

3.0 AFFECTED ENVIRONMENT

3.1 Project Area

As shown in map figure 1.1 subsistence activities are allowed in all national preserves in Alaska and most of the national parks and monuments established by ANILCA, amounting to about 43 million acres (Table 3.1). These NPS areas occur from Glacier Bay National Preserve to Aniakchak National Monument and Preserve in southern Alaska to Noatak and Gates of the Arctic in northern Alaska. These areas include all national park system units established through ANILCA except Kenai Fjords National Park and areas established before ANILCA such as: the former Mount McKinley National Park (now part of Denali NP), Katmai National Monument (now Park), Glacier Bay National Monument (now Park), and Klondike and Sitka National Historic Parks. Eligible subsistence users for parks and monuments, described in more detail in the next section, are identified in 36 CFR Part 13 under special regulations for park areas in Alaska. Eligible subsistence users for preserves are more variable and track with Federal Subsistence Board findings for customary and traditional (C&T) uses of resources. Federal C&T findings for grouse, ptarmigan, and wolves include large areas, whereas C&T findings for species like moose, Dall sheep, mountain goats, and muskoxen are generally more restricted and local (see 50 CFR Part 100 for species managed under ANILCA Title VIII).

Table 3.1 Acres of NPS Areas in Alaska allowing subsistence uses and populations of users

AREA NAME	NPS ACRES	ELIGIBLE PRESERVE USERS ¹ (2010)	ELIGIBLE PARK/MONUMENT USERS
Aniakchak National Preserve	458,124	3,472	
Aniakchak National Monument	137,176		344
Bering Land Bridge National Preserve	2,632,522	16,943	
Cape Krusenstern National Monument	616,476		7,104
Denali National Preserve	1,304,242	2,648	
Denali National Park (ANILCA Additions)	2,586,722		329
Gates of the Arctic National Preserve	948,203	24,160	
Gates of the Arctic National Park	7,272,662		1,723
Glacier Bay National Preserve	58,406	662	
Katmai National Preserve/Alagnak WR	359,819	3,472	
Kobuk Valley National Park	1,713,569		7,104
Lake Clark National Preserve	1,294,116	9,337	
Lake Clark National Park	2,533,079		693
Noatak National Preserve	6,548,727	24,160	
Wrangell-Saint Elias National Preserve	4,306,002	13,000	
Wrangell-Saint Elias National Park	7,951,161		5,175
Yukon-Charley Rivers National Preserve	2,236,875	5,360	
TOTAL ACRES	42,957,881		

¹ Population totals are from 2010 U.S. Census data, but only a subset of the populations would be collectors.

3.2 Eligible Subsistence Users

Eligible subsistence users in parks and monuments are codified in 36 CFR Parts 13.6 to 13.73 and are summarized in table 3.2. In addition, rural residents who demonstrate a customary and traditional use of subsistence resources in these parks and monuments and do not live in the identified resident zone communities may obtain a subsistence 13.440 permit. Rural residents who have demonstrated a customary and traditional (C&T) use of subsistence resources in preserves and are described in the federal subsistence board C&T determinations are eligible for subsistence activities in preserves, as summarized in table 3.3. Additional descriptions of subsistence user populations and uses are summarized in subsections below for each park, monument, and preserve.

Table 3.2 Eligible Subsistence Users in National Parks and Monuments of Alaska.

Monument or Park	Resident Zone Communities	Authority
ANIA NM	Chignik, Chignik Lagoon, Chignik Lake, Meshik, & Port Heiden	36 CFR 13.602
CAKR NM	Residents in the NANA Region	36 CFR 13.802
DENA NP	Cantwell, Minchumina, Nikolai, & Telida	36 CFR 13.902
GAAR NP	Alatna, Allakaket, Ambler, Anaktuvuk Pass, Bettles/Evansville, Hughes, Kobuk, Nuiqsut, Shungnak, & Wiseman	36 CFR 13.1002
KOVA NP	Residents in the NANA Region	36 CFR 13.1502
LACL NP	Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay, & Port Alsworth	36 CFR 13.1602
WRST NP	Chisana, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Gakona Junction, Glennallen, Gulkana, Healy Lake, Kenny Lake, Lower Tonsina, McCarthy, Mentasta Lake, Nabesna, Northway/Northway Village/Northway Junction, Slana, Tanacross, Tazlina, Tetlin, Tok, Tonsina, Yakutat	36 CFR 13.1902

Table 3.3 Rural Residents in GMUs with C&T for antlered or horned species and wolves² by Preserve

Species/ Preserve	Caribou	Moose	Deer	Sheep	Mt. Goat	Muskox	Wolf
ANIA	Residents in 9B,9C, 9E, 17, Nelson Lagoon & Sand Point	Residents in 9A, B, C, & E					Residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon
BELA	<u>In GMU 22</u> , residents of 21D, 22, 23, and 24; <u>In GMU 23</u> , residents of 21D, 22, 23, 24 (Wiseman), 26A, and Galena	<u>In GMU 22</u> , residents of GMU 22; <u>in GMU 23</u> , residents of GMU 23.				<u>In GMU 22B</u> west of Darby Mtns, residents of 22B & 22C; <u>in GMU 22D</u> , residents of 22 B –E, excluding St. Lawrence Is.; <u>in GMU 22E</u> , residents of 22 E, excluding Little Diomedes Is.	<u>In GMU 22</u> residents of 21D (N & W of Yukon River), 22, 23, and Kotlik; <u>in GMU 23</u> residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon
DENA	<u>In GMU 16B</u> , all rural residents; <u>in GMU 19C</u> , residents of 19C, Lime Village, McGrath, Nicholai, and Telida; <u>in GMU 19D</u> ,	<u>In GMU 16B</u> , residents of 16B; in 19c, residents of 19; <u>in GMU 19D</u> , residents of 19 and		<u>In GMU 16B</u> , no subsistence priority; <u>in GMU 19</u> , all rural residents.			<u>In GMUs 16, 19, & 20</u> , residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-

² Wolves are included here because they generally have the widest geographic C&T determination of all subsistence species.

Species/ Preserve	Caribou	Moose	Deer	Sheep	Mt. Goat	Muskox	Wolf
	residents of 19D, Lime Village, Sleetmute, and Stony River; <u>in GMU 20C</u> , residents of 20C east of Teklanika River, in Cantwell, Lake Minchumina, Manley Hot Springs, Minto, Nenana, Nikolai, Tanana, Telida and between MP 216-239 and 300-309 of Parks Hwy; no subsistence for NPS residents at DENA HQ.	Lake Minchumina; <u>in GMU 20C</u> , residents of 20C (not in DENA) and Cantwell, Manley, Minto, Nenana, Nikolai, Tanana, Telida, McKinley Village, and between MP 216-239 and 300-309 of Parks Hwy.					26, & Chickaloon
GAAR	<u>In GMU 23</u> , residents of 21D (west of Koyukuk & Yukon rivers), 22, 23, Wiseman, 26A, & Galena; <u>in GMU 26A</u> , residents of 26, Anaktuvuk Pass, & Point Hope; <u>in GMU 26B</u> , residents of 26, Anaktuvuk Pass, Point Hope, & along Dalton Hwy in 24.	<u>In GMU 23</u> , residents of 23; <u>in GMU 26</u> , residents of 26, Anaktuvuk Pass, and Point Hope (not Prudhoe Bay workers)		<u>In GMU 23</u> , residents of 23; <u>in GMU 26A</u> , residents of 26, Anaktuvuk Pass & Point Hope; <u>in GMU 26B</u> , residents of 26, Anaktuvuk Pass, Point Hope, & Wiseman.			<u>In GMUs 23, 24, & 26</u> , residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon
GLBA			Residents of (5A)		5A area residents		Residents of 5A
KATM	Residents of 9B, 9C, 17, and Egegik	Residents of 9A, 9B, 9C, & 9E					Residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon
LACL	<u>In GMU 9B</u> , residents of 9B, 9C, & 17; <u>in GMU 17B</u> , residents of 9B, Lime Village, and Stony River; <u>in GMU 19B</u> , residents of 19A, 19B, 18 upstream of	<u>In GMU 9B</u> , residents of 9A, 9B, 9C, & 9E; <u>in GMU 17B</u> , residents of 17, Nondalton,		<u>In GMU 9B</u> , residents of Iliamna, Newhalen, Nondalton, Pedro Bay, & Port Alsworth; <u>in GMU 17B</u> , all rural residents.			<u>In GMUs 9, 17, & 19</u> , residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, &

Species/ Preserve	Caribou	Moose	Deer	Sheep	Mt. Goat	Muskox	Wolf
	and including Johnson River, St. Marys, Marshall, Pilot Station, & Russian Mission	Levelock, Goodnews Bay, and Platinum; <u>in GMU 19B</u> , residents of 19A, 19B, 18 upstream of and including Johnson River, St. Marys, Marshall, Pilot Station, & Russian Mission					Chickaloon
NOAT	Residents of 21D, 22, 23, 23 (Wiseman), 26A & Galena	Residents of 23		Residents of 23 north of Arctic Circle & Point Lay		Residents of 23	Residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon
WRST	<u>In GMU 11</u> north of Sanford River, residents of 11, 12, 13A-D, Healy Lake, Chickaloon, & Dot Lake; <u>in remainder GMU 11</u> , residents of 11, 13A-D & Chickaloon; in GMU 12, residents of 12, Dot Lake, Chistochina, Gakona, Mentasta Lake, & Slana.	<u>In GMU 5</u> , residents of 5; <u>in GMU 6</u> , residents of 5A, 6A-C; <u>in GMU 11 north of Sanford River</u> , residents of 11, 12, 13A-D, Healy Lake, Chickaloon, & Dot Lake; <u>in remainder GMU 11</u> , residents of 11, 13A-D & Chickaloon; <u>in GMU 12</u> , residents of 12, 13A-D, Chickaloon, Dot Lake, and Healy Lake (see manual for details)	<u>In GMU 5B</u> , no federal open season; in unit 6, all rural residents.	<u>In GMU 11</u> north of Sanford R., residents in GMU 12, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Glennallen, Gulkana, Healy Lake, Kenny Lake, Mentasta, Slana, McCarthy/ South Wrangell/ South Park, Tazlina, Tonsina, Nabesna Road MP 0-46 and McCarthy Road MP 0-62. <u>In remainder GMU 11</u> , residents of Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Glennallen, Gulkana, Helay Lake, Kenny Lake, Mentasta, Slana, McCarthy/ South Wrangell/ South Park, Tazlina, Tonsina, Tok Cutoff Road MP 79-110, Nabesna Road MP 0-46 and	<u>In GMU 5B</u> , residents of 5B; <u>in GMU 6A</u> , residents of 5A, 6C, Chenega Bay, and Tatitlek; <u>in GMU 11</u> , residents of 11, Chitina, Chistochina, Copper Center, Gakona, Glennallen, Gulkana, Mentasta		<u>In GMU 6A</u> , residents of 5A, 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon; in GMU 11 & 12, residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon

Species/ Preserve	Caribou	Moose	Deer	Sheep	Mt. Goat	Muskox	Wolf
				McCarthy Road MP 0-62. <u>In GMU 12</u> , residents in GMU 12, Chistochina, Mentasta, Dot Lake, and Healy Lake.	Lake, Slana, Tazlina, Tonsina, & Dot Lake.		
YUCH	For GMU 20E, rural residents of 12, 20D & E	<u>In GMU 20E</u> , rural residents of 20E, 12 (north of WRST Preserve), Circle, Central, Dot Lake, Healy Lake, and Mentasta Lake.					<u>In GMUs 20E & 25 B&C</u> , residents of 6, 9, 10 (Unimak Is. Only), 11-13, 16-26, & Chickaloon

Following are descriptions of the location, distribution, and population and eligible subsistence users in each affected park, monument, and preserve. Also provided is information about subsistence harvest rates in various NPS areas where known or activity rates for various eligible subsistence populations. The goal is to present the level of participation in subsistence use of resources in or near these NPS areas so that we can gage the plausible maximum levels of opportunistic collections and uses of shed or discarded animal parts.

3.2.1 Aniakchak National Monument and Preserve

Aniakchak National Monument and Preserve (ANIA) encompasses 601,294 acres approximately 450 miles southwest of Anchorage and 140 miles southeast of King Salmon in the Lake and Peninsula Borough. Subsistence eligibility for ANIA is determined primarily by residency within the five named resident zone communities or by qualification for a section 13.440 special subsistence permit. It is also determined through application of the federal subsistence customary and traditional use determination process (C&T). The monument is closed to sport hunting, but sport hunting is allowed in the preserve consistent with State of Alaska sport hunting regulations, seasons and bag limits. Because of its remote location and notoriously bad weather, ANIA is one of the least visited units of the National Park System.

The area's primary subsistence resources include salmon, halibut, marine mammals, shellfish, moose, caribou, brown bear, bird eggs, ptarmigan, ducks, snowshoe hare, furbearing animals, berries and various plants.

The majority of the subsistence fish harvest occurs outside the monument and preserve on other public lands and in marine waters. Most subsistence hunting within ANIA occurs in areas accessible by foot; by boat in the spring, summer, and fall, or by snow machine in the winter. Federal registration permits are required in Unit 9E for federal subsistence harvests of brown bear but not for other subsistence hunts including moose, furbearers, ptarmigan, and grouse. Local residents may also elect to harvest under State of Alaska hunting or fishing regulations. Currently permits are not required for gathering other plant resources such as berries or greens.

Sport hunting is authorized within the preserve under section 1313 of ANILCA. The preserve is well known for trophy brown bear and moose hunting. Caribou hunting in Unit 9E has been closed to both sport and subsistence hunting since 2005 due to a dramatic decline in the population of the Northern Alaska Peninsula Caribou Herd. Most sport hunters access the preserve either by private aircraft or chartering air taxi or transporter services from King Salmon or Kodiak. Guided sport hunting occurs only under the conditions of a concession contract. There are currently three sport hunting guide concessions authorized to operate in the preserve.

To engage in subsistence activities within Aniakchak National Monument, individuals must either live in one of the monument's five designated resident zone communities, live within the monument, or have a subsistence use permit issued by the monument superintendent. Chignik, Chignik Lagoon, Chignik Lake, Meshik and Port Heiden are designated resident zone communities (36 CFR 13.602) for Aniakchak National Monument. Rural residents who do not reside in the monument or a resident zone community, but who have (or are members of a family that has) customarily and traditionally engaged in subsistence activities in the park, without the use of aircraft, may continue to do so pursuant to a subsistence eligibility permit issued by the park superintendent in accordance with federal regulations (36 CFR 13.440).

To engage in subsistence activities within the preserve, individuals are not required to live in a resident zone community, but must live in a rural community or area that has a positive customary and traditional use determination for the species and area they wish to hunt or fish. The population of rural residents with a positive federal subsistence C&T determination for

caribou and moose in the preserve totals 3,472 and includes residents from faraway communities such as Dillingham, Togiak, Naknek, Iliamna, and Nondalton, but we believe about 464 nearby residents of communities such as Chignik and Port Heiden would travel to this remote area to hunt and collect shed or discarded animal parts and plants.

The following summaries describe ANIA’s five resident zone communities for the monument:

Chignik: The community of Chignik has a population of 91 and is located on Anchorage Bay on the southeast end of the Alaska Peninsula approximately 450 miles southwest of Anchorage and 260 miles southwest of Kodiak. The community is a mix of Alutiiq and non-Native peoples who utilize subsistence resources to supplement seasonal employment.

Chignik Lagoon: Chignik Lagoon is a community of 78 people located on the southeast end of the Alaska Peninsula approximately 450 miles southwest of Anchorage and six miles west of Chignik. The community is a mix of Alutiiq and non-Native peoples who utilize subsistence resources to supplement seasonal employment.

Chignik Lake: The community of Chignik Lake has 73 people and is located on the southeast end of the Alaska Peninsula next to a lake by the same name. It lies 13 miles west of Chignik, 265 miles southwest of Kodiak, and 474 miles southwest of Anchorage. The population of Chignik Lake is predominantly Alutiiq.

Port Heiden/Meshik: The old village of Meshik was located at the current site of Port Heiden. The community has a population of 102 and is located at the mouth of the Meshik River on the Bristol Bay side of the Alaska Peninsula approximately 424 miles southwest of Anchorage and 20 miles west of Aniakchak National Preserve and Monument. Port Heiden is a traditional Alutiiq community reliant on commercial fishing and subsistence.

Table 3.4: Population of ANIA Resident Zones Communities (Alaska DCCED 2011)

Community	2010 Population	2000 Population	% AK Native
Chignik	91	188	45.2
Chignik Lagoon	78	53	56.6
Chignik Lake	73	133	91.7
Port Heiden/Meshik	102	119	72.3
TOTAL	344	493	

3.2.2 Denali National Park and Preserve

Denali National Park and Preserve is located along Alaska Highway 3 (also called the George Parks Highway about 240 miles north of Anchorage and 120 miles south of Fairbanks, and 12 miles south of Healy, the nearest year-round community. Subsistence hunting, trapping and fishing is permitted in the park and preserve lands added to the original Mt. McKinley National Park by ANILCA. Subsistence activities are not authorized in the former Mt. McKinley National Park. To be eligible for subsistence use in the ANILCA additions to Denali National Park a

person must be a local rural resident living in one of Denali's designated subsistence resident zone communities. The communities of Nikolai, Cantwell, Telida, and Lake Minchumina are recognized as subsistence resident zones for Denali National Park. Individuals residing outside of Denali's resident zone communities who have a personal or family history of using the park additions for subsistence purposes at the time ANILCA became law are also eligible for a special subsistence use permit from the superintendent. In addition to being a "local rural resident" the community or area where one lives must also have a "positive" customary and traditional use determination for the area and species one intends to hunt or trap.

Wildlife Management Units within Denali include portions of: 13(E), 16(A), 16(B), 19(C) 19(D), and 20(C). Denali National Park has two areas designated as National Preserves in GMUs 16B, 19C, and 20C. Both federal subsistence and State of Alaska hunting and trapping are permitted in the preserves. According to Federal Subsistence C&T determinations, those eligible to hunt in the preserve units would be residents of those GMU subunits and a list of additional communities, totaling about 2,648 people.

Table 3.5 summarizes the resident zone communities around DENA. The following summaries describe Denali National Park's four resident zone communities.

Cantwell: Cantwell is a community of 219 residents located on the George Parks Highway at the west end of the Denali Highway, 211 miles north of Anchorage and 28 miles south of Denali Park. Since ANILCA passed in 1981, Cantwell has more than doubled its population from a predominantly Native community to a community that today is 73% non-Native. As a result of Cantwell's road access, growing population, and changing demographics, contemporary Cantwell consists of a number of distinct subsistence user groups. Residents participate in subsistence hunting, trapping, and fishing activities and utilized moose, caribou, bears, salmon, freshwater fish, berries, firewood, and furbearers.

Lake Minchumina: Minchumina is a community of 13 residents and is located 65 miles north of Mount McKinley in the Interior Alaska. The lake and the community are situated near the geographical center of Alaska. Minchumina is a non-native community that utilizes a variety of resources including, freshwater fish, moose, waterfowl, berries, furbearers, gardening, and firewood.

Nikolai: Nikolai is has a population of 94 and is located in Interior Alaska on the south fork of the Kuskokwim River, 46 air miles east of McGrath. Nikolai is an Upper Kuskokwim Athabascan village with an active subsistence-based economy based on harvesting salmon, freshwater fish, moose, caribou, bear, waterfowl, berries, and firewood.

Telida: Telida has 3 residents from one family. The community is located on the south side of the Swift Fork (McKinley Fork) of the Kuskokwim River, about 50 miles northeast of Medfra.

The area experiences a cold, continental climate. Telida is an Upper Kuskowim Athabaskan village with one family that relies heavily on subsistence hunting, fishing and gathering for food and fuel.

Table 3.5: Population of Denali National Park Resident Zone Communities. (Alaska DCCED 2011)

Community	2010 Population	2000 Population	% AK Native
Cantwell	219	222	27%
Lake Minchumina	13	32	12.5%
Nikolai	94	100	81%
Telida	3	3	100%
Totals	329	357	

3.2.3 Gates of the Arctic National Park and Preserve

Gates of the Arctic National Park and Preserve encircles 8.4 million acres of northern Alaska above the Arctic Circle. The park unit lies between the James W. Dalton Highway to the east and Noatak National Preserve and the National Petroleum Reserve–Alaska to the west. The Nunamiut Eskimo community of Anaktuvuk Pass lies within park boundaries, and nine additional resident zone communities in the surrounding area have subsistence harvest rights within the park unit. Subsistence eligibility in the park is determined by residency in Anaktuvuk Pass, Bettles/Evansville, Alatna, Allakaket, Kobuk, Shungnak, Ambler, Hughes, Wiseman, and Nuiqsut. The total population of these communities is approximately 1,700. The bulk of the park (7.2 million acres) is designated wilderness under the authority of the 1964 Wilderness Act. The following summaries describe GAAR’s ten resident zone communities:

Alatna: Alatna is a community of 37 residents and is located on the north bank of the Koyukuk River, southwest of its junction with the Alatna River, approximately 190 air miles northwest of Fairbanks and 57 miles upriver from Hughes. Alatna lies just west of the municipal boundaries of the City of Allakaket. The Alatna population consists largely of descendants of Kobuk Eskimos; Athabascans predominantly live in Allakaket. Subsistence activities are prevalent.

Allakaket: Allakaket is a community of 171 residents and is located on the south bank of the Koyukuk River, southwest of its junction with the Alatna River, approximately 190 air miles northwest of Fairbanks and 57 miles upriver from Hughes. The village of Alatna is located directly across the river. Allakaket is mainly an Athabaskan community; Kobuk Eskimos live

across the river in Alatna. Two separate village councils exist. Traditional potlatches, dances and foot races attract visitors from area villages. Subsistence activities provide the majority of food sources.

Ambler: Ambler is a community of 258 residents and is located on the north bank of the Kobuk River, near the confluence of the Ambler and the Kobuk Rivers. It lies 45 miles north of the Arctic Circle. It is 105 miles northeast of Kotzebue, 25 miles northwest of Kobuk, and 19 air miles or 30 miles downriver from Shungnak. The residents of Ambler are Kuuvanmiut Inupiaq Eskimos, with a traditional subsistence way of life.

Anaktuvuk Pass: Anaktuvuk Pass is a community of 324 residents and is located at 2,200 feet elevation on the divide between the Anaktuvuk and John Rivers in the central Brooks Range. It is the last remaining settlement of the Nunamiut (inland northern Inupiat Eskimo). Anaktuvuk Pass is a community dependent upon subsistence activities.

Bettles/Evansville: The communities of Bettles and Evansville are adjacent to one another. Bettles is a community of 12 residents and Evansville is a community of 15 residents, located about 180 air miles and 250 road miles northwest of Fairbanks. They lie just north of the Kanuti National Wildlife Refuge. Bettles and Evansville are located on the S.E. bank of the Koyukuk River. Residents of Bettles are primarily non-Native, while the population of Evansville is a mixture of Athabascans and Inupiaq Eskimos.

Hughes: Hughes is a community of 77 residents and is located on a 500-foot bluff on the east bank of the Koyukuk River, about 115 air miles northeast of Galena and 210 air miles northwest of Fairbanks. Hughes is a Koyukon Athabascan village. Traditional ways of life persist -- potlatches and dog races attract visitors from surrounding river villages.

Kobuk: Kobuk is a community of 151 residents and is located on the right bank of the Kobuk River, about 7 miles northeast of Shungnak and 128 air miles east of Kotzebue. It is the smallest village in the Northwest Arctic Borough. It is a Kuuvanmiut Inupiaq Eskimo village practicing a traditional subsistence way of life.

Nuiqsut: Nuiqsut is a community of 402 residents and is located on the west bank of the Nechelik Channel of the Colville River Delta, about 35 miles from the Beaufort Sea coast. The climate is arctic. The majority of the population is Inupiaq Eskimo and they practice a traditional subsistence way of life.

Shungnak: Shungnak is a community of 262 residents and is located on the west bank of the Kobuk River, about 120 miles east of Kotzebue. The original settlement was 10 miles further upstream at Kobuk. It is a traditional Kuuvanmiut Inupiaq Eskimo village with a subsistence way of life.

Wiseman: Wiseman is a community of 14 residents and is located on the middle fork of the Koyukuk River, at the junction of Wiseman Creek in the Brooks Range. It is about 260 miles northwest of Fairbanks off the Dalton Highway, 13 miles north of Coldfoot, and 75 miles north

of the Arctic Circle. Wiseman is located in a valley, at 1,180' elevation. There are 30 original cabins from the 1920s still in use; 70% are used seasonally.

Table 3.6: Population of GAAR Resident Zone Communities

Community	2010 Population	2000 Population	% AK Native
Alatna	37	35	94.3
Allakaket	171	133	97.0
Ambler	258	309	84.8
Anaktuvuk Pass	324	282	87.6
Bettles/Evansville	27	71	31.0
Hughes	77	78	78.2
Kobuk	151	109	93.6
Nuiqsut	402	433	88.2
Shungnak	262	256	94.5
Wiseman	14	21	19.0
TOTAL	1723	1727	

The population of rural residents with a positive federal subsistence C&T determination for caribou in the GAAR preserve units includes residents in GMUs 22, 23, 24, and 26 and totals about 24,160, but we believe about 1,723 nearby residents of the park resident zone communities are most likely to travel to these remote areas to hunt and collect shed or discarded animal parts and plants.

Because caribou is a primary subsistence resource in Arctic Alaska, we also consulted community studies conducted by the Alaska Department of Fish and Game between 2000-2010 (ADFG 2011), which are summarized and found online in the “Community Subsistence Information System” (CSIS). This summary indicates that 60-82 percent of households in these communities attempted to hunt for caribou in the study year, and in most communities 90-100 percent of the households used caribou resources. Caribou hunting is a common activity for these communities and can be used as an indicator of general participation in subsistence activities in an area. Collection of shed or discarded animal parts and plants for subsistence uses are likely to occur opportunistically along with common hunting and gathering activities. Not all of the resident zone households would have used park lands for hunting caribou, but GAAR has one community located within the park boundaries (Anaktuvuk) and seven others that are geographically located relatively close to the parklands. Because GAAR provides a sizeable area near these communities and these households would tend to harvest closest to home when possible, we estimate roughly one quarter of the caribou harvested in the area is taken from GAAR, with some communities like Anaktuvuk taking a higher percentage off park lands than other communities farther away. In summary, we estimate a sizeable percent of the caribou harvested for the resident zone population of around 1,700 people is derived from GAAR.

3.2.4 Glacier Bay National Preserve

Glacier Bay National Preserve is 57,000 acres adjacent to the northwest corner of Glacier Bay National Park. The National Park lands are not open to harvest of resources under ANILCA Title VIII. Yakutat is the only community with a customary and traditional use determination for all of the big game species present in the preserve. Small game and furbearers have a default C&T use determination for all rural residents. The village of Yakutat has a population of 662 and is 50 miles by air from the Preserve. On average 14 local residents use the Preserve for moose hunting each year and three moose are harvested. Few Brown Bear subsistence tags are issued and no harvest under subsistence regulations has happened in the last ten years. No use has been documented for subsistence hunting of Deer, Black Bear, Mountain Goat or small game in the past ten years. Limited harvest of furbearers by a single trapper has occurred in 2004, 2005 and 2008, primarily Wolf (13), Lynx (9) and Marten (1).

3.2.5 Katmai National Preserve

Katmai National Preserve (KATM NP) contains 333,401 acres and is located on the Alaska Peninsula in southwest Alaska. The Alagnak Wild River (ALAG) is adjacent to KATM NP and encompasses 30,665 acres, drains an area of 2,237 square miles and empties into the Kvichak River near Bristol Bay in southwest Alaska. The landscape in KATM NP and ALAG is dominated by numerous large and small lakes—including Kukaklek and Nonvianuk Lakes—wetlands and open tundra, stands of black spruce and thickets of alder and dwarf birch. The area's primary subsistence resources include sockeye salmon, silver salmon, whitefish, pike, rainbow trout, moose, caribou, brown bear, bird eggs, ptarmigan, ducks, snowshoe hare, furbearing animals, berries and various plants. To engage in subsistence activities within KATM NP and ALAG, individuals must live in a rural community or area that has a positive customary and traditional use determination for the species in Unit 9C they wish to hunt or fish.

The majority of the subsistence fish harvest occurs in the ALAG during the red salmon run during the summer and the silver salmon run in the fall. According to ethnographic work conducted by the University of Washington (Deur, 2008), there is limited subsistence fishing in KATM NP. Most subsistence hunting along the ALAG corridor takes place by boat during the summer and fall and by snow machine in the winter. Subsistence hunting in KATM NP occurs in areas accessible by foot in the spring, summer, and fall, or by snow machine in the winter. Federal registration permits are required in Unit 9C for federal subsistence harvests of brown bear, but not for other subsistence hunts including black bear, caribou (in the ALAG drainage only; there is no Federal open season for caribou in KATM NP), moose and furbearers. Local residents may also elect to harvest under State of Alaska hunting or fishing regulations. Permits are currently not required for gathering other plant resources such as berries or greens.

Sport hunting is authorized within the preserve and in the ALAG corridor under section 1313 of ANILCA. The preserve is accessible primarily by air but the ALAG can be accessed by aircraft, boat, or snowmobile, depending on the season. Most sport hunters access the preserve either by private aircraft or chartering air taxi or transporter services from King Salmon, Port Alsworth, Kenai or Homer. The major draw for sport hunters in KATM NP is brown bear hunting, which

occurs in the fall in odd-numbered years and in the spring in even-numbered years. Guided sport hunting occurs only under the conditions of a concession permit. There are two sport hunting guide concessions authorized to operate in the preserve, but one is currently vacant. There are no hunting guide concessions authorized for ALAG. Caribou hunting is open to sport and Federal subsistence hunters in ALAG and in that portion of KATM NP within the Alagnak River drainage. The remainder of KATM NP has been closed to both sport and subsistence hunting since 2006 due to a dramatic decline in the population of the Northern Alaska Peninsula Caribou Herd.

Katmai National Preserve is on the northern end of the Alaska Peninsula approximately 225 miles southwest of Anchorage, 90 miles southwest of Homer and 35 miles northeast of King Salmon in the Lake and Peninsula Borough. The Alagnak Wild River corridor is located on the west side of Katmai National Preserve and extends 69 miles from the preserve border toward the confluence with the Kvichak River. Eligibility for the Federal Subsistence Program in KATM Preserve and ALAG is determined primarily through customary and traditional (C&T) use determinations by the Federal Subsistence Board. Both units are located in GMU 9C. When communities or areas have a positive C&T determination for a species in a particular game unit, only residents of those communities or areas have a Federal subsistence priority and are eligible to hunt or trap that species in that unit under Federal Subsistence regulations. If the Board has not made a customary and traditional use determination for a species, then all rural residents of Alaska may utilize that species for subsistence in that unit. Residents of the State of Alaska may also subsistence hunt or trap in the preserve under State of Alaska subsistence regulations. Sport hunting is also allowed in the preserve consistent with State of Alaska sport hunting regulations, seasons and bag limits.

Caribou and moose are the primary subsistence species found in the preserve and wild river corridor and are currently at low numbers, but residents in units 9 A, B, C, E, 17, and Egegik may take a caribou or moose in the preserve and wild rivers areas, which totals up to about 3,472 people. We believe a smaller, more local population is likely to hunt and collect in the preserve as described below.

The following summaries describe communities with positive customary and traditional determinations for Katmai National Preserve and the Alagnak Wild River that are located within 50 statute miles of the preserve and wild river corridor, a reasonable distance for local rural residents likely to use the area:

Igiugig: Igiugig has a population of 50 residents and is located on the Alaska Peninsula on the south shore of the Kvichak River, which flows from Iliamna Lake. It is 244 miles southwest of Anchorage, 50 miles northeast of King Salmon and 48 miles southwest of Iliamna. Historically a Yup'ik Eskimo village, the population is now primarily Alutiiq and dependent on a subsistence lifestyle based on caribou, moose, freshwater seals, salmon, birds and small mammals.

Iliamna: Iliamna is a community of 109 people located on the northwest side of Iliamna Lake, 200 miles southwest of Anchorage. The population is mixed, with non-Natives, Inland Dena'ina Athabascans, Alutiiqs and Yup'ik Eskimos. Many residents participate in subsistence hunting

and fishing activities and utilize moose, caribou, bear, freshwater seals, salmon, whitefish and grayling.

King Salmon: King Salmon is a community of 374 located on the north bank of the Naknek River on the Alaska Peninsula, about 15 miles upriver from Naknek and 284 miles southwest of Anchorage. The population is mixed with Aleuts, Athabascan Indians, Yup'ik Eskimos and non-Natives. Many residents utilize salmon, trout, birds, moose, caribou, small mammals and berries for subsistence.

Kakhonak: Kakhonak has a population of 170 and is located on the south shore of Iliamna Lake, 207 miles southwest of Anchorage, 22 miles south of Iliamna and 88 miles northeast of King Salmon. The village has a mixed Native population composed primarily of Alutiiq and Yup'ik peoples and subsistence activities are the focal point of the culture and lifestyle.

Levelock: Levelock has 69 residents and is located on the west bank of the Kvichak River, 10 miles inland from Kvichak Bay. It is 278 air miles southwest of Anchorage and 40 miles north of Naknek. Levelock has a population that is predominantly Alutiiq and Yup'ik and the community relies on subsistence activities for a large portion of its diet. Residents hunt, fish and gather a variety of foods including salmon, trout, moose, caribou, birds, small mammals and berries.

Naknek: Naknek has a population of 544 and is located on the north bank of the Naknek River, at the northeastern end of Bristol Bay. It is 297 miles southwest of Anchorage and 15.5 miles west of King Salmon. Naknek is a fishing community with a mixed population of non-Natives, Yup'ik Eskimos, Alutiiq, and Athabascan Indians. Many residents utilize salmon, trout, birds, moose, caribou, seals, small mammals and berries for subsistence.

Newhalen: Newhalen is a community of 190 people located on the north shore of Iliamna Lake, at the mouth of the Newhalen River, 5 miles south of Iliamna and 200 miles southwest of Anchorage. Newhalen is culturally mixed with Yup'ik Eskimos, Alutiiqs, and Inland Dena'ina Athabascans. Most households rely on subsistence resources for food, fuel and materials.

Nondalton: Nondalton has a population of 164 and is located on the west shore of Six Mile Lake, between Lake Clark and Iliamna Lake. It is 190 miles southwest of Anchorage. Nondalton is an Inland Dena'ina Athabascan community and many households rely on subsistence hunting, fishing and gathering for food, fuel and materials.

Pedro Bay: Pedro Bay has a population of 42 and is located on the Alaska Peninsula at the head of Pedro Bay and the east end of Iliamna Lake. It is 176 air miles southwest of Anchorage. Pedro Bay is an Inland Dena'ina Athabascan village reliant on subsistence resources including salmon, moose, bears, small mammals and birds.

South Naknek: South Naknek is a community of 79 people located on the south bank of the Naknek River on the Alaska Peninsula, 297 miles southwest of Anchorage. South Naknek is a traditional Alutiiq community with a fishing and subsistence lifestyle. Residents rely on subsistence hunting and fishing for food and utilize salmon, trout, caribou, moose, seals and small mammals.

Table 3.7: Population of Communities within 50 Statute Miles of KATM Preserve and ALAG Wild River Corridor (Alaska DCCED 2011)

Community	2010 Population	2000 Population	% AK Native
Igiugig	50	53	83.0
Iliamna	109	102	59.0
King Salmon	374	442	30.1
Kakhonak	170	174	90.8
Levelock	69	122	95.1
Naknek	544	678	47.1
Newhalen	190	160	91.3
Nondalton	164	221	90.0
Pedro Bay	42	50	64.0
South Naknek	79	137	83.9
TOTAL	1791	2139	

3.2.6 Lake Clark National Park and Preserve

Lake Clark National Park and Preserve is approximately 160 miles southwest of Anchorage on the northern end of the Alaska Peninsula. The inland areas of the park and preserve are located primarily in the Lake and Peninsula Borough, while the coastal portions of the park are included in the Kenai Peninsula Borough. Subsistence eligibility for LACL is determined by residency within the park, the six resident zone communities or by qualification for a section 13.440 special subsistence permit. It is also determined through application of the federal subsistence customary and traditional use determination process (C&T). The park is closed to sport hunting, but recreational angling is allowed in all park waters open to sport fishing. Unlike the park, sport hunting is allowed in the preserve consistent with State of Alaska general hunting regulations, seasons and bag limits.

In review of those rural residents with a positive C&T determination for caribou and moose in the preserve areas within GMUs 9, 17, and 19, about 9,337 people would be eligible to hunt in the preserve area. We believe, however, that rural residents living closer to the preserve numbering about 2,259 people are most likely to be those who would hunt and gather in the preserve.

The following summaries describe two of LACL's six resident zone communities. Iliamna, Newhalen, Pedro Bay, and Nondalton are described above as subsistence communities for KATM Preserve:

Lime Village: Lime Village has a population of 29 and is located on the south bank of the Stony River, 50 miles southeast of its junction with the Kuskokwim River. The village is 111 air miles south of McGrath, 137 miles east of Aniak, and 185 miles west of Anchorage near the northwest boundaries of the park and preserve. Lime Village is a Dena’ina Athabascan Indian settlement with a subsistence-based economy based on salmon, moose, bear, caribou, waterfowl, and berries.

Port Alsworth: Port Alsworth is a community of 159 located in the preserve on the east shore of Lake Clark at Hardenburg Bay and approximately 165 miles southwest of Anchorage. Port Alsworth's population is primarily non-Native.

Table 3.8 describes resident zone community populations, and table 3.13 resident zone harvests of selected species.

Table 3.8: Population of LACL Resident Zones Communities

Community	2010 Population	2000 Population	% AK Native
Iliamna	109	102	59.0
Lime Village	29	46	N/A
Newhalen	190	160	91.3
Nondalton	164	221	90.0
Pedro Bay	42	50	64.0
Port Alsworth	159	104	22.1
TOTAL	693	683	

3.2.7 Western Arctic National Parklands Communities

Western Arctic National Parklands (WEAR) is a National Park Service organizational structure administering four park units located in northwest Alaska: Bering Land Bridge National Preserve (BELA), Cape Krusenstern National Monument (CAKR), Kobuk Valley National Park (KOVA), and Noatak National Preserve (NOAT). The Arctic Circle cuts through BELA, but the bulk of the park unit is located south of the Arctic Circle within the northern part of the Seward Peninsula. CAKR, NOAT, and KOVA are located north of the Arctic Circle and arranged roughly in a sweeping arc north of Kotzebue, Alaska. CAKR stretches nearly due north, NOAT stretches west to east, and KOVA dips north to south. Subsistence eligibility for CAKR and KOVA is determined by residency within the park unit’s resident zone or in rare cases qualification for a special subsistence permit. CAKR and KOVA are also closed to sport hunting. Sport hunting is allowed in BELA and NOAT and subsistence eligibility for the two preserves is largely determined through application of the federal subsistence customary and traditional use determination process (C&T). In some cases the federal C&T determination provides for a much larger pool of potentially eligible users than might occur under use of the resident zone concept. C&T is also species specific. Caribou management in BELA illustrates the complexity associated with federal C&T. BELA includes portions of GMUs 22B, 22D, 22E, and 23. The

federal C&T for caribou in GMU 22 includes residents of GMUs 21D, 22, 23, and 24 The C&T for GMU 23 includes residents of GMUs 21D, 22, 23, 24 (Wiseman), 26A, and Galena.

The NANA region (NANA is the Alaska Native Claims Settlement Act regional for-profit corporation for the area). Its boundaries are roughly equivalent to those of the Northwest Arctic Borough and the Northwest Arctic Census Area. The region contains about 38,000 square miles (roughly the size of the State of Indiana), and a 2009 year population of 7,444 persons at a density of 0.2 per square mile compared to 1.1 per square mile for the State of Alaska as a whole. Its population is almost entirely compressed into eleven communities with ten of those scattered around the regional hub of Kotzebue. All of the communities are composed predominately of Alaska Native people (the largest percentage being Kivalina at 96.3% and the lowest being Kotzebue at 73.6%). Nine of the communities are more than 85% Alaska Native. They range in size from the smallest being Kobuk with a 2010 population of 109 to the largest being Kotzebue with a 2010 population of 3,082. Eight of the communities contain populations of less than 450 people. Three of the communities (Kotzebue, Deering, and Kivalina) are coastal communities (Kotzebue and Kivalina along the Chukchi Sea and Arctic Ocean, and Deering along Kotzebue Sound). The other eight are located along important rivers (Noatak along the Noatak River; Noorvik, Kiana, Ambler, Shungnak, and Kobuk along the Kobuk River; Selawik along the Selawik River; and Buckland along the Buckland River). Federal regulations within 36 CFR Part 13 identify the NANA Region as being included within the resident zones for CAKR and KOVA.

Kotzebue³: Kotzebue is the largest community in the NANA Region (population 3,201) and serves as the region's hub. It is located on the Baldwin Peninsula in Kotzebue Sound near the discharges of the Kobuk, Noatak, and Selawik Rivers. It is 549 air miles northwest of Anchorage and 26 miles above the Arctic Circle. The residents of Kotzebue are primarily Inupiaq Eskimos, and subsistence activities are an integral part of the lifestyle. Each summer, the North Tent City fish camp is set up to dry and smoke the season's catch.

Noatak: Noatak is located on the west bank of the Noatak River, 55 miles north of Kotzebue and 70 miles north of the Arctic Circle. This is the only settlement on the 396 mile-long Noatak River, just west of the 6.6-million acre Noatak National Preserve, and about 20 miles east of CAKR. Noatak is a medium size (population 510), predominately Inupiaq Eskimo community. Subsistence activities are the central focus of the culture, and families travel to fish camps during the summer.

Kivalina: Kivalina is at the tip of an 8-mile barrier reef located between the Chukchi Sea and Kivalina River. It lies 80 air miles northwest of Kotzebue. Kivalina (population 374) is a traditional Inupiaq Eskimo village. Subsistence activities, including whaling, provide most food sources. Inupiaq dancing was reintroduced by a group of young people in September of 2008.

³ Tables 3.9 and 3.10 below provides community population sizes for 2010 and 2000 as well as the percentage of Alaska Natives making up the population for BELA and NANA Region communities considered eligible for WEAR parks areas.

Table 3.9 Population of BELA Primary Communities (Alaska DCCED 2011)

Community	2010 Population	2000 Population	% AK Native
Shishmaref	563	562	94.9
Wales	145	152	84.8
Diomede	115	146	92.2
Brevig Mission	388	276	91.5
Nome	3,598	3,505	54.8
Deering	122	136	86.9
TOTAL	4,815	4,777	

Table 3.10 Population of CAKR and KOVA Resident Zones Communities (Alaska DCCED 2011)

Community	2010 Population	2000 Population	% AK Native
Ambler	258	309	84.5
Buckland	416	406	95.4
Deering	122	136	86.9
Kiana	361	388	90.3
Kivalina	374	377	96.3
Kobuk	151	109	90.1
Kotzebue	3,201	3,082	73.6
Noatak	514	428	94.8
Noorvik	668	634	88.3
Selawik	829	772	85.4
Shungnak	262	256	94.3
TOTAL	7,156	6,897	

Selawik: Selawik (population 829) is the second largest community in the region. It is located at the mouth of the Selawik River, where it empties into Selawik Lake, about 90 miles east of Kotzebue. It lies 670 miles northwest of Anchorage. The city is near the Selawik National Wildlife Refuge, a key breeding and resting spot for migratory waterfowl. It is an Inupiaq Eskimo community active in traditional subsistence fishing and hunting.

Buckland: Buckland (population 416) is located on the west bank of the Buckland River, about 75 miles southeast of Kotzebue. Buckland is an Inupiaq Eskimo village, and subsistence activities are an important focus of the economy.

Deering: Deering (population 122) is the smallest community in the region. It is located on Kotzebue Sound at the mouth of the Inmachuk River, 57 miles southwest of Kotzebue and about 22 miles east of BELA. The population of the village is primarily Inupiaq Eskimo. The people are active in subsistence.

Noorvik: Noorvik (population 668) is the third largest community in the region. is located on the right bank of the Nazuruk Channel of the Kobuk River, 33 miles northwest of Selawik and 45 miles east of Kotzebue. The village is downriver from the 1.7-million acre Kobuk Valley National Park. Noorvik is primarily an Inupiaq Eskimo community with a subsistence lifestyle.

Kiana: Kiana (population 361) is located on the north bank of the Kobuk River, 57 air miles east of Kotzebue and about 22 miles west of KOVA. Kiana is a traditional Inupiaq Eskimo village practicing a subsistence lifestyle.

Ambler: This village is described above as one of the subsistence communities using Gates of the Arctic National Park and Preserve.

Shungnak: This village is described above as one of the subsistence communities using Gates of the Arctic National Park and Preserve.

Kobuk: This village is described above as one of the subsistence communities using Gates of the Arctic National Park and Preserve.

The Bering Straits region (Bering Straits is the ANCSA regional for-profit corporation for the area) boundaries are roughly equivalent to those of the Nome Census Area. The region contains about 23,000 square miles, and a 2009 year population of 9,391 persons at a density of 0.4 per square mile compared to 1.1 per square mile for the State of Alaska as a whole. Its population is almost entirely compressed into sixteen communities with fifteen of those scattered around the regional hub of Nome. While the interior of the Seward Peninsula was once extensively occupied in traditional times, today's communities are almost entirely coastal, although most are located within traditional tribal boundaries. Beginning with Shishmaref in the north, the string of communities continues westward along the northern coast to the tip of Cape Prince of Wales (Wales with Diomedede just off shore, then turns southeastward along the southern coast to Brevig Mission, Teller, Nome (to which King Island relocated), Golovin, Elim, Koyuk, and then turns south along the shore of Eastern Norton Sound with Shaktoolik, Elim, and Stebbins and St. Michael. The one modern day exception is White Mountain which is located north of Golovin on the shore of the Fish River. While all of these communities have the potential to become users of BELA, ethno-historical research as well as subsistence harvest patterns suggest that only five of these Seward Peninsula communities would collect resources from BELA: Shishmaref, Wales, Diomedede, Brevig Mission, and Nome. To those five communities should be added a sixth --- Deering, from the NANA region and which has demonstrated substantial links to BELA.

Nome: Nome (population 3,598) is the largest community in the region and is the hub for the Bering Straits Region. Nome was built along the Bering Sea on the south coast of the Seward Peninsula, facing Norton Sound. It lies 539 air miles northwest of Anchorage, a 75-minute flight. It lies 102 miles south of the Arctic Circle and 161 miles east of Russia, and about 45 air miles south of BELA. The population of Nome is a mixture of Inupiat Eskimos and non-Natives. Although some employment opportunities are available, subsistence activities are prevalent in the community. Former villagers from King Island also live in Nome.

Shishmaref: Shishmaref (population 563) is located on Sarichef Island, in the Chukchi Sea, just north of the Bering Strait. Shishmaref is 5 miles from the mainland, 126 miles north of Nome, and 100 miles southwest of Kotzebue. The village is surrounded on three sides by the 2.6 million-acre Bering Land Bridge National Reserve. It is a traditional Inupiat village with a fishing and subsistence lifestyle.

Wales: Wales (population 145) is located on Cape Prince of Wales, at the western tip of the Seward Peninsula, 111 miles northwest of Nome, and 25 miles west of BELA. Wales has a strong traditional Inupiaq Eskimo whaling culture. Ancient songs, dances, and customs are still practiced. In the summer, Little Diomed residents travel between the two villages in large traditional skin boats.

Diomed: Diomed (population 115) is located on the west coast of Little Diomed Island in the Bering Straits, 135 miles northwest of Nome and about 20 miles west of Wales. It is only 2.5 miles from Big Diomed Island, Russia, and the international boundary lies between the two islands. It has land holdings on the mainland that border BELA. Diomed is a traditional Inupiaq Eskimo village with a subsistence lifestyle. Seal, polar bear, blue crab, and whale meat are the preferred foods. Mainland Natives come to Diomed to hunt polar bears.

Brevig Mission: Brevig Mission (population 388) is located at the mouth of Shelman Creek on Port Clarence, 5 miles northwest of Teller and 65 miles northwest of Nome, and about 50 miles south of BELA. Brevig Mission is predominantly Inupiaq Eskimo with a subsistence lifestyle.

Finally, we recognize that current harvest data from distal communities suggest that such use is often very limited and sporadic. Additionally, harvest studies and use area mapping projects have shown that more locally abundant or locationally predictable resources will tend to be harvested closer to home. Wood and most other plants, some fish and birds, as well as moose are examples. However, highly valued resources that may be more locationally unpredictable such as caribou, or which may occur widely distributed at lower densities, such as some furbearers, may be harvested over much larger areas. We also recognize that resources primarily harvested at these communities vary according to the ecosystems in which they are located in or near. All of the above communities harvest a wide and fairly extensive list of resource species or categories, but coastal communities may harvest higher percentages of marine mammals and some fish, while more inland communities may harvest higher percentages of large terrestrial mammals with fish or large land mammals shifting in relative importance depending on availability.

Four communities are geographically located relatively close to the BELA. Community studies conducted by the Alaska Department of Fish and Game (2011) between 2000-2010 are summarized and found in the “Community Subsistence Information System” (CSIS). This summary indicates that 43-68 percent of households in most of these communities attempted to hunt for large land mammals in the study year, and 72 to 95 percent of all households used large mammals. Land mammal hunting is a common activity for these communities and can be used as an indicator of general participation in subsistence activities in an area and on adjacent NPS lands. Collection of shed or discarded animal parts and plants for subsistence uses are likely to occur opportunistically along with common hunting and gathering activities.

The park areas in the NANA Region include Kobuk Valley National Park (KOVA), Cape Krusenstern National Monument (CAKR), and Noatak National Preserve (NOAT) and part of Bering Land Bridge National Preserve (BELA). There are nine communities in the region that are geographically located relatively close to these parklands. Community studies conducted by the Alaska Department of Fish and Game (2011) between 2000-2010 are summarized and found in the “Community Subsistence Information System” (CSIS). This summary indicates that 62-73 percent of households in these communities attempted to hunt for caribou in the study year, and 89 to 100 percent of all households used caribou resources. Caribou hunting is a very common activity for these communities and can be used as an indicator of general participation in subsistence activities in an area and on adjacent park lands. Collection of shed or discarded animal parts and plants for subsistence uses are likely to occur opportunistically along with common hunting and gathering activities. Because park areas comprise nearly half of the NANA region and contain key harvest areas (e.g. along the Noatak River and its tributaries and the Kobuk River between Ambler and Kiana), a large percentage of effort to harvest caribou in the NANA Region or GMU 23 is probably taken from NPS lands in the region. See tables 3.9 and 3.10 for summary population data for rural resident communities for BELA, CAKR, and KOVA.

3.2.8 Wrangell-St. Elias National Park and Preserve

Wrangell-St. Elias National Park and Preserve, located in south-central Alaska, is the largest unit in the national park system, with approximately 13.2 million acres⁴ falling within the park boundaries. The landscape included within Wrangell-St. Elias ranges from coastal beaches to forests and tundra to the rock and ice of some of the highest mountains in the country. The region’s main subsistence resources are salmon, moose, caribou, Dall sheep, mountain goat, ptarmigan, grouse, snowshoe hare, furbearing animals, berries, mushrooms, and dead or green logs for construction and firewood. Most subsistence hunting within Wrangell-St. Elias occurs off the Nabesna, McCarthy, and Kotsina roads. The Copper, Nabesna, Chisana and Chitina rivers serve as popular riverine access routes for subsistence users. The majority of the subsistence fish harvest in the region occurs on the Copper River, which comprises the western boundary for much of the park. Motorboats, trucks, and off-road vehicles (ORVs) are typical access means. Access by boat or airplanes is allowed on the Malaspina Forelands pursuant to special regulation at 36 CFR 13.1902(c).

Tables 3.11 and 3.12 summarize the federal subsistence hunting and fishing permits issued by the park between 2002 and 2009. Federal registration permits are not required for all federal subsistence harvests (e.g., furbearers, black and brown bear in Units 11 and 12, the regular season for sheep in Units 11 and 12), and local residents may also elect to harvest under state of Alaska hunting or fishing regulations. Currently permits are not required for the subsistence harvest of firewood or for gathering other plant resources such as berries or mushrooms.

Sport hunting is authorized within Wrangell-St. Elias National Preserve under section 1313 of ANILCA. The preserve’s accessibility via the road system and chartered fly-in hunts makes the

⁴ Approximately 800,000 acres within the park boundary are non-federal lands owned by Alaska Native Corporations, the State of Alaska, the University of Alaska, and other private owners.

area especially popular for Alaskan sport hunters. The preserve has produced several world-record Dall sheep and consequently attracts sheep hunters from around the globe. A major portion of sport hunter access is by aircraft, both private and air taxi. The Mentasta Mountains, Chisana area, Jacksina Creek drainage, Chitina River valley, and the Nabesna River drainage receive relatively heavy sport hunting pressure each year. Sport harvest of wildlife by unguided sport hunters is moderate to heavy along the Nabesna, McCarthy, and Kotsina roads. Guided sport hunting within Wrangell-St. Elias National Preserve occurs only under the conditions of a concession permit. There are currently sixteen sport hunting guide areas in the preserve, most of which are not directly adjacent to the road system.

Table 3.11: Federal Subsistence Hunting Permits Issued by Wrangell-St. Elias National Park and Preserve, 2002-2009

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Unit 5B Goat	0	0	4	0	0	1	3	0
Unit 11 Moose	92	244	256	224	250	282	274	252
Unit 11 Goat	26	49	39	41	37	52	67	50
Unit 11 Elder Sheep	6	13	20	13	16	11	18	27
Unit 11 Elder/Junior Sheep	n/a	n/a	n/a	2	0	0	1	5
Unit 12 Elder Sheep	n/a	n/a	10	8	8	6	7	14
Unit 12 Elder/Junior Sheep	n/a	n/a	n/a	0	0	0	0	1

Note: A small portion of Unit 13C falls within Wrangell-St. Elias National Preserve, and the park issues permits for the Unit 13 moose and caribou hunts from its Slana Ranger Station. The majority of the permits for those hunts are issued by the Bureau of Land Management's Glennallen Field Office, and it is not possible to separately identify the number of permits issued by the park for those hunts. Similar situations exist for the Unit 5 brown bear hunt and the Unit 5A goat hunt, except that the primary agency involved is the U.S. Forest Service's Tongass National Forest.
n/a = Hunt had not yet been established.

Source: Federal Subsistence Permit Database, accessed 1/26/2011.

Table 3.12: Federal Subsistence Fishing Permits for the Upper Copper River, Wrangell-St. Elias National Park and Preserve, 2002-2009

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Glennallen Subdistrict	201	221	262	267	254	281	270	274
Chitina Subdistrict	122	100	109	76	75	98	82	68
Batzulnetas	1	1	1	1	0	1	1	0

Note: Permits are issued on a household basis. The majority of the permits are issued by Wrangell-St. Elias National Park and Preserve and the park is the designated federal manager for this fishery. A few of the permits are issued through Tetlin National Wildlife Refuge in Tok.

Source: NPS data.

To engage in subsistence activities within Wrangell-St. Elias National Park, individuals must either live in one of the park's 23 designated resident zone communities, live within the park, or have a subsistence use permit (36 CFR 13.440) issued by the park superintendent. The following communities are designated as resident zones for the park: Chisana, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Gakona Junction, Glennallen, Gulkana, Healy Lake, Kenny Lake, Lower Tonsina, McCarthy, Mentasta Lake, Nabesna, Northway, Slana, Tanacross, Tazlina, Tetlin, Tok, Tonsina, and Yakutat (36 CFR 13.1902). Rural residents who do not reside in the park or a resident zone community, but who have (or are members of a family that has) customarily and traditionally engaged in subsistence activities in the park, without the use of aircraft, may continue to do so pursuant to a subsistence eligibility permit issued by the park superintendent in accordance with federal regulations (36 CFR 13.440). To engage in subsistence activities within Wrangell-St. Elias National Preserve, individuals are not required to live in a resident zone community, but they must live in a rural community or area that has a positive customary and traditional use determination for the species and area they wish to hunt or fish. Population estimates from the Alaska Department of Labor and Workforce Development indicate that approximately 5,800 people lived in the park's resident zone in 2009 (see table 3.13). This count is down slightly from the population counted by the 2000 census. Note the communities and areas for which population is estimated do not align exactly with the resident zone communities.

3.2.9 Yukon-Charley Rivers National Preserve

Yukon-Charley Rivers National Preserve encircles 2.5 million acres along a section of the Yukon River near the U.S.-Canadian border between the rural communities of Eagle and Circle. The preserve protects the entire 106-mile watershed of the Charley River and helps to protect and interpret the gold rush history of the upper Yukon River region. Because of its national preserve status, both subsistence use and sport hunting are allowed in the unit. The Han Gwich'in Athabascan Indians traditionally lived along the upper Yukon River, and today they live in communities on the Canadian side of the border and in Eagle Village just 3 miles east of Eagle. The rivers within the preserve have long served as transportation corridors, townsites, and hunting and fishing grounds for the residents of this region.

According to the Federal Subsistence Board C&T determinations for big game found in the preserve in GMU 20E, as identified in Table 3.3, eligible residents in GMUs 20 D& E and 12 could total up to 5,360 people and include communities such as Tok. We believe residents of local communities along the Yukon River are those most likely to be hunting and gathering in the preserve as described below (see Table 3.14).

The following summaries describe YUCH's local eligible communities:

Central: Central is a community of 96 residents and is located on the Steese Highway about 125 miles northeast of Fairbanks and 28 miles southwest of Circle. Circle Hot Springs is located nearby.

Table 3.13: Population of the Wrangell-St. Elias National Park Resident Zone, 2000 & 2010

	April 1, 2010	April 1, 2000
	<u>Census</u>	<u>Census</u>
Upper Tanana/Alaska Highway Communities	1,819	2,006
Dot Lake Village CDP (1)	62	38
Healy Lake	13	37
Northway (inc. Northway Junction and Northway Village)	223	274
Tanacross	136	140
Tetlin	127	124
Tok	1,258	1,393
Copper Basin Communities (2)	2,694	3,027
Chisana (3)	--	--
Chistochina	93	93
Chitina	126	123
Copper Center (inc. Silver Springs CDP)	442	492
Gakona	218	215
Glennallen	483	554
Gulkana	119	164
Kenny Lake (inc. Willow Creek CDP)	546	611
McCarthy	28	42
Mentasta Lake	112	142
Slana (inc. Nabesna CDP in 2010)	152	124
Tazlina (inc. Copperville CDP in 2000)	297	328
Tonsina	78	92
Remainder of Copper River census subarea	(4)	47
Gulf of Alaska Communities	662	808
Yakutat (City and Borough)	662	808
Total	5,175	5,841

Notes:

- (1) Excludes the Dot Lake CDP, with 13 residents in 2010 and 19 residents in 2000, because only the Dot Lake Village CDP falls within the Wrangell-St. Elias resident zone boundary.
- (2) Gakona Junction, Lower Tonsina, and Nabesna are resident zone communities that fall within the Copper Basin, but are not currently separated out for population count purposes.
- (3) Local reports indicate that 12 people in Chisana were missed or placed in the wrong location in 2000.
- (4) Data for this area have not been released. In 2009, the population of this area was estimated at 196.

(Williams 2010 and Alaska DOL 2011)

Circle: Circle is a community of 104 residents and is located on the south bank of the Yukon River at the edge of the Yukon Flats, 160 miles northeast of Fairbanks. It is at the eastern end of the Steese Highway. The population of Circle is predominantly Athabascan, but there are several non-Native families. The Circle Civic Community Association was formed in 1967. It cooperates with the traditional council to maintain signs in the area, a public boat launch, and in preserving historic sites.

Eagle: The City of Eagle is a community of 86 residents and is located on the Taylor Highway, 6 miles west of the Alaska-Canadian border. Eagle is on the left bank of the Yukon River at the mouth of Mission Creek. The Yukon-Charley Rivers National Preserve is northwest of the area.

Eagle Village: Eagle Village is a community of 67 residents and is located on the Taylor Highway, 3 miles west of the Alaska-Canadian border. Eagle Village is on the left bank of the Yukon River, 3 miles east of the City of Eagle, on the Taylor Highway. The village is southeast of the Yukon Charley Rivers National Preserve. Eagle is a Han Kutchin Indian village. The early village was called "Johnny's" by non-Natives, because its chief was known as John. A military post (Fort Egbert) was established at the nearby City of Eagle.

Table 3.14: Population of Local YUCH Communities

Community	2010 Population	2000 Population	% AK Native
Central	96	134	9.7
Circle	104	100	85.0
Eagle	86	129	6.2
Eagle Village	67	68	44.1
TOTAL	353	431	

3.3 Economic Conditions in Local Rural Communities and Handicraft Sales

The State of Alaska Department of Commerce, Community, & Economic Development has produced reports on the Economic Impact of Alaska’s Visitor Industry including Alaska Visitor Expenditures. The summer 2001 survey (Northern Economics for ADCCED 2002) broke out expenditures by all visitors on Alaska Native Arts and Crafts. This category of expenditure was meant to capture items given the “Silver Hand” designation, meaning hand crafted in Alaska by an Alaska Eskimo, Aleut, or Indian craftsman and made wholly or in significant part of natural materials. About 1,500 persons were signed up for the Silver Hand Program in 2001 (more likely now), but native-style crafts made in Alaska by Natives and non-natives were probably included in visitor responses. Out of the total 2001 summer expenditures of \$1,512.6 million about \$110.5 million were spent on Alaska-made handicrafts, or 7%. This figure does not include purchases of handicrafts by Alaska residents or the value of handicrafts bartered for other items in a subsistence economy. In 2009 total summer visitor spending dropped to \$1.3B (McDowell Group 2010), and purchases of handicrafts may also have dropped to due to a sagging economy, but nevertheless about \$100M were probably spent on Alaska-made handicrafts. The McDowell

report notes that the bulk of visitor expenditures (and therefore sale of Alaskan handicrafts too) was in Southeast and South-central Alaska at 39% each, followed by 15% expenditure in Interior, 6% in Southwest, and 1% in Far North Alaska. Not all of these handicrafts would have been made in rural locations, but according to the Calista Corporation Economic Profile web, page crafts productions are an important source of earnings during winter months when fishing, construction, and other seasonal work is unavailable. This situation probably holds true for most remote rural locations across Alaska.

Subsistence users collect horns, antlers, bones and plants for personal/family use and to sell as a form of additional income. Use of horns, antlers, bones and plants as crafts by subsistence users can vary by community, family, and individual. Rural communities are often dependent upon seasonal and short –term employment to supplement their income throughout the year. Creating crafts to sell is one of several means of subsistence living that contributes to the financial stability of rural communities. Though the creation of crafts is important to the economic wellbeing of some subsistence users, the collection of horns, antlers, bones and plants to sell takes place on a relatively small basis.

3.3.1 Aniakchak National Monument and Preserve

For a summary of ANIA resident zone community economic conditions see Table 3.15.

Chignik: The Chignik economy is based on seasonal employment in commercial fisheries and subsistence. In 2009, nine residents held commercial fishing permits. The community supports two fish processing plants: Norquest Adak and Trident Seafoods which employ between 600 and 800 people each year to process salmon, herring roe, halibut, cod, and crab. Chignik is accessible by air and sea. There is a 2,600' long by 60' wide gravel runway owned by the State and a seaplane base with regular flights from King Salmon and Port Heiden. Barge services arrive weekly from late spring through early fall and monthly during the remainder of the year. The state ferry operates bi-monthly from Kodiak between May and October. Residents rely on salmon, halibut, clams, seals, caribou and moose to supplement their diet.

Chignik Lagoon: Fishing is the mainstay of the economy in Chignik Lagoon, which serves as a regional fishing center. The economy is highly dependent on the success of the annual salmon fisheries and 23 residents held commercial fishing permits in 2009. The primary year-round employers are the village council, electric plant, and school. Chignik Lagoon is accessible by air and sea, and there are no roads connecting it to other villages. There is a state-maintained 1,810' by 60' wide gravel airstrip, public domain small boat harbor, and seaplane base. Regular and charter flights are available from King Salmon. A cargo ship brings supplies annually and goods are lightered to shore. Salmon, halibut, clams, seals, caribou and moose are important food sources for Chignik Lagoon residents.

Chignik Lake: Commercial fishing is an important income source in Chignik Lake. Six residents held commercial fishing permits in 2009 and many residents leave the community during the summer months to commercial fish, crew, or work at the fish processors at Chignik. The

community is accessible by air and has a state-owned 2,800' long by 60' wide gravel airstrip with regularly-scheduled and charter air service from King Salmon. Cargo ships deliver goods weekly during the summer and monthly during winter to Chignik Lagoon, which are then transported over land to Chignik Lake. Residents rely heavily on subsistence foods and resources and utilize salmon, fresh water fish, clams, caribou, moose, and seals.

Port Heiden/Meshik: Commercial fishing and government jobs provide the majority of cash income in Port Heiden and 12 residents held commercial fishing permits in 2009. The state-owned airport consists of a lighted gravel runway 5,000' long by 100' wide and a 4,000' long by 100' wide lighted gravel crosswind runway that can accommodate up to Boeing 737 aircraft. Regular and chartered air services are provided from King Salmon. The airstrip serves as a point-of-transfer for flights to Chignik, Chignik Lagoon and Chignik Lake. There is a natural boat harbor but no dock. Cargo from Seattle is delivered twice yearly by a BIA-chartered barge and is lightered and offloaded on the beach.

Table 3.15: Economic Characteristics of ANIA Resident Zone Communities (Alaska DCCED 2011)

Community	Median Household Income	Per Capita Income	% Unemployed	% Below Poverty
Chignik	\$34,250	16,166	35.2	4.5
Chignik Lagoon	\$92,297	28,940	0	1.8
Chignik Lake	\$41,458	13,843	8.6	22.0
Port Heiden/ Meshik	\$31,875	20,532	16.7	5.6

3.3.2 Denali National Park and Preserve

Subsistence users affiliated with Denali National Park and Preserve use horns, antlers and bones for such craftwork as carving, buttons, and items around the home that include, but are not limited to, door handles, hangers, and light fixtures. Wood from spruce and birch are also used for items around the home and to make furniture to be sold. Berries can be sold or traded within communities and stored for personal use.

Many rural communities are without road access, such as Lake Minchumina, Telida, and Nikolai and supplement their financial income through subsistence collection and selling of crafts. Communities with road access, such as Cantwell, also supplement their finances through subsistence collection and selling of crafts. Income accrued in rural areas is often seasonal and attained through more than one avenue of employment. The creation of crafts from wood, plants, bones, and antlers acts as a supplement for subsistence users in communities near the Park. For a summary of economic conditions in these communities see Table 3.16.

Cantwell: Cantwell’s economy is based on highway tourism and transportation. Part-time seasonal construction jobs also provide income. Cantwell is accessible by road, rail, and air. The George Parks Highway connects to Fairbanks and Anchorage, the Denali Highway links Denali Park with the Richardson Highway during summer months only. There are two privately owned airstrips; the 2080’ by 30’ wide gravel airstrip is for public use. A privately-owned helipad is also available at the Igloo. The Alaska railroad provides train service. Road access from Fairbanks and Anchorage provides easy access to groceries that help supplements their diets made up of locally harvested moose and caribou. Table 3.23 and the following descriptions summarize the economic characteristics of DENA resident zone communities.

Table 3.16: Economic Characteristics of DENA Resident Zone Communities. (Alaska DCCED 2011)

Community	2000 Median Household Income	2000 Per Capita Income	2000 % Unemployed	2000 % Below Poverty
Cantwell	\$43,750	\$22,615	11%	2.1%
Lake Minchumina	\$36,250	\$26,780	0%	0%
Nikolai	\$15,000	\$11,029	37.9%	27.6%
Telida	N/A	N/A	N/A	N/A

Lake Minchumina: Residents earn their living in a variety of ways: trapping, making crafts, writing, guiding, and operating a tourist lodge. Most residents combine part time work with a semi-subsistence lifestyle. A state-owned 4,200’ long by 100’ wide gravel airstrip is available. The lake may be accessed by boat in the summer. There is no road connection. Some people have fish nets in the summer and fall months to provide food for themselves and their dogs. People also depend heavily on the fall moose hunt for their year’s supply of meat.

Nikolai: Village employment peaks during the summer when the construction and the fire season is underway. The city, state, and federal government provide the primary year-round employment. Some of the villagers from Nikolai are involved in guiding activities in the area; however, their activities do not extend into the park or preserve. Residents rely heavily on subsistence activities for food and wood for heat. Some residents tend gardens, Salmon, caribou, rabbits and the occasional bear are utilized. Trapping and handicrafts also provide income.

Telida: Residents depend on a subsistence lifestyle for most food sources. Access to Telida is primarily by air. A locally-maintained 1,900’ long by 40’ wide turf/dirt airstrip is available. Small boats can reach Telida, but snags and sticks downriver prevent large boat access. There is no road connection, but a winter trail connects the village with Nikolai. Snowmachines, motor bikes and ATVs are used. Telida is a traditional Upper Kuskokwim Athabascan village with an active subsistence based economy.

3.3.3 Gates of the Arctic National Park and Preserve

Subsistence users in GAAR are avid users of natural materials to make handicrafts for personal use and sale. Economic conditions of the resident zone communities are described below (see Table 3.17).

Ambler: Economic conditions in this community are described below under section 3.3.7 for WEAR parks.

Alatna: The economy is seasonal and subsistence-based. Salmon, whitefish, moose, bear, small game, and berries provide most food sources. Caribou are taken when available. A few earn income from trapping or selling traditional Native handicrafts. Construction and BLM emergency firefighting also provide summer jobs.

Allakaket: Most cash jobs are part-time or seasonal. The primary year-round employers are the school, city, tribe, and village corporation store. Construction and BLM emergency firefighting provide summer jobs. A few earn income from trapping or selling traditional Native handicrafts. Subsistence is the focus of the local economy. Salmon, whitefish, moose, bear, small game, and berries provide most food sources. Caribou are taken when available.

Anaktuvuk Pass: Economic and employment opportunities are limited in Anaktuvuk Pass, due to its isolation. Hunting and trapping for the sale of skins, guiding hunters, or making traditional caribou skin masks or clothing provides income. Some residents have seasonal employment outside of the community. Caribou is the primary source of meat; other subsistence foods include trout, grayling, moose, sheep, brown bear, ptarmigan, and water fowl.

Bettles/Evansville: The economy of Bettles is linked to air transportation, visitor services, and government. In Bettles, one hundred percent of the heads of household are employed, most full-time, which is unique for a rural community. The community is accessible by road during winter months, which dramatically reduces the cost of goods and supplies. The FAA, National Park Service, school, city, general store, and lodging provide year-round employment. During the summer, tourist-oriented businesses and guides for the Brooks Range provide seasonal employment, as well as a BLM firefighting station. The economy is similar for Evansville, except that ninety percent of the heads of household are employed, most full-time. Subsistence activities are important to the Native residents, however subsistence use by the non-Natives is substantially lower. Salmon, moose, bear, caribou, and sheep are utilized. The tribe provides a tribal office and operates a clinic.

Hughes: Subsistence is the focus of the local economy. Salmon, freshwater fish, moose, black bears, rabbits, waterfowl, and berries are utilized. Caribou are also sought when available. Most cash is earned from part-time jobs with the city, school, tribal clinic, or store. BLM emergency firefighting, construction work, skin sewing, beadwork, sled building, and trapping also provide seasonal income.

Kobuk: Economic conditions in this community are described below under section 3.3.7 for WEAR parks.

Nuiqsut: Unemployment is high in Nuiqsut. The Kuukpik Native Corporation, school, borough services, and store provide most of the year-round employment in the village. Trapping and craft-making provide some income. Caribou, bowhead and beluga whale, seal, moose, and fish are staples of the diet. Polar bears are also hunted.

Shungnak: Economic conditions in this community are described below under section 3.3.7 for WEAR parks.

Wiseman: Subsistence hunting, fishing, and trapping sustain year-round residents. Roadside services and transportation of materials for the North Slope Borough provide a few positions in Wiseman. In 2009, one resident held a commercial fishing permit. Several residents sell handcrafted items and furs. Self-employment, seasonal visitor service jobs, seasonal highway maintenance jobs, and the National Park Service provide income.

Table 3.17: Economic Characteristics of GAAR Resident Zone Communities (Alaska DCCED 2011)

Community	2000 Median Household Income	2000 Per Capita Income	2000 % Unemployed	2000 % Below Poverty
Alatna	\$20,313	\$14,109	14.3%	9.1%
Allakaket	\$16,563	\$10,912	39.1%	12.9%
Ambler	\$43,500	\$13,712	27.9%	14.3%
Anaktuvuk Pass	\$52,500	\$15,283	33.3%	4.4%
Bettles/Evansville	\$51,563	\$17,666	0.0%	5.4%
Hughes	\$24,375	\$10,194	14.3%	28.0%
Kobuk	\$30,750	\$9,845	0.0%	28.6%
Nuiqsut	\$48,036	\$14,876	8.8%	2.4%
Shungnak	\$44,375	\$10,377	27.5%	35.8%
Wiseman	\$23,750	\$8,211	0.0%	10.5%

3.3.4 Glacier Bay National Preserve

Yakutat is a Tlingit village that developed into an important fishing port and later a large temporary military base during World War II. The City and Borough of Yakutat is the only community that has a customary and traditional use determination for big game species in GMU 5 which includes Glacier Bay National Preserve and a portion of Wrangell-St. Elias National Park & Preserve. Yakutat has a population of 685 residents. The 2010 census shows the residents almost equal in native (Tlingit) and non-native heritage. The median household income

was \$46,786, per capita income was \$22,579. The primary industries are commercial fishing, tourism related to sport fishing, other tourism opportunities (big game hunting, kayaking, bird-watching) and government.

The village has approximately 60 miles of improved road, but is not connected to any road system. Yakutat does have daily air service to Anchorage and Juneau, barge service, and intermittent service from the Alaska Ferry System. Residents rely heavily on subsistence resources gathered from federal public lands and waters on Tongass National Forest, Wrangell-St. Elias National Park & Preserve and Glacier Bay National Preserve.

Two local shops sell locally made handicrafts. Four other businesses have significant displays of locally made goods. The items sold include jewelry, clothing, moccasins, hand-tied fishing lures, basketry, carvings, traditional fishing gear and blankets. The materials include Moose and Deer antler and hide; Mountain Goat wool and horn; fur and pelts from terrestrial furbearers, Sea Otter and Seal; locally harvested spruce root and wood from Sitka Spruce and Western Red Cedar; and local stones, jade and clay. Several of these items are taken from animals that are harvested in the Preserve or found on the beach. Approximately twelve residents make some income from these items. Most get their raw materials from the closer and road accessible Tongass NF lands.

3.3.5 Katmai National Park and Preserve and Alagnak Wild River

Table 3.18 summarizes the economic conditions of communities within 50 miles of Katmai National preserve and Alagnak Wild River. The descriptions below give more context for these communities.

Igiugig: Commercial salmon fishing is the mainstay of Igiugig's economy and four residents held commercial fishing permits in 2009. Many residents travel to Naknek each summer to fish or work in fish processing plants. Lake Iliamna is the eighth largest lake in the U.S. and is well known for its trophy rainbow trout which attract sport anglers from around the world. There are seven commercial lodges in Igiugig that serve sport fishermen and hunters and provide some seasonal employment opportunities. Subsistence is an important part of the residents' lifestyle and people rely on a variety of fish and animals for food. Igiugig is accessible by water and air. The state owns and maintains a 3,000' long by 75' wide gravel runway and charter air service is available from Iliamna and King Salmon. Barges travel up the Kvichak River and deliver goods from Naknek or Dillingham in the fall. The Igiugig Corporation also operates a barge system on Lake Iliamna.

Iliamna: Commercial fishing, sport fishing, and tourism are the primary sources of income in Iliamna. Many residents participate in the Bristol Bay sockeye salmon fishery and 19 residents held commercial fishing permits in 2009. Iliamna has a history of tourism based on guided hunting and fishing and the area is famous for trophy rainbow trout. There are several hunting and fishing lodges in the community, but most lodge employees are hired from outside Alaska.

Iliamna is accessible by air and water. There are two state-owned gravel airstrips—one 5,086' long by 100' wide, the other 4,800' long by 100' wide—with daily commercial flights to and from Anchorage and surrounding villages. Barge services are available during the summer months via the Kvichak River and small boats are used to commute between villages on Iliamna Lake.

Mineral exploration activities by Northern Dynasty Minerals Ltd. currently provide a variety of support service employment opportunities in Iliamna, however development of the Pebble Mine is in the planning and permitting stage, and controversial due to environmental concerns.

King Salmon: The King Salmon economy is relatively diverse with employment opportunities in government, transportation, commercial fishing and tourism. The Bristol Bay red salmon fishery is the largest in the world and 32 residents held commercial fishing permits in 2009.

Opportunities for guided sport hunting and fishing draw sportsmen from around the world and there are several lodges and guide and outfitting services in the community. King Salmon is a major air transportation hub for the Bristol Bay region and air services employ a large portion of the community. The King Salmon Airport is a former Air Force base currently maintained under contract with Chugach Development Corporation. The state-owned airport has an 8,901' long by 150' wide paved, lighted runway and a 4,018' long by 100' wide asphalt/gravel crosswind runway and there is regularly scheduled air service to and from Anchorage. A 4,000' stretch of the Naknek River is also designated for float planes. Bulk goods and cargo are delivered to Naknek by barge and trucked to King Salmon via a 15-mile connecting road. During winter, an ice road on the frozen Naknek River provides access to South Naknek.

Kakhonak: The school is the largest employer in Kakhonak and many residents travel to Bristol Bay each summer to fish. In 2009, nine persons held commercial fishing permits. People rely heavily on subsistence activities and utilize a variety of resources including salmon, trout, grayling, moose, bear, rabbit, porcupine, freshwater seals, berries and other plants. During the summer months, many families travel to their summer fish camps near the Gibraltar River to put up salmon. Kokhanok is accessible by air and water. A state-owned 3,300 long by 75' wide gravel airstrip and a seaplane base support scheduled and charter air services from Anchorage, Iliamna, and King Salmon. Supplies travel by barge up the Kvichak River into Iliamna Lake and are lightered to shore near Kokhanok. There are no docking facilities and skiffs, ATVs, and trucks are the most common forms of local transportation.

Levelock: Commercial fishing and subsistence activities are the focus of the local economy and seven residents held commercial fishing permits in 2009. Most residents travel to Naknek to commercial fish or work in fish processing plants during the summer season. Several seasonal lodges operate in the area, however most lodge employees are brought in from outside the area. Levelock is accessible by air and water. The state owns a 3,281' long by 59' wide lighted gravel runway and scheduled and charter flights are available. Cargo and bulk goods are delivered by barge up the Kvichak River during the summer.

Table 3.18: Economic Characteristics of Local Communities within 50 Statute Miles of KATM Preserve and ALAG (Alaska DCCED 2011)

Community	Median Household Income (\$)	Per Capita Income (\$)	% Unemployed	% Below Poverty
Igiugig	21,750	13,172	0	6.9
Iliamna	60,625	19,741	0	3.1
King Salmon	54,375	26,755	8.9	12.4
Kokhanok	19,583	7,732	11.4	42.6
Levelock	18,750	12,199	0	24.6
Naknek	53,393	21,182	9.4	3.7
Newhalen	36,250	9,447	31.3	16.3
Nondalton	19,583	8,411	37.3	45.4
Pedro Bay	36,750	18,419	0	6.0
South Naknek	22,344	13,019	24.1	27.1

Naknek: The economy is based on government employment, commercial salmon fishing, and fish processing. In 2009, 105 residents held commercial fishing permits. Several thousand people come from other Alaska communities and out-of-state during the fishing season to commercial fish and work in fish processing plants. Millions of pounds of salmon are trucked from Naknek to the King Salmon airport each summer where jets transport fish to markets in the lower 48 states. Naknek is accessible by air and water and is connected to King Salmon by a 15.5-mile road. There are two airfields in Naknek. The Tibbetts Airport has a lighted 1,700' long by 60' wide gravel runway. The state-owned Naknek Airport is located one mile north of Naknek and has a 1,950' long by 50' wide lighted gravel runway, a 1,850' long and 45' wide gravel runway, and 2,000' float plane landing area. The Bristol Bay Borough operates a cargo dock at Naknek that has 800' of berthing space, a concrete surface, and two cranes.

Newhalen: Most employment in Newhalen is seasonal and many residents work in Bristol Bay salmon fishery or in Iliamna. In 2009, 10 residents held commercial fishing permits. Residents rely heavily on subsistence activities and most families travel to fish camps along the Newhalen River during the summer to harvest sockeye salmon. Salmon, trout, grayling, moose, caribou, rabbit, porcupine, freshwater seal and berries are the primary sources of subsistence harvested food. Air transportation is available at the same state-owned airstrips that serve Iliamna and fuel and bulk goods are delivered to the community by barges via the Kvichak River.

Nondalton: Commercial fishing in Bristol Bay is an important income source in Nondalton and in 2009, five residents held commercial fishing permits. Wildland firefighting is a primary

source of summer employment and the community is well known for its well-trained and experienced firefighting crews. Nondalton is accessible by air and water. A state-owned 2,800' long by 75' wide gravel runway serves the community and scheduled and charter air services are available from Iliamna and Port Alsworth. Bulk goods are received in Iliamna then taken by a cat-trail to Fish Camp, located across from Nondalton on the east side of the lake, then ferried by skiff or barge to the west side. Nondalton relies heavily on subsistence hunting and fishing and many families travel to fish camp at the outlet of Six Mile Lake each summer to harvest sockeye salmon. Residents utilize a variety of resources including salmon, whitefish, grayling, moose, caribou, bear, Dall sheep, rabbit, porcupine, waterfowl, upland birds and berries.

Pedro Bay: Most Pedro Bay residents obtain summer employment in the Bristol Bay fishery and three area residents held commercial fishing permits in 2009. The community also relies on tourism and seasonal jobs available through local wilderness lodges catering to sport hunters and anglers. There is a state-owned 3,000' long by 60' wide gravel airstrip and scheduled and charter air services are available to access Anchorage and other communities in the region. Fuel, building materials and bulk goods are transported by barge from Naknek via the Kvichak River and up Iliamna Lake. Goods are also sent by barge from Homer to Iliamna Bay on Cook Inlet then portaged over a 14-mile road to Pile Bay, 10 miles to the east. Most families depend heavily on subsistence resources and utilize salmon, trout, moose, bear, rabbit, and freshwater seals.

South Naknek: Commercial fishing and salmon processing are the mainstays of the South Naknek economy and 28 residents held commercial fishing permits in 2009. Trident Seafoods operates a fish processing plant in South Naknek which provides seasonal employment for local residents and people from other parts of the state and outside. Local government and public services provide other employment opportunities. South Naknek is accessible by air and water. There are two state-owned lighted gravel runways. One is 2,264' long by 60' wide, and the other is 3,314' long by 60' wide. The PAF Cannery airport lies three miles to the southeast. It has a 750' long by 30' wide dirt strip and a 650' long by 75' wide crosswind strip. Scheduled and charter air services are available. The frozen Naknek River serves as an ice road to Naknek and King Salmon in winter. The Bristol Bay Borough operates a mid- and high-tide cargo dock at South Naknek with 200' of berth space to accommodate barges.

3.3.6 Economic Conditions in Local Rural Communities for LACL⁵

Table 3.19 summarizes economic conditions for LACL resident zone communities.

Iliamna: Economic conditions in this community are described above under section 3.3.5 for KATM Preserve.

Lime Village: Lime Village has a minimal commercial economy and subsistence hunting, fishing, trapping and gathering activities are the primary sources of food, shelter and heating fuel. There is no store in Lime Village. Some seasonal work is found through BLM wildland firefighting or trapping. Cash income is primarily derived from public assistance programs. Lime Village is dependent on small riverboats and airplanes for transportation, but shallow water

prevents the use of barges which greatly increases the costs of fuel, heating oil and bulk goods. When the river freezes, residents use dog teams and snowmachines for ground travel. There is a 1,500' long by 55' wide gravel runway just north of the village that is owned and maintained by the state.

Newhalen: Economic conditions in this community are described above under section 3.3.5 for KATM Preserve.

Nondalton: Economic conditions in this community are described above under section 3.3.5 for KATM Preserve.

Pedro Bay: Economic conditions in this community are described above under section 3.3.5 for KATM Preserve.

Table 3.19: Economic Characteristics of LACL Resident Zone Communities (Alaska DCCED 2011)

Community	Median Household Income (\$)	Per Capita Income (\$)	% Unemployed	% Below Poverty
Iliamna	60,625	19,741	0	3.1
Lime Village	N/A	N/A	N/A	N/A
Newhalen	36,250	9,447	31.3	16.3
Nondalton	19,583	8,411	37.3	45.4
Pedro Bay	36,750	18,419	0	6.0
Port Alsworth	58,750	21,716	4.9	6.0

Port Alsworth: Port Alsworth has several commercial lodges that provide outfitter/guide services for recreational hunters and anglers during the summer months. Most residents are either self-employed, employed by one of the commercial lodges or air services based in Port Alsworth or by Lake Clark National Park and Preserve. In 2009, two residents held commercial fishing permits. There are two privately-owned and operated airstrips: a 4,200' and 100" wide gravel airstrip owned by Dave Wilder and a 3,000' long by 100' wide dirt/gravel airstrip operated by Glen Alsworth and The Farm Lodge. Daily air service from Anchorage provides easy access to groceries and other goods and residents supplement their diets with salmon, moose, caribou, bear, and Dall sheep.

3.3.7 Economic Conditions in Local Rural Communities near WEAR parks

A summary of economic conditions in local rural communities near WEAR NPS areas is provided in table 3.20 and the brief descriptions below. A significant employer in the region is

the Red Dog Mine, where over 50% of the employees are residents from regional villages who work on shifts.

Ambler: Cash employment is limited to the school, city, clinic, and local stores, though some mining occurs. In 2009, two residents held commercial fishing permits. Subsistence is a major part of the local economy. Chum salmon and caribou are the most important food sources. Freshwater fish, moose, bear, and berries are also harvested. Birch baskets, fur pelts, and jade, quartz, bone, and ivory carvings created in Ambler are sold in gift shops throughout the state. The community is interested in developing a lapidary facility for local artisans. Ambler's major means of transportation are by barge, plane, small boat, and snowmachine. There are no roads linking the village to other parts of the state. A state-owned 3,000' long by 60' wide lighted gravel airstrip with a 2,400' long by 60' wide gravel crosswind airstrip is located one and a half miles from the city. In addition, daily scheduled services are provided out of Kotzebue, and air taxis provide charter flights. Crowley Marine Services barges fuel and supplies to Ambler each summer. Boats are used for inter-village travel and subsistence activities. ATVs and snowmachines are commonly used in winter.

Buckland: Residents depend on a subsistence lifestyle for most food sources. Employment is primarily with the school, city, health clinic, and stores. Some mining also occurs. In 2009, one resident held a commercial fishing permit. The community is interested in developing a Native food products and crafts manufacturing facility to produce reindeer sausage, berry products, Labrador tea, and ivory and wood carving.

Buckland's major means of transportation are plane, small boat, barge, and snowmachine; there are no roads outside of the village. Buckland has a state-owned 3,200' long by 75' wide gravel airstrip, which serves a number of scheduled and chartered flights. Crowley Marine barges fuels, and various lighterage companies deliver cargo and supplies each summer.

Deering: Deering's economy is a mix of cash and subsistence activities. Moose, seal, and beluga whale provide most meat sources; pink salmon, tom cod, herring, ptarmigan, rabbit, and waterfowl are also utilized. A number of residents earn income from handicrafts and trapping. The village is interested in developing a craft production facility and cultural center to train youth in Native crafts. The school, city, Maniilaq Association, stores, and airline provide the only year-round jobs. Some mining occurs in the Seward Peninsula's interior. In 2009, two residents held commercial fishing permits. The village wants to develop eco-tourism, including a 38-mile road to Inmachuk Springs for tourists.

Deering is accessible year-round by plane. A state-owned 3,300' long by 75' wide gravel airstrip, with a 2,640' long by 75' wide gravel crosswind strip, enables flights by several Kotzebue air services. A private runway is 2,400' long and 50' wide. Crowley Marine Services barges fuel and goods from Kotzebue each summer. Small boats, ATVs, and snowmachines are used for local travel. Winter trails are available to Candle and Buckland.

Table 3.20: Economic Characteristics of WEAR Eligible Communities (Alaska DCCED 2011)

Community	Median Household Income (\$)	Per Capita Income (\$)	% Unemployed	% Below Poverty
Ambler	43,500	13,712	27.9	14.3
Brevig Mission	21,875	7,278	2.4	48.4
Buckland	38,333	9,624	33.8	11.9
Deering	33,333	11,000	17.0	5.8
Diomede	23,750	9,944	2.2	35.4
Kiana	39,688	11,534	11.6	11.2
Kivalina	30,833	8,360	25.5	26.4
Kobuk	30,750	9,845	0.0	28.6
Kotzebue	57,163	18,289	9.8	13.1
Noatak	30,833	9,659	25.4	22.0
Nome	59,402	23,402	11.0	6.3
Noorvik	51,964	12,020	19.6	7.6
Selawik	25,625	8,170	34.3	34.4
Shungnak	44,375	10,377	27.5	35.8
Shishmaref	30,714	10,487	16.4	16.3
Wales	33,333	14,877	18.9	18.3

Kiana: The economy depends on traditional subsistence activities, augmented by a cash economy. Chum salmon, freshwater fish, moose, caribou, waterfowl, and berries are harvested. The school, city, and Maniilaq Association provide the majority of year-round jobs. The Red Dog Mine also offers area employment. Kiana is one of the more modern villages in the borough and has three general stores. In 2009, two residents held commercial fishing permits; seasonal employment also includes work on river barges, BLM firefighting, and jade mining. The major means of transportation are plane, small boat, and snowmachine. The state-owned Bob Baker Memorial Airport has a 3,400' long by 100' wide lighted gravel runway. Daily scheduled flights and charter flights are provided. Crowley Marine Services barges fuel and supplies each summer, and local store owners have large boats to bring supplies upriver. Boats, ATVs, and snowmachines are used for local travel, and there are a few trucks. A road extends along the river to Kobuk Camp, and a network of old trading trails exists.

Kivalina: Kivalina's economy depends on subsistence activities. Bearded seal, walrus, bowhead whale, Dolly Varden trout, tomcods, blue cods, salmon, whitefish, and caribou are utilized. The

school, city, Maniilaq Association, NANA Regional Corporation, tribal council, airlines, and local stores provide year-round jobs. In 2009, two residents held commercial fishing permits. Native carvings and jewelry are produced from ivory and whalebones. The community is interested in developing an arts and crafts center that could be readily moved to the new city site. The major means of transportation into the community are plane and barge. A state-owned 3,000' long by 60' wide gravel airstrip serves daily flights from Kotzebue. Crowley Marine Services barges goods from Kotzebue during July and August. Small boats, ATVs, and snowmachines are used for local travel. Two main hunting trails follow the Kivalina and Wulik Rivers.

Kobuk: The economy of Kobuk is based on subsistence. Whitefish, caribou, and moose provide the majority of meat sources. Cash employment is limited to the school, city, and Maniilaq clinic. Seasonal construction and BLM firefighting provide some income. Kobuk's major means of transportation are barge, plane, small boat, and snowmachine. A state-owned 4,000' long by 75' wide lighted gravel airstrip serves scheduled air carriers. Float planes land on the Kobuk River. Crowley Marine Services barges fuel and supplies during the spring and fall, when high water stages occur. There is a barge off-loading area. Boats, ATVs, and snowmachines are used for local travel. There are many trails along the river for year-round inter-village travel and subsistence activities, including a 7-mile road to Shungnak.

Kotzebue: Kotzebue is the service and transportation center for all villages in the northwest region. It has a healthy cash economy, a growing private sector, and a stable public sector. Due to its location at the confluence of three river drainages, Kotzebue is the transfer point between ocean and inland shipping. It is also the air transport center for the region. Activities related to oil and minerals exploration and development have contributed to the economy. The majority of income is directly or indirectly related to government employment, such as the school district, Maniilaq Association, the city, and the borough. The Teck Alaska Red Dog Mine is a significant regional employer. Commercial fishing for chum salmon provides some seasonal employment. In 2009, 115 residents held commercial fishing permits. Most residents rely on subsistence to supplement income. Air is the primary means of transportation year-round. The state-owned Ralph Wien Memorial Airport supports daily jet service to Anchorage and several air taxis to the region's villages. It has a 5,900' long by 150' wide main paved runway and 3,876' long by 90' wide crosswind gravel runway. A seaplane base is also operated by the state. The shipping season lasts 100 days, from early July to early October, when the sound is ice-free. Due to river sediments deposited by the Noatak River four miles above Kotzebue, its harbor is shallow. Deep draft vessels must anchor 15 miles out, and cargo is lightered to shore and warehoused. Crowley Marine Services operates shallow draft barges to deliver cargo to area communities. There are 26 miles of local gravel road used by cars, trucks, and motorcycles during the summer. Snowmachines are preferred in winter for local transportation.

Noatak: Noatak's economy is principally based on subsistence, although the available employment is diverse. The school district, city, Maniilaq, and retail stores are the primary employers. In 2009, six residents held commercial fishing permits. During the summer, many families travel to seasonal fish camps at Sheshalik, and others find seasonal work in Kotzebue or firefighting. Chum salmon, whitefish, caribou, moose, and waterfowl are harvested. Noatak is primarily accessed by air. The state-owned lighted gravel runway is 4,000' long by 60' wide. Six regional air services provide cargo, mail, and passenger services. There are currently no barge

services to Noatak. Small boats, ATVs, and snowmachines are used for local transportation. Historic trails along the Noatak River are still used for inter-village travel and subsistence activities.

Noorvik: The primary local employers are the school district, the city, the Maniilaq health clinic, and two stores. There is seasonal employment at the Red Dog Mine or firefighting with BLM, and locals also travel to work in Kotzebue. In 2009, three residents held commercial fishing permits. Caribou, fish, moose, waterfowl, and berries are utilized. Noorvik is accessible by plane and by shallow-draft vessels. There are no roads linking the village to other areas of the state. The state-owned Robert (Bob) Curtis Memorial Airport has a 4,000' long by 100' wide lighted gravel runway. Several regional air taxis provide service to Kotzebue and surrounding cities. Crowley Marine Services barges fuel and supplies during the summer. Boats, ATVs, and snowmachines are common means of transportation locally.

Selawik: Inhabitants of Selawik subsist mainly on whitefish, sheefish, caribou, moose, ducks, ptarmigan, and berries. Occasionally, bartered seal and beluga whale supplement the diet. The primary employers in the community include the school, the city, the IRA, Maniilaq, and three grocery stores. Handicrafts are made and sold locally and at gift shops in larger cities. Seasonal work is also found outside of Selawik with the Red Dog Mine, BLM firefighting, or lighterage operations. In 2009, four residents held commercial fishing permits. Selawik is accessible by plane and barge. The Roland Norton Memorial Airport provides a 3,000' long by 70' wide gravel runway owned by the city. The state also owns a 3,000' long by 60' wide gravel airstrip with a 2,659' long by 60' wide crosswind strip. Scheduled flights are available to Kotzebue and area villages. Docking facilities and a barge landing area exist. Freight is shipped upriver from Kotzebue each summer by Crowley Marine Services. Boardwalks have been constructed within the village. Boats, ATVs, and snowmachines are prevalent forms of local travel.

Shungnak: Shungnak subsists mainly on fishing, seasonal employment, hunting, and trapping. Subsistence food sources include sheefish, whitefish, caribou, moose, ducks, and berries. Most full-time employment is with the school district, city, Maniilaq Association, two stores, and a lodge. BLM provides seasonal employment in firefighting, hiring over 30 residents each year. Shungnak also has a strong arts and crafts industry; residents make and sell finely-crafted baskets, masks, mukluks, parkas, hats, and mittens. The community wants to develop a visitor center, mini-mall, post office, and clinic complex at Dahl Creek. Shungnak is accessible by plane, barge, or small boat. The state-owned lighted gravel runway is 4,000' long by 60' wide and has scheduled regional air services. Fuel and supplies are barged in each summer by Crowley Marine Services of Kotzebue. Small boats, ATVs, snowmachines, and dog sleds are used for local travel and subsistence activities. Trails along the river are used for inter-village travel.

Shishmaref: The Shishmaref economy is based on subsistence supplemented by part-time wage earnings. In 2009, two residents held commercial fishing permits. Year-round jobs are limited. Villagers rely on fish, walrus, seal, polar bear, rabbit, and other subsistence foods. The Friendship Center, a cultural center and carving facility, was constructed for local artisans. Shishmaref's primary link to the rest of Alaska is by air. A state-owned 5,000' long by 70' wide paved runway is available for charter and freight services from Nome. Most people use boats for trips to the mainland.

Wales: The economy of Wales is based on subsistence hunting and fishing, trapping, Native arts and crafts, and some mining. A private reindeer herd is managed out of Wales, and local residents are employed to assist in the harvest. Whales, walrus, polar bear, moose, salmon, and other fish are utilized. Wales is accessed by air and sea only. There is a state-owned 4,000' long by 75' wide gravel airstrip, and the ice on the straits is frequently used as a landing area by planes in the winter. Scheduled and charter flights are available. Cargo is delivered by barge and lightered half mile to shore. Skin boats are still a popular method of sea travel, and snowmachines are used in winter. There is a 6.5-mile road to Tin City.

Brevig Mission: The people of Brevig Mission subsist upon fish, moose, reindeer, seal, walrus, and beluga whales. The primary employers are the city and school district. Year-round jobs are scarce, unemployment is high, and seasonal jobs in mining and construction have become limited due to a depressed minerals market. Arts and crafts provide some cash income. Brevig Mission is accessible by air and sea and, in the winter, over land or ice. A cargo ship visits annually. The state-owned 2,990' long by 100' wide gravel airstrip with a 2,110' long by 75' wide gravel crosswind strip enables year-round access. Regular air service is available from Nome, and charters are provided from Nome and Teller. Teller is 5 miles away by boat. A 72-mile gravel road between Teller and Nome is maintained by the state during the summer.

Diomed: Little Diomed villagers depend almost entirely upon a subsistence economy for their livelihood. Employment is limited to the city and school. Seasonal mining, construction, and commercial fishing positions have been on the decline. The Diomed people are excellent ivory carvers; the city serves as a wholesale agent for the ivory. Seal and walrus hides are used to make parkas, hats, mukluks, furs, and skins for trade. Villagers travel to Wales by boat for supplies. Mail is delivered once per week. Due to constant winds from the north, accessibility is often limited. A state-owned heliport allows for weekly mail delivery. There is no airstrip due to the steep slopes and rocky terrain, so ski planes must land on an ice strip in winter. Few float plane pilots attempt to land on the rough and often foggy open sea during summer. Regular flights are scheduled from Nome, weather permitting. There is a breakwater and small boat harbor. Skin boats are still a popular method of sea travel to cover the 28 miles to Wales. Cargo barge stops are irregular, due to sea or ice conditions, but deliver at least annually. Lighterage services are available from Nome.

Nome: Nome is the supply, service, and transportation center of the Bering Strait region. Government services provide the majority of employment. In 2009, 42 residents held commercial fishing permits. Retail services, transportation, mining, medical, and other businesses provide year-round income. The large gold mining operation 8 miles north of Nome being developed by NovaGold Resources, Inc. is not fully operational and is in caretaker status pending sale to a new owner. Several small gold mines continue to provide some employment. Subsistence activities contribute to the local diet. Nome is a regional center of transportation for surrounding villages. There are two state-owned airports. The Nome Airport has two paved runways; one is 6,001' long and 150' wide, and the other is 5,576' by 150' wide. Scheduled jet flights are available, as well as charter and helicopter services. The city field offers a 1,950' long by 110' wide gravel airstrip. The entire seaward side of the city is protected by a 3,350-foot-long sea wall of granite boulders. A port and berthing facilities accommodate vessels up to 18 feet of

draft. Lighterage services distribute cargo to area communities. Local development groups and the city fund harbor dredging, two seasonal floating docks, and a boat launch. Local roads lead to Teller, Council, and the Kougarok River.

3.3.8 Economic Conditions in Local Rural Communities near WRST

The park's 23 resident zone communities fall within three regions, the Alaska Highway/Upper Tanana area, the Copper Basin, and the Gulf of Alaska.⁶ See table 3.21 for a summary of these communities.

Alaska Highway/Upper Tanana: Six of the park's resident zone communities are located north of the park on or near the Alaska Highway. The area is traditionally Upper Tanana Athabascan. Tok, the hub community for the region, is the first major community encountered by travelers entering the state by highway. About 20 percent of Tok residents are Alaska Native. Northway, Tetlin, Tanacross, Healy Lake, and Dot Lake are small, predominantly Alaska Native villages with federally recognized tribal governments. There is no borough in the area. Healy Lake is only accessible by plane, boat or winter ice road. Local economies are affected by the continental climate zone with long cold winters, relatively warm summers, and low precipitation. The economy is based on government, tourism, services and transportation. Employment opportunities in the villages are often limited. Firefighting for the Bureau of Land Management is an important source of summer employment in the villages. Many residents engage in subsistence activities, and some also make handicrafts for sale.

Copper Basin: Thirteen of the park's resident zone communities are located on or near the Richardson and Edgerton Highways between Mentasta Lake Village on the north and Chitina and Tonsina on the south. Nabesna and McCarthy are located within the park and preserve boundary, along roads of the same name, and Chisana is a small remote community located in north of the Wrangell Mountains near the Chisana River. There is no borough in the area and no local governments. Glennallen is the supply hub of the Copper Basin, although more limited supplies and services are available in some of the other communities. The region is traditionally Ahtna Athabascan. Some of the smaller villages are predominantly Alaska Native, while the larger communities tend to have a mixture of Alaska Native and non-native residents. The villages of Chistochina (Cheesh'na), Chitina, Copper Center (Kluti-Kaah), Gakona, Gulkana, Mentasta Lake, and Tazlina have federally recognized tribal governments. There are no Alaska Native residents in McCarthy and Chisana. Local economies are affected by the continental climate with long, cold winters, relatively warm summers, and low precipitation. Residents are employed in local services, retail businesses, government agencies, schools, and tourism. Tourism-related tourism is often seasonal. Many residents depend on subsistence hunting, fishing, trapping, and gathering. The Copper River salmon fishery is a particularly important subsistence resource in the region.

⁶ Alaska Community Database Community Information Summaries from the Alaska Department of Commerce, Community, and Economic Development were used in developing the regional summaries (http://www.commerce.state.ak.us/dca/commdb/CF_CIS.htm, accessed 1/26/2011).

Table 3.21: Summary Community Conditions for Local Communities near WRST⁷ (Alaska DCCED 2011)

Community	Median Household Income (\$)	Per Capita Income (\$)	% Unemployed	% Below Poverty
Chistochina	46,071	25,371	14.3	5.3
Chitina	16,803	12,500	18.8	24.1
Copper Center	59,286	21,010	16.1	25.4
Dot Lake Village	41,250	16,351	12.9	26.4
Gakona	81,500	28,206	14.6	2.8
Glennallen	48,421	22,799	33.2	0.5
Gulkana	68,750	11,298	39.6	22
Healy Lake	110,625	46,760	20	13.5
Mentasta Lake	21,875	9,457	34.4	38.2
Northway	35,365	15,441	44.4	48.3
Northway Village	18,500	9,086	65.0	55.6
Tanacross	23,011	14,167	53.3	38.9
Tazlina	63,750	29,050	16.9	10.4
Tetlin	41,667	10,676	53.7	18.9
Tok	53,986	20,779	10.1	9.8
Yakutat	68,750	28,727	4.1	3.4

Gulf of Alaska: Yakutat is an isolated coastal community at the mouth of Yakutat Bay on the Gulf of Alaska. The community has no road access, however it does have daily jet service to Anchorage and Juneau. It is believed to have been originally settled by Eyak people from the Copper River, who were subsequently conquered by the Tlingit. About 47 percent of the community residents identify as Alaska Native. It is the only community in the park's resident zone that has a city and borough government as well as a federally recognized tribal government, the Yakutat Tlingit Tribe. Local economies are affected by the maritime climate with relatively

⁷ Chisana and McCarthy are omitted from this table because populations are mostly seasonal and economic data is lacking.

mild and often rainy weather. Its economy is dependent on fishing and government agencies. Many residents also rely on subsistence hunting, fishing, and gathering.

3.3.9 Economic Conditions in Eligible Local Rural Communities near YUCH

Economic opportunities in communities near YUCH are limited. Table 3.22 provides a summary of economic conditions of local area communities.

Central: Central provides services to area residents, including Circle Hot Springs. Central has a cash economy based on providing seasonal support for mining operations in the area. The Circle District Museum attracts seasonal visitors, although Circle Hot Springs closed in October 2002. A number of individuals live in the area only seasonally. Subsistence and recreational activities provide food sources for the year-round residents. In 2009, one resident held a commercial fishing permit.

Circle: Recreation attracts visitors to Circle seasonally. Circle Hot Springs was closed in October 2002. Some persons live in the community only during summer months. Major employers include the school, clinic, village corporation, trading post, and post office. In 2009, two residents held commercial fishing permits. Almost all residents are involved in subsistence. Salmon, freshwater fish, moose, and bear are the major sources of meat. Trapping and making handicrafts contribute to family incomes.

Eagle: Retail businesses, the school, mining, and seasonal employment, such as tourism and BLM firefighting, provide the majority of employment. Year-round earning opportunities are limited. Subsistence activities provide food sources.

Eagle Village: Nearly all employment in Eagle Village is seasonal. Subsistence activities provide the majority of food items.

Table 3.22 Summary Community Conditions for Local Communities near YUCH (Alaska DCCED 2011)

Community	2000 Median Household Income	2000 Per Capita Income	2000 % Unemployed	2000 % Below Poverty
Central	\$36,875	\$22,593	13.8%	22.5%
Circle	\$11,667	\$6,426	24.0%	42.0%
Eagle	\$36,042	\$20,221	14.3%	16.5%
Eagle Village	\$6,875	\$13,886	56.7%	55.7%

3.4 Wildlife and Habitat

Throughout Alaska's national parklands, numerous species produce antlers that are grown and shed annually. These species include moose, caribou, and deer. Muskox, bison, mountain goats, and Dall's sheep grow horns throughout their life (see table 3.23 for distributions of horned and antlered species by park) The skulls, bones, and claws of other animals, such as brown and black bears or wolves, may also be found on the landscape and all of these animal parts may be of interest to collectors for subsistence purposes.

Throughout their life, animals meet the needs of growth and maintenance through consumption of the foods available naturally in their environment (Robbins 1993). In time, these minerals and nutrients are returned to the ecosystem through urination and defecation in life, and through consumption and decomposition in death. Hunting, trapping, collection and removal does result in a loss of these mineral and nutrients to the system. However, other inputs and losses from geologic and weather-related process also impact the overall balance.

Horns, hooves, and claws are made largely of keratin, a fibrous structural protein, and have little nutritional value. Antlers and bones, however, have similar chemical structures and can be of significant importance to animals who consume them. While the majority of calcium (98%) and phosphorus (80%) found in mature animals is located in bone and antlers, these minerals serve a variety of other critical physiological functions (Robbins 1993). Calcium is critical to blood clotting, nerve and muscle function, muscle contractions, acid-base balance, and enzyme activation (Robbins 1993). Phosphorus is critical to the metabolism of fats, amino acids (proteins), and carbohydrates; muscle contraction, transport of metabolites, and nerve tissue function (Robbins 1993).

The availability of bones and antlers can be of ecological significance to other animals who consume them to meet their own nutritional needs. Consumption of bones and antlers by both rodents (Woodbury 1940, Coventry 1940, McCabe, 1957, Michael 1965) and caribou and deer (McCabe 1957, Michael 1965) has been documented and predators commonly consume portions of bones when looking to extract marrow and to meet mineral needs (Robbins 1993). The bulk of the bone material consumed by predators is passed through the gastrointestinal tract and then is further available to other consumers.

Caribou are the only deer in which both sexes have antlers. Males shed their antlers following the fall breeding season and pregnant females shed their antlers soon after calving season in the spring. Young males retain their antlers longer than mature males and non-pregnant females shed their antlers during the winter.

Moose, like caribou, are members of the deer family, but only the males grow antlers. Male moose shed their antlers in late autumn or early winter, after the end of the breeding season. By January, most bulls are antlerless and begin growing a new set in the spring. It takes three to five months for a bull moose to grow a new set of antlers.

Herbivores likely consume more antler and bone when soil and plants available for consumption are depleted in required minerals or nutrients (Michael 1965). If a particular nutrient is lacking

(e.g. calcium), bone and antler availability may be more important. Similarly, if soils are nutrient poor, mineral deficiencies can adversely affect general body growth, antler growth, and productivity of consumers (Robbins 1993).

The abundance and distribution of some of these wildlife resources are presented by park areas below.

Table 3.23 Distribution of wildlife with horns and antlers by NPS units in Alaska

SPECIES PARK	Moose	Caribou	Deer	Dall's Sheep	Mt. Goat	Muskox	Bison
Alagnak	X	X					
Aniakchak	X	X					
Bering Land Bridge	X	X				X	
Cape Krusenstern	X	X		X		X	
Denali	X	X		X	X		
Gates of the Arctic	X	X		X		X	
Glacier Bay	X		X		X		
Katmai	X	X					
Kobuk Valley	X	X		X		X	
Lake Clark	X	X		X			
Noatak	X	X		X		X	
Wrangell-St. Elias	X	X	X	X	X		X
Yukon- Charley	X	X		X		X	

ANIA: The Northern Alaska Peninsula caribou herd (NAP) ranges over 19,560 square miles from KATM NP/ALAG on the northern end of the herd's range in Game Management Unit (GMU) 9C to Point Moller in GMU 9E to the south. ANIA is located in GMU 9E. From the 1980s through early 90s, the herd numbered between 15,000 and 19,000 animals. In 1994, the population started a steady decline, which resulted in a progression of hunting restrictions and closures over the next twelve years. In 2006, federal lands in GMU 9E were closed to subsistence caribou hunting and remain closed at present. The NAP currently numbers somewhere around 2000 animals (Butler 2009). ADF&G estimates the average moose density in the southern portion on GMU 9E, which includes ANIA, to be very low with a bull:cow ratio around 25 bulls for every 100 cows (Butler 2008, USFWS 2008).

DENA: The primary caribou herd in the park is the Denali Caribou Herd, which is considered a non-migratory herd but ranges widely in the old Park/Wilderness and New Park areas north of the Alaska Range, on state and private lands northeast of the park, and Old Park and New Park areas south of the Alaska Range between Windy Creek and the West Fork of the Chulitna River. The spatial distribution of the Denali Herd changes throughout the year as females move to calving ranges predominantly in the foothills to the north and northwest of Mt. McKinley, remaining in the higher elevation areas through much of the summer and into the rut. With the onset of winter, caribou move to winter ranges at lower elevations encompassing much of the north side of Alaska Range from the lower Savage to the forested Foraker River, Birch Creek, and Slippery Creek flats, with the predominant concentration in the foothills and flats directly north of the Wyoming Hills. The herd's September 2010 population was estimated at 2,070 (Adams, 2011). Bull caribou shed their antlers in the winter, while cows shed their antlers during the calving season.

GAAR: Both caribou and moose shed their antlers on an annual basis in Gates of the Arctic National Park and Preserve. The game management units (GMU) overlapping the park and preserve are GMUs 23, 24 (24A, 24B, 24C), and 26 (26A). Moose in GMU 23 are found in low densities in large areas of the unit (Harper 2008). Throughout GMU 24, moose are widely distributed in areas characteristic of interior Alaska (Harper 2008). Lastly, in GMU 26A, moose populations have increased since 1940 (Harper 2008).

There are two distinct caribou herds that migrate through the park. The Western Arctic caribou herd range extends through GMUs 23, 24A-C, and 26A. The Teshekpuk caribou herd range includes Unit 26A.

Additionally, Dall sheep and muskox are found within the park and preserve boundaries and Dall sheep populations occur in GMUs 23 and 26A, the northwestern edge of their range. Units 23, 24A-B, and 26A incorporate the Central Brooks Range and a single Dall sheep population is unevenly distributed throughout this mountain range (Harper 2008). Dall sheep are found throughout the eastern Brooks Range. Two separate muskox populations occur in GMU 23, as well as a population in GMU 26B. For GMU 26B, hunting permits are made available for residents of Nuiqsut.

KATM: The Northern Alaska Peninsula caribou herd (NAP) ranges over 19,560 square miles in Units 9C and 9E from KATM NP/ALAG on the northern end of the herd's range to Point Moller to the south. From the 1980s through early 90s, the herd numbered between 15,000 and 19,000 animals. In 1994, the population started a steady decline, which resulted in a progression of hunting restrictions and closures over the next ten years. The NAP currently numbers somewhere around 2000 animals (Butler 2009). There is currently no Federal subsistence hunting season for caribou in KATM NP, however subsistence hunters may take two caribou in ALAG from August 1 through March 15, provided no more than one bull be taken and no more than one caribou be taken between August 1 and January 31. ADF&G (FWS 2008) estimates the average moose density in GMU 9C, which includes KATM NP/ALAG, to be 0.71 animals per square mile with a bull:cow ratio that has averaged 44 bulls for every 100 cows since 2000.

LACL: The Mulchatna Caribou Herd ranges over 60,000 square miles from LACL on the eastern end of the herd's range to the Kuskokwim River drainage to the west. This area includes Units 9B, 17, 18 south, 19A and 19B. In the early 1980s, the herd spent most of the year east of the Mulchatna River between the Bonanza Hills and Iliamna Lake where they were relatively accessible to residents from Iliamna, Newhalen, Nondalton and Port Alsworth. By the mid-2000s, the herd had moved west and away from the Lake Clark/Iliamna Lake villages making it more difficult for people to access the animals for subsistence. The current population of the Mulchatna Caribou Herd is between 30 and 45 thousand animals (Woolington 2009).

Since the migration patterns of the Mulchatna Caribou Herd have shifted westward and away from villages in the Lake Clark/Iliamna Lake region, subsistence gatherers would have to travel long distances to find areas where there is a possibility of finding shed antlers, which would currently be located outside the boundaries of LACL.

ADF&G (FWS 2008) estimates the average moose density in Game Management GMU 9B, which includes the southern portion of LACL, to be approximately 0.46 animals per square mile. There is no information regarding moose densities in the northern section of the park and preserve located in GMUs 16B South and 17B, but ADFG (Butler 2008) population information indicates that the densities are well below one moose per square mile and are most likely comparable to the densities in GMU 9B. The ratio of bulls to cows in GMU 9B averages 34 bulls for every 100 cows and indicates a relatively healthy moose population. In GMU 16B South, the bull:cow ratio is lower with 23 bulls per 100 cows. There is no current population composition information available for GMU 17B.

WRST: Caribou and moose are the only species in Wrangell-St. Elias NPP that shed their antlers annually. Moose occur at low density levels throughout the park and preserve outside of those areas that are covered by rock and ice. The 2010 moose population estimate for an 8210 km² area of Unit 11 north of the Chitina River was 1576 moose. There were 52 bulls per 100 cows observed during the survey (J. Putera, WRST wildlife biologist, email message, 11 May 2011). Three caribou herds spend some of their time in the park. The migration route of the Nelchina herd passes through the northwest corner of the park. The herd's fall 2008 population was estimated at 33,000 (Tobey and Schwanke 2009: 84). The Mentasta herd is a small herd (fewer than 400 animals) that calves on the slopes of Mt. Drum. The Chisana herd (about 700 animals) ranges between the northeast corner of the national preserve and the Yukon (J. Putera, pers. Comm.). Currently, no harvest is allowed of either the Chisana herd or the Mentasta herd due to conservation concerns.

Sheep, mountain goat and bison are horned species that occur within Wrangell-St. Elias. Sheep generally occur north of the Chitina River drainage, and goats are south of the Chitina River drainage. They are widely distributed in mountainous terrain. The last park-wide sheep population estimate was 17,455 obtained in 1993 (Strickland et al. 1993). ADF&G has estimated the Unit 11 mountain goat population at 700 animals based on partial surveys conducted over many years (Tobey 2008c: 131). There have been no attempts to estimate the goat population in GMU 5B. Under this alternative, bison would be included on the list of potential wildlife species whose parts could be collected. Although the federal subsistence program does not have a

positive C&T use determination for bison, approximately 150 animals occur in two areas of GMU 11 (Tobey 2008a, 2008b).

YUCH: Both caribou and moose shed their antlers on an annual basis and are found in Yukon-Charley Rivers National Preserve. The game management units (GMU) located in the preserve are GMU 20 and 25. The communities of Eagle and Eagle Village are located in GMU 20E, which covers the majority of acreage in the preserve. The communities of Central and Circle are located in GMU 25, specifically GMU 25C, but also have access to GMU 25B via the Yukon River. The moose in GMU 20E have remained at low densities during the time period between 1976 and 2006 (Harper 2008). The last moose survey conducted in GMU 25B was in 1987, yet pilots and experienced guides have observed a decline in moose numbers and current numbers are thought to be quite low (Harper 2008). The Forty-mile caribou herd range includes GMU 20E, overlapping into portions of the upper Forty-mile and Yukon River drainages (Harper 2009). Additionally, Dall sheep are found within GMU 20E, primarily small subpopulations in the Tanana Hills (Harper 2008).

3.5 Cultural Resources

During both the prehistoric and historic periods Native peoples, explorers, trappers, and miners have traveled and lived in the vast majority of lands within Alaska, but Alaska's NPS lands have often been perceived by non-local people as an uninhabited wilderness. Cultural resources, the physical evidence of this human activity, are found throughout Alaska. They include archeological sites, ethnographic resources, cultural landscapes, and historic structures. Not all of these would be affected by collections of shed or discarded animal parts or plants for the making, barter, or selling of handicrafts. People living in communities associated with parks are well positioned to observe changes occurring as a result of increased collections of discarded or shed resources. Knowledgeable people should be consulted to learn about potential risks to the cultural resource types summarized below.

3.5.1 Archeological Sites

All NPS units in Alaska contain archeological sites. The sites document a range of occupation periods from the late Pleistocene era, some 11,000 years ago, to the mid-twentieth century. They show the diverse and changing adaptations of Alaska's indigenous people and the first non-Native settlers in Alaska, embracing a broad range of themes from the earliest migrations to the New World to the development of commercial mining technology.

The climatic range of archeological sites in Alaska is enormous, from the rainy and forested Southeast Alaska to the arid and treeless Arctic coastal plain in Northwest Alaska. As a rough generalization, the highest concentrations of prehistoric human activity have been located along rivers, particularly at river confluences or where rivers meet the sea. However, human habitation, either permanent or temporary, can also be found along trails, at overview points, along lakeshores, and at many other geographic locations. In addition to the most obvious human habitation sites, many Alaska natives moved seasonally to order to take best advantage of the available fish, wildlife, and plants. Perhaps the only places that are predictably lacking in cultural impacts are glaciated areas, although some trails wound through these areas and

evidence of past human activity has been revealed from melting glaciers. In short, virtually no areas within Alaska's parks can be categorically excluded from consideration as potential locations for archeological sites.

The distribution of known archeological sites is limited by the size, remoteness, rugged terrain, and harsh climate of Alaska. Permafrost, loess deposition, volcanism, sea level change, and glaciation can all help preserve sites, but also can make many of them almost impossible to find. Lack of funding, the difficulties of permitting, and management policies have restricted archeological investigation. Despite such obstacles, each year archeologists find new sites which significantly enhance our understanding of past cultures by contributing unique, new information.

Historical archeology has uncovered evidence of non-Native settlers to Alaska, as well as of early interactions between Euro-Americans and Alaska Natives. Alaska was a colony of Russia between 1741 and 1867, and most Russian settlement and activity occurred along the Alaska's southern shorelines. This phase of Alaska history is particularly evident at SITK, once the Russian capitol, but also is found at GLBA and WRST (Yakutat), ANIA, KATM, and LACL. Beginning in the 1870s, and continuing until the early 20th century, a wave of mining prospectors swept over Alaska and the neighboring Yukon in search of gold, silver, copper, and other minerals. The mining frontier was felt most strongly in what is now KLGO, and at Yukon River camps and others now in YUCH. A few large-scale ventures drew people to Alaska, including the Kennecott Copper Mine complex and company town, now part of WRST. In the late 1870s, the commercial fishing and packing industry began with canneries in southeast Alaska, affecting what are now SITK and GLBA. Fish processing sites were soon found along shorelines and near river mouths east from Metlakatla in Southeast Alaska all the way north to Bristol Bay. Remains of the fishing industry are found in several parks including ANIA, KATM, and LACL.

Archeological sites do not occur randomly. Instead, they are located in the most advantageous places for efficiently exploiting various aspects of the local environment. The spatial distribution of archeological sites produced by a human group's ecological adaptation to its environment is called a settlement pattern or a subsistence pattern, depending on the function of the sites. Because modern people, like prehistoric ones, seek the best locations to efficiently exploit the environment, contemporary subsistence activities and traditional collection of natural resources may take place at or near archeological sites. These sites could be at risk if there was an increase in collections of shed horns and antlers, bones, or plants. In addition, archeological sites may be located in the very places where animals are likely to congregate, such as along the shores of rivers. It would not be surprising if people found more shed horns or antlers near archeological sites.

An important theme in Alaska prehistory and history is that people subsisted by means of a hunting and gathering economy. They were supported by wild food, rather than by produced goods. Alaska Natives were opportunistic foragers, and they used the animals and plants that presented themselves to them. They used all parts of the animals and would not hesitate to use shed horns or antlers, or a new resource when it became available. Archeological sites often support luxuriant stands of colonizing vegetation such as fireweed, sage, alder and cow parsnip, which also occur naturally after burns or natural events. Such plants might attract more humans

to the site to gather plants, or could attract more animals which then shed horns or antlers. The increased use might pose some risk to the archeological sites.

3.5.2 Ethnographic Resources

Shed or discarded animal parts or plants used to make tools, containers, or buildings, for functional, artistic, or religious purposes, can themselves be ethnographic resources. Some ethnographic resources may not be adversely affected by the use of shed or discarded animal parts or plant materials, and some may even benefit. The use of discarded or shed animal parts such as horns, antlers, and bones that would otherwise be left unworked, and of collected plant parts, might substitute for more wasteful or harmful uses of resources. Allowing the collection of shed or discarded animal parts and plants for art, crafts, ritual or practical uses might also stimulate cultural revitalization. Local people might consider some subsistence harvesting areas, or other important places, to be enhanced if discarded or shed animal parts and plants are removed from the areas.

3.5.3 Cultural Landscapes

Currently there are 74 cultural landscapes identified in Alaska, 22 of which have been listed, or determined eligible to be listed, on the National Register of Historic Places (NRHP). They occur in every park and preserve in the system and vary widely from small village or camp sites associated with Alaska's earliest inhabitants, to sprawling mining sites devoted to a complex culture of historic resource extraction. Landscapes encompass a wide variety of natural and cultural resources, which can include natural systems and vestures, vegetation, buildings and structures, archeological sites, views and vistas, topography, land use, and small scale features. All of these landscape characteristic could be affected by increased collection of shed animal or plant parts. In addition, shed or discarded antlers, horns, bones and plants may themselves be part of a cultural landscape.

3.5.4 Historic Structures

Historic structures are defined as a constructed work, usually immovable by nature or design, and created to serve some human activity. They include buildings, bridges, earthworks, roads, and rock cairns. Many historic structures in the Alaska Region are constructed of wood, and they range in size from one-room log houses to large wood frame or log office buildings and road houses. Many are decorated with antlers. In forested areas the wood may come from local trees; in others lumber has been imported from elsewhere. The structures are located in remote towns and sites throughout the state. From the functional simplicity of a trapper's cabin and cache to the weathered, austere beauty of a Russian Orthodox chapel, they give evidence of humans' adaptability to a harsh and challenging environment.

3.6 Terrestrial Vegetation

A wide variety of terrestrial vegetation exists across Alaska's NPS units that could be affected by gathering of plant materials, bones and antlers for traditional uses. Ecologically, these relatively little-disturbed communities range from the coastal temperate rainforests of Southeast Alaska

parks to boreal forests of Interior Alaska parks to arctic or alpine tundra in most Alaska parks. The majority of plant communities categorized by the Alaska Vegetation Classification (Viereck et al. 1992) are represented in at least one park, and this system provides a more thorough description of the range of plant communities in Alaska than can be effectively presented here. Table 3.24 summarizes the primary uses of plant materials from NPS areas in Alaska. In addition to these, many other plants are used for a variety of purposes.

Lichen growth on caribou antlers represent a special relationship noted in Alaska park areas. There is a distinct assemblage of lichens that colonizes older shed caribou antlers (Thomson 1984, Thomson 1988). These communities are very pronounced in the arctic parks (BELA, CAKR, GAAR, KOVA, NOAT).

Table 3.24 Summary of primary subsistence uses of plant materials.

Plant (s)	Uses
Paper birch (<i>Betula papyrifera</i>) bark	Basket-making, carving
Black cottonwood (<i>Populus trichocarpa</i>) bark	Basket-making, carving
Paper birch (<i>Betula papyrifera</i>) burls	Bowls, furniture
White spruce (<i>Picea glauca</i>) wood	Bowls, furniture
Spruce (<i>Picea</i> spp.) roots	Basket-making
Grasses	Basket-making
Shrubs (including willows, <i>Salix</i> spp.)	Weaving on masks, showshoes, furniture
Lichens, other plants	Coloring and staining craft items

The following sections summarize the plant communities found in each park unit. Percentage values for vegetation types by park were adapted from the most recent analyses available from the NPS Landcover Mapping Program in the Alaska Regional Office, except where otherwise noted, using terminology drawn from the Alaska Vegetation Classification. More detail is provided on the vegetation of parks with more traditional uses of plant materials.

3.6.1 ANIA Terrestrial Vegetation

Only a coarse statewide landcover map exists for ANIA, and its analysis suggests that low and dwarf shrub, tussock and wet sedge, moist herbaceous, and lichen communities compose 55% of its area. An additional 13% is covered by tall and low shrublands and 20% by alpine tundra and barrens, with over 12% unvegetated. Since ANIA is approximately 12 roadless miles from Port Heiden and 27 miles from Chignik, and since the same landcover types are available much closer to these towns, it is unlikely that significant gathering of plant materials occurs in ANIA. One of the more sensitive landcover types found in ANIA is volcanic rock-lichen barrens. While these are rich in lichens which could be used for dyes (especially *Umbilicaria* spp.), enough of this type is available closer to both communities that collection in ANIA appears unlikely.

3.6.2 BELA and CAKR Terrestrial Vegetation

The treeless plant communities of BELA and CAKR are composed primarily of low shrubs, sedges, grasses, forbs, mosses, and lichens. Approximately 55% of these park units are covered by upland and lowland dwarf birch (*Betula nana*) tussock shrub tundras dominated or with varying degrees of cottongrass tussocks (*Eriophorum vaginatum*). Twenty-five percent is covered by tall or low shrub communities dominated by willows (*Salix* spp.), and occasionally alder (*Alnus crispa*), and frequently co-dominated by dwarf birch. Other systems include: alpine systems dominated by Mountain Avens (*Dryas integrifolia*), Alpine Azalea (*Louiseularia*), and lichens; riparian shrublands; sedge fen meadows; and coastal meadows. Areas of special concern include thermal features with cottonwoods, rare in this part of the state; and the late-successional lichen-dominated lava flows.

While some harvest of berries occurs in the areas around Deering (12 miles from the preserve), Shishmaref (14 miles from the preserve) and Kivalina (9 miles from the monument), impacts on plant communities due to traditional uses has not been observed. Neither basketry nor wood carving are predominant crafts in this part of the world, and Native crafts in this vicinity have strong affinities toward marine mammals (e.g., ivory and whale-bone carvings). Some driftwood may be gathered for decorative purposes and furniture-making, and increasingly firewood for domestic heating, but it is unknown how much of this occurs on NPS lands versus closer to the communities.

3.6.3 DENA Terrestrial Vegetation

More than 30% of DENA is unvegetated, with surfaces of rock, ice and snow, and water. Over one quarter of the park supports spruce forests and woodlands, with the majority stunted by harsh growing conditions on the north side of the Alaska Range. Another quarter supports low and dwarf shrublands and herbaceous plant communities, and 5% is sparsely vegetated. Alder and willow shrublands comprise 6% of the park and broadleaf and mixed spruce-broadleaf forests 4%.

Plant communities in the park entrance area and along the Parks Highway are dominated by white spruce (*Picea glauca*) forest and woodland and mixed spruce-broadleaf (mostly *Betula papyrifera*) forest. By contrast, most plant communities along the Denali Park Road beyond the first several miles are shrublands of various composition and structure with occasional tree cover near rivers. There are a number of access roads into DENA, though that the plant communities are little different from the areas surrounding the local communities and distances range from 20-80 road miles to access NPS lands.

3.6.4 GAAR Terrestrial Vegetation

In GAAR, 10 to 15% of the landscape is unvegetated rock and snowfields. About 53% of the park consists of low and dwarf shrublands and herbaceous plant communities (arctic and alpine tundra), 6% supports tall shrubs, and an additional 7% is sparsely vegetated. Almost 18% of the park supports spruce forests and woodlands, and 1% supports broadleaf and mixed spruce-broadleaf forests. The main access points for gathering of plant materials would be the Dalton

Highway corridor, the Native lands surrounding Anaktuvuk Pass and Native lands near the southeast border. Vegetation types along the park's eastern boundary near the Dalton Highway include spruce and broadleaf forests, tall riparian shrubland, and dwarf shrub tundra. The Native lands near Anaktuvuk Pass border primarily dwarf shrub tundras and graminoid/herbaceous wetlands. The inholding in the southeast of the park borders a wide variety of vegetation types from boreal forest to alpine. There are also a number of inholdings scattered throughout GAAR, predominantly with riparian and alpine vegetation.

3.6.5 GLBA Terrestrial Vegetation

The vegetation in the Dry Bay area of Glacier Bay National Preserve is strongly influenced by the wet, cool, coastal maritime climate and dynamic geomorphologic processes. The area is bound by the Alsek River to the north and west, the North Gulf of Alaska to the south/southwest, and the Deception Hills to the east. The vegetation in the area is generally young in terms of primary and secondary succession except in the hills, where vegetation is generally more mature and has escaped recent glacial cover and massive floods.

Vegetation around Dry Bay is changing due to rapid uplift from isostatic rebound after deglaciation, which has been measured at rates approaching 25 millimeters per year (0.25 m per decade) in recent research (Larsen *et al.*, 2004, 2005). As streams incise at rates to accommodate this uplift and maintain stream base level, an increase in stream-associated floodplains results in a decrease in groundwater elevation. Declining groundwater elevations in soils result in drier conditions and changes in associated vegetation communities over time. Shifts in vegetation community composition and distribution from wetland to drier (shrub) communities are evident in aerial photos dating back to 1948.

3.7.6 KATM/ALAG Terrestrial Vegetation

While no landcover map exists specifically for ALAG, its plant communities are similar to those of KATM as reported here. Roughly 10% of KATM is covered by spruce, broadleaf, and mixed forest types, 22% by tall shrublands, 32% by low and dwarf shrublands and herbaceous plant communities, and 22% is sparsely vegetated. The remaining 14% is unvegetated.

Access to park lands for gathering would be in the preserve to the north, which is rarely visited. The vegetation in this area is mixed, ranging from spruce forest to dwarf shrub tundra.

3.7.7 KOVA Terrestrial Vegetation

Approximately 54% of KOVA consists of low and dwarf shrub, tussock and wet sedge, moist herbaceous, and lichen communities. An additional 24% is covered by tall and low shrublands, 19% by conifer forests and woodlands, and 3% by alpine tundra and barrens. Primary access to KOVA's plant resources are from the Kobuk River and from Native inholdings and allotments along the Kobuk River corridor. The vegetation along the river consists of mixed broadleaf-conifer forest (*Betula papyrifera*-*Populus balsamifera*-*Picea glauca*), and large thickets of tall willows (e.g., *Salix alaxensis*, *S. lanata*, *S. pulchra*) and alder (*Alnus crispa*). Many local residents have camps along the Kobuk during the summer, and plant gathering could be possible

during this time. Access into the uplands is also possible, but requires walking in an area with few trails. The Kobuk Sand Dunes are known for bearberries. Locals collect wild spinach, Eskimo potato, and spruce roots for basket weaving.

3.7.8 LACL Terrestrial Vegetation

Approximately 30% of LACL is unvegetated, and an additional 19% is sparsely vegetated. The remaining land area is covered by spruce, broadleaf, and mixed forests (11%), tall shrublands (16%), low and dwarf shrublands (17%), and grasslands, marshes, and meadows (3.5%), with 3.5% unknown due to cloud cover and shadows. Areas of access in LACL are very large in the south and include a variety of vegetation types. There are large areas of Native lands both inside and along the LACL borders in the south, and some private inholdings in the north. Vegetation ranges from spruce-hardwood forests to dwarf shrub tundras, and includes various thickets of willow and alder.

3.7.9 NOAT Terrestrial Vegetation

Approximately 73% of NOAT consists of low and dwarf tussock shrub, tussock and wet sedge meadows, and moist herbaceous vegetation. An additional 15% is covered by alpine tundra and barrens, 12% by tall and low shrublands, and a minor amount by conifer woodland and riparian poplars (*Populus balsamifera*). Access for plant gathering includes the Noatak River and sparse Native allotments. There is one large Native inholding along the southwest border, which hosts white spruce forests and woodland and dwarf shrub-tussock communities.

3.7.10 WRST Terrestrial Vegetation

Twenty-nine percent of WRST is covered by water, ice, and snow and an additional 30% by alpine barrens. Forests account for 12% of the land area, nearly all of which are conifer forests and woodlands. Low and dwarf shrublands, herbaceous, and wetland communities cover 19% of WRST (Jorgenson et al. 2008). Tall shrublands and shrub thickets cover 4% of WRST. There are two primary access roads into WRST: the McCarthy Road and the Nabesna Road. Both roads have abundant inholdings and Native lands. There is also access along the coast where there are Native lands.

Roads, trails, and facilities accessible from the McCarthy Road are on river terraces and moraines in the Kuskulana and Kotsina River drainages, alluvial fans emanating from the southern Wrangell Mountains in the Chokosna River drainage and terraces in the Crystalline Hills formed by the retreat of glacial Lake Ahtna. Most of the forested area directly adjacent to the McCarthy Road has been logged for the Kennicott railroad construction or was burned in historical fires. This area has been heavily infested by the spruce bark beetle. The following vegetation types are found near the McCarthy Road: closed white spruce forest, open white spruce forest, white spruce woodland, closed mixed aspen-white spruce forest, open mixed white spruce-poplar forest, closed mixed poplar-white spruce forest, open black spruce forest, open low willow-graminoid shrub bog and open low mixed shrub-sedge tussock bog (Jorgenson et al. 2008). The vegetation types in the upper Kotsina River drainage in the vicinity of facilities are: willow-birch shrub (90%), woodland needle leaf forest, open mixed forest and closed mixed

forest (Jorgenson et al. 2008). Vegetation types near facilities in the Upper Kuskulana River drainage are alpine forb herbaceous (90%), open dwarf scrub and willow-birch shrub. The dominant vegetation types along the Nabesna Road associated with roads and facilities are: open white spruce forest, white spruce woodland, black spruce woodland, open mixed white spruce-poplar forest, open low willow-graminoid shrub bog, open tall willow scrub and herbaceous seral communities (Jorgenson et al. 2008).

3.7.11 YUCH Terrestrial Vegetation

The dominant vegetation types of YUCH are open and woodland spruce forest, which account for 58.5% cover of its area. Other common plant communities include broadleaf and mixed forests, covering 12.5% of the land area, tall and low shrublands (14%), and dwarf shrublands, dry herbaceous communities, and wet sedge and tussock tundra communities (5%). Two percent of YUCH's area is sparsely vegetated, 3% is rock, water, or snow, 4% was unknown due to cloud shadows on the landscape, and 1% had been burned by wildfire as of 1997. Plant communities in the Coal Creek area are dominated by conifer, broadleaf, and mixed forests, much of which burned in 2004 during the Woodchopper Fire. Areas that were dredged by mining operations are covered by scattered shrublands, with substantial areas remaining unvegetated.

3.7 Recreation and Scenic Values

Descriptions the recreational and scenic values of these areas are primarily from ANILCA Titles 1 & 2, unit general management plans (GMPs), and published foundation statements.

ANILCA Section 101(a) indicates all of the NPS units established by the Act are to preserve for the benefit, use, and inspiration of present and future generations the scenery and recreational values, among other values. Section 101 (b) further specifies the areas shall preserve the wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing, fishing, and sport hunting within large arctic and subarctic wildlands and on free-flowing rivers. In ANILCA Title II, of those parks allowing subsistence uses, the following also emphasize recreational values and uses:

3.7.1 ANIA Recreation and Scenic Values

The General Management Plan (GMP) for the Aniakchak National Monument and Preserve (NPS 1986a) states great natural beauty can be found through the area, but the scenic focus is the caldera and the tumultuous first few miles of the Aniakchak River, which slashes through the caldera rim and calms dramatically before it empties into the Pacific. Though recreational use is just a few hundred visitors each year, those who arrive participate in hunting, fishing, rafting, backpacking, exploration, photography and nature study. The Aniakchak Foundation Statement (NPS 2009a) states the geographic isolation, extreme topography, and unpredictable weather provide visitors with the opportunity for extremely remote, challenging, wilderness-based recreational experiences.

3.7.2 BELA Recreation and Scenic Values

For Bering Land Bridge National Preserve, ANILCA Section 201(2) states the area shall provide for outdoor recreation and environmental education activities including public access for recreational purposes to the Serpentine Hot Springs area. The BELA GMP (NPS 1986b) indicates recreational uses are sparse and expected to increase slowly, with a focus on the Serpentine area. Recreational uses in the preserve include bathing, hiking, sport hunting, sport fishing, photography, snowmobiling, mushing and the occasional sled dog race. The BELA Foundation Statement (NPS 2009b) states the preserve provides visitors with opportunities to form their own emotional connections with Serpentine Hot Springs. With its granite tors the area has provided inspiration and healing to people who have visited the place for thousands of years.

3.7.3 CAKR Recreation and Scenic Values

ANILCA 201(3) established CAKR primarily to protect archeological resources dating back thousands of years, to protect habitat for seals and other wildlife, and the viability of subsistence resources and uses. The GMP for Cape Krusenstern National Monument (NPS 1986c) states that recreational use is extremely low with fewer than 100 visitors per year. Shelter cabins are now present in two locations for travelers between Kivalina and Kotzebue at Kotlik Lagoon and Tukrok River, but these are used mostly by residents traveling between villages and not for recreational purposes. Sport hunting is not allowed in CAKR.

3.7.4 DENA Recreation and Scenic Values

In 1917 Congress established Mount McKinley National Park as 1) “a public park for the benefit and enjoyment of the people” and 2) a “game refuge.” Consistent with these purposes, the statute directed the Secretary of Interior to publish rules and regulations “aimed at the freest use of the said park for recreation purposes by the public and for the preservation of animals, birds, and fish and for the preservation of the natural curiosities and scenic beauties thereof” (39 Stat. 938). ANILCA Section 202(3)(a) provided additions to Mount McKinley National Park to establish Denali National Park and Preserve to protect and interpret the entire mountain massif and additional scenic mountain peaks, and to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities. Visitors have access to DENA by train, highway, and airplanes, and visitation exceeds 400,000 most summers in recent years (see NPS 1986d and NPS 2006). Most visitors enjoy the spectacular scenery and large and small wildlife along the Denali Park Road, a 92-mile paved and gravel road, which narrows as it nears the end point in the historic Kantishna Mining District. Most visitors enter the park via buses, a few get permits to drive private vehicles to campgrounds or for photography, and some fly in to landing strips at either end of the park road or to remote locations. Several lodges and campgrounds accommodate visitors at the eastern end of the park, and four lodges exist in the Kantishna area. Popular recreational activities include photography, nature viewing, hiking, backpacking, mountaineering, cross-country skiing, dog mushing, and snowshoeing. Mount McKinley, the highest peak in North America at 20,320 feet, attracts about 1,200 mountaineers each year. Several other high peaks and vertical granite faces also attract climbers. Some consider Denali to be the most accessible NPS center piece in Alaska with its massive mountains at the apex of the Alaska Range and abundant viewable large and

small subarctic wildlife in their native habitats. Recreational use is so concentrated in DENA that three GMP amendments have been written to address the use at the entrance area and the park road (NPS 1997), the South Side Development Plan (NPS 1996), and the Backcountry Management Plan (NPS 2006). All of these plans address public facilities and controlling human access and uses in a manner to conserve the values for which the area was established.

3.7.5 GAAR Recreation and Scenic Values

For Gates of the Arctic National Park and Preserve, ANILCA Section 201(4)(a) states the area shall provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities. The GAAR GMP (NPS 1986e) states the vast wilderness naturally constrains recreational activities to river trips, backpacking, photography, mountaineering, wildlife viewing, fishing, and sport hunting and trapping in the preserve areas. Winter recreational activities include cross-country skiing, snowshoeing, and dog sledding. The bulk of the use occurs from June to September with 97% of the visitors floating rivers, hiking and backpacking, or both. The GAAR Foundation Statement (NPS 2009c) states the park and preserve are acknowledged as the premier wilderness unit in the system with the headwaters to six Wild Rivers. This park provides visitors with opportunities for solitude and challenging wilderness adventures in a remote and vast arctic landscape. The gaunt beauty and pristine landscapes evoke the spiritual, intangible essence of a timeless arctic wilderness that inspires a sense of discovery.

3.7.6 GLBA Preserve Recreation and Scenic Values

Recreational visitors to Glacier Bay National Preserve arrive primarily by aircraft from Yakutat or river raft from Canada down the Tatsenshini and Alsek Rivers (NPS 1984a). Primitive NPS camping facilities and toilets accommodate river floaters at the end of their trips. Several landing strips provide for their egress. Two commercial lodges have concession permits for the area, which has numerous vehicle routes servicing the Alsek and East Alsek river areas. Visitors participate in sport fishing, sport hunting, canoeing, and wildlife watching. The free-flowing Alsek Wild River protects the pristine nature of the corridor through vast valleys and deep canyons crowned by towering mountain ranges and cascading glaciers (NPS 2010a). The NPS manages visitor use of the river to create challenging, uncrowded recreational opportunities to explore the power and immensity of the primeval vastness. The preserve is a dynamic uplifting landscape that receives abundant precipitation and is flooded with fish and wildlife during spring and fall migrations.

3.7.7 KATM Preserve and ALAG Wild River Recreation and Scenic Values

ANILCA Section 202(2) enlarged Katmai National monument to establish Katmai National Park and Preserve to protect habitats and populations of fish and wildlife with emphasis on brown bear concentrations and salmon. This section also calls for protection of scenic, geological, cultural and recreational features. ANILCA Section 601 designated the Alagnak Wild River to be administered by the NPS. Most recreational visitors who enter Katmai National Preserve and Alagnak Wild River arrive in float planes for sport fishing and hunting. Several lodges exist at the head of and along the Alagnak River, which is a popular sport fishing river for trout and

salmon. Numerous large and small lakes provide for excellent float plane access. Several visitors to these areas float down Moraine Creek, Nonvianuk, and Alagnak rivers to access fishing and hunting areas and for photography. Several local guiding operations assist fishermen and hunters with lodging and access to productive locations. Around 25,000 recreational visits occur to these areas each year (NPS 1986f). The Foundation Statement for these areas (NPS 2009d) says the Alagnak Wild River offers outstanding opportunities in wide range of world-class, wilderness-based recreational activities such as floating, camping, fishing, hunting, and wildlife viewing. The preserve and the Wild River are known for trophy trout and salmon fishing, as well as moose and bear observations and hunting.

3.7.8 KOVA Recreation and Scenic Values

ANILCA Section 201(6) established Kobuk Valley National Park to maintain the environmental integrity of the Kobuk Valley boreal forest, Kobuk, Salmon, and other rivers and the Great Kobuk Sand Dunes. The area also harbors archeological sites dating back thousands of years and ancient caribou migration routes. Most of the small numbers of nonlocal recreational users float the Kobuk River and visit the Kobuk Sand Dunes. Far fewer visitors fly to the headwaters of the Salmon Wild River to float down it to the Kobuk River and out usually to Kiana. Some visitors make a special trip to the Kobuk River to photograph migrations of the large, free-ranging Western Arctic Caribou Herd. A few local guides take chartered boat trips into the park for sport fishing of sheefish, salmon, and other fish. Sport hunting is not allowed in this unit. A few local residents fish with hook and line for fish at the mouths of streams feeding into the Kobuk (NPS 1986g). The area's Foundation Statement (NPS 2010b) states the Kobuk Valley area is among the largest, wildest, and most free from human influences and intrusions of all NPS units. The area includes designated Wilderness contiguous with the Selawik National Wildlife Refuge Wilderness and the clear and remote Salmon Wild River, both which provide opportunities for solitude, inspiration, and exploration.

3.7.9 LACL Recreation and Scenic Values

ANILCA Section 201(7)(a) emphasizes Lake Clark National Park and Preserve shall maintain unimpaired the scenic beauty and quality of the Alaska Range and Aleutian Range, including active volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state. Nearly all recreational visitors to LACL arrive by airplane to ample landing strips at Port Alsworth, Nondalton, Silver Salmon Creek, or other remote locations. Visitors stay in a dozen or so lodges at Port Alsworth, Silver Salmon Creek, Nondalton, and other locations, or they camp, raft, or backpack in remote locations. The primary recreational activities include sport hunting and fishing, river running, backcountry hiking and camping, sightseeing, and photography. Less popular activities include sailing, iceboating, mountain climbing, and cross-country skiing (NPS 1984b). LACL has it all for wildland recreation and scenery: volcanoes, mountains, glaciers, lakes, wild rivers, large wildlife, abundant fish, large wilderness areas, wild coasts, and spectacular scenery in all directions. As stated in the LACL Foundation Statement (NPS 2009e), "Lake Clark National Park and Preserve's astonishing unimpaired scenic beauty provides excellent opportunities for solitude and to experience both wilderness and wildness."

3.7.10 NOAT Recreation and Scenic Values

ANILCA Section 201(8) established Noatak National Preserve to maintain the environmental integrity of the Noatak River and adjacent uplands to assure the continuation of geological and biological processes unimpaired by adverse human activity. ANILCA Section 601 designated the Noatak Wild River from its headwaters in GAAR to its confluence with the Kelly River. The area's GMP (NPS 1986h) indicated recreational users number a few thousand each year and most arrive to float the river, sport fish, or sport hunt. A few commercial operators provide air charters and guiding services; there are three concessions for hunting guides. Up to half of the visitors put down or take out at the gravel bar near the Kelly River, which has created conflict with local subsistence users. The area's Foundation Statement (NPS 2009f) states, "Noatak National Preserve protects a dynamic, vast, and sweeping landscape of arctic and subarctic terrain, features, landforms, and wildlife. The Noatak Wilderness constitutes the western half of a 13-million-acre designated arctic wilderness that limits development and protects the nation's largest unaltered river basin and free-flowing wild river. The Noatak Wild River provides an excellent opportunity for a lengthy wilderness float experience."

3.7.11 WRST Recreation and Scenic Values

ANILCA Section 201(9) specifies the Wrangell-Saint Elias National Park and Preserve shall maintain unimpaired the scenic beauty and quality of high mountain peaks, foothills, glacial systems, lakes, and streams, valleys, and coastal landscapes in their natural state, and will provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities. ANILCA Section 701(8) designated 8.7 million acres of wilderness, the largest such area in the USA. Coupled with Kluane National Park and the Tatsenshini-Alsek Provincial Park in Canada, these areas make up a World Heritage Site, which preserves North America's, and possibly the world's, largest wilderness mountain landscape. The area's GMP (NPS 1986i) states that recreational uses include mountaineering, hunting, backpacking, trapping, fishing, river running, photography, and sight-seeing. Several tens of thousands of visitors go to WRST annually. The McCarthy and Nabesna Roads penetrate the interior of the park and some visitors go deeper by small airplane, snowmobile, ORV, mountain bike, and foot. Some recreational users travel by cross-country skis, pack horses, and river boats. A few small lodges service visitors inside the park and preserve and a couple of large ones have been built near the outskirts. This park and preserve has one of the largest concentrations of mountain sheep in the world. Visitor use management objectives include preservation of natural ecosystems, scenic quality, and visitor enjoyment and appreciation along with traditional uses of the area. The Foundation Statement for WRST (NPS 2010c) notes the area encompasses the nation's largest protected active glacial complex, includes nine of the 16 highest peaks in North America, and contains more than 1,000 miles of scenic free-flowing glacial rivers. This park is so large and diverse, including a rugged and wild coast, that it harbors nearly all possible wildland recreational opportunities for visitors to Alaska.

3.7.12 YUCH Recreation and Scenic Values

ANILCA Section 201(10) established the Yukon-Charley Rivers National Preserve to maintain the environmental integrity of the entire Charley River basin, including natural features in their

undeveloped natural condition, and to protect habitat and populations of caribou, moose, Dall sheep, bears, and wolves. Historical gold rush and archeological sites are to be protected along the Yukon River. The Charley River and all of its major tributaries were designated as the Charley Wild River in ANILCA Section 601. The area's GMP (NPS 1985) indicates only several hundred to a few thousand visitors get into YUCH each year. Most stay over several nights for camping, hunting, fishing, and river float trips, when they also enjoy observing and photographing the spectacular scenery and wildlife. River bluffs in the area are renowned for their geologic folds, fossils, and peregrine falcon nest habitat. Visitors are attracted to the remote and challenging floating conditions the Charley River offers. Four public use cabins occur along the Yukon River in the Preserve. A few river boats provide transportation along the Yukon River. Sport hunting and guiding occur in portions of the preserve, which is generally lighter than subsistence hunting by local rural residents and focused on fall Dall sheep and spring bear hunts. Severe winter cold restricts winter recreation, but the Yukon Quest International Dog Sled Race passes through the park each February, and a few others snowmobile, ski, and mountain bike along the Yukon River.

3.8 Wilderness

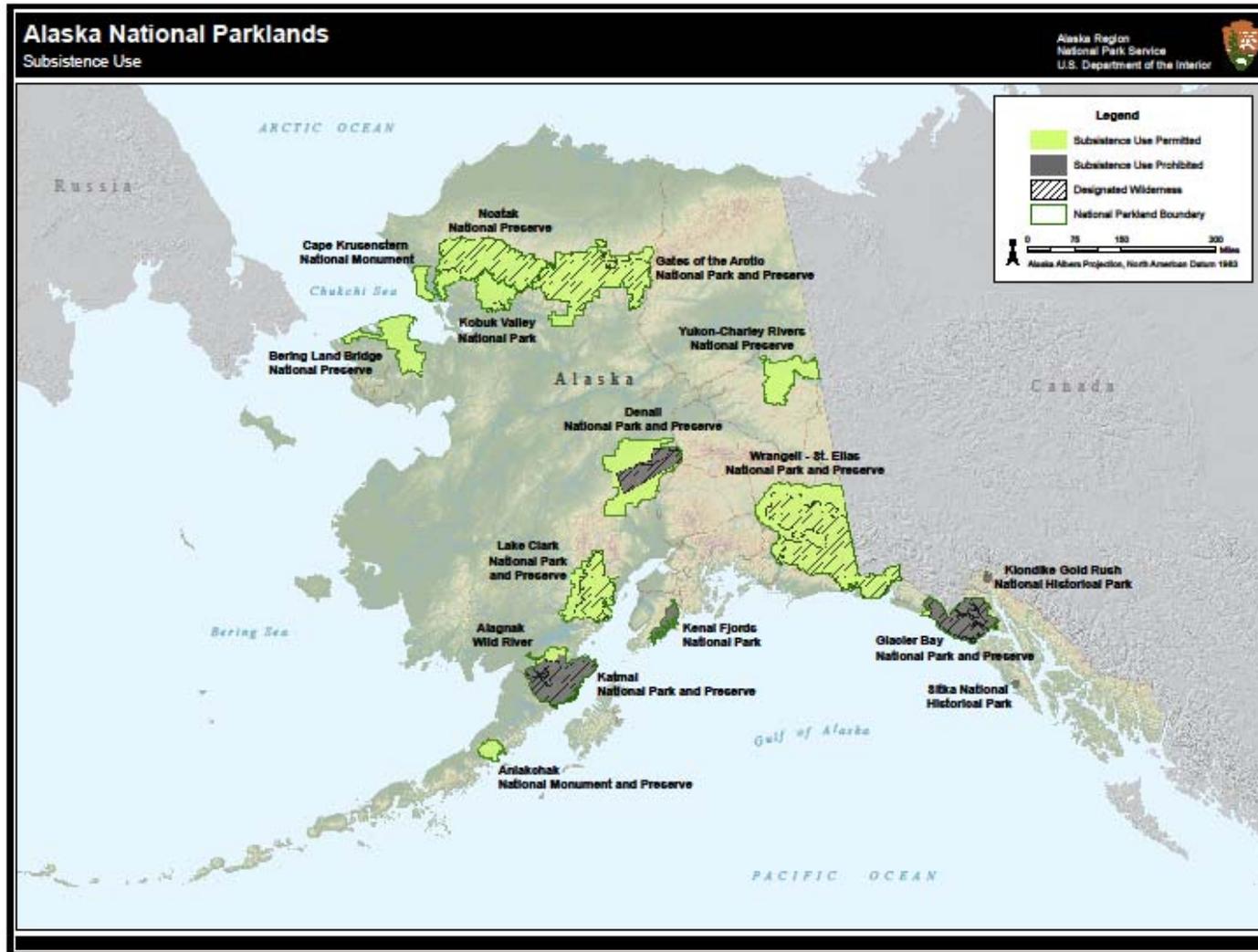
Alaska parklands contain approximately 33 million acres of designated wilderness and approximately 19 million acres of eligible wilderness (see Figure 3.1 for a map of designated wilderness in Alaska NPS areas). ANILCA subsistence activities are allowed on all of the designated wilderness areas in Alaska NPS areas except the original Mount McKinley portion of Denali National Park, Katmai National Park, and Glacier Bay National Park. The Wilderness Act and ANILCA require the NPS to preserve the wilderness character of these lands. The NPS focuses on four "qualities" of wilderness character that are tangible and directly link stewardship decisions to the language of the 1964 Wilderness Act. These qualities are: natural, solitude or primitive and unconfined recreation, undeveloped, and untrammeled. Of these four qualities, only the "untrammeled" and "natural" qualities would be affected by the proposed collections of shed or discarded nonedible animal parts and plant materials for subsistence uses and to make and sell handicrafts. NPS Management Policies (NPS 2006, Section 6.3) requires the Service to take no action that would diminish the wilderness eligibility of an area possessing wilderness characteristics until the legislative process of wilderness designation for the area has been completed.

Untrammeled means that wilderness is essentially unhindered and free from the *actions* of modern human control or manipulation.

Natural means that ecological systems are substantially free from the *effects* of modern civilization.

The Alaska parklands tend to epitomize the natural and untrammeled qualities of wilderness character. Ecological systems are not intentionally modified by the actions of management, and parks generally resist manipulation of ecosystem components. Isolation, geography, and weather associated with Alaska parklands make human influence difficult. They contain robust intact ecosystems that play out their evolving adaptations and patterns.

Figure 3.1 Wilderness and Subsistence Areas in Alaska National Park System Lands



4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter provides an evaluation of the potential effects or impacts of each of the alternatives on the resources described in the issue statements presented in Chapter 1, Purpose and Need for Action.

4.1.1 Methods

Because this EA addresses options for a regulation to apply across the Alaska Region, impacts to subsistence and some of the resources are addressed by NPS unit. The overall effect to each impact topic is summarized at the end of those sections with park by park analyses.

4.1.2 Impact Levels

The following table provides guidance on how the NPS evaluates the impacts of the alternatives on impact topics. These definitions are general in nature and qualitative because for the most part we do not have quantitative measures of impacts to resources from collection activities. We do have quantitative measures of the eligible populations of people and the areas within which they would be authorized to collect.

Table 4.1 Impact Levels

Minor	Moderate	Major
Change in resource would occur, but no substantial impact would result. The change would be perceptible and measurable but not alter resource condition.	Noticeable and measurable change in a resource would occur and would alter resource condition, but the integrity of the resource would remain.	Substantial impact to a resource would occur that is easily defined, highly noticeable, and would measurably alter the integrity of the resource.

4.1.3 Cumulative Impacts

Cumulative effects on affected resources would be from subsistence and sport hunting pressures, climate change effects, and other developments and uses in park areas with authorized subsistence. The effects from added removals of nonedible animal by-products and some plant materials for subsistence uses, including the sale of handicrafts made from these materials, would be added to the ongoing effects to these resources from other agents to determine the overall effect to those resources as defined in the impact threshold table.

4.2 Impacts of Alternative A: No Action

4.2.1 Impacts to Subsistence Users

4.2.1.1 Effects to Subsistence Users in Aniakchak National Monument and Preserve

According to 2010 census information¹, approximately 344 people live in the communities of the monument's resident zone and thus are eligible to engage in subsistence in the national monument as well as in the national preserve. An additional 120 people live in rural communities in reasonable proximity to ANIA with a positive customary and traditional use determination for at least one wildlife species in the preserve, although up to 3,472 people are eligible but live distant from the preserve.² Thus, an estimated total of about 464 active local rural residents would continue to not have authority to collect and use shed or discarded nonedible animal parts and plants on preserve lands and 344 people on monument lands to make and sell handicrafts. This would be a minor negative impact because alternative sources of shed or discarded animal parts and plants are available, in many instances closer to their village sites.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses from NPS areas (e.g. food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on subsistence users in ANIA.

4.2.1.2 Effects to Subsistence Users in Denali National Park and Preserve

According to 2010 census information¹, approximately 275² people live in the communities of the park's resident zone and thus are eligible to engage in subsistence in the national park as well as the national preserve. An additional 2,373 live in rural communities in reasonable proximity to the park and preserve with a positive customary and traditional use determination for at least one

¹NPS calculations based on the information in: 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for "Places" accessed on 6/20/2011 at <http://live.laborstats.alaska.gov/cen/>. The figures exclude people living outside census designated places.

²In calculating the number of federally qualified subsistence users outside of the monument's resident zone but with eligibility in the national preserve, we have focused on residents of other rural communities located on the Gulf of Alaska side of the Alaska Peninsula in Unit 9E. All federally qualified rural residents have a positive customary and traditional use determination (C&T) for coyote, fox, hare, lynx, wolverine, grouse and ptarmigan in Unit 9. Residents of Units 6, 9, 10 (Umiak Island only), 11, 12, 13, 16– 26 and Chickaloon are federally qualified subsistence users and have a positive C&T for wolf in Unit 9. Given the remoteness of the Aniakchak National Preserve and the logistics, expense and distances involved accessing the area, it is highly unlikely that federally qualified rural residents residing outside of Units 9C or 9E will seek to access the resources discussed in this EA.

wildlife species in at least one area of the preserve³. Thus, a total of about 2,648 eligible local rural residents would continue to not be authorized to collect shed or discarded animal parts or plants on park and preserve lands to make and sell handicrafts. This alternative would have a minor negative long term impact on the opportunity for subsistence users to collect shed or discarded animal parts to make handicrafts for personal uses or sale or plants to make and sell handicrafts.

Cumulative Impact:

Although not authorized on NPS-managed lands, Denali-affiliated subsistence users will continue to be able collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on subsistence users seeking to collect shed or discarded nonedible animal parts (horns, antlers, and bones) and plants in DENA for personal/family use or to make into handicrafts to sell.

4.2.1.3 Effects to Subsistence Users in Gates of the Arctic National Park and Preserve

Our analysis of 2010 census information³ reveals there are approximately 1,723 people residing in the ten resident zone communities, either surrounding or located in Gates of the Arctic National Park. A population of about 16,000 rural residents, including those in the resident zone communities, has federal C&T for wildlife resources in the preserve units. Subsistence users in Gates of the Arctic National Preserve are already allowed to sell handicrafts made from plant materials collected in the Kobuk River preserve unit (36 CFR Parts 13.1006). Alternative A would not allow authorized subsistence users in GAAR to collect shed or discarded animal parts to make handicrafts for personal uses or sale, and plants could not be collected from the Itkillik Preserve unit to make and sell handicrafts.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able collect and use shed or discarded animal parts and plants from other lands, and they will be able to harvest from the park additions and the preserve plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use) and to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

³NPS calculations based on the information in: 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for “Places” accessed on 5/3/2011 at <http://live.laborstats.alaska.gov/cen/>. The figures exclude people living outside census designated places.

Conclusion:

This alternative would have a minor negative impact on subsistence users in GAAR.

4.2.1.4 Effects to Subsistence Users in Glacier Bay National Preserve

According to 2010 census information⁴, 662 people live in the only rural community (Yakutat) in reasonable proximity to the preserve with a positive customary and traditional use determination for any wildlife species in the preserve.⁵ Thus, 662 people would not have authority to collect shed or discarded animal parts and plants on preserve lands to make and sell handicrafts. This alternative would have a minor negative impact on the opportunity for subsistence users to collect and use the resources because alternative sources of these resources are available on USFS lands more easily accessible to Yakutat.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, and they will be able to harvest plants on the preserve for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use) and to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on subsistence users in GLBA Preserve.

4.2.1.5 Effects to Subsistence Users in Katmai National Preserve and Alagnak National Wild and Scenic River

According to 2010 census information⁶, approximately 1,791 people live in rural communities in reasonable proximity to Katmai National Preserve and the Alagnak Wild River (KATM NP/ALAG) with a positive customary and traditional use determination for at least one wildlife species in at least one area of the preserve or wild river corridor. Though about 3,472 people have a positive C&T determination for big game species not including wolves and small game,⁷

⁴ 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for “Places” accessed on 5/3/2011 at <http://live.laborstats.alaska.gov/cen/>. The figures presented here exclude people living outside the boundaries of census designated places.

⁵ In calculating the number of people affected, rural residents of Unit 5 are the only people considered. There is no resource in GLBA Preserve with a positive C&T finding for other than residents of Unit 5 or Yakutat

⁶ NPS calculations based on the information in: 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for “Places” accessed on 6/20/2011 at <http://live.laborstats.alaska.gov/cen/>. The figures presented here exclude people living outside the boundaries of census designated places.

⁷ In calculating the number of federally qualified subsistence users with eligibility in the national preserve and the wild river corridor, we have focused on residents of units adjacent to or overlapping with the preserve boundaries (9A, 9B, 9C and 9E). All federally qualified rural residents have a positive customary and traditional use determination (C&T) for coyote, fox, hare, lynx, wolverine, grouse and ptarmigan in Unit 9. Residents of Units 6, 9,

we estimate about 1,791 local rural residents would not be authorized to collect shed or discarded animal parts or plants to make and sell handicrafts from preserve lands or on lands along the Alagnak Wild River. This alternative would have a minor negative impact on the opportunity for local subsistence users to collect shed or discarded animal parts to make handicrafts for personal uses or sale or plants to make and sell handicrafts because alternative sources of these resources are available.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest from the preserve and wild river corridor plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use), and to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on subsistence users in KATM Preserve and ALAG Wild River.

4.2.1.6 Effects to Subsistence Users in Lake Clark National Park and Preserve

According to 2010 census information⁸, approximately 693 people live in the communities of the park's resident zone and thus are eligible to engage in subsistence in the national park as well as in the national preserve. An additional 1,666 people live in rural communities in reasonable proximity to the park and preserve with a positive customary and traditional use determination for at least one wildlife species in at least one area of the preserve, though a total of 9,337 are technically eligible but live a long ways from the preserve.⁹ Thus, a total of about 2,359 potentially eligible local rural residents would not be authorized to collect shed or discarded animal parts and plants on preserve lands and 693 people on park lands to make and sell

10 (Umiak Island only), 11, 12, 13, 16– 26 and Chickaloon are federally qualified subsistence users and have a positive C&T for wolf in Unit 9. Given the remoteness of Katmai National Preserve and the Alagnak Wild River and the logistics, expense and distances involved accessing these areas, it is unlikely that federally qualified rural residents residing outside of Units 9A, 9B, 9C or 9E will seek to collect the resources discussed in this EA.

⁸NPS calculations based on the information in: 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for "Places" accessed on 6/20/2011 at <http://live.laborstats.alaska.gov/cen/>. The figures exclude people living outside census designated places.

⁹In calculating the number of federally qualified subsistence users outside of the park's resident zone but with eligibility in the national preserve, we have focused on residents of units adjacent to or overlapping with the park boundaries (9A, 9B, 9C, 16B, 17B, 19A and 19B). All federally qualified rural residents have a positive customary and traditional use determination (C&T) for coyote, fox, hare, lynx, and wolverine in Units 9, 16, 17 and 19. In Units 9, 17 and 19, all rural residents have a positive C&T for grouse and ptarmigan; and in Units 17 and 19 a positive C&T for sheep. Rural residents of Units 6, 9, 10 (Umiak Island only), 11, 12, 13, 16– 26 and Chickaloon are federally qualified subsistence users and have a positive C&T for wolf. In Unit 16, federally qualified rural residents of Units 11, 13, 15, 16, 20D, 23 and Chickaloon have a positive C&T for grouse and ptarmigan. Given the remoteness of Lake Clark National Park and Preserve and the expense, logistics and distances involved to access the area, it is highly unlikely that federally qualified rural residents residing outside of Units 9A, 9B, 9C, 16B, 17B, 19A and 19B will seek to collect the resources discussed in this EA.

handicrafts. This alternative would have a minor negative impact on the opportunity for subsistence users to collect shed or discarded animal parts to make handicrafts for personal uses or sale or plants to make and sell handicrafts because alternative sources of these resources are available.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, and they will be able to harvest from NPS areas plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use) and to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on subsistence users in LACL.

4.2.1.7 Effects to Subsistence Users in WEAR Parklands

This alternative would have the potential to negatively impact up to eleven communities and 7,104 residents for CAKR and KOVA (the resident zone communities), up to forty communities and 24,160 residents for NOAT (based on the C&T determination for caribou), and thirty-seven communities and 16,943 residents for BELA (based on the C&T determination for caribou). The distribution of caribou, moose, brown bear, Dall sheep, muskoxen, and most plant species are not confined just to the NPS units and thus would still be available on other lands locally and in some cases regionally. This alternative would have only a minor negative impact on the opportunity for subsistence users to collect shed or discarded animal parts to make handicrafts for personal uses or sale or plants to make and sell handicrafts within the four WEAR park units (CAKR, KOVA, NOAT and BELA).

Cumulative Impacts:

While this alternative would have only a minor negative impact in and of itself, it would maintain a restriction on top of other already existing regulatory restrictions and thus further contributes to a restriction of opportunity and flexibility in utilizing these resources. Subsistence populations in Northwest Alaska have access to shed or discarded animal parts and plants in lands outside of NPS units to make and sell handicrafts, and village and corporation lands tend to surround these communities. However, a large percentage of the available lands (more than 50 % of the Northwest Arctic Borough) are under NPS management. Though local area residents are likely to make collections closer to their communities or use nonedible animal parts from animals taken for food, a large area for collections would continue to be unavailable for local area residents under alternative A.

Conclusion:

This alternative would have a minor negative impact on subsistence users in WEAR Parklands.

4.2.1.8 Effects to Subsistence Users in Wrangell-St. Elias National Park and Preserve

According to 2010 census information¹⁰, approximately 5,200 people live in the communities of the park's resident zone and thus are eligible to engage in subsistence in the national park as well as in the national preserve. An additional 7,800 people live in rural communities in reasonable proximity to the park and preserve with a positive customary and traditional use determination for at least one wildlife species in at least one area of the preserve.¹¹ Thus, a total of about 13,000 eligible local rural residents would not be authorized to collect shed or discarded animal parts and plants from preserve lands and 5,200 people from park lands to make and sell handicrafts. This alternative would have a minor negative impact on the opportunity for subsistence users to collect shed or discarded animal parts to make handicrafts for personal uses or sale or plants to make and sell handicrafts because alternative sources of these resources are available.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users would continue to be able collect and use shed or discarded animal parts and plants from other lands. They will be able to harvest from NPS areas plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on WRST subsistence users.

4.2.1.9 Effects to Subsistence Users in Yukon-Charley Rivers National Preserve

Our analysis of 2010 census information¹² reveals there are approximately 353 people residing in the rural communities of Central, Circle, Eagle, and Eagle Village. Residents of these

¹⁰ NPS calculations based on the information in: 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for "Places" accessed on 5/3/2011 at <http://live.laborstats.alaska.gov/cen/>. The figures exclude people living outside census designated places.

¹¹ In calculating the number of federally qualified subsistence users outside of the park's resident zone but with eligibility in the national preserve, we have focused on residents of units adjacent to or overlapping with the park boundaries (5, 6, 11, 12, and 13) along with one subunit (20D) in which some of the communities are in the resident zone and others are not. Residents of Units 9, 10 (Umiak Island only), and 15-26 (except 20D) are federally qualified subsistence users have a positive customary and traditional use determination for wolf, spruce grouse, or ptarmigan in Units 6, 11, 12, and 13, however given their distance from Wrangell-St. Elias National Preserve it is unlikely that they will seek to access the resources discussed in this EA.

¹²NPS calculations based on the information in: 2010 Census Redistricting Data (PL94-171) Summary File. Alaska Department of Labor and Workforce Development. Data for "Places" accessed on 5/3/2011 at

communities are within proximity of the preserve and are determined to be customary and traditional users; however, a total of 5,360 people have a positive C&T for some big game species in parts of the preserve according to the Federal Subsistence Board, but live a long ways from the preserve. This alternative would not authorize subsistence users to collect shed or discarded animal parts or plants to make handicrafts for personal uses or to sell. Alternative A would have a minor negative impact on the opportunity for rural residents of eligible communities in or near Yukon-Charley Rivers National Preserve to collect and use these resources because alternative sources of these resources are available outside of the preserve.

Cumulative Impact:

Local resident users may collect shed or discarded animal parts or plants on other public lands, but they would not be authorized to do so within preserve lands. Residents will be able to harvest plants for authorized subsistence uses such as for fuel, but they won't be able to collect plants and wildlife byproducts to make and sell handicrafts.

Conclusion:

This alternative would have a minor negative impact on YUCH subsistence users.

Cumulative Effects to Subsistence Users across Alaska NPS Units

Subsistence users of areas would be able to use nonedible animal parts from animals taken for food and plant materials for some authorized uses such as for firewood and building materials, and they could collect and use such nonedible animal parts from non-NPS areas. The alternative would not authorize the collection of shed or discarded animal parts and plants (except along the Kobuk River in KOVA and GAAR Preserve) to make and sell handicrafts from NPS areas in Alaska, which would result in small negative effects having a small overall effect on the availability of such resources to local subsistence populations to make handicrafts for personal uses or sales.

Conclusions on Impacts to Subsistence Users across Alaska NPS Units

Alternative A would have a minor negative impact on subsistence users because collection of shed or discarded animal parts and plant materials would not be authorized.

<http://live.laborstats.alaska.gov/cen/>. The figures presented here exclude people living outside the boundaries of census designated places.

4.2.2 Impacts to Socio-Economic Conditions in Local Rural Communities

4.2.2.1 Effects to Local Rural Communities of Aniakchak National Monument and Preserve

Because a large proportion of residents in this area participate in the area's commercial fishing industry and government and teaching jobs, the percentages of people unemployed and below the poverty level are low (table 3.15). Of those communities analyzed near ANIA, all have decreased in population since 2000 except Chignik Lagoon (table 3.4). Aleuts are renowned for their basket-making, so basket weavers in these communities may be inhibited economically if individuals are not allowed to collect materials to make and sell handicrafts in ANIA. Although 464 local residents are not authorized to collect shed or discarded animal parts and plants from the preserve, and 344 in the monument, there are alternative sources of these resources closer to the communities. Additionally, the number of local residents who use these resources to produce handicrafts for sale on a regular basis is relatively small. This alternative would have a minor negative impact on local economic conditions in and near ANIA because these resources would not be available from park lands for local cottage industries.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users would continue to be able to collect and use these resources from other lands. On NPS lands they will be allowed to harvest plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative will have a minor negative impact on local economic conditions near ANIA.

4.2.2.2 Effects to Local Rural Communities of Denali National Park and Preserve

Although the 329 people in resident zone communities and up to 2,648 people in local rural communities with C&T for key resources in the preserve would not have access to these resources in the ANILCA Park and Preserve additions, there are alternative sources of these resources on other public lands nearby. Populations of resident zone communities are dropping since 2000 or holding steady (table 3.5), and the percent of households below poverty are low except for the more remote community of Nikolai (table 3.16).

The collection of shed or discarded animal parts (e.g. horns, antlers, hooves, and bones) and plants to make into handicrafts for personal/family use or to sell is one of several forms of income for subsistence residents. The Alaska Department of Commerce, Community, and Economic Development (DCCED) data indicates trapping and sale of handicrafts are important for Minchumina and Nikolai. While the number of individuals using horns, antlers, bones and plants is relatively small, their reliance upon these resources may be significant. This alternative would have a minor negative long term impact on local economic conditions because these resources would continue to be unavailable from park lands for local cottage industries.

Cumulative Impact:

While not authorized on NPS-managed lands, Denali-affiliated subsistence users would be able to collect and use shed or discarded animal parts and plants from other lands, they would be able to harvest plants for authorized subsistence uses (e.g. food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on local economic conditions near DENA.

4.2.2.3 Effects to Local Rural Communities of Gates of the Arctic National Park and Preserve

Though the total population of resident zone communities is steady overall and particularly communities with higher percentages of Alaska Natives, some smaller communities are dropping dramatically in population (table 3.6). Alternative A would have a minor negative impact on local economic conditions in and near GAAR because the collection of handicraft resources is not authorized. This restriction would have potential minor negative impacts to the local cottage industries which use these resources, yet the number of local residents who participate in this type of industry is considered to be relatively small.

Cumulative Impact:

Local subsistence users may continue to collect and use shed or discarded animal parts and plants from other public lands, although they would not be authorized for such collections from National Park Service lands. Residents will be able to harvest plants for authorized subsistence uses such as fuel, as well as using wildlife byproducts for handicrafts. Several residents in resident zone communities make handicrafts for sale, which could be an important economic opportunity where other options are minimal and community unemployment and poverty levels is higher (table 3.17).

Conclusion:

This alternative would have a minor negative impact on local economic conditions near GAAR.

4.2.2.4 Effects to Local Rural Communities of Glacier Bay National Preserve

Up to 662 people would not be authorized to collect and use shed or discarded animal parts and plants from the preserve to make and sell handicrafts for cottage industries. There are nearby alternative sources of these materials. Additionally, the number of local residents who use these resources to produce handicrafts for sale is relatively small.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative will have a minor negative impact on local economic conditions near Glacier Bay National Preserve.

4.2.2.5 Effects to Local Rural Communities of Katmai National Preserve (including Alagnak National Wild and Scenic River)

Up to 3,472 people with federal C&T for key species in KATM Preserve and ALAG would not have authority to collect and use shed or discarded animal parts and plants from the preserve or along the river corridor to make and sell handicrafts for local cottage industries. Alternative sources of these materials are closer to the villages, and we estimate a subset of this population (1,791) live closer and would be more likely to want authority to collect in the preserve and wild river corridor. All of the associated rural communities are dropping in population except Newhalen and Iliamna, and these communities obtain most of their cash income from the Bristol Bay salmon fishery, hunting and sport fish guiding, transportation, and government employment. The ADCCED information does not specifically mention the making of handicrafts in these communities as important as it does for other rural communities. The number of local residents who use these resources to produce handicrafts for sale on a regular basis is relatively small, so this economic sector is a small in these rural communities.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative will have a minor negative impact on local economic conditions near KATM.

4.2.2.6 Effects to Local Rural Communities of Lake Clark National Park and Preserve

Up to 2,359 people would not have authority to collect and use shed or discarded animal parts and plants from the preserve, and 693 in the park, to make and sell handicrafts for local cottage industries. Alternative sources of these resources are often located closer to the villages, except

for Port Alsworth that is surrounded by the park and preserve. The population of the resident zone communities is fairly stable, but the more remote communities (Lime Village, Nondalton, and Pedro Bay) are dropping in population. Most of these communities have significant income from the Bristol Bay salmon fishery, hunting and sport fish guiding, fire-fighting, transportation, and government employment. The ADCCED information does not specifically mention the making of handicrafts in these communities as important as it does for other rural communities in the state. Additionally, the number of local residents who use these resources to produce handicrafts for sale on a regular basis is relatively small.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative will have a minor negative impact on local economic conditions near LACL.

4.2.2.7 Effects to Local Rural Communities of WEAR Parklands

This alternative would have only a minor negative impact on local economic conditions. The production of crafts such as baskets, ivory carvings and other art forms is practiced throughout the NANA and Bering Straits Regions. The production of arts and crafts is probably not a major income producer on the regional level but can be an important source of income for some individuals in villages otherwise characterized by job scarcity, and high unemployment and poverty rates. Additionally arts and crafts production can provide income in the winter when construction, fishing or other seasonal work is unavailable. Ivory, baleen, jade, soapstone, marine mammal bones, hides and other products such as teeth, feathers, glass beads, cloth, drift wood, and land mammal furs and some skins as well as sinews, as well as plant products such as barks and grasses (generally available in locations other than from within the four WEAR park units with some exceptions) provide the bulk of the raw materials. Horns and antlers are used by a few individual artists but make up only a very small part of the overall production within the two regions.

The random distribution of the horns and antler resources along with the limited quantity coupled with the difficulties and costs of accessing the four park units make their collection largely random and opportunistic acts by a relatively few individuals at any one time rather than a focused collection effort. The exception to this pattern could be considered as stochastic, such as group mortality events from floods, major storms, avalanches, venturing onto weak ice, or

attempting to cross swollen rivers, resulting in the deaths of a number of animals whose bodies then get concentrated in a relatively small area. For example, a severe, coastal, winter storm in February of 2011 resulted in the deaths of approximately 50 muskoxen within about a half mile radius in BELA. Such events generate a lot of interest among users, may result in a very cost-efficient harvesting or collecting opportunity, and consequently draw users from a wide surrounding area, especially those with aircraft access into the preserves. Such occasions are rare, but could be beneficial for several years to craftsmen. With continued prohibitions for collection of shed, discarded, or naturally occurring nonedible parts of wildlife incorporated into arts and craft products intended for sale (with the exception of plants in KOVA which may be currently collected under existing regulation), this alternative precludes subsistence users the occasional opportunity to collect resources for and economic benefit in up to eleven communities and 7,156 residents for CAKR and KOVA (the resident zone communities), up to forty communities and 24,160 residents for NOAT (based on the C&T determination for caribou), and thirty-seven communities and 16,943 residents for BELA (based on the C&T determination for caribou).

Cumulative Impact Analysis:

Local subsistence users will continue to be able collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. While this alternative would have only a minor negative impact on local economic conditions, it continues a regulatory restriction regarding the subsistence uses of shed or discarded animal parts and plants from vast areas

Conclusion:

This alternative would have only a minor negative impact on local economic conditions.

4.2.2.8 Effects to Local Rural Communities of Wrangell-St. Elias National Park and Preserve

Up to 5,200 residents near the park and 13,000 people near the preserve would not be authorized to collect shed or discarded animal parts and plants to make and sell handicrafts for local cottage industries. Alternative sources of these materials may be located closer to the communities, but a vast area would continue to be closed to collections and uses. The population of all resident zone communities has dropped a few hundred or about 11% over the last census decade. Residents of Yakutat rely primarily on commercial fishing and government jobs for income, whereas resident of more northern resident zone communities rely on seasonal fire-fighting and visitor services. Some residents in these communities make handicrafts for sale, but the overall population of

local residents who use these resources to produce handicrafts for sale on a regular basis is relatively small and may be decreasing over time.

Cumulative Impact:

Although not authorized on NPS-managed lands, local subsistence users will continue to be able to collect and use shed or discarded animal parts and plants from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor negative impact on local economic conditions near WRST.

4.2.2.9 Effects to Local Rural Communities of Yukon-Charley Rivers National Preserve

Alternative A would have a minor negative impact on local economic conditions because of continued restrictions on NPS lands for the collection of materials to make and sell handicrafts. The overall population of closely associated communities is small and dropping (table 3.14), but the small predominantly Native villages have high percentages of people below the poverty level (table 3.22) and rely heavily on subsistence resources for food and the sale of furs from trapping and handicrafts made of local renewable resources. This restriction would have potential minor negative impacts to the local cottage industries which use these resources, yet the number of local residents who participate in this type of industry is considered to be relatively small.

Cumulative Impact:

Local resident users may continue to collect and use shed or discarded animal parts and plants from other lands, although they will not be authorized to collect such resources from preserve lands. Residents will be able to harvest plants for subsistence uses such as fuel, but they won't be able to use plants and wildlife byproducts to make and sell handicrafts.

Conclusion:

This alternative would have a minor negative impact on local economic conditions near YUCH.

Cumulative Impact to Local Economic Conditions Across Alaska NPS Areas:

Although not authorized on NPS-managed lands, local subsistence users would continue to have access to shed or discarded animal parts on other lands, and they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use) and along NPS areas along the Kobuk River valley for the making and selling of handicrafts. Subsistence residents would continue to be able to make and sell handicrafts out of

the nonedible byproducts of wildlife harvested for subsistence. The making and selling of handicrafts is generally a small portion of the overall economic opportunities for rural residents near parks, monuments, and preserves, but this sector may be significant for households and communities with skilled craftsmen with few options for generating cash.

Conclusion on Impacts to Local Economic Conditions Across Alaska NPS Areas:

This alternative would have a minor negative impact on local economic conditions because shed or discarded animals parts and plants would not be available to make and sell handicrafts for local cottage industries from about 40 million acres of NPS lands in Alaska. About 75,000 local rural residents would continue to not be authorized to collect these resources in the preserves, and an estimated 15,000 rural residents would continue to not be authorized to collect these resources in parks and monuments. Additionally, the number of local rural residents who use these resources to produce handicrafts for sale on a regular basis is relatively small.

4.2.3 Impacts on Wildlife and Habitat

This alternative would have no impact on wildlife and habitat as the nutrient found in horns, antlers, skulls, and other body parts would remain available for direct consumption by other animals, or eventually break down and contribute to soil nutrients.

Cumulative Impact:

This alternative would not contribute to cumulative impacts on nutrient availability and cycling for eventual consumption by wildlife. Other major factors influencing ecosystem nutrient levels include weather, geology, permafrost, climate, atmospheric deposition, soil chemistry, soil ecology, and terrestrial plant and animal biomass.

Conclusion:

This alternative would have no impact on wildlife and habitat.

4.2.4 Impacts on Cultural Resources

This alternative would maintain the existing prohibition of collection of shed horns and antlers, bones, and plants in NPS-managed areas. The accumulation of shed horns and antlers, animal bones, and plants around archeological sites, ethnographic resources, cultural landscapes, or historic buildings would be unlikely to adversely affect cultural resources by damaging the sites.

Shed horns and antlers, or bones left behind, are themselves potential ethnographic resources, as symbolic objects with cultural significance, or as materials for art and functional objects. There would be potential negative impact to ethnographic resources and traditional practices if collections of nonedible discarded animal materials, or nonedible plant materials, are not allowed.

Cumulative Impact:

Collections of inedible animal or plant parts are allowed on vast adjacent area public lands by the general public and subsistence users. Over time, most cultural resources in NPS areas would not be affected by this alternative. There is a possibility that cultural, artistic or spiritual traditions may be lost if inedible animal or plant parts, considered as ethnographic resources, are not allowed to be collected.

Conclusion:

This alternative would have a minor negative impact on cultural resources.

4.2.5 Impacts on Terrestrial Vegetation

For all park units other than KOVA and GAAR Kobuk River Preserve where plant collection is authorized for the making and selling of handicrafts, this alternative would have no effect on vegetation and soils since no plant collections to make handicrafts would be authorized. A low level of gathering of birch bark, spruce burls, spruce roots, birch wood, and willows for a variety of uses may occur (see Table 3-24). At current levels (which are unknown), NPS personnel have not observed any effect of gathering plant materials or vegetation. The low level of gathering in KOVA and GAAR Preserve, if there is any, is therefore presumed to create only minor negative effects.

Cumulative Effects to Vegetation

In most ANILCA areas regulations provide for the gathering of plants for food and wood for firewood and house-building. Plant materials collection in KOVA and GAAR Preserve is still authorized to make and sell handicrafts under this alternative, but there would be no new impacts to plants associated with this alternative and therefore no additional cumulative effect to plants.

Conclusions on Impacts to Vegetation

This alternative would have no new impacts in NPS units in Alaska and minor impacts to vegetation from collection of plants would continue in KOVA and GAAR Preserve.

4.2.6 Impacts to Recreation and Scenic Values

Under this alternative, items such as horns, antlers, bones, and plants would not be collected from Alaska parklands. Therefore recreation and scenic values would be unaffected from current conditions.

Cumulative Impact

Across the Alaska NPS units there are a number of causal factors that have degraded, are degrading, or could degrade recreation and scenic values. They include group size that is usually

not limited in the backcountry, methods of recreational access that include small airplanes and sometimes ATVs, sport hunting and fishing that locally displace or deplete wildlife, air and water pollution that degrade enjoyment of natural features, artificial lighting that reduces nighttime scenic values, noise from airplanes and motors that disturb natural quiet, and unnatural features added to the landscape such as radio transmitter facilities and collared wildlife. Impacts are from management actions, subsistence uses, and recreation that occur both within and outside of parklands. In general, the quality of recreation and scenic integrity is very high across the national parks in Alaska resulting in visitor enjoyment of the protected natural and cultural resources. Small levels of impact to scenic integrity result in large levels of impact to visitor enjoyment because the changes from the expected and sought-after conditions are more noticeable than in degraded areas. Past, present, and reasonably foreseeable impacts to recreation and scenic integrity are minor. Future threats to recreation and scenic integrity are largely unknown though it is suspected that climate change would continue to impact natural scenic integrity, and a park's response to climate change may include actions that impact recreation and scenic integrity. This alternative would have no contribution to cumulative impacts to recreation and scenic integrity.

Conclusion

This alternative would result in no impacts to recreation and scenic integrity.

4.2.7 Impacts to Wilderness Values

Under this alternative, items such as horns, antlers, bones, and plants would not be collected from Alaska parklands, so the natural and untrammeled qualities of wilderness character would be unaffected.

Cumulative Effects to Wilderness Values

Across the Alaska NPS units there are a number of things that degrade the untrammeled and natural qualities of wilderness character. They include things like collaring animals and suppressing fires, as well as actions or effects of actions that occur outside the park boundaries, such as the State of Alaska's predator management program or atmospheric pollutants originating from other continents. In general across the landscape of Alaska national park wilderness, these lands tend to epitomize the natural and untrammeled qualities of wilderness character. Past and present threats to the untrammeled and natural qualities of wilderness character are minor. Future threats to the untrammeled and natural qualities are largely unknown though it's suspected that climate change will continue to impact the natural quality, and a park's response to climate change (i.e. removing invasive plant species) may include actions that manipulate the wilderness. This alternative would not contribute to cumulative impacts to wilderness character.

Conclusions on Impacts to Wilderness Values

This alternative would result in no impacts to wilderness character.

4.3 Impacts of Alternative B: Broad Eligibility and No Permits

4.3.1 Impacts to Subsistence Users

4.3.1.1 Effects to Subsistence Users in Aniakchak National Monument and Preserve

This alternative would have a minor positive impact on the opportunity for subsistence users to collect shed or discarded nonedible animal parts and plants to make into handicrafts and sell. Although 3,472 rural residents have C&T for a key species in table 3.3 (excluding wolves) in the ANIA Preserve and would be authorized to collect shed or discarded animal parts and plants to make handicrafts, we estimate approximately 464 subsistence users live close to ANIA and would be likely potential collectors. About 344 subsistence users live in resident zones and could collect these resources throughout the monument. Because collection would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations.

Caribou and moose are the only species in ANIA that shed their antlers annually. Caribou and moose numbers in ANIA are low, which limits the availability of shed antlers for subsistence collections. The animals are also distributed over a large area, which further reduces the likelihood of finding antlers once they have been shed.

The opportunity for subsistence users to collect caribou antlers in ANIA is limited by the availability of animals during the time of year when they are shed and the distance to travel there from Port Heiden/Meshik, Chignik, Chignik Lagoon or Chignik Lake. Since the population of the NAP caribou herd is very low, the likelihood of finding shed caribou antlers is consequently greatly reduced.

Mature bulls make up a relatively small proportion of the total moose population in ANIA, so the supply of the most desirable antlers is limited. Subsistence gatherers searching for shed moose antlers might be able to find them in areas where bull moose are known to winter, but the effort and expense involved to access those areas may greatly exceed the likelihood of recovering one or more antlers. Subsistence users interested in utilizing moose antlers for personal use and handicrafts would have a better chance of obtaining antlers by salvaging them from a bull taken in the subsistence hunt where the primary objective is obtaining meat and antlers are often left in the field.

In addition to shed antlers, this alternative would authorize subsistence users to collect non-edible parts of animal carcasses or the remains of animals not salvaged by hunters that may have recoverable bones, horns, or antlers. The distribution of carcasses and animal remains is generally random and may vary from year to year depending on factors such as winter weather conditions, predation, and hunter success. Collecting non-edible parts from animal carcasses is

largely opportunistic but knowledge of locations of actual or potential kill sites would greatly increase the likelihood of finding salvageable materials for personal uses or handicrafts.

Cumulative Impact:

In addition to collecting these resources on NPS managed lands, ANIA affiliated subsistence users will continue to be able to collect these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on subsistence users in ANIA.

4.3.1.2

Effects to Subsistence Users in Denali National Park and Preserve

This alternative would have a minor beneficial impact on the opportunity for subsistence users to collect and use shed or discarded nonedible animal parts and plants to make and sell handicrafts. Approximately 329 subsistence users affiliated with Denali National Park would be authorized to collect the resources described in this analysis throughout the ANILCA additions of the park and preserve and a possible 2,373 additional subsistence users living within close proximity to the park could collect these resources throughout the ANILCA additions of the park if qualified for a subsistence use permit (see 36 CFR 13.440). It is important to note that currently there are approximately 12 subsistence use permits being used for Denali National Park (DENA Subsistence Management Plan, CH 4, p. 1). Because collections would be authorized, individuals unaware of the existing prohibition would be no longer violating NPS regulations.

Only the estimated residents eligible for collection in the ANILCA park and preserve units of 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) are those who live in a resident zone or have a 36 CFR Section 13.440 permit would be authorized to collect and use shed or discarded animal parts and plants to make and sell handicrafts. The ANILCA sections of the Park and Preserve are the areas of the park added to the old Park section in 1980. The use of snowmachines, motor boats, and other means of traditional surface transportation is authorized on new Park and Preserve lands. Old Park lands will remain closed to all collections; however, subsistence users seeking access to the Kantishna area of 20(C) are required to obtain a park road travel permit during the primary visitor season⁴. Access to these lands can be difficult without aircraft, and the use of aircraft to collect the shed or discarded animal parts and plants would be prohibited on the ANILCA additions of the new Park while aircraft may be used to access the Preserve for collection. Additionally, subsistence users would be encouraged to participate in cultural and traditional activities that involve the use of horns, antlers, bones and plants for personal/family use due to the authorization provided by this alternative.

Caribou and moose are the only species in Denali National Park and Preserve that shed their antlers annually. Moose occur at low density levels throughout the park and preserve outside of those areas that are covered by rock and ice. The 2008 aerial moose survey population estimate for a 10,004 km² area on the north side of the Alaska Range in Denali National Park and Preserve of Unit 20(C) was 830 moose. Fifty-four bulls per 100 cows were observed during the study (Owen, 2009). Additionally, two areas on the south side of the Alaska Range in Denali National Park and Preserve were also surveyed for moose population densities. Aerial surveys taken of the 1085 km² Cantwell area showed a count of 255 moose in Unit 13(E). There were 40 bulls per 100 cows observed during the survey. The second survey of the 1885 km² Yentna area of Unit 16(B) was 50 moose. Fifty-seven bulls per 100 cows were observed during the study (Owen, 2009). Antlers shed by moose in the ANILCA park and preserve sections of Units 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) could be collected under this alternative.

While subsistence collection is closed in Old Park areas where these caribou most commonly congregate, users would be able to collect antlers in New Park areas in the north central and northwest parts of Denali. Antlers shed by the Denali Caribou Herd could be collected under this alternative, but low numbers and the distribution of the animals over wide areas limit the availability of shed antlers for collection.

The Tonzona Caribou Herd occupies more westerly areas of the park, including New Park and Preserve areas south of Minchumina. This small herd, probably numbering fewer than 1,000 animals, could provide some additional opportunity for antler collection in those areas, which are accessed most easily in winter.

The Nelchina Caribou Herd finds its northwestern most distribution in the southern foothills of the Alaska Range, in the vicinity of the community of Cantwell. Most of the caribou taken by subsistence hunters in the Cantwell Traditional Use Area within Denali National Park are probably members of the Nelchina Herd. If some Nelchina Herd caribou remain in the park until antlers are shed; they could provide additional opportunity for subsistence antler gathering in that area.

Animal carcasses and remains are randomly distributed across the landscape, and the numbers may vary from year to year depending on factors such as winter weather, conditions, predation, and hunter success. Dall sheep are the only horned species that habitats Denali National Park and Preserve. Sheep do not shed their horns and any collections by subsistence users would consist of remains left by hunters or from sheep that died of natural causes. Sheep generally occur in high, rocky terrain that is difficult to access by subsistence users. Surveys conducted in 2008-2009 in habitat north of the Alaska Range revealed a population of 1,724 sheep (Phillips, 2009). Additional sheep population surveys of the Park will be conducted in 2011. It is important to note that sheep population surveys were conducted in areas of the Old Park where harvest is closed to subsistence users. Additionally, the Federal Subsistence Board has not identified a subsistence priority for sheep in Units 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) of Denali National Park and Preserve.

Collections of resources in Denali National Park and Preserve to make and sell handicrafts would be concentrated along a small number of roads in the Kantishna area, trails, and river corridors.

Aircraft may be used to access the ANILCA preserve lands for the subsistence harvest, and therefore collection, of horns, antlers, bones and plants. However, aircraft is not permitted in the ANILCA park additions for subsistence purposes. Canoes or motorboat are used by subsistence users on the Muddy River, which flows through the preserve portion of the Park. Other possible means of access include the upper Kantishna River and Yentna River which flows into the southwest Preserve. Additional subsistence access may include the Tokositna River and Bearpaw River in the new Park. Collections of materials to make and sell handicrafts would be enhanced along these rivers under this alternative.

Cumulative Impact:

In addition to collections of shed or discarded animal parts and plant resources on NPS-managed lands to make and sell handicrafts, eligible subsistence users would continue to collect shed or discarded nonedible animal parts and plants on other lands, they will be able to harvest plants from DENA ANILCA additions for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on subsistence users in DENA ANILCA Park additions and Preserve.

4.3.1.3 Effects to Subsistence Users in Gates of the Arctic National Park and Preserve

Approximately 1,723 subsistence users would be authorized to collect shed or discarded nonedible animal parts for personal and family uses and to make and sell handicrafts and plants to make and sell handicrafts, in addition to those who are already authorized to collect plants for handicraft customary trade in 0.9 Million acres of the Western (Kobuk River) unit of the GAAR Preserve. Alternative B would authorize subsistence users the opportunity to collect shed or discarded animal parts (e.g. horns, antlers, and bones) as they are found within 8 million acres of the park and preserve.

Because of the presence of moose, caribou, Dall sheep, and muskoxen in various game management units within the park and preserve, the opportunity of finding and using shed or discarded antlers, horns, and other nonedible animal parts exists. It is important to note though, that animal remains are located at irregular intervals throughout wide stretches of landscape, many times at random. Due to its vast expanse of landscape and weather conditions, subsistence access to areas in Gates of the Arctic National Park and Preserve is limited to various modes of transportation during certain times of the year. During the winter, local subsistence users usually travel on snowmachines, while in the spring, summer, and fall, the main form of conveyance is either by motorboat or low-pressure off-road vehicles such as Argos, which are allowed by legislation for residents of Anaktuvuk Pass in limited areas only. Shed or discarded animal parts may be covered with snow during much of the winter season. Because of the scattered and unpredictable distribution of shed or discarded animal parts and the difficult and limited means of transport in the area, the additional collection of these materials to collect and make

handicrafts would be small. Alternative B would have a minor positive impact on local subsistence users who wish to collect resources in GAAR.

Cumulative Impact:

In addition to collections of shed or discarded animal parts and plant resources on NPS-managed lands to make and sell handicrafts, eligible subsistence users would continue to collect shed or discarded nonedible animal parts and plants on other lands, they will be able to harvest plants from all of GAAR for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on subsistence users in GAAR.

4.3.1.4 Effects to Subsistence Users in Glacier Bay National Preserve

Approximately 662 subsistence users affiliated with Glacier Bay National Preserve would be authorized to collect shed or discarded animal parts and plant resources throughout the preserve. Because these traditional activities would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations.

Cumulative Impact:

In addition to collecting these resources on preserve lands, GLBA-affiliated subsistence users will continue to be able to collect shed or discarded animal parts and plant resources from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on subsistence users in GLBA Preserve.

4.3.1.5 Effects to Subsistence Users in Katmai National Preserve (including Alagnak National Wild River)

Up to 3,472 rural residents with a positive C&T for a key species in KATM NP/ALAG would be authorized to collect shed or discarded animal parts and plant resources throughout the preserve and along the Wild River corridor to make and sell handicrafts. We estimate about half of these people live in communities within reasonable proximity to these areas covering about 400,000 acres who would likely make such collections. Because these traditional activities would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations.

Caribou and moose are the only species in KATM NP/ALAG that shed their antlers annually. Caribou and moose numbers in KATM NP/ALAG are low, which limits the availability of shed antlers for subsistence gathering. The animals are also distributed over a large area, which further reduces the likelihood of finding antlers once they have been shed. The opportunity for subsistence users to collect caribou antlers in KATM NP/ALAG is limited by the availability of animals during the time of year when they are shed. Because the population of the Northern Alaska Peninsula caribou herd is very low, the consequent likelihood of finding shed caribou antlers is greatly reduced.

Because mature bulls represent a relatively small proportion of the moose population in KATM NP/ALAG, the supply of the most desirable antlers is limited. Subsistence gatherers searching for shed moose antlers might be able to find them in areas where bull moose are known to winter, but the effort and expense involved to access those areas may greatly exceed the likelihood of recovering one or more antlers. Subsistence users interested in utilizing moose antlers for personal use and handicrafts would have a better chance of obtaining antlers by salvaging them from a bull taken in the subsistence hunt where the primary objective is obtaining meat and antlers are often left in the field.

In addition to shed antlers, this alternative would authorize subsistence users to collect non-edible parts of animal carcasses or the remains of animals not salvaged by hunters that may have recoverable bones, horns, or antlers. The distribution of carcasses and animal remains is generally random and may vary from year to year depending on factors such as winter weather conditions, predation, and hunter success. Collecting non-edible parts from animal carcasses is largely opportunistic but knowledge of locations of actual or potential kill sites would greatly increase the likelihood of finding salvageable materials for personal uses or handicrafts.

Cumulative Impact:

In addition to collecting these resources on NPS managed lands, KATM NP/ALAG-affiliated subsistence users will continue to be able to collect these resources from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on KATM Preserve and ALAG subsistence users.

4.3.1.6 Effects to Subsistence Users in Lake Clark National Park and Preserve

Approximately 2,359 subsistence users affiliated with LACL would be authorized to collect the shed or discarded animal parts and plants throughout the preserve and 693 subsistence users could collect these resources throughout the park to make and sell handicrafts. Because collections would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations.

Caribou and moose are the only species in LACL that shed their antlers annually. Caribou and moose numbers in LACL are low, which limits the availability of shed antlers for subsistence collections. The animals are also distributed over a large area, which further reduces the likelihood of finding antlers once they have been shed. Dall sheep also occur in the mountains of the park, which may provide some horn, bone and other nonedible animal parts to make and sell handicrafts.

Because mature bull moose represent a relatively small proportion of the moose population in LACL, the supply of the most desirable antlers is limited. Subsistence gatherers searching for shed moose antlers might be able to find them in areas where bull moose are known to winter, but the effort and expense involved to access those areas may greatly exceed the likelihood of recovering one or more shed antlers. Subsistence users interested in utilizing moose antlers for personal use and handicrafts would have a better chance of obtaining antlers by salvaging them from a bull taken in the subsistence hunt where the primary objective is obtaining meat and antlers are often left in the field.

In addition to shed antlers, this alternative would authorize subsistence users to gather non-edible parts of animal carcasses or the remains of animals not salvaged by hunters that may have recoverable bones, horns, or hooves. The distribution of carcasses and animal remains is generally random and may vary from year to year depending on factors such as winter weather conditions, predation, and hunter success. Gathering non-edible parts from animal carcasses is largely opportunistic but knowledge of locations of actual or potential kill sites would greatly increase the likelihood of finding salvageable materials for personal uses or handicrafts.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS managed lands in LACL, affiliated subsistence users will continue to be able to collect these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on subsistence users in LACL.

4.3.1.7 Effects to Subsistence Users in WEAR Parklands

This alternative would have a minor positive impact on the opportunity for subsistence users to collect and use shed or discarded nonedible animal parts and plants to make and sell handicrafts. It represents the minimally restricted option, and its effects would potentially be almost the opposite of those in Alternative A, with the communities and residents indicated above having authorization to use the resources under this alternative. The potential number of villages and residents to be affected would be the same as indicated in Alternative A. Consequently, some

resident zone communities and affiliated communities located closer to the four NPS units would benefit more under this alternative. More distant communities and the majority of their residents would, in practical terms, experience very little benefit in terms of being authorized to collect and use resources from within the four WEAR park units.

Cumulative Impact Analysis:

This alternative would eliminate one regulatory restriction for eligible subsistence users in terms of their ability to utilize the shed or discarded animal parts and plants. Subsistence populations in Northwest Alaska have access to shed or discarded animal parts and plants in lands outside of NPS units to make and sell handicrafts, and village and corporation lands tend to surround these communities. However, a large percentage of the available lands (more than 50 % of the Northwest Arctic Borough) are under NPS management. Though local area residents are likely to make collections closer to their communities or use nonedible animal parts from animals taken for food, a large area for collections would be made available for all local residents under alternative B. While it would appear to provide the most opportunity for the largest number of users, there is also the possibility that some residents of regional centers such as Nome or Kotzebue, and perhaps even a few individuals from more distant communities, could access the preserves by using aircraft and increase competition for the resources. That could reduce the opportunity for village residents in the areas of the two preserves. Thus the positive cumulative effect for affected subsistence users would be minor.

Conclusion:

This alternative would have a minor positive impact on the opportunity for subsistence users to collect and use shed or discarded animal parts and plants from within the four WEAR conservation system units of CAKR, KOVA, NOAT and BELA to make and sell handicrafts.

4.3.1.8 Effects to Subsistence Users in Wrangell-St. Elias National Park and Preserve

This alternative would have a minor positive impact on the opportunity for subsistence users to collect and use shed or discarded animal parts and plants to make and sell handicrafts. Approximately 13,000 subsistence users affiliated with Wrangell-St. Elias would be authorized to collect the resources throughout the preserve and 5,200 subsistence users could collect these resources throughout park. Because collection would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations.

Moose and caribou antlers and sheep and goat horns would be the most prized shed or discarded animal parts to make and sell handicrafts. Though no harvest is allowed of either the Chisana herd or the Mentasta herd due to conservation concerns, their antlers could be collected under

this alternative. Low numbers and the distribution of the animals over wide areas limit the availability of shed antlers for subsistence gathering and uses.

In addition to shed antlers, this alternative would allow subsistence users to gather bones, horns, or antlers from animal carcasses and the remains of animals not salvaged by hunters for personal use or handicrafts. Animal carcasses and remains are randomly distributed across the landscape, and the numbers may vary from year to year depending on factors such as winter weather conditions, predation, and hunter success.

Collection of these resources in WRST would be concentrated along a small number of trails and roads. Two state-maintained gravel roads enter the park, the 40-mile-long Nabesna Road on the north and the 60-mile-long McCarthy Road through the center of the park near the Chitina River. Motorboats, snowmachines, trucks, and off-road vehicles¹³ (ORVs) are typical motorized access means for subsistence in both the park and preserve. Subsistence users make use of several established ORV trails off the Nabesna Road and may also travel by ORV off those established trails provided that resource damage does not occur. Fixed wing aircraft may be used to access the national preserve for subsistence, but generally not the national park. In addition to three improved airstrips, there are unimproved strips at numerous locations throughout the park and preserve. Access by boat or airplane is allowed on the Malaspina Forelands (including the national park under the provisions of a special regulation regarding aircraft). The Copper, Nabesna, Chisana and Chitina rivers serve as popular riverine access routes for subsistence users. Even with multiple means of access, there are large areas of the national park that see little if any subsistence use due to limitations on the use of aircraft for subsistence and the difficulty of overland access (e.g., the area south of the Chitina River drainage but north of Icy Bay and the Malaspina Forelands).

Cumulative Impact:

In addition to being authorized to collect and use shed or discarded animal parts and plants from NPS-managed lands in WRST to make and sell handicrafts, subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on WRST subsistence users.

4.3.1.9 Effects to Subsistence Users in Yukon-Charley Rivers National Preserve

This alternative would authorize up to 5,360 rural residents who have C&T for key species in the preserve to collect shed or discarded nonedible animal parts and plants to make and sell

¹³ ORVs are considered to be a traditionally employed means of surface transportation for subsistence in Wrangell-St. Elias.

handicrafts. Approximately 523 local rural residents would be the more likely population of collectors and users of these resources in 2.2 million acres of the preserve.

Because of the presence of moose, caribou, and sheep in various units within the preserve, the opportunity of finding and using shed antlers and discarded horns exists.

Cumulative Impact:

Local residents are presently able to collect the subject resources on vast adjacent public lands, and this alternative would authorize collections of such materials on an additional 2.2 million acres for use in the making of handicrafts for personal use or to sell.

Conclusion:

This alternative would have a minor positive impact on local rural resident users in YUCH.

Cumulative Effects to Subsistence Users Across Alaska NPS Areas

Local resident users are presently able to collect the subject resources on vast adjacent areas of public lands to the NPS units across Alaska, and this alternative would authorize collections of such materials on an additional 42 million acres for use in the making of handicrafts for personal use or to sell.

Conclusions on Impacts to Subsistence Users Across Alaska NPS Areas

This alternative would have a minor positive effect on up to 15,000 rural residents who reside within subsistence resident zones for parks and monuments and nearly all rural residents for preserves because of the liberal C&T findings for wolves and ptarmigan across the state. This alternative results in the fewest restrictions for subsistence collections and uses of shed or discarded animal parts and plants from about 42 million acres of NPS-managed lands in Alaska to make and sell handicrafts.

4.3.2 Impacts to Socio-Economic Conditions in Local Rural Communities

4.3.2.1 Effects to Local Rural Communities of Aniakchak National Monument and Preserve

Up to 3,472 rural residents with C&T in the ANIA Preserve and 344 residents living in subsistence resident zone communities affiliated with ANIA Monument would be authorized to collect and use shed or discarded animal parts and plants to make and sell handicrafts without collection limits or permit requirements. Approximately 464 local residents would be the likely population of collectors of these resources throughout the national preserve because of the remoteness and difficulty of access into ANIA. This alternative would have a minor positive

impact on local economic conditions in and near ANIA because collected resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, ANIA-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. As noted above for the no-action alternative, the making and selling of handicrafts for these communities is likely a very small portion of the overall economic opportunities because commercial fishing dominates income production in the area.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near ANIA.

4.3.2.2 Effects to Local Rural Communities of Denali National Park and Preserve

Approximately 329 subsistence users living in designated resident zone communities of Cantwell, Nikolai, Telida, or Lake Minchumina would be authorized to collect shed or discarded animal parts (e.g. horns, antlers, or bones) from lands throughout the park additions and preserve for personal use or the production of handicrafts for sale without collection limits or permit requirements. An additional 2,373 people with C&T for key species within the preserve would be authorized to collect shed or discarded animal parts throughout the preserve. Additional rural residents could obtain authorizations to collect within the ANILCA park additions pending approval for a special subsistence use permit (13.440) issued by the Superintendent. Additionally, eligible rural residents would be authorized to collect plant materials from park or preserve lands for the making of handicrafts for personal use or sale.

A small subset of the eligible populations would take advantage of this provision. For example, the more remote community of Nikolai has a higher percentage of the population below the poverty level, and the making of handicrafts is noted as a means of income. Nevertheless, Nikolai is far from the boundaries of DENA, so the number of residents likely to take advantage of this provision would be small. The lack of permits to control the collections of these materials to make and sell handicrafts under this alternative would minimize the reporting requirements for remote rural communities. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source materials for local cottage industries.

Cumulative Impact:

In addition to authorized collection of shed or discarded animal parts and plant resources on NPS-managed lands, Denali-affiliated subsistence users would continue to have access to these resources on adjacent area lands. They would continue to be able to harvest from the park

additions and preserve plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near DENA.

4.3.2.3 Effects to Local Rural Communities of Gates of the Arctic National Park and Preserve

The making and selling of handicrafts is important for several residents in communities associated with GAAR. Handicrafts from skin sewing, beadwork, birch bark baskets, masks, and dolls are made and sold from communities associated with GAAR. Authority to collect shed or discarded animal parts and plants to make and sell such handicrafts would be provided to approximately 1,723 subsistence users who reside in resident zone communities associated with Gates of the Arctic National Park and Preserve, though a subset of these residents would participate in collections to make handicrafts. Additionally up to 24,000 rural residents would have authority to collect shed or discarded animal parts and plants from the preserve units to make and sell handicrafts, though subsistence resident zone communities of the KOVA and GAAR already have authority to collect plant materials in the KOVA and GAAR Kobuk River Preserve units for traditional and customary purposes. Again we think a much smaller subset of this population would take advantage of the opportunity in the preserve areas. Collection limitations or permit requirements would not be imposed on local subsistence users. This alternative would have a minor positive impact on local economic conditions because authority to collect nonedible shed or discarded animal parts (e.g. antlers, horns, bones) and collections of plant materials in areas in addition to the Kobuk River portion of the GAAR Preserve could potentially benefit local cottage industries.

Cumulative Impact:

Local subsistence users would be able to collect shed or discarded animal parts and plant materials in vast public and private lands adjacent to GAAR and they would be authorized to collect such resources in about 8 million acres of GAAR for use in the making and selling of handicrafts. Members of resident zone communities would continue to be able to harvest from the park and preserve plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. For Anaktuvuk Pass, the one community within the boundaries of GAAR, the local area available for collections would greatly increase, but for more distant subsistence communities like Hughes and Nuiqsut, most collections would occur outside of GAAR areas. Residents of Interior communities find seasonal employment with BLM firefighting and construction, and most residents in all resident zone communities participate in subsistence gathering. Therefore, the magnitude of the cumulative effect varies for each community depending on its distance from GAAR and their specific needs.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near GAAR.

4.3.2.4 Effects to Local Rural Communities of Glacier Bay National Preserve

Approximately 662 subsistence users affiliated with Glacier Bay National Preserve would be authorized to collect shed or discarded animal parts (e.g. horns, antlers, or bones) and plants from lands throughout the preserve for personal use or the production of handicrafts for sale without collection limits or permit requirements. Only about 12 residents are known to make and sell handicrafts from various raw materials in the Yakutat community area. This alternative would have a very minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting these resources on preserve lands, GLBA-affiliated subsistence users would continue to be able to access these resources on other lands (e.g. Tongass NF), they would be able to harvest plants for subsistence purposes (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on local economic conditions near GLBA Preserve.

4.3.2.5 Effects to Local Rural Communities of Katmai National Preserve (including Alagnak National Wild and Scenic River)

Approximately 3,472 rural residents with C&T for key species in KATM NP/ALAG would be authorized to collect shed or discarded horns, antlers, or bones from lands throughout the preserve and river corridor for personal use or the production of handicrafts for sale without collection limits or permit requirements. Approximately 1,791 people who live reasonably close to these areas would be more likely to make and use such collections. Additionally, these rural residents would be authorized to collect plant materials from KATM NP/ALAG for the production of handicrafts for sale. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands to make and sell handicrafts, KATM NP/ALAG-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized

subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. As noted above in section 4.2.2.5, the making and selling of handicrafts would be a small part of most local economic opportunities where commercial fishing activities, transportation, and guided sport fishing and hunting are more major aspects of the local economies. In some communities in the area, culture camps are resulting in resurgence in the making of handicrafts for personal and family uses and for sale (Evanoff, Karen, pers. comm. 2011)

Conclusion

This alternative would have a minor positive impact on local economic conditions near KATM Preserve.

4.3.2.6 Effects to Local Rural Communities of Lake Clark National Park and Preserve

Approximately 693 subsistence users living in resident zone communities affiliated with Lake Clark National Park would be authorized to collect shed or discarded horns, antlers, or bones from lands throughout the park for personal use or the production of handicrafts for sale without collection limits or permit requirements. An additional 9,337 people have C&T for key species in the preserve and would be eligible to collect these resources throughout the national preserve. Approximately 1,666 local residents in addition to the resident zone communities are more likely to be the population of people taking advantage of this opportunity for a total of 2,359 people. Additionally, these rural residents would be authorized to collect plant materials from park or preserve lands for the production of handicrafts for sale. For communities immediately adjacent to or surrounded by LACL (Nondalton and Port Alsworth) availability of these resources to make handicrafts may be more important. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts (e.g. horns, antlers, or bones) and plants on NPS-managed lands, LACL-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. As noted above in section 4.2.2.6, the making and selling of handicrafts would be a small part of most local economic opportunities where commercial fishing activities, transportation, guided sport fishing and hunting, and mining exploration are more major aspects of the local cash economies. In some communities in the area, culture camps are resulting in resurgence in the making of handicrafts for personal and family uses and for sale (Evanoff, Karen, pers. comm. 2011).

Conclusion

This alternative would have a minor positive impact on local economic conditions near LACL.

4.3.2.7 Effects to Local Rural Communities of WEAR National Parklands

As noted in EA section 3.3.7 the making and selling of handicrafts is an important activity in most of the WEAR local subsistence-qualified communities. Remote communities such as Diomede, Kivalina, Kobuk, Shungnak, Selawik, and Brevig Mission have the highest poverty rates (table 3.20). This alternative would expand the opportunity to utilize shed or discarded animal parts and plant materials to make handicrafts to a large group of potential users. At the same time it could result in an increase in competition between users and an overutilization of the resources. This could reduce the opportunity and economic return to residents of resident zone communities and affiliated communities located closest to the two WEAR preserve units. This alternative would have a minor positive impact on local economic conditions.

Cumulative Impact:

Though subsistence is a dominant economic factor in local communities, employment opportunities at Red Dog Mine, on BLM seasonal fire crews, mining exploration, barge and airlines services, local stores and public services, and limited commercial fishing are also important cash sectors. The increased availability of shed or discarded animal parts and plant materials (in addition to plants from KOVA and GAAR Kobuk River Preserve) would provide a small cumulative benefit to local communities.

Conclusion:

This alternative would have a minor positive impact on local economic conditions in WEAR-affiliated communities.

4.3.2.8 Effects to Local Rural Communities of Wrangell-St. Elias National Park and Preserve

Approximately 5,200 subsistence users affiliated with Wrangell-St. Elias National Park would be authorized to collect shed or discarded horns, antlers, or bones from lands throughout the park for personal use or the production of handicrafts for sale without collection limits or permit requirements. An additional 7,800 people, for a total of 13,000 people, would be eligible to collect these resources throughout the national preserve. Additionally, these rural residents would be authorized to collect plant materials from park or preserve lands for the production of handicrafts for sale. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, WRST-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. The making and selling of handicrafts is probably most important to the smaller and predominantly Native Alaskan communities north of WRST in the Tanana River Basin and in the Copper River basin to the west, where employment opportunities are generally limited to seasonal fire-fighting, tribal services, and schools. Residents of larger mixed communities such as Tok and Glennallen have greater access to retail businesses, government agencies, and seasonal tourism. Subsistence hunting, fishing and gathering is important to all of the local rural communities, and the making and selling of handicrafts is a small cash-producing subset of those activities.

Conclusion

This alternative would have a minor positive impact on local economic conditions near WRST.

4.3.2.9 Effects to Local Rural Communities of Yukon-Charley Rivers National Preserve

Up to 5,360 rural residents have C&T for key subsistence species and would be authorized to collect shed or discarded animal parts (e.g. horns, antlers, or bones) and plants to make and sell handicrafts, but we estimate 523 local users who reside in communities closely associated with Yukon-Charley Rivers National Preserve would be more likely to collect and use these resources. Alternative B would have a minor positive impact on local economic conditions because authority to collect and use these resources without having to obtain permits could potentially benefit local cottage industries.

Cumulative Impact:

Local users already have access to public lands adjacent to collect shed or discarded animal parts (e.g. horns, antlers, or bones) and plants to make and sell handicrafts, and this alternative would provide access to these resources on up to 2.2 million additional acres of land. The largely Native local communities of Circle and Eagle Village have the highest percentages of the populations below the poverty level (table 3.22), and section 3.3.9 describes the making and selling of handicrafts as contributing to family incomes in these communities. Other local communities have more access to employment in mining and government services and seasonal fire-fighting and tourism. Overall the making and selling of handicrafts from materials gathered in YUCH would contribute a small economic benefit to local rural communities.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near YUCH.

Cumulative Impacts to Local Economic Conditions across Alaska NPS Areas:

This alternative would result in a minor positive effect on local cottage industries because local subsistence users would be allowed to collect shed or discarded animal parts and plant materials from about 42 million acres of public land to make into handicrafts for personal use or to sell. Local subsistence users would continue to have access to shed or discarded animal parts on other public lands, and they would be able to harvest plants for subsistence purposes (e.g., food, fuel, and building materials for personal or family use). Subsistence residents would also continue to be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. Although up to 15,000 members of resident zone communities for parks and monuments and over 75,000 rural residents with C&T for key wildlife species in preserves would be authorized to make and use collections, the number of local rural residents who use these resources to produce handicrafts for sale on a regular basis is relatively small. The making and selling of handicrafts is generally a small portion of the overall economic opportunities for rural residents near parks, monuments, and preserves, but this sector may be significant for households with skilled craftsmen with limited alternative economic opportunities.

Conclusion on Impacts to Local Economic Conditions across Alaska NPS Areas:

Over 75,000 local rural residents would potentially be authorized to collect and use shed or discarded animal parts and plants from NPS preserves in Alaska to make and sell handicrafts, and an estimated 15,000 members of resident zone communities would potentially have access to these resources in NPS parks and monuments, but a much smaller subset of these populations are likely to take advantage of and benefit from these resources. This alternative would have a minor positive impact on local economic conditions because shed or discarded animal parts and plants would be available from about 42 million acres of public land park lands for local cottage industries without the need for permits.

4.3.3 Impacts on Wildlife and Habitat

The potential for adverse effects of antler and bone collection on wildlife would likely be determined by four factors. The first is the scale of the removal activity (i.e., the proportion of available antlers, horns, and bones removed). Parks with high subsistence use may be more affected than other parks. The second is the distribution of the removal activity. If access or collections are highly localized, one would predict a greater impact in these areas. Third, the proportion of bone and antler producers relative to bone and antler consumers will influence the importance of each shed or deposited item (Michael 1965). Finally, and likely most importantly, the mineral content of the soil and plants would dramatically influence the degree and necessity of bone and antler consumption by herbivores (Michael 1965). This alternative could have a minor negative impact on wildlife and habitat if soil nutrients are lacking and collections are proportionally significant and concentrated in areas of low soil nutrient availability.

Cumulative Impact:

This alternative could contribute to cumulative impacts when considered with other factors such as weather, geology, permafrost, climate, atmospheric deposition, soil chemistry, soil ecology, and terrestrial plant and animal biomass.

Conclusion

This alternative could have a minor negative impact on wildlife and habitat.

4.3.4 Impacts on Cultural Resources

Cultural resources occur in all Alaska parks and include archeological resources, ethnographic resources, cultural landscapes, and historic structures. While there may be potential for impacts to these resources from collection of shed horns and antlers, animal bones, and plants, unless specific sites and access to those sites are identified, it is difficult to determine impacts to cultural resources. The consideration of cultural resources and removal of horns, antlers, bones, and plants in Alaska's NPS units involves two issues: 1) whether shed horns, antlers, bones and plants themselves are cultural resources, and therefore warrant preservation; and 2) whether the removal of shed horns, antlers, bones and plants could adversely affect cultural resources.

Collection of horns, antlers, bones and plants could impact an archeological site or historic structure by damaging artifacts, walls, and other parts of structures. Retrieving partially buried or surface materials could harm sites or structures. A cultural landscape might be affected by erosion or damaging trails. Shed horns and antlers, or bones left behind, are themselves potential ethnographic resources, as symbolic objects with cultural significance, or as materials for art and functional objects. Other ethnographic resources, such as trees, rocks, or other landmarks, might be adversely affected by added human presence to collect horns and other materials.

It is also possible that the collection of these nonedible byproducts in order to make and sell handicrafts will have a positive impact on cultural resources. As an example, it may encourage revitalization of cultural practices associated with subsistence, cultural landscapes, or ethnographic resources.

Cumulative Impact:

Other impacts to cultural resources in Alaska NPS areas include vandalism, weathering, erosion, and construction, but most of these impacts are limited with careful planning of new projects, monitoring of known sites, and law enforcement activities. The increased human use associated with collection of discarded horns and antlers, as well as of bones and inedible plants, may damage archeological sites, ethnographic resources, cultural landscapes, or historic structures. Cultural revitalization associated with collection of these materials may also lead to a positive impact on cultural resources.

Conclusion

This alternative could have a minor negative impact on in situ cultural resources, and a potential small positive impact on ethnographic cultural resources.

4.3.5 Impacts on Terrestrial Vegetation

This alternative would allow for unlimited collection of plant materials inside of the 13 Alaska park units where subsistence is allowed. While this may appear to allow much higher impacts to vegetation and soils than currently, the distances and difficult access to these materials relative to closer sources outside NPS lands are likely to curtail these impacts. The most likely impact corridors would occur along either waterways (e.g., the Kobuk River, the Noatak River, the Yukon River), along the coast, or roadways (e.g., in WRST and DENA). The impacts are likely to range from minor to moderate under current conditions. Under future possible scenarios, it is conceivable that some plant resources may become much more valuable. For example, birch bark baskets could become a highly sought commodity, or a medicinal plant from a particular location becomes extremely valuable. In these situations, the lack of controls on collections may allow for depletion of plant resources in certain locations, with moderate impacts to the resource overall. The increased removal of shed caribou antlers may have an adverse impact on rare assemblages of lichens that form on these shed antlers. Currently caribou shed antler substrates are fairly common in the arctic national parklands, but the Western Arctic Caribou Herd and Teshepuk Caribou Herd fluctuate in numbers considerably. An increase in antler collections at the time of a herd decline has the potential to adversely affect this special vegetative resource.

Cumulative Effects to Vegetation

The projected increase in road construction, mineral development, oil and gas development, pollution from local and global sources, and habitat loss statewide is likely to affect vegetation and soils in NPS units statewide. While the current impact level in KOVA and GAAR Kobuk River Preserve does not lead to an observable effect, it is conceivable that under a more intensive collection regime the combination of this alternative and the impacts from other sources may have a moderate effect.

Conclusions on Impacts to Vegetation

This alternative is likely to have a minor negative effect on vegetation and soils under current collection levels. It is conceivable, however, that other collection scenarios could lead to a moderate effect on a few rare lichen assemblages.

4.3.6 Impacts to Recreation and Scenic Values

This alternative would result in the highest occurrence of removal of horns, antlers, bones, and plants from wilderness portions of Alaska parklands. The action of removing these objects from

the parks would result in impacts to recreation and scenic integrity. The highest rate of removal would be in WRST and the WEAR parklands where people live in close proximity to parklands and where there is a greater ease of access to parklands. In these areas the rate of impact to recreation and scenic integrity would be greatest. Considering the large acreage of parklands and the small populations of local people, the degree of impact to recreation and scenic integrity would be minor. The effects of the removal of these natural objects would impact recreation and scenic integrity by effecting vegetation and wildlife, resulting in reduced opportunity for recreational enjoyment of these removed items. Impacts to park scenic integrity and to recreational visitor enjoyment would be difficult to measure because the proposed impacts would remove natural items from the parks. A missing feature is not as noticed as an added feature, so the impacts would be conceptual, affecting the more informed visitors that the landscapes are altered by unseen management and subsistence activities. Some recreational visitors may be specifically seeking to view and photograph the abundance of discarded antlers or other natural features affected by this alternative, and would be impacted by the lack of such opportunities.

Cumulative Impact:

Across the Alaska NPS units, a number of causal factors have degraded, are degrading, or could degrade recreation and scenic values. They include group size that is usually not limited in the backcountry, methods of recreational access that include small airplanes and sometimes ATVs, sport hunting and fishing that locally displace or deplete wildlife, air and water pollution that degrade enjoyment of natural features, artificial lighting that reduces nighttime scenic values, noise from airplanes and motors that disturb natural quiet, and unnatural features added to the landscape such as radio transmitter facilities and collared wildlife. Impacts are from management actions, subsistence uses, and recreation that occur both within and outside of parklands. In general, the quality of recreation and scenic integrity is very high across the national parks in Alaska resulting in visitor enjoyment of the protected natural and cultural resources. Small levels of impact to scenic integrity result in large levels of impact to visitor enjoyment because the changes from the expected and sought-after conditions are more noticeable than in degraded areas. Past, present, and reasonably foreseeable impacts to recreation and scenic integrity are minor. Future threats to recreation and scenic integrity are largely unknown though it is suspected that climate change would continue to impact natural scenic integrity, and a park's response to climate change may include actions that impact recreation and scenic integrity. This alternative would have a minor contribution to cumulative impacts on recreation and scenic integrity.

Conclusion:

Over the long-term, the continued removal of natural objects such as horns and antlers from the parks would result in a minor adverse effect to recreation and scenic integrity.

4.3.7 Impacts to Wilderness Values

This alternative would likely result in the highest occurrence of removal of horns, antlers, bones, and plants from wilderness portions of Alaska parklands. Removing these objects from the wilderness is considered trammeling. The highest rate of removal would be in WRST and the

WEAR parklands where people live in close proximity to parklands and/or there is a greater ease of access to parklands. In these areas the rate of trammeling would be greatest. Considering the large acreage of parklands and the small populations of local people, the degree of trammeling would be minor.

The removal of these shed or discarded nonedible animal parts and plants would result in minor impacts on the natural quality of wilderness by adversely effecting vegetation and wildlife (see those sections for an explanation of impacts).

Cumulative Effects to Wilderness Values:

Across the Alaska NPS units, a number of factors degrade the untrammeled and natural qualities of wilderness character. These include collaring animals and suppressing fires, as well as actions or effects of actions that occur outside the park boundaries, such as the State of Alaska's predator management program or atmospheric pollutants originating from other continents. In general, across the landscape of Alaska national parks, these lands tend to epitomize the natural and untrammeled qualities of wilderness character. Past and present threats to the untrammeled and natural qualities of wilderness character are minor. Future threats to the untrammeled and natural qualities are largely unknown though it's suspected that climate change will continue to impact the natural quality, and a park's response to climate change (i.e. removing invasive plant species) may include actions that manipulate the wilderness. This alternative would contribute very minor additional impact. The cumulative impact of this alternative plus past, present, and future actions would be minor.

Conclusions on Impacts to Wilderness Values:

Over the long term, the continued removal of these animal parts and plants would result in a minor adverse effect to the untrammeled and natural qualities of wilderness character.

4.4 Impacts of Alternative C: Collections Restricted by Area with Discretionary Permitting

4.4.1 Impacts to Subsistence Users

4.4.1.1 Effects to Subsistence users in Aniakchak National Monument and Preserve

This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to collect shed or discarded animal parts and plants in the national monument, national preserve, or both to make and sell handicrafts. Because collection would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations. On the negative side, ANIA-affiliated subsistence users may find that permit requirements hinder their ability to collect resources to make and sell handicrafts.

Residents of the ANIA resident zone communities would be eligible to collect shed or discarded animal parts and plants in the national monument; however access to these lands is difficult without airplanes and use of airplanes to collect wildlife-based resources would be prohibited. In

addition to those subsistence users, up to 3,472 rural residents have C&T for key species and could be authorized to collect shed or discarded animal parts and plants in the preserve. Residents from communities located on the Gulf of Alaska side of the Alaska Peninsula in GMU 9E would be most likely to be collecting resources in the preserve to make and sell handicrafts because the area is so remote and inaccessible.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, ANIA-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on ANIA subsistence users.

4.4.1.2 Effects to Subsistence users in Denali National Park and Preserve

This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to collect shed or discarded animal parts and plants in the ANILCA park additions and preserve to make and sell handicrafts. Subsistence collection would remain closed in the old Park. Permit requirements may hinder the ability to collect resources due to its restrictive nature. Discretionary permitting may enhance the preservation of resources by assisting the park in the protection of its resources from over-collection. Because collection would be authorized, individuals unaware of the existing prohibition would be no longer violating NPS regulations.

Only the estimated 329 subsistence users who live in a designated resident zone community, live within the park boundary, or have a special subsistence use permit (13.440) are authorized to collect these resources in GMUs 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) of the ANILCA additions to the park and preserve. In addition to these users, an additional 2,373 rural residents living near DENA could be eligible to harvest resources in the preserve portions of GMUs 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C).

Limits placed on the collection of plant materials to make into handicrafts and sell are discretionary, pending consultation with appropriate SRC and a finding by the Superintendent. Additionally, limits placed on the collection of horns, antlers, and bones for personal or family use or to make into handicrafts and sell are discretionary, pending consultation with appropriate SRC and a finding by the Superintendent.

Cumulative Impact:

In addition to participating in the collection of shed or discarded animal parts and plants on NPS-managed lands in DENA, Denali-affiliated subsistence users may be able to collect these

resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. However, limits could be placed on the collection of horns, antlers, and bones for personal or family use or to make into handicrafts to sell on a discretionary basis pending consultation with the appropriate SRC and a finding by the Superintendent.

Conclusion:

This alternative would have a minor positive impact on DENA subsistence users seeking to collect shed or discarded animal parts and plants to make into handicrafts for personal or family use or to sell.

4.4.1.3 Effects to Subsistence users in Gates of the Arctic National Park and Preserve

Alternative C would have a minor positive impact on local subsistence users who wish to collect shed or discarded animal parts and plants to make into handicrafts. Approximately 1,723 members of resident zone communities would be authorized to collect these resources from the park to make and sell handicrafts and up to 24,000 rural residents would be authorized to collect these resources from the two preserve units to make and sell handicrafts, but a small subset of this population who live closer to the park and preserve would actually collect such materials to make and sell handicrafts. The discretionary permitting requirements issued from the superintendent in consultation with the SRC could potentially be viewed by subsistence users as a hindrance to authorized activities under this alternative. Only rural residents with C&T for any species within a GMU overlapping the park and preserve would be authorized to make collections, however, most rural residents throughout the state have C&T for wolves or ptarmigan in GMUs 23, 24, and 26. Rural residents of the Kobuk River Valley already have authorization to collect plants in the Kobuk River portion of the GAAR Preserve, but this alternative would greatly increase the area where these residents could collect plants to make handicrafts.

Cumulative Impact:

Local subsistence users are now able to collect shed or discarded animal parts and plants on adjacent area lands for use in the making of handicrafts. This alternative would increase by nearly 8 million acres the locally available area for collecting such handicraft resources.

Conclusion:

This alternative would have a minor positive impact on GAAR subsistence users.

4.4.1.4 Effects to Subsistence users in Glacier Bay National Preserve

Only the 662 residents of Yakutat would be authorized to collect shed or discarded animal parts and plants in Unit 5. Because collection would be authorized, individuals unaware of the existing

prohibition would no longer be violating NPS regulations. Permit requirements may hinder some eligible residents from collecting these resources. This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to collect shed or discarded animal parts and plants in the national preserve to make and sell handicrafts.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants from preserve lands to make into handicrafts, GLBA-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on GLBA subsistence users.

4.4.1.5 Effects to Subsistence users in Katmai National Preserve (including Alagnak National Wild and Scenic River)

Up to 3,472 rural residents with C&T for key species would be authorized to collect shed or discarded animal parts and plants in the preserve and wild river corridor to make and sell handicrafts, but fewer than about half of this population lives in proximity to KATM Preserve who would actually participate in these activities. Because these traditional activities would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations. Permit requirements may hinder some residents from collecting these resources. This alternative would have a minor positive impact on subsistence users in terms of providing authority to collect and use these resources in the national preserve, wild river corridor, or both.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants NPS-managed lands to make and sell handicrafts, KATM NP/ALAG-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on KATM Preserve subsistence users.

4.4.1.6 Effects to Subsistence users in Lake Clark National Park and Preserve

About 693 residents of the LACL resident zone communities would be eligible to collect shed or discarded animal parts and plants in those portions of GMUs 9A, 9B, 17B and 19C that fall

within the national park; however access to most of these lands is difficult without aircraft (motorboat access is available to upper Lake Clark and its major tributaries), and use of aircraft to collect wildlife-based resources would be prohibited. Up to 9,337 rural residents have C&T for key species within the preserve and would be eligible to collect and use such resources to make and sell handicrafts in the preserve portions of GMUs 9B, 16B, 17B and 19C; however, it is likely that only a small subset of this population would actually collect these resources. This alternative would have a minor positive impact on subsistence users in terms of providing an authority to collect and use these resources in the national park, national preserve, or both.

Because these traditional activities would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations. Permit requirements may hinder some residents from collecting these resources.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants from NPS-managed lands, LACL-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on LACL subsistence users.

4.4.1.7 Effects to Subsistence users in WEAR National Parklands

The potential number of communities and residents under this alternative would be the similar to those described for WEAR NPS areas under Alternative B, but some residents would be limited to the GMUs where they have a positive C&T determination. Most rural residents in Arctic and Northwestern Alaska, however, have a positive C&T for caribou because of the wide distribution and use of the Western Arctic Caribou Herd. Positive impacts might be somewhat less under this alternative than under Alternative B depending on how restrictive permit conditions or requirements might be. Restrictive permit conditions could reduce the opportunities for collecting shed or discarded animal parts and plants to make and sell handicrafts. On the other hand, maximizing the potential for collections by eligible users could slightly increase the level of competition for shed or discarded animal parts and plant materials and reduce opportunities for individuals and families. This alternative would have a minor positive impact on the opportunity for subsistence users to collect and use shed or discarded animal parts and plants to make and sell handicrafts.

Cumulative Impact:

Subsistence populations in Northwest Alaska have access to shed or discarded animal parts and plants in lands outside of NPS units to make and sell handicrafts, and village and corporation lands tend to surround these communities. However, a large percentage of the available lands (more than 50 % of the Northwest Arctic Borough) are under NPS management. Though local area residents are likely to make collections closer to their communities or use nonedible animal parts from animals taken for food, a large area for collections would be made available for many residents under alternative C. While it would appear to provide an increased opportunity for the users with federal C&T for any species in an applicable GMU, access to resources would be restricted by the other existing factors identified in Alternative B that would limit its benefit. Additionally there is the possibility that residents of regional centers like Nome or Kotzebue could by using aircraft to access the preserves and outcompete and thus reduce the opportunity for village residents in the areas of the two preserves.

Conclusion:

This alternative would have a minor positive impact on the opportunity for subsistence users to collect and use shed or discarded animal parts and plants from within the four WEAR conservation units of CAKR, KOVA, NOAT and BELA to make and sell handicrafts.

4.4.1.8 Effects to Subsistence Users in Wrangell-St. Elias National Park and Preserve

An estimated 660 residents of Yakutat would be authorized collect and use shed or discarded animal parts and plants in GMU 5. All 5,200 people living in the resident zone could collect resources in GMU 6, although access to these lands is difficult without aircraft, and use of aircraft to collect the wildlife-based resources would be prohibited. Residents of all resident zone communities except Yakutat (approximately 4,500) would be eligible to harvest resources in those portions of GMUs 11, 12, and 13C that fall within the national park. In addition to those subsistence users, an additional 7,800 rural residents from outside of the resident zone would be eligible to harvest resources in the preserve portions of GMUs 11, 12, and 13C.

See Section 4.3.1 for a discussion of the supply of the resources along with the means used to access them in WRST. Under this alternative, bison would be included on the list of potential wildlife species whose parts could be collected. Although there is not a positive C&T use determination for bison, they do occur in Unit 11. This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to access these resources in the national park, national preserve, or both.

Because these traditional activities would be authorized, individuals unaware of the existing prohibition would be at less risk for negative contacts with law enforcement. On the negative side, WRST-affiliated subsistence users believe that permit requirements hinder their ability to access subsistence resources.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, WRST-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on WRST subsistence users.

4.4.1.9 Effects to Subsistence users in Yukon-Charley Rivers National Preserve

Up to 5,360 rural residents have C&T for a key species in various GMUs of YUCH and could be authorized to collect and use shed or discarded animal parts and plants to make and sell handicrafts, but about 523 residents of local communities would be most likely to collect these resources. On the other hand, the discretionary permitting requirements could potentially hinder collections. Alternative C would have a minor positive impact on local rural users who wish to collect and use shed or discarded animal parts and plants to make and sell handicrafts.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. This alternative would add an additional 2.2 million acres of area where subsistence users would be authorized to collect shed or discarded animal parts and plants for use in the making and selling of handicrafts.

Conclusion

This alternative would have a minor positive impact on YUCH subsistence users.

Cumulative Effects to Subsistence Users across Alaska NPS Areas

In addition to collecting these resources on NPS-managed lands, NPS area affiliated subsistence users would continue to have access these resources on other public lands, they would be able to harvest plants for subsistence purposes (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusions on Impacts to Subsistence Users across Alaska NPS Areas

This alternative would have a minor positive impact on up to 75,000 subsistence users in preserves and 15,000 subsistence users in parks and monuments over about 42 million acres where they have federal C&T uses in applicable GMUs.

4.4.2 Impacts to Socio-Economic Conditions in Local Rural Communities

4.4.2.1 Effects to Local Rural Communities of Aniakchak National Monument and Preserve

Approximately 344 subsistence users living in resident zone communities affiliated with ANIA would be authorized to collect and use shed or discarded animal parts and plants from portions of the national monument and up to 3,472 rural residents with C&T for key species in the GMUs overlaying the preserve, but more likely 464 local rural residents, would be eligible to collect and use shed or discarded animal parts and plants from portions of the preserve to make and sell handicrafts. This alternative would have a minor positive impact on local economic conditions because collections of shed or discarded animal parts and plants would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting and using shed or discarded animal parts and plants on NPS-managed lands, ANIA-affiliated subsistence users would continue to be able to access these resources on other lands closer to their communities, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. See also the cumulative effects analysis for effects on overall economic conditions in section 4.3.2.1 where commercial fishing dominates economic opportunities in ANIA local rural communities.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near ANIA.

4.4.2.2 Effects to Local Rural Communities of Denali National Park and Preserve

Approximately 329 subsistence users who live in resident zone communities would be authorized to collect and use shed or discarded animal parts and plants from units 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) of the ANILCA park additions and preserve, totaling about 3.9 million acres. An additional 2,373 rural residents with C&T for key species within the preserve (about 1.3 million acres) would be eligible for collections in units 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) of the preserve. Limits could be placed on the collection of shed or discarded animal parts (e.g. horns, antlers, and bones) and plants on NPS lands to make into handicrafts for personal/family use or to sell. Permits for the collection of horns, antlers and bones in DENA would likely be required under this alternative. Subsistence collection would remain closed in the old Park section. This alternative would have a minor positive impact on local economic

conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collection of shed or discarded animal parts and plants on about 3.9 million acres DENA park and preserve lands, Denali-affiliated subsistence users may have ample access to these resources on other lands closer to their communities, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. However, limits likely to be placed on the collection of shed or discarded animal parts (e.g. horns, antlers, and bones) on DENA lands for personal/family use or to make into handicrafts would reduce the cumulative benefits of authorizing collections in DENA.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near DENA.

4.4.2.3 Effects to Local Rural Communities of Gates of the Arctic National Park and Preserve

About 1,723 subsistence users who reside in resident zone communities associated with Gates of the Arctic would be authorized to collect and use shed or discarded animal parts and plants to make into handicrafts for sale. Up to 24,000 rural residents have C&T for caribou in at least one GMU subunit in GAAR, and they would have authority to collect any shed or discarded animals parts and plants in those parts of GAAR Preserve units to collect materials to make and sell handicrafts. Permits for collections in GAAR are unlikely unless a shortage of resources occurs and the Superintendent and SRC agree permits would help to manage the situation. Alternative C would have a minor positive impact on local economic conditions because authorization to collect shed or discarded animal parts and plants could potentially benefit local cottage industries.

Cumulative Impact:

Local subsistence users are able to collect and use shed or discarded animal parts and plants from vast public lands adjacent to GAAR, and members of resident zone communities would continue to be able to harvest from the park and preserve areas plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. GAAR would increase the locally available collection area by about 8 million acres, except the collection of plants to make and sell handicrafts is already allowed for local area residents near the Kobuk River unit of GAAR Preserve. As noted above in section 4.3.2.3 the availability of other economic opportunities in these remote local communities is very limited, so the making and selling of handicrafts is very important to several residents and families.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near GAAR.

4.4.2.4 Effects to Local Rural Communities of Glacier Bay National Preserve

Approximately 662 subsistence users with C&T for key species in Glacier Bay National Preserve would be authorized to collect and use shed or discarded animal parts and plants from the preserve; however, only about 12 residents are known to actively make and sell handicrafts. This alternative would have a minor positive impact on local economic conditions because the collection of shed or discarded animal parts and plants would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting and use shed or discarded animal parts and plants on preserve lands, GLBA-affiliated subsistence users would continue to be able to access these resources on other lands, particularly Tongass NF. They would also be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near GLBA Preserve.

4.4.2.5 Effects to Local Rural Communities of Katmai National Preserve (including Alagnak National Wild and Scenic River)

Up to 3,472 rural residents with C&T for key species in KATM NP/ALAG would be authorized to collect and use shed or discarded animal parts and plants from the preserve and wild river corridor, however about half of these rural residents who live closer to these areas would be likely to travel to these areas to make such collections. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting and using shed or discarded animal parts and plants from NPS-managed lands, KATM NP/ALAG-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. Income to local residents from the making and selling of handicrafts from materials out of KATM Preserve and Alagnak Wild River would likely comprise a small subset of the overall

economic opportunities that are concentrated on commercial fishing, tourism, guided sport fishing and hunting, transportation, and government services.

Conclusion

This alternative would have a minor positive impact on local economic conditions near KATM Preserve.

4.4.2.6 Effects to Local Rural Communities of Lake Clark National Park and Preserve

Approximately 693 subsistence users who live in resident zone communities would be authorized to collect and use shed or discarded animal parts and plants from the national park to make and sell handicrafts. Up to 9,337 rural residents, including the resident zone communities, with C&T for key species in GMUs of the preserve would also be authorized to collect and use shed or discarded animal parts and plants from the national preserve. However, about 2,359 local rural residents would be more likely to make such collections in the preserve because those living farther away would make such collections closer to their residences. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting and using shed or discarded animal parts and plants from NPS-managed lands, LACL-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. Commercial fishing, guiding, government services, and services for mineral exploration and subsistence fishing and hunting are dominant economic sectors in the local communities. As noted in section 4.3.2.6, however, culture camps have resulted in resurgence in the making and selling of traditional handicrafts in some communities like Nondalton.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near LACL.

4.4.2.7 Effects to Local Rural Communities of WEAR National Parklands

As analyzed in section 4.3.2.7, the making and selling of handicrafts is an important subsistence activity in most of the WEAR local subsistence-qualified communities. Remote communities such as Diomedea, Kivalina, Kobuk, Shungnak, Selawik, and Brevig Mission have the highest poverty rates (table 3.20), and this alternative would expand the opportunity to utilize shed or discarded animal parts and plant materials to make handicrafts to a large group of potential users. Use of various terms and conditions in permits after consultation with the SRCs and local

communities might result in better resource management and alleviate a potential problem of resource over-utilization. However, it would retain the potential for increased competition in preserves identified in Alternative B, but competition could be slightly reduced where some rural residents do not have C&T for a key species in all GMU areas. If permits are too complicated and onerous, local residents might be discouraged from collecting.

Cumulative Impact Analysis:

Subsistence users would continue to be able to collect and use shed or discarded animal parts and plants on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. This alternative would remove one regulatory obstacle to improving opportunity for expanding subsistence uses; however potential increased competition might offset or reduce any positive gain for local users residing closest to the preserves.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near WEAR parklands.

4.4.2.8 Effects to Local Rural Communities of Wrangell-St. Elias National Park and Preserve

Approximately 5,200 subsistence users affiliated with Wrangell-St. Elias would be authorized to collect and use shed or discarded animal parts and plants from portions of the national park to make and sell handicrafts, and a total of 13,000 rural residents would be eligible to collect these resources in portions the preserve. Not all resident zone members would be authorized to collect in all GMUs of the park and preserve. For example, only residents in GMU 5 would be able to collect in GMUs 5 and 6 of the park and preserve. Conversely, residents of the Yakutat area would not have authorization to collect in GMUs 11 and 12. This alternative reduces the population of rural residents who can collect in various GMUs of the park according to the positive C&T findings for harvest of key species in those units. This alternative would have a minor positive impact on local economic conditions because the collections of shed or discarded animal parts and plants would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, WRST-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. As noted in section 4.3.2.8, some of the more remote resident zone communities comprised predominantly of

Alaska Natives have limited sources of income, so the making and selling of handicrafts is often important to those communities. This alternative would limit the population of collectors to those who have a positive C&T for key species in the various GMUs overlapping the park and preserve, which could slightly reduce competition for limited resources in these areas as compared to other areas open to collections.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near WRST.

4.4.2.9 Effects to Local Rural Communities of Yukon-Charley Rivers National Preserve

Up to 5,360 rural residents would have authorization to collect and use shed or discarded animal parts and plants in limited areas of the preserve where they have C&T for a key species. Approximately 523 local rural residents closely associated with Yukon-Charley Rivers National Preserve would actively collect resources. Collections of resources may require a permit. As noted in section 4.3.2.9, collecting resources may be more important for the economically disadvantaged communities of Circle and Eagle Village. This alternative would have a minor positive impact on local economic conditions because authorization to collect of shed or discarded animal parts and plants could potentially benefit local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, YUCH-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. This alternative would increase the area where rural residents could collect materials to make and sell handicrafts, but the increase in area would be restricted to areas where they have C&T for key species in the preserve resulting in a minor additional benefit to local cottage industries.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near YUCH.

Cumulative Impacts to Local Economic Conditions across Alaska NPS Areas:

Local subsistence users would continue to have access to shed or discarded animal parts on other lands, and they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use). Subsistence residents would also continue to be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. The number of local rural residents who use these resources to produce handicrafts for sale on a regular basis, however, is relatively small, but fewer than 75,000 residents would have authorization to collect these resources on NPS parklands in Alaska. The making and selling of handicrafts is generally a small portion of the overall economic opportunities for rural

residents near parks, monuments, and preserves, but this sector may be significant for households with skilled craftsmen. Alternative C would result in a minor positive effect on local cottage industries because local subsistence users would be allowed to collect shed or discarded animal parts and plant materials to make into handicrafts for personal use or to sell on parts of about 42 million acres of public land.

Conclusion on Impacts to Local Economic Conditions across Alaska NPS Areas:

Alternative C would have a minor positive impact on local economic conditions because these resources would be available from about 42 million acres of public land park lands for local cottage industries. Nearly 75,000 local rural residents would potentially have access to these resources in the preserves, and an estimated 15,000 rural residents would potentially have access to these resources in parks and monuments.

4.4.3 Impacts on Wildlife and Habitat

This alternative could have a minor negative impact on wildlife and habitat if soil nutrients are lacking and collections are proportionally significant and concentrated in areas of low soil nutrient availability.

Cumulative Impact:

This alternative could contribute to cumulative impacts when considered with other factors such as weather, geology, permafrost, climate, atmospheric deposition, soil chemistry, soil ecology, and terrestrial plant and animal biomass.

Conclusion:

This alternative could have a minor negative impact on some species of wildlife or habitat.

4.4.4 Impacts on Cultural Resources

Under this alternative, only NPS-qualified rural residents with a Customary and Traditional use determination could collect these materials. Qualified individuals could collect inedible animal and plant materials without risk of negative contacts with law enforcement. Requiring C&T use determination to collect non-edible materials may be a burden on subsistence users.

Collection of horns, antlers, bones and plants could impact an archeological site or historic structure by damaging artifacts, walls, and other parts of structures. Digging in the ground to retrieve partially buried materials could harm sites or structures. Shed horns and antlers, or bones left behind, are themselves potential ethnographic resources, as symbolic objects with cultural significance, or as materials for art and functional objects. Other ethnographic resources, such as trees, rocks, or other landmarks, might be adversely affected by added human activity to collect antlers, horns, and other materials.

It is also possible that the collection of these nonedible byproducts in order to make and sell handicrafts will have a positive impact on cultural resources. As an example, it may encourage revitalization of cultural practices associated with subsistence, cultural landscapes, or ethnographic resources, including caring for and preserving these resources.

Under this alternative, the impacts might be smaller on some cultural resources within a park because only those users who seek out permits would be authorized to collect horns, antlers, bones, and plants. If residents of one community associated with the park are eligible to collect these materials, the cultural resources accessible to that community may be at greater risk of negative impact because of increased human presence.

Cumulative Impact:

Other impacts to cultural resources in Alaska NPS areas include vandalism, weathering, erosion, and construction, but most of these impacts are limited with careful planning of new projects, monitoring of known sites, and law enforcement activities. The increased human presence associated with collection of discarded horns and antlers, as well as of bones and inedible plants, may damage archeological sites, ethnographic resources, cultural landscapes, or historic structures. Cultural revitalization associated with collection of these materials may also lead to a positive impact on cultural resources.

Conclusion:

This alternative could have a minor negative impact on cultural resources, and a potential small positive impact on cultural resources.

4.4.5 Impacts on Terrestrial Vegetation

By managing collections, monitoring the results of various levels of collection, and considering collection limits, this alternative may avoid the potentially moderate or higher impacts under a future scenario that increases demand for plant resources from NPS units. In KOVA and the GAAR Kobuk River Preserve areas, this alternative could result in the requirement to obtain permits to collect plants where authorization to collect plants to make and sell handicrafts was allowed without permits. Still, because current collection levels have not had an observable impact, this alternative is not likely to result in a change in current low impact levels. The increased removal of shed caribou antlers may have an adverse impact on rare assemblages of lichens that form on these shed antlers. Currently caribou shed antler substrates are fairly common in the arctic national parklands, but the Western Arctic Caribou Herd and Teshepuk Caribou Herd fluctuate in numbers considerably. An increase in antler collections at the time of a herd decline has the potential to adversely affect the special lichen assemblage associated with these antlers.

Cumulative Effects to Vegetation:

The projected increase in road construction, mineral development, oil and gas development, pollution from local and global sources, and habitat loss statewide is likely to affect vegetation and soils in NPS units statewide. While current collection locations in preserve units are generally farther away than other available collection locations, it is conceivable that under a more intensive collection regime the combination of this alternative and the impacts from other sources may have an additional minor effect.

Conclusions on Impacts to Vegetation:

This alternative would probably have a minor negative impact on vegetation and soils.

4.4.6 Impacts to Recreation and Scenic Values

Actions proposed in this alternative would lead to low rates of removal of horns, antlers, bones, and plants from portions Alaska parklands because eligible collectors would have access only to areas where they have C&T for any species. This would consequently produce less removal of shed or discarded animal parts that attribute to scenic values and recreational enjoyment of park areas in Alaska.

Cumulative Impact:

Across the Alaska NPS units, a number of causal factors have degraded, are degrading, or could degrade recreation and scenic values. They include group size that is usually not limited in the backcountry, methods of recreational access that include small airplanes and sometimes ATVs, sport hunting and fishing that locally displace or deplete wildlife, air and water pollution that degrade enjoyment of natural features, artificial lighting that reduces nighttime scenic values, noise from airplanes and motors that disturb natural quiet, and unnatural features added to the landscape such as radio transmitter facilities and collared wildlife. Impacts are from management actions, subsistence uses, and recreation that occur both within and outside of parklands. In general, the quality of recreation and scenic integrity is very high across the national parks in Alaska resulting in visitor enjoyment of the protected natural and cultural resources. Small levels of impact to scenic integrity result in large levels of impact to visitor enjoyment because the changes from the expected and sought-after conditions are more noticeable than in degraded areas. Past, present, and reasonably foreseeable impacts to recreation and scenic integrity are minor. Future threats to recreation and scenic integrity are largely unknown though it is suspected that climate change would continue to impact natural scenic integrity, and a park's response to climate change may include actions that impact recreation and scenic integrity. This alternative would have no contribution to cumulative impacts to recreation and scenic integrity.

Conclusion

Over the long-term, the continued removal of natural objects such as horns and antlers from the parks would result in a minor adverse effect to recreation and scenic integrity.

4.4.7 Impacts to Wilderness Values

Actions proposed in this alternative could lead to slightly lower rates of removal of horns, antlers, bones, and plants from wilderness portions of Alaska parklands and would consequently produce minor impacts to wilderness character.

Cumulative Effects to Wilderness:

Across the Alaska NPS units there are a number of factors degrade the untrammled and natural qualities of wilderness character. They include things like collaring animals and suppressing fires, as well as actions or effects of actions that occur outside the park boundaries, such as the State of Alaska's predator management program or atmospheric pollutants originating from other continents. In general, across the landscape of Alaska national parks, these lands tend to epitomize the natural and untrammled qualities of wilderness character. Past and present threats to the untrammled and natural qualities of wilderness character are minor. Future threats to the untrammled and natural qualities are largely unknown though it's suspected that climate change will continue to impact the natural quality, and a park's response to climate change (i.e. removing invasive plant species) may include actions that manipulate the wilderness. This alternative would contribute a minimal impact. The cumulative impact of this alternative plus past, present, and future actions would be minor to moderate.

Conclusions on Impacts to Wilderness:

The continued removal of shed or discarded animal parts and plants would result in a minor adverse effect to the untrammled and natural qualities of wilderness character.

4.5 Impacts of Alternative D: Collections Restricted by Area and Species with Permits

4.5.1 Impacts to Subsistence Users

4.5.1.1 Effects to Subsistence Users in Aniakchak National Monument and Preserve

The total number of rural residents eligible for these harvests is the same as the other alternatives – 344 resident zone community members in the national monument and up to 3,472 rural residents with C&T for a key species in the preserve, but likely only 464 local area residents who live reasonably close to the remote and difficult to access ANIA. This alternative restricts what shed or discarded animal parts can be collected and where more than other alternatives. Instead of being able to gather the horns, bones, or antlers of all wildlife species throughout the monument or preserve, federally qualified subsistence users would be authorized to collect only

in the locations and for species for which they have federal C&T to harvest live animals in a particular GMU.

Residents of Chignik, Chignik Lagoon, Chignik Lake, and Port Heiden/Meshik (a combined total of 344 people) could collect these resources on monument and preserve lands. Eligible rural residents from other communities located on the Gulf of Alaska side of the Alaska Peninsula in GMU 9E would be eligible to collect these resources in the preserve. They would also be eligible in the preserve to collect bones and salvageable non-edible byproducts from beaver, coyote, arctic and red fox, hare, lynx, wolf, wolverine, grouse and ptarmigan.

Because collections and uses would be authorized, individuals unaware of the existing prohibition would no longer be violating NPS regulations. The requirement for permits may hinder some individuals from collecting handicraft resources because obtaining signed permits authorizing collections in these remote rural communities takes time and forethought with intermittent or slow mail service. This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to collect these resources in the national monument, national preserve, or both.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants from NPS managed lands, ANIA-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on ANIA subsistence users.

4.5.1.2 Effects to Subsistence Users in Denali National Park and Preserve

The number of subsistence users who would be eligible for collections in the new portions of the park and preserve total 329 people who live in a designated resident zone, have a Section 13.440 permit and who have a Federal Subsistence Customary & Traditional Use Finding for each wildlife species in each GMU or subunit in the park or monument. These units include GMUs 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C). An additional 2,373 rural residents who have a positive federal C&T for each species in each GMU could also be eligible for collection in new Park portions of the park and preserve for each wildlife species in each GMU or subunit of the preserve, including GMUs 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) if a subsistence use permit (13.440) is issued. A permit to collect shed or discarded animal parts and plants materials to make into handicrafts and sell would be required.

Subsistence collection would remain closed in the former Mt McKinley National Park part of Denali National Park. The requirements to obtain a permit may hinder certain eligible collectors. A permit may enhance the preservation of resources by assisting the park in the protection of its

resources. This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to collect shed or discarded nonedible animal parts and plants in the park and preserve portions of the park to make and sell handicrafts.

Cumulative Impact:

In addition to opportunities to collect shed or discarded animal parts and plants on NPS-managed lands in DENA, Denali-affiliated subsistence users may be able to collect these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. Because a permit to collect horns, antlers, bones and plants would be required under this alternative, the collection of shed or discarded animal parts (like horns, antlers, and bones) and plants may not be authorized in locations frequented by the recreational public and where necessary to protect naturally functioning ecosystems.

Conclusion:

This alternative would have a minor positive impact on DENA subsistence users seeking the collection shed or discarded animal parts and plants for personal/family use or to make into handicrafts to sell.

4.5.1.3 Effects to Subsistence Users in Gates of the Arctic National Park and Preserve

Approximately 1,723 resident zone community members would be authorized to collect and use shed or discarded animal parts and plants from park and preserve areas where they have a positive federal C&T finding for each species in each GMU overlapping the park. Up to about 24,000 rural residents of Arctic and Northwestern Alaska would have authority to collect a shed or discarded animal parts of species in each GMU where they have a C&T for that species. This effectively reduces competition for resources to those who may be hunting in the area. Anaktuvuk Pass, which is effectively surrounded by the park and preserve, would benefit the most from this alternative because of its proximity to the park areas and with reduced competition from other rural residents. Requiring a permit may hinder some eligible persons from collecting. The permit restrictions on resources users can collect and where they can collect them, hence limiting users to collections of various species, numbers of collections, and locations for which they are allowed to harvest. A permit may also require a report on the amounts and locations of collections activities. This alternative would have a minor positive impact on local subsistence users who wish to collect shed or discarded nonedible animal parts and plants to make or sell handicrafts.

Cumulative Impact:

Eligible subsistence users who would be authorized to collect and use shed or discarded animal parts and plants from GAAR areas could also collect these materials from other lands adjacent to the park and preserve for use in the making of handicrafts, and they are already able to harvest plant materials for authorized subsistence uses (e.g., food, fuel, and building materials for

personal or family use), or make and sell handicraft from nonedible parts of wildlife taken for subsistence. This alternative would provide minor additional opportunities for local rural residents to collect and use shed or discarded animal parts and plants to make and sell handicrafts.

Conclusion:

This alternative would have a minor positive impact on GAAR subsistence users.

4.5.1.4 Effects to Subsistence Users in Glacier Bay National Preserve

The total number of rural residents eligible for collection of shed or discarded animal parts and plants is the same as the other alternatives – 662 people in the national preserve. Residents only of Yakutat would be able to collect these resources from preserve lands in GMU 5. Some collectors may be hindered because this alternative requires permits from the NPS prior to collections from preserve areas. Individuals unaware of the existing prohibition would no longer be violating NPS regulations. This alternative would have a minor positive impact on local subsistence users who wish to collect shed or discarded nonedible animal parts and plants to make or sell handicrafts.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants from preserve lands, GLBA-affiliated subsistence users will continue to be able to access these resources on other nearby lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on GLBA Preserve subsistence users.

4.5.1.5 Effects to Subsistence Users in Katmai National Preserve (including Alagnak National Wild River)

The total number of rural residents eligible for collection of shed or discarded animal parts and plants is the same as the other alternatives - 3,472 people; however, this alternative places the greatest restriction on what and where these rural residents can collect. Again, we think a much smaller subset of this eligible population who lives closer to these areas would actually take advantage of the collection opportunities. Instead of being able to gather the horns, bones or antlers of all wildlife species throughout the preserve or wild river corridor, federally qualified subsistence users would be restricted to the locations and species for which they are eligible to harvest animal for food. Eligible rural residents residing in or adjacent to GMU 9C would be eligible to collect shed or discarded animal parts from big game species in KATM NP/ALAG. They would also be eligible to collect bones and salvageable non-edible byproducts from beaver,

coyote, arctic and red fox, hare, lynx, wolf, wolverine, grouse, ptarmigan and sheep in that portion of GMU 9C that lies within KATM NP/ALAG.

Individuals unaware of the existing prohibition on collections of shed or discarded animal parts and plants would no longer be violating NPS regulations. Requiring a permit may hinder some eligible persons from collecting.

This alternative would have a minor positive impact on local subsistence users who wish to collect shed or discarded nonedible animal parts and plants along the wild river corridor or in the preserve to make or sell handicrafts.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS managed lands, KATM NP/ALAG-affiliated subsistence users will continue to be able to access these resources on other lands closer to their residences, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on KATM Preserve and ALAG subsistence users.

4.5.1.6 Effects to Subsistence Users in Lake Clark National Park and Preserve

The total number of rural residents eligible for collection of shed or discarded animal parts and plants is the same as the other alternatives – up to 9,337 people in the national preserve and 693 people in the national park; however, this alternative places the greatest restriction on what and where they can collect. Again, local rural residents numbering about 2,359 people would be the more likely population collecting shed or discarded animal parts in the preserve. Instead of being able to gather the horns, bones or antlers of all wildlife species throughout the park or preserve, federally qualified subsistence users would be restricted to the locations and species for which they have federal C&T to harvest each species in each GMU.

Residents of Lime Village (29 people) would only be able to collect these resources from park and preserve lands in GMUs 19B and 19C. Residents of Iliamna, Newhalen, Nondalton, Pedro Bay and Port Alsworth (664 people) could generally collect these resources on park and preserve lands in GMUs 9A and 9B, and to a limited extent in GMUs 16B, and 17B. Eligible rural residents residing in GMU 9B outside of the resident zone would be eligible to collect these resources in preserve portions of GMU 9B, and limited resources (plants and caribou in some areas) in GMUs 16B and 17B. Rural residents residing in GMU 9C would also be eligible to collect shed or discarded animal parts in preserve portions of Units 9B, and limited resources (plants and caribou in some areas) in GMUs 16B. All 9,337 eligible local rural residents considered in this analysis would be eligible to collect bones and salvageable body parts from

coyote, arctic and red fox, hare, lynx, wolf, wolverine in the preserve portions of GMUs 9B, 16B, 17B and 19, but the actual number of collectors would be much lower. They would also be eligible to collect grouse and ptarmigan body parts in the preserve portions of GMUs 9B, 17B and 19B, and sheep in the preserve portions of GMUs 17B and 19B.

Individuals unaware of the existing prohibition would no longer be violating NPS regulations so long as they obtain a permit to collect. On the negative side, however, LACL-affiliated subsistence users believe that required permits would hinder their ability to access subsistence resources.

Alternative D would have a minor positive impact on local subsistence users who wish to collect shed or discarded nonedible animal parts and plants in the national park and preserve to make or sell handicrafts.

Cumulative Impact:

In addition to collecting these resources on NPS managed lands, LACL-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for subsistence purposes (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence.

Conclusion

This alternative would have a minor positive impact on LACL subsistence users.

4.5.1.7 Effects to Subsistence Users in WEAR National Parklands

This alternative would authorize the collection and use of shed or discarded nonedible animal parts and plants to individuals with a positive C&T for that specific resource in each GMU (species or geographically related population of a species). This could significantly reduce the number of potential users, reduce competition, and reduce pressure on the resource. For example, the number of eligible users of muskoxen in a northern portion of BELA would be reduced down from thirty-seven communities and 16,943 residents to two communities and 708 residents. This would maximize access opportunity for local residents living closest to the preserve units. Eligibility to hunt caribous would remain widespread, so a larger population of subsistence users would be eligible to collect shed or discarded caribou parts. Some of this benefit to subsistence users might be somewhat offset by the permit requirement. Kobuk River area residents are already authorized to collect and use plant materials to make and sell handicraft as a customary and traditional activity, but this alternative would increase the population of people who could collect plant materials to make and sell handicrafts by several thousand. Most residents, however, would make plant collections much closer to their residences. This alternative would have a minor positive impact on the opportunity for subsistence users to collect shed or discarded

nonedible animal parts and plants throughout these NPS units Northwest Alaska to make and sell handicrafts.

Cumulative Impact Analysis:

Subsistence populations in Northwest Alaska have access to shed or discarded animal parts and plants in most lands outside of NPS units to make and sell handicrafts, and village and corporation lands tend to surround these communities. However, a large percentage of the available lands (more than 50 % of the Northwest Arctic Borough) are under NPS management. Though local area residents are likely to make collections closer to their communities or use nonedible animal parts from animals taken for food, a large area for collections would be made available for many rural residents under this alternative.

Conclusion:

This alternative would have a minor positive impact on the opportunity for subsistence users to collect and use shed or discarded animal parts and plants from the four WEAR conservation units of CAKR, KOVA, NOAT and BELA.

4.5.1.8 Effects to Subsistence Users in Wrangell-St. Elias National Park and Preserve

The total number of rural residents eligible for collection of shed or discarded animal parts and plants is the same as the other alternatives – about 13,000 people in the national preserve and 5,200 people in the national park; however, this alternative restriction what and where they can collect. Instead of being able to gather the horns, bones or antlers of all wildlife species throughout the park or preserve, federally qualified subsistence users would be restricted to the locations and species for which they have a federally-recognized C&T determination to harvest. Residents of Yakutat (approx. 660 people) would only be able to collect these resources from park and preserve lands in GMUs 5 and 6. Residents of the Upper Tanana communities in the park's resident zone (approx. 1,800 people) generally could collect these resources on park and preserve lands in GMU 12, the northern half of GMU 11, and for a few resources in GMU 13C. Residents of the Copper Basin communities in the park's resident zone (approx. 2,700 people) would have access to most resources on park and preserve lands in GMUs 11 and 13 and a more limited number of resources in the western portion of GMU 12. Residents of the northern Copper Basin communities (GMU 13C communities with a population of about 580 people) would also be eligible to collect some of these resources in GMU 12 east of the Nabesna River.

For most of the alternatives considered, 2,400 people who live in rural areas of GMU 6 (outside of the resident zone) along with 4,400 residents of Alaska Highway communities (20D) outside of the resident zone have been eligible to harvest wildlife resources in preserve portions of GMUs 11, 12 and 13C. Under this alternative, they would only be authorized to collect wolf parts in those areas. Beyond wolves, residents of rural areas in GMU 13A, 13B, and 13D outside of the resident zone (approx. 970 people) would be eligible to collect a few resources (plants,

moose, and in some areas caribou) in GMUs 11, 13C, and the western portion of GMU 12. In addition, approximately 220 residents of GMU 13E would be eligible to collect a few resources (moose, caribou, wolves and plants) in GMU 13C.

See the Section 4.3.1 for a discussion of the supply of the resources discussed in this EA along with the means used to access them in Wrangell-St. Elias NPP. Under this alternative, bison would not be included on the list of potential wildlife species whose parts could be collected. Although bison occur in GMU 11, collection would be limited to species for which there are positive customary and traditional use findings. And there is not a positive customary and traditional use determination for bison in GMU 11.

Individuals unaware of the existing prohibition would no longer be violating NPS regulations if they obtain a collecting permit. Requirements to obtain a permit may hinder some eligible person from collecting these resources.

This alternative would have a minor positive impact on subsistence users in terms of providing an opportunity to collect these resources in the national park, national preserve, or both.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS managed lands, WRST-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a minor positive impact on WRST subsistence users.

4.5.1.9 Effects to Subsistence Users in Yukon-Charley Rivers National Preserve

Up to 5,360 rural residents would be eligible to collect of shed or discarded animal parts and plants in limited GMUs of the preserve where they have a positive C&T finding for each animal species; however, we think a greatly reduced portion of the local rural residents would actually take advantage of the opportunity. The requirement to obtain a permit may hinder some eligible persons from collecting these resources. The permit would identify what resources users can collect and where they can collect them, hence limiting users to the species and locations for which they are qualified to harvest. Alternative D would have a minor positive impact on local rural users who wish to collect shed or discarded animal parts and plants in YUCH.

Cumulative Impact:

Local rural residents are presently able to collect the shed or discarded animal parts and plants from lands adjacent to YUCH, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make

and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. This alternative would increase the collecting area by about 2.2 million acres for a limited population of eligible rural residents in YUCH to collect shed or discarded animal parts and plants to make and sell handicrafts.

Conclusion:

This alternative would have a minor positive impact on YUCH subsistence users.

Cumulative Effects to Subsistence Users across Alaska NPS Areas

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, NPS area affiliated subsistence users would continue to have access to these resources on other public lands, they would be able to harvest plants for subsistence purposes (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusions on Impacts to Subsistence Users across Alaska NPS Areas

This alternative would have a minor positive impact on fewer than 75,000 subsistence users in preserves and 15,000 subsistence users in parks and monuments over about 42 million acres, but the areas available to individual collectors would be limited to areas and species where they have federally recognized C&T.

4.5.2 Impacts to Socio-Economic Conditions in Local Rural Communities

4.5.2.1 Effects to Local Rural Communities of Aniakchak National Monument and Preserve

Approximately 344 subsistence users affiliated with ANIA would be authorized to collect shed or discarded animal parts and plants from portions of the national monument and up to 3,472 rural residents would be eligible to collect and use these resources from portions of the preserve; however, we think the population of rural residents likely to travel to remote ANIA Preserve would be much smaller. Compared to the other alternatives, this alternative places the greatest limits on what and where a given individual can collect. While the total number of potentially eligible subsistence users would be the same, the geographic extent of the authorized collection areas and the number of species whose parts could be collected by an individual subsistence user would be more restricted. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS managed lands, ANIA-affiliated subsistence users will continue to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the

non-edible byproducts of wildlife harvested for subsistence. As noted in section 4.3.2.1 the collections of this material to make and sell handicrafts would likely comprise a very small portion of the economic opportunities otherwise provided through commercial fishing and other activities in the local communities.

Conclusion

This alternative would have a minor positive impact on local economic conditions near ANIA.

4.5.2.2 Effects to Local Rural Communities of Denali National Park and Preserve

Approximately 329 subsistence users affiliated with Denali National Park and Preserve would be authorized to collect shed or discarded animal parts and plants from units 13(E), 16(A), 16(B), 19(C), 19(D), and 20(C) of the New Park sections. Additionally, a possible 2,373 rural residents who obtain a collecting permit could be eligible under this alternative. Compared to the other alternatives, this alternative places the greatest limits on what and where an individual can collect. While the total number of potentially eligible subsistence users would be the same, the geographic extent of the authorized collection area and the number of species whose parts could be collected by an individual user would be more restricted. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to limited authorized collections of shed or discarded animal parts and plants on NPS-managed lands, Denali-affiliated eligible subsistence users may be able collect and use these resources from other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. the DENA Superintendent would likely place limits on the collections of horns, antlers, and bones on NPS lands where recreational use is high and to protect the natural conditions of park resources. Permits for the collection shed or discarded animal parts and plants would be required under Alternative D. Section 4.3.2.2 describes how the making and selling of handicrafts would be more important for more remote communities where fewer alternative economic opportunities exist.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near DENA Preserve and ANILCA Park additions.

4.5.2.3 Effects to Local Rural Communities of Gates of the Arctic National Park and Preserve

Alternative D would have a minor positive impact on local economic conditions because eligibility to collect and use shed or discarded animal parts and plants to make and sell handicraft could potentially benefit local cottage industries. Alternative D restricts users as it relates to

which species and their parts can be collected, and where they can be collected. Authority to collect and use these resources would be provided to about 1,723 members of resident zone communities where they have a positive federal C&T finding for each species in each GMU. A greater population of rural residents would have authority to collect and use shed or discarded animal parts and plants from the preserve units to make and sell handicrafts, but under alternative D not all of the 24,000 rural residents would be eligible to collect moose parts; however, they might be authorized to collect caribou parts. Residents of the Kobuk River Valley already have authority to collect plant materials in the Kobuk River part of the preserve, but this alternative would authorize plant collections in other parts of the park and preserve for these and other rural residents.

Cumulative Impact:

Local subsistence users are able to collect and use shed or discarded animal parts and plants from vast public lands adjacent to GAAR, and members of resident zone communities would continue to be able to harvest from the park and preserve areas plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. Alternative D would increase the locally available collection area in GAAR by about 8 million acres, except the collection of plants to make and sell handicrafts is already allowed for local area residents near the Kobuk River unit of GAAR Preserve. Also, rural residents must have C&T for each species in each GMU of the park and preserve before they would be authorized to collect parts of those species and locations, so this greatly restricts the area in GAAR for most collectors. As noted above in section 4.3.2.3 the availability of other economic opportunities in these remote local communities is very limited, so the making and selling of handicrafts is very important to several residents and families.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near GAAR.

4.5.2.4 Effects to Local Rural Communities of Glacier Bay National Preserve

Approximately 662 subsistence users affiliated with Glacier Bay National Preserve would be authorized to collect and use shed or discarded animal parts and plants from the preserve. Alternative D places the greatest limits on what and where a given individual can collect, however few Yakutat residents are known to make and sell handicrafts from local materials, and this alternative would not have much different effect than alternative C. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on preserve lands, GLBA-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building

materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence.

Conclusion:

This alternative would have a very minor positive impact on local economic conditions near GLBA Preserve.

4.5.2.5 Effects to Local Rural Communities of Katmai National Preserve and Alagnak NWR

Up to 3,472 rural residents would be eligible to collect and use shed or discarded animal parts and plants in KATM Preserve and ALAG, but a smaller subset of this population would likely make collections because of the requirements to obtain a permit. Alternative D places the greatest limits on what and where a given individual can collect. So while the total number of potentially eligible subsistence users would be the same, the geographic extent of the authorized collection areas and the number of species whose parts could be collected by an individual subsistence user would be more restricted. This alternative would have a minor positive impact on local economic conditions because the collection of shed or discarded animal parts and plants would provide a small additional area and source material for local cottage industries.

Cumulative Impact:

In addition to collecting and using shed or discarded animal parts and plants on NPS managed lands, KATM NP/ALAG-affiliated subsistence users will continue to be able to collect these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. This alternative would provide a minor additional benefit for local cottage industries because this alternative would provide a relatively small additional collection area for only those species that rural residents have a positive C&T to harvest. As noted in section 4.3.2.5, the economic benefits of these uses would be small in most subject communities where commercial fishing activities, guiding for sport fishing and hunting guiding, and transportation dominate the economies.

Conclusion:

This alternative would have a very minor positive impact on local economic conditions near KATM Preserve and ALAG NWR.

4.5.2.6 Effects to Local Rural Communities of Lake Clark National Park and Preserve

Approximately 693 subsistence users in resident zone communities associated with LACL would be authorized to collect and use shed or discarded animal parts and plants from portions of the national park, and up to 9,337 rural residents would be eligible to harvest them in limited portions of the preserve where they have a federal C&T determination for each species in each GMU. Alternative D places the greatest limits on what and where a given individual can collect. So while the total number of potentially eligible subsistence users would be the same as in other

alternatives, the geographic extent of the authorized collection areas and the number of species whose parts could be collected by an individual subsistence user would be more restricted. This would have the effect of reducing competition for resources among rural residents and limits removal of materials from NPS areas, especially where required permits limit collections.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS managed lands, LACL-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence. As noted in section 4.3.2.6 other economic opportunities in the affected communities include commercial fishing, guiding, transportation, mineral exploration, and government services, so the making and selling of handicraft provides a small additional economic benefit. Culture camps, however, have resulted in resurgence in the making of traditional handicrafts.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near LACL.

4.5.2.7 Effects to Local Rural Communities of WEAR National Parklands

Permit stipulations and conditions under alternative D could result in improved long term resource availability and overall add to the positive effect to local cottage industries, providing the permitting process is not too complicated and onerous so as to discourage subsistence uses. A positive advantage of this alternative results from restricting subsistence uses of a specific species to those individuals with positive C&T for that species. This reduces the potential for competition over more desirable and potentially valuable resources such as the muskoxen mortality event described in Alternative A (section 4.2.2.7). Eligibility to collect and use caribou parts, however, would not change much because a large area containing eligible rural residents have C&T to hunt caribou in the WEAR preserve areas. This could result in a positive impact on local economic conditions for communities closest to the NPS units. Overall this alternative would have a very minor positive impact on local economic conditions.

Cumulative Impact:

This alternative would improve opportunities for expanding subsistence cottage industries by providing a large area (nearly 11 million acres) for collections and uses of shed or discarded animal parts and plants to local rural residents with close connections to these areas. Rural residents will continue to be able to make and sell handicrafts out of the non-edible byproducts of wildlife harvested for subsistence and they will be able to harvest plants for subsistence purposes (e.g., food, fuel, and building materials for personal or family use). While the impact

relative to the regional economy may be very small when compared to other economic opportunities in the area, this alternative reduces competition for collection of handicraft resources for local residents most closely associated with WEAR park areas where arts and craft production and sales can be important for some individuals and families in order to meet critical needs at specific times.

Conclusion:

This alternative would have a very minor positive impact on local economic conditions, but by reducing competition for collection of handicraft resources, the local benefits could be greater than that of Alternatives B and C.

4.5.2.8 Effects to Local Rural Communities of Wrangell-St. Elias National Park and Preserve

Approximately 5,200 subsistence users affiliated with WRST would be authorized to collect shed or discarded animal parts and plants from portions of the national park and about 13,000 rural residents would be eligible to collect them in portions the preserve. Alternative D places the greatest limits on what and where a given individual can collect. So while the total number of potentially eligible subsistence users would be the same, the geographic extent of the authorized collection areas and the number of species whose parts could be collected by an individual subsistence user would be more restricted (see discussion in 4.5.1.8). Fewer people would have authorization to collect shed or discarded parts of more restricted wildlife such as sheep or goats. Local rural communities would therefore have less competition for some resources, which could help obtain materials for their crafts. This alternative would have a minor positive impact on local economic conditions because these resources would provide additional source material for local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS managed lands to make and sell handicrafts, WRST-affiliated subsistence users will continue to be able to access these resources on other lands, they will be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they will be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. As noted in section 4.3.2.8, alternative economic opportunities exist for many of the larger communities, but smaller predominantly Native Alaska communities have fewer options, which results in the making and selling of handicrafts as more important for these communities.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near WRST.

4.5.2.9 Effects to Local Rural Communities of Yukon-Charley Rivers National Preserve

Though up to 5,360 rural residents have C&T for key species in parts of YUCH, we suspect more like 523 local rural residents would actually collect shed or discarded animal parts and plants from areas where they have C&T for harvesting particular species. Through permits, Alternative D places greater restrictions on users as related to which species and their parts can be collected, the number of parts that can be collected, and where resources can be collected. Alternative D would have a minor positive impact on local economic conditions because legal access to these resources could potentially benefit local cottage industries.

Cumulative Impact:

In addition to collecting shed or discarded animal parts and plants on NPS-managed lands, YUCH-affiliated subsistence users would continue to be able to access these resources on other lands, they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use), and they would be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. This alternative would increase the area where rural residents could collect materials to make and sell handicrafts, but the increase in area would be restricted to areas where they have C&T for key species in each GMU in the preserve resulting in a minor additional benefit to local cottage industries.

Conclusion:

This alternative would have a minor positive impact on local economic conditions near YUCH.

Cumulative Impacts to Local Economic Conditions across Alaska NPS Areas:

Alternative D would result in a minor positive effect on local cottage industries because local subsistence users would be allowed to collect shed or discarded animal parts and plant materials to make into handicrafts for personal use or to sell on about 42 million acres of public land. Local subsistence users would continue to have access to shed or discarded animal parts on other lands, and they would be able to harvest plants for authorized subsistence uses (e.g., food, fuel, and building materials for personal or family use). Subsistence residents would also continue to be able to make and sell handicrafts out of the nonedible byproducts of wildlife harvested for subsistence. The number of local rural residents who use these resources to produce handicrafts for sale on a regular basis, however, is relatively small and limited by species and area, but up to about 60,000 residents would have authority to collect and use shed or discarded animal parts and plants from NPS parklands in Alaska. The making and selling of handicrafts is generally a small portion of the overall economic opportunities for rural residents near parks, monuments, and preserves, but this sector may be significant for households with skilled craftsmen.

Conclusion on Impacts to Local Economic Conditions across Alaska NPS Areas:

Alternative D would have a minor positive impact on local economic conditions because shed or discarded animal parts and plants would be available from about 42 million acres of public land

park lands for local cottage industries. About 60,000 local rural residents would have authority to collect these resources in the preserves, and an estimated 15,000 rural residents would potentially have access to these resources in parks and monuments; however, the area available to qualified individuals would be reduced across most of the park areas compared to alternatives B and C because of the requirement for federally recognized C&T by each species in each GMU and the requirement for permits

4.5.3 Impacts to Wildlife and Habitat

Where soil nutrients are lacking and collections are proportionally significant and concentrated in areas of low soil nutrient availability, this alternative could have a minor negative impact on wildlife and its habitat.

Cumulative Impact:

This alternative could contribute to cumulative impacts such as when considered with other factors weather, geology, permafrost, climate, atmospheric deposition, soil chemistry, soil ecology, and terrestrial plant and animal biomass.

Conclusion

This alternative could have a minor negative impact on wildlife or habitat.

4.5.4 Impacts on Cultural Resources

This alternative responds to requests from NPS Subsistence Resource Commissions and from Alaska Federal Subsistence Regional Advisor Councils for the opportunity to collect horns, antlers, bones, and plants as a traditional subsistence activity. Under this alternative, only NPS-qualified rural residents with a Customary and Traditional use determination could collect these materials. In addition, the superintendent of an area would issue individual permits for NPS-qualified local rural residents. Authorized individuals could obtain permits and collect these materials; however, some subsistence users may think that requiring a permit to collect non-edible materials is an unnecessary burden on subsistence users.

Collection of horns, antlers, bones and plants could impact an archeological site or historic structure by damaging artifacts, walls, and other parts of structures. Retrieving partially buried or surface materials could harm sites or structures. A cultural landscape might be affected by erosion or damaging trails. Shed horns and antlers, or bones left behind, are themselves potential ethnographic resources, as symbolic objects with cultural significance, or as materials for art and functional objects. Other ethnographic resources, such as trees, rocks, or other landmarks, might be adversely affected by added human presence to collect horns and other materials.

It is also possible that the collection of these nonedible byproducts in order to make and sell handicrafts will have a positive impact on cultural resources. As an example, it may encourage revitalization of cultural practices associated with subsistence, cultural landscapes, or ethnographic resources, including caring for and preserving these resources.

Under this alternative, the impacts might be unevenly distributed on cultural resources within a park because only some users would be authorized to collect horns, antlers, bones, and plants. If only certain residents associated with the park are eligible to collect these materials, the cultural resources accessible to that community may be at less risk of negative impact because of increased human presence than under less restrictive Alternatives B and C.

Cumulative Impact:

Other impacts to cultural resources in Alaska NPS areas include vandalism, weathering, erosion, and construction, but most of these impacts are limited with careful planning of new projects, monitoring of known sites, and law enforcement activities. The increased human presence associated with collection of discarded horns and antlers, as well as of bones and inedible plants, may damage archeological sites, ethnographic resources, cultural landscapes, or historic structures. Cultural revitalization associated with collection of these materials may also lead to a positive impact on cultural resources. Because fewer NPS-qualified subsistence users would be allowed to collect the materials than under Alternatives B and C, there would be a lower likelihood of impacts to cultural resources.

Conclusion:

This alternative could have a minor negative impact on cultural resources, and a potential small positive impact on cultural resources.

4.5.5 Impacts on Terrestrial Vegetation

By managing collections, monitoring the results of various levels of collection, and limiting collections through permits, this alternative may avoid the potentially moderate or higher impacts under future conditions that increase demand for plant resources from NPS units. Under currently low impact levels, it is likely that the differences between this alternative and the others would not be noticeable. This alternative would result in the requirement for a permit to collect plants in KOVA and GAAR Kobuk River Preserve areas where such permits were not previously required to collect plants to make and sell handicrafts, which could result in a slight positive benefit to vegetation. Because current collection levels have not had an observable impact, permit requirements are not likely to result in a change in current low impact levels. The increased removal of shed caribou antlers may have an adverse impact on rare assemblages of lichens that form on these shed antlers. Currently caribou shed antler substrates are fairly common in the arctic national parklands, but the Western Arctic Caribou Herd and Teshepuk Caribou Herd fluctuate in numbers considerably. An increase in antler collections at the time of a herd decline has the potential to adversely affect this special vegetative resource, but the more limited population of collectors would probably result in fewer collections under this action alternative.

Cumulative Effects to Vegetation:

The projected increase in road construction, mineral development, oil and gas development, pollution from local and global sources, and habitat loss statewide is likely to affect vegetation and soils in NPS units statewide. While current collection locations in preserve units are generally farther away than other available collection locations, it is conceivable that under a more intensive collection regime the combination of this alternative and the impacts from other sources may have an additional minor effect.

Conclusions on Impacts to Vegetation:

This alternative would probably have a minor negative impact on vegetation and soils.

4.5.6 Impacts to Recreation and Scenic Values

This alternative proposes to allow collection of horns, antlers, bones, and plants from portions Alaska parklands but only under a permit from the superintendent. Collection would be more tightly controlled and removal of these objects would be expected to occur at a lower rate than in the other action alternatives.

Cumulative Impact:

Across the Alaska park units there are a number of causal factors that have degraded, are degrading or could degrade recreation and scenic integrity. They include limits on group size, limits on methods of recreational access, take limits on sport hunting and fishing, reduction in the abundance of natural features to enjoy such as unpolluted air and water, and addition to unnatural features to the landscape such as radio facilities and collared wildlife. Impacts are from Management actions, subsistence uses and recreation that occur both within and outside of parklands. In general, the quality of recreation and scenic integrity is very high across the national parks in Alaska resulting in visitor enjoyment of the protected natural and cultural resources. As such, small levels of impact to recreation and scenic integrity result in large levels of impact because the change from the expected and sought-after conditions are more noticeable than in previously degraded areas. Past, present and reasonably foreseeable impacts to recreation and scenic integrity are minor. Future threats to recreation and scenic integrity are largely unknown though it is suspected that climate change will continue to impact natural scenic integrity, and a park's response to climate change may include actions that impact recreation and scenic integrity. This alternative would have minor contribution to cumulative impacts to recreation and scenic integrity.

Conclusion:

Over the long-term, the continued removal of natural objects such as horns and antlers from the parks would result in a minor adverse effect to recreation and scenic integrity.

4.5.7 Impacts to Wilderness Values

This alternative proposes to allow collection of horns, antlers, bones, and plants from wilderness portions of Alaska parklands but only pursuant to a permit. Collection would be more tightly controlled and removal of these objects could be expected to occur at a lower rate than in the other action alternatives.

Cumulative Effects to Wilderness Values:

Across the Alaska NPS units there are a number of things that degrade the untrammeled and natural qualities of wilderness character. They include things like collaring animals and suppressing fires, as well as actions or effects of actions that occur outside the park boundaries, such as the State of Alaska's predator management program or atmospheric pollutants originating from other continents. In general, across the landscape of Alaska national parks, these lands tend to epitomize the natural and untrammeled qualities of wilderness character. Past and present threats to the untrammeled and natural qualities of wilderness character are minor. Future threats to the untrammeled and natural qualities are largely unknown though it's suspected that climate change will continue to impact the natural quality, and a park's response to climate change (i.e. removing invasive plant species) may include actions that manipulate the wilderness. This alternative would contribute a minimal impact. The cumulative impact of this alternative plus past, present, and future actions would be minor to moderate.

Conclusions on Impacts to Wilderness Values:

Over the long term, the continued removal of these objects would create a minor adverse effect to the untrammeled and natural qualities of wilderness character.

5.0 CONSULTATION and COORDINATION

5.1 Public Involvement

The NPS distributed scoping newsletters to Subsistence Resource Commissions (SRCs) associated with Alaska ANILCA National Park System units for the proposed action to develop new special regulations for the collection and use of natural materials for personal use and to make and sell handicrafts from 2009 through 2010. NPS personnel presented these materials and briefings to all of these meetings. Furthermore, the NPS shared the newsletter with interested non-governmental organizations (NGOs). Both groups provided valuable feedback, which resulted in refinement of the alternatives and additional considerations for impacts analyses.

Local rural residents represented on SRCs expressed concern for any requirements for permits and preferred an alternative which provided freer access and opportunity for collections of materials that could assist them in their way of life. As a result we developed an alternative with minimal restrictions for local rural residents who have access to any subsistence resources in the affected NPS units.

Conservation NGOs such as the National Parks and Conservation Association (NPCA), Sierra Club, Denali Citizens Council, and Wilderness Society preferred alternatives that limited or prohibited collections of plant and animal materials from Alaska NPS units. They expressed concern for scenic and ecosystem impacts and the possibility that this action could set a precedent for national movements to allow the collections and uses of such materials in NPS units across the nation. If collections are allowed at all, they preferred that the collections be tightly managed with a permit system.

Public meetings are planned during a 60-day public review period that would hopefully span scheduled SRC meetings. These meetings would be open to public participation.

5.2 Intra-agency and Interagency Coordination

Internally the NPS coordinated closely and regularly with members of the NPS Alaska Subsistence Advisory Council (SAC), comprised of park and regional office subsistence program managers, and with the NPS Alaska Leadership Council (ALC), comprised of park superintendents and the regional directorate. The “Horns and Antlers EA” was a regular agenda item on the SAC meetings from 2009 through 2011. Key project members included NPS Alaska Subsistence Managers and a core team consisting of Sandy Rabinowitch, Bud Rice, David Mills, Andee Sears, Paul Hunter, and Clarence Summers.

Furthermore, project manager Sandy Rabinowitch communicated periodically with subsistence co-workers with the U.S. Fish and Wildlife Service and Alaska Department of Fish and Game to discuss definitions of handicrafts.

5.3 List of Preparers and Consultants

A project agreement identified the key issues and resources specialists needed to complete a reasonable analysis of the impacts of the alternatives as described in the following list of preparers (table 5-1). Other NPS personnel reviewed the internal review EA and consulted with the interdisciplinary team (table 5-2).

Table 5-1 List of Preparers (Interdisciplinary Team)

Name	Office Location	Position
Sandy Rabinowitch	NPS Alaska Regional Office, Anchorage, AK	Subsistence Wildlife Manager, Overall Project Manager
Bud Rice	NPS Alaska Regional Office, Anchorage, AK	Environmental Protection Specialist, NEPA Project Manager, Scenery and Recreation affected environment
Clarence Summers	NPS Alaska Regional Office, Anchorage, AK	Subsistence Specialist, ANILCA 810 preparation
Ken Adkisson	NPS Bering Land Bridge National Preserve, Nome, AK	Western Alaska National Parklands Subsistence Manager
Barbara Cellarius	NPS Wrangell-Saint Elias National Park and Preserve, Copper Center, AK	Subsistence Manager
Amy Craver	NPS Denali National Park and Preserve, McKinley Park, Alaska	Cultural Resources and Subsistence Manager
Dave Krupa/Marcy Okada	Gates of the Arctic National Park and Preserve and Yukon-Charley Rivers National Preserve	Subsistence Manager
Mary McBurney	NPS Lake Clark National Park and Preserve, Field Office, Homer, AK	Subsistence Manager for Aniakchak National Monument and Preserve, Katmai Preserve, Alagnak Wild River, and Lake Clark National Park and Preserve
Jim Capra	NPS Glacier Bay National Park and Preserve Field Office, Yakutat, AK	Dry Bay Ranger
Grant Hilderbrand	NPS Alaska Regional Office, Anchorage, AK	Wildlife Biologist and Threatened and Endangered Species Coordinator
Rachel Mason	NPS Alaska Regional Office, Anchorage, AK	Anthropologist
Peter Neitlich	Western Alaska National Parklands, Kotzebue, AK	Plant Ecologist
Dick Anderson	NPS Alaska Regional Office, Anchorage, AK	Scenery and Recreational Impacts
Judy Alderson/Adrienne Lindholm	NPS Alaska Regional Office, Anchorage, AK	Regional Wilderness Coordinator
Susan Rego	NPS Alaska Regional Office, Anchorage, AK	Geographic Specialist – Resources/Uses Mapping
Paul Hunter	NPS Alaska Regional Office, Anchorage, AK	Management Program Analyst Draft Regulations

Table 5-2 List of Project Consultants

Name	Office Location	Position
David Mills	NPS Alaska Regional Office, Anchorage, AK	Subsistence Program Manager
Andee Sears	NPS Alaska Regional Office, Anchorage, AK	Regional Law Enforcement Ranger - Regulations
Joan B. Darnell	NPS Alaska Regional Office, Anchorage, AK	Environmental Planning a& Compliance Team Manager
Glen Yankus	NPS Alaska Regional Office, Anchorage, AK	Environmental Planning a& Compliance NEPA Project Manager
Guy Adema	NPS Alaska Regional Office, Anchorage, AK	Natural Resources Science Team Manager
Joni Piercy	NPS Alaska Regional Office, Anchorage, AK	Geographic Information Systems Team Manager
John Quinley	NPS Alaska Regional Office, Anchorage, AK	Public Information Officer

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