green: Tatitlek surface, conservation easement acquired through EVO/STC HPP, with public access, CAC subsurface
- Red: Tatitlek surface, conservation easement acquired through EVO/STC HPP, with no public access, CAC subsurface
- Light Green: USFS surface acquired from Tatitlek through EVO/STC HPP, CAC subsurface
- Dark Green: State of Alaska surface acquired from Tatitlek through EVO/STC HPP, CAC subsurface
- Pink: Tatitlek Corporate exclusion area easement, CAC subsurface
- Light Green: Tatitlek surface with conservation easement acquired through EVO/STC HPP, CAC subsurface (outline segregated due to small size of features)
- EVO/STC HPP: EVO/STC HPP (light green), EVO/STC HPP (dark green), EVO/STC HPP (pink)
- Private
- Bureau of Land Management
- State of Alaska
- Forest Service

**Map Scale:** 0 to 5 miles

**Map Source:** BLM, Data source: CAC, 12/2003, Not dated, Not dated

**Disclaimer:** No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of the information contained in this map. The user assumes all responsibility for the use of the information contained in this map. The information contained in this map is for informational purposes only. It is not intended to be used for any other purpose.

Tatitlek, Mineral Occurrences, Detailed

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**Legend:**

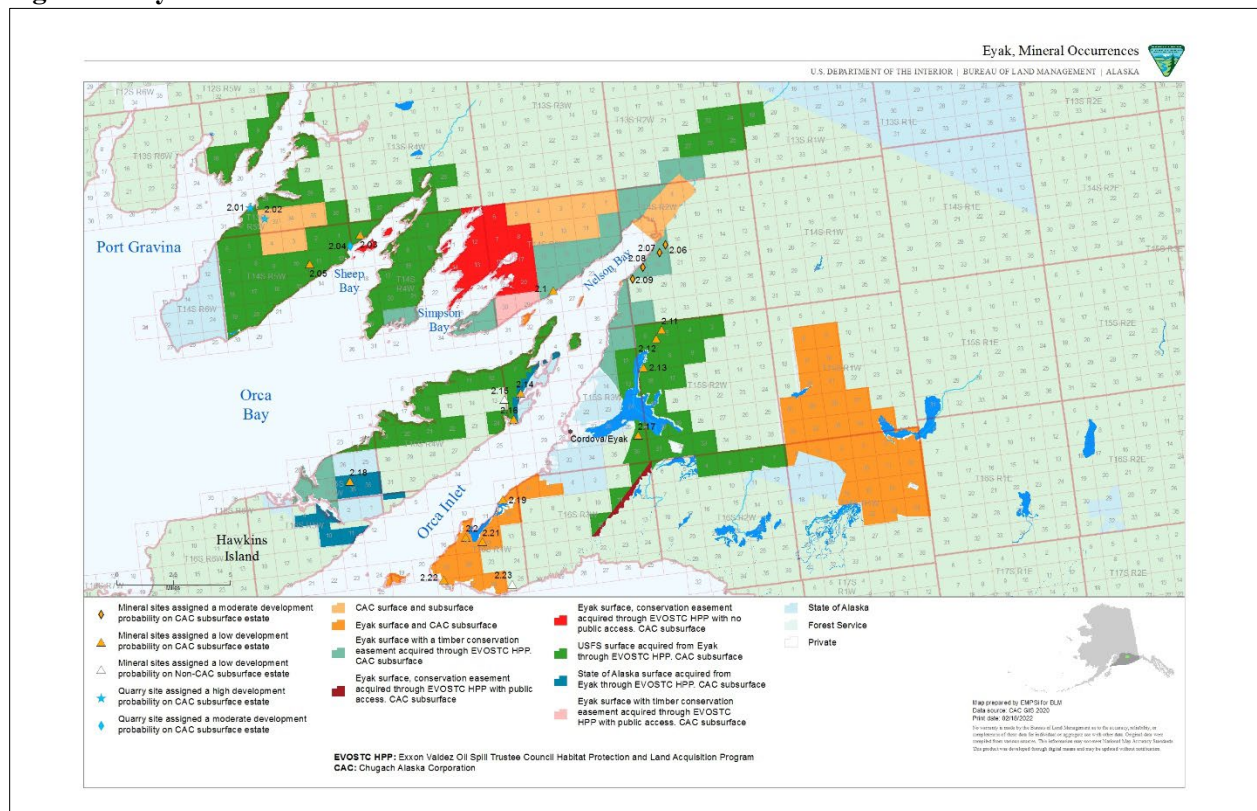
- Mineral sites assigned a moderate development probability on CAC subsurface estate
- Mineral sites assigned a low development probability on CAC subsurface estate
- Mineral sites assigned a high development probability on Non-CAC subsurface estate
- Mineral sites assigned a moderate development probability on Non-CAC
- Mineral sites assigned a low development probability on Non-CAC subsurface estate
- CAC surface and subsurface
- Tatitlek surface and CAC subsurface
- Tatitlek surface and subsurface
- Tatitlek surface with timber conservation easement acquired through EVOSTC HPP
- Tatitlek surface conservation easement acquired through EVOSTC HPP, with public access, CAC subsurface
- Tatitlek surface conservation easement acquired through EVOSTC HPP, with no public access, CAC subsurface
- State of Alaska surface acquired from Tatitlek through EVOSTC HPP, CAC subsurface
- Tatitlek surface with conservation easement acquired through EVOSTC HPP, CAC subsurface, (outline exaggerated due to small size of features)
- Private

**EVOSTC HPP:** Exxon Valdez Oil Spill Trustee Council Habitat Protection and Land Acquisition Program  
**CAC:** Chugach Alaska Corporation

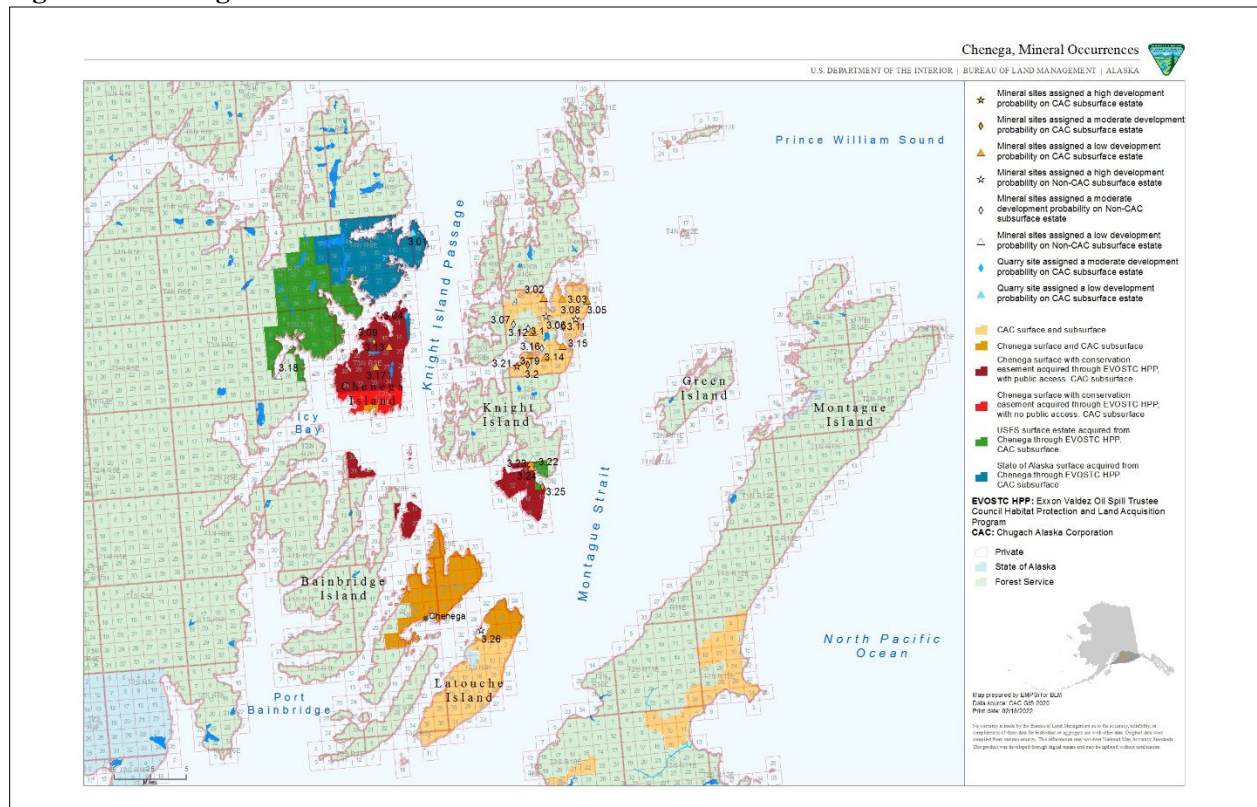
Map prepared by: GSI/SLR/JLM  
 Data source: CAC GIS 2005  
 Final date: 02/10/2007  
 The map is a product of the Bureau of Land Management and is not intended to be used for any purpose other than the one for which it was prepared. The information is not to be used for any other purpose. The information is not to be used for any other purpose. The information is not to be used for any other purpose.



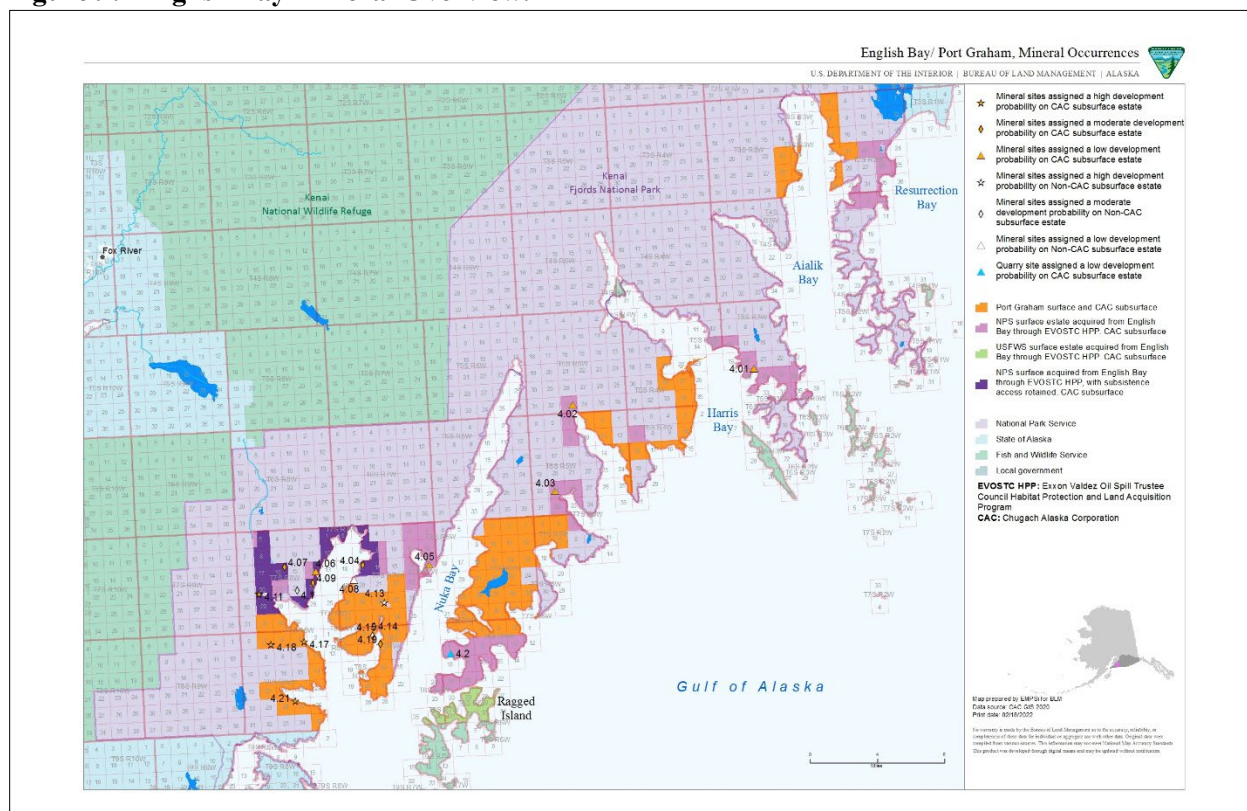
**Figure 7: Eyak Mineral Overview.**



**Figure 8: Chenega Mineral Overview.**



**Figure 9: English Bay Mineral Overview.**



**Appendix B** lists occurrences located on subsurface not owned by the CAC.

## VI. THE PROGRAM'S EFFECTS ON CHUGACH REGION NATIVE CORPORATIONS

This assessment element analyzes the benefits and costs to Native village corporations and their shareholders stemming from the Program, including monetary benefits and economic effects of permanent conservation easements in the Chugach Region. The assessment does not present the effects of the Program from the perspective of the EVOSTC, and it does not present the effects of the Program from the perspective of any other regional stakeholders including local and regional governments, civic organizations, or the public. The assessment was unable to distinguish between effects that may be attributable to pre-existing conditions, such as the ANCSA or the EVOS, rather than the Program acquisitions. The assessment did not attempt to inquire about or analyze comparator examples of surface interests sold to other entities. The assessment also did not attempt to understand what may have been the continuing socioeconomic impacts of the EVOS

on Chugach Region Native corporations in the absence of Program acquisitions that sought to conserve and restore ecosystem services in the Region following the spill.

Finally, while certain positive impacts reported herein are quantifiable and can be expressed in dollar values, other positive impacts and virtually all perceived negative impacts are not readily quantifiable. Due to the qualitative nature of some values used, the subjective nature of the data collected for this analysis, and the lack of a baseline analysis, the assessment cannot determine the net value provided by the Program.

The information described below was obtained from interviews conducted over the course of this study and certain publicly available documents, as well as a significant amount of information provided by the CAC or CAC representatives. In addition, more general comments on the impacts of the Program were collected via a comment website from Chugach shareholders, tribal members, and other individuals who live in the Chugach Region. The key interviewees represented the following groups in the Chugach Region: corporate officers of village corporations, corporate officers of the CAC, tribal entities, and officers of three nonprofit organizations.

The relevant questions key interviewees were asked regarding the Program's effects on the Native corporations included:

- How did the Program negatively or positively affect the village corporations and their shareholders?
- Did the new public access to these remote areas bring more hunters, sport fishers, campers, and other recreating tourists? Did that have a negative or positive impact on residents and village economies?
- How did the Program payments to the Native corporations trickle down to the shareholders and the local economies?
- Did the village corporations turn the funds from the Program transactions into long-term investments that pay off over time?
- Did individual shareholders use dividends that resulted from the transactions to invest in assets, such as fishing vessels or fishing permits or other small businesses, that would provide a long-term revenue stream?

The following sections present a summary of the positive and negative effects of the Program from the perspective of the organizations that participated in the interviews and the few individual shareholders who provided comments.<sup>9</sup> The limited number of key interviewees who are officers or employees of the different organizations may or may not represent the perspective shareholders in the Region. Impacts of the Program from the broader perspective of shareholders and diverse stakeholders in the Chugach Region are not reflected in this assessment.

Representatives of four of the five village corporations in the Chugach Region participated in the key informant interviews and provided information for this study: The Chenega Corporation, The Tatitlek Corporation, The Eyak Corporation, and The Port Graham Corporation. The English Bay Corporation did not provide any information for this study.

#### ***A. SUMMARY OF BENEFITS/POSITIVE EFFECTS***

This section summarizes the major findings on the benefits or positive impacts of the Program from the key informant interviews and online survey.

Generally, at the time of the transactions, participating village corporation shareholders reported they viewed the Program as a way to protect their lands and their subsistence way of life. In addition, the interviewees and survey respondents viewed participation as a means to receive monetary payments (financial return to shareholders) in exchange for titles to portions of their lands acquired under the ANCSA and fulfill their mandates to provide for near-term financial support and long-term value for shareholders and their descendants. Program acquisitions were approved by village corporation shareholder vote and received majority shareholder support.

The primary direct quantifiable benefit of the Program to the Alaska Native village corporations was in direct monetary payments, providing funds for corporations to provide economic opportunities in lieu of resource development on their lands, to distribute dividends to shareholders, and to set up trust funds to provide for more long-term benefits. Neither the CAC

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<sup>9</sup> Many of the impacts described in the interviews are subjective in nature, reflecting the viewpoint of each key informant.



nor The Port Graham Corporation participated in the Program and therefore did not receive any direct monetary payments.

During the interviews, representatives of village corporations indicated they were faced with an untenable decision. From their perspective, the only way the corporations would be compensated at all for the damages that resulted from the EVOS was to accept the transactions presented by the Program. The corporations needed the funds that would be provided by giving up their lands. Some shareholders stated they did not consider the transactions as compensation for damages.

### **B. DIRECT PAYMENTS**

Village corporations that sold lands and interests, received direct monetary payments from the Program. **Table 10** summarizes payments received by each corporation and the number of acres sold, including the acreage in fee simple, in conservation easements, and in timber easements. Some corporations received payments in lump sum and some transactions took several years; the closing dates shown in **Table 10** are the initial closings. The Tatitlek Corporation, for example, had subsequent closings in 1998 and 2000, and The English Bay Corporation also had closings in 2001 and 2007. For The Eyak Corporation, the transactions included an earlier purchase of commercial timber rights on 2,052 acres of land in Orca Narrows in January of 1995.

**Table 10. Direct Payments Received by Corporation**

<b>Village Corporation</b>	<b>Closing Date</b>	<b>Acreage Fee</b>	<b>Acreage Conservation Easement</b>	<b>Acreage Timber Easement</b>	<b>Total Acreage</b>	<b>Payments Received</b>
Eyak Corporation	2/5/1999	55,184	8,315	12,587	76,086	\$48,576,704
English Bay Corporation	11/13/1997	32,375			32,375	\$15,156,790
Tatitlek Corporation	6/5/1998	33,981	38,148	16,381	72,129	\$34,719,461
Chenega Corporation	6/26/1997	37,703	22,297		60,001	\$34,000,000
<b>Total</b>		<b>159,243</b>	<b>81,347</b>	<b>28,968</b>	<b>242,738</b>	<b>\$132,452,955</b>

Source: EVOSTC 2007

### ***C. SHAREHOLDER DISTRIBUTIONS AND DIVIDENDS***

The direct monetary payments that the ANCSA corporations received allowed for the distribution of dividends to shareholders. These payments were particularly important at the time, as shareholders lost their means of livelihood and subsistence resources due to damages from the EVOS. For example, following receipt of payments from the Program, The Eyak Corporation distributed its first significant distribution of benefits to its shareholders since the 1989 oil spill. Each Alaska Native shareholder with 100 shares of The Eyak Corporation received approximately \$77,000 in cash from the proceeds of the land sale (The Eyak Corporation, 2021).

The Tatitlek Corporation distributed approximately 40 percent of the payments received (about \$14 million) to its shareholders; the exact amount of the distribution to each shareholder was not reported. Other corporations did not provide information on their distributions.

### ***D. SETTLEMENT TRUST FUNDS***

The village corporations also used a portion of the proceeds to establish settlement trust funds, similar in structure to the Alaska Permanent Fund. The money was invested in a portfolio of stocks, bonds, and real estate, with annual earnings divided equally among the stockholders, based on a formula. Each fund was inflation proofed and required that the principal be left intact.

Trust funds were set up for The English Bay, Chenega, Tatitlek, and Eyak Corporations. The intent was to invest some of the funds to provide for long-term benefits and provide for future generations, in the same way that lands would have provided for future generations.

According to The Tatitlek Corporation, 40 percent of its Program proceeds were put into a settlement trust and invested with the Alaska Permanent Capital, historically generating a six to seven percent return. These returns provided shareholder dividends and supported shareholder programs, which include scholarships (approximately \$45,000 per year), burial assistance (approximately \$30,000 per year), vocational programs (approximately \$10,000 per year), life skills training (approximately \$15,000 per year), and contributions to an annual cultural heritage event that hosts 120 children for a week to study Alaska Native history and cultural programs of the Chugach Region.

The Chenega Corporation set up a similar trust fund (with a stock/bond portfolio) with \$14 million from the payments received. Dividends have been distributed regularly, and the amounts are based on a 5-year average of fund revenues.

In 1998, The Eyak Corporation established its \$10 million trust fund for future generations, the Eyak Permanent Fund Settlement Trust. All Eyak Corporation shareholders became beneficiaries of the trust. According to their corporate documents, the trust was created to establish a permanent fund to provide a source of funds for regular distributions to trust beneficiaries in perpetuity. The trust now holds and manages substantial assets (more than \$18 million in 2010) and distributes only a portion of its net income. In total, as of 2010, The Eyak Corporation and the trust have paid \$35 million in dividends to its shareholders since its inception; this amount equals approximately \$108,000 per shareholder (holding 100 shares).

The English Bay Corporation did not provide information for this study; however, it has been documented that The English Bay Corporation established a similar trust fund and also agreed to commit \$500,000 from its proceeds to establish a special cultural conservation fund to survey, protect, curate, and interpret archaeological sites and cultural artifacts associated with the lands acquired (Hunt, 2009).

All trusts described above remain intact, providing regular financial dividends to shareholders.

### ***E. INVESTMENTS IN OTHER BUSINESS DEVELOPMENT OPPORTUNITIES***

The village corporations also leveraged a portion of the proceeds as capital to pursue other business development ventures. For example, The Chenega Corporation used \$20 million for investments, primarily in tourism, The Tatitlek Corporation used 20 percent to purchase commercial real estate, and The Eyak Corporation retained \$5 million for its own use.

For some Native corporations, a portion of the funds allowed them to establish a more varied portfolio by participating in government contracting via the 8(a) programs.<sup>10</sup> The Eyak

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<sup>10</sup> Alaska Native corporations qualify under section 8(a) of the Small Business Act to receive federal contracting preference.

Corporation's revenues are generated from a variety of businesses that provide a range of services, including government contracting, project management, construction, and facility staffing. The Tatitlek Corporation also operates as a government contractor and provides services that include satellite imagery, construction, range service, virtual training support, and supply chain. The Chenega Corporation has a portfolio of companies involved in environmental services, health care, and facilities; military, intelligence, and operations support; professional services; and security.

#### ***F. PROTECTION OF LANDS FROM IMPACTS OF LOGGING***

According to some of the Native corporations, one of the reasons they chose to participate in the Program was to protect their lands from the impacts of continued logging. Some village corporation shareholders believed that logging operations on the EVOSTC lands would have continued without the Program. The Eyak Corporation moved out of the logging business and transitioned to government-contracting work. The Tatitlek Corporation used \$5 million of the proceeds to buy out timber contracts that were in place so it could sell or place conservation easements on its land. The Chenega Corporation was also involved in timber harvesting prior to the Program acquisitions and looked at the Program as a way to protect its forest resources while providing financial benefit to shareholders.

In describing positive impacts of the Program, one Native corporation shareholder described protection of the viewshed and subsistence resources on the lands in perpetuity, and the continuing monetary benefit to shareholders through payouts from the trusts.

#### ***G. INDIRECT BENEFITS***

One of the initial objectives of this study was to document the indirect benefits of the Program in terms of how the money was used by the shareholders and how their spending of the funds contributed to the local and regional economies. A survey of shareholders was envisioned as the most effective way to collect this data; however, time constraints and federal requirements prevented the use of this approach. Instead, information on how shareholders used the distributions was included in the key informant interview questions. Not all the representatives interviewed were beneficiaries of these payments; therefore, limited information was collected on indirect benefits of the Program.

One anecdote mentioned during a key informant interview was that his parent was able to pay off the remaining mortgage on their house. Another commenter (posted on the comment webpage) noted that the initial payment benefited their family in its formative years and the continuing payments helped make ends meet for their household.

According to one of the shareholders participating in the interviews, another indirect benefit of the Program was that it provided a basis for research and collection of scientific information and baseline data pertaining to the Region, which was compiled to support the implementation of the Program.

Other indirect benefits of Program land acquisitions include increased access to commercial and subsistence harvests attributable to conservation efforts, development of visitor-related businesses responding to increased public access, and subsequent dividends to shareholders from government contracting and other corporation revenues.

## **VII. SUMMARY OF COSTS/NEGATIVE IMPACTS**

This section summarizes findings on the negative impacts and costs of the Program from the key informant interviews and online survey. The findings also include statements from representatives of corporations that opted not to participate in the Program. This includes The Port Graham Corporation and the CAC, as well as individuals who are considered at-large shareholders (the CAC shareholders who are not shareholders of any of the village corporations). At-large shareholders make up 54 percent of the CAC's total shareholder population.

The CAC and Port Graham did not participate in the Program and therefore did not receive direct monetary benefits from the Program. Similarly, since the CAC's at-large shareholders are not tied to any of the village corporations, they also did not receive direct monetary benefits from the Program.

In general, interviewees reported the following costs or negative effects of the Program on the Chugach Region's Alaska Native corporations and their shareholders:

- Loss of exclusive access to lands and resources.
- The cost of sharing resources and lands with the public.
- The negative impacts from increased use and access on the land and resources.
- Increased public perception that any resource development in the Prince William Sound or Kenai Fjords Region is prohibited.
- The increased costs/constraints to the CAC to develop subsurface resources on Program lands and adjacent lands.

The CAC provided a significant volume of material regarding subsurface resources in its ANCSA lands that it believes have been impacted by the Program. A summary of the CAC's identified subsurface resources is addressed in the **Potential Direct and Indirect Economic Impacts of Mineral Development in the Chugach Region** section. The following section discusses specific topics or themes that consistently emerged in the interviews regarding negative effects of the Program.

#### **A. INCREASED PUBLIC ACCESS**

Program acquisitions resulted in the U.S. and State securing lands and interests in land that allowed for public access and recreation. While negotiations focused on the restoration of injured resources caused by the EVOS, civil settlement funds were also used to restore reduced or lost services provided by those resources, including subsistence, commercial fishing, recreation, and tourism. According to some village corporation representatives, increased visitation in the area, both on Program acquisitions and adjacent properties, has caused damage to their properties.

Federal and state agency representatives noted increases in the number of visitors/recreationists in the Chugach Region could be attributed to improved access unrelated to Program acquisitions, such as the reconstruction of the Anton Anderson Memorial Tunnel allowing vehicular traffic to Whittier from Portage Valley. The Federal government has also built infrastructure allowing for increased access to Program lands, including a parking area<sup>11</sup> that provides expanded access to the Copper River and cabins for recreational use.

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<sup>11</sup> The Sand Trail Parking lot was a collaboration with The Eyak Corporation, Native Village of Eyak, and the Forest Service to address safety concerns and inappropriate motorized use of Program lands.

With public access to Program interests acquired by the U.S. and the State, persons not associated with the villages and the CAC may have greater access to subsistence resources and may be crowding out traditional users. A few interviewees noted an increase in trespassing and illegal hunting on corporation properties, and some found the Program created the impression the public can freely access all lands in the Chugach Region. In many cases federal and State staff, including law enforcement, work collaboratively with local police to assist in preventing trespass on private lands. For example, the Forest Service has collaboratively posted signs and marked boundaries to help mitigate trespass issues. Annually, survey crews mark and post a percentage of National Forest boundaries to provide clarity to all members of the public, giving priority to locations with a history of trespass issues. Some of these efforts may have been necessary regardless of the Program.

Interview participants could not identify a clear distinction between rules for access on Program lands versus lands that are outside the public domain, noting that some people do not understand or recognize that private landowners require to access the lands, and finding no accountability for unauthorized access when it happens. According to the participants, Program lands do not have sufficient protection from further damage, which seems inconsistent with the intent of the Program.

Some of the costs reportedly incurred by the Native corporations due to increased public access include cleanup costs to dispose of waste dumped on corporation properties and monitoring costs to prevent trespass on areas that are intended for the exclusive use of local residents. One village corporation reported spending \$35,000 a year to address trespass issues, which included monitoring properties and erecting signs to prevent trespass. At least one interviewee acknowledged that the EVOS itself drew the public's attention to the unique ecological and recreational value of the Chugach Region, and likely spurred increased visitation in the area.

## ***B. COSTS OF ADDRESSING PUBLIC SENTIMENT AGAINST DEVELOPMENT***

Efforts toward developing resources in the Chugach Region for the economic benefit of residents have been met with opposition from certain segments of the public. Corporate representatives acknowledged this as a negative effect of the Program during the interviews, stating that any form

of development in the Chugach Region, particularly on Program-acquired lands, can be viewed as a violation of the purpose of the Program regardless of the conveyance language and reservations for valid existing rights. From the CAC's perspective, this has constrained development efforts in the Chugach Region, particularly of the subsurface resources.

Segments of the public strenuously object to resource development in the ecologically valuable Chugach Region and believe that resource development does not meet the goals of the EVOSTC to restore and protect the Chugach Region's ecosystem. Whether negative public sentiment toward resource development would have existed as a result of the EVOS or otherwise in the absence of the Program cannot be determined. Significant resource development in Alaska often gets strenuously opposed by segments of the public regardless of land ownership.

### ***C. FOREGONE BENEFITS/OPPORTUNITY COSTS: CARBON SEQUESTRATION***

Several key interviewees noted that the Native corporations are not able to take advantage of more recent opportunities, such as carbon sequestration and funding for wetland mitigation, because of they have sold their property rights through the Program.

In 2015, California's greenhouse gas rules opened a market for carbon credits in Alaska. Specifically, businesses in California that are subject to strict carbon emission standards may buy a certain number of carbon offset credits through a cap-and-trade program administered by the California Air Resources Board. Forested land may be eligible for monetization through the carbon credit program, which requires a 100-year commitment not to harvest the land for timber or to otherwise improve forest management. Some corporations that have eligible forest resources on their remaining lands have been able to participate in the California cap-and-trade program and have realized financial returns<sup>12</sup>; however, forest resources on lands acquired by the Program cannot be further monetized for their carbon credits because the lands do not risk being logged.

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<sup>12</sup> On lands inventoried for carbon sequestration projects, The Port Graham Corporation has 2.374 million offset credits on 18,165 acres, The English Bay Corporation has 1.429 million offset credits on 12,761 acres, and the CAC has 6.386 million offset credits on 49,996 acres. The CAC has sold approximately 3.425 million of its offset credits (Chugach Alaska Corporation, 2021). Offset credits only translate to actual income if they are sold on the cap-and-trade market, and their value fluctuates depending on market.



A sequestration project area needs to be large enough to cover the significant transaction costs involved, including the cost of the inventory and monitoring to enroll. The CAC noted that the Program may, in the future, affect its ability to fully optimize the opportunity to generate financial benefits from some of the forest resources on lands adjacent to Program lands, which do not have the acreage for a stand-alone project to cover those costs. If the village corporations still owned all the surface and had not otherwise alienated surface interests, such as through a conservation or other easement, a collaboration with the CAC to enroll a larger forest area might realize some economies of scale. To date, carbon sequestration projects in Alaska have only been possible on parcels with areas greater than 10,000 forested acres.

The CAC identified specific areas as “stranded” resources adjacent to Program lands, where the presence of Program lands has potentially reduced the contiguous area available for a forestry management program. Some example areas include sections 33 thru 35, T. 13 S., R. 5 W., Copper River Meridian, and sections 3 and 4, T. 14 S., R. 5 W., Copper River Meridian (the CAC’s full fee Port Gravina parcel) and sections 1 thru 5, and 9 thru 11 in T. 14 S., R. 5 W., Copper River Meridian (the CAC’s full fee parcel to the north of Nelson Bay and east of Simpson Bay). These areas cover approximately 5,000 acres of forested land with marketable species of vegetation. With the 2019 average price per offset credit of \$13 (Friedman, 2019) and combined with the forest resources potential generation of 126 credits per acre (based on the CAC’s carbon projection), the estimated 2019 value of the resources on these two stranded areas could have potentially yielded \$8 million in 2019.

The potential carbon credit value that could have been recovered every 100 years (or as long as the market exists) is affected by many factors, including that stranded forested acres would qualify as part of a larger integrated forestry management program if the adjacent Program lands were eligible or if the village corporations still owned the land and chose to participate.

#### ***D. NEGATIVE SENTIMENTS REGARDING THE NEGOTIATIONS AND ACQUISITION PROCESS***

Program acquisitions were intended to be equal value transactions through which the affected Native corporations would be fairly compensated for the market and public resource values of their land interests, while shareholders and others retained the right to use the lands for subsistence and

cultural purposes.<sup>13</sup> Program acquisitions were not intended as compensation for damages related to the EVOS. In fact, the U.S. and the State only entered into the civil settlement with Exxon after confirming it would have no effect on Alaska Natives' private damages claims. *See Native Village of Chenega Bay et al. v. State of Alaska and United States*, No. A91-454 Civ. (Sept. 24, 1991) ("Lujan Settlement"). Indigenous Alaskans and Native corporations impacted by the EVOS separately pursued compensation for damages, including legal claims for damages against Exxon, Alyeska, and the Trans-Alaska Pipeline Liability Fund. A jury awarded Alaska residents, including Alaska Natives, another \$5 billion in punitive damages, which was later appealed and reduced to approximately \$500 million. In short, individuals and corporations successfully pursued both compensatory and punitive damages through various mechanisms.

As noted earlier, several key interviewees reported feeling that corporations were coerced into giving up property and property rights to get any economic relief related to damages and impacts due to the EVOS, including losses to subsistence resources and commercial fisheries for a decade. They stated the EVOSTC leveraged dire need to take the lands conveyed pursuant to the settlement in ANCSA, finding it tantamount to a land grab resulting in the loss of thousands of acres in fee simple and through conservation easements.

One sentiment expressed was that buying the lands was not going to restore the damaged resources and that other organizations cannot protect the lands any better than the village corporations. The people who live in the Chugach Region have been conserving and protecting the land for generations and did not cause the *Exxon Valdez* oil spill.

Some interviewees took exception to the Federal government's valuation of the lands. They stated during the "comparables" used in the valuation were of lower value. The Government Accounting Office reviewed the Program's acquisitions in 1998 and determined that the EVOSTC had paid on average 56% above appraised market value for the land interests it purchased (United States General Accounting Office, 1998).

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<sup>13</sup> The Program's policies include that the EVOSTC will "specifically consider the restoration benefits to the injured natural resources, services, and the ecosystem relative to the appraised fair market value of the land or interests in land," and that "[s]ubsistence use should not be displaced through acquisition or protection of land . . . ." EVOSTC 1994 Restoration Plan, pp. 23-24.

### ***E. UNMET EXPECTATIONS***

The following statements summarize information provided during the interviews regarding several unrealized promises and unmet expectations of the Program:

- The government reneged on its part of the deal to conduct or fund studies to look at historic, cultural, and archaeological sites.
- The corporations have not been involved in the regulatory process and there is no way for them to get involved.
- The corporations' understanding of the agreement was that the lands would be held in pristine condition in perpetuity and not opened to tourism and recreation.

The Forest Service notes that agencies manage the land according to covenants stipulating what is and what is not allowed, and that it tries to work with corporations to resolve issues when there have been questions or conflicts with regard to trail access, roads, parking, trespass, habitat, and other concerns. Likewise, the Federal land managers do try to keep corporations involved by inviting Alaska Native tribes and Alaska Native corporations to engage on projects requiring National Environmental Policy Act (NEPA) compliance; many of those projects involve direct collaboration and/or consultation.

### ***F. SUMMARY AND CONCLUSION***

Interviews were conducted with Native corporation representatives in the Chugach Region to determine how the Program affected their organizations and shareholders. The following summarizes the key findings they identified for this study.

The most easily quantifiable benefit to the village corporations that participated in the Program was the direct monetary payments. The four participating village corporations in total received \$132.4 million in exchange for approximately 241,000 acres of land or interests in land. These payments in turn provided funds for the corporations to provide economic opportunities in lieu of resource development on their lands, to distribute dividends to shareholders, and to set up trust funds to provide for long-term benefits.

Some village corporations were able to leverage a portion of the proceeds as capital to pursue other business development ventures, including commercial real estate, tourism, government contracting, construction, and other professional services. Some viewed the Program as a means to generate income and avoid the negative impacts that timber operations can have on the land. Dividends may have also contributed to the regional economy through shareholder spending. These indirect effects are difficult to quantify with available information.

This assessment did not attempt to assess or quantify any positive value to Native corporations from the Program's resource conservation and restoration goals accomplished by the Program. These potential effects, and what the impacts would have been in the absence of the Program, are also difficult or impossible to quantify in retrospect.

Negative effects of the Program on the corporations and their shareholders were identified as loss of access to lands and resources, impacts from increased public use and access, and constraints on resource development, including from public perception regarding those activities on Program acquisitions and adjacent lands. As with the benefits and positive impacts, these relationships are challenging to ascertain and quantify. This study found it difficult to determine whether there is a direct causal relationship between many of the negative effects identified in the interviews and the Program, or if the negative effects are the result of other factors, such as the EVOS and the related public attention and economic pressures, or the split-estate ownership established in ANCSA.

Some effects from the perspective of the agencies that manage Program lands were obtained as part of the review process conducted for this study. With respect to land management, the agencies identified the following benefits that could be attributed to the Program:

1. Direct investments in stewardship, including coordination and implementation of active restoration work and resulting economic opportunities;
2. Increased public access for recreational activities (as stipulated in the agreed upon conservation easements) helped generate benefits for regional businesses; and,
3. Protection of salmon streams which enhanced the sustainability of wild populations that contribute to the regional economy.

The Federal land managers could not provide information on, and the study did not evaluate, the Program with respect to the significant rehabilitation of the environment, natural resources, and ecosystem services impacted by the oil spill that has been achieved by the Program, even though these aspects of the Program have undoubtedly had significant positive socioeconomic effects within the Chugach Region. Recovery of “human services” associated with the natural resources of the Chugach Region remains a primary objective of the EVOSTC.

## **VIII. POTENTIAL RESOURCES IN THE CHUGACH REGION**

This section seeks to identify potential resource development opportunities in the Chugach Region and to determine whether Program acquisitions have materially affected CAC’s ability to develop its resources. To meet these objectives, the study first describes ten categories of land ownership patterns where the CAC has identified mineral occurrences. The study then examines the single quarry project proposed by the CAC that is in the permitting and development phase at Port Gravina, and separately examines potential future quarry and mining projects with respect to the subsurface development impacts. Those sections also include estimates provided by the CAC,<sup>14</sup> of the grade and tons of mineral resources and estimates of total resource value. These estimates are highly speculative in-place values that do not consider the economic feasibility of development. Some categories have minimal practical applicability to CAC land and certain estimates relate to occurrences on lands that are not affected by the Program.

With the limited data available, as noted elsewhere in this assessment, whether and to what extent the Program acquisitions have materially affected the CAC’s development of its subsurface resources cannot be easily ascertained or quantified. The CAC has engaged in little mineral development on its lands regardless of whether the CAC holds the lands in fee or underlie Program interests or Native village corporation surface. This is consistent with the fact that the CAC’s subsurface lands primarily at issue in this study were not selected by the regional corporation for their subsurface resource value; rather, under the ANCSA they were selected by Native village corporations who own the surface by operation of the ANCSA §14(e). Whether authorization is

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<sup>15</sup> Statewide ARDF data are available for download at <https://ardf.wr.usgs.gov/index.php>.

required for a project and any relative costs associated with obtaining such authorizations are highly project specific. However, the development of subsurface resources frequently requires compliance with State or Federal environmental regulations not related to access to the surface or the surface owner. In most cases, these requirements still include a public notification and comment process. In the Chugach Region, for example, most subsurface resources can be found in remote locations and do not have road access or other transportation infrastructure; therefore, moving materials and personnel into and out of the development area, and eventually moving the product to commodity markets, will in almost every instance require authorization from the U.S. Army Corps of Engineers (USACE) and/or Alaska Department of Natural Resources (AKDNR).

#### **A. PROPERTY OWNERSHIP CATEGORIES**

**Table 11** describes ten subsurface ownership categories in the Chugach Alaska Region. The categories have been developed based on the actual configurations of surface ownership and management where the CAC has identified subsurface mineral and rock/gravel occurrences. The categories consider the array of surface acquisitions made under the Program, as well as the dominant legal right of the subsurface owner to develop its interests using as much of the surface as is reasonably necessary, as well as other applicable law, including provisions of the ANILCA.

In the table below, the property ownership category in the first column uses abbreviations and acronyms to shorten the labels which are used extensively in other tables in this section. The category labels are also used in **Appendix B**.

**Table 11. Relevant Property Ownership Categories in the Chugach Alaska Region**

<b>Property Ownership Category</b>	<b>Description of the Property Ownership Categories and Potential Development Requirements</b>
1. CAC Full-fee Estate	<p>CAC identified ten mineral occurrences that fall into this category and no examples of development or attempted development.</p> <p>Normally, where permits from the USACE and AKDNR would be required for a development project, no additional coordination with village corporations or state or federal agencies would be required except by agreement. However, in the 1982 CNI Agreement CAC did agree to implement its resource planning “in cooperation and consultation with the appropriate state and federal agencies that have land management and resource planning responsibilities in the Chugach Region” as well as to “give due regard and consideration to views expressed by interested groups and the public.” (Exhibit ___, ¶ 18).</p>
2. Access through Village Corporation Surface	<p>This category represents the pre-existing split-estate ownership pattern created by the ANCSA, and along with Category 8 provides the baseline for comparison to other property ownership categories involving access across adjacent lands. The CAC identified two mineral occurrences that fall into this category and no examples of development or attempted development.</p> <p>This category involves development of the CAC occurrences on CAC full-fee estate lands that would require crossing through separate parcels of village corporation surface to access a marine terminal. Development would require coordination and negotiations with the village corporation, and potentially other entities if the village corporation has alienated interests in its surface.</p>
3. Access through Program-acquired surface interests within a larger parcel	<p>The CAC identified two mineral occurrences that fall into this category and no examples of development or attempted development.</p> <p>The CAC’s subsurface ownership guarantees it a right to develop subsurface resources through reasonable use of the surface, even where such use involves property interests acquired by the EVOSTC, whether that be in the form of surface, timber easement, or conservation easement.</p>

<b>Property Ownership Category</b>	<b>Description of the Property Ownership Categories and Potential Development Requirements</b>
4. Access through Forest Service Program Surface	<p>The CAC identified one mineral occurrence which was determined likely to require access through Forest Service Program Surface. There have been no examples of development or attempted development in this category.</p> <p>Development of the CAC subsurface on adjacent properties would involve negotiations and possibly permits from the Forest Service. Under section 1323(a) of ANILCA, the Forest Service will provide access inholdings within the National Forest System, so the owner(s) may enjoy reasonable use of their property. In turn, the non-federal landowner must adhere to the rules and regulations of the National Forest System. The State also holds a Program conservation easement on these lands. There does not appear to be any legal requirement the State must grant the CAC access, but the CAC and the State (and village corporation as holder of a reversionary interests) could come to a negotiated agreement to facilitate development.</p>
5. AKDNR Program Surface	The CAC identified two mineral occurrences that fall into this category and no examples of development or attempted development.
6. Forest Service Program Surface	The CAC has identified fourteen mineral occurrences that fall into this category. There has been one example of development or attempted development in this category, where the CAC and the Forest Service avoided litigation and agreed to negotiate reasonable use of the surface through a public process and development plan.
7. Minerals are located on or adjacent to NPS Program Surface	Ten mineral occurrences fall into this category. Access would be governed by the ANILCA section 1110(b) right of access to inholdings on lands administered by the NPS in Alaska. CAC and the State may need to come to negotiated agreement to facilitate development where authorized access could affect the terms of a conservation easement.



<b>Property Ownership Category</b>	<b>Description of the Property Ownership Categories and Potential Development Requirements</b>
8. Village Corporation Surface	<p>This category represents the pre-existing split-estate ownership created by the ANCSA, and along with Category 2 provides the baseline for comparison to other property ownership categories. The CAC has identified sixteen occurrences that fall into this category and no examples of development or attempted development.</p> <p>Development would likely involve notification of the village corporation and negotiation regarding reasonable use of the surface to access subsurface resources. It may also involve interaction with other third-parties if the village corporation has alienated some or all of its interests in the surface (such as through a carbon credits program).</p>
9. Village Corporation Surface / Forest Service Program Conservation Easement	<p>The CAC has identified eleven mineral occurrences that fall into this category and no examples of development or attempted development.</p> <p>This category would have permitting and approval requirements similar to category 8 above.</p>
10. Village Corporation Surface / Forest Service Program Timber Easement	<p>The CAC has identified ten mineral occurrences that fall into this category and no examples of development or attempted development.</p> <p>Development would likely involve notification of the village corporation and negotiation over reasonable use of the surface to access subsurface resources. Discussions with the Forest Service would likely be necessary to ensure compliance with the timber easement, which allows development of roads and infrastructure if they are not related to commercial timber harvests.</p>

For this study, the CAC provided data for over 100 mineral occurrences and quarries of interest in the Chugach Region (CAC 2020e). Where possible, the data were linked to more current databases maintained by the U.S. Geological Survey: the ARDF<sup>15</sup>, which has been considered the most reliable source of information on mineral occurrences in the state (USGS 2020a), and the Mineral Resources Data System (MRDS)<sup>16</sup>, which augments the ARDF (USGS 2020b). Additional conversations and email correspondence with CAC staff (Phillips 2020) and CAC geographic

<sup>15</sup> Statewide ARDF data are available for download at <https://ardf.wr.usgs.gov/index.php>.

<sup>16</sup> MRDS data can be downloaded for each Borough and Census Area at <https://mrdata.usgs.gov/mrds/geo-inventory.php>.

information system data were used to determine the status of CAC occurrences of interest, relative to the Program lands in the ten categories described in **Table 11**. The mineral occurrence data have been augmented with information on the locations of five quarry rock sites of interest to CAC (AES 2020a).

The following are examples of mineral or quarry occurrences that fall into each of the property ownership categories:

1. **CAC Full-fee Estate.** The Copper Coin site (Map ID #3.21) is an occurrence on CAC full-fee land in the Chenega Map Region on Knight Island. Investigations suggest there may be economically significant quantities of copper at this site; however, the economic feasibility of extraction and development has not been investigated.
2. **Access through Village Corporation Surface.** The Silver Lake Tributary occurrence (Map ID #1.01) falls into this ownership category. Marine access to develop this placer gold occurrence on CAC full-fee land could run through Tatitlek surface where the Program holds a conservation easement, or through Tatitlek surface farther west that was not part of the Program acquisition. In either case, the village corporation may not be legally obligated to provide access to the CAC.
3. **Possible access through Village Corporation Surface/Forest Service Program Conservation Easement.** The Copper Mountain Prospect (Map ID # 1.05) lies under the surface owned by Tatitlek. The occurrence is just south of a conservation easement on corporation lands acquired by the Forest Service under the Program. The CAC indicated they believe there is moderate potential for further development, and other CAC-owned mineral occurrences can be found nearby, but it has not estimated the costs of developing this occurrence. The most cost-effective development infrastructure may include use of a marine terminal in Galena Bay to the north and a road from the occurrence to the terminal. Both the terminal and a large portion of the road would fall on the Program-acquired conservation easement.

4. **Access through Forest Service Program Surface.** Nelson Bay (Map ID # 2.08) was determined to potentially require access through lands in this category, which would be subject to the access provisions in ANILCA. The CAC would also need to negotiate or litigate access with the State, which holds a conservation easement.
5. **AKDNR Program Surface.** The Eshamy Bay quarry site in the Chenega Map Region (Map ID# 3.01) is one of two sites that coincide with surface acquired by the State of Alaska under the Program. CAC identified a low probability of development based on the estimated resource potential of this quarry before considering the costs of potential development. Should development be pursued, State ownership of the surface may require that CAC notify the State and the parties may litigate or choose to negotiate over reasonable access to develop the subsurface.
6. **Forest Service Program Surface.** Development of the Port Gravina quarry (Map ID # 2.01) in the Eyak Map Region serves as an example of development in this ownership category. Because the subsurface has the dominant legal right, CAC has the legal right to make reasonable use of the surface to develop any subsurface resources. CAC and the Forest Service agreed to negotiate what constitutes “reasonable use” through a public environmental review process and development plan, thereby avoiding litigation.
7. **NPS Program Surface.** The Alaska Hills occurrence, in the English Bay/Port Graham Map Region (Map ID # 4.07), may have a moderate mineral potential within the Program-acquired surface that is now part of the Kenai Fjords National Park. Because CAC has a dominant legal right to the subsurface, if it chooses to pursue development and make reasonable use of the surface as necessary to develop the subsurface resource, CAC and NPS may negotiate or litigate what constitutes “reasonable use” and may need to take action to avoid litigation similar to the example at Port Gravina. If The English Bay Corporation had retained the surface, CAC would likely have had to notify and potentially negotiate or litigate reasonable access with the village corporation and obtain a permit from the USACE and/or AKDNR for a dock or marine terminal.

8. **Village Corporation Surface**—The Johnston and Degan occurrence in Port Graham/English Bay Map Region (Map ID # 4.14) falls into this ownership category. The occurrence, in which CAC has indicated moderate potential, is part of the surface belonging to The Port Graham Corporation. As with lands in other property ownership categories, the CAC would likely have to notify The Port Graham Corporation as the surface owner and potentially negotiate or litigate over what constitutes “reasonable use” of the surface to develop the subsurface. CAC would also almost invariably need to obtain permits from the USACE and AKDNR to develop this occurrence, which would require a public notice and comment process. Because of its proximity to the Kenai Fjords National Park, the issuance of USACE and AKDNR permits might be controversial.
9. **Village Corporation Surface/Forest Service Program Conservation Easement**—An example of an occurrence in this ownership category is the Mogul Group occurrence in the Tatitlek Region (Map ID # 1.04). According to the CAC, this site has a moderate potential for economically significant quantities of minerals. The occurrence lies north and west of the Copper Mountain occurrence that was discussed under category 4 above. As with lands in other property ownership categories, the CAC would likely have to notify Tatitlek as the surface owner and potentially negotiate or litigate over what constitutes “reasonable use” of the surface to develop the subsurface, and a USACE and/or AKDNR permit would be required if development includes infrastructure such as a dock or marine terminal.
10. **Village Corporation Surface/Forest Service Program Timber Easement**—The Chisna Consolidated (Buckeye Group) occurrence in the Tatitlek Map Region (Map ID # 1.32) is on the Forest Service timber easement acquired under the Program. The occurrence may have economically significant quantities of copper mineralization. Language in the Program-related timber easements precludes commercial timber harvests and developments for that purpose, but all other commercial development is allowed. As with lands in other property ownership categories, the CAC would likely have to notify the surface owner and potentially negotiate or litigate over what constitutes “reasonable use” of the surface to develop the subsurface, and a USACE and/or AKDNR permit would be required if development includes infrastructure such as a dock or marine terminal.

## **1. PROJECTS IN THE PERMITTING AND DEVELOPMENT PHASE**

Information regarding applications for permits or notices of intent to access lands on Program lands were obtained from representatives of the agencies that manage Program acquisitions (i.e., Forest Service, NPS, FWS, and AKDNR). Key informant interviews with CAC representatives produced mixed views on whether the Program impacted development activities.

The FWS has not received any applications or formal inquiries for economic development or mineral development projects on its Program lands or to cross the Program lands for those reasons. Applications for development on other Program lands so far have been mostly for exploration. The NPS approved a permit for mineral exploration in Kenai Fjords National Park in the summer of 2019. The Forest Service has also received notices of intent from CAC for exploration of their mineral estates.

CAC proposed development of a granite quarry on Forest Service surface acquired under the Program at Port Gravina (Forest Service Program surface, as described in **Table 11**). The following subsection describes the proposed quarry project at Port Gravina and the negotiated process employed by the CAC and the Forest Service to determine reasonable use of surface estate for development of the quarry.

### ***Port Gravina Quarry***

CAC has proposed a commercial rock quarry at Port Gravina. The total proposed project area covers 145 acres; 96 acres is in the Chugach National Forest, where the U.S. owns the surface and CAC owns the subsurface. The surface was acquired from The Eyak Corporation through the Program. The rest of the project area (43 acres) is on lands where CAC owns both surface and subsurface; six acres are tidelands. See **Figure 6**, Map ID # 2.01. The Program-acquired surface and conservation easement at Port Gravina are subject to CAC's dominant legal rights to reasonable use of the surface if it is reasonably necessary to develop its subsurface resources (Forest Service, 2017).

CAC's proposed operating plan for the project included staged construction, which would ultimately result in an access road, two stone quarry sites and two work pads, a temporary dock for project development, a permanent dock for operations, and a laydown area. In addition, the camp and possibly an airstrip would be located on adjacent CAC surface. When completed, the development as proposed would have direct surface impact on approximately 83 acres of Forest Service lands. Although these acres are within an Inventoried Roadless Area (under the Chugach National Forest Management Plan), timber harvest and road construction may be allowed in the exercise of valid existing rights.

## **2. NEGOTIATIONS OVER REASONABLE USE**

As the subsurface owner, CAC's dominant right under Alaska law includes "the right to make such use of the surface as is reasonably necessary to remove the minerals." *Norken v. McGahan*, 823 P.2d at 628 (Alaska 1991). The rights of the ANCSA surface owner – which the Forest Service became following EVOSTC acquisition of surface interests at Port Gravina – do not include the right to required prior consent to exploration, development, or removal of minerals from the subsurface estate except within the geographic boundaries of Native villages. *See* 43 U.S.C. § 1613(f); *Leisnoi v. Stratman*, 154 F.3d 1062 (9th Cir. 1998).<sup>17</sup> Given that the Forest Service does not require prior consent, the law does not establish a specific method for the determination of what constitutes "reasonable use" by the subsurface owner except that it may be determined by agreement between the owners of surface and subsurface. *See id.* at 1071.

For the proposed Port Gravina Quarry project, CAC and the Forest Service agreed to determine reasonable use of the federally managed surface through a public process that included an environmental assessment. While this would not necessarily be case for every subsurface development underlying a Program acquisition, by engaging in a public process and environmental review, the parties effectively avoided litigation over the project and negotiated a plan of operations that coordinated requirements of the myriad state and federal agencies with oversight over various aspects of the quarry project.

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<sup>17</sup> Pursuant to Program land purchase agreements, village corporations who conveyed land interests pursuant to the Program retained their right to consent to subsurface development within the boundaries of Native villages under ANCSA § 14(f).

CAC first notified the Forest Service of its intent to perform mineral exploration in a portion of the Port Gravina quarry project area on May 16, 2014. The purpose of the mineral exploration was to gather geologic data at two blast sites and several drill sites to assess the feasibility of a commercial rock quarry. In response to CAC's notice, in November 2014 the Cordova District Ranger issued a notice to proceed for the mineral exploration. CAC requested and received a special use permit for surface occupancy of a temporary camp associated with its exploration activities. CAC began blasting and drilling activities in March 2015, which were completed in April 2015. On June 2, 2015, CAC submitted an operating plan providing notice to the Forest Service of its intent to develop the subsurface. State and federal law required CAC to comply with all necessary permits and licenses, including from the USACE, AKDNR, Alaska Department of Environmental Conservation, Alaska Department of Fish & Game, National Oceanic and Atmospheric Administration, Fish and Wildlife Service, and the Environmental Protection Agency, which can apply regardless of surface ownership. Permits from the USACE and AKDNR were subject to public notice and comment processes.

The Forest Service and CAC coordinated with all permitting agencies, as well as the State of Alaska (as the conservation easement holder) and the village corporation in negotiating reasonable use of the surface. The stipulations include a required mining reclamation plan approved by the Forest Service in coordination with the AKDNR pursuant to Alaska law. Although this stipulation relates to surface use, the reclamation plan could have been required under Alaska law regardless of surface ownership.

According to one key CAC interviewee, the National Environmental Policy Act review process described above added 18 months to the permitting schedule. The Forest Service's management measures and EVOSTC covenants accounted for about 70 to 75 percent of the permitting costs for the project. The CAC interviewee estimated that the additional costs to the project due to the constraints of the Program were \$76,880 in project management costs, \$125,297 in permitting costs, and \$63,662 in legal costs (Phillips, 2020). This does not include increased CAC staff time and expenses to navigate the process.

Furthermore, requested changes in the operating plan are anticipated to result in additional costs to the quarry, including potentially millions of dollars for accommodations desired by the Forest Service. The CAC interviewee estimated a 20 to 25 percent increase in development costs and a 3 to 5 percent increase in operating costs (Phillips 2020). As an example, they noted that, because CAC had to minimize the footprint of the proposed quarry as much as possible and leave the strips of timber for aesthetic reasons, the laydown areas could not be situated as close to the dock as it could be and was redesigned to be much smaller than ideal for maximum efficiency. The interviewee anticipates this will double the cost of the tug and barge operations.

According to CAC, “if it costs \$20,000 per day for a tug and barge, instead of needing it only one day, having to haul from the sort yard up the valley will double that time and cost.” The increase in operating costs would be mostly associated with transportation and logistics: the time of transport, labor and maintenance of longer roads, operations and maintenance of equipment, and fuel. Minimizing the quarry footprint, leaving green spaces, longer roads, restricting the size of the laydown and storage areas, placing laydown areas farther from the loading facility, all reduce efficiency and add costs. CAC estimated that additional operating costs due to the constraints of the Program associated with negotiated measures to reduce damages to the surface could amount to \$1.7 million per year.

The Forest Service disagrees that the mitigation measures identified as added costs to the CAC are related to the Program. These measures were agreed upon as the result of negotiations between split-estate owners over the subsurface owner’s reasonable use of the surface, consistent with applicable law in Alaska and not unlike the negotiations that CAC may otherwise have undertaken with a Native village corporation owner. The Forest Service does not perceive the agreed-upon mitigation measures as beyond those necessary to ensure reasonable use. In negotiating public use with CAC through public environmental review, the Forest Service sought to avoid any impact on CAC’s development timeline for the project.

### **3. CONFLICT WITH PUBLIC INTERESTS**

Although the Program acquisitions recognize CAC’s dominant legal right to develop its subsurface making reasonable use of the surface, there is an inherent conflict between such development and



the intent of the Program to protect the surface for the benefit of the EVOS-affected resources and services. Specifically, the land acquisitions were meant to protect key habitats for species injured in the EVOS from further damage by intrusive development or logging, to the extent possible. This conflict does not pose a legal impediment to the proposed development, and the covenants associated with the land sales do not prevent CAC from developing their subsurface resources; however, the conflict contributed to some negative reactions to the proposed Port Gravina quarry.

The public comments on the environmental assessment of the Port Gravina Project operating plan demonstrate this public sentiment associated with the development (Forest Service 2017). A few excerpts are provided below.

“The federal government has entirely ignored the *Exxon Valdez* Oil Spill Restoration Plan in its consideration of this permit application, and this flaw must be remedied. As is well-known, this parcel of land was protected with tens of millions of dollars of public funds (EVOS Restoration Habitat program), with the clear understanding that the area’s habitat is essential to the recovery of PWS [Prince William Sound] from the 1989 oil spill.”

“I am deeply angered at the ethical failing of the Chugach Alaska Corporation who are taking advantage of a deeply flawed system in order to profit further from an area obviously deemed to be of biological importance by *Exxon Valdez* Oil Spill Trustee Council who paid \$45 million for its protection. This action cannot be viewed as anything less than theft from the American people and this project demonstrates the moral and ethical laxity of the proponent. The fact that protection of the area has already been paid for should be of pressing concern to the Alaska Department of Natural Resources, which has conservation easement enforcement obligations for this EVOSTC-acquired land.”

“... acknowledges the legal right of Chugach Alaska Corporation to access their subsurface; however, we also note the failure of the EVOS Restoration Plan, administered by the EVOS Trustee Council, and the Chugach National Forest to

adequately protect the surface of lands that were intended to be protected as reparation for the damages done by the *Exxon Valdez* oil spill.”

“Recognizing the legality of subsurface owner rights to access resources unfortunately runs contrary to the mandates of the Chugach National Forest Management Plan and the EVOS Restoration Plan.”

“Impacts on the “wilderness appeal,” recreational value, experience of solitude, opportunity for adventure, scenic value, and related characteristics currently afforded by the Port Gravina Area caused by operation of an industrial quarry here will have profound, lasting detrimental effects on the attractiveness of, and ability to appreciate recreational pursuits in, all of Port Gravina, not just the immediate vicinity of the project.”

The more the public understands the rights, roles, and responsibilities of the surface and subsurface owners, and the relationship to the Program’s intent and objectives, the fewer misperceptions and negative public reactions to resource development are expected to occur.

Given the significant surface resource value of lands in the Chugach Region, the CAC has long committed to seek and consider public input on development of its own lands. *See* 1982 CNI Settlement Agreement ¶ 18, “Management of Lands Conveyed to CNI.” This commitment was made well before the EVOS, settlement, creation of the Program, or Program acquisitions. However, concerns expressed by the CAC representatives that negative public views on subsurface development are an impediment to development may not be quantifiable.

#### **4. SUMMARY: THE PORT GRAVINA QUARRY PROJECT**

The Port Gravina Quarry project is the first project on Program-acquired lands that has advanced beyond exploration, pursuant to a negotiated determination of reasonable surface use between the federal surface owner and the CAC.

Another proposed subsurface development on Program-acquired lands would not necessarily advance according to the same process negotiated by the CAC and the Forest Service for Port Gravina. However, through that process the Forest Service and the CAC were able to agree on the CAC's operating plan, as well as coordinating the many State and federal requirements applicable to mining projects in Alaska regardless of surface ownership. The parties may choose to negotiate regarding the CAC's use of the surface for subsurface development to avoid disputes and litigations. To date, there have been only a handful of applications for access on Program-acquired lands related to development of subsurface resources. Aside from the Port Gravina Quarry project, the projects have been limited to exploration.

## ***B. MINERAL RECONNAISSANCE AND EXPLORATION ACTIVITIES***

### ***1. POTENTIAL FUTURE QUARRY PROJECTS***

The CAC and the AES have identified four other potential future quarry projects in the Chugach Region, three of which are on Program-acquired lands, as follows:

1. The Port Gravina quarry expansion prospect is one mile inland from the existing Port Gravina quarry site, on CAC's full fee estate. This potential project has been placed into Property Ownership Category 4—Access through Forest Service Program Surface—because it appears that the most cost-effective way that the project could be developed would be to continue use of the road and dock that is already permitted on the adjacent Forest Service Program Surface for servicing the Port Gravina quarry.<sup>18</sup> The CAC currently has a permit for use of the road on Program surface to access its fee lands that are part of the original Port Gravina quarry project.

As described in the **Table 11**, section 1323(a) of the ANILCA requires that the Forest Service provide access to lands not owned by the federal government within the boundaries of the National Forest, as deemed adequate to secure to the owner the reasonable use and enjoyment thereof. However, the Program also acquired a conservation easement which is

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<sup>18</sup> The presumed existence of the road, dock, and other infrastructure for the Port Gravina quarry would reduce the construction-based development costs of the Port Gravina quarry extension.

held by the State of Alaska encumbering these lands, and it appears that the State must also agree to access or to changes in the language of the conservation easement.

Preliminary drill testing and lab analyses show that this site would be at least as good as the Port Gravina quarry project, described above. The rock exposures show massive and less fractured surfaces and may produce a higher percentage of large armor stone material than the Port Gravina quarry currently under development.

2. The Sheep Bay prospect is about five miles east of the Port Gravina quarry underlying Program surface acquired by the Forest Service, and thus falls under Subsurface Development Category 6—Forest Service Program SE. The rock type and quality are similar to the Port Gravina quarry currently under development; however, the docking area is less protected, and there is lack of flat terrain for laydown and camp areas.
3. The Roaring Cove prospect lies about six miles east of the West Arm of Nuka Bay and 70 miles southwest of Seward, on Program-acquired lands administered by the NPS as part of the Kenai Fjords National Park and, as such, falls under Property Ownership Category 7—NPS Program Surface. The 10-mile Tertiary-aged intrusive body exposed on all sides of Roaring Cove appears to be homogenous and massive.
4. The Eshamy Bay prospect lies about 25 miles southeast of Whittier on Program-acquired surface held by the State of Alaska and, as such, falls under Subsurface Development Category 6—AKDNR Program Surface. The USGS and the BLM geologists describe the unit as a homogenous granite to granodiorite. The eastern shore of Eshamy Bay offers reasonably safe access to the shore and adequate flat terrain for stockpile and camp requirements. Exposed rock and/or shallow bedrock appear to be less than a half-mile from the shore.

## **2. ESTIMATED RESOURCE VALUE OF THE QUARRY RESOURCES**

The CAC states that the Port Gravina quarry (Site A) has an estimated 2.2 million tons of minable material in the east pit and 4.6 million tons of minable material in the west pit. A previous Northern

Economics (2019) analysis used publicly available data to estimate the value of aggregate products in Anchorage and on Alaska’s contiguous road system. The analysis found that, at that time, blasted riprap was commonly sold at about \$100 per ton, D1 aggregate<sup>19</sup> sold for about \$12 per ton, and pit-run or fill material (waste) could be sold for about \$5 per ton. Armor stone (or armoring stone) can easily fetch much higher prices per ton than most riprap seen in the Alaska market; however, the prices vary significantly for each contract and the specificity of requirements for the rock’s application. Assuming a 30 percent yield for riprap, a 20 percent yield for D1, and a 50 percent yield for waste/fill material, the value per ton would be \$34.90 per ton and the deposit would have a theoretical value of \$237.3 million if no armor stone is included in the product mix. The theoretical resource value would increase with increasing levels of armor stone. However, any assigned value would also only be a gross value because it does not incorporate the significant costs of mining or processing the stone, so a high value does not necessarily mean the quarry can operate at a profit or has an available market for the material. For example, the cost of transporting stone from a quarry, like Port Gravina, that is *not* on the contiguous road system (unlike the rock for which prices are quoted above) may far exceed the market price.

The AES noted that the “visible resource at Site B is nearly unlimited in comparison to Site A...[Site] B could easily produce several hundred million tons of rock of all size categories.” Assuming that several hundred million tons implies a range of between 300 million and 500 million tons of resource at Port Gravina Site B, and assuming approximately \$34.90 per ton, the estimated range of theoretical total resource value at Site B could be in the billions of dollars. Current production of rock, sand, and gravel in the entire state of Alaska from 2017 through 2019 averaged 3.5 million tons (Athey, Werdon, & Twelker, 2021).

Total resource values shown for both Port Gravina quarry Site A and Site B do not include capital or production costs or, importantly, the cost of transportation from the quarry site to construction project sites. These types of costs often make sand, rock, and gravel resources economically infeasible without a local demand for it.

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<sup>19</sup> D1 material meets quality requirements for all uses of coarse aggregates except for use in portland cement or other cement mixtures.

The CAC did not provide indications of size of the resources of the other potential quarry sites; however, the CAC indicated that the Sheep Bay site is similar in quality to those at the two Port Gravina sites. The quarry resources at Eshamy Bay and Roaring Cove have not been studied in sufficient detail to allow estimates of the quality or volume of rock that may be available.

### **3. *POTENTIAL FUTURE MINERAL DEVELOPMENT PROJECTS***

This section provides an assessment of future mineral development projects that the CAC, as owner of the subsurface, has stated that it may potentially undertake. The assessment is comprised of the following components:

- A general description of four categories of land ownership patterns related to the Program acquisitions.
- A description of the primary dataset provided by the CAC for this assessment, along with additional data that have been brought to bear on the assessment.
- A listing of mineral occurrences that are controlled by the CAC subsurface ownership.
- A description of available information on mineral occurrences of all three classes of minerals.

### ***C. MINERAL OCCURRENCES ON CAC LANDS UNDERLYING OR ADJACENT TO PROGRAM ACQUISITIONS***

**Table 12** lists the 15 mineral occurrences that have been identified in the CAC subsurface underlying or adjacent to land interests acquired by the Program. Additional information for each of these occurrences is provided in Tables B-2 and B-3 in **Appendix B**.<sup>20</sup> The Map ID # in **Table 12** corresponds to the labels for specific occurrences depicted on the maps in **Figure 4 - Figure 8**.

The CAC identified the mineral potential for each occurrence in the table and in the associated maps (AES 2020a). Development potential, as the AES and the CAC define and apply it, does not imply the occurrences are development-level deposits nor does it imply that any of the sites would be economic to mine, but merely that some sites have documented past exploration or mining,

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<sup>20</sup> **Appendix B** provides data for all 104 mineral and quarry occurrences of interest to CAC. The appendix comprises three tables as follows: **Table B-2**—Information on Mineral and Quarry Occurrences in CAC Subsurface that Underlie or Are Adjacent to Program Lands; **Table B-3**—Information on Mineral and Quarry Occurrences in CAC Subsurface that Are Not Affected by the Program; **Table B-4**—Information on Mineral and Quarry Occurrences in Non-CAC Subsurface without Regard to Program Acquisitions. All the tables include links to URLs on the MRDS.

good metal grades, or mine workings. Their development potential designation, as they describe in their 2008 report, indicates that an occurrence has characteristics that might compel someone to continue to explore or develop the subject sites. The CAC has not conducted any economic feasibility studies of the occurrences for which they have identified interest. Most of the CAC-identified deposits BLM would define as mineral prospects or occurrences.

In the maps, a star indicates a higher mineral potential, a diamond indicates a moderate mineral potential, and a triangle indicates a lower mineral potential. The fourth column of **Table 12** describes the ownership category of the land with the occurrence as described in **Table 11**.

There has been very little active mining in the Chugach Region since the Kennecott Copper Mine closed in 1938. According to the AES, the Kennecott mine served as the driver of the Prince William Sound market for copper. Ore from Kennecott (which was of particularly high grade) was shipped from Cordova to the Tacoma Smelter,<sup>21</sup> and ore vessels would stop on their way out of Prince William Sound at other mine sites to transport other ores. These ores would supplement the ore from Kennecott and enable more cost effecting smelting operations (Alaska Earth Sciences, 2020). Once Kennecott mine closed, other smaller mines in the Region struggled to find markets and closed soon after. Further declines and mining shutdowns are linked to World War II.

There are no data available to reasonably estimate the potential development or production costs of these identified mineral resources, and without such data, no competent assessment of actual value is possible. Estimates of the size of remaining mineral occurrences in the Chugach Region are limited. According to the CAC's contractor, AES (2020a), there has been very little reconnaissance or exploration in the Chugach Region using modern geophysical methods. Of the 104 mineral occurrences and quarries of interest to the CAC (CAC 2020e), even estimates of tons and grade of mineralized materials are only available for 32. These "inferred" estimates have a low level of geological confidence and are based on the USBM research or characterization sampling. The USBM's description of "Inferred Reserves" in its 1984 Mineral Land Assessment (USBM,1984a), using agency guidance, would have been better described as "Inferred Resources"

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<sup>21</sup> The Tacoma Smelter located in Commencement Bay in Ruston, near Tacoma, Washington operated from 1889 to 1996 (Collaborative on Health and the Environment, 2019).

as the term “Reserve” implies a deposit could be profitably developed based on economic evaluations at the time. The USBM’s published (USBM,1984b) feasibility study of mineral development in the region did not indicate any mineral occurrences as being potentially profitable. No other feasibility studies for mineral development in the region, from recent times, have been documented. Most of the resource estimates provided by the CAC or the AES, unsubstantiated by agency reports or other objective data, should be considered hypothetical or even speculative. Of the 32 mineral occurrences or prospects with these estimates, 17 are on non-CAC subsurface; an additional 15 occurrences are on the CAC subsurface where the Program has not acquired any interest in the surface.

**Table 12** provides information provided by the CAC and information extracted from the ARDF and the USBM. The inferred estimates were used to develop a relative value for the mineral occurrences where information was available. The Estimated Resource Value field is a designation developed by combining the grade of the reported resources, the total contained metals, and the prices of metals in 2019. Occurrences of “Large” value have grades above regional mine cut-off grades and relatively large number of reported tons of resource. These relative values in **Table 12** reflect inferred tonnage and grade estimates where sampling is insufficient to confidently establish a resource. Because of the dearth of geological evidence and sampling and the lack of capital or production costs, determining whether development of this material would be economically feasible is not reasonable. This table summarizes only locations from Appendix B Table B-2 that had available resources reported.

The CAC identified the Alaska Hills occurrence, associated with the Program-acquired surface near Kenai Fjords National Park, as having substantial grade and tonnage; enough resource to account for 95 percent of the total estimated gold in the area. The CAC reports a grade of 5.3 troy ounces per ton at Alaska Hills. This grade is quite high by most standards and is based on historic and unofficial mine production results (USGS, 1970). To assume this grade would continue is very optimistic. With the unreliable provenance of the grade and no basis provided for the estimate of 1,175 tons of gold-bearing quartz vein remaining at the Alaska Hills occurrence endowing the site with excessive value would be imprudent.



It should be noted that the cost to develop a mine is dependent on an individual deposit's geology and geography and no two mines are alike. Currently, there are no reliable cost estimates for any of the occurrences in the Chugach Region. Challenges in maintaining production without access to existing roads and infrastructure await almost every deposit that is developed in the future in this Region. Currently, there are no competent costs estimates calculated for any of the occurrences in the CAC region.

**Table 12. Available Information for Mineral Occurrences  
Underlying or Adjacent to Program Acquired Property Interests**

Map ID #	Map Region	Occurrence Name	Surface Ownership	Commodities Present*	CAC Mineral Potential	USBM Mineral Potential	Estimated Resource Value**
1.04	Tatitlek	Mogul Group	Village Corp. surface/ Forest Service Program conservation easement	Copper	Moderate	Low	Low
1.05	Tatitlek	Copper Mountain Prospect	Possible access through Village Corp surface/Forest Service Program conservation easement	Copper	Moderate	Low	Low
1.21	Tatitlek	Reynolds-Alaska Development Co.	Village Corp. surface/ Forest Service Program conservation easement	Copper, Zinc, Silver	Lower	Moderate	Moderate
1.22	Tatitlek	Falck (west)	Village Corp. surface/ Forest Service Program conservation easement	Copper, Zinc, Silver	Moderate	Low	Low
1.32	Tatitlek	Chisna Consolidated (Buckeye Group)	Village Corp. surface/ Forest Service Program timber easement	Copper	Moderate	Low	Low

1.42	Tatitlek	Dickey Copper Co. (north)	USFS Program Surface	copper, zinc, gold	Higher	Moderate	Unknown
3.04	Chenega	Chenega Island	Village Corp. surface/ Forest Service Program conservation easement	Manganese	Moderate	Unknown	Unknown
4.07	English Bay/ Port Graham	Alaska Hills	NPS Program Surface	Gold	Moderate	Unknown	Large
4.09	English Bay/ Port Graham	Rosness & Larson	NPS Program Surface	Gold	Moderate	Moderate	Moderate

Source: Developed by the analysts based on data provided by CAC (2020c), AES (2020a), and MRDS data (USGS ,2020b). Estimates of resources are taken from MRDS, ARDF or AES (2020).

\*Commodities Present are listed in order of relative decreasing value, with the commodity of primary value listed first

\*\*Estimated Resource Value: Low value = value per ton (below cut-off grade of regional mines), Moderate = higher grade but low tonnage, Large = higher grade and larger tonnage

## 1. SUMMARY AND CONCLUSION REGARDING MINERAL OCCURRENCES OF CAC SUBSURFACE

Data regarding the potential for development of mineral occurrences within the CAC subsurface in Program-acquired surface and easements remains quite limited. Very little reconnaissance and exploration occurred in the Chugach Region in recent years. The CAC indicated interest in 104 mineral occurrences in the Chugach Region, 75 of the 104 occur on the CAC subsurface. Of these, only 15 occurrences have numeric estimates of quantity and grade available calculated from widely variable sampling techniques. Only nine occurrences have an in-place per ton value above the current cut-off grade of modern mines in Alaska. Of those nine occurrences, three underlie Program-acquisition lands or may require access through Program acquisitions.

Without advanced exploration data to identify the extent and grade of mineralization, as well as the information to estimate the potential development or production costs of these resources, the analysis cannot determine whether development of the mineral occurrences discussed above would be technically and economically feasible regardless of the Program's impacts.

## IX. CONCLUSION

As required by the Act, this study sought to assess the social and economic impacts of the Program on the CAC and CAC lands, and the Chugach Region as a whole. However, the very narrow scope of data collection and the paucity of data regarding any mineral resources in the Chugach Region subsurface limited the findings of this assessment. The assessment did not evaluate the Program with respect to the rehabilitation of the environment, natural resources, and ecosystem services impacted by the oil spill, nor did it consider the socioeconomic impacts of the Program in these respects.

**CAC and CAC Lands.** The CAC's land ownership covers over 900,000 acres in southcentral Alaska, including 378,000 acres of full-estate and 550,000 acres of subsurface. Under the Program, the U.S. and the State acquired approximately 241,000 surface acres on lands in the Chugach Region for which CAC owns the subsurface. Of these lands, the U.S. and the State acquired title to over 159,243 acres of the surface.

Under ANCSA, the surface at issue was owned by the Native village corporations while the subsurface was owned by the regional corporation. The ANCSA did not restrict the village and regional corporations from alienating their property interests. Thus, pursuant to the Program acquisitions, the State and federal agencies became owners of the ANCSA surface interests. These and other changes may result in increased development costs and complexity which are difficult, if not impossible, to quantify, including public perceptions that conflict with such activities in the Chugach Region following the EVOS, surface acquisitions by the EVOSTC, and transfer to the land managing agencies.

From the CAC's perspective, the changes in the surface ownership have increased the complexity and costs of development. In the case of the Port Gravina Quarry project, for example, some CAC representatives reported that ownership and management of surface acquired through the Program by the Forest Service resulted in additional costs and delays connected to negotiations over reasonable use of the surface. However, at least one CAC representative indicated that the process was collaborative and allowed the CAC to coordinate with other State and Federal authorities.

The CAC representatives recognize that development of the quarry in the absence of the Program would likely have involved notification and potentially negotiation or litigation with The Eyak Corporation but contend that that process would have been less costly with respect to both time and money.

The CAC representatives further asserted that the Program created a public perception that conflicts with development, and that the Program's stated goal of habitat protection has resulted in a public perception that any resource development in the Prince William Sound or Kenai Fjords Region is prohibited. While it is clear that segments of the public oppose subsurface development in the oil spill area, it cannot be known whether and to what extent public sentiments against development would have grown following the oil spill regardless of Program acquisitions. Any obligation the CAC may have to respond to public sentiment does not appear to have been materially affected by the Program. Moreover, any costs and delays associated with addressing public comments opposed to development are not quantifiable.

Through the easements and rights of enforcement created with the Program acquisitions, there is a process for the CAC to obtain access to their adjacent full-estate inholdings, where there was previously no guaranteed right of access or process for access. Although the CAC contends that this process for negotiating access with a neighboring Native village corporation would be less onerous, the assessment found no other evidence to support this assertion. Several village corporation interviewees expressed generally negative views of development that affects their surface.

The CAC's legal rights to develop its subsurface resources are not affected by the Program acquisitions. The CAC as the subsurface owner has the right to access and develop its mineral resources making reasonable use of the surface, and the land purchase agreements explicitly did not affect or limit that right. The CAC does not, and did not prior to the Program acquisitions, necessarily have a right to cross neighboring lands to access its subsurface.

Regardless of surface ownership, any proposal by the CAC to develop its subsurface could require permitting by state and federal agencies with regulatory authority over subsurface development

projects, which would likely trigger public review and comment. Any proposal by the CAC to develop a subsurface resource on Program-acquired lands would likely involve notice to the surface owner and potentially negotiations or litigation over what constitutes reasonable use of the surface. As previously noted, the CAC stated that it faces greater expense and time delays due to the Program acquiring the surface.

**Chugach Region.** For this assessment, the effects of the Program on the Chugach Region focused on the entities interviewed and their stakeholders. In addition, the Chugach Region includes two unincorporated tribal organizations that represent shareholders of the CAC in the communities of Seward and Valdez. Interviews were conducted to determine how the Program affected the organizations and shareholders.

The assessment did not include the socioeconomic effects of the Program's goals and accomplishments on the Region. For example, it did not evaluate the economic effects of restored ecosystem services, such as recovering fisheries, recreation, and tourism. The key interviewees interviewed for this assessment did not include local governments, chambers of commerce, or non-governmental organizations. No public comment was solicited as part of the data collection for this assessment.

Four of the five village corporations in the Chugach Region participated in the Program: The Eyak Corporation, The English Bay Corporation, The Tatitlek Corporation, and The Chenega Corporation. The primary direct quantifiable benefit of the Program to the village corporations was the direct monetary payments amounting to \$132.4 million received in exchange for title to 159,243 acres of surface and the establishment of conservation easements on an additional 68,760 acres in the Chugach Region. The payments in turn, provided funds for these corporations to provide economic opportunities in lieu of resource development on their lands, to distribute dividends to shareholders, and to set up trust funds to provide for more long-term benefits. The primary direct quantifiable benefit of the Program to the Alaska Native village corporations was in direct monetary payments amounting to \$132.4 million in exchange for title to 159,243 acres of surface estate and the establishment of conservation easements on an additional 68,760 acres in the Chugach Region. These payments provided funds for corporations to provide economic

opportunities in lieu of resource development on their lands, to distribute dividends to shareholders, and to set up trust funds to provide for more long-term benefits. All but one of these trust funds remains in place, and they continue to benefit shareholders.

Neither the CAC nor The Port Graham Corporation participated in the Program, and therefore did not receive any direct payments. No indirect benefits from the Program were reported. Since the CAC's at-large shareholders are not tied to any of the village corporations, they also did not receive any monetary payments from the Program.

The reported negative effects of the Program on some of the individuals and entities within the Chugach Region include: the loss of exclusive access to some lands and resources; the cost of sharing some resources and lands with the public; and negative impacts on the land and resources where there are increases in access and use.

Without a valid way to quantify or monetize these effects, objectively comparing and weighing the positive effects of the Program against the negative effects would be difficult. Whether the positive effects outweigh the perceived negative effects can only be determined by the affected parties.

## X. REFERENCES

- (n.d.). Retrieved from Chugachmiut: <https://www.chugachmiut.org/>
- Alaska Commercial Fisheries Entry Commission. (2021). Retrieved from Alaska Commercial Fisheries Entry Commission: <https://www.cfec.state.ak.us/index.htm>
- Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries. (2019, April). *2017 Prince William Sound area finfish management report*. Anchorage: Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries. Retrieved from Alaska Department of Fish and Game: <https://www.adfg.alaska.gov/FedAidPDFs/FMR19-07.pdf>
- Alaska Department of Labor & Workforce Development, Research and Analysis. (2019). *Alaska Population Overview: 2018 estimates*. Alaska: Department of Labor and Workforce Development, Research and Analysis. Retrieved from Alaska Department of Labor and Workforce Development: <http://live.laborstats.alaska.gov/pop/estimates/pub/18popover.pdf>
- Alaska Department of Natural Resources. (n.d.). *North Fork Mine*. Retrieved from Division of Mining, Land and Water: <http://dnr.alaska.gov/mlw/mining/largemine/nixonfork/>
- Alaska Earth Sciences. (2020). *CAC mineral resource deposits constrained by EVOSTC (EVOS) habitat protection*. Anchorage: Alaska Earth Sciences.
- Alaska's Forest Products Industry*. (2020). Retrieved from Alaska Forest Association: <https://www.akforest.org/facts.htm>
- Alyeska Pipeline Service Company. (2021). Retrieved from Trans Alaska Pipeline System (TAPS): <https://www.alyeska-pipe.com/trans-alaska-pipeline-system-taps-overview/>
- Athey, J., Werdon, M., & Twelker, E. (2021). *Alaska's mineral industry 2019*. Anchorage: Alaska Division of Geological & Geophysical Surveys.
- Beebe, K., Oduro, I., & Mondragon, R. (2018, April 25). *Technical Report for the Kensington Gold Mine, Juneau, Southeast Alaska, U.S.A.* Retrieved from Coeur Mining: [https://www.coeur.com/\\_resources/pdfs/Technical%20Reports/Kensington%20TR.PDF](https://www.coeur.com/_resources/pdfs/Technical%20Reports/Kensington%20TR.PDF)
- Chugach Alaska Corporation. (1980). *The Chugach Story*. Retrieved from Chugachmiut Heritage Preservation: [https://chugachheritageak.org/resource-files/The\\_Chugach\\_Story.pdf](https://chugachheritageak.org/resource-files/The_Chugach_Story.pdf)
- Chugach Alaska Corporation. (2008). *Mineral Prospects on Chugach Alaska Corporation Lands*. Anchorage, Alaska: Chugach Alaska Corporation.
- Chugach Alaska Corporation. (2020, June 5). Economic information on Port Gravina Project. Anchorage, Alaska.
- Chugach Alaska Corporation. (2020, March 23). *History*. Retrieved from Chugach Alaska Corporation: <https://www.chugach.com/about-us/history/>
- Chugach Alaska Corporation. (2021). Retrieved from Chugach Alaska Corporation: <https://www.chugach.com/>
- Chugach Alaska Corporation; Hickel, Josie. (2020, March 23). *Chugach Region Study Narrative*. Retrieved from cac-webservices.azurewebsites.net: [https://cac-webservices.azurewebsites.net/static/sway/ChugachRegionStudyNarrative\\_JH-v2.pdf](https://cac-webservices.azurewebsites.net/static/sway/ChugachRegionStudyNarrative_JH-v2.pdf)
- Chugach Alaska Corporation; Phillips, David. (2020, May 5). Data and metadata on mineral deposits in the Chugach Alaska Region of interest to Chugach Alaska Corporation. *Email*. Anchorage, Alaska.
- Chugach Alaska Corporation; Phillips, David. (2020, September 11). Information on CAC Carbon Sequestration Project. *Email*. Anchorage, Alaska.
- Chugach Alaska Corporation; Phillips, David. (2020, June 15). Information on estimated additional costs and time delays to Port Gravina Project due to regulatory constraints. *Email*. Anchorage, Alaska.

Chugach Alaska Corporation; Phillips, David. (2020, June 5 through August 14). Personal communication via email with Northern Economics, Inc. Anchorage, Alaska.

City of Cordova. (2021). Retrieved from City of Cordova, Alaska: <https://www.cityofcordova.net/>

City of Seward. (n.d.). Retrieved from City of Seward: Alaska Starts Here: <https://www.cityofseward.us/>

City of Valdez. (2021). Retrieved from City of Valdez: <https://www.valdezak.gov/>

City of Whittier. (2021). Retrieved from City of Whittier Alaska: <https://www.whittieralaska.gov/>

Collaborative on Health and the Environment. (2019). *Tacoma smelter: A toxic legacy of lead and arsenic contamination*. Retrieved from Collaborative on health and the environment: <https://www.healthandenvironment.org/environmental-health/social-context/history/tacoma-smelter-a-toxic-legacy-of-lead-and-arsenic-contamination>

Community Subsistence Information System: CSIS. (2020, June 1). Retrieved from Alaska Department of Fish and Game: <http://www.adfg.alaska.gov/sb/CSIS/>

Datawheel and Deloitte. (2021). *Nawalek AK*. Retrieved from Data USA: <https://datausa.io/profile/geo/nanwalek-ak#about>

Department of the Interior Bureau of Land Management. (2020). GIS data from Bureau of Land Management Alaska State office server, including surface management, Chugach Alaska Corporation, and village corporations. Anchorage, Alaska.

Ellis, B., Kase, J., & Gierymski, C. (2019). *Chugach Alaska Corporation Kenai Fjords Land Assessment & Exploration Program*. Kenai Peninsula, Alaska: Alaska Earth Sciences.

Exxon Valdez Oil Spill Trustees Council. (2022). Retrieved from Exxon Valdez Oil Spill Trustees Council: <https://evostc.state.ak.us/>

Fall, J. (2006, June 1). *Update of the status of subsistence uses in Exxon Valdez oil spill area communities*. Anchorage: Alaska Department of Fish and Game, Division of Subsistence. Retrieved from Alaska Department of Fish and Game Division of Subsistence: <https://www.adfg.alaska.gov/TechPap/tp312.pdf>

Fall, J., & Utermohle, C. (1995). *An investigation of the sociocultural consequences of outer continental shelf development in Alaska*. Anchorage, Alaska: Alaska Department of Fish and Game, Division of Subsistence.

Fall, J., & Utermohle, C. (1999, September). *Subsistence Harvests and Uses in Eight Communities Ten Years After the Exxon Valdez Oil Spill*. Retrieved from Alaska Department of Fish and Game: <http://www.adfg.alaska.gov/techpap/tp252.pdf>

Fall, J., & Zimpelman, G. (Eds.). (2016, June). *Update on the status of subsistence uses in Exxon Valdez oil spill area communities, 2014*. Retrieved from Alaska Department of Fish and Game: <http://www.adfg.alaska.gov/techpap/TP412.pdf>

Friedman, S. (2019, September 30). *Harvesting Carbon Credits*. Retrieved from Alaska Business Magazine: <https://www.akbizmag.com/industry/alaska-native/harvesting-carbon-credits/>

Hoekzema, R. B., & Sherman, G. E. (n.d.). *Mineral investigations on the Chugach National Forest, Alaska (peninsula study area)*. Anchorage: U.S. Department of the Interior Bureau of Mines.

Hunt, J. (2009). *Mission without a map: The politics and policies of restoration following the Exxon Valdez oil spill: 1989 - 2002*. Anchorage: Exxon Valdez Oil Spill Trustees Council. Retrieved from Exxon Valdez Oil Spill Trustee Council: <https://evostc.state.ak.us/media/2218/2002-02535-final.pdf>

IMPLAN. (2019). *IMPLAN Application Using Data Year 2018 (Economic Impact Study)*. Retrieved from IMPLAN: <https://implan.com/>

Jansons, U., Hoekzema, R. B., Kurtak, J. M., & Fechner, S. (1984). *Mineral Occurrences in the Chugach National Forest, Southcentral Alaska: U.S. Bureau of Mines Mineral Land Assessment 5-84, 218 p., 2 sheets*. Retrieved from Alaska Department of Natural Resources Geological & Geophysical Surveys: <https://dggs.alaska.gov/pubs/id/21295>



- Jensen, P., McDonald, D., Mehalek, K., Blair, K., Hancock, B., Butikofer, M., & Glader, P. (2018, December 31). *Technical Report for the Greens Creek Mine, Juneau, Alaska, USA*. Retrieved from Hecla Mining Company: <https://www.hecla-mining.com/wp-content/uploads/2019/04/2019-Greens-Creek-Technical-Report-43-101-31Mar19-Final.pdf>
- Jones, B., & Kostick, M. L. (Eds.). (2016, August). *The Harvest and Use of Wild Resources in Nikiski, Seldovia, Nanwalek, and Port Graham, Alaska, 2014*. Anchorage. Retrieved 2021, from Alaska Department of Fish and Game Division of Subsistence: <http://www.adfg.alaska.gov/techpap/TP420.pdf>
- Karl, S., Kreiner, D., Case, G., Labay, K., Shew, N., Granitto, M., . . . Anderson, E. (2021). *GIS-Based Identification of Areas that have Resource Potential for Lode Gold in Alaska*. Retrieved from USGS science for a changing world: <https://pubs.er.usgs.gov/publication/ofr20211041>
- Kompkoff, G. (2018, April 26). Testimony to House Committee on Natural Resources Subcommittee on Indian, Insular and Alaska Native Affairs (Representative Don Young of Alaska) 2 p.m. H.R. 211.
- Lasley, S. (2019, December 1). *Purpose, tradition guide Chugach Alaska*. Retrieved from North of 60 Mining News: <https://www.miningnewsnorth.com/story/2019/12/01/in-depth/purpose-tradition-guide-chugach-alaska/6080.html>
- Lydon, T. (2019, March 22). *Wounded Wilderness: The Exxon Valdez Oil Spill 30 Years Later*. Retrieved from Hakai Magazine Coastal Science and Societies: <https://www.hakaimagazine.com/news/wounded-wilderness-the-exxon-valdez-oil-spill-30-years-later/>
- Miraglia, R. (2002, June). The cultural and behavioral impact of the Exxon Valdez oil spill on the Native Peoples of Prince William Sound, Alaska. *Spill Science & Technology Bulletin*, 7(1-2), 75-87. doi:[https://doi.org/10.1016/S1353-2561\(02\)00054-3](https://doi.org/10.1016/S1353-2561(02)00054-3)
- Moffit, F., & Fellows, R. (1950). *Copper deposits of the Prince William Sound district, Alaska USGS Bulletin # 963B*. Retrieved from Alaska Department of Natural Resources Geological & Geophysical Surveys: <https://dggs.alaska.gov/pubs/id/3542>
- National Oceanic and Atmospheric Administration. (2020, August 17). *Exxon Valdez*. Retrieved from Damage assessment, remediation, and restoration program: <https://darrp.noaa.gov/oil-spills/exxon-valdez>
- National Park Service. (2021). Retrieved from National Park Service: <https://www.nps.gov>
- Nelson, S. W., & Miller, M. L. (2000). *Assessment of mineral resource tracts in the Chugach National Forest, Alaska*. Anchorage: U.S. Geological Survey.
- Northern Economics, Inc. (2019). *Hard Aggregate Quarry Pre-Feasibility Study*. Anchorage, Alaska: Northern Economics.
- Palinkas, L., Petterson, J., Russell, J., & Downs, M. (1993, October). Community patterns of psychiatric disorders after the Exxon Valdez oil spill. *American Journal of Psychiatry*, 150(10), 1517-1523. doi:<https://doi.org/10.1176/ajp.150.10.1517>
- Pearson, W., Elston, R., Bienert, R., Drum, A., & Antrim, L. (2011, April). Why did the Prince William Sound, Alaska, Pacific herring (*Clupea pallasii*) fisheries collapse in 1993 and 1994? *Canadian Journal of Fisheries and Aquatic Sciences*, 56(4), 711-737. doi:10.1139/cjfas-56-4-711
- Petterson, J. (1992). Oiled mayors social impact assessment. *Alaska OCS Region Fourth Information Transfer Meeting*, (pp. 271-276).
- Picou, S., & Martin, C. (2007). Long-Term Community Impacts of the Exxon Valdez Oil Spill: Patterns of Social Disruption and Psychological Stress Seventeen Years after the Disaster. *Department of Sociology, Anthropology and Social Work, University of South Alabama*.

- Picou, S., Gill, D., Dyer, C., & Curry, E. (1992). Disruption and stress in an Alaskan fishing community: initial and continuing impacts of the Exxon Valdez oil spill. *Industrial Crisis Quarterly* 6(3).
- Port Graham Corporation. (2021). Retrieved from Port Graham Corporation: <http://portgrahamcorp.com/>
- Prince William Sound Economic Development District. (2016). *Sound opportunities: Economic growth for the Prince William Sound region, vision-strategy-action 2016-2021*. Anchorage: A3 Consulting, Creativity, and Communications. Retrieved from [https://acb084ff-450c-4310-956d-dde05d574117.filesusr.com/ugd/594ba7\\_72be37e5492b42f1a00d2bfc5260563f.pdf](https://acb084ff-450c-4310-956d-dde05d574117.filesusr.com/ugd/594ba7_72be37e5492b42f1a00d2bfc5260563f.pdf)
- Quarterly Census of Employment and Wages (QCEW) data*. (2020). Retrieved from Alaska Department of Labor and Workforce Development: <https://live.laborstats.alaska.gov/qcew>
- Reed, P., & Brown, G. (2003). *Public Land Management and Quality of Life in Neighboring Communities-The Chugach National Forest Planning Experience*. Forest Science 49(4).
- Reger, D., McMahan, J., & Holmes, C. (1992). *Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations. Archaeology study number 1. Exxon Valdez oil spill state/federal natural resource damage assessment final report*. Technical, United States. Retrieved from <https://www.osti.gov/biblio/371062>
- Research and analysis: Population and census*. (2021). Retrieved from Alaska Department of Workforce Analysis: <https://live.laborstats.alaska.gov/landing/pop-cen.html>
- Retherford, R., & Ellis, B. (2020, May 12). Interview with President and Vice President of Alaska Earth Sciences. (I. Northern Economics, Interviewer)
- Reynolds, S. (1992). Social, economic, and subsistence effects of the Exxon-Valdez oil spill - Cordova. *Alaska OCS Region Fourth Information Transfer Meeting*, (pp. 299-303).
- Simeone, W. E., & Miraglia, R. (2000). *An Ethnography of Chenega Bay and Tatitlek, Alaska*. Anchorage, Alaska: Alaska Department of Fish and Game, Division of Subsistence.
- Subsistence Research*. (2020, June 1). Retrieved from Alaska Department of Fish and Game: <https://www.adfg.alaska.gov/index.cfm?adfg=subsistenceresearch.main>
- The Chenega Corporation. (n.d.). Retrieved from The Chenega Corporation: Extraordinary People. Exceptional Performance.: <https://www.chenega.com/about/the-chenega-story/>
- The Eyak Corporation. (2021). Retrieved from The Eyak Corporation: <https://www.eyakcorporation.com/>
- The Tatitlek Corporation. (2019). Retrieved from The Tatitlek Corporation: <https://www.tatitlek.com/>
- Trans-Alaska Pipeline: Hearings before the Committee on Interior and Insular Affairs, United States Senate, Ninety-First Congress, First Session on the Status of the Proposed Trans-Alaska Pipeline p. 42. Appendix 1 1969 . (2021, June 14). HeinOnline.
- U.S. Army Corps of Engineers. (2016, March 18). *Port Gravina Permit Application POA-2015-99*. Retrieved from US Army Corps of Engineers Alaska District Website: <https://www.poa.usace.army.mil/Missions/Regulatory/Public-Notices/Year/2016/?Page=15>
- U.S. Census Bureau. (2018). *5-year American Community Survey Data 2013-2018*. Retrieved from United States Census Bureau: <https://data.census.gov/cedsci/table>
- U.S. Department of the Interior Bureau of Land Management. (2005). *Economic Information on the Nixon Fork Mine Project, Mystery Creek Resources, Inc. Plan of Operations and Reclamation Plan*. Anchorage, Alaska.
- U.S. Department of the Interior Bureau of Land Management. (2007, July). *East Alaska Resource Management Plan*. Retrieved from blm.gov: [https://eplanning.blm.gov/public\\_projects/lup/66965/83535/](https://eplanning.blm.gov/public_projects/lup/66965/83535/)

- U.S. Department of the Interior Bureau of Land Management. (2020, August 31). Response to comments on the Chugach Region Land Study: Socio-Economic Impact Assessment; Preliminary Final Draft.
- U.S. Forest Service. (2017). *Port Gravina Quarry Project Environmental Assessment*. Cordova: Chugach National Forest. Retrieved from [https://www.fs.usda.gov/nfs/11558/www/nepa/101919\\_FSPLT3\\_3992557.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/101919_FSPLT3_3992557.pdf)
- United States Congress. (1999, July 28). *U.S. Congressional Report 106-124. Exxon Valdez Oil Spill. 106th Congress, 1st Session*. Retrieved from <https://www.congress.gov/congressional-report/106th-congress/senate-report/124/1>
- United States Forest Service. (2014, November). *Alaska's Timber Harvest and Forest Products Industry, 2011. General Technical Report pnw-gtr-903*. Retrieved from U.S. Forest Service: [https://www.fs.fed.us/pnw/pubs/pnw\\_gtr903.pdf](https://www.fs.fed.us/pnw/pubs/pnw_gtr903.pdf)
- United States Forest Service. (2020). *Chugach National Forest Resource Management Plan*. Anchorage: Forest Service. Retrieved from U.S. Department of Agriculture, Forest Service: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd725270.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd725270.pdf)
- United States Forest Service. (2020). *Chugach National Forest: Forest Plan Revision EIS*. Retrieved from U.S. Forest Service: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd725270.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd725270.pdf)
- United States General Accounting Office. (1998). *Natural resources restoration: Status of payments and use of Exxon Valdez oil spill settlement funds*. Resources, Community, and Economic Development Division. Washington DC: United States General Accounting Office.
- United States Geological Survey. (2020, June 12). *Alaska Resource Data File*. Retrieved from USGS science for a changing world: <https://ardf.wr.usgs.gov/index.php>
- United States Geological Survey. (2020, June 2). *Commodity Statistics and Information*. Retrieved from USGS science for a changing world: <https://www.usgs.gov/centers/nmic/commodity-statistics-and-information>
- United States Geological Survey. (2020, June 12). *Mineral Resource Data System*. Retrieved from USGS science for a changing world: <https://mrdata.usgs.gov/mrds/geo-inventory.php>
- Zinno, V. (2015). *2015 Field Summary Report for Exploration Conducted on Chugach Alaska Corporation Lands at Port Fidalgo*. Anchorage, Alaska: Alaska Earth Sciences, Inc.