

**The Harvest and Use of Wild Foods by Four
Communities Bordering the Yukon-Charley Rivers
National Preserve: Central, Circle, Eagle, and Eagle
Village, 2016 and 2017**

by

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Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mid-eye-to-fork	MEF
gram	g	all commonly accepted		mid-eye-to-tail-fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.	Mathematics, statistics	
meter	m	at	@	all standard mathematical	
milliliter	mL	compass directions:		signs, symbols and	
millimeter	mm	east	E	abbreviations	
		north	N	alternate hypothesis	H _A
Weights and measures (English)		south	S	base of natural logarithm	e
cubic feet per second	ft ³ /s	west	W	catch per unit effort	CPUE
foot	ft	copyright	©	coefficient of variation	CV
gallon	gal	corporate suffixes:		common test statistics	(F, t, χ^2 , etc.)
inch	in	Company	Co.	confidence interval	CI
mile	mi	Corporation	Corp.	correlation coefficient	
nautical mile	nmi	Incorporated	Inc.	(multiple)	R
ounce	oz	Limited	Ltd.	correlation coefficient	
pound	lb	District of Columbia	D.C.	(simple)	r
quart	qt	et alii (and others)	et al.	covariance	cov
yard	yd	et cetera (and so forth)	etc.	degree (angular)	°
		exempli gratia		degrees of freedom	df
Time and temperature		(for example)	e.g.	expected value	E
day	d	Federal Information		greater than	>
degrees Celsius	°C	Code	FIC	greater than or equal to	?
degrees Fahrenheit	°F	id est (that is)	i.e.	harvest per unit effort	HPUE
degrees kelvin	K	latitude or longitude	lat. or long.	less than	<
hour	h	monetary symbols		less than or equal to	?
minute	min	(U.S.)	\$, ¢	logarithm (natural)	ln
second	s	months (tables and		logarithm (base 10)	log
		figures): first three		logarithm (specify base)	log ₂ , etc.
Physics and chemistry		letters	Jan,...,Dec	minute (angular)	'
all atomic symbols		registered trademark	®	not significant	NS
alternating current	AC	trademark	™	null hypothesis	H ₀
ampere	A	United States		percent	%
calorie	cal	(adjective)	U.S.	probability	P
direct current	DC	United States of		probability of a type I error	
hertz	Hz	America (noun)	USA	(rejection of the null	
horsepower	hp	U.S.C.	United States	hypothesis when true)	α
hydrogen ion activity	pH		Code	probability of a type II error	
(negative log of)		U.S. state	use two-letter	(acceptance of the null	
parts per million	ppm		abbreviations	hypothesis when false)	β
parts per thousand	ppt, ‰		(e.g., AK, WA)	second (angular)	"
volts	V			standard deviation	SD
watts	W			standard error	SE
				variance	
				population	Var
				sample	var

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BORDERING THE YUKON-CHARLEY RIVERS NATIONAL
PRESERVE: CENTRAL, CIRCLE, EAGLE, AND EAGLE VILLAGE,
2016 AND 2017**

by

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ABSTRACT

This report summarizes the results of research conducted in Central Hot Springs (Central), Circle, Eagle, and Eagle Village, Alaska. Data were gathered in Central during the spring of 2017 and in the remaining communities in the spring of 2018. These communities were chosen for this study because of their proximity to the Yukon-Charley Rivers National Preserve.

The principal questions addressed by the Yukon-Charley Rivers National Preserve Subsistence Research Project concerned the range of wild foods used and harvested for subsistence and harvest amounts of each wild food. Related questions addressed the role of wild foods in each study community's economy, the role of cash in subsistence economies, the use of lands and waters for subsistence practices, how the use of Yukon-Charley Rivers National Preserve has changed over time, the evolving relationship between local residents and the National Park Service as it relates to subsistence use in the preserve, and the effects of competition with other users.

Over the course of the 2017 and 2018 field seasons, ADF&G Division of Subsistence researchers surveyed household heads about their wild resource harvest and use between January and December of the prior calendar year. Each of the study communities is road accessible for part or all of the year. The harvest patterns of Central differ from those of Circle, Eagle, and Eagle Village largely because of its location on the Steese Highway, roughly 33 miles from the Yukon River. The Steese Highway is maintained year-round, allowing residents of Central and Circle to travel to the hub of Fairbanks for supplies and store-bought food. The residents of Eagle and Eagle Village are seasonally connected to the road system by the Taylor Highway between the months of April and October. This report includes a discussion of the differences that accessibility makes in the harvest and use patterns of the study communities.

Key words: Subsistence fishing, subsistence hunting, Central Hot Springs, Circle, Eagle, Eagle Village, Yukon River, Yukon-Charley Rivers National Preserve, National Park Service, Fortymile caribou, salmon, Chinook salmon, fall chum salmon, moose, seasonal round, food security, demographics, income, jobs, harvest areas.

1. INTRODUCTION

Alida Trainor

This report summarizes the results of research conducted in the springs of 2017 and 2018 in four Yukon River drainage communities: Central, Circle, Eagle, and Eagle Village (Figure 1-1). Residents of the Yukon River drainage rely heavily on subsistence hunting, fishing, and gathering for nutrition and to support their customary and traditional way of life. Subsistence harvests of wild foods throughout the study area occur primarily in the boreal forests and sub-Arctic habitats of Interior Alaska. Harvests vary from community to community and may also fluctuate through time in the amounts and species harvested in response to varied circumstances, such as species abundance, regulations, socioeconomic factors (e.g., cost of fuel), personal tastes, and many other factors. The four study communities harvested and used a variety of species, including Chinook and fall chum salmon, moose, caribou, bears, northern pike, ducks, geese, wild berries, and greens.

Table 1-1 reports some introductory findings from the four study communities. Population size for each community was small, ranging from 24 people in Eagle Village to 161 in Eagle. Central and Circle were similar in size: 79 and 82 people, respectively. Eagle Village and Circle were predominately Alaska Native communities (100% and 88% Alaska Native, respectively), while Central and Eagle were not (4% and 15% Alaska Native). The average lengths of residency for Circle and Eagle Village household heads were longer than the mostly non-Native communities of Central and Eagle (approximately 40 years, compared to fewer than 25 years in Central and Eagle). In terms of harvest, residents in the city of Eagle harvested far more edible food than those in any of the other communities (691 lb per capita). This is largely because of the number of dog teams kept by Eagle residents and the high quantities of fall chum salmon that are harvested to support those teams. Detailed discussions of the harvest and use patterns of wild foods are presented in each community's results chapter.

PROJECT BACKGROUND

The principal research questions asked about the quantity of wild resources harvested and used for subsistence and how these resources were shared within communities. Related questions involved the role of wild foods in the region's economy, the role of cash in subsistence economies, the land and waters used for subsistence in the Yukon River drainage and the assessments of harvests over time. The investigation of these questions has provided baseline information about the contemporary subsistence uses of fish, wildlife, and plant resources in Central, Circle, Eagle, and Eagle Village. Although some harvest information is available for some species in some of the communities, a comprehensive subsistence survey had never been conducted in any of the study communities included in this report. Local residents, agencies, and nongovernmental organizations need updated information on customary and traditional uses of fish, wildlife, and vegetation for planning, impact assessment, and decision making. This project was conducted cooperatively by the Alaska Department of Fish and Game (ADF&G) Division of Subsistence, the local or tribal government in each study community, and the National Park Service.

REGIONAL BACKGROUND

The upper Yukon River area extends from the U.S.-Canada border near Eagle to the confluence with the Tanana River, approximately 529 miles downstream. Major tributaries include the Nation, Charley, Porcupine, and Teedriinjik rivers. Between Eagle and Circle, the river is characterized by deep, fast waters, with a main channel and rolling hills on either side of the river valley. Mountains to the north and south of the river rise to over 6,000 feet and are covered in intermittent forest and muskeg (Caulfield 1979:2). Once the Yukon River reaches Circle, the hilly terrain gives way to the Yukon Flats. The river becomes braided with numerous, slow moving channels. The Yukon River is glacial fed and silty, giving the water a brown appearance. In this region, temperatures range from -50° F in the winter to 90° F in the summer.

The National Park Service Yukon-Charley Rivers National Preserve is 2.5-million-acre area located between Eagle and Circle. The headquarters office is located in Eagle (Plate 1-1). The preserve includes the entire

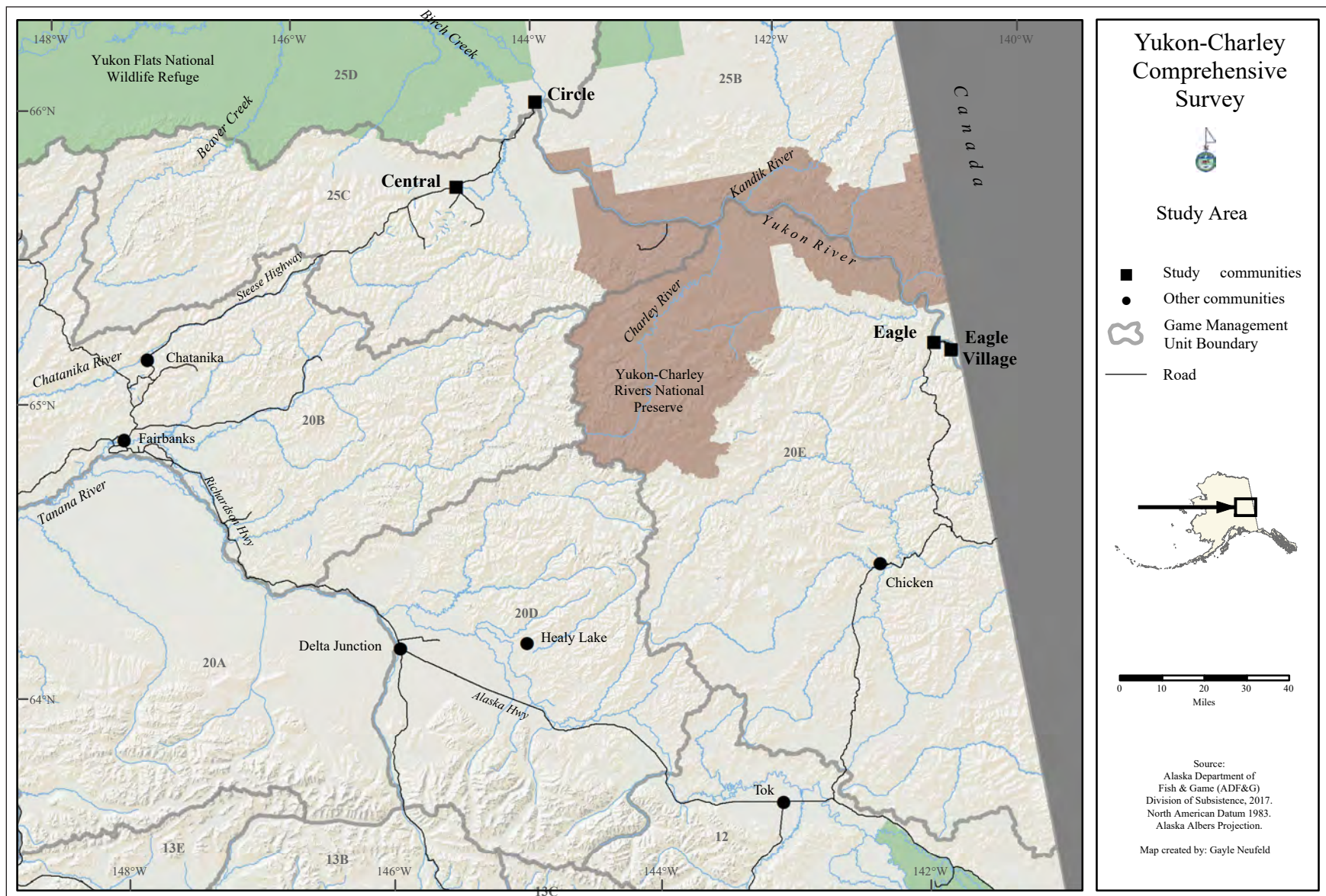


Figure 1-1.—Study area.

Table 1-1.–Selected findings, study communities, 2016 and 2017.

	2016	2017		
	Central	Circle	Eagle	Eagle Village
Demography				
Population	79.2	81.6	160.5	23.5
Percentage of population that is Alaska Native	4.4%	88.2%	15.0%	100.0%
Percentage of household heads born in Alaska	15.0%	78.6%	14.8%	80.0%
Average length of residency of household heads (years)	23.6	40.6	22.1	42.9
Cash economy				
Average number of months employed	5.3	5.1	5.5	5.5
Percentage of employed adults working year-round	57.9%	47.1%	42.6%	55.6%
Percentage of income from sources other than employment	34.1%	39.8%	38.4%	29.8%
Average household income ^a	\$31,118	\$27,570	\$30,569	\$15,209
Per capita income ^a	\$17,288	\$10,812	\$13,331	\$10,984
Resource harvest and use				
Per capita harvest, pounds usable weight	117.3	374.9	691.1	336.1
Average household harvest, pounds usable weight	211.2	956.0	1,584.7	465.3
Number of resources used by 50% or more households	6.0	5.0	5.0	6.0
Average number of resources used per household	9.2	11.0	10.7	9.9
Average number of resources attempted to be harvested per household	7.6	7.0	9.8	6.2
Average number of resources harvested per household	6.8	6.4	8.4	4.5
Average number of resources received per household	2.4	5.1	2.8	6.3
Average number of resources given away per household	1.8	3.4	2.2	2.8
Percentage of total harvest taken by top ranked 25% of households	81.3%	86.5%	94.8%	88.8%
Percentage of households that harvested 70% of harvest	16.0%	15.0%	10.3%	15.4%
Per capita harvest by lowest ranked 50% of households	8.2	1.4	5.8	3.1
Percentage of total harvest taken by lowest ranked 50% of harvesting households	7.0%	0.4%	0.8%	0.9%
Average number of resources used by lowest ranked 50% of households	6.3	7.9	7.0	9.1
Average number of resources used by top ranked 25% of households	12.5	17.2	17.6	11.0

Source ADF&G Division of Subsistence household surveys, 2017 and 2018.

a. Includes income from sources other than employment.



Plate 1-1.—The Yukon-Charley Rivers National Preserve headquarters in Eagle, Alaska.

1.1-million-acre Charley River watershed.¹ The Preserve was established in 1980 with the passage of the Alaska National Interest Lands Conservation Act (ANILCA).² ANILCA designated much of the national parklands in Alaska and granted the National Park Service the authority to manage these lands.

Archeological evidence suggests that the area now known as the Yukon-Charley Rivers Preserve had been inhabited by Athabascan people since 11,000 B.C. (Caulfield 1979:4). During a 1976 archeological survey in the area, 11 prehistoric sites were investigated and revealed microblades and burins, suggesting that “the Upper Charley River region and its tributaries have served as important subsistence localities, particularly in the exploitation of caribou” (Bowers and Hoch 1976:40). Although several different linguistic groups of Athabascans exist throughout the upper Yukon River region, Han and Gwich’in Athabascans live in the area known today as the Yukon-Charley Rivers Preserve. The Han territory extends beyond the 2.5-million acre preserve, reaching into the upper portions of the Klondike River drainage in the Canadian Yukon Territory. The Yukon River shapes the lives of those who live near it, as evidenced by the translation of “Han,” meaning “people of the river” (Caulfield 1979:1). More precisely,

the word Han signifies “river” in the Han language, and the dialect terms Han Hwech’in, Han Huch’in, or Han Gwich’in all translate to English as “River People.” The Han are fundamentally distinguished from neighboring groups of Interior Native Athabascans by their language and their homeland, which is largely defined by the mountains, creeks, rivers, and lakes named by their language. (Mishler and Simeone 2004:xx)

Four bands of Han Athabascan people were identified in the late nineteenth century: Charley Village³ (at the confluence of the Kandik and Yukon rivers), Johnny’s Village (present-day Eagle), Fortymile, and Nuklako

1. National Park Service, 2020. “What is Yukon-Charley Rivers?” Accessed March 27, 2020.
<https://www.nps.gov/yuch/learn/>

2. National Park Service, 2017. “Alaska National Interest Lands Conservation Act.” Accessed March 27, 2020.
<https://www.nps.gov/locations/alaska/anilca.htm>

3. Many place names in the region, including the Charley River, were named by and for Han leaders. Therefore, the Yukon-Charley Rivers Preserve also acquired its name through the rich history of the Han people (Mishler and Simeone 2004).

(located 13 miles below the mouth of the Klondike River in Yukon Territory, Canada; Caulfield 1979:5). Han Athabascans lived a seasonal lifestyle that centered around obtaining locally available wild foods. Traveling to fish camps to harvest Chinook and fall chum salmon was a common activity in June, July and August. Drying salmon “was of the greatest importance as the process made that food available over long periods” (Osgood 1971:106). Han Athabascans used fish wheels, set nets, and dip nets to harvest salmon (Osgood 1971:104). Nonsalmon fish such as whitefishes, northern pike, Arctic grayling, burbot, and longnose suckers were also harvested in traps, smaller nets, or by hook and line (Osgood 1971:105–106). People living near present-day Eagle, Circle, or Central had access to the Fortymile caribou herd, much like they do today, and they began focusing their harvesting efforts on caribou in September (Caulfield 1979:5). Caulfield describes these efforts:

Caribou fences were located in the headwaters of the Fortymile River and probably elsewhere. Caribou, once located, were driven toward the fences where they became entrapped in moose-skin rope snares; they were then killed by means of spears, bow and arrow, and knives...Meat from these hunts was then cached near the kill site for use later in the winter. (Caulfield, 6)

Although hunting for caribou often occurred in the hills and mountains away from the Yukon River, hunters would return to locations nearer the river when hunting was over. Hunters could return and access their cached meat throughout the winter months. People stayed busy making sleds, snowshoes, or clothing from caribou skin during winter months (Caulfield 1979:6). Small land mammals were hunted for food and for fur throughout the winter, and migratory bird hunting occurred in the spring and fall. A variety of berries such as blueberries, cranberries, and salmonberries were also used.

In the 19th and 20th centuries, contact with Euroamericans increased. The Hudson’s Bay Company established a trading post in Fort Yukon in 1873, and the gold rush of the early 1900s brought many outsiders to the creeks and tributaries throughout the Han and Gwich’in region of the upper Yukon River (Caulfield 1979:8,13). Throughout the 1800s, the U.S.-Canada border began to dramatically affect the traditional hunting and trapping area of the Han. Around 1940, Alaskan trappers who crossed into Canada were taxed on any fur pelts brought back into Alaska. Han Athabascans from the Eagle area historically traveled into the Ogilvie Mountains near the headwaters of the Peel and Porcupine rivers, but because of the newly enforced border and the accompanying duties imposed on their furs caught there, they began shifting their harvesting activities west and north of Eagle towards American Summit. Although these events rapidly changed the lives of the Han and Gwich’in Athabascans living in the upper Yukon region, their continued use of and presence on the landscape remained an important aspect of their identity and seasonal lifestyle.

REGULATORY CONTEXT

Fisheries

Residents of Central, Circle, Eagle, and Eagle Village rely heavily on Chinook salmon for their household needs. Fewer types of salmon are found in the upper stretches of the Yukon River than are present in the lower Yukon River region. Chinook salmon is the primary type of salmon used for human consumption. Since 1998 however, the abundance of Chinook salmon throughout the Yukon River has declined significantly. Although the exact cause of this decline is unknown, commercial, personal use, and sport Chinook salmon fisheries have all been closed at various times in an effort to protect those fish. The restrictions to fishing time, gear, and areas within the subsistence fishery have resulted in extreme changes to the fishery and created a strain on the communities and households that depend on Chinook salmon.

Circle, Eagle and Eagle Village are located in fishing District 5D, the last Alaska fishing district before the U.S.-Canada border. Central residents who fish on the Yukon River also use District 5D. Because of their upriver locations, these communities have sometimes been subject to additional fishing restrictions that lower river districts did not experience earlier in the season. Although fisheries managers strive for equity throughout the drainage in terms of fishing opportunity, if the run strength is weaker than anticipated and the escapement goal into Canada is at risk of not being met, they may limit fishing in District 5D. This was of particular concern in 2015, when the run was expected to be poor to below average: Alaska Department

of Fish and Game (ADF&G) developed a preseason forecast range of 118,000–140,000 Chinook salmon, less than half of the historical run size of 300,000 fish (Schmidt and Garcia 2015:1). Although all fishing districts experienced extreme reductions in fishing opportunity, District 5 experienced additional closures and, because of the lack of summer chum salmon in that region, did not have the benefit of using selective gear to target an alternative salmon species (Schmidt and Garcia 2015:5–6). These increased restrictions to District 5 were taken “to avoid offering opportunity that would primarily target Canadian-origin Chinook salmon” (Schmidt and Garcia 2015:6).

In 2017, managers determined that the Yukon River Chinook salmon run was strong enough to remove all subsistence fishing restrictions in District 5D (Carroll and Jallen 2017). This allowed fishers to fish with the maximum gillnet mesh size of 7.5 inches on the full regulatory schedule of two 48-hour fishing periods per week. Lower river fishing districts experienced more conservation measures than District 5D in 2017, but during preseason planning meetings, fishers throughout the river suggested this liberalization in the uppermost part of the river to provide more equity to this district.

In addition to relying heavily on Chinook salmon, many of the communities in District 5D maintain dog teams. Dog teams are used for transportation, trapping, and recreation. In order to continue this lifestyle, households in District 5D that support dog teams depend on a healthy and strong run of fall chum salmon. Discussed throughout the results chapters in this report, the seasonal round of harvesting activities in each of these communities is busiest in the fall, when fall chum salmon fishing occurs at the same time as caribou and moose hunting, berry picking, and the harvest of personal gardens.

Wildlife

Caribou

The Fortymile caribou herd (FCH) is a vital resource for residents in all the study communities included in this report. The range and population of the FCH, like other caribou herds, has varied over time. In the late 1800s until World War I, caribou from this herd were commercially sold in both Alaska and the Yukon Territory (Harper and McCarthy 2015:2). Most hunting in the area was concentrated along the roadways of the Steese and Top of the World highways. After the Taylor Highway was constructed in the 1950s, residents of Eagle and other Alaskans heavily utilized this area to access the FCH. In the 1970s and 1980s, management of the herd was designed to benefit local subsistence hunters. During this time,

...hunting seasons were deliberately set to avoid the period when road crossings were likely. Consequently, hunter concentration and harvest distribution shifted from highways to trail systems accessed from the Taylor and Steese highways and areas accessed from small airstrips within the Fortymile and Charley river drainages. (Gross 2015:12-2)

This rural preference changed in 1989 with the Alaska Supreme Court’s *McDowell v. State of Alaska* decision, which ruled that the state of Alaska could not differentiate between subsistence users based on where they lived.⁴ Consequently, all Alaskans were eligible to participate in subsistence hunting and fishing (Norris 2002). However, the federal government continued to base subsistence eligibility on rural residency on federal public lands and waters. The differences in eligibility led the federal government to initiate management efforts on federal lands that would continue to offer subsistence opportunity to qualified rural residents.

In the 1990s, federal and state governments dually managed the Fortymile caribou herd because the herd’s range crossed both state and federal lands.

Competition among Alaska hunters increased because of the reduced quotas and complex regulations. During this period many residents within the herd’s range were unhappy with the ineffectiveness of dual federal and state management in administering the hunts and bringing about a herd increase. In response, the Upper

4. *McDowell v. State of Alaska*, 1989. 785. P.2d 1

Tanana-Fortymile Fish and Game Advisory Committee, the Tr'ondëk Hwëchîn First Nation in [the]Yukon [Territory], and other public groups requested that ADF&G, the U.S. federal agencies, and Yukon Department of Renewable Resources work with the public to develop a management plan for [the] FCH. (Gross 2015:12-3)

This request resulted in the establishment of the Fortymile Caribou Herd Management Planning Team, a group made up of stakeholders and agency personnel from both Alaska and the Yukon Territory. This group creates recommendations for herd size, harvest, and habitat management. Additionally, local Alaska Fish and Game Advisory Committees (AC), such as the Eagle, Central, and Circle ACs, as well as the federal Subsistence Eastern Interior Regional Advisory Council all regularly comment and contribute to this planning process. In this way, the management of the FCH is heavily structured and influenced by the public process at both the state, federal, and international levels.

Currently, the range of the FCH is broken into four zones and each have different harvest opportunities. Eagle and Eagle Village are located in Game Management Unit (GMU) 20E and Zone 3 of the FCH range. Zone 3 encompasses the Taylor Highway where much of the harvest of FCH occurs. Hunting in Zone 3 is closed by Emergency Order if this zone's harvest quota is reached. Harvest quotas vary based on the herd's population and harvestable surplus.⁵ Central and Circle residents access FCH caribou in GMU 25C in Zone 1. Residents participating in the state hunt opportunities must seek updates from ADF&G regarding Emergency Order closures when the harvest quota has been met for a given season. Hunting typically occurs in August and September. Many residents in these rural but road-accessible communities find state hunts challenging because of increased competition with nonlocal hunters and hunter crowding along the roadways. Some residents prefer to participate in the federal seasons for FCH that limits participation to federally qualified rural residents. Local concerns about competition with nonlocal hunters will be discussed further in the Results chapters.

Moose

Residents in each study community reported hunting moose. Much of the hunting occurred along the major waterways in September, and some hunting also occurred along the Steese and Taylor highways. ADF&G managers establish optimal bull to cow ratios in each GMU. These ratios are considered management objectives that can help keep the moose population healthy while meeting resident subsistence needs, providing nonresident hunt opportunity, and not risking over-harvest or an over-dense population that could lead to a crash (Wells 2018:8). Hunting within the Yukon-Charley Rivers Preserve is common for residents in all study communities. Competition with nonlocal hunters occurs within the Preserve as well and will be discussed in the Results and Discussion chapters.

STUDY OBJECTIVES

The project had the following objectives:

- Estimate subsistence harvests and uses of wild fish, game, and plant resources in a 12-month study year (2016 for Central Hot Springs, 2017 for Circle, Eagle, and Eagle Village);
- Map areas used for hunting, fishing, and gathering during the study year;
- Gather demographic information about each community, including population size and age composition, ethnicities, birthplaces, and lengths of residency in the study communities;
- Characterize each community's involvement in the cash economy, including jobs and other sources of cash income;

5. ADF&G, n.d. "Caribou hunting in Alaska: hunting Fortymile-White Mountains caribou." Accessed March 27, 2020. <http://www.adfg.alaska.gov/index.cfm?adfg=caribouhunting.40mile>

- Evaluate trends in subsistence harvests;
- Document local concerns related to subsistence hunting and fishing; and
- Conduct ethnographic interviews with longtime residents to contextualize the quantitative harvest survey data and deepen the understanding of subsistence in each community.

Within this harvest assessment program, the Division of Subsistence worked with the National Park Service to select study communities that are near to or have a history of using Yukon-Charley Rivers Preserve lands. Division of Subsistence staff hired and trained a few community residents in the administration of the survey instruments. Local research assistants were paired with Division of Subsistence staff to administer surveys to occupied households in each community. Results were collaboratively reviewed and interpreted with each community. Summary results are published online at the Community Subsistence Information System (CSIS) website⁶ maintained by the ADF&G Division of Subsistence.

RESEARCH METHODS

Ethical Principles for the Conduct of Research

The project was guided by the research principles outlined in the Alaska Federation of Natives Guidelines for Research⁷ and by the National Science Foundation, Office of Polar Programs in its Principles for the Conduct of Research in the Arctic⁸, the Ethical Principles for the Conduct of Research in the North (Association of Canadian Universities for Northern Studies 2003), as well as the Alaska confidentiality statute (AS 16.05.815). These principles stress community approval of research designs, informed consent, anonymity or confidentiality of study participants, community review of draft study findings, and the provision of study findings to each study community upon completion of the research.

Project Planning and Approvals

The Central Fish and Game Advisory Committee (AC) approved this research on February 1, 2017 at a regularly scheduled AC meeting (Table 1-2). Because Central does not have a city or tribal government, the AC acted as the consulting body for this research. The Circle Tribal Council, the City of Eagle, and the Eagle Village Council approved the research on February 22, 2017, January 22, 2018, and February 20, 2018, respectively. Staff and local research assistants are listed in Table 1-3.

Systematic Household Surveys

The primary method for collecting subsistence harvest and use information in this project was a systematic household survey. Following receipt of comments at the scoping meetings, ADF&G finalized the survey instrument for Central in March 2017 and for the remaining communities in February 2018. A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and other economic data that are comparable with information collected in other household surveys in the study communities and with data in the Community Subsistence Information System (CSIS). Table 1-4 reports the estimated household and sample achievement for each of the study communities. Populations ranged from 24 people in Eagle Village to 161 people in the city of Eagle. Circle and Eagle Village were predominately Alaska Native communities while Central and Eagle were not. Appendix A is an example of the survey instrument used in this project. Surveys took an average of 40 minutes to complete (Table 1-5).

6. ADF&G, n.d. "Community Subsistence Information System: CSIS." <http://www.adfg.alaska.gov/sb/CSIS> Hereinafter *ADF&G CSIS*.

7. Alaska Federation of Natives. 2013. "Alaska Federation of Natives Guidelines for Research." Alaska Native Knowledge Network. Accessed March 31, 2020. <http://www.ankn.uaf.edu/IKS/afnguide.html>

8. National Science Foundation Interagency Social Science Task Force. 2012. "Principles for the Conduct of Research in the Arctic." Accessed March 31, 2020. <http://www.nsf.gov/od/opp/arctic/conduct.jsp>

Table 1-2.—Community meetings and field work, study communities.

Community	Community approval meeting	Field work	Community data review meeting
Central	February 1, 2017	March 24–30, 2017	Draft report mailed May 2020
Circle	February 22, 2017	April 4–7, 2018	Draft report mailed May 2020
Eagle	January 22, 2018	March 19–28, 2018	February 20, 2019
Eagle Village	February 20, 2018	March 19–28, 2018	February 20, 2019

Source ADF&G Division of Subsistence, 2020.

Table 1-3.—Project staff.

Task	Name	Organization
Northern Regional Program Manager	Caroline Brown	ADF&G Division of Subsistence
Principal Investigator	Alida Trainor	ADF&G Division of Subsistence
Administrative support	Pam Amundson	ADF&G Division of Subsistence
	Tamsen Coursey-Willis	ADF&G Division of Subsistence
	Deanne Lincoln	ADF&G Division of Subsistence
Data Management Lead	Dave Koster	ADF&G Division of Subsistence
Programmer	Margaret Cunningham	ADF&G Division of Subsistence
Data Entry	Margaret Cunningham	ADF&G Division of Subsistence
	Halia Janssen	ADF&G Division of Subsistence
	Jon Jeans	ADF&G Division of Subsistence
	Alex Depue	ADF&G Division of Subsistence
	Alea Robinson	ADF&G Division of Subsistence
Data Cleaning/Validation	Margaret Cunningham	ADF&G Division of Subsistence
Data Analysis	Marylynne Kostick	ADF&G Division of Subsistence
	Margaret Cunningham	ADF&G Division of Subsistence
Cartography	Gayle Neufeld	ADF&G Division of Subsistence
	Margaret Cunningham	ADF&G Division of Subsistence
Editorial Review Lead	Rebecca Dunne	ADF&G Division of Subsistence
Production Lead	Rebecca Dunne	ADF&G Division of Subsistence
Field Research Staff	Alida Trainor	ADF&G Division of Subsistence
	Brooke McDavid	ADF&G Division of Subsistence
	Jeff Park	ADF&G Division of Subsistence
	Kathleen Roush	ADF&G Division of Subsistence
	Nicole Braem	National Park Service
Local Research Assistants	Colette Glanz	Central
	Linda Smith	Central
	Amanda Pope	Circle
	Tonya Carroll	Circle
	Maralyn Hinckley	Eagle
	Sunny Hemen	Eagle
	Milan Clevesy III	Eagle
	Michael Stevens	Eagle Village

Source ADF&G Division of Subsistence, 2020.

Table 1-4.—Sample achievement, study communities, 2016 and 2017.

	Community			
	2016	2017		
Sample information	Central	Circle	Eagle	Eagle Village
Number of dwelling units	88	38	70	17
Interview goal	100%	100%	100%	100%
Households surveyed	25	20	58	13
Households failed to be contacted	6	8	6	4
Households declined to be surveyed	13	4	6	0
Households moved or occupied by nonresident	44	6	0	0
Total households attempted to be surveyed	44	32	70	17
Refusal rate	34.2%	16.7%	9.4%	0.0%
Final estimate of permanent households	44	32	70	17
Percentage of total households surveyed	56.8%	62.5%	82.9%	76.5%
Survey weighting factor	1.76	1.60	1.21	1.31
Sampled population	45	51	133	18
Estimated population	79.2	81.6	160.5	23.5

Source ADF&G Division of Subsistence household surveys, 2017 and 2018.

Table 1-5.—Survey length, study communities, 2016 and 2017.

Community	Year	Survey length (minutes)		
		Average	Minimum	Maximum
Central	2016	46	22	77
Circle	2017	36	13	85
Eagle	2017	40	7	105
Eagle Village	2017	36	12	75

Source ADF&G Division of Subsistence household surveys, 2017, and 2018.

Mapping Locations of Subsistence Hunting, Fishing, and Gathering Activities

During household interviews, the researchers asked respondents to indicate the locations of their fishing, hunting, and gathering activities during the study year. In addition, interviewers asked the respondents to mark on the maps the sites of each harvest, the species harvested, the amounts harvested, and the months of harvest. ADF&G staff established a standard mapping method. Points were used to mark harvest locations and polygons (circled areas) were used to indicate harvest effort areas, such as areas searched while hunting moose. Some lines were also drawn in order to depict when the harvesting activity did not occur at a specific point: for example, lines were used to depict traplines.

Harvest locations and fishing, hunting, and gathering areas were documented using an application designed on the ArcGIS Runtime SDK for iOS platform: basically a mapping data collection application for iPad.⁹ The point, polygon, or line was drawn on a U.S. Geological Survey topographic relief map downloaded on the iPad. The iPad allowed the user to zoom in and out to the appropriate scale, and the ability to document harvesting activities wherever they occurred in the state of Alaska. Once a feature was accepted, an attribute box was filled out by the researcher that noted the species harvested, amount, method of access to the resource, and month(s) of harvest. The data were uploaded via Wi-Fi to a server. Once data collection was complete the data were downloaded into an ArcGIS file geodatabase. The application was developed by HDR, Inc., an environmental research firm located in Anchorage. Paper maps were also available to be used as a reference for respondents as well as by a local research assistant (LRA) when an ADF&G researcher was not available for the interview. These maps were 11x17 inches at a scale of 1:250,000 and 1:500,000 and only documented the area within the survey area. Very few paper maps were used, and research staff digitized markings on paper maps using the iPad application.

Once a survey was complete, researchers conducted a quality control exercise by matching the map data to the survey form to ensure that all map data had been documented. This was completed in the field before the surveys were submitted to the community's lead researcher. Once the data had been uploaded, researchers also verified that the household data were logged into the server.

At the end of the field season the geodatabase was turned over to ADF&G. A few remaining paper maps were digitized and then map production began. The data were first sorted by community, and then resource. Maps were then produced at the species-specific level for each community.

In some instances, researchers found it difficult and time consuming to map winding roads such as the Taylor Highway or waterways such as Birch Creek. In these cases, researchers asked respondents for detailed descriptions of the extent traveled and took notes. Each evening, a researcher added the detail on the iPads, relying on the notes taken during the mapping interview to accurately capture the use and extent of each search area.

Key Respondent Interviews

While researchers were in the study communities they consulted with tribal governments, community councils, and LRAs to identify key respondents to interview. The purpose of the key respondent interviews was to provide additional context for the quantitative data and also to provide information for the community background section at the beginning of each chapter, the seasonal round sections, harvest-over-time analysis, and the community comments and concerns section at the end of each chapter. The number of key respondent interviews varied among communities. Key respondent interviews were semi-structured and directed by a key respondent interview protocol designed by ADF&G researchers that has proven successful on other baseline study projects (see Appendix B). In addition to the standard list of questions, this protocol included a handful of questions about the current and historical use of the Yukon-Charley Rivers Preserve, both before and since its establishment. These questions were designed to understand each key respondent's history in the area and their relationship with the National Park Service, the authority of which affects access and use patterns of land and waters used for subsistence. Ethnographic interviews were

9. Product names are given because they are established standards for the State of Alaska or for scientific completeness; they do not constitute product endorsement.

digitally recorded and transcribed verbatim for later analysis. Interviews were coded thematically across all communities. Copies of transcripts and audio recordings were mailed to each respondent. In addition to gathering qualitative data through the key respondent interview protocol, ADF&G staff took notes during interviews to provide additional context for this report. Researchers analyzed key respondent interviews and interview notes in preparation for this report. Key respondents were informed that, to maintain anonymity, their names would not be included in this report.

Household Survey Implementation

Central

Field work in Central was challenging because of the transient and private nature of the community. Many residents did not meet the six-month residency requirement to be eligible for the survey. Central's location on the Steese Highway made it possible for people to come and go from Fairbanks throughout the year. As a result, staff worked closely with local research assistants to ensure that only residents who were in Central for at least six months during the study year were included in the survey effort. Additionally, surveyors experienced some local reticence towards the survey itself because it was funded by the National Park Service, an entity that some residents distrust. Further consideration of this dynamic is explored in the Discussion chapter of this report.

Circle

Staff did not experience any complications during data collection in Circle. The community was receptive to the survey effort, and local research assistants worked diligently to complete the census sample quickly.

Eagle

The survey effort in Eagle occurred concurrently with the survey effort in Eagle Village. Similarly to the experience in Central, many of the refusals to participate in the survey occurred because of a distrust of the National Park Service. Staff participated in community events such as the Spring Carnival and spent much of their free time interacting with community residents to expand local understanding of the project and build relationships with residents.

Eagle Village

Noted above, staff worked in Eagle and Eagle Village concurrently. In consultation with the local and tribal governments, and with residents and local research assistants, ADF&G staff decided not to use the Census Designated Place (CDP) boundary between Eagle and Eagle Village. Instead, the boundary line was locally agreed upon, and residents were able to self-identify and confirm their residency in either the city or village. Figure 1-2 shows the difference between the CDP and the distinction used in this study. Many residents live along the road that connects Eagle to Eagle Village. After the 2009 Yukon River flood and the subsequent relocation of Eagle Village further away from Eagle City, some residents felt it was important to differentiate between the two sister communities. Although Eagle Village provided a thorough list of residents, gaining input from residents who lived along the road to confirm which community they identified with was important to accurately attribute harvest.

DATA ANALYSIS AND REVIEW

Survey Data Entry and Analysis

Surveys were coded for data entry by research staff and reviewed by the project leads in each community for consistency. Responses were coded following standardized conventions used by the Division of Subsistence to facilitate data entry. Information Management staff within the Division of Subsistence set up database structures within Microsoft SQL Server at ADF&G in Anchorage to hold the survey data. The database structures included rules, constraints, and referential integrity to ensure that data were entered completely and accurately. Data entry screens were available on a secured internal network. Daily incremental backups of the database occurred, and transaction logs were backed up hourly. Full backups of the database occurred twice weekly. This ensured that no more than one hour of data entry would be lost in the unlikely event of

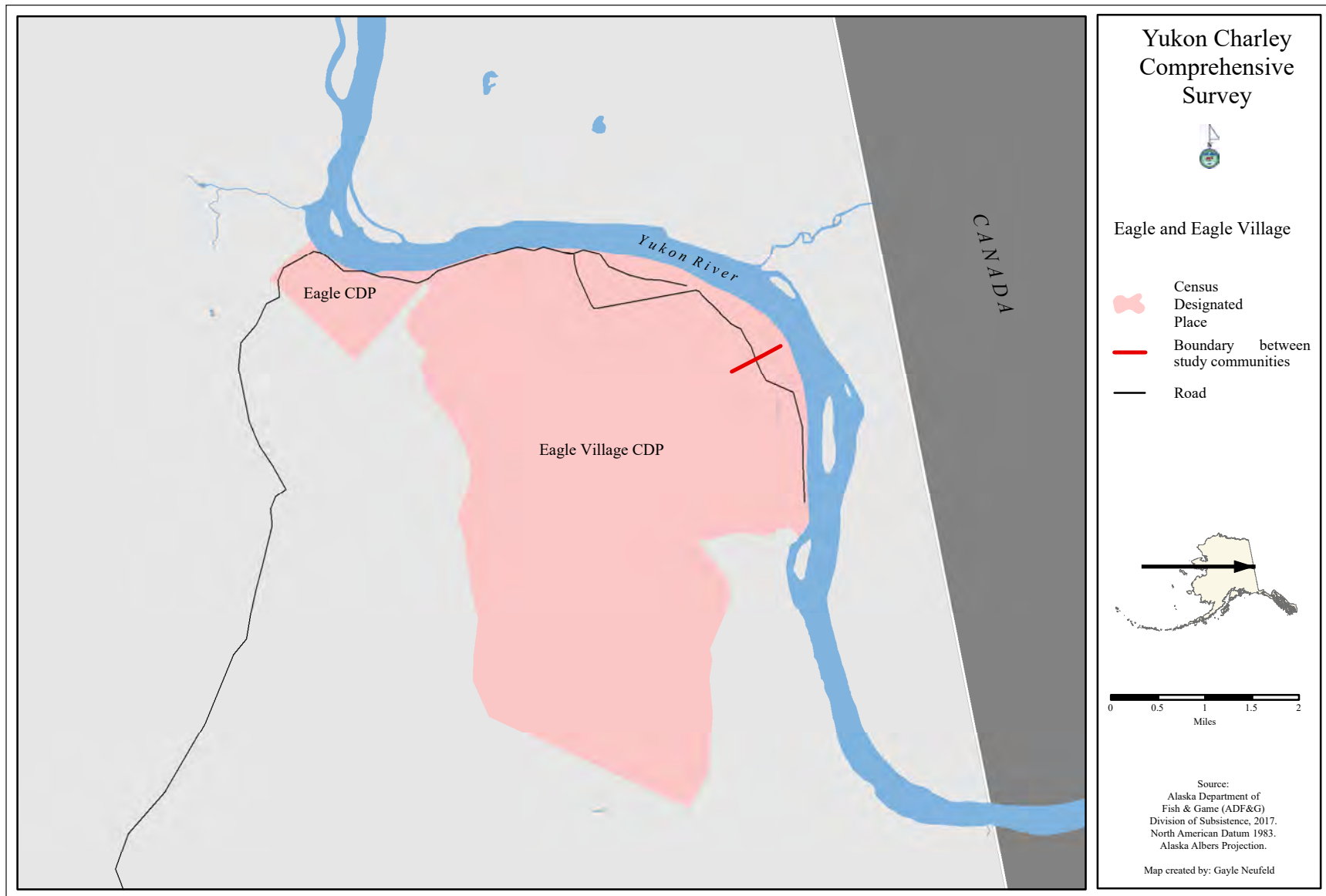


Figure 1-2.—Eagle and Eagle Village Census Designated Place and study area boundaries, 2017.

a catastrophic failure. All survey data were entered twice, and each set compared in order to minimize data entry errors.

Once data were entered and confirmed, information was processed with the use of Statistical Package for the Social Sciences (SPSS) software, version 21. Initial processing included the performance of standardized logic checks of the data. Logic checks are often needed in complex data sets where rules, constraints, and referential integrity do not capture all of the possible inconsistencies that may appear. Harvest data collected as numbers of animals, or in gallons or buckets, were converted to pounds usable weight using standard factors (see Appendix C for conversion factors).

ADF&G staff also used SPSS for analyzing the survey information. Analyses included review of raw data frequencies, cross tabulations, table generation, estimation of population parameters, and calculation of confidence intervals for the estimates. Missing information was dealt with on a case-by-case basis according to standardized practices, such as minimal value substitution or using an averaged response for similarly characterized households. Typically, missing data are an uncommon, randomly occurring phenomenon in household surveys conducted by the division. In unusual cases where a substantial amount of survey information was missing, the household survey was treated as a “nonresponse” and not included in community estimates. ADF&G researchers documented all adjustments.

Harvest estimates and responses to all questions were calculated based upon the application of weighted means (Cochran 1977). These calculations are standard methods for extrapolating sampled data. As an example, the formula for harvest expansion is:

$$H_i = \bar{h}_i S_i \quad (1)$$

$$\bar{h}_i = \frac{h_i}{n_i} \quad (2)$$

where:

H_i = the total estimated harvest (numbers of resource or pounds) for the community i ,

$\bar{h}_i$ = the mean harvest of returned surveys,

h_i = the total harvest reported in returned surveys,

n_i = the number of returned surveys, and

S_i = the number of households in a community.

As an interim step, the standard deviation (SD) (or variance [V], which is the SD squared) was also calculated with the raw, unexpanded data. The standard error (SE), or SD of the mean, was also calculated for each community. This was used to estimate the relative precision of the mean, or the likelihood that an unknown value would fall within a certain distance from the mean. In this study, the relative precision of the mean is shown in the tables as a confidence limit (CL), expressed as a percentage. Once SE was calculated, the CL was determined by multiplying the SE by a constant that reflected the level of significance desired, based on a normal distribution. The value of the constant is derived from the student's t distribution and varies slightly depending upon the size of the community. Though there are numerous ways to express the formula below, it contains the components of a SD, V, and SE:

$$CL\%(\pm) = \frac{t_{(\alpha/2)} \times \frac{s}{\sqrt{n}} \times \sqrt{\frac{N-n}{N-1}}}{\bar{h}} \quad (3)$$

where:

s = sample standard deviation,

n = sample size,

$\bar{h}$ = mean harvest of returned surveys,

N = population size, and

$t_{\alpha/2}$ = student's t statistic for alpha level ($\alpha = 0.95$) with $n-1$ degrees of freedom.

Small CL percentages indicate that an estimate is likely to be very close to the actual mean of the sample. Larger percentages mean that estimates could be further from the mean of the sample.

The corrected final data from the household survey will be added to the Division of Subsistence CSIS. This publicly accessible database includes community-level study findings.

Population Estimates and Other Demographic Information

As noted above, a goal of the research was to collect demographic information for all year-round households in each study community. For this study, “year-round” was defined as being domiciled in the community when the surveys took place and for at least six months during study year 2016 in Central and 2017 in Circle, Eagle, and Eagle Village. Because not all households were interviewed, population estimates for each community were calculated by multiplying the average household size of interviewed households by the total number of year-round households, as identified by Division of Subsistence researchers in consultation with community officials and other knowledgeable respondents.

There may be several reasons for the differences among the population estimates for each community generated from the division’s surveys and other demographic data developed by the 2010 federal census (U.S. Census Bureau 2011), the U.S. Census Bureau’s American Community Survey (U.S. Census Bureau n.d.), and the Alaska Department of Labor and Workforce Development (ADLWD n.d.) Sampling of households, depending on when surveys are conducted or eligibility criteria for inclusion in the survey, may explain differences in the population estimates. Also, as noted above, the study areas for Eagle and Eagle Village do not correspond to those used by the U.S. Census Bureau.

Map Data Entry and Analysis

As discussed above, maps were generated based on data collected using an iPad or on 11x17-inch paper maps. All data were entered on the iPad, whether in the field during interviews or by ADF&G research staff while coding survey data. Map features were matched to the survey form to ensure that all harvest data were recorded accurately. Once all data were entered, an ArcGIS file geodatabase was downloaded by ADF&G researchers from the server and maps showing harvest locations for each species created in ArcGIS 10.2 using a standard template for reports. Maps show search and harvest locations for fish species; search and harvest areas for plants, berries, wood, and birds; and hunting areas for land mammals. Maps were reviewed at a community review meeting to ensure accuracy as well as to identify any data that the community would like to keep confidential.

Food Security Analysis

A “food security” section of the survey used a standard national questionnaire to assess whether or not the household had enough food to eat, whether from subsistence sources or from market sources. The protocol used in this survey was a modified version of the 12-month food security scale questionnaire developed by the U.S. Department of Agriculture (USDA). This questionnaire is administered nationwide each year as part of the annual Current Population Survey (CPS). In 2007, approximately 125,000 U.S. households were interviewed, including 1,653 in Alaska (Nord et al. 2008). From CPS data, the USDA prepares an annual report on food security in the United States.

Food security protocols have been extensively reviewed (Coates 2004; Webb et al. 2006; Wunderlich and Norwood 2006) and have been used around the world, including in northern Burkina Faso (Frongillo and Nanama 2006), Bangladesh (Coates et al. 2006), Bolivia and the Philippines (Melgar-Quinonez et al. 2006), and Brazil (Pérez-Escamilla et al. 2004). Although there have been efforts to develop a universal food security measurement protocol (Swindale and Bilinsky 2006), researchers often modify the protocol slightly to respond to community social, cultural, and economic circumstances, as was done here.

For this study, the food security protocol was modified by the addition of several questions designed to determine whether food insecurities, if any, were related to subsistence foods or store-bought foods. Additionally, the wording of some questions was changed slightly. As in Brazil (Pérez-Escamilla et al. 2004), the USDA term “balanced meals” was difficult to interpret for indigenous Alaska populations, and was replaced with the term “healthy meals” to reflect unique dietary and cultural circumstances in rural Alaska.

In 2015, Division of Subsistence added a filter question to reduce the number of questions asked to food secure households. Households agreeing with the statement “We had enough of the kinds of foods we wanted to eat” were considered food secure and were not asked about increasingly severe instances of food insecurity.

Community Review Meetings

ADF&G staff presented preliminary survey findings and associated search and harvest maps at a meeting in each community. Table 1-2 shows when a community review meeting occurred in each study community. Due to the COVID-19 pandemic and State of Alaska mandated travel restrictions, in-person community review meetings could not occur in Central or Circle. Instead, a draft copy of the report was mailed to the Central Advisory Committee and the Circle Tribal Council for review.

FINAL REPORT ORGANIZATION

This report summarizes the results of systematic household surveys and mapping interviews conducted by staff from ADF&G as well as LRAs, and the report also summarizes resident feedback provided at community review meetings. The findings are organized by study community. Each chapter includes tables and figures that report findings on demographic characteristics, employment characteristics, individual participation in harvesting and processing of wild resources, characteristics of resource harvests and uses, food security, and harvest and use trends over time.

With regard to the harvest and use data in each chapter, the content is consistent in each chapter because the data are based on the survey instrument; however, there are differences among the chapters in terms of documenting historical trends. Each community has a different history of subsistence harvesting practices and none of the communities have had past comprehensive harvest surveys upon which to base comparisons.

ADF&G provided a draft report to the National Park Service and to the study communities for review and comment. After receipt of comments, the report was finalized. ADF&G mailed a short (four-page) summary of the study findings to every household in the four study communities.

2. CENTRAL

Alida Trainor and Helen S. Cold

In March 2017, three Alaska Department of Fish and Game (ADF&G) researchers and two local research assistants surveyed 25 of 44 (57%) households in Central (Table 2-1). Residents of Central harvested an estimated 9,288 lb of wild foods in 2016 (Table 2-2). This estimate represents a mathematical expansion to all households in the community based upon the harvests reported by the households of the sample. The average harvest per household was 211 lb, and the estimated population of Central was 79 persons (Table 2-3). Based on the population and the estimated total harvest, Central households harvested an average of 117 lb of wild foods per person in 2016. During the study year, Central residents reported harvesting an average of seven different types of wild resources per household (Table 2-2).

This chapter summarizes findings from the household surveys including demographic characteristics, responses to harvest assessment questions, harvest estimates, employment, income, sharing of wild resources, and food security. Results from this survey are available online in the Division of Subsistence Community Subsistence Information System (CSIS).¹ In addition to the comprehensive surveys, researchers conducted three ethnographic interviews with five key respondents. Two respondents were women and three were men. The ethnographic interviews provide context for quantitative data presented in this chapter, and findings from interviews, historical background information, and comparisons to earlier studies are presented throughout the chapter.

Table 2-1.—Sample achievement, Central, 2016.

Sample information	Community Central
Number of dwelling units	88
Survey goal	50%
Households surveyed	25
Households failed to be contacted	6
Households declined to be surveyed	13
Households moved or occupied by nonresident	44
Total households attempted to be surveyed	44
Refusal rate	34.2%
Final estimate of permanent households	44
Percentage of total households surveyed	56.8%
Survey weighting factor	1.76
Sampled population	45
Estimated population	79.2

Source ADF&G Division of Subsistence household surveys, 2017.

1. Alaska Department of Fish and Game (ADF&G) Division of Subsistence, Juneau. n.d. "Community Subsistence Information System: CSIS." <https://www.adfg.alaska.gov/sb/CSIS>. Hereinafter *ADF&G CSIS*.

Table 2-2.—Resource harvest and use characteristics, Central, 2016.

Characteristic	
Mean number of resources used per household	9.2
Minimum	0
Maximum	18
95% confidence limit ($\pm$)	14.7%
Median	9.0
Mean number of resources attempted to harvest per household	7.5
Minimum	0
Maximum	17
95% confidence limit ($\pm$)	18.4%
Median	7.0
Mean number of resources harvested per household	6.8
Minimum	0
Maximum	15
95% confidence limit ($\pm$)	17.8%
Median	6.0
Mean number of resources received per household	2.4
Minimum	0
Maximum	7
95% confidence limit ($\pm$)	27.7%
Median	1.0
Mean number of resources given away per household	1.8
Minimum	0
Maximum	10
95% confidence limit ($\pm$)	43.0%
Median	0.0
Household harvest (pounds)	
Minimum	0
Maximum	1,327
Mean	211.1
Median	80.1
Total harvest weight (lb)	9,288.4
Community per capita harvest (lb)	117.3
Percentage using any resource	96%
Percentage attempting to harvest any resource	88%
Percentage harvesting any resource	88%
Percentage receiving any resource	68%
Percentage giving away any resource	48%
Number of households in sample	25
Number of resources asked about and identified voluntarily by respondents	114

Source ADF&G Division of Subsistence household surveys, 2017.

Table 2-3.–Selected community study findings, Central, 2016.

Category	Community Central
Demography	
Population	79.2
Percentage of population that is Alaska Native	4.4%
Percentage of household heads born in Alaska	15.0%
Average length of residency of household heads (years)	23.6
Cash economy	
Average number of months employed	5.3
Percentage of employed adults working year-round	57.9%
Percentage of income from sources other than employment	34.1%
Average household income ^a	\$31,118
Per capita income ^a	\$17,288
Resource harvest and use	
Per capita harvest, pounds usable weight	117.3
Average household harvest, pounds usable weight	211.1
Number of resources used by 50% or more households	6.0
Average number of resources used per household	9.2
Average number of resources attempted to be harvested per household	7.5
Average number of resources harvested per household	6.8
Average number of resources received per household	2.4
Average number of resources given away per household	1.8
Percentage of total harvest taken by top ranked 25% of households	81.4%
Percentage of households that harvested 70% of harvest	16.0%
Per capita harvest by lowest ranked 50% of households	8.2
Percentage of total harvest taken by lowest ranked 50% of harvesting households	7.0%
Average number of resources used by lowest ranked 50% of households	6.3
Average number of resources used by top ranked 25% of households	12.5

Source ADF&G Division of Subsistence household surveys, 2017.

a. Includes income from sources other than employment.

COMMUNITY BACKGROUND

Central is located on the Steese Highway about 125 miles northeast of Fairbanks and 28 miles south of Circle.² The community sits within the Yukon River drainage near the area where the geology of the drainage changes, and the high terraces characteristic of the Eagle-Circle Canyon give way to the gently sloping alluvial basin of the Yukon Flats (Mertie 1937). This transitional zone encompasses the northeastern portion of the White Mountains, and Central lies within a small valley at the headwaters of Crooked Creek, a tributary of Birch Creek and ultimately of the Yukon River.³ To the south and east of the community, the Yukon-Charley Rivers National Preserve encompasses 3,948 square miles of land, including about 130 miles of the Yukon River and the entire drainage basin of the Charley River.⁴ Black spruce forests dominate the landscape, while deciduous tree and shrub species occupy areas of higher elevation or with well-drained

2. Alaska Department of Commerce, Community, and Economic Development (ADCCED) Division of Community and Regional Affairs, Juneau. n.d. “Alaska Community Database Online: Community Information.” Accessed February 14, 2020. <https://dcra-cdo-dccd.opendata.arcgis.com/>

3. Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys. 2018. “Interactive maps: USGS Ifsar Status.” Accessed February 14, 2020. <http://maps.dggs.alaska.gov/ifsarstatus/#65.85479;-143.94012;10>

4. National Park Service. 2020. “Yukon-Charley Rivers National Preserve Alaska.” Accessed March 2, 2020. <https://www.nps.gov/yuch/>

soils.⁵ Central has a continental subarctic climate characterized by long winters that can reach extremes of -60° F, and short warm summers that average around 50–60° F.⁶

The recorded history of Central begins with its settlement by non-Native prospectors, but Gwichyaa and Denduu Gwich'in have used the area surrounding the community for generations (Koskey et al. 2018). Archaeological evidence in adjacent areas of Interior Alaska indicates human presence on the landscape as early as 14,000 years before present, and early peoples were likely supported in large part by the Yukon River as a travel corridor and source of subsistence foods, especially salmon (Hoffecker and Elias 2003). Although Russian and British fur traders were some of the first Europeans to explore Interior Alaska in search of furs, few settlers traveled south and east of Fort Yukon, and fewer stayed permanently (Koskey et al. 2018). However, trading posts associated with the trapping industry paved the way for future immigrations, and the first prospectors to visit eastern Interior Alaska relied on these establishments to support their efforts.

The community of Central was established soon after gold was discovered in Crooked Creek in the 1890s and a roadhouse (known as “Central House”) was built to provide for the needs of the influx of miners prospecting in the area (Koskey et al. 2018). Roughly between 1910 and 1960, the area became a bustling hub of activity, attracting gold miners and entrepreneurs from other regions of Alaska, the United States, and abroad. The Steese Highway opened in 1928, and a community grew around the roadhouse, which included businesses focusing on moving freight and mining equipment as well as supplying food and manufactured goods. As prospectors continued to move through the region, miners organized to form several mining districts in an attempt to structure and enforce the staking of individual claims. These smaller districts later coalesced into the Central Mining District, which became one of the most important mining districts in the state. Initially, mining in the area consisted of mostly small-scale operations run by individual families or partnerships, and miners used simple tools such as rockers, sluice boxes and gold pans to remove gold from river and creek beds. These methods gave way to placer mining in some locations, a technique that involves removing vegetation and soil in an area and using water moving through a sluice box to separate gold from other excavated materials.⁷ As more easily accessible and higher-value gold deposits dwindled, technological advancements provided more efficient mineral extraction. The remnants of ditches dug to divert water from neighboring creeks to facilitate hydraulic mining are still evident on aerial imagery of the area surrounding Central (Koskey et al. 2018). Around 1911, some mining operations turned to dredging, an extremely effective mining method requiring high initial investment and large crews. Individual claims were purchased by companies that were better positioned to invest the resources needed to successfully run large-scale operations, and for the next several decades mining intensity followed closely with changes in the price of gold. Mining occurs in the region to this day, albeit less intensely than the community saw in its early years.

Gold mining may have been the central driving force responsible for the establishment of the community of Central, but other social and environmental factors were integral to its development (Koskey et al. 2018). In 1967 and again in 1989, major floods damaged local infrastructure and many residents lost equipment or suffered damage to homes and outbuildings. The creation of the Yukon-Charley Rivers National Preserve in 1980 came with new regulations restricting activities such as mining, timber cutting, and trapping on lands near Central. The road to nearby Circle Hot Springs intersects the Steese Highway at Central, where the Arctic Circle Hot Springs Resort had long served as a central social gathering spot and boosted the economic viability of the area until it closed its doors to the public in 2002 .

Today, the roughly 100 residents of Central are primarily of European descent. The Steese Highway is maintained year-round by the Alaska Department of Transportation, enabling regular deliveries of goods and services to the community from Fairbanks. The community has a state-owned gravel airstrip, and

5. University of Alaska Anchorage, Alaska Center for Conservation Science. 2019. “Alaska land cover and wetlands.” Accessed February 14, 2020. <https://composite.accs.axiomdatascience.com/#map>

6. U.S. Climate Data. 2020. “Central, Alaska.” Accessed February 14, 2020. <https://www.usclimatedata.com>

7. National Park Service, Yukon-Charley Rivers National Preserve Alaska. 2015. “What is placer gold mining?” Accessed February 14, 2020. <https://www.nps.gov/yuch/learn/historyculture/placer-mining.htm>

residents also use boats, snowmachines, and dog sleds for community travel and recreation. Central is a checkpoint during the annual Yukon Quest International Sled Dog Race.⁸ Additional public facilities include a kindergarten through grade 12 school, a post office, and a community health clinic. The Steese Roadhouse continues to provide food and lodging to travelers in the area, and several small stores, a gas station, a bed and breakfast, and a lodge accommodate tourists and residents alike.

SEASONAL ROUND

Central residents tailor their harvests of wild foods to match the seasonal availability of different resources. Figure 2-1 depicts the area where Central residents searched for and harvested all wild resources in 2016. Using a seasonal round approach to comprehensively understand harvest patterns effectively illustrates relationships among time of year, resource type, and different subsistence activities.

Spring is a time of transition for the people of Central. In March, when temperatures are still cold and snow and ice are still present and thick enough for safe travel, many people fish for northern pike⁹ and burbot under the ice. Some residents run trap lines through the winter and early spring, capturing primarily marten, lynx, wolf and occasionally wolverine (07152019CNT3). Some hunters harvest waterfowl during their migrations north to summer breeding grounds. As the weather warms and daylight hours increase, these activities cease and people turn to preparing for summer activities.

Long days and warm temperatures encourage subsistence activities in summer months in Central. Traveling to fish for salmon, either on the nearby Yukon River or on the Copper River in southcentral Alaska, is a focus for many residents during summer months. Some families use drift- and setnets to capture Chinook and fall chum salmon on the Yukon River. Those that travel to further locations (including the sockeye salmon personal use fishery on the Copper River near Chitina) may use dipnets to harvest salmon. Many people also fish for nonsalmon fish, including pike, burbot, Arctic grayling,¹⁰ and sheefish. Different berry species are picked as they ripen in the late summer into early fall, and other plants and fungi are collected throughout the growing season.

As temperatures fall, days grow shorter, and vegetation changes color, people turn their attention to large land mammals. Caribou are the primary large land mammals hunted by Central residents, and the first hunting opportunity for the species takes place in late summer. Some hunters will also harvest bears during this time, sometimes incidentally when they are encountered while searching for ungulates. Moose hunting takes place in September, and many individuals also hunt for upland game birds and snowshoe hares in the fall and winter months. When snow and ice conditions become favorable in late fall to early winter, trappers set up new winter traplines. Depending on the proximity of the Fortymile caribou herd, winter hunting for caribou may occur.

Despite the cold temperatures and limited daylight hours in winter, many Central residents participate in a variety of winter subsistence activities. As soon as the ice is thick enough to safely traverse, fishers jig for pike and sheefish and set lines to capture burbot. Hunters increase harvest pressure on snowshoe hares in the winter, and some hunters also take caribou.

Central's location on the Steese Highway allows residents to participate in year-round subsistence activities. For residents who may not have snowmachines or dog teams, the highway opens the possibility to drive out of town in search of easily accessible areas for berries, birds, large land mammals and small land mammals. Throughout this chapter, the use of the highway is discussed and documented through the search and harvest maps presented in each resource section.

8. Yukon Quest. n.d. "Race central." Accessed February 14, 2020. <https://www.yukonquest.com>

9. Hereinafter *pike*.

10. Hereinafter *grayling*.

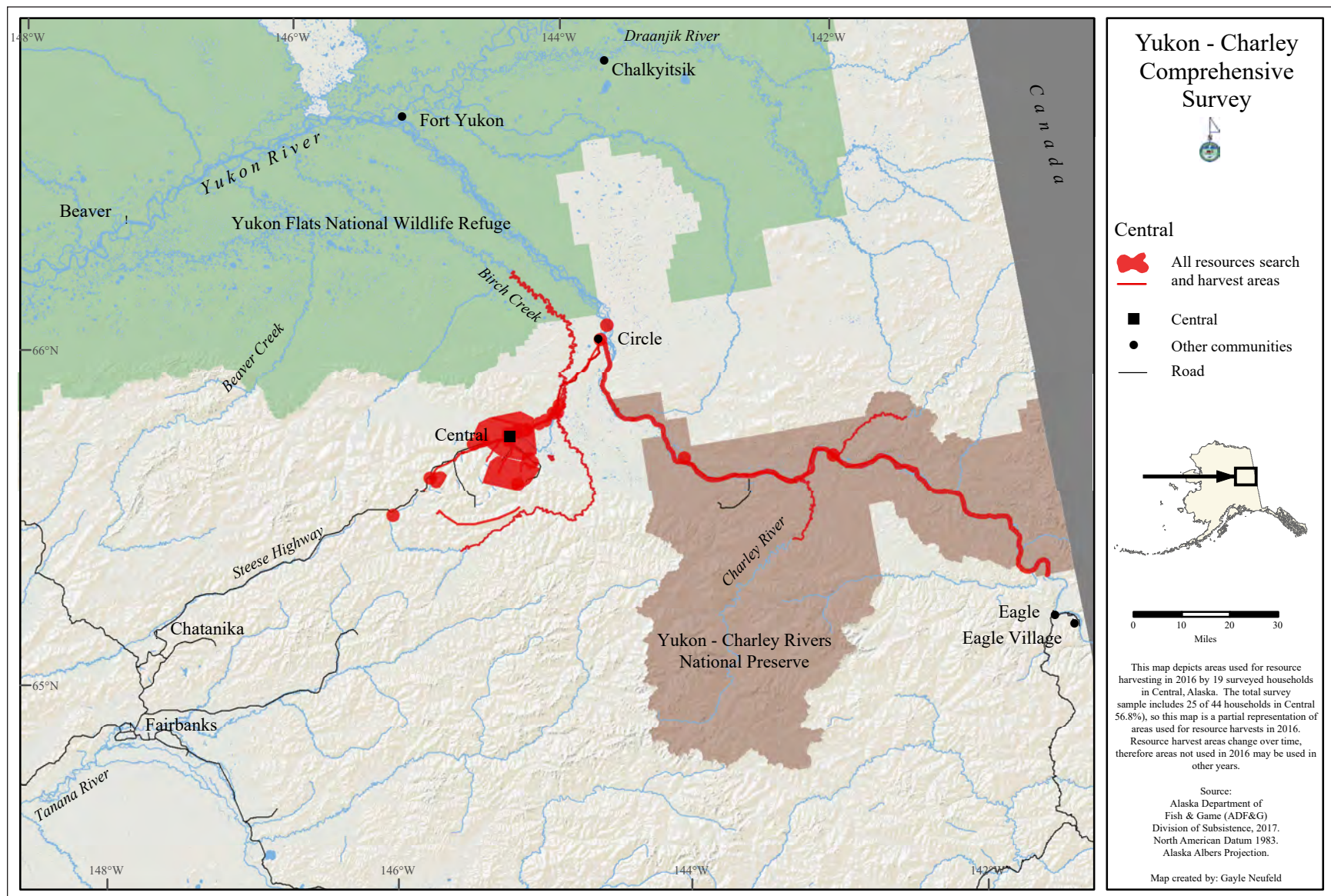


Figure 2-1.—All resources search and harvest areas, Central, 2016.

POPULATION ESTIMATES AND DEMOGRAPHIC INFORMATION

Subsistence Division staff surveyed 25 households with 45 occupants (Table 2-4). Table 2-5 shows the population estimates of this study alongside the 2010 U.S. Census and the 2012–2016 American Community Survey (ACS). This study estimated a total population of 79. The 2010 Census counted a slightly higher population (96), and the ACS average range fell slightly below that of this study (17–67 people).

Household sizes range from one to four people, with an average of two people per household (Table 2-3). On average, residents had spent 22 years in Central. One respondent had lived in Central for 64 years at the time of data collection, the longest occupancy documented in this study. The survey asked respondents to identify their birth communities: the majority (76%) of the population was born in U.S. states outside Alaska (Table D2-1). Several individuals (2% of the population) were born outside the United States. Only 7% of residents were born in Central. Eleven percent of the population identified the neighboring city of Fairbanks as their birthplace. Similar to the general population, heads of households mostly identified other U.S. states as their birthplace (83%); Fairbanks and Central were the highest birthplace locations within Alaska (both 5%; Table D2-2). Central is a predominantly non-Native community: only 4% of the population identify as Alaska Native (Figure 2-2).

Figure 2-3 and Table D2-3 show the age profile of Central's population. Most of Central's population falls into older age brackets. The average age was 55 years; the oldest person was 79. Eighteen percent of the population is between the ages of 55 and 59, and 22% is between the ages of 65 and 69. This study only identified five children under the age of ten.

Figure 2-4 shows the population of Central from 1950 to 2016. The population experienced a steady increase from 1980 to 2010 but has slowly declined since then.

INCOME AND CASH EMPLOYMENT

Respondents were asked about earned income (wages earned by all household members 16 years old and older) and other income (e.g., Alaska Permanent Fund dividend, Social Security, public assistance, handicrafts). Table 2-6 shows the estimated income from both wage employment and other sources. In 2016, Central residents earned a total of \$902,660. Earned income per household averaged \$20,515. Services accounted for the majority of earned income in Central, contributing \$310,110 to the total. State government and construction were the second and third most lucrative sources of earned income. Together the top three sources of earned income employed 61% of working adults (Table 2-7). Central residents received a total of \$466,542 from other income sources. This accounted for 34% of the community's total income. The highest sources of other income were Social Security, the Alaska Permanent Fund dividend, and pension and retirement funds. Figure 2-5 shows the top income sources from both employment and other sources. Services, state government, and Social Security made up 62% of all income in Central. The Alaska Permanent Fund accounted for 5% of all income. The median income estimated during this study was \$17,622 with a large confidence interval (Table D2-4).

Approximately 58% of adults held some form of employment during the 2016 study year (Table D2-5). Adults reporting employment during 2016 worked an average of nine months out of the year. Seventy-four percent of households reported having at least one employed adult. Thirty-five percent of employed adults worked full time, and 27% reported holding an on-call position (Table D2-6).

FOOD SECURITY

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were

Table 2-4.–Sample and demographic characteristics, Central, 2016.

Characteristics	Community Central
Sampled households	25
Eligible households	44
Percentage sampled	56.8%
Sampled population	45
Estimated community population	79.2
Household size	
Mean	1.8
Minimum	1.0
Maximum	4.0
Age	
Mean	55.3
Minimum	2
Maximum	79
Median	61.0
Length of residency	
Total population	
Mean	21.5
Minimum ^a	0.0
Maximum	64.0
Heads of household	
Mean	23.6
Minimum	1.0
Maximum	64.0
Alaska Native	
Estimated households ^b	
Number	1.8
Percentage	4.0%
Estimated population	
Number	3.5
Percentage	4.4%

Source ADF&G Division of Subsistence household surveys, 2017.

a. A minimum age of 0 (zero) is used for infants

b. The estimated number of households in which at least one head of household is Alaska Native.

Table 2-5.—Total and Alaska Native population estimates, Central, 2010, 2012–2016, and 2016.

	Census (2010)	5-year American Community Survey (2012–2016)		This study (2016)	
		Estimate	Range ^a	Estimate	Range ^b
Total population					
Households	53	39.0	25 – 53	44.0	
Population	96	42.0	17 – 67	79.2	70 – 88
Alaska Native					
Population	6	3.0	0 – 7	3.5	4 – 4
Percentage	6.3%	7.1%	0.0% – 16.7%	4.4%	4.4% – 4.4%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey (ACS) 2016 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2017, for 2016 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

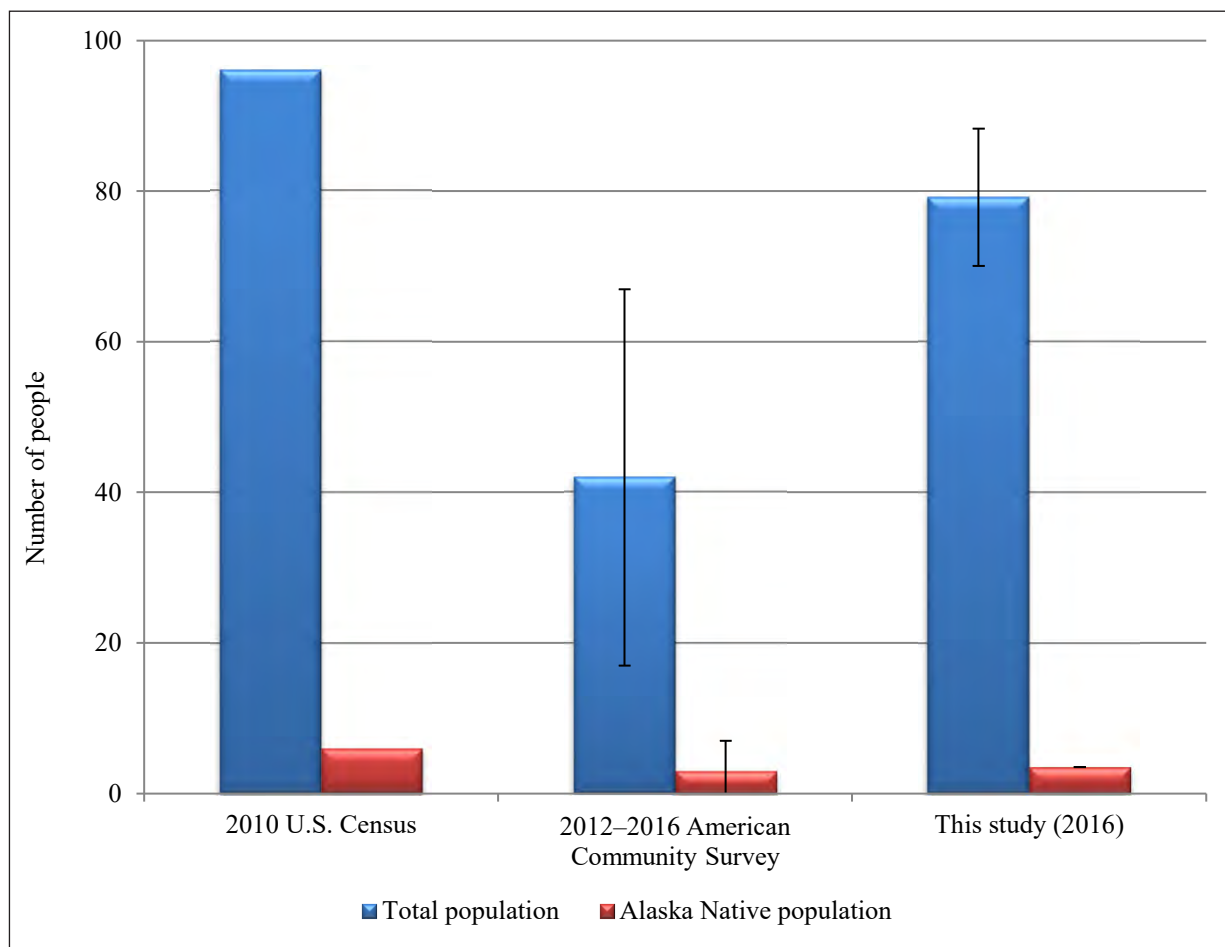


Figure 2-2.—Total and Alaska Native population estimates, Central, 2010, 2012–2016, and 2016.

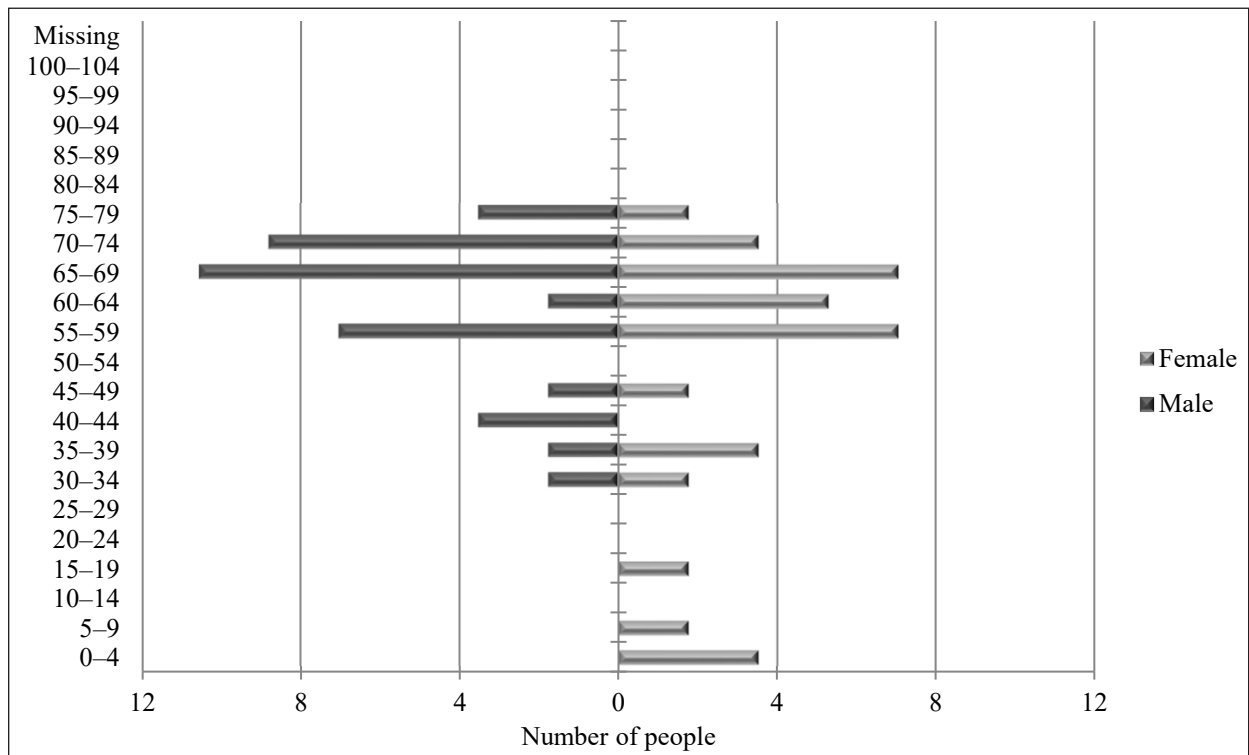


Figure 2-3.—Population profile, Central, 2016.

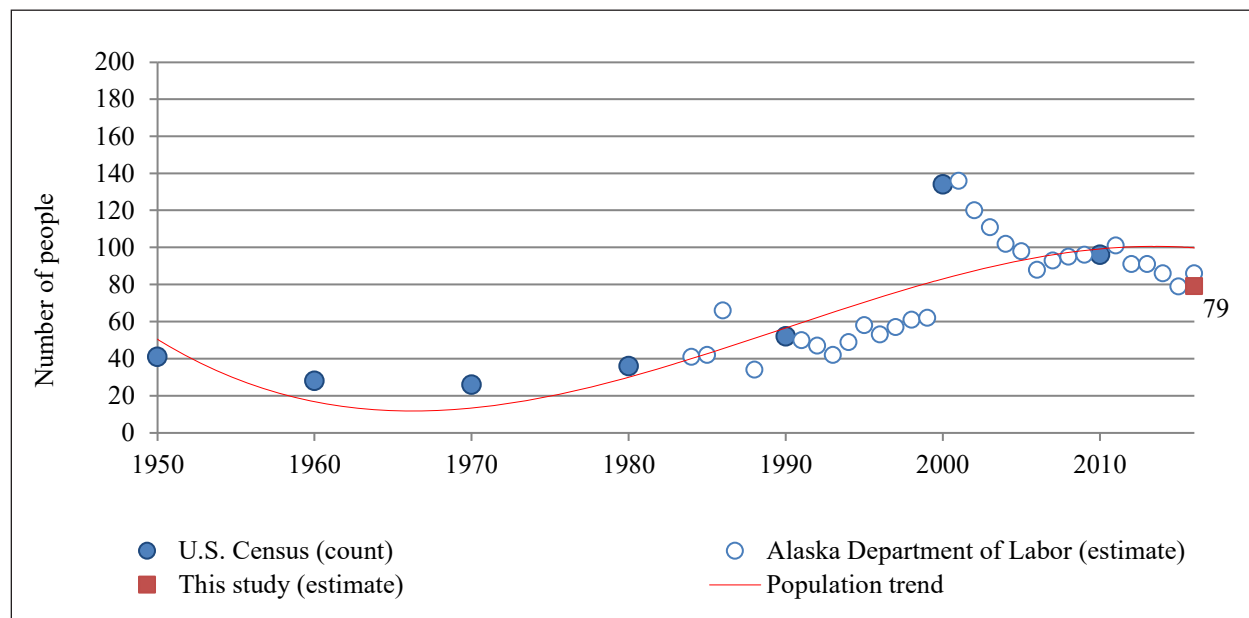


Figure 2-4.—Population estimates, Central, 1950–2016.

Table 2-6.—Estimated earned and other income, Central, 2016.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Services	11.0	9.0	\$310,110	\$2,676 – \$832,213	\$7,048	22.6%
State government	5.5	5.4	\$274,360	\$54,724 – \$731,378	\$6,235	20.0%
Construction	9.1	9.0	\$108,580	\$2,074 – \$402,894	\$2,468	7.9%
Transportation, communication, and utilities	3.7	3.6	\$103,758	\$5,391 – \$573,336	\$2,358	7.6%
Agriculture, forestry, and fishing	1.8	1.8	\$38,675	\$906 – \$200,985	\$879	2.8%
Local government, including tribal	3.7	3.6	\$38,244	\$3,739 – \$141,812	\$869	2.8%
Retail trade	1.8	1.8	\$16,628	\$10,453 – \$36,274	\$378	1.2%
Other employment	1.8	1.8	\$8,314	\$5,227 – \$20,236	\$189	0.6%
Manufacturing	7.3	7.2	\$3,326	\$1,000 – \$28,844	\$76	0.2%
Federal government	1.8	1.8	\$665	\$418 – \$1,451	\$15	0.0%
Earned income subtotal	42.1	32.5	\$902,660	\$182,509 – \$1,974,090	\$20,515	65.9%
Other income						
Social Security		26.4	\$255,790	\$130,611 – \$399,640	\$5,813	18.7%
Alaska Permanent Fund dividend		42.2	\$71,949	\$59,358 – \$88,137	\$1,635	5.3%
Pension / retirement		15.8	\$46,690	\$8,381 – \$98,621	\$1,061	3.4%
Veteran disability benefit		1.8	\$31,680	\$18,000 – \$63,360	\$720	2.3%
Longevity bonus		7.3	\$18,150	\$3,696 – \$38,500	\$413	1.3%
SNAP (Supplemental Nutrition Assistance Program)		5.3	\$16,621	\$655 – \$57,679	\$378	1.2%
Unemployment insurance		1.8	\$7,040	\$4,000 – \$14,080	\$160	0.5%
Fuel voucher		7.0	\$6,864	\$1,232 – \$14,080	\$156	0.5%
Adult public assistance (OAA, APD)		1.8	\$5,745	\$3,264 – \$11,489	\$131	0.4%
Heating assistance		3.5	\$5,342	\$3,035 – \$12,382	\$121	0.4%
Other		3.5	\$446	\$253 – \$2,847	\$10	0.0%
Supplemental Security Income		1.8	\$226	\$128 – \$1,634	\$5	0.0%
TANF (Temporary Assistance for Needy Families)		0.0	\$0	\$0 – \$0	\$0	0.0%
Workers' compensation / insurance		0.0	\$0	\$0 – \$0	\$0	0.0%
Disability benefit		0.0	\$0	\$0 – \$0	\$0	0.0%
Native corporation dividend		0.0	\$0	\$0 – \$0	\$0	0.0%
Child support		0.0	\$0	\$0 – \$0	\$0	0.0%
Foster care		0.0	\$0	\$0 – \$0	\$0	0.0%
Meeting honoraria		0.0	\$0	\$0 – \$0	\$0	0.0%
Other income subtotal		26.4	\$466,542	\$310,450 – \$634,780	\$10,603	34.1%
Community income total			\$1,369,202	\$696,691 – \$2,327,264	\$31,118	100.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table 2-7.—Employment by industry, Central, 2016.

Industry	Jobs	Employed Households	Employed Individuals	Percentage of wage earnings
Estimated total number	47.8	32.5	42.1	
Federal government	3.8%	5.6%	4.3%	0.1%
Transportation and material moving occupations	3.8%	5.6%	4.3%	0.1%
State government	11.5%	16.7%	13.0%	30.4%
Transportation and material moving occupations	7.7%	11.1%	8.7%	20.3%
Occupation not indicated	3.8%	5.6%	4.3%	10.1%
Local government, including tribal	7.7%	11.1%	8.7%	4.2%
Teachers, librarians, and counselors	3.8%	5.6%	4.3%	0.6%
Handlers, equipment cleaners, helpers, and laborers	3.8%	5.6%	4.3%	3.7%
Agriculture, forestry, and fishing	3.8%	5.6%	4.3%	4.3%
Agricultural, forestry, and fishing occupations	3.8%	5.6%	4.3%	4.3%
Construction	19.2%	27.8%	21.7%	12.0%
Engineers, surveyors, and architects	7.7%	11.1%	8.7%	5.6%
Construction and extractive occupations	11.5%	16.7%	13.0%	6.5%
Manufacturing	15.4%	22.2%	17.4%	0.4%
Writers, artists, entertainers, and athletes	15.4%	22.2%	17.4%	0.4%
Transportation, communication, and utilities	7.7%	11.1%	8.7%	11.5%
Service occupations	7.7%	11.1%	8.7%	11.5%
Retail trade	3.8%	5.6%	4.3%	1.8%
Service occupations	3.8%	5.6%	4.3%	1.8%
Services	23.1%	27.8%	26.1%	34.4%
Registered nurses, pharmacists, dietitians, therapists, and physicians assistants	3.8%	5.6%	4.3%	9.2%
Service occupations	3.8%	5.6%	4.3%	8.8%
Mechanics and repairers	3.8%	5.6%	4.3%	0.1%
Transportation and material moving occupations	3.8%	5.6%	4.3%	8.8%
Handlers, equipment cleaners, helpers, and laborers	7.7%	11.1%	8.7%	7.4%
Industry not indicated	3.8%	5.6%	4.3%	0.9%
Mechanics and repairers	3.8%	5.6%	4.3%	0.9%

Source ADF&G Division of Subsistence household surveys, 2017.

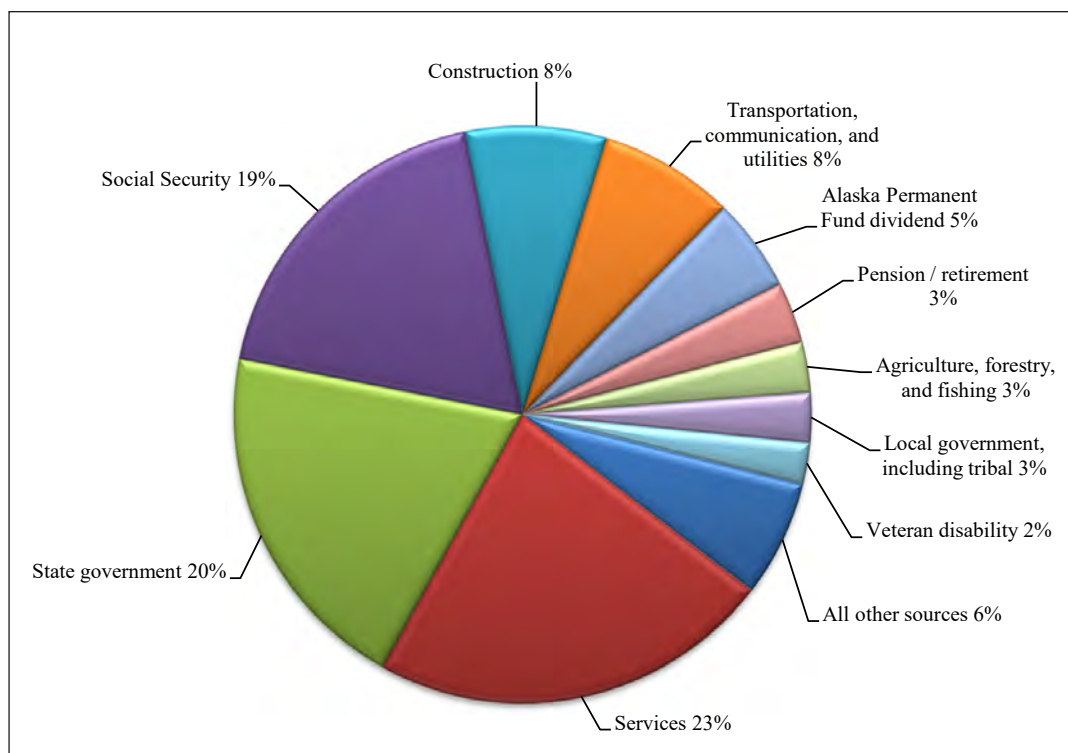


Figure 2-5.—Top income sources, Central, 2016.

broken down further into two subcategories: high or marginal food security. Food insecure households were divided into two subcategories: low food security or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Central residents are summarized in Figure 2-6.¹¹ Four percent of households worried they would run out of food, and 17% did not have what they needed to hunt, gather, or buy food. Five percent of households ran out of food at some point during the 2016 study year.

Food security results for surveys for Central, the state of Alaska, and the United States are summarized in Figure 2-7. Of those that chose to participate in the food security section of the survey, 100% of households were characterized as food secure. Compared to the rest of Alaska and the United States this is considerably higher (87% and 88% respectively).

Figure 2-8 portrays the mean number of food insecure conditions per household by food security category by month. Figure 2-9 shows which months households reported foods not lasting. Between April and October Central households did not report a shortage of either subsistence or store-bought foods. However, between January and March, and again in December, 4% of responding households reported running out of store-bought food. Households experienced shortages of subsistence foods in the winter months of February, March, and October through December.

11. During data collection, many respondents chose not to participate in the food security section of the survey. Consequently, the results reported in this section are compiled from a small number of households and may not accurately reflect the full extent of food secure or insecure conditions in the community.

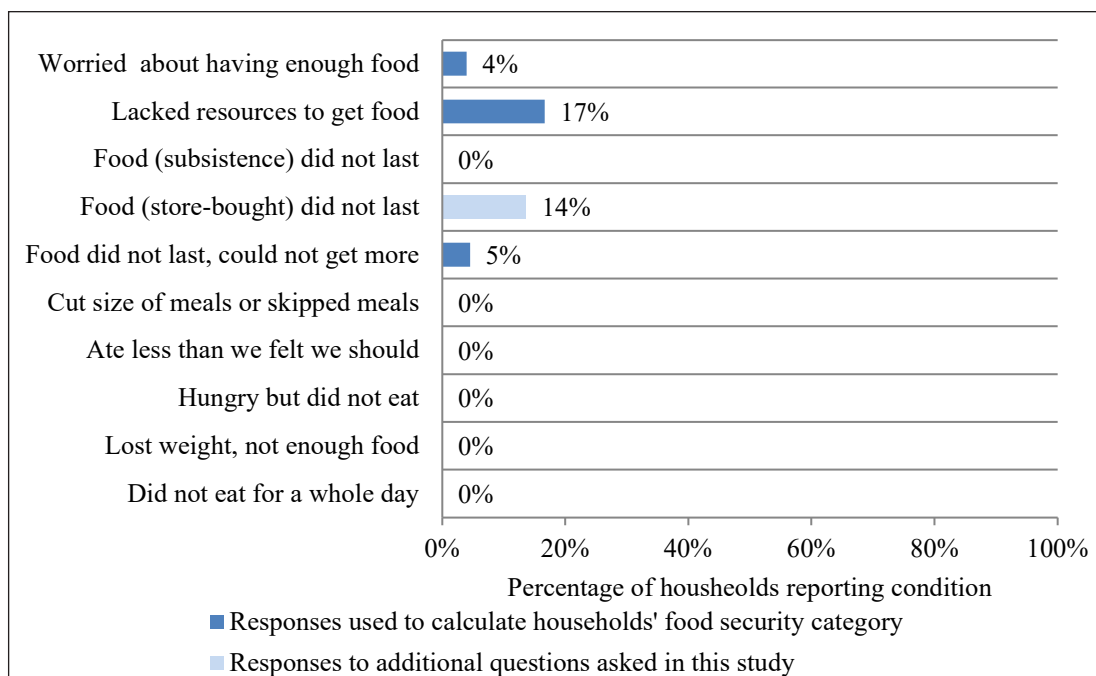


Figure 2-6.—Responses to questions about food insecure conditions, Central, 2016.

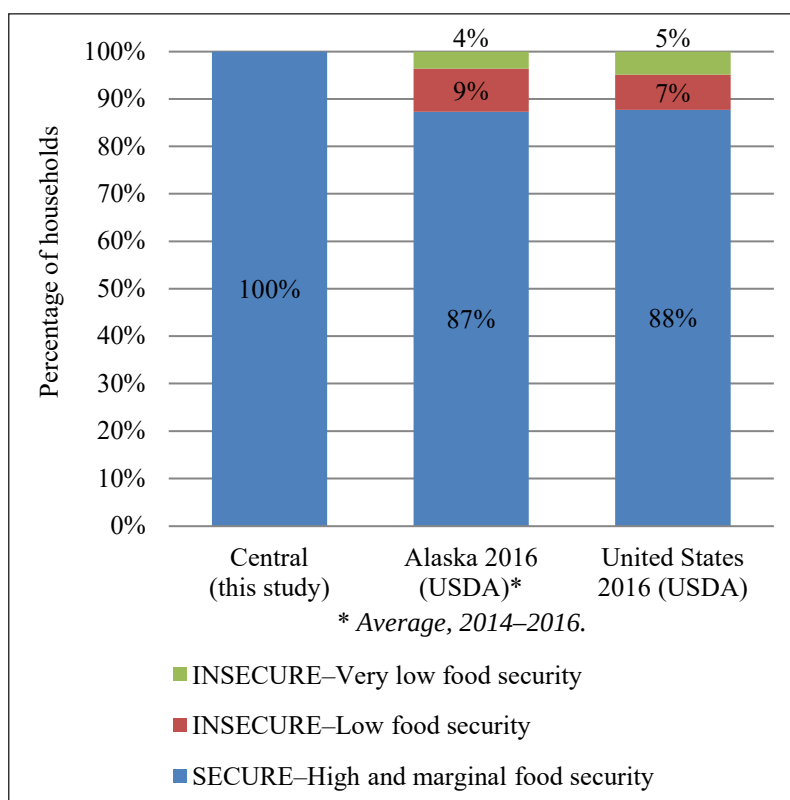


Figure 2-7.—Comparison of food security categories, Central, Alaska, and United States, 2016.

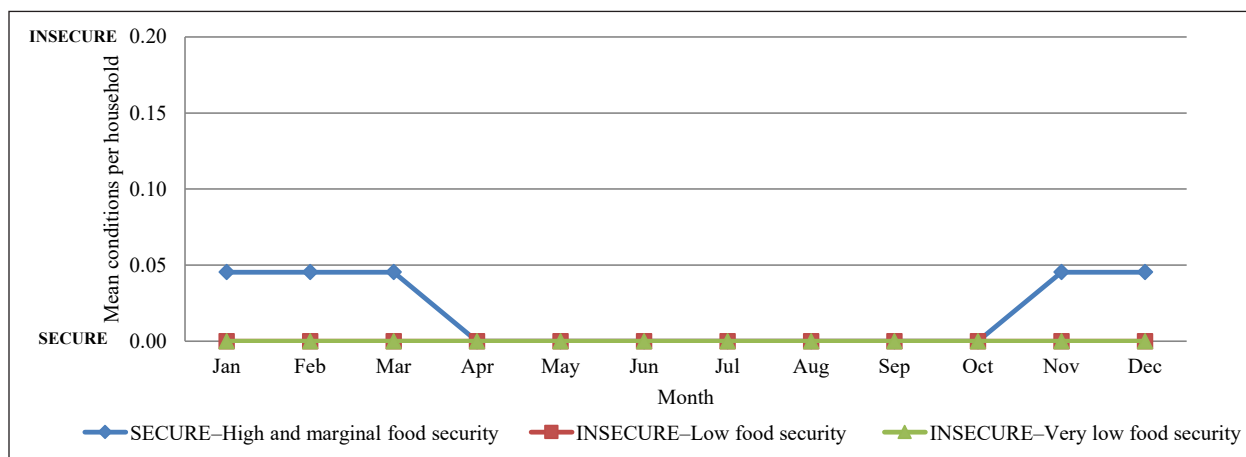


Figure 2-8.—Mean number of food insecure conditions by month and household food security category, Central, 2016.

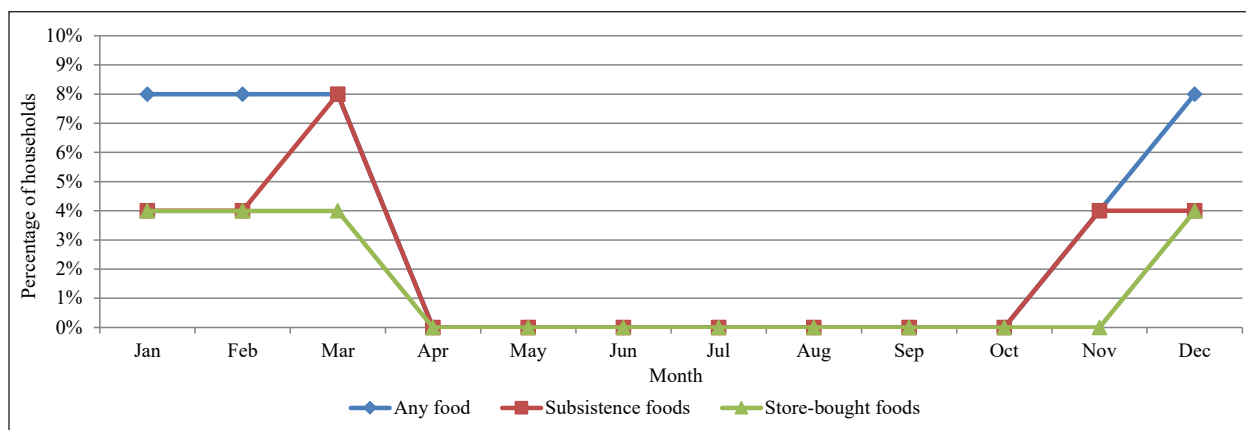


Figure 2-9.—Months when food did not last, Central, 2016.

SUMMARY OF HARVEST AND USE PATTERNS

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 2-10 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Central residents in 2016. Ninety-one percent of people in Central participated in processing vegetation, and 86% participated in gathering vegetation. High rates of participation existed in the fish category: 48% of individuals were part of harvesting efforts for fish, and 50% helped process them. Only 25% of individuals hunted large land mammals. This lower level in hunt participation is likely due to the nature of the resource category. In order to participate in hunting, individuals need more specialized equipment, financial resources, and skills. However, 48% of individuals helped process large land mammals, illustrating the common pattern that more people are needed to process and put away a large land mammal than are required to hunt them.

Table D2-7 shows levels of individual participation in craft activities. Several Central residents built fish wheels or sewed skins or cloth. All residents cooked wild foods.

Harvest and Use of Wild Resources at the Household Level

Figure 2-11 shows by resource category the percentages of households that used wild resources and attempted to harvest and harvested wild foods. More than half of all households used five of the seven resource categories. More households used vegetation than any other resource category (96%). Large land mammals followed: 72% of households reported use. Salmon, birds and eggs, and nonsalmon fish were all used by 60% of households. Despite the high use of salmon, only 16% of households attempted harvest

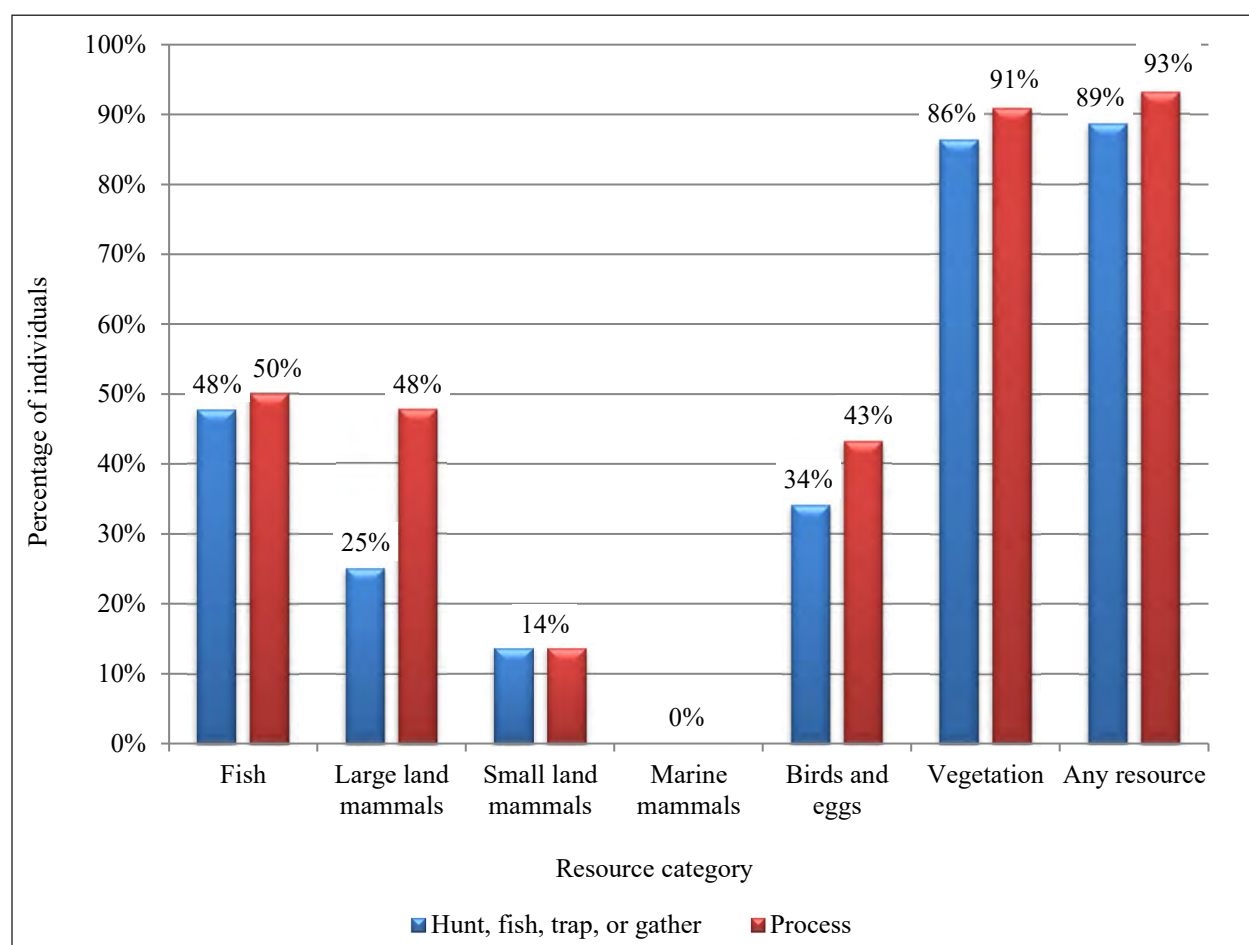


Figure 2-10.—Individual participation in subsistence harvesting and processing, by category, Central, 2016.

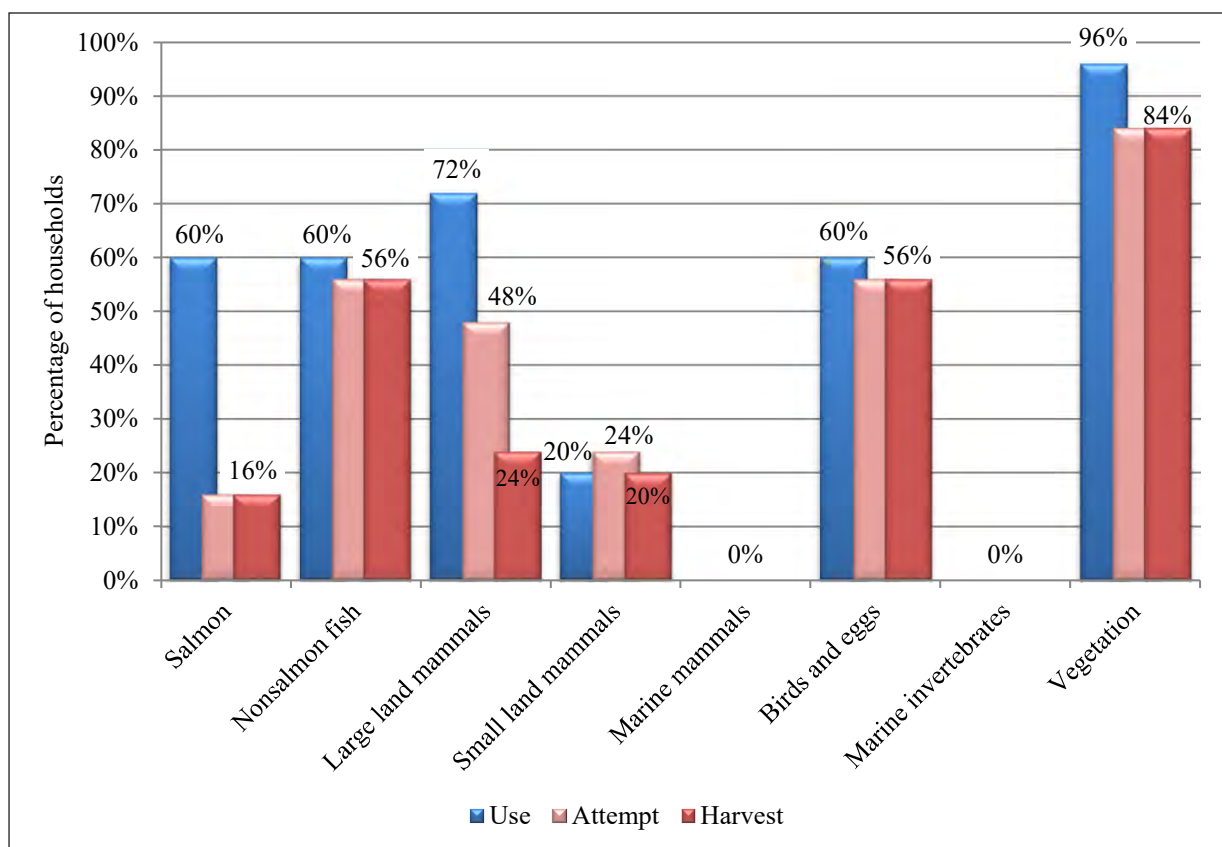


Figure 2-11.—Percentages of households using, attempting to harvest, and harvesting wild resources, by category, Central, 2016.

or successfully harvested those fish. Similarly, harvest was highest in the vegetation category (84%); and nonsalmon fish and birds and eggs were both harvested by 56% of households. This indicates a high rate of sharing within Central. Three of the five resource categories that were used by Central households experienced equal rates of attempted harvest and harvest, meaning that those who tried to harvest were successful. Large land mammals were the exception. Although 48% of households attempted to harvest large land mammals such as caribou or moose, only 24% reported making a harvest. This discrepancy could be a result of abundance issues, competition with other hunters, or other factors. These issues will be explored further in the large land mammal section below.

Table 2-2 summarizes resource harvest and use characteristics for Central in 2016 at the household level. The average harvest was 211 lb usable weight per household, 117 lb per capita. During the study year, community households harvested an average of seven kinds of resources and used an average of nine kinds of resources. The maximum number of resources used by any household was 18. In addition, households gave away an average of two kinds of resources. Overall, as many as 114 resources were available for households to harvest in the study area; this included resources that survey respondents identified but were not asked about in the survey instrument. Table D2-8 lists which resources Central residents used during the study year.

In addition to asking about edible resources, the survey used in this study asked respondents about their use of natural materials for the making of handicrafts and some additional questions pertaining to modes of transportation and the use of motorized equipment to search for or harvest wild resources. Table D2-9 reports the use of bark, horns, antlers and other raw materials. Four percent of households reported using bark and antlers, and 7% used other raw materials. Table D2-10 shows the types of transportation used by Central residents in 2016 to access wild resources. All-terrain vehicles (ATVs) and snowmachines were the

most commonly used alternate mode of transportation (40% and 38% of households, respectively). Boats were used by 25% of responding households. A small percentage of households reported using aircraft (7%) or dogsleds (6%) to access the subsistence resources they needed during the study year. Overwhelmingly, households owned the equipment they used for transportation. Only 2% reported borrowing or sharing transportation (boats). Table D2-11 shows the additional equipment used during harvesting activities. Central residents used chainsaws, winches, and cars or trucks during the study year.

SHARING OF WILD RESOURCES

Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 rural Alaska communities found that about 33% of the households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 2-12, in the 2016 study year in Central, about 70% of the harvests of wild resources as estimated in pounds usable weight were harvested by 16% of the community's households. This represents a significantly more specialized distribution of harvesting than the average estimated by Wolfe et al. (2010). Demographics, income characteristics, and sharing patterns within Central may explain the higher concentration of harvest amongst a fewer number of households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Central and the other study communities.

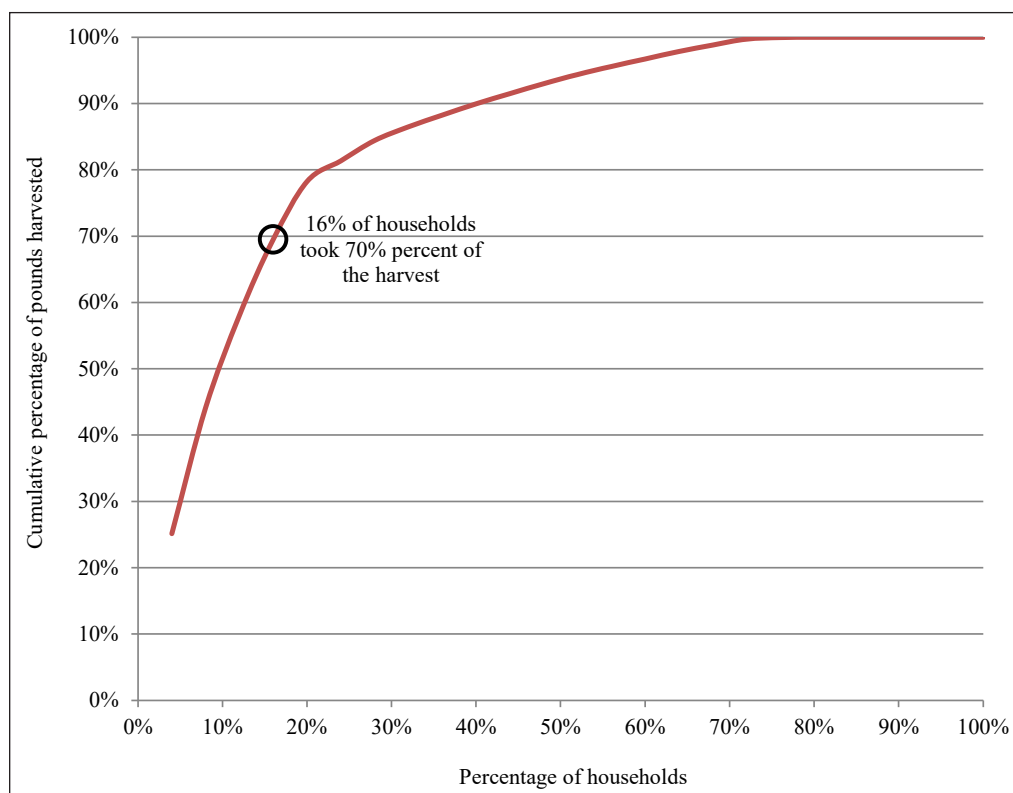


Figure 2-12.—Household specialization, Central, 2016.

HARVEST QUANTITIES AND COMPOSITION

Table 2-8 reports estimated wild resource harvests and uses by Central residents in 2016 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors¹²). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and nonlocal hunters. Purchased foods are not included, but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

Figure 2-13 shows the composition of harvest in pounds by resource category. Large land mammals contributed the greatest amount of edible weight to the community total, making up 45% of the total harvest. Nonsalmon fish accounted for 24% of the harvest by weight, and salmon contributed 13% to the community total.

Table 2-9 lists the top ranked resources used by households and Figure 2-14 shows the species with the highest harvests during the 2016 study year. Wood was used, likely for heating purposes, by 92% of households, more than any other wild resource. Of the edible resources used by Central residents, blueberries, moose, and caribou were used by the highest percentages of households (68%, 64%, and 60% respectively). Per capita harvests indicate that moose, caribou, and Chinook salmon were the species with the highest harvest in 2016: these resources contributed 31%, 12%, and 11% to the total edible harvest, respectively. Several nonsalmon fish species were among the top harvested resources, including pike (9%), sheefish (7%), grayling (3%), and burbot (3%).

HARVEST AND USE CHARACTERISTICS BY RESOURCE CATEGORY

Salmon

Central residents travel to participate in the Yukon River salmon fishery. Overall, 60% of Central households reported that they used salmon in 2016. In 2016, 16% of Central households harvested approximately 1,005 lb of Chinook salmon (13 lb per capita; Table 2-8). This harvest represents 86% of the 2016 salmon harvest (Figure 2-15). Residents who harvested this species shared the fish within the community. Four percent of households gave some away, and 24% reported receiving it from others. The high rate of receipt could either mean that a small portion of households shared with many others within Central, or that Central residents receive Chinook salmon from others outside of the community. One respondent explained that his household prefers Chinook salmon. In the past when he still fished, he and his wife, “mainly we only did kings, Chinook. And I’ve not had a fresh Chinook now for what, two years I think, you know. But that’s just the way life is” (03292017CNT1). Central residents also harvested 166 lb of coho salmon, representing 14% of the salmon harvest (Table 2-8; Figure 2-15). Some respondents reported receiving sockeye salmon. Central residents used set gillnets, fish wheels, rod and reel and other methods to catch their salmon (Table 2-10; Figure 2-16). The majority of Chinook salmon was caught in a set gillnet (54%), and all of the coho salmon was caught in a fish wheel (Table D2-12). No fish were fed to dogs in 2016.

Figure 2-17 shows the areas used by survey participants to harvest salmon. Residents identified several locations along the Yukon River. The majority of locations fall within the Yukon Charley Rivers National Preserve. One fishing location is downstream of Circle. To fish for salmon on the Yukon River, Central residents must drive to the boat dock in Circle and then travel by boat to their fishing location from there.

12. Resources that are not eaten, such as firewood and some furbearers, are included in the table but are assigned a conversion factor of zero.

Table 2-8.—Estimated harvest and use of wild resources, Central, 2016.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount		95% confidence limit (±) harvest	
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit		Mean per household
All resources	96.0	88.0	88.0	68.0	48.0	9,288.4	211.1	117.3	9,288.4 lb		211.1	44.5
Salmon	60.0	16.0	16.0	48.0	8.0	1,170.8	26.6	14.8	1,170.8 lb		26.6	85.7
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Fall chum salmon	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown chum salmon	12.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Coho salmon	4.0	4.0	4.0	0.0	0.0	165.8	3.8	2.1	35.2 ind		0.8	135.6
Chinook salmon	36.0	16.0	16.0	24.0	4.0	1,005.0	22.8	12.7	88.0 ind		2.0	84.8
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sockeye salmon	12.0	0.0	0.0	12.0	4.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown salmon	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Nonsalmon fish	60.0	56.0	56.0	12.0	12.0	2,257.4	51.3	28.5	2,257.4 lb		51.3	59.0
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Smelts	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Eulachon (hooligan, candlefish)	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific halibut	12.0	4.0	4.0	8.0	0.0	176.0	4.0	2.2	176.0 lb		4.0	135.6
Arctic lamprey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Burbot	12.0	12.0	12.0	0.0	0.0	229.2	5.2	2.9	54.6 ind		1.2	92.7
Arctic char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Dolly Varden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lake trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Arctic grayling	44.0	44.0	40.0	0.0	4.0	315.0	7.2	4.0	350.0 ind		8.0	46.9
Northern pike	28.0	32.0	28.0	0.0	12.0	859.6	19.5	10.9	260.5 ind		5.9	92.3
Sheefish	32.0	32.0	32.0	0.0	8.0	677.6	15.4	8.6	123.2 ind		2.8	57.2
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 2-8.—Page 2 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Nonsalmon fish, continued												
Broad whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Bering cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown whitefishes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Large land mammals	72.0	48.0	24.0	48.0	16.0	4,171.2	94.8	52.7	4,171.2 lb		94.8	59.9
Black bear	12.0	8.0	4.0	4.0	0.0	176.0	4.0	2.2	1.8 ind		0.0	135.6
Brown bear	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Caribou	60.0	28.0	20.0	40.0	12.0	1,144.0	26.0	14.4	8.8 ind		0.2	55.4
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Moose	64.0	44.0	12.0	44.0	12.0	2,851.2	64.8	36.0	5.3 ind		0.1	75.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Small land mammals	20.0	24.0	20.0	0.0	4.0	296.2	6.7	3.7	296.2 lb		6.7	116.2
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Fox	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	1.8 ind		0.0	135.6
Snowshoe hare	12.0	12.0	12.0	0.0	0.0	211.2	4.8	2.7	112.6 ind		2.6	135.6
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lynx	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	1.8 ind		0.0	135.6
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marten	4.0	8.0	4.0	0.0	0.0	0.0	0.0	0.0	26.4 ind		0.6	135.6
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Red squirrel	8.0	8.0	8.0	0.0	4.0	85.0	1.9	1.1	171.0 ind		3.9	238.7
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 2-8.—Page 3 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount		95% confidence limit (±) harvest	
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit		Mean per household
Marine mammals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Birds and eggs	60.0	56.0	56.0	16.0	4.0	320.1	7.3	4.0	320.1 lb		7.3	36.8
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Goldeneyes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Mallard	16.0	12.0	8.0	8.0	0.0	19.8	0.5	0.3	12.3 ind		0.3	76.7
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern pintail	12.0	12.0	8.0	4.0	0.0	6.2	0.1	0.1	5.3 ind		0.1	99.4
Ring-necked duck	4.0	4.0	4.0	0.0	0.0	15.8	0.4	0.2	10.6 ind		0.2	135.6
Unknown scaups	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern shoveler	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown teals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
American wigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Canada goose	4.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-fronted goose	4.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Spruce grouse	52.0	44.0	44.0	8.0	4.0	193.0	4.4	2.4	227.0 ind		5.2	48.6
Sharp-tailed grouse	12.0	8.0	8.0	4.0	4.0	12.7	0.3	0.2	12.3 ind		0.3	102.8
Ruffed grouse	20.0	20.0	20.0	0.0	4.0	50.9	1.2	0.6	59.8 ind		1.4	64.6

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Table 2-8.-Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs, continued												
Ptarmigans	24.0	24.0	20.0	0.0	4.0	21.7	0.5	0.3	28.2	ind	0.6	62.2
Duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Butter clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Freshwater clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Dungeness crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
King crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Shrimps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	96.0	84.0	84.0	36.0	32.0	1,072.8	24.4	13.5	1,072.8 lb		24.4	34.5
Blueberry	68.0	60.0	60.0	12.0	20.0	518.3	11.8	6.5	142.8	gal	3.2	46.2
Lowbush cranberry	52.0	52.0	52.0	4.0	20.0	158.0	3.6	2.0	52.7	gal	1.2	38.9
Highbush cranberry	32.0	28.0	28.0	4.0	16.0	95.0	2.2	1.2	23.8	gal	0.5	57.9
Crowberry	8.0	8.0	8.0	0.0	4.0	3.1	0.1	0.0	0.8	gal	0.0	102.8
Currants	4.0	4.0	4.0	0.0	0.0	7.0	0.2	0.1	1.8	gal	0.0	135.6
Cloudberry	4.0	4.0	4.0	0.0	0.0	1.3	0.0	0.0	0.3	gal	0.0	135.6
Nagoonberry	4.0	4.0	4.0	0.0	0.0	0.4	0.0	0.0	0.1	gal	0.0	135.6
Raspberry	44.0	44.0	44.0	0.0	16.0	184.4	4.2	2.3	59.3	gal	1.3	50.2
Wild rhubarb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Hudson's Bay (Labrador) tea	4.0	4.0	4.0	0.0	0.0	1.8	0.0	0.0	1.8	gal	0.0	135.6
Lambsquarter	4.0	4.0	4.0	0.0	0.0	8.8	0.2	0.1	8.8	gal	0.2	135.6
Dandelion greens	4.0	4.0	4.0	0.0	0.0	8.8	0.2	0.1	8.8	gal	0.2	135.6
Spruce tips	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

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Table 2-8.-Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Vegetation, continued												
Wild rose hips	28.0	28.0	28.0	0.0	8.0	73.3	1.7	0.9	18.3	gal	0.4	67.8
Unknown mushrooms	16.0	16.0	16.0	0.0	4.0	6.6	0.2	0.1	6.6	gal	0.2	80.4
Fireweed	4.0	4.0	4.0	0.0	0.0	3.5	0.1	0.0	3.5	gal	0.1	135.6
Punk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Chaga	20.0	16.0	16.0	4.0	4.0	2.4	0.1	0.0	2.4	gal	0.1	101.1
Mousefoods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wood	92.0	72.0	72.0	24.0	8.0	0.0	0.0	0.0	258.1	cord	5.9	31.0
Roots	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cord	0.0	0.0
Other wood	8.0	8.0	8.0	0.0	0.0	0.0	0.0	0.0	29.3	cord	0.7	93.1

Source ADF&G Division of Subsistence household surveys, 2017.

Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

Note For small land mammals, species that are not typically eaten show a nonzero harvest amount with a zero harvest weight. Harvest weight is not calculated for species harvested but not eaten.

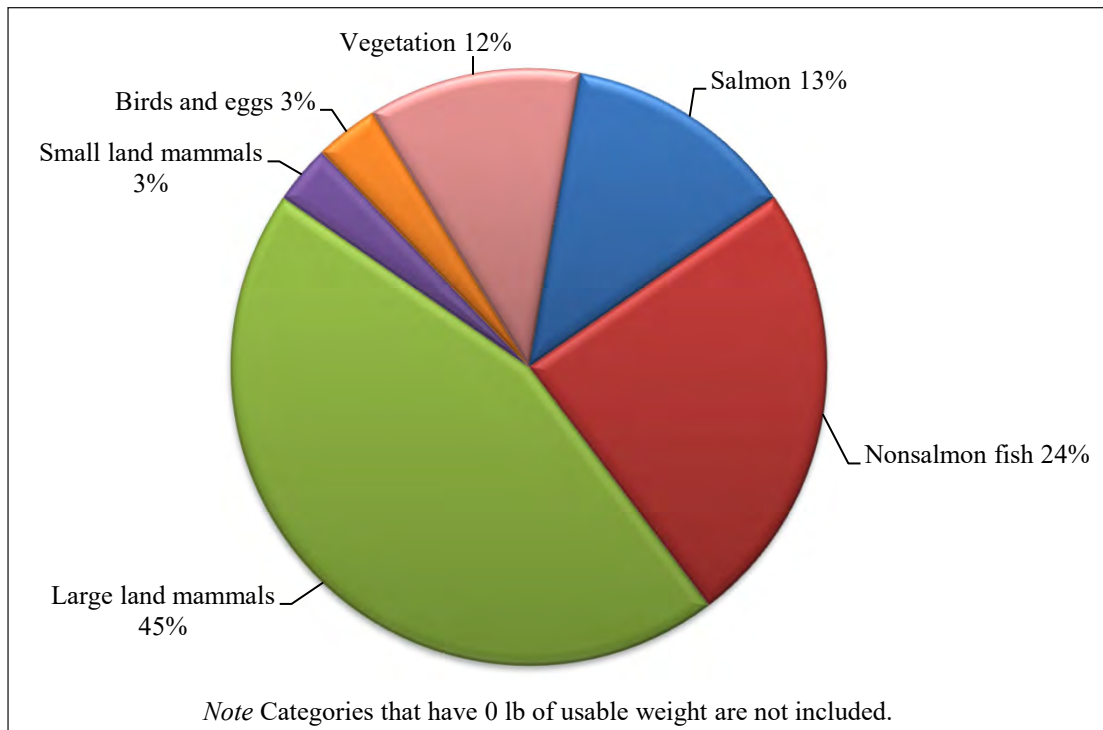


Figure 2-13.—Composition of harvest by percentage of edible weight, Central, 2016.

Table 2-9.—Top ranked resources used by households, Central, 2016.

Rank ^a	Resource	Percentage of households using
1.	Wood	92.0%
2.	Blueberry	68.0%
3.	Moose	64.0%
4.	Caribou	60.0%
5.	Spruce grouse	52.0%
5.	Lowbush cranberry	52.0%
7.	Arctic grayling	44.0%
7.	Raspberry	44.0%
9.	Chinook salmon	36.0%
10.	Sheefish	32.0%
10.	Highbush cranberry	32.0%

Source ADF&G Division of Subsistence household surveys, 2017.

a. Resources used by the same percentage of households share the lowest rank value instead of having sequential rank values.

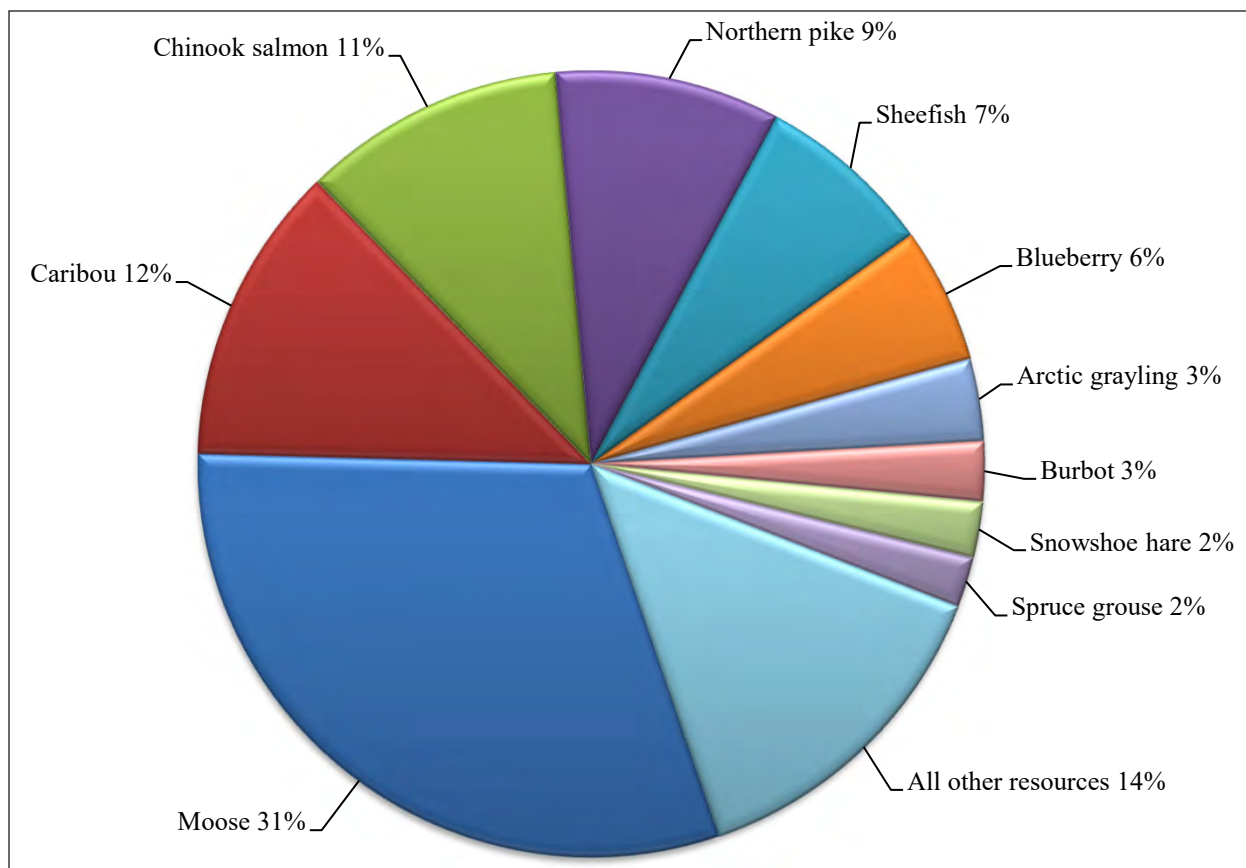


Figure 2-14.—Top resources harvested by percentage of total harvest weight, Central, 2016.

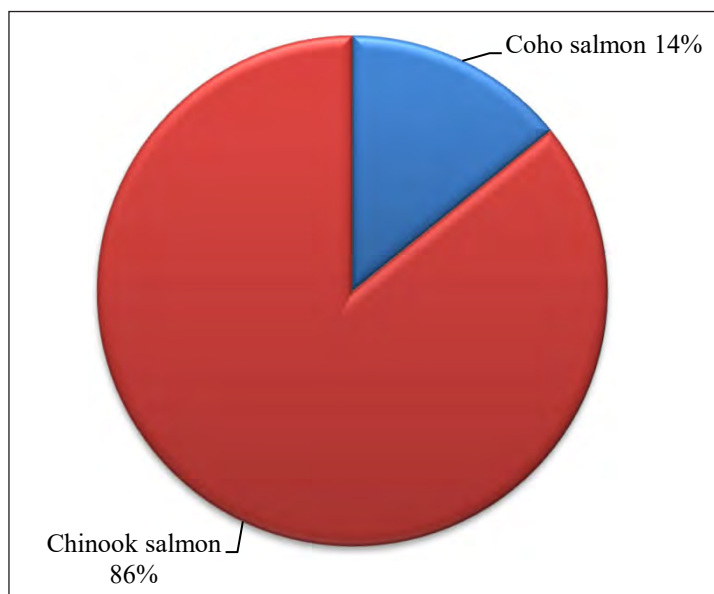


Figure 2-15.—Composition of salmon harvest by percentage of edible weight, Central, 2016.

Table 2-10.—Estimated salmon harvests by gear type, Central, 2016.

Resource	Removed from commercial catch		Subsistence methods										Rod and reel		Any method	
			Dip net		Gillnet or seine		Fish wheel		Other method		Subsistence gear, any method					
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds		
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds		
Salmon	0.0	0.0	0.0	0.0	47.5	542.7	70.4	567.8	0.0	0.0	117.9	1,110.5	5.3	60.3	123.2	1,170.8
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fall chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coho salmon	0.0	0.0	0.0	0.0	0.0	0.0	35.2	165.8	0.0	0.0	35.2	165.8	0.0	0.0	35.2	165.8
Chinook salmon	0.0	0.0	0.0	0.0	47.5	542.7	35.2	402.0	0.0	0.0	82.7	944.7	5.3	60.3	88.0	1,005.0
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sockeye salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2017.

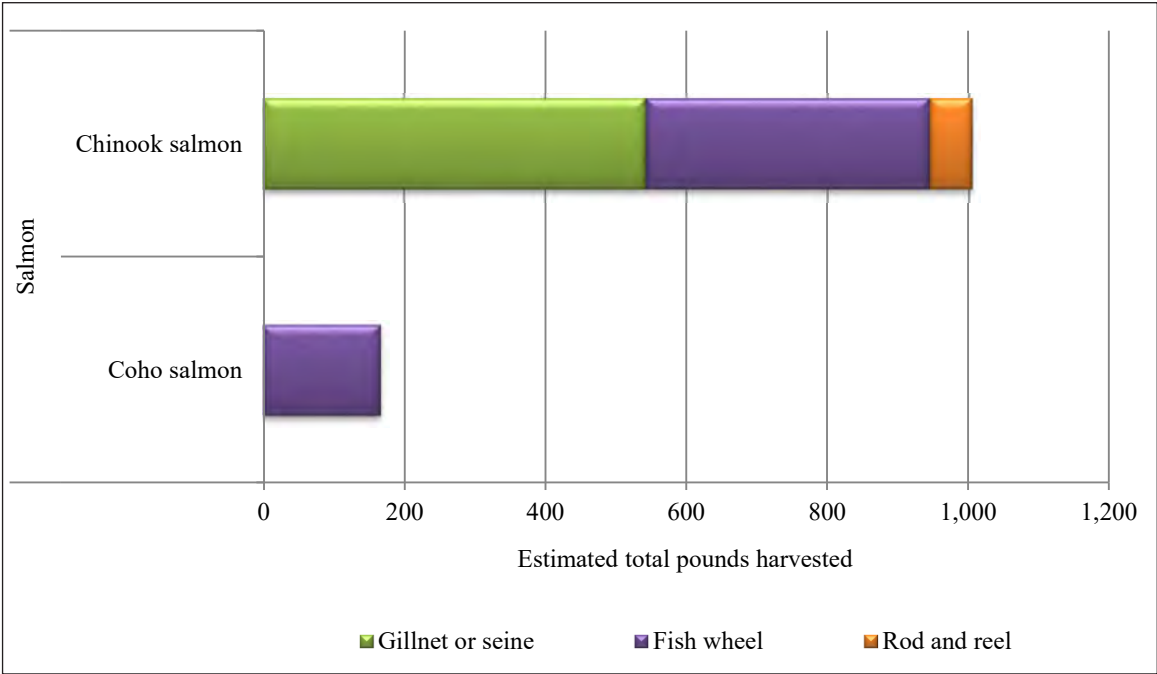


Figure 2-16.—Estimated salmon harvests by gear type in edible pounds, Central, 2016.



Figure 2-17.—Salmon fishing areas, Central, 2016.

Nonsalmon Fish

Nonsalmon fish species made up 24% of Central's total wild food harvest by weight (Figure 2-13). This resource contributed more to the total community harvest than salmon. Central residents caught approximately 2,257 lb of nonsalmon fish in 2016 (Table 2-8). A variety of species, including sheefish (30%), pike (38%), grayling (14%), burbot (10%), and Pacific halibut¹³ (8%), made up the nonsalmon harvest (Figure 2-18). Sixty percent of households reported using nonsalmon fish during the study year, and more than half of households harvested them (56%; Table 2-17). One ethnographic respondent described nonsalmon fishing in the fall and the use of nonsalmon parts for other subsistence activities: "Late fall we'd try to catch pike, after moose is over and before everything freezes, we try to go get a bunch of pike, use their heads and tails for bait, trapping bait" (07152019CNT3).

Figure 2-19 and Table 2-11 report the gear types used to harvest nonsalmon species. Because nonsalmon fish are available year-round, fishers use a variety of different methods. The majority (63%) of nonsalmon fish was caught with rod and reel (Table D2-13). One respondent shared his experience fishing for grayling when he was working at nearby gold mines:

Lot of times just on a hook and the red tag off of my cigarette wrapper with a little bit of aluminum, anything that would just catch [their] attention. We just, we had one fishing pole at the bottom of the hole and we walked to and from the gold mine. And if we wanted fish that night, we just stopped at the fishing hole and lot of times just, like I said, just a lure and a pole. Nothing, no reels or anything on them and we do the creek and stuff too. We'd walk in and do some fishing in with the poles, just look for holes. (03032017CNT2)

A large portion of the pike harvested in 2016 was caught with other methods: specifically, a bow and arrow. This unusual gear type accounted for 67% of the pike harvested (Table D2-13). No nonsalmon fish were fed to dogs.

Figure 2-20 shows the locations that Central residents used to harvest nonsalmon fish in 2016. Central residents harvested nonsalmon fish in nearby lakes and small tributaries close to the community. Some residents traveled up the Yukon River to utilize a large area for nonsalmon fishing. During the study year, this fishing occurred entirely in the Yukon-Charley Rivers National Preserve. Nonsalmon fish harvest also occurred in Cook Inlet, likely for halibut.

Large Land Mammals

Large land mammals contribute significantly to the diets of Central residents and account for nearly half of total harvest (45%; Figure 2-13). Seventy-two percent of households reported using large land mammals (Table 2-8). Only 24% of households harvested successfully. Sharing meat occurred frequently during the study year: 48% of households reported that they received some meat from others. Central hunters harvested a total of 4,171 lb or 53 lb per capita of large land mammals.

Moose made up the majority of the large land mammal harvest by weight (68%; Figure 2-21). Sixty-four percent of households reported using moose (Table 2-8). Nearly half (44%) of households attempted to harvest moose, but only 12% were successful. One respondent explained that hunting for moose takes patience:

We sometimes use the antler, the shoulder blade, you know, cow call and the shoulder blade a little bit, you know, you rub it in the bushes. But usually, it takes a while because they have to warm up to you, you know, and then they'll come in. They'll eventually come in. And you can get one. (07152019CNT3)

The same respondent described processing methods for moose. Residents freeze most of the moose, but in the 1980s they did not need a freezer because it was cold enough to leave portions of the moose outside.

13. Hereinafter *halibut*; not harvested locally.

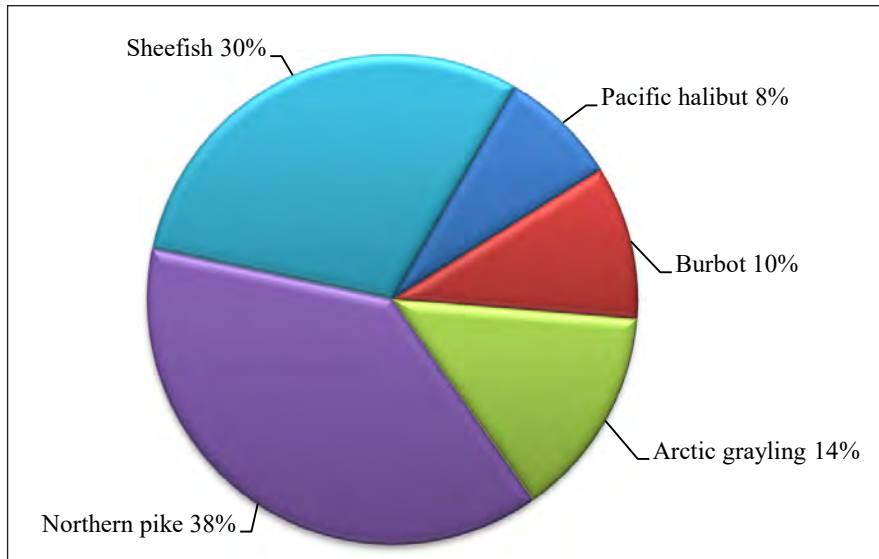


Figure 2-18.—Composition of nonsalmon fish harvest by percentage of edible weight, Central, 2016.

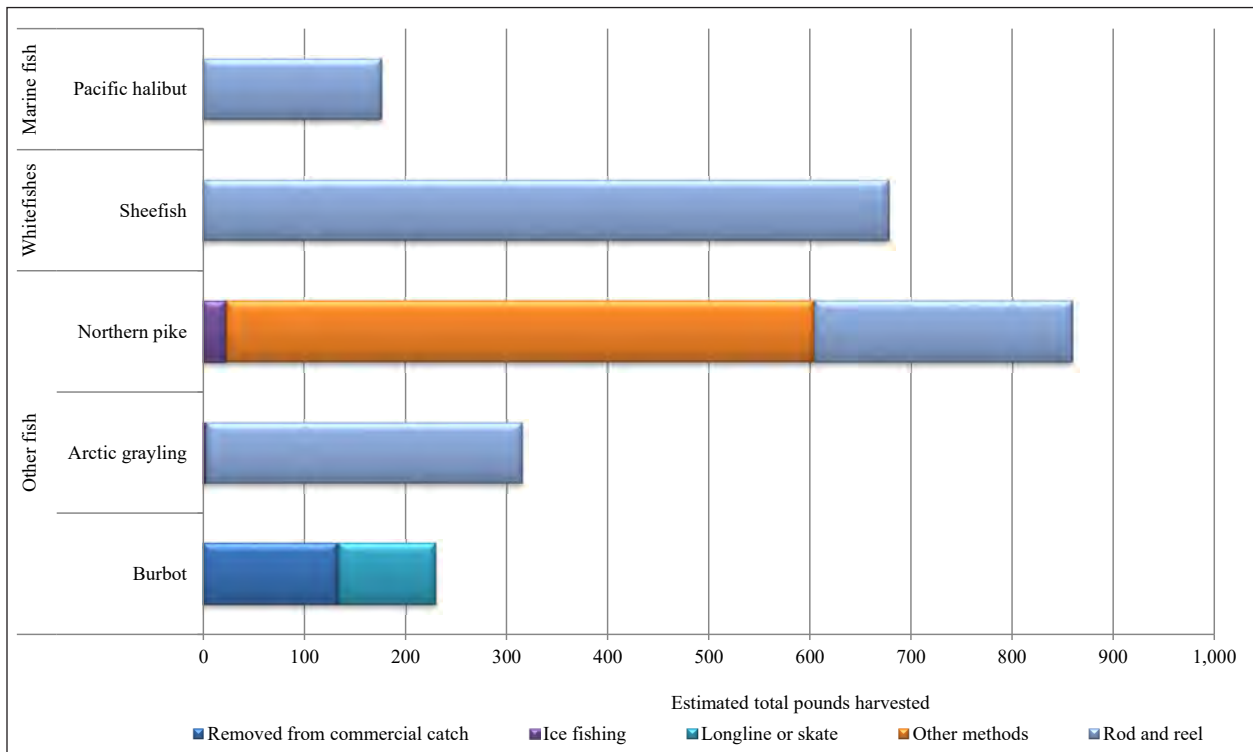


Figure 2-19.—Estimated nonsalmon fish harvests by gear type in edible pounds, Central, 2016.

Table 2-11.—Estimated nonsalmon fish harvests by gear type, Central, 2016.

Resource	Units	Subsistence methods																	
		Removed from commercial catch		Fish wheel		Gillnet or seine		Ice fishing		Longline/skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds
Nonsalmon fish			133.1		0.0		0.0		26.4		96.1		580.8		703.3		1,421.0		2,257.4
Pacific herring	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smelts	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eulachon (hooligan, candlefish)	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific halibut	lb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	176.0	176.0	176.0	176.0
Arctic lamprey	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	ind	31.7	133.1	0.0	0.0	0.0	0.0	0.0	0.0	22.9	96.1	0.0	0.0	22.9	96.1	0.0	0.0	54.6	229.2
Arctic char	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lake trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	ind	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.2	0.0	0.0	0.0	0.0	3.5	3.2	346.5	311.9	350.0	315.0
Northern pike	ind	0.0	0.0	0.0	0.0	0.0	0.0	7.0	23.2	0.0	0.0	176.0	580.8	183.0	604.0	77.4	255.6	260.5	859.6
Sheefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	123.2	677.6	123.2	677.6
Longnose sucker	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown trouts	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Broad whitefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bering cisco	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Least cisco	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Humpback whitefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown whitefishes	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2017.

a. The harvested number of each resource is measured by the unit in which the resource harvest information was collected; the unit of measurement is provided for each resource.

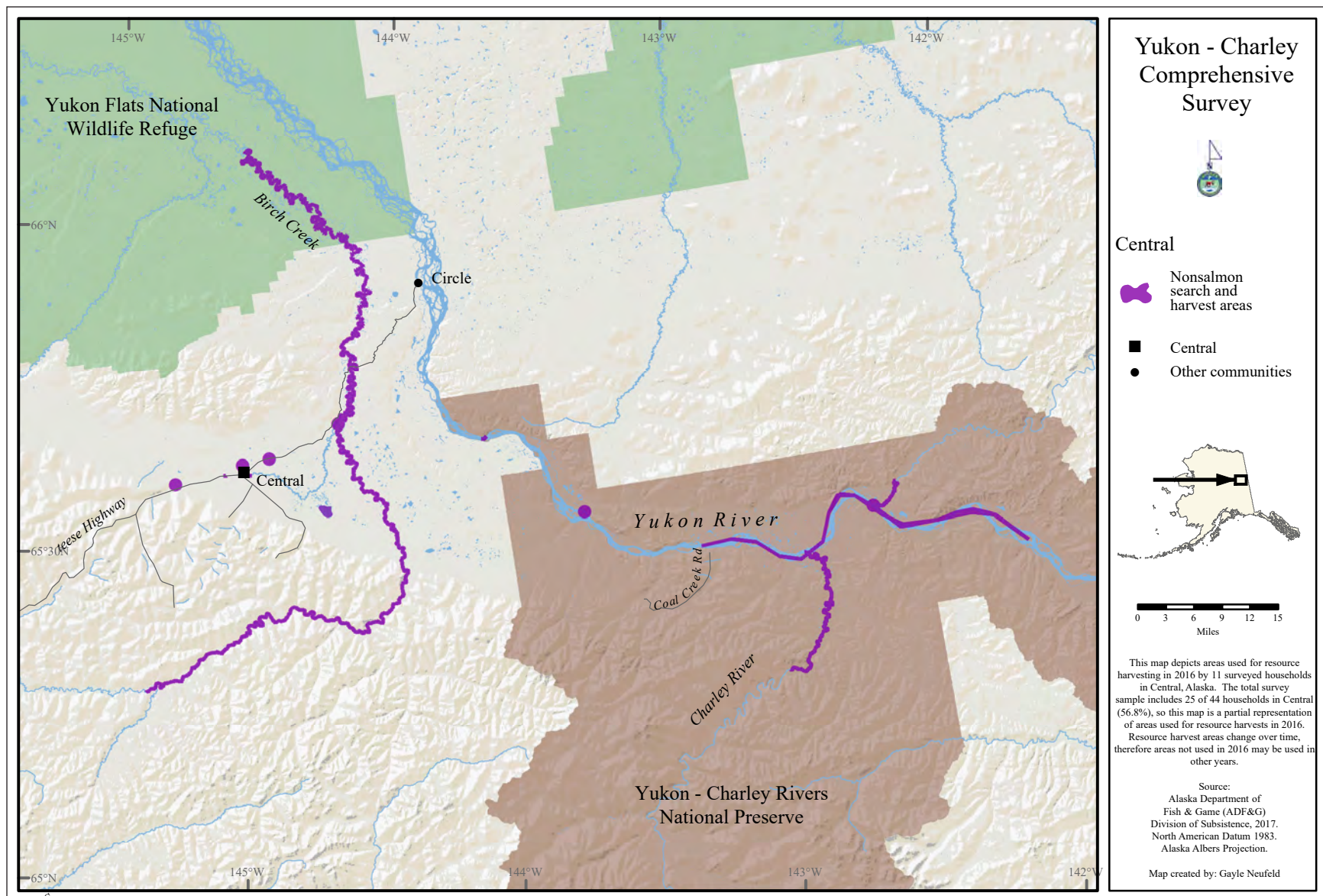


Figure 2-20.—Nonsalmon fishing areas, Central, 2016.

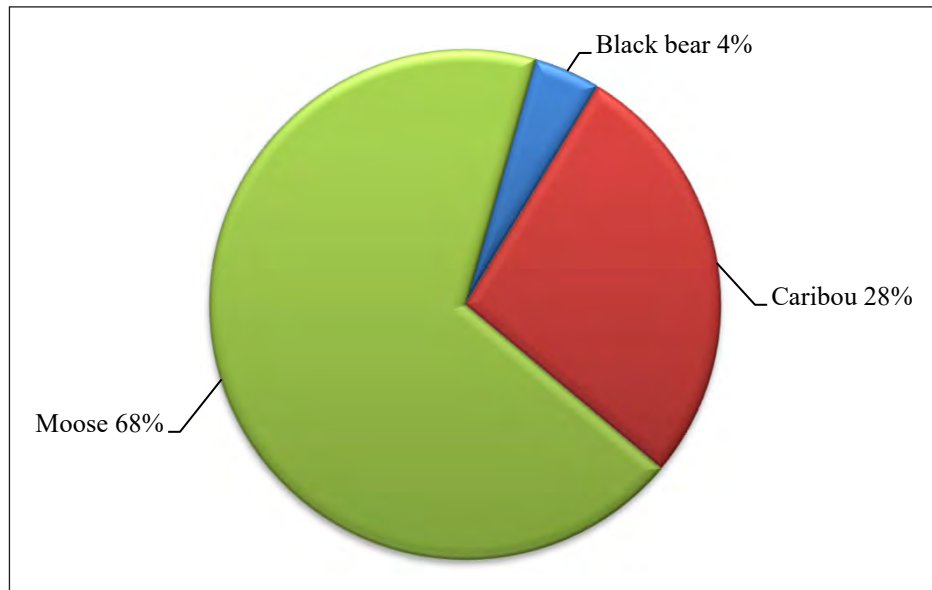


Figure 2-21.—Composition of large land mammal harvest by percentage of edible weight, Central, 2016.

Now, “I think it’s warmer in the fall than it has been because we used to hang ‘em for a couple weeks. But you don’t dare hang ‘em now, because they’ll rot.”

The community of Central is located in the proximity of the Fortymile caribou herd (FCH).¹⁴ The FCH is a critical resource for residents living in Central, especially in years when moose harvest is low. In 2016, caribou accounted for 28% of the large land mammal harvest and was used by 60% of households (Table 2-8). Central hunters harvested a total of 1,144 lb of caribou in 2016 (14 lb per capita). During field work for this study, the FCH was present in the vicinity of Central. One ethnographic respondent described the intensity of their presence, “They’re everywhere. I mean yesterday [we] came out of the Hot Springs and Christ, there was fifty-some caribou in that little field there. I says, usually you see ten or eleven, I said maybe, thank God, maybe they’re moving out and going” (03292017CNT1).

Central residents have several opportunities to hunt caribou, under both state and federal regulations. Under state regulations in 2016, residents could hunt FCH in GMUs 20B and 25C during the fall from August 30 through September 30, and in the winter between December 1 and March 31 (ADF&G, Division of Wildlife Conservation 2016). Each year, ADF&G issues Emergency Orders during the season to close or limit the hunt once the quota for Fortymile caribou is met. Residents must pay close attention to the Emergency Order updates to remain compliant with season dates and restrictions.¹⁵ The FCH migratory route often overlaps with the Steese Highway outside of Central. The proximity to a major highway makes the FCH more accessible than other caribou herds and often draws large numbers of hunters to the area. Hunters from other communities in Alaska and nonresident hunters travel up the Steese Highway in hopes of harvesting a caribou. This influx of hunters not only can create competition for local hunters, but in the view of Central residents, it can also create a safety concern. One respondent explained:

It can be bad. Like sometimes there’s just a zillion caribou, they’re all right next to the road, and everybody comes from out of town and you know, it’s just a zoo. So everybody from Central is like, “Yeah, I’m not going there to get shot.”... That’s the only big hunting conflict really, is when it’s one of those madhouses like

14. ADF&G, n.d. “Caribou hunting in Alaska: hunting Fortymile-White Mountains caribou.” Accessed March 2, 2020. <https://www.adfg.alaska.gov/index.cfm?adfg=caribouhunting.40mile>

15. L. Boeck, ADF&G Division of Wildlife Conservation, Wildlife Biologist, personal communication with A. Trainor, February 20, 2020.

that. And it doesn't always happen that way, but sometimes they show up by the zillion, caribou. And then word gets out and pretty soon there's cars everywhere, and people blatin' all over the place, and...It's gross, really. (07152019CNT3)

Central residents are qualified rural residents under federal regulations and are able to take part in a more limited subsistence hunt opportunity that reduces the congestion along the highway corridor.

And I myself am glad that we do have a federal subsistence deal going on because it's the only opportunity to go hunting sometime around here anymore...I've never shot a caribou during the season when the general hunts here. (03292017CNT1)

Some black bear harvest did occur in 2016: 4% of households harvested and 12% used black bear (Table 2-8). Some respondents described their preference for hunting bears in the spring: "They're better eatin'. They're sweeter. They're tender and they don't smell like fish and their hides are good. So you can keep the hide and you can keep the meat" (07152019CNT3). This respondent favored processing bears for sausage: "You know, we might take the backstrap and make steaks, but as a rule bears were sausage because it's the best sausage. It's better than caribou and moose, so everybody likes bear sausage."

Table D2-14 reports the months in which Central residents harvested large land mammals. During September, Central residents harvested four bull moose; they also harvested two moose of unknown sex in an unknown month. Caribou harvest occurred during the fall and winter months of August, November, and December. Two black bears were taken in August.

Figure 2-22 shows the search and harvest areas used by Central residents in 2016. The entire portion of the Yukon River mainstem in the Preserve is included as a moose search area, indicating that Central residents are traveling upstream from Circle to hunt moose. Central residents also traveled up the Charley and Kandik rivers in search of moose. Some Central residents hunted moose closer to home, indicated by a blue polygon south of the community to the east of the Hot Springs Road.

Caribou from the FCH were present throughout the local area during the study year, and residents hunted them close to town. Although the search areas shown in Figure 2-22 are discrete, likely because residents did not have to travel far to find the FCH, one survey respondent did indicate general use of the entirety of GMU 25C. The respondent said that he used the whole unit for both moose and caribou. This large extent is not shown on Figure 2-22 because it would obscure the detail documented by numerous other respondents.

Small Land Mammals/Furbearers

Twenty-four percent of Central households participated in the hunting or trapping of small land mammals (Table 2-8). Central households harvested snowshoe hare, fox, lynx, marten, and red squirrel in 2016. Figure 2-23 shows the composition of harvest for edible small land mammals. A total of 296 lb of small land mammals were part of the edible community harvest. Furbearers that are not commonly eaten are not part of this total. Snowshoe hare accounted for most of the estimated edible weight of the category (211 lb), and red squirrels made up the remainder of edible weight (85 lb). All of the fox, lynx and marten harvested by Central residents were used for fur only (Figure 2-24). Nearly all of the red squirrels harvested were eaten; because the red squirrel harvest was dominated by one household, Table 2-8 does not expand that harvest to others. Only 6% of the snowshoe hares harvested were for fur only, indicating that the majority of snowshoe hare harvest was for human consumption (Figure 2-24). Table D2-15 reports the timing of small land mammal harvest by month. Harvest of red squirrels occurred in throughout the spring, summer, and fall but not during the months of December through February. All the furbearers were harvested in unknown months.

Ethnographic respondents discussed the economic benefit of trapping. "[We trap] lynx and beaver. Beaver is sort of our mainstay because we, I, sell all the mittens, hats, headbands. 'Cause we do moose hide, we tan all the moose we get, make moose hide mittens, hats, pillows and it's usually moose hide and beaver"

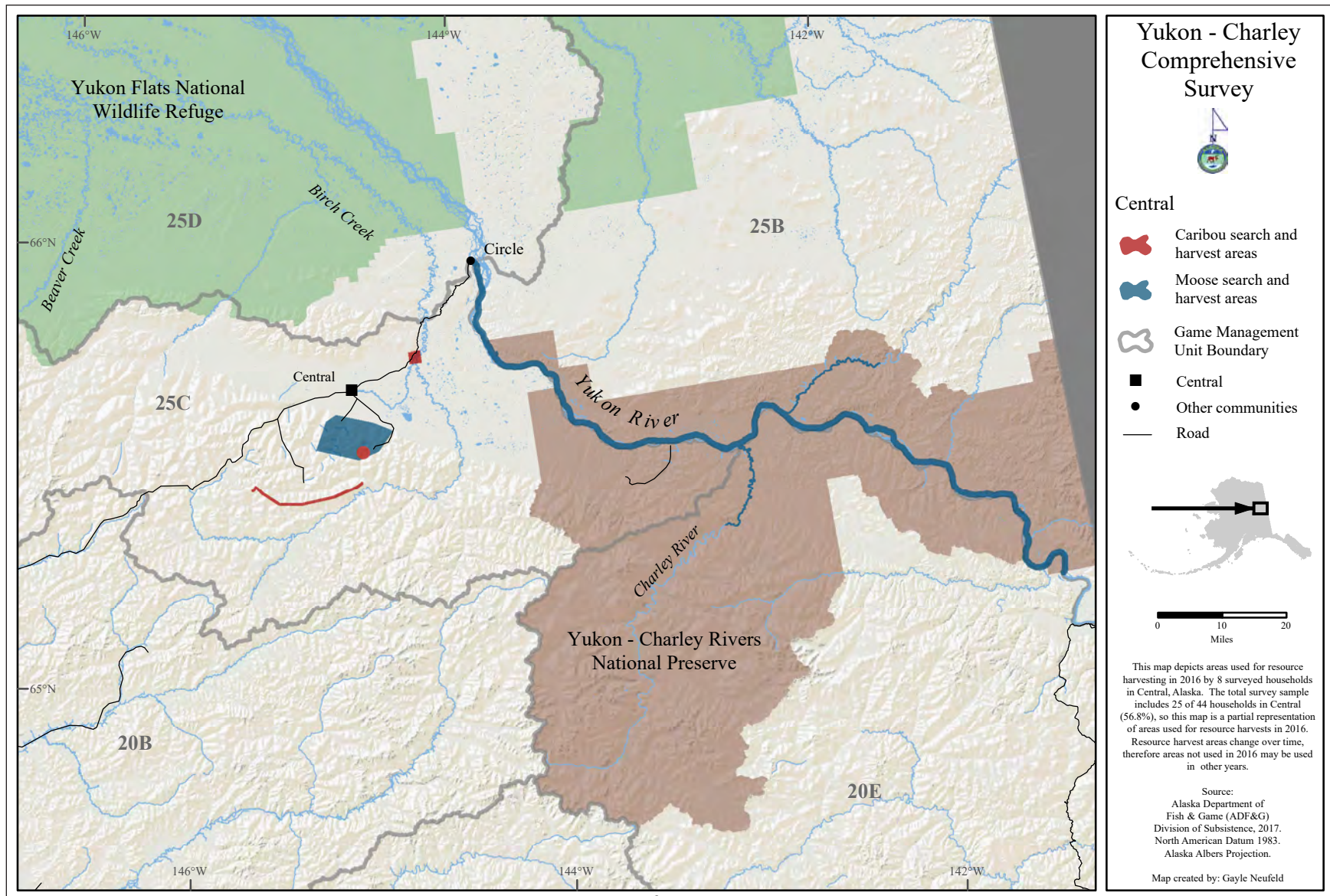


Figure 2-22.—Large land mammal hunting areas, Central, 2016.

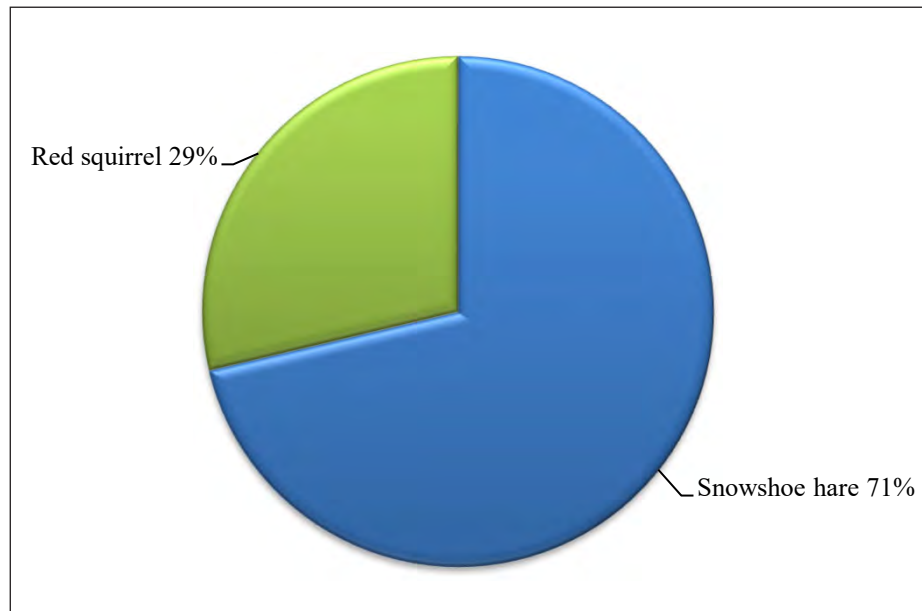


Figure 2-23.—Composition of small land mammal harvest by percentage of edible weight, Central, 2016.

(07152019CNT3)¹⁶. The respondent continued, “And with beaver we sell the carcasses to dog mushers, the skulls to different stores, and the hides I use in the sewing. So it helps us to go, it’s sort of our bread and butter.”

Similarly to large land mammal hunting, some Central residents described occasions of user conflict with nonlocal trappers because of the proximity to Fairbanks: “It don’t take long for people to move right in once you leave [your] trapline sitting” (03292017CNT1). This respondent explained that after a Central resident left to work on the North Slope, trappers from Fairbanks came and began “using his traps, that was the worst part, you know, they were hanging the trees, they were just resetting and baiting with a little ptarmigan wing or something” (03292017CNT1). Although traplines on public lands do not belong to anyone, this respondent felt that nonlocal trappers often disregard social norms held by local residents. Another described this indiscretion by saying, “It can get pretty nasty stepping over somebody else’s trapline and I just never, I never done it” (03032017CNT2).

Figure 2-25 shows the areas used to search for small land mammals. Most of the small land mammal hunting and trapping occurred in the immediate vicinity of Central. Two trap lines extend along the Steese Highway to the east and west of the community. Two additional lines appear in the low foothills to the north and southwest.

Marine Mammals

Central residents did not report the use or harvest of any marine mammals during the study year.

Birds and Eggs

Central residents harvested both migratory and nonmigratory birds during the study year. Eggs were not harvested in the study year. Three percent of the total community’s harvest by weight came from birds (Figure 2-13). A total of 320 lb of birds were harvested (4 lb per capita; Table 2-8). Sixty percent of households reported using birds in the study year, and 56% reported harvest. Four percent of households gave birds to others, and 16% received them. Spruce grouse made up 60% of the bird harvest by weight (Figure 2-26). Residents harvested 227 spruce grouse or 193 lb (2 lb per capita) in 2016 (Table 2-8).

16. This respondent spoke at length about trapping activities. However, because they were on the trapline during the time of field work, they did not complete a survey. Therefore, harvest of beaver is not documented in Table D2-15.

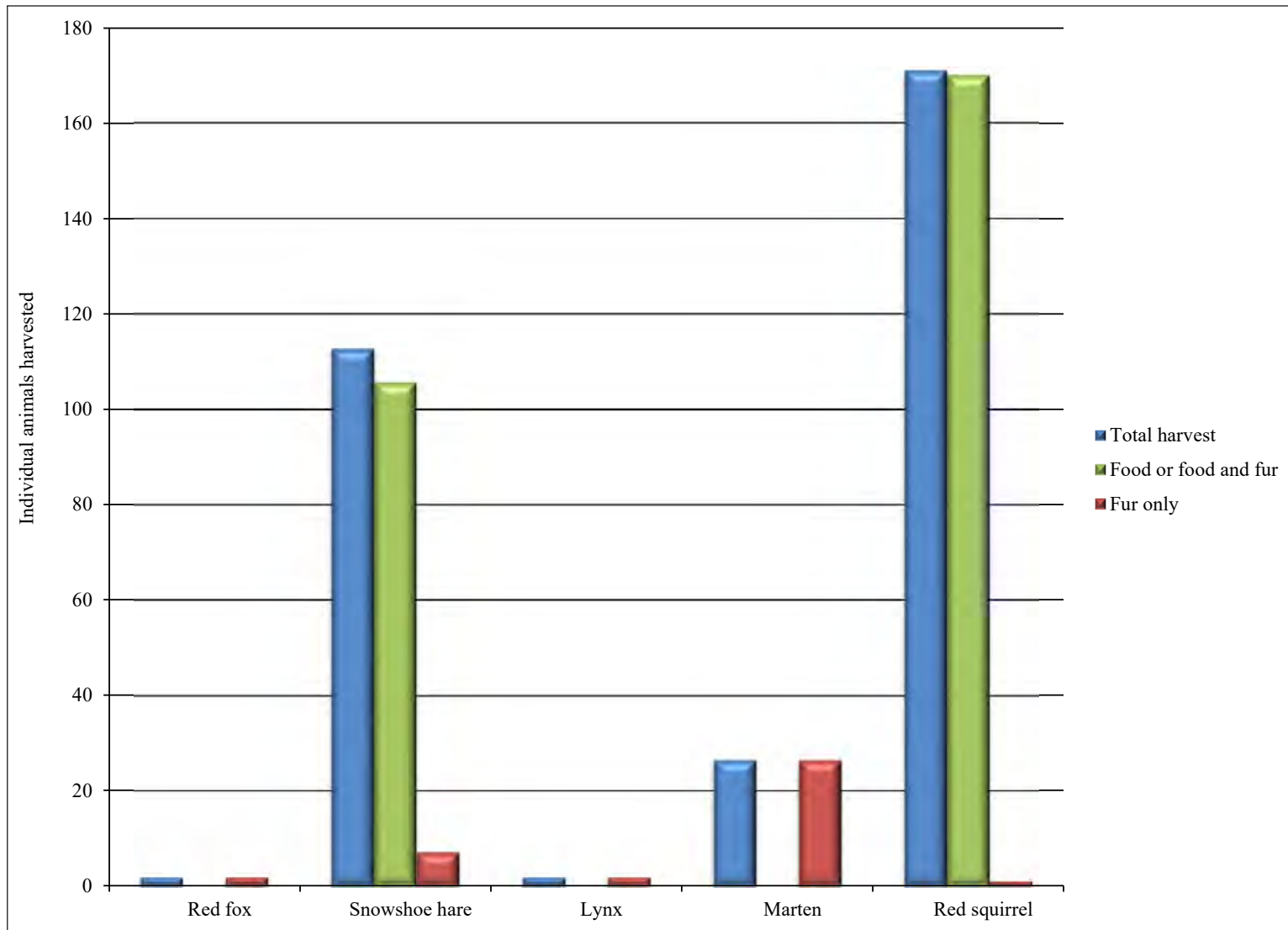


Figure 2-24.—Estimated land mammal harvests for food or fur, Central, 2016.

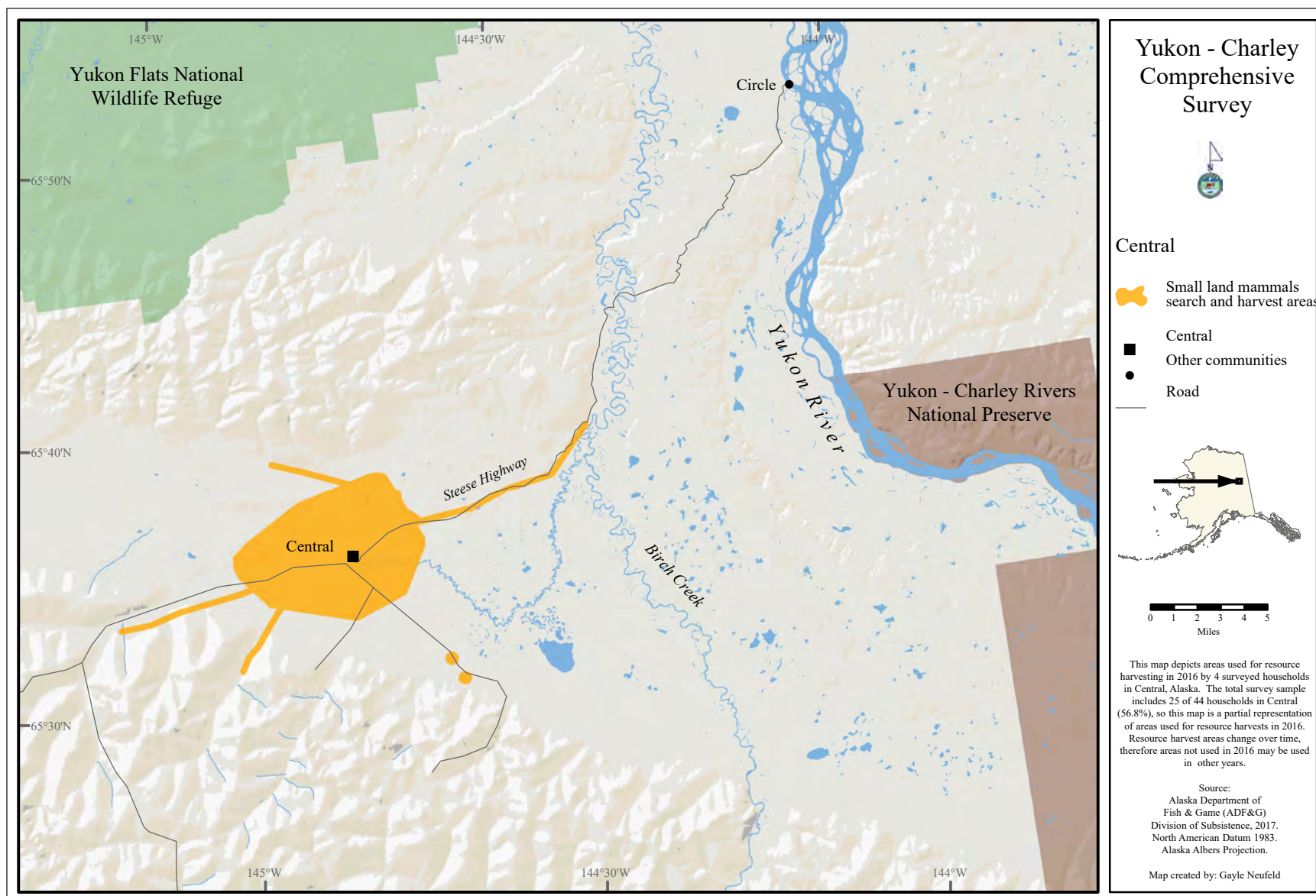


Figure 2-25.—Small land mammal hunting and trapping areas, Central, 2016.

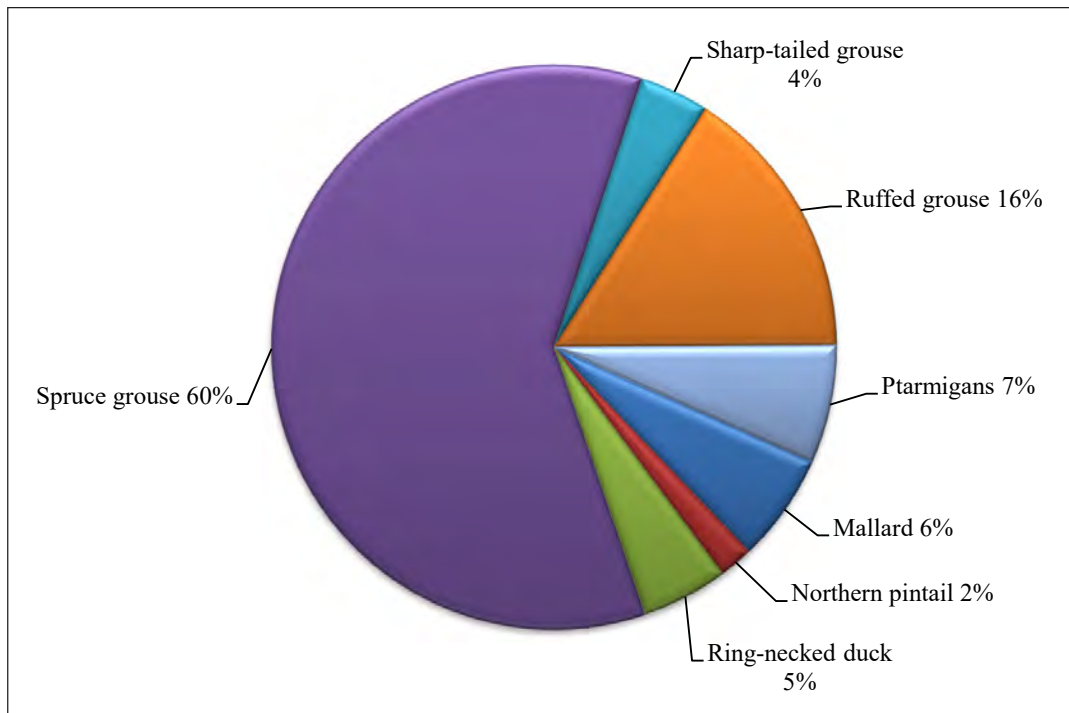


Figure 2-26.—Composition of bird harvest by percentage of edible weight, Central, 2016.

One respondent described his opportunistic hunting of spruce grouse, “Spruce hens, they’ll come into the yard and I’ll nail one once and awhile” (03032017CNT2). Other species of grouse were also favored by residents. Ruffed grouse and sharp-tailed grouse made up 16% and 4% of the bird harvest, respectively, and contributed 51 lb and 13 lb to the community harvest. Ptarmigans, another nonmigratory bird, were harvested by 20% of households and made up 7% of the bird harvest (22 lb; Table 2-8; Figure 2-26). Central residents also harvested a variety of ducks. Mallard was the most commonly harvested duck, harvested by 8% of households. Sixteen percent of households reported using mallard in 2016. Households also reported using northern pintail and ring-necked duck. Some residents reported receiving Canada goose and white-fronted goose from others. Although no harvest of geese was reported, it is possible that goose hunters were not surveyed. Table D2-16 reports the timing of bird harvests. Grouses and ptarmigans were harvested in the fall and winter, and migratory birds were harvested in the spring.

Figure 2-27 shows the search areas for birds. Hunting for grouses and ptarmigans occurred almost entirely along the Steese Highway. Hunting of these birds stretched from approximately ten miles southwest on the highway all the way to Circle to the northeast. Ducks and geese were hunted in a small, localized area on Circle Hot Springs Road.

Marine Invertebrates

Central residents did not report the use or harvest of any marine invertebrates during the study year.

Vegetation

Central residents harvested slightly over 1,000 lb of vegetation such as plants and berries in 2016 (14 lb per capita; Table 2-8). Ninety-six percent of households reported using vegetation during the study year and 84% participated in harvesting it. Slightly less than a third of households (32%) gave away vegetation, and 36% received it from others. Berries made up the majority (90%) of vegetation harvested during the study year by weight (Figure 2-28). Plants and other greens accounted for 9% of the harvest, and mushrooms made up 1%. Blueberries were the most heavily used (68% of households) and harvested plant species (60%) and added 518 lb or 7 lb per capita to the community harvest (Table 2-8). More than half of all households picked lowbush cranberries, and 20% of households shared those berries with others. Residents

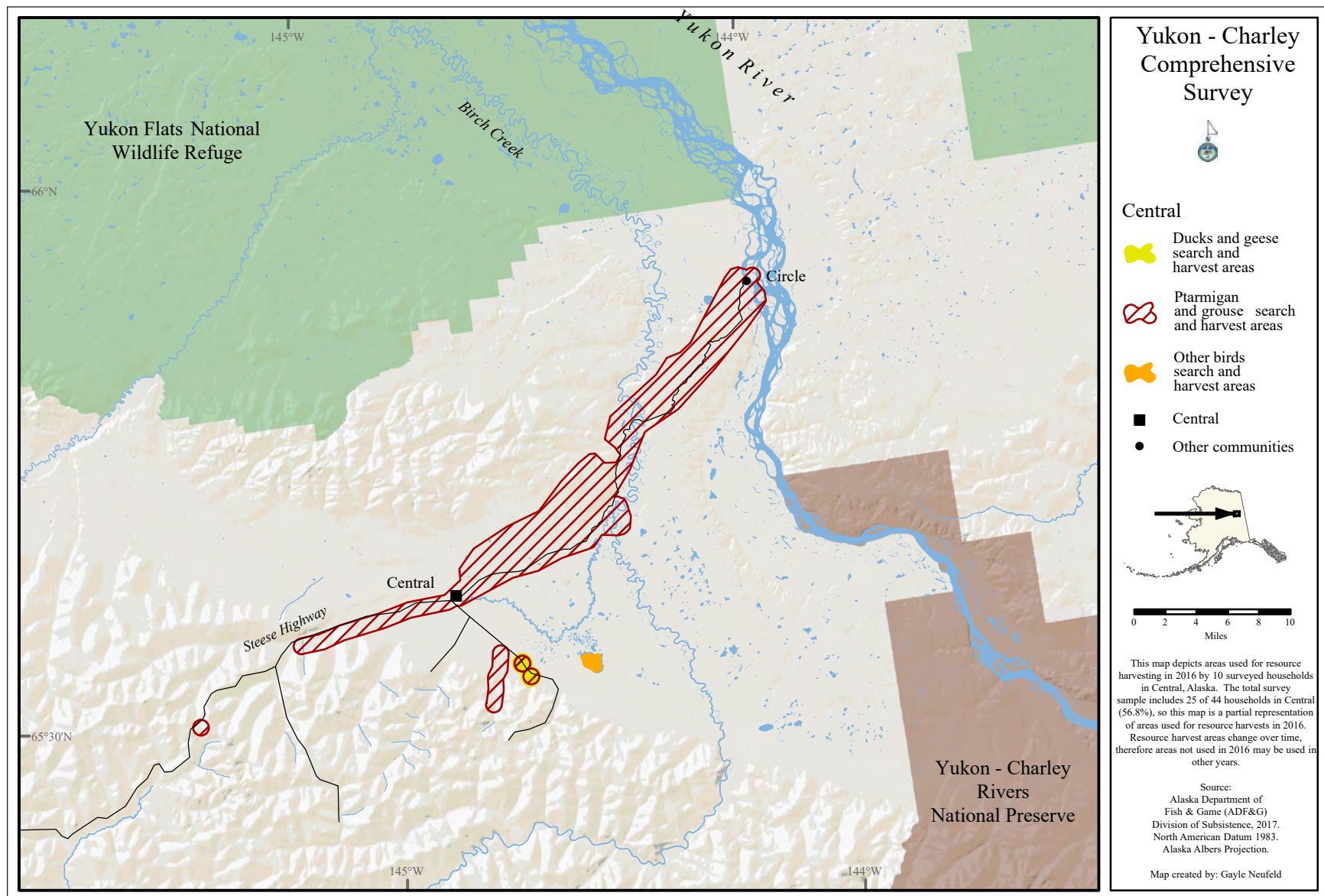


Figure 2-27.—Bird hunting areas, Central, 2016.

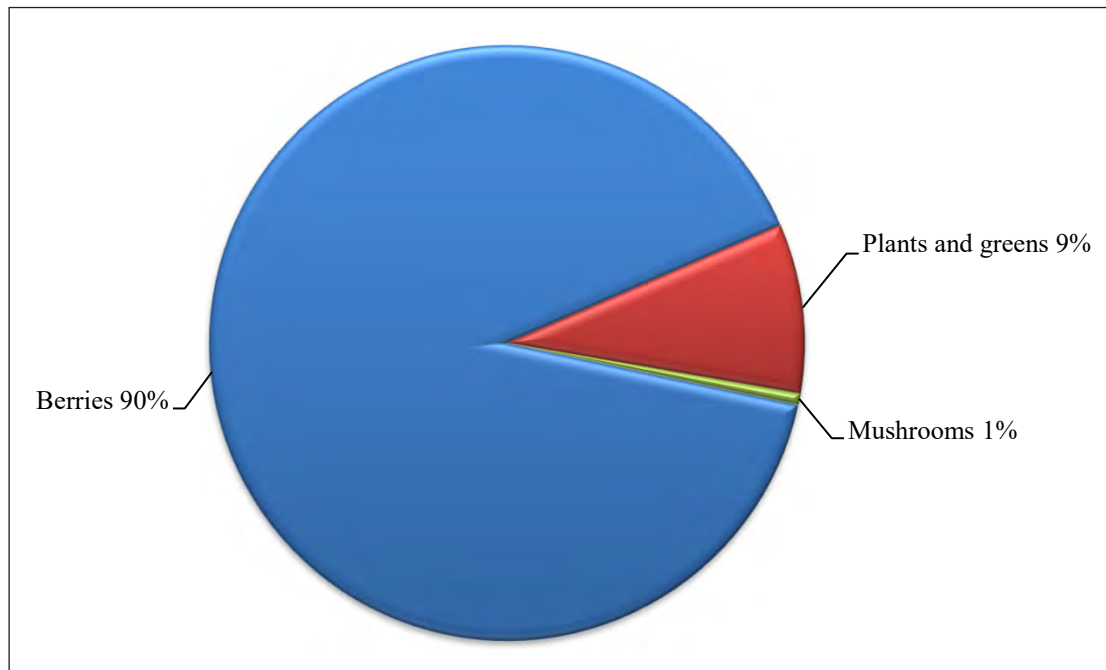


Figure 2-28.—Composition of vegetation harvest by percentage of edible weight, Central, 2016.

picked 184 lb of raspberries in 2016. Central residents targeted smaller amounts of plants such as wild rose hips (73 lb harvested by 28% of households), lambsquarter, and dandelion greens (9 lb each, each harvested by 4% of households).

To heat their homes, 92% of Central households used wood. Residents harvested a total of 258 cords of wood during the study year. Table D2-17 reports the use firewood for heating by sampled households. Thirteen of responding households used firewood exclusively to heat their homes. Eleven percent used wood for 76%–99% of their heating needs. Only four percent did not use any wood. On average, the annual cost of heating a home was \$1,622.50. This expense would likely be higher if wood were not used as a heating supplement.

Figure 2-29 shows the areas used by Central residents to harvest edible vegetation in 2016. Nearly all areas used for harvesting vegetation occurred along the Steese Highway. Residents traveled west along the highway for about 20 miles and east all the way to Circle. Some residents indicated their use of a small area between Central and Circle. Additionally, some harvests occurred within the Yukon-Charley Rivers National Preserve on a small access road off the Yukon River and off the mainstem Yukon River downstream from Circle. Figure 2-30 shows the areas used for harvesting firewood. Residents stayed closer to town and utilized a large swath of land in the immediate vicinity of Central. Central residents identified smaller search areas slightly out of town off the Steese Highway towards Circle.

COMPARING HARVESTS AND USES IN 2016 WITH PREVIOUS YEARS

Harvest Assessments

Researchers asked respondents to assess their own harvests in two ways: whether they used more, less, or about the same amount of eight resource categories in 2016 as in the past five years and whether they got “enough” of each of the eight resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

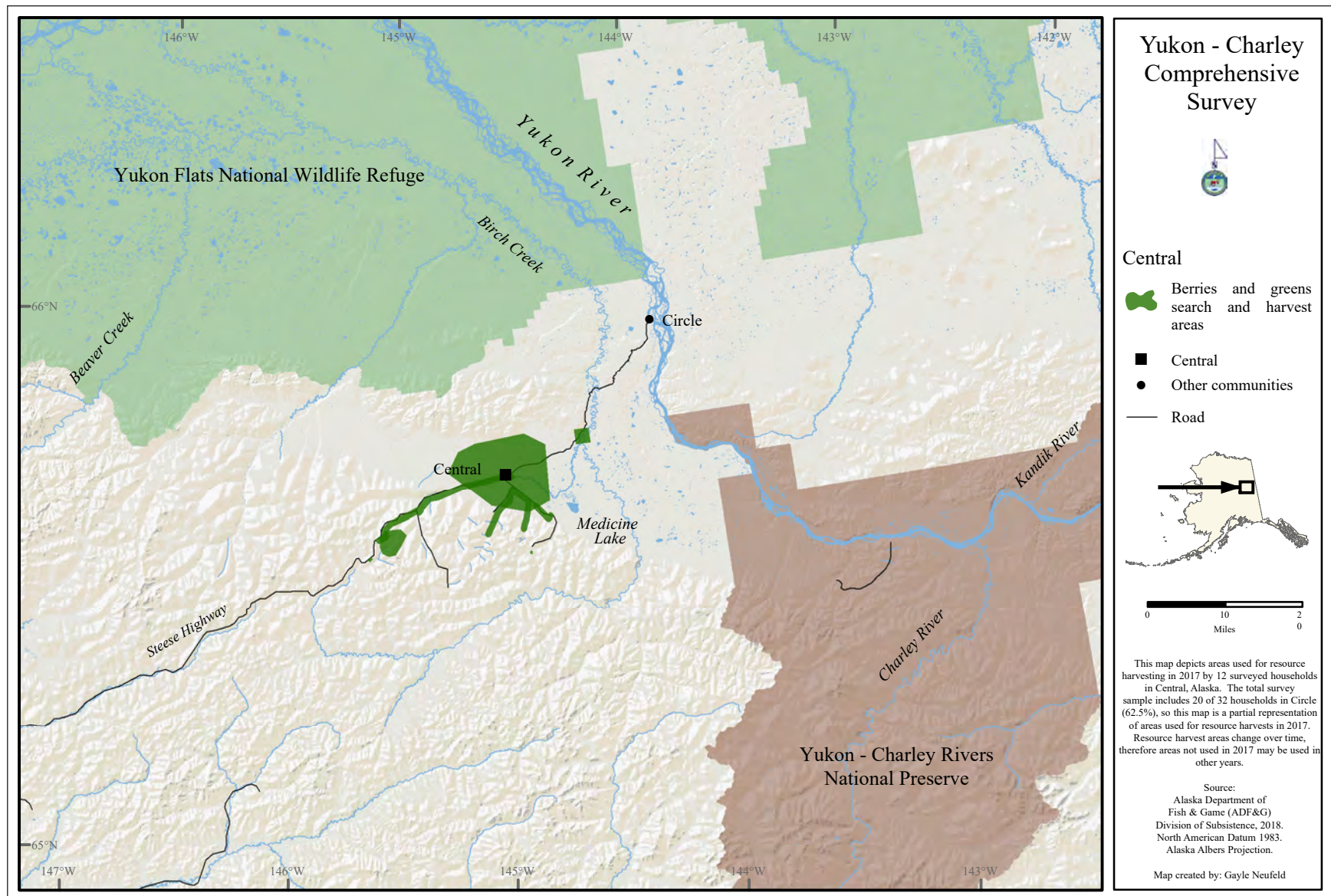


Figure 2-29.—Berries and greens gathering areas, Central, 2016.

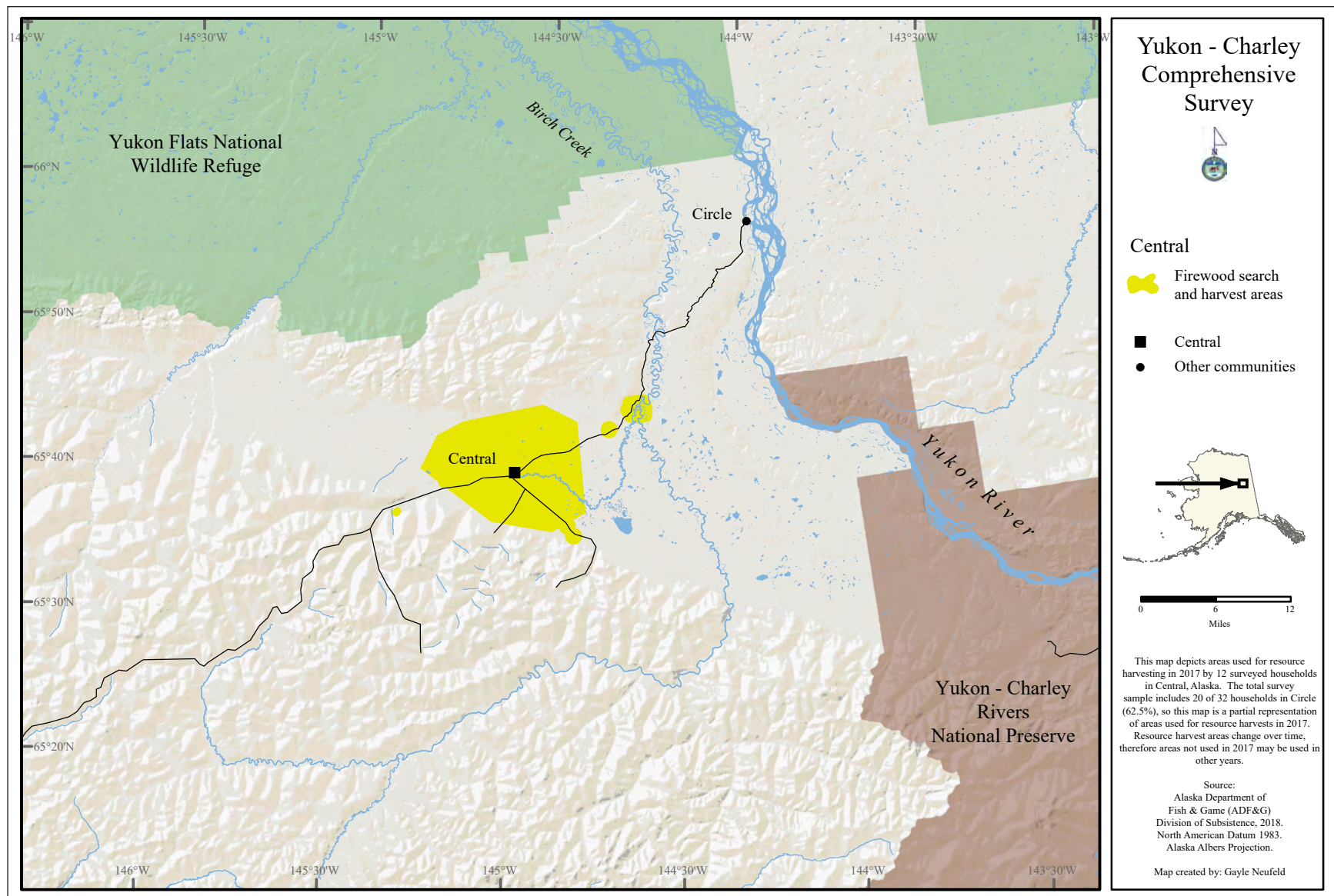


Figure 2-30.—Firewood harvest areas, Central, 2016.

Table 2-12.—Changes in household uses of resources compared to recent years, Central, 2016.

Resource category	Sampled households	Valid responses ^a	Households reporting use									
			Total households		Less		Same		More		Households not using	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	25	25	25	100.0%	9	36.0%	15	60.0%	1	4.0%	0	0.0%
Salmon	25	25	25	76.0%	8	32.0%	9	36.0%	2	8.0%	6	24.0%
Nonsalmon fish	25	25	25	64.0%	5	20.0%	11	44.0%	0	0.0%	9	36.0%
Large land mammals	25	25	25	84.0%	7	28.0%	14	56.0%	0	0.0%	4	16.0%
Small land mammals	25	25	25	28.0%	2	8.0%	5	20.0%	0	0.0%	18	72.0%
Marine mammals	25	25	25	0.0%	0	0.0%	0	0.0%	0	0.0%	25	100.0%
Birds	25	25	25	60.0%	5	20.0%	9	36.0%	1	4.0%	10	40.0%
Marine invertebrates	25	25	25	0.0%	0	0.0%	0	0.0%	0	0.0%	25	100.0%
Vegetation	25	25	25	96.0%	3	12.0%	18	72.0%	3	12.0%	1	4.0%

Source ADF&G Division of Subsistence household surveys, 2017.

a. Valid responses do not include households that did not provide any response.

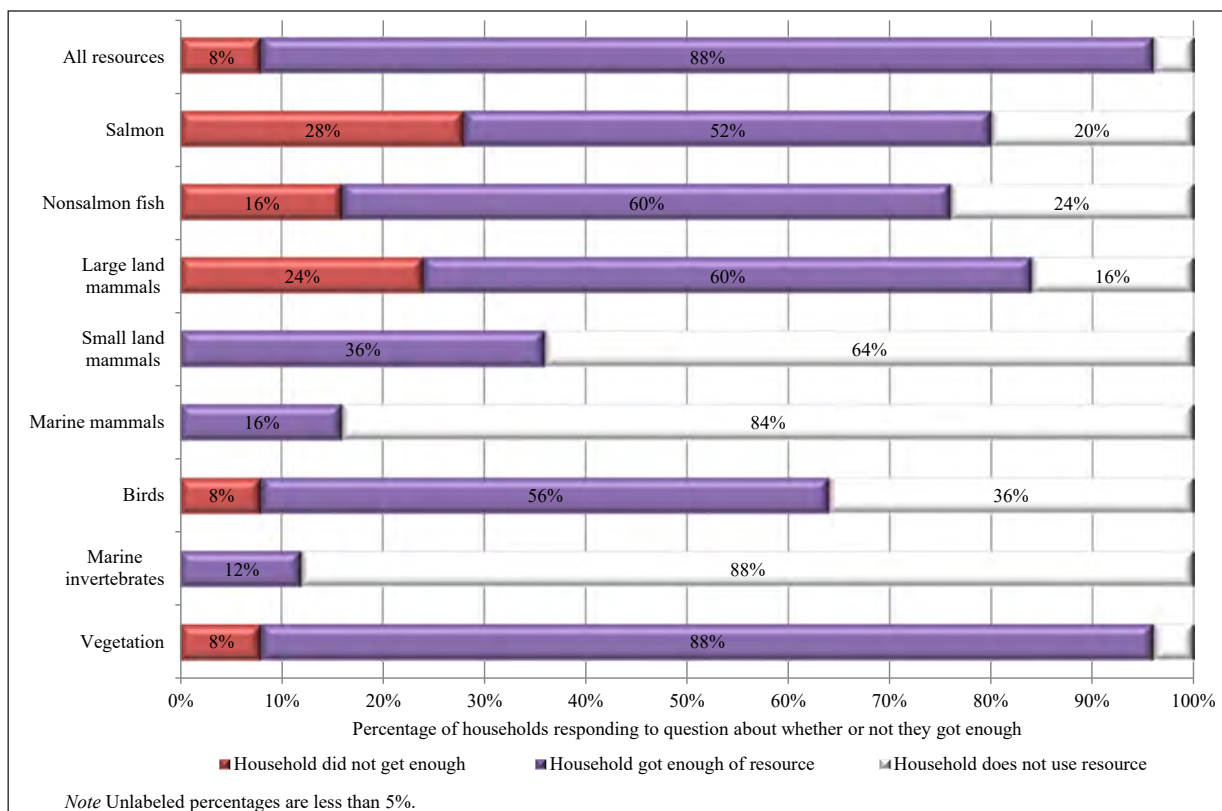


Figure 2-31.—Percentages of households reporting whether or not they got enough resources, Central, 2016.

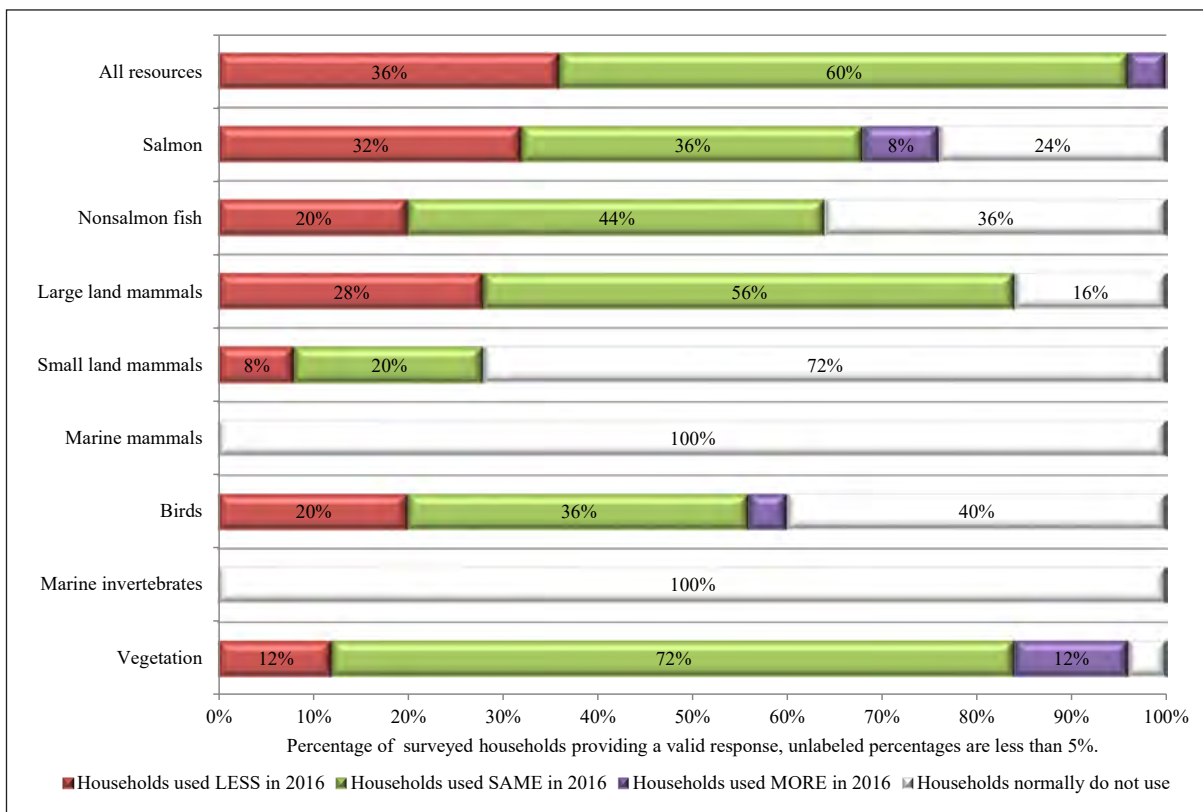


Figure 2-32.—Changes in use of resources compared to recent years, Central, 2016.

Together, Table 2-12 and Figure 2-31 and Figure 2-32 provide a broad overview of households' assessments of their harvests in 2016. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

In 2016, 88% of Central households reported getting enough wild resources, and 8% reported that they did not (Figure 2-31). More households reported not getting enough salmon (28%) than any other resource category. Twenty-four percent of responding households reported they did not get enough large land mammals, while 60% felt that they did. Households that reported they did not get enough of a resource in 2016 were asked to categorize the impact to their household as minor, major, severe, or not noticeable. For all resources, 44% of respondents characterized the impact to their households as minor, while 44% described it as major (Table D2-18). Households that did not get enough salmon experienced severe impacts (14% of responding households), as did those that did not get enough large land mammals (17% of responding households). Table D2-19 lists the resources that households needed more of in 2016. Of the 38 households that responded to the question, 20 identified a specific fish species or fish category. Six households needed more moose and four needed more caribou, the two predominate large land mammals used by Central residents.

Central households mostly reported that their use of wild resources had not changed in comparison to prior years (Figure 2-32). Sixty percent reported that they used the same amount of all wild resources in 2016 when compared to recent years, 36% reported using less, and 4% used more. For the salmon category, 32% of households used less than in recent years, a greater decline in use than any other resource category. Twenty-eight percent of households used less large land mammals than in recent years, and 56% reported that their use stayed the same. No household used more large land mammals. Overall, the use of each resource category remained mostly stable when compared to recent years, and greater percentages of households reported reductions in use rather than increases.

Households that reporting using less or more of a resource category were asked to give a reason why their use was different than in recent years. Table D2-20 and Table D2-21 report the reasons for less and more use, respectively. Family or personal reasons, resources being less available, and not having enough time to go out and harvest resources were the most common reasons for using less (Table D2-20). Regulations were a factor of using less salmon (25% of households) and nonsalmon fish (20%), but not land mammals. In the large land mammal category, three of the seven people who used less attributed the decrease to unsuccessful hunts. Two respondents gave reasons for using less small land mammals as no time and lack of effort, both of which affected these households' uses of small land mammals in 2016. Fewer households reporting using more wild resources in 2016 (Table D2-21). One household reported that favorable weather enabled them to harvest more birds, and another household needed more, and therefore used more, salmon during the study year. Having more help increased the use of salmon for another household.

Appendix Table D2-22 identifies some reasons households avoided harvesting certain species. One household avoided muskrats because a dead muskrat was found near the pond. Because the cause of death was unclear, other muskrat in the pond were not harvested.

Harvest Data

Comprehensive subsistence harvest data had never been collected in Central prior to this study. Consequently, no comparisons can be made with prior results. However, the baseline data in this report will allow researchers to monitor changes in Central's use and harvest patterns in the future. The Division of Commercial Fisheries collects subsistence fishery harvest information from the annual permit issued to Central residents. Unlike other Yukon River communities that report their harvest during a postseason salmon survey, road accessible communities like Central must use a subsistence fisheries permit each year to report their harvest. Figure 2-33 shows the historical salmon harvests made by Central residents from 1990 to 2016, as reported on ADF&G permits. In the 1990s, Central residents reported large harvests of fall chum salmon. This consistent and heavy harvest of fall chum salmon in the 1990s suggests the presence of dog teams in the community. Smaller harvests of fall chum salmon occurred in 2005 and again during this

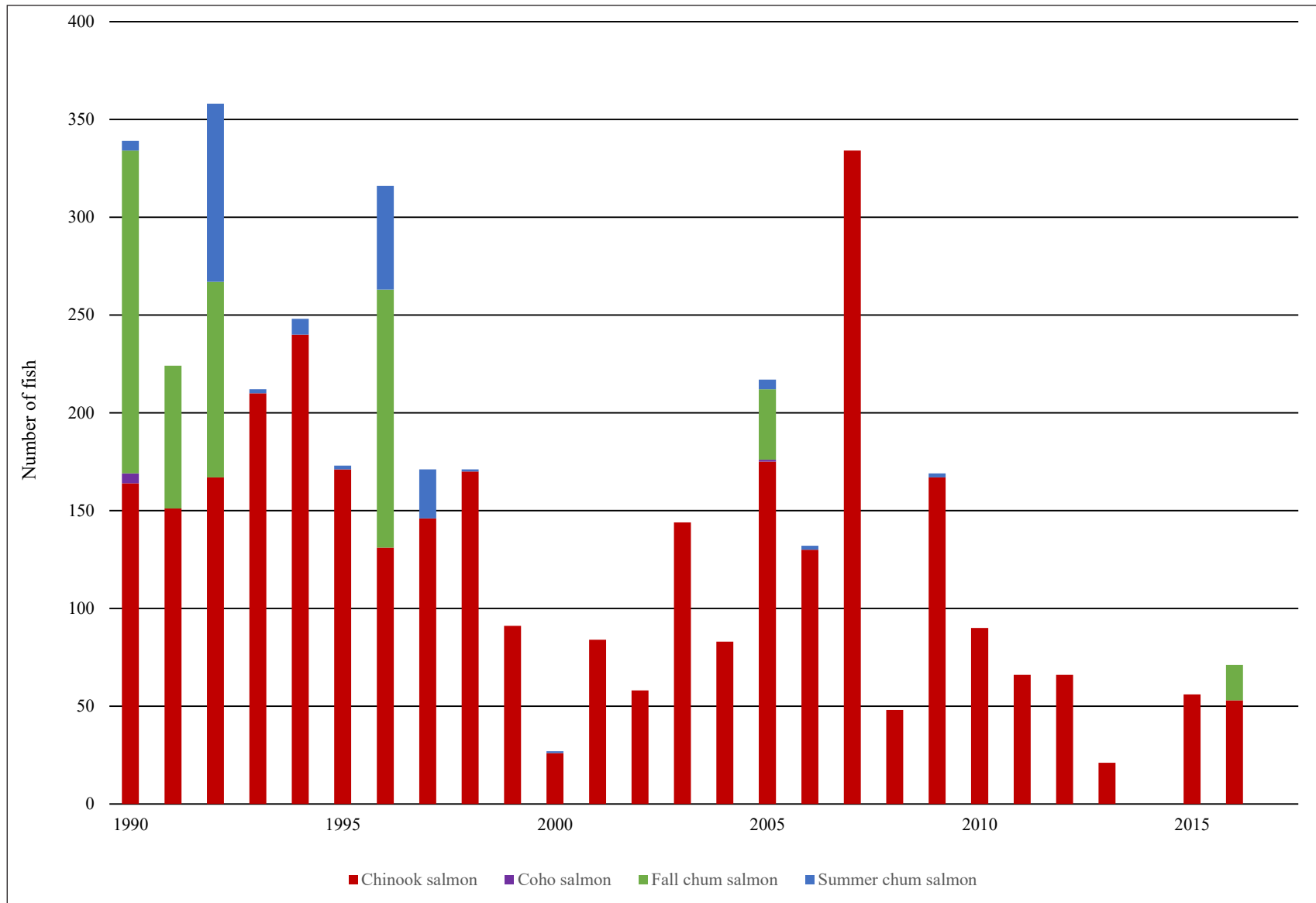


Figure 2-33.—Salmon harvests by species, Central, 1990–2016.

study year. Summer chum salmon harvests, shown in blue, occurred periodically over the data set. Although summer chum salmon are not available in the Yukon River near Circle, it is possible that Central residents were traveling downstream to harvest these fish, possibly as incidental catch in a commercial fishery. Central residents have primarily targeted Chinook salmon through time. Even as the species experienced declines in abundance, they continued to be the primary, if not the only, species sought by Central fishers.

Current and Historical Harvest Areas

No prior studies documented the areas used by Central residents for their subsistence harvesting activities.

LOCAL COMMENTS AND CONCERNS

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Central. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary. In addition, respondents expressed their concerns about wild resources during the community review meeting of preliminary data. These concerns are included in the summary.

Surveyed respondents expressed concern about the caribou hunts occurring along the Steese Highway. One survey respondent described the quota being met within three days and Central residents experience fear that “combat hunting of caribou” creates unsafe conditions both on the road and “in their yards.”

Several survey respondents commented on the Chinook salmon regulations that, in their opinion, make getting the fish they need more difficult. One respondent explained that the restrictions reduce the time available to fish and can create a significant financial burden for those who have to travel to Yukon River to fish: “If you don’t time your travel correctly you’ll miss out on fishing opportunities.” Similarly, another household felt that the openings for Chinook salmon usually come at the “tail end of the run,” so fishers must spend more money on gas to catch fish that are more dispersed later in the season. Shifting harvest to later in the season also risks rainier, wetter weather that can make drying fish more difficult. Another respondent wanted more fishing opportunity designated for subsistence users: an “exception” to the regulations that limit fishing opportunity. One respondent noted that although residents can supplement their catches with nonsalmon species like burbot, salmon is healthier.

One survey respondent shared their feelings about the National Park Service: “please abolish Park Service” because of the respondent’s interest in gold mining in the Yukon-Charley Rivers National Preserve.

ACKNOWLEDGMENTS

The authors would like to thank the community of Central for allowing this research to move forward. Particular thanks go to Bill Glanz and the Central Fish and Game Advisory Committee who met to discuss the value of this research and helped to arrange accommodations and gain local support for the project prior to the start of fieldwork. Without these outreach efforts, completing this work would have been difficult. Additionally, the authors would like to thank Central residents, who were generous with their time and patient with research staff.

3. CIRCLE

Jeff Park

In April 2018, three Alaska Department of Fish and Game (ADF&G) researchers and two local research assistants surveyed 20 of 32 (63%) households in Circle (Table 3-1). Expanding for 12 unsurveyed households, Circle’s estimated population of 82 people harvested an average of 375 edible pounds of wild food per person in 2017 (Table 3-2). During the study year, Circle residents used an average of 11 different kinds of wild resources per household.

This chapter summarizes findings from household surveys including demographic characteristics, responses to harvest assessment questions, harvest estimates, reported employment and income information, and responses to food security questions. Harvest numbers are expanded estimates. Results from this survey are available online in the ADF&G Community Subsistence Information System (CSIS).¹ Additional tables appear in Appendix D.

In addition to the comprehensive survey, three interviews were conducted with four residents of the community. These ethnographic interviews contextualize the quantitative harvest and use data collected in the surveys by providing a better understanding of the seasonal round, local history, and subsistence activities in the area.

COMMUNITY BACKGROUND

Circle is located on the south (left) bank of the Yukon River at the eastern end of the Steese Highway 130 air miles northeast of Fairbanks (Plate 3-1).² It sits at approximately 575 feet above sea level on the southern edge of the Yukon Flats, where the Yukon River flows through an extensive flat lowland made up of shallow lakes, braided streams, marshes, and sloughs. Circle has a subarctic climate: winters can reach -70° F, and the short summers average 60–70° F.³

Table 3-1.—Sample achievement, Circle, 2017.

Sample information	Community Circle
Number of dwelling units	38
Survey goal	100%
Households surveyed	20
Households failed to be contacted	8
Households declined to be surveyed	4
Households moved or occupied by nonresident	6
Total households attempted to be surveyed	32
Refusal rate	16.7%
Final estimate of permanent households	32
Percentage of total households surveyed	62.5%
Survey weighting factor	1.60
Sampled population	51
Estimated population	81.6

Source ADF&G Division of Subsistence household surveys, 2018.

1. Alaska Department of Fish and Game (ADF&G) Division of Subsistence, Juneau. “Community Subsistence Information System: CSIS.” <https://www.adfg.alaska.gov/sb/CSIS>. Hereinafter *ADF&G CSIS*.
2. Google Earth Pro 7.3.2.5487. “Circle, Alaska.” 65°49;32.00” N and 144°03’38.00” W. CNES/Airbus, Maxar Technologies, Landsat/Copernicus. 2020. Accessed February 11, 2020.
3. U.S. Fish and Wildlife Service. 2018. “Yukon Flats National Wildlife Refuge, Alaska: Habitat.” Accessed February 11, 2020. www.fws.gov/refuge/yukon_flats/wildlife_and_habitat/habitat.html

Table 3-2.–Selected community study findings, Circle, 2017.

Category	Community Circle
Demography	
Population	81.6
Percentage of population that is Alaska Native	88.2%
Percentage of household heads born in Alaska	78.6%
Average length of residency of household heads (years)	40.6
Cash economy	
Average number of months employed	5.1
Percentage of employed adults working year-round	47.1%
Percentage of income from sources other than employment	39.8%
Average household income ^a	\$27,570
Per capita income ^a	\$10,812
Resource harvest and use	
Per capita harvest, pounds usable weight	374.9
Average household harvest, pounds usable weight	956.0
Number of resources used by 50% or more households	7.0
Average number of resources used per household	11.0
Average number of resources attempted to be harvested per household	7.0
Average number of resources harvested per household	6.4
Average number of resources received per household	5.1
Average number of resources given away per household	3.4
Percentage of total harvest taken by top ranked 25% of households	86.5%
Percentage of households that harvested 70% of harvest	15.0%
Per capita harvest by lowest ranked 50% of households	1.4
Percentage of total harvest taken by lowest ranked 50% of harvesting households	0.4%
Average number of resources used by lowest ranked 50% of households	7.9
Average number of resources used by top ranked 25% of households	17.2

Source ADF&G Division of Subsistence household surveys, 2018.

a. Includes income from sources other than employment.

The Gwichyaa Gwich'in Athabascans inhabited areas along the Yukon River, including the present day location of Circle (Koskey and Mull 2011). They maintained semi-permanent, seasonal hunting and fishing camps in the region; however, the community of Circle was not established until 1883, after gold was discovered on nearby Birch Creek (Koskey et al. 2018). The location originally served as a distribution point for goods that were barged up the Yukon River and dispersed to nearby mining camps (Koskey and Mull 2011). Circle quickly became the largest mining community on the Yukon River and served as a hub for the region:

Circle City had an opera house, a theater, a hospital, a jewelry store, eight to ten dance halls and saloons, a hotel or two, a couple of trading posts, roadhouses, three restaurants, laundry services, a gambling house, a dentist, a bakery, a barber shop and bath house, a couple of churches, a library, a school, and a printing press. (Koskey et al. 2018)

Gold strikes in the Klondike in 1896 and in Nome in 1899 caused an exodus of miners from Circle: “Within a few short hours the price of dogs skyrocketed, and the price of cabins plummeted as many men began to haul several months’ supply of food, their camp outfit and their mining tools...upriver to the Klondike” (Koskey et al. 2018). A much smaller and more stable population remained at Circle and continued to



Plate 3-1.—Yukon River at Circle, Alaska.

supply the few miners that remained in the area.⁴ Circle became the first Alaska community on the Yukon River with access to the state’s road system when the Steese Highway was completed in 1928 (Koskey 2018).

Circle now has a barge service on the Yukon River during the summer and a state-owned airstrip. There is a medical clinic operated by the Tanana Chiefs Conference, a store, a pre-kindergarten through grade 12 school in the Yukon Flats School District, a post office, a store, and a washeteria. Circle Native Community is a federally recognized tribe and owner of the Alaska Native Claims Settlement Act (ANCSA) village corporation “Danzhit Hanlaih Corporation.”

SEASONAL ROUND

Figure 3-1 shows all the areas that Circle respondents reported searching for wild foods in 2017. Opportunities to harvest wild foods arise seasonally throughout the year. Circle residents take advantage of the longer days and milder temperatures of early spring prior to breakup by jigging through the ice for northern pike⁵ or maintaining set lines for burbot. Migratory waterfowl begin to pass through the region in April and are hunted by snowmachine in years when the ice is still stable in the region.

Additional springtime harvesting opportunities arise after breakup. Hunters are able to target migratory waterfowl by boat. Muskrats can be found in lakes and were commonly harvested in the past when they were more plentiful and the furs were more valuable:

[Muskrats]...had a good price on them. Of course, we eat them too. And what they don’t eat they air dry and use for dog food. Years ago, around this time of the year, people would get ready to go...Get their canoes and traps and everything ready

4. Alaska Department of Commerce, Community, and Economic Development (ADCCED) Division of Community and Regional Affairs, Juneau. n.d. “Alaska Community Database Online: Community Information.” Accessed February 11, 2020. <https://dcra-cdo-dcced.opendata.arcgis.com/>

5. Hereinafter *pike*.

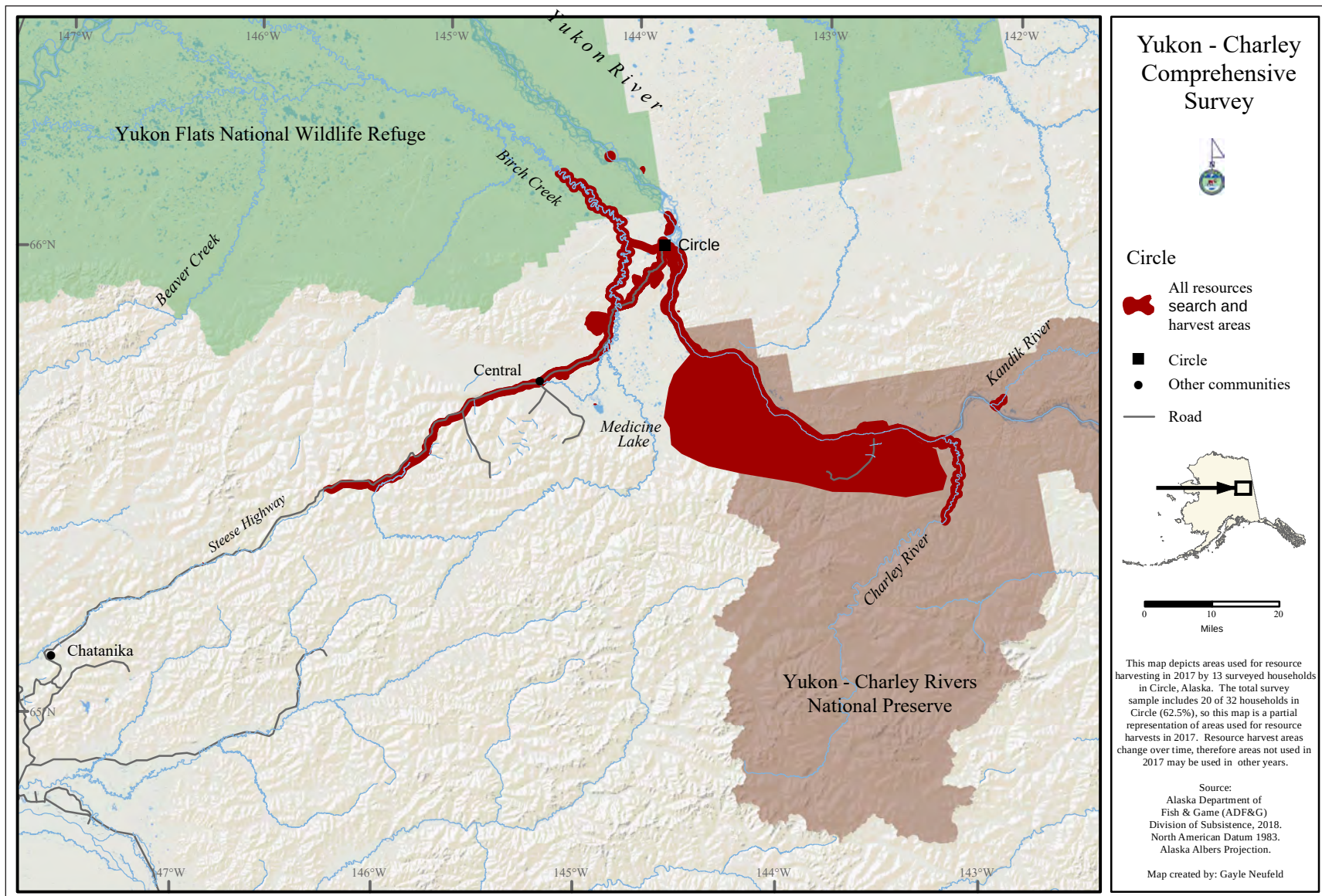


Figure 3-1.—All resources search and harvest areas, Circle, 2017.

to go out. People would go out after the ice breakup when they could travel long distance with a canoe...Until June 10. June 10th used to be last day of ratting. (04062018CRC3)

Another key respondent described how his family used to harvest snow buntings in the spring:

Springtime they used to even eat those little snowbirds, those bunting...I used to hear my mother and aunties talk about how they used to get them when they were young. They used to snare them...Bunch of willows in a circle, a little opening, put snares all the way around, get them. Get that picture wire, little single strand, pull it apart, use it for a snare. (04062018CRC4)

Fishers target whitefishes in the spring with a set gillnet. Longnose suckers are also available and were once targeted at this time of year. "We used to go out and get suckers, right after the ice breakup, when the water is still high, and the sloughs are full. We used to put fish net out there for suckers" (04062018CRC3). Beavers are plentiful in the region and are hunted immediately after breakup while their winter pelts are still in good condition. A wide variety of young plants and newly formed buds are also harvested in the spring. Some households reported harvesting wild rhubarb in June: "Rhubarb, we go after, wild rhubarb around first of June. About the only time is about the first week of June. When the shoots are small. After that it turns into wood so there is no use gathering them anymore" (04062018CRC3). Other springtime vegetation harvest opportunities include spruce tips and willow leaves: "...leaves on the willow. Chew it up. It's good for headaches, aches and pains. Good for bee stings, mosquito bites. Keep the swelling down" (04062018CRC4).

Black bears can be found along the river in late spring and summer: "There are a lot of bears in there. You see 'em a lot in June and July is when we probably see most of the bears. They're pretty thick on the river that time of year" (04062018CRC1). One key respondent described why he prefers to target black bears in the spring:

It's good, springtime, probably the best time to get them. When they are not moving, or they don't move too far from their dens. Well probably farther down river they like to get them in the fall, but I don't really care for them then. Too rich for me. Too much fat on there. Don't taste good. (04062018CRC4)

Summer brings salmon. Chinook salmon are the first to arrive: "July 4th. You got to be ready to fish then. Or around then" (04062018CRC4). The chum salmon run begins to arrive in August: "I would say in August I think is when they start showing up if I remember right. We don't usually have a net out that time of year, but I think people in the fish wheels are catching them around then" (04062018CRC1). Summer is also the time for gathering vegetation such as blueberries, raspberries, and lowbush cranberries, as well as other edible or medicinal plants like fireweed, rosehips, and Hudson's Bay tea.

In August some hunters begin scouting for moose in preparation for hunting in September: "In August, you're ready to go. Go upriver. See where the moose are at...go back in the lakes and look around" (04062018CRC4). Moose hunting begins in September: "About the time that you are done salmon fishing, the first part of September would be getting ready to go moose hunting" (04072018CRC3). One key respondent indicated that in recent years, he has started hunting earlier in September to avoid competition from other hunters: "The last five years you have to go out right at the beginning of the hunting season, because if you don't there is other people that come in from [other communities]" (04072018CRC3). Another key respondent said he has no choice but to hunt moose in late September when the weather is colder: "Well, now we kinda have to wait till like the end of September, because we don't really have a way to freeze our moose and so we have to hang it until it freezes" (04062018CRC1). Finally, a key respondent said he tends to start moose hunting a little later than in the past because the moose mating season tends to start later: "If you start hunting a little later you probably wouldn't have to travel so far. Because it seems like they are just getting a little later and later, they are rutting a little later now. So, you have to hunt a little later" (04062018CRC4).

Some hunters are looking for an opportunity to harvest other large land mammals in the fall while moose hunting: “September we hunt moose. If we run into caribou, we’ll take one. Same with a bear. We’re pretty much hunting everything at that time” (04062018CRC1). One respondent explained that fall is the only time he will try to harvest a black bear:

Fall bears, they’ve been feeding on blueberries and cranberries. They got a nice thick layer of fat on their rump. Spring bears have come out of the den. They’re eating pretty much your dead carrion that they find or bear grass and they’re, they’re pretty lean that time of year. We just don’t prefer—everybody’s got their own preference. (04062018CRC1)

Hunters may also take the opportunity to harvest small land mammals such as beaver and porcupine during fall hunting trips “We get [porcupine]. Late, late fall, I wouldn’t bother until late, late fall. They’re kind of strong tasting in springtime, so I don’t bother” (04062018CRC4). Also, many Circle residents hunt grouses, ptarmigans, and snowshoe hares along the roads in the fall.

Some fishers wait until late fall to harvest chum salmon to use to feed their sled dog teams. “Late September, into October when it’s cold. You know a lot of the guys here that have the big dog teams that’s when they’re really putting up chums” (04062018CRC1). At this time of year, the salmon can be preserved by allowing them to freeze; this is much easier than drying the fish, and they retain more nutrients and moisture.

Autumn provides a second opportunity to harvest migratory waterfowl as they move through the region on their return migration. Sandhill cranes were once abundant in the fall and were commonly targeted by Circle residents (Andersen and Jennings 2001). However, contemporary Circle residents expend much less effort hunting waterfowl in the fall compared to spring:

It’s not as much fun. They are harder to get, too. They won’t respond to your call. So you have to be at a certain spot that they fly over all the time. Certain island on the river, or certain sandbar they feed, or certain mouth of slough that they feed on goose-grass. You have to find those spots and wait. And they fly much higher. (04072018CRC3)

Fishers may incidentally catch burbot and a variety of other nonsalmon fish in fish wheels in the fall: “In the late fall, we catch sheefish too. Those big whitefish. And we also catch little whitefish too, and little suckers too” (04072018CRC3). Some residents also target burbot by setting lines from the riverbank and fish for pike and Arctic grayling⁶ with rod and reel in October prior to freeze-up.

Furbearer trapping and hunting begins in November and can continue until April. Marten and lynx are the primary targets, though trappers may target beaver, mink, wolverine, and other furbearers as well. Circle residents continue hunting and snaring snowshoe hares as well as hunting grouses and ptarmigans throughout the winter. Also, fishers target burbot by setting lines or jigging through the ice all winter. Hunters may target caribou or harvest them opportunistically throughout the winter until the end of April. Also, hunters have a second opportunity to harvest a bull moose in December. A key respondent said that many people do not take advantage of this hunt because the bull moose are in poor condition after the rut: “I wouldn’t bother with a bull moose then. It would be too skinny. Meat would be tough. Not worth it” (04062018CRC4), though he went on to say that some Circle residents do participate in this winter moose hunt, particularly in years when they did not successfully harvest a moose in September.

POPULATION ESTIMATES AND DEMOGRAPHIC INFORMATION

Fifty-one residents lived in the 20 surveyed households in Circle in 2017 (Table 3-1). Expanding for the unsurveyed households, the estimated population of 82 included 35 males (43%) and 46 females (57%); 72 people were Alaska Native (88%; tables 3-3 and D3-1; figures 3-2 and 3-3)

Household sizes ranged from one to eight occupants and averaged three residents per household (Table 3-4). The average age during the study year was 37, and eldest resident was 78 years old. The average length of

6. Hereinafter *grayling*.

Table 3-3.—Total and Alaska Native population estimates, Circle, 2010, 2013–2017, and 2017.

	Census (2010)	5-year American Community Survey (2013–2017)		This study (2017)	
		Estimate	Range ^a	Estimate	Range ^b
Total population					
Households	40	39.0	27 – 51	32.0	
Population	104	108.0	74 – 142	81.6	65 – 99
Alaska Native					
Population	90	71.0	48 – 94	72.0	55 – 89
Percentage	86.5%	65.7%	44.4% – 87.0%	88.2%	66.9% – 109.6%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey (ACS) 2017 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2018 for 2017 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

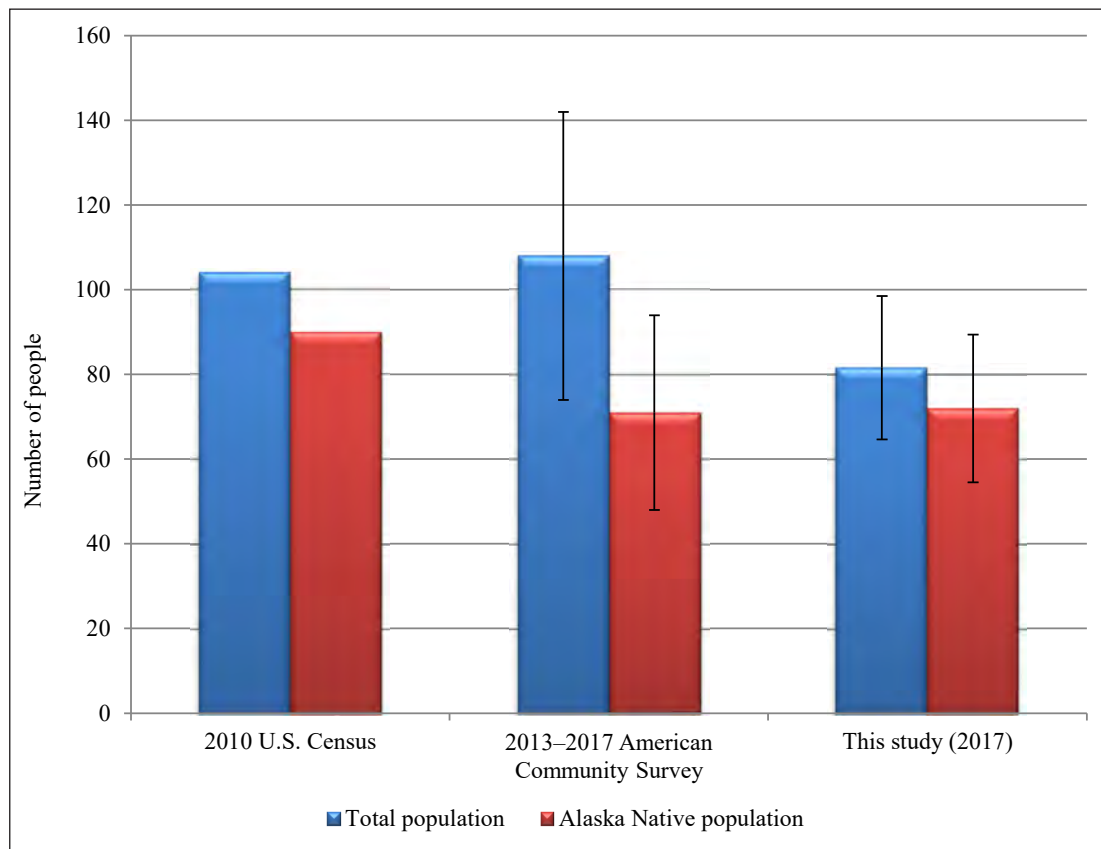


Figure 3-2.—Total and Alaska Native population estimates, Circle, 2010, 2013–2017, and 2017.

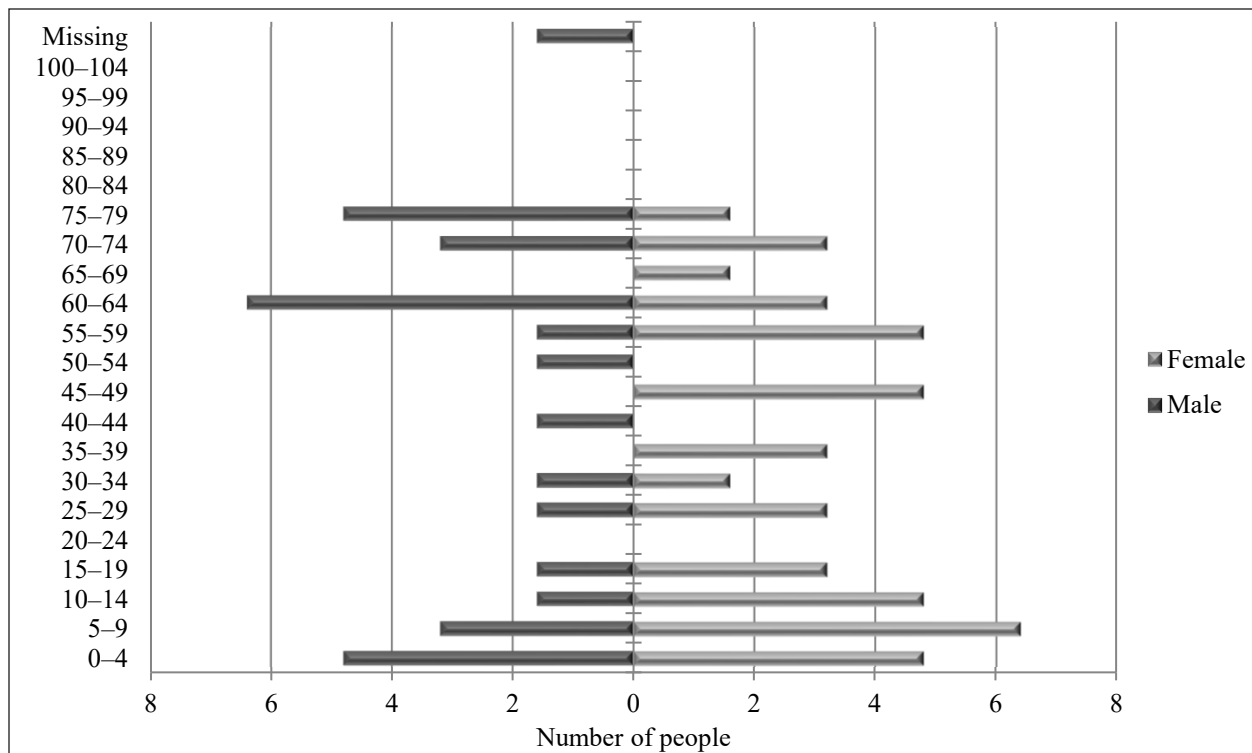


Figure 3-3.—Population profile, Circle, 2017.

residency was 27 years. Forty-three percent of household heads reported Circle as their birthplace and 21% originated from nearby Fort Yukon (Table D3-2). Seven percent of household heads were originally from Fairbanks, and small percentages (less than 4%) were from the nearby communities of Arctic Village and Chalkyitsik. Similar to household heads, most of the population was born in Circle (59%); 14% were born in Fort Yukon, and 8% were born in Arctic Village (Table D3-3).

Figure 3-4 shows historical population estimates from 1939 to 2017. The figure includes the population estimate from this study as well as estimates from the U.S. Census Bureau and the Alaska Department of Labor. Except for decennial U.S. census years, the Alaska Department of Labor estimates the population annually. The population of Circle has been gradually increasing for the last five decades and is currently higher than ever recorded. In 2010, the U.S. Census Bureau counted 104 residents in Circle. In 2017, the Alaska Department of Labor estimated a population of 102. This study's estimate of 82 residents is notably lower than both the 2010 U.S. Census Bureau count and the Alaska Department of Labor 2017 estimate. The two estimates are likely divergent because of a difference in methodologies. In this study for example, residents needed to have lived in Circle for at least six months to be counted, longer than required for the DOL estimate.

INCOME AND CASH EMPLOYMENT

Survey respondents were asked about both earned income (jobs held and wages earned by all household members 16 years and older) and unearned income (Alaska Permanent Fund dividend, Social Security, public assistance, etc.). The survey also asked about months worked and work schedules for employed residents in 2017.

In 2017, all Circle households combined earned or received an estimated \$882,231, with an average household income of \$27,570 (Table 3-5). Of the total community income, \$531,154 (60%) was from employment, and \$351,076 (40%) was from other sources. Table D3-4 compares the estimated median income from this study with the American Community Survey (ACS) estimates of median income in Circle and in all Alaska between 2013 and 2017. The median income estimated by this study is larger than the ACS

Table 3-4.–Sample and demographic characteristics, Circle, 2017.

Characteristics	Community Circle
Sampled households	20
Eligible households	32
Percentage sampled	62.5%
Sampled population	51
Estimated community population	81.6
Household size	
Mean	2.6
Minimum	1.0
Maximum	8.0
Age	
Mean	36.7
Minimum ^a	0
Maximum	78
Median	37.5
Length of residency	
Total population	
Mean	27.0
Minimum ^a	0
Maximum	78
Heads of household	
Mean	40.6
Minimum	5
Maximum	76
Alaska Native	
Estimated households ^b	
Number	27.2
Percentage	85.0%
Estimated population	
Number	72.0
Percentage	88.2%

Source ADF&G Division of Subsistence household surveys, 2018.

a. A minimum age of 0 (zero) is used for infants who are less than 1 year of age.

b. The estimated number of households in which at least 1 head of household is Alaska Native.

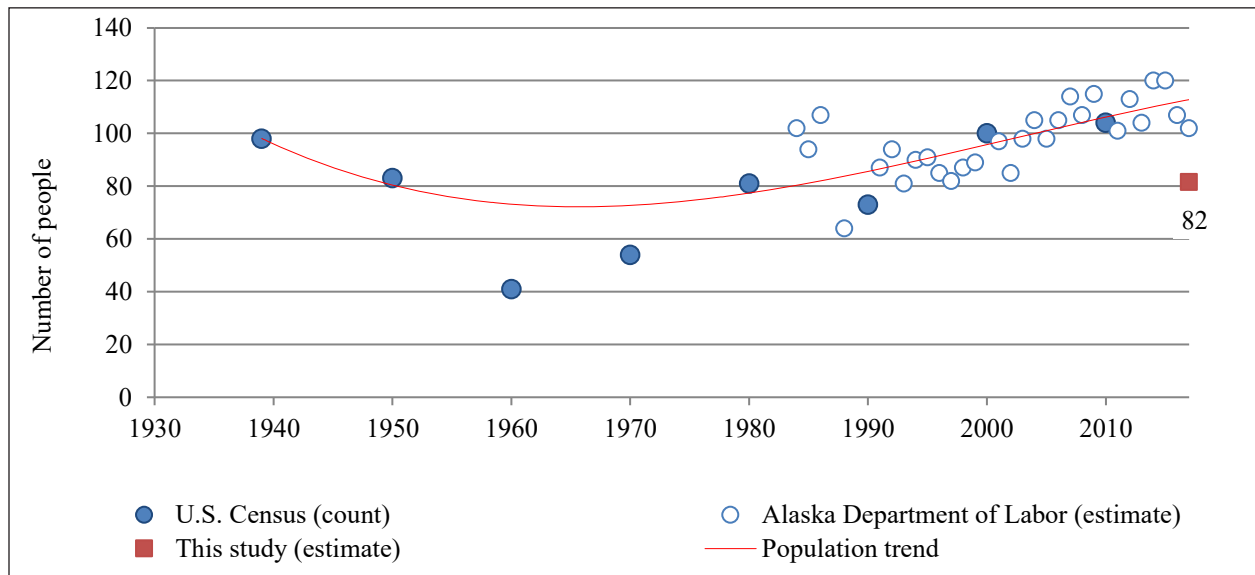


Figure 3-4.—Population estimates, Circle, 1939–2017.

Table 3-5.—Estimated earned and other income, Circle, 2017.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal	12.2	10.9	\$312,214	\$66,944 – \$742,573	\$9,757	35.4%
Federal government	3.5	3.6	\$58,977	\$20,785 – \$150,638	\$1,843	6.7%
Construction	1.7	1.8	\$49,148	\$44,970 – \$50,215	\$1,536	5.6%
Services	12.2	10.9	\$47,743	\$1,381 – \$219,591	\$1,492	5.4%
Transportation, communication, and utilities	5.2	5.4	\$32,971	\$7,621 – \$90,532	\$1,030	3.7%
Retail trade	3.5	1.8	\$22,243	\$13,662 – \$23,822	\$695	2.5%
Other employment	1.7	1.8	\$7,859	\$4,477 – \$7,951	\$246	0.9%
Earned income subtotal	33.1	23.6	\$531,154	\$265,378 – \$994,748	\$16,599	60.2%
Other income						
Social Security		9.6	\$116,459	\$24,980 – \$262,400	\$3,639	13.2%
Alaska Permanent Fund dividend		28.8	\$75,680	\$47,520 – \$110,880	\$2,365	8.6%
Pension / retirement		4.8	\$74,173	\$389 – \$196,851	\$2,318	8.4%
Native corporation dividend		20.8	\$33,743	\$18,641 – \$53,560	\$1,054	3.8%
Supplemental Security Income		3.2	\$16,835	\$10,522 – \$53,312	\$526	1.9%
Other		6.4	\$8,707	\$997 – \$25,461	\$272	1.0%
Foster care		1.6	\$8,678	\$5,424 – \$17,357	\$271	1.0%
Unemployment insurance		3.2	\$8,421	\$5,263 – \$26,667	\$263	1.0%
Heating assistance		6.4	\$4,480	\$640 – \$8,960	\$140	0.5%
SNAP (Supplemental Nutrition Assistance Program)		3.2	\$3,234	\$2,021 – \$10,240	\$101	0.4%
Child support		1.6	\$419	\$262 – \$1,649	\$13	0.0%
Adult public assistance (OAA, APD)		1.6	\$248	\$155 – \$1,388	\$8	0.0%
TANF (Temporary Assistance for Needy Families)		0.0	\$0	\$0 – \$0	\$0	0.0%
Longevity bonus		0.0	\$0	\$0 – \$0	\$0	0.0%
Workers compensation / insurance		0.0	\$0	\$0 – \$0	\$0	0.0%
Disability benefit		0.0	\$0	\$0 – \$0	\$0	0.0%
Veterans assistance		0.0	\$0	\$0 – \$0	\$0	0.0%
Fuel voucher		0.0	\$0	\$0 – \$0	\$0	0.0%
Meeting honoraria		0.0	\$0	\$0 – \$0	\$0	0.0%
Other income subtotal		4.8	\$351,076	\$175,630 – \$615,800	\$10,971	39.8%
Community income total			\$882,231	\$544,680 – \$1,357,014	\$27,570	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

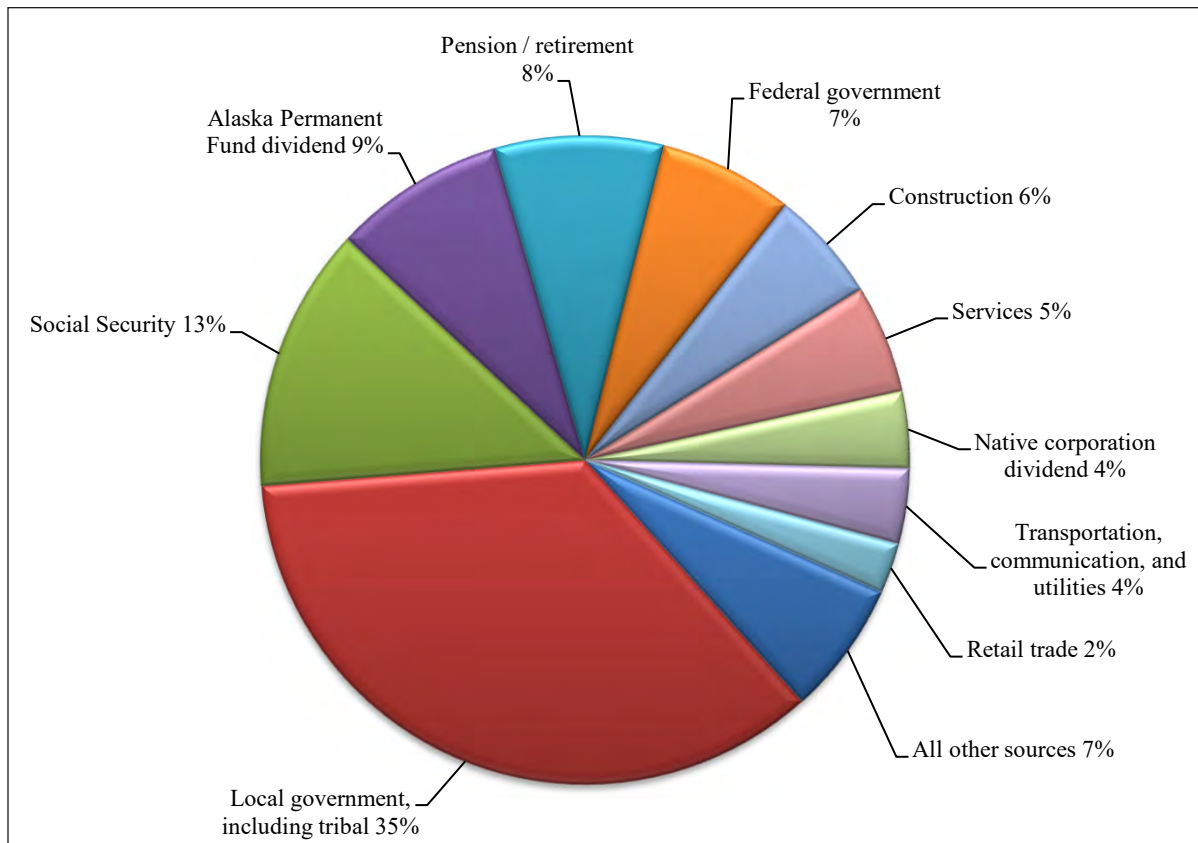


Figure 3-5.—Top income sources, Circle, 2017.

estimates; however, the margins of error do overlap. Both this study and the ACS estimates show that the median income in Circle is much lower than that of Alaska as a whole.

Employment with local government was the most significant income source for Circle: it provided 35% of all income to the community (Figure 3-5). Other contributions to the community's income came from a variety of sources: significant contributions include Social Security (13%), the Alaska Permanent Fund dividend (9%), pension/retirement (8%), and employment with the federal government (7%).

Thirty-five percent of employed adults were in the local government sector (Table 3-6); however, these jobs provided 59% of the community's wage earnings. The services industry accounted for 27% of Circle jobs and accounted for 9% of the community's income. Transportation, communication, and utilities provided 15% of jobs, and 8% of jobs were with the federal government.

Forty-seven percent of employed adults were working year-round, and Circle residents were employed for an average of five months in 2017 (Table 3-2). Thirty-one percent of jobs were full time and another 31% were part time (Table D3-5). An estimated 54 adults (62%) were employed an average of 22 weeks in 2017 (Table D3-6). Seventy four percent of households contained at least one employed adult. The number of jobs held per employed household ranged from one to six, with an average of two jobs per household.

FOOD SECURITY

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were

Table 3-6.—Employment by industry, Circle, 2017.

Industry	Jobs	Employed Households	Employed Individuals	Percentage of wage earnings
Estimated total number	45.3	23.6	33.1	
Federal government	7.7%	15.4%	10.5%	11.1%
Executive, administrative, and managerial	3.8%	7.7%	5.3%	7.1%
Service occupations	3.8%	7.7%	5.3%	4.0%
Local government, including tribal	34.6%	46.2%	36.8%	58.8%
Teachers, librarians, and counselors	7.7%	15.4%	10.5%	37.0%
Service occupations	15.4%	23.1%	21.1%	8.7%
Agricultural, forestry, and fishing occupations	3.8%	7.7%	5.3%	4.6%
Mechanics and repairers	3.8%	7.7%	5.3%	4.5%
Transportation and material moving occupations	3.8%	7.7%	5.3%	4.0%
Construction	3.8%	7.7%	5.3%	9.3%
Construction and extractive occupations	3.8%	7.7%	5.3%	9.3%
Transportation, communication, and utilities	15.4%	23.1%	15.8%	6.2%
Administrative support occupations, including clerical	3.8%	7.7%	5.3%	1.3%
Precision production occupations	7.7%	7.7%	5.3%	2.8%
Transportation and material moving occupations	3.8%	7.7%	5.3%	2.1%
Retail trade	7.7%	7.7%	10.5%	4.2%
Executive, administrative, and managerial	7.7%	7.7%	10.5%	4.2%
Services	26.9%	46.2%	36.8%	9.0%
Service occupations	15.4%	30.8%	21.1%	1.1%
Construction and extractive occupations	3.8%	7.7%	5.3%	6.3%
Transportation and material moving occupations	3.8%	7.7%	5.3%	1.3%
Handlers, equipment cleaners, helpers, and laborers	3.8%	7.7%	5.3%	0.3%
Industry not indicated	3.8%	7.7%	5.3%	1.5%
Handlers, equipment cleaners, helpers, and laborers	3.8%	7.7%	5.3%	1.5%

Source ADF&G Division of Subsistence household surveys, 2018.

broken down further into two subcategories: high or marginal food security. Food insecure households were divided into two subcategories: low or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Circle residents are summarized in Figure 3-6. Eight of the ten statements listed in the figure are used to calculate a household's food security. Thirty percent of responding households worried that they would not have enough food. Twenty percent of responding households said that they ran out of store-bought food at some point during the year, and 20% reported that their subsistence food ran out. Fifteen percent of households reported that once their food, either store-bought or subsistence, ran out, they were unable to get more. Thirty-five percent of responses indicated that the household lacked resources, such as equipment, transportation, or money, that they needed to get food. Eleven percent of responding households reported that they had to cut the size of their meals or skip meals at some point in 2017. Five percent of households reported that at least one adult in the household ate less than they felt they should because they could not get the foods they needed. None of the respondents indicated that a household member was hungry but did not eat, lost weight because they did not have enough food, or did not eat for a whole day.

Food security results for surveys for Circle, the state of Alaska, and the United States are summarized in Figure 3-7. Eighty percent of Circle households experienced high and marginal food security in 2017: less than the state of Alaska (85%) and the United States (83%). Also, a higher percentage of Circle households fell into the low food security category compared to the state of Alaska or the rest of the country (20%, 12%, and 12%, respectively). However, no households in Circle indicated that they experienced very low food security, compared to 4% of households in the state of Alaska and 5% in the United States.

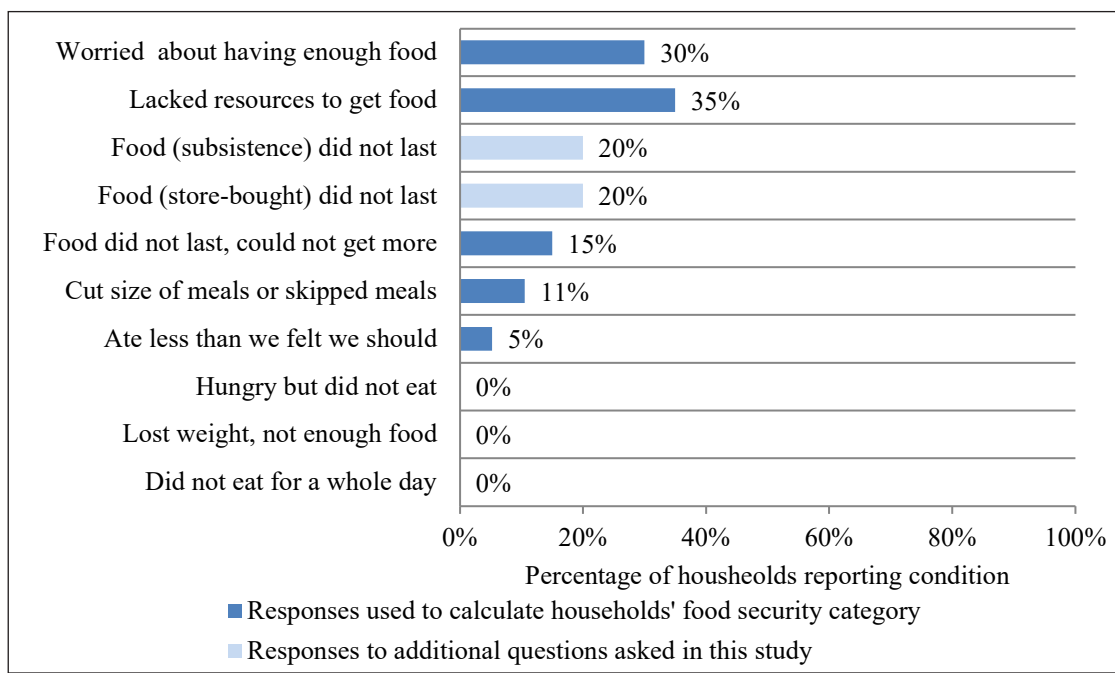


Figure 3-6.—Responses to questions about food insecure conditions, Circle, 2017.

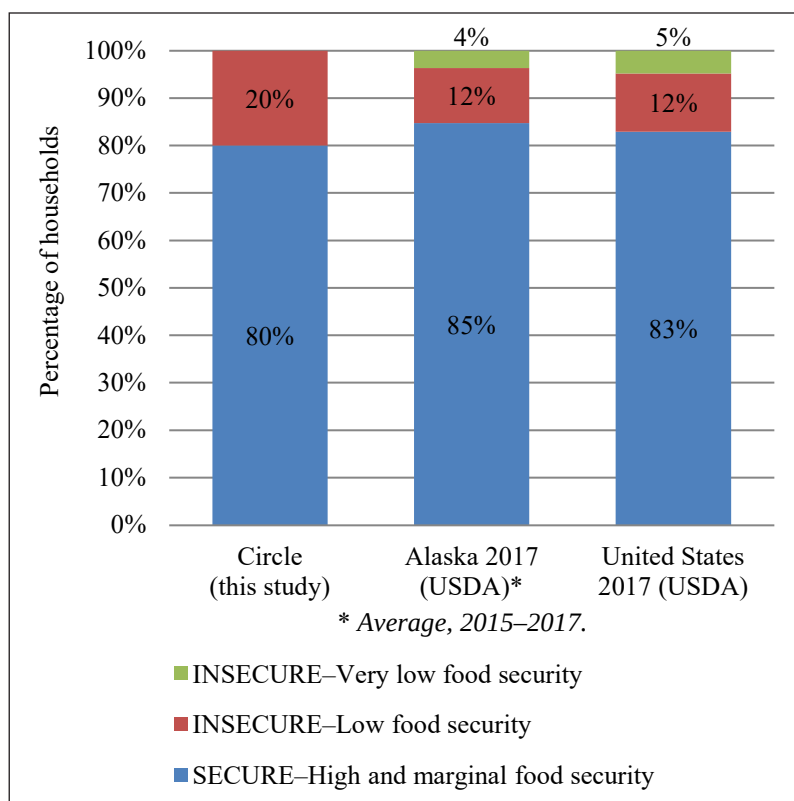


Figure 3-7.—Comparison of food security categories, Circle, Alaska, and United States, 2017.

Figure 3-8 portrays the mean number of food insecure conditions per household by food security category by month. Households with high and marginal food security (shown in blue) showed nearly zero food insecure conditions throughout the year. Households with low food security (shown in red) were stable from March to July: they reported approximately one food insecure condition per month throughout that time. These households increased to two food insecure conditions throughout the fall months and showed a maximum of three food insecure conditions in December and January. Decreased food security in the winter months could possibly indicate a reduced availability of wild resources, a seasonal reduction in employment, or a seasonal increase in utility expenses.

Figure 3-9 shows the months in which households reported foods not lasting. No households reported running out of subsistence foods (shown in red) from March to July. Some households said that their subsistence food did not last in fall and winter; a maximum of 15% reported this in December and January. Five percent of households reported their store-bought food (shown in green) not lasting from March to November. This increased to 10% in December through February with a maximum of 15% in January.

SUMMARY OF HARVEST AND USE PATTERNS

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 3-10 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Circle residents in 2017. Seventy-five percent of Circle residents hunted, fished, trapped, or gathered wild foods, and 86% worked to process those resources. Two-thirds of the community gathered vegetation. Smaller percentages of residents harvested fish (45%), large land mammals (43%), and birds and eggs (41%). Fish and large land mammals account for the majority of Circle's total harvest and require the highest degree of effort and cooperation to properly process and preserve. The highest percentage of residents (67%) participated in processing these two resource categories.

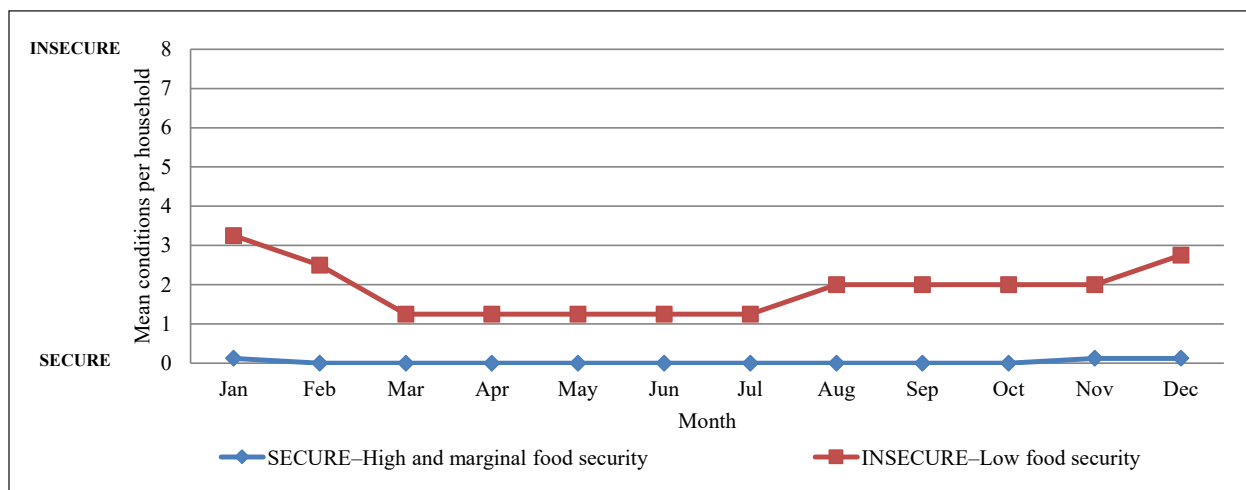


Figure 3-8.—Mean number of food insecure conditions by month and by household food security category, Circle, 2017.

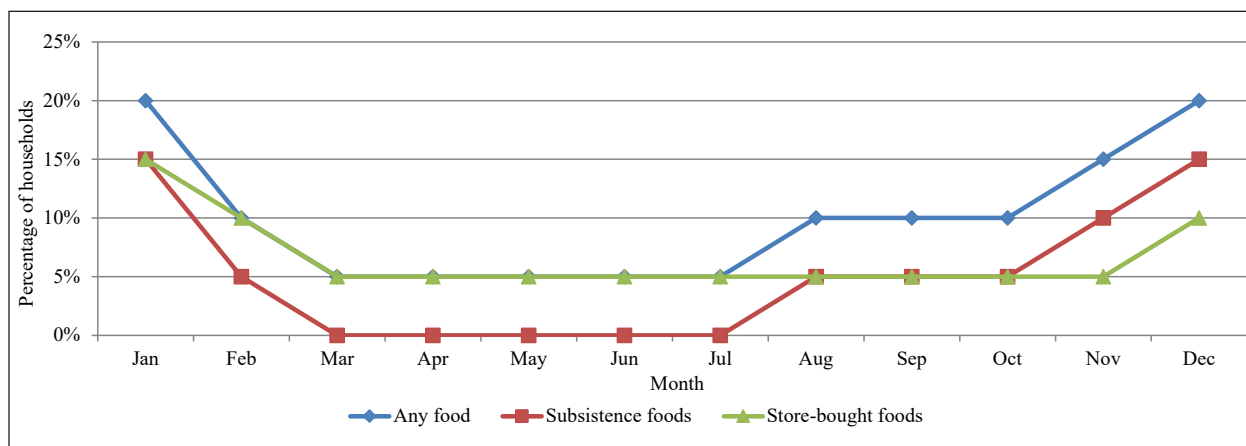


Figure 3-9.—Months when food did not last, Circle, 2017.

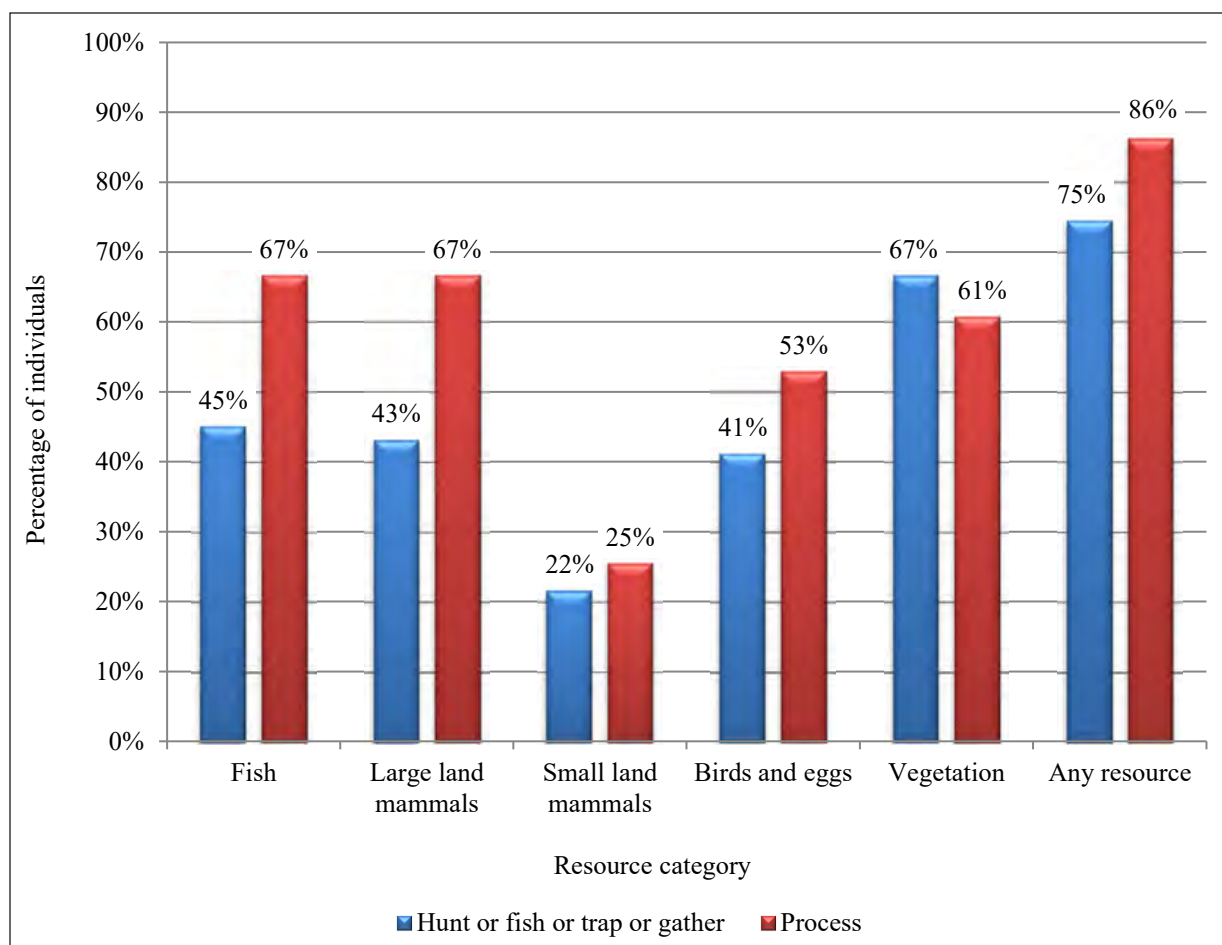


Figure 3-10.—Individual participation in subsistence harvesting and processing, by category, Circle, 2017.

Respondents were asked about participation in craft or construction activities using subsistence resources (Table D3-7). Sixty-five percent of people cooked wild foods, 12% made handicrafts, 12% sewed skins or furs, and 10% built fish wheels.

Harvest and Use of Wild Resources at the Household Level

Figure 3-11 shows by resource category the percentages of households that used, attempted to harvest, and harvested wild resources. One hundred percent of surveyed Circle households reported using salmon and large land mammals. Eighty-five percent utilized vegetation and 80% used birds. Large percentages of households also reported using nonsalmon fish and small land mammals as well (65% and 55% respectively).

Sixty-five percent of households harvested vegetation: more than any other resource category. Forty-five percent of households reported harvesting salmon and birds, and approximately one third of households harvested resources from the nonsalmon, large land mammal, and small land mammal categories. The percentage of households using any resource category was much greater than that of households who harvested those resources. This demonstrates a high degree of sharing of subsistence resources between Circle households.

Large land mammals is the only category with a notable difference between the percentage of households attempting to harvest and those successfully harvesting. Approximately two-thirds of Circle large land mammal hunters were successful in 2017.

Table 3-7 summarizes resource harvest and use characteristics for Circle in 2017 at the household level. The average harvest was 956 lb usable weight per household, or 376 lb per capita. During the study year,

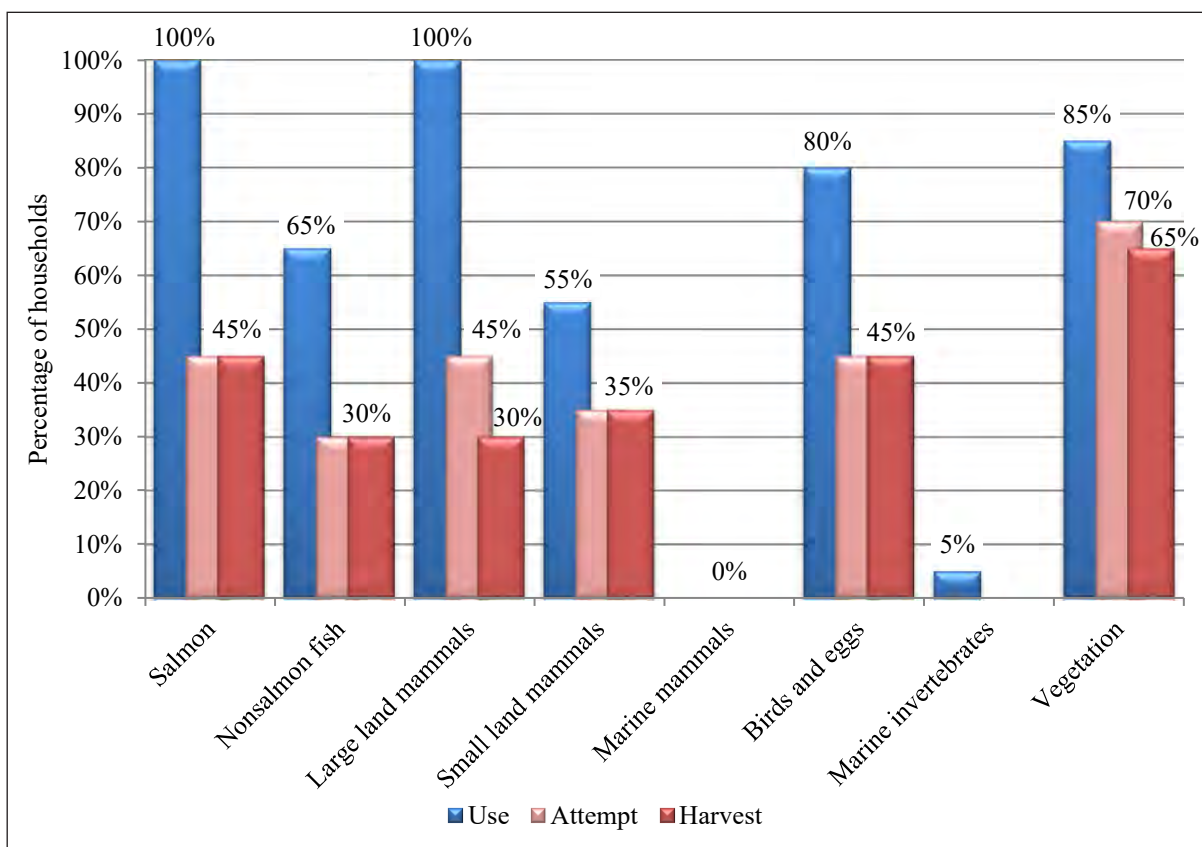


Figure 3-11.—Percentages of households using, attempting to harvest, and harvesting wild resources, by category, Circle, 2017.

community households harvested an average of six different kinds of resources and used an average of 11 resources. The maximum number of resources used by any household was 21. In addition, households gave away an average of three different resources. Circle households used over 40 different resources (Table 3-8). Appendix Table D3-8 lists the resources that Circle respondents reported using during the study year.

The survey asked households if they used natural materials to make handicrafts. Fifteen percent of Circle households reported using furs or hides to make handicrafts (Table D3-9). Ten percent used tree bark for handicrafts, most likely birch bark used to make baskets. Finally, five percent reported using horns and five percent used antlers; however, antlers are far more common in the region and it is possible that respondents did not readily make the distinction between the two resources.

Table D3-10 shows the modes of transportation that sampled households reported using to access wild resources. Fifty-five percent of sampled households used a boat, and 40% used a truck to harvest subsistence resources. Snowmachines (35%), all-terrain vehicles (ATVs; 20%), and dogsleds (5%) were also used. Table D3-11 shows the portable motorized equipment used by sampled households while searching for and harvesting wild resources in 2017. Forty-five percent of households reported using a chainsaw, 15% used a generator, and 5% used an ice auger.

SHARING OF WILD RESOURCES

Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which

Table 3-7.—Resource harvest and use characteristics, Circle, 2017.

Characteristic	
Mean number of resources used per household	11.0
Minimum	3
Maximum	21
95% confidence limit ($\pm$)	13.7%
Median	8.5
Mean number of resources attempted to harvest per household	7.0
Minimum	0
Maximum	23
95% confidence limit ($\pm$)	31.4%
Median	3.5
Mean number of resources harvested per household	6.4
Minimum	0
Maximum	20
95% confidence limit ($\pm$)	31.8%
Median	3.0
Mean number of resources received per household	5.1
Minimum	0
Maximum	13
95% confidence limit ($\pm$)	18.8%
Median	6.0
Mean number of resources given away per household	3.4
Minimum	0
Maximum	15
95% confidence limit ($\pm$)	40.4%
Median	1.5
Household harvest (pounds)	
Minimum	0
Maximum	4,929
Mean	956.0
Median	21.5
Total harvest weight (lb)	30,593.1
Community per capita harvest (lb)	374.9
Percentage using any resource	100%
Percentage attempting to harvest any resource	75%
Percentage harvesting any resource	70%
Percentage receiving any resource	95%
Percentage giving away any resource	70%
Number of households in sample	20
Number of resources asked about and identified voluntarily by respondents	114

Source ADF&G Division of Subsistence household surveys, 2018.

they share with other households. A recent study of 3,265 households in 66 rural Alaska communities found that about 33% of the households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 3-12, 15% of the community's households harvested about 68% of wild resources as estimated in pounds usable weight in 2017. This distribution is significantly more concentrated than the general pattern identified by Wolfe (2010). Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Circle and the other study communities and why a more extreme concentration of harvesting effort is occurring in Circle.

HARVEST QUANTITIES AND COMPOSITION

Table 3-8 reports estimated wild resource harvests and uses by Circle residents in 2017 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors⁷). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and nonlocal hunters. Purchased foods are not included, but resources such as firewood and wild resources used for dog food are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households.

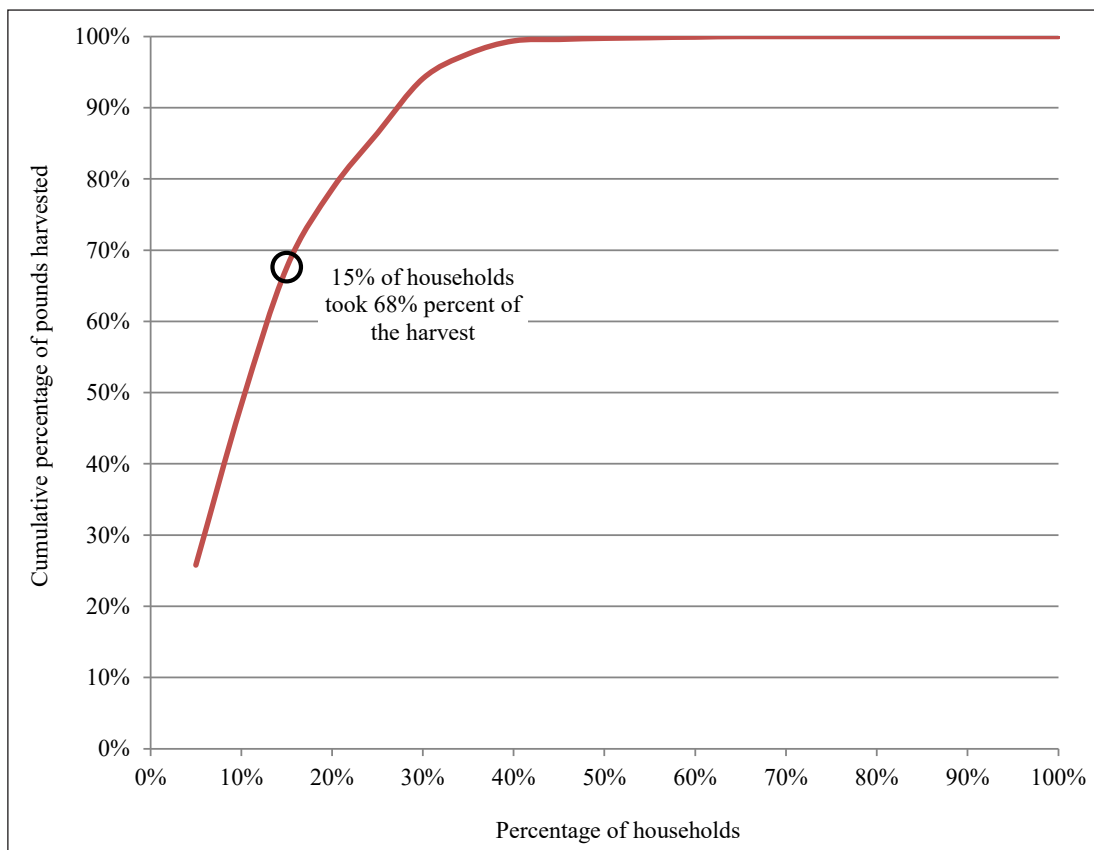


Figure 3-12.—Household specialization, Circle, 2017.

7. Resources that are not eaten, such as firewood and some furbearers, are included in the table but are assigned a conversion factor of zero.

Table 3-8.—Estimated harvest and use of wild resources, Circle, 2017.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	100.0	75.0	70.0	95.0	70.0	30,593.1	956.0	374.9	30,593.1 lb		956.0	47.4
Salmon	100.0	45.0	45.0	70.0	45.0	24,070.1	752.2	295.0	24,070.1 lb		752.2	50.7
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Fall chum salmon	45.0	35.0	35.0	15.0	20.0	18,350.6	573.5	224.9	3,888.0 ind		121.5	60.3
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Coho salmon	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Chinook salmon	100.0	45.0	45.0	65.0	40.0	5,719.6	178.7	70.1	787.2 ind		24.6	46.9
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sockeye salmon	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown salmon	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Nonsalmon fish	65.0	30.0	30.0	50.0	15.0	719.8	22.5	8.8	719.8 lb		22.5	59.7
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Smelts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific halibut	30.0	5.0	5.0	25.0	5.0	270.1	8.4	3.3	270.1 lb		8.4	128.2
Arctic lamprey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Burbot	20.0	5.0	5.0	15.0	0.0	80.6	2.5	1.0	19.2 ind		0.6	128.2
Arctic char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Dolly Varden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lake trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Arctic grayling	15.0	5.0	5.0	10.0	5.0	14.4	0.5	0.2	16.0 ind		0.5	128.2
Northern pike	5.0	5.0	5.0	0.0	0.0	10.6	0.3	0.1	3.2 ind		0.1	128.2
Sheefish	10.0	10.0	10.0	5.0	0.0	105.6	3.3	1.3	19.2 ind		0.6	99.7
Longnose sucker	5.0	5.0	5.0	0.0	0.0	32.0	1.0	0.4	16.0 ind		0.5	128.2
Unknown trouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Broad whitefish	10.0	5.0	5.0	5.0	5.0	5.1	0.2	0.1	1.6 ind		0.1	128.2

-continued-

Table 3-8.—Page 2 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Nonsalmon fish, continued												
Bering cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Humpback whitefish	15.0	10.0	10.0	5.0	5.0	117.6	3.7	1.4	56.0 ind		1.8	89.2
Round whitefish	5.0	5.0	5.0	0.0	0.0	6.7	0.2	0.1	9.6 ind		0.3	128.2
Unknown whitefishes	15.0	10.0	10.0	5.0	5.0	77.0	2.4	0.9	40.0 ind		1.3	90.2
Large land mammals	100.0	45.0	30.0	95.0	40.0	4,227.2	132.1	51.8	4,227.2 lb		132.1	48.6
Black bear	20.0	15.0	10.0	10.0	5.0	160.0	5.0	2.0	3.2 ind		0.1	128.2
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Caribou	70.0	15.0	10.0	60.0	25.0	624.0	19.5	7.6	4.8 ind		0.2	93.5
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Moose	95.0	45.0	20.0	80.0	30.0	3,443.2	107.6	42.2	6.4 ind		0.2	58.8
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Small land mammals	55.0	35.0	35.0	20.0	15.0	256.0	8.0	3.1	256.0 lb		8.0	72.3
Beaver	10.0	10.0	10.0	0.0	5.0	144.0	4.5	1.8	19.2 ind		0.6	128.2
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Red fox	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Snowshoe hare	50.0	30.0	30.0	20.0	5.0	112.0	3.5	1.4	56.0 ind		1.8	48.7
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lynx	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0	32.0 ind		1.0	128.2
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marten	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	134.4 ind		4.2	107.8
Mink	10.0	10.0	10.0	0.0	5.0	0.0	0.0	0.0	4.8 ind		0.2	93.5
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Wolverine	5.0	10.0	5.0	0.0	0.0	0.0	0.0	0.0	1.6 ind		0.1	128.2

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Table 3-8.-Page 3 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine mammals												
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown seal oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Birds and eggs	80.0	45.0	45.0	45.0	15.0	761.6	23.8	9.3	761.6 lb		23.8	38.4
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Goldeneyes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Mallard	40.0	30.0	30.0	10.0	15.0	97.9	3.1	1.2	60.8 ind		1.9	48.9
Merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern pintail	10.0	10.0	10.0	0.0	5.0	22.7	0.7	0.3	19.2 ind		0.6	107.8
Scaups	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Black scoter	10.0	5.0	5.0	5.0	0.0	4.8	0.2	0.1	3.2 ind		0.1	128.2
Surf scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern shoveler	5.0	5.0	5.0	0.0	5.0	4.1	0.1	0.1	4.8 ind		0.2	128.2
Teals	5.0	5.0	5.0	0.0	5.0	7.5	0.2	0.1	16.0 ind		0.5	128.2
American wigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown ducks	15.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Canada goose	45.0	30.0	30.0	20.0	15.0	276.2	8.6	3.4	97.6 ind		3.1	51.9
Snow goose	5.0	5.0	5.0	0.0	0.0	17.9	0.6	0.2	6.4 ind		0.2	128.2
White-fronted goose	30.0	25.0	25.0	10.0	0.0	203.5	6.4	2.5	64.0 ind		2.0	52.4
Unknown geese	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 3-8.—Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs, continued												
Cranes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown gulls	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Spruce grouse	40.0	25.0	25.0	20.0	5.0	62.6	2.0	0.8	73.6 ind		2.3	68.1
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Ruffed grouse	10.0	10.0	10.0	0.0	0.0	42.2	1.3	0.5	49.6 ind		1.6	123.9
Ptarmigans	20.0	15.0	15.0	5.0	5.0	22.2	0.7	0.3	28.8 ind		0.9	81.3
Duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marine invertebrates	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Butter clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Freshwater clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Dungeness crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
King crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Tanner crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Shrimps	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Vegetation	85.0	70.0	65.0	40.0	40.0	558.4	17.5	6.8	558.4 lb		17.5	45.5
Blueberry	60.0	60.0	50.0	15.0	30.0	294.4	9.2	3.6	73.6 gal		2.3	44.1
Lowbush cranberry	50.0	40.0	35.0	15.0	25.0	83.2	2.6	1.0	20.8 gal		0.7	57.4
Highbush cranberry	20.0	15.0	15.0	5.0	15.0	56.0	1.8	0.7	14.0 gal		0.4	83.3
Crowberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Cloudberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Raspberry	15.0	15.0	15.0	0.0	5.0	84.8	2.7	1.0	21.2 gal		0.7	115.9
Wild rhubarb	5.0	5.0	5.0	0.0	5.0	3.2	0.1	0.0	3.2 gal		0.1	128.2
Wild potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0

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Table 3-8.—Page 5 of 5.

Table 3-6: Page 3 of 15.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount		95% confidence limit (±)	
	Use %	Attempt %	Harvested %	Received %	Given %	Total	Mean per household	Per capita	Total	Unit		Mean per household
Vegetation, continued												
Hudson's Bay (Labrador) tea	20.0	20.0	20.0	0.0	5.0	2.4	0.1	0.0	2.4 gal		0.1	62.8
Spruce tips	5.0	5.0	5.0	0.0	0.0	0.4	0.0	0.0	0.4 gal		0.0	128.2
Wild rose hips	10.0	10.0	10.0	0.0	5.0	19.2	0.6	0.2	4.8 gal		0.2	93.5
Unknown mushrooms	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Fireweed	5.0	5.0	5.0	0.0	5.0	3.2	0.1	0.0	3.2 gal		0.1	128.2
Punk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Chaga	20.0	20.0	20.0	0.0	10.0	11.6	0.4	0.1	11.6 gal		0.4	77.9
Mousefoods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Wood	70.0	35.0	35.0	30.0	15.0	0.0	0.0	0.0	112.0 cord		3.5	50.4
Other wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 cord		0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

Note For small land mammals, species that are not typically eaten show a non-zero harvest amount with a zero harvest weight. Harvest weight is not calculated for species harvested but not eaten.

Circle residents harvested 30,593 edible pounds of wild foods for an estimated harvest of 956 lb per household or 376 lb per capita (Table 3-8). Salmon accounted for 79% of the total harvest, and large land mammals contributed 14%. Each of the remaining resource categories made up much smaller percentages of the harvest (Figure 3-13).

Table 3-9 lists the top ranked resources used by households and Figure 3-14 shows the species with the highest harvests during the 2017 study year. Fall chum salmon accounted for the majority of the total community harvest (60%) but was only used by 45% of households. Chinook salmon was used by 100% of Circle households and was the second most harvested resource (19%). Moose and caribou were widely shared among households. Moose only accounted for 11% of the total harvest, but was used by 95% of households. Caribou made up a very small portion of the harvest (2%), but was used by 70% of households. There were no small land mammals among the most harvested resources; however, snowshoe hare was used by 50% of households. Blueberries and lowbush cranberries were among the most used resources (60% and 50% of households, respectively). Canada goose was among the ten most used species but only accounted for 1% of the total harvest. There were no nonsalmon fish among the most used resources. Pacific halibut⁸ was one of the most harvested species, though it only accounted for 1% of the harvest.

Although some Circle residents eat fall chum salmon, a large portion of the harvest is fed to dogs. A key respondent estimated that there are currently at least three households with dog mushing teams in Circle (04072018CRC3). Also, according to subsistence salmon fishing permit data returned by Circle fishers, there were approximately 104 dogs in the community in 2017 (Estensen et al. 2018). Figure 3-15 shows the top ten species harvested and used for human consumption. With fish fed to dogs removed from the total harvest, Chinook salmon account for 40% of the harvest and moose accounts for 24%. Fall chum salmon only makes up 14% of the harvest used for human consumption.

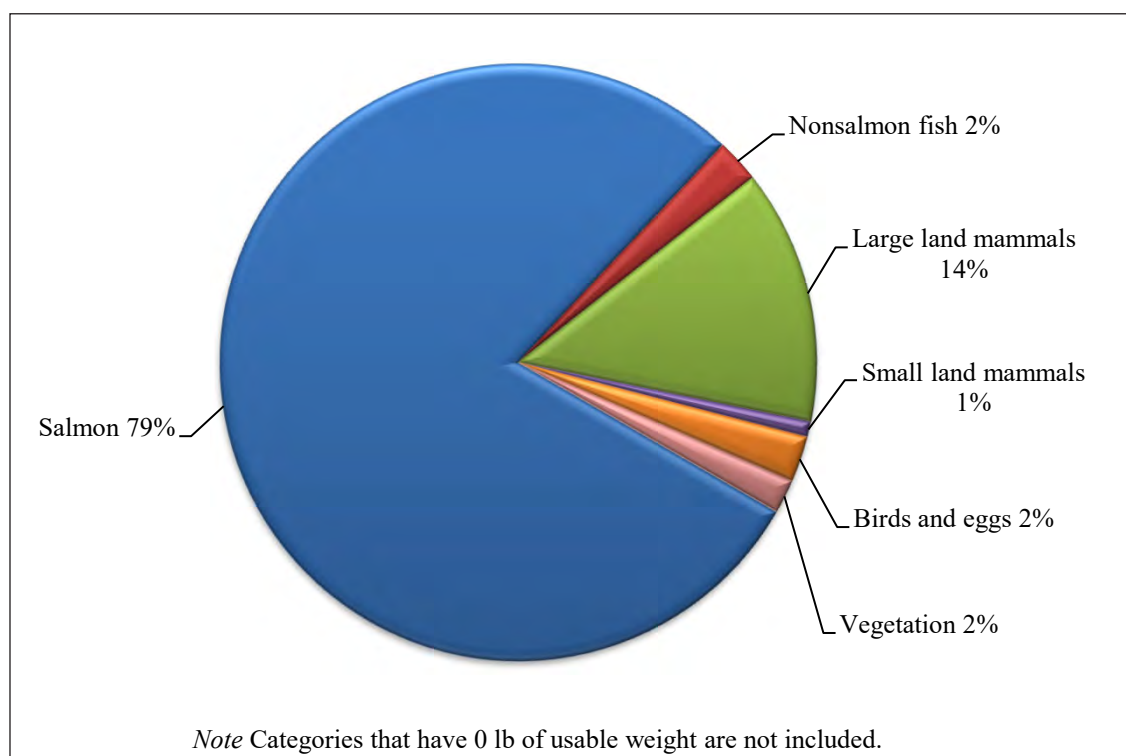


Figure 3-13.—Composition of harvest by percentage of edible weight, Circle, 2017.

8. Hereinafter *halibut*.

Table 3-9.—Top ranked resources used by households, Circle, 2017.

Rank ^a	Resource	Percentage of households using
1.	Chinook salmon	100.0%
2.	Moose	95.0%
3.	Caribou	70.0%
4.	Blueberry	60.0%
5.	Snowshoe hare	50.0%
5.	Lowbush cranberry	50.0%
7.	Fall chum salmon	45.0%
7.	Canada goose	45.0%
9.	Mallard	40.0%
9.	Spruce grouse	40.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Resources used by the same percentage of households share the lowest rank value instead of having sequential rank values.

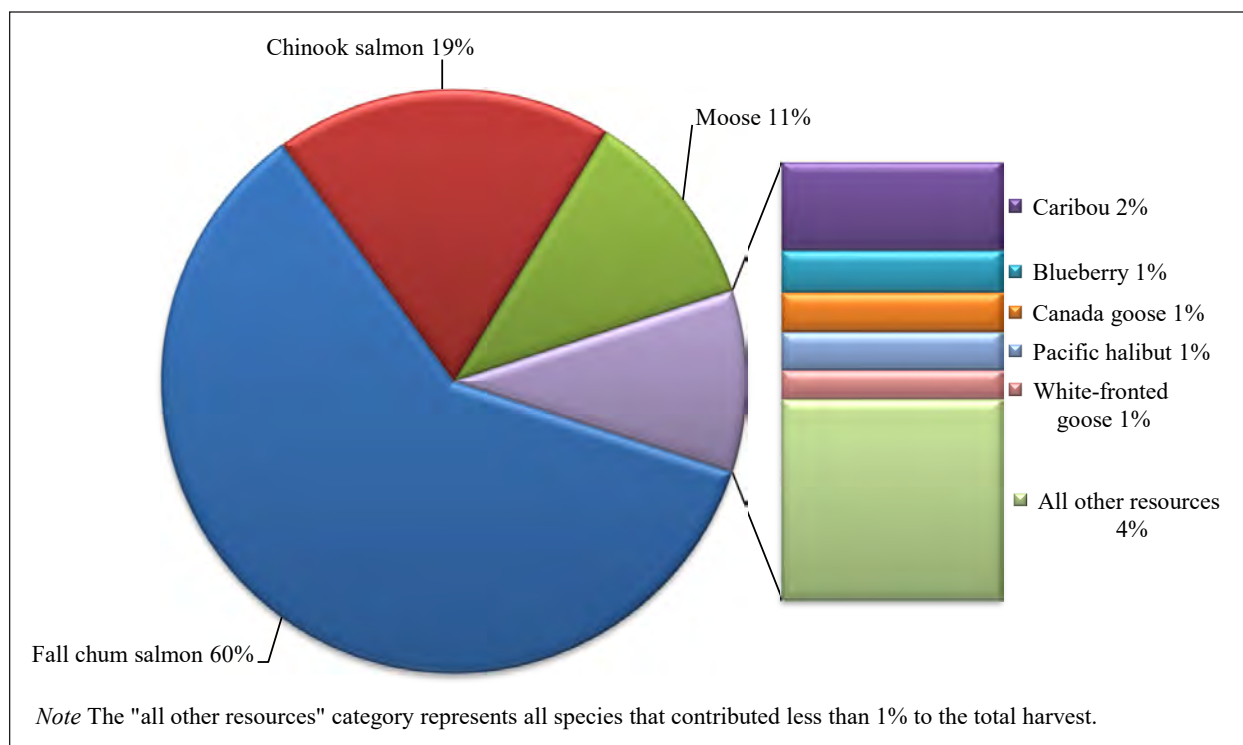


Figure 3-14.—Top resources harvested by percentage of total harvest weight, Circle, 2017.

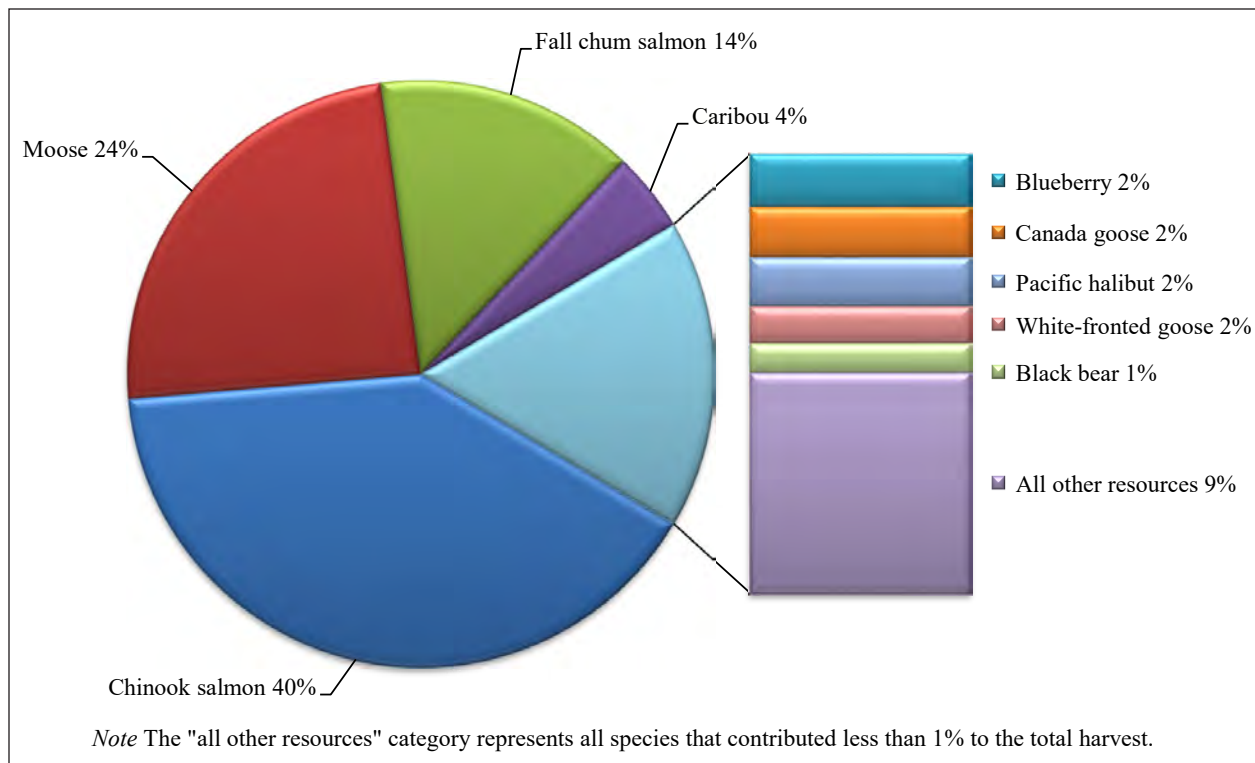


Figure 3-15.—Top resources harvested for human consumption by percentage of harvest for human consumption, Circle, 2017.

HARVEST AND USE CHARACTERISTICS BY RESOURCE CATEGORY

Salmon

Salmon made up 79% of Circle's total harvest (Figure 3-13). Circle fishers harvested an estimated 24,070 lb of salmon (295 lb per capita; Table 3-8). Seventy percent of households reported receiving salmon from someone, and 45% reported that they shared salmon with another household. Fall chum salmon was harvested by 35% of households and constituted the majority of the salmon harvest in 2017. Circle fishers caught 18,351 lb (3,888 fish) of fall chum salmon (225 lb per capita), which amounts to 76% of the total salmon harvest as estimated in pounds usable weight (Figure 3-16). Fall chum salmon tend to be in poor condition by the time they reach Circle. Some respondents consider fall chum salmon to be unpalatable and typically only harvest them for uses other than human consumption: "Yeah, trapping bait, dog team, burbot bait" (04062018CRC1). The survey asked households to estimate the number of subsistence-harvested fish they used for dog food. Circle residents harvested 3,456 chum salmon (16,312 lb) to use for dog food (Table 3-10). This amounts to 89% of the total fall chum salmon harvest. One key respondent described harvesting fall chum salmon for his dog team:

Whole, just put 'em up whole and let 'em freeze. They get a little green, but the dogs seem to like that. Crib it out and cover it up with a tarp, try to keep the ravens and stuff out. Just take 'em out as you need them, put them in the pot whole. (04062018CRC1)

Another key respondent explained that some fall chum salmon are in better condition than others, and by being selective he can harvest some that are good to eat: "I only go after maybe about ten...catch 20 to get ten good ones, you know. So, I don't target more than that...By that time, I usually have enough king salmon anyway" (04072018CRC3).

Chinook salmon accounted for 24% of the total salmon harvest (Figure 3-16). Forty-five percent of households harvested a total of 5,720 lb of Chinook salmon (or 787 fish; Table 3-8). Sixty-five percent of households received Chinook salmon, and 40% shared it with other households. Respondents described 2017 as a good fishing year for Chinook salmon compared to other recent years: “Last year they let us fish unrestricted and I mean we did fine. And seems like everybody did well. So, it sounds like the numbers were definitely up” (04062018CRC1). Chinook and fall chum salmon are the only salmon species that migrate past Circle in large numbers, and they were the only two salmon species harvested in 2017.

Circle residents used fish wheels to harvest 17,960 lb (75%) of the community’s salmon (Figure 3-17; tables 3-10 and D3-11). Gillnets were used to harvest the remaining 6,110 lb (25%) of salmon. Respondents did not report using any other gear type to fish for salmon in 2017.

One key respondent provided some insight into why fish wheels account for more salmon harvest than gillnets: “Nobody likes to fish with a fish net, especially for chum salmon. It’s easier [with a fish wheel] and you get more too. A lot more” (04062018CRC4). Another fisher described using both a gillnet and a fish wheel. He tests the waters with a net early in the season to determine when and where the salmon are running:

Well, it’s gotta be deep water and has to be where a channel hits a bank or a channel goes along a sandbar where you think it’s deep. You have to test it. And it’s hard to do, try to test for a fish wheel, because you have to keep moving it. I start out with fish net at the beginning. I wait a couple of days after I hear fish [are] in Beaver, I put a test net in a couple of places, while I’m working on my fish wheel, get my fish wheel ready, I will have that net in. And, maybe, if I catch one or two salmon in the net, I will wait a couple of days, then I will put in my fish wheel, and then once the fish wheels are catching fish, then I pull my nets. (04072018CRC3)

Figure 3-18 shows the salmon fishing and harvest locations used by Circle respondents in 2017. All fishing spots were on the Yukon River mainstem. Most salmon fishing locations were directly adjacent to town or within approximately seven miles upstream. One household fished approximately 40 miles upstream from

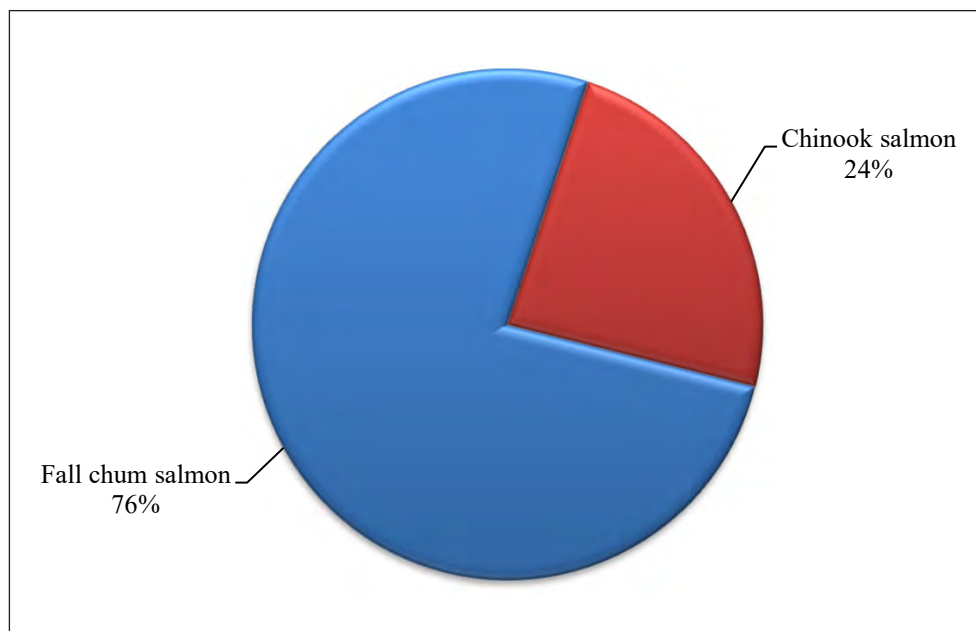


Figure 3-16.–Composition of salmon harvest by percentage of edible weight, Circle, 2017.

Table 3-10.–Estimated salmon harvests by gear type, Circle, 2017.

Resource	Subsistence methods															
	Removed from commercial catch		Subsistence methods				Subsistence gear, any method									
	Number	Pounds	Dip net		Gillnet or seine		Fish wheel		Other method		Subsistence gear, any method		Rod and reel		Any method	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	0.0	0.0	0.0	0.0	1,193.6	6,110.1	3,481.6	17,960.0	0.0	0.0	4,675.2	24,070.1	0.0	0.0	4,675.2	24,070.1
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fall chum salmon	0.0	0.0	0.0	0.0	1,006.4	4,750.0	2,881.6	13,600.6	0.0	0.0	3,888.0	18,350.6	0.0	0.0	3,888.0	18,350.6
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coho salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chinook salmon	0.0	0.0	0.0	0.0	187.2	1,360.1	600.0	4,359.4	0.0	0.0	787.2	5,719.6	0.0	0.0	787.2	5,719.6
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sockeye salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

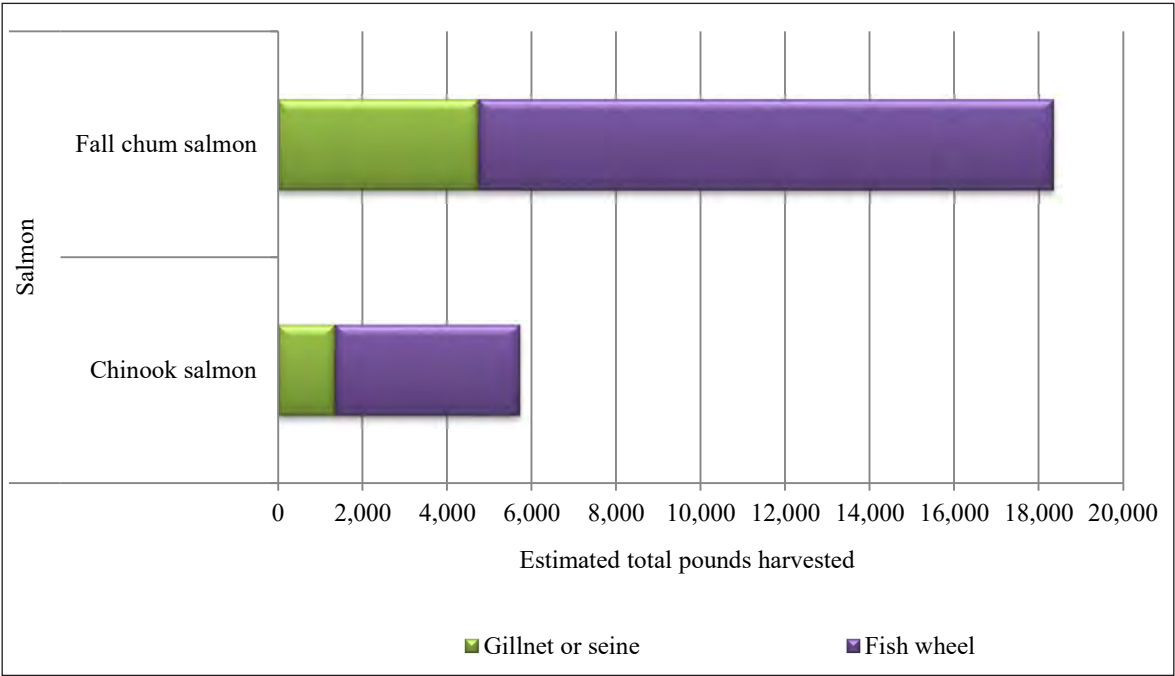


Figure 3-17.–Estimated salmon harvests by gear type in edible pounds, Circle, 2017.

Table 3-11.—Estimated salmon and nonsalmon fish harvests for consumption by dogs, Circle, 2017.

Resource	Amount	Pounds
Salmon		
Fall chum salmon	3,456.0 ind	16,311.6 lb
Nonsalmon fish		
Longnose sucker	16.0 ind	32.0 lb
Total	3,472.0 ind	16,343.6 lb

Source ADF&G Division of Subsistence household surveys, 2018.

the community inside the Yukon-Charley Rivers National Preserve. Finally, at least one respondent fished for salmon on the Yukon River approximately 15 miles downriver from Circle.

Nonsalmon Fish

Circle residents harvested 720 lb (9 lb per capita) of nonsalmon fish (Table 3-8). Thirty percent of households harvested nonsalmon fish, and 65% used at least one type of nonsalmon fish. Figure 3-19 shows the composition of the nonsalmon fish harvest by weight. Pacific halibut (not available locally) accounted for the largest portion of the harvest (38%) followed by humpback whitefish (16%), sheefish (15%), burbot (11%) and unknown whitefishes (11%). Small numbers of longnose suckers, grayling, pike, broad whitefish, and round whitefish account for the remaining harvest. All humpback whitefish, sheefish, and round whitefish were caught in fish wheels that were primarily targeting salmon (Figure 3-20 and Table D3-13). All longnose suckers and broad whitefish were caught using a set gillnet. One key respondent explained that he uses his “whitefish” net to target these and other fish:

With the four-inch mesh we catch whitefish, sheefish, burbot...Yeah, we get suckers, and when we were having the salmon restrictions we used the whitefish net quite a bit so we could get some fish in. (04062018CRC1)

Fishers harvested all burbot using set lines either set from the shore prior to freeze-up, or through the ice in the winter. One key respondent described the process:

For burbot we do set lines a lot...just a couple feet of water. Just right along the edge. Right out here you just hammer a stake in the bank there. Just throw it out with some nylon line or something strong, and a sinker, and a circle hook, little piece of, we were using chum salmon last year and it worked pretty well. Yeah, we did really well. We ate burbot every night for quite a while. (04062018CRC1)

All halibut, pike, and grayling were caught with rod and reel.

Respondents used 16 longnose suckers to feed dogs (Table 3-9). Survey respondents reported no other use of nonsalmon fish for feeding dogs.

Figure 3-21 shows the nonsalmon fishing and harvest locations used by Circle respondents in 2017. Most nonsalmon fishing, other than halibut fishing, took place on the Yukon River within a few miles of the community. Many of these locations match locations that were identified as salmon fishing spots, likely because various nonsalmon fish were incidentally caught in gillnets and fish wheels that were targeting salmon. Nonsalmon fishing also took place on the Yukon River at locations inside the Yukon-Charley Rivers National Preserve between 40 and 50 miles upriver from Circle. For example, fishing occurred at the mouth of and along the first 12 miles of the Charley River as well as the first two miles of the Kandik River. Finally, fishers harvested nonsalmon fish in the Cook Inlet near the community of Kenai.⁹

9. Survey notes, February 2017.

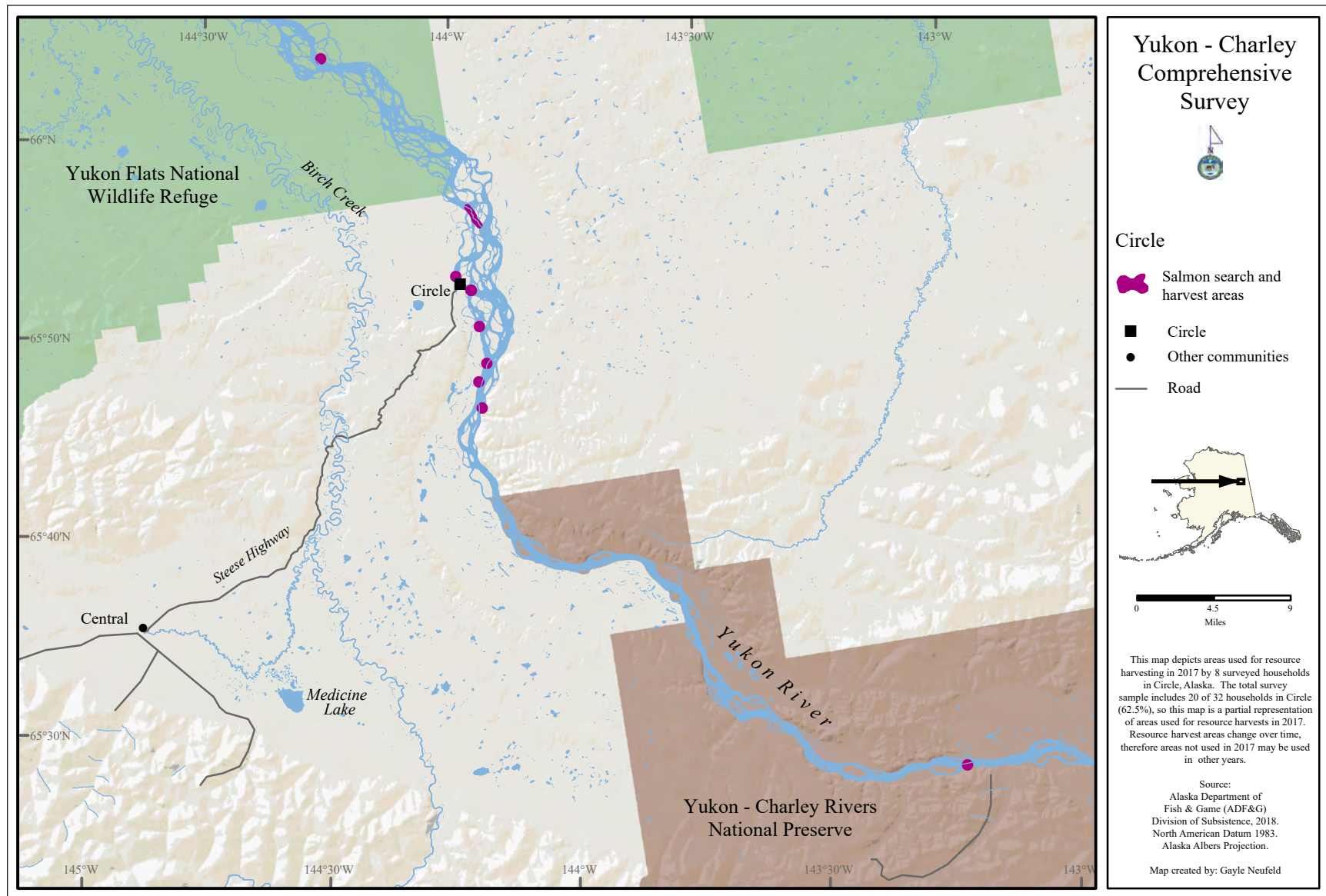


Figure 3-18.—Salmon fishing areas, Circle, 2017.

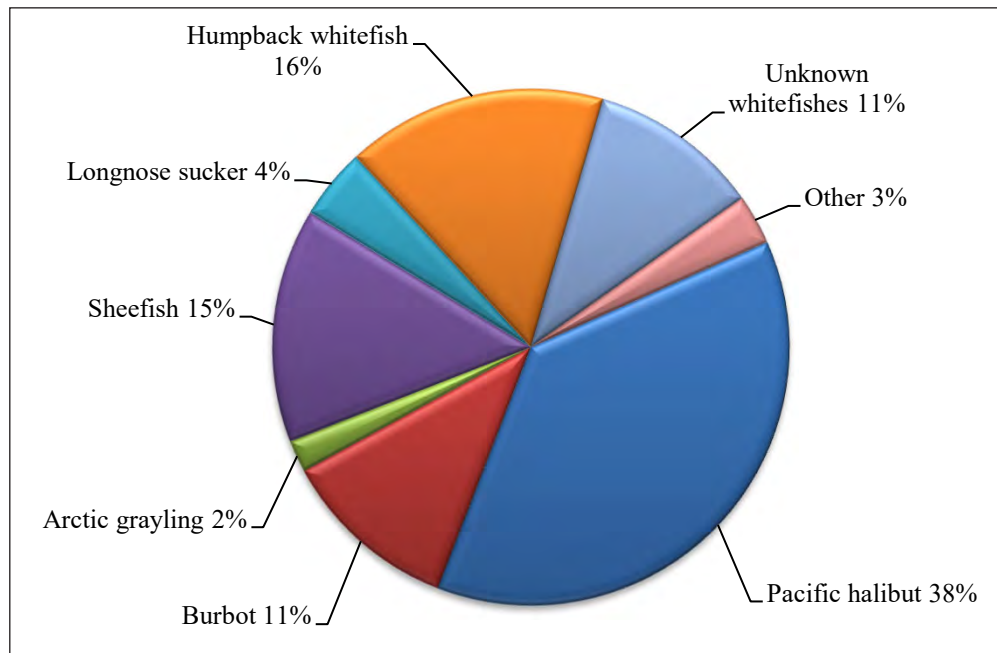


Figure 3-19.—Composition of nonsalmon fish harvest by percentage of edible weight, Circle, 2017.

Large Land Mammals

Circle residents harvested 4,227 edible pounds (52 lb per capita) of large land mammals in 2017 (Table 3-8). Moose made up 81% of this harvest (Figure 3-22). An estimated six moose provided 3,443 lb of food to the community, an average of 42 lb per person (Table 3-8). An estimated five caribou accounted for 15% of the large land mammal harvest and contributed approximately 624 edible pounds (8 lb per capita) to the community's total (Table 3-8; Figure 3-22). Black bears were the only other large land mammal that was harvested in 2017. Circle hunters harvested an estimated three black bears, approximately half of which (160 lb or 2 lb per capita) was used for food (Table 3-8; figures 3-22 and 3-23). At least one black bear was harvested only because it was encroaching on a fish camp: "I didn't want to shoot but I had to, because he was getting into my fish cache at fish camp. I warned him, I talked to him. I told him to stay out of my fish cache, otherwise you'll be dead. He didn't listen" (04072018CRC3). Also, a black bear was harvested and not eaten because there were worms in the flesh:

Last year, I shot a bear just right up here, around the corner. A good, about medium size, it looked pretty fat to me so I shot it. But when I gut it out and opened the, when I skinned that out and gut it out, it was full of worms. That was too close to the village, too, like garbage bear, you know. (04072018CRC3)

Ninety-five percent of Circle households used moose in 2017 (Table 3-8). Twenty percent of households harvested a moose and 80% received moose meat from another household. Thirty percent of households shared their moose with another household. This makes moose among the most shared subsistence resources in the community—second only to Chinook salmon. When asked what parts of the moose people use, one key respondent provided some insight into the importance of moose to the community:

You should rephrase that, what part of the moose you don't use? Antlers! No, we use every bit of it. Oh yeah, we take the heart, the liver...Take all of the guts out, everything. All the organs. The stomach, take that. A lot of people throw that away. Take that, hang it up, dry it, cut it up. Oh yeah, stomach skin. You take that, that's better than any kind of stew meat you can buy in the store. You make soup with it, stew. Moose head. Take everything...we boil it up [bones], cook it, it's where all

Table 3-12.—Estimated nonsalmon fish harvests by gear type, Circle, 2017.

Resource		Subsistence methods																	
		Removed from commercial catch		Subsistence gear,												Rod and reel		Any method	
				Fish wheel		Gillnet or seine		Ice fishing		Longline/skate		Other method		any method					
Units	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	
Nonsalmon fish			0.0		307.0		37.1		0.0		80.6		0.0		424.7		295.0		719.8
Pacific herring	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smelts	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific halibut	lb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	270.1	270.1	270.1	270.1
Arctic lamprey	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.2	80.6	0.0	0.0	19.2	80.6	0.0	0.0	19.2	80.6
Arctic char	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lake trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	14.4	16.0	14.4
Northern pike	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	10.6	3.2	10.6
Sheefish	ind	0.0	0.0	19.2	105.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.2	105.6	0.0	0.0	19.2	105.6
Longnose sucker	ind	0.0	0.0	0.0	0.0	16.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	32.0	0.0	0.0	16.0	32.0
Unknown trouts	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Broad whitefish	ind	0.0	0.0	0.0	0.0	1.6	5.1	0.0	0.0	0.0	0.0	0.0	0.0	1.6	5.1	0.0	0.0	1.6	5.1
Bering cisco	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Least cisco	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Humpback whitefish	ind	0.0	0.0	56.0	117.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.0	117.6	0.0	0.0	56.0	117.6
Round whitefish	ind	0.0	0.0	9.6	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	6.7	0.0	0.0	9.6	6.7
Unknown whitefishes	ind	0.0	0.0	40.0	77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	77.0	0.0	0.0	40.0	77.0

Source ADF&G Division of Subsistence household surveys, 2018.

a. The harvested number of each resource is measured by the unit in which the resource harvest information was collected; the unit of measurement is provided for each resource

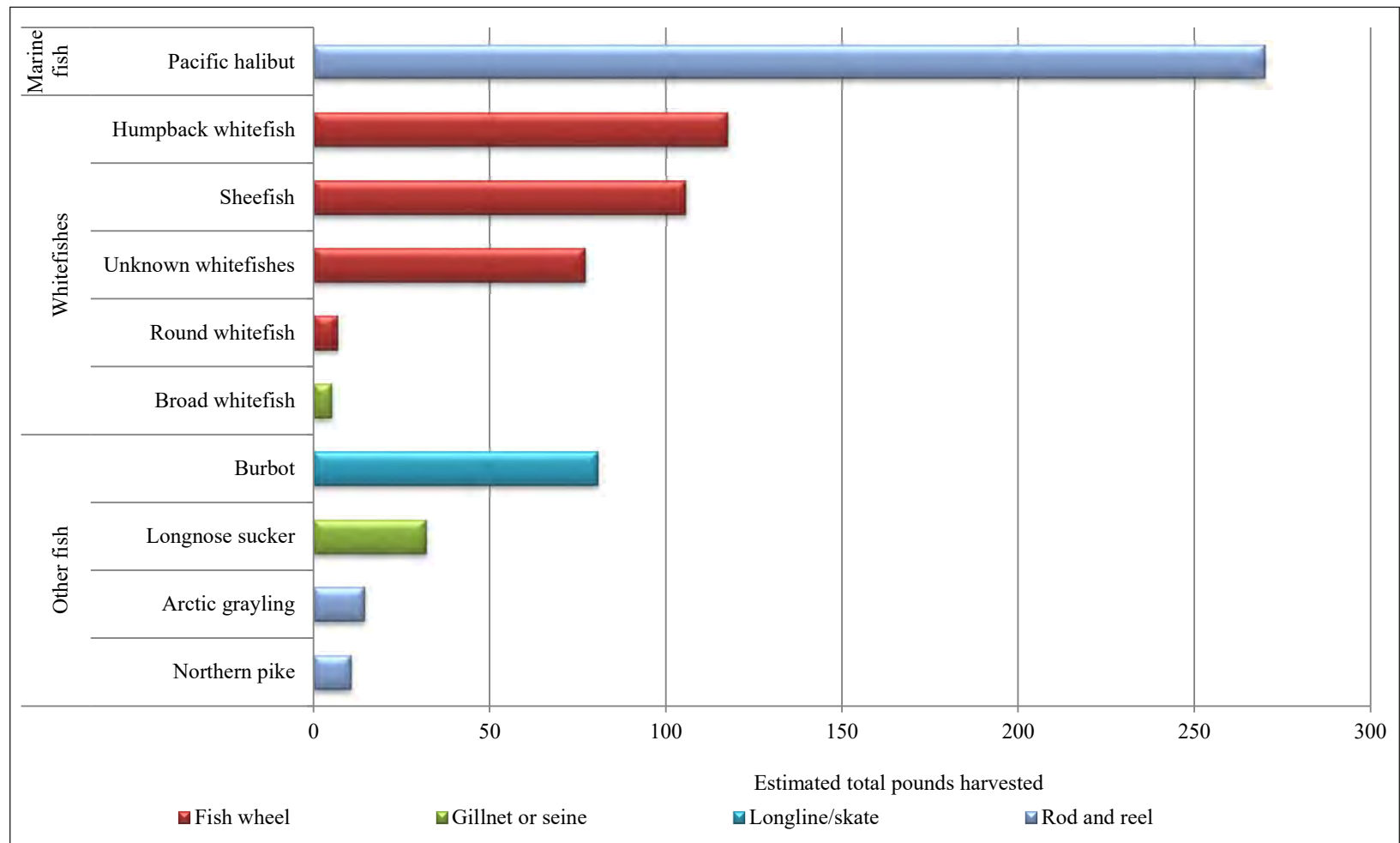


Figure 3-20.—Estimated nonsalmon fish harvests by gear type in edible pounds, Circle, 2017.

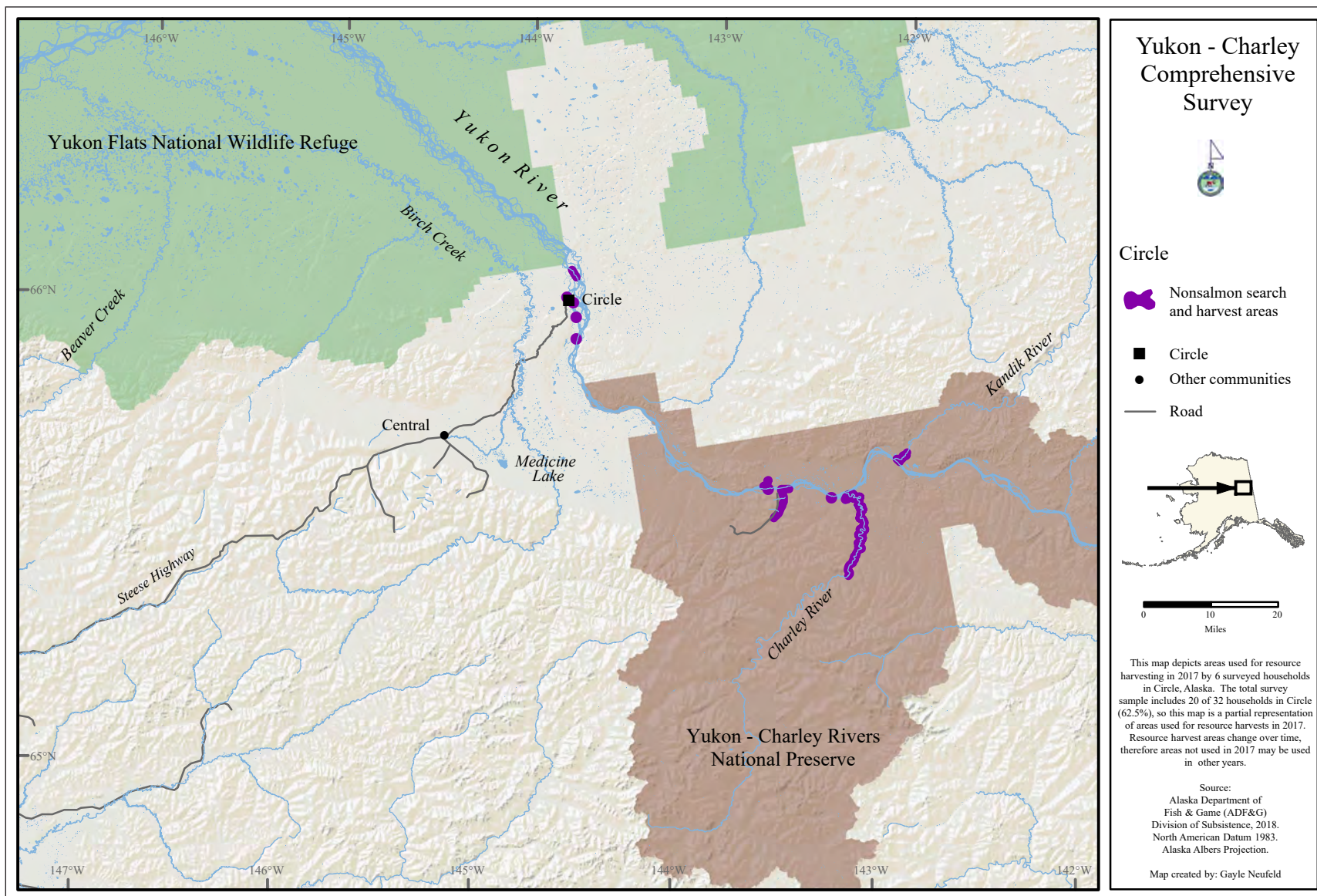


Figure 3-21.—Nonsalmon fishing areas, Circle, 2017.

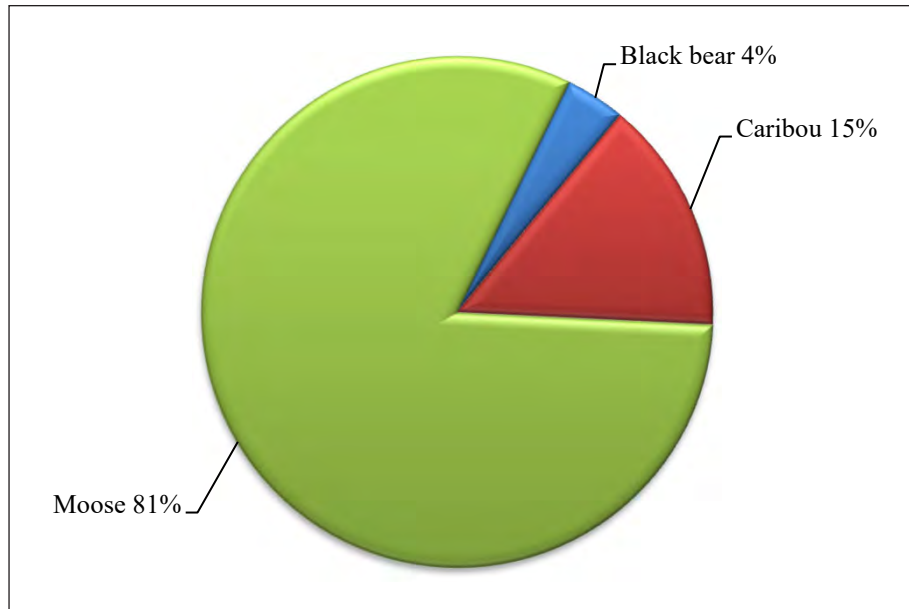


Figure 3-22.—Composition of large land mammal harvest by percentage of edible weight, Circle, 2017.

the flavor comes from. These sport hunters don't know that. Never throw nothing away. Marrow in the bones, we eat all that. (04062018CRC4)

He went on to describe how he processes and preserves his moose:

I always skin it, cut the head off. Leave the neck there, though. We just cut the meat off the neck and take that. Take all the bones, everything. Ribcage, everything. The hind quarters. And we bring it home, then we hang it up, let it sit there. Put a little smoke under there for a little flavor. Not too much. Usually hang it up for about maybe a week, ten days. Let it sit...breaks down, tastes better. Not so tough. Cut it up, butcher it up and put it away. (04062018CRC4)

Another key respondent was able to provide details about how moose hides are tanned by hand, a practice that has largely been abandoned:

Oh yeah, a lot of work. I remember it takes my grandma all summer to tan one moose hide. Because you have to scrape it, and you gotta cut, in the wintertime, she will bring it out, and she will cut the hair off. Then she will cut the outer flesh off and clean the inner flesh and then she will soak it a couple of times. And then she'll throw it on a clothesline outside and let it whip around all winter. And in the spring of the year she will thaw it out, and she will soak it in a swamp or little pond. There used to be a little pond just back, behind this old school over here. A little marshy pond out here, back then, soak her moose hide in there and then after that she will bring out, it will dry, then she will scrape on until she gets all the roots out of it. And then she will wring it out a couple of times, and she will soak it again, and do the same thing until she gets everything out of it, and she will dry it again, and she will make a little tent and drape it over that, and put an old canvas on top of that and, burn an old, find an old rotten log, like a brown rotten log, she will smoke it with that. It's all spruce trees. Birch trees they got a stronger smell, you know. All summer job. And of course, you have to use the moose brain too. Not very many people do that anymore. (04072018CRC3)

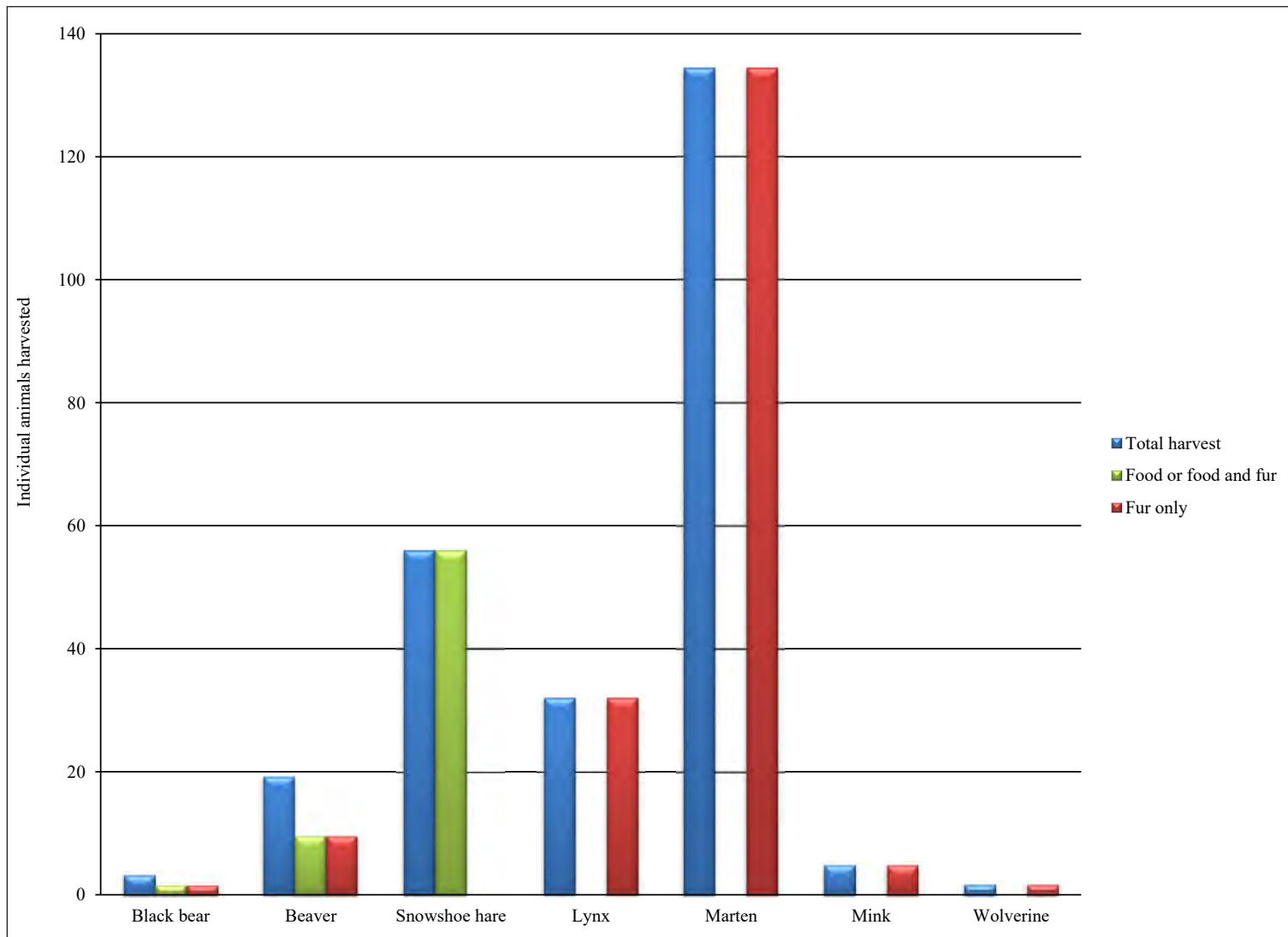


Figure 3-23.—Estimated land mammal harvests for food or fur, Circle, 2017.

One key respondent offered that, in his experience, the moose population is low in the region and predation by wolves and bears is likely a factor: “I think a lot of it is just predation. Other people I’ve talked to, I’ve heard the same thing. Just seems to be a lot of wolves...And the bears, I think the bears definitely hit ‘em hard in the spring” (04062018CRC1). However, moose meat is important to their household, and with enough effort their hunting is usually successful: “I think there has been only one year we didn’t get one. But we have to hunt pretty darn hard usually” (04062018CRC1). This key respondent also described some of his moose hunting techniques:

You just kind of have to pick spots where you’re not really traveling as much and just do a lot of calling. Just call, and call, and calling and pray something eventually, you know moose will travel quite a ways to a cow call. So it depends on how we’re hunting. Sometimes we’re hunting in the boat in the evening or early morning. Just hoping to catch a moose on the bank, and other times we just call, call, and call from a spot. (04062018CRC1)

Seventy percent of Circle households used caribou in 2017. Sixty percent received caribou from another household and 25% shared their caribou meat with others. Only 15% of households hunted caribou and two thirds of these households successfully harvested caribou. Caribou hunters experienced a greater success rate than moose hunters; however, far fewer households targeted caribou. One key respondent stated that caribou are sometimes available; however, few people hunt for them:

People around here don’t even bother it, they don’t hardly eat it. I said, “You guys don’t know what you are missing.” There’s a lot of caribou. There was even caribou around here all winter. Nobody bothers them. There are a couple of people that got a couple. Just to dry it. (04062018CRC4)

This respondent went on to explain why he prefers moose over caribou: “I prefer to go after moose. Better, tastes better. Lasts us longer, you get more meat out of it” (04062018CRC4). Another respondent explained that he does not need to hunt for caribou because it’s easier to trade salmon for it: “Mostly, I get my caribou from Venetie. Their caribou is a lot better than what we get up here. I got a friend up there, hunt all the time, so he sends me caribou meat, caribou head” (04072018CRC3).

Some respondents reported that the caribou migration has tended to come closer to town in recent years. One resident said, “We’ve seen them moving more this way towards the Yukon. There was a few years back where they actually crossed the Yukon. It seems like the past few years they’ve been moving this way more and more” (04062018CRC1). Another added, “Matter of fact this year they were just right out here. Three miles out here, on the flat, the big lake there. They haven’t been down that far, last time they were in this area was over 20 years ago. That close anyway” (04072018CRC3).

Fifteen percent of households hunted for black bear and 10% successfully harvested a black bear. Circle respondents did not report hunting any large land mammals other than moose, caribou, and black bear. Brown bear are present in the region; however, respondents indicated that they do not eat brown bear due to cultural tradition or personal taste.

Table D3-14 shows the estimated large land mammal harvest by sex of the animal and month of harvest. All moose were male, and all were harvested in September. All caribou were male and were harvested equally in March, September, and December. Hunters harvested black bear in June and July. As one key respondent explained:

June and July is when we probably see most of the bears. I think it’s the time of year that they’re preying on the moose calves. Because the cows will come down and they’ll have their calves along the river in the willows and stuff. And the bears know and they feed pretty heavy on the calves. (04062018CRC1)

Figure 3-24 shows all locations Circle respondents reported hunting for large land mammals in 2017. Hunters searched for moose along the Yukon River from Circle to the mouth of the Charley River approximately 50 air miles upriver from the village and along the first nine miles of the Charley River. One key respondent

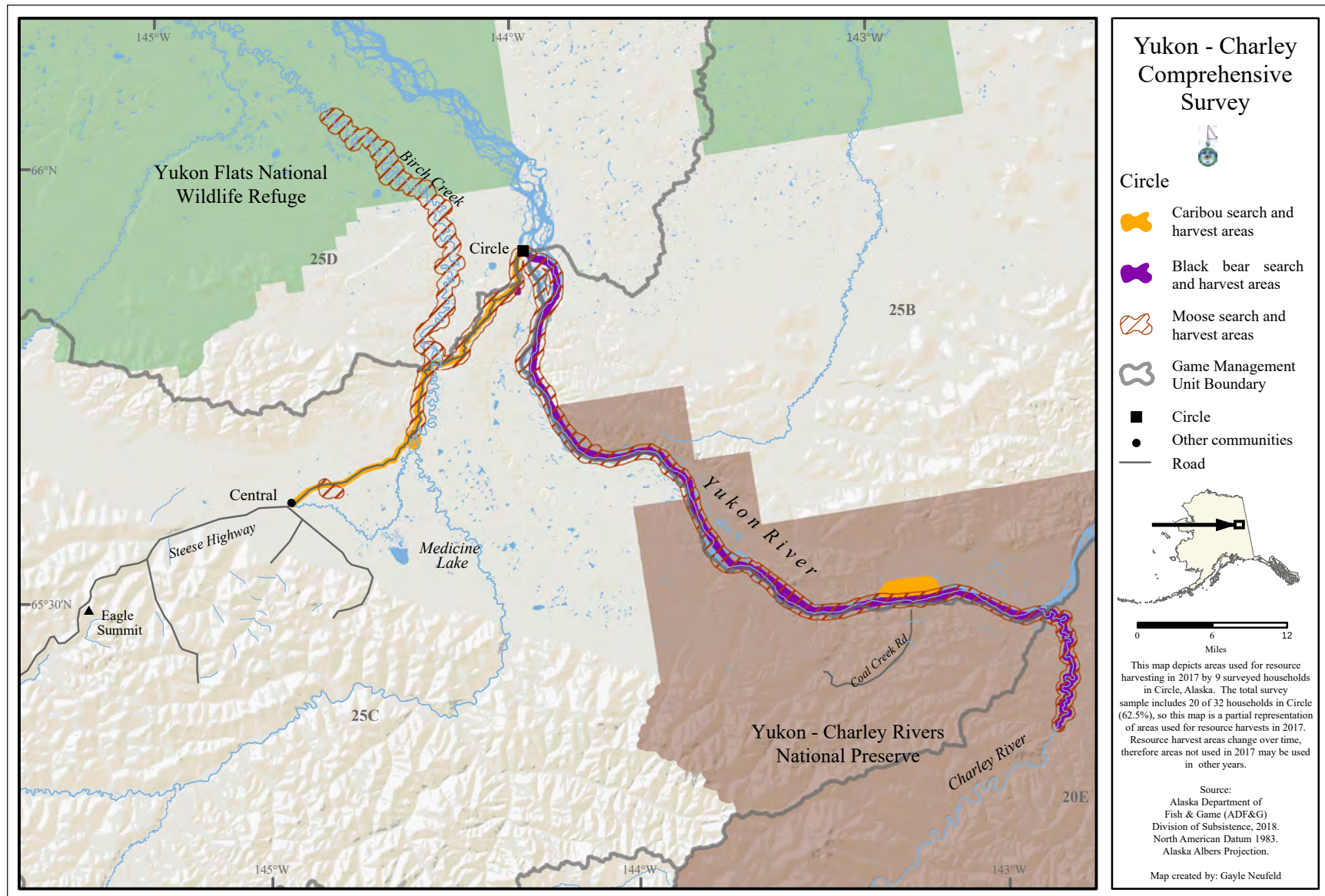


Figure 3-24.—Large land mammal hunting areas, Circle, 2017.

offered a reason why the moose hunting area does not extend past the Charley River: “try to stay this side of Charley River because people from Eagle they hunt down this way too...and we don’t want to get into the areas that they hunt on” (04072018CRC3). Respondents also reported moose hunting along most of the Steese Highway between Circle and Central and along Birch Creek from the Steese Highway to approximately 22 miles downstream.

Circle residents hunted caribou along the Steese Highway from Circle to Central. Respondents described Eagle Summit as the best caribou hunting spot; however, they tend to avoid it because of competition with outside hunters. One hunter said, “I wouldn’t go up there. People don’t know what they are shooting at. Those are the sport hunters. You don’t want to be around them” (04062018CRC4). Another respondent added, “If there are too many people around, well you gotta wear a helmet or flak jackets because they will shoot at anything!...That’s how come I don’t hunt the caribou up on the summit” (04072018CRC3). One respondent also reported caribou hunting in an area adjacent to the north bank of the Yukon River approximately 40 air miles upriver from Circle. Another key respondent described hunting for caribou at Medicine Lake near Circle Hot Springs: “Once in a while, when there is nobody else around, I will go down by Medicine Lake and shoot my caribou down there” (04072018CRC3).

Respondents hunted black bear along the Yukon River from Circle to the Charley River and along the first nine miles of the Charley River. This matches a reported moose hunting area, which likely indicates that black bears were a secondary target that hunters watched for while moose hunting.

Small Land Mammals/Furbearers

Circle residents harvested 256 edible pounds of small land mammals in 2017 (Table 3-8). Fifty-five percent of households reported using small land mammals, and 15% shared them with other households. Thirty-five percent of households attempted to harvest some species in this resource category, and all were successful.

Beaver and snowshoe hare were the only small land mammals that were used for human consumption (Figure 3-25). Ten percent of households harvested an estimated 19 beavers, half of which were used for food (144 lb; Figure 3-23). Beavers may also be harvested for their pelts, to use as trapping bait, and for dog food. One key respondent described his beaver trapping methods:

Just chop a hole through the ice, set the snare and that’s it. You look in the ice, you’ll see, if you look in the ice...you’ll see a trail of bubbles. That’s where he’s been swimming. Chop a hole right there. Put the snare down...you look around there, see what he’s been eating. If he’s been eating willow you use willows for the bait. If it’s birch you use birch, and so on. Whatever he’s got around there you chop that down and put in the middle. He’ll swim up to it. But it’s not easy if the ice is thick. It’s a lot of work. (04062018CRC4)

Another key respondent provided some additional details about beaver trapping:

I’ve used 330 Conibears and snares. We used snares this winter. We set it around the feed piles, you know. Not right on the feed pile, but kind of out from the feed pile. Generally, the farthest side of the feed pile from the hut. ‘Cause generally the young ones will kind of stay close to the hut and the feed pile, but the bigger adults will kind of go farther away. So, we’ll set ‘em out past there and we’ll use a bait stick. And then we just put four snares in the hole around it. (04062018CRC1)

Many respondents indicated that the current value of beaver fur does not justify the time, effort and cost of gasoline needed to trap them as it did in the past: “We do some beaver trapping. That’s, there’s really not much money in it. But the beaver we caught this year we fed to the dogs. And we sold the castor, and hides, and stuff” (04062018CRC1). One key respondent said he targets beaver occasionally because he craves the meat: “I haven’t had beaver meat for over a year now, and I’m thinking about shooting one this spring” (04072018CRC3). Two other key respondents pointed out that part of the reason they continue to trap beaver is to pass the skill along to the next generation: “It’s something to do with the kids, just so they can learn. ‘Cause maybe someday the value will come back up” (04062018CRC1). Similarly: “A couple

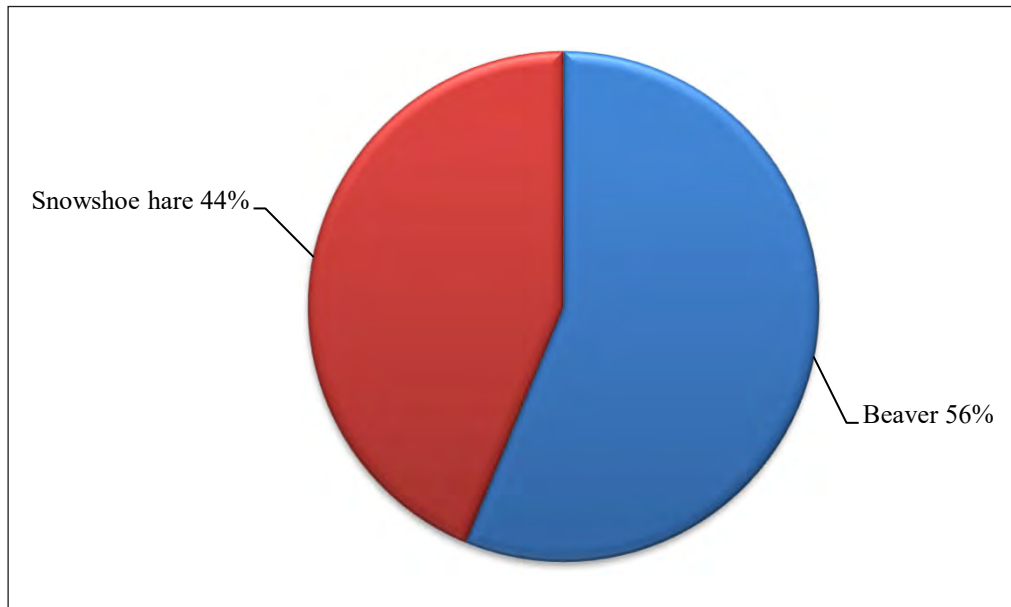


Figure 3-25.—Composition of small land mammal harvest, by percentage of edible weight, Circle, 2017.

years ago I trapped a couple because I never had beaver for a long time...It's good to show my boy how it's done (04062018CRC4).

Thirty percent of households harvested a total of 56 snowshoe hares, which amounts to approximately 112 edible pounds or 1.4 lb per capita (Table 3-8). Circle residents hunt or snare snowshoe hares throughout the winter. Trappers can set snare traplines for hares near town and easily maintain them by foot. This convenience makes hare trapping a popular activity for youth and those who do not have the time or transportation to hunt or trap further from town.

Figure 3-23 shows the composition and uses of the small land mammal harvest. All of the snowshoe hares and half of the beavers were used for food. The remaining small mammals were harvested for their fur, but may also have been used for trapping bait, or dog food.

Ten percent of households attempted to trap marten and all of them were successful. Trappers harvested an estimated 134 martens in 2017 (Table 3-8). A key respondent provided several reasons why marten is the primary furbearer species targeted by trappers: "Marten are easy to catch, easy to skin, and you can catch a lot of 'em. When you're in good marten country, like I said that's the trapper's bread and butter around here. That's where your money is. Good year you can average a hundred bucks a marten" (04062018CRC1). One key respondent explained that the marten population can experience cycles associated with wildfires: "I think fire season has a lot to do with it too. The more country that burns up, the less marten you get, but they will make a great comeback after the vegetation comes back up again...they rebound right away" (04072018CRC3).

Five percent of households harvested 32 lynx (Table 3-8). Although some households in the region eat lynx, Circle's 2017 lynx harvest was reportedly used for fur only. Trappers also harvested very small numbers of mink and wolverine for their fur.

No porcupines were harvested in 2017; however, one respondent indicated that they will harvest one if given the opportunity:

Well, I've been trying to get a porcupine for a couple of years now, but the only one I see...are way too big, you know. I'm trying to catch a little one. A lot of people don't eat porcupine anymore, too. But I do, and I always try to get one small, otherwise I'll have to waste too much. (04072018CRC3)

Another respondent said that he will occasionally harvest a porcupine to give to an elder: “We don’t really get it until we know somebody that wants it. Give it to somebody that’s old, they like it” (04062018CRC4).

A key respondent indicated that he would normally target wolves, but was not able to in 2017:

We didn’t really do any wolf trapping this year mainly because by the time trapping season rolled around the wolves were really following the caribou. And it’s really tough to trap ‘em when they’re following caribou because you just take a really big risk of getting a caribou in a snare or a number nine [trap]. It’s not something you want to do. So, we really didn’t even bother with them at that point just because they stuck right to the caribou trails. (04062018CRC1)

This respondent also targets muskrat in a typical year but did not in 2017: “We usually utilize the fur ourselves. We tan it and...make hats and mitts for kids out of it. And then we eat it” (04062018CRC1). He went on to describe his muskrat trapping method:

I trap them in the push-ups with a number one trap. Cut a little hole in the side of the push-up and there’s usually a little shelf in there where the muskrat will feed and you sit it in there and then you seal the hole up really good...I think the biggest thing is when you seal the hole you have to make sure you seal it properly. Otherwise, if the cold can get in there it will actually freeze the water, the water hole. And if you do that, and it freezes, you can actually kill them off that way if you’re not properly sealing the hole because then they can’t get up to breathe. (04062018CRC1)

Other respondents indicated that they occasionally harvest muskrat, but the muskrat population is low in the region. “We still eat them. If I had a muskrat right now I would be chewing on it right now. Pretty hard to come by around here” (04062018CRC4).

Table D3-15 shows the estimated small land mammal harvest by month. All mink and wolverine were harvested in December. The lynx and marten harvest took place equally in November and December. Snowshoe hare was targeted throughout the winter from October to February, and beaver was only harvested in September and December.

Figure 3-26 shows all locations Circle respondents reported hunting and trapping for small land mammals in 2017. Respondents targeted small land mammals in a large area south of the Yukon River beginning about 16 miles south of Circle and extending 40 miles to the east into the Yukon Charley Rivers National Preserve. Small land mammal hunting or trapping also took place in a circuit from Circle along the Steese Highway to the Birch Creek bridge, north along Birch Creek approximately ten air miles, and east returning to Circle.

Marine Mammals

No surveyed households reported hunting for or using marine mammals.

Birds and Eggs

Circle residents harvested more than eight different bird species, totaling 762 lb (9 lb per capita) in 2017 (Table 3-8). Forty-five percent of households harvested birds and 80% used them. Migratory waterfowl made up the majority of the bird harvest (83%); grouses and ptarmigans accounted for the remainder. No egg harvest was reported.

Figure 3-27 shows the composition of the bird harvest as estimated in usable pounds. Two species accounted for over half of the bird harvest: Canada goose (36%) and white-fronted goose (27%). Mallards were the third most harvested bird species, and they made up 13% of the harvest. Snow geese and northern pintails made up the majority of the remaining migratory waterfowl harvest. Two key respondents described their preferences when it comes to migratory waterfowl. One said, “The specklebellies [white-fronted goose]

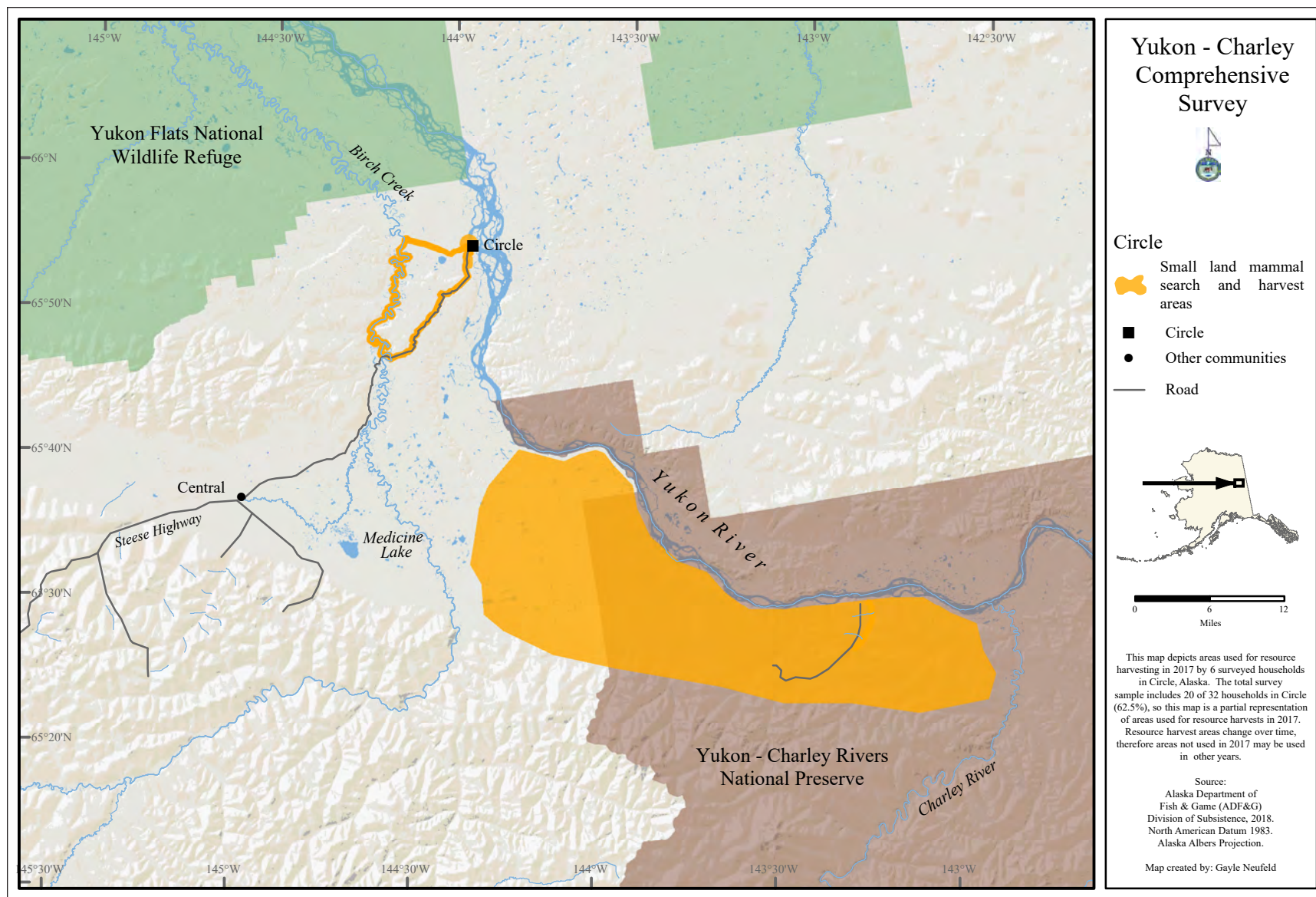


Figure 3-26.—Small land mammal hunting and trapping areas, Circle, 2017.

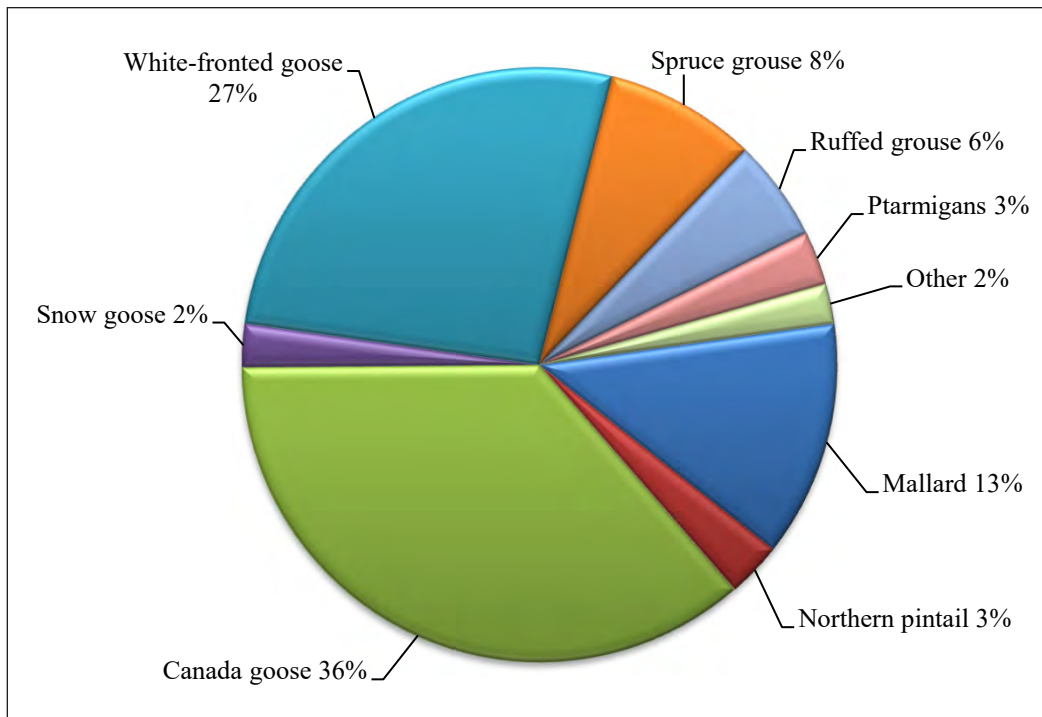


Figure 3-27.—Composition of bird harvest by percentage of edible weight, Circle, 2017.

because they are the fattest. And mallard ducks. We don't really like to shoot the pintails because they are always skinny" (04062018CRC4).

I usually target mallards. They are a bigger duck, and they got a lot more meat to it. Like I said pintail, there is lots of pintails around, but those are bony, bony ducks, they are hardly worth harvesting. Wigeon is good too, but the last few years they come later it seems like. They come after the break-up, or right around the break-up, you know, that's a lot harder to get them. (04072018CRC3)

Spruce grouse were the most harvested upland game bird (8% of the total bird harvest), followed by ruffed grouse (6%) and ptarmigans (3%; Figure 3-27). Grouses and ptarmigans are hunted along the roads or taken opportunistically while out doing other subsistence activities: "Yeah, if we see 'em we'll take 'em. We definitely like grouse and ptarmigan. We saw some spruce hens and we took some. But, they're just kind of when we're out walking. You know, we always have a .22" (04062018CRC1).

Several respondents commented that they didn't see many ptarmigans in 2017 compared to recent years: "We really hardly saw any ptarmigan...I think we saw, I saw a total of three. Which is pretty odd considering I was in some pretty good ptarmigan territory up by the mountains there. I don't know if it's just a down year" (04062018CRC1).

Table D3-16 shows the estimated bird harvest by season. All migratory waterfowl were harvested in spring with the exception of an estimated five white-fronted geese that were harvested in fall. The majority of upland game birds were harvested in the fall; however, a small number of spruce grouse and ptarmigans were harvested in the winter.

Figure 3-28 shows all locations Circle respondents reported hunting for birds in 2017. Hunters primarily targeted ducks and geese in areas along the west bank of the Yukon River extending approximately 3.5 miles to the north and south of the community. Also, at least one respondent hunted ducks and geese in a small area near Medicine Lake approximately nine air miles southeast of Central. Respondents hunted ptarmigans and grouses along the Steese Highway from Circle to Central, as well as in an area approximately three miles along Coal Creek Road in the Yukon Charley Rivers National Preserve. Respondents also hunted for

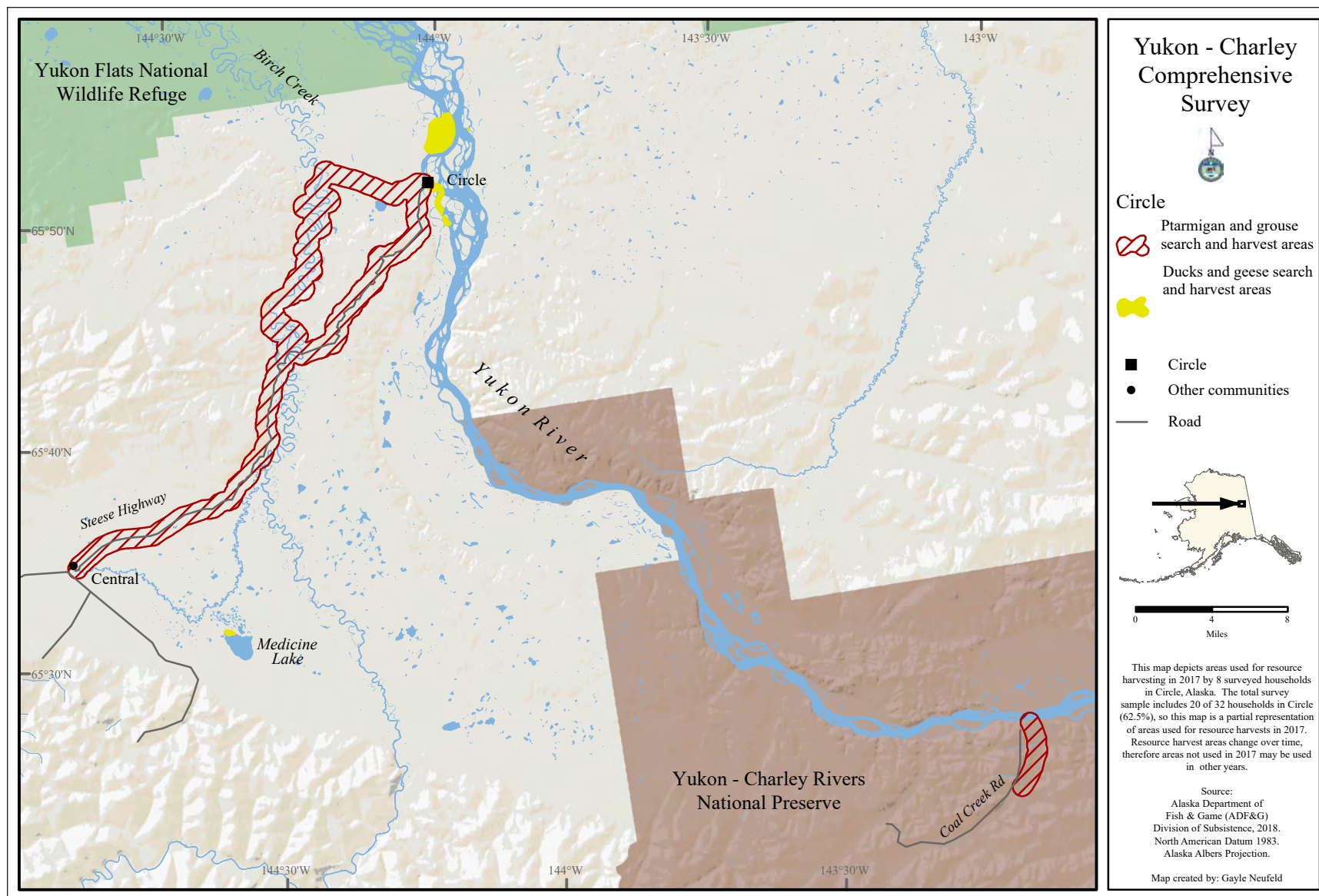


Figure 3-28.—Bird hunting areas, Circle, 2017.

ptarmigans and grouses from the Birch Creek Bridge along Birch Creek to the north and then east returning to Circle: a circuit that matches a small land mammal search area described above.

Marine Invertebrates

One household reported receiving shrimp (Table 3-8). No surveyed households reported searching for or using any other marine invertebrates. Considerable travel is necessary to harvest any of these species.

Vegetation

Circle residents harvested an estimated 558 lb (7 lb per capita) of vegetation in 2017 (Table 3-8). Eighty-five percent of households used vegetation and 65% harvested it. Berries made up 93% of the vegetation harvest by edible weight, and a variety of other edible plants and mushrooms accounted for the remaining 7% (Figure 3-29).

Blueberries were the most harvested vegetation resource (Table 3-8). Half of Circle households picked a total of 294 lb (74 gallons) of blueberries in 2017. Raspberries were the second most harvested vegetation followed by lowbush cranberry and highbush cranberry. Approximately 12 lb of chaga, a fungus that grows on live birch trees, was harvested and used for making tea. Circle residents also harvested very small amounts of other edible and medicinal plants, including wild rose hips, fireweed, wild rhubarb, and Hudson's Bay tea. One key respondent spoke about other vegetation resources that were commonly used in the past.

I know they used that spruce pitch from the tree. They just used it for cuts and sores and drank it...And they used this oil from the birch bark. They burned it down. They used the rotten one that they find on the ground, they would burn it and the oil comes out of it, they used that. Just cuts and whatever to rub on. And there's a little plant they used for pain reliever; they would call it rat root. They got it out of the muskrat holes. If you bite into it your mouth will go numb. They used that for pain. (04062018CRC4)

Figure 3-30 shows all locations Circle respondents reported searching for berries and greens in 2017. Respondents reported searching for and harvesting vegetation primarily along the Steese Highway from Circle to approximately 36 air miles beyond the community of Central. At least one respondent also reported

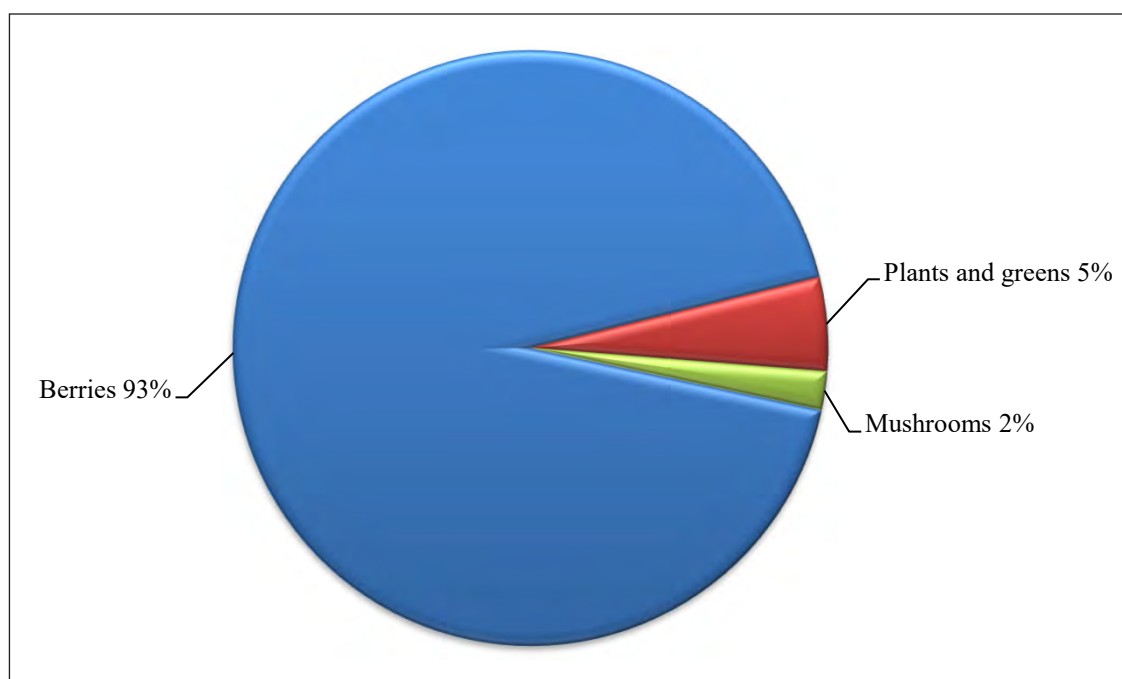


Figure 3-29.—Composition of vegetation harvest by percentage of edible weight, Circle, 2017.

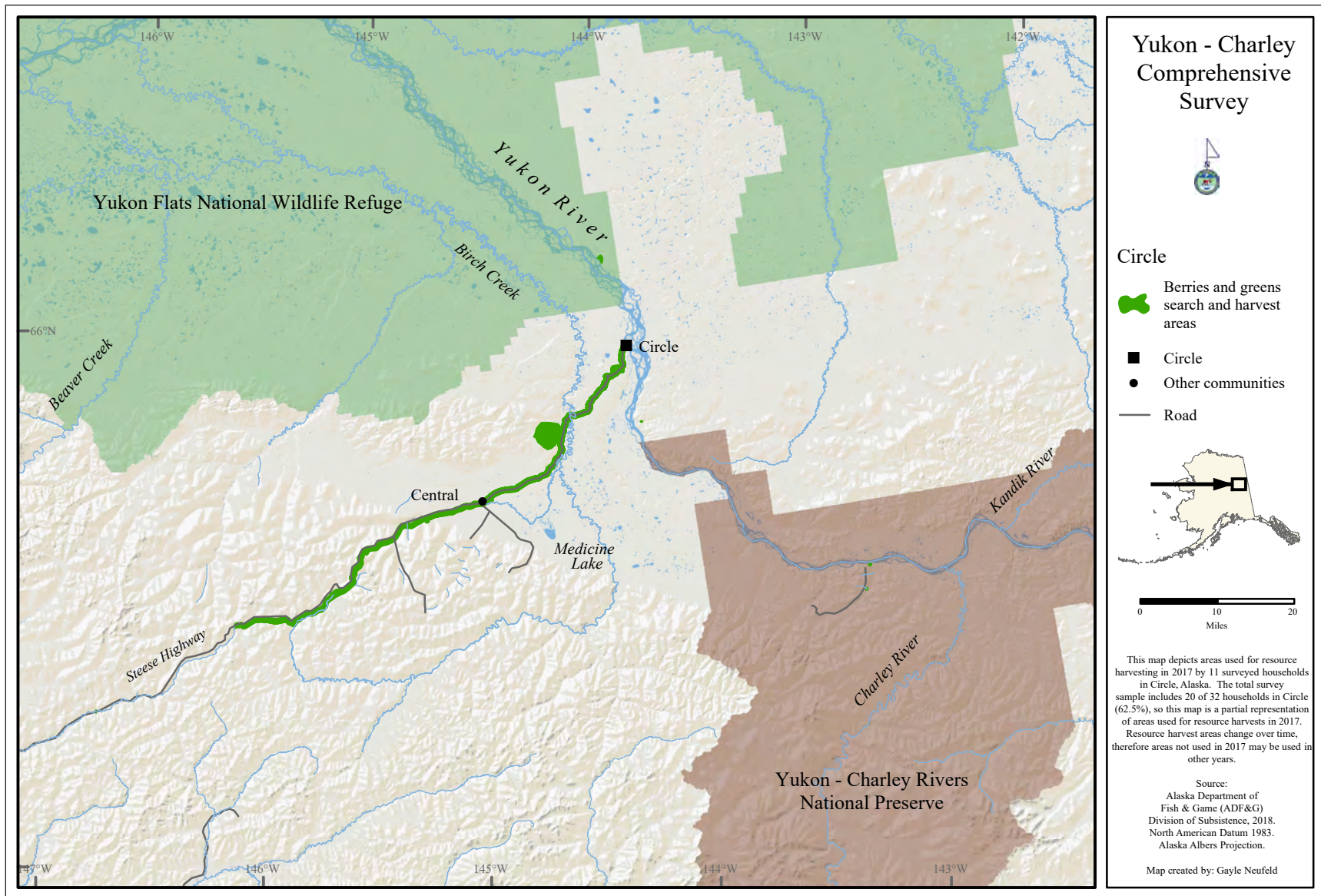


Figure 3-30.—Berries and greens gathering areas, Circle, 2017.

searching for vegetation in an area extending west from the Steese Highway approximately 15 air miles from Circle.

Many Circle households rely on wood for home heating. Seventy percent of households used firewood and 35% harvested it (Table 3-8). Thirty percent of households received firewood from someone and 15% of households reported sharing their firewood with others. Table D3-17 shows reported percentages of home heat that come from firewood. Thirty-five percent of sampled households reported that 100% of their home heating comes from firewood. The average annual cost to heat a home in Circle was estimated to be \$1,036. Four households reported having to change where they get their firewood in the past five years (Table D3-18). Reasons for moving firewood harvest locations included having to go further from the community to find dry wood and harvesting in locations where there are standing dead trees due to wildfire.

Circle residents harvested firewood in several areas along the Steese Highway between Circle and the Birch Creek Bridge (Figure 3-31). Respondents also reported gathering firewood along a 12-mile stretch of the Yukon River in the Yukon-Charley Rivers National Preserve approximately 40 air miles from Circle.

COMPARING HARVESTS AND USES IN 2017 WITH PREVIOUS YEARS

Harvest Assessments

Researchers asked respondents to assess their own harvests in two ways: whether they used more, less, or about the same amount of eight resource categories in 2017 compared to recent years, and whether they got “enough” of each of the eight resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. This section discusses responses to those questions.

Together, Table 3-13 and figures 3-32 and 3-33 provide a broad overview of households’ assessments of their harvests in 2017. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

Figure 3-32 shows the percentage of sampled households who reported getting less, the same amount, or more of each resource category in 2017 compared to recent years. Fifty-five percent of households reported using about the same amount of wild resources in 2017, and 25% reported using less. Fifty percent of households used less vegetation in 2017. This may be due to a poor berry crop in 2017 and likely indicates that the berry harvest estimate in this study is less than in an average year. Thirty-five percent of households used fewer birds in 2017. Several respondents indicated that the numbers of migratory waterfowl coming through the region have been decreasing over time:

A lot less geese pass here, than in the past. I think their flight way has changed... Chalkyitsik and Venetie people too said it seems like those specklebelly [white-fronted geese] and the Canada geese are coming down the Porcupine River, where they usually come this way too. (04072018CRC3)

Fifty percent of households used more salmon in 2017 compared to recent years, likely a result of the lack of fishing restrictions on the Yukon River during the Chinook salmon run for the first time in many years.

Figure 3-33 shows the percentages of sampled households that reported whether they got enough of each resource category. Forty-five percent of sampled households got enough wild foods in 2017 and 45% did not. The categories with the highest percentages of households not getting enough were vegetation (45%) and large land mammals (30%). Twenty-five percent of households did not get enough salmon, and 20% did not get enough birds.

Table D3-19 reports the reasons that Circle households used less of each resource category. Of the households that gave reasons for using less salmon in 2017, 80% (four responses) answered that less sharing was the cause. Similarly, the majority of responding households (60%, three responses) reported that less sharing resulted in having fewer nonsalmon fish compared to recent years. The primary reason respondents gave

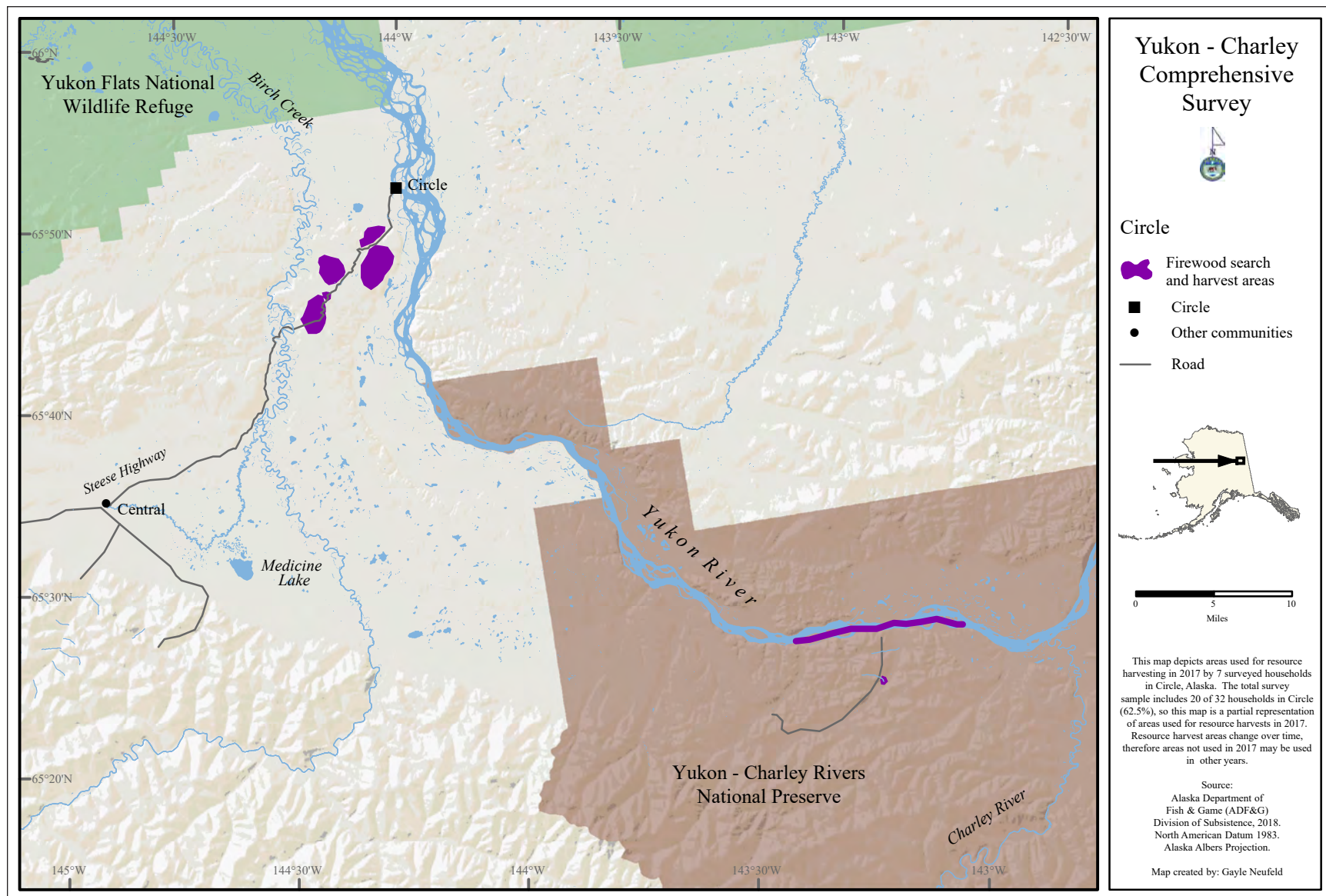


Figure 3-31.—Firewood harvesting areas, Circle, 2017.

Table 3-13.—Changes in household uses of resources compared to recent years, Circle, 2017.

Resource category	Sampled households	Valid responses ^a	Households reporting use										Households not using	
			Total households		Less		Same		More					
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	20	20	100.0%	5	25.0%	11	55.0%	4	20.0%	0	0.0%		
Salmon	20	20	20	100.0%	5	25.0%	5	25.0%	10	50.0%	0	0.0%		
Nonsalmon fish	20	20	15	75.0%	5	25.0%	5	25.0%	5	25.0%	5	25.0%		
Large land mammals	20	19	19	100.0%	4	21.1%	9	47.4%	6	31.6%	0	0.0%		
Small land mammals	20	20	14	70.0%	4	20.0%	5	25.0%	5	25.0%	6	30.0%		
Marine mammals	20	20	0	0.0%	0	0.0%	0	0.0%	0	0.0%	20	100.0%		
Birds	20	20	17	85.0%	7	35.0%	9	45.0%	1	5.0%	3	15.0%		
Marine invertebrates	20	20	2	10.0%	1	5.0%	0	0.0%	1	5.0%	18	90.0%		
Vegetation	20	20	18	90.0%	10	50.0%	8	40.0%	0	0.0%	2	10.0%		

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response.

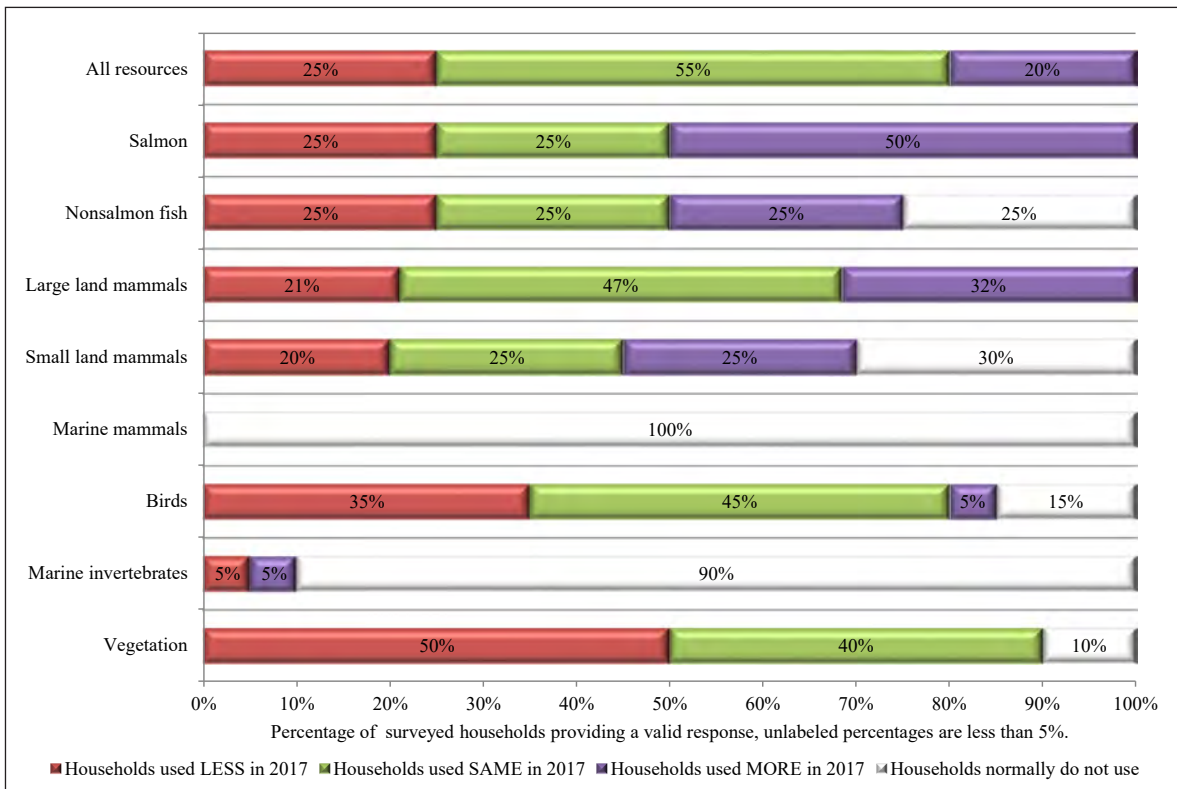


Figure 3-32.—Changes in household uses of resources compared to recent years, Circle, 2017.

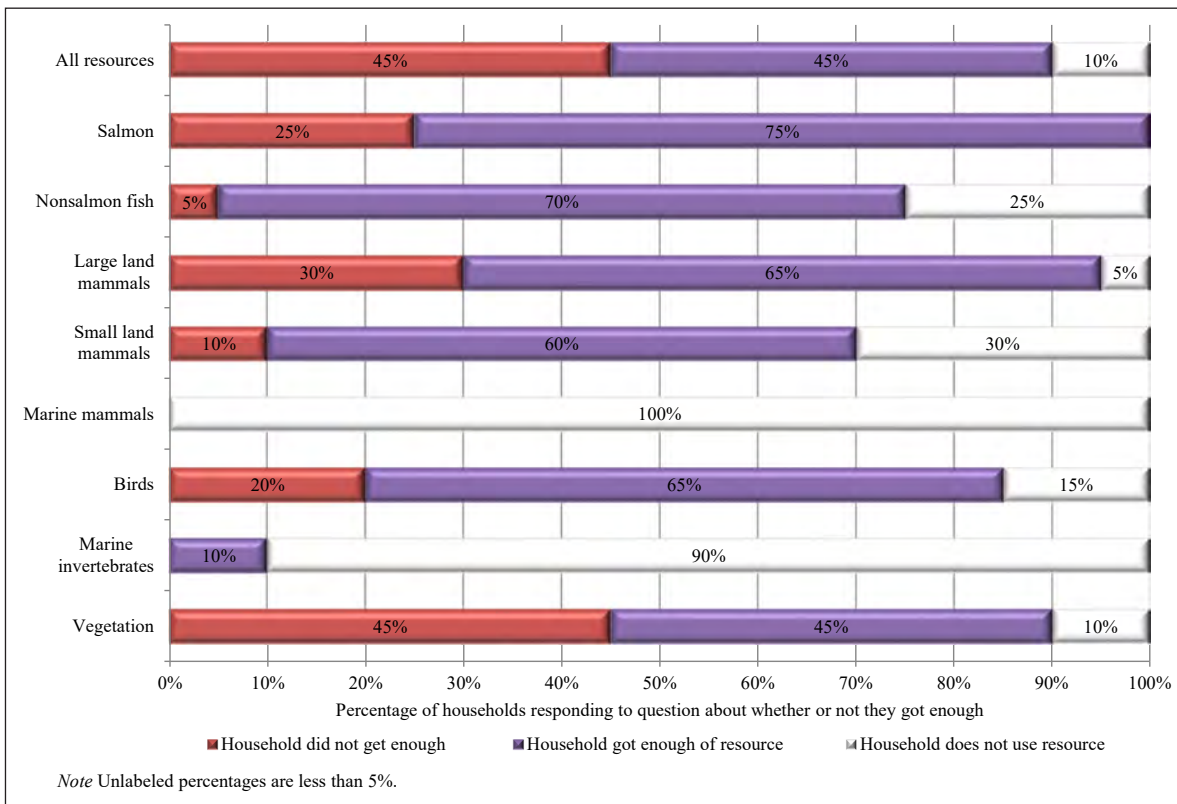


Figure 3-33.—Percentages of households reporting whether or not they got enough resources, Circle, 2017.

for having less large land mammals was unsuccessful hunting (50%, two responses). Seventy-five percent (three responses) of responding households said they had less small land mammals in 2017 because of less hunting and trapping effort. Respondents had fewer birds in 2017 primarily due to decreased hunting effort (43%, three responses) and less sharing (43%, three responses). Resource availability (50%, five responses) and reduced effort (40%, four responses) were the primary reasons given for having less vegetation in 2017.

Table D-20 reports the reasons Circle households used more of each resource category compared to recent years. Ten households reported using more salmon in 2017. Forty percent received more salmon than usual, 40% got more because they travelled farther to harvest them, and 30% harvested more than in recent years because the weather was favorable. Receiving more from other households was the primary reason respondents gave for having more nonsalmon fish, large land mammals, and small land mammals. No households reported using more vegetation in 2017 compared to recent years.

Survey respondents who answered that they did not get enough of a resource were asked to assess how severe the resulting impact was to their household. Respondents chose either minor, major, severe, or not noticeable to describe the effect of not getting enough. Three of the five households reporting that they did not get enough salmon in 2017 indicated that it had a major or severe impact (Table D3-21). Two responding households (33%) said that not having enough large land mammals affected their household severely, and four households (67%) said the effect was minor or not noticeable. Of the nine households that did not get enough vegetation in 2017, 44% described the impact as major or severe, and 44% said the effect was minor. Fifty percent (two responses) of households that did not get enough birds indicated that it had a major effect.

Respondents who indicated that they did not get enough of a resource category were asked to identify what specific resources were needed. Table D3-22 shows the resource categories and specific resources which Circle respondents reported needing more of in 2017. Answers to this question varied in specificity: some respondents indicated that they needed more resources from a certain category, such as salmon, while others named a specific resource, such as Chinook salmon. Also, some households gave multiple answers to this question for each resource category. Seven households indicated a need for more blueberries: more than any other resource species. Moose was the second most common specific resource needed (six households), followed by Chinook salmon (five households). A total of 21 households described needing some type of vegetation: far more than any other resource category. Nine households described needing more large land mammals, and seven households needed more birds.

Table D-23 lists subsistence resources that households avoided harvesting in 2017 due to poor health of the resource as well as reasons given for avoiding that resource. Some respondents avoided harvesting Chinook and chum salmon because they had sores on them. At least one respondent avoided caribou because they were told that the animals had flies in them. Finally, one household reported not harvesting migratory waterfowl because they fear that the birds pick up contaminants during their time in the continental U.S.

Harvest Data

Changes in the harvest of resources by Circle residents can also be discerned through comparisons with findings from other study years as well as through information provided by key respondents in this study. This was the first comprehensive subsistence survey conducted by ADF&G for Circle. However, the ADF&G Subsistence Division has conducted studies gathering harvest data for migratory waterfowl in the year 2000 (Andersen and Jennings 2001), nonsalmon fish in 2005 (Koskey and Mull 2011), and land mammals in 2008 and 2009 (Van Lanen et al. 2012). Also, salmon harvest data have been documented annually since 1989 through fishing permit harvest reports submitted by Circle fishers.

Salmon

Because Circle is accessible by road, ADF&G does not conduct annual salmon harvest surveys, like in more remote communities. Instead, Circle fishers are required to get a subsistence salmon fishing permit and report their harvest by submitting their permit at the end of the fishing season. Figure 3-34 shows the estimated annual salmon harvests by species and year. Circle's Chinook salmon harvest has decreased

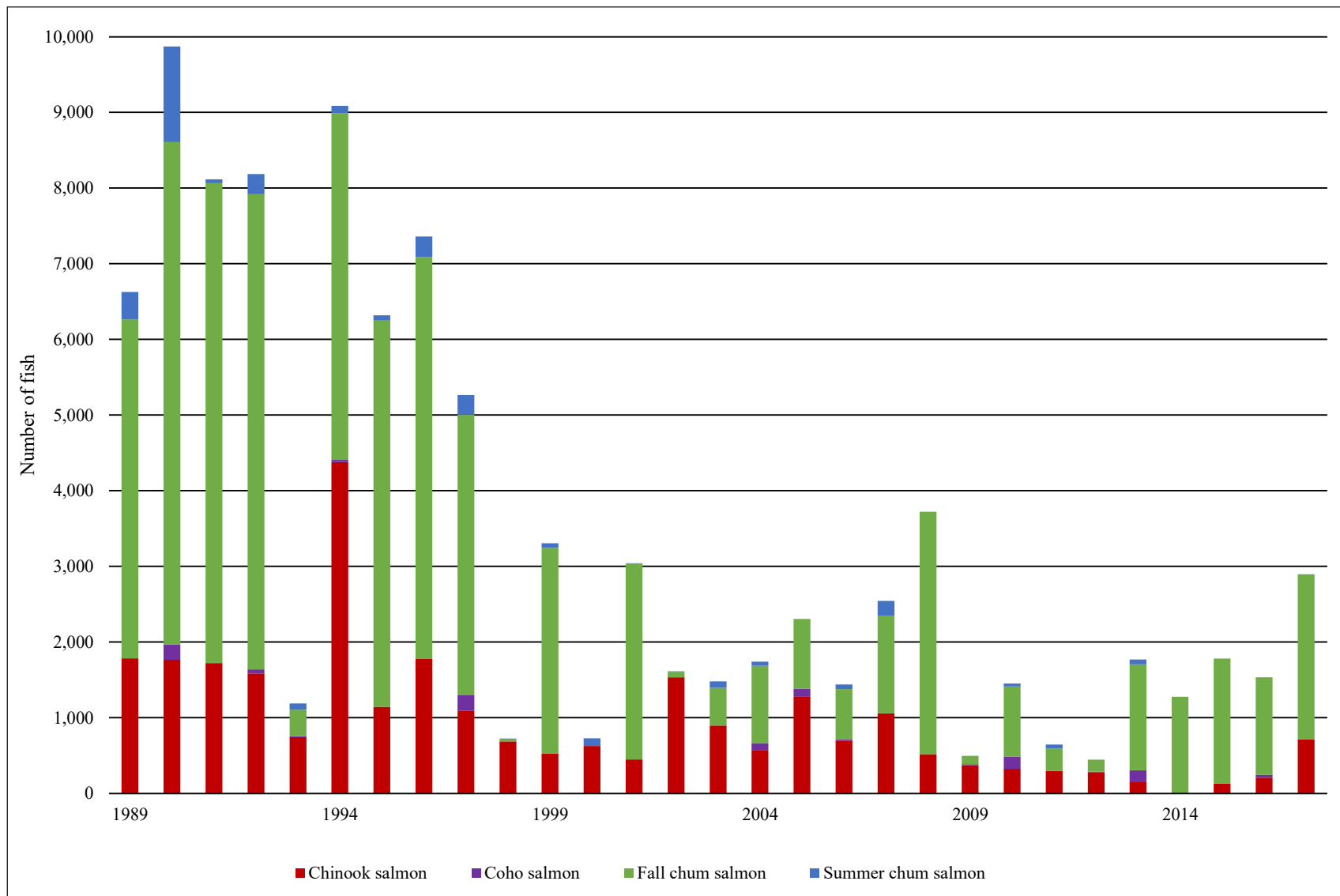


Figure 3-34.—Salmon harvests by species, Circle, 1989–2017.

steadily due to declining numbers and reductions in subsistence harvest opportunity. One key respondent characterized Chinook salmon fishing prior to these fishing restrictions: “Back in the days I’m talking about just one morning, you would catch maybe 30 or 40 [Chinook salmon], and maybe catch about 80 in a day. Now you are lucky, if you don’t pick the right place, you are lucky if you get 20 a day” (04072018CRC3). No Chinook salmon were harvested in 2014; however, the Chinook salmon harvest has increased annually since that time. The estimated Chinook salmon harvest in 2017 was larger than any year since 2007, possibly because there were fewer fishing restrictions in 2017 than in previous years

The fall chum salmon harvest has fluctuated from year to year but has experienced an overall decrease over time. One key respondent explained that the decreasing chum salmon harvest is due to fewer dog teams in the community: “Them days everybody had dogs too. There was a lot of chum salmon. We used to fish late in the fall...For dogs. Get a thousand easy in two weeks” (04062018CRC4). However, the fall chum salmon harvest estimated in this study (3,888 fish) was more than any year since 1996. This may be due to a recent increase in the popularity of dog mushing for sport and recreation:

Dog teams are coming back here in town, you know. There is one, two, there is about three people that got dog team now. And I’m thinking about getting back into it...Mostly for the sport. It’s fun. But, it’s costly, but it’s also fun, too. There is a lot of village competition going on, too, now...We never used to go to other villages to race, but now you can. ‘Cause you can either drive there, or you go down the river with a snowmachine. (04072018CRC3)

Nonsalmon Fish¹⁰

Koskey and Mull (2011) estimated that Circle’s nonsalmon fish harvest was 5 lb per capita in 2005. This estimate is considerably less than the current study’s estimate of 9 lb per capita. A large portion of this difference may be because the 2011 study did not document the community’s halibut harvest; however, halibut made up 38% of the nonsalmon harvest estimated by the current study. Half as many households attempted to harvest nonsalmon fish in 2005 (15%) compared to 2017 (30%). No grayling or burbot were harvested in 2005 compared to an estimated 16 grayling and 19 burbot in 2017. Also, far more sheefish were harvested in 2017 (19 fish) compared to 2005 (5 fish). Pike was the only nonsalmon fish that was harvested in significantly larger quantities in 2005 (42 fish) compared to 2017 (3 fish).

Large Land Mammals¹¹

The few years of data available for moose harvest in Circle show that moose hunting effort and success rates vary from year to year. Seventy-five percent of households hunted moose in 2008, but only 13% were successful (Van Lanen et al. 2012). In contrast, in the following year only 47% of households hunted and 33% were successful. The current study provides an intermediate data point: 45% of households hunted and 20% of households harvested a moose. One key respondent identified a factor that makes moose hunting more difficult now than in the past: “[In the ‘50s and ‘60s] it was easy. Go out and if you had a couple of days, get a moose. ‘Cause there was not very many outside hunters...the highway wasn’t as good as it is now, it was hard getting to here” (04072018CRC3).

Caribou hunting effort and harvest also varies across the three years of data. Twenty-three percent of households hunted caribou in 2008, compared to 7% in 2009 and 15% in 2017. The current study’s caribou harvest is the largest of the three years at eight pounds per capita, compared to six pounds in 2008, and one pound in 2009. A key respondent pointed out that caribou were once a more important resource for the community:

There used to be a caribou crossing between Sixteen and Twentymile. I remember my grandfather...used to wait until the late fall when the caribou are migrating. And they wait until the caribou, for the first bunch to cross, and then they’ll go up and get a few. (04072018CRC3)

10. Data in this section are sourced from Koskey and Mull (2011) for 2005 and Table 3-8 for 2017.

11. Data in this section are sourced from Van Lanen et al (2012) for 2008 and Table 3-8 for 2017.

Waterfowl¹²

Migratory bird harvest data for study year 2000 estimated a harvest of 443 birds more than the current study's estimate of 272. The seasonality of waterfowl harvest shows the greatest variation between the two years of data. Circle residents harvested an estimated 90 migratory waterfowl in the fall of 2000. The 2017 estimate of only five migratory birds harvested in the fall suggests that waterfowl hunters are more active in the spring now (Table D3-13). The absence of sandhill cranes in the area accounts for part of this shift. Circle hunters harvested 52 sandhill cranes in the fall of 2000 and none in 2017. A key respondent confirmed that sandhill cranes, once available in large numbers, no longer migrate through the area: "It's like these sandhill cranes too...there used to be thousands and thousands of them out here and I don't know where they all went" (04062018CRC4). Scoters may be another example of waterfowl that no longer move through the area. An estimated three scoters were harvested in 2017 compared to 123 in 2000.

Small Land Mammals¹³

ADF&G collected furbearer harvest data for regulatory years 2008–2009 and 2009–2010 (Van Lanen et al. 2012). Circle's participation in lynx trapping decreased from an estimated 23% of households in 2008–2009 to only 5% in 2017. Marten trapping participation was 10% percent of households in both 2008–2009 and 2017; however, the marten harvest was much greater in 2017 (134 individuals) than in 2008–2009 (5 individuals). One key respondent said that fewer people are trapping furbearers than in the past because fur prices have decreased; however, marten is the exception because of the current value of the fur: "That's probably the only thing you're gonna make money on is that marten" (04062018CRC4).

Key respondents identified other factors that have potentially contributed to a decrease in small land mammal harvest over time, including higher gasoline prices and fewer dog teams in the community: "About this time of year, back when everybody had dog teams...that would be their main source of dog food by now. By then they are running kind of low on their fish" (04062018CRC4). Finally, one key respondent talked about two small land mammals that are far less common in the region than they once were:

Oh, years ago when there was muskrats. Probably back in the early '70s. It was a lot of fun. We used to like to shoot them. Go out in a canvas canoe and shoot 'em...Oh yeah, there was a good price in them days. It was a good money maker... Just like ground squirrel, we used to have them here a long time ago. I don't know where they went. Just all of a sudden, they disappeared. They used to, right up here six miles there used to be a bunch of them up there. We used to get them for my mother. Then one year we went up there and they were all gone...Probably the late '70s, somewhere around there. (04062018CRC4)

Current and Historical Harvest Areas

No prior studies documented the areas used by Circle residents for their subsistence harvesting activities.

LOCAL COMMENTS AND CONCERNS

Following is a summary of local concerns that have not been discussed above. These comments and concerns were recorded during surveys, ethnographic interviews, and community meetings. Some households did not offer any additional information during the surveys and interviews, so not all households are represented in this summary.

Many respondents were concerned about hunters from outside Circle affecting their ability to hunt. One key respondent pointed out that "Village people stay in their own, around their own villages." (04072018CRC3); however, being accessible by road allows hunters from much larger communities to access the area around Circle. Another key respondent said: "We've seen some years where it was just crazy, you know, with the

12. Data in this section are sourced from Andersen and Jennings (2001) for 2000 and Table 3-8 for 2017.

13. Data in this section are sourced from Van Lanen et al (2012)for 2008–2010 and Table 3-8 for 2017.

amount of people” (04062018CRC1). Many respondents gave firsthand examples of how competition with outside hunters affects local hunters:

People with their jetboats come in. They can afford to spend time, one to two weeks, upriver. Where we go hunting, we know the river, we travel the river so often we know where there is a moose, right. And that’s what where we’re gonna go after it when the hunting season opens. Now you can’t because the people that go up early will also find them too. (04072018CRC3)

Respondents also voiced concerns about a variety of environmental changes they have witnessed over time. These changes include lakes drying in the region: “About 40 miles upriver, there’s a lake there and that’s, the last couple of years, that’s just gone, its dried up. All the lakes on this side are drying up. Seen that all over the Interior” (04072018CRC3). Some respondents also commented on changing ice conditions including thinner ice on the Yukon River:

Ice conditions are now just unbelievable. I mean you can’t go upriver and hunt. Only we can go up here, we can’t go down where we usually hunt, around 12 miles down, because the water, there is too much water all the time now. The ice is fading. (04062018CRC4)

Thinner ice has also resulted in earlier and milder spring breakups on the river:

The ice isn’t the same too. We usually have huge chunks of ice come down, it’s not that way anymore, it’s all just slush...Like last year, when most ice went by, we didn’t even know it. So, it’s like I said, it’s not as thick, and it’s not as big as chunks as it used to be. It’s way different. (04072018CRC3)

Two key respondents described changes in the Yukon River near the community: “It’s coming down to that, a lot of these sloughs, wider sloughs where they [salmon] traveled are all gone now. Most of them are all gone so they have to stay in the channel” (04072018CRC3), “Fewer eddies, and the river is coming down to just one bigger channel” (04062018CRC1). These respondents indicated that this reduction in channels, sloughs, and eddies has resulted in fewer good fishing locations near town.

One key respondent had concerns about some people in the community harvesting Chinook salmon to sell in Fairbanks: “They found out it is a money maker...there is a lot of Native people that live in Fairbanks that don’t do what we do out here and fish. They will buy it right there in a second” (04062018CRC4). Also, some Circle residents said that they were concerned about oil drilling and development in the region and how it may affect subsistence for future generations. Finally, many respondents voiced general concerns about state and federal management of wildlife, centering around the belief that people who are living off the land should be allowed to harvest resources they need to feed their family without legal concerns.

ACKNOWLEDGMENTS

ADF&G Division of Subsistence would like to thank the residents of Circle for your patience and for allowing us into your homes. The author would also like to thank the Circle Tribal Council for approving this research project and the key respondents for freely providing details about their lives and, in many cases, the lives of their ancestors. Special thanks to Amanda Pope for helping us at each stage of the project. Finally, thank you to our local research assistants who helped us schedule and administer surveys and who shared their knowledge of the community with us.

4. EAGLE

Brooke M. McDavid

In March 2018, five researchers and three local research assistants surveyed 58 of 70 eligible households (83%) in Eagle, Alaska (Table 4-1). Surveys averaged 40 minutes each (Table 4-2). Expanding for 12 unsurveyed households, Eagle's estimated total harvest of wild foods between January and December 2017 was 110,932 edible pounds (Table 4-3). The average harvest per household was 1,585 lb with a median of 90 lb. Per capita, the harvest was 691 lb. Survey respondents reported using an average of 11 resources per household and harvesting 8 resources per household. The survey areas for the city of Eagle and Eagle Village were based upon local understanding of community boundaries and do not align exactly with the census designated place (CDP boundaries). This resulted in an expanded study area for Eagle: residents living on the road between the city and Eagle Village were considered residents of the city (Figure 1-2).¹ Consequently, demographic data from this study are not directly comparable with those reported by the U.S. Census or the Alaska Department of Labor.

This chapter summarizes findings from household surveys, including demographic characteristics, responses to harvest assessment questions, harvest estimates, reported employment and income information, and responses to food security questions. Harvest numbers are expanded estimates. Results from this survey are available online in the ADF&G Community Subsistence Information System (CSIS).² Additional tables appear in Appendix D. Table 4-4 shows selected findings from this study.

In addition to the comprehensive survey, five interviews were conducted with six longtime residents of the community. These ethnographic interviews lasted an average of one hour and 30 minutes. By providing a better understanding of the seasonal round, local history, and subsistence activities in the area, the information shared by ethnographic respondents contextualizes the quantitative harvest and use data collected in the surveys.

COMMUNITY BACKGROUND

The background information included in this section pertains to both Eagle Village and the city of Eagle. Although data were collected separately for each community, an important relationship exists between the village and city in terms of their shared history, proximity, and through residents' cooperation in subsistence activities and sharing of subsistence resources. Because of this, the two communities are often collectively referred to simply as "Eagle."

Within the Alaska portion of the Yukon River drainage, Eagle and Eagle Village are the easternmost communities along the river. Eagle is 1,213 river miles from the mouth of the Yukon River (Estensen et al. 2018:82). Eagle Village is located approximately six river miles upriver from Eagle and five river miles downriver from the Canadian border. Until 2009, Eagle Village was located only three miles from Eagle, but after a flood destroyed the community, it was relocated further upriver. The two communities remain connected by an unpaved road. The airport is located along the road between the two communities. The terrain in the surrounding region is mountainous: a series of steep bluffs frame the river, which primarily follows a single channel (Plate 4-1).

Eagle and Eagle Village are located within the traditional territory of the Han Hwech'in (alternatively known as Han Gwich'in), who are speakers of the Han Athabascan language (Mishler and Simeone 2004).³ The Han Hwech'in maintained a settlement at the site of present-day Eagle prior to the influx of Euroamerican

1. See the Introduction chapter for more information about the methods used to determine the boundary between Eagle and Eagle Village.

2. Alaska Department of Fish and Game (ADF&G) Division of Subsistence, Juneau. "Community Subsistence Information System: CSIS." <https://www.adfg.alaska.gov/sb/CSIS>. Hereinafter *ADF&G CSIS*.

3. For more information on regional Han Hwech'in history, see the Introduction chapter of this report.

Table 4-1.—Sample achievement, Eagle, 2017.

Sample information	Community
	Eagle
Number of dwelling units	70
Survey goal	100%
Households surveyed	58
Households failed to be contacted	6
Households declined to be surveyed	6
Households moved or occupied by nonresident	0
Total households attempted to be surveyed	70
Refusal rate	9.4%
Final estimate of permanent households	70
Percentage of total households surveyed	82.9%
Survey weighting factor	1.21
Sampled population	133
Estimated population	160.5

Source ADF&G Division of Subsistence household surveys, 2018.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

Table 4-2.—Survey length, Eagle, 2017.

Community	Survey length (minutes)		
	Average	Minimum	Maximum
Eagle	40	7	105

Source ADF&G Division of Subsistence household surveys, 2018.

Table 4-3.—Resource harvest and use characteristics, Eagle, 2017.

Characteristic	
Mean number of resources used per household	10.7
Minimum	1
Maximum	30
95% confidence limit ($\pm$)	7.4%
Median	9.0
Mean number of resources attempted to harvest per household	9.8
Minimum	0
Maximum	32
95% confidence limit ($\pm$)	8.0%
Median	9.5
Mean number of resources harvested per household	8.4
Minimum	0
Maximum	30
95% confidence limit ($\pm$)	9.0%
Median	6.0
Mean number of resources received per household	2.8
Minimum	0
Maximum	15
95% confidence limit ($\pm$)	10.8%
Median	2.0
Mean number of resources given away per household	2.2
Minimum	0
Maximum	15
95% confidence limit ($\pm$)	15.2%
Median	1.0
Household harvest (pounds)	
Minimum	0
Maximum	17,981
Mean	1,584.7
Median	89.9
Total harvest weight (lb)	110,931.7
Community per capita harvest (lb)	691.1
Percentage using any resource	100%
Percentage attempting to harvest any resource	95%
Percentage harvesting any resource	93%
Percentage receiving any resource	81%
Percentage giving away any resource	67%
Number of households in sample	58
Number of resources asked about and identified voluntarily by respondents	128

Source ADF&G Division of Subsistence household surveys, 2018.

Table 4-4.–Selected study findings, Eagle, 2017.

Category	Community Eagle
Demography	
Population	160.5
Percentage of population that is Alaska Native	15.0%
Percentage of household heads born in Alaska	14.8%
Average length of residency of household heads (years)	22.1
Cash economy	
Average number of months employed	5.5
Percentage of employed adults working year-round	42.6%
Percentage of income from sources other than employment	38.4%
Average household income ^a	\$30,569
Per capita income ^a	\$13,331
Resource harvest and use	
Per capita harvest, pounds usable weight	691.1
Average household harvest, pounds usable weight	1,584.7
Number of resources used by 50% or more households	5.0
Average number of resources used per household	10.7
Average number of resources attempted to be harvested per household	9.8
Average number of resources harvested per household	8.4
Average number of resources received per household	2.8
Average number of resources given away per household	2.2
Percentage of total harvest taken by top ranked 25% of households	94.8%
Percentage of households that harvested 70% of harvest	10.3%
Per capita harvest by lowest ranked 50% of households	5.8
Percentage of total harvest taken by lowest ranked 50% of harvesting households	0.8%
Average number of resources used by lowest ranked 50% of households	7.0
Average number of resources used by top ranked 25% of households	17.6

Source ADF&G Division of Subsistence household surveys, 2018.

a. Includes income from sources other than employment.



Plate 4-1.—Aerial view of Eagle along the Yukon River with Eagle Bluff in the background.

settlers. This location at the base of Eagle Bluff was known as Tthee T'äwdlenn, or “water moving around the bluff.” The archeological record dates the presence of Native people in the Yukon-Charley Rivers area to at least 4,000 years before present.⁴ In pre-contact times, Han Hwech'in traveled throughout their traditional territory to participate in a seasonal round of subsistence activities.

The first documented contact between Han Hwech'in at Eagle and Euroamericans occurred in 1867 when members of the Western Union telegraph expedition encountered a village of about 250 people near Eagle Bluff (Ducker and Spude 1982). This was the same year that the U.S. purchased Alaska from Russia. In 1880, a man named Moses Mercier opened a trading post on Belle Isle near the location of present-day Eagle and documented a band of just over 100 Han Hwech'in living nearby. Some historical accounts refer to this settlement as Johnny's Village (Crow and Obley 1981). Although local Han Hwech'in had historically traded with other Native groups and with Euroamericans since the establishment of Fort Yukon and Fort Reliance, they were immersed into a mixed cash-subsistence economy as the fur trade and gold mining extended directly to their homeland. The gold rush brought miners to the area in the mid-1890s, and in 1898, 28 miners established the city of Eagle (Ducker and Spude 1982). The city quickly swelled to 1,700 residents. Around 500 cabins were built and three commercial stores were in operation. Native people were not allowed to file mining claims in the United States since they were not recognized as citizens, but some local Alaska Natives were hired to help work in mining camps (Mishler and Simeone 2004). Others worked selling firewood or foods such as dried salmon, but the increased population also put a strain on these local wild resources.

Because of the influx of miners into Alaska from Canada, Fort Egbert was established in 1899 to monitor border passage and mining activities in the region (Plate 4-2). Oral history accounts from Han Hwech'in elders recall that the building of Fort Egbert forcibly displaced them from their traditional land at the mouth of Mission Creek and base of Eagle Bluff (Mishler and Simeone 2004). Human remains and artifacts that

4. National Park Service, 2018. “People.” Accessed April 7, 2020.
<https://www.nps.gov/yuch/learn/historyculture/people.htm>



B. McDavid

Plate 4-2.—Some of the preserved structures at Fort Egbert.

were taken from this location and placed in the University of Alaska museum collections also demonstrate that this location was used traditionally. One elder respondent from Eagle Village recalled that some Natives used to live near Eagle Bluff, but they relocated after Fort Egbert was established:

In those days there was just a village here [at current site] and few people down there [at Eagle Bluff], they said. It used to be Fort Egbert where all the army people. And they, my Native people, didn't want to be around down there so the chief moved them up to where we were. Yeah, because, right now, on that little airport down there [by the National Park Service], when we were kids we used to play around down on the bank. We used to find necklace and just things. It used to be a cemetery there. Right where the Park Service is on the little airport, there is a grave site there, but see when it start [eroding], then you could find some stuff, they said. Maybe it all washed away. (03232018EAA2)

The building of Fort Egbert resulted in the emergence of two distinct communities that were segregated ethnically and geographically. Even after Fort Egbert was decommissioned in 1911, Eagle and Eagle Village continued to exist as two separate communities.

The establishment of the international border also segregated the Han Hwech'in who lived on either side, disrupting relationships and historical travel patterns. The late Charlie Isaac, a Han Hwech'in person from Dawson, explained: "We were once one people who camped in the summer in various places between here and Charlie Creek [Kandik River]. After the white man came and especially after the gold rush, we formed up into two villages. The boundary also helped to separate us" (Osgood 1971).

Eagle's boomtown days were short-lived because most miners quickly left for the rush to Nome in 1899 (Ducker and Spude 1982). However, not all newcomers relocated so quickly: several remained because the mines in nearby Fortymile River, Seventymile River, and American Creek areas were still productive. By 1900, there were approximately 340 people living in Eagle city and around 60 Native Han Hwetch'in in the village a few miles from town. Eagle became the first incorporated city in the Interior (and the second in the state) in 1901. The headquarters of the Third Judicial District Court was located in Eagle from 1900–1904,

until it moved to Fairbanks. Eagle was also connected to Valdez by a military-installed telegraph line in 1903.

Throughout the early 20th century, Eagle's population continued to decline while Eagle Village's population remained relatively stable (Ducker and Spude 1982; Mishler and Simeone 2004). Construction of the Taylor Highway, which connects Eagle and Eagle Village to the Alaska Highway, was completed in 1955. Typically, the highway is open from April to October and closed during winter months. Highway construction provided job opportunities for local people and provided seasonal access to other areas of the state where groceries and other supplies could be purchased more affordably (Mishler and Simeone 2004). The highway caused a shift in local land use patterns because it provided easier access for hunting and trapping into the Fortymile country. Because the new highway also let people from elsewhere in Alaska easily access the region, competition for resources increased, especially for caribou and moose in the fall.

Completion of the Taylor Highway also resulted in an increase to the population in Eagle. During the 1970s, a new wave of people moved to Eagle and several settled along the river downstream from Eagle, where they built cabins from local materials or occupied abandoned structures, and tried out a subsistence way of life (Brown et al. 2015; Caulfield 1979). Many of these people were living within the proposed boundaries of the Yukon-Charley Rivers National Preserve (the Preserve). Some of these newcomers sought out experienced elders from Eagle and Eagle Village to learn traditional subsistence skills. Although the population of Eagle increased during the 1970s and 1980s, the population of Eagle Village began to steadily decline as elders passed away and other residents moved to Eagle. After the establishment of the Preserve in 1980, many of the people who had recently settled along the Yukon River were considered to be trespassing and were forced to move (Brown et al. 2015; Koskey, Tyrrell, and Lotvonen 2018; O'Neill 2006). Consequently some relocated to Eagle or left the area entirely (Brown et al. 2015; Koskey, Tyrrell, and Lotvonen 2018; O'Neill 2006). Only one family in Eagle has been able to maintain a permit for the use of their historical family cabin within the Preserve boundaries, and they must periodically reapply for this permit (03262018EAA6, 03262018EAA9, Brown et al. 2015).

In the 1960s and 1970s, Eagle Village residents engaged in the land claims prior to and after the passage of the Alaska Native Claims Settlement Act (ANCSA) in 1971. Through ANCSA, the Hungwich'in Corporation of Eagle Village was able to select lands to be conveyed to them from the federal government (Mishler and Simeone 2004). Additionally, individual Native allotments could also be selected based on historical use. Some Hungwich'in Corporation lands and several Native allotments are located within the Preserve. The establishment of the Preserve affected how subsistence activities occurred in the region downriver from Eagle and will be further explored in the Discussion chapter of this report.

The use of dog teams in Eagle and Eagle Village has a long history and is still very active in the city of Eagle; when trappers and miners first entered the region, dogs were one of the only types of feasible transportation in the winter months. Although local Han Hwetch'in did not utilize dog sleds as a form of transportation prior to contact, they adopted their use shortly thereafter (Crow and Obley 1981). Throughout much of Alaska, the use of sled dogs declined after the introduction of snowmachines. However, dogs have remained an important part of Eagle's identity as a community.

A lot of the people in [the city of] Eagle still use their dogs for wood, hauling water, trapping...it's probably the second largest dog community in the upper Yukon region...Economics aren't strong for making a lot of money, but we do have the fish that allows you to continue to maintain dogs. If we didn't have fall chum, the dog teams would disappear very quickly. If we had a good economy, a cash economy, I think you'd see a lot more of the dogs disappear too. (12092018EAA5)

The community tradition of using dog teams is also being preserved through the Alaska Care and Husbandry Instruction for Lifelong Living (A-CHILL) program at the Eagle School. This program engages middle and high school students in hands-on learning about culture, dog mushing, and veterinary science.⁵

5. Alaska Care and Husbandry Instruction for Lifelong Living, n.d. "A-CHILL." Accessed April 8, 2020. <https://www.achill.life/>

Not all households have sled dogs, and those that do greatly vary in the number of dogs they keep: some keep only a few dogs for recreational purposes, and others maintain working teams. A few households operate dogsled tour companies. One respondent stated that there are currently eight kennels in Eagle and went on to further characterize the community as:

really famous for having those freight-type [dogs] that can still move pretty fast... The big trapline dogs gradually gave away to the more middle-size dogs that Eagle is really known for, which would be like between 60 and 80 pound dogs... They are not as small as a sprint dog... We started to get a reputation, I think because so many of these kennels were focused on dog care, guiding, improving their image, like rehoming dogs to good homes. It started to be like a snowball effect and there was a reputation, like, "Oh, those Eagle dogs are good dogs." (03262018EAA9)

The number of dog teams in Eagle affects subsistence harvest patterns, specifically fall chum salmon, which are harvested in great numbers to feed dogs throughout the year. There are not many sled dogs in Eagle Village compared to Eagle, but the exact number in either community was not collected as part of this study⁶.

Eagle and Eagle Village have seasonal road access via the Taylor Highway, but the communities are still 370 miles from the nearest urban center in Fairbanks. Economic opportunities are limited and often seasonal in nature, and the cost of living is high. To save money, residents commonly travel to Fairbanks in the springtime after the highway opens to purchase needed supplies in bulk. They often take another trip in the fall to stock up before the road closes for the winter.⁷

Although land use patterns have changed over time, subsistence hunting, fishing, and gathering nevertheless remain vital to the livelihoods of most residents in Eagle and Eagle Village. Additionally, the communities continue to be a destination for people who seek a change from urban living to areas that offer a small-town lifestyle with ample opportunities for subsistence. As one ethnographic respondent described: "We're very fortunate to be here. Because it's at the end of the road and it's a good jumping off spot to get farther into the bush. Now if you aren't into that, this is a horrible place" (03262018EAA6).

In 2009, Eagle and Eagle Village experienced a catastrophic flood that entirely destroyed Eagle Village. Berms of ice flattened all the homes and buildings in the village and also caused significant damage to homes and infrastructure in the city of Eagle.⁸ After this event, the village was relocated approximately six miles further upriver from the city. This relocation was difficult for village residents because they lost their longtime home:

That old village which we all like it because whole bunch of us were born there, we were raised there, we had school there, which had kids from kindergarten to eighth grade... We miss our old village because there is, you know it brings back so many, much, memory from all the old timers that used to live there. Old timers used to tell stories, they used to dance our Indian dance when I was just a little girl, I remember that. They used to have a big dance on, like, New Year. But other than that, man it just, when it flooded everybody just felt sad, to move all the gear. I mean there is nothing to move back. It just shaved everything off. (03232018EAA2)

Referring to the old village site, another respondent shared: "Well, for me, I would rather live there than here. Because you could look around and across the river and you can't, you can't look across the river here. Yeah, it was better living down there" (03252018EAA4).

Today, Eagle has a school, a store, an airport, a library, a post office, two wellhouses, a campground, several churches, a softball field, and several historic buildings maintained by the Eagle Historical Society,

6. Field notes, March 2018.

7. Field notes, March 2018

8. Hopkins, K. 2009. "Yukon Flood Destroys Eagle Village, floods Eagle." Anchorage Daily News. Accessed February 25, 2020. <https://www.adn.com/alaska-news/article/yukon-flood-destroys-eagle-village-floods-eagle/2009/05/05/>



Plate 4-3.—An ADF&G researcher participates in the “frozen fall chum toss” at the Eagle Spring Carnival.

the Bureau of Land Management, and the National Park Service. This infrastructure is used by residents of both the city and village. An old schoolhouse in Eagle is used as a checkpoint for the Yukon Quest. Eagle Village has a Village Council Office, a community recreation facility, and a Health Clinic that serves residents of both communities. Just downriver from the communities is the Eagle fisheries sonar project site operated by ADF&G and staff from the Canadian Department of Fisheries and Oceans, which is vital to monitoring the number of Chinook and fall chum salmon that pass from Alaska waters into the Yukon Territory, Canada.

Although separated geographically by a few miles, residents of each locale have always interacted frequently, relied on much of the same infrastructure, and utilized overlapping land areas and resources for subsistence. Several annual festivities also bring the two communities together. Each spring, a Spring

Carnival is held to celebrate the changing seasons and is filled with games intended to promote traditional skills in a fun way for children and adults alike. For example, the frozen fall chum fish toss event mimics the skills needed to feed sled dogs (Plate 4-3). In some years, the carnival includes a sprint mushing race called “The Flying Eagle” on the local trails around Eagle.⁹ Eagle’s largest celebration occurs for Fourth of July. A community potluck is held the evening before and includes a silent auction for the Eagle Historical Society. Festivities continue all day on July 4 and often include a parade, costume contest, quilt auction, carnival games, rifle shooting competition, and cake walk. The Fourth of July softball game is often the main event, and special accommodations are made so that everyone, both young and old, can participate without striking out.

Each Christmas Eve, Eagle Village hosts a gathering for families from both communities. Santa gives presents to each child who sits on his lap and adults participate in a gift exchange. Dinner, live music, and singing Christmas carols are also part of the tradition. Because Eagle Village was relocated further away from Eagle after the flood, this event is a special time to re-establish the sense of community between all residents. In addition to events between the two neighboring communities, Eagle Village residents also maintain relationships with their relatives in Canada. Semi-annual gatherings are held at Moosehide, Yukon Territory, and Han Hwech’in from both sides of the border attend (04242018EAA1). The Moosehide gatherings draw hundreds of people together to celebrate Han culture. Two international mushing events also bring community residents together with visitors and tourists. Annually, the Percy de Wolfe Memorial Mail Race honors the mail carrier who operated between Dawson City and Eagle for almost 40 years, often battling treacherous weather and snow conditions to deliver people their mail (Plate 4-4).¹⁰ During the race, mushers travel from Dawson to Eagle and back. Eagle also serves as a checkpoint on the Yukon Quest, a 1,000-mile sled dog race between Fairbanks and Whitehorse.¹¹ For each of these events, community members volunteer at the checkpoint at the old school house in Eagle (Plate 4-5).

9. A. Trainor, ADF&G Subsistence Resource Specialist and former Eagle resident, personal communication, April 1, 2020.

10. The Percy DeWolfe Memorial Mail Race. 2020. “History” Accessed April 8, 2020. <https://www.thepercy.com/history>

11. Yukon Quest, n.d. “Yukon Quest.” Accessed April 8, 2020. <https://www.yukonquest.com/>



Plate 4-4.—Eagle is the halfway checkpoint for the Percy DeWolfe Memorial Mail Race each spring, from Dawson City, YT to Eagle and back. Here, local residents volunteer at the checkpoint.



Plate 4-5.—The former Eagle Public School building is now used as a checkpoint for the Yukon Quest and Percy DeWolfe sled dog races.

SEASONAL ROUND

Eagle residents participate in a seasonal round of subsistence activities based on resource availability and current hunting and fishing regulations. During the spring, many families concentrate on cutting firewood, replenishing what was used during the colder months and allowing it to dry over the coming summer.¹² Most trapping comes to an end by spring, except for wolf, beaver, and muskrat. As the landscape begins to thaw, migratory bird hunting provides a fresh source of meat after the long winter. Some households hunt for black bear in spring as well. This is also a popular time for Arctic grayling¹³ fishing when the ice along the banks of the Yukon River begins to melt. Gardeners plant seeds indoors toward the end of spring to prepare for summer gardens. Once the Taylor Highway is opened for the season, many residents will make trips to Fairbanks to purchase groceries and other needed supplies.

Eagle residents spend early summer preparing for salmon fishing season, which may involve building or repairing fishwheels, mending gillnets, and ensuring that other equipment is in working order. Chinook salmon begin to arrive in early July, and fishing extends through August. Salmon fishing is often a cooperative effort: households share gear and labor. Although some households fish close to the community, the limited availability of fishing spots means that others have to travel back and forth by boat to their fishing locations or else choose to stay in a fish camp. Also during this time, families plant and tend gardens that help to supply fresh vegetables, which are difficult to get and expensive to buy in Eagle.

In early August there is a short break in salmon fishing while fishers wait for fall chum salmon to arrive in late August. Households that maintain dog teams or kennels expend much effort to harvest large quantities of fish to feed dogs over the coming year. Fall is one of the busiest times of the year in Eagle for subsistence activities. In addition to fall chum salmon fishing, fall is also the season to hunt moose and caribou. Residents travel throughout the Taylor Highway and Yukon River corridors in search of these animals. Also in the fall time, residents focus on gathering large quantities of berries to freeze or make jam; they often pick berries around town and near American Summit. Additionally, families that maintain home gardens are busy pulling and preserving their crops. Game birds such as ptarmigans and grouses are also hunted in the fall time.

Before the Taylor Highway closes in October, Eagle residents often travel to Fairbanks to stock up on supplies for the winter. Although winter months are quieter for the general population, those who participate in trapping stay busy traveling their lines, traveling to trapping cabins, and checking their traps while the weather is cold and pelts are of highest quality. People also hunt caribou in the winter months if they are unable to meet their household's subsistence needs in the fall season. In the winter months, people commonly travel with their sled dogs in the Eagle area to haul firewood and water, give tours, or enjoy the local trails.

Figure 4-1 shows the areas that respondents in Eagle reported using for hunting, fishing, and gathering in 2017. Later sections of this chapter will show use areas broken down by resource category. These maps are a partial representation of the subsistence harvest areas because not all respondents chose to participate in mapping, and not all residents were able to be surveyed. Eagle residents from 51 households extensively used the region surrounding the community; the Yukon River and Taylor Highway provided the main access routes to search and harvest areas. Respondents used a large section in the eastern portion of the Preserve, including the lower portion of the Nation River drainage; they also used a smaller area at Coal Creek further downriver on the Yukon to search for and harvest subsistence resources. Other use areas included the Seventymile River, Mission Creek, American Creek, and Champion Creek drainages and the area around American Summit. Subsistence activities also occurred outside of the vicinity of the community. Residents used almost the entire length of the Taylor Highway as well as smaller areas outside of the region near Chitina and at the Kasilof River in southcentral Alaska.

12. B. McDavid field notes, March 2018.

13. Hereinafter, *grayling*.

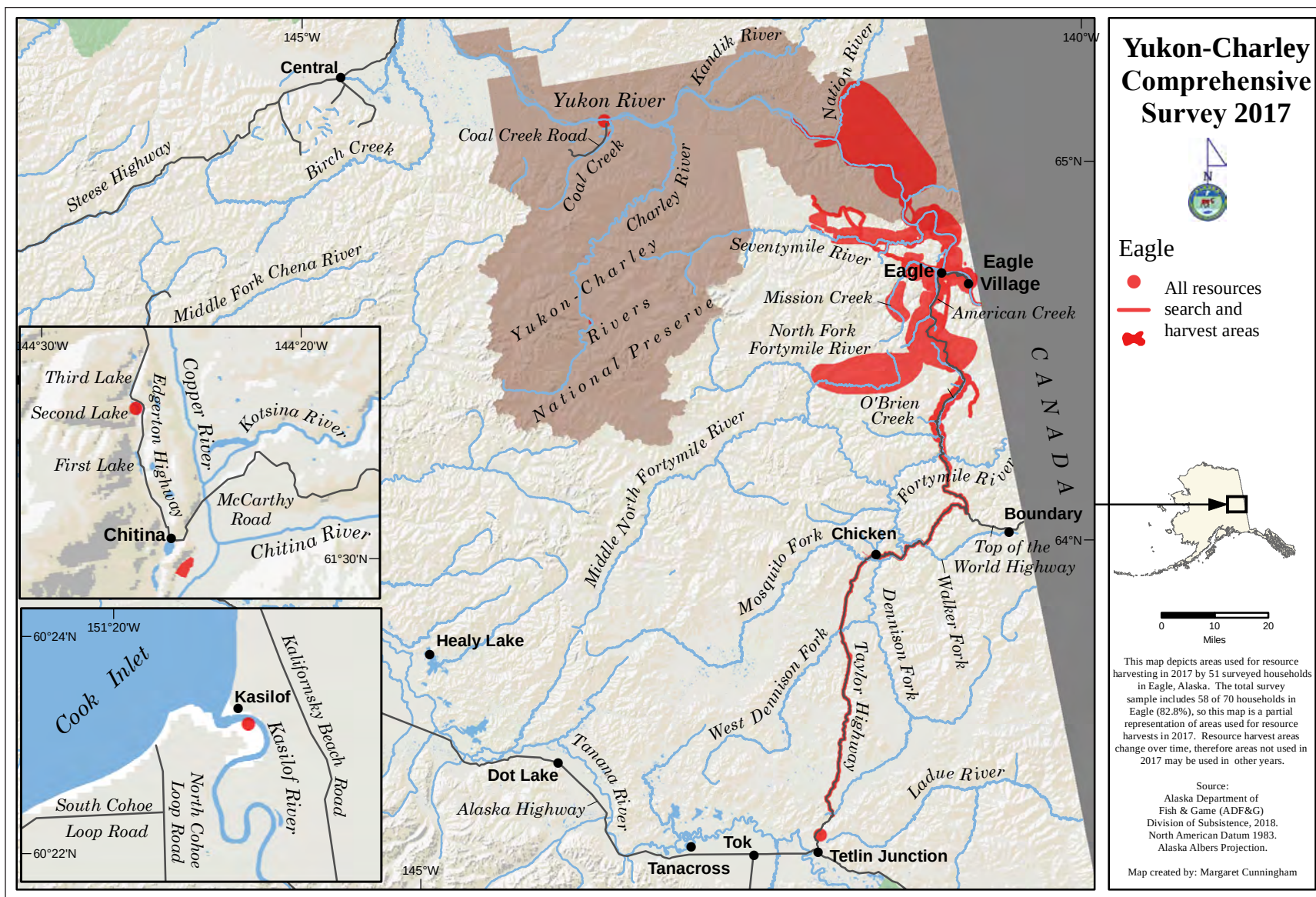


Figure 4-1.—All resources search and harvest areas, Eagle, 2017.

POPULATION ESTIMATES AND DEMOGRAPHIC INFORMATION

During 2017, the total estimated population in Eagle was 161 individuals living in 70 households with an Alaska Native population of 24 persons (Table 4-5; Figure 4-2). In comparison to ADF&G estimates from this project, the 2010 U.S. Census recorded a total population of 86 persons in 41 households in the Eagle City CDP with an Alaska Native population of 8 persons. The U.S. Census Bureau American Community Survey (ACS) estimated a 5-year average population of 74 individuals and 41 households between 2013 and 2017 with no Alaska Native population. As previously mentioned, ADF&G population estimates do not follow the CDP boundaries used by the U.S. Census Bureau, which primarily accounts for the differences in population estimates between this study and U.S. Census estimates (Figure 1-2). In addition, the differences in these estimates may also result from variations in the sampling methods, timing of surveys, refusal rates, and definitions of residency.

Table 4-5.—Total and Alaska Native population estimates, Eagle, 2010, 2013–2017, and 2017.

	Census (2010)	5-year American Community Survey (2013–2017)		This study (2017)	
		Estimate	Range ^a	Estimate	Range ^b
Total population					
Households	41	41.0	23 – 59	70.0	
Population	86	74.0	43 – 105	160.5	148 – 173
Alaska Native					
Population	8	0.0	0 – 8	24.1	14 – 34
Percentage	9.3%	0.0%	0% – 12.2%	15.0%	8.7% – 21.4%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey (ACS) 2016 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2018 for 2017 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

Note The boundary between Eagle and Eagle Village used by the Division of Subsistence differs from that used by the U.S. Census Bureau.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

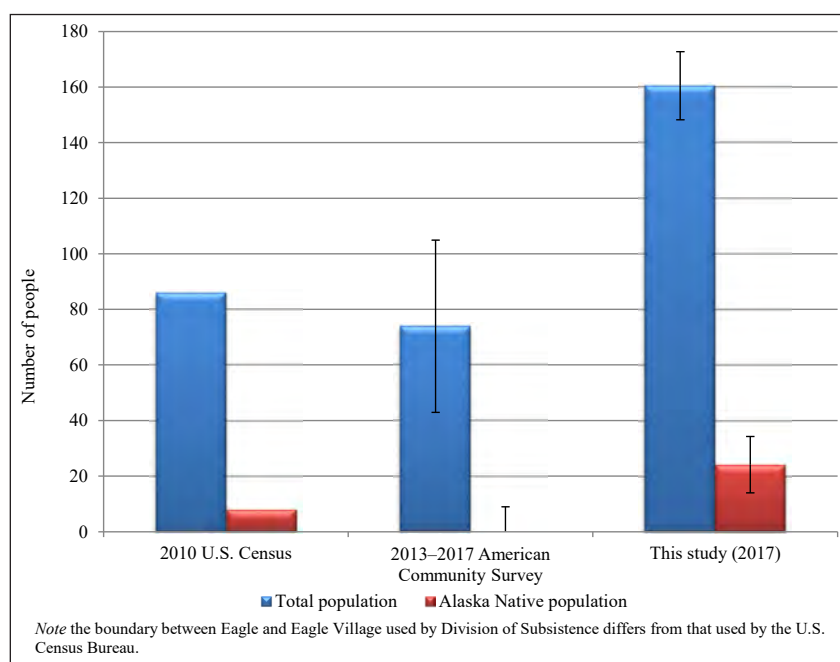


Figure 4-2.—Total and Alaska Native population estimates, Eagle, 2010, 2013–2017, and 2017.

Household sizes in Eagle ranged in size from one to eight individuals with an average of two residents per household (Table 4-6). The mean age of residents was 41, but residents ranged in age from 3 to 83. The average length of residency was 18 years, and the maximum was 51. Approximately six households had residents who identified as Alaska Native. Figure 4-3 depicts the population structure in Eagle (also see Table D4-1). All age classes under 85 years were represented, and overall there were more males (92) than females (69). There were fewer people in the age classes between 20 and 40 and this may indicate that younger adults tend to leave the community for college or work.

Table 4-6.—Sample and demographic characteristics, Eagle, 2017.

Characteristics	Community Eagle
Sampled households	58
Eligible households	70
Percentage sampled	82.9%
Sampled population	133
Estimated community population	160.5
Household size	
Mean	2.3
Minimum	1.0
Maximum	8.0
Age	
Mean	41.4
Minimum	3
Maximum	83
Median	48.0
Length of residency	
Total population	
Mean	18.1
Minimum	1
Maximum	51
Heads of household	
Mean	22.1
Minimum	1
Maximum	51
Alaska Native	
Estimated households ^a	
Number	6.0
Percentage	8.6%
Estimated population	
Number	24.1
Percentage	15.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. The estimated number of households in which at least 1 head of household is Alaska Native.

Historical population data available from the U.S. Census and Alaska Department of Labor (ADOL) show how the population of Eagle has varied over time since 1939 (Figure 4-4). There was a decrease in population during the 1960s, with the population reaching a low of around 40 people in 1970. However, this decline was followed by a sharp increase in the 1970s, 1980s, and 1990s when the population reached nearly 200. Over the last few decades, the Census count and ADOL estimates again showed a decline, but the population within the city boundaries has stabilized around 80 people since 2006. The much larger population estimated by this study for 2017 is a consequence of the expanded boundary of the community for the survey.

The majority (79%) of heads of household in Eagle reported birthplaces in other U.S. states (Table D4-2). Only 6% of heads of households were born in Eagle, 9% in other parts of Alaska including Fairbanks and Anchorage, and 4% internationally. For the population as a whole, a larger proportion of residents were born in Eagle (22%), but the majority were born in other U.S. states (59%; Table D4-3).

INCOME AND CASH EMPLOYMENT

Survey respondents were asked about both earned income (jobs held and wages earned by all household members 16 years and older) and income from other sources. The survey also asked about months worked and work schedules for employed residents in each household.

The total estimated community income for Eagle during 2017 was \$2,139,843; \$1,319,079 (62%) came from wage labor and the remaining \$820,764 (38%) came from other sources (Table 4-7). The average income per household totaled \$30,569 and included an estimated \$18,844 from wages and \$11,725 from other sources. Median household income was \$27,939 with a 95% confidence interval range of \$21,178–\$36,100 (Table D4-4). This estimate is similar to the median of \$28,750 calculated by the 2013–2017 American Community Survey (ACS), although, as noted previously, the ACS and this study used different boundaries for the community. For the entire State of Alaska, ACS

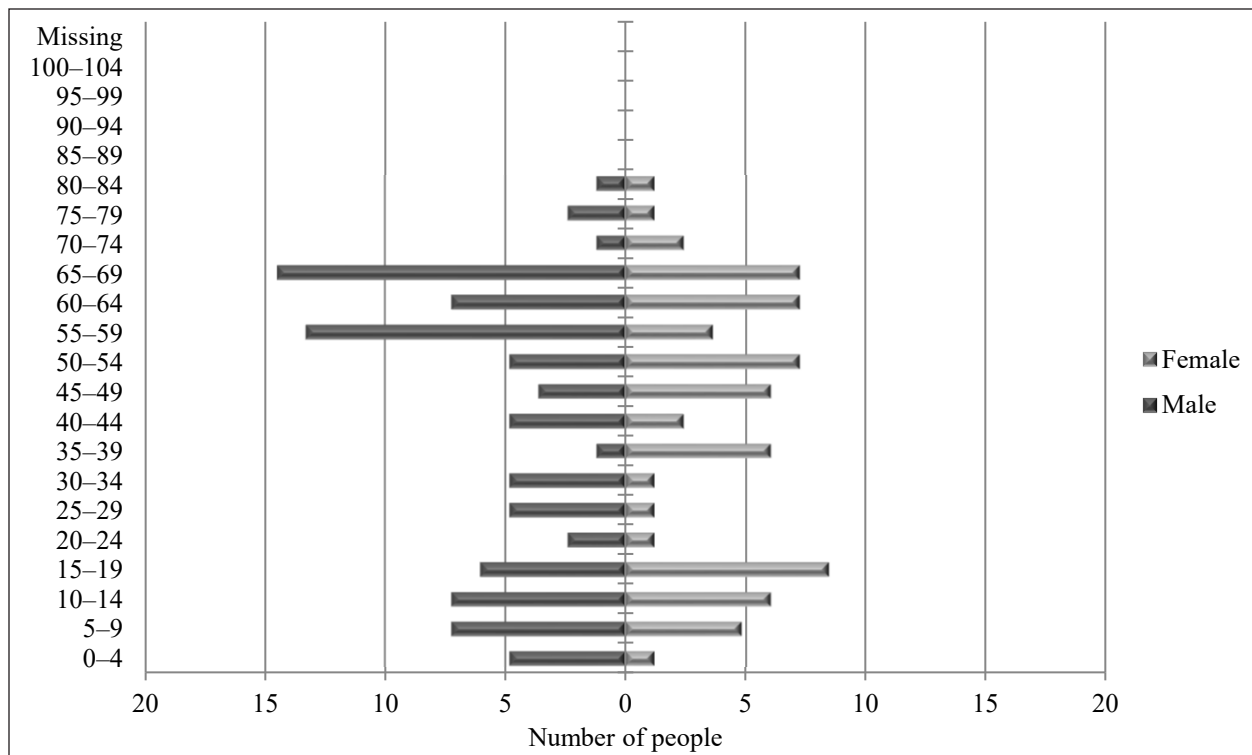


Figure 4-3.—Population profile, Eagle, 2017.

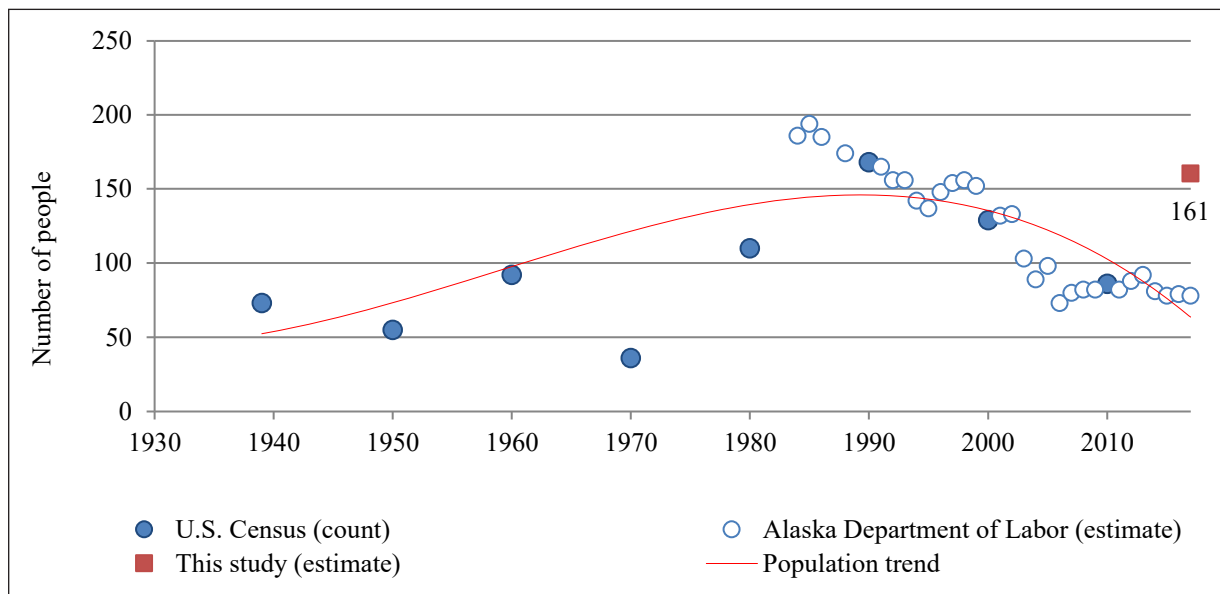


Figure 4-4.—Population estimates, Eagle, 1939–2017.

Table 4-7.—Estimated earned and other income, Eagle, 2017.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal	31.5	24.2	\$314,653	\$133,356 – \$546,612	\$4,495	14.7%
Federal government	16.4	14.8	\$298,479	\$100,366 – \$608,561	\$4,264	13.9%
Services	20.2	16.2	\$241,113	\$97,051 – \$482,674	\$3,444	11.3%
State government	5.0	5.4	\$168,695	\$35,034 – \$379,245	\$2,410	7.9%
Transportation, communication, and utilities	2.5	2.7	\$113,218	\$16,888 – \$289,201	\$1,617	5.3%
Retail trade	8.8	6.7	\$94,084	\$16,278 – \$213,416	\$1,344	4.4%
Manufacturing	6.3	5.4	\$71,401	\$16,901 – \$177,288	\$1,020	3.3%
Agriculture, forestry, and fishing	6.3	6.7	\$10,643	\$2,409 – \$24,377	\$152	0.5%
Construction	1.3	1.3	\$6,793	\$6,438 – \$13,553	\$97	0.3%
Earned income subtotal	78.1	52.5	\$1,319,079	\$929,416 – \$1,741,355	\$18,844	61.6%
Other income						
Pension / retirement		15.7	\$255,566	\$108,962 – \$462,636	\$3,651	11.9%
Social Security		24.1	\$195,795	\$99,840 – \$321,555	\$2,797	9.1%
Alaska Permanent Fund dividend		67.6	\$159,310	\$130,103 – \$189,845	\$2,276	7.4%
SNAP (Supplemental Nutrition Assistance Program)		15.7	\$75,182	\$35,700 – \$127,350	\$1,074	3.5%
Disability benefit		3.6	\$31,355	\$25,980 – \$69,517	\$448	1.5%
Veterans assistance		1.2	\$25,345	\$21,000 – \$50,690	\$362	1.2%
Supplemental Security Income		4.8	\$24,577	\$4,345 – \$57,077	\$351	1.1%
Unemployment insurance		4.8	\$12,821	\$1,134 – \$33,158	\$183	0.6%
Child support		2.4	\$9,534	\$7,900 – \$28,603	\$136	0.4%
Other		4.8	\$9,375	\$37 – \$30,000	\$134	0.4%
Heating assistance		9.7	\$8,858	\$2,377 – \$20,421	\$127	0.4%
Adult public assistance (OAA, APD)		2.4	\$8,690	\$7,200 – \$17,379	\$124	0.4%
Native corporation dividend		4.8	\$4,221	\$724 – \$9,532	\$60	0.2%
Foster care		2.4	\$133	\$110 – \$564	\$2	0.0%
TANF (Temporary assistance for needy families)		0.0	\$0	\$0 – \$0	\$0	0.0%
Longevity bonus		0.0	\$0	\$0 – \$0	\$0	0.0%
Workers compensation / insurance		0.0	\$0	\$0 – \$0	\$0	0.0%
Fuel voucher		0.0	\$0	\$0 – \$0	\$0	0.0%
Meeting honoraria		0.0	\$0	\$0 – \$0	\$0	0.0%
Other income subtotal		15.7	\$820,764	\$604,195 – \$1,084,804	\$11,725	38.4%
Community income total			\$2,139,843	\$1,753,400 – \$2,593,938	\$30,569	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

estimated the median income during 2013–2017 to be \$76,114, which is more than two and a half times the median income for the same period in Eagle.

As shown in Figure 4-5, total community income was derived from a variety of sources. Employment earnings from local government jobs supplied 15% of the community total, followed by jobs with the federal government (14%), service industry (11%), state government (8%), and jobs in the transportation, communication, and utilities sector (5%). Non-wage sources of income came from pension/retirement (12%), Social Security (9%), and the Alaska Permanent Fund dividend (7%). Table 4-8 shows the breakdown of employment by industry. In 2017, approximately 101 jobs were held by 78 individuals living in 53 households. Although individuals held one job on average, some individuals worked up to three jobs (Table D4-5). Fewer than half of employed adults worked year-round (43%), and they were employed for an average of nine months. Eagle residents held more part-time jobs (42%) than full-time ones (34%), and around 19% of jobs were on-call (Table D4-6).

Several key respondents discussed the relationship between subsistence and income. Because year-round employment is difficult to obtain in Eagle, the harvesting of subsistence resources helps to ease the financial burden of purchasing food exclusively from the local store or from Fairbanks. However, hunting and fishing also requires money and equipment. A few long-time Eagle residents recalled that when they first moved to the community with very limited financial resources, they depended on what they could harvest for food (09272018EAA8, 12092019EAA5). Sometimes this included helping others with harvesting and processing in return for a share of meat or fish. One respondent noted that once he became employed, he was able to buy better equipment, and his subsistence activities became more efficient (03262018EAA6). Now these established households try to help other households who may be in similar situations as they once were by sharing portions of their harvest or by inviting others to work with them in harvesting and processing activities.

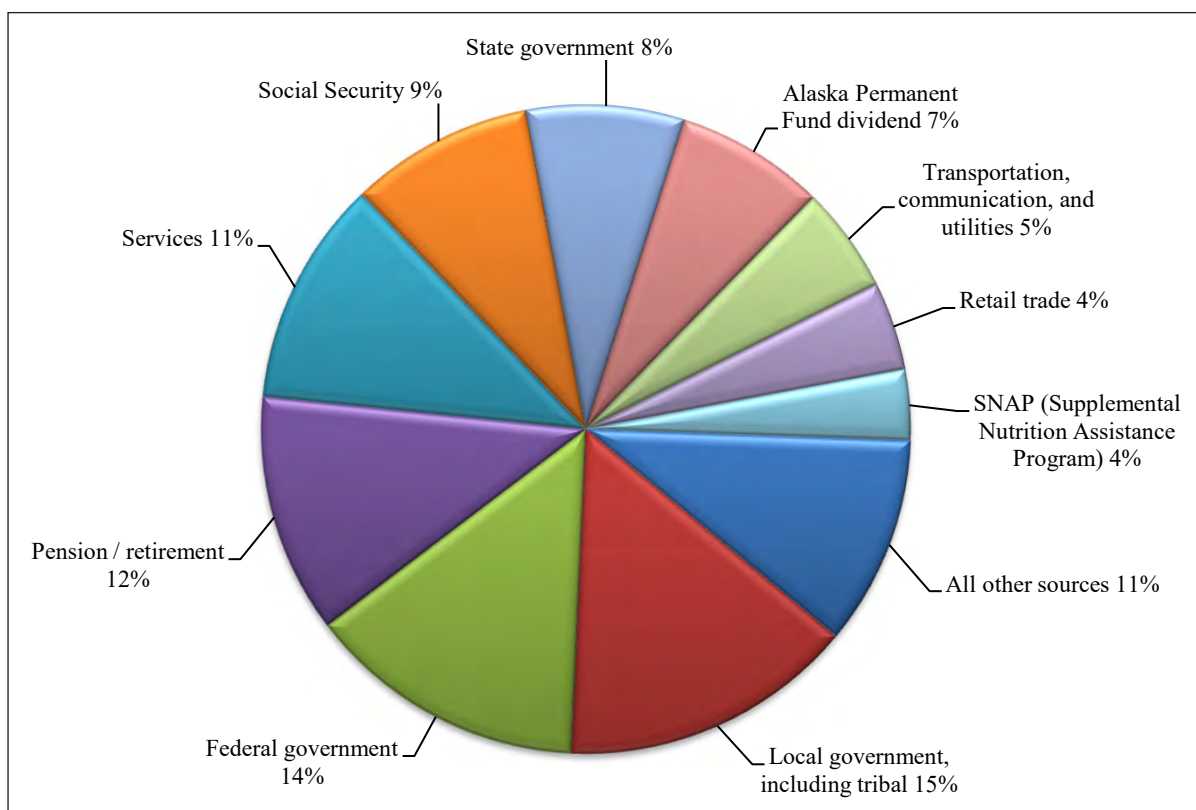


Figure 4-5.—Top income sources, Eagle, 2017.

Table 4-8.—Employment by industry, Eagle, 2017.

Industry	Jobs	Employed Households	Employed Individuals	Percentage of wage earnings
Estimated total number	100.8	52.5	78.1	
Federal government	16.3%	28.2%	21.0%	22.6%
Executive, administrative, and managerial	2.5%	5.1%	3.2%	1.0%
Teachers, librarians, and counselors	1.3%	2.6%	1.6%	1.6%
Service occupations	8.8%	15.4%	11.3%	8.6%
Mechanics and repairers	3.8%	7.7%	4.8%	11.4%
State government	5.0%	10.3%	6.5%	12.8%
Natural scientists and mathematicians	1.3%	2.6%	1.6%	2.7%
Transportation and material moving occupations	3.8%	7.7%	4.8%	10.1%
Local government, including tribal	33.8%	46.2%	40.3%	23.9%
Executive, administrative, and managerial	6.3%	10.3%	8.1%	6.7%
Social scientists, social workers, religious workers, and lawyers	1.3%	2.6%	1.6%	0.1%
Teachers, librarians, and counselors	7.5%	15.4%	9.7%	1.2%
Administrative support occupations, including clerical	2.5%	5.1%	3.2%	1.6%
Service occupations	2.5%	5.1%	3.2%	0.6%
Mechanics and repairers	5.0%	10.3%	6.5%	7.7%
Transportation and material moving occupations	1.3%	2.6%	1.6%	0.4%
Handlers, equipment cleaners, helpers, and laborers	7.5%	12.8%	9.7%	5.5%
Agriculture, forestry, and fishing	6.3%	12.8%	8.1%	0.8%
Agricultural, forestry, and fishing occupations	6.3%	12.8%	8.1%	0.8%
Construction	1.3%	2.6%	1.6%	0.5%
Construction and extractive occupations	1.3%	2.6%	1.6%	0.5%
Manufacturing	6.3%	10.3%	8.1%	5.4%
Writers, artists, entertainers, and athletes	5.0%	7.7%	6.5%	4.3%
Precision production occupations	1.3%	2.6%	1.6%	1.1%
Transportation, communication, and utilities	2.5%	5.1%	3.2%	8.6%
Mechanics and repairers	1.3%	2.6%	1.6%	4.3%
Precision production occupations	1.3%	2.6%	1.6%	4.3%
Retail trade	8.8%	12.8%	11.3%	7.1%
Marketing and sales occupations	2.5%	5.1%	3.2%	4.1%
Service occupations	3.8%	7.7%	4.8%	1.7%
Handlers, equipment cleaners, helpers, and laborers	2.5%	2.6%	3.2%	1.3%
Services	20.0%	30.8%	25.8%	18.3%
Executive, administrative, and managerial	2.5%	5.1%	3.2%	3.1%
Social scientists, social workers, religious workers, and lawyers	1.3%	2.6%	1.6%	1.3%
Health technologists and technicians	1.3%	2.6%	1.6%	6.0%
Service occupations	8.8%	12.8%	11.3%	6.1%
Mechanics and repairers	1.3%	2.6%	1.6%	0.3%
Transportation and material moving occupations	1.3%	2.6%	1.6%	0.3%
Handlers, equipment cleaners, helpers, and laborers	3.8%	5.1%	4.8%	1.2%

Source ADF&G Division of Subsistence household surveys, 2018.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

FOOD SECURITY

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were broken down further into two subcategories: high or marginal food security. Food insecure households were divided into two subcategories: low or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Food security metrics comparing food security levels in Eagle, the state of Alaska, and the United States are summarized in Figure 4-6. Results show higher levels of food security in Eagle than state or national levels. In Eagle, 2% of households experienced very low food security in 2017 and no households experienced low food insecure conditions.

Figure 4-7 shows the conditions experienced by survey respondents that led to food insecure conditions in their households. In 2017, 9% of households reported that they lacked resources to get food, 2% worried about having enough food, and 3% reported that at some point during the year their food did not last and

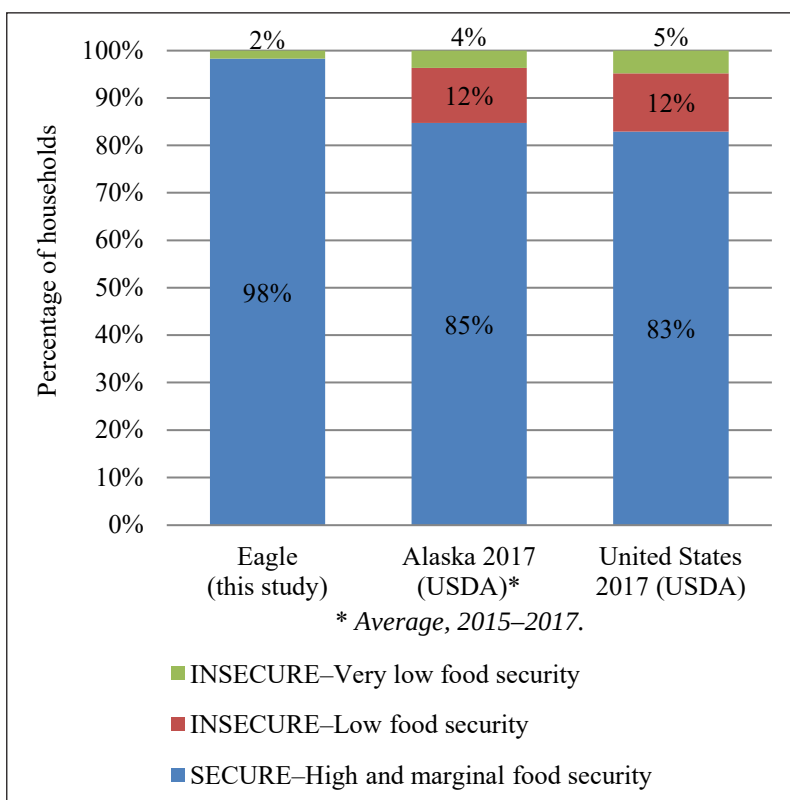


Figure 4-6.—Comparison of food security categories, Eagle, Alaska, and United States, 2017.

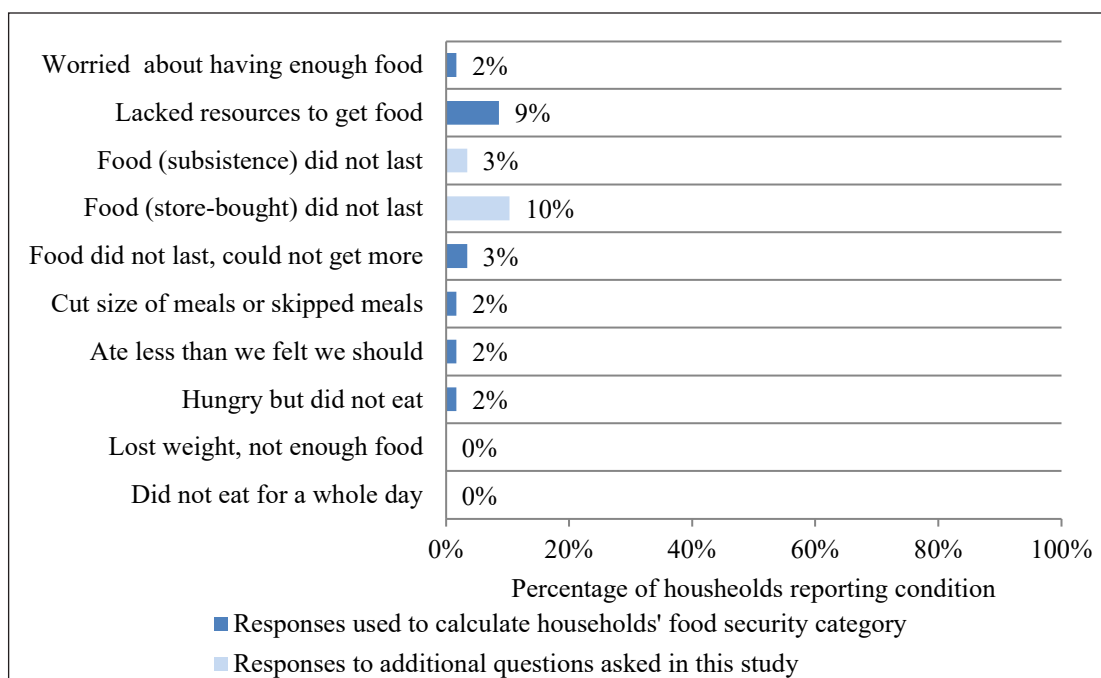


Figure 4-7.—Responses to questions about food insecure conditions, Eagle, 2017.

they could not get more. When asked whether foods not lasting applied to subsistence foods or store-bought foods, 10% of households reported that it applied to subsistence foods and 3% to store-bought food. Two percent of households reported having to skip meals or going hungry because of a lack of food.

Figure 4-8 portrays the mean number of food insecure conditions per household by food security category by month. During March and April, an average of six food insecurity conditions were reported by households characterized as very low food security. Figure 4-9 shows which months households reported foods not lasting. The percentage of households reporting subsistence food not lasting steadily increased through the winter and peaked at 7% of households in June before declining to 4% in July and 0% in August through November. This pattern is likely related to the timing of availability of resources: salmon fishing occurs in mid- to late summer, followed by moose and caribou season in fall, which makes these times of year more food secure.

During surveys and interviews, Eagle residents talked about how important harvesting wild foods is to their livelihoods. Store-bought food in Eagle is expensive, as is importing food; therefore, many households primarily rely on meat and fish they are able to harvest or that they receive from others. Several households also plant gardens in the summer and preserve vegetables for use throughout the rest of the year.

A lot of times we will have a meal where practically nothing is store-bought and that's always a good feeling. And then we will have some where everything is store-bought and then we say we shot it with our wallet! But we can't shoot everything with our wallet. (03262018EAA9)

SUMMARY OF HARVEST AND USE PATTERNS

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 4-10 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Eagle residents in 2017. Overall, 75% of people in Eagle participated in some type of hunting, fishing, trapping, or gathering of subsistence resources in 2017. Additionally, 86% of people helped to process wild foods. Participation varied by resource category: the highest percentages of people gathered and processed vegetation, and the lowest hunted and processed small land mammals. For most resource categories, slightly higher percentages of people participated in processing than harvesting. The

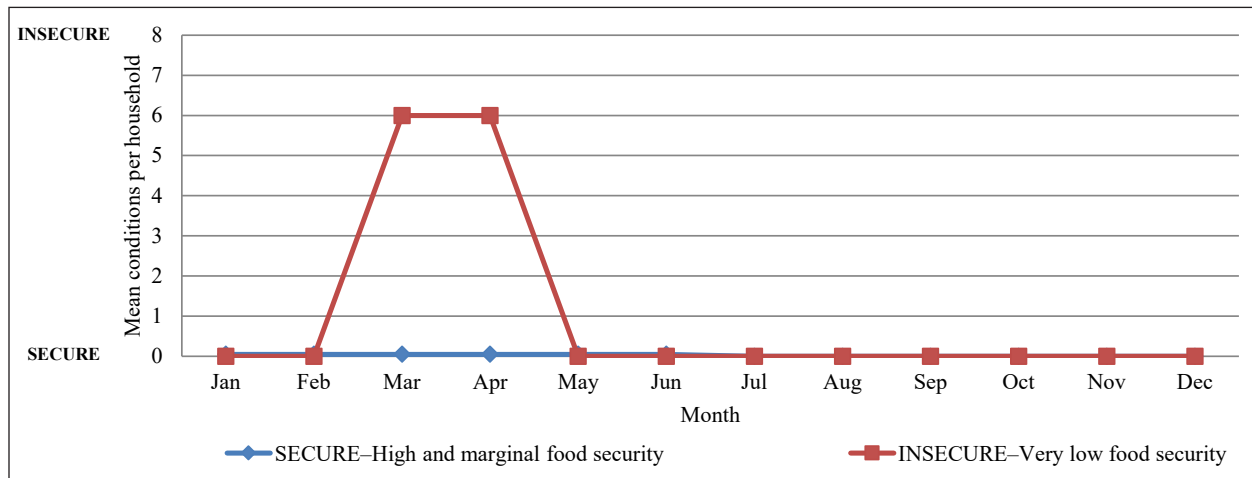


Figure 4-8.—Mean number of food insecure conditions by month and household food security category, Eagle, 2017.

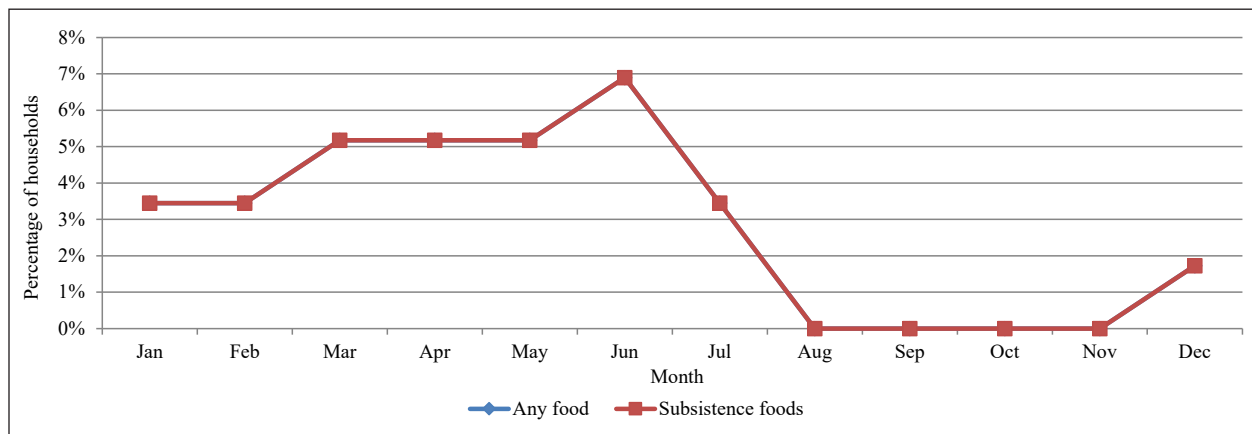


Figure 4-9.—Months when food did not last, Eagle, 2017.

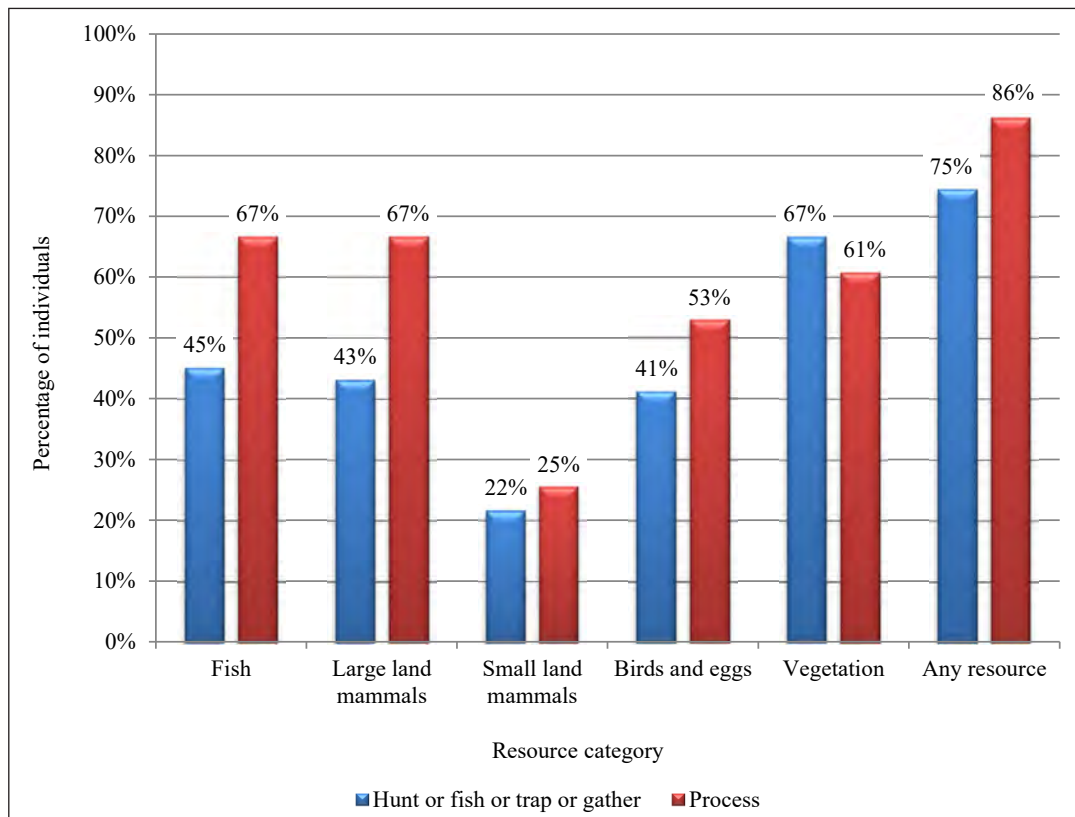


Figure 4-10.—Individual participation in subsistence harvesting and processing, by category, Eagle, 2017.

large land mammal category had the largest difference between the percentage of people harvesting (43%) and processing (67%). Vegetation was the only category for which a smaller percentage of people processed (61%) than harvested (67%).

The survey included questions about participation in craft or construction activities that involve the use of subsistence resources (Table D4-7). Seventy-five percent of individuals cooked wild foods, 27% made handicrafts, and 20% built shelters. Smaller percentages of individuals built fish wheels, dog sleds, and fish traps.

Harvest and Use of Wild Resources at the Household Level

Figure 4-11 shows by resource category the percentages of households that used wild resources, attempted to harvest, and harvested wild foods. By resource category, vegetation was used and harvested by the most households: 95% and 93%, respectively. Salmon was the second most commonly used resource type (86%), although fewer than half of households harvested salmon themselves (45%). This indicates a high level of sharing between households. The majority of households also used large land mammals (71%). This resource category also showed the largest difference between attempted harvest (59%) and successful harvest (36%). For all other resource categories, attempted harvest and successful harvests were typically only separated by a few percentage points. Nonsalmon fish and birds were used by more than half of households, and small land mammals were used by 40%. Marine mammals and marine invertebrates, which are not available locally, were used by 2% and 3% of households respectively, although no harvest or attempted harvest was reported. Differences in the percentages of households using a resource and harvesting a resource can be explained by the sharing of the resource from successfully harvesting households to other local and nonlocal households.

Table 4-3 summarizes resource harvest and use characteristics for Eagle in 2017 at the household level. The average harvest was 1,585 lb usable weight per household, but household harvest amounts ranged from no harvest to 17,981 lb. The median harvest was 90 lb. The per capita harvest was 691 lb. During the study year, community households harvested an average of 8 kinds of resources and used an average of 11 kinds of resources. The maximum number of resources used by any household was 30. In addition, households gave away an average of two kinds of resources and received an average of three from others. Overall, 129 resources were either asked about on the survey or were identified by survey respondents as used during 2017. Table D4-8 provides a complete list of the 80 resources that Eagle respondents reported using in 2017.

At the request of the National Park Service, additional survey questions asked about use of transportation and equipment for harvesting wild resources as well as natural materials for making handicrafts. Table D4-9 shows the types of transportation used by Eagle residents to access wild resources. Snowmachines were the most common type of transportation: they were used by 37 households. Other common types of transportation included boats (29 households), ATVs (27), and trucks (21). The use of trucks or other highway vehicles was not explicitly asked about on the survey, so the use of those modes of transportation is likely underrepresented. Less commonly used transportation included dogsleds (six households), and planes (one household). Most households owned their own transportation, but some borrowed it. Boats were the most commonly borrowed type of transportation, although only five households reported borrowing them. No household reported leasing or chartering transportation. The survey did not ask about resource harvesting that took place only by foot.

Other types of motorized equipment were also used for subsistence activities (Table D4-10). Forty-five households used chainsaws, 16 used winches, 14 used generators, and 5 used ice augers.

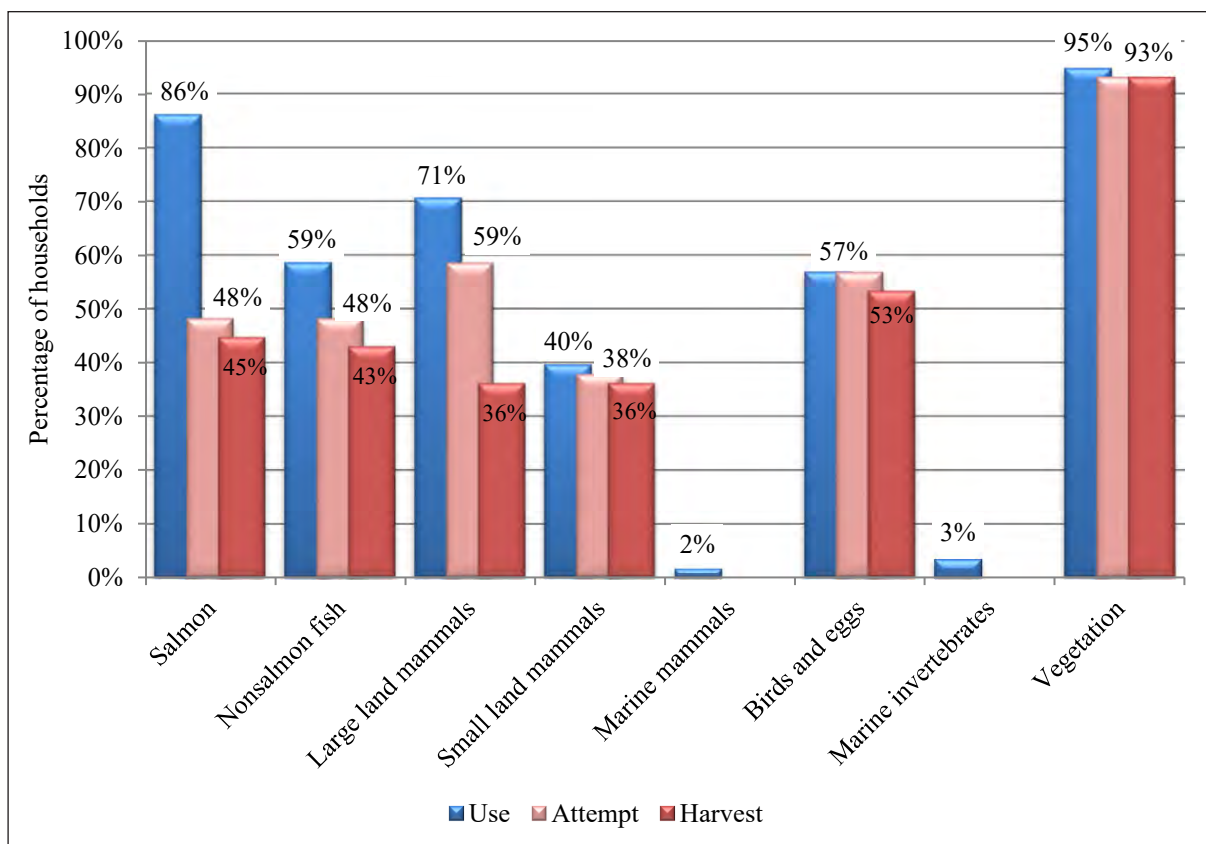


Figure 4-11.—Percentages of households using, attempting to harvest, and harvesting wild resources, by category, Eagle, 2017.

Eagle residents used a variety of natural materials for making handicrafts and art. Table D4-11 shows that 12 households used fur or hides, 10 used antlers, and 7 used bark. Other types of materials used less frequently included horns, wood, roots, and claws/feathers/hooves/teeth. The survey did not ask respondents to specify what types of crafts they produced; however, each of the five key respondent households mentioned using furs to sew hats or mittens, or to make ruffs. One key respondent has used diamond willow to make lamps and walking sticks (03272018EAA8).

SHARING OF WILD RESOURCES

Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A study of 3,265 households in 66 rural Alaska communities found that about 33% of the households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 4-12, in the 2017 study year in Eagle, 10% of households harvested 73% of the resources. One reason such a large portion of the harvest is concentrated among so few households is due to the harvest of large numbers of fall chum salmon to feed sled dogs by a small number of households. Removing fish that were harvested for dogs shows a less concentrated harvest pattern: 19% of households took 70% of the total community harvest by weight. However, harvests by weight in Eagle are still more concentrated among fewer households than Wolfe et al. (2010) found among other rural communities.

Although total harvests were specialized, 100% of residents utilized multiple types of resources (Table 4-3). This highlights the importance of sharing as a key means by which many residents obtain wild foods. Indeed, 81% of households in Eagle received wild resources from others, and 67% of households gave at

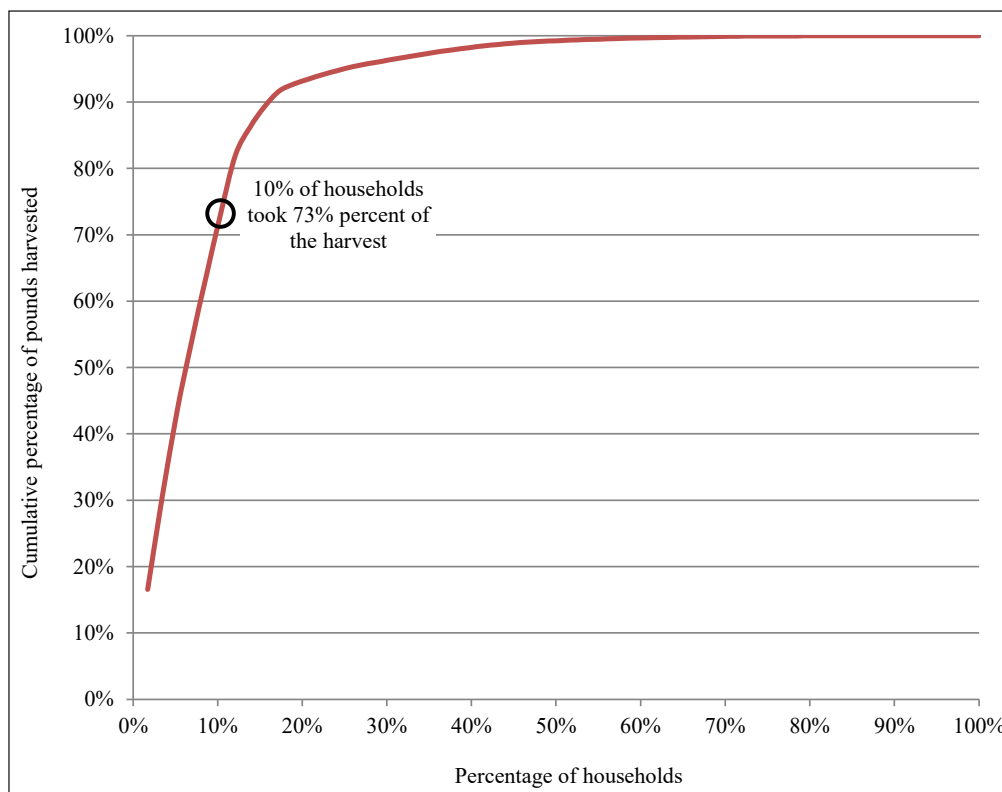


Figure 4-12.—Household specialization, Eagle, 2017.

least one resource to others. Giving and receiving are not limited to within the community, but likely also occur with friends and relatives living in other rural communities in Alaska and in urban centers such as Fairbanks. Several respondents in Eagle mentioned sharing with other households, particularly with elders in Eagle Village.

There is a lot of elderly people now that don't go hunt anymore. And they depend on younger people, other people, to share it. And they bring it to 'em and help them and harvest for them or whatever. Especially the village. I mean, the elders out there, man, those ladies absolutely love it when someone brings them ducks or caribou or moose or grouse. Yeah, it's a big deal, because that's what they grew up on, you know. That's part of their culture, sharing. (03272018EAA8)

HARVEST QUANTITIES AND COMPOSITION

Table 4-9 reports estimated wild resource harvests and uses by Eagle residents in 2017 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors¹⁴). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and nonlocal hunters. Purchased foods are not included, but resources such as firewood are included because they are an important part of the subsistence way of life.

The total subsistence harvest in Eagle during 2017 was estimated to be 110,932 lb (Table 4-9). Figure 4-13 shows the composition of the subsistence harvest in pounds usable weight by resource category. Salmon comprised the majority of the total harvest (89%), followed by large land mammals (9%). Vegetation and nonsalmon fish each made up 1% of the total.

Table 4-10 lists the top ten resources used by households in Eagle. Chinook salmon were used by 79% of households, making it the most commonly used resource. Blueberries (66%), caribou (55%), and moose (53%) were all used by more than half of households. Figure 4-14 shows the composition of the total subsistence harvest in weight per capita by specific resources. Fall chum salmon dominate the per capita harvest (83%). However, most of those fish were harvested for sled dogs. Figure 4-15 is another iteration of per capita harvests: in this figure, fish for dogs has been removed to give a better depiction of the resources used for human consumption. This revised figure shows a diversity of resources contributing to the pounds of wild food available for human consumption. Chinook salmon (29%), caribou (25%), and moose (19%) together accounted for nearly three-quarters of the total. Fall chum salmon and black bear composed smaller proportions: 9% and 4% respectively. The remaining 14% comprised small amounts of a variety of other resources. Harvests by species within each resource category will be discussed in more detail in the following sections.

HARVEST AND USE CHARACTERISTICS BY RESOURCE CATEGORY

Salmon

Salmon are a staple resource in Eagle and are utilized as food for humans and for dogs. In 2017, salmon were used by 86% of households (Table 4-9). Just under half of households attempted to harvest salmon (48%), and 45% of households harvested them. Salmon was the only resource type received by more than half of households (62%) and it was also the resource type most commonly given away to others (43%).

Figure 4-16 shows the composition of the salmon harvest in pounds usable weight by species. Only two species of salmon are abundant in this portion of the upper Yukon River: Chinook salmon and fall chum salmon. Fall chum salmon composed the vast majority of the salmon harvest (94%; Figure 4-16); Eagle fishers harvested approximately 19,493 fish or 92,003 lb of fall chum salmon (Table 4-9). The harvest and

14. Resources that are not eaten, such as firewood and some furbearers, are included in the table but are given a conversion factor of zero.

Table 4-9.—Estimated harvest and use of wild resources, Eagle, 2017.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	100.0	94.8	93.1	81.0	67.2	110,931.7	1,584.7	691.1	110,931.7 lb		1,584.7	29.3
Salmon	86.2	48.3	44.8	62.1	43.1	98,190.8	1,402.7	611.7	98,190.8 lb		1,402.7	31.9
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Fall chum salmon	48.3	29.3	29.3	25.9	15.5	92,003.3	1,314.3	573.2	19,493.1 ind		278.5	32.8
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Coho salmon	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Chinook salmon	79.3	37.9	34.5	55.2	32.8	6,021.5	86.0	37.5	828.8 ind		11.8	23.9
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sockeye salmon	5.2	3.4	3.4	1.7	1.7	166.0	2.4	1.0	38.6 ind		0.6	59.2
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown salmon	1.7	0.0	0.0	1.7	1.7	0.0	0.0	0.0	0.0 ind		0.0	0.0
Nonsalmon fish	58.6	48.3	43.1	24.1	10.3	1,303.1	18.6	8.1	1,303.1 lb		18.6	26.8
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Smelts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific halibut	8.6	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Arctic lamprey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Burbot	32.8	34.5	24.1	8.6	5.2	365.0	5.2	2.3	86.9 ind		1.2	24.2
Arctic char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Dolly Varden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lake trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Arctic grayling	39.7	32.8	31.0	10.3	5.2	217.2	3.1	1.4	241.4 ind		3.4	21.6
Northern pike	6.9	6.9	3.4	3.4	0.0	83.6	1.2	0.5	25.3 ind		0.4	68.7
Sheefish	15.5	12.1	12.1	5.2	5.2	292.1	4.2	1.8	53.1 ind		0.8	36.4
Longnose sucker	5.2	5.2	5.2	0.0	0.0	21.7	0.3	0.1	10.9 ind		0.2	48.8
Unknown trouts	3.4	3.4	3.4	0.0	1.7	15.2	0.2	0.1	7.2 ind		0.1	70.2
Broad whitefish	3.4	3.4	3.4	1.7	1.7	42.5	0.6	0.3	13.3 ind		0.2	75.6

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Table 4-8.—Page 2 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Nonsalmon fish, continued												
Bering cisco	3.4	3.4	3.4	1.7	1.7	98.0	1.4	0.6	70.0 ind		1.0	66.6
Least cisco	1.7	1.7	1.7	0.0	0.0	14.4	0.2	0.1	20.5 ind		0.3	82.9
Humpback whitefish	10.3	10.3	10.3	0.0	0.0	134.3	1.9	0.8	64.0 ind		0.9	43.7
Round whitefish	1.7	1.7	1.7	0.0	0.0	14.4	0.2	0.1	20.5 ind		0.3	82.9
Unknown whitefishes	6.9	3.4	1.7	5.2	0.0	4.8	0.1	0.0	2.4 ind		0.0	82.9
Large land mammals	70.7	58.6	36.2	46.6	27.6	9,676.9	138.2	60.3	9,676.9 lb		138.2	20.8
Black bear	20.7	24.1	8.6	12.1	8.6	603.4	8.6	3.8	7.2 ind		0.1	42.9
Brown bear	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Caribou	55.2	44.8	31.0	25.9	22.4	5,177.6	74.0	32.3	39.8 ind		0.6	19.7
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Moose	53.4	48.3	10.3	36.2	12.1	3,895.9	55.7	24.3	7.2 ind		0.1	32.3
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Small land mammals	39.7	37.9	36.2	8.6	10.3	251.9	3.6	1.6	251.9 lb		3.6	32.3
Beaver	8.6	6.9	6.9	0.0	3.4	126.7	1.8	0.8	13.3 ind		0.2	41.7
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Red fox	6.9	6.9	6.9	0.0	0.0	0.0	0.0	0.0	6.0 ind		0.1	42.9
Snowshoe hare	19.0	17.2	17.2	3.4	3.4	99.0	1.4	0.6	56.7 ind		0.8	27.7
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lynx	13.8	12.1	10.3	1.7	3.4	14.5	0.2	0.1	21.7 ind		0.3	61.4
Marmots	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Martens	29.3	31.0	29.3	3.4	1.7	0.0	0.0	0.0	643.5 ind		9.2	33.1
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Muskrat	3.4	3.4	3.4	0.0	0.0	11.8	0.2	0.1	15.7 ind		0.2	66.3
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Weasels	1.7	1.7	1.7	0.0	0.0	0.0	0.0	0.0	1.2 ind		0.0	82.9
Gray wolf	8.6	12.1	8.6	0.0	0.0	0.0	0.0	0.0	19.3 ind		0.3	58.1
Wolverine	10.3	12.1	10.3	0.0	0.0	0.0	0.0	0.0	10.9 ind		0.2	36.7

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Table 4-8.—Page 3 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine mammals	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown seal oil	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown whales	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Birds and eggs	56.9	56.9	53.4	10.3	10.3	515.7	7.4	3.2	515.7 lb		7.4	19.6
Bufflehead	1.7	1.7	1.7	0.0	0.0	0.7	0.0	0.0	1.2 ind		0.0	82.9
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Goldeneyes	1.7	1.7	1.7	0.0	0.0	1.5	0.0	0.0	1.2 ind		0.0	82.9
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Mallard	13.8	13.8	10.3	3.4	5.2	85.5	1.2	0.5	53.1 ind		0.8	36.2
Mergansers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern pintail	8.6	8.6	5.2	1.7	1.7	14.2	0.2	0.1	12.1 ind		0.2	53.1
Scaups	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Surf scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern shoveler	3.4	5.2	3.4	0.0	1.7	7.3	0.1	0.0	8.4 ind		0.1	63.4
Teals	8.6	10.3	6.9	1.7	5.2	10.8	0.2	0.1	22.9 ind		0.3	40.5
American wigeon	5.2	6.9	5.2	0.0	1.7	16.5	0.2	0.1	15.7 ind		0.2	48.2
Unknown ducks	5.2	3.4	3.4	1.7	1.7	32.4	0.5	0.2	27.8 ind		0.4	72.7
Canada goose	1.7	3.4	1.7	0.0	0.0	3.4	0.0	0.0	1.2 ind		0.0	82.9
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Cranes	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown gulls	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 4-8.—Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs, continued												
Spruce grouse	39.7	39.7	37.9	3.4	6.9	200.0	2.9	1.2	235.3	ind	3.4	19.2
Sharp-tailed grouse	5.2	10.3	5.2	0.0	1.7	16.2	0.2	0.1	15.7	ind	0.2	49.0
Ruffed grouse	27.6	29.3	25.9	3.4	3.4	78.0	1.1	0.5	91.7	ind	1.3	25.2
Unknown grouses	1.7	1.7	0.0	1.7	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigans	17.2	17.2	15.5	1.7	0.0	49.3	0.7	0.3	64.0	ind	0.9	36.0
Duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	3.4	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Butter clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Freshwater clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Dungeness crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
King crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Shrimps	3.4	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	94.8	93.1	93.1	25.9	29.3	993.3	14.2	6.2	993.3 lb		14.2	14.7
Blueberry	65.5	65.5	58.6	10.3	15.5	320.1	4.6	2.0	80.0	gal	1.1	15.0
Lowbush cranberry	31.0	41.4	31.0	3.4	5.2	122.8	1.8	0.8	30.7	gal	0.4	26.0
Highbush cranberry	24.1	24.1	24.1	1.7	3.4	152.9	2.2	1.0	38.2	gal	0.5	33.0
Crowberry	5.2	5.2	5.2	0.0	0.0	7.4	0.1	0.0	1.8	gal	0.0	60.8
Currants	1.7	1.7	1.7	0.0	0.0	0.6	0.0	0.0	0.2	gal	0.0	82.9
Cloudberry	5.2	5.2	5.2	0.0	1.7	4.2	0.1	0.0	1.1	gal	0.0	53.6
Nagoonberry	3.4	3.4	3.4	0.0	0.0	1.5	0.0	0.0	0.4	gal	0.0	68.1

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Table 4-8.—Page 5 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Vegetation, continued												
Raspberry	34.5	34.5	34.5	1.7	6.9	115.3	1.6	0.7	28.8 gal		0.4	23.3
Strawberry	27.6	27.6	27.6	0.0	0.0	54.4	0.8	0.3	13.6 gal		0.2	25.5
Wild rhubarb	6.9	6.9	6.9	0.0	1.7	4.5	0.1	0.0	4.5 gal		0.1	50.2
Wild potato	1.7	1.7	1.7	0.0	0.0	24.1	0.3	0.2	6.0 gal		0.1	82.9
Hudson's Bay (Labrador) tea	13.8	13.8	13.8	0.0	6.9	15.6	0.2	0.1	15.6 gal		0.2	37.9
Lambsquarter	8.6	8.6	8.6	0.0	3.4	21.4	0.3	0.1	21.4 gal		0.3	52.1
Dandelion greens	1.7	1.7	1.7	0.0	0.0	1.2	0.0	0.0	1.2 gal		0.0	0.0
Spruce tips	5.2	5.2	5.2	0.0	0.0	1.8	0.0	0.0	1.8 gal		0.0	58.1
Valerian	1.7	1.7	1.7	0.0	0.0	1.2	0.0	0.0	1.2 gal		0.0	0.0
Wild rose hips	13.8	13.8	13.8	3.4	3.4	52.0	0.7	0.3	13.1 gal		0.2	42.5
Yarrow	6.9	6.9	6.9	0.0	1.7	14.5	0.2	0.1	14.5 gal		0.2	69.4
Other wild greens	13.8	13.8	13.8	1.7	1.7	39.8	0.6	0.2	39.8 gal		0.6	40.2
Unknown mushrooms	12.1	12.1	12.1	1.7	0.0	3.2	0.0	0.0	3.2 gal		0.0	38.4
Fireweed	12.1	12.1	12.1	0.0	0.0	11.5	0.2	0.1	11.5 gal		0.2	40.9
Plantain	6.9	6.9	6.9	0.0	0.0	3.6	0.1	0.0	3.6 gal		0.1	39.5
Stinkweed	1.7	1.7	1.7	0.0	0.0	1.2	0.0	0.0	1.2 gal		0.0	82.9
Punk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Puffballs	1.7	1.7	1.7	0.0	1.7	1.2	0.0	0.0	1.2 gal		0.0	82.9
Chaga	10.3	10.3	8.6	1.7	3.4	7.4	0.1	0.0	7.4 gal		0.1	46.0
Mousefoods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Spruce pitch	1.7	1.7	1.7	0.0	0.0	0.0	0.0	0.0	1.2 gal		0.0	82.9
Birch sap	1.7	1.7	1.7	0.0	0.0	9.7	0.1	0.1	1.2 gal		0.0	0.0
Firewood	87.9	82.8	81.0	12.1	10.3	0.0	0.0	0.0	270.5 cord		3.9	9.1
Other wood	5.2	5.2	5.2	0.0	0.0	0.0	0.0	0.0	2.4 cord		0.0	82.9

Source ADF&G Division of Subsistence household surveys, 2018.

Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

Note For small land mammals, species that are not typically eaten show a non-zero harvest amount with a zero harvest weight. Harvest weight is not calculated for species harvested but not eaten.

Note Other wild greens includes goldenrod, rose petals, colts foot, chickweed, chamomile, bluebells, arnica, queen anne's lace, high bush cranberry bark, spruce roots, and strawberry spinnet.

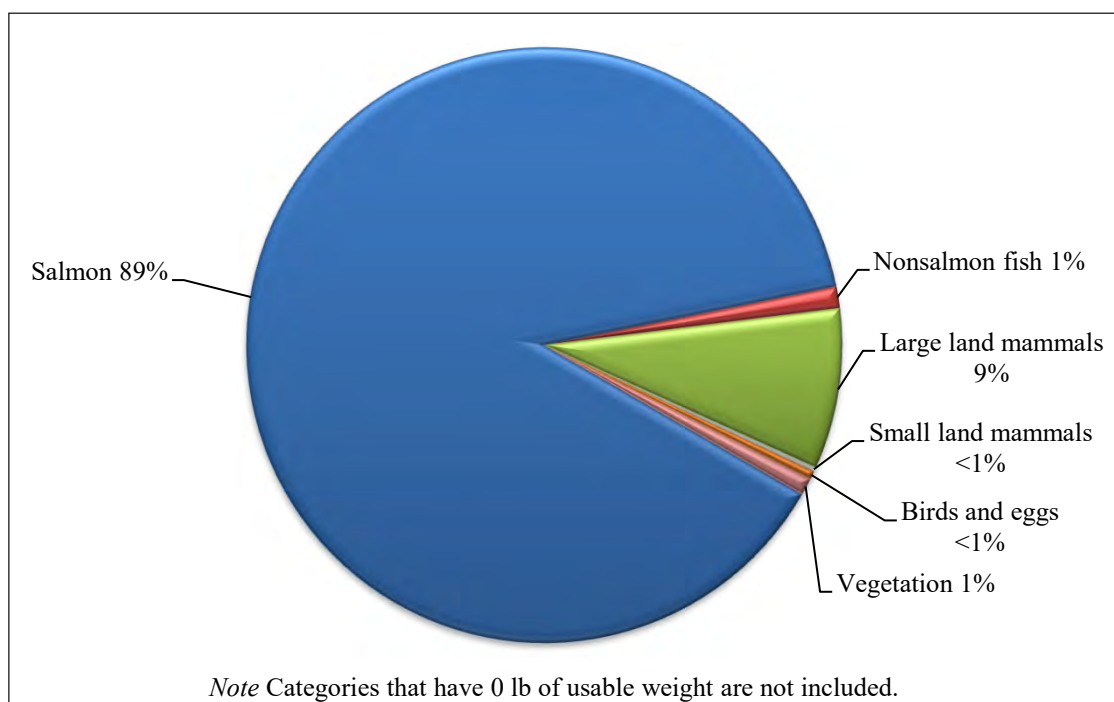


Figure 4-13.—Composition of harvest by percentage of edible weight, Eagle, 2017.

Table 4-10.—Top ranked resources used by households, Eagle, 2017.

Rank ^a	Resource	Percentage of households using
1.	Chinook salmon	79.3%
2.	Blueberry	65.5%
3.	Caribou	55.2%
4.	Moose	53.4%
5.	Fall chum salmon	48.3%
6.	Arctic grayling	39.7%
6.	Spruce grouse	39.7%
8.	Raspberry	34.5%
9.	Burbot	32.8%
10.	Lowbush cranberry	31.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Resources used by the same percentage of households share the lowest rank value instead of having sequential rank values.

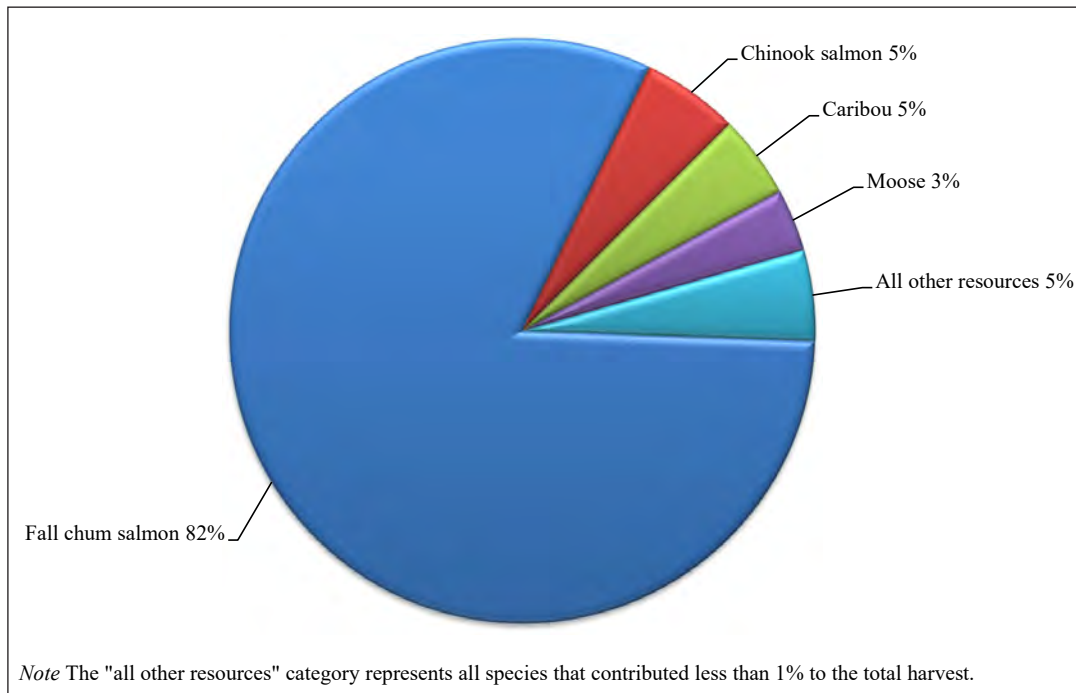


Figure 4-14.—Top resources harvested by percentage of total harvest weight, Eagle, 2017.

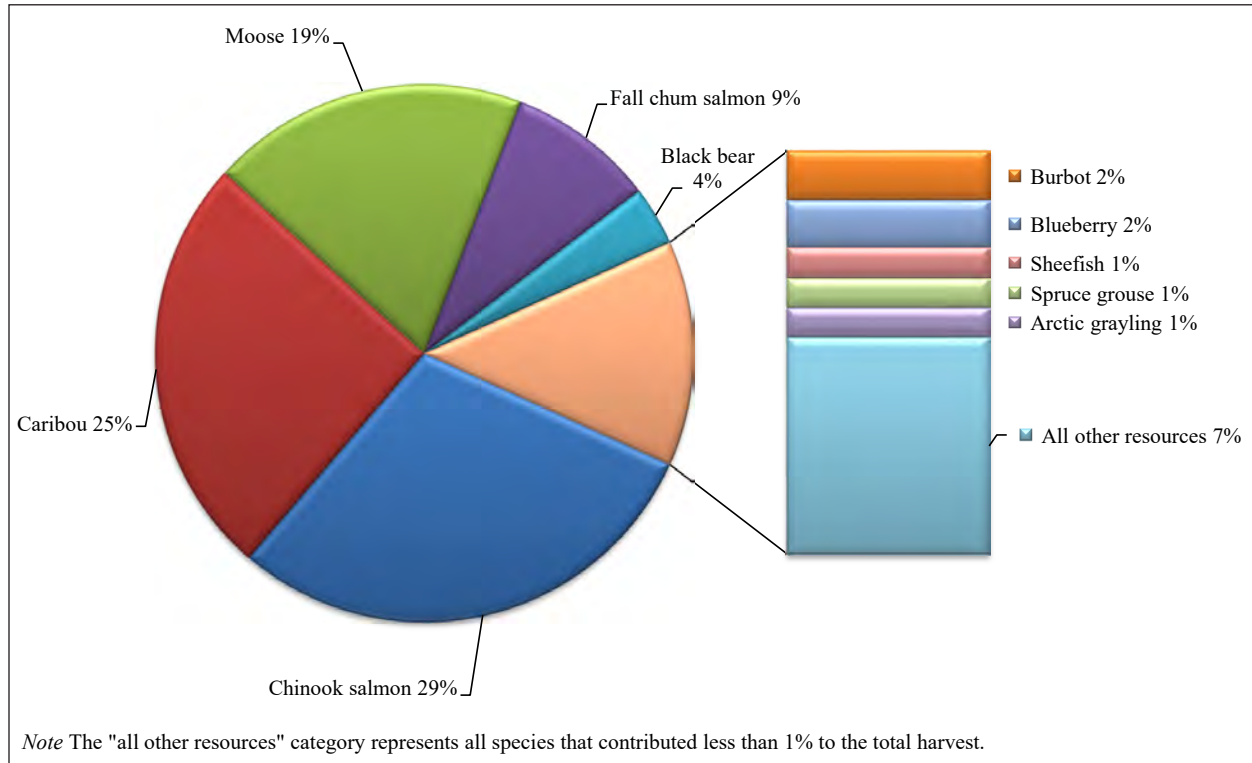


Figure 4-15.—Top resources harvested for human consumption by percentage of harvest for human consumption, Eagle, 2017.

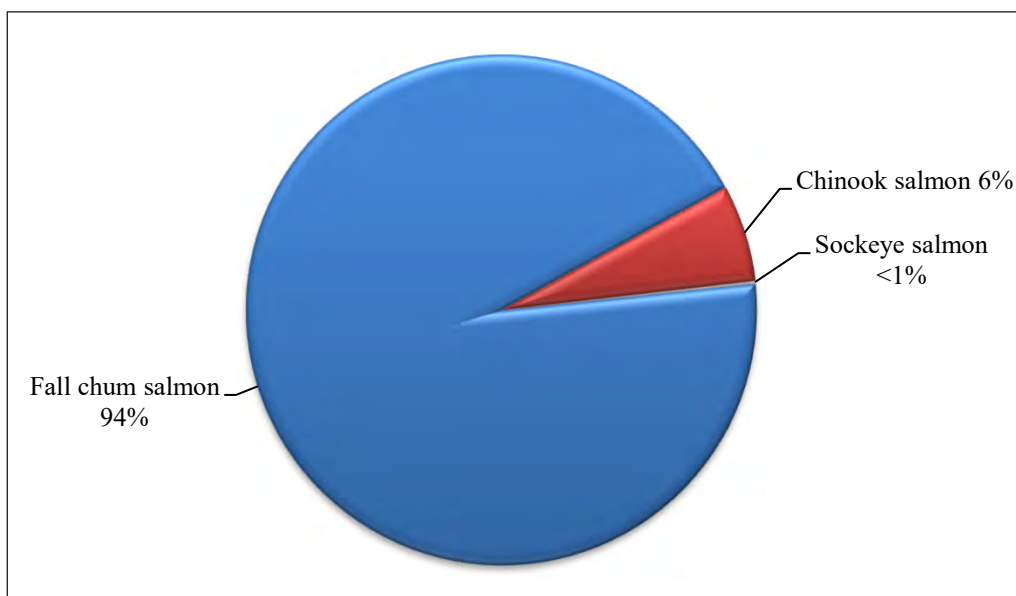


Figure 4-16.—Composition of salmon harvest by percentage of edible weight, Eagle, 2017.

use of large amounts of fall chum salmon is concentrated among a small number of households in Eagle who maintain dog teams and kennels; therefore, the per household and per capita fall chum salmon amounts in Table 4-9 should be interpreted with this fact in mind.

As shown in Table 4-11, Eagle residents harvested 19,111 fall chum salmon food for dogs, leaving just 383 fall chum salmon for human consumption. After removing fish used for dogs, the average number of fall chum salmon per household was five fish. Fall chum salmon were used by 48% of households. As several respondents noted, fall chum salmon has become an increasingly important resource for human consumption in recent years of declining Chinook salmon abundance (12092018EAA5, 03262018EAA9).¹⁵ Some households have begun to target more fall chum salmon because of fishing restrictions that have limited their harvest of Chinook salmon. Other households have chosen to target more fall chum salmon even when fishing is open for Chinook salmon in order to aid conservation efforts and rebuild the run.

Some Eagle residents are concerned that fall chum salmon could become over-exploited because of the increased reliance on these fish for human consumption:

[Respondent 1]: The fall chum are really, really key to what we do up here. Having those fall fish here is important. So, I'm concerned that if they start developing a [commercial] market and start fishing for fall chum harder on the lower river, that's really gonna affect us.

[Respondent 2]: ...So many dog teams depend on them, and so many people. For us, for instance, whenever we can't get kings, we are depending on those chums to replace that in our freezer for human consumption...So yeah, I'm also concerned that the fall chum will get hit by the commercial fishers now that they are, you know, popular. So, that was always like our fear that eventually it would become a popular commercial fishery and impact us, because of that. We don't have silvers [coho] and we don't have any other runs of things. So, this is our big run. And that's another difference between us and other places. (03262018EAA9).

15. C. L. Brown, A. Trainor, B. McDavid, J. S. Magdanz, and G. Rakhmetov. *In prep.* Patterns and Trends of Salmon Harvest and Use in the Yukon River Drainage, Alaska, 1990–2014. Alaska Department of Fish and Game Division of Subsistence, Fairbanks. Hereinafter cited as *Brown et al. In prep.*

Table 4-11.—Estimated salmon and nonsalmon fish harvests for consumption by dogs, Eagle, 2017.

Resource	Amount	Pounds
Salmon		
Fall chum salmon	19,110.5 ind	90,197.52 lb
Nonsalmon fish		
Burbot	6.0 ind	25.3 lb
Arctic grayling	19.3 ind	17.4 lb
Northern pike	20.5 ind	67.7 lb
Sheefish	14.5 ind	79.7 lb
Longnose sucker	6.0 ind	12.1 lb
Broad whitefish	4.8 ind	15.4 lb
Bering cisco	42.2 ind	59.1 lb
Least cisco	20.5 ind	14.4 lb
Humpback whitefish	38.6 ind	81.1 lb
Round whitefish	20.5 ind	14.4 lb
Unknown whitefishes	2.4 ind	4.8 lb
Total	19,306.0 ind	90,588.9 lb

Source ADF&G Division of Subsistence household surveys, 2018.

Another key respondent echoed the importance of fall chum salmon in Eagle.

King salmon give people personal, human consumption food. And that's obviously a very important thing, as you know. Up and down the Yukon River and everywhere in Alaska it's the preferred food. Doesn't mean it's absolutely necessary in our community; it's a preferred food. What's absolutely necessary in our community to keep the lifestyle, the subsistence lifestyle, the identity of Eagle, is fall chum. (12092018EAA5)

In 2017, 12 Eagle households reported harvesting fall chum salmon for dogs. Reported harvest amounts ranged from 80 to 3,400 with an average of 1,568 fish. Variation in the number of fish harvested for dogs is related to the number of dogs a household needs to feed as well as the use and availability of other food for dogs. One respondent said that as a general rule, fishers must harvest “about 150 fish per dog per year” (12032018EAA5).

When fishing for fall chum salmon for dog food, higher quality fish are often set aside and preserved for eating by people. Respondents estimated that about one out of every ten fall chum salmon are typically firm enough or of good enough quality for “eating fish” (12092018EAA5, 03262018EAA6, 03262018EAA9). However, this ratio of edible to poor quality fish can vary throughout the run and from year to year:

This year when I tracked how many [fall chum salmon] were good to eat, because they were much later, it was probably one in every 15. There's some years where I've seen three in ten are really good fish to eat. So, a lot depends on the run timing and the temperatures of the water, and those variables, yeah. But in every year, you can always find enough chum to eat. 'Cause even the lesser quality ones you can smoke 'em, and you can do other things, you can grind 'em up...It's like anything, when you live the subsistence lifestyle you figure out how to use the resource in a way that works for you. And if the resource is there you maximize it. If it's not there you find something to fill that gap for the year. (12092018EAA5)

During early fall chum salmon fishing, fish for dogs are typically split, scored, and hung to dry flesh side out (03262018EAA9). When a good quality fish is split, it may be set aside in a cooler to later process for human consumption. Some fishers have built roofs over their drying racks and storage racks so that fall rains do not spoil the fish (03262018EAA6; Plate 4-6).



Plate 4-6.—Dried fall chum salmon stored for the winter.

Although the total number of Chinook salmon harvested was much smaller than the amount of fall chum salmon, these fish were used by a higher percentage of households than any other resource (79%; Table 4-9). The total Chinook salmon harvest amounted to 829 fish or 6,022 lb. This is approximately 12 fish per household or 38 lb per capita. Chinook salmon are prized as a food fish because of their large size, high oil content, and meat that is generally firmer than chum salmon. Some survey and interview respondents noted that 2017 was a good year for Chinook salmon compared to recent years. The number of Chinook salmon needed per household also varies by the size of the fish. For example:

If we can get about 30, that seems to meet our needs. We could take more and eat them, but it seems like 30 is about right given everything else that we are harvesting because we don't want to overdo it. And if we caught 15 bigger fish, we would probably meet our need sooner, but those, 30 of those little medium, or small ones. (03262018EAA9)

Chinook salmon are typically prepared first by filleting, and then they are either frozen or cut into smaller pieces to be brined, smoked, and jarred (03262018EAA7, 03272018EAA8, 03262018EAA9). Occasionally people might cut fish into strips, then smoke and dry them. A key respondent described how her family smokes Chinook salmon after brining it for about four hours:

People have preferences, but we prefer alder. It has a kind of a bittersweet taste that's really good. And you just leave the bark on, kind of in little sections, and feed your smoker. And that hot smoke kind of cooks the fish partly, it's partly cooked. By the time it's done, after about another four hours or whatever, it's bright orange. Kind of has that delicious smoky flavor and you can almost eat it like that... Then it goes into the canning jar like that. And that, we usually try to make like, oh, eight

cases of these, pints or quart jars that my mom prepares. So then we share that fish. It's super nutritious, it's fast. Because, like on a day where you don't have dinner prepared, you can just take two jars and make fish patties or eat it with biscuits. So, it's very easy to use. It's also kind of our emergency food that we take along, because when you are really hungry or you just need energy, the fish somehow has that fat that just gives that to you. (03262018EAA9)

This respondent went on to explain that they use all the leftover parts of the Chinook salmon, such as the head, guts, and backbone, for their sled dogs or as fertilizer in their garden.

There was very little use of other species of salmon by Eagle residents. Five percent of households used sockeye salmon, and 3% harvested an estimated 39 fish (166 lb). Sockeye salmon are not available locally, and residents must travel to other areas of the state to harvest them. No households harvested coho salmon, but 2% of households received some from others. A key respondent commented that they very rarely see coho salmon in Eagle unless "if you are fishing until October, you may pick up a few" (03262018EAA9).

Fish wheels were used to harvest 93% of salmon in Eagle, including 92% (101,918 lb) of fall chum and 73% (4,417 lb) of Chinook salmon (Table D4-12; Table 4-12; Figure 4-17). Some households share a fish wheel in partnership with other households, and others operate them on their own. Fish wheels are commonly used by households fishing for fall chum salmon for dogs because they are efficient at catching large amounts of fish. Gillnets were also used to harvest salmon, although in smaller quantities. Eight percent of fall chum salmon and 27% of Chinook salmon were harvested using set gillnets. Sockeye salmon were exclusively harvested using dip nets, and 18 fall chum salmon were also harvested with dip nets. One key respondent mentioned dip netting fall chum salmon since they swim close to the riverbank (03272018EAA8). However, he said the use of dipnets is more common in Eagle Village than in Eagle.

One respondent discussed the timing of salmon fishing:

For us the chum and king are separate in time. So, for some communities, kings and chums are coming up together. For us, kings are in July. Chums are distinctly in August and September...a lot of our fall time activity in the community kind of revolves around chum. (12092018EAA5)

Figure 4-18 depicts the areas where Eagle residents fished for salmon in 2017. Salmon fishing took place at various locations along the Yukon River. Several fishing locations were concentrated near the community, and others were dispersed downriver both inside and outside of the Preserve boundaries. Some fishers, especially newer residents, have difficulties finding a productive fishing location because the number of eddies is limited, and most of the bigger eddies are claimed by long-time fishing households (03272018EAA8). However, many established fishing families will happily share the use of their fish wheel or give away fish to those in need. For example, one respondent described how this can be mutually beneficial for him and others:

Later this spring I'll be, you know, "You want to fish this year, don't you?", you know. "Yeah, yeah, yeah, we need more." So you get people kind of lined up ahead of time that are gonna want some fish. Because there is just times where I can't deal with it [because of work]. Yeah, I'm either gonna shut [the fish wheel] down. But I don't mind letting it fish, if someone else will commit to it. So that works good. (032620118EAA6)

He encourages any households who use his wheel or whom he gives fish to have their own permit so that individual household use is more accurately reported to ADF&G, but if they do not have a permit then he will report the fish that others caught on his household's permit.

Respondents generally described a good Chinook salmon set net fishing site as a large eddy (03272018EAA8, 03262018EAA9).

Table 4-12.—Estimated salmon harvests by gear type, Eagle, 2017.

Resource	Subsistence methods															
	Removed from commercial catch		Subsistence gear,										Rod and reel		Any method	
			Dip net		Gillnet or seine		Fish wheel		Other method		any method					
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	0.0	0.0	56.7	251.4	1,690.9	8,542.8	22,201.7	106,335.0	0.0	0.0	23,949.3	115,129.3	0.0	0.0	23,949.3	115,129.3
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fall chum salmon	0.0	0.0	18.1	85.4	1,470.0	6,938.1	21,593.8	101,918.2	0.0	0.0	23,081.9	108,941.8	0.0	0.0	23,081.9	108,941.8
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coho salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chinook salmon	0.0	0.0	0.0	0.0	220.9	1,604.7	607.9	4,416.8	0.0	0.0	828.8	6,021.5	0.0	0.0	828.8	6,021.5
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sockeye salmon	0.0	0.0	38.6	166.0	0.0	0.0	0.0	0.0	0.0	0.0	38.6	166.0	0.0	0.0	38.6	166.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: ADF&G Division of Subsistence household surveys, 2018.

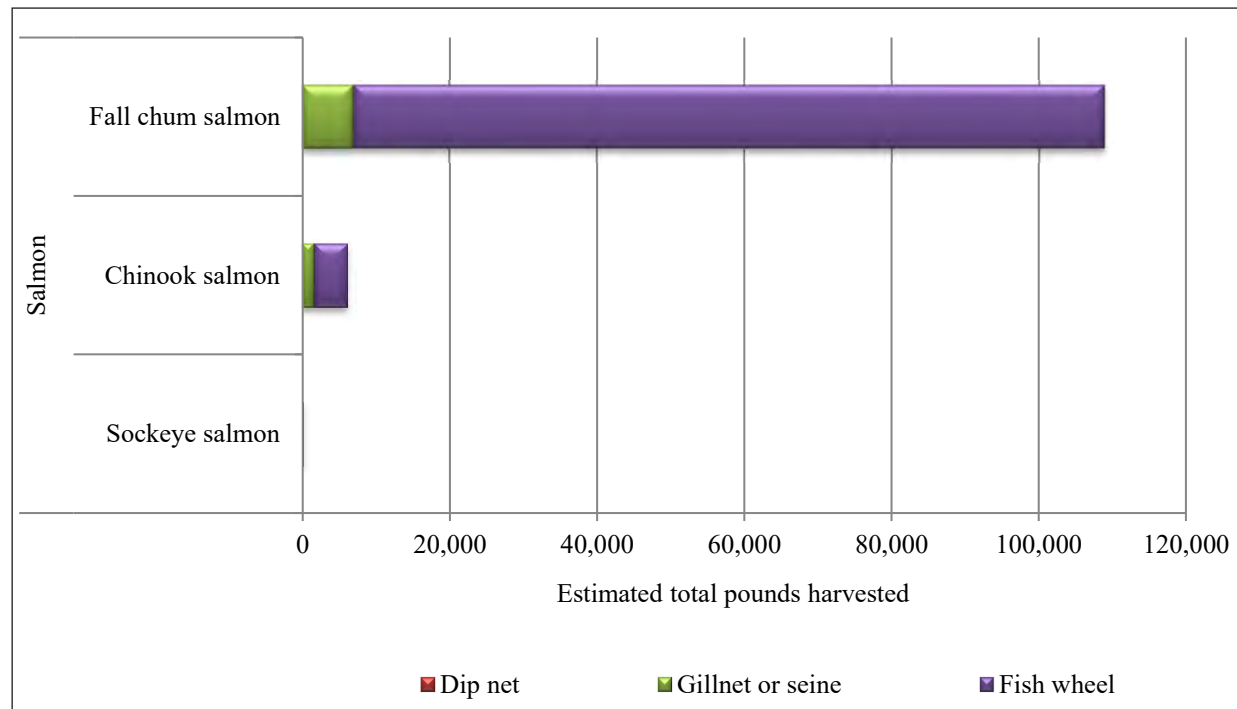


Figure 4-17.—Estimated salmon harvests by gear type in edible pounds, Eagle, 2017.

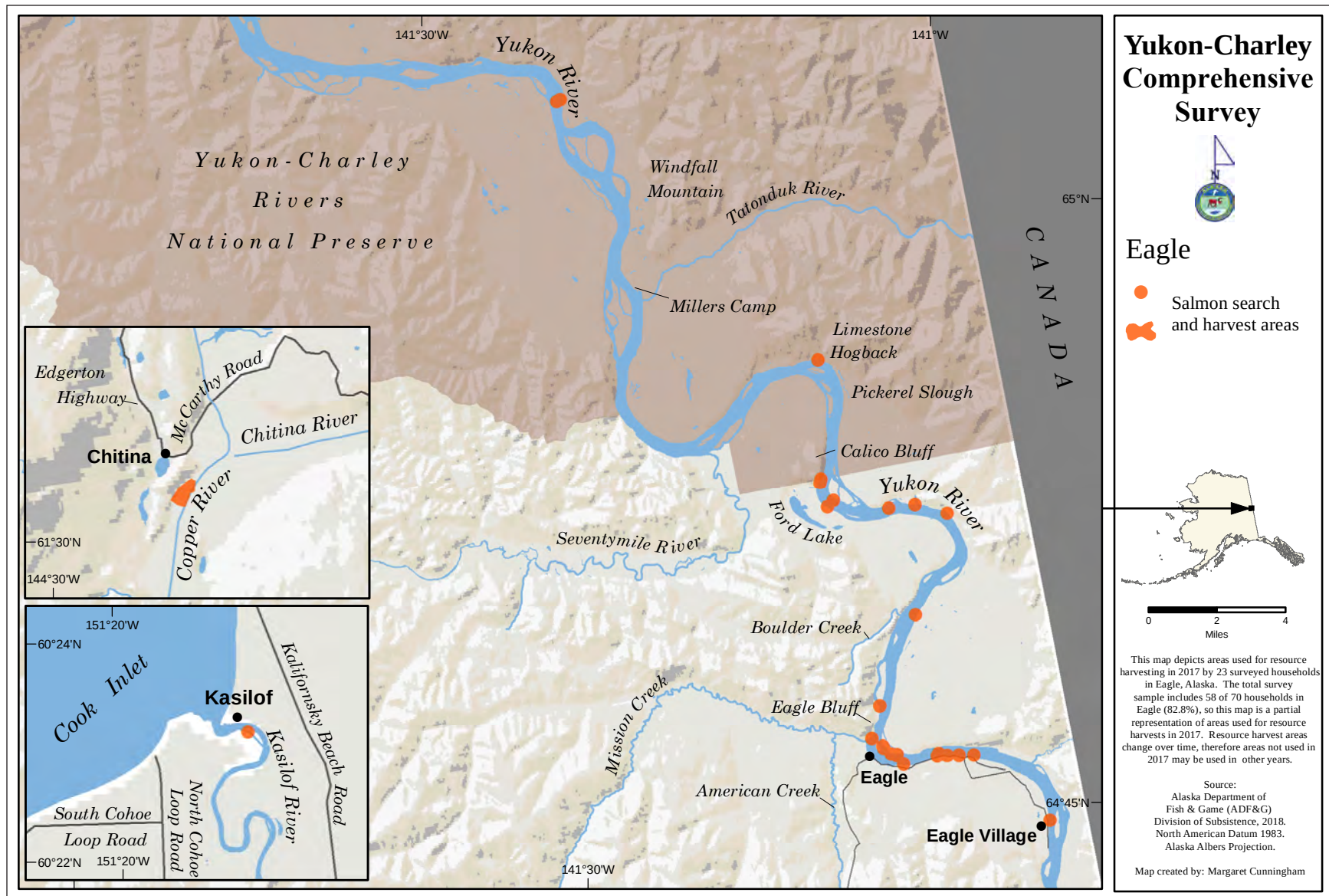


Figure 4-18.—Salmon fishing areas, Eagle, 2017.

You are gonna find your eddies anywhere that there is a bluff, like Eagle Bluff, or Simon's Bluff, or Calico Bluff. There is usually a big eddy up here, across from the village, Malcom's Eddy. You are looking for like, it's like a little swirl in the water. I'm sure you have seen it before. And for the kings, those eddies around the bluffs are really good. Because kings are stronger fish and they can hold in those areas, so if you want those bigger kings, you need to set in one of those bigger eddies...The one spot that we kinda found that works good for us, it's like a little micro eddy. And...you can see where the swirl in the water, and then there is the main current. And right where those two meet it's called, I call it a seam. And you can see, you can see where the two are meeting, and that's where you want that cork line to be, right in that seam. (03262018EAA9)

This respondent's family chooses to fish smaller eddies with a six-inch net, even when larger mesh sizes are allowed, to allow the larger Chinook salmon to pass on to the spawning grounds.

Nonsalmon Fish

In 2017, Eagle residents harvested at least 11 species of nonsalmon fish (Table 4-9). The total nonsalmon fish harvest amounted to approximately 1,303 lb total or 19 lb per household. Although nonsalmon fish were used by 59% of households in the community, no one species was used by more than 40% of households. Arctic grayling was most commonly used (40% of households), followed by burbot (33%), sheefish (16%), and humpback whitefish (10%). Figure 4-19 depicts the nonsalmon harvest composition by weight and species. Burbot contributed 28% of the harvest by weight (365 lb), sheefish contributed 22% (292 lb), and grayling made up 17% (217 lb; Table 4-9; Figure 4-19). Although grayling harvest was smaller than burbot and sheefish in terms of weight, the total number of grayling caught was greater than either species: 241 fish compared to 87 burbot and 53 sheefish. At least eight other species of nonsalmon fish were harvested. Although no Pacific halibut were harvested by Eagle households, 7% of households received halibut from others.¹⁶

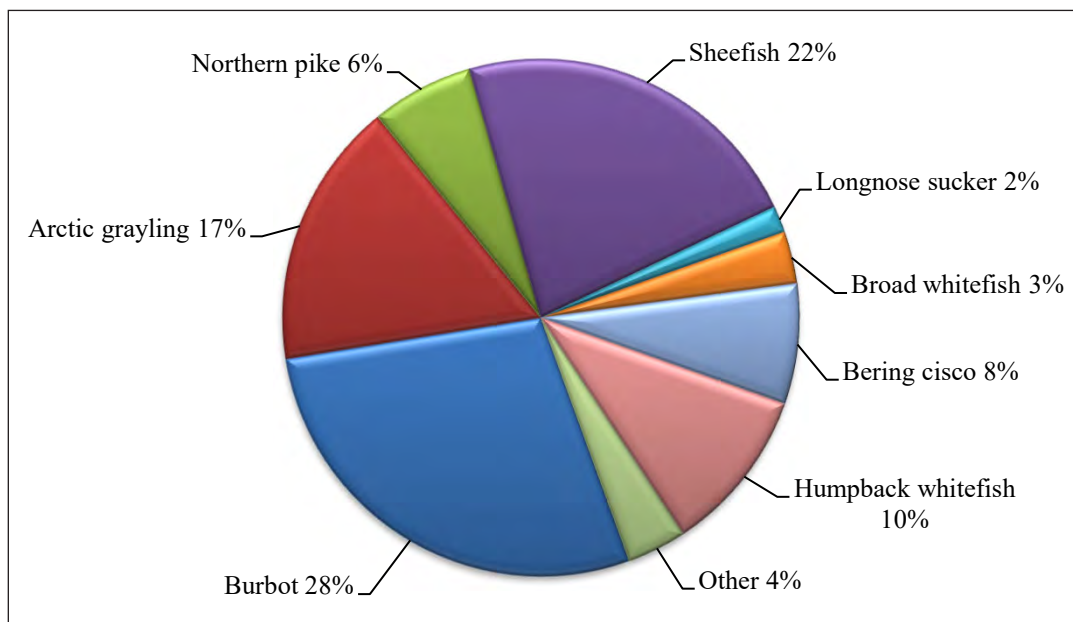


Figure 4-19.—Composition of nonsalmon fish harvest by percentage of edible weight, Eagle, 2017.

16. A greater percentage of households used halibut than received it because at least one respondent continued to use halibut left over from 2016.

Five households reported feeding nonsalmon fish to dogs. Eagle households used 30% (391 lb) of the nonsalmon fish harvest to feed dogs Table 4-11. All least cisco and round whitefish were used for dogs, along with most pike. About half of the Bering cisco and humpback whitefish were also used for dogs.

An estimated total of 533 lb of nonsalmon fish was harvested using rod and reel, 432 lb with fish wheels, 232 lb with gillnets, and 106 lb with longlines (Table 4-13). As estimated in total pounds of fish, 41% of the nonsalmon fish harvest was caught using rod and reel, 33% with fish wheels, 18% with gill nets, and 8% with longlines (Table D4-13). Figure 4-20 is a visual representation of the nonsalmon fish harvest weight by gear type and species. Some households put out four-inch nonsalmon nets to harvest these fish for themselves or for their dogs prior to salmon runs arriving, especially if their salmon supply from the previous year is running low (12092018EAA5). Incidental catch of nonsalmon fish in fish wheels and larger sheefish and whitefishes in gillnets when fishing for salmon is also common. Most grayling, all trouts, and some burbot and sheefish were caught using rod and reel (Table 4-13; Figure 4-20). Burbot were also caught using longlines. Several respondents characterized nonsalmon fishing as “sport fishing:” something fun to do in the late spring and early summer when grayling begin to migrate up tributaries; some respondents occasionally ice fish on the Yukon River in the winter for burbot and sheefish (03262018EAA6, 03262018EAA7, 03272018EAA8).

Figure 4-21 shows locations where Eagle residents fished for nonsalmon fishes; many of the locations along the Yukon River are similar or identical to those used for salmon fishing locations. Nonsalmon fishing also occurred in creeks and lakes along the Taylor and Edgerton highways. Respondents specifically mentioned that at the base of Eagle Bluff in Mission Creek is a popular local spot for grayling fishing as is Alder Creek on the Taylor Highway approximately 40 miles south of Eagle (03262018EAA7, 03272018EAA8).

Large Land Mammals

In 2017, the total large land mammal harvest amounted to 9,677 lb; the average household harvest was 138 lb, and the per capita harvest was 60 lb (Table 4-9). After salmon, large land mammals contributed the second greatest amount by weight to the overall subsistence harvest. If only considering wild foods harvested for human consumption, large land mammals accounted for a larger portion of the harvest by weight than salmon (48% of the total; tables 4-9 and 4-11). The large land mammal harvest comprised 54% caribou, 40% moose, and 6% black bear by weight (Figure 4-22). Caribou and moose were both used by over half of households in Eagle, and black bear was used by 21% (Table 4-9). Successful harvest rates were lower for large land mammals than for other resource types. A greater percentage of households received large land mammals (47%) than harvested them (36%).

During 2017, Eagle residents harvested an estimated 40 caribou, equating to 5,178 lb or 74 lb per household (Table 4-9). Forty-five percent of households attempted to harvest caribou, and 31% were successful. Around a quarter of households gave away caribou meat and another quarter received it from others. One respondent characterized the importance of caribou to local residents:

Second to salmon, caribou are probably the most consumed red meat. People get moose, but I don’t hear of a lot of people getting moose consistently. But when the caribou are in the region, everybody’s eating caribou. So it’s probably the second most important natural resource feeding people in Eagle. (12092018EAA5)

Overall, Eagle hunters took 22 caribou bulls and 16 cows (Table D4-14). The sex of the caribou hunted depends on the season: “If we are going in the fall season, usually it’s bulls because it’s before rut. However, in the November season we went only for females because of the rut. We didn’t want to end up with bad meat” (03262018EAA7). This respondent mentioned that their family was able to harvest three caribou. “We always try if we can, if we get any possible extra, we try to give some away to others.”

Caribou hunting took place during August through December, although one animal was harvested in March. The most caribou were harvested in November (19 animals) and December (10 animals). In the fall of 2017, many Eagle residents were unable to harvest the caribou they needed because not many caribou were in

Table 4-13.—Estimated nonsalmon fish harvests by gear type, Eagle, 2017.

Resource	Units	Subsistence methods																	
		Removed from commercial catch		Fish wheel		Gillnet or seine		Ice fishing		Longline/skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds
Nonsalmon fish			0.0		431.5		232.1		0.0		106.4		0.0		770.1		533.1		1,303.1
Pacific herring	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smelts	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific halibut	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic lamprey	lb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	ind	0.0	0.0	4.8	20.3	6.0	25.3	0.0	0.0	25.3	106.4	0.0	0.0	36.2	152.1	50.7	212.9	86.9	365.0
Arctic char	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lake trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	ind	0.0	0.0	27.8	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8	25.0	213.6	192.3	241.4	217.2
Northern pike	ind	0.0	0.0	0.0	0.0	20.5	67.7	0.0	0.0	0.0	0.0	0.0	0.0	20.5	67.7	4.8	15.9	25.3	83.6
Sheefish	ind	0.0	0.0	21.7	119.5	19.3	106.2	0.0	0.0	0.0	0.0	0.0	0.0	41.0	225.7	12.1	66.4	53.1	292.1
Longnose sucker	ind	0.0	0.0	6.0	12.1	4.8	9.7	0.0	0.0	0.0	0.0	0.0	0.0	10.9	21.7	0.0	0.0	10.9	21.7
Unknown trouts	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	15.2	7.2	15.2
Broad whitefish	ind	0.0	0.0	6.0	19.3	7.2	23.2	0.0	0.0	0.0	0.0	0.0	0.0	13.3	42.5	0.0	0.0	13.3	42.5
Bering cisco	ind	0.0	0.0	70.0	98.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.0	98.0	0.0	0.0	70.0	98.0
Least cisco	ind	0.0	0.0	20.5	14.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	14.4	0.0	0.0	20.5	14.4
Humpback whitefish	ind	0.0	0.0	49.5	103.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.5	103.9	14.5	30.4	64.0	134.3
Round whitefish	ind	0.0	0.0	20.5	14.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	14.4	0.0	0.0	20.5	14.4
Unknown whitefishes	ind	0.0	0.0	2.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.8	0.0	0.0	2.4	4.8

Source ADF&G Division of Subsistence household surveys, 2018.

a. The harvested number of each resource is measured by the unit in which the resource harvest information was collected; the unit of measurement is provided for each resource.

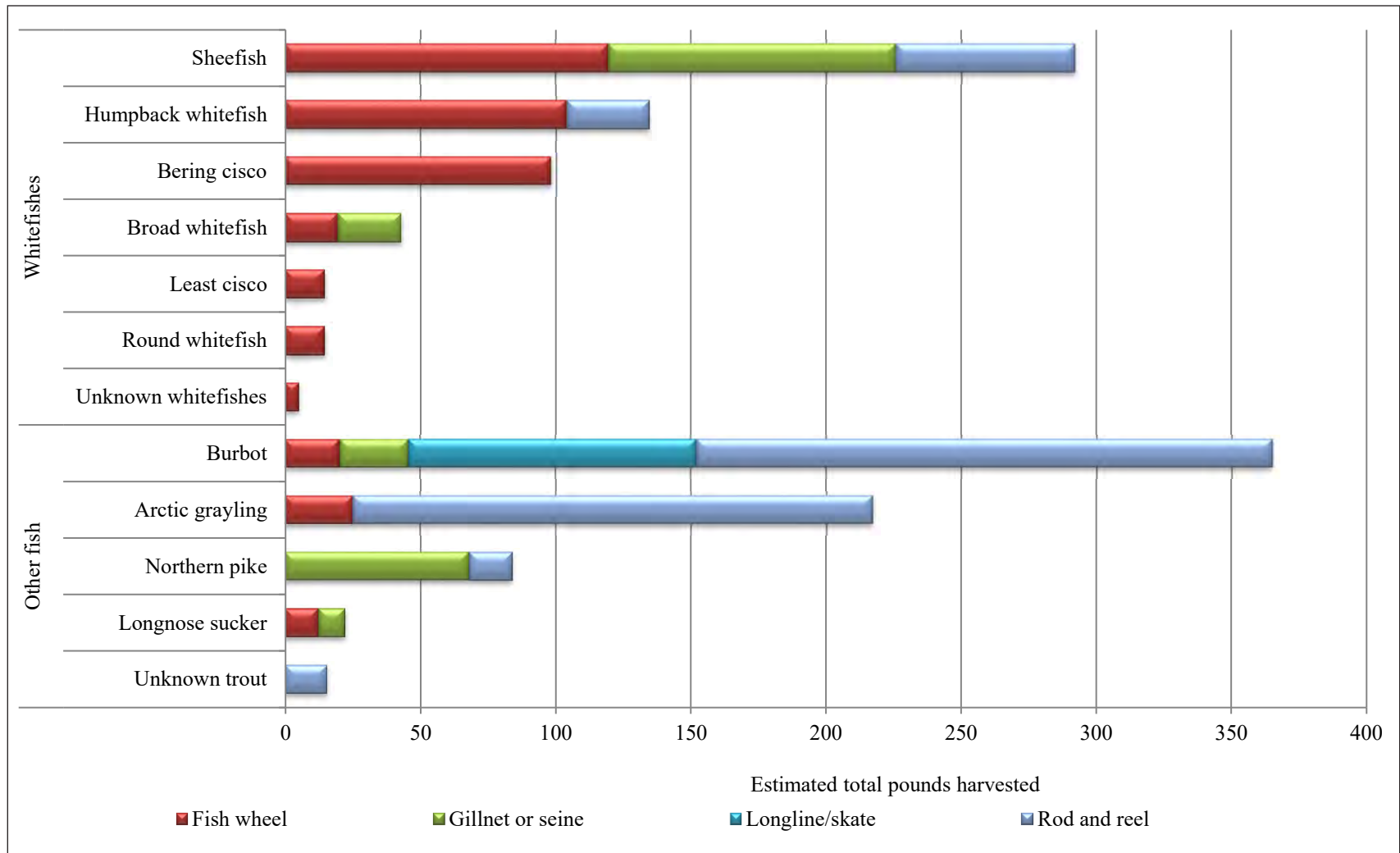


Figure 4-20.—Estimated nonsalmon fish harvests by gear type in edible pounds, Eagle, 2017.

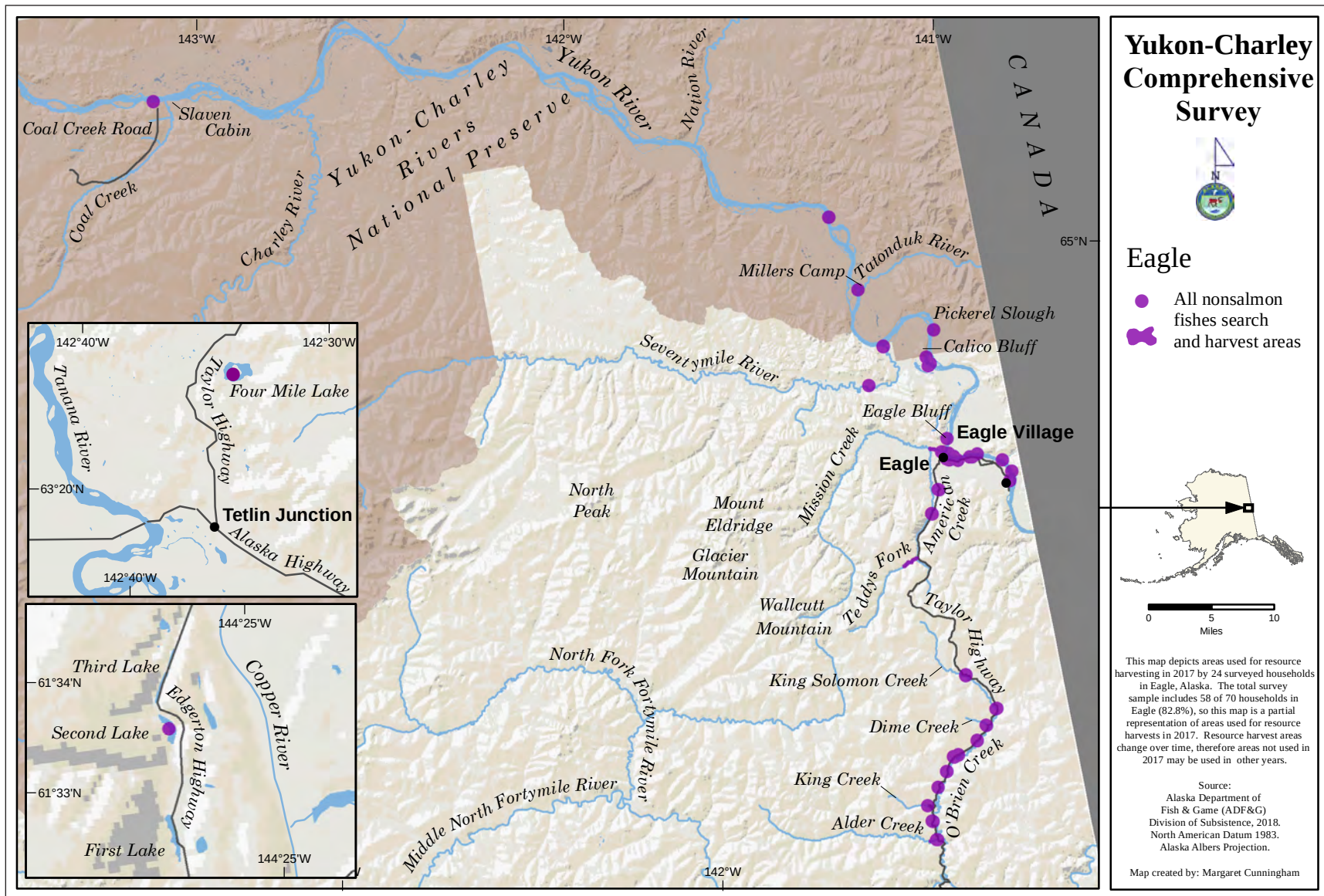


Figure 4-21.—Nonsalmon fishing areas, Eagle, 2017.

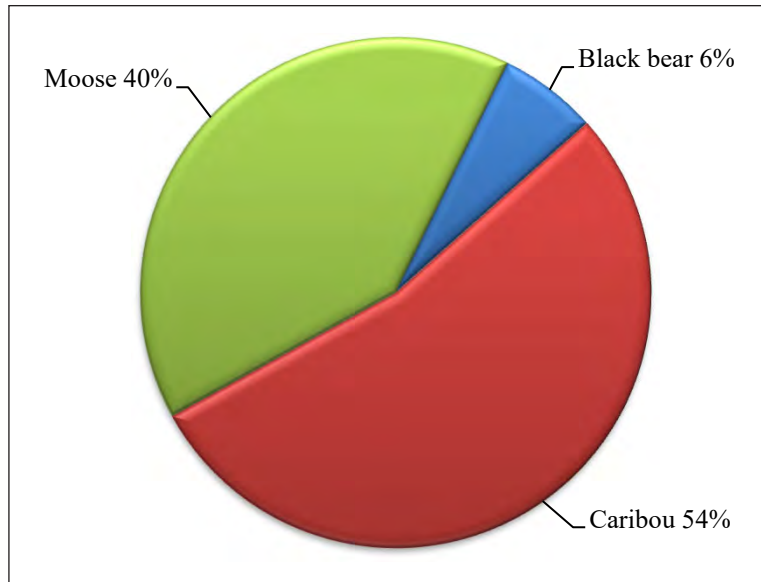


Figure 4-22.—Composition of large land mammal harvest by percentage of edible weight, Eagle, 2017.

the area when the hunt was open in Zone 3.¹⁷ Residents requested that an additional opening be provided. In November, a three-day hunt was opened by Emergency Order that provided locals another chance to harvest caribou before the winter hunt (ADF&G 2017).

That's actually come into play two or three times since that was put into the plan. And it's been a godsend to the people of Eagle, especially the village people, Native Village of Eagle. So it was done by Isaac Juneby and that was really good forethought with that. And it was really good that the Fortymile Coalition accepted that, because it's a pretty low impact on the caribou but it is a huge positive impact for the community of Eagle. Those are the kind of management things that when we can fine tune a program and meet the needs of a community, you know something small like that, that's not going to be a heavy harvest, it's meaningful. That's a tremendous success of management. (12092018EAA5)

The Fortymile Caribou Harvest Management Plan allows managers to open a short, late fall hunt as an additional opportunity for subsistence needs to be met (Harvest Management Coalition 2012). Because the Taylor Highway is often closed by late fall when there is snow on the ground, access is mostly limited to locals who can enter the region by snowmachine.

In addition to the extra opportunity to hunt in November 2017, Eagle residents were able to hunt caribou close to Eagle in December. The caribou migrated through Eagle at that time and provided a rare chance to hunt them close to the community. Historically, caribou used to migrate close to town more commonly. A large wildfire in the 2000s on American Summit burned a lot of the lichen that caribou rely on for food, and they avoided the area for some time (03272018EAA8). Since the herd has rebounded from record low numbers in the 1970s (Harvest Management Coalition 2012), locals are hopeful that seeing caribou close to town will become common once again. One respondent remarked about the herd:

The Fortymile herd has made an amazing recovery. I think we're at a point, my personal feeling is we're at a point where they're ready to expand. They're at the point where they are overgrazing the areas where they have been living in. And there's a lot of concern about 'em crashing again. My feeling is what they're doing is they're going to expand out. It's taking that stress to force them to move out of

17. Survey notes, March 2018.

the areas and go in wintering grounds. And I think that's why we're seeing them in Eagle again crossing the river at Eagle, Calico Bluff, Tatonduk region. They're going back to their original ranges which was the upper Ogilvie Mountain range in Canada. And so I think we need to be patient. I'm hearing a lot of concerns from our biologists that they're going to crash. I don't necessarily agree with that. I think this is a natural way that the animals expand. They have to go through stress for food sources, and for calving, and then they'll branch out...So, I'm pretty confident that if we're patient on our side and we don't start the harvest too greatly, they'll continue to expand to the Yukon Territory. And maybe once that happens then I think we have a chance at really growing the herd to a much larger extent. I think they'll develop new summer ranges. And that's what's being depleted right now is their summer ranges, their calving ranges are really depleted because lichen takes so long to grow. They decimated the lichen, and so they're stressing out over food, and that's probably why we're not getting good calf survival. I think the biggest folly we have as humans is, we put everything on our terms of time. And we don't realize that our timeline is very small compared to what most nature and things happen, let it be salmon, or moose, or caribou. (12092018EAA5)

Although caribou migration close to town creates more convenient hunting opportunity, one respondent said that means locals also have to be more vigilant about wolves that follow the caribou into the area (03262018EAA7). When wolves linger around the community, residents worry about potential attacks on both humans and dogs.

Caribou hunting opportunity exists in both fall and winter, but many Eagle respondents expressed a preference to harvest them in the fall time before the season gets extremely cold and dark. Nevertheless, some Eagle residents still choose to wait until the winter hunt in order to avoid crowds on the Taylor Highway. Other residents who do hunt in the regular fall season choose to do so in the "walk-in only" hunt within the Glacier Mountain Controlled Use Area even though hunting there requires more effort; they also do this to avoid crowds (03262018EAA7, 03272018EAA8, 03262018EAA9). Crowding along the Taylor Highway will be described more in later sections. One respondent noted the importance of the federal subsistence hunt for caribou that gives local residents more of a chance to harvest them, noting that the state hunt can often be very short if caribou are in the area (03272018EAA8). Another respondent said that he prefers to hunt in the winter for other reasons.

When I came into the country, I learned to hunt caribou in the winter. So, it's just natural for me to not even think about hunting caribou in August or early September because I was always a winter harvester. I didn't have refrigeration. (12092018EAA5)

Slightly more households hunted moose than did caribou, but fewer were successful: only 10% of households killed a moose (Table 4-9). However, 36% of households reported receiving moose from others. Eagle hunters harvested an estimated total of seven moose, all of which were bulls harvested in September (Table D4-14). Some respondents noted that they have previously tried to hunt moose in the winter season but have rarely been successful because moose do not move around much in the cold (03272018EAA8). Also, "they don't respond to a call because it's after rut" (03262018EAA6).

At least one Eagle resident characterized the 2017 moose harvest as low: "There was very few people that got moose last year" (03262018EAA7). Regarding the moose population, two respondents noted that the moose density in the area has always been low because the habitat is naturally limiting (12092018EAA5, 03272018EAA8). The competition with hunters coming in from other areas of the state to moose hunt along the Taylor Highway and the Yukon River combined with the naturally low density makes moose hunting difficult: "On the river anymore it's combat hunting. And on the road it's combat hunting" (03262018EAA7).

One respondent has had the best luck hunting later in the moose season after most nonlocal hunters have left. He often hunts downriver in the Preserve where the federal subsistence season is five days longer than the state season.

It quiets it down down there, and then the moose kind of settle down, and then you can, I have called them in. And it seems like if you don't have a lot of people pounding the river, and they are, I have been out calling before, and had I'm pretty sure a moose, I've had this happen twice, moose coming in to my call, and people on the river either would get it, or scare them off. (03262018EAA9)

Moose and caribou meat are prepared in a variety of ways, including smoking, drying, freezing, or canning. One respondent described how her household preserves moose and caribou meat and how everyone works together to process it:

I have done dried meat, but mostly I freeze it. If for some reason, which very seldom ever happens, I still have meat in the freezer and we've got more meat to put in, I will can some up. But that doesn't happen really often. So, primarily I freeze it. We do a lot of burger. I will take some of it and do it in really thin pieces and we'll do like Mongolian moose with it, or I do some in cubes for doing either stew meat, or we like just to cook that like in a pressure cooker and then pull it apart just with like barbecue sauce on it. I mean anything that generally you would use red meat for, I use the moose and caribou instead...My job is, I wait at home, and as soon as the animals are here, and then I am in charge of the actual butchering part...We all have our specific parts of it. So, somebody is usually deboning. Somebody else is washing the meat. Somebody else is cleaning up like all the sinew and stuff off of it and whatever, and deciding if it's gonna be cut up to grind, or if it's gonna be able to be cut up for like the Mongolian moose, or if it's gonna be a roast or if anything is good for steaks. And then somebody is grinding, somebody is packaging... Any leftovers from, you know, the butchering out usually comes generally before trapping season, and so then the guys save all of that, and they use it as baits for trapping season. (03262018EAA7)

She said that it usually takes an entire week to process a moose, including quartering it and hanging it for a few days, and then working on it in the evenings as a family. For caribou, it "doesn't take nearly as long, but of course you don't nearly get the meat off of it either."

Eagle residents harvested an estimated seven black bears harvested from April through August (Table D4-14), and all but one was used for food (Figure 4-23). This harvest amounted to approximately 603 edible pounds or 9 lb per household. Twenty-four percent of households reported hunting for black bear, but only 9% were successful. Brown bear was used by 2% of households, but the meat was received from others and no one from Eagle reported hunting them in 2017. Key respondents described varying preferences for when to hunt black bear. For example, some considered the meat to taste best in the spring after breakup (03262018EAA6), but others preferred to target them in the fall after the bears have been eating berries (03272018EAA8). Still others harvest black bear opportunistically if the chance arises and they are in need of the meat (03262018EAA9).

One respondent described bear hunting:

It's kind of stop and stalk. So, you boat on the river and you glass the southern hill sides. And the bears will be there in the, like the aspens and like the pussy willows, But before the leaves come out, you can actually see, you know, oh, this big black shiny thing in, in the leafless trees that are just trying to bud. And so then you pull-up on the shore and sneak up on them. So, so that's pretty fun. Of course, coming off of winter, it feels pretty good out. We are toughened up from the winter, so, man, boating on the river when it's forty degrees and, you know, it's like, "Oh, wow, this is great, let's go bear hunting," you know. If you see a bear in

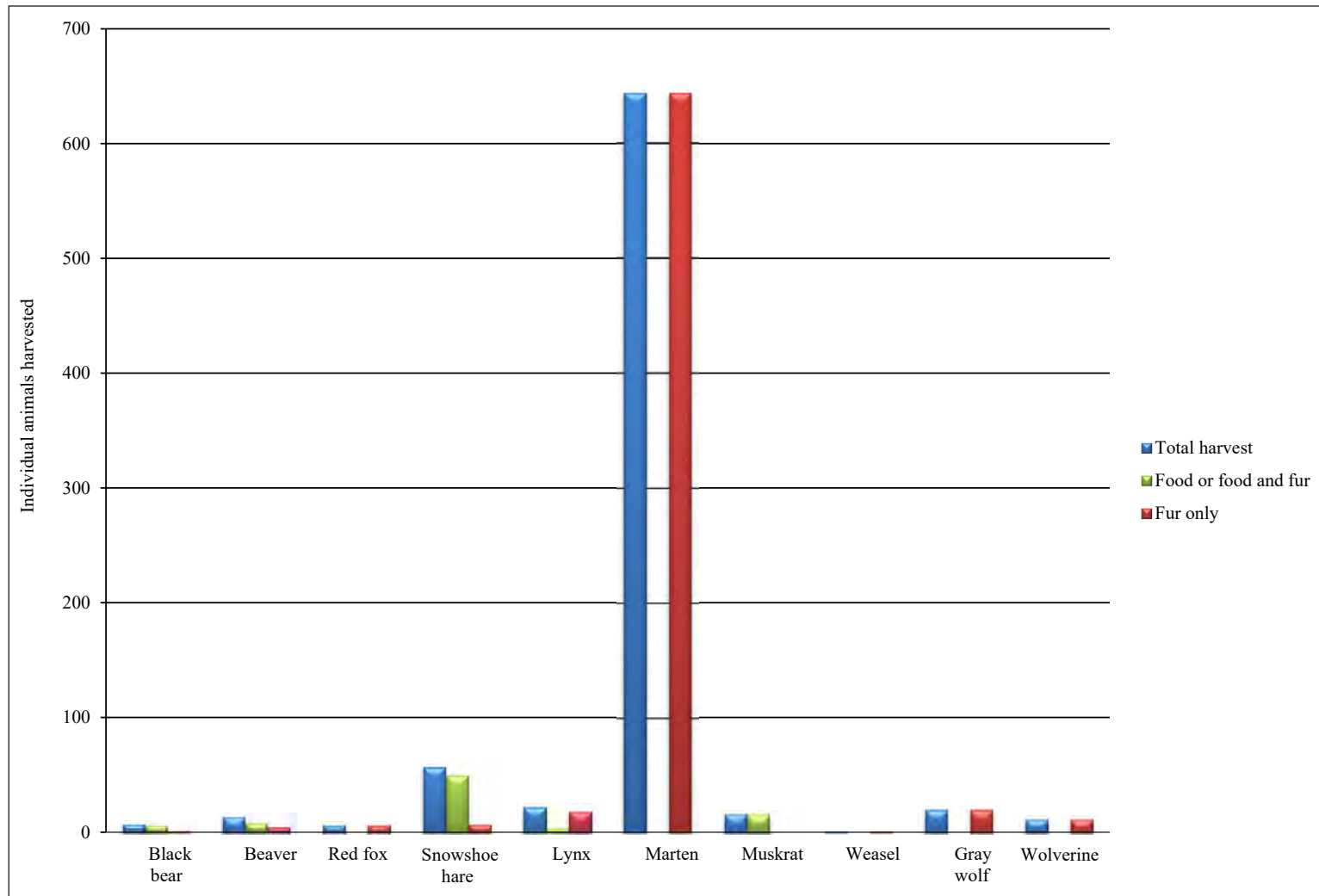


Figure 4-23.—Estimated land mammal harvests for food or fur, Eagle, 2017.

the summer, yeah, I've shot summer bear and fall bear. But that's less, "Oh, we are going bear hunting." That's more in the spring, nothing else is happening. "Man, let's go on the river." (03262018EAA5)

Some Eagle residents set up bear baiting stations to hunt bears. One household expressed concerns about bear baiting practices:

It has been a safety issue because we have had people baiting bears on the trails that we are walking on and our kids are walking on. It's really dangerous because you get some people who will drive not very far out of town, they think they are out in the wilderness...And also it just habituates the bears in the area to people. (03262018EAA9)

Two respondents mentioned that they have tried bear baiting in the past during the springtime, but they do not continue to use this method to harvest bears (03262018EAA6, 03272018EAA8). One of these respondents said that he would go downriver to make sure he was a safe distance from town; however, he said traveling back and forth to check the bait station was tiring and so he ultimately abandoned the practice (03262018EAA6).

Black bear meat is prepared in a variety of ways, like moose and caribou. "Just like all the rest of our meat, we cube about 50%, and then we make roast of probably 25%, and then the other 25% is ground meat. Black bear is also the best for sausage, like grinding it and making sausage" (03262018EAA9). Sometimes people also preserve bear fat. "I have rendered it down. It's good, bear grease. Put it in jars and then you can, like if you have dry caribou or dry moose meat, dip in there" (03272018EAA8).

No Dall sheep were harvested or used by Eagle residents in 2017. Eagle hunters do occasionally hunt Dall sheep, but to do so requires a two to three day walk into the Glacier Mountain area (03272018EAA8, 03262018EAA9). Sometimes sheep are present on Eagle Bluff or in the mountain across the river from town, but typically residents leave these animals alone and simply enjoy viewing them (03262018EAA7).

Figure 4-24 shows the areas where Eagle residents hunted for large land mammals during the 2017 study year. The areas used for large land mammal hunting contain a myriad of lands under management by state, federal, and Native entities, and hunting regulations vary between them. Large land mammal hunting primarily took place in GMU 20E; however, some hunting was done in the southern portion of GMU 25B. Many of the search and harvest areas for moose, caribou, and black bear were in similar locations and included the length of the Taylor Highway from Eagle to Chicken and the Yukon River from Eagle into Yukon-Charley Rivers National Preserve. One respondent characterized the highway as a more popular location of hunting large land mammals. "Most of the people in Eagle are road hunters. There aren't that many that really hunt the river" (12092018EAA5). For moose and caribou, hunters searched in wider areas than for black bear. This included several miles on either side of the Yukon River both inside and outside of the Preserve and on either side of the Taylor Highway within approximately 20 miles of town. Much of the hunting off the highway occurred on the west side in the eastern portion of the Glacier Mountain Controlled Use Area, which is restricted to nonmotorized hunting during the fall. Moose and black bear were also hunted in the Seventymile River drainage.

Small Land Mammals/Furbearers

Small land mammals were used least frequently compared to other locally available resource categories (Figure 4-12). An estimated 40% of households used small mammals and 36% harvested them (Table 4-9). Small land mammals are harvested for both their food and fur and can be either hunted, snared, or trapped. Figure 4-23 shows the total number of each of the furbearing species that were harvested and also shows how much of each harvest was used as food and fur. Four species of small land mammals provided 252 lb of wild food to Eagle residents in 2017; 50% of the edible harvest came from beaver (127 lb), 39% from snowshoe hare (99 lb), 6% from lynx (15 lb), and 5% from muskrat (12 lb; Table 4-9; Figure 4-25).

By far, marten were harvested in the largest quantity: 644 marten were trapped during the 2017 study year, and all were used for their fur (Table 4-9; Figure 4-23). Study respondents reported that they sell marten furs

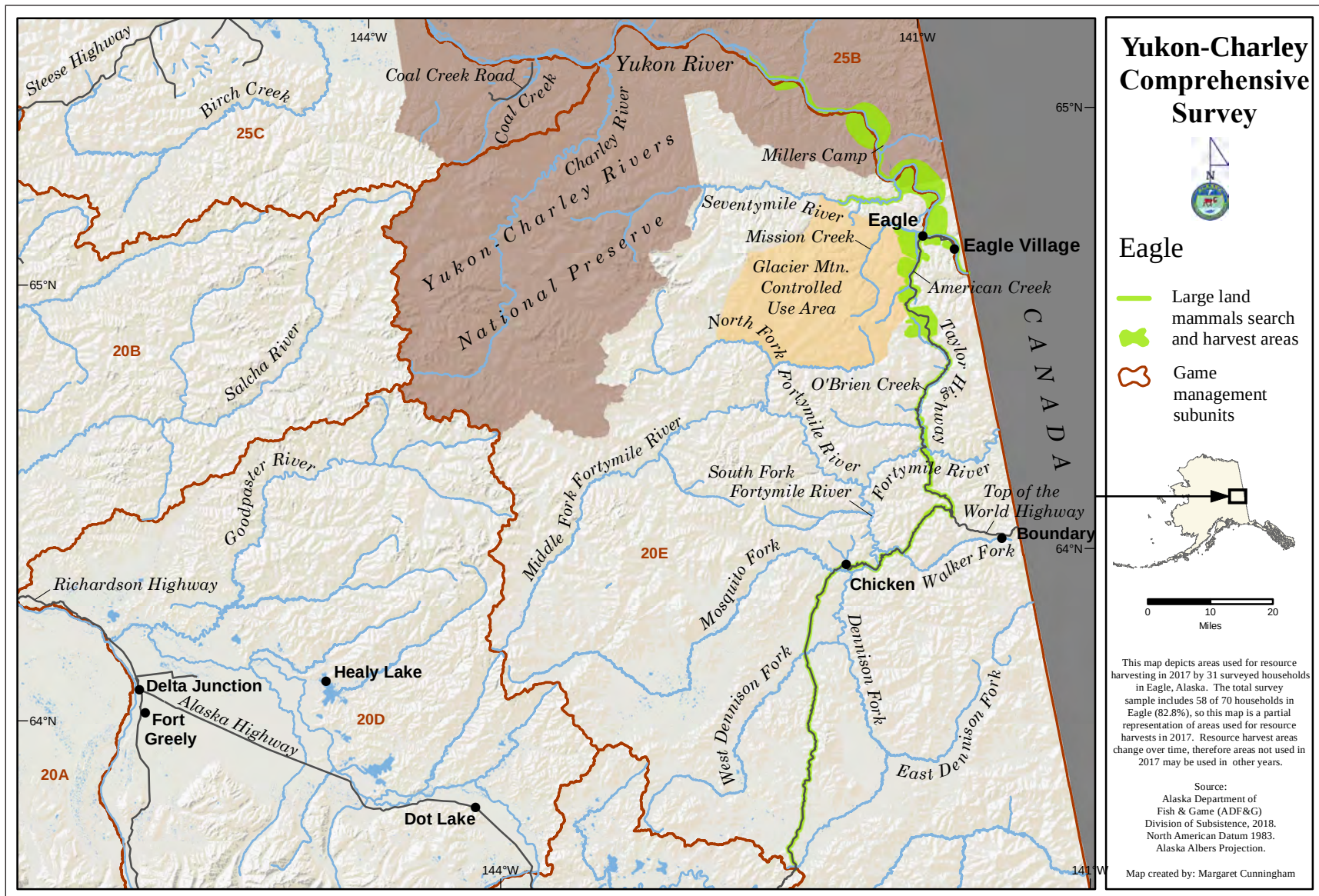


Figure 4-24.—Large land mammal hunting areas, Eagle, 2017.

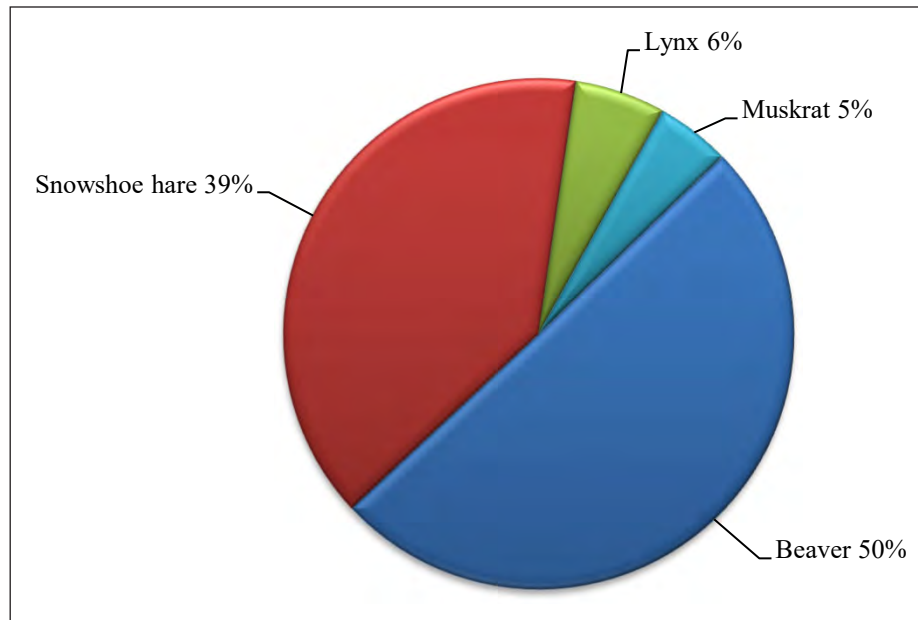


Figure 4-25.—Small land mammal harvests by percentage of edible weight, Eagle, 2017.

at fur auctions or use them personally for making items such as hats, mittens, and ruffs (03262018EAA6, 03262018EAA9, 03272018EAA8). Marten is a locally preferred fur for hats because it is warm and less prickly than beaver. After marten, other commonly harvested furbearers included 19 grey wolf, 22 lynx, and 11 wolverine (Table 4-9). All red fox and weasel were harvested only for fur. The majority of snowshoe hare and beaver were used for food or food and fur; only 13% of the snowshoe hare and 36% of the beaver were used for fur alone.

All small land mammals were taken during the colder months from October through April (Table D4-15). This period coincides with the general trapping season (5 AAC 84.270) and is when furs are in the best condition. Muskrat was the only animal harvested in the shoulder seasons of October and April. When fieldwork was completed in March 2018, one respondent was still trapping:

In spring, so right now, it is wolf season for snares. So they differentiate: it's wolf trapping season, but not traps. Because typically, a big wolf snare can't catch a lynx. So nothing else is open. For land animals, I mean. Beaver and muskrat are, but that's different. So pretty much a big wolf snare, you can't catch a marten in a wolf snare. You can't catch a lynx in a wolf snare. So, it's legal to have wolf snares out. And the wolves are active this time of year... There is actually quite a few around. There is a lot of caribou around and that brings the wolves into the country. (03262018EAA6)

Another respondent commented on the relationship between ungulate and wolf populations, "There's some years where I notice some wolf packs seem to be larger and then there are other years where they seem to just kind of spread out. And I think the wolf populations in our area are much more in sync with the caribou migrations and not so much the moose" (12092018EAA5).

Search and harvest areas for small land mammals in 2017 included several traplines radiating out from the community as well as large areas in the surrounding region (Figure 4-26). These areas included a portion of the Preserve between the Nation and Tatonduk rivers, the lower portion of the Seventymile River drainage, the Mission Creek drainage, and the Champion Creek drainage. Other areas were located across the Yukon River from town as well as out along the Taylor Highway.

Trapping has both historical and contemporary significance in Eagle. After the gold rush, the fur trade was a primary source of income for residents of the region, and the trapping tradition is still maintained by some

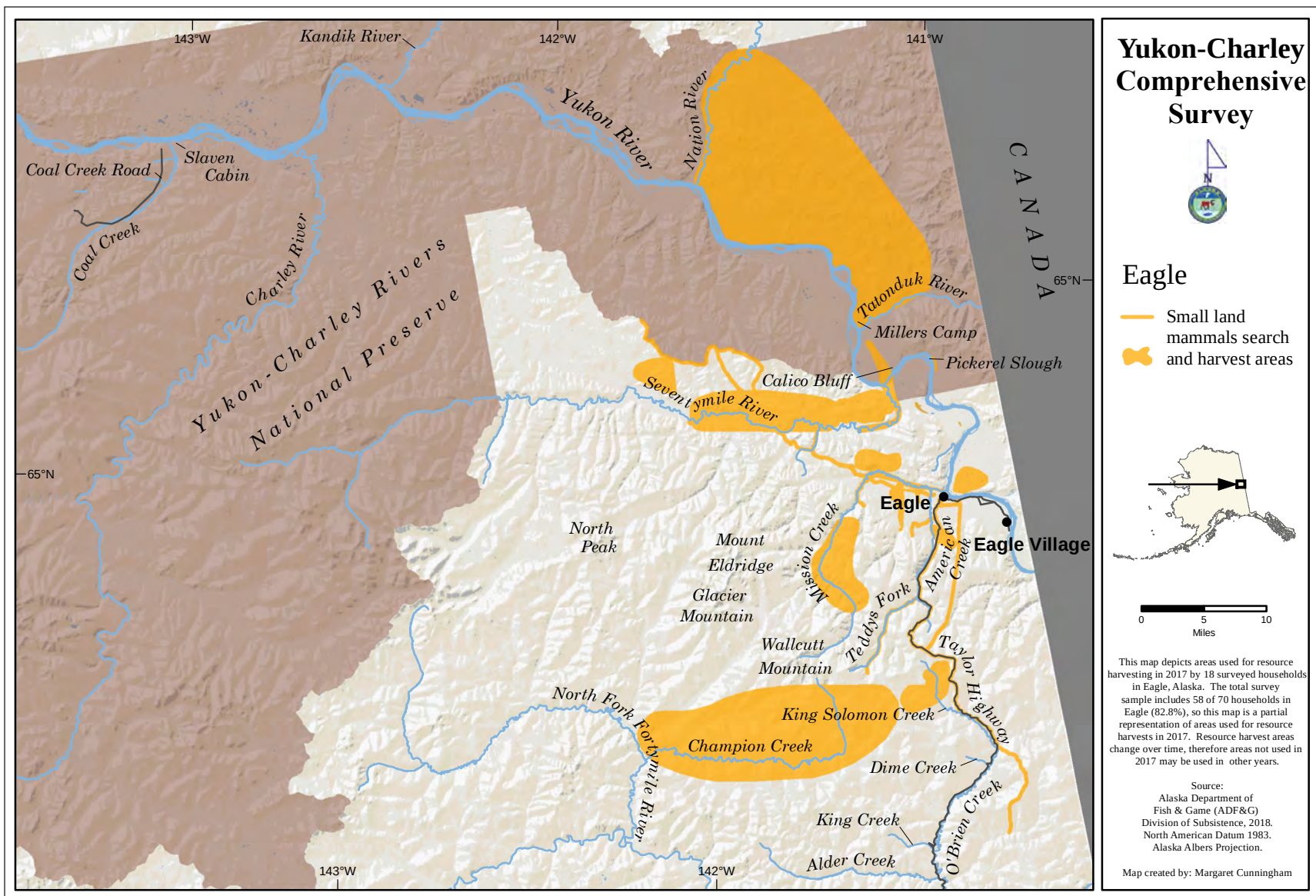


Figure 4-26.—Small land mammal hunting and trapping areas, Eagle, 2017.

families today. Although information was not collected on the survey regarding the number of households that trapped in 2017, several survey and key respondents reported that they maintain traplines of varying lengths. Trapping was characterized by Eagle residents as an important activity that generates supplemental income, provides raw materials for personal use, and keeps traditional skills alive.

One respondent's earliest memories are of riding in a dog sled as her parents trapped inside what is now Yukon-Charley Rivers National Preserve. She described contemporary trapping in Eagle:

There is still a lot of trapping in this area. A lot of the trails, like the Ford Lake Trail, Lorges Lake trail, those were maintained and kept open by trappers over the years. And there are still people trapping in a lot of those places. So, it's still a really traditional thing to do and a way to make money. And it's usually around here, it's mostly marten, but wolverine are important as well. Lynx, important. And for some people, wolves also. And then there is some beaver trapping but not like anywhere else, like there is less. What I'd say is I saw a big change to less beaver trapping, because less people know how to do it. [My husband] still does know how to do it, but a lot of folks don't really. (03262018EAA9)

Those who trap as a way to make income can either send their furs off to be tanned and sell them through personal networks or send them to large fur auctions such as the North American Fur Auction in Canada (03262018EAA7). Fur prices fluctuate depending on demand, and one respondent noted that selling fur was a great way to earn money as a young, single male, but that he was happy to find more efficient means of making money as he got older (12092018EAA5).

Trapping has evolved over time as other wage-earning opportunities have become more readily available and as snowmachine technology has improved. One respondent started trapping when he moved to Eagle in the early 1980s.

Back then it was 99% dogs...And with dogs you pretty much can't cover the distances but you can go into a lot more remote areas, at least back then...Snowmachine technology was so poor that they were limited to drainage bottoms whereas all the fur was up in the high country...Now, snowmachines are capable of going almost more places than dog teams because of the power and the improvements they have made on 'em...So I am saying probably now it's at least it flipped, most people trap with snowmachines now.

[Now], we don't see people that actually go out into the country and stay out there for long periods of time. There's a few but not like when I first showed up. Most people have jobs or something and they go out on weekends or a couple days during the week. I think they trap pretty hard, but they trap closer...They don't camp out. They don't make long traplines where they're staying day after day out there. They seem to just go out one day, come home, maybe an overnight. But very few trappers have extended traplines now.

It's a generational thing where people do it for a certain period of time and they grow out of it. They either get into a family, they get old, they move on...And that seems to be the, the way the land works out, at least in the eastern Interior, is that people come in, they do things for a number of years, usually at a fairly young age, and then they move on to other things. And it just opens up the country again to someone else new coming in. I've seen very few people that stick around for a long, long time...When I first came into the country there were a lot of people living along the Yukon River in the tributaries, but there is almost nobody left because they have all moved on, due to having kids, wanting to be around other things for their kids, whatever...But now it's actually gone very blank. (12092018EAA5)

Land management, which drastically changed after the Alaska National Lands Interest Conservation Act (ANILCA) was passed in 1980, may also have contributed to the declining presence of trappers. At least

one active trapper in Eagle no longer uses the Preserve for trapping due to restrictions on the use of cabins and storing supplies (03262018EAA6). For considerations of how trapping patterns have changed and the limitations imposed on trappers that historically used the Preserve, see the Discussion chapter.

Marine Mammals

No Eagle households reported harvest of marine mammals in 2017, although 2% of households received seal oil and whale muktuk from elsewhere (Table 4-9).

Birds and Eggs

Slightly over half of Eagle households harvested birds in 2017 (53%) and 57% used birds (Table 4-9). No households reported harvesting eggs. A total of 550 birds provided 516 edible pounds, or about 7 lb per household. Both game birds and migratory birds were harvested; game birds made up approximately two-thirds of the harvest by weight and migratory birds contributed the remaining third (Figure 4-27). Spruce grouse composed the greatest proportion of the bird harvest of any species (39% of the harvest by weight). Mallards (17%), ruffed grouse (15%), and ptarmigans (10%) were other large contributors to the bird harvest.

Table D4-16 depicts bird harvest by season. Migratory birds were harvested exclusively in the spring. Harvests included 53 mallards, 23 teals, 16 American widgeons, 12 northern pintails, and smaller amounts of other species. Grouses were primarily harvested in the fall, except for one that was harvested in winter. The harvest included a total of 235 spruce grouse, 92 ruffed grouse, and 16 sharp-tailed grouse. Ptarmigans were harvested in all seasons except summer: 29 were harvested in the fall, 25 in the winter, and 10 in the spring. Some households avoid hunting migratory birds in the springtime.

We've hunted a few birds in the spring, but typically it is not like a every year thing. So it's kind of, for us, we know that they are migrating through, it's their breeding season. So if we are not super hungry, we are not gonna go shoot a whole bunch of birds. Because we don't need them. So, we would rather have them have babies and then get a few in the fall. (03262018EAA9).

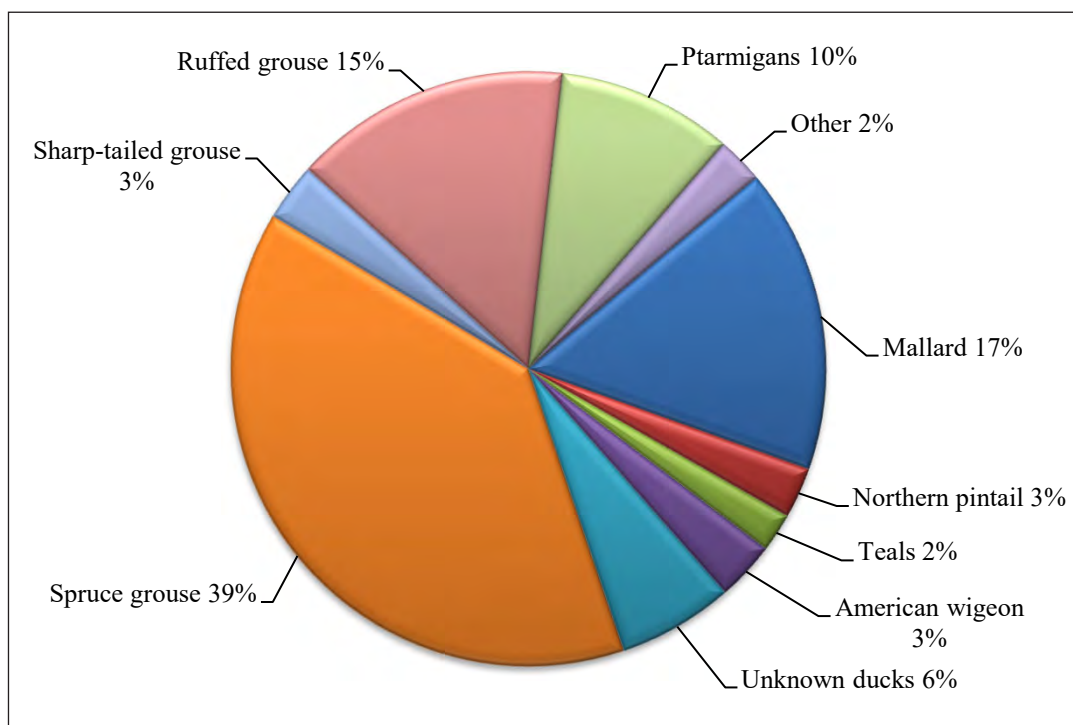


Figure 4-27.—Composition of bird harvest by percentage of edible weight, Eagle, 2017.

One respondent mentioned he might occasionally harvest one or two ducks in the fall, but that fall is primarily the time to hunt game birds (03272018EAA8). Another respondent said that her teenaged sons like to hunt ducks in the spring each year, and she also agreed that fall time is mainly for grouses (03262018EAA7). “There is not enough grouse to actually stick in the freezer per se, but they brought enough home for a few meals, and lunch, and that sort of thing.” People harvest migratory birds and game birds to add variety to their diets or may target them more heavily when other food sources are low, but birds are not typically a major staple food source.

Eagle residents hunted ducks and geese in the lakes and ponds between town and the Eagle Village, behind the airport, and along sections of the Taylor Highway (Figure 4-28). Ducks and geese were also hunted at Ford Lake located downriver near Calico Bluff. Ptarmigan and grouse were hunted along the Yukon River from the community downriver to the mouth of Trout Creek, in the Mission Creek and American Creek drainages southwest of town, and along most of the Taylor Highway.

Marine Invertebrates

No Eagle households reported harvest of marine invertebrates in 2017, which are not available without long distance travel, although 3% of households received shrimp from elsewhere (Table 4-9).

Vegetation

More Eagle households used vegetation than any other resource category (95%; Table 4-9). This harvest provided approximately 993 edible pounds of wild foods, or an average of 14 lb per household and 6 lb per capita. Figure 4-29 shows the composition of the vegetation harvest by weight. Berries accounted for 83% of the harvest and included 320 lb of blueberries, 123 lb of lowbush cranberries, 153 lb of highbush cranberries, 115 lb of raspberries, and 54 lb of strawberries (Table 4-9; Figure 4-29). Other berries such as crowberry, currants, cloudberry, and nagoonberry were harvested in smaller amounts. Sixty-five percent of households used blueberries, more than any other edible plant (Table 4-9).

Other types of plants contributed 16% to the vegetation harvest by weight, and mushrooms contributed less than 1% (Figure 4-29). Fewer households utilized these other plants and fungi than berries (Table 4-9). Eagle residents harvested over 25 different types of berries, plant products, and mushrooms, although they gathered small amounts of most. Rose hips and Hudson’s Bay tea were used most commonly of the other plants, but only by 14% of households. Eagle households harvested 52 lb of rose hips, 21 lb of lambsquarters, 16 lb of Hudson’s Bay tea, 15 lb of yarrow, and 12 lb of fireweed.

Berries are an important part of the subsistence harvest as one of the only locally available fruits. According to several respondents in Eagle, 2017 was not a good berry year because of a late frost and hailstorm in June. Some Eagle residents dedicate a lot of time to picking and processing several gallons of blueberries and lowbush cranberries each year. They processed the berries as juices, jams, syrups, sauces, and butters. Many berries are simply frozen for use in cakes, muffins, and smoothies (03262018EAA7, 03262018EAA9).

Last year we had a very poor year, so I only probably brought in, I think, five or six gallons, but usually in a year I would bring in between 20 and 30 gallons of cranberries...If we are making a trip out [the Taylor Highway], I always warn my family that the buckets are coming along and when we get there we aren’t stopping until the buckets, you know, everybody’s got a filled bucket, and then we can move on to the next spot. (03262018EAA7)

Another respondent reported that highbush cranberry bark is used for medicinal purposes.

The most important thing about the highbush cranberries, which is like a bush that does not wither away, so it’s a shrub, like a woody shrub, and the bark is medicinal for us, that like relaxes the muscles. And especially for menstrual cramps, or to prevent miscarriage, or to like just relax the digestive system, the highbush cranberry bark is really the best thing. You just take the branches of the highbush cranberry, with the little red buds and the grey bark. They are about waist high usually and you just take a little branch off, and you peel it and put the buds and

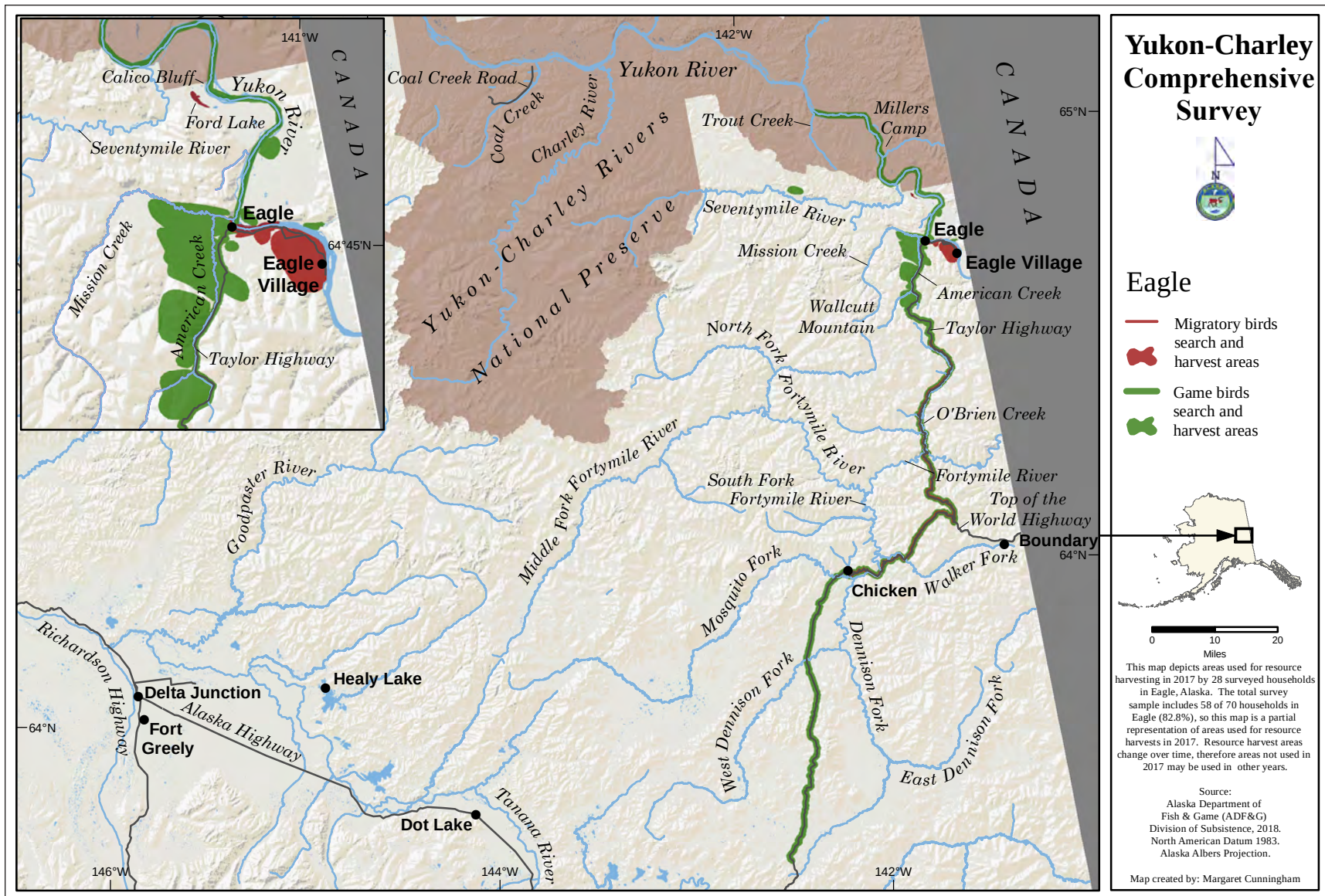


Figure 4-28.—Bird hunting areas, Eagle, 2017.

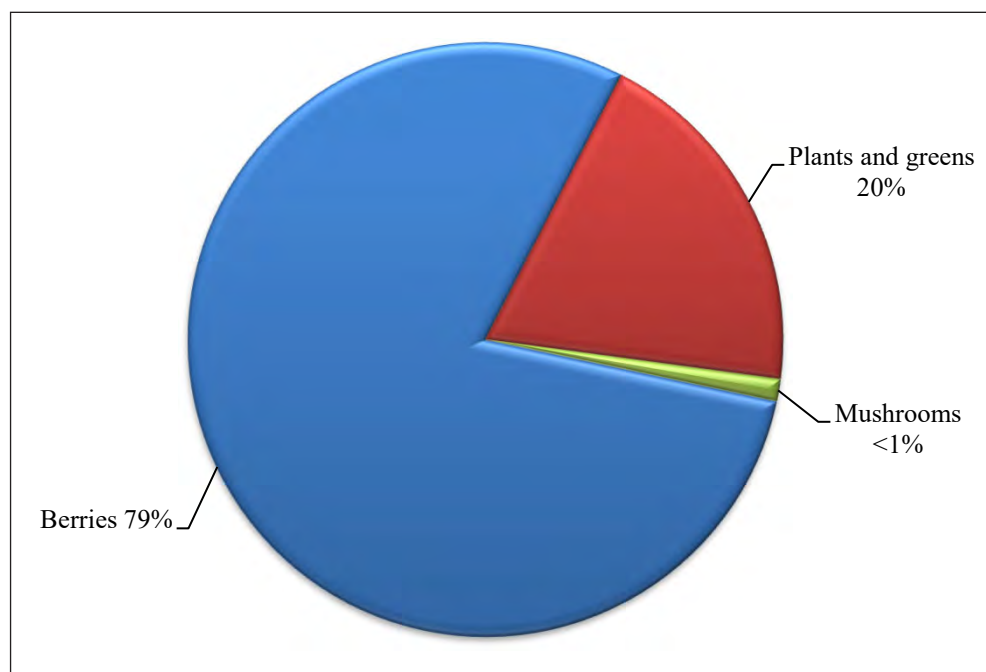


Figure 4-29.—Composition of vegetation harvest by percentage of edible weight, Eagle, 2017.

the bark, both the outer and inner bark, just take all the bark off and put it in hot tea pot, and just simmer it for about ten minutes, and then let it cool. (03262018EAA9)

Figure 4-30 highlights the locations where Eagle residents gathered edible vegetation (not including firewood). Search and harvest areas for vegetation occurred within the vicinity of the community and upriver of Eagle Village, but also in larger geographic areas outside of town. These other areas included on both sides of the Taylor Highway near American Summit and along both sides of the Yukon River downstream from Eagle, both within and outside of the Preserve. “We try to pick a lot of berries like in August, the early part of August, which is why I’m glad that the caribou opener is later, because I need that early August part for picking the berries in the same spot, and it’s really hard when there is like bullets flying around.” (03262018EAA9).

Many households in Eagle rely on firewood for home heating: 54 households reported using firewood as a source of heat for their homes (Table D4-17). Twenty of those households solely used firewood for home heating. Residents harvested approximately 271 cords of firewood in 2017. The average annual cost of heating a home in Eagle was \$1,014. If survey respondents harvested their own firewood, they were also asked if the area that they harvest from has changed in the last five years. Twenty-three households indicated that their harvest areas have changed in the past five years (Table D4-18). Reasons for changing harvest locations included moving around to harvest from different areas at least every few years in order to prevent overharvesting or clear cutting; only harvesting dry standing or dead wood, such as in old burn areas; competition with other harvesters; and collecting driftwood.

The locations where Eagle residents harvested firewood in 2017 are shown in Figure 4-31. Many of the harvest locations were concentrated close to the community, such as up the Mission Creek drainage, along the Yukon River downstream from town, and behind the airport. Other areas included inside Yukon-Charley Rivers National Preserve downriver of the Tatonduk River, in a small area up the Seventymile River drainage, and near American Summit on the Taylor Highway. One respondent noted that “there is a two-mile boundary all the way around Eagle that is state, that you can get wood in. So, generally that’s where we go” (03262018EAA7). Another respondent said that wood in this designated area is difficult to find, because so many people use it. “We don’t have many places to cut wood. Legally, I mean. There are

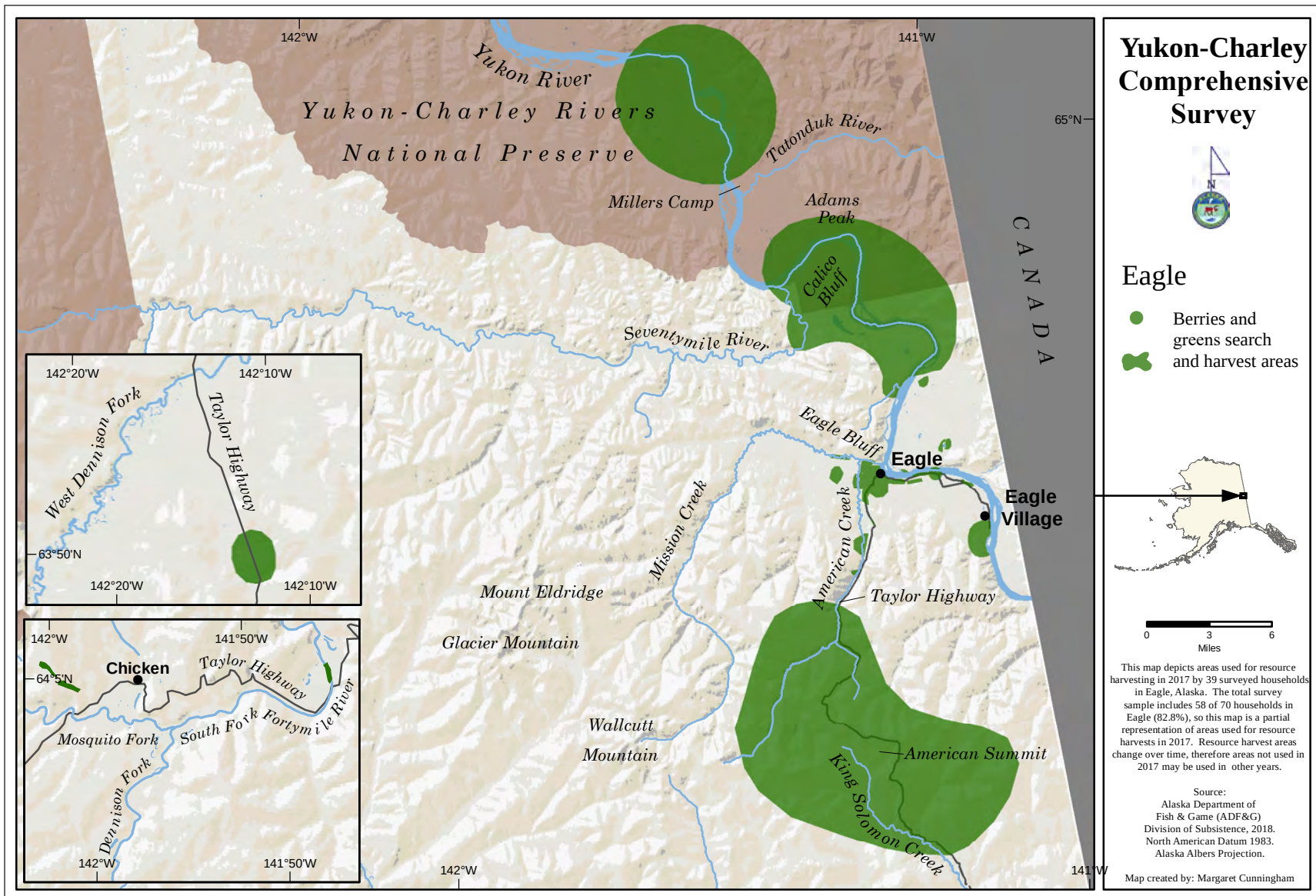


Figure 4-30.—Berries and greens gathering areas, Eagle, 2017.

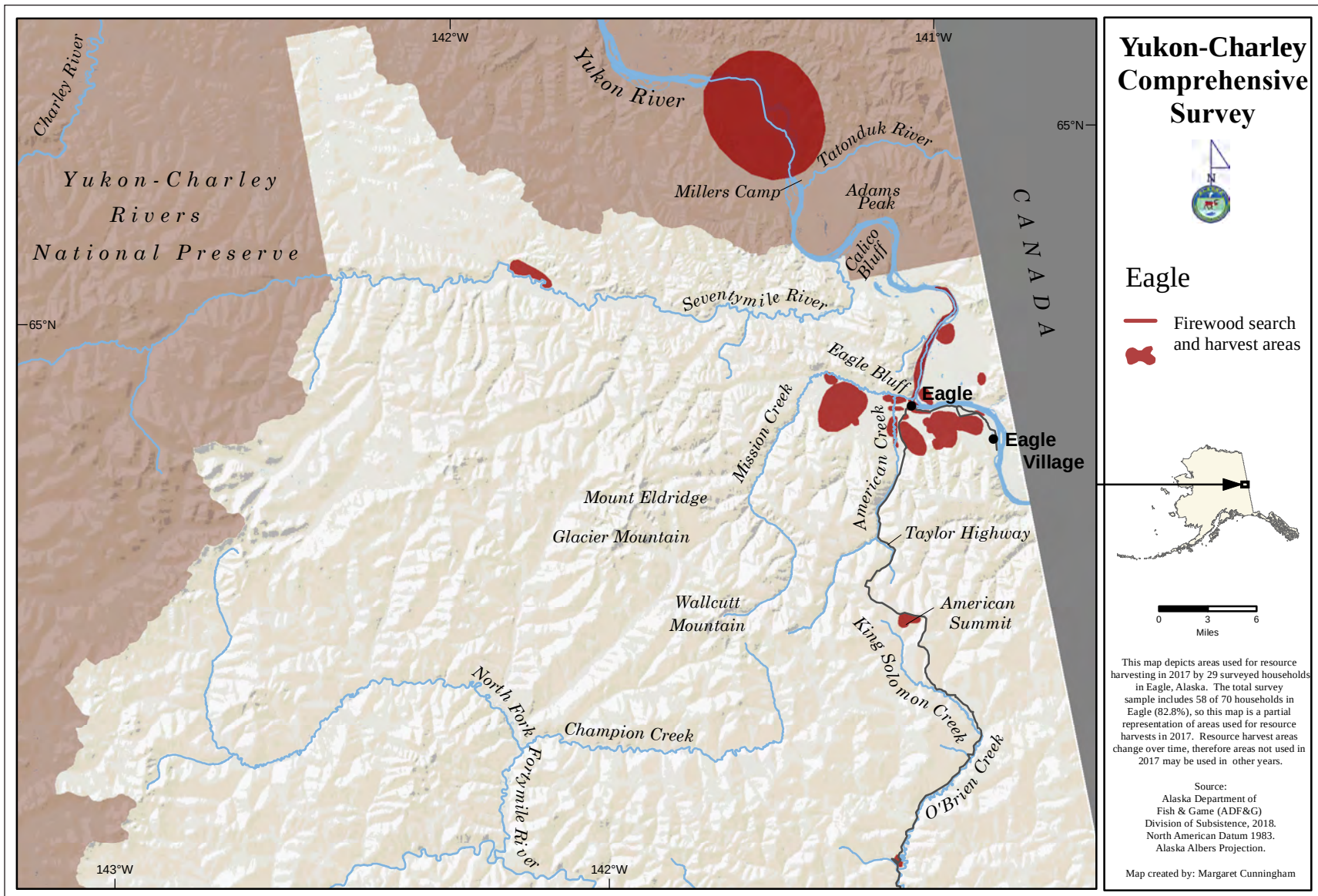


Figure 4-31.—Firewood harvesting areas, Eagle, 2017.

wood lots, designated wood lots that DNR [Alaska Department of Natural Resources] came in and set up but they are cut out” (03272018EAA8). He has tried to obtain a wood permit from U.S. Bureau of Land Management but was denied. “We are surrounded by wood but you can’t go cut it...It would be nice to be able to be legal about it.” As an alternative solution, he has started to collect driftwood along the river. A survey respondent shared that woodcutters can help manage forests. For example, when there was a large spruce beetle outbreak that resulted in a lot of infected trees, woodcutters took that all out and it may have limited the spread of beetles in the rest of the forest.

In addition to wild foods, home gardens are important to many Eagle residents, especially considering the high cost of fresh produce in the local store.

The gardening is a big deal for us because, you know, we have to have some green food, and then we try to prepare as much for the winter, put it in the freezer or some, like potatoes, you don’t have to put in the freezer, you can put in the root cellar. Potatoes and beets and carrots and things like that. Because here in Eagle like a pepper, like a red bell pepper, costs four dollars. So, we don’t have the luxury of like buying that kind of stuff often, even if it makes it here in one piece. (03262018EAA9)

As one survey respondent commented, they supplement subsistence harvests with chickens and their garden. Even if they could afford to buy all food at the store, they would still harvest or produce their own food because they “value independence.”¹⁸

COMPARING HARVESTS AND USES IN 2017 WITH PREVIOUS YEARS

Harvest Assessments

Researchers asked respondents to assess their own harvests in two ways: whether they used more, less, or about the same amount of eight resource categories in 2017 as in recent years, and whether they got “enough” of each of the eight resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

For eight resource categories and for all resources combined, survey respondents were asked to assess how their 2017 use compared to recent years (Table 4-14; Figure 4-32). Table D4-19 describes reasons respondents provided for getting less of a resource and Table D4-20 describes reasons for getting more. Overall, 53% of respondents said that they used the same amount of resources as in recent years, 40% said they used less, and only 7% of households said they used more. Responses varied by resource category. For example, 30% of households (17) said they used more salmon than in recent years—a substantially greater proportion than said they used more of any other resource (Table 4-14). Reasons for using more salmon were varied, but some of the more common reasons for getting more included favorable weather, traveling further to harvest, and receiving more (Table D4-20).

Vegetation had the greatest proportion of households reporting less use (44% or 25 households; Table D4-19). Sixteen households reported that vegetation was less available in 2017. This likely refers to berries, which several survey respondents commented were poor in 2017 due to hailstorms and late frost. However, 47% of households (27) reported using the same amount of vegetation in 2017. Twenty-one households reported using less nonsalmon fish and large land mammals. The most common reason for less use of nonsalmon fish was lack of effort in harvesting (nine households), and the most common reason for lower large land mammal uses was unsuccessful harvest (nine households).

18. Survey notes, March 2018.

Table 4-14.—Changes in household uses of resources compared to recent years, Eagle, 2017.

Resource category	Sampled households	Valid responses ^a	Households reporting use								Households not using	
			Total households		Less		Same		More			
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	58	57	57	100.0%	23	40.4%	30	52.6%	4	7.0%	0	0.0%
Salmon	58	57	50	87.7%	10	17.5%	23	40.4%	17	29.8%	7	12.3%
Nonsalmon fish	58	57	44	77.2%	21	36.8%	19	33.3%	4	7.0%	13	22.8%
Large land mammals	58	57	50	87.7%	21	36.8%	25	43.9%	4	7.0%	7	12.3%
Small land mammals	58	58	28	48.3%	11	19.0%	10	17.2%	7	12.1%	30	51.7%
Marine mammals	58	58	2	3.4%	1	1.7%	1	1.7%	0	0.0%	56	96.6%
Birds	58	58	29	50.0%	6	10.3%	23	39.7%	0	0.0%	29	50.0%
Marine invertebrates	58	58	2	3.4%	1	1.7%	0	0.0%	1	1.7%	56	96.6%
Vegetation	58	57	55	96.5%	25	43.9%	27	47.4%	3	5.3%	2	3.5%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response.

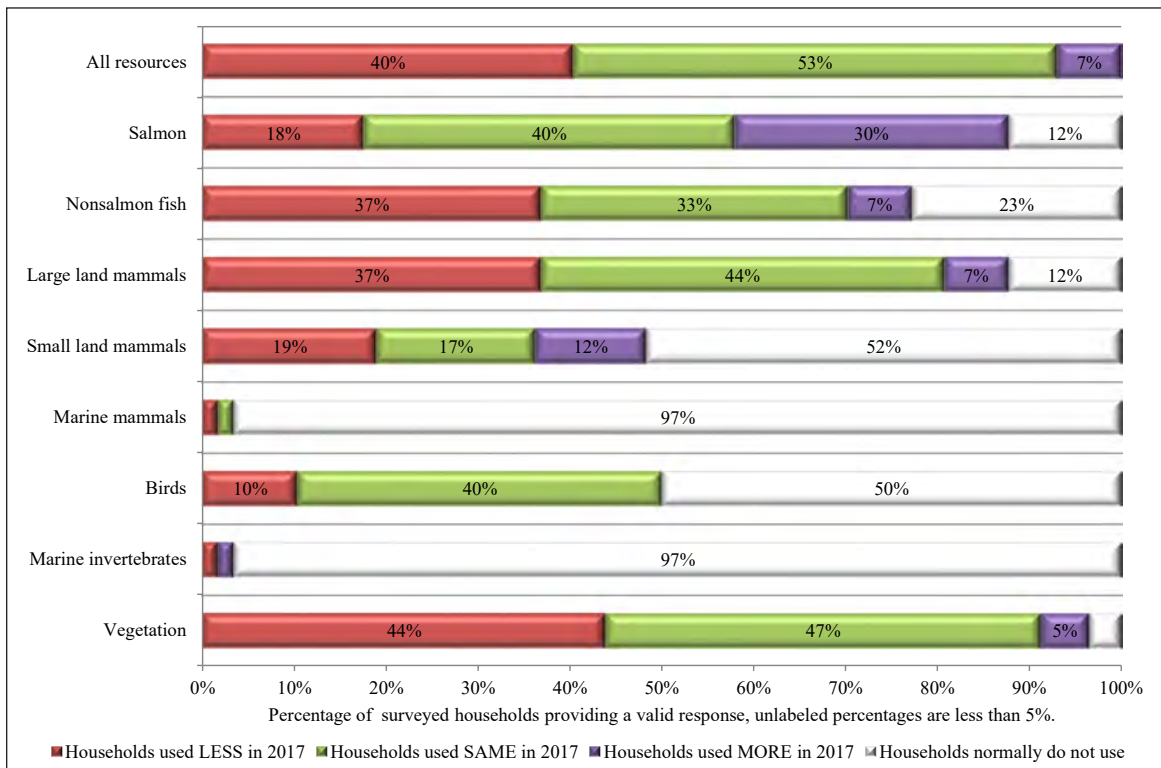


Figure 4-32.—Changes in household uses of resources compared to recent years, Eagle, 2017.

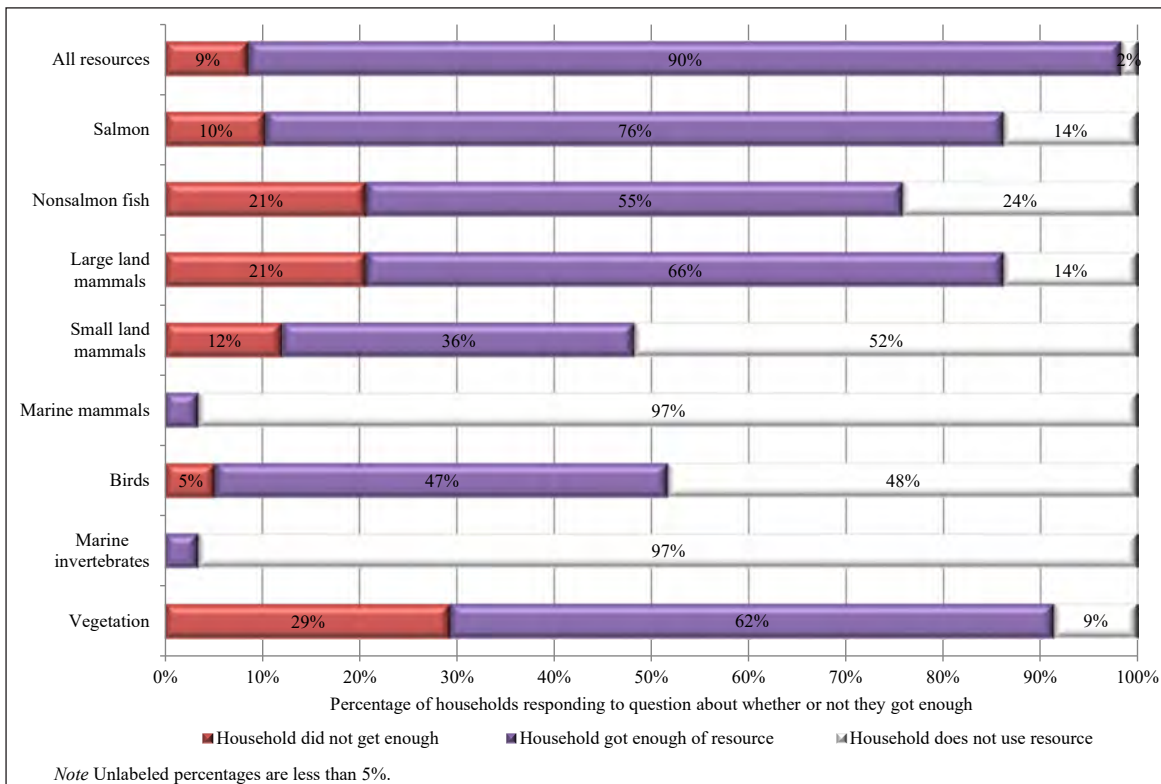


Figure 4-33.—Percentages of households reporting whether or not they got enough resources, Eagle, 2017.

Eagle respondents were asked if they got enough of each resource category to meet their needs. For all resources combined, five households (9%) reported not getting enough (Table D4-21; Figure 4-33). The most households reported not getting enough vegetation (17; Table D4-21). Of those households, 13 reported that the impact to their household was minor and 3 said that it was major. The nonsalmon fish and large land mammal categories each included 12 households that reported not getting enough. For nonsalmon fish, one household reported the impact as major, five as minor, and four as not noticeable. For large land mammals, two households experienced a major impact, nine minor, and one not noticeable.

If respondents indicated that they did not get enough resources in any given category, they were also asked to identify which specific resource(s) they needed more of (Table D4-22). Blueberries were the resource needed by the most households (11), followed by moose (9), lowbush cranberry (9), caribou (8), and Chinook salmon (6). There were 25 other resources that 5 or fewer households reported needing more of in 2017.

Survey respondents were additionally asked if there were any resources that they avoided harvesting due to poor resource health in 2017 (Table D4-23). One survey respondent avoided harvesting Chinook salmon because of poor run strength. Another respondent did not trap lynx because they are at a low in their population cycle and they are letting them rebound before trapping again. Two respondents said that 2017 was a bad year for lowbush cranberries and another said the same for blueberries. One respondent said that they avoided harvesting all resources because there is already enough pressure on them.

Harvest Data¹⁹

Changes in the harvest of resources by Eagle residents can also be discerned through comparisons with findings from other study years. Although no previous comprehensive subsistence harvest surveys have been conducted in Eagle, the Division of Subsistence collected household harvest information about large land mammals, small land mammals, and nonsalmon fish in 2004. This prior study combined harvest data for Eagle and Eagle Village residents; therefore, the data collected in each community as part of this current research project has been combined for comparison to the older dataset in Figure 4-34 and Table 4-15. In order to accurately compare the harvest data from these two studies, the harvest weights for black bear and moose in the older dataset were recalculated using the same conversion factors as the 2017 study.

In 2004, an estimated 1,723 lb of nonsalmon fish were harvested. In 2017, the harvest was approximately 1,390 lb, or about 400 lb less than in 2004. The per capita nonsalmon harvest decreased from 14 lb in 2004 to 8 lb in 2017. The composition of nonsalmon species contributing to these totals was similar in each study year: burbot, sheefish, and grayling were the primary species harvested. The largest difference in harvests between the two studies was in the estimated number of grayling harvested. In 2004, 834 grayling (666 lb) were harvested, but in 2017 only 254 fish (229 lb) were caught. Grayling are primarily harvested with a rod and reel in tributaries; in contrast, most of the other nonsalmon fish are commonly caught in the Yukon River with gillnets or incidentally when salmon fishing.

More pounds of large land mammals were harvested in 2017 compared to 2004, but the per capita harvests remained consistent because the community population increased between the two study years. In both years, moose contributed the greatest proportion of the total for the combined communities: around half of edible pounds in this resource category came from moose. In 2017, caribou harvests were double what they were in 2004, jumping from 19 animals to 40. In the former study, black bears contributed more to the total large land mammal harvest than in 2017. In both years 11 black bears were harvested, but in 2017 not all black bears were used for food. Eagle and Eagle Village hunters harvested four Dall sheep in 2004, but none in 2017.

Small land mammals showed the largest variations in harvest between the two study years. Although similar numbers of total animals were harvested, fewer were used for food in the latter study year. In 2004, 1,446

19. Data for 2004 are derived from ADF&G CSIS with revised conversion factors for two species, black bear and moose, in order to match the conversion factors used in this study. Data for 2017 are sourced from Tables 4-9 and 5-9 in this report.

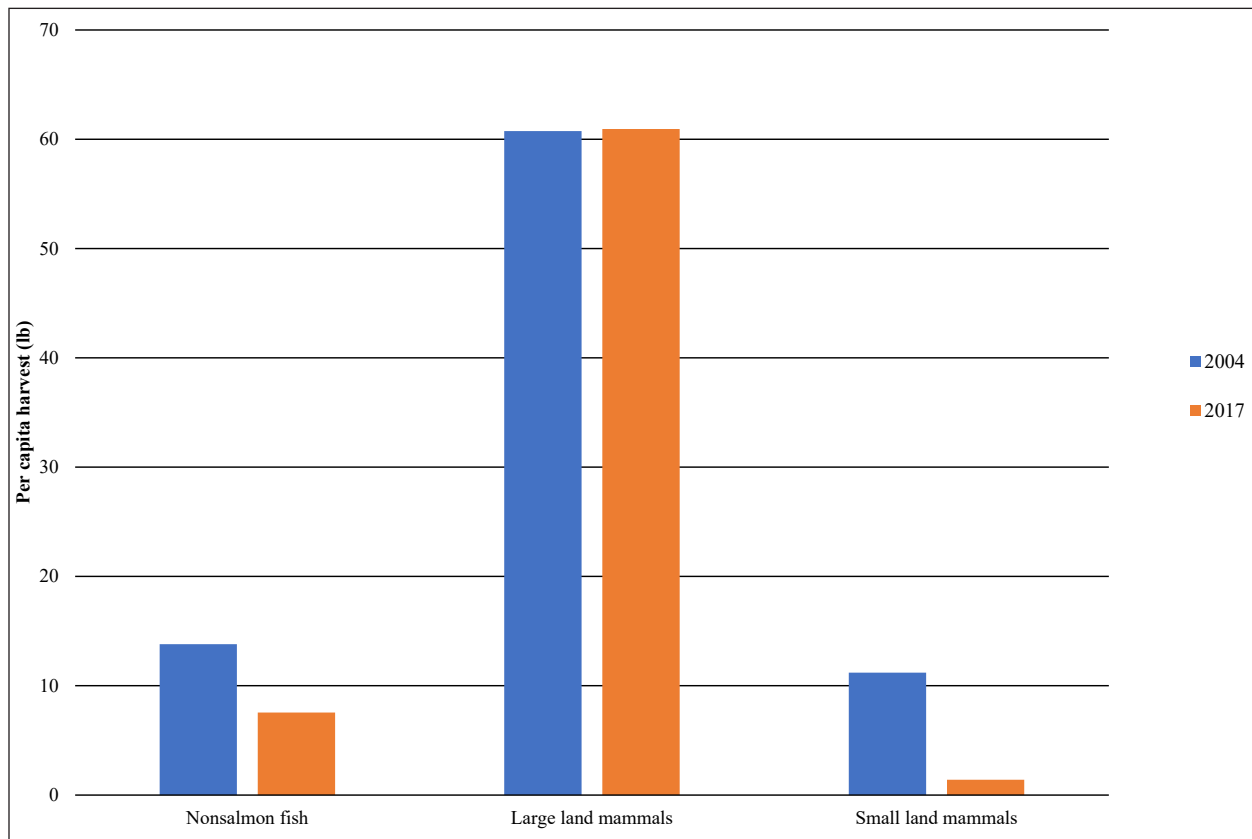


Figure 4-34.—Comparison of estimated per capita harvests by resource category, Eagle and Eagle Village combined, 2004 and 2017.

Table 4-15.—Comparison of estimated total and per capita harvests by resource category, Eagle and Eagle Village combined, 2004 and 2017.

Resource	2004		2017	
	Total	Per capita	Total	Per capita
Nonsalmon fish	1,723.2	13.8	1,389.8	7.6
Large land mammals	7,823.9	60.7	11,214.7	60.9
Small land mammals	1,446.0	11.2	257.2	1.4

Source ADF&G CSIS for 2004 data, Division of Subsistence household surveys, 2018, for 2017 data.

lb of small land mammals were harvested for food, but in 2017 only 257 lb were harvested for food. This was a decrease in per capita harvest from 11 lb per person to 2 lb per person.

Annual salmon harvest information from the ADF&G Division of Commercial Fisheries from 1989 to 2017 allows for an assessment of changes in salmon harvest patterns over time (Figure 4-35). Total salmon harvest by residents of Eagle and Eagle Village has increased over this time period, but harvests by each species have not. Fall chum salmon harvests have increased, although this trend was permeated by very low harvests in 1993 and 1998, and prolonged series of low fall chum salmon harvests during 2000–2004. Prior to 2009, Chinook salmon harvests fluctuated between approximately 1,000 to 2,500 fish. Chinook salmon returns to the Yukon River declined sharply in 2009 and this was followed by record low harvests between 2012 and 2014 in Eagle. Severe fishing restrictions were put in place to conserve this species during the 2009 population decline and contributed to the very low harvests.²⁰ Residents of Eagle have also spoken out about voluntary efforts by some community members to harvest fewer Chinook salmon and rely more on fall chum salmon to help in rebuilding the run. In 2016 and 2017, fishing restrictions were relaxed due to better Chinook salmon abundance and Chinook salmon harvests in Eagle began to return to their normal range (Estensen et al. 2018). For detailed information on how salmon harvests have changed in Eagle since the 2009 Chinook salmon crash and a discussion of factors that have contributed to those changes, see Brown et al. (*In prep*).

The Division of Commercial Fisheries reported that 1,730 Chinook salmon and 19,126 fall chum salmon were harvested by Eagle and Eagle Village residents in 2017 (Estensen et al. 2018). Harvest information collected for this study estimated Chinook salmon harvest for the two communities to be slightly lower (1,593 fish) and fall chum salmon to be slightly higher (19,619 fish) than the permit data collected by Commercial Fisheries (Estensen et al. 2018). Despite the differences in methods of data collection, these estimates are similar, and the permit data fell within the 95% confidence interval range for the harvest survey estimates.

Current and Historical Harvest Areas

There are no previously published studies that included mapping with which to compare the 2017 search and harvest area maps for Eagle.

LOCAL COMMENTS AND CONCERNS

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Eagle. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary. In addition, respondents expressed their concerns about wild resources during the community review meeting of preliminary data. These concerns have been included in the summary.

Resources and Change

Residents of Eagle shared their observations and perspectives on a variety of resource issues. For salmon, residents continued to raise concerns for the low abundance and smaller sizes of Chinook salmon returning to the upper Yukon River drainage, as they have done in previous studies (Brown et al. 2015).

When I first got here [to Eagle], I would help the [family] below the bluff there pick their net...It was full of salmon every time we checked it twice a day. And they were like 50, 60 pound salmon. That was regular big salmon. And now you don't see that. And [the numbers] just slowly declined. (03272018EAA8)

When prompted for his thoughts on causes to the decline in the Chinook salmon population, this respondent mentioned overfishing in the commercial fishery as well as the Yukon Queen tour boat that used to operate between Eagle and Dawson: the vessel caused a large wake and may have disturbed salmon spawning

20. Brown et al. *In prep*.

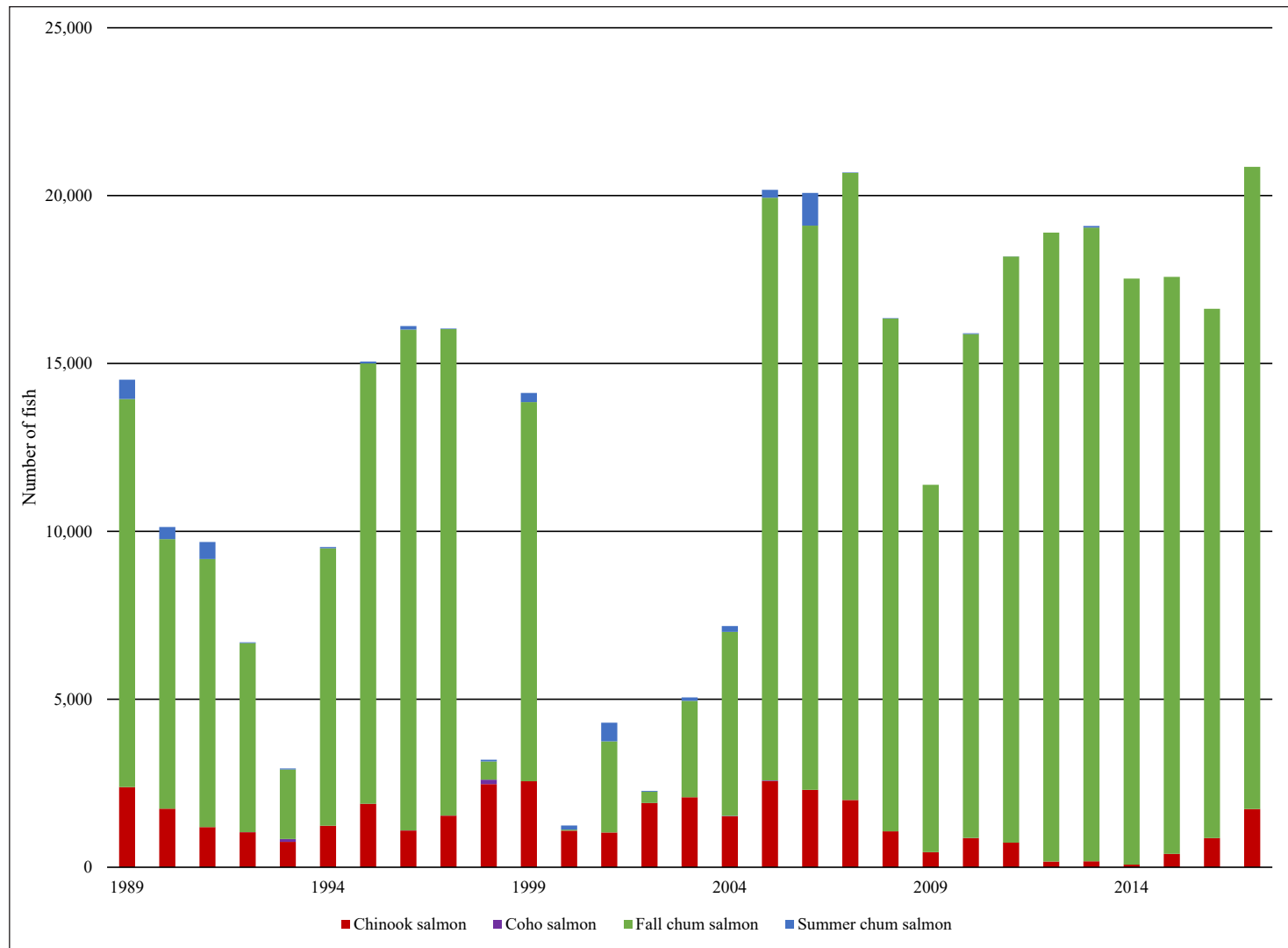


Figure 4-35.—Salmon harvests by species, Eagle, 1989–2017.

habitat. Survey respondents also speculated on causes of salmon declines. They commented that there is not enough regulation of bycatch in marine fisheries and that there are too many commercial fishing permits.²¹

Eagle respondents also expressed concerns about the future of fall chum salmon. If Chinook salmon abundance remains depressed, some residents are worried that continued pressure on fall chum salmon will cause their numbers to decline as well (12092018EAA5, 03262018EAA9). One respondent feels that this is already happening:

The subsistence harvest and the commercial harvest in the lower river will create a problem for us getting those fish into the, up the upper river. And that's exactly what we experienced this year in my opinion. I think the run, you saw the run came in really strong, but we commercial fished it to the point where...it slowed the pulses and the number of fish down so much that the people of Eagle, many of the people of Eagle did not get what they needed to get with their fish wheels for their dog teams. (12092018EAA5)

Some residents were concerned that the Fortymile caribou herd does not migrate into the area like it did in the past. Two survey respondents suggested that they may be joining the Porcupine caribou herd on the other side of the Yukon River.²²

Two survey respondents mentioned that they have seen fewer waterfowl migrating through the Eagle area in the springtime and that there are also fewer songbirds, like swallows, than there used to be.²³ One of these respondents characterized this population decline as a “massive bird die-off.”

Eagle residents also shared observations of environmental changes during surveys and key respondent interviews. One key respondent shared that the ice breakup on the Yukon River has been getting more intense, causing riverbank erosion and changes to river bottom channels (12092018EAA5). This respondent also felt that despite occasional flood events, the volume of water in the Yukon River has been decreasing over time. Others have observed that spring and fall seasons are warmer and that temperatures are not getting as cold in winter. This pattern of warmer weather affects peoples' abilities to process and store their subsistence foods. For example, a survey respondent noted that drying fish tend to rot more easily, and it is often too warm during moose season to hang meat to dry.

In addition, survey respondents observed that permafrost is thinning and the surface of the permafrost is melting, spruce trees are diseased, willows are brown in the summer instead of green, and wetter weather is causing more mushrooms and other fungi to grow.

A survey respondent expressed a general concern that government and managers are not forward-thinking enough to prepare for continued environmental changes and how those changes will affect Alaskans.

Management

Some respondents mentioned that regulations can make it hard for them to get the wild foods they need. They especially noted difficulties when the Fortymile caribou hunt closes quickly and when salmon fishing windows are short. One survey respondent said these short periods of opportunity are especially difficult for those who work to align their days off with the regulatory schedule.²⁴ A key respondent elaborated:

I think the most important thing is managers have to realize that the only way people that live in a remote area can survive is they have to have a consistent reliable access to the resource. And that's the only thing they need. They don't need to be managed by a lot of things 'cause they're self-limiting...People are only going to harvest what they need. It's too much work or they don't have the ability to store it or keep it...I guess the most important thing for me to try to make

21. Survey notes, March 2018.

22. Survey notes, March 2018.

23. Survey notes, March 2018.

24. Survey notes, March 2018

managers understand is just make sure there's that consistency. You can't open and close and allow one year you could do one thing and the next year you can't. You can't live the subsistence lifestyle relying on a resource and have those kinds of restrictions put on you. It just doesn't work. (12092018EAA5)

Another survey respondent shared that the limited fishing opportunity in recent years that requires fishers to put nets in then quickly take them out is costly and inefficient.²⁵ The respondent said that the abundance of fish passing Eagle is limited, making them more difficult to catch, and that short fishing "windows" are not a good management method for the upriver region. Similarly, this respondent lamented the short openings for caribou hunting. And although they appreciated the three-day emergency hunt that enabled them to get a caribou, they noted that it took a long time for the request for an opening to be processed. By the time it opened, most caribou had left the area, and more cow caribou were likely to be killed than would have been if the hunt had opened sooner and there were more animals from which to select.

Hunting competition with people from other areas of Alaska, especially urban centers, can feel unfair to Eagle residents who depend on subsistence harvests for the majority of the protein in their diets. Every key respondent and some survey respondents commented on hunting competition with nonlocal hunters. The most common concerns regarded caribou hunting on the Taylor Highway. "The Taylor Highway is a dangerous place to be when the caribou are around because there's so many people shooting from every direction...Most locals don't even go out. They wait for the winter hunt" (12092018EAA5). Another key respondent shared:

We've had this issue since the road is, anybody in the state can hunt it, we've had a real issue with locals actually getting enough meat because it is combat hunting. I mean, personally for us, it's just plain old dangerous. You know, you don't want to be involved in a situation where you end up with a massive hunting accident. (03262018EAA7)

She added that hunting competition also extends to the Yukon River:

It seems like every year there is more hunters coming in to put in here at the Yukon. I mean, the number of vehicles just coming in and with these big old boat systems...All they do is just roar back and forth up and down, and they are not really, I mean, it's like they are more playing. Not that some of them don't actually get meat. But it's like, they really came to play. And if they get an animal, you know, "Oh whoopee, we got an animal." And then, you can have people that have taken their boat up, they've tied their boat up and stuff and are in the woods calling and stuff, but then you've got this jet boat rolling back and forth, and the noise, it just scares everything away. Animals aren't used to hearing all this chaos and stuff.

One key respondent said that he used to hunt moose downriver near the Nation River, "but after a while he stopped because there were "too many hunters with big jet boats and no moose" (03272018EAA8). Another said that he sees "hundreds of boats" from other parts of the state during moose season. He "can't compete with them" all, especially since he uses a small 25 horsepower Go-Devil motor which is much less efficient than the big motors they use. Yet another key respondent said, "I've had this happen twice, moose coming into my call, and [other] people on the river either would get it or scare them off" (03262018EAA9).

To address this issue, another key respondent suggested that more outreach and education with hunters from urban areas could help them understand the effects they have on people living in rural areas when they travel to those places to hunt:

The laws all give equal rights to everyone. But the reality is people who live in remote areas absolutely depend upon these resources. And when you see a guy show up with four buddies in a \$50,000 boat drinking a bunch of beer, eighty-thousand-dollar truck pulling a fifty-thousand-dollar boat, and they're telling you they need that moose just as much as you

25. Survey notes, March 2018.

do when your life depends on getting that moose for the winter. It's a tough sell. And I'm not saying that there should be priorities, but we need to educate people so that they're at least respectful to other hunters and their impacts to them. (12092018EAA5)

Respondents presented a variety of perspectives on predator control. One survey respondent felt that predator control is "messing with" the natural processes of how animals regulate themselves.²⁶ A key respondent did not think predator control to be very effective given the vast areas of wolf habitat on federal and Canadian lands as well as the steep terrain surrounding Eagle where ADF&G cannot conduct it (03262018EAA6). He was also concerned about the high costs of implementation. Another survey respondent felt that predator control had been too effective; they noted the scarcity of wolves left to trap and that wolf removal takes opportunity to harvest wolves away from trappers.²⁷ They also noted that removing wolves by predator control affects other animal populations as well because other furbearers eat the winter kills of the wolves.

One key respondent felt that predator control had helped both moose and caribou populations increase (03272018EAA5). He considered himself to be neutral on the topic, but he believed that predator control is sometimes a necessary management tool when low ungulate populations reach such a low level that people are prevented from getting the meat they need.

Infrastructure and Development

One key respondent couple expressed concerns about potential development projects along the Yukon River, specifically the building of a dam and salmon hatcheries that the couple said have been proposed in Alaska in the past (03262018EAA9). They stressed the importance of keeping the Yukon River a free-flowing waterway so that it continues to provide essential ecosystem services, such as naturally flooding wetlands. They were also worried about the detrimental effects that hatchery-released salmon could have on wild salmon populations:

[Respondent 1]: We need to protect our wild runs, because they are different. They are genetically different, it's a whole different thing. It's like, apples and oranges. Like we do not need a hatchery. We need a hatchery like a nail in the head. You know, because it also, they are just gonna compete with our fish that we are trying to save.

[Respondent 2]: The one thing the Yukon has that a lot of places don't have, is we have an intact functioning habitat. And that is irreplaceable. We cannot duplicate that. You can have hatchery propagation but there is no way that it can replace the stocks of fish that are going up into the tributaries and systems, that evolved over a millennia to be specific to that region. You just cannot, we cannot do that. You know, you can't play God, in that way...Each one of these systems has naturally selected those fish. They spawn at a particular time, they out-migrate at a particular time, they are feeding on this, in that particular food base. They all go out to the delta and then are all out in the ocean, and they all return, at a given time. We can't recreate that.

They were also concerned with pollution from mining that might affect water quality.

Importance of Subsistence

Residents in Eagle highly value their ability to participate in subsistence activities. Some long-term residents were raised with these values, and others have moved to Eagle because of them. One key respondent expressed concerns that younger people may not be getting as involved in subsistence as they once were (03262018EAA7). However, many residents are actively working to pass on skills, knowledge, and values related to subsistence to younger generations as was evident through discussions with all key respondents and during many household surveys.

26. Survey notes, March 2018.

27. Survey notes, March 2018.

Some respondents also recognized that the world is changing and that younger generations face unique challenges in order to carry on subsistence activities and keep the “Alaskan spirit” alive (12092018EAA5, 03262018EAA9). They specifically cited adapting to the effects of a changing climate and maintaining livelihoods in rural areas despite increasing urban populations. “I think this next generation is gonna have to be super, super adaptable and innovative to make it work” (03262018EAA9).

Despite challenges, another respondent wants young people to know that the subsistence way of life is possible and rewarding, if they are up for the challenge:

I think it would be very difficult for someone to come in as a young person and do, develop the life that I’ve developed. But it’s still possible...if it’s something you really want to go after, it’s still possible to do it...There’s an innate need in human beings to feel like there’s a connection to nature...And if you can surround yourself with that, there’s a level of tranquility or satisfaction that you just can’t get from anything else in my life, in my opinion. So, I just want other people to experience that. (12092018EAA5)

He advised those wanting to get more involved in subsistence activities or way of life to not be afraid to fail. “If you’re not going to do something because you failed, you’re going to starve to death pretty quick.” However, he also noted that there are many people to watch and learn from that can help someone get started.

Another respondent summarized the importance of subsistence to her family and the people of Eagle:

When you have the land around you that enables you to have subsistence at the level that we have, it gives you like this feeling of security, and you never feel poor. So even, like many times in my life, actually the majority of my life, we are so far below the poverty line, we don’t even register as below the poverty line anymore. It’s like we are off the picture. But you never feel poor, because you have what you need, and you know how to get it. Like, if you don’t have a particular thing, you can go find it. Just imagine how cool that would be. And imagine, like, raising your kids and having the security that they are not gonna starve, that you are gonna be okay. And having fun while you are doing it!

The main thing about it is, like, the pride that people have. When people come here in the fall and they see us working so hard fishing for chums to feed our dogs, they probably think that we are crazy. But I would like to know what we would be doing otherwise? Because the whole level of skill, and working together that goes into this process, gives your life purpose. It gives what people are looking for. It’s like this connectivity, connectiveness, purpose. You are using your knowledge that you’ve acquired over a lifetime in many cases, or years, or whatever. You are using that, and you are getting something done...Most people are happier when they feel like they are making a difference, doing something they can do, to help themselves or their community, their kids. And also passing it on to somebody else is really rewarding. So, like, when you see your kids catch a rabbit, you are just, like [smiling]. (03262018EAA9)

ACKNOWLEDGMENTS

ADF&G Division of Subsistence would like to thank the Eagle City Council for approving this research project. This project would not have been possible without the work of our dedicated local research assistants who helped us schedule and administer surveys, and who were helpful guides as we made our way around town. To all the community members of Eagle, thank you for taking the time to share information about your subsistence experiences with our research staff. We would also like to thank the staff at Yukon-Charley Rivers National Preserve headquarters for kindly allowing us to use the visitor center as workspace while we were in town for fieldwork.

5. EAGLE VILLAGE

Brooke M. McDavid

In March 2018, two researchers and one local research assistant surveyed 13 of 17 eligible households (77%) in Eagle Village, Alaska (Table 5-1). Surveys averaged 36 minutes each (Table 5-2). Expanding for four unsurveyed households, Eagle Village’s estimated total harvest of wild foods between January and December 2017 was 7,910 edible pounds (Table 5-3). The average harvest per household was 465 lb, and the average harvest per capita was 336 lb. Survey respondents used an average of ten resources per household and harvested five resources per household. The survey areas for Eagle Village and the city of Eagle are based upon local understanding of community boundaries and do not align exactly with the CDP boundaries (Figure 1-2). Specifically, this study’s boundary for Eagle Village is smaller than the CDP boundary; residents living on the road between the city of Eagle and Eagle Village were considered to be residents of Eagle.¹ Consequently, demographic and economic data from this study are not directly comparable with those reported by the U.S. Census or the Alaska Department of Labor.

This chapter summarizes findings from household surveys including demographic characteristics, responses to harvest assessment questions, harvest estimates, reported employment and income information, and responses to food security questions. Harvest numbers are expanded estimates. Results from this survey are available online in the ADFG Community Subsistence Information System (CSIS).² Additional tables appear in Appendix D. Table 5-4 shows selected findings from this study.

In addition to the comprehensive survey, four interviews were conducted with five longtime residents of the community. By providing a better understanding of the seasonal round, local history, and subsistence activities in the area, the ethnographic interviews contextualize the quantitative harvest and use data collected in the surveys.

Table 5-1.—Sample achievement, Eagle Village, 2017.

Sample information	Community
	Eagle Village
Number of dwelling units	17
Survey goal	100%
Households surveyed	13
Households failed to be contacted	4
Households declined to be surveyed	0
Households moved or occupied by nonresident	0
Total households attempted to be surveyed	17
Refusal rate	0.0%
Final estimate of permanent households	17
Percentage of total households surveyed	76.5%
Survey weighting factor	1.31
Sampled population	18
Estimated population	23.5

Source ADF&G Division of Subsistence household surveys, 2018.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

1. See the Introduction chapter for more information about the methods used to determine the boundary between Eagle and Eagle Village.
2. Alaska Department of Fish and Game (ADF&G) Division of Subsistence, Juneau. “Community Subsistence Information System: CSIS.” <https://www.adfg.alaska.gov/sb/CSIS>. Hereinafter *ADF&G CSIS*.

Table 5-2.—Survey length, Eagle Village, 2017.

Community	Survey length (minutes)		
	Average	Minimum	Maximum
Eagle Village	36	12	75

Source ADF&G Division of Subsistence household surveys, 2018.

COMMUNITY BACKGROUND

Community background information for Eagle Village is described in conjunction with information for Eagle in Chapter 4.

SEASONAL ROUND

The seasonal round of subsistence activities in which residents of Eagle Village participate is rooted in long-standing traditions practiced by their ancestors. In precontact times, Han Hwech'in peoples relied solely on resources from the land and water for their sustenance and survival. Activities varied throughout the year based on the seasonal availability of different resources. Although present-day Eagle Village has a mixed subsistence-cash economy, seasonal patterns of resource harvest persist and remain central to the lives of residents. Participation in subsistence is not only a means of securing food, it is a social and cultural practice that serves as a foundation for the community.

Key respondent interviews as part of this project provided insight into the seasonal round practiced in Eagle Village today. Beginning in the springtime, people hunt ducks on lakes near the village; these provide a fresh source of meat after the long winter. Early summer is spent preparing for the salmon fishing season, which begins when Chinook salmon arrive in the first part of July and extends through August. Fall chum salmon begin to arrive in late August, but residents do not target these as heavily as they once did because they no longer use dog teams. During August and September, people hunt moose and caribou, which in addition to salmon provide the bulk of the wild foods on which residents rely throughout the winter months. People sometimes also hunt caribou in the winter months if they are unable to meet their subsistence needs in the fall season. Some trapping also occurs during the winter months when furs are prime.

Figure 5-1 depicts the search and harvest areas for all wild food resources by Eagle Village residents in 2017. Areas used for subsistence activities in 2017 were concentrated near the community on both sides of the Yukon River between the Canadian border and the city of Eagle. Survey respondents also traveled downriver to just past the Nation River's confluence within Yukon-Charley Rivers National Preserve, along the entirety of the Taylor Highway, and along a portion of the Alaska Highway as far as the junction with the road to Northway.

For more detailed information about the historical seasonal round followed by the Han Hwech'in of Eagle Village, refer to Koskey et al. 2018, Mishler and Simeone 2004, and Osgood 1971.

POPULATION ESTIMATES AND DEMOGRAPHIC INFORMATION

During 2017, the total estimated population in Eagle Village was 24 individuals living in 17 households (Table 5-5; Figure 5-2). In comparison to ADF&G estimates from this project, the 2010 U.S. Census recorded a total population of 67 persons in 31 households in the Eagle Village CDP with an Alaska Native population of 28 persons. The U.S. Census Bureau American Community Survey (ACS) estimated a 5-year average population of 22 individuals in 17 households between 2013 and 2017. As previously mentioned, ADF&G population estimates do not follow the CDP boundaries used by the U.S. Census Bureau, which primarily accounts for the differences in population estimates between this study and U.S. Census estimates (Figure 1-2). In addition, the differences in these estimates may result from variations in the sampling methods, timing of surveys, refusal rates, and definitions of residency.

Household sizes in Eagle Village ranged in size from one to three individuals with an average of one resident per household (Table 5-6). The mean age of residents was 55, but residents ranged in age from

Table 5-3.—Resource harvest and use characteristics, Eagle Village, 2017.

Characteristic	
Mean number of resources used per household	9.9
Minimum	4
Maximum	14
95% confidence limit ($\pm$)	9.4%
Median	10.0
Mean number of resources attempted to harvest per household	6.2
Minimum	0
Maximum	15
95% confidence limit ($\pm$)	21.0%
Median	6.0
Mean number of resources harvested per household	4.5
Minimum	0
Maximum	13
95% confidence limit ($\pm$)	27.0%
Median	4.0
Mean number of resources received per household	6.3
Minimum	2
Maximum	11
95% confidence limit ($\pm$)	13.2%
Median	6.0
Mean number of resources given away per household	2.8
Minimum	0
Maximum	8
95% confidence limit ($\pm$)	25.2%
Median	3.0
Household harvest (pounds)	
Minimum	0
Maximum	2,576
Mean	465.3
Median	24.3
Total harvest weight (lb)	7,910.2
Community per capita harvest (lb)	336.1
Percentage using any resource	100%
Percentage attempting to harvest any resource	92%
Percentage harvesting any resource	77%
Percentage receiving any resource	100%
Percentage giving away any resource	77%
Number of households in sample	13
Number of resources asked about and identified voluntarily by respondents	117

Source ADF&G Division of Subsistence household surveys, 2018.

Table 5-4.—Selected study findings, Eagle Village, 2017.

Category	Community Eagle
Demography	
Population	23.5
Percentage of population that is Alaska Native	100.0%
Percentage of household heads born in Alaska	80.0%
Average length of residency of household heads (years)	42.9
Cash economy	
Average number of months employed	5.5
Percentage of employed adults working year-round	55.6%
Percentage of income from sources other than employment	29.8%
Average household income ^a	\$15,209
Per capita income ^a	\$10,984
Resource harvest and use	
Per capita harvest, pounds usable weight	336.1
Average household harvest, pounds usable weight	465.3
Number of resources used by 50% or more households	6.0
Average number of resources used per household	10.0
Average number of resources attempted to be harvested per household	6.2
Average number of resources harvested per household	4.5
Average number of resources received per household	6.3
Average number of resources given away per household	2.8
Percentage of total harvest taken by top ranked 25% of households	88.8%
Percentage of households that harvested 70% of harvest	15.4%
Per capita harvest by lowest ranked 50% of households	3.1
Percentage of total harvest taken by lowest ranked 50% of harvesting households	0.9%
Average number of resources used by lowest ranked 50% of households	9.3
Average number of resources used by top ranked 25% of households	11.0

Source ADF&G Division of Subsistence household surveys, 2018.

a. Includes income from sources other than employment.

21 to 77. The average length of residency was 41 years, and the maximum was 75. All survey respondents identified as Alaska Native. As shown in Figure 5-3, most residents of Eagle Village population are above 50 years old, and there were no children living in the community in 2017 (also see Appendix Table D5-1). This population structure suggests that there may be a decline in the future, because there are few young people to replace older residents.

Historical population data available from the U.S. Census and Alaska Department of Labor (ADOL) show how the community's population has varied over time since 1980 (Figure 5-4). There was a decrease in population during the 1990s and an increase after 2000. Since this time, U.S. Census and ADOL estimates have fluctuated around 70 people. These estimates, which are based on CDP boundaries, obscure the population decline that has occurred in Eagle Village. Respondents recalled a time when the Eagle Village population outnumbered that of the city of Eagle, but as elders passed away and younger generations moved to urban areas the village population has dwindled (03232018EAA2, 04242018EAA1).

The majority (67%) of heads of household reported being born in Eagle Village at its prior location (Table D5-2). Approximately 13.3% were born in Whitehorse, Yukon Territory, alluding to the traditional transboundary relationships between Han peoples. The remaining heads of household were born in Fort Yukon, Tanana, or in another U.S. state. Similar to household heads, 61% of the population as a whole was

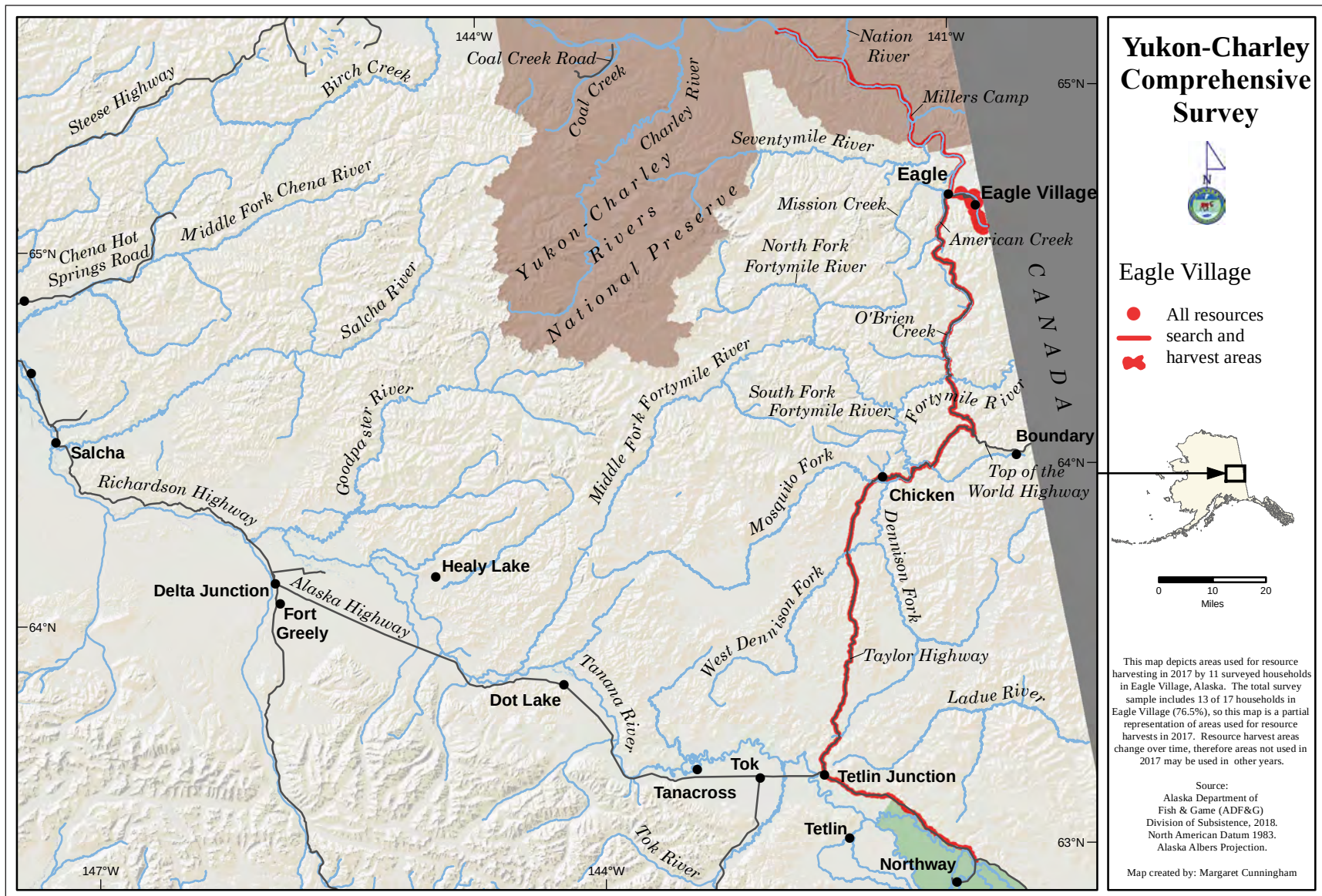


Figure 5-1.—All resources search and harvest areas, Eagle Village, 2017.

Table 5-5.—Total and Alaska Native population estimates, Eagle Village, 2010, 2013–2017, and 2017.

	Census (2010)	5-year American Community Survey (2013–2017)		This study (2017)	
		Estimate	Range ^a	Estimate	Range ^b
Total population					
Households	31	17.0	9 – 25	17.0	
Population	67	22.0	11 – 33	23.5	20 – 27
Alaska Native					
Population	28	11.0	3 – 19	23.5	20 – 27
Percentage	41.8%	50.0%	13.6% – 86.4%	100.0%	84.5% – 115.5%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey (ACS) 2016 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2018 for 2017 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

Note The boundary between Eagle and Eagle Village used by the Division of Subsistence differs from that used by the U.S. Census Bureau.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

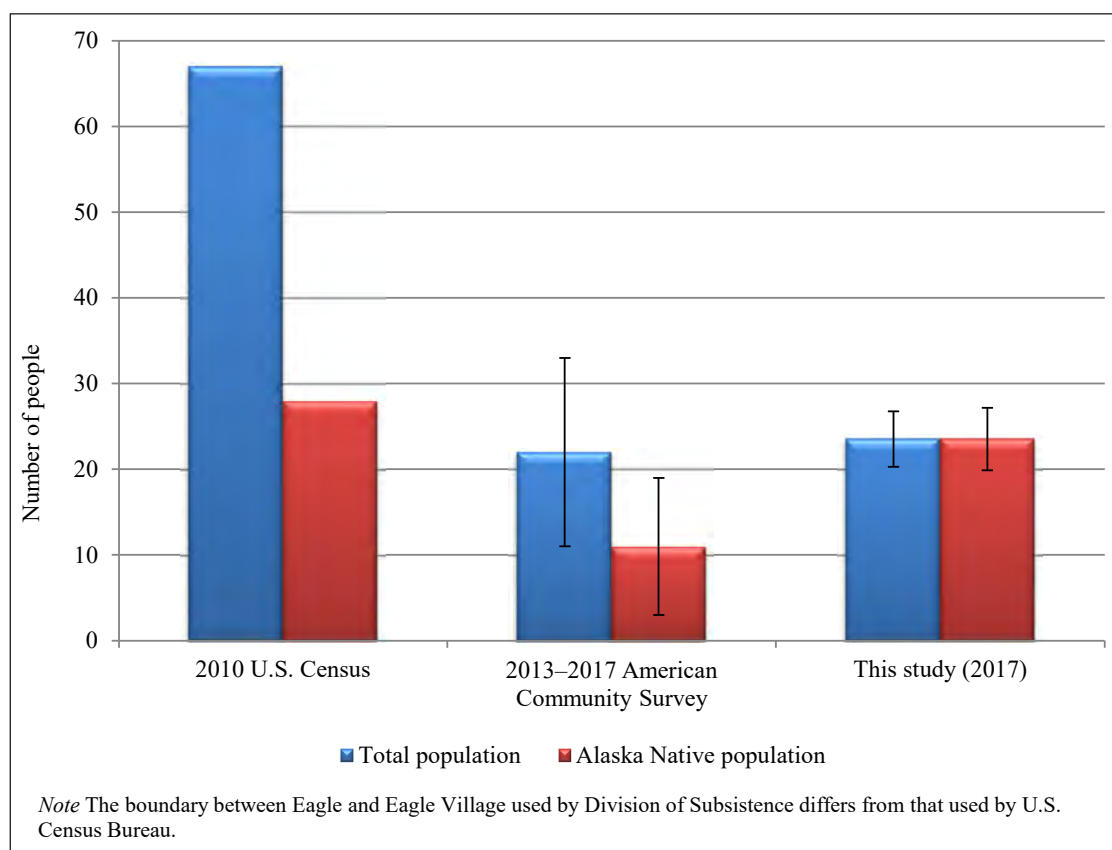


Figure 5-2.—Total and Alaska Native population estimates, Eagle Village, 2010, 2013–2017, and 2017.

Table 5-6.—Sample and demographic characteristics, Eagle Village, 2017.

Characteristics	Community Eagle Village
Sampled households	13
Eligible households	17
Percentage sampled	76.5%
Sampled population	18
Estimated community population	23.5
Household size	
Mean	1.4
Minimum	1.0
Maximum	3.0
Age	
Mean	54.6
Minimum	21
Maximum	77
Median	58.0
Length of residency	
Total population	
Mean	40.8
Minimum	5
Maximum	75
Heads of household	
Mean	42.9
Minimum	5
Maximum	75
Alaska Native	
Estimated households ^a	
Number	17.0
Percentage	100.0%
Estimated population	
Number	23.5
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. The estimated number of households in which at least 1 head of household is Alaska Native.

born in Eagle Village (Table D5-3). Additional places of birth for the entire population included those places listed above, plus Fairbanks and Kotzebue.

INCOME AND CASH EMPLOYMENT

Survey respondents were asked about both earned income (jobs held and wages earned by all household members 16 years and older) and income from other sources. The survey also asked about months worked and work schedules for employed residents in each household.

The total estimated community income for Eagle Village during 2017 was \$258,548; wage labor provided \$181,434 (70%) of that total, and other sources accounted for the remaining \$77,114 (30%; Table 5-7). The average income per household totaled \$15,209 and included an estimated \$10,673 from wages and \$4,536 from other sources. Median household income was \$12,572 with a 95% confidence interval of \$1,061–\$16,500 (Table D5-4). This estimate is substantially lower than the median of \$48,750 calculated by the 2013–2017 American Community Survey (ACS). The difference between these estimates, similar to that found in the population data, could stem from differing sampling methods as well as the different boundaries for the community used in each study. For the entire state of Alaska, ACS estimated the median income during 2013–2017 to be \$76,114. Both the ADF&G and ACS median income estimates for Eagle Village are substantially lower than that for the entire state.

As shown in Figure 5-5, employment earnings from local government jobs made the largest contribution to income in the community: 54% of the community total. Earned income from service jobs contributed 11%, and employment with the federal government contributed 5%. The remaining sources of income were from nonwage sources such as the Alaska Permanent Fund dividend, retirement, Native corporation dividends, or social services. Table 5-8 shows how jobs held by local residents were broken down by industry: 75% of jobs were with the local government. Jobs were held by 13 residents residing in 11 households (Table D5-5). Although individuals held one job on average, some individuals worked two jobs. About half of employed

adults worked year-round (56%); however, 10.3 months was the average length of employment. Two-thirds of jobs were part-time and the remaining third were full-time (Table D5-6).

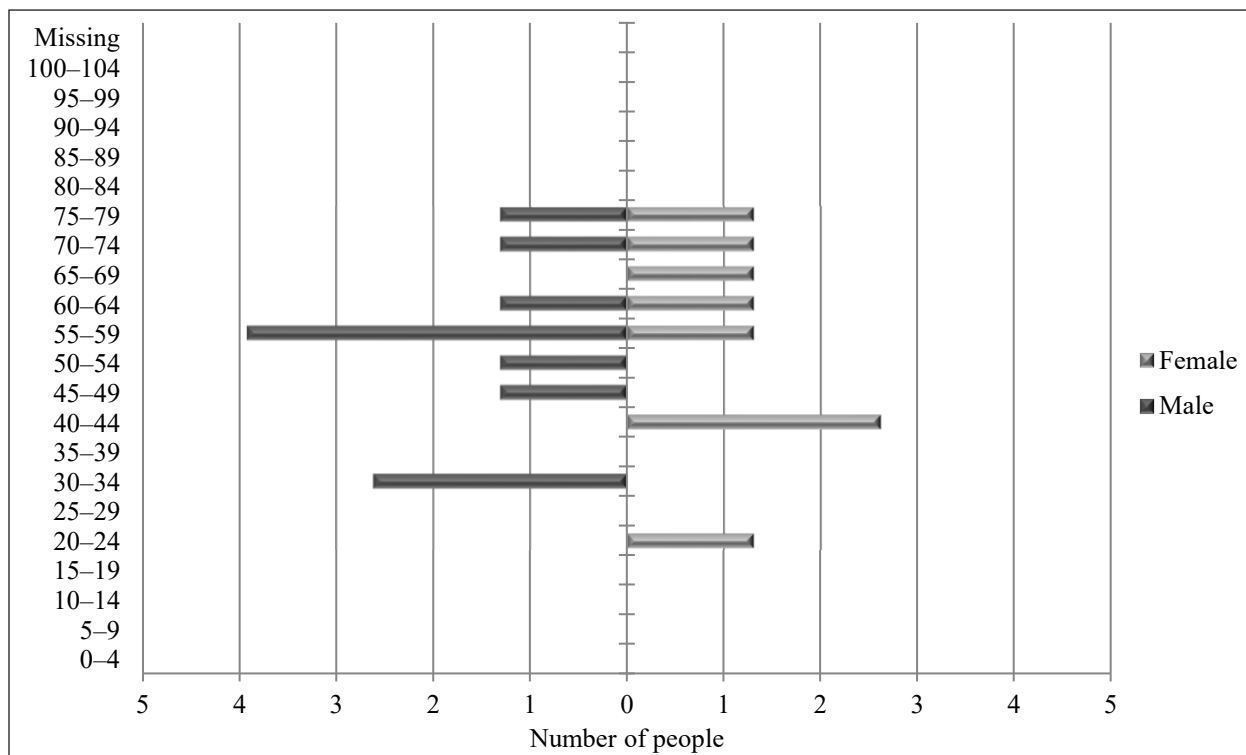


Figure 5-3.—Population profile, Eagle Village, 2017.

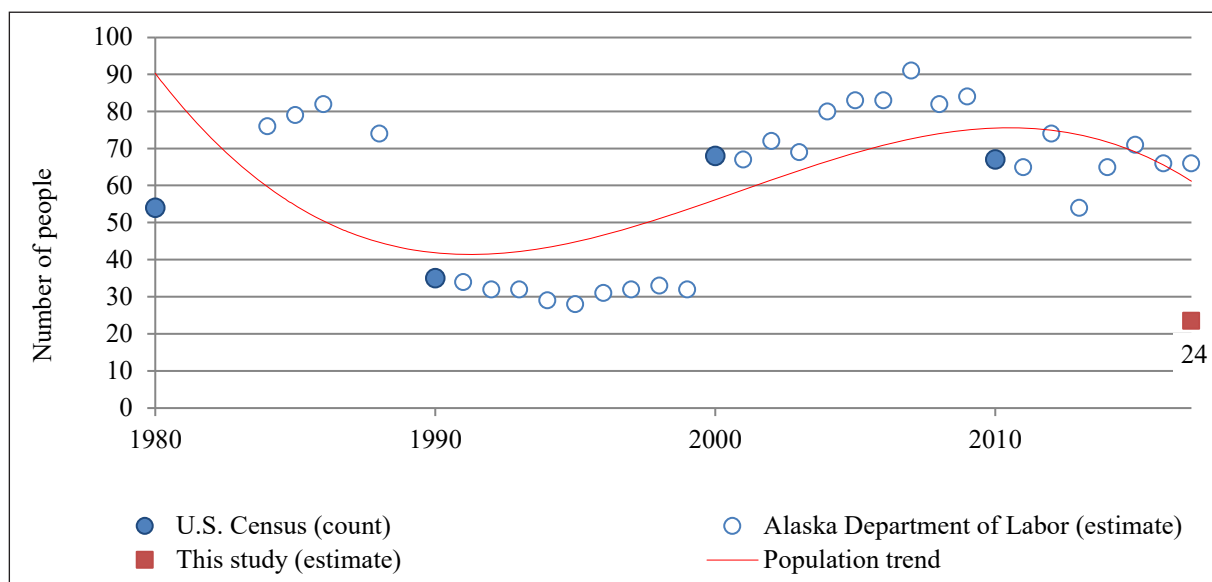


Figure 5-4.—Population estimates, Eagle Village, 1980–2017.

Table 5-7.—Estimated earned and other income

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal Services	11.1	9.9	\$139,771	\$57,904 – \$280,482	\$8,222	54.1%
Federal government	2.8	2.8	\$28,223	\$13,297 – \$80,605	\$1,660	10.9%
	1.4	1.4	\$13,440	\$11,910 – \$31,179	\$791	5.2%
Earned income subtotal	12.5	11.3	\$181,434	\$88,459 – \$336,545	\$10,673	70.2%
Other income						
Pension / retirement		1.3	\$23,538	\$18,000 – \$47,077	\$1,385	9.1%
Alaska Permanent Fund dividend		14.4	\$18,700	\$12,467 – \$24,454	\$1,100	7.2%
Native corporation dividend		14.4	\$13,617	\$5,013 – \$26,480	\$801	5.3%
Social Security		3.9	\$8,179	\$177 – \$29,988	\$481	3.2%
SNAP (Supplemental Nutrition Assistance Program)		6.5	\$6,207	\$299 – \$21,324	\$365	2.4%
Heating assistance		6.5	\$5,242	\$1,275 – \$9,690	\$308	2.0%
Adult public assistance (OAA, APD)		1.3	\$1,193	\$912 – \$2,385	\$70	0.5%
Unemployment		1.3	\$439	\$336 – \$879	\$26	0.2%
TANF (Temporary Assistance for Needy Families)		0.0	\$0	\$0 – \$0	\$0	0.0%
Supplemental Security Income		0.0	\$0	\$0 – \$0	\$0	0.0%
Longevity bonus		0.0	\$0	\$0 – \$0	\$0	0.0%
Workers compensation / insurance		0.0	\$0	\$0 – \$0	\$0	0.0%
Disability benefit		0.0	\$0	\$0 – \$0	\$0	0.0%
Veterans assistance		0.0	\$0	\$0 – \$0	\$0	0.0%
Child support		0.0	\$0	\$0 – \$0	\$0	0.0%
Other		0.0	\$0	\$0 – \$0	\$0	0.0%
Foster care		0.0	\$0	\$0 – \$0	\$0	0.0%
Fuel voucher		0.0	\$0	\$0 – \$0	\$0	0.0%
Meeting honoraria		0.0	\$0	\$0 – \$0	\$0	0.0%
Other income subtotal		1.3	\$77,114	\$0 – \$2,385	\$4,536	29.8%
Community income total			\$258,548	\$35,781 – \$132,168	\$15,209	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

FOOD SECURITY

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were broken down further into two subcategories: high or marginal food security. Food insecure households were divided into two subcategories: low food security or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Food security results comparing food security levels in Eagle Village, the state of Alaska, and the United States are summarized in Figure 5-6. Results show slightly higher levels of food security in Eagle Village than state or national levels. Although a similar percentage of households experience low food security across each scale, no households were categorized as very low food security in Eagle Village in 2017.

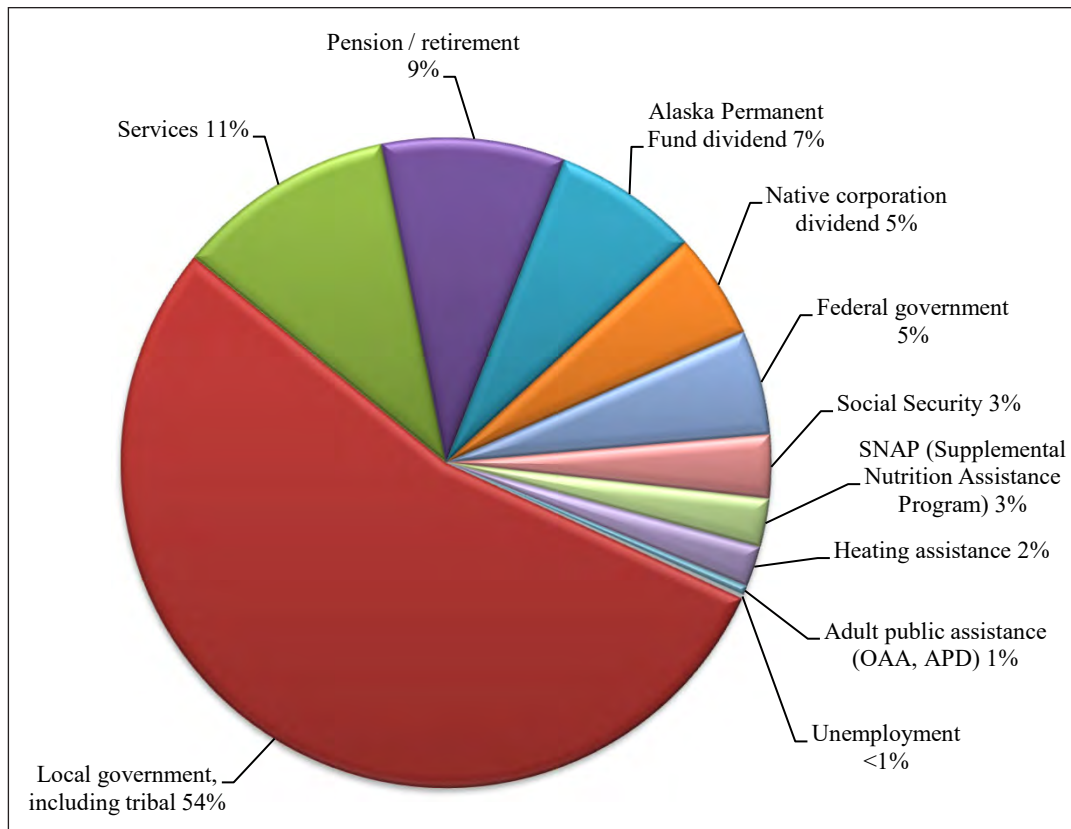


Figure 5-5.—Top income sources, Eagle Village, 2017.

Table 5-8.—Employment by industry, Eagle Village, 2017.

Industry	Jobs	Employed Households	Employed Individuals	Percentage of wage earnings
Estimated total number	16.6	11.3	12.5	
Federal government	8.3%	12.5%	11.1%	7.4%
Administrative support occupations, including clerical	8.3%	12.5%	11.1%	7.4%
Local government, including tribal	75.0%	87.5%	88.9%	77.0%
Executive, administrative, and managerial	16.7%	25.0%	22.2%	14.8%
Administrative support occupations, including clerical	8.3%	12.5%	11.1%	25.9%
Service occupations	8.3%	12.5%	11.1%	4.4%
Handlers, equipment cleaners, helpers, and laborers	41.7%	62.5%	55.6%	31.9%
Services	16.7%	25.0%	22.2%	15.6%
Health technologists and technicians	8.3%	12.5%	11.1%	6.7%
Service occupations	8.3%	12.5%	11.1%	8.9%

Source ADF&G Division of Subsistence household surveys, 2018.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

Figure 5-7 shows the conditions experienced by survey respondents that led to food insecurity in their households. In 2017, 23% of households reported that they lacked resources to get food, 15% worried about having enough food, and 8% reported that at some point during the year their food did not last and they could not get more. When asked whether subsistence foods or store bought foods did not last, 38% reported that each kind of food ran out. No households reported having to skip meals or losing weight because of a lack of food.

Food security can vary throughout the year, especially in winter months when wage labor and harvestable resources are less readily available. Figure 5-8 portrays the mean number of food insecure conditions per household by food security category by month. During January and February an average of three food insecure conditions were reported by households characterized as low food security. Food secure households reported fewer than one food insecure condition on average between September and May, as shown by the blue line, which is slightly above zero during this period. Figure 5-9 shows which months households reported foods not lasting. During the fall and early winter (September through December) subsistence foods did not last for 8% of households in 2017. Food insecure conditions increased during late winter and spring (January through May), when subsistence foods did not last for up to 15% of households.

Respondents noted that both buying and harvesting food is expensive at the store in Eagle. Additionally, hunting regulations do not allow proxy hunting in GMU 20E, so able-bodied individuals cannot harvest moose for their elders. One key respondent explained:

Have you seen the price for a steak at the store? A gallon of milk? This is their staple: moose meat, caribou meat, king salmon, dog salmon. And they're putting regulations on it so hard that we have to try to survive off that store. The road is closed all winter. [The store] has to double the price because of the freight cost for the airplane. They can't afford it here...It's almost \$2,000 just to get from here to there [downriver] and to hunt. You know, and you got 2,000 pounds of meat in that

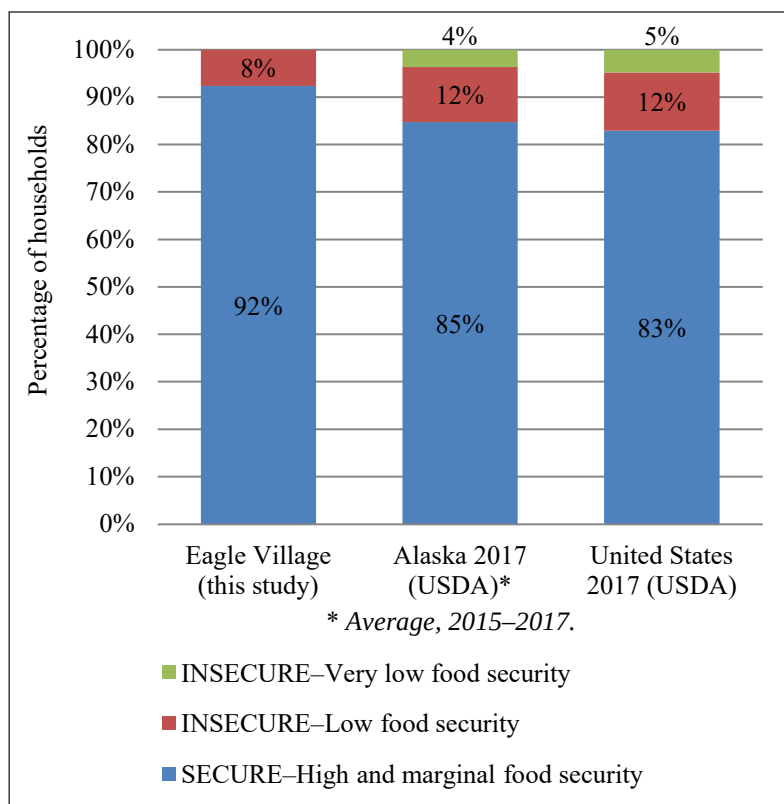


Figure 5-6.—Comparison of food security categories, Eagle Village, Alaska, and United States, 2017.

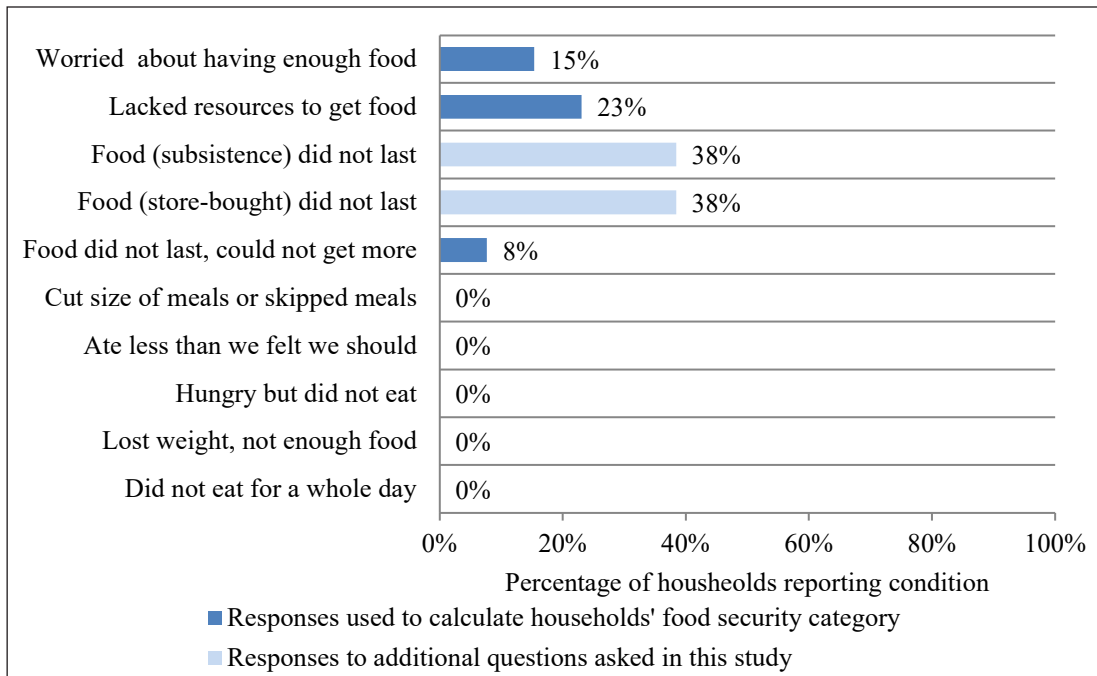


Figure 5-7.—Responses to questions about food insecure conditions, Eagle Village, 2017.

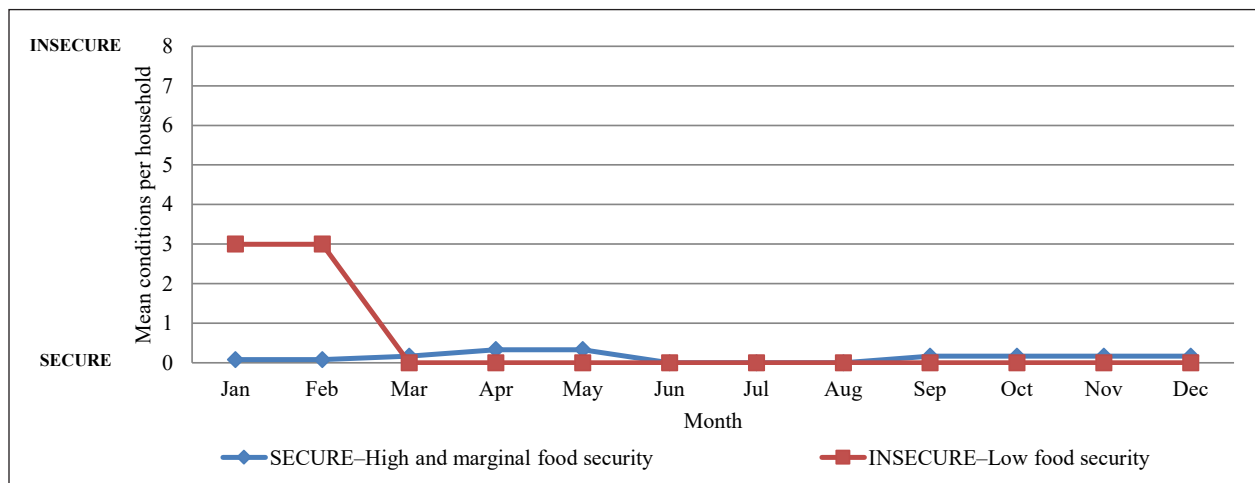


Figure 5-8.—Mean number of food insecure conditions by month and household food security category, Eagle Village, 2017.

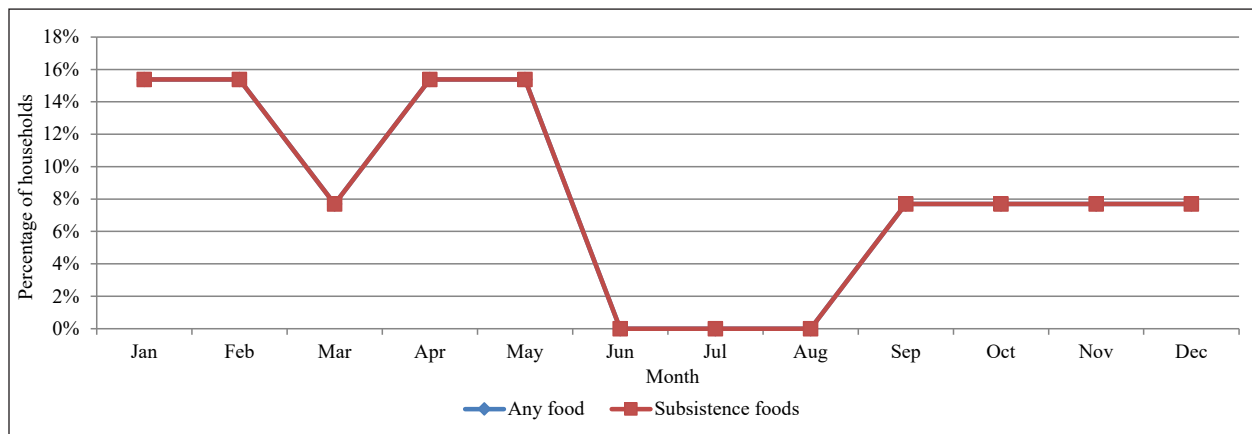


Figure 5-9.—Months when food did not last, Eagle Village, 2017.

[boat], you might as well double your gas. I have broke down, ran out of gas five miles out of Eagle to come home with the meat. Sat there overnight, had to wait for someone to come down. “Can you give me a ride up so I can get some more gas?” I mean it’s not cheap to hunt here. And I mean, the only ones that suffering are the elders here. And one day, you know, I gotta feed my family. You know, I can give them what I can, but after that, then what? They’re suffering. (03242018EAA3)

Another survey respondent noted that they have to budget carefully because food is so expensive at the local store, and that prices have increased since the closing of the Sam’s Club store in Fairbanks.

SUMMARY OF HARVEST AND USE PATTERNS

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 5-10 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Eagle Village residents in 2017. Overall, 89% of people in Eagle participated in some type of hunting, fishing, or gathering of subsistence resources in 2017, and 100% of people helped to process wild foods. Participation varied by resource category: the highest percentages of people were involved with vegetation and the smallest with small land mammals. For all resource categories, more people participated in processing than hunting, fishing, or gathering. The largest discrepancies between the percentages of people harvesting and processing were for fish and small land mammals.

The survey included questions about participation in craft or construction activities that involve the use of subsistence resources (Table D5-7). In Eagle Village, 100% of people cooked wild foods, 18% built fish wheels, 17% made handicrafts, 11% sewed skins or furs, and 6% built some sort of shelter.

Harvest and Use of Wild Resources at the Household Level

Table 5-3 summarizes resource harvest and use characteristics for Eagle Village in 2017 at the household level. All households in Eagle Village reported using some type of wild resource in 2017, 92% attempted to harvest at least one resource, and 77% harvested wild resources. The average household harvest was 465 lb usable weight, or 336 lb per capita. During the study year, households harvested an average of five kinds of resources and used an average of ten kinds of resources. The maximum number of resources used by any household was 14. In addition, households received an average of six kinds of resources and gave away an average of three. Sharing will be discussed in more detail in the following section. Overall, 117 resources were asked about on the survey or named by respondents (Table 5-3); however, only about 34 resources were actually used by Eagle Village residents (Table D5-8).

Figure 5-11 shows by resource category the percentages of households that used, attempted to harvest, and successfully harvested wild foods. All households used salmon, large land mammals, and vegetation. Large proportions of households also used birds (85%) and nonsalmon fish (69%). Small land mammals were

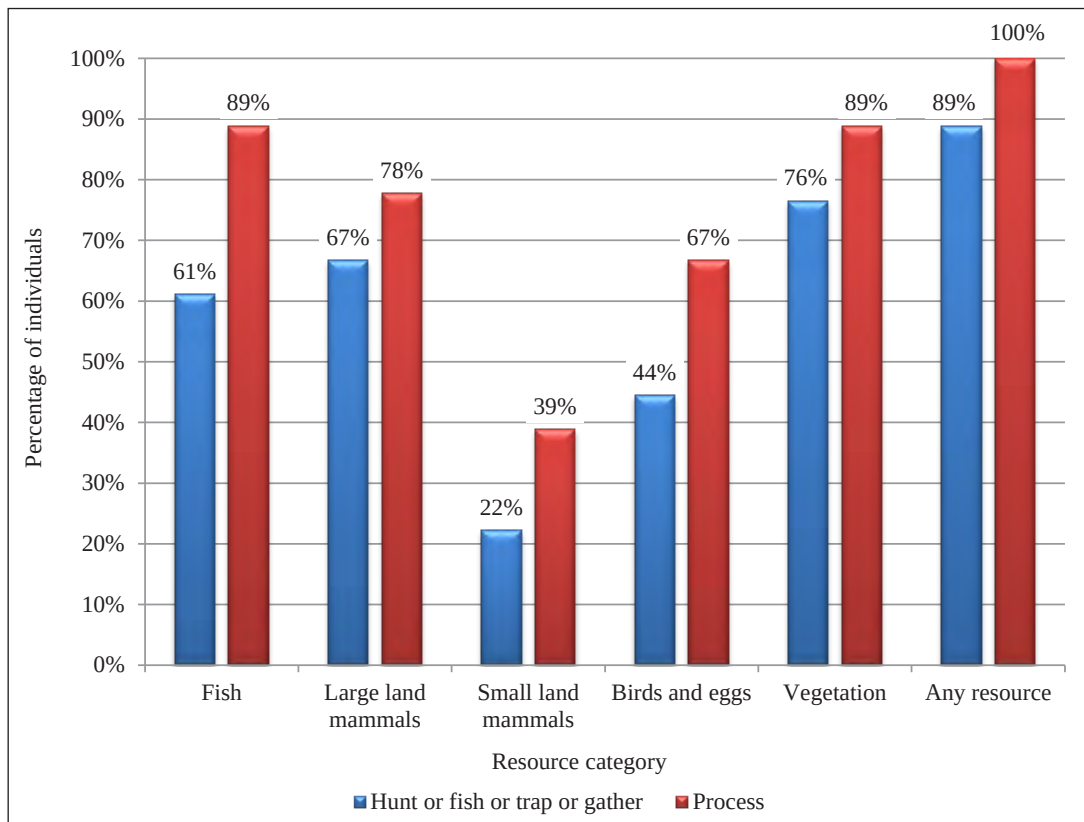


Figure 5-10.—Individual participation in subsistence harvesting and processing, by category, Eagle Village, 2017.

the least commonly used resource (31%). No households used marine mammals or marine invertebrates, and therefore they were not included in this figure. For salmon, nonsalmon fish, small land mammals, and vegetation, the same proportions of households attempted harvesting as successfully harvested. Large land mammals had a large discrepancy between attempted harvest (69% of households) and successful harvest (15%), and birds also had a discrepancy, although not as great (54% attempted harvest and 38% harvested).

At the request of the National Park Service, the survey included additional questions about transportation, equipment use, and natural materials used to make handicrafts. Table D5-9 shows the types of transportation used by Eagle Village residents to access wild resources. Seven households used boats, four used snowmachines and trucks, and one household used an all-terrain vehicle (ATV). The survey did not specifically ask about the use of trucks or other highway vehicles, so their use is likely under-represented. Households either owned or borrowed transportation, and boats were the only type that were borrowed more frequently than owned. No household reported leasing or chartering transportation. The survey did not ask about resource harvesting that took place only by foot.

Five surveyed households reported using chainsaws and one reported using a log splitter (Table D5-10).

Table D5-11 shows that two households used wood and two households used “other raw materials” for making handicrafts. The other raw materials involved beadwork, but respondents were not specific about what type of material was used. However, beading on moosehide or other leathers is a common Athabaskan practice. One key respondent in Eagle Village whittles small figurines and makes replica buildings out of wood (03252018EAA4). Some of his work is displayed at the Eagle Village Council building (Plate 5-1).

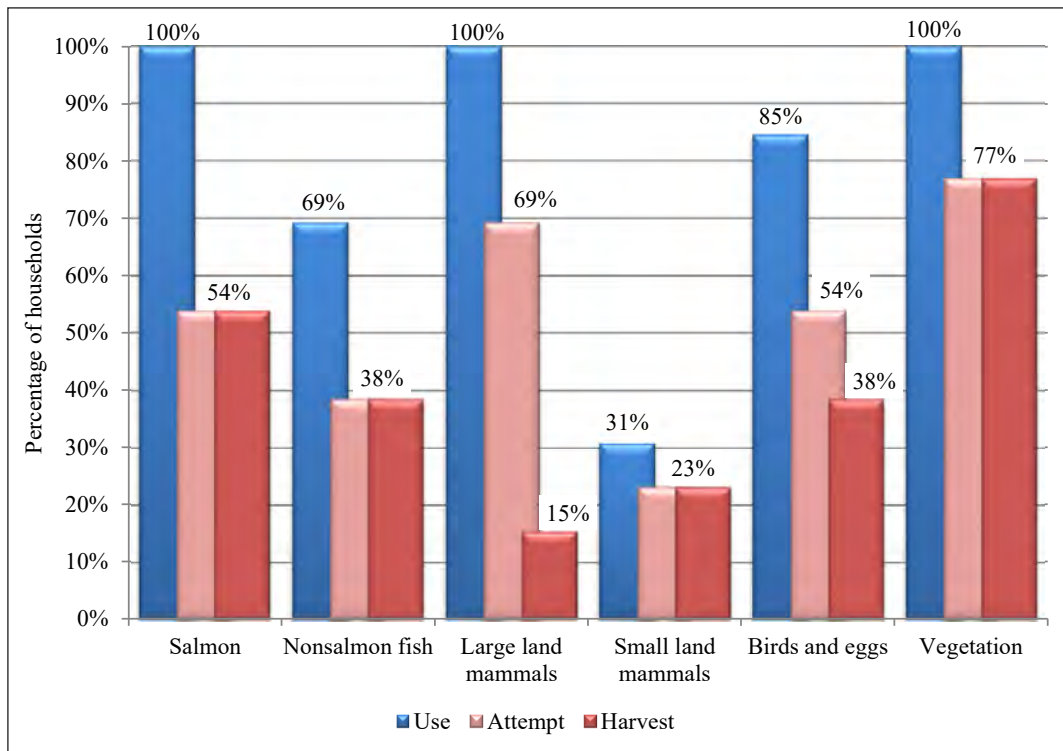


Figure 5-11.—Percentages of households using, attempting to harvest, and harvesting wild resources, by category, Eagle Village, 2017.



Plate 5-1.—Wooden handicrafts produced by an Eagle Village elder, including replicas of community buildings from both the old and new village locations.

SHARING OF WILD RESOURCES

Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of a community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 rural Alaska communities found that about 33% of the households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 5-12, approximately 15% of households in Eagle Village harvested 78% of the wild resources by weight in 2017. These results indicate that subsistence harvests were much more specialized in Eagle Village in comparison to the trends reported by Wolfe et al. (2010). This could be caused by a variety of factors, including the small population size and the older demographic of residents. Further analysis of the study findings beyond the scope of this report might identify characteristics of the highly productive households in Eagle Village.

Although harvests were highly specialized, all households utilized multiple types of resources. Sharing is a key means by which residents obtain wild foods. Every household in Eagle Village reported receiving at least one type of resource, and 77% of households reported giving at least one resource to others (Table 5-3). This reflects the pattern of harvest specialization in which a few households harvest and redistribute wild resources to others.

HARVEST QUANTITIES AND COMPOSITION

Table 5-9 reports estimated wild resource harvests and uses by Eagle Village residents in 2017 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors³). The harvest category includes resources harvested by any

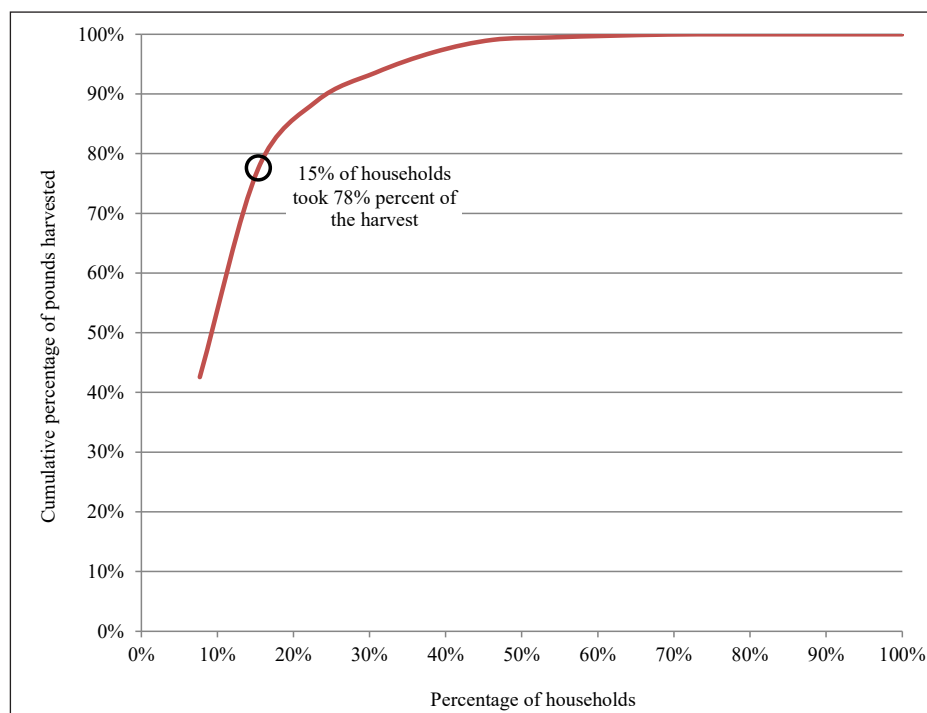


Figure 5-12.—Household specialization, Eagle Village, 2017.

3. Resources that are not eaten, such as firewood and some furbearers, are included in the table but are assigned a conversion factor of zero.

Table 5-9.—Estimated harvest and use of wild resources, Eagle Village, 2017.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	100.0	92.3	76.9	100.0	76.9	7,910.2	465.3	336.1	7,910.2 lb		465.3	54.3
Salmon	100.0	53.8	53.8	92.3	38.5	6,141.8	361.3	260.9	6,141.8 lb		361.3	52.8
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Fall chum salmon	69.2	30.8	23.1	53.8	7.7	593.0	34.9	25.2	125.6 ind		7.4	73.8
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Coho salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Chinook salmon	100.0	46.2	46.2	84.6	38.5	5,548.8	326.4	235.7	763.7 ind		44.9	58.1
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sockeye salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Nonsalmon fish	69.2	38.5	38.5	38.5	30.8	86.7	5.1	3.7	86.7 lb		5.1	50.7
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Smelts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Pacific halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Arctic lamprey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Arctic char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Dolly Varden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lake trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Arctic grayling	38.5	15.4	15.4	23.1	23.1	11.8	0.7	0.5	13.1 ind		0.8	71.6
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sheefish	30.8	23.1	23.1	7.7	7.7	64.7	3.8	2.7	11.8 ind		0.7	63.2
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown trouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Broad whitefish	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 5-8.--Page 2 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Nonsalmon fish, continued												
Bering cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown whitefishes	23.1	7.7	7.7	15.4	0.0	10.2	0.6	0.4	5.2 ind		0.3	105.7
Large land mammals	100.0	69.2	15.4	92.3	61.5	1,537.8	90.5	65.3	1,537.8 lb		90.5	71.9
Black bear	7.7	7.7	7.7	0.0	7.7	130.8	7.7	5.6	3.9 ind		0.2	105.7
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Caribou	69.2	61.5	0.0	69.2	30.8	0.0	0.0	0.0	0.0 ind		0.0	0.0
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Moose	100.0	69.2	15.4	84.6	53.8	1,407.1	82.8	59.8	2.6 ind		0.2	71.6
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Small land mammals	30.8	23.1	23.1	7.7	0.0	5.2	0.3	0.2	5.2 lb		0.3	105.7
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Snowshoe hare	23.1	15.4	15.4	7.7	0.0	5.2	0.3	0.2	7.8 ind		0.5	105.7
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marten	7.7	7.7	7.7	0.0	0.0	0.0	0.0	0.0	15.7 ind		0.9	105.7
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marine mammals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 5-8.–Page 3 of 5.

Table 3-6: Page 3 of 13.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine mammals, continued												
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown seal oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Birds and eggs	84.6	53.8	38.5	61.5	30.8	69.2	4.1	2.9	69.2 lb		4.1	55.6
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Canvasback	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Goldeneyes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Mallard	46.2	15.4	15.4	38.5	15.4	16.8	1.0	0.7	10.5 ind		0.6	71.6
Mergansers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern pintail	15.4	7.7	7.7	7.7	7.7	4.6	0.3	0.2	3.9 ind		0.2	105.7
Scaups	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Surf scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Northern shoveler	7.7	7.7	7.7	0.0	0.0	11.2	0.7	0.5	13.1 ind		0.8	105.7
Teals	7.7	0.0	0.0	7.7	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
American wigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown ducks	15.4	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Canada goose	15.4	7.7	7.7	7.7	0.0	14.8	0.9	0.6	5.2 ind		0.3	105.7
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown gulls	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0

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Table 5-8.-Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs, continued												
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Spruce grouse	46.2	46.2	30.8	15.4	15.4	14.5	0.9	0.6	17.0 ind		1.0	54.8
Sharp-tailed grouse	0.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Ruffed grouse	7.7	15.4	7.7	0.0	0.0	2.2	0.1	0.1	2.6 ind		0.2	105.7
Unknown grouses	7.7	0.0	0.0	7.7	7.7	0.0	0.0	0.0	0.0 ind		0.0	0.0
Ptarmigans	15.4	15.4	7.7	7.7	15.4	5.0	0.3	0.2	6.5 ind		0.4	105.7
Duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Marine invertebrates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 lb		0.0	0.0
Butter clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Freshwater clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Dungeness crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
King crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Tanner crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Unknown crabs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ind		0.0	0.0
Shrimps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Vegetation	100.0	76.9	76.9	84.6	38.5	69.4	4.1	2.9	69.4 lb		4.1	46.2
Blueberry	38.5	15.4	7.7	30.8	0.0	5.2	0.3	0.2	1.3 gal		0.1	105.7
Lowbush cranberry	38.5	7.7	0.0	38.5	7.7	0.0	0.0	0.0	0.0 gal		0.0	0.0
Highbush cranberry	23.1	23.1	23.1	7.7	15.4	36.6	2.2	1.6	9.2 gal		0.5	57.2
Crowberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Cloudberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Raspberry	23.1	15.4	15.4	7.7	0.0	2.3	0.1	0.1	0.6 gal		0.0	72.4
Soapberry	7.7	7.7	7.7	0.0	0.0	0.3	0.0	0.0	0.1 gal		0.0	105.7
Strawberry	7.7	7.7	7.7	0.0	0.0	0.3	0.0	0.0	0.1 gal		0.0	105.7

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Table 5-8.—Page 5 of 5.

Table 3-6: Page 3 of 13.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount			95% confidence limit (±) harvest
	Using	Attempting harvest	Harvesting	Receiving	Giving away	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Vegetation, continued												
Wild rhubarb	7.7	7.7	7.7	0.0	0.0	0.1	0.0	0.0	0.1 gal		0.0	105.7
Wild potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Hudson's Bay (Labrador) tea	53.8	53.8	53.8	0.0	15.4	17.7	1.0	0.8	17.7 gal		1.0	62.6
Spruce tips	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Wild rose hips	7.7	7.7	7.7	0.0	0.0	0.7	0.0	0.0	0.2 gal		0.0	105.7
Unknown mushrooms	23.1	23.1	23.1	7.7	15.4	6.2	0.4	0.3	6.2 gal		0.4	67.8
Fireweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Stinkweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Punk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Chaga	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Mousefoods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 gal		0.0	0.0
Wood	92.3	46.2	46.2	69.2	0.0	0.0	0.0	0.0	34.0 cord		2.0	40.8
Other wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 cord		0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

Note For small land mammals, species that are not typically eaten show a non-zero harvest amount with a zero harvest weight. Harvest weight is not calculated for species harvested but not eaten.

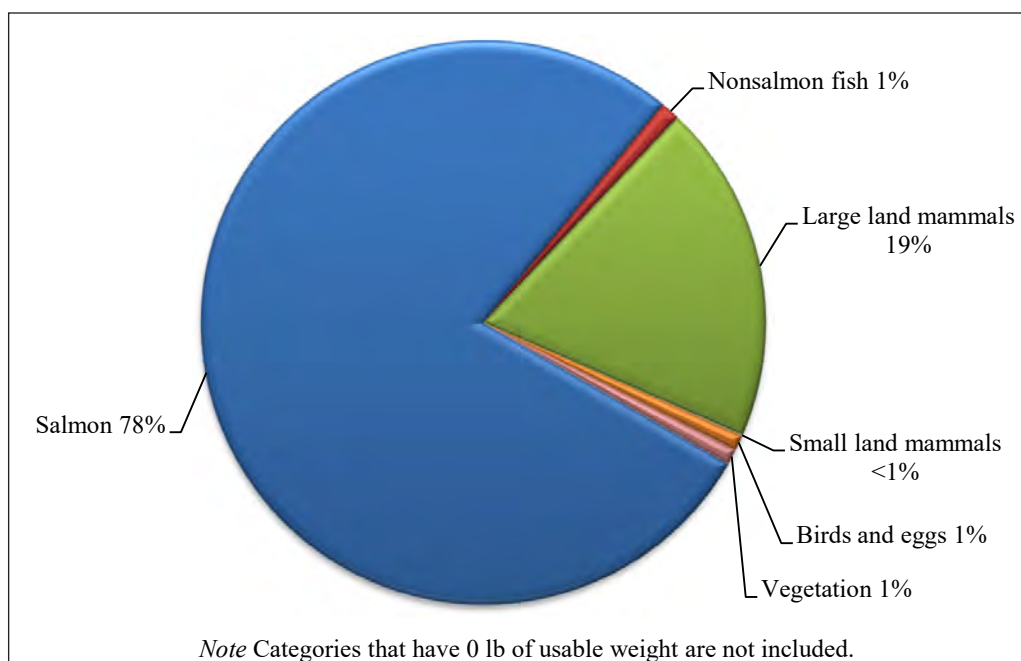


Figure 5-13.—Composition of harvest by percentage of edible weight, Eagle Village, 2017.

member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and nonlocal hunters. Purchased foods are not included, but resources such as firewood are included because although they are not edible, they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods, as discussed in the previous section. Almost every household reported receiving salmon (92%), large land mammals (92%), and vegetation (85%) from others. A greater percentage of households (62%) reported giving away large land mammals than any other resource category. For all resource categories, the percentage of households receiving was greater than that of giving away. Giving and receiving are not limited to within the community, but likely also occur with friends and relatives living in other rural communities and in urban centers such as Fairbanks.

Table 5-10.—Top ranked resources used by households, Eagle Village, 2017.

Rank ^a	Resource	Percentage of households using
1.	Chinook salmon	100.0%
1.	Moose	100.0%
3.	Fall chum salmon	69.2%
3.	Caribou	69.2%
5.	Hudson's Bay (Labrador) tea	53.8%
6.	Mallard	46.2%
6.	Spruce grouse	46.2%
8.	Arctic grayling	38.5%
8.	Blueberry	38.5%
8.	Lowbush cranberry	38.5%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Resources used by the same percentage of households share the lowest rank value instead of having sequential rank values.

In 2017, the total subsistence harvest in Eagle Village was estimated to be 7,910 lb (336 lb per capita; Table 5-9). The composition of the total harvest by weight and resource category is shown in Figure 5-13. Salmon composed the largest proportion of the harvest (78%; 6,142 lb), followed by large land mammals (19%; 1,538 lb; Table 5-9; Figure 5-13). The remaining 3% of the edible harvest included nonsalmon fish, birds, and vegetation. Small land mammals contributed less than 1%. Harvests by species within each resource category will be discussed in more detail in the following sections.

Table 5-10 lists the top ranked resources used by households. Chinook salmon and moose were used by all households in Eagle Village in 2017.

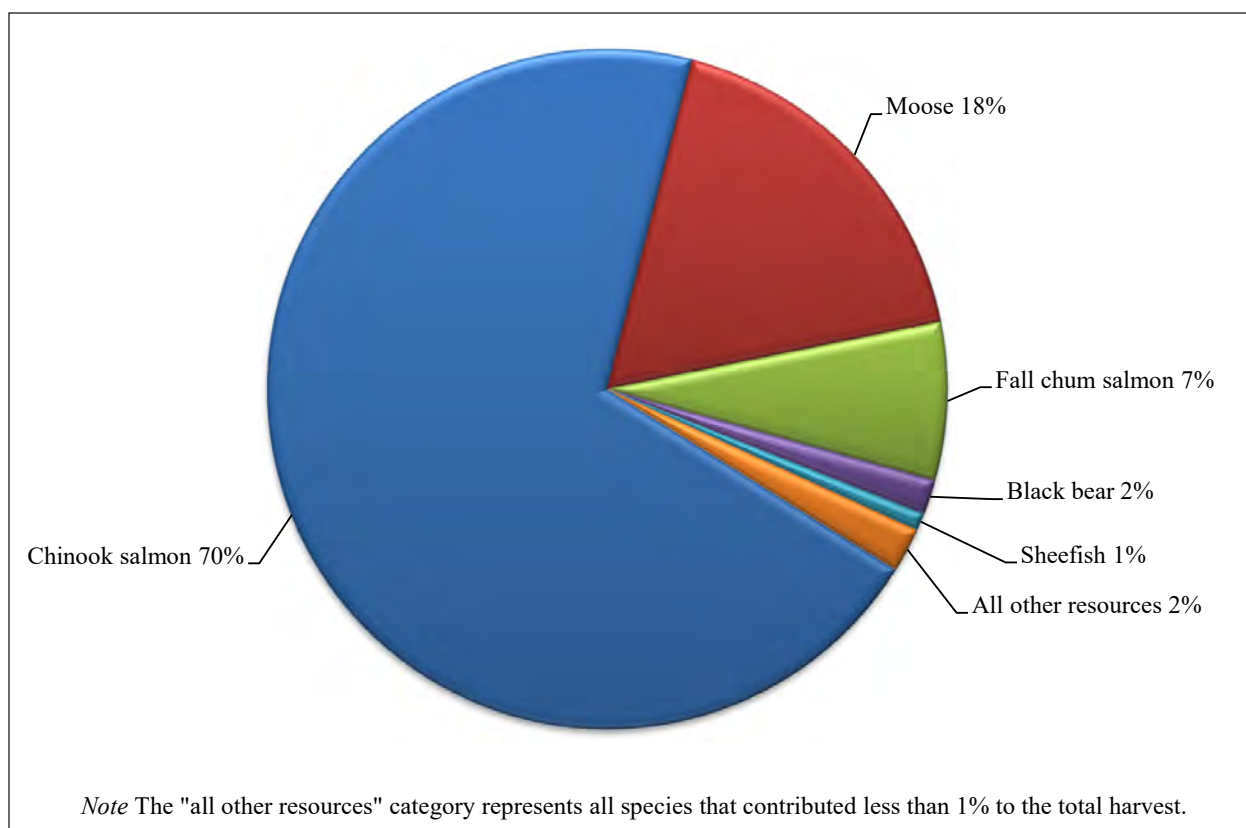


Figure 5-14.—Top resources harvested by percentage of edible weight, Eagle Village, 2017.

Caribou and fall chum salmon were also used by most households, (69% each). Just over half of households used Hudson's Bay tea (54%), locally known as k'eläk'ày' (Henry and Yukon Native Language Center 2011), and just under half of households used mallard and spruce grouse (46% each).

Figure 5-14 shows the composition of the top species harvested by weight per capita during the 2017 study year. Chinook salmon made up the largest percentage of the per capita harvest; this resource accounted for about two-thirds of the edible pounds per capita (70%; 236 lb per person; Table 5-10; Figure 5-14). Moose composed the second largest portion of the per capita harvest (18%; 60 lb) of the total. Fall chum salmon totaled 7% (25 lb) and black bear contributed 2% (6 lb). Sheefish contributed 1% (3 lb) to the per capita harvest by weight, and all other resources made up the remaining 2%. Although caribou was one of the most commonly used resources, there was no harvest by Eagle Village residents.

HARVEST AND USE CHARACTERISTICS BY RESOURCE CATEGORY

Salmon

Salmon is a staple resource in Eagle Village. In 2017, salmon accounted for the majority of the subsistence harvest by weight and was used by all households in the community (Table 5-9; Figure 5-12). In total, Eagle Village fishers harvested 889 salmon (6,142 lb; Table 5-9). By weight, 90% of the harvest was Chinook salmon; fall chum salmon contributed the remaining 10% (Figure 5-15). The mean salmon harvests per household were 326 lb of Chinook salmon and 35 lb of fall chum salmon, or 361 lb total (Table 5-9). The per capita total salmon harvest was 261 lb.

Chinook salmon is prized for human consumption and is commonly preserved by freezing, smoking, and canning (Plate 5-2). Chinook salmon is generally preferred for its firmer flesh and oil content, but fall chum salmon can serve as a substitute in times of low Chinook salmon abundance or during periods of heavily restricted Chinook salmon fishing, which has been common since the 2009 Chinook salmon population

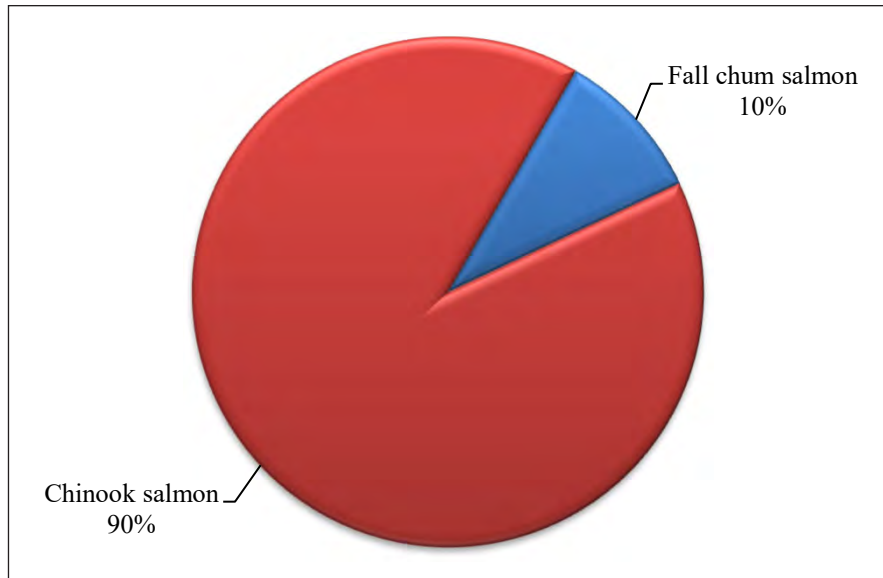


Figure 5-15.—Composition of salmon harvest by percentage of edible weight, Eagle Village, 2017.



Plate 5-2.—Chinook salmon being smoked in Eagle Village.

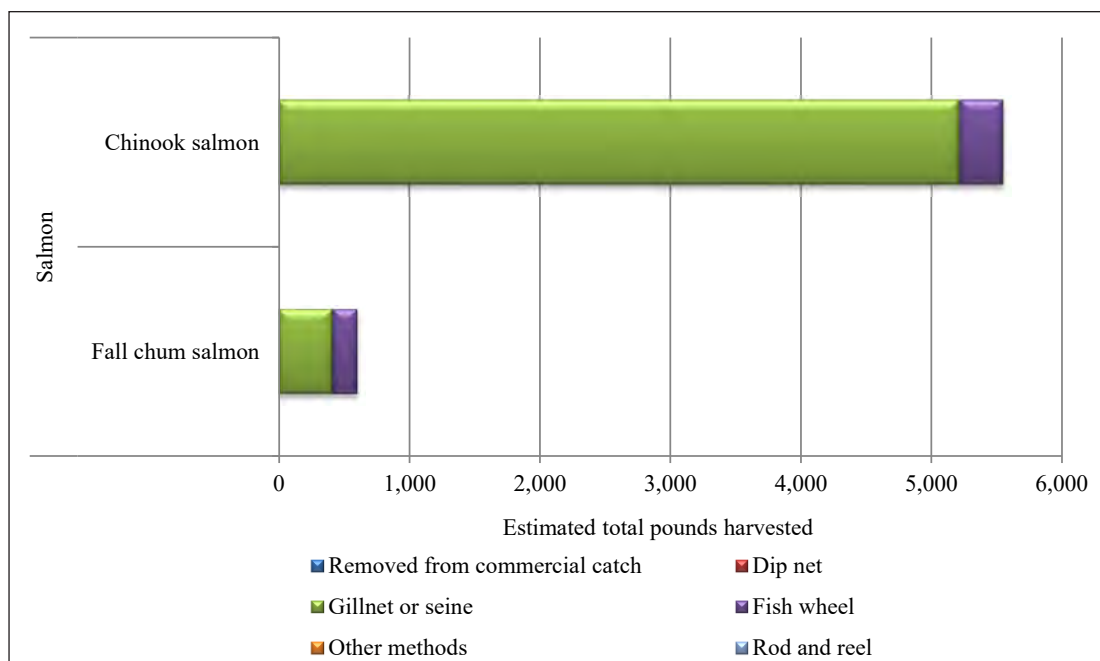


Figure 5-16.—Estimated salmon harvests by gear type in edible pounds, Eagle Village, 2017.

crash. “They never had a closure on dog salmon [fall chum salmon] so we were able to catch dog salmon. So we did what we do with kings, we made salmon strips and dried some of that” (04242018EAA1).

Figure 5-16 shows usable pounds of salmon harvested by gear type. Eagle Village fishers primarily used gillnets to harvest salmon: gillnets provided 91% (5,624 lb) of the salmon in 2017 (tables 5-11 and D5-12). Approximately 718 (5,215 lb) Chinook salmon and 86 (408 lb) fall chum salmon were taken by set gillnets, and the remaining 39 Chinook salmon and 46 fall chum salmon were harvested using a fish wheel.

One respondent said that a fisher’s decision to use a net or a wheel depends on the skills and labor available (04242018EAA1). Nets can be purchased, but a fish wheel takes specialized knowledge to build. In 2017, Eagle Village and Eagle Community School received funding from the Alaska Care and Husbandry Instruction for Lifelong Living (A-CHILL) program to teach students to build and operate a fish wheel.⁴ As mentioned above, a few Eagle Village residents helped with the construction of the wheel. The fish wheel did not operate as successfully as was hoped, but while it was in operation the harvested fish were distributed among community residents. The Village Council hopes to have a community fish wheel again in the future (04242018EAA1).

Although not used by any surveyed households in 2017, people occasionally use dip nets to harvest salmon. One respondent said that dip nets are most commonly used for chum salmon, commonly known as “dog salmon” (04242018EAA1). When a large run migrates upriver, chum salmon can be spotted by the waves they make at the water surface and fishers can target them with dip nets. If the fish are “banged up” and not good enough quality for eating, then they can be thrown back alive. Another respondent described how he and his brothers would take dip nets with them moose hunting so they could catch and fry a few salmon for dinner in moose camp (03252018EAA4). A key respondent from the city of Eagle also recalled seeing residents of Eagle Village use dip nets in the past. He said that before the village was relocated, “people could get down to the bank really easy, so they used the river a lot. There was more dipnetting, there was more people cutting fish, and doing things like that” (03272018EAA8). Handmade dip nets were

4. B. McDavid field notes, March 2018.

Table 5-11.—Estimated harvests of salmon by gear type, Eagle Village, 2017.

Resource	Subsistence methods															
	Removed from commercial catch		Subsistence gear,										Rod and reel		Any method	
			Dip net		Gillnet or seine		Fish wheel		Other method		any method					
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	0.0	0.0	0.0	0.0	804.3	5,624.1	85.0	517.7	0.0	0.0	889.3	6,141.8	0.0	0.0	889.3	6,141.8
Summer chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fall chum salmon	0.0	0.0	0.0	0.0	86.4	407.9	39.2	185.2	0.0	0.0	125.6	593.0	0.0	0.0	125.6	593.0
Unknown chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coho salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chinook salmon	0.0	0.0	0.0	0.0	717.9	5,216.2	45.8	332.5	0.0	0.0	763.7	5,548.8	0.0	0.0	763.7	5,548.8
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sockeye salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spawnouts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Table 5-12.—Estimated harvest of salmon for consumption by dogs, Eagle Village, 2017.

Resource	Amount	Pounds
Salmon		
Fall chum salmon	111.2 ind	524.6 lb
Total	111.2 ind	524.6 lb

Source ADF&G Division of Subsistence household surveys, 2018.

a traditional fishing gear used by the Han Hwetch'in before contact but were not legal gear under state management (Osgood 1971).⁵

Table 5-12 shows that an estimated 111 (525 lb) fall chum salmon were harvested for feeding dogs, indicating that only 11 fall chum salmon were utilized for human consumption. During surveys, only two households reported feeding salmon to dogs. The quality of fall chum salmon is more variable than Chinook salmon, and not all fish that are caught are fit for eating. Poor quality fish that cannot be released alive are often fed to dogs and not wasted. In the past when there were more dogs in the community, there was more fishing for fall chum salmon. One respondent recalled, "The fish wheel would sink. They were so full. They were sliding off over the edges. Like over a thousand a day sometimes" (04242018EAA1). To put up chum salmon for dogs, fishers would split and hang the early fish to dry with the flesh side out. When the weather got cold, enough they could hang the salmon whole without risk of spoiling. Roe would also be dried for dogs.

Eagle Village residents fished for salmon close to the community, between the Canadian border and the city of Eagle (Figure 5-17). In the past, some Eagle Village residents would travel downriver and spend a large portion of the summer in fish camp, where extended family members would work together to harvest and process fish to store for the winter (04242018EAA1, 03232018EAA2, 03252018EAA4). Although residents now fish closer to the community, harvesting and processing fish is still an important traditional practice. People originally from Eagle Village but now living in Fairbanks or elsewhere commonly return home during summer months to help with fishing (03232018EAA2).

Respondents have seen changes in the abundance and size of Chinook salmon over time.

They build our fish wheel and it hit 300 a day, king salmon...Now you just get those little king salmon. These were huge king salmon they were catching those days. It just filled up the fish wheel or some of them had to be thrown back in the river. The live ones. (02232018EAA2)

Another respondent shared that finding a suitable fishing location was less important in the past because the fish were so abundant, but now it is not as efficient to spend time at camp or travel back and forth (04242018EAA1). This respondent also said that a natural cycle of larger and smaller run sizes makes salmon fishing different every year, but he is uncertain what is causing the continued low run sizes. "I always thought it was just the cycle, so it didn't bother me none. But it bothered me when I couldn't get any...It could be a lot of the catch downriver or it could be most anything, you know." He is sometimes able to still catch what he considers good-sized Chinook salmon, over 40 lb, but they are rare.

In the past, salmon were more commonly harvested to sell noncommercially as part of customary trade. One elder respondent recalled that Eagle Village residents would sell bundles of 50 dried salmon to the store for credit, and the store would sell them for dog food (03252018EAA4). He also said that people from Tanacross would travel to Eagle in the summertime to buy fish. However, another respondent said that their family would simply share the fish with people from other communities:

It was in the late '50s and early '60s when we still living down there [at camp] every year...After that my dad would start building fish wheel back in the '70s [close to the village]. And we even had people from Tok, Tanacross, Dot Lake, Northway come into Eagle...Used to give 'em boat loads. We give it to 'em, we didn't take no money. (04242018EAA1)

Nonsalmon Fish

Almost 70% of households used nonsalmon fish in 2017 even though they harvested the resource in much smaller quantities than salmon (Table 5-9). Fewer households fished for nonsalmon species (39%) than salmon (54%) as well. The estimated total harvest of nonsalmon fish was 87 lb (30 fish), which is

5. Dip nets were made legal subsistence salmon fishing gear on the Yukon River after this study was completed (ADF&G, Division of Commercial Fisheries 2019).

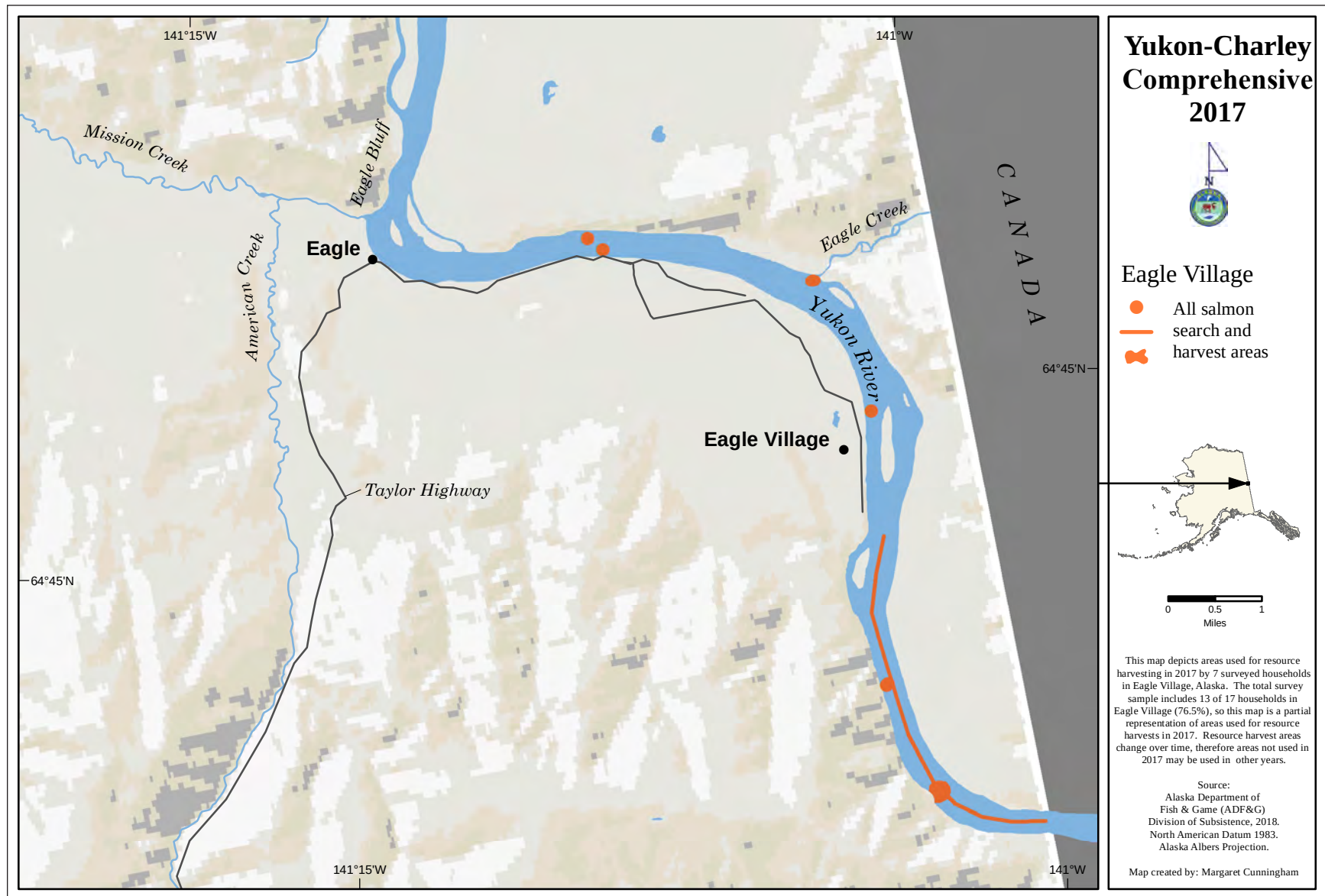


Figure 5-17.—Salmon fishing areas, Eagle Village, 2017.

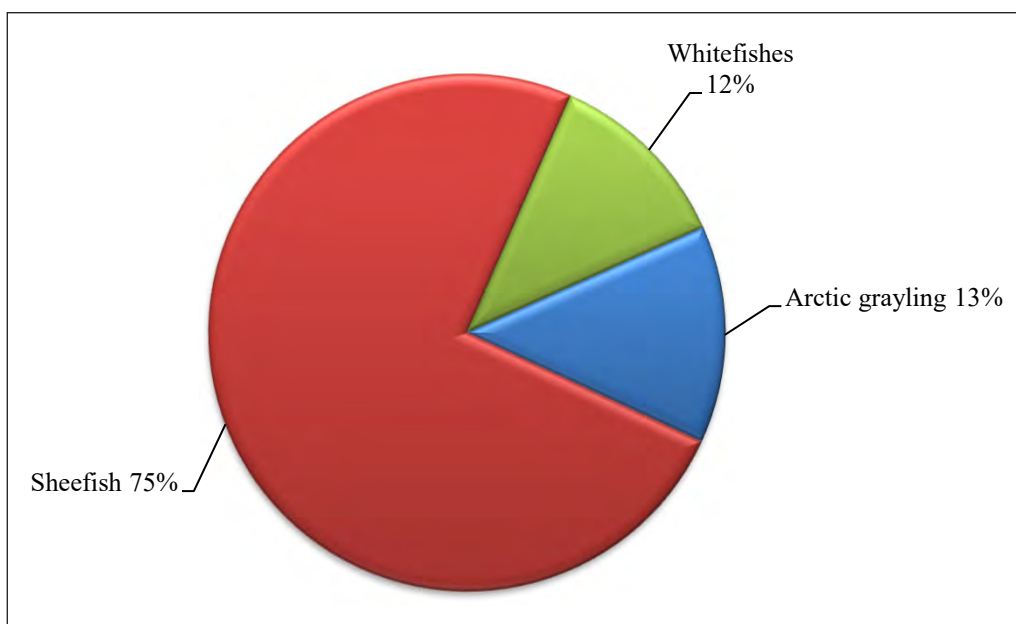


Figure 5-18.—Composition of nonsalmon fish harvest by percentage of edible weight, Eagle Village, 2017.

approximately five fish per household. The composition of the nonsalmon fish harvest by weight amounted to 75% (65 lb) sheefish, 13% (12 lb) Arctic grayling⁶, and 12% (10 lb) unidentified whitefishes (Figure 5-18). All sheefish and other unidentified whitefishes were harvested using set gillnets, and all grayling were harvested by rod and reel (tables 5-13 and D5-13). Figure 5-19 is a visual representation of the nonsalmon fish harvest by gear type.

Nonsalmon fish were harvested in mostly the same locations as salmon: between the U.S.-Canada border downstream to Eagle Creek (Figure 5-20). One key respondent described incidentally catching sheefish in his set gillnet and said that sometimes they are bigger than Chinook salmon (04242018EAA1). He sometimes uses a four-inch mesh gillnet to specifically target whitefishes and catches lots of humpback whitefish when using the four-inch mesh. Ciscoes are too small and go through the net, but they can be caught on a hook. Some nonsalmon fish were also harvested off of the Taylor Highway at Alder Creek. A survey respondent mentioned taking a rod and reel while traveling and stopping to fish for grayling along the highway. One elder key respondent mentioned that Eagle Village residents used to fish for grayling by Eagle Bluff in springtime when the edges of the river start to melt (03252018EAA4). However, nonsalmon fish seem to have been more of a staple food in the past:

Back in the '30s and '40s people used to go up to the Fortymile River in Canada with their dog team in the last part of April to go fishing, or downriver about 20 miles there is a place they call Seventymile [River]. Same thing, they go there with their dog team and go fishing [for grayling]...They either chop a hole through the ice, sometimes that ice is five feet thick or when there is river water along the beach...My two older brothers, they always used dip nets to go fishing for whitefish just after breakup in springtime. (03252018EAA4)

During the sudden decline of fall chum salmon around 2000 when there were still a few small dog teams in Eagle Village, whitefishes were an important substitute for the fall chum salmon that could not be harvested due to low abundance and fishing restrictions (04242018EAA1). In 2017, however, Eagle Village residents did not report feeding any nonsalmon fish to dogs (Table 5-12).

6. Hereinafter, *grayling*.

Table 5-13.—Estimated harvests of nonsalmon fish by gear type, Eagle Village, 2017.

Resource	Units	Subsistence methods															
		Removed from commercial catch		Fish wheel		Gillnet or seine		Ice fishing		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds	Number ^a	Pounds
Nonsalmon fish			0.0		0.0		74.9		0.0		0.0		74.9		11.8		86.7
Pacific herring	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smelts	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific halibut	lb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic lamprey	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic char	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lake trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	11.8	13.1	11.8
Northern pike	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sheefish	ind	0.0	0.0	0.0	0.0	11.8	64.7	0.0	0.0	0.0	0.0	11.8	64.7	0.0	0.0	11.8	64.7
Longnose sucker	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown trouts	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Broad whitefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bering cisco	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Least cisco	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Humpback whitefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown whitefishes	ind	0.0	0.0	0.0	0.0	5.2	10.2	0.0	0.0	0.0	0.0	5.2	10.2	0.0	0.0	5.2	10.2

Source: ADF&G Division of Subsistence household surveys, 2018.

a. The harvested number of each resource is measured by the unit in which the resource harvest information was collected; the unit of measurement is provided for each resource.

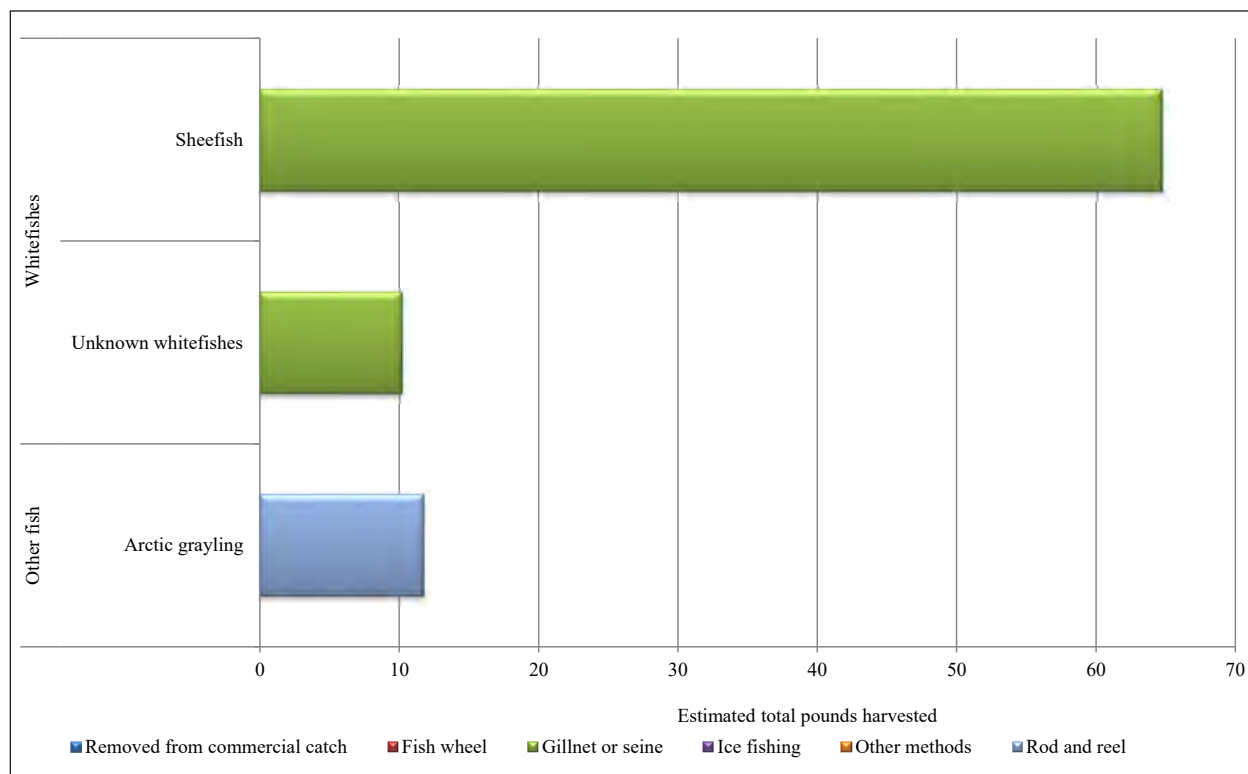


Figure 5-19.—Estimated harvests of nonsalmon fish by gear type in edible pounds, Eagle Village, 2017.

Large Land Mammals

In 2017, the total large land mammal harvest amounted to 1,537 lb, and an average household harvest was 91 lb, 65 lb per capita (Table 5-9). After salmon, large land mammals contributed the second greatest amount by weight to the overall subsistence harvest (Figure 5-13). Moose made up the majority of the large land mammal harvest (91%), and black bear composed a small proportion (9%; Figure 5-21).

Sixty-nine percent of households attempted to harvest moose but only 15% were successful (Table 5-9). All households reported using moose meat, and 85% received moose meat from others. Eagle Village hunters took three bull moose (1,407 lb) in September (tables 5-9 and D5-14). One elder respondent recalled a time when moose could be hunted as needed, such as in the summertime, and how a moose would then be divided and distributed to all the families in the village (03232018EAA2). Within present-day hunting seasons, another respondent mentioned that he prefers to hunt for caribou before moose because harvesting moose during cooler weather prevents the meat from spoiling (04242018EAA1). This hunter prefers to call moose to him because as he has gotten older he can no longer pack the meat very far. He does this by either using a homemade birch bark call or by rubbing a moose shoulder blade against trees. Another respondent described how he makes sure his moose meat does not spoil. After killing the moose, he will gut it and cut off the head (03252018EAA4). If necessary, at that point he can cover it with a tarp and leave it overnight as long as the weather is not too hot. However, the moose should be skinned as soon as possible and the meat hung up. Alternatively, moose meat can be piled on top of stacked dry wood temporarily. Eagle Village residents described freezing, smoking, drying, and canning the meat as methods to preserve it.

Hunters harvested an estimated four black bears in the summer months of July and August (Table D5-14), but only one black bear was used for food (Figure 5-22). Only 8% of households hunted for bears, and 8% of households gave away black bear meat to others (Table 5-9). One survey respondent shared that bears are not eaten much because of traditional beliefs that in the distant past when humans were animals, bears were the closest relative to people and could even speak to humans.⁷

7. Survey notes, March 2018.

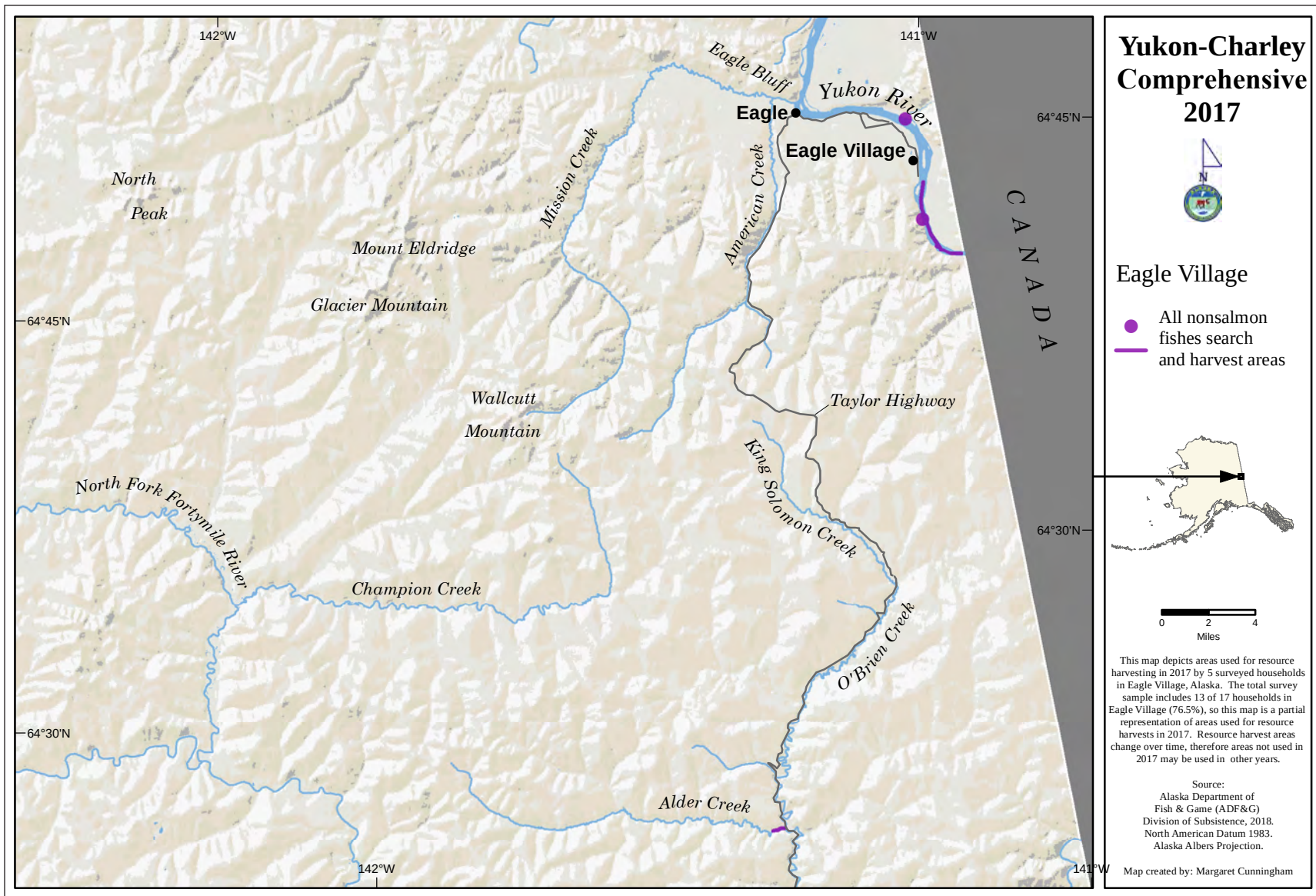


Figure 5-20.—Nonsalmon fishing areas, Eagle Village, 2017.

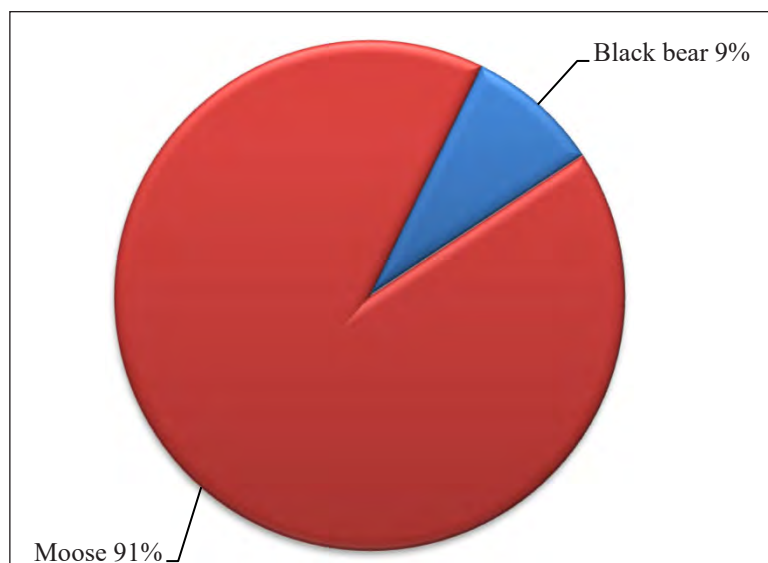


Figure 5-21.—Composition of large land mammal harvest by percentage of edible weight, Eagle Village, 2017.

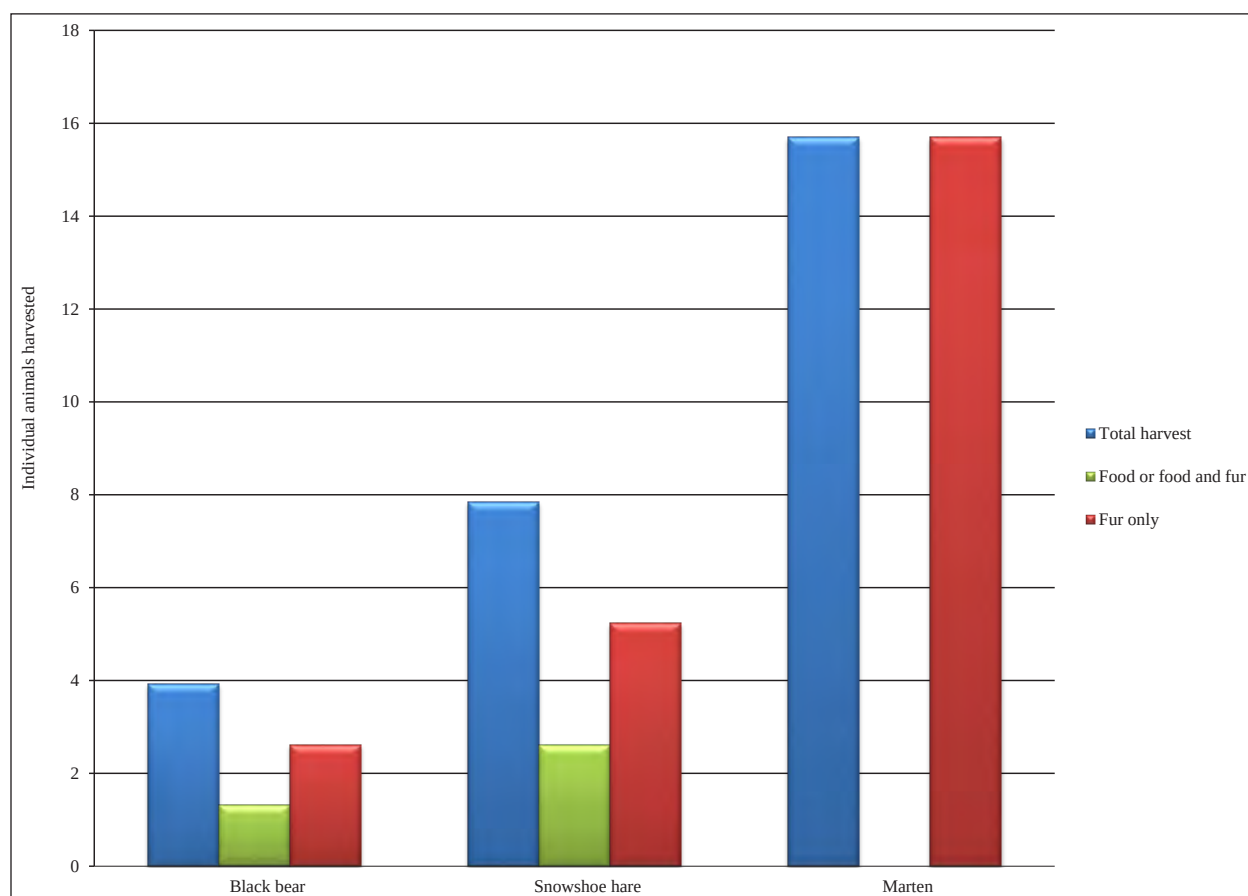


Figure 5-22.—Estimated land mammal harvests for food or fur, Eagle Village, 2017.

Eagle Village residents did not successfully harvest any caribou in 2017, although 62% of households attempted to harvest them (Table 5-9). Sixty-nine percent of households received caribou meat from others. Some caribou came near Eagle Bluff in 2017, but they were too far to shoot by the time hunters from the village were able to travel there to try to harvest any (04242018EAA1). A survey respondent from the city of Eagle recalled sharing caribou meat to residents in the village because they were unsuccessful.⁸

Although caribou harvests may have decreased as the number of hunters in Eagle Village has decreased, a community harvest of zero caribou is not typical. An elder who is no longer an active hunter described how important caribou was for his family:

We used, we get enough to last us all winter. Like, maybe seven, eight, nine, ten caribou...Back, I don't know, until 1963 I think, the only fresh meat you could get from downtown was slab bacon. And then the store sells them canned Spam, canned corned beef, canned wieners, and canned meatloaf. That's all you could get from the store. That's why people hunt caribou, always get, have enough to last all winter. (03252018EAA4)

Another respondent stated that his brother used to take his truck to American Summit to harvest caribou, and he would bring his harvest back to the village and share it with all the families (04242018EAA1).

One key respondent described traditional harvest practices for caribou: "Yeah, don't get those ones with the calves and such, you know, when they're carrying" (04242018EAA1), but "barren cows" without calves are okay to harvest. He continued, "And certain time to leave those bulls alone too. 'Cause they stink to high heavens late fall." Another respondent indirectly brought up the traditional practice of avoiding harvest of the lead caribou (03232018EAA2). She was concerned about changing migration patterns of the Fortymile caribou herd, which she said went the "wrong way" the prior year by not migrating through the Eagle area and instead concentrated on the Steese Highway and into the White Mountains. She attributed this change in migration as a possible effect of the lead caribou being harvested.

In the past, moose and caribou hides were used for many purposes, including clothing and bedding; they could also be tanned and sold for income or store credit. An elder recalled how these animals were used and processed:

My mom, she saved maybe two, three of them [caribou]. She cleaned the flesh out of it and stretch it out on the floor and she dried it. We used that for a mattress in case you go out camping. You ever try that? I mean you gotta have your sleeping bag and sleep on top of it and it is warmer than anything. I guess back in the old days, people tan it and make caribou sleeping bags out of it. It's one of the warmest things...The old people, like my mom, I think she was born in 1907, people that old they used a lot of things like caribou that people don't use today. Like my mom, she used to boil them caribou hooves. And then you could eat the thing inside of it. It tastes good, I'd eat it when I was a little kid. And then the leg bones, that's where she'd gets the skin off the leg bone for making mukluks. And then the leg bone, when were little kids me and my younger brother, we used to stick them in the cook stove and cook them, until she told us it's done and then we break it, and get a little stick, enough to fit inside the leg broken bone and then eat that marrow with crackers or a homemade biscuit. People don't do that anymore. She made her living like that, and just about all her life. I remember in 1950, I was seven years old. I used to have to help her tan moose hides. She made, she put a pole across in the cabin and she put that moose skin over it and we'd scrape it with that scraper she got to make it soft for tanning. And I used to help her do that, and then after she scrape where it's almost soft all the way around, she would make a frame outdoor on a pole bigger than this pole, she would make something like a tipi frame, she would wrap that moose hide around it and cover it with canvas and leave the top

8. Survey notes, March 2018.

open, then she build little campfire inside out of a rotten spruce wood...that's the one that tan moose hide brown...She makes her own tool for tanning. Like the bone from a moose, she break one end of it off and kind of cut it down so it's something like a wood shaver at the end. She does beadwork with that moose she tans and she'd sell it to the store. See that's where she bought us clothes like blue jeans and flannel shirts from the store. (03252018EAA4)

Dall sheep are another large land mammal that Eagle Village residents occasionally harvest. However, they are not commonly harvested because of the great effort to reach their habitat at high elevation in the bluffs across the river from the village or near Glacier Mountain.

In 2017, Eagle Village residents hunted for large land mammals along the Taylor Highway and on a portion of the Alaska Highway between the Taylor Highway junction and the Northway Road junction (Figure 5-23). They also hunted along the Yukon River and extended downriver from the community into the Preserve to approximately 20 miles past the Nation River. There was some hunting that also occurred in the Eagle Creek drainage on the opposite side of the Yukon River from Eagle Village. It is also common to hunt in the flats behind the airport.

Moose are hunted both along the river and the road system, while caribou are typically hunted only along the road system unless they migrate across the Yukon River near town. Black bears are not usually sought out independently, but harvested if the opportunity arises when traveling or when nuisance bears enter town or fish camps. In the past, some hunters would use a fall moose camp. As one respondent described, his hunting group would make a camp 40 miles downriver by setting up a canvas wall tent with a stove, and they would hunt moose in the surrounding area (03252018EAA4).

During hunting season, people from elsewhere in Alaska flock to Eagle to hunt along the Taylor Highway and on the Yukon River. To deal with the increased competition in the area, one Eagle Village respondent sometimes travels downriver a week before the season opens and sets up a campsite so that hopefully no one will encroach on his hunting area (04242018EAA1). However, he does not usually like to hunt within the Preserve, even though fewer Alaskans are qualified to hunt there:

I usually don't like to go where Park Service is. They tend to piss me off too quick. You know, I mean they come into camp and they're not invited. They can do that now days, check your license and stuff. But they make a big deal with some guy. They make a big deal out of anything. They don't bother me. What bothers me is when they call me by my name. I don't know who the hell they are, you know.

The Taylor Highway is often overcrowded during caribou hunting season, so finding a place to hunt can be difficult (04242018EAA1, 03242018EAA3). This deters some Eagle Village hunters from hunting during the fall season; instead they wait until the winter hunt. More details on this issue will be described in the "Local Comments and Concerns" section below.

One elder recalled that on rare occasions groups of caribou from the Porcupine caribou herd (PCH) have migrated south to the Yukon River (02232018EAA2). She recalled her family hunting PCH caribou once at Wood Island, approximately 40 miles downriver from Eagle.

Small Land Mammals/Furbearers

Small land mammals were used by 31% of households and harvested by 23% of households in Eagle Village during 2017 (Figure 5-13). Of the 8 snowshoe hares⁹ and 16 marten harvested, only 3 hares (5 lb) were used for food (Figure 5-22). Several survey respondents expressed concerns about tularemia and were uncertain how to ensure that hare meat was safe to eat. Some households that normally would have eaten snowshoe hares chose to use them only for fur. Although no porcupine was harvested in 2017, two survey respondents reported that porcupine is a local delicacy.¹⁰ Residents prepare porcupine by first singeing the

9. Hereinafter, *hare*.

10. Survey notes, March 2018.

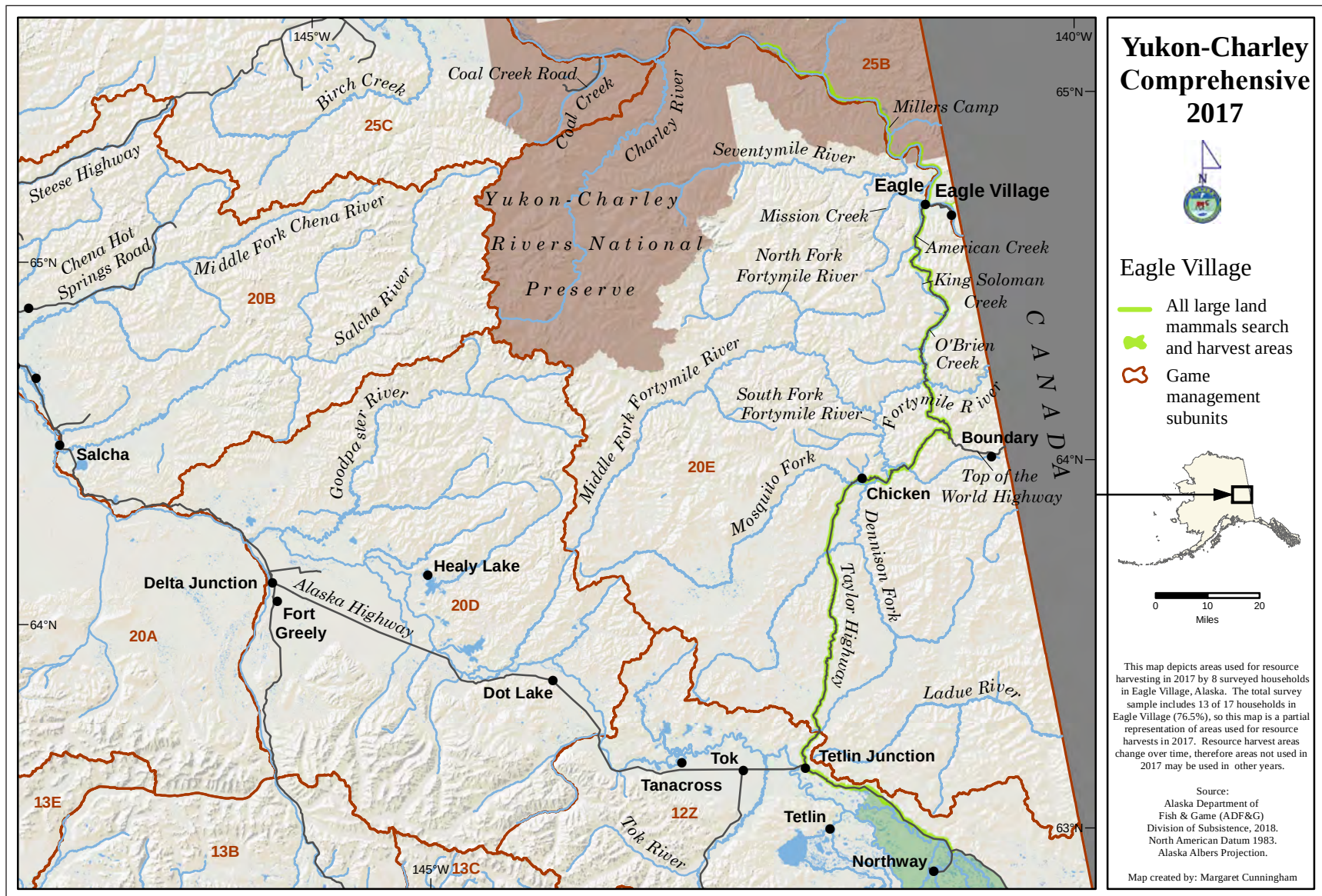


Figure 5-23.—Large land mammal hunting areas, Eagle Village, 2017.

quills off the body and then boiling the meat. According to one respondent, the porcupine population in the area is low.

Residents harvested small land mammals within the community, along the road to Eagle, and upriver on both sides of the Yukon River (Figure 5-24). All hare and marten were taken in winter months between November and February (Table D5-15). Although trapping was a common activity in the past, few Eagle Village residents participate in trapping at present day. According to one respondent, “I was the only one this winter actually put out traps...I got maybe 10, 11 marten there last winter. I sell at auction” (04242018EAA1).

Respondents shared several memories of spending much of the winter out on their traplines and of family members who did the same. They trapped with dog teams until snowmachines became more available. However, at least one respondent continued to prefer to use a dog team even after snowmachines were introduced because a dog team could not break down or run out of gas (03232018EAA2). Respondents mentioned that they used to trap in the Nation River drainage, in the American Summit region, the Mission Creek drainage, and the Glacier Mountain region, as well as Comet, Bear, and Champion creeks, which are tributaries of the North Fork of the Fortymile River (04242018EAA1, 03232018EAA2, 03252018EAA4). Many backcountry trapping cabins allowed trappers to stay out on the land and travel between them so that they could maintain extensive traplines. Over time many of these cabins have fallen into disrepair because of lack of use, and some have been destroyed by wildfires.

The decline of trapping was likely related to a combination of factors, including changes in demographics, falling fur prices, competition with other trappers, and furbearer populations. As one elder described, there used to be a lot of muskrats in the area but they have disappeared since the 1960s (03252018EAA4). He also mentioned that “in the ‘80s a lot of people moved into Eagle and they start trapping out that way [American and Mission creeks], so you can’t find a place to trap.” A survey respondent added additional information about muskrats, saying that “muskrats mate for life, so you have to kill them both. We don’t hunt them every year for this reason.”¹¹

Marine Mammals

Eagle Village residents did not report any harvest or use of marine mammals in 2017.

Birds and Eggs

Seven types of birds were harvested in Eagle Village in 2017 (Figure 5-25). Approximately two-thirds of the bird harvest consisted of migratory waterfowl and the remaining one-third were game birds. No bird eggs were harvested. A survey respondent mentioned that “elders taught us not to take birds eggs when we were little,” so wild bird eggs are not typically utilized by community residents.

During the study year, 85% of households used birds and 39% of households harvested them (Table 5-9). Mallards and spruce grouse were used by the largest percentages of households (46%). More households received birds from others (62%) than harvested them. The total bird harvest in edible pounds was around 69 lb, amounting to 4 lb per household.

The majority of ducks and geese were harvested in the springtime, and grouses and ptarmigans were mostly harvested in the fall (Table D5-16). Eagle Village residents mentioned that they target migratory birds in the spring as a source of fresh meat after the long winter. One survey respondent said: “Mallards are the best kind of ducks. We don’t care for the black ducks, they taste like fish. Mallards are skinny but they taste good. Fall ducks are too fat; we like spring ducks.”¹²

Figure 5-26 depicts the search and harvest areas for birds in 2017. Eagle Village residents hunted ducks and geese along the Yukon River within Yukon-Charley Rivers National Preserve as well as in small lakes and ponds near the community. They hunted grouses and ptarmigans in the area around the community, on the road between the Eagle Village and Eagle, and along a short section of the Taylor Highway.

11. Survey notes, March 2018.

12. Survey notes, March 2018.

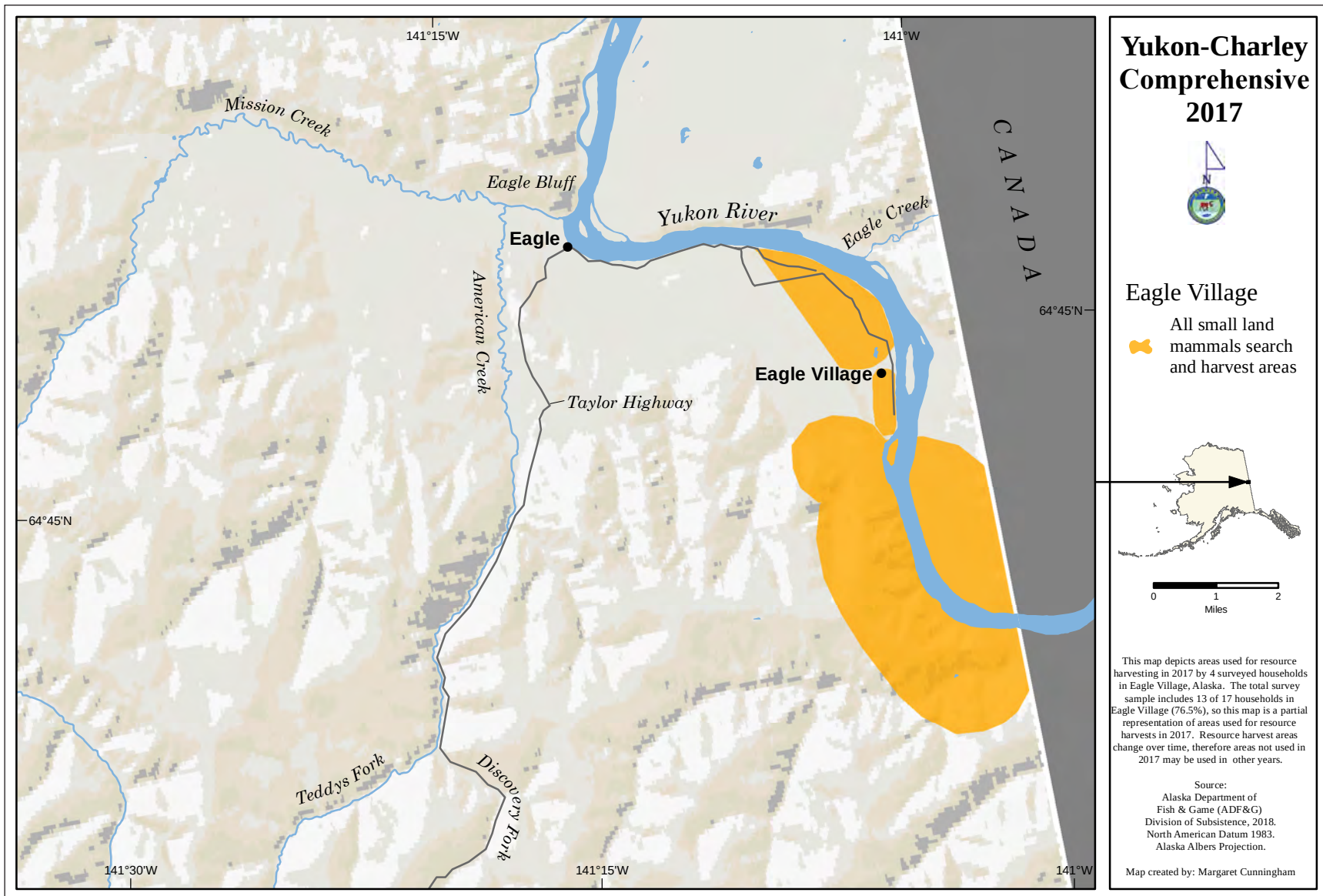


Figure 5-24.—Small land mammal hunting and trapping areas, Eagle Village, 2017.

Respondents mentioned that in the past people would sometimes travel downriver and hunt birds at Ford Lake (04242018EAA1, 03252018EAA4).

Marine Invertebrates

Eagle Village residents did not report any harvest or use of marine invertebrates in 2017.

Vegetation

All households (100%) in Eagle Village used some type of vegetation in 2017 (Figure 5-13). The vegetation harvest composition by edible weight consisted of 65% berries, 26% plants and greens, and 9% mushrooms (Figure 5-27). The most commonly used plant was Hudson's Bay tea, locally known as k'eläk'ay' (Table 5-9). It was used by 54% of households. Eagle Village households also used a variety of berries, such as blueberry (used by 39% of households), lowbush and highbush cranberries (39%; 23%), and raspberries (23%). The mean per household berry harvest was less than one gallon. Less than a quarter of households harvested berries in 2017, and several survey comments indicated that 2017 was a poor berry year due to late frost and a hailstorm in June. Six gallons of mushrooms were also harvested and used by 23% of households. Although survey respondents did not report any harvest of stinkweed in 2017, one survey respondent stated that the plant is sometimes used as traditional medicine.

Firewood was used by 92% of households (Table 5-9). Residents harvested 34 cords of firewood; however, several respondents also reported receiving firewood through an energy assistance program. Thus, the total amount of firewood used annually for home heating in Eagle Village is likely much greater. Table D5-17 shows the percentage of home heating that comes from firewood and the annual cost of heating a home. Most residents get at least some of their heat from wood, and three respondents reported wood as their only heating source. The average annual cost of heating a home in Eagle Village was calculated to be \$1,108. If survey respondents harvested their own firewood they were also asked if the area that they harvest from has changed in the last five years. Three respondents indicated that their harvest area has changed, and two said that they only harvest dry standing wood, which requires them to continually shift harvest areas to find

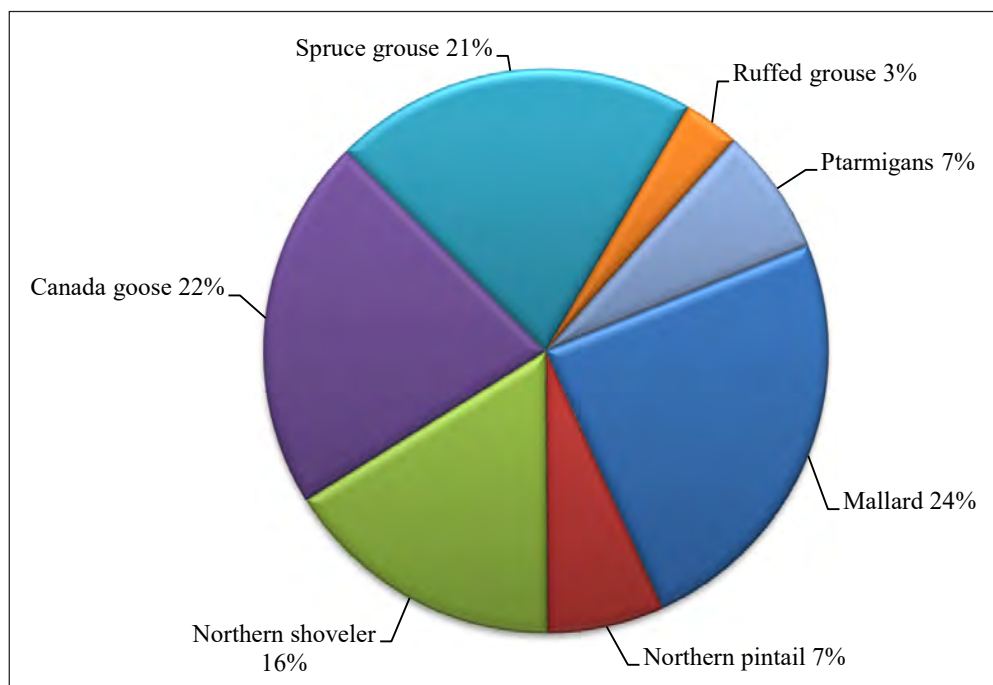


Figure 5-25.—Estimated bird harvest by percentage of edible weight, Eagle Village, 2017.

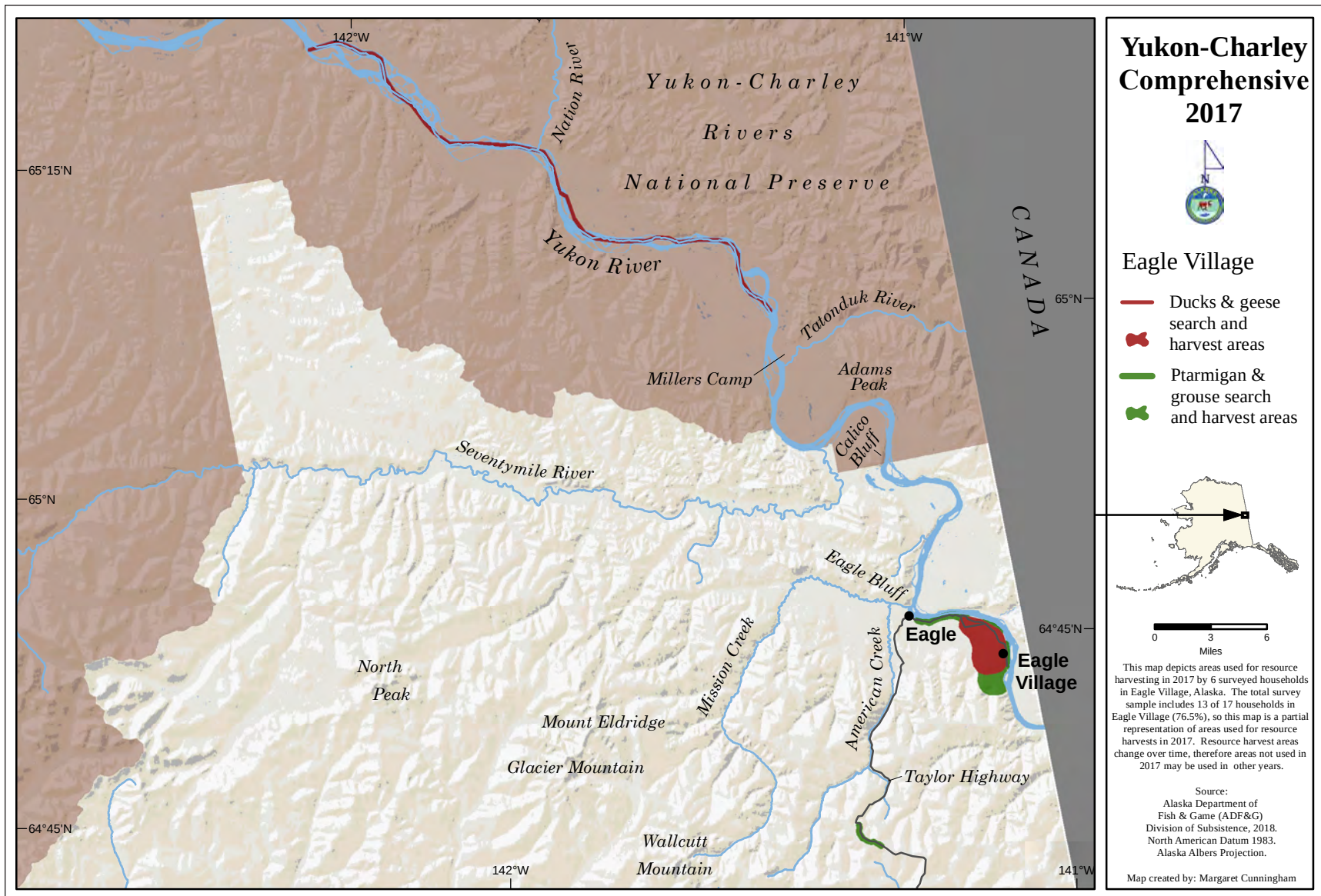


Figure 5-26.—Bird hunting areas, Eagle Village, 2017.

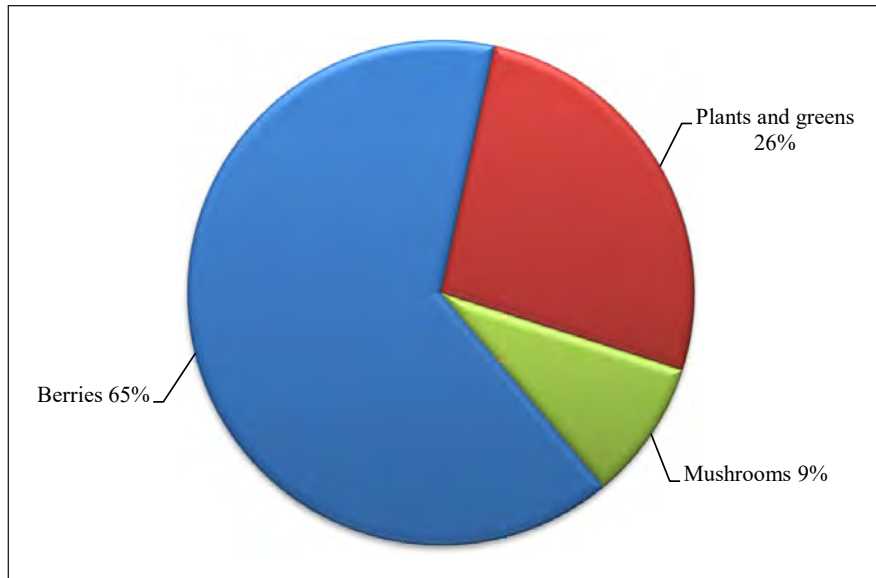


Figure 5-27.—Composition of vegetation harvest by percentage of edible weight, Eagle Village, 2017.

enough to meet their needs (Table D5-18). In the past, Eagle Village residents could cut firewood and sell it to the store for income (03252018EAA4).

Figure 5-28 highlights some of the areas that Eagle Village residents used to gather vegetation in 2017. Four respondents reported gathering plants, berries, and mushrooms in the immediate vicinity of the community, along the road to Eagle, at the local airport and airstrip, and along the Taylor Highway heading out of town and at American Summit. Residents harvested firewood around the village and in the area immediately south of the community (Figure 5-29).

COMPARING HARVESTS AND USES IN 2017 WITH PREVIOUS YEARS

Harvest Assessments

Researchers asked respondents to assess their own harvests in two ways: whether they used more, less, or about the same amount of eight resource categories in 2017 as in recent years, and whether they got “enough” of each of the eight resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer the questions.

For eight resource categories and for all resources combined, survey respondents were asked to assess how their 2017 use compared to recent years (Table 5-14; Figure 5-30). Table D5-19 describes reasons respondents provided for getting less of a resource and Table D5-20 describes reasons for getting more. Overall, half of respondents said that they used the same amount of resources as in recent years and 42% said they used less; only 8% of households said they used more (Table 5-14; Figure 5-30). Responses varied by resource category. For example, a substantially greater proportion of households (45%) said they used more salmon than in recent years than any other resource category. However, within the salmon category, responses were fairly split. Five households reported getting more salmon in 2017 for several reasons, including including favorable weather and traveling further to fish (Table D5-20). Four households reported getting less. Households reported getting less because of personal reasons, lack of effort, and lack of success (Table D5-19). A greater percentage of households (58%) reported less use of large land mammals than any

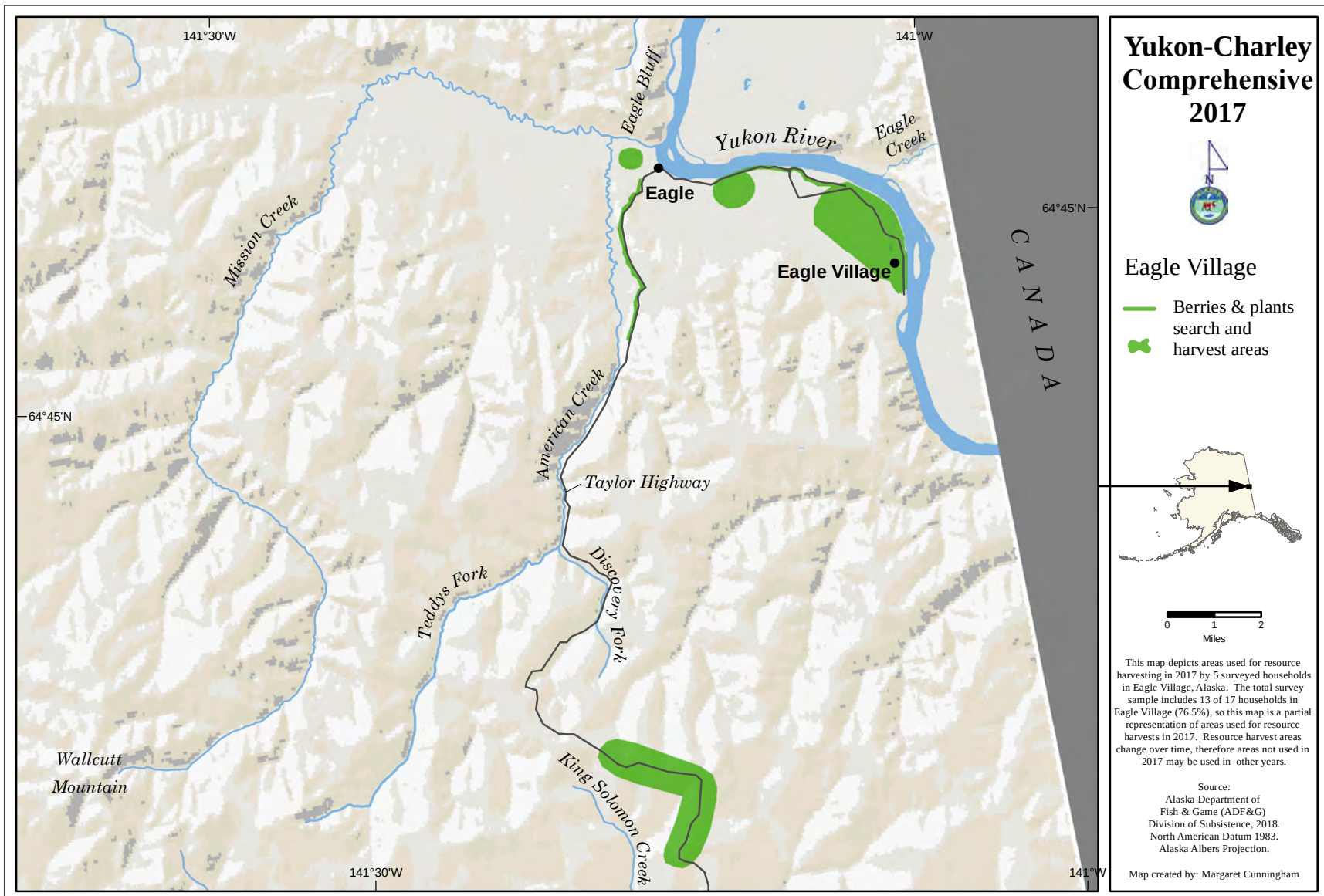


Figure 5-28.—Berries and greens gathering areas, Eagle Village, 2017.

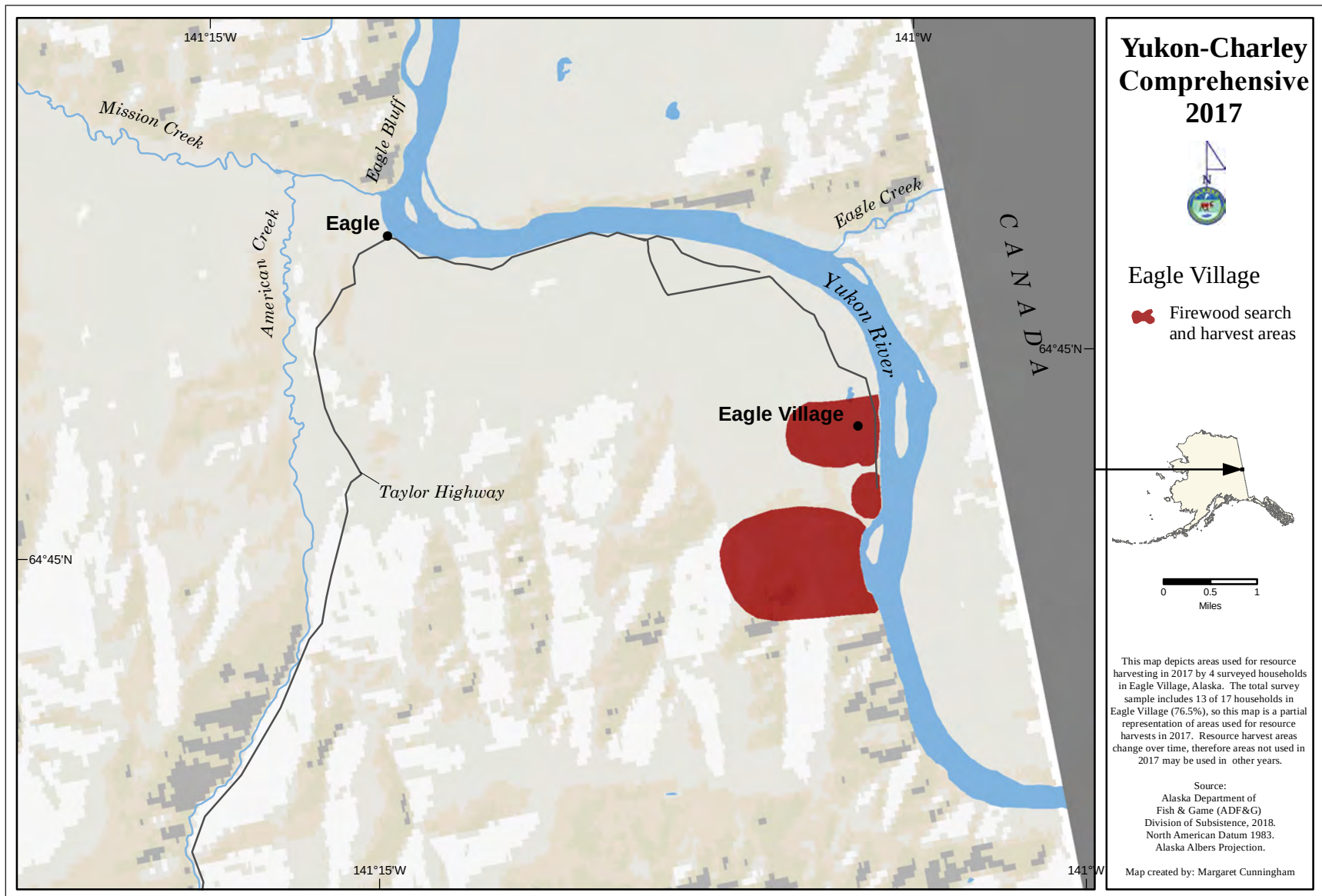


Figure 5-29.—Firewood harvesting areas, Eagle Village, 2017.

Table 5-14.—Changes in household uses of resources compared to recent years, Eagle Village, 2017.

Resource category	Sampled households	Valid responses ^a	Households reporting use								Households not using	
			Total households		Less		Same		More			
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	13	12	12	100.0%	5	41.7%	6	50.0%	1	8.3%	0	0.0%
Salmon	13	11	11	100.0%	4	36.4%	2	18.2%	5	45.5%	0	0.0%
Nonsalmon fish	13	13	10	76.9%	3	23.1%	5	38.5%	2	15.4%	3	23.1%
Large land mammals	13	12	12	100.0%	7	58.3%	3	25.0%	2	16.7%	0	0.0%
Small land mammals	13	13	11	84.6%	6	46.2%	3	23.1%	2	15.4%	2	15.4%
Marine mammals	13	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
Birds	13	12	12	100.0%	6	50.0%	4	33.3%	2	16.7%	0	0.0%
Marine invertebrates	13	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
Vegetation	13	10	10	100.0%	5	50.0%	4	40.0%	1	10.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response.

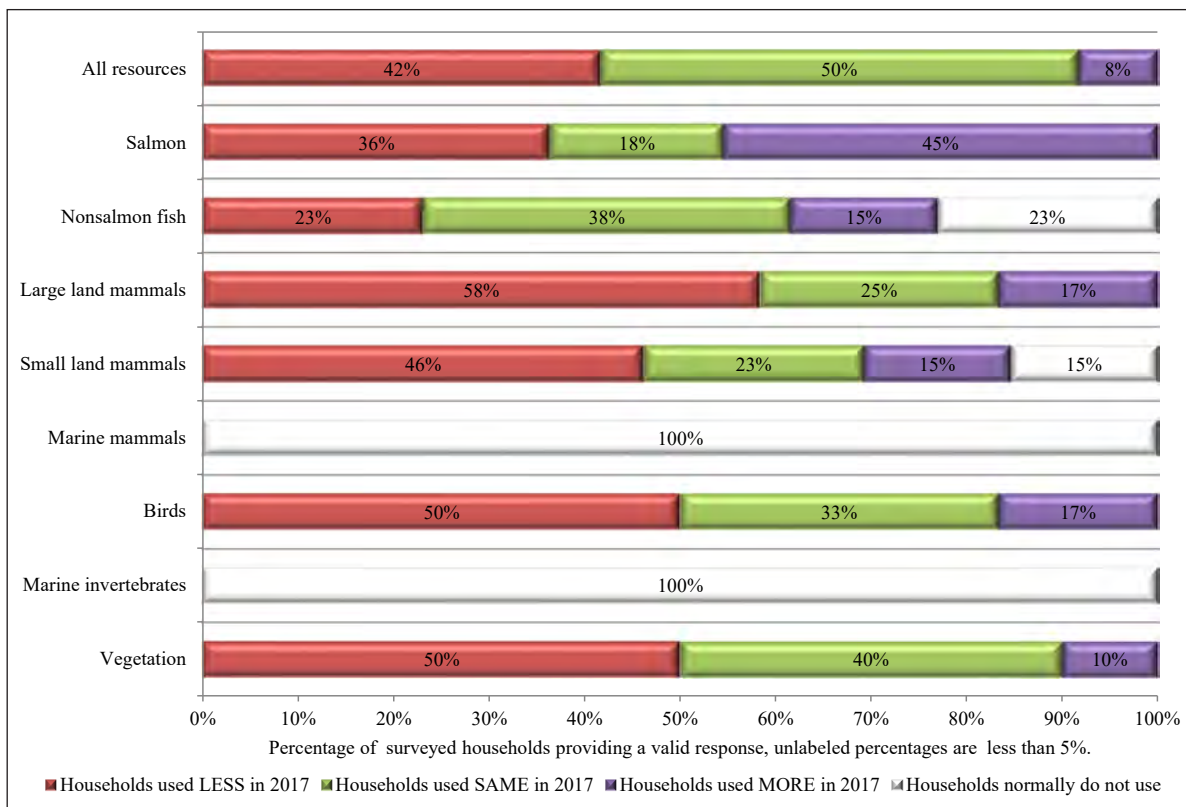


Figure 5-30.—Changes in household uses of resources compared to recent years, Eagle Village, 2017.

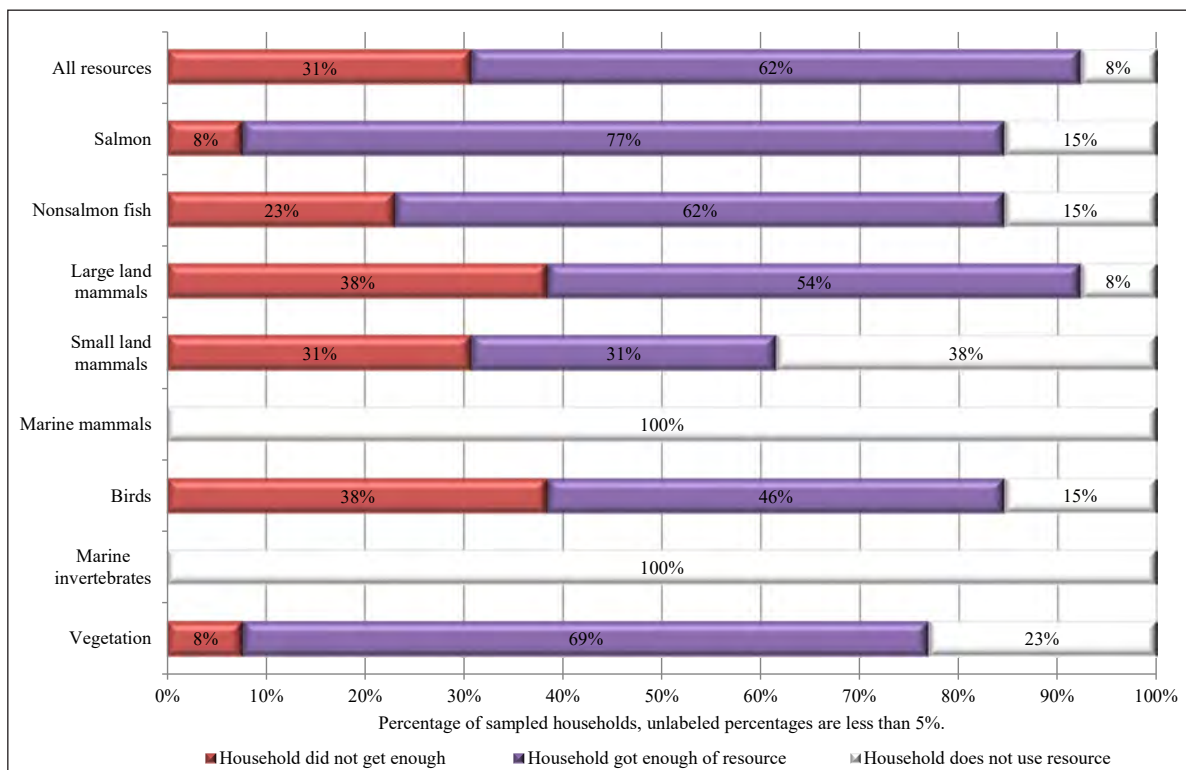


Figure 5-31.—Percentages of households reporting whether or not they got enough resources, Eagle Village, 2017.

other resource category (Table 5-14; Figure 5-30). These households said that unsuccessful harvest, less sharing, and resource availability were reasons they got less than in recent years (Table D5-19).

Approximately one-third of households in Eagle Village reported that they did not get enough wild foods overall in 2017 (Table D5-21; Figure 5-31). The most households reported not getting enough large land mammals and birds, and these were also the only resource categories for which some respondents experienced a major impact due to not meeting their needs. If respondents indicated that they did not get enough resources in any given category, they were also asked to identify which specific resource or resources they needed more of (Table D5-22). More households needed moose than any other resource. At least three households needed caribou, ducks, or snowshoe hares.

Survey respondents were additionally asked if they avoided harvesting any resources due to poor resource health in 2017. Three respondents mentioned avoiding snowshoe hare due to concerns about a tularemia outbreak that they had heard about from other local people and notices released by management agencies (Table D5-23).

Harvest Data¹³

Changes in the harvest of resources by Eagle Village residents over time can also be discerned through comparisons with findings from other study years. Although no previous comprehensive subsistence harvest surveys have been conducted in Eagle Village, other projects and programs have recorded harvest data for several types of subsistence resources. However, most prior studies have combined harvest data for Eagle and Eagle Village households and therefore each community's data cannot be isolated to compare their previous harvests with the 2017 dataset. A combined comparison of these datasets was discussed in Chapter 4, following the results of the 2017 Eagle harvest information.

Data published in the Environmental Impact Statement for the proposed Preserve included harvest estimates for the Alaska Native population of Eagle and Eagle Village (U.S. Department of the Interior 1974). Sample size and methods of data collection were not included, so the number of people and households this harvest data represent is uncertain. The 1973 harvest by Alaska Natives living in Eagle and Eagle Village included an estimated 100 caribou, 30 moose, 1,500 hares, 300 ducks, and 4,000 chum salmon. These numbers are substantially greater than the 2017 harvest for Eagle Village. The lack of sample information and details about methods from the 1973 study makes it very difficult to compare to this study. However, possible explanations for the decreased harvest could be a result of a smaller population in Eagle Village today than in the past and a population that is now made up of more elderly people who are not able to participate in heavy harvesting activities.

However, a previous Division of Subsistence study collected information about migratory bird harvests by Eagle Village residents (Andersen and Jennings 2001). During the 2000 study year, Eagle Village residents harvested 260 lb or 7 lb per capita of migratory birds. Hunters harvested a total of 204 ducks, representing 5 species. No geese were reported. Half of the households in the community harvested migratory birds, and 61% used them. Eagle Village residents harvested more mallards (96) than any other species. By comparison, residents harvested only 69 lb or 3 lb per capita of ducks and geese (59 birds) in 2017. The total 2017 harvest is 191 lb less than in 2000. Three species of ducks and one species of goose were harvested in 2017. However, mallards were the migratory bird used by the greatest percentage of households (46%) and also harvested by the greatest percentage of households (15%). In 2017, fewer households harvested fewer migratory birds.

Reasons for the differences in harvests between the two study years cannot be discerned from this quantitative data alone, but may be related to changing community demographics. Although the number of households in Eagle Village was similar in both study years (19 in 2000; 17 in 2017), the community population declined from 36 individuals to 24 (Andersen and Jennings 2001:5). Due to population decline and an aging population, fewer residents may have hunted in the latter study year.

13. Data in this section is sourced from ADF&G CSIS and Table 5-9.

Current and Historical Harvest Areas

There are no previous published studies that included mapping with which to compare the 2017 harvest and use maps.

LOCAL COMMENTS AND CONCERNS

Following is a summary of local observations of wild resource populations and trends that were recorded during household surveys and ethnographic interviews in Eagle Village. Some households did not offer any additional information or comments, so not all households are represented in the summary. In addition, community members had the opportunity to express their concerns about wild resources during the community review meeting of preliminary study results.

Resources and Change

Eagle Village survey respondents provided a variety of comments regarding the health of specific resources and the environment. Respondents noted that Chinook salmon size and abundance have declined over time. One respondent said that they tend to catch younger Chinook salmon now. Another respondent mentioned that Chinook salmon populations are starting to increase because they are not being harvested in the commercial fishery any longer. In their opinion, commercial fishing and the roe fishery were the main contributors to the decline in Chinook salmon abundance.

Two survey respondents were concerned about migratory bird populations: they noticed fewer birds in the area than when they were younger.¹⁴ As previously mentioned, residents were also concerned about tularemia in hares. Following fieldwork, researchers sent information to Eagle Village Council regarding how to identify infected hares to help assuage fear of the disease. One respondent would like to see more regular communication from state and federal managers about animal health issues in general and was specifically curious about diseases in sheep.

According to one respondent, warming temperature patterns are causing berries to ripen earlier and to disappear earlier. They did not comment on whether or not this environmental change has affected other resources. Another respondent expressed concerns about pollution in the Yukon River and the marine environment that may affect fish populations, but was not specific about the source of the pollution.

Some residents expressed concerns about the declining number of people in the community carrying on traditional practices. Eagle Village Council has proposed to address this by beginning a culture camp to pass on subsistence skills and traditions to younger generations. One survey respondent said, “I am hoping and praying that the culture camp we’re starting this summer will bring some traditional skills back. I hope we can tell stories so they know how we used to live.”

Management

Eagle Village residents expressed some concerns regarding fish and wildlife management: the majority of these focused on the fall moose and caribou hunts along the Taylor Highway. Respondents expressed displeasure with the regulation that prohibits them from possessing both a moose and a caribou permit in the state hunts within GMU 20E. One respondent cited that this burdens locals who consequently have to make more trips and use more gas to hunt both species (03242018EAA3). This member of a young, active household was also upset that they cannot proxy hunt for their elders.

What I want Fish and Game to know is that you’ve been here, you have met all of the elders and you have seen all able-bodied men that can actually go out hunting. The elders outnumber the guys. And there is no proxy, we can’t proxy hunt for the elders...How many snowmachines you seen in this town? There is one out there, there is one over here by the tribal hall that’s broke down, and they got what, there is two village snowmachines. These guys can’t afford that kind of stuff...There are only two boats in the village not owned by the council. Eighty percent of the

14. Survey notes, March 2018.

village is elders. They can't do what young people do. Why can't we proxy hunt for elders? They have to be there?...We are hardcore hunters. And I don't care, I will hunt for anybody, I love hunting, especially for elders. That's the way I was brought and raised up. And I enjoy giving to my elders. They cannot do like I can do now like they used to. But they are suffering because there is no proxy hunt.

Additionally, residents commented that the mix of state and federal land ownership and differing hunting regulations is extremely confusing. One respondent suggested combining the state and federal hunting regulation books so that comparing the different regulations and hunt boundaries would be easier. Another respondent expressed his frustration with this as it applies to moose:

With moose, I mean if you are hunting on the Taylor Highway on certain spots, you have the state and federal open on both sides of the road. So you know what, you can close it one side but then you know if you see a moose on the right side, then you gonna have to drag your moose on the left side to make it legal and it's ridiculous...This is generations and generations of people that has lived here. And you know, how are you going to tell them that this side of the road is legal? (03242018EAA3)

Respondents also expressed irritation over differing regulations for caribou between GMU 20E, where the bag limit is one caribou, and GMU 25B where the bag limit is ten caribou. Sometimes caribou are located on the border between units but hunters are restricted to harvesting one animal unless the animals move across the river into GMU 25B. ADF&G structures hunts in GMU 20E and along the Taylor Highway to be more restrictive because of their popularity and road accessibility.

Several respondents cited concerns about overcrowding, hunter ethics, and enforcement along the Taylor Highway. One survey respondent estimated that the influx of nonlocal people hunting in the area has doubled or tripled in recent years; however, an older respondent said that hunting in this area has been very popular since the 1970s. Respondents generally agreed that the hunts are "overcrowded." They have difficulties finding a place to hunt, especially for caribou, the season for which is sometimes only open for a short period. One respondent described the scene in the fall time:

You'll see people with a trailer of four four-wheelers on there. You'll have trailer with two six-wheelers on them. It's just, every corner there's a campsite and people walking around the road and four-wheelers everywhere. It was a lot of noise. All the gravel pits, that is just camper city. You couldn't find a camp spot. And boy, every little opening there was tents and campers. (04242018EAA1)

This respondent did not have suggestions for reducing competition with outside hunters. He said that although the "100-feet-off-the-road rule" is designed to disperse hunters from the roadway, the rule makes participating in hunting more difficult for local elders and those with physical limitations because they cannot hike very far. A younger respondent suggested that ATVs be banned along the entirety of the Taylor Highway and that only walk-in hunts should be allowed (03242018EAA3). In their opinion, a combination of walk-in-only hunts and allowing proxy hunting for local elders would enable Eagle Village residents to better meet their needs. However, this respondent was not in favor of the 100-feet-off-the-road rule: "We need meat. We can't get it if it's by the road?"

People also expressed concerns that the high levels of activity along the highway change the migration routes of the Fortymile caribou herd because excess noise causes them to avoid the highway. Respondents felt that a forced change in migration might stress the herd, affect their breeding, and cause them to avoid coming into the Eagle and Eagle Village vicinity. Caribou migration routes differ over time based on the size of the herd and condition of its habitat. Since caribou are naturally somewhat unpredictable, residents felt that the added congestion on the Taylor Highway decreases the chances of seeing them in the area. Banning the use of ATVs would help decrease noise levels, according to one Eagle Village resident.

They are coming in and they are driving these ATVs up and down, up and down the road, up and down the road. And they are just actually scaring the animals off. If

you are going to hunt in one spot, get your butt off, get off there and go stalk your animal, call them in. Go find out where you see fresh tracks, stay there and do it. Not go 25 miles this way, 25 miles that way from your camp, and then impeding on somebody else's hunt...ADF&G needs to be on the highway patrolling. We need more troopers. People impede on our hunts, encroach on our hunting spot when were already set up. Disrespectful hunters. (03242018EAA3)

Some respondents said that they would like to see a greater presence of wildlife troopers along the Taylor Highway during the fall hunting season to enforce issues of wanton waste due to poor meat care.

One survey respondent from Eagle Village expressed a desire for predator control within the Preserve in addition to the intensive management programs that have been carried out on state land.¹⁵ They reasoned that there are no active hunting guides in the region to help suppress populations of bears and wolves, which prey on moose and caribou.

The only comment related to fisheries management was that Chinook salmon fishing periods are too short.

ACKNOWLEDGMENTS

ADF&G Division of Subsistence would like to thank the Eagle Village Council for their approval and support of this research project. We also greatly appreciate the time that community members took to complete surveys and talk to us about subsistence in Eagle Village. Without your assistance, this project would not have been possible.

15. Survey notes, March 2018.

6. DISCUSSION AND CONCLUSIONS

Alida Trainor

The customary and traditional harvests of wild resources continue to make major contributions to the well-being of Central, Circle, Eagle, and Eagle Village, as well as numerous other rural Alaska communities. None of the study communities included in this report have ever participated in a comprehensive subsistence study before. As a result, the findings included in this report represent baseline data for each of them. Reporting the levels of harvest and use, documenting local knowledge about resources and changes over time, depicting use areas, and assessing harvest and use compared to prior years are critical for resource and land management and can be used by communities when self-advocating in the state and federal regulatory processes. This baseline information also allows for assessments of potential changes to resource abundance, regulations, and levels of participation in subsistence activities.

Data for this project were gathered in the spring of 2016 and the spring of 2017. Each of the study communities borders the Yukon-Charley Rivers National Preserve (the Preserve). Because of their proximity to the Preserve, the ethnographic interviews included questions designed to understand how residents utilize that area and how that use may have changed over time. Over the course of fieldwork, researchers conducted 14 ethnographic interviews with 18 respondents. The following sections consider the way in which subsistence harvest and use in each community is affected by the Preserve and the National Park Service more generally.

Regional Resource Harvest and Use Patterns

The communities of Central, Circle, Eagle, and Eagle Village are all located in the upper Yukon River region. The upper Yukon River provides access to three types of salmon: fall chum, coho, and Chinook salmon. Nonsalmon species such as burbot, northern pike, and sheefish are commonly found in the numerous tributaries that flow into the Yukon River and surround each study community. Large land mammals are available to residents in this region as well. Moose are a welcome addition to residents' diets, but caribou, particularly from the Fortymile caribou herd (FCH) are critical to the residents in this study area. Although the same resources are available to residents in each of the study communities, some differences exist in the harvest and use patterns of each community. These differences can be explained by demographic and social differences and will be discussed below.

Figure 6-1 shows the top ten resources harvested by each study community. Salmon was a keystone species for three of the four study communities. In both Circle and Eagle, fall chum salmon made up the majority of harvest by weight (60% and 82% respectively). In Eagle Village, Chinook salmon accounted for 70% of the community harvest. The use of fall chum salmon is discussed extensively in the Circle and Eagle chapters. Residents in both communities rely heavily on fall chum salmon primarily to feed their dog teams. Under state law, using fish to support dog teams for transportation or other subsistence activities is protected as a customary and traditional use (AS 16.05.940). However, because the harvest of fall chum salmon for dog teams was so extensive in Eagle and Circle, Figure 6-2 shows the top resources harvested by weight with the harvest of fish for dogs removed. Central and Eagle Village households do not keep dog teams, therefore, using these figures allows for better comparisons of resource harvest across all study communities. When the harvest of fish fed to dogs is removed from the community harvests of Circle and Eagle, Chinook salmon becomes the highest harvested resource (Figure 6-2). Forty percent of Circle's harvest and 29% of Eagle's total harvest for human use came from Chinook salmon. Central was the only community in which no salmon species were a top harvested resource. It is the only study community that is not in direct proximity to the Yukon River, and therefore residents must travel farther to find an available fishing location. Additionally, one ethnographic respondent cited the aging population of Central as a reason for reduced fishing effort. Fishing along the Yukon River occurred more frequently in the past (03292017CEN1). Eagle Village had the highest proportion of Chinook salmon in its harvest (70%). Discussed in the results chapters, residents do eat fall chum salmon when it is in good enough condition. When a household is harvesting large amounts of fall chum salmon for dogs, household members have a higher likelihood of seeing and being able to keep

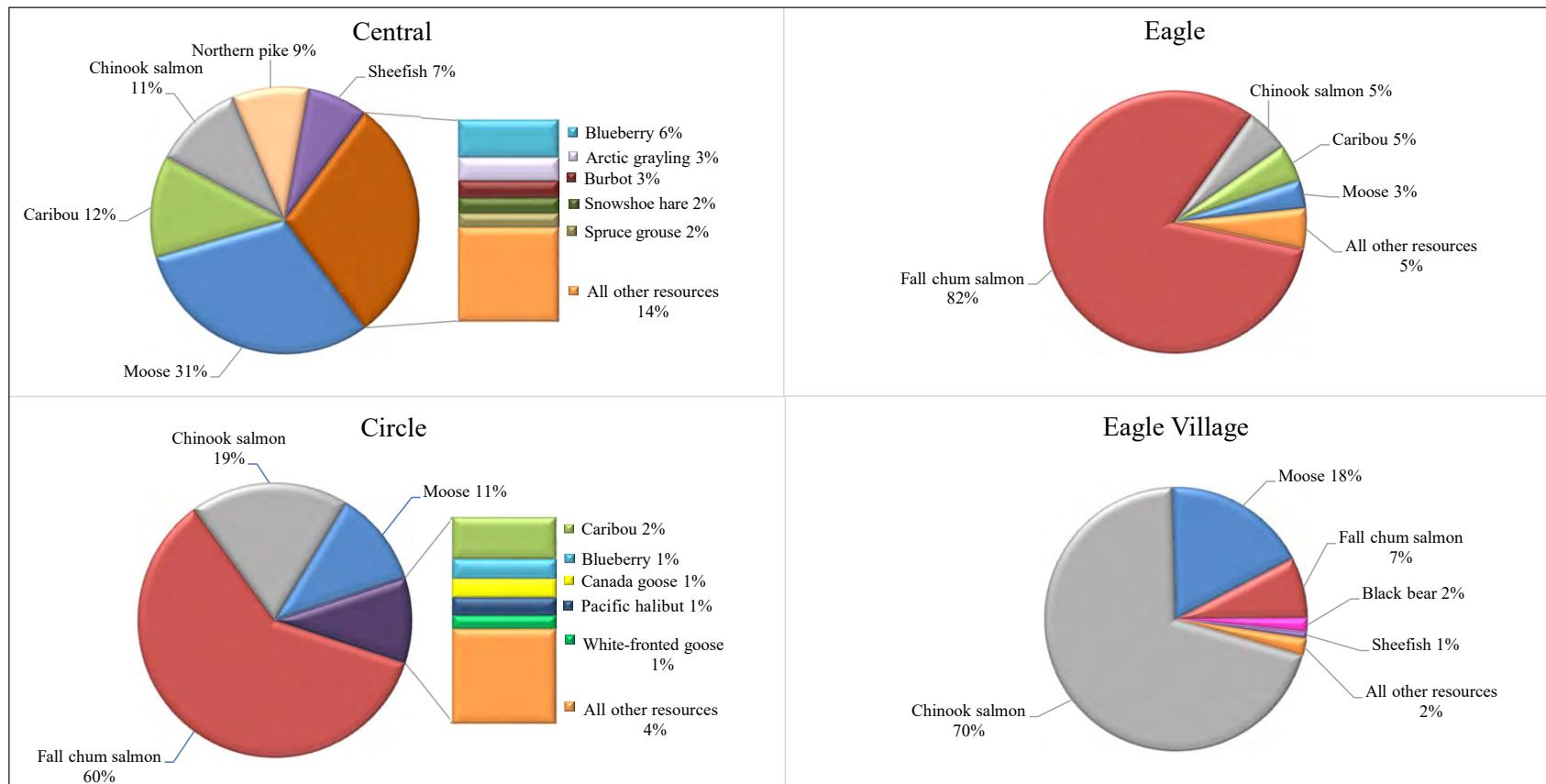


Figure 6-1.–Top resources harvested by edible weight, study communities, 2016 and 2017.

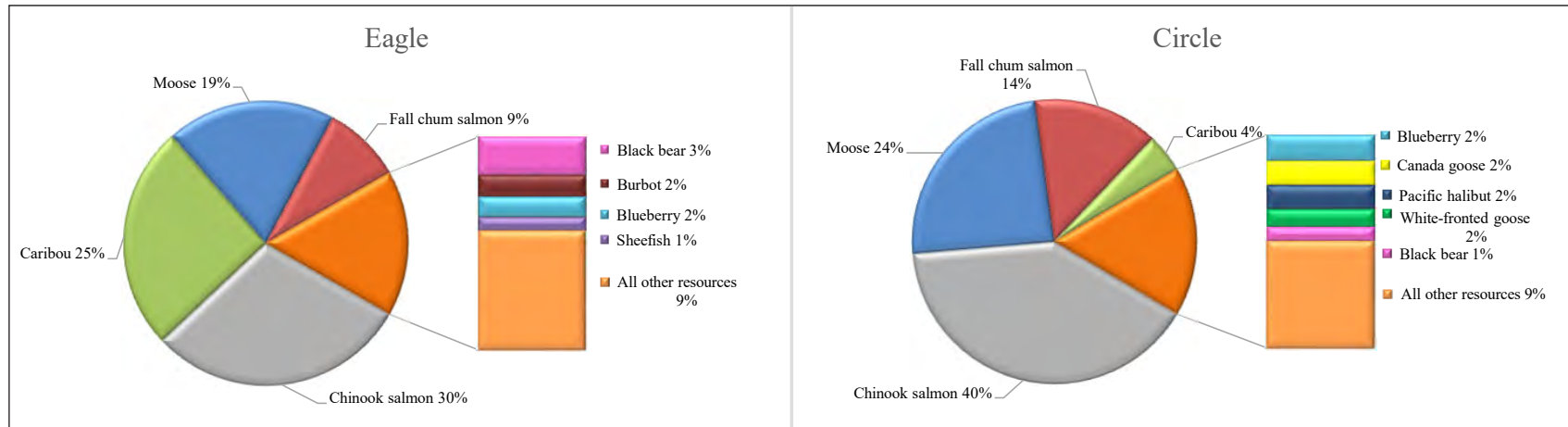


Figure 6-2.—Top resources harvested by edible weight with fish for dogs removed, Eagle and Circle, 2017.

higher quality fall chum salmon for their own consumption. This offsets their needs for Chinook salmon and can make up for low harvests earlier in the summer. In Figure 6-2, fall chum salmon for human use made up 14% of Circle's harvest and 9% of Eagle's.

Large land mammals contributed significantly to each of the study communities' harvests. The use of large land mammals becomes more clear after the significant harvest of fall chum salmon for dogs is removed. In Eagle for example, caribou (25% of community harvest), moose (19%), and black bear (4%) account for more than a third of the total harvest. Large land mammals were significant to the harvest and diets of residents in Central and Eagle Village. In Central, where residents do not harvest large amounts of salmon, large land mammals are particularly important. Moose and caribou made up 43% of the community harvest. Unlike residents in the other study communities, Eagle Village residents did not hunt caribou, but moose (18%) and black bear (2%) were large contributors, after salmon. The composition of the remaining resources was similar in all communities. Small amounts of nonsalmon species, berries, and game birds completed the top resources harvested by weight.

Although many of the same resources are available to residents in all the study communities, the harvest and use patterns of these resources vary based on a variety of factors. Most notable, the presence or absence of dog teams shapes the harvest composition of each community and dictates the seasonal nature of harvesting activities. For example, harvesting fall chum salmon for dogs occurs in September, the same month that residents are able to hunt moose. If households that maintain dog teams prioritize their fall chum salmon harvest over moose hunting, they may become more dependent on winter opportunities for caribou harvest to meet their human food needs.

HISTORY OF THE NATIONAL PARK SERVICE AND THE ESTABLISHMENT OF THE YUKON-CHARLEY RIVERS NATIONAL PRESERVE

The National Park Service (NPS) is a federal land management agency within the U.S. Department of the Interior. The NPS is granted the authority and responsibility to manage many of the country's protected lands, including national parks, monuments, and preserves. Its purpose is to conserve the scenery, including natural and historic objects, and wildlife in order to provide for their appreciation and leave these lands unimpaired for the enjoyment of future generations.¹ After the passage of the Alaska National Interest Lands Conservation Act (ANILCA) in 1980, the NPS was granted this same authority in ten newly established national parks, preserves, and monuments throughout Alaska, including the Yukon-Charley Rivers National Preserve (Magdanz 2012:27). This act applied to nearly 100 million acres in Alaska, 51 million of which were placed under the control of the NPS. Not only was this the single largest land designation act in the history of the United States, but ANILCA was unique in federal law because of the considerations of subsistence outlined in Title VIII. As a result, parklands within Alaska require a significantly different approach to management, accounting for subsistence and consumptive uses. Access to these new parklands was more liberal than to parklands outside of Alaska. ANILCA allowed for the use of rifles, outboard motors, and airplanes, all of which are prohibited in NPS lands elsewhere in the country. The use of cabins, a topic discussed at length by some ethnographic respondents in this study, was also allowed under ANILCA, but only when necessary for subsistence; and permitted use is accompanied by a variety of stipulations and reviews. Title VIII of ANILCA gave subsistence uses priority over all other consumptive uses. However, providing for subsistence uses requires an understanding of the human history within the newly established Parks, Preserves, and Monuments, and also creates challenges and conflict between subsistence and other activities. Magdanz (2012:32) describes this conundrum:

One of the greatest challenges the Park Service faced after ANILCA, and which it still faces today, is balancing the variety of uses ANILCA and other law [*sic*] requires it to allow, all the while facing the demands of [residents]. The NPS must accommodate many uses on parklands—recreational, scientific, subsistence and,

1. National Park Service, 2017. "Organic Act of 1916." Accessed April 13, 2020.
<https://www.nps.gov/grba/learn/management/organic-act-of-1916.htm>

on National Preserves, sport hunting, as well as maintain the natural integrity of the parklands for future generations. ANILCA makes clear that subsistence uses receive priority over other consumptive uses, but the NPS must still allow those other uses.

Many participants in this research were living in the area in 1980 when the transition occurred, and they experienced significant changes to how they used the area now known as the Preserve. In order to understand how subsistence use and harvest within the Preserve has changed, and how local relationships with the NPS shape these uses, the following sections will discuss contemporary use areas and the experiences shared by survey and ethnographic respondents in each study community that pertain to the Preserve.

CONTEMPORARY USE AREAS

Figure 6-3 shows the areas used by residents of each study community. The Preserve is shown at the center of the map. Roads, major tributaries, and the study communities are clearly marked. This map presents the use area data provided by respondents for each given study year. Central's use area represents 2016, while Circle, Eagle, and Eagle Village document the areas used in 2017. Although annual variation does occur, this map illustrates the general areas residents use that while allowing for a regional discussion of use patterns. The following two sections will explore the effects on resident use patterns of highways and the Preserve, two features shared by the four study communities.

Use of the Steese and Taylor Highways

Each study community is accessible by road. The existence of these roadways influences how residents harvest their subsistence resources. This section will discuss the use of these roadways, compare them to one another, and highlight some local concerns regarding road access and subsistence. To the northwest of the Preserve is the Steese Highway with the communities of Central and Circle located along it. To the southeast is the Taylor Highway. Eagle and Eagle Village are located at the end of the Taylor Highway. Unlike the Steese Highway, which is open year-round, the Taylor Highway is only open for travel approximately between the months of April and October. The presence of these highways increases residents' access to hunting and trapping locations. Residents in all communities utilize these highways to search for large land mammals, small land mammals, game birds, vegetation such as berries, and even occasional nonsalmon fishing. For more information about the resource category use area information for each community, see chapters 2 through 5. This section will discuss the ways in which these highways are utilized by residents for subsistence and some of the issues that arise along these roadways.

Residents in Central and Circle use the Steese Highway for many subsistence activities. For example, in 2017, Circle residents traveled along the Steese highway to the border of Unit 25C, around Twelvemile Summit. In the prior year, Central residents did not travel as far along the Steese Highway for subsistence resources as Circle residents; however, they did stop at several Birch Creek tributaries that the Steese Highway crosses. Most of the road use by Central residents was more localized and occurred between the communities of Central and Circle.

The use of the Taylor Highway by Eagle and Eagle Village residents was more extensive than that of the Steese Highway by Circle and Central residents. Eagle residents traveled the length of the Taylor Highway, approximately 160 miles. They used the Taylor Highway to hunt large land mammals, access trapping areas, hunt game birds, and gather berries and plants. Residents of Eagle Village reported traveling beyond the Taylor Highway onto the Alaska Highway.

These highways also allow residents to travel to hub communities like Fairbanks to shop for supplies and store-bought foods. In addition, they enable residents to access harvest areas that would otherwise be difficult and time consuming to reach. However, these roadways also increase access for nonlocal hunters. This can lead to conflicts and competition between local and nonlocal hunters. Ethnographic respondents in all communities discussed the difficulties experienced during caribou hunting season when many nonlocal hunters drive up the Steese and Taylor highways to access the FCH. Issues of overcrowding and complaints of unsafe hunting conditions and wanton waste along the road were expressed by residents in all communities.

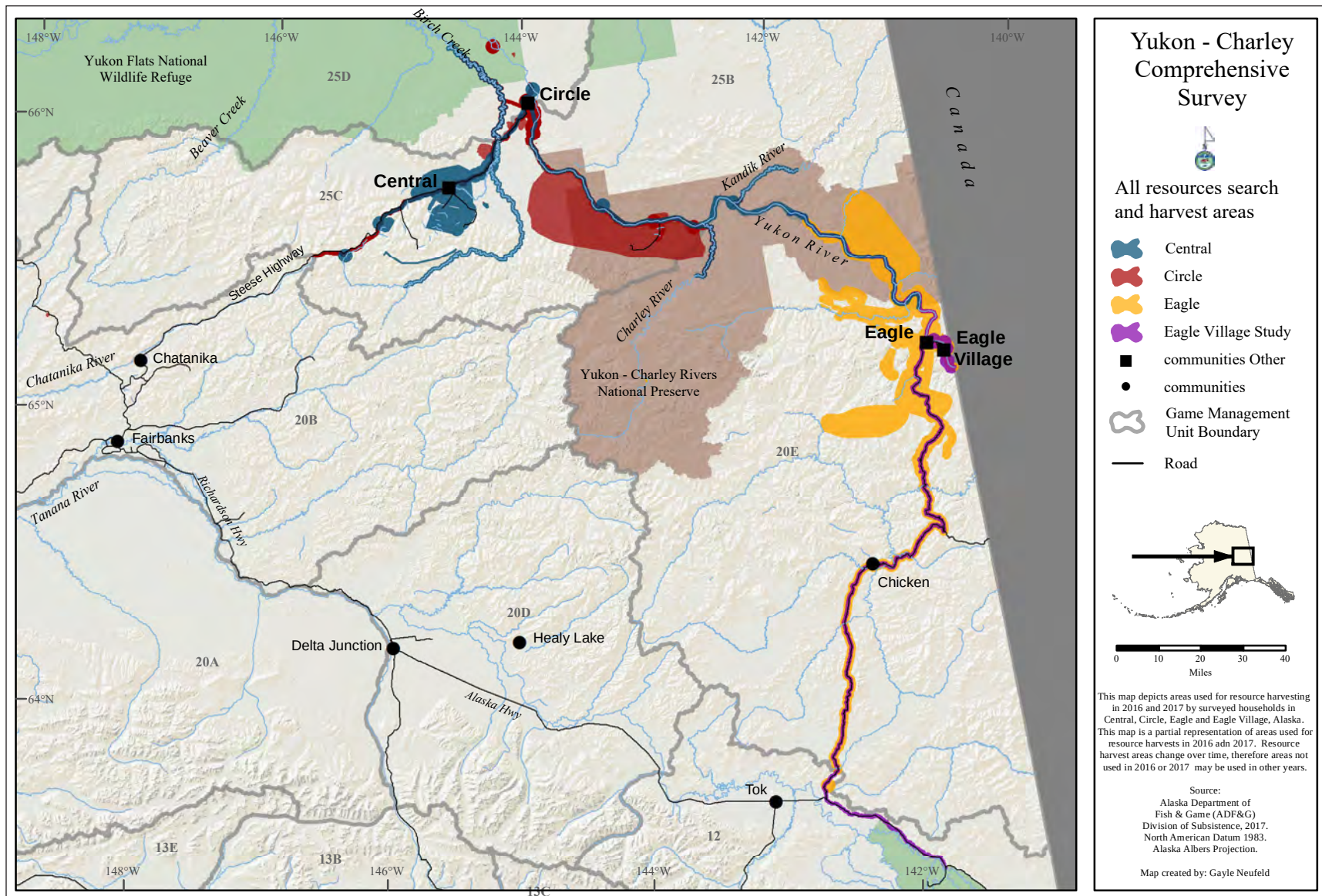


Figure 6-3.—All resources search and harvest areas, study communities, 2016 and 2017.

However, residents in each study community benefit from the opportunity to participate in the federal seasons, which are only open to qualified rural residents. Hunters in both Central and Eagle expressed gratitude for this opportunity because having a few extra days to hunt in a less crowded environment makes meeting a household's subsistence needs more attainable.

Use of the Yukon-Charley Rivers National Preserve

The use of the Preserve was reported by residents in all communities (Figure 6-1). Central was the only community with use documented along the entire length of the Yukon River through the Preserve, shown in blue. A survey respondent in Central who reported this use described an atypical trip to Eagle that happened to coincide with moose hunting.² This respondent did not characterize travel through the length of the Preserve as normal activity. Residents from Central traveled up the Kandik and Charley rivers, approximately 50 miles up each tributary. This was the only use of these major tributaries documented by survey respondents in this study. Circle residents used a more concentrated area in the lower portion of the Preserve, centered around Slaven's Roadhouse. Similarly, Eagle residents' use occurred mostly in the upper bounds of the Preserve, closer to Eagle. Specifically, Eagle residents used a large area on the north side of the Yukon River bounded by the Nation River to the northeast. Eagle Village residents traveled along the Yukon River downstream to the Nation River. Use of the Preserve by Eagle and Eagle Village residents rarely overlapped with use by Circle and Central residents. For the most part, Circle and Central residents use the northwestern part of the Preserve, while Eagle and Eagle Village residents stayed further upstream in the eastern portion. Some of Eagle's use areas are directly adjacent to the Preserve boundary, possibly indicating an awareness or choice to remain outside of the Preserve for certain activities. Many of the use areas documented by respondents occurred locally to their communities and thus outside of the Preserve boundaries.

LOCAL RELATIONSHIPS WITH THE NATIONAL PARK SERVICE AND USE OF THE YUKON-CHARLEY RIVERS NATIONAL PRESERVE

Many of the respondents interviewed during this study resided in the area prior to the establishment of the Preserve and consequently lived through a significant change in land status and management authority. Because this change affected access to an area near each of the study communities, the following sections will discuss how residents' use of this area has changed over time. Additionally, the section includes a discussion of the local relationships with the National Park Service (NPS).

An evaluation of local perspectives documented in the key respondent interviews with residents of each community highlights these shared experiences and suggests ways in which NPS policies shaped subsistence uses of the area. These interviews also captured local ideas about ways in which stakeholders and the NPS might work together to improve the experiences of subsistence users within the Preserve.

Central

Local relationships with the National Park Service in Central are poor. According to *United States v. Wilde*, in 2010, Jim Wilde, a 71-year-old Central man who was traveling along the Yukon River in the Preserve with his wife, did not immediately stop for a boat and safety inspection by NPS rangers. Wilde contends that he was hauling a heavy load and it was unsafe for the rangers to stop and board his vessel while still floating in the river. When he did not comply with the request of the NPS rangers, they drew their firearms on the Wildes and directed them to shore. A scuffle ensued, and Wilde was arrested and charged with three misdemeanors.³ Residents feel that he was mistreated and handled roughly and unfairly (03292017CNT1). The Wildes took issue with the NPS's authority to stop them on the river, check their boat registration and other requirements, as well as the use of force to compel them (Case No. 13-30360). Their argument ultimately failed, but *United States v. Wilde* epitomizes the sentiments of Central residents towards the NPS.

2. Survey notes, March 2018.

3. Medred, C., 2011. "National Park Service trial turns Wild(e)." Anchorage Daily News, Anchorage. Accessed April 22, 2020. <https://www.adn.com/uncategorized/article/national-park-service-trial-turns-wilde/2011/04/06/>

All three of the ethnographic respondents interviewed for Central noted the Wilde case and described how it compounded their negative feelings towards the NPS. The resentment that Wilde felt when he was stopped by NPS rangers stemmed from the general resentment felt by many residents: that the National Park Service is infringing on the livelihoods that have existed in this area long before the Preserve was established and that those tasked with enforcing these federal laws are outsiders, who are only stationed in the Preserve for a short time and are unaware of local customs and norms. The NPS ultimately apologized for the force used against Wilde and the harm that case did to the relationship with the community of Central.

Ethnographic respondents shared their perspectives regarding the NPS and the establishment of the Preserve. Long before the Wilde case, residents were displeased with the changes to local subsistence activities due to changes in the land status of the Yukon-Charley rivers area. “Lotta people quit using the Yukon-Charley [Preserve] just ‘cause they were actively discouraged...Park Service pressure, harassment” (07152019CNT3). This respondent cited the closure or locking up of cabins that could once be used by anyone, complicated permitting processes, lengthy bureaucratic delays and staff turnover that make getting a response difficult, false allegations of poaching, and other acts that make using the area for subsistence nearly impossible. After decades of trying to “go legal” and meet all the bureaucratic requirements, this respondent decided it was not worth the time to continue. The respondent would hunt and fish elsewhere. “They [NPS] make it as hard as they can” for residents to use the Preserve (07152019CNT3). For other residents, this respondent described how in the past, at least three Central families used the Preserve to fish for salmon but after declines in the Chinook salmon population “and the hassle with the Park Service, that we’re talking about [Wilde case], they just moved somewhere else, it’s just easier to go somewhere else.” Today, many Central families travel hundreds of miles to Chitina to fish for salmon, rather than fishing on the Yukon River, only 30 miles from the community.

The difficulty, or in some cases, inability for residents to access cabins within the Preserve for extended periods of time, or build a seasonal shelter significantly reduces their ability to subsist in the area. Having to continuously reapply for a permit to access a cabin that they or their family built long ago is experienced by respondents to be demeaning and burdensome. “You feel very helpless, because they have the power to turn you out of the place you’re in...it’s like if they really wanted, they [NPS] could kick you out” (07152019CNT3).

While the use of the area by local residents decreased, use by nonlocals from places such as Fairbanks, Anchorage, and Soldotna increased (03292017CNT1). Especially during moose hunting season, nonlocal sport hunters in the Preserve discourage locals from returning to these historical hunting grounds for subsistence by creating a sense of “congestion” and competition along the river (03292017CNT1).

After the Jim Wilde case, the NPS began making a concentrated effort to improve relationships with Central residents. One ethnographic respondent described this initiative:

So ‘bout three to four years ago they came to me and they said, “Will you help us, we got new rangers.” Sort of, I mean two or three. “We need you, if you would, to go up and down the river with ‘em, introduce them to people on the river, explain, you know.” And, and it worked. I spent three days with them. And I mean we haven’t had any incidence from them whatsoever. The park superintendent even calls me, “Hey you guys want to go get a beer?”⁴ They’ll come through Central, so we go have a beer with ‘em and stuff. (03292017CNT1)

Prior to the Wilde case, this respondent characterized the local relationship with the NPS as “horrible” but now according to him,

everybody is kind of getting along with ‘em. They came here and we had a big barbecue and all of the locals came down to it and they explained their positions. Then from there we went to Circle. We had a big barbecue for another day. So, you

4. The occasion described by the respondent occurred when the Superintendent was on personal travel and did not occur during work hours.

know, we've been helping 'em and they've been helping us. So everybody is kinda getting along now.

Whether other residents share this positive sentiment is unclear. This opinion was only shared by one respondent and was not expressed or captured in any of the survey comments. However, continued efforts by the NPS to establish relationships with Central residents will be critical to minimizing conflict in the future. Having committed staff, including rangers, who are assigned to Yukon-Charley Preserve for longer than a few years could facilitate lasting, meaningful relationships and understanding between local stakeholders and NPS representatives.

Circle

Circle respondents shared experiences when they felt harassed by NPS rangers and unwelcome on the lands and waters they had used for generations. Like other respondents in this study, Circle residents described how the area was once an active area for subsistence harvest and use activities. However, after the establishment of the Preserve and the accompanying authority and rules of the NPS, use of the Preserve significantly declined. One respondent described a time when he and a friend had boated upriver into the Preserve, turned off the engine, and were floating downstream when an NPS ranger approached and asked to see his hunting license and permit:

I said, "What for?" He said, "You have to have a hunting license and permit." I said, "I'm floating down to Circle, why I need a hunting license and permit?" You know? "Well aren't you hunting?" [and] I said, "I would be hunting only if I see something that's worth hunting. I don't think you have the right to ask me about my hunting license and my ID, and my permit." So that kind of got me the wrong way, you know? (04072018CRC3)

The ranger had assumed they were moose hunting and wanted to check if the men were legally prepared to do so. However, from the respondent's point of view, this ranger was overstepping his authority and treating the pair as though they had no legitimate reason to be on the Yukon River. Conflict between local residents and NPS rangers could stem from cultural differences such as not speaking of hunting activities while they are happening or the more general sentiment that the Yukon-Charley rivers area was utilized by residents long before it became a Preserve (Nelson 1983:232). Imposing regulations and strict limitations to subsistence activities creates an inherent conflict with local subsistence users. Although ANILCA makes the management of Alaska parklands inherently different than the management of parklands elsewhere in the country by requiring the consideration of subsistence, the complexities of the law are not always well understood by staff or rangers who rotate into Alaska parks and preserves from out of state. This often creates a situation in which implementing regulations and attempting to balance subsistence uses with other management objectives within the Preserve depends on the interpretation of the individual NPS employee. One respondent summarized the fundamental changes that have occurred as a result of establishing the Yukon-Charley Rivers Preserve:

And then, you know, when you have law enforcement...kind of checking people to see if they have permits and then they don't have permits. Over the years it's just basically a lot of people in the rural areas here now they just don't want to go up there. And, which is unfortunate, because that's, that was their traditional hunting territory and trapping territory long before the Preserve. And now they don't feel comfortable going there, you know. I would like to see, you know, more people back out on the land again. It's really lonely country, you know? (04062018CRC1)

Another respondent who cited the establishment of the Preserve and presence of the Park Service as a reason for decreasing his use of the area added:

It didn't bother me because I never, never really had to go that far [to successfully hunt]. But now we have to go travel, travel, all the time we have to travel now. We can't stay in one place because there's a lot of hunters that come in now. On the Charley River there's camps all over where we hunt all the time. (04062018CRC4)

This respondent felt that he had to travel farther in search of a moose because of the increased presence of nonlocal hunters. He felt that he was forced to hunt in the Preserve under NPS authority. Another respondent, who lives seasonally within the Preserve, described the reduced use by Circle residents:

Oh, yeah, absolutely I would say there's less local rural residents utilizing the, that area today since they [created the Preserve]. Obviously, a lot of people used to live up there, and it's very difficult to have a subsistence lifestyle when you're not able to live there because it's such a long ways to travel. I mean 60 miles one way for us to travel, and then not to have a place to live or to store the stuff you need up there. We're constantly having to do permits and then, you know, you wait months for an answer. So you're in limbo sometimes not really knowing. (04062018CRC1)

This respondent felt that the requirements that NPS had implemented for people to use the Preserve created a process too burdensome for rural residents to navigate and puts subsistence practices in conflict with NPS regulations. According to this respondent,

Some people will sneak in there to hunt moose, but they won't stay the night. They get in, they get out. Trapping: there's nobody trapping up there anymore in the Preserve...In the old days a lot of these folks [from Circle] used to hunt and fish up there. But you go through there now and you won't see any locals. (04062018CRC1)

According to Circle residents, utilizing the Preserve for subsistence activities consistent with historical use patterns is nearly impossible. Respondents noted examples of NPS rules, such as prohibitions on cutting a tree that is more than three inches in diameter, bans on building a temporary structure such as a smokehouse, and limitations on the use of motorized equipment such as snowmachines or chainsaws; they said that these rules fundamentally restrict a subsistence user's ability to take part in the customary and traditional practices of harvesting and processing subsistence resources:

You know, talking with some of the people in the [NPS] compliance team, I mean you definitely get a feeling that it's almost as if they don't feel that humans belong in nature. We're not part of nature and anything we do means we're destroying it, you know. We cut a tree down we're destroying the wilderness. Beaver cuts a tree down he's improving the habitat, you know. We're animals too, you know. In our history we've always been a part of nature, you know. I think it's important we keep that lifestyle intact especially in this modern world where it's so rare. It should be preserved...When I talk with [the NPS] I'm always saying, you know, you say you support subsistence and that you want to preserve culture, but how can you preserve that when people don't want to go in [the Preserve]? How are you saying you're preserving that subsistence culture when you're not allowing people to, well, I shouldn't say not allowing, but making it very difficult, which is kind of what they've done. (04062018CRC1)

The conflict between prioritizing subsistence, mandated in ANILCA, and preserving a natural landscape makes NPS management of parklands in Alaska unique. Although there is no need to recalibrate the philosophy central to the management of parklands throughout the rest of the United States, the current expression of management of the Yukon-Charley Rivers National Preserve will continue to discourage residents from practicing their traditional subsistence activities on lands and waters that were once integral to their lives.

Eagle and Eagle Village

The Preserve headquarters is based in Eagle, and although its presence has increased opportunities for tourism in Eagle, the establishment of the Preserve caused conflict with families who lived or maintained seasonal camps within its boundaries prior to the establishment of the Preserve (Brown et al. 2015; O'Neill 2006). The Environmental Impact Statement for the proposed Yukon-Charley Rivers National Preserve estimated that at least five families lived year-round within the planned boundaries of the Preserve (U.S.

Department of the Interior, Alaska Planning Group 1974). This document also mentioned that: “A number of cabins exist on the Yukon [River], particularly near the mouths of tributary streams, and two or three cabins exist along the Charley River. All these cabins are used periodically for hunting and trapping.” Other sources estimated a higher annual population within the proposed boundaries.

From the perspective of people who had been living along the Yukon River, it seemed as if federal land management agencies viewed them as trespassers; however, in their eyes, they were living in a way that people in rural Alaska had the right to live.⁵ Most families were subsequently forced out of the Preserve with trespass notices or threats thereof. Only one family in Eagle has been able to maintain a permit for the use of their historical family cabin within the Preserve boundaries; this family must reapply every five years or lose their ability to use their cabin (03262018EAA6, 03262018EAA9, Brown et al. 2015). The NPS effort to reduce the number of people living within the Preserve succeeded. The seasonal and year-round residences that were scattered throughout the Preserve in the early 1980s are all but gone. Some of the people living along the river moved to Eagle, while many left the region or Alaska entirely (O’Neill 2006:242).

The establishment of the Preserve undoubtedly affected how subsistence activities occurred in the region downriver from Eagle. For example, some respondents in Eagle feel that trapping is now too difficult to do within the Preserve. A long-time trapper who previously utilized land in an area that is now part of Yukon-Charley Rivers National Preserve expressed his frustration with regulations that greatly limit use of the area compared to before the Preserve was established:

They are squeezing you out. Now, to go down there and trap out of, let’s just pick a cabin that they firmly say they control, the Nation Bluff cabin. I gotta have a permit if I want to do activities out of there. Okay, and so let’s say I get the permit. Well, then nobody else can have the permit at that time. And I mean you can go down and use it, just intermittently, but let’s say I want to trap out of it. “Oh, you can’t do that, this is a public use cabin.” You can’t leave fuel there. You can’t leave food. I can’t haul fuel down or dog food or anything...You can’t cut trails. You can’t cut firewood...Some of the people in the past, they are freaking out if they find a gum wrapper in the cabin. It was built in the ‘40s! It was there way before the park. (03262018EAA6)

Eagle residents do not need a permit from National Park Service to participate in subsistence activities in the Preserve, but they do need a permit to utilize public use cabins for subsistence purposes, to build a barrel cache in which to store supplies, or to cut standing timber for firewood that is greater than three inches in diameter within the boundaries of the Preserve.⁶ Similar to the concerns expressed in Circle, not being able to cut wood or store supplies without going through the permitting process makes traveling to the Preserve for subsistence activities unrealistic.

Although hunting, fishing, and trapping are allowed within the Preserve by federally qualified subsistence users, some local residents still harbor ill feelings for how users were treated when the Preserve was established, and they avoid using the Preserve for subsistence activities. Some Eagle residents did note that the NPS has recently been making efforts to improve relationships with local subsistence users, particularly since the Wilde case (Case No. 13-30360). One such effort was the establishment of a Subsistence Working Group in Eagle, designed to bring interested local residents and NPS staff together to facilitate better communication about subsistence issues.⁷ Through ANILCA Title VIII Section 808, in national parks and monuments, the NPS facilitates formal Subsistence Resource Commissions (SRC) that provide representation from resident zone communities neighboring the national parks. These efforts do not occur

5. Project Jukebox, 2004. “Yukon-Charley Rivers National Preserve, Project Jukebox.” Accessed February 25, 2020. <http://jukebox.uaf.edu/YUCH/htm/index.htm>

6. National Park Service, 2019. “Subsistence use cabin, firewood, and cache permits.” Accessed February 24, 2020. <https://www.nps.gov/yuch/planyourvisit/subsistence-use-cabin-firewood-cache-permits.htm>

7. M. Okada, NPS, personal communication with B. McDavid, March 5, 2020.

for national preserves. Other NPS efforts have included facilitating a trip for Eagle Village elders into the Preserve to visit sites where many of their families lived and worked in earlier days (03232018EAA2). One survey respondent commented that they would like NPS to offer a trip for locals to Slaven's Roadhouse or other locations in the Preserve so that more residents could experience the Preserve.

CONCLUSIONS

The communities of Central, Circle, Eagle, and Eagle Village are all located outside of the Preserve boundaries. Residents rely heavily on caribou, moose, and salmon. For Circle and Eagle, the harvesting of other resources occurs around the significant efforts made to harvest fall chum salmon for dog teams in September. All of the study communities are located in District 5D, the uppermost fishing district in Alaska. Residents' need for salmon, particularly Chinook and fall chum salmon, the primary species that pass through this district, can sometimes be jeopardized by management's need to meet the salmon escapement goals into Canada. Heavy subsistence or commercial fishing in lower river districts can also strain these communities' ability to meet their needs for salmon. As a result, moose and caribou become even more critical within overall subsistence harvests.

Much of the contemporary harvesting of these resources occurs outside the Preserve boundaries, along the nearby Taylor or Steese highways or throughout the numerous drainages that residents can access. Harvesting also occurs in the immediate vicinity of each community. Use of the Preserve still occurs as well. Residents in each community traveled to harvest wild foods within its boundaries; however, key respondents in all communities agreed that the use of this area has diminished over time. Respondents who discussed this change did not attribute it to a shift in demographics, the expense of traveling, or a lack of time or interest to do so. Instead, they offered a consistent narrative that customary and traditional practices consistent with subsistence harvest and use patterns were inconsistent with the NPS management of the Preserve.

However, the NPS has taken steps in recent years to improve relationships in all communities by holding public social events such as barbeques and holding town hall-style meetings. Additionally, staff at the NPS regional office in Fairbanks, including the superintendent and the subsistence coordinator for Yukon-Charley Rivers National Preserve regularly attend community events and visit often. The value of this type of personal outreach and investment cannot be overstated. The NPS created a Subsistence Working Group in Eagle, where residents had expressed interest for one. This response demonstrates a willingness and desire to improve relationships and respond to local concerns. An SRC, or something similar to it, with representatives from each community neighboring the Preserve could be a benefit to stakeholders and the NPS. Many of the concerns expressed by Eagle residents were also expressed by Circle and Central residents during ethnographic interviews. Presumably, these concerns were shared with the NPS through the working group process. However, without a formal, single body to document these issues, the concerns of Central and Circle may remain unheard. Uniting interested residents from each of the communities bordering the preserve could be one way to build consensus and create a public process similar to the process that exists for national parks and monuments.

Noted above, an Eagle Village resident suggested that the NPS offer more arranged trips into the Preserve so that elders can revisit places that they traveled to when they were younger. Offering these trips to elders and youth in all of the study communities would be one way to reconnect residents to the Preserve and create an opportunity for learning between generations and between stakeholders and managers.

Finally, human presence within the Preserve is not new. The ancestors of many ethnographic respondents were raised in this area and knew it well. The considerations that ANILCA requires are unique to Alaska, and the management of these lands must operate differently than parkland management elsewhere in the United States. Enabling customary and traditional practices such as trapping, fishing, and hunting requires the allowance of small trapping cabins, smokehouses, and semi-permanent or permanent structures to shelter subsistence users and store the necessary gear and equipment. Without this flexibility, subsistence will not continue in the Preserve. Providing for the subsistence activities outlined in Title VIII of ANILCA while

also conserving the wilderness are not mutually exclusive mandates. However, only through stakeholder engagement can these goals be achieved.

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APPENDIX A—SURVEY INSTRUMENT

COMPREHENSIVE WILD FOOD HARVEST SURVEY

CIRCLE, ALASKA

YUKON CHARLIE
COMPREHENSIVE

From January 1, 2016 to December 31, 2016

OMB# 1024-0262
Expiration date: 04/30/2015

This survey is used to estimate wild food harvests and to describe rural community economies. We will publish a summary report, and send it to all households in your community. We share this information with the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Park Service. We work with the Federal Regional Advisory Councils and with local Fish and Game Advisory Committees to better manage wild food resources.

We will NOT identify your household. We will NOT use this information for enforcement. Participation in this survey is voluntary. Even if you agree to be surveyed, you may skip questions or stop at any time.

HOUSEHOLD ID: _____
COMMUNITY ID: _____
INTERVIEWER 1: _____
INTERVIEWER 2: _____
INTERVIEW DATE: _____
START TIME: _____
STOP TIME: _____

DATA CODED BY: _____
DATA ENTERED BY: _____
SUPERVISOR: _____



PAPERWORK REDUCTION ACT STATEMENT:

A federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information, unless a currently valid OMB control number is displayed. 16 U.S.C.1a-7 authorizes collection of this information. This information will be used by the National Park Service, the Federal Subsistence Management Program, and the Alaska Department of Fish and Game, Division of Subsistence to understand more about the communities eligible to engage in subsistence in Wrangell-St. Elias National Park and Preserve. Response to this request is voluntary. Your name will not appear anywhere on the completed survey and your responses will be completely anonymous. The public reporting burden for completing individual interviews is estimated to take 60 minutes. Please direct comments regarding any aspect of this collection to:

Barbara Cellarius, Wrangell-St. Elias National Park and Preserve, Resources Division, Mile 106.8 Richardson Highway, P.O. Box 439, Copper Center, AK 99573,

COOPERATING ORGANIZATIONS

**YUKON CHARLIE NATIONAL
PRESERVE**
P.O. BOX 167
EAGLE, AK 99738
907-547-2233

**ALASKA DEPARTMENT OF FISH
AND GAME**
1300 COLLEGE RD.
FAIRBANKS, AK 99701
907-328-6116

HOUSEHOLD MEMBERS

HOUSEHOLD ID

First, I would like to ask about the people in your household, permanent members of your household who sleep at your house. This includes students who return home every summer. I am NOT interested in people who lived with you temporarily, even if they stayed several months.

Last year, that is, between January 1, 2016 and December 31, 2016 WHO were the head or heads of your household?

Is this person answering questions on this survey?	How is this person related to HEAD 1?	Is this person MALE or FEMALE?	Is this person an ALASKA NATIVE?	In what YEAR was this person born?	Where were parents living when this person was born?	How many years has this person lived in Northway?	Highest level of education attained by this person?
ID #	(circle)	(relation)	(circle)	(circle)	(year)	(AK city or state)	(number)
HEAD 1	Y N		M F	Y N			
1							
NEXT enter spouse or partner. If a household has a SINGLE HEAD, leave HEAD 2 row BLANK and move to PERSON 3.							
HEAD 2	Y N		M F	Y N			
2							
BELOW, enter children (oldest to youngest), grandchildren, grandparents, or anyone else living full-time in this household.							
PERSON 03	Y N		M F	Y N			
3							
PERSON 04	Y N		M F	Y N			
4							
PERSON 05	Y N		M F	Y N			
5							
PERSON 06	Y N		M F	Y N			
6							
PERSON 07	Y N		M F	Y N			
7							
PERSON 08	Y N		M F	Y N			
8							
PERSON 09	Y N		M F	Y N			
9							
PERSON 10	Y N		M F	Y N			
10							
PERSON 11	Y N		M F	Y N			
11							
PERSON 12	Y N		M F	Y N			
12							
PERSON 13	Y N		M F	Y N			
13							

PERMANENT HH MEMBERS: 01

CIRCLE: 93

HOUSEHOLD PARTICIPATION

To continue our questions about people in your household, I would like to ask a few questions about participation in harvesting wild foods...

Between January 1, 2016 and December 31, 2016

Did this person

PERSON ID# FROM PAGE 2	FISH		LARGE LAND MAMMALS		SMALL LAND MAMMALS/ FURBEARERS		BIRDS AND EGGS		PLANTS / BERRIES / WOOD	
	FISH FOR (circle)	PROCESS (circle)	HUNT / TRAP (circle)	PROCESS (circle)	HUNT / TRAP (circle)	PROCESS (circle)	HUNT / GATHER (circle)	PROCESS (circle)	GATHER (circle)	PROCESS (circle)
HEAD 1	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
1										
HEAD 2	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
2										
PERSON 03	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
3										
PERSON 04	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
4										
PERSON 05	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
5										
PERSON 06	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
6										
PERSON 07	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
7										
PERSON 08	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
8										
PERSON 09	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
9										
PERSON 10	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
10										
PERSON 11	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
11										
PERSON 12	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
12										
PERSON 13	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
13										

PERMANENT HH MEMBERS: 01

CIRCLE: 93

HOUSEHOLD PARTICIPATION

HOUSEHOLD ID

... Continued from previous page

Between January 1, 2016 and December 31, 2016

Did this person

PERSON ID# FROM PAGE 2	BUILD FISH WHEELS	BUILD FISH TRAPS	BUILD DOG SLEDS	SEW SKINS/CLOTH	COOK WILD FOODS
ID #	(circle)	(circle)	(circle)	(circle)	(circle)
HEAD 1	Y N	Y N	Y N	Y N	Y N
1					
HEAD 2	Y N	Y N	Y N	Y N	Y N
2					
PERSON 03	Y N	Y N	Y N	Y N	Y N
3					
PERSON 04	Y N	Y N	Y N	Y N	Y N
4					
PERSON 05	Y N	Y N	Y N	Y N	Y N
5					
PERSON 06	Y N	Y N	Y N	Y N	Y N
6					
PERSON 07	Y N	Y N	Y N	Y N	Y N
7					
PERSON 08	Y N	Y N	Y N	Y N	Y N
8					
PERSON 09	Y N	Y N	Y N	Y N	Y N
9					
PERSON 10	Y N	Y N	Y N	Y N	Y N
10					
PERSON 11	Y N	Y N	Y N	Y N	Y N
11					
PERSON 12	Y N	Y N	Y N	Y N	Y N
12					
PERSON 13	Y N	Y N	Y N	Y N	Y N
13					

PERMANENT HH MEMBERS: 01

CIRCLE: 93

RETAINED COMMERCIAL HARVESTS

HOUSEHOLD ID

1. Do you or members of your household USUALLY participate in any commercial fishery?..... Y N ☐2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household PARTICIPATE in any commercial fishery?..... Y N ☐

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

A ... FISH commercially for _____?

B ... KEEP any ____ from your
commercial catch for your own use² or
to share?C Was the ____ that you kept
INCIDENTAL⁴ catch?if keep
is "yes"Please estimate how many fish ALL MEMBERS OF YOUR HOUSEHOLD
removed from commercial harvests for personal use during the last year.Include COMMERCIALY HARVESTED fish that members of this
household gave away, ate fresh, fed to dogs, lost to spoilage, or got by
helping others. If helping others, report ONLY THIS HOUSEHOLD'S
share.

How many were removed for your OWN USE? ⁵	How many were removed for your CREW? ⁵	How many were removed to give to OTHERS?	Units ³	
number	number	number	specify	comments

Read names below in blanks above	A COMM FISH?	B KEEP?	C INCI?					
CHINOOK (KING) SALMON	Y N	Y N	Y N					IND.
113000001								
SOCKEYE (RED) SALMON	Y N	Y N	Y N					IND.
115000001								
COHO (SILVER) SALMON	Y N	Y N	Y N					IND.
112000001								
CHUM (DOG) SALMON	Y N	Y N	Y N					IND.
111000001								
PINK (HUMPIES) SALMON	Y N	Y N	Y N					IND.
114000001								
HALIBUT	Y N	Y N	Y N					LB.
121800001								
HERRING	Y N	Y N	Y N					GAL.
120200001								
HERRING ROE	Y N	Y N	Y N					GAL.
120300001								
CRAB	Y N	Y N	Y N					IND.
501099001								
	Y N	Y N	Y N					

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes eating, feeding to dogs, sharing or trading with others, etc.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

4 "INCIDENTAL CATCH" means the fish kept was not being commercially fished. For example, a king salmon kept from a chum commercial fishery.

5 Double counting (captains' removals for crew members and crew members' removal for own uses) is fixed in analysis. Collect both.

HARVESTS: SALMON

HOUSEHOLD ID

1. Do you or members of your household USUALLY fish for salmon for subsistence, personal use, or sport?..... Y N

2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST salmon?..... Y NIF the answer to QUESTION 2 is NO, to to the **NEXT PAGE**.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if harvest
is "yes"Please estimate how many salmon ALL MEMBERS OF YOUR
HOUSEHOLD got during the last year. How many were
harvested with INCLUDE salmon that members of this household gave away,
ate fresh, fed to dogs, lost to spoilage, or got by helping others. If
fishing with or helping others, report ONLY THIS HOUSEHOLD'S
share of the harvest. DO NOT INCLUDE catch and release fish or
retained commercial harvests.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	DIP NET	GILL NET OR SEINE	FISH WHEEL	ROD & REEL ³	OTHER GEAR (specify type)	Units ⁴
						(number harvested by each gear type)				amount / type	specify
CHUM (DOG) SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.
111090000											
SUMMER CHUM	Y N	Y N	Y N	Y N	Y N					/	IND.
111010000											
FALL CHUM	Y N	Y N	Y N	Y N	Y N					/	IND.
111020000											
COHO SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.
112000000											
CHINOOK SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.
113000000											
PINK SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.
114000000											
SOCKEYE SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.
115000000											
SPAWNOUTS	Y N	Y N	Y N	Y N	Y N					/	IND.
117000000											
UNKNOWN SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.
119000000											
	Y N	Y N	Y N	Y N	Y N					/	
	Y N	Y N	Y N	Y N	Y N					/	

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

Otherwise, continue with mapping, and assessment sections...

Refer to data collection maps and mapping instructions to map salmon...

110000000

(3)

CIRCLE: 93

HARVESTS: OTHER FISH

HOUSEHOLD ID

1. Do you or members of your household USUALLY fish for other fish for subsistence, personal use, or sport?..... Y N

2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST other fish?..... Y N

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ... receive _____ from another HH or community
- C ... give _____ to another HH or community?
- D ... try² to harvest _____?
- E ... actually harvest any _____?

if
harvest
is "yes"

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with					
						FISH WHEEL	GILL NET OR SEINE	ICE FISHING	ROD & REEL ³	OTHER GEAR (specify type)	Units ⁴
						(number harvested by each gear type)				amount / type	specify
HUMPBACK WHITEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.
126408000											
ROUND WHITEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.
126412000											
LEAST CISCO	Y N	Y N	Y N	Y N	Y N					/	IND.
126406060											
BROAD WHITEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.
126404000											
BERING CISCO	Y N	Y N	Y N	Y N	Y N					/	IND.
126406040											
SHEEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.
125600000											
UNKNOWN WHITEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.
126499000											
PIKE	Y N	Y N	Y N	Y N	Y N					/	IND.
125500000											
BURBOT (LINGCOD)	Y N	Y N	Y N	Y N	Y N					/	IND.
124800000											
ARCTIC GRAYLING	Y N	Y N	Y N	Y N	Y N					/	IND.
125200000											

...Continue on next page

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

OTHER FISH: 06**CIRCLE: 93**

HARVESTS: OTHER FISH

HOUSEHOLD ID

...continued from previous page

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ... receive _____ from another HH or community
- C ... give _____ to another HH or community?
- D ... try² to harvest _____?
- E ... actually harvest any _____?

if
harvest
is "yes"

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	FISH WHEEL	GILL NET OR SEINE	ICE FISHING	ROD & REEL ³	OTHER GEAR (specify type)	Units ⁴
						(number harvested by each gear type)				amount / type	specify
DOLLY VARDEN	Y N	Y N	Y N	Y N	Y N					/	IND.
125006000											
LAKE TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.
125010000											
UNKNOWN TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.
126299000											
LONGNOSE SUCKER	Y N	Y N	Y N	Y N	Y N					/	IND.
126000000											
ARCTIC CHAR	Y N	Y N	Y N	Y N	Y N					/	IND.
125002000											
SMELT	Y N	Y N	Y N	Y N	Y N					/	GAL.
120400000											
LAMPREY	Y N	Y N	Y N	Y N	Y N					/	IND.
122000000											
HALIBUT	Y N	Y N	Y N	Y N	Y N					/	LB.
121800000											
HERRING SPAWN ON KELP	Y N	Y N	Y N	Y N	Y N					/	GAL.
120306000											
	Y N	Y N	Y N	Y N	Y N					/	

Did anyone in the household harvest or receive any other nonsalmon fish, such as halibut, hooligan, or char?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

OTHER FISH: 06**CIRCLE: 93**

HARVEST SUMMARY: OTHER FISH

HOUSEHOLD ID

If this household did NOT USE or HARVEST other fish last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING*Refer to data collection maps and mapping instructions to map other fish...***ASSESSMENTS: OTHER FISH**

120000000

To conclude our other fish section, I am going to ask a few general questions about other fish.

During the last year,¹... did your household use LESS, SAME, or MORE other fish than in recent years? X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different?

1 ☐2 ☐**During the last year,¹**...did your household GET ENOUGH other fish?..... Y N ☐

If NO...

What KIND of other fish did you need?

How would you describe the impact to your household of not getting enough other fish last year?

... not noticeable?

(0)

... minor ?

(1)

... major?

(2)

... Severe?

(3)

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVESTS: MARINE INVERTEBRATES

HOUSEHOLD ID

1. Do you or members of your household USUALLY harvest marine invertebrates for subsistence, personal use, or sport? Y N

2. During the last year (between January 1, 2016 and December 31, 2016),

did you, or members of your household USE or TRY TO HARVEST marine invertebrates?..... Y N

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with

INCLUDE marine invertebrates that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest. DO NOT INCLUDE marine invertebrates caught commercially, or were not retained.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	AMOUNT (amt)	Units ⁴ specify	COMMENTS (text)
DUNGENESS CRAB	Y N	Y N	Y N	Y N	Y N		IND.	
501004000								
KING CRAB	Y N	Y N	Y N	Y N	Y N		IND.	
501008000								
TANNER CRAB	Y N	Y N	Y N	Y N	Y N		IND.	
501012000								
RAZOR CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500612000								
FRESHWATER CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500604000								
BUTTER CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500602000								
CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500699000								
SHRIMP	Y N	Y N	Y N	Y N	Y N		LB.	
503400000								
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			

During the last year, did your household use any other kind of marine invertebrates?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 "ROD AND REEL" includes fish caught in open water with a hook and a line attached to a rod or a pole. Jigging through the ice is "ice fishing."

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

MARINE INVERTEBRATES: 08**CIRCLE: 93**

HARVEST SUMMARY: MARINE INVERTEBRATES

HOUSEHOLD ID

If this household did NOT USE or HARVEST marine invertebrates last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING*Refer to data collection maps and mapping instructions to map marine invertebrates...***ASSESSMENTS: MARINE INVERTEBRATES**

500000000

To conclude our marine invertebrates section, I am going to ask a few general questions about marine invertebrates.

During the last year,¹... did your household use LESS, SAME, or MORE marine invertebrates than in recent years? X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different? _____

1 ☐2 ☐**During the last year,¹**...did your household GET ENOUGH marine invertebrates?..... Y N ☐

If NO...

What KIND of marine invertebrates did you need? _____

How would you describe the impact to your household of not getting enough marine invertebrates last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for large land mammals?

Y N

2. During the last year (between January 1, 2016 and December 31, 2016),

did you, or members of your household USE or TRY TO HARVEST large land mammals?..... Y N

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Read names below in blanks above	A	B	C	D	E
	USE	REC	GIVE	TRY	HAR

MOOSE

Y N Y N Y N Y N Y N

211800000

211800001

211800002

211800009

CARIBOU

Y N Y N Y N Y N Y N

211000000

211000001

211000002

211000009

BLACK BEAR

Y N Y N Y N Y N Y N

210600000

BROWN BEAR

Y N Y N Y N Y N Y N

210800000

MOUNTAIN GOAT

Y N Y N Y N Y N Y N

211600000

DALL SHEEP

Y N Y N Y N Y N Y N

212200000

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE large land mammals that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS ³
M/F	(specify amount harvested per month)													(specify)

M IND.

F IND.

UNK IND.

1 IND.

2 IND.

-9 IND.

M IND.

F IND.

UNK IND.

1 IND.

2 IND.

-9 IND.

IND.

IND.

IND.

IND.

IND.

IND.

During the last year, did your household use any other kind of large land mammals?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

LARGE LAND MAMMALS: 10**CIRCLE: 93**

HARVEST SUMMARY: LARGE LAND MAMMALS

HOUSEHOLD ID

If this household did NOT USE or HARVEST large land mammals last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING*Refer to data collection maps and mapping instructions to map large land mammals...***ASSESSMENTS: LARGE LAND MAMMALS**

210000000

To conclude our large land mammals section, I am going to ask a few general questions about large land mammals.

During the last year,¹... did your household use LESS, SAME, or MORE large land mammals than in recent years? X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different? _____

1 ☐2 ☐**During the last year,¹**...did your household GET ENOUGH large land mammals?..... Y N ☐

If NO...

What KIND of large land mammals did you need? _____

How would you describe the impact to your household of not getting enough large land mammals last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt or trap for small land mammals or furbearers?..... Y N ☐2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST small land mammals or furbearers?..... Y N ☐

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE small land mammals or furbearers that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	USED FOR FOOD OR FOR FOOD & FUR	UNITS ³
	USE	REC	GIVE	TRY	HAR	(specify amount harvested per month)													(amount)	specify
BEAVER	Y N	Y N	Y N	Y N	Y N															IND.
220200000																				
MUSKRAT	Y N	Y N	Y N	Y N	Y N															IND.
222400000																				
PORCUPINE	Y N	Y N	Y N	Y N	Y N															IND.
222600000																				
WOLF	Y N	Y N	Y N	Y N	Y N															IND.
223200000																				
WOLVERINE	Y N	Y N	Y N	Y N	Y N															IND.
223400000																				
COYOTE	Y N	Y N	Y N	Y N	Y N															IND.
220400000																				
FOX	Y N	Y N	Y N	Y N	Y N															IND.
(SPECIFY)																				
220800000																				
SNOWSHOE HARE	Y N	Y N	Y N	Y N	Y N															IND.
221004000																				
LYNX	Y N	Y N	Y N	Y N	Y N															IND.
221600000																				
MARTEN	Y N	Y N	Y N	Y N	Y N															IND.
222000000																				

...Continue on next page

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

SMALL LAND MAMMALS OR FURBEARERS: 14**CIRCLE: 93**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

...continued from previous page

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE small land mammals or furbearers that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	USED FOR FOOD OR FOR FOOD & FUR	UNITS ³
	USE	REC	GIVE	TRY	HAR	(specify amount harvested per month)														(amount)
LAND OTTER	Y N	Y N	Y N	Y N	Y N															IND.
221200000																				
MARMOT	Y N	Y N	Y N	Y N	Y N															IND.
221800000																				
MINK	Y N	Y N	Y N	Y N	Y N															IND.
222200000																				
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.

During the last year, did your household use any other kind of small land mammals or furbearers?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

SMALL LAND MAMMALS OR FURBEARERS: 14**CIRCLE: 93**

HARVEST SUMMARY: SMALL LAND ANIMALS

HOUSEHOLD ID

If this household did NOT USE or HARVEST small land animals last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING*Refer to data collection maps and mapping instructions to map small land mammals...***ASSESSMENTS: SMALL LAND MAMMALS/FURBEARERS**

220000000

To conclude our small land mammals/furbearers section, I am going to ask a few general questions about small land mammals/furbearers.

During the last year,¹

... did your household use LESS, SAME, or MORE small land mammals/furbearers than in recent years? X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

During the last year,¹

...did your household GET ENOUGH small land mammals/furbearers?..... Y N

If NO...

What KIND of small land mammals/furbearers did you need?

How would you describe the impact to your household of not getting enough small land mammals/furbearers last year?

... not noticeable? ... minor ? ... major? ... Severe?

(0) (1) (2) (3)

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVESTS: MARINE MAMMALS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for marine mammals?..... Y N ☐2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST marine mammals?..... Y N ☐IF the answer to QUESTION 2 is NO, to to the *NEXT PAGE*.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ... receive _____ from another HH or community
- C ... give _____ to another HH or community?
- D ... try² to harvest _____?
- E ... actually harvest any _____?

if
harvest
is "yes"

Please estimate how many marine mammals ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE marine mammals that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS ³
						M/F	(specify amount harvested per month)													(specify)
HARBOR SEAL	Y N	Y N	Y N	Y N	Y N															IND.
300806000																				
STELLER SEA LION	Y N	Y N	Y N	Y N	Y N															IND.
301200000																				
SEA OTTER	Y N	Y N	Y N	Y N	Y N															IND.
301000000																				
FUR SEAL	Y N	Y N	Y N	Y N	Y N															IND.
300804000																				
WHALE (SPECIFY)	Y N	Y N	Y N	Y N	Y N															IND.
301600000																				
UNKNOWN SEAL (OR SEAL OIL)	Y N	Y N	Y N	Y N	Y N															IND.
300899000																				
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.

During the last year, did your household use any other kind of Marine mammals?..... Y N ☐

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

HARVEST SUMMARY: MARINE MAMMALS

HOUSEHOLD ID

If this household did NOT USE or HARVEST marine mammals last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING

Refer to data collection maps and mapping instructions to map marine mammals...

ASSESSMENTS: MARINE MAMMALS

300000000

To conclude our marine mammals section, I am going to ask a few general questions about marine mammals.

During the last year,¹

... did your household use LESS, SAME, or MORE marine mammals than in recent years? X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

During the last year,¹

...did your household GET ENOUGH marine mammals?..... Y N

If NO...

What KIND of marine mammals did you need?

How would you describe the impact to your household of not getting enough marine mammals last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for migratory waterfowl?..... Y N ☐2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST migratory waterfowl?..... Y N ☐IF the answer to QUESTION 2 is NO, to to the *NEXT PAGE*.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many migratory waterfowl ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE migratory waterfowl that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	January February	May June	July August September	October November December	Season of harvest unknown	UNITS ³ (specify)
	USE	REC	GIVE	TRY	HAR	WINTER	SPRING	SUMMER	FALL	(number)	
CANADA GEESE	Y N	Y N	Y N	Y N	Y N						IND.
410404990											
WHITE-FRONTED GEESE (SPECKLEBELLY)	Y N	Y N	Y N	Y N	Y N						IND.
410410000											
SNOW GEESE	Y N	Y N	Y N	Y N	Y N						IND.
410408000											
SWAN (SPECIFY)	Y N	Y N	Y N	Y N	Y N						IND.
410699000											
CRANE	Y N	Y N	Y N	Y N	Y N						IND.
410800000											
LOON (SPECIFY)	Y N	Y N	Y N	Y N	Y N						IND.
411216000											
AMERICAN WIGEON	Y N	Y N	Y N	Y N	Y N						IND.
410236020											
TEAL	Y N	Y N	Y N	Y N	Y N						IND.
410232000											
MALLARD	Y N	Y N	Y N	Y N	Y N						IND.
410214000											
NORTHERN PINTAIL	Y N	Y N	Y N	Y N	Y N						IND.
410220000											

...Continue on the next page

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

3 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

MIGRATORY WATERFOWL: 15

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

...continued from previous page

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many migratory waterfowl ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE migratory waterfowl that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	January February March April WINTER	May June JULY August September October November December FALL	Season of harvest unknown	UNITS ³
	USE	REC	GIVE	TRY	HAR	(number killed in each season)			(number) (specify)
NORTHERN SHOVELER	Y N	Y N	Y N	Y N	Y N				IND.
410230000									
BLACK SCOTER (BLACK DUCKS)	Y N	Y N	Y N	Y N	Y N				IND.
410228020									
WHITE-WINGED SCOTER	Y N	Y N	Y N	Y N	Y N				IND.
410228060									
UNKNOWN SCOTER	Y N	Y N	Y N	Y N	Y N				IND.
410228990									
BUFFLEHEAD	Y N	Y N	Y N	Y N	Y N				IND.
410202000									
GOLDENEYE	Y N	Y N	Y N	Y N	Y N				IND.
410210000									
SCAUP	Y N	Y N	Y N	Y N	Y N				IND.
410226990									
LONG-TAILED DUCK (OLDSQUAW)	Y N	Y N	Y N	Y N	Y N				IND.
410218000									
	Y N	Y N	Y N	Y N	Y N				
	Y N	Y N	Y N	Y N	Y N				
	Y N	Y N	Y N	Y N	Y N				

During the last year, did your household use any other kind of migratory waterfowl?.....Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.² "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.³ UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.**MIGRATORY WATERFOWL: 15**

HARVESTS: OTHER BIRDS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for other birds?..... Y N

2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST other birds?..... Y N

IF the answer to QUESTION 2 is NO, to to the *NEXT PAGE*.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many other birds ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested in

INCLUDE other birds that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	January February March November December WINTER	April May June SPRING	July August SUMMER	September October FALL	Season of harvest unknown	UNITS ³
						(number killed in each season)				(number)	(specify)

PTARMIGAN Y N Y N Y N Y N Y N IND.

421804000 SPRUCE GROUSE Y N Y N Y N Y N Y N IND.

421802020 RUFFED GROUSE Y N Y N Y N Y N Y N IND.

421802060 SHARP-TAILED GROUSE Y N Y N Y N Y N Y N IND.

421802040 Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

Y N Y N Y N Y N Y N

During the last year, did your household use any other kind of other birds?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

² "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

³ UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

OTHER BIRDS: 15

HARVESTS: BIRD EGGS

HOUSEHOLD ID

1. Do you or members of your household USUALLY harvest bird eggs?..... Y N ☐2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST bird eggs?..... Y N ☐

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ...receive _____ from another HH or community
- C ...give _____ to another HH or community?
- D ...try² to harvest _____?
- E ...actually harvest any _____?

if
harvest
is "yes"

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with

INCLUDE bird eggs that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	AMOUNT (amt)	Units ⁴ specify	COMMENTS (text)
GULL EGGS (SPECIFY)	Y N	Y N	Y N	Y N	Y N	IND.		
431212000								
GEESE EGGS (SPECIFY)	Y N	Y N	Y N	Y N	Y N	IND.		
430400000								
DUCK EGGS (SPECIFY)	Y N	Y N	Y N	Y N	Y N	IND.		
430200000								
	Y N	Y N	Y N	Y N	Y N	IND.		
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			

During the last year, did your household use any other kind of bird eggs?..... Y N ☐

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

BIRD EGGS: 15**CIRCLE: 93**

HARVEST SUMMARY: BIRDS AND EGGS

HOUSEHOLD ID

If this household did NOT USE or HARVEST birds and eggs last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING*Refer to data collection maps and mapping instructions to map birds and eggs...***ASSESSMENTS: BIRDS AND EGGS**

400000000

To conclude our birds and eggs section, I am going to ask a few general questions about birds and eggs.

During the last year,¹... did your household use LESS, SAME, or MORE birds and eggs than in recent years? X L S M ☐

IF LESS or MORE ...

X = do not use

WHY was your use different? _____

1 ☐2 ☐**During the last year,¹**...did your household GET ENOUGH birds and eggs?..... Y N ☐

If NO...

What KIND of birds and eggs did you need? _____

How would you describe the impact to your household of not getting enough birds and eggs last year?

... not noticeable?

... minor ?

... major?

... Severe?

(0)

(1)

(2)

(3)

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVESTS: PLANTS AND BERRIES (INCLUDING WOOD)

HOUSEHOLD ID

1. Do you or members of your household USUALLY harvest plants and berries (including wood)?..... Y N ☐2. During the last year (between January 1, 2016 and December 31, 2016),
did you, or members of your household USE or TRY TO HARVEST plants and berries (including wood)?..... Y N ☐

IF the answer to QUESTION 2 is NO, to the NEXT PAGE.

IF the answer is YES, continue on this page ...

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ... receive _____ from another HH or community
- C ... give _____ to another HH or community?
- D ... try² to harvest _____?
- E ... actually harvest any _____?

if
harvest
is "yes"

Please estimate how many plants and berries (including wood) ALL MEMBERS OF YOUR HOUSEHOLD got during the last year.

INCLUDE plants and berries (including wood) that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A	B	C	D	E	AMOUNT	Units ⁴	COMMENTS
	USE	REC	GIVE	TRY	HAR	(amt)	specify	(text)
BLUEBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601002000								
LOW BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601004000								
RASPBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601020000								
HIGH BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601006000								
CROWBERRY (BLACKBERRY)	Y N	Y N	Y N	Y N	Y N		GAL.	
601007000								
CLOUD BERRY (SALMONBERRY)	Y N	Y N	Y N	Y N	Y N		GAL.	
601016000								
LABRADOR TEA	Y N	Y N	Y N	Y N	Y N		GAL.	
602018000								
ROOTS (FOR FOOD)	Y N	Y N	Y N	Y N	Y N		GAL.	
602009000								
ROSE HIPS NCHOO	Y N	Y N	Y N	Y N	Y N		GAL.	
602036000								
MUSHROOMS CH'INAIY'	Y N	Y N	Y N	Y N	Y N		GAL.	
602040000								

...Continue on the next page

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

HARVESTS: PLANTS AND BERRIES (INCLUDING WOOD)

HOUSEHOLD ID

...continued from previous page

During the last year,¹

did you or members of your household...

- A ... use² _____?
- B ... receive _____ from another HH or community
- C ... give _____ to another HH or community?
- D ... try² to harvest _____?
- E ... actually harvest any _____?

if harve
is "yes"

Please estimate how many plants and berries (including wood) ALL MEMBERS OF YOUR HOUSEHOLD got for subsistence uses during the last year. How many were harvested with

INCLUDE plants and berries (including wood) that members of this household gave away, are fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with or helping others, report ONLY THIS HOUSEHOLD'S share of the harvest.

Read names below in blanks above	A USE	B REC	C GIVE	D TRY	E HAR	AMOUNT (amt)	Units ⁴ specify	COMMENTS (text)
MUSKRAT CANDY (MOUSEFOODS)	Y N	Y N	Y N	Y N	Y N		GAL.	
602060000								
SPRUCE TIPS	Y N	Y N	Y N	Y N	Y N		GAL.	
602030000								
WILD RHUBARB	Y N	Y N	Y N	Y N	Y N		GAL.	
602006000								
CHAGA	Y N	Y N	Y N	Y N	Y N		GAL.	
602046040								
PUNK	Y N	Y N	Y N	Y N	Y N		GAL.	
602046010								
FIREWEED	Y N	Y N	Y N	Y N	Y N		GAL.	
602042000								
FIREWOOD	Y N	Y N	Y N	Y N	Y N		CORD.	
604000000								
WOOD (OTHER) (SPECIFY USE)	Y N	Y N	Y N	Y N	Y N		CORD.	
604098000								
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			
	Y N	Y N	Y N	Y N	Y N			

During the last year, did your household use any other kind of PLANTS AND BERRIES (INCLUDING WOOD)?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

2 "USE" includes harvesting, processing, eating, trading, feeding to dogs, etc. "TRY" includes looking, hunting, fishing, or any attempt to get.

4 UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.

HARVEST SUMMARY: PLANTS AND BERRIES

HOUSEHOLD ID

If this household did NOT USE or HARVEST plants and berries last year, go to the ASSESSMENT section below.

Otherwise, continue with mapping, and assessment sections...

MAPPING*Refer to data collection maps and mapping instructions to map plants, berries, and wood...***ASSESSMENTS: PLANTS AND BERRIES (INCLUDING WOOD)**

600000000

To conclude our plants and berries (including wood) section, I am going to ask a few general questions about plants and berries (including wood).

During the last year,¹

... did your household use LESS, SAME, or MORE plants and berries (including wood) than in recent years? X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

During the last year,¹

...did your household GET ENOUGH plants and berries (including wood)?..... Y N

If NO...

What KIND of plants and berries (including wood) did you need?

How would you describe the impact to your household of not getting enough plants and berries (including wood) last year?

... not noticeable? ... minor ? ... major? ... Severe?

(0) (1) (2) (3)

1 "LAST YEAR" means between January 1, 2016 and December 31, 2016.

HARVEST SUMMARY: ALL RESOURCES

HOUSEHOLD ID

0

ASSESSMENTS: ALL RESOURCES

To conclude our harvests section, I am going to ask a few general questions about wild resources.

During the last year,¹

... did your household use *LESS, SAME, or MORE* wild resources than in recent years? X L S M

IF LESS or MORE ...

X = do not use

WHY was your use different?

1

2

During the last year,¹

... did your household GET ENOUGH wild resources? Y N

If NO...

What KIND of wild resources did you need?

How would you describe the impact to your household of not getting enough wild resources last year? *not noticeable?* *minor ?* *major?* *Severe?*
(0) (1) (2) (3)

HEALTH IMPACT ASSESSMENTS

(circle ONE response)

In a normal week, how often are wild foods such as salmon, non-salmon fish, moose, caribou, birds, etc. served in your household?

None,
don't use
(0)

Less than
once per
week
(1)

1 - 3
times per
week
(2)

4 - 6
times per
week
(3)

Once per
day
(4)

2 times
per day
(5)

3 Times
per day
(6)

If this household does NOT USE wild foods, go to the next page

Otherwise, continue below...

Please list the TOP FIVE MOST IMPORTANT WILD FOODS that are used in your household. Include wild foods that may not be available now, but are important at other times of the year. Please list most important foods first.

(Not necessary to fill out every line)

TOP FIVE WILD FOODS

Wild Food 1

Wild Food 2

Wild Food 3

Wild Food 4

Wild Food 5

If your household CANNOT GET WILD FOODS, what foods do members of your household eat instead? These can be general categories or more specific items you purchase or grow. Please list most important alternative foods first. These can be general categories or more specific items you purchase, grow, or are grown locally.

(Not necessary to fill out every line)

Other Food

Other Food

Other Food

Other Food

Other Food

**OTHER FOODS²
(1 TO 5)****OTHER FOODS²
(6 TO 10)**

¹ "LAST YEAR" means between January 1, 2016 and December 31, 2016.

² For "OTHER FOODS", we are not interested in condiments or staples, such as sugar, flour, coffee, or butter etc... We are interested in foods used in place of traditional foods for meals or snacks. This includes foods substituted by personal preference or out of necessity (traditional food not available).

ASSESSMENTS OF ALL RESOURCES: 66**CIRCLE: 93**

ADDITIONAL ASSESSMENTS

HOUSEHOLD ID

Resource Health

Between January 1, 2014 and December 31, 2014... were there any resources that your household avoided harvesting due to poor resource health?

If YES, which resources did you avoid and why?

Transportation and Motorized Equipment

Between January 1, 2014 and December 31, 2014... did members of your household use the following when harvesting or attempting to harvest wild foods?

	circle	
boat	Y	N
snowmachine	Y	N
4-wheeler/ORV	Y	N
airplane	Y	N
dogsled	Y	N

Does your household own, borrow, lease, or charter this equipment?

use, or charter this equipment:

	Own	Borrow	Lease	Charter	
Circle only responses that the respondent answered yes to above.					
boat	Y N	Y N	Y N	Y N	
snowmachine	Y N	Y N	Y N	Y N	
4-wheeler/ORV	Y N	Y N	Y N	Y N	
airplane	Y N	Y N	Y N	Y N	
dogsled	Y N	Y N	Y N	Y N	

Comments:

Between January 1, 2014 and December 31, 2014... did members of your household use the following or motorized equipment when harvesting or attempting to harvest wild foods?

	circle	
chainsaw	Y	N
ice auger	Y	N
winch	Y	N
generator	Y	N
Other (specify)	Y	N

Heating

What proportion of your household's heating comes from firewood?

	circle
0%	
1-25%	
26-50%	
51-75%	
76-99%	
100%	

In the past 5 years has your harvest area for firewood changed?

	circle
Y	N

If yes, please explain why?

How much do you spend annually to heat your home?

\$

Handicrafts

Between January 1, 2014 and December 31, 2014... did members of your household participate in the making of handicrafts using the following materials?

	circle	
birchbark	Y	N
horns	Y	N
antlers	Y	N
other natural material (specify)	Y	N

ADDITIONAL ASSESSMENTS

CIRCLE: 93

ASSESSMENTS: GEAR PURCHASES

HOUSEHOLD ID

SNAP funds (the Supplemental Nutrition Assistance Program also known as 'food stamps') can be used to purchase materials related to catching or processing subsistence foods. We'd like to learn about how people use SNAP funds to purchase these items to get the food they need.

1 How important are the following sources of food or money for food for your household?

That is, how much does your household rely on them as a main source of food or money for food? (circle responses)

Wild food harvests	not important	important	very important	☐
The store	not important	important	very important	☐
WIC	not important	important	very important	☐
SNAP	not important	important	very important	☐
Online/Over the phone orders	not important	important	very important	☐

2 Are there certain foods that you need or would like to eat that are difficult to get, or are not available in your community? Y N

If YES,

What are these foods and why are they difficult to get or not available?

1 ☐
2 ☐

3 What is the most important benefit to your household of eating wild foods?

1 ☐
2 ☐

4 Who do you consider to be the leaders in solving food problems in your community?

1 ☐
2 ☐

5 Last year, did your household receive SNAP funds? Y N

(If NO, continue with the comments section on the next page.....)

If YES,

How many weeks did your SNAP benefits usually last?

6 Did your household use SNAP funds to purchase subsistence FISHING or HUNTING GEAR? Y N

If YES,

What types of gear did your household purchase? (circle all that apply)

Nets	Lines	Hooks	Fishing rods	Harpoons	Knives	Ice augers	Other	☐
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) (describe)	

7 How important are SNAP funds to the following? (circle responses)

Buying hunting and/or fishing gear	not important	important	very important	☐
Buying enough food for my family	not important	important	very important	☐
Buying enough healthy food for my family	not important	important	very important	☐
Buying the foods that my family wants/likes to eat	not important	important	very important	☐
Buying fruit and/or vegetables	not important	important	very important	☐

8 In your opinion, does SNAP make it easier or harder for people in your community to eat wild foods? easier harder

(circle response)

FOOD SECURITY

HOUSEHOLD ID

The questions on this page have been asked all over the United States to find out if Americans have enough to eat. We would like to know if people in your community have enough to eat. I'd like you to think about all your household's food, both wild food and store-bought...

Which of these three statements best describes the food eaten in your household in the last 12 months...

(Circle one)

STATEMENT 1. We had enough of the kinds of food we wanted to eat..... 2 STATEMENT 2. We had enough food, but not always the KIND of food we wanted to eat..... 3 STATEMENT 3. Sometimes, or often, we did NOT HAVE ENOUGH food to eat.....	1 2 3	HH1C ☐ If 2 or 3

If STATEMENT 2 or STATEMENT 3 was TRUE, continue with food security questions on this page. Otherwise, go to next section...

Now I am going to read you several statements about different food situations.

Please tell me whether EACH statement was true for your household (HH) in the last 12 months.

4 STATEMENT 4. We WORRIED that our household would run out of food before we could get more. HH2

In the last 12 months, was this ever true for your household?..... N Y ? ☐

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

...did this happen because your household couldn't get WILD FOOD,
 your HH couldn't get STORE-BOUGHT food, or your HH couldn't get BOTH KINDS of food?..... WILD STOR BOTH ☐

5 STATEMENT 5. We could not get the kinds of foods we wanted to eat because of a LACK OF RESOURCES. HH4

By "lack of resources," we mean your household did NOT have what you needed to hunt, fish, gather, OR did not have enough money to buy food.

In the last 12 months, was this ever true for your household?..... N Y ? ☐

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

...did this happen because your household couldn't get WILD FOOD,
 your HH couldn't get STORE-BOUGHT food, or your HH couldn't get BOTH KINDS of food?..... WILD STOR BOTH ☐

6 STATEMENT 6. The food we had JUST DID NOT LAST, and we could not get more. HH3

In the last 12 months, was this ever true for your household?..... N Y ? ☐

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Now, think just about your household's WILD FOOD...

STATEMENT 7. The WILD food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this ever true for your household?..... N Y ? ☐

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Now, think just about your household's STORE-BOUGHT food...

STATEMENT 8. The STORE-BOUGHT food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this ever true for your household?..... N Y ? ☐

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

If any ONE of the STATEMENTS 4, 5, OR 6 was "YES," continue with food security questions on next page. Otherwise, go to next section...

FOOD SECURITY

HOUSEHOLD ID

If any ONE of the STATEMENTS 4, 5, or 6 on previous page was "YES," continue with food security questions below. Otherwise, go to next section...

In the past 12 months, did you or other adults in your household ever CUT THE SIZE OF YOUR MEALS OR SKIP MEALS because the HH could not get the food that was needed? N Y ? AD1

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
AD1

In the last 12 months, did you or other adults in your household ever EAT LESS THAN YOU FELT YOU SHOULD because the HH could not get the food that was needed?..... N Y ? AD2

In the last 12 months, were adults in the HH ever HUNGRY BUT DID NOT EAT because there was not enough food?..... N Y ? AD3

In the last 12 months, did adults in the HH LOSE WEIGHT because there was not enough food?..... N Y ? AD4

In the last 12 months, were adults in the HH ever NOT EAT FOR A WHOLE DAY because there was not enough food?..... N Y ? AD5

If YES...

...in which months did this happen?..... J F M A M J J A S O N D
AD5

EMPLOYMENT

HOUSEHOLD ID

The next few pages ask about jobs and income. We ask about these things because we are trying to understand all parts of the community economy. Many people use wages from jobs to support hunting, fishing, and gathering activities.

Between January 1, 2016 and December 31, 2016 ...

...Did any members of your household earn money from a JOB or from SELF EMPLOYMENT?..... Y N ☐

Starting with the first head of your household, what job or jobs did he or she have last year?

For each member of this household born before 2001, list EACH JOB held last year. For household members who did not have a job, write: RETIRED, UNEMPLOYED, STUDENT, HOMEMAKER, DISABLED, etc..

INCLUDE EACH PERSON 16 YEARS AND OLDER EVEN IF THEY DID NOT HAVE A JOB				WORK SCHEDULE ²					In the past year how much did hee or she earn in this job? gross income ³													
Person code from page 2 (ID #)	What kind of work did he or she do in this job? (job title ¹)	For whom did he or she work in this job? (employer)	In the past year, what months did he or she work in this job? (circle each month worked)	FULL TIME (circle one)	PART TIME (circle one)	SHIFT - FULL TIME (circle one)	ON-CALL, VARIES (circle one)	SHIFT - PART TIME (circle one)														
1ST JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
1	6	910100000	SOC:	SIC:												schedule:						
2ND JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
2	6	910100000	SOC:	SIC:												schedule:						
3RD JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
3	6	910100000	SOC:	SIC:												schedule:						
4TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
4	6	910100000	SOC:	SIC:												schedule:						
5TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
5	6	910100000	SOC:	SIC:												schedule:						
6TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
6	6	910100000	SOC:	SIC:												schedule:						
7TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
7	6	910100000	SOC:	SIC:												schedule:						
8TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
8	6	910100000	SOC:	SIC:												schedule:						
9TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
9	6	910100000	SOC:	SIC:												schedule:						
10TH JOB				J	F	M	A	M	J	J	A	S	O	N	D	FT	PT	SF	OC	SP	\$	/ YR
10	6	910100000	SOC:	SIC:												schedule:						

If a person FISHES COMMERCIALY or is otherwise SELF-EMPLOYED, list that as a separate job. For job title, enter COMMERCIAL FISHER, CARVER, SEWER, BAKER, etc. Work schedule usually will be ON CALL. For gross income from self-employment, enter revenue MINUS expenses.

If a person does not earn money from any kind of work, enter RETIRED, UNEMPLOYED, DISABLED, STUDENT, or HOMEMAKER or other appropriate description as the job title.

Leave employer, months worked, schedule, and gross income blank.

WORK SCHEDULE
FT - Fulltime (35+ hr/wk)
PT - Parttime (<35 hr/wk)
SF - Shift (2wks on/2wks off, etc.)
SP - Shift - part time
OC - Irregular, on call

GROSS INCOME is the same as TAXABLE INCOME on a W-2 form. Self-employment, enter revenue - expense

EMPLOYMENT: 23**CIRCLE: 93**

OTHER INCOME

HOUSEHOLD ID

Between January 1, 2016 and December 31, 2016 ...

...Did any members of your household receive a dividend from the Permanent Fund or a native corporation?..... Y N

IF NO, go to the next section on this page

IF YES, continue below...

		Did anyone in your household receive income from		TOTAL amount all members of your household received from		Alaska PFD IN 2016		Regional corporations		Dividend	
		in 2016 (circle one)		2016 (dollars)							
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND	Y	N	\$		/ YR	1 PFD = \$1,022	Doyon	\$5.99		
	32						2 PFDs = \$2,044	AHTNA	\$5.75		
	NATIVE CORPORATION DIVIDENDS	Y	N	\$		/ YR	3 PFDs = \$3,066	CIRI	\$8.53		
	13						4 PFDs = \$4,088	Village Corporation(s)		Dividend	
							5 PFDs = \$5,110				
							6 PFDs = \$6,132				
							7 PFDs = \$7,154				
							8 PFDs = \$8,176				
							9 PFDs = \$9,198				
							10 PFDs = \$10,220				
							11 PFDs = \$11,242				

Between January 1, 2016 and December 31, 2016 ...

...Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next section on this page

IF YES, continue below...

		Received?		Total amount?				Received?		Total amount?		
		(circle one)		(dollars)				(circle one)		(dollars)		
EMPLOYMENT RELATED	UNEMPLOYMENT	Y	N	\$		/ YR	FAMILY & CHILD	TANF (say "tanif", used to be AFDC)	Y	N	\$	/ YR
	12							2				
	WORKERS' COMP	Y	N	\$		/ YR		CHILD SUPPORT	Y	N	\$	/ YR
	8							15				
	SOCIAL SECURITY	Y	N	\$		/ YR		FOSTER CARE	Y	N	\$	/ YR
	7							41				
	PENSION & RETIREMENT	Y	N	\$		/ YR		FUEL VOUCHERS	Y	N	\$	/ YR
	5							49				
DISABILITY	Y	N	\$		/ YR	OTHER	MEETING HONORARIA (not per diem*)	Y	N	\$	/ YR	
31							50					
VETERANS ASSISTANCE	Y	N	\$		/ YR		OTHER (describe)	Y	N	\$	/ YR	
35							OTHER (describe)	Y	N	\$	/ YR	
FOOD STAMPS (QUEST CARD)	Y	N	\$		/ YR							
11												
ENTITLEMENTS	ADULT PUBLIC ASSISTANCE	Y	N	\$		/ YR						
	3											
	SUPPLEMENTAL SECURITY INCOME (SSI)	Y	N	\$		/ YR						
10												
STATE BENEFITS	ENERGY ASSISTANCE	Y	N	\$		/ YR						
	9											
	ALASKA SENIOR BENEFITS (LONGEVITY)	Y	N	\$		/ YR						
6												

* per diem covers travel expenses, and is not counted as income.

Scratch paper for calculations

for _____ weeks =
for _____ weeks =

for _____ weeks =
for _____ weeks =

Senior Benefits of \$125 per month for 12 months = \$1,500 per elder
Senior Benefits of \$175 per month for 12 months = \$2,100 per elder
Senior Benefits of \$250 per month for 12 months = \$3,000 per elder

OTHER INCOME: 24**CIRCLE: 93**

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

CIRCLE: 93

APPENDIX B—ETHNOGRAPHIC INTERVIEW PROTOCOL

Comprehensive Subsistence Survey Ethnographic Protocol

Part 1. Demographic Information

In the beginning of each interview, I recommend asking some basic demographic questions:

1. name
2. year/location born
3. parents names and where from?
4. how long has respondent been hunting/fishing?

Then, it is often useful to take the seasonal round approach when doing interviews and let people answer the questions below through the structure of a description of the parts of the seasonal round that they participate in. That way, you can also document seasonal camps used in the past or currently used by respondent. **[Keep in mind that you do not have to do it this way, but the species sections below are ordered by a seasonal round. Skip around if that works better for you and your respondent.]**

Beginning in the spring with bird hunting...

Part 2. Migratory Bird hunting

1. Please describe your current migratory bird hunting practices:

- a. what are the primary species you try to get every year? Do you collect eggs (which kinds?)*
- b. who do you hunt with year to year? How is this determined?*
- c. if you are successful, what do you do with the birds – how do you distribute/share it?*
- d. How do you preserve/process your harvest?*
- e. how do you feel the different bird populations are doing right now? Why do you think the population is declining/increasing? Are the different bird species healthy?*
- f. Are there environmental factors that contribute to changes in bird migrations and hunting? (changing weather patterns, changing habitat, etc)*
- g. are younger people learning to hunt birds? If so, how do they do that? How did you learn?*

h. can you show us where you hunt now (or in the last 5 years?) what about the last 10 or 20 years? Have those areas changed at all?

i. are there any rules about hunting or the treatment of birds during hunting/harvest?

j. native names for birds or other aspects of bird hunting? Do you remember any traditional stories about birds or bird hunting in your village?

k. are there any natural seasonal indicators that you use to know when the birds will come?

Part 3. Non-salmon fishing – ask questions for each species (households are likely to harvest multiple species. While we want to document all species they harvest, the most important species to cover will be: whitefish [differentiate species if possible], sheefish, and pike. If a household heavily harvests another species, document that as much as possible.)

1. Please describe your current non-salmon fishing practices:

a. which species do you harvest? Timing of that harvest (for each species)?

b. do you fish with other people? How is this determined?

c. what are the primary means you use to harvest different species of non-salmon? (gear type by species?)

d. what do you do with the non-salmon you harvest – how do you distribute/share it?

e. are younger people learning to fish? If so, how do they do that? How did you learn?

f. how do you feel the non-salmon population is doing right now? Why do you think the population is declining/increasing? Are the non- salmon healthy?

g. Have your fishing areas changed at all? (map changes in area – currently and 10-20 years ago)

h. if there are changes to your fishing areas, what explains those changes? (environmental conditions, personal circumstances, traditional areas, changes in the fish population, regulations, etc)

i. Are there environmental factors that contribute to changes in non-salmon fishing? (weather, river conditions, etc)

g. which parts of the fish do you use? How do you preserve/process these parts?

h. are there any rules about fishing or the treatment of fish/nets during fishing?

i. native names for non- salmon species or other aspects of fishing? Do you remember any traditional stories about non-salmon species or fishing in your village?

Part 4. Salmon fishing

1. Please describe your current salmon fishing practices:

a. do you fish with other people? How is this determined?

b. which species do you harvest? Timing of that harvest?

c. what are the primary means you use to harvest salmon? (gear type by species?)

d. what do you do with the salmon you harvest – how do you distribute/share it?

e. which parts of the salmon do you use? How do you preserve/process these parts?

f. how do you feel the salmon population is doing right now? Why do you think the population is declining/increasing? Are the salmon healthy?

g. Have your fishing areas changed at all? (map changes in area – currently and 10-20 years ago)

h. if there are changes to your fishing areas, what explains those changes? (environmental conditions, personal circumstances, traditional areas, changes in the fish population, regulations, etc)

i. Are there environmental factors that contribute to changes in salmon fishing? (weather, river conditions, etc)

j. many people say that the elders used observations of the environment (changes in the land or water, weather, other animals' behavior) to know when salmon were coming and how many might come. Do you remember any of these 'natural indicators'?

k. are younger people learning to fish? If so, how do they do that? How did you learn?

l. are there any rules about fishing or the treatment of fish/nets during fishing?

m. native names for salmon species or other aspects of fishing? Do you remember any traditional stories about salmon or fishing in your village?

Part 5. Moose hunting

1. Please describe your current moose hunting practices

- a. who do you hunt with year to year? How is this determined?*
- b. if you are successful, what do you do with the moose – how do you distribute/share it?*
- c. which parts of the moose do you use? How do you preserve/process these parts?*
- d. how do you feel the moose population is doing right now? Why do you think the population is declining/increasing (e.g. predation concerns, hard winters, good habitat, etc)? Are the moose healthy?*
- e. Are there environmental factors that contribute to changes in moose hunting? (weather, river conditions, etc)*
- f. are younger people learning to hunt? If so, how do they do that? How did you learn?*
- g. can you show us where you hunt now (or in the last 5 years?) what about the last 10 or 20 years? Have those areas changed at all?*
- h. are there any rules about hunting or the treatment of moose or other animals during moose hunting/harvest?*
- i. native names for moose or other aspects of moose hunting? Do you remember any traditional stories about moose or moose hunting in your village?*

Part 6. Other large game hunting (brown bear, black bear, caribou)

1. Please describe your current big game hunting practices (for each...)

- a. who do you hunt with year to year? How is this determined?*
- b. if you are successful, what do you do with the bear/caribou – how do you distribute/share it?*
- c. which parts of the bear/caribou do you use? How do you preserve/process these parts?*
- d. how do you feel the bear/caribou population is doing right now? Why do you think the population is declining/increasing? Are they healthy?*
- e. can you show us where you hunt now (or in the last 5 years?) what about the last 10 or 20 years? Have those areas changed at all?*

f. Are there environmental factors that contribute to changes in bear/caribou hunting? (weather, river conditions, winter conditions, migratory routes (caribou), etc)

g. are younger people learning to hunt? If so, how do they do that? How did you learn?

h. are there any rules about hunting or the treatment of bear/caribou or other animals during moose hunting/harvest?

i. native names for bear/caribou or other aspects of bear/caribou hunting? Do you remember any traditional stories about bear/caribou or bear/caribou hunting in your village?

Part 7. Trapping

1. Please describe your current trapping practices:

a. do you trap with anyone else? How is this determined?

b. how do you 'hold' your trapline? From whom (if anyone) did you get it/take it over?

c. are younger people learning to trap? If so, how do they do that? How did you learn?

d. what species do you trap? Why?

e. how do you feel the population of the animals you trap is doing right now? Why do you think the population is declining/increasing? Are the species you trap healthy?

f. can you show us where you trap now (or in the last 5 years?) what about the last 10 or 20 years? Have those areas changed at all?

g. Are there environmental factors that contribute to changes in trapping? (changing weather, snow pack, river conditions, etc)

Part 8. Use of the Yukon-Charley Rivers Preserve

1. Do you ever travel into the Yukon Charley Preserve for subsistence purposes?

2. If so, what kinds of activities do you or your family participate in there?

3. Has your use of the area changed over time? If so, why?

4. Has the establishment of the Preserve impacted your use of that area in any way? How?

APPENDIX C—CONVERSION FACTORS

Table C1.—Conversion factors, Central, 2016.

The following table presents the conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 5 gallons of smelt, the quantity would be multiplied by the appropriate conversion factor (in this case 0.18) to show a harvest of 0.9 lb of smelt.

Resource name	Reported units	Conversion factor
Summer chum salmon	Individual	4.82
Fall chum salmon	Individual	4.82
Unknown chum salmon	Individual	4.82
Unknown chum salmon [CF retention]	Individual	4.82
Coho salmon	Individual	4.71
Coho salmon [CF retention]	Individual	4.71
Chinook salmon	Individual	11.42
Chinook salmon [CF retention]	Individual	11.42
Pink salmon	Individual	2.37
Pink salmon [CF retention]	Individual	2.37
Sockeye salmon	Individual	4.84
Sockeye salmon [CF retention]	Individual	4.84
Spawnouts	Individual	4.84
Pacific herring [CF retention]	Gallons	0.18
Pacific herring roe [CF retention]	Gallons	0.18
Pacific herring spawn on kelp	Gallons	0.18
Smelts	Gallons	0.18
Eulachon (hooligan, candlefish)	Individual	0.18
Pacific halibut	Individual	21.10
Pacific halibut	Pounds	1.00
Pacific halibut [CF retention]	Pounds	1.00
Arctic lamprey	Individual	0.60
Burbot	Individual	4.20
Burbot [CF retention]	Individual	4.20
Arctic char	Individual	3.30
Dolly Varden	Individual	3.30
Lake trout	Individual	4.00
Arctic grayling	Individual	0.90
Northern pike	Individual	3.30
Sheefish	Individual	5.50
Longnose sucker	Individual	2.00
Unknown trouts	Individual	2.10
Broad whitefish	Individual	3.20
Bering cisco	Individual	1.40
Least cisco	Individual	0.70
Humpback whitefish	Individual	2.10
Round whitefish	Individual	0.70
Black bear	Individual	100.00
Brown bear	Individual	141.00
Caribou	Individual	130.00
Mountain goat	Individual	72.50
Moose	Individual	540.00

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Table C1.–Page 2 of 3.

Resource name	Reported units	Conversion factor
Dall sheep	Individual	65.00
Beaver	Individual	15.00
Coyote	Individual	0.00
Red fox	Individual	0.00
Snowshoe hare	Individual	2.00
River otter	Individual	3.00
Lynx	Individual	4.00
Marmot	Individual	0.00
Marten	Individual	0.00
Mink	Individual	2.00
Muskrat	Individual	0.75
Porcupine	Individual	5.00
Red squirrel	Individual	0.50
Gray wolf	Individual	0.00
Wolverine	Individual	0.00
Fur seal	Individual	15.00
Harbor seal	Individual	45.00
Unknown seals	Individual	0.00
Sea otter	Individual	19.50
Steller sea lion	Individual	200.00
Bufflehead	Individual	0.57
Goldeneyes	Individual	1.27
Mallard	Individual	1.61
Long-tailed duck	Individual	1.16
Northern pintail	Individual	1.18
Ring-necked duck	Individual	1.50
Unknown scaups	Individual	1.35
Black scoter	Individual	1.51
White-winged scoter	Individual	2.61
Unknown scoters	Individual	2.06
Northern shoveler	Individual	0.86
Unknown teals	Individual	0.47
American wigeon	Individual	1.05
Canada goose	Individual	2.83
Snow goose	Individual	2.80
White-fronted goose	Individual	3.18
Unknown swans	Individual	10.98
Sandhill crane	Individual	5.40
Unknown loons	Individual	3.60
Spruce grouse	Individual	0.85
Sharp-tailed grouse	Individual	1.03
Ruffed grouse	Individual	0.85
Ptarmigans	Individual	0.77
Duck eggs	Individual	0.15
Goose eggs	Individual	0.25
Gull eggs	Individual	0.21
Butter clams	Gallons	3.00

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Table C1.–Page 3 of 3.

Resource name	Reported units	Conversion factor
Freshwater clams	Gallons	3.00
Razor clams	Gallons	3.00
Unknown clams	Gallons	3.00
Dungeness crab	Individual	0.70
King crabs	Individual	2.10
Tanner crabs	Individual	1.60
Unknown crabs [CF retention]	Individual	2.10
Shrimps	Pounds	1.00
Blueberry	Pounds	1.00
Blueberry	Gallons	4.00
Blueberry	Pints	0.50
Blueberry	Half-pints	0.25
Lowbush cranberry	Pounds	1.00
Lowbush cranberry	Gallons	4.00
Lowbush cranberry	Quarts	1.00
Lowbush cranberry	Half-pints	0.25
Highbush cranberry	Gallons	4.00
Highbush cranberry	Quarts	1.00
Crowberry	Gallons	4.00
Crowberry	Half-pints	0.25
Currants	Gallons	4.00
Cloudberry	Gallons	4.00
Cloudberry	Half-pints	0.25
Nagoonberry	Half-pints	0.25
Raspberry	Pounds	1.00
Raspberry	Gallons	4.00
Raspberry	Half-pints	0.25
Wild rhubarb	Gallons	1.00
Hudson's Bay (Labrador) tea	Gallons	1.00
Lambsquarter	Gallons	1.00
Dandelion greens	Gallons	1.00
Spruce tips	Gallons	1.00
Wild rose hips	Gallons	4.00
Unknown mushrooms	Gallons	1.00
Unknown mushrooms	Quarts	0.25
Fireweed	Gallons	1.00
Punk	Gallons	0.00
Chaga	Pounds	1.00
Chaga	Gallons	1.00
Chaga	Quarts	0.25
Chaga	Half-pints	0.06
Mousefoods	Gallons	1.00
Wood	Cords	
Roots	Gallons	<i>Generally not used</i>
Other wood	Cords	<i>for consumption</i>

Source ADF&G Division of Subsistence household surveys, 2017.

Table C2.–Conversion factors, Circle, 2017.

The following table presents the conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 3 individual Bering cisco, the quantity would be multiplied by the appropriate conversion factor (in this case 1.4) to show a harvest of 4.2 lb of Bering cisco.

Resource name	Reported units	Conversion factor
Summer chum salmon	Individual	4.7198
Fall chum salmon	Individual	4.7198
Unknown chum salmon	Individual	4.7198
Unknown chum salmon [CF retention]	Individual	4.7198
Coho salmon	Individual	4.5168
Coho salmon [CF retention]	Individual	4.5168
Chinook salmon	Individual	7.2657
Chinook salmon [CF retention]	Individual	7.2657
Pink salmon	Individual	2.7669
Pink salmon [CF retention]	Individual	2.7669
Sockeye salmon	Individual	4.2979
Sockeye salmon [CF retention]	Individual	4.2979
Spawnouts	Individual	4.7198
Unknown salmon	Individual	5.1485
Pacific herring [CF retention]	Gallons	0.1800
Pacific herring roe [CF retention]	Gallons	0.1800
Pacific herring spawn on kelp	Gallons	0.1800
Smelts	Gallons	0.1800
Pacific halibut	Individual	21.1000
Pacific halibut	Pounds	1.0000
Pacific halibut [CF retention]	Pounds	1.0000
Arctic lamprey	Individual	0.6000
Burbot	Individual	4.2000
Arctic char	Individual	3.3000
Dolly Varden	Individual	3.3000
Lake trout	Individual	4.0000
Arctic grayling	Individual	0.9000
Northern pike	Individual	3.3000
Sheefish	Individual	5.5000
Longnose sucker	Individual	2.0000
Unknown trouts	Individual	2.1000
Broad whitefish	Individual	3.2000
Bering cisco	Individual	1.4000
Least cisco	Individual	0.7000
Humpback whitefish	Individual	2.1000
Round whitefish	Individual	0.7000
Unknown whitefishes	Individual	1.9262
Black bear	Individual	100.0000
Brown bear	Individual	141.0000
Caribou	Individual	130.0000

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Table C2.–Page 2 of 3.

Resource name	Reported units	Conversion factor
Mountain goat	Individual	72.5000
Moose	Individual	538.0000
Dall sheep	Individual	65.0000
Beaver	Individual	15.0000
Coyote	Individual	0.0000
Red fox	Individual	0.0000
Snowshoe hare	Individual	2.0000
River otter	Individual	3.0000
Lynx	Individual	4.0000
Marmot	Individual	0.0000
Marten	Individual	0.0000
Mink	Individual	2.0000
Muskrat	Individual	0.7500
Porcupine	Individual	5.0000
Gray wolf	Individual	0.0000
Wolverine	Individual	0.0000
Fur seal	Individual	15.0000
Harbor seal	Individual	45.0000
Unknown seal oil	Individual	0.0000
Sea otter	Individual	19.5000
Steller sea lion	Individual	200.0000
Unknown whales	Individual	0.0000
Bufflehead	Individual	0.5700
Canvasback	Individual	1.7400
Goldeneyes	Individual	1.2700
Harlequin duck	Individual	0.8500
Mallard	Individual	1.6100
Mergansers	Individual	1.7400
Long-tailed duck	Individual	1.1600
Northern pintail	Individual	1.1800
Scaups	Individual	1.3500
Black scoter	Individual	1.5100
Surf scoter	Individual	1.4600
White-winged scoter	Individual	2.6100
Unknown scoters	Individual	2.0600
Northern shoveler	Individual	0.8600
Teals	Individual	0.4700
American wigeon	Individual	1.0500
Unknown ducks	Individual	1.3175
Canada goose	Individual	2.8300
Snow goose	Individual	2.8000
White-fronted goose	Individual	3.1800
Unknown geese	Individual	2.9622
Swans	Individual	10.9800
Cranes	Individual	5.4000

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Table C2.–Page 3 of 3.

Resource name	Reported units	Conversion factor
Unknown gulls	Individual	1.7200
Unknown loons	Individual	3.6000
Spruce grouse	Individual	0.8500
Sharp-tailed grouse	Individual	1.0300
Ruffed grouse	Individual	0.8500
Ptarmigans	Individual	0.7700
Duck eggs	Individual	0.1500
Goose eggs	Individual	0.2490
Gull eggs	Individual	0.2140
Butter clams	Gallons	3.0000
Freshwater clams	Gallons	3.0000
Razor clams	Gallons	3.0000
Unknown clams	Gallons	3.0000
Dungeness crab	Individual	0.7000
King crabs	Individual	2.1000
Tanner crabs	Individual	1.6000
Unknown crab	Individual	0.0000
Shrimps	Pounds	1.0000
Blueberry	Gallons	4.0000
Blueberry	Quarts	1.0000
Lowbush cranberry	Gallons	4.0000
Lowbush cranberry	Quarts	1.0000
Lowbush cranberry	Half-pints	0.2500
Highbush cranberry	Gallons	4.0000
Highbush cranberry	Quarts	1.0000
Crowberry	Gallons	4.0000
Cloudberry	Gallons	4.0000
Raspberry	Gallons	4.0000
Raspberry	Half-pints	0.2500
Wild rhubarb	Gallons	1.0000
Wild potato	Gallons	4.0000
Hudson's Bay (Labrador) tea	Gallons	1.0000
Hudson's Bay (Labrador) tea	Quarts	0.2500
Spruce tips	Gallons	1.0000
Spruce tips	Quarts	0.2500
Wild rose hips	Gallons	4.0000
Unknown mushrooms	Gallons	1.0000
Fireweed	Gallons	1.0000
Punk	Gallons	0.0000
Chaga	Pounds	1.0000
Chaga	Gallons	1.0000
Chaga	Plastic shopping bag	1.0000
Chaga	Pints	0.1250
Mousefoods	Gallons	1.0000
Wood	Cords	0.0000
Other wood	Cords	0.0000

Source ADF&G Division of Subsistence household surveys, 2019.

Table C3.—Conversion factors, Eagle, 2017.

The following table presents the conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 3 individual Bering cisco, the quantity would be multiplied by the appropriate conversion factor (in this case 1.4) to show a harvest of 4.2 lb of Bering cisco.

Resource name	Reported units	Conversion factor
Summer chum salmon	Individual	4.7198
Fall chum salmon	Individual	4.7198
Unknown chum salmon	Individual	4.7198
Unknown chum salmon [CF retention]	Individual	4.7198
Coho salmon	Individual	4.5168
Coho salmon [CF retention]	Individual	4.5168
Chinook salmon	Individual	7.2657
Chinook salmon [CF retention]	Individual	7.2657
Pink salmon	Individual	2.7669
Pink salmon [CF retention]	Individual	2.7669
Sockeye salmon	Individual	4.2979
Sockeye salmon [CF retention]	Individual	4.2979
Spawnouts	Individual	4.7198
Unknown salmon	Individual	4.8150
Pacific herring [CF retention]	Gallons	0.1800
Pacific herring roe [CF retention]	Gallons	0.1800
Pacific herring spawn on kelp	Gallons	0.1800
Smelts	Gallons	0.1800
Pacific halibut	Pounds	1.0000
Pacific halibut [CF retention]	Pounds	1.0000
Arctic lamprey	Individual	0.6000
Burbot	Individual	4.2000
Arctic char	Individual	3.3000
Dolly Varden	Individual	3.3000
Lake trout	Individual	4.0000
Arctic grayling	Individual	0.9000
Northern pike	Individual	3.3000
Sheefish	Individual	5.5000
Longnose sucker	Individual	2.0000
Unknown trouts	Individual	2.1000
Broad whitefish	Individual	3.2000
Bering cisco	Individual	1.4000
Least cisco	Individual	0.7000
Humpback whitefish	Individual	2.1000
Round whitefish	Individual	0.7000
Unknown whitefishes	Individual	1.9730
Black bear	Individual	100.0000
Brown bear	Individual	141.0000
Caribou	Individual	130.0000
Mountain goat	Individual	72.5000

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Table C3.–Page 2 of 4.

Resource name	Reported units	Conversion factor
Moose	Individual	538.0000
Dall sheep	Individual	65.0000
Beaver	Individual	15.0000
Coyote	Individual	0.0000
Red fox	Individual	0.0000
Snowshoe hare	Individual	2.0000
River otter	Individual	3.0000
Lynx	Individual	4.0000
Marmot	Individual	0.0000
Marten	Individual	0.0000
Mink	Individual	2.0000
Muskrat	Individual	0.7500
Porcupine	Individual	5.0000
Weasels	Individual	0.5000
Gray wolf	Individual	0.0000
Wolverine	Individual	0.0000
Fur seal	Individual	15.0000
Harbor seal	Individual	45.0000
Unknown seal oil	Individual	0.0000
Sea otter	Individual	19.5000
Steller sea lion	Individual	200.0000
Unknown whales	Individual	0.0000
Bufflehead	Individual	0.5700
Canvasback	Individual	1.7400
Goldeneyes	Individual	1.2700
Harlequin duck	Individual	0.8500
Mallard	Individual	1.6100
Mergansers	Individual	1.7400
Long-tailed duck	Individual	1.1600
Northern pintail	Individual	1.1800
Scaups	Individual	1.3500
Black scoter	Individual	1.5100
Surf scoter	Individual	1.4600
White-winged scoter	Individual	2.6100
Unknown scoters	Individual	2.0600
Northern shoveler	Individual	0.8600
Teals	Individual	0.4700
American wigeon	Individual	1.0500
Unknown ducks	Individual	1.1670
Canada goose	Individual	2.8300
Snow goose	Individual	2.8000
White-fronted goose	Individual	3.1800
Swans	Individual	10.9800
Cranes	Individual	5.4000
Unknown gulls	Individual	1.7200

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Table C3.–Page 3 of 4.

Resource name	Reported units	Conversion factor
Unknown loons	Individual	3.6000
Spruce grouse	Individual	0.8500
Sharp-tailed grouse	Individual	1.0300
Ruffed grouse	Individual	0.8500
Unknown grouses	Individual	0.8582
Ptarmigans	Individual	0.7700
Duck eggs	Individual	0.1500
Goose eggs	Individual	0.2490
Gull eggs	Individual	0.2140
Butter clams	Gallons	3.0000
Freshwater clams	Gallons	3.0000
Razor clams	Gallons	3.0000
Unknown clams	Gallons	3.0000
Dungeness crab	Individual	0.7000
King crabs	Individual	2.1000
Tanner crabs	Individual	1.6000
Unknown crabs	Individual	0.0000
Shrimps	Pounds	1.0000
Blueberry	Pounds	1.0000
Blueberry	Gallons	4.0000
Blueberry	Quarts	1.0000
Blueberry	Half-pints	0.2500
Lowbush cranberry	Gallons	4.0000
Lowbush cranberry	Quarts	1.0000
Highbush cranberry	Gallons	4.0000
Highbush cranberry	Quarts	1.0000
Highbush cranberry	Half-pints	0.2500
Crowberry	Gallons	4.0000
Crowberry	Quarts	1.0000
Currants	Quarts	1.0000
Cloudberry	Gallons	4.0000
Cloudberry	Quarts	1.0000
Cloudberry	Pints	0.5000
Nagoonberry	Quarts	1.0000
Nagoonberry	Half-pints	0.2500
Raspberry	Pounds	1.0000
Raspberry	Gallons	4.0000
Raspberry	Quarts	1.0000
Raspberry	Half-pints	0.2500
Strawberry	Pounds	1.0000
Strawberry	Gallons	4.0000
Strawberry	Quarts	1.0000
Strawberry	Pints	0.5000
Strawberry	Half-pints	0.2500
Wild rhubarb	Gallons	1.0000
Wild rhubarb	Quarts	0.2500

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Table C3.–Page 4 of 4.

Resource name	Reported units	Conversion factor
Wild potato	Gallons	4.0000
Wild potato	Gallons	4.0000
Hudson's Bay (Labrador) tea	Pounds	1.0000
Hudson's Bay (Labrador) tea	Gallons	1.0000
Hudson's Bay (Labrador) tea	Quarts	0.2500
Hudson's Bay (Labrador) tea	Half-pints	0.0625
Lambsquarter	Gallons	1.0000
Lambsquarter	Quarts	0.2500
Dandelion greens	Gallons	1.0000
Spruce tips	Gallons	1.0000
Spruce tips	Quarts	0.2500
Valerian	Gallons	1.0000
Wild rose hips	Pounds	1.0000
Wild rose hips	Gallons	4.0000
Wild rose hips	Half-pints	0.0625
Yarrow	Gallons	1.0000
Yarrow	Quarts	0.2500
Other wild greens	Gallons	1.0000
Other wild greens	Quarts	0.2500
Other wild greens	Pints	0.1250
Unknown mushrooms	Individual	0.0250
Unknown mushrooms	Gallons	1.0000
Unknown mushrooms	Quarts	0.2500
Unknown mushrooms	Half-pints	0.0625
Fireweed	Gallons	1.0000
Fireweed	Quarts	0.2500
Plantain	Gallons	1.0000
Plantain	Quarts	0.2500
Stinkweed	Gallons	1.0000
Punk	Gallons	0.0000
Puffballs	Gallons	1.0000
Chaga	Pounds	1.0000
Chaga	Gallons	1.0000
Chaga	Half-pints	0.0625
Mousefoods	Gallons	1.0000
Wood	Cords	0.0000
Spruce pitch	Gallons	0.0000
Birch	Cords	0.0000
Willow	Cords	0.0000
Birch sap	Gallons	8.0000
Firewood	Cords	0.0000
Other wood	Gallons	0.0010
Other wood	Cords	0.0000

Source ADF&G Division of Subsistence household surveys, 2019.

Table C4.–Conversion factors, Eagle Village, 2017.

The following table presents the conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 3 individual Bering cisco, the quantity would be multiplied by the appropriate conversion factor (in this case 1.4) to show a harvest of 4.2 lb of Bering cisco.

Resource name	Reported units	Conversion factor
Summer chum salmon	Individual	4.7198
Fall chum salmon	Individual	4.7198
Unknown chum salmon	Individual	4.7198
Unknown chum salmon [CF retention]	Individual	4.7198
Coho salmon	Individual	4.5168
Coho salmon [CF retention]	Individual	4.5168
Chinook salmon	Individual	7.2657
Chinook salmon [CF retention]	Individual	7.2657
Pink salmon	Individual	2.7669
Pink salmon [CF retention]	Individual	2.7669
Sockeye salmon	Individual	4.2979
Sockeye salmon [CF retention]	Individual	4.2979
Spawnouts	Individual	4.7198
Unknown salmon	Individual	6.9060
Pacific herring [CF retention]	Gallons	0.1800
Pacific herring roe [CF retention]	Gallons	0.1800
Pacific herring spawn on kelp	Gallons	0.1800
Smelts	Gallons	0.1800
Pacific halibut	Pounds	1.0000
Pacific halibut [CF retention]	Pounds	1.0000
Arctic lamprey	Individual	0.6000
Burbot	Individual	4.2000
Arctic char	Individual	3.3000
Dolly Varden	Individual	3.3000
Lake trout	Individual	4.0000
Arctic grayling	Individual	0.9000
Northern pike	Individual	3.3000
Sheefish	Individual	5.5000
Longnose sucker	Individual	2.0000
Unknown trouts	Individual	2.1000
Broad whitefish	Individual	3.2000
Bering cisco	Individual	1.4000
Least cisco	Individual	0.7000
Humpback whitefish	Individual	2.1000
Round whitefish	Individual	0.7000
Unknown whitefishes	Individual	1.9496
Black bear	Individual	100.0000
Brown bear	Individual	141.0000
Caribou	Individual	130.0000
Mountain goat	Individual	72.5000

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Table C4.–Page 2 of 3.

Resource name	Reported units	Conversion factor
Moose	Individual	538.0000
Dall sheep	Individual	65.0000
Beaver	Individual	15.0000
Coyote	Individual	0.0000
Red fox	Individual	0.0000
Snowshoe hare	Individual	2.0000
River otter	Individual	3.0000
Lynx	Individual	4.0000
Marmot	Individual	0.0000
Marten	Individual	0.0000
Mink	Individual	2.0000
Muskrat	Individual	0.7500
Porcupine	Individual	5.0000
Gray wolf	Individual	0.0000
Wolverine	Individual	0.0000
Fur seal	Individual	15.0000
Harbor seal	Individual	45.0000
Unknown seal oil	Individual	0.0000
Sea otter	Individual	19.5000
Steller sea lion	Individual	200.0000
Unknown whales	Individual	0.0000
Bufflehead	Individual	0.5700
Canvasback	Individual	1.7400
Goldeneyes	Individual	1.2700
Harlequin duck	Individual	0.8500
Mallard	Individual	1.6100
Mergansers	Individual	1.7400
Long-tailed duck	Individual	1.1600
Northern pintail	Individual	1.1800
Scaups	Individual	1.3500
Black scoter	Individual	1.5100
Surf scoter	Individual	1.4600
White-winged scoter	Individual	2.6100
Unknown scoters	Individual	2.0600
Northern shoveler	Individual	0.8600
Teals	Individual	0.4700
American wigeon	Individual	1.0500
Unknown ducks	Individual	1.1914
Canada goose	Individual	2.8300
Snow goose	Individual	2.8000
White-fronted goose	Individual	3.1800
Swans	Individual	10.9800
Cranes	Individual	5.4000
Unknown gulls	Individual	1.7200
Unknown loons	Individual	3.6000

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Resource name	Reported units	Conversion factor
Spruce grouse	Individual	0.8500
Sharp-tailed grouse	Individual	1.0300
Ruffed grouse	Individual	0.8500
Unknown grouses	Individual	0.8500
Ptarmigans	Individual	0.7700
Duck eggs	Individual	0.1500
Goose eggs	Individual	0.2490
Gull eggs	Individual	0.2140
Butter clams	Gallons	3.0000
Freshwater clams	Gallons	3.0000
Razor clams	Gallons	3.0000
Unknown clams	Gallons	3.0000
Dungeness crab	Individual	0.7000
King crabs	Individual	2.1000
Tanner crabs	Individual	1.6000
Unknown crabs	Individual	0.0000
Shrimps	Pounds	1.0000
Blueberry	Gallons	4.0000
Lowbush cranberry	Gallons	4.0000
Highbush cranberry	Gallons	4.0000
Crowberry	Gallons	4.0000
Cloudberry	Gallons	4.0000
Raspberry	Gallons	4.0000
Raspberry	Quarts	1.0000
Raspberry	Half-pints	0.2500
Soapberry	Half-pints	0.2500
Strawberry	Half-pints	0.2500
Wild rhubarb	Gallons	1.0000
Wild rhubarb	Half-pints	0.0625
Wild potato	Gallons	4.0000
Hudson's Bay (Labrador) tea	Gallons	1.0000
Hudson's Bay (Labrador) tea	Quarts	0.2500
Hudson's Bay (Labrador) tea	Half-pints	0.0625
Spruce tips	Gallons	1.0000
Wild rose hips	Gallons	4.0000
Wild rose hips	Pints	0.5000
Unknown mushrooms	Gallons	1.0000
Unknown mushrooms	Quarts	0.2500
Fireweed	Gallons	1.0000
Stinkweed	Gallons	1.0000
Punk	Gallons	0.0000
Chaga	Gallons	1.0000
Mousefoods	Gallons	1.0000
Wood	Cords	0.0000
Other wood	Cords	0.0000

Source ADF&G Division of Subsistence household surveys, 2019.

APPENDIX D—ADDITIONAL TABLES AND FIGURES

Table D2-1.—Birthplaces of population, Central, 2016.

Birthplace	Percentage
Central	6.7%
Circle	2.2%
Fairbanks	11.1%
Kongiganak	2.2%
Other U.S.	75.6%
Foreign	2.2%

Source ADF&G Division of Subsistence household surveys, 2017.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D2-2.—Birthplaces of household heads, Central, 2016.

Birthplace	Percentage
Central	5.0%
Circle	2.5%
Fairbanks	5.0%
Kongiganak	2.5%
Other U.S.	82.5%
Foreign	2.5%

Source ADF&G Division of Subsistence household surveys, 2017.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D2-3.—Population profile, Central, 2016.

Age	Male			Female			Total		
	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	0.0	0.0%	0.0%	3.5	9.1%	9.1%	3.5	4.4%	4.4%
5–9	0.0	0.0%	0.0%	1.8	4.5%	13.6%	1.8	2.2%	6.7%
10–14	0.0	0.0%	0.0%	0.0	0.0%	13.6%	0.0	0.0%	6.7%
15–19	0.0	0.0%	0.0%	1.8	4.5%	18.2%	1.8	2.2%	8.9%
20–24	0.0	0.0%	0.0%	0.0	0.0%	18.2%	0.0	0.0%	8.9%
25–29	0.0	0.0%	0.0%	0.0	0.0%	18.2%	0.0	0.0%	8.9%
30–34	1.8	4.3%	4.3%	1.8	4.5%	22.7%	3.5	4.4%	13.3%
35–39	1.8	4.3%	8.7%	3.5	9.1%	31.8%	5.3	6.7%	20.0%
40–44	3.5	8.7%	17.4%	0.0	0.0%	31.8%	3.5	4.4%	24.4%
45–49	1.8	4.3%	21.7%	1.8	4.5%	36.4%	3.5	4.4%	28.9%
50–54	0.0	0.0%	21.7%	0.0	0.0%	36.4%	0.0	0.0%	28.9%
55–59	7.0	17.4%	39.1%	7.0	18.2%	54.5%	14.1	17.8%	46.7%
60–64	1.8	4.3%	43.5%	5.3	13.6%	68.2%	7.0	8.9%	55.6%
65–69	10.6	26.1%	69.6%	7.0	18.2%	86.4%	17.6	22.2%	77.8%
70–74	8.8	21.7%	91.3%	3.5	9.1%	95.5%	12.3	15.6%	93.3%
75–79	3.5	8.7%	100.0%	1.8	4.5%	100.0%	5.3	6.7%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	40.5	100.0%	100.0%	38.7	100.0%	100.0%	79.2	100.0%	100.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-4.—Comparison of median household income estimates, Central, 2016.

Data source	Median ^a	Range ^{b,c}
2016 Division of Subsistence estimate	\$17,622	\$11,639 – \$54,968
2012–2016 ACS (Central CDP)	\$21,250	\$19,135 – \$23,365
2012–2016 ACS (All Alaska)	\$74,444	\$73,635 – \$75,253

Sources ADF&G Division of Subsistence household surveys, 2017 for 2016 estimate; U.S. Census Bureau for American Community Survey (ACS) 5-year survey estimate.

a. Division of Subsistence 2016 estimate does not include categories of income excluded by the 2012–2016 ACS median estimate, including SNAP benefits, housing assistance, and one-time payments.

b. Range is a 95% confidence interval of the estimated median.

c. ACS data range is the reported margin of error.

Table D2-5.—Employment characteristics, Central, 2016.

Characteristic	Community Central
All adults	
Number	72.2
Mean weeks employed	22.9
Employed adults	
Number	42.1
Percentage	58.3%
Jobs	
Number	47.8
Mean	1.1
Minimum	1
Maximum	3
Months employed	
Mean	9.1
Minimum	1
Maximum	12
Percentage employed year-round	57.9%
Mean weeks employed	39.2
Households	
Number	44
Employed	
Number	32.5
Percentage	73.9%
Jobs per employed household	
Mean	1.5
Minimum	1
Maximum	3
Employed adults	
Mean	
Employed households	1.3
Total households	1.0
Minimum	1
Maximum	2
Mean person-weeks of employment	37.5

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-6.—Reported job schedules, Central, 2016.

Schedule	Jobs		Employed persons		Employed households	
	Number	Percentage	Number	Percentage	Number	Percentage
Full time	14.7	30.8%	14.6	34.8%	12.6	38.9%
Part time	7.4	15.4%	7.3	17.4%	7.2	22.2%
Shift	1.8	3.8%	1.8	4.3%	1.8	5.6%
On call (occasional)	12.9	26.9%	12.8	30.4%	12.6	38.9%
Part time shift	1.8	3.8%	1.8	4.3%	1.8	5.6%
Schedule not reported	5.5	11.5%	5.5	13.0%	3.6	11.1%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-7.—Individual participation in subsistence craft activities, Central, 2016.

Total number of people	79.2
Building fish wheels	
Number	3.8
Percentage	4.8%
Building fish traps	
Number	0.0
Percentage	0.0%
Building dog sleds	
Number	0.0
Percentage	0.0%
Sewing skins or cloth	
Number	7.5
Percentage	9.5%
Cooking wild foods	
Number	79.2
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-8.—Resources used, Central, 2016.

Resource	Scientific name
Fall chum salmon	<i>Oncorhynchus keta</i>
Unknown chum salmon	<i>Oncorhynchus keta</i>
Coho salmon	<i>Oncorhynchus kisutch</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Sockeye salmon	<i>Oncorhynchus nerka</i>
Unknown salmon	<i>Oncorhynchus spp.</i>
Smelts	
Eulachon (hooligan, candlefish)	<i>Thaleichthys pacificus</i>
Pacific halibut	<i>Hippoglossus stenolepis</i>
Burbot	<i>Lota lota</i>
Arctic grayling	<i>Thymallus arcticus</i>
Northern pike	<i>Esox lucius</i>
Sheefish	<i>Stenodus leucichthys</i>
Black bear	<i>Ursus americanus</i>
Brown bear	<i>Ursus arctos</i>
Caribou	<i>Rangifer tarandus</i>
Moose	<i>Alces alces</i>
Red fox	<i>Vulpes vulpes</i>
Snowshoe hare	<i>Lepus americanus</i>
Lynx	<i>Lynx canadensis</i>
Marten	<i>Martes americana</i>
Red squirrel	<i>Tamiasciurus hudsonicus</i>
Mallard	<i>Anas platyrhynchos</i>
Northern pintail	<i>Anas acuta</i>
Ring-necked duck	<i>Aythya collaris</i>
Canada goose	<i>Branta canadensis</i>
White-fronted goose	<i>Anser albifrons</i>
Spruce grouse	<i>Falcipennis canadensis</i>
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Ptarmigans	<i>Lagopus spp.</i>
Blueberry	<i>Vaccinium uliginosum alpinum</i>
Lowbush cranberry	<i>Vaccinium vitis-idaea minus</i>
Highbush cranberry	<i>Viburnum edule</i>
Crowberry	<i>Empetrum nigrum</i>
Currants	<i>Ribes spp.</i>
Cloudberry	<i>Rubus chamaemorus</i>
Nagoonberry	<i>Rubus arcticus spp.</i>
Raspberry	<i>Rubus idaeus</i>
Hudson's Bay (Labrador) tea	<i>Ledum palustre</i>
Lambsquarter	<i>chenopodium album</i>
Dandelion greens	<i>Taraxacum L.</i>
Wild rose hips	<i>Rosa acicularis</i>
Unknown mushrooms	
Fireweed	<i>Epilobium angustifolium</i>
Chaga	<i>Inonotus I. obliquus</i>
Wood	
Other wood	

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-9.—Natural materials used for making handicrafts, Central, 2016.

Material	Households reporting use	
	Number	Percentage
Bark	2	8.0%
Horns	0	0.0%
Antlers	2	8.0%
Other raw material	4	16.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-10.—Modes of transportation used to access wild resources, Central, 2016.

Equipment	Households reporting use		Own		Borrow		Lease		Charter	
	Number	Percentage ^a	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b
Boat	15	60.0%	14	93.3%	1	6.7%	0	0.0%	0	0.0%
Snowmachine	21	84.0%	21	100.0%	0	0.0%	0	0.0%	0	0.0%
All-terrain vehicle	22	88.0%	22	100.0%	0	0.0%	0	0.0%	0	0.0%
Sled	3	12.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
Aircraft	4	16.0%	4	100.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2017.

a. Percentage of sampled households.

b. Percentage of households reporting use of the equipment.

Table D2-11.—Portable motorized equipment used while searching for and harvesting wild resources, Central, 2016.

Equipment	Households reporting use	
	Number	Percentage
Car	9	36.0%
Chainsaw	24	96.0%
Ice auger	7	28.0%
Winch	10	40.0%
Other portable motors or	4	16.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-12.—Estimated percentages of salmon harvests by gear type, resource, and total salmon harvest, Central, 2016.

Resource	Percentage base	Subsistence methods															
		Removed from commercial catch		Dip net		Gillnet or seine		Fish wheel		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	38.6%	46.4%	57.1%	48.5%	0.0%	0.0%	95.7%	94.8%	4.3%	5.2%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	38.6%	46.4%	57.1%	48.5%	0.0%	0.0%	95.7%	94.8%	4.3%	5.2%	100.0%	100.0%
Summer chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fall chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	29.2%	0.0%	0.0%	29.9%	14.9%	0.0%	0.0%	28.6%	14.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	28.6%	14.2%	0.0%	0.0%	28.6%	14.2%	0.0%	0.0%	28.6%	14.2%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	50.0%	70.8%	0.0%	0.0%	70.1%	85.1%	100.0%	100.0%	71.4%	85.8%
	Resource	0.0%	0.0%	0.0%	0.0%	54.0%	54.0%	40.0%	40.0%	0.0%	0.0%	94.0%	94.0%	6.0%	6.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	38.6%	46.4%	28.6%	34.3%	0.0%	0.0%	67.1%	80.7%	4.3%	5.2%	71.4%	85.8%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spawnouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-13.—Estimated percentages of nonsalmon fish harvests by gear type, resource, and total nonsalmon fish harvest, by weight Central, 2016.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					Subsistence gear, any method	Rod and reel	Any method
			Fish wheel	Gillnet or seine	Ice fishing	Longline/skate	Other method			
Nonsalmon fish	Gear type	100.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	5.9%	0.0%	0.0%	1.2%	4.3%	25.7%	31.2%	62.9%	100.0%
	Total	5.9%	0.0%	0.0%	1.2%	4.3%	25.7%	31.2%	62.9%	100.0%
Pacific herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Eulachon (hooligan, candlefish)	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.4%	7.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	7.8%
Arctic lamprey	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Burbot	Gear type	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	13.7%	0.0%	10.2%
	Resource	58.1%	0.0%	0.0%	0.0%	41.9%	0.0%	41.9%	0.0%	100.0%
	Total	5.9%	0.0%	0.0%	0.0%	4.3%	0.0%	4.3%	0.0%	10.2%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	12.0%	0.0%	0.0%	0.5%	21.9%	14.0%
	Resource	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	1.0%	99.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	13.8%	14.0%

-continued-

Table D2-13.—Continued.

Resource	Percentage base	Removed from	Subsistence methods					Subsistence gear, any method	Rod and reel	Any method
		commercial catch	Fish wheel	Gillnet or seine	Ice fishing	Longline/skate	Other method			
Northern pike	Gear type	0.0%	0.0%	0.0%	88.0%	0.0%	100.0%	85.9%	18.0%	38.1%
	Resource	0.0%	0.0%	0.0%	2.7%	0.0%	67.6%	70.3%	29.7%	100.0%
	Total	0.0%	0.0%	0.0%	1.0%	0.0%	25.7%	26.8%	11.3%	38.1%
Sheefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	47.7%	30.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%	30.0%
Longnose sucker	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Broad whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bering cisco	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Least cisco	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-14.—Estimated large land mammal harvests by month and sex, Central, 2016.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All large land mammals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.5	0.0	1.8	3.5	3.5	15.8
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	1.8
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	1.8	3.5	1.8	8.8
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1.8	0.0	3.5
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	0.0	3.5
Caribou, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1.8	5.3
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	3.5
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-15.—Estimated small land mammal harvests by month, Central, 2016.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All small land mammals	37.0	37.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	2.8	2.8	35.2	30.9	313.6
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Snowshoe hare	37.0	37.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	35.2	0.0	112.6
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4	26.4
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red squirrel	0.0	0.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	1.0	1.0	0.0	1.0	171.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-16.—Estimated bird harvests by season, Central, 2016.

Resource	Estimated harvest by season					Total
	Spring	Summer	Fall	Winter	Season unknown	
All birds	17.6	0.0	309.8	28.2	0.0	355.5
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0
Goldeneyes	0.0	0.0	0.0	0.0	0.0	0.0
Mallard	5.3	0.0	7.0	0.0	0.0	12.3
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0
Northern pintail	1.8	0.0	3.5	0.0	0.0	5.3
Ring-necked duck	10.6	0.0	0.0	0.0	0.0	10.6
Unknown scaups	0.0	0.0	0.0	0.0	0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0
Northern shoveler	0.0	0.0	0.0	0.0	0.0	0.0
Unknown teals	0.0	0.0	0.0	0.0	0.0	0.0
American wigeon	0.0	0.0	0.0	0.0	0.0	0.0
Canada goose	0.0	0.0	0.0	0.0	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0
Spruce grouse	0.0	0.0	218.2	8.8	0.0	227.0
Sharp-tailed grouse	0.0	0.0	7.0	5.3	0.0	12.3
Ruffed grouse	0.0	0.0	56.3	3.5	0.0	59.8
Ptarmigans	0.0	0.0	17.6	10.6	0.0	28.2

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-17.—Reported use of firewood for home heating, Central, 2016.

Average annual cost of home heating	Household use of wood for home heating as a percentage of total fuel for heating											
	0%		1%–25%		26%–50%		51%–75%		76%–99%		100%	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
\$1,622.50	2	8.0%	2	8.0%	2	8.0%	6	24.0%	6	24.0%	7	28.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-18.—Reported impact to households that did not get enough of a resource, Central, 2016.

Resource category	Sample households	Households not getting enough				Impact to those not getting enough									
		Valid responses ^a		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	25	25	100.0%	9	36.0%	0	0.0%	0	0.0%	4	44.4%	4	44.4%	1	11.1%
Salmon	25	20	80.0%	7	35.0%	0	0.0%	0	0.0%	4	57.1%	2	28.6%	1	14.3%
Nonsalmon fish	25	19	76.0%	4	21.1%	0	0.0%	1	25.0%	3	75.0%	0	0.0%	0	0.0%
Large land mammals	25	21	84.0%	6	28.6%	0	0.0%	0	0.0%	3	50.0%	2	33.3%	1	16.7%
Small land mammals	25	9	36.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	25	4	16.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	25	16	64.0%	2	12.5%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Marine invertebrates	25	3	12.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	25	24	96.0%	2	8.3%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2017.

a. Includes households failing to respond to the question and those households that never used the resource.

Table D2-19.—Resources that households reported needing more of, Central, 2016.

Resource	Households needing	Percentage of households
Fish	1	4.0%
Salmon	5	20.0%
Summer chum salmon	1	4.0%
Fall chum salmon	1	4.0%
Chinook salmon	6	24.0%
Sockeye salmon	1	4.0%
Pacific halibut	2	8.0%
Burbot	1	4.0%
Northern pike	2	8.0%
Black bear	1	4.0%
Caribou	4	16.0%
Moose	6	24.0%
Dall sheep	1	4.0%
Birds and eggs	1	4.0%
Spruce grouse	2	8.0%
Berries	1	4.0%
Wood	2	8.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D2-20.—Reasons for less household uses of resources compared to recent years, Central, 2016.

Resource category	Valid responses ^a	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	25	9	2	22.2%	2	22%	0	0.0%	0	0%	1	11%	1	11%	1	11.1%	2	22.2%
Salmon	25	8	2	25.0%	3	38%	0	0.0%	0	0%	2	25%	2	25%	0	0.0%	0	0.0%
Nonsalmon fish	25	5	2	40.0%	1	20%	0	0.0%	0	0%	1	20%	1	20%	0	0.0%	0	0.0%
Large land mammals	25	7	1	14.3%	0	0%	1	14.3%	0	0%	1	14%	2	29%	3	42.9%	0	0.0%
Small land mammals	25	2	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	1	50%	0	0.0%	1	50.0%
Marine mammals	25	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Birds	25	5	0	0.0%	4	80%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine invertebrates	25	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Vegetation	25	3	1	33.3%	1	33%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	2	66.7%

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Table D2-20.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources		Too much competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	25	9	0	0%	2	22.2%	1	11.1%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	0	0.0%	0	0.0%
Salmon	25	8	0	0%	1	12.5%	2	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	25	5	0	0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	25	7	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	25	2	0	0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	25	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	25	5	0	0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	25	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	25	3	0	0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2017.

a. Valid responses do not include households that did not provide any response and households reporting never using the resource.

Table D2-21.—Reasons for more household uses of resources compared to recent years, Central, 2016.

Resource category	Valid responses ^a	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	25	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	25	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	1	100.0%
Nonsalmon fish	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	25	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	25	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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Table D2-21.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	25	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	25	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	25	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	25	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	25	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2017.

a. Valid responses do not include households that did not provide any response and households reporting never use.

Table D2-22.—Resources that households avoided harvesting due to poor resource health, Central, 2016.

Resource	Reason
Chinook salmon	Regs
Muskrat	Dead muskrat near pond but not sure why dead but wasn't going to harvest muskrats in any case
Birds and eggs	Low population since BLM fire

Source ADF&G Division of Subsistence household surveys, 2017.

Table D3-1.—Population profile, Circle, 2017.

Age	Male			Female			Total		
	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	4.8	13.6%	13.6%	4.8	10.3%	10.3%	9.6	11.8%	11.8%
5–9	3.2	9.1%	22.7%	6.4	13.8%	24.1%	9.6	11.8%	23.5%
10–14	1.6	4.5%	27.3%	4.8	10.3%	34.5%	6.4	7.8%	31.4%
15–19	1.6	4.5%	31.8%	3.2	6.9%	41.4%	4.8	5.9%	37.3%
20–24	0.0	0.0%	31.8%	0.0	0.0%	41.4%	0.0	0.0%	37.3%
25–29	1.6	4.5%	36.4%	3.2	6.9%	48.3%	4.8	5.9%	43.1%
30–34	1.6	4.5%	40.9%	1.6	3.4%	51.7%	3.2	3.9%	47.1%
35–39	0.0	0.0%	40.9%	3.2	6.9%	58.6%	3.2	3.9%	51.0%
40–44	1.6	4.5%	45.5%	0.0	0.0%	58.6%	1.6	2.0%	52.9%
45–49	0.0	0.0%	45.5%	4.8	10.3%	69.0%	4.8	5.9%	58.8%
50–54	1.6	4.5%	50.0%	0.0	0.0%	69.0%	1.6	2.0%	60.8%
55–59	1.6	4.5%	54.5%	4.8	10.3%	79.3%	6.4	7.8%	68.6%
60–64	6.4	18.2%	72.7%	3.2	6.9%	86.2%	9.6	11.8%	80.4%
65–69	0.0	0.0%	72.7%	1.6	3.4%	89.7%	1.6	2.0%	82.4%
70–74	3.2	9.1%	81.8%	3.2	6.9%	96.6%	6.4	7.8%	90.2%
75–79	4.8	13.6%	95.5%	1.6	3.4%	100.0%	6.4	7.8%	98.0%
80–84	0.0	0.0%	95.5%	0.0	0.0%	100.0%	0.0	0.0%	98.0%
85–89	0.0	0.0%	95.5%	0.0	0.0%	100.0%	0.0	0.0%	98.0%
90–94	0.0	0.0%	95.5%	0.0	0.0%	100.0%	0.0	0.0%	98.0%
95–99	0.0	0.0%	95.5%	0.0	0.0%	100.0%	0.0	0.0%	98.0%
100–104	0.0	0.0%	95.5%	0.0	0.0%	100.0%	0.0	0.0%	98.0%
Missing	1.6	4.5%	100.0%	0.0	0.0%	100.0%	1.6	2.0%	100.0%
Total	35.2	100.0%	100.0%	46.4	100.0%	100.0%	81.6	100.0%	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-2.—Birthplaces of household heads, Circle, 2017.

Birthplace	Percentage
	3.6%
	3.6%
Circle	42.9%
Fairbanks	7.1%
Fort Yukon	21.4%
Circle	
Other U.S.	10.7%
Foreign	10.7%

Source ADF&G Division of Subsistence household surveys, 2018.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D3-3.—Birthplaces of population, Circle, 2017.

Birthplace	Percentage
Arctic Village	7.8%
Chalkyitsik	2.0%
Circle	58.8%
Fairbanks	5.9%
Fort Yukon	13.7%
Other U.S.	5.9%
Foreign	5.9%

Source ADF&G Division of Subsistence household surveys, 2018.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D3-4.—Comparison of median household income estimates, Circle, 2017.

Data source	Median ^a	Range ^{b,c}
2017 Division of Subsistence estimate	\$28,100	\$10,805 – \$38,981
2013–2017 ACS (Circle)	\$16,806	\$11,687 – \$21,925
2013–2017 ACS (All Alaska)	\$76,114	\$75,135 – \$77,093

Sources ADF&G Division of Subsistence household surveys, 2018, for 2017 estimate; U.S. Census Bureau for American Community Survey (ACS) 5-year survey estimate.

a. Division of Subsistence 2017 estimate does not include categories of income excluded by the 2013–2017 ACS median estimate, including food stamps, housing assistance, and one-time payments.

b. Range is a 95% confidence interval of the estimated median.

c. ACS data range is the reported margin of error.

Table D3-5.—Reported job schedules, Circle, 2017.

Schedule	Jobs		Employed persons		Employed households	
	Number	Percentage	Number	Percentage	Number	Percentage
Full time	13.9	30.8%	13.9	42.1%	10.9	46.2%
Part time	13.9	30.8%	13.9	42.1%	10.9	46.2%
On call (occasional)	10.5	23.1%	8.7	26.3%	9.1	38.5%
Schedule not reported	7.0	15.4%	3.5	10.5%	3.6	15.4%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-6.—Employment characteristics, Circle, 2017.

Characteristic	Community Circle
All adults	
Number	53.9
Mean weeks employed	21.9
Employed adults	
Number	33.1
Percentage	61.5%
Jobs	
Number	45.3
Mean	1.4
Minimum	1
Maximum	4
Months employed	
Mean	8.2
Minimum	2
Maximum	12
Percentage employed year-round	47.1%
Mean weeks employed	35.7
Households	
Number	32
Employed	
Number	23.6
Percentage	73.7%
Jobs per employed household	
Mean	1.9
Minimum	1
Maximum	6
Employed adults	
Mean	
Employed households	1.4
Total households	1.0
Minimum	1
Maximum	3
Mean person-weeks of employment	36.9

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-7.—Individual participation in subsistence craft activities, Circle, 2017.

Total number of people	79.2
Building fish wheels	
Number	3.8
Percentage	4.8%
Building fish traps	
Number	0.0
Percentage	0.0%
Building dog sleds	
Number	0.0
Percentage	0.0%
Sewing skins or cloth	
Number	7.5
Percentage	9.5%
Cooking wild foods	
Number	79.2
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2017.

Table D3-8.–Resources used, Circle, 2017.

Resource	Scientific name
Fall chum salmon	<i>Oncorhynchus keta</i>
Coho salmon	<i>Oncorhynchus kisutch</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Sockeye salmon	<i>Oncorhynchus nerka</i>
Unknown salmon	<i>Oncorhynchus spp.</i>
Pacific halibut	<i>Hippoglossus stenolepis</i>
Burbot	<i>Lota lota</i>
Arctic grayling	<i>Thymallus arcticus</i>
Northern pike	<i>Esox lucius</i>
Sheefish	<i>Stenodus leucichthys</i>
Longnose sucker	<i>Catostomus catostomus</i>
Broad whitefish	<i>Coregonus nasus</i>
Humpback whitefish	<i>Coregonus pidschian</i>
Round whitefish	<i>Prosopium cylindraceum</i>
Unknown whitefishes	
Black bear	<i>Ursus americanus</i>
Caribou	<i>Rangifer tarandus</i>
Moose	<i>Alces alces</i>
Beaver	<i>Castor canadensis</i>
Snowshoe hare	<i>Lepus americanus</i>
Lynx	<i>Lynx canadensis</i>
Marten	<i>Martes americana</i>
Mink	<i>Neovison vison</i>
Wolverine	<i>Gulo gulo</i>
Mallard	<i>Anas platyrhynchos</i>
Northern pintail	<i>Anas acuta</i>
Black scoter	<i>Melanitta nigra</i>
Northern shoveler	<i>Anas clypeata</i>
Teals	<i>Anas spp.</i>
Unknown ducks	
Canada goose	<i>Branta canadensis</i>
Snow goose	<i>Chen caerulescens</i>
White-fronted goose	<i>Anser albifrons</i>
Unknown geese	
Spruce grouse	<i>Falcapennis canadensis</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Ptarmigans	<i>Lagopus spp.</i>
Shrimps	
Blueberry	<i>Vaccinium uliginosum alpinum</i>
Lowbush cranberry	<i>Vaccinium vitis-idaea minus</i>
Highbush cranberry	<i>Viburnum edule</i>
Raspberry	<i>Rubus idaeus</i>
Wild rhubarb	<i>Polygonum alaskanum</i>
Hudson's Bay (Labrador) tea	<i>Ledum palustre</i>
Spruce tips	<i>Picea spp.</i>
Wild rose hips	<i>Rosa acicularis</i>
Fireweed	<i>Epilobium angustifolium</i>
Chaga	<i>Inonotus I. obliquus</i>
Wood	

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-9.—Natural materials used for making handicrafts, Circle, 2017.

Material	Households reporting use	
	Number	Percentage
Bark	2	10.0%
Horns	1	5.0%
Antlers	1	5.0%
Fur/hides	3	15.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-10.—Modes of transportation used to access wild resources, Circle, 2017.

Equipment	Households reporting use		Own		Borrow		Lease		Charter		Unknown	
	Number	Percentage ^a	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b
Boat	11	55.0%	8	72.7%	2	18.2%	0	0.0%	0	0.0%	1	9.1%
Snowmachine	7	35.0%	6	85.7%	0	0.0%	0	0.0%	0	0.0%	1	14.3%
All-terrain vehicle	4	20.0%	2	50.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%
Sled	1	5.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Truck	8	40.0%	-	-	-	-	-	-	-	-	8	100.0%
Aircraft	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Percentage of sampled households.

b. Percentage of households reporting use of the equipment.

Table D3-11.—Portable motorized equipment used while searching for and harvesting wild resources, Circle, 2017.

Equipment	Households reporting use	
	Number	Percentage
Generator	3	15.0%
Chainsaw	9	45.0%
Ice auger	1	5.0%
Winch	0	0.0%
Other portable motors c	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-12.—Estimated percentages of salmon harvests by gear type, resource, and total salmon harvest, Circle, 2017.

Resource	Percentage base	Subsistence methods															
		Removed from commercial catch		Dip net		Gillnet or seine		Fish wheel		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	25.5%	25.4%	74.5%	74.6%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	25.5%	25.4%	74.5%	74.6%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Summer chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fall chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	84.3%	77.7%	82.8%	75.7%	0.0%	0.0%	83.2%	76.2%	0.0%	0.0%	83.2%	76.2%
	Resource	0.0%	0.0%	0.0%	0.0%	25.9%	25.9%	74.1%	74.1%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	21.5%	19.7%	61.6%	56.5%	0.0%	0.0%	83.2%	76.2%	0.0%	0.0%	83.2%	76.2%
Unknown chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	15.7%	22.3%	17.2%	24.3%	0.0%	0.0%	16.8%	23.8%	0.0%	0.0%	16.8%	23.8%
	Resource	0.0%	0.0%	0.0%	0.0%	23.8%	23.8%	76.2%	76.2%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	4.0%	5.7%	12.8%	18.1%	0.0%	0.0%	16.8%	23.8%	0.0%	0.0%	16.8%	23.8%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spawnaouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-13.—Estimated harvests of nonsalmon fish by gear type, resource, and total nonsalmon fish harvest, by weight, Circle, 2017.

Resource	Percentage base	Removed from	Subsistence methods							
		commercial	Fish	Gillnet or	Ice	Longline/	Other	Subsistence	Rod and	Any
		catch	wheel	seine	fishing	skate	method	gear, any	reel	method
		Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Nonsalmon fish	Gear type	0.0%	100.0%	100.0%	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%
	Resource	0.0%	42.6%	5.2%	0.0%	11.2%	0.0%	59.0%	41.0%	100.0%
	Total	0.0%	42.6%	5.2%	0.0%	11.2%	0.0%	59.0%	41.0%	100.0%
Pacific herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Smelts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	91.5%	37.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	37.5%	37.5%
Arctic lamprey	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	19.0%	0.0%	11.2%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	11.2%	0.0%	11.2%	0.0%	11.2%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%	2.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%

-continued-

Table D3-13.—Continued.

		Removed from commercial catch	Subsistence methods								
	Percentage base	Pounds	Fish wheel Pounds	Gillnet or seine Pounds	Ice fishing Pounds	Longline/ skate Pounds	Other method Pounds	Subsistence gear, any method Pounds	Rod and reel Pounds	Any method Pounds	
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	1.5%	
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	1.5%	
Sheefish	Gear type	0.0%	34.4%	0.0%	0.0%	0.0%	0.0%	24.9%	0.0%	14.7%	
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	
	Total	0.0%	14.7%	0.0%	0.0%	0.0%	0.0%	14.7%	0.0%	14.7%	
Longnose sucker	Gear type	0.0%	0.0%	86.2%	0.0%	0.0%	0.0%	7.5%	0.0%	4.4%	
	Resource	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	
	Total	0.0%	0.0%	4.4%	0.0%	0.0%	0.0%	4.4%	0.0%	4.4%	
Unknown trouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Broad whitefish	Gear type	0.0%	0.0%	13.8%	0.0%	0.0%	0.0%	1.2%	0.0%	0.7%	
	Resource	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	
	Total	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.7%	0.0%	0.7%	
Bering cisco	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Least cisco	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Humpback whitefish	Gear type	0.0%	38.3%	0.0%	0.0%	0.0%	0.0%	27.7%	0.0%	16.3%	
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	
	Total	0.0%	16.3%	0.0%	0.0%	0.0%	0.0%	16.3%	0.0%	16.3%	
Round whitefish	Gear type	0.0%	2.2%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.9%	
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	
	Total	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	0.9%	
Unknown whitefishes	Gear type	0.0%	25.1%	0.0%	0.0%	0.0%	0.0%	18.1%	0.0%	10.7%	
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	
	Total	0.0%	10.7%	0.0%	0.0%	0.0%	0.0%	10.7%	0.0%	10.7%	

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-14.—Estimated large land mammal harvests by month and sex, Circle, 2017.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All large land mammals	0.0	0.0	1.6	0.0	0.0	1.6	1.6	0.0	8.0	0.0	0.0	1.6	0.0	14.4
Black bear	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	3.2
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6	0.0	4.8
Caribou, male	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.6	0.0	4.8
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	6.4
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	6.4
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-15.—Estimated small land mammal harvests by month, Circle, 2017.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All small land mammals	11.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	12.8	9.6	102.4	108.8	0.0	248.0
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	6.4	0.0	19.2
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snowshoe hare	11.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	19.2	12.8	0.0	56.0
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	16.0	0.0	32.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	67.2	0.0	134.4
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.6

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-16.—Estimated bird harvests by season, Circle, 2017.

Resource	Estimated harvest by season					Total
	Spring	Summer	Fall	Winter	Season unknown	
All birds	267.2	0.0	137.6	19.2	0.0	424.0
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0
Mallard	60.8	0.0	0.0	0.0	0.0	60.8
Merganser	0.0	0.0	0.0	0.0	0.0	0.0
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0
Northern pintail	19.2	0.0	0.0	0.0	0.0	19.2
Scaup	0.0	0.0	0.0	0.0	0.0	0.0
Black scoter	3.2	0.0	0.0	0.0	0.0	3.2
Surf scoter	0.0	0.0	0.0	0.0	0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0
Unknown scoter	0.0	0.0	0.0	0.0	0.0	0.0
Northern shoveler	4.8	0.0	0.0	0.0	0.0	4.8
Teal	16.0	0.0	0.0	0.0	0.0	16.0
American wigeon	0.0	0.0	0.0	0.0	0.0	0.0
Unknown ducks	0.0	0.0	0.0	0.0	0.0	0.0
Canada goose	97.6	0.0	0.0	0.0	0.0	97.6
Snow goose	6.4	0.0	0.0	0.0	0.0	6.4
White-fronted goose	59.2	0.0	4.8	0.0	0.0	64.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0
Crane	0.0	0.0	0.0	0.0	0.0	0.0
Unknown gull	0.0	0.0	0.0	0.0	0.0	0.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0
Spruce grouse	0.0	0.0	64.0	9.6	0.0	73.6
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0
Ruffed grouse	0.0	0.0	49.6	0.0	0.0	49.6
Ptarmigan	0.0	0.0	19.2	9.6	0.0	28.8

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-17.—Reported use of firewood for home heating, Circle, 2017.

Average annual cost of home heating	Household use of wood for home heating as a percentage of total fuel for heating													
	0%		1%–25%		26%–50%		51%–75%		76%–99%		100%		Unknown	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
\$1,036.11	3	15.0%	2	10.0%	3	15.0%	5	25.0%	0	0.0%	7	35.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-18.—Reasons for changes in firewood harvest areas in the past five years, Circle, 2017.

Moving further away for the dry wood
Fire dried up wood and made it easier to get and more abundant
Getting picked clean near town
Have to go further to find good wood after the fires in 2009
Total number of households reporting changes = 4 households

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-19.—Reasons for less household uses of resources compared to recent years, Circle, 2017.

Resource category	Valid responses ^a	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	5	1	20.0%	1	20%	0	0.0%	0	0%	1	20%	1	20%	2	40.0%	1	20.0%
Salmon	20	5	0	0.0%	0	0%	0	0.0%	1	20%	4	80%	1	20%	0	0.0%	0	0.0%
Nonsalmon fish	20	5	0	0.0%	0	0%	0	0.0%	0	0%	3	60%	0	0%	1	20.0%	0	0.0%
Large land mammals	19	4	1	25.0%	0	0%	0	0.0%	0	0%	1	25%	1	25%	2	50.0%	0	0.0%
Small land mammals	20	4	1	25.0%	0	0%	0	0.0%	0	0%	1	25%	3	75%	0	0.0%	1	25.0%
Marine mammals	20	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Birds	20	7	1	14.3%	0	0%	0	0.0%	0	0%	3	43%	3	43%	1	14.3%	0	0.0%
Marine invertebrates	20	1	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	1	100%	0	0.0%	0	0.0%
Vegetation	20	10	1	10.0%	5	50%	0	0.0%	0	0%	0	0%	4	40%	0	0.0%	1	10.0%

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Table D3-19.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources		Too much competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	5	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%
Salmon	20	5	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	20	5	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	19	4	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	20	4	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%
Marine mammals	20	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	20	7	0	0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	20	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	10	0	0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response and households reporting never using the resource.

Table D3-20.—Reasons for more household uses of resources compared to recent years, Circle, 2017.

Resource category	Valid responses ^a	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	3	0	0.0%	0	0.0%	2	66.7%	2	66.7%	1	33.3%	0	0.0%	0	0.0%
Salmon	20	10	0	0.0%	0	0.0%	3	30.0%	4	40.0%	0	0.0%	1	10.0%	0	0.0%
Nonsalmon fish	20	5	0	0.0%	0	0.0%	1	20.0%	4	80.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	19	6	0	0.0%	0	0.0%	2	33.3%	4	66.7%	1	16.7%	0	0.0%	0	0.0%
Small land mammals	20	5	0	0.0%	0	0.0%	3	60.0%	3	60.0%	0	0.0%	0	0.0%	1	20.0%
Marine mammals	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	20	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	20	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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Table D3-20.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	20	10	0	0.0%	0	0.0%	4	40.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	20	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	19	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	20	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	20	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	20	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response and households reporting never use.

Table D3-21.—Reported impact to households that did not get enough of a resource, Circle, 2017.

Resource category	Sample households	Households not getting enough				Impact to those not getting enough									
		Valid responses ^a		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	20	100.0%	5	25.0%	0	0.0%	1	20.0%	2	40.0%	1	20.0%	1	20.0%
Salmon	20	20	100.0%	5	25.0%	0	0.0%	1	20.0%	1	20.0%	2	40.0%	1	20.0%
Nonsalmon fish	20	15	75.0%	1	6.7%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Large land mammals	20	19	95.0%	6	31.6%	0	0.0%	1	16.7%	3	50.0%	0	0.0%	2	33.3%
Small land mammals	20	14	70.0%	2	14.3%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%
Marine mammals	20	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	20	17	85.0%	4	23.5%	0	0.0%	1	25.0%	1	25.0%	2	50.0%	0	0.0%
Marine invertebrates	20	2	10.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	18	90.0%	9	50.0%	1	11.1%	0	0.0%	4	44.4%	3	33.3%	1	11.1%

Source: ADF&G Division of Subsistence household surveys, 2018.

a. Includes households failing to respond to the question and those households that never used the resource.

Table D3-22.—Resources that households reported needing more of, Circle, 2017.

Resource	Households needing	Percentage of households
Chinook salmon	5	25.0%
Whitefishes	1	5.0%
Black bear	1	5.0%
Caribou	2	10.0%
Moose	6	30.0%
Snowshoe hare	2	10.0%
Ducks	1	5.0%
Black scoter	1	5.0%
Geese	3	15.0%
Grouse	1	5.0%
Ptarmigan	1	5.0%
Berries	3	15.0%
Blueberry	7	35.0%
Lowbush cranberry	4	20.0%
Highbush cranberry	1	5.0%
Raspberry	1	5.0%
Wild rhubarb	1	5.0%
Hudson's Bay (Labrador)	1	5.0%
Wild rose hips	2	10.0%
Fireweed	1	5.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D3-23.—Resources that households avoided harvesting due to poor resource health, Circle, 2017.

Resource	Reason
Fall chum salmon	Banged up with sores
Chinook salmon	
Caribou	Heard there were flies in them, didn't want them
Ducks	Contaminants (mercury and PCB) from lower 48
Geese	

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-1.—Population profile, Eagle, 2017.

Age	Male			Female			Total		
	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	4.8	5.3%	5.3%	1.2	1.8%	1.8%	6.0	3.8%	3.8%
5–9	7.2	7.9%	13.2%	4.8	7.0%	8.8%	12.1	7.5%	11.3%
10–14	7.2	7.9%	21.1%	6.0	8.8%	17.5%	13.3	8.3%	19.5%
15–19	6.0	6.6%	27.6%	8.4	12.3%	29.8%	14.5	9.0%	28.6%
20–24	2.4	2.6%	30.3%	1.2	1.8%	31.6%	3.6	2.3%	30.8%
25–29	4.8	5.3%	35.5%	1.2	1.8%	33.3%	6.0	3.8%	34.6%
30–34	4.8	5.3%	40.8%	1.2	1.8%	35.1%	6.0	3.8%	38.3%
35–39	1.2	1.3%	42.1%	6.0	8.8%	43.9%	7.2	4.5%	42.9%
40–44	4.8	5.3%	47.4%	2.4	3.5%	47.4%	7.2	4.5%	47.4%
45–49	3.6	3.9%	51.3%	6.0	8.8%	56.1%	9.7	6.0%	53.4%
50–54	4.8	5.3%	56.6%	7.2	10.5%	66.7%	12.1	7.5%	60.9%
55–59	13.3	14.5%	71.1%	3.6	5.3%	71.9%	16.9	10.5%	71.4%
60–64	7.2	7.9%	78.9%	7.2	10.5%	82.5%	14.5	9.0%	80.5%
65–69	14.5	15.8%	94.7%	7.2	10.5%	93.0%	21.7	13.5%	94.0%
70–74	1.2	1.3%	96.1%	2.4	3.5%	96.5%	3.6	2.3%	96.2%
75–79	2.4	2.6%	98.7%	1.2	1.8%	98.2%	3.6	2.3%	98.5%
80–84	1.2	1.3%	100.0%	1.2	1.8%	100.0%	2.4	1.5%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	91.7	100.0%	100.0%	68.8	100.0%	100.0%	160.5	100.0%	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-2.—Birthplaces of household heads, Eagle, 2017.

Birthplace	Percentage
Anchorage	3.3%
Eagle	5.6%
Fairbanks	4.4%
Other Alaska	1.1%
Other U.S.	78.9%
Yukon Drainage, Canada	1.1%
Foreign	3.3%
Missing	2.2%

Source ADF&G Division of Subsistence household surveys, 2018.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D4-3.—Birthplaces of population, Eagle, 2017.

Birthplace	Percentage
Anchorage	3.8%
Eagle	21.8%
Fairbanks	6.0%
Glennallen	0.8%
Kotzebue	2.3%
Other Alaska	1.5%
Other U.S.	58.6%
Foreign	2.3%
Yukon Drainage, Canada	0.8%
Missing	2.3%

Source ADF&G Division of Subsistence household surveys, 2018.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D4-4.—Comparison of median household income estimates, Eagle, 2017.

Data source	Median ^a	Range ^{b,c}
2017 Division of Subsistence estimate	\$27,939	\$21,178 – \$36,100
2013–2017 ACS (Eagle)	\$28,750	\$10,801 – \$46,699
2013–2017 ACS (All Alaska)	\$76,114	\$75,135 – \$77,093

Sources ADF&G Division of Subsistence household surveys, 2018, for 2017 estimate; U.S. Census Bureau for American Community Survey (ACS) 5-year survey estimate.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

a. Division of Subsistence 2017 estimate does not include categories of income excluded by the 2012–2016 ACS median estimate, including food stamps, housing assistance, and one-time payments.

b. Range is a 95% confidence interval of the estimated median.

c. ACS data range is the reported margin of error.

Table D4-5.—Employment characteristics, Eagle, 2017.

Characteristic	Community
	Eagle
All adults	
Number	125.5
Mean weeks employed	23.7
Employed adults	
Number	78.1
Percentage	62.2%
Jobs	
Number	100.8
Mean	1.3
Minimum	1
Maximum	3
Months employed	
Mean	8.8
Minimum	1
Maximum	12
Percentage employed year-round	42.6%
Mean weeks employed	38.1
Households	
Number	70
Employed	
Number	52.5
Percentage	75.0%
Jobs per employed household	
Mean	1.9
Minimum	1
Maximum	10
Employed adults	
Mean	
Employed households	1.5
Total households	1.1
Minimum	1
Maximum	7
Mean person-weeks of employment	42.6

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-6.—Household reasons for changes in firewood harvest areas in the past five years, Eagle, 2017.

Trying not to clear cut area
Used to go out to Eagle Creek in burn area in Canada, but not allowed to cut there anymore
Too far away
Got low hanging fruit at burn area. Now easier to get along river
Move around; do not overharvest one area
Move around areas- not the same year to year
Move around to get what's needed. No one reason
Have to go further for dry wood
There was a huge beetle kill and able to find local dead trees. Those now are pretty much gone within 3 miles of Eagle
Everybody when they find, its where they all go
Moved here
No designated wood lot, get a lot off river now (driftwood)
Goes a little bit further for dry wood
Asked to change location- user conflict
Moved
Lack of means to get it
Have to go further- getting scarce nearby
Availability/competition
(Unknown = 5)

Total number of households reporting changes = 23 households

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-7.—Individual participation in subsistence craft activities, Eagle, 2017.

Total number of people	160.5
Building fish wheels	
Number	25.8
Percentage	16.1%
Building fish traps	
Number	2.7
Percentage	1.7%
Building dog sleds	
Number	10.9
Percentage	6.8%
Sewing skins or fur	
Number	28.6
Percentage	17.8%
Cooking wild foods	
Number	121.1
Percentage	75.4%
Making handicrafts	
Number	43.5
Percentage	27.1%
Building shelters	
Number	32.6
Percentage	20.3%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-8.–Resources used, Eagle, 2017.

Resource	Scientific name
Fall chum salmon	<i>Oncorhynchus keta</i>
Coho salmon	<i>Oncorhynchus kisutch</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Sockeye salmon	<i>Oncorhynchus nerka</i>
Unknown salmon	<i>Oncorhynchus spp.</i>
Pacific halibut	<i>Hippoglossus stenolepis</i>
Burbot	<i>Lota lota</i>
Arctic grayling	<i>Thymallus arcticus</i>
Northern pike	<i>Esox lucius</i>
Sheefish	<i>Stenodus leucichthys</i>
Longnose sucker	<i>Catostomus catostomus</i>
Unknown trouts	
Broad whitefish	<i>Coregonus nasus</i>
Bering cisco	<i>Coregonus laurettae</i>
Least cisco	<i>Coregonus sardinella</i>
Humpback whitefish	<i>Coregonus pidschian</i>
Round whitefish	<i>Prosopium cylindraceum</i>
Unknown whitefishes	
Black bear	<i>Ursus americanus</i>
Brown bear	<i>Ursus arctos</i>
Caribou	<i>Rangifer tarandus</i>
Moose	<i>Alces alces</i>
Beaver	<i>Castor canadensis</i>
Red fox	<i>Vulpes vulpes</i>
Snowshoe hare	<i>Lepus americanus</i>
Lynx	<i>Lynx canadensis</i>
Martens	<i>Martes spp.</i>
Muskrat	<i>Ondatra zibethicus</i>
Weasels	<i>Mustela spp.</i>
Gray wolf	<i>Canis lupus</i>
Wolverine	<i>Gulo gulo</i>
Unknown seal oil	
Unknown whales	
Bufflehead	<i>Bucephala albeola</i>
Goldeneyes	<i>Bucephala spp.</i>
Mallard	<i>Anas platyrhynchos</i>
Northern pintail	<i>Anas acuta</i>
Northern shoveler	<i>Anas clypeata</i>
Teals	<i>Anas spp.</i>
American wigeon	<i>Anas americana</i>
Unknown ducks	
Canada goose	<i>Branta canadensis parvipes</i>
Spruce grouse	<i>Falcipennis canadensis</i>
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Unknown grouses	
Ptarmigans	<i>Lagopus spp.</i>
Shrimp	
Blueberry	<i>Vaccinium uliginosum alpinum</i>
Lowbush cranberry	<i>Vaccinium vitis-idaea minus</i>
Highbush cranberry	<i>Viburnum edule</i>
Crowberry	<i>Empetrum nigrum</i>
Currants	<i>Ribes spp.</i>
Cloudberry	<i>Rubus chamaemorus</i>
Nagoonberry	<i>Rubus arcticus spp.</i>
Raspberry	<i>Rubus idaeus</i>

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Table D4-8.–Continued.

Resource	Scientific name
Strawberry	<i>Fragaria virginiana</i>
Wild rhubarb	<i>Polygonum alaskanum</i>
Wild potato	<i>Hedysarum alpinum</i>
Hudson's Bay (Labrador) tea	<i>Ledum palustre</i>
Lambsquarter	<i>Chenopodium album</i>
Dandelion greens	<i>Taraxacum L.</i>
Spruce tips	<i>Picea spp.</i>
Valerian	<i>Valeriana spp.</i>
Wild rose hips	<i>Rosa acicularis</i>
Yarrow	<i>Achillea spp.</i>
Other wild greens	
Unknown mushrooms	
Fireweed	<i>Epilobium angustifolium</i>
Plantain	<i>Plantago major</i>
Stinkweed	<i>Artemisia tilesii</i>
Puffballs	
Chaga	<i>Inonotus I. obliquus</i>
Spruce pitch	<i>Picea spp.</i>
Birch sap	<i>Betula spp.</i>
Firewood	
Other wood	

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-9.—Modes of transportation used to access wild resources, Eagle, 2017.

Equipment	Households reporting use		Own		Borrow		Lease		Charter		Unknown	
	Number	Percentage ^a	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b
Boat	29	50.0%	23	79.3%	5	17.2%	0	0.0%	0	0.0%	1	3.4%
Snowmachine	37	63.8%	35	94.6%	2	5.4%	0	0.0%	0	0.0%	0	0.0%
All-terrain vehicle	27	46.6%	25	92.6%	2	7.4%	0	0.0%	0	0.0%	0	0.0%
Sled	6	10.3%	6	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Truck	21	36.2%	-	-	-	-	-	-	-	-	21	100.0%
Aircraft	1	1.7%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Percentage of sampled households.

b. Percentage of households reporting use of the equipment.

Table D4-10.—Portable motorized equipment used while searching for and harvesting wild resources, Eagle, 2017.

Equipment	Households reporting use	
	Number	Percentage
Generator	14	24.1%
Chainsaw	45	77.6%
Ice auger	5	8.6%
Winch	16	27.6%
Other portable motors or	2	3.4%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-11.—Natural materials used for making handicrafts, Eagle, 2017.

Material	Households reporting use	
	Number	Percentage
Bark	7	12.1%
Horns	5	8.6%
Antlers	10	17.2%
Roots	1	1.7%
Wood	5	8.6%
Other Raw Material	2	3.4%
Claws/Feathers/Hooves/Teeth	1	1.7%
Fur/hides	12	20.7%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-12.—Estimated percentages of salmon harvests by gear type, resource, and total salmon harvest, Eagle, 2017.

Resource	Percentage base	Subsistence methods															
		Removed from commercial catch		Dip net		Gillnet or seine		Fish wheel		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.3%	0.3%	8.3%	8.7%	91.4%	91.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.3%	0.3%	8.3%	8.7%	91.4%	91.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Summer chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fall chum salmon	Gear type	0.0%	0.0%	31.9%	34.0%	86.9%	81.2%	96.7%	95.1%	0.0%	0.0%	95.7%	93.7%	0.0%	0.0%	95.7%	93.7%
	Resource	0.0%	0.0%	0.1%	0.1%	7.5%	7.5%	92.4%	92.4%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.1%	0.1%	7.2%	7.1%	88.4%	86.5%	0.0%	0.0%	95.7%	93.7%	0.0%	0.0%	95.7%	93.7%
Unknown chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	13.1%	18.8%	3.3%	4.9%	0.0%	0.0%	4.1%	6.1%	0.0%	0.0%	4.1%	6.1%
	Resource	0.0%	0.0%	0.0%	0.0%	26.6%	26.6%	73.4%	73.4%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.1%	1.6%	3.0%	4.5%	0.0%	0.0%	4.1%	6.1%	0.0%	0.0%	4.1%	6.1%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	68.1%	66.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.2%	0.2%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.2%	0.2%
Spawnouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-13.—Estimated percentages of nonsalmon fish harvests by gear type, resource, and total nonsalmon fish harvest, by weight, Eagle, 2017.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					Subsistence gear, any method	Rod and reel	Any method
			Fish wheel	Gillnet or seine	Ice fishing	Longline/skate	Other method			
Nonsalmon fish	Gear type	0.0%	100.0%	100.0%	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%
	Resource	0.0%	33.1%	17.8%	0.0%	8.2%	0.0%	59.1%	40.9%	100.0%
	Total	0.0%	33.1%	17.8%	0.0%	8.2%	0.0%	59.1%	40.9%	100.0%
Pacific herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Smelts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic lamprey	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Burbot	Gear type	0.0%	4.7%	10.9%	0.0%	100.0%	0.0%	19.7%	39.9%	28.0%
	Resource	0.0%	5.6%	6.9%	0.0%	29.2%	0.0%	41.7%	58.3%	100.0%
	Total	0.0%	1.6%	1.9%	0.0%	8.2%	0.0%	11.7%	16.3%	28.0%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic grayling	Gear type	0.0%	5.8%	0.0%	0.0%	0.0%	0.0%	3.2%	36.1%	16.7%
	Resource	0.0%	11.5%	0.0%	0.0%	0.0%	0.0%	11.5%	88.5%	100.0%
	Total	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%	1.9%	14.8%	16.7%

-continued-

Table D4-13.—Continued.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					Subsistence gear, any method	Rod and reel	Any method
			Fish wheel	Gillnet or seine	Ice fishing	Longline/skate	Other method			
Northern pike	Gear type	0.0%	0.0%	29.2%	0.0%	0.0%	0.0%	8.8%	3.0%	6.4%
	Resource	0.0%	0.0%	81.0%	0.0%	0.0%	0.0%	81.0%	19.0%	100.0%
	Total	0.0%	0.0%	5.2%	0.0%	0.0%	0.0%	5.2%	1.2%	6.4%
Sheefish	Gear type	0.0%	27.7%	45.8%	0.0%	0.0%	0.0%	29.3%	12.5%	22.4%
	Resource	0.0%	40.9%	36.4%	0.0%	0.0%	0.0%	77.3%	22.7%	100.0%
	Total	0.0%	9.2%	8.2%	0.0%	0.0%	0.0%	17.3%	5.1%	22.4%
Longnose sucker	Gear type	0.0%	2.8%	4.2%	0.0%	0.0%	0.0%	2.8%	0.0%	1.7%
	Resource	0.0%	55.6%	44.4%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.9%	0.7%	0.0%	0.0%	0.0%	1.7%	0.0%	1.7%
Unknown trouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	1.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	1.2%
Broad whitefish	Gear type	0.0%	4.5%	10.0%	0.0%	0.0%	0.0%	5.5%	0.0%	3.3%
	Resource	0.0%	45.5%	54.5%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	1.5%	1.8%	0.0%	0.0%	0.0%	3.3%	0.0%	3.3%
Bering cisco	Gear type	0.0%	22.7%	0.0%	0.0%	0.0%	0.0%	12.7%	0.0%	7.5%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	7.5%	0.0%	0.0%	0.0%	0.0%	7.5%	0.0%	7.5%
Least cisco	Gear type	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	1.1%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	1.1%
Humpback whitefish	Gear type	0.0%	24.1%	0.0%	0.0%	0.0%	0.0%	13.5%	5.7%	10.3%
	Resource	0.0%	77.4%	0.0%	0.0%	0.0%	0.0%	77.4%	22.6%	100.0%
	Total	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	8.0%	2.3%	10.3%
Round whitefish	Gear type	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	1.1%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	1.1%
Unknown whitefishes	Gear type	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.4%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.4%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-14.—Estimated large land mammal harvests by month and sex, Eagle, 2017.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All large land mammals	0.0	0.0	1.2	1.2	1.2	1.2	2.4	3.6	9.7	3.6	19.3	9.7	1.2	54.3
Black bear	0.0	0.0	0.0	1.2	1.2	1.2	2.4	1.2	0.0	0.0	0.0	0.0	0.0	7.2
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou	0.0	0.0	1.2	0.0	0.0	0.0	0.0	2.4	2.4	3.6	19.3	9.7	1.2	39.8
Caribou, male	0.0	0.0	1.2	0.0	0.0	0.0	0.0	2.4	2.4	2.4	7.2	4.8	1.2	21.7
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	9.7	4.8	0.0	15.7
Caribou, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	2.4
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	7.2
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	7.2
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-15.—Estimated small land mammal harvests by month, Eagle, 2017.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All small land mammals	73.4	61.3	12.1	3.6	0.0	0.0	0.0	0.0	0.0	6.0	97.2	115.9	418.8	788.3
Beaver	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.6	0.0	13.3
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red fox	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.4	0.0	6.0
Snowshoe hare	13.3	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	10.9	20.5	56.7
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lynx	1.2	2.4	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	12.1	21.7
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	50.4	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.9	85.7	385.0	643.5
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Muskrat	0.0	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	6.0	6.0	0.0	0.0	15.7
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	1.2
Gray wolf	0.0	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	8.4	0.0	19.3
Wolverine	6.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	10.9

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-16.—Estimated bird harvests by season, Eagle, 2017.

Resource	Estimated harvest by season					Total
	Spring	Summer	Fall	Winter	Season unknown	
All birds	153.3	0.0	370.5	26.6	0.0	550.3
Bufflehead	1.2	0.0	0.0	0.0	0.0	1.2
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0
Goldeneyes	1.2	0.0	0.0	0.0	0.0	1.2
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0
Mallard	53.1	0.0	0.0	0.0	0.0	53.1
Merganser	0.0	0.0	0.0	0.0	0.0	0.0
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0
Northern pintail	12.1	0.0	0.0	0.0	0.0	12.1
Scaups	0.0	0.0	0.0	0.0	0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0
Surf scoter	0.0	0.0	0.0	0.0	0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0
Northern shoveler	8.4	0.0	0.0	0.0	0.0	8.4
Teals	22.9	0.0	0.0	0.0	0.0	22.9
American wigeon	15.7	0.0	0.0	0.0	0.0	15.7
Unknown ducks	27.8	0.0	0.0	0.0	0.0	27.8
Canada goose	1.2	0.0	0.0	0.0	0.0	1.2
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0
Unknown gulls	0.0	0.0	0.0	0.0	0.0	0.0
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0
Spruce grouse	0.0	0.0	234.1	1.2	0.0	235.3
Sharp-tailed grouse	0.0	0.0	15.7	0.0	0.0	15.7
Ruffed grouse	0.0	0.0	91.7	0.0	0.0	91.7
Unknown grouses	0.0	0.0	0.0	0.0	0.0	0.0
Ptarmigans	9.7	0.0	29.0	25.3	0.0	64.0

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-17.—Reported use of firewood for home heating, Eagle, 2017.

Average annual cost of home heating	Household use of wood for home heating as a percentage of total fuel for heating													
	0%		1%–25%		26%–50%		51%–75%		76%–99%		100%		Unknown	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
\$1,013.91	1	1.7%	3	5.2%	8	13.8%	8	13.8%	15	25.9%	20	34.5%	2	3.4%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-18.—Reasons for changes in firewood harvest areas in the last five years, Eagle, 2017.

Trying not to clear cut area
Used to go out to Eagle Creek in burn area in Canada, but not allowed to cut there anymore
Too far away
Got low hanging fruit at burn area. Now easier to get along river
Move around; do not overharvest one area
Move around areas- not the same year to year
Move around to get what's needed. No one reason
Have to go further for dry wood
There was a huge beetle kill and able to find local dead trees. Those now are pretty much gone within 3 miles of Eagle
Everybody when they find, its where they all go
Moved here
No designated wood lot, get a lot off river now (driftwood)
Goes a little bit further for dry wood
Asked to change location- user conflict
Moved
Lack of means to get it
Have to go further- getting scarce nearby
Availability/competition
(Unknown = 5)

Total number of households reporting changes = 23 households

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-19.—Reasons for less household uses of resources compared to recent years, Eagle, 2017.

Resource category	Valid responses ^a	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	57	23	4	17.4%	3	13%	0	0.0%	1	4%	2	9%	5	22%	1	4.3%	0	0.0%
Salmon	57	10	1	10.0%	0	0%	0	0.0%	0	0%	1	10%	1	10%	0	0.0%	0	0.0%
Nonsalmon fish	57	20	1	5.0%	0	0%	0	0.0%	0	0%	0	0%	9	45%	2	10.0%	1	5.0%
Large land mammals	57	21	1	4.8%	3	14%	0	0.0%	0	0%	4	19%	4	19%	9	42.9%	0	0.0%
Small land mammals	58	10	1	10.0%	1	10%	0	0.0%	0	0%	0	0%	5	50%	1	10.0%	0	0.0%
Marine mammals	58	1	0	0.0%	0	0%	0	0.0%	0	0%	1	100%	0	0%	0	0.0%	0	0.0%
Birds	58	6	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	3	50%	1	16.7%	0	0.0%
Marine invertebrates	58	1	0	0.0%	0	0%	0	0.0%	0	0%	1	100%	0	0%	0	0.0%	0	0.0%
Vegetation	57	25	2	8.0%	16	64%	0	0.0%	0	0%	0	0%	1	4%	0	0.0%	3	12.0%

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Table D4-19.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources		Too much competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	57	23	1	4%	7	30.4%	0	0.0%	0	0.0%	0	0.0%	6	26.1%	0	0.0%	0	0.0%	0	0.0%
Salmon	57	10	1	10%	2	20.0%	0	0.0%	0	0.0%	0	0.0%	5	50.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	57	20	2	10%	4	20.0%	0	0.0%	0	0.0%	0	0.0%	3	15.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	57	21	0	0%	1	4.8%	0	0.0%	0	0.0%	0	0.0%	4	19.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	58	10	0	0%	5	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	58	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	58	6	0	0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	58	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	57	25	2	8%	4	16.0%	0	0.0%	0	0.0%	0	0.0%	5	20.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response and households reporting never using the resource.

Table D4-20.—Reasons for more household uses of resources compared to recent years, Eagle, 2017.

Resource category	Valid responses ^a	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	57	4	1	25.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	1	25.0%	0	0.0%
Salmon	57	17	0	0.0%	0	0.0%	8	47.1%	4	23.5%	2	11.8%	2	11.8%	0	0.0%
Nonsalmon fish	57	4	0	0.0%	0	0.0%	0	0.0%	2	50.0%	2	50.0%	0	0.0%	0	0.0%
Large land mammals	57	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%	2	50.0%	0	0.0%
Small land mammals	58	7	0	0.0%	0	0.0%	2	28.6%	0	0.0%	5	71.4%	0	0.0%	0	0.0%
Marine mammals	58	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	58	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	58	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	57	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%

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Table D4-20.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	57	4	1	25.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	57	17	0	0.0%	0	0.0%	7	41.2%	0	0.0%	0	0.0%	2	11.8%	0	0.0%
Nonsalmon fish	57	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	57	4	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	58	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%
Marine mammals	58	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	58	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	58	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	57	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response and households reporting never use.

Table D4-21.—Reported impact to households that did not get enough of a resources, Eagle, 2017.

Resource category	Sample households	Households not getting enough				Impact to those not getting enough									
		Valid responses ^a		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	58	57	98.3%	5	8.8%	2	40.0%	1	20.0%	2	40.0%	0	0.0%	0	0.0%
Salmon	58	50	86.2%	6	12.0%	0	0.0%	0	0.0%	4	66.7%	2	33.3%	0	0.0%
Nonsalmon fish	58	44	75.9%	12	27.3%	0	0.0%	4	33.3%	7	58.3%	1	8.3%	0	0.0%
Large land mammals	58	50	86.2%	12	24.0%	0	0.0%	1	8.3%	9	75.0%	2	16.7%	0	0.0%
Small land mammals	58	28	48.3%	7	25.0%	0	0.0%	1	14.3%	5	71.4%	1	14.3%	0	0.0%
Marine mammals	58	2	3.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	58	30	51.7%	3	10.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%
Marine invertebrates	58	2	3.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	58	53	91.4%	17	32.1%	1	5.9%	0	0.0%	13	76.5%	3	17.6%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Includes households failing to respond to the question and those households that never used the resource.

Table D4-22.—Resources households reported needing more of, Eagle, 2017.

Resource	Households needing	Percentage of households
Blueberry	11	19.0%
Moose	9	15.5%
Lowbush cranberry	9	15.5%
Caribou	8	13.8%
Chinook salmon	6	10.3%
Burbot	5	8.6%
Arctic grayling	5	8.6%
Marten	5	8.6%
Berries	5	8.6%
Wood	4	6.9%
Whitefishes	3	5.2%
Lynx	3	5.2%
Fish	2	3.4%
Sheefish	2	3.4%
Snowshoe hare	2	3.4%
Raspberry	2	3.4%
Chum salmon	1	1.7%
Fall chum salmon	1	1.7%
Sockeye salmon	1	1.7%
Pacific halibut	1	1.7%
Northern pike	1	1.7%
Fox	1	1.7%
Wolverine	1	1.7%
Grouse	1	1.7%
Spruce grouse	1	1.7%
Ruffed grouse	1	1.7%
Ptarmigan	1	1.7%
Lambs quarter	1	1.7%
Yarrow	1	1.7%
Unidentified/other	1	1.7%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D4-23.—Resources that households avoided harvesting due to poor resource health, Eagle, 2017.

Resource	Reason
Chinook salmon	Poor runs lately
Lynx	Low numbers, letting increase population
Blueberries	Blueberries low close to town but across anyway at Slavens
	Roadhouse to let townspeople access closer to town
Lowbush cranberry	Bad year
	Poor year
All/any resource	Already enough pressure on resources

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-1.—Population profile, Eagle Village, 2017.

Age	Male			Female			Total		
	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
5–9	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
10–14	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
15–19	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
20–24	0.0	0.0%	0.0%	1.3	12.5%	12.5%	1.3	5.6%	5.6%
25–29	0.0	0.0%	0.0%	0.0	0.0%	12.5%	0.0	0.0%	5.6%
30–34	2.6	20.0%	20.0%	0.0	0.0%	12.5%	2.6	11.1%	16.7%
35–39	0.0	0.0%	20.0%	0.0	0.0%	12.5%	0.0	0.0%	16.7%
40–44	0.0	0.0%	20.0%	2.6	25.0%	37.5%	2.6	11.1%	27.8%
45–49	1.3	10.0%	30.0%	0.0	0.0%	37.5%	1.3	5.6%	33.3%
50–54	1.3	10.0%	40.0%	0.0	0.0%	37.5%	1.3	5.6%	38.9%
55–59	3.9	30.0%	70.0%	1.3	12.5%	50.0%	5.2	22.2%	61.1%
60–64	1.3	10.0%	80.0%	1.3	12.5%	62.5%	2.6	11.1%	72.2%
65–69	0.0	0.0%	80.0%	1.3	12.5%	75.0%	1.3	5.6%	77.8%
70–74	1.3	10.0%	90.0%	1.3	12.5%	87.5%	2.6	11.1%	88.9%
75–79	1.3	10.0%	100.0%	1.3	12.5%	100.0%	2.6	11.1%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	13.1	100.0%	100.0%	10.5	100.0%	100.0%	23.5	100.0%	100.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-2.—Birthplaces of household heads, Eagle Village, 2017.

Birthplace	Percentage
Fort Yukon	6.7%
Tanana	6.7%
Eagle Village	66.7%
Other U.S.	6.7%
Whitehorse/Lake Labarge, Canada	13.3%

Source ADF&G Division of Subsistence household surveys, 2018.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D5-3.—Birthplaces of population, Eagle Village, 2017.

Birthplace	Percentage
Fairbanks	5.6%
Fort Yukon	5.6%
Kotzebue	5.6%
Tanana	5.6%
Eagle Village	61.1%
Other U.S.	5.6%
Whitehorse/Lake Labarge, Canada	11.1%

Source ADF&G Division of Subsistence household surveys, 2018.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table D5-4.—Comparison of median household income estimates, Eagle Village, 2017.

Data source	Median ^a	Range ^{b,c}
2017 Division of Subsistence estimate	\$12,472	\$1,061 – \$16,500
2013–2017 ACS (Eagle Village)	\$48,750	\$28,570 – \$68,930
2013–2017 ACS (All Alaska)	\$76,114	\$75,135 – \$77,093

Sources ADF&G Division of Subsistence household surveys, 2018, for 2017 estimate; U.S. Census Bureau for American Community Survey (ACS) 5-year survey estimate.

Note The boundary between Eagle and Eagle Village used by Division of Subsistence differs from that used by U.S. Census Bureau.

a. Division of Subsistence 2017 estimate does not include categories of income excluded by the 2013–2017 ACS median estimate, including food stamps, housing assistance, and one-time payments.

b. Range is a 95% confidence interval of the estimated median.

c. ACS data range is the reported margin of error.

Table D5-5.—Employment characteristics, Eagle Village, 2017.

Characteristic	Community Eagle Village
All adults	
Number	23.5
Mean weeks employed	23.7
Employed adults	
Number	12.5
Percentage	53.0%
Jobs	
Number	16.6
Mean	1.3
Minimum	1
Maximum	2
Months employed	
Mean	10.3
Minimum	6
Maximum	12
Percentage employed year-round	55.6%
Mean weeks employed	44.8
Households	
Number	17
Employed	
Number	11.3
Percentage	66.7%
Jobs per employed household	
Mean	1.5
Minimum	1
Maximum	2
Employed adults	
Mean	
Employed households	1.1
Total households	0.7
Minimum	1
Maximum	2
Mean person-weeks of employment	32.9

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-6.—Reported job schedules, Eagle Village, 2017.

Schedule	Jobs		Employed persons		Employed households	
	Number	Percentage	Number	Percentage	Number	Percentage
Full time	5.5	33.3%	5.5	44.4%	5.7	50.0%
Part time	11.1	66.7%	8.3	66.7%	8.5	75.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-7.—Individual participation in subsistence craft activities, Eagle Village, 2017.

Total number of people	23.5
Building fish wheels	
Number	4.2
Percentage	17.6%
Building fish traps	
Number	0.0
Percentage	0.0%
Building dog sleds	
Number	0.0
Percentage	0.0%
Sewing skins or fur	
Number	2.6
Percentage	11.1%
Cooking wild foods	
Number	23.5
Percentage	100.0%
Making handicrafts	
Number	3.9
Percentage	16.7%
Building shelters	
Number	1.5
Percentage	6.2%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-8.–Resources used, Eagle Village, 2017.

Resource	Scientific name
Fall chum salmon	<i>Oncorhynchus keta</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Arctic grayling	<i>Thymallus arcticus</i>
Sheefish	<i>Stenodus leucichthys</i>
Broad whitefish	<i>Coregonus nasus</i>
Unknown whitefishes	
Black bear	<i>Ursus americanus</i>
Caribou	<i>Rangifer tarandus</i>
Moose	<i>Alces alces</i>
Snowshoe hare	<i>Lepus americanus</i>
Marten	<i>Martes americana</i>
Canvasback	<i>Aythya valisineria</i>
Mallard	<i>Anas platyrhynchos</i>
Northern pintail	<i>Anas acuta</i>
Northern shoveler	<i>Anas clypeata</i>
Teals	<i>Anas spp.</i>
Unknown ducks	
Canada goose	<i>Branta canadensis</i>
Spruce grouse	<i>Falcipennis canadensis</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Unknown grouses	
Ptarmigans	<i>Lagopus spp.</i>
Blueberry	<i>Vaccinium uliginosum alpinum</i>
Lowbush cranberry	<i>Vaccinium vitis-idaea minus</i>
Highbush cranberry	<i>Viburnum edule</i>
Raspberry	<i>Rubus idaeus</i>
Soapberry	<i>Shepherdia canadensis</i>
Strawberry	<i>Fragaria virginiana</i>
Wild rhubarb	<i>Polygonum alaskanum</i>
Hudson's Bay (Labrador) tea	<i>Ledum palustre</i>
Wild rose hips	<i>Rosa acicularis</i>
Unknown mushrooms	
Stinkweed	<i>Artemisia tilesii</i>
Wood	

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-9.—Modes of transportation used to access wild resources, Eagle Village, 2017.

Equipment	Households reporting use		Own		Borrow		Lease		Charter		Unknown	
	Number	Percentage ^a	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b	Number	Percentage ^b
Boat	7	53.8%	2	28.6%	4	57.1%	0	0.0%	0	0.0%	1	14.3%
Snowmachine	4	30.8%	3	75.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
All-terrain vehicle	1	7.7%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sled	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Truck	4	30.8%	-	-	-	-	-	-	-	-	4	100.0%
Aircraft	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Percentage of sampled households.

b. Percentage of households reporting use of the equipment.

Table D5-10.—Portable motorized equipment used while searching for and harvesting wild resources, Eagle Village, 2017.

Equipment	Households reporting use	
	Number	Percentage
Generator	0	0.0%
Chainsaw	5	38.5%
Ice auger	0	0.0%
Winch	0	0.0%
Log splitter	1	7.7%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-11.—Natural materials used for making handicrafts, Eagle Village, 2017.

Material	Households reporting use	
	Number	Percentage
Bark	0	0.0%
Horns	0	0.0%
Antlers	0	0.0%
Wood	2	15.4%
Other raw materials	2	15.4%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-12.—Estimated percentages of salmon harvests by gear type, resource, and total salmon harvest, Eagle Village, 2017.

Resource	Percentage base	Subsistence methods															
		Removed from commercial catch		Dip net		Gillnet or seine		Fish wheel		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	90.4%	91.6%	9.6%	8.4%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	90.4%	91.6%	9.6%	8.4%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Summer chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fall chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	10.7%	7.3%	46.2%	35.8%	0.0%	0.0%	14.1%	9.7%	0.0%	0.0%	14.1%	9.7%
	Resource	0.0%	0.0%	0.0%	0.0%	68.8%	68.8%	31.2%	31.2%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	9.7%	6.6%	4.4%	3.0%	0.0%	0.0%	14.1%	9.7%	0.0%	0.0%	14.1%	9.7%
Unknown chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	89.3%	92.7%	53.8%	64.2%	0.0%	0.0%	85.9%	90.3%	0.0%	0.0%	85.9%	90.3%
	Resource	0.0%	0.0%	0.0%	0.0%	94.0%	94.0%	6.0%	6.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	80.7%	84.9%	5.1%	5.4%	0.0%	0.0%	85.9%	90.3%	0.0%	0.0%	85.9%	90.3%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spawnouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-13.—Estimated percentages of nonsalmon fish harvests by gear type, resource, and total nonsalmon fish harvest, by weight, Eagle Village, 2017.

Resource	Percentage base	Removed from commercial catch	Subsistence methods						
			Fish wheel	Gillnet or seine	Ice fishing	Other method	Subsistence gear, any method	Rod and reel	Any method
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	86.4%	0.0%	0.0%	86.4%	13.6%	100.0%
	Total	0.0%	0.0%	86.4%	0.0%	0.0%	86.4%	13.6%	100.0%
Pacific herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Smelts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic lamprey	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	13.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.6%	13.6%

-continued-

Table D5-13.—Continued.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					Rod and reel	Any method
			Fish wheel	Gillnet or seine	Ice fishing	Other method	Subsistence gear, any method		
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sheefish	Gear type	0.0%	0.0%	86.4%	0.0%	0.0%	86.4%	0.0%	74.7%
	Resource	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	74.7%	0.0%	0.0%	74.7%	0.0%	74.7%
Longnose sucker	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown trouts	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Broad whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bering cisco	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Least cisco	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown whitefishes	Gear type	0.0%	0.0%	13.6%	0.0%	0.0%	13.6%	0.0%	11.8%
	Resource	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	11.8%	0.0%	0.0%	11.8%	0.0%	11.8%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-14.—Estimated harvests of large land mammals by month and sex, Eagle Village, 2017.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All large land mammals	0.0	0.0	0.0	0.0	0.0	0.0	2.6	1.3	2.6	0.0	0.0	0.0	0.0	6.5
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	2.6	1.3	0.0	0.0	0.0	0.0	0.0	3.9
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	2.6
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	2.6
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-15.—Estimated small land mammal harvests by month, Eagle Village, 2017.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All small land mammals	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	6.5	5.2	23.5
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	5.2	7.8
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.9	0.0	15.7
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-16.—Estimated bird harvests by season, Eagle Village, 2017.

Resource	Estimated harvest by season					Total
	Spring	Summer	Fall	Winter	Season unknown	
All birds	32.7	0.0	26.2	0.0	0.0	58.8
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0
Goldeneyes	0.0	0.0	0.0	0.0	0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0
Mallard	10.5	0.0	0.0	0.0	0.0	10.5
Mergansers	0.0	0.0	0.0	0.0	0.0	0.0
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0
Northern pintail	3.9	0.0	0.0	0.0	0.0	3.9
Scaups	0.0	0.0	0.0	0.0	0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0
Surf scoter	0.0	0.0	0.0	0.0	0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0	0.0	0.0
Unknown scoters	0.0	0.0	0.0	0.0	0.0	0.0
Northern shoveler	13.1	0.0	0.0	0.0	0.0	13.1
Teals	0.0	0.0	0.0	0.0	0.0	0.0
American wigeon	0.0	0.0	0.0	0.0	0.0	0.0
Unknown ducks	0.0	0.0	0.0	0.0	0.0	0.0
Canada goose	0.0	0.0	5.2	0.0	0.0	5.2
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0
Unknown gulls	0.0	0.0	0.0	0.0	0.0	0.0
Unknown loons	0.0	0.0	0.0	0.0	0.0	0.0
Spruce grouse	2.6	0.0	14.4	0.0	0.0	17.0
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0
Ruffed grouse	2.6	0.0	0.0	0.0	0.0	2.6
Unknown grouses	0.0	0.0	0.0	0.0	0.0	0.0
Ptarmigans	0.0	0.0	6.5	0.0	0.0	6.5

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-17.—Use of firewood for home heating, Eagle Village, 2017.

Average annual cost of home heating	Household use of wood for home heating as a percentage of total fuel for heating													
	0%		1%–25%		26%–50%		51%–75%		76%–99%		100%		Unknown	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
\$1,107.69	2	15.4%	4	30.8%	2	15.4%	2	15.4%	0	0.0%	3	23.1%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-18.—Reasons for changes in firewood harvest areas in the last five years, Eagle Village, 2017.

Cuts standing dry, has to move around to look for it
[Illegible]
No more dry wood on property
Total number of households reporting changes = 3 households

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-19.—Reasons for less household uses of resources compared to recent years, Eagle Village, 2017.

Resource category	Valid responses ^a	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	12	5	1	20.0%	1	20%	1	20.0%	1	20%	0	0%	1	20%	2	40.0%	0	0.0%
Salmon	11	4	1	25.0%	0	0%	0	0.0%	0	0%	0	0%	2	50%	1	25.0%	0	0.0%
Nonsalmon fish	13	2	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Large land mammals	12	7	0	0.0%	3	43%	0	0.0%	0	0%	4	57%	0	0%	4	57.1%	0	0.0%
Small land mammals	13	6	2	33.3%	1	17%	0	0.0%	0	0%	1	17%	0	0%	0	0.0%	0	0.0%
Marine mammals	13	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Birds	12	6	0	0.0%	2	33%	0	0.0%	3	50%	1	17%	0	0%	1	16.7%	0	0.0%
Marine invertebrates	13	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Vegetation	10	5	1	20.0%	3	60%	0	0.0%	0	0%	0	0%	2	40%	0	0.0%	0	0.0%

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Table D5-19.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources		Too much competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	12	5	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	11	4	1	25%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	13	2	0	0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	12	7	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	13	6	0	0%	1	16.7%	0	0.0%	2	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	13	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	12	6	0	0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	13	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	10	5	0	0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response and households reporting never using the resource.

Table D5-20.—Reasons for more household uses of resources compared to recent years, Eagle Village, 2017.

Resource category	Valid responses ^a	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	12	1	0	0.0%	0	0.0%	1	100.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	11	5	0	0.0%	0	0.0%	3	60.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	13	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%
Large land mammals	12	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Small land mammals	13	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Marine mammals	13	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	12	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	13	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	10	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%

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Table D5-20.—Continued.

Resource category	Valid responses ^a	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	12	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	11	5	0	0.0%	0	0.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	13	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	12	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	13	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	13	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	12	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	13	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	10	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Valid responses do not include households that did not provide any response and households reporting never use.

Table D5-21.—Reported impact to households that did not get enough of a resource, Eagle Village, 2017.

Resource category	Sample households	Households not getting enough				Impact to those not getting enough									
		Valid responses ^a		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	13	12	92.3%	4	33.3%	1	25.0%	0	0.0%	1	25.0%	2	50.0%	0	0.0%
Salmon	13	11	84.6%	1	9.1%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Nonsalmon fish	13	11	84.6%	3	27.3%	0	0.0%	2	66.7%	1	33.3%	0	0.0%	0	0.0%
Large land mammals	13	12	92.3%	5	41.7%	0	0.0%	0	0.0%	3	60.0%	2	40.0%	0	0.0%
Small land mammals	13	8	61.5%	4	50.0%	0	0.0%	0	0.0%	4	100.0%	0	0.0%	0	0.0%
Marine mammals	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	13	11	84.6%	5	45.5%	0	0.0%	1	20.0%	3	60.0%	1	20.0%	0	0.0%
Marine invertebrates	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	13	10	76.9%	1	10.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2018.

a. Includes households failing to respond to the question and those households that never used the resource.

Table D5-22.—Resources that households reported needing more of, Eagle Village, 2017.

Resource	Households needing	Percentage of households
Salmon	1	7.7%
Chinook salmon	1	7.7%
Burbot	1	7.7%
Arctic grayling	2	15.4%
Whitefishes	1	7.7%
Least cisco	1	7.7%
Caribou	3	23.1%
Moose	5	38.5%
Beaver	1	7.7%
Snowshoe hare	3	23.1%
Porcupine	1	7.7%
Ducks	3	23.1%
Mallard	2	15.4%
Geese	1	7.7%
Canada goose	1	7.7%
Ptarmigan	2	15.4%
Blueberry	2	15.4%
Highbush cranberry	1	7.7%

Source ADF&G Division of Subsistence household surveys, 2018.

Table D5-23.—Resources that households avoided harvesting due to poor resource health, Eagle Village, 2017.

Resource	Reason
Snowshoe hare	Just word of mouth, people avoiding
	Saw and heard notice to not eat
	Warned of disease

Source ADF&G Division of Subsistence household surveys, 2018.