Technical Paper No. 466

The Harvest and Uses of Wild Resources in Birch Creek, Alaska, 2018

by
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and
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June 2020

Alaska Department of Fish and Game **Division of Subsistence**

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)	
centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)	
cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature	
day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry	
all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General	
Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)	
fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics	
all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	?
harvest per unit effort	HPUE
less than	<
less than or equal to	?
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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The Division of Subsistence Technical Paper Series was established in 1979 and represents the most complete collection of information about customary and traditional uses of fish and wildlife resources in Alaska. The papers cover all regions of the state. Some papers were written in response to specific fish and game management issues. Others provide detailed, basic information on the subsistence uses of particular communities which pertain to a large number of scientific and policy questions.

Technical Paper series reports are available through the Alaska Resources Library and Information Services (ARLIS), the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone editorial and professional review.

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ABSTRACT

This report presents the results of research documenting the harvests and uses of wild foods in Birch Creek, Alaska during the calendar year 2018. Information for this report was gathered through a census of household surveys and semi-structured interviews with knowledgeable key respondents. Three of the four key respondent interviews were conducted in Fairbanks in January 2020. Respondents in these interviews included three current Birch Creek residents and two former Birch Creek residents who now reside in Fairbanks. This research focused on the harvest amounts, uses, and sharing of all wild resources by the community. Information gathered also includes demographics, income, food security, the assessment of recent availability of resources, and areas used to search for subsistence resources in 2018. Birch Creek is a small community located in the Yukon Flats of Interior Alaska on Birch Creek River, a tributary of the Yukon River. The majority of Birch Creek residents are of Dendu Gwich'in descent and are members of the Birch Creek Tribe. Residents of Birch Creek, like those of all Yukon Flats communities, rely on subsistence resources and they participate in a variety of traditional subsistence harvest activities that vary by season. This is the first comprehensive subsistence harvest and use survey conducted in Birch Creek; the results presented here are considered baseline information that can be used in the future to compare if and how subsistence harvest and use patterns change over time.

Key words: Birch Creek, Yukon Flats, subsistence, subsistence fishing, subsistence hunting, traditional knowledge, harvest survey, Dendu, Gwich'in Athabascan, moose, salmon, Yukon River.

1. INTRODUCTION

Jeff Park

This report summarizes the results of research conducted in 2019 on the subsistence harvests and uses of wild resources in Birch Creek, Alaska in study year 2018 (Figure 1-1). Birch Creek residents rely on subsistence hunting, fishing, and gathering for nutrition and to support their customary and traditional way of life. Table 1-1 lists the wild resources that Birch Creek residents used during the study year. Despite the heavy reliance on wild food resources, minimal historical data on the harvest practices of Birch Creek residents or by other Yukon Flats communities has been collected. Existing data have shown a reliance on subsistence resources including moose, various nonsalmon fish, and migratory waterfowl in the past. However, there is an overall lack of quantitative harvest data for Birch Creek that could be compared to other Yukon Flats communities. This was a major factor in the selection of Birch Creek for this single-community report.

This study is the first comprehensive subsistence survey to be conducted in Birch Creek; as such, it serves as a baseline of all wild food use and harvest in the community in a one-year period. This report represents a significant contribution to the available data on the harvests and uses of subsistence foods in Birch Creek and will enhance understanding of the use and harvest patterns that exist throughout the region.

Project Background

The Alaska Department of Fish and Game (ADF&G) Division of Subsistence scientifically gathers, quantifies, evaluates, and reports information about customary and traditional uses of the state of Alaska's fish, wildlife, and vegetative resources (AS 16.05.094). 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. The goal of this study was to document comprehensive baseline subsistence harvest and use information in Birch Creek. This project was conducted cooperatively by the ADF&G Division of Subsistence and the Tihteet'aii Gwich'in Tribal Government.

Community and Regional Background

The Dendu Gwich'in Athabascan community of Birch Creek is located on the creek for which it is named and centered in the Yukon Flats National Wildlife Refuge approximately 26 air miles southwest of the community of Fort Yukon (Figure 1-1). Birch Creek itself is a stream that originates in the Yukon-Tanana uplands to the south and flows northward through the flats until it meets the Yukon River. The community sits in a flat to gently rolling floodplain characterized by vast systems of lowland lakes, sloughs, and braided streams typical of the Yukon Flats (Caulfield 1983). Vegetation in the region includes muskeg wetlands with shrubs of willows and alders; lowlands of black spruce; and areas of white spruce, paper birch, and balsam poplar forests. The region has a continental subarctic climate typical of Interior Alaska with cold, dry winters and short, warm summers.

Birch Creek residents are deeply connected to the land and its resources, and they rely on subsistence to provide a major part of their diet. Moose tends to be the primary source of wild food; however, some residents take advantage of seasonal opportunities to harvest other resources. Fishers may travel to the nearby Yukon River to harvest salmon during their annual migration. Nonsalmon fish such as whitefishes and northern pike can be caught with a net or rod and reel in Birch Creek. Hunters target migratory waterfowl during their spring migration through the region. Hunters and trappers harvest a variety of small land mammals during winter for both food and furs. Finally, residents supplement their wild food diet with cranberries and other vegetation that is abundant in the area surrounding the community.

The Dendu Gwich'in originate from the southern edge of the central Yukon Flats south of the Yukon River. Known as the foothill mountain people, the Dendu Gwich'in traditionally inhabited upland areas to the

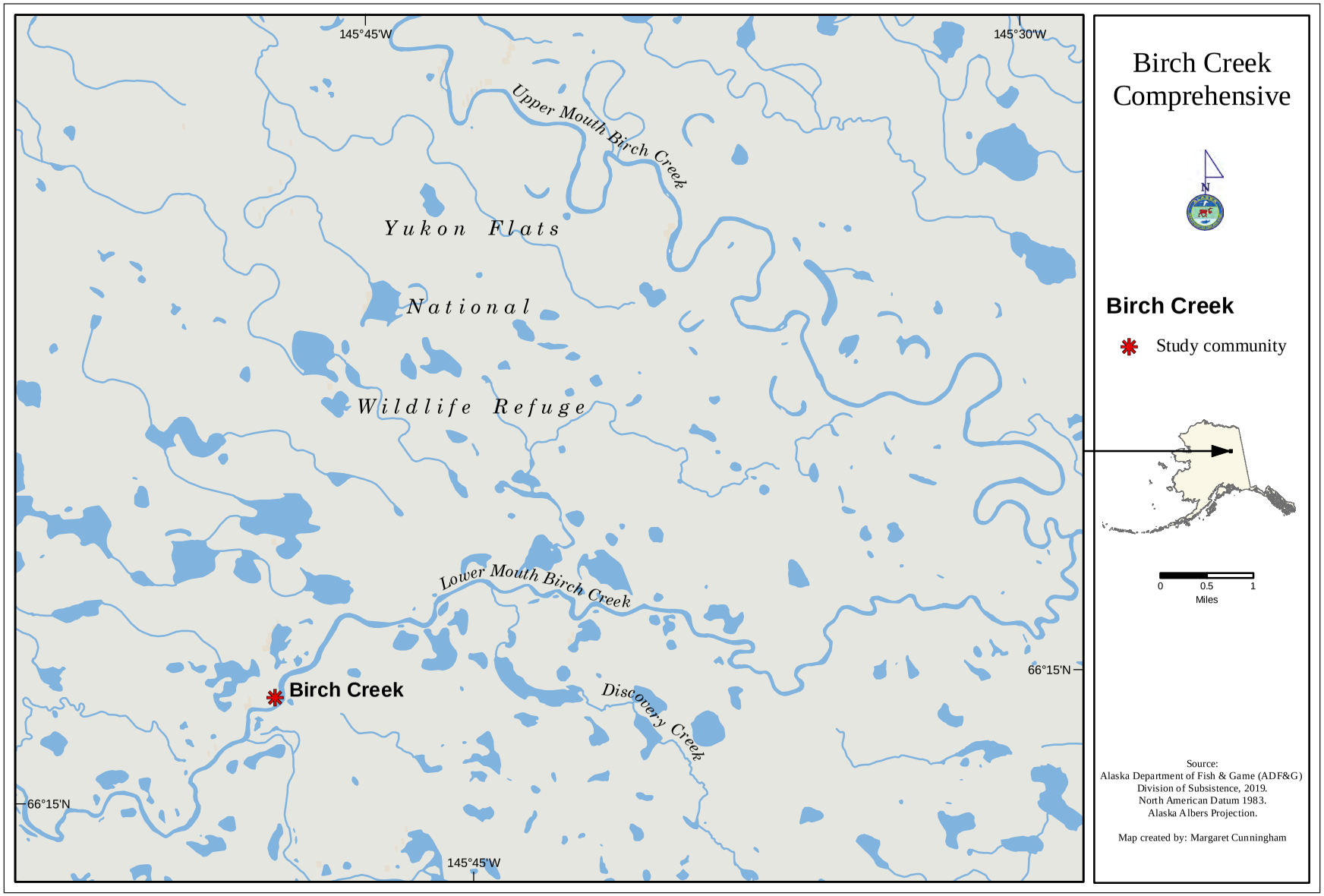

Figure 1-1.–Study area.

Table 1-1.–Resources used, Birch Creek, 2018.

Resource	Scientific name
Fall chum salmon	*Oncorhynchus keta*
Chinook salmon	*Oncorhynchus tshawytscha*
Black bear	*Ursus americanus*
Caribou	*Rangifer tarandus*
Moose	*Alces alces*
Snowshoe hare	*Lepus americanus*
Lynx	*Lynx canadensis*
Red squirrel	*Tamiasciurus hudsonicus*
Canvasback	*Aythya valisineria*
Mallard	*Anas platyrhynchos*
Northern pintail	*Anas acuta*
Black scoter	*Melanitta nigra*
Northern shoveler	*Anas clypeata*
Teals	*Anas spp.*
Unknown Canada/cackling geese	*Branta spp.*
White-fronted goose	*Anser albifrons*
Lowbush cranberry	*Vaccinum vitis-idaea minus*
Highbush cranberry	*Viburnum edule*
Hudson's Bay (Labrador) tea	*Ledum palustre*
Wood	

Source ADF&G Division of Subsistence household surveys, 2019.

south of the flats as well as portions of the White and Crazy mountains.[1] Bands traveled seasonally through the area utilizing semi-permanent camps along Birch Creek and on lakes in the region (U.S. Fish and Wildlife Service 2008). The Dendu Gwich'in name for the community is Liteet'aii, which means "water courses meet," in reference to a point just below the current village site where Birch Creek Slough (also known as Fish Net Slough) emerges from a nearby lake system and enters Birch Creek. The conjunction of these two waterways creates an eddy and an ideal spot to set fishnets (Matesi and Kaplan 2016).

In 1898, respected tribal chief Birch Creek Jimmy built a cabin near the current village site and was soon joined by his extended family: "That's where…Birch Creek Jimmy raised his kids. And he trapped there, and he fished there and hunted there. Wintertime, springtime" (02012020KBC7). However, they remained seasonally nomadic, moving to nearby Fort Yukon in the summer and returning to Birch Creek for fall moose hunting and winter trapping. A key respondent described this seasonal pattern:

> They moved back and forth. They come back in fall time. They move out with boat back to Fort Yukon after muskrat season over. Then fall time go back to hunting and run the trapline in winter…There was lots of traplines running through these hills back in the heydays. (02012020KBC7)

Year-round settlement increased when a Bureau of Indian Affairs school was established in the 1950s.[2] The community grew, and the area continued to be popular for trapping both by Birch Creek residents as well as trappers from Fort Yukon: "This was a community of probably over 100 people, trappers…People used to go from Fort Yukon and hunker down in Birch Creek" (02012020KBC5).

Lack of students forced the school to close in 1999. This caused many families to relocate to larger communities: "We did have teachers in and out who lived in Birch Creek for a while, but eventually we didn't have anyone full time who could teach us so we decided to move to Fairbanks" (01302020KBC4). In 2011, the Tribal Office, well house, and electric plant were destroyed in a fire. One key respondent attempted to explain the resulting loss: "A lot of things burnt. A lot of history. Our history burnt in that building" (02012020KBC5). Another key respondent explained that some people left the community due

1. Gwich'in Council International, n.d. "Our Communities." Accessed April 1, 2020. https://gwichincouncil.com/our-communities
2. Tanana Chiefs Conference, 2020. "Communities in our region: Birch Creek." Accessed April 1, 2020. https://www.tananachiefs.org/about/communities/

to the hardships caused by the fire: "We were like starting over again, temporary this, temporary that" (02012020KBC6).

A facility to house new electric generators and a water treatment plant was completed in 2014. This building also houses a new tribal office and library. The Margaret Martin Health Clinic, built in 2017, employs a part-time health aide hired from the community. A state-owned gravel airstrip provides passenger and freight services five days per week.

The Dendu Gwich'in tribe is healthy and active with over 100 members. The tribal office and most tribal members reside in Fairbanks. Birch Creek is one of ten communities in the Council of Athabascan Tribal Governments (CATG), an organization of unified Yukon Flats communities that manages many natural resources, health care, government, and economic activities in the region. Today Birch Creek has a small, aging resident population. Population size is limited by the lack of school and employment opportunities. One key respondent explained that some tribal members transition between Birch Creek and other communities as jobs become available: "Yeah, just everybody comes and goes. Every year, every other year…It just depends. Depends on money, jobs" (02012020KBC6).

Regulatory Context[3]

Fisheries

Birch Creek residents must travel to the Yukon River to fish for salmon. Chinook salmon are 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 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. Birch Creek is located in fishing District 5D, the last Alaska fishing district before the U.S.-Canada border. Because of its upriver location, the community has 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 Chinook salmon 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.

In 2018, managers anticipated a smaller than average Yukon River Chinook salmon run and subsistence salmon fishing in District 5D was limited to three and a half days per week with six-inch or smaller mesh gillnets throughout most of the run (Carroll and Jallen 2018). However, Birch Creek residents did not report traveling to the Yukon River to fish for salmon in 2018. Instead, some households received salmon from others, likely from friends or relatives in other communities that fish along the mainstem. Although traveling to the Yukon River to fish for salmon was common in the past, most in the community no longer participate. As a result, Birch Creek residents are less affected by the changing salmon fishing regulations in Distrct 5D than residents in other Yukon Flats communities.

Wildlife

The community of Birch Creek is located in Game Management Unit (GMU) 25D, a large subunit that encompasses several other Yukon Flats communities including Fort Yukon, Stevens Village, Beaver, Venetie, and Chalkyitsik. Much of the land in GMU 25D is part of the federal Yukon Flats National Wildlife Refuge. Hunters from Birch Creek must be familiar with the state and federal regulations that exist within this region and the boundaries associated with the two management regimes.

Birch Creek is represented by one seat on the Yukon Flats Fish and Game Advisory Committee (AC), a local forum that gives residents within the region the opportunity to make recommendations to the Alaska boards of Fisheries and Game. Additionally, the Yukon Flats AC develops regulatory proposals and consults with

3. This section has been adapted from Trainor et al. (2020).

individuals, organizations, and other agencies to inform their decision making.[4] The Yukon Flats region is represented at the federal regulatory level through membership on the Eastern Interior Regional Subsistence Advisory Council, a board that makes recommendations to the Federal Subsistence Board.

Birch Creek residents rely heavily on moose (Van Lanen et al. 2012). Alaska state hunting regulations provide Birch Creek residents an opportunity to harvest one bull moose per year by obtaining a harvest ticket for a fall hunting season in September or a winter season in December. Residents are also provided an opportunity to obtain a federal registration permit to harvest one bull moose on nearby federal lands between August 25 and February 28.

Study Objectives

The project had the following objectives:

- Estimate subsistence harvests and uses of wild fish, birds, land animals, and plant resources by residents of Birch Creek in a 12-month study year (2018);
- Map areas used for hunting, fishing, and gathering during the study year;
- Work with the local tribal government to select and interview longtime and knowledgeable residents who have extensive history participating in subsistence activities;
- Collect demographic information for Birch Creek, including population size, age composition, ethnicities, birthplaces, and lengths of residency in the study community;
- Characterize Birch Creek's involvement in the cash economy, including jobs and other sources of income;
- Evaluate trends in subsistence harvests; and
- Document local concerns relating to subsistence hunting and fishing.

The Division of Subsistence trained one community resident in the administration of the survey instrument. This local research assistant helped ADF&G researchers in the completion of surveys with occupied households within Birch Creek. Results were collaboratively reviewed and interpreted with the community while they were still in draft status. Summary results are published online at the Community Subsistence Information System (CSIS) website maintained by the ADF&G Division of Subsistence.[5]

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 Research[6] and by the National Science Foundation, Office of Polar Programs in its Principles for the Conduct of Research in the Arctic[7], 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.

4. ADF&G, n.d. "Advisory Committees." Accessed March 11, 2020. http://www.adfg.alaska.gov/index.cfm?adfg=process.advisory
5. 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*.
6. Alaska Federation of Natives. 2013. "Alaska Federation of Natives Guidelines for Research." Accessed March 28, 2020. Alaska Native Knowledge Network. http://www.ankn.uaf.edu/IKS/afnguide.html
7. National Science Foundation Interagency Social Science Task Force. 2012. "Principles for the Conduct of Research in the Arctic." Accessed March 28, 2020. http://www.nsf.gov/od/opp/arctic/conduct.jsp

Table 1-2.–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	David Koster	ADF&G Division of Subsistence
Programmer	Margaret Cunningham	ADF&G Division of Subsistence
Data Entry	Margaret Cunningham	ADF&G Division of Subsistence
	Alexzandria DePue	ADF&G Division of Subsistence
	Halia Janssen	ADF&G Division of Subsistence
Data Cleaning/Validation	Margaret Cunningham	ADF&G Division of Subsistence
Data Analysis	Margaret Cunningham	ADF&G Division of Subsistence
Cartography	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	Jeff Park	ADF&G Division of Subsistence
	Kathleen Roush	ADF&G Division of Subsistence
Local Research Assistant	Winston James	Birch Creek

Source ADF&G Division of Subsistence, 2019.

Project Planning and Approvals

The Tihteet'aii Gwich'in Tribal Government approved this research on January 8, 2019 in Fairbanks. Fieldwork was conducted February 5–7, 2019. Two Subsistence Division staff traveled to Birch Creek to complete the data collection (Table 1-2).

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 from the tribal consultation process, ADF&G finalized the survey instrument in January 2019. A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and economic data that are comparable with data in the Community Subsistence Information System (CSIS[8]). Appendix A is an example of the survey instrument used in this project. Table 1-3 shows survey achievement for Birch Creek. Surveys took an average of 36 minutes to complete (Table 1-4).

Mapping Locations of Subsistence Hunting, Fishing, and Gathering Activities

During these household surveys, the researchers asked respondents to indicate the locations of their fishing, hunting, and gathering activities during the study year. In addition, researchers asked respondents to mark on the maps the species harvested, the amounts harvested, and the months of harvest. ADF&G staff established a standardized mapping method where researchers used iPads to record use areas and worked with respondents to capture the full extent used for each species they attempted to harvest. Points were used to mark specific search and harvest locations, such as ice fishing spots. Polygons were used to indicate larger areas, such as areas searched while hunting moose. Lines were drawn to depict search areas such as traplines or courses taken while fishing.

Harvest locations and fishing, hunting, and gathering areas were documented using an application designed on the ArcGIS Runtime SDK for iOS platform; 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 to document harvesting activities

8. ADF&G CSIS.

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.

Table 1-3.–Sample achievement, Birch Creek, 2018.

Sample information	Community Birch Creek
Number of dwelling units	13
Survey goal	100%
Households surveyed	6
Households failed to be contacted	4
Households declined to be surveyed	1
Households moved or occupied by nonresident	2
New households	1
Total households attempted to be surveyed	11
Refusal rate	14.3%
Final estimate of permanent households	11
Percentage of total households survyed	54.5%
Survey weighting factor	1.83
Sampled population	9
Estimated population	16.5

Source ADF&G Division of Subsistence household surveys, 2019.

Table 1-4.–Survey length, Birch Creek, 2018.

Community	Interview length (minutes)		
	Average	Minimum	Maximum
Birch Creek	36	15	60

Source ADF&G Division of Subsistence household surveys, 2019.

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 when researchers returned from the field. 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 depicted the local area surrounding the community of Birch Creek in all directions. Very few paper maps were used, and research staff digitized marking 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.

Hunting, fishing, and gathering locations were provided by four of the six surveyed households. This information was used to create one map showing the reported search and harvest locations for all resources. Maps depicting the search and harvest areas for individual resource categories were not included in this report to preserve the confidentiality of the small number of respondents that provided mapping information for each resource category.

Key Respondent Interviews

While researchers were in Birch Creek, they consulted with the Birch Creek Tribal Council, LRAs, and other community members 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, the seasonal round section, harvest-over-time analysis, and the community comments and concerns section. Seven key respondents were identified at that time and one interview was conducted. The remaining potential key respondents were either unavailable or unable to be contacted while the researchers were in Birch Creek. Three additional interviews with five respondents were conducted in Fairbanks in January 2020. These interviews included three of the originally identified key respondents as well as two Birch Creek tribal members and former Birch Creek residents now living in Fairbanks.

Key respondent interviews were semi-structured and directed by a key respondent interview protocol (see Appendix B). Key respondents were informed that, to maintain anonymity, their names would not be included in this report. A copy of the audio recording and a printed transcript of the interview were sent to each individual respondent.

Data Analysis and Review

Survey Data Entry and Analysis

Surveys were coded for data entry by research staff and reviewed by the project leads 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 internet site. 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 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:

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

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

where:

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

$\overline{h}_i$ = 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. 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 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:

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

where:

s = sample standard deviation,

n = sample size,

$\overline{h}$ = 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 Birch Creek. 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 the study year 2018. 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 division's estimated Birch Creek population 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, timing of when surveys are conducted, or eligibility criteria for inclusion in the survey may explain differences in the population estimates.

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 in the field during survey administration. 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.X using a standard template for reports. Maps show search and harvest areas for each resource. Maps were reviewed at a community review meeting on February 1, 2020 to ensure accuracy as well identify any data 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.

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.

Key Respondent Interviews

Key respondent interviews were audio recorded and were transcribed verbatim. The interview data was analyzed using deductive coding and organized based on the themes of this study. This qualitative data was integrated into the report by using direct key respondent quotes whenever possible.

Final Report Organization

This report summarizes the results of systematic household surveys and mapping interviews conducted by staff from ADF&G and LRAs as well as resident feedback provided at community review meetings. The results 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 also harvest and use trends over time. Table 1-5 shows selected study findings for Birch Creek.

ADF&G provided a draft report to the tribal government for review and comment. After receipt of comments, the report was finalized. ADF&G mailed a short (4-page) summary of the study findings to post office box holders in Birch Creek.

Table 1-5.–Selected findings, Birch Creek, 2018.

Category	Community Birch Creek
Demography	
Population	16.5
Percentage of population that is Alaska Native	100.0%
Percentage of household heads born in Alaska	100.0%
Average length of residency of household heads (year)	47.4
Cash economy	
Average number of months employed	3.6
Percentage of employed adults working year-round	50.0%
Percentage of income from sources other than employment	67.0%
Average household income[a]	$8,895
Per capita income[a]	$5,930
Resource harvest and use	
Per capita harvest, pounds usable weight	192.3
Average household harvest, pounds usable weight	288.4
Number of resources used by 50% or more households	2.0
Average number of resources used per household	6.8
Average number of resources attempted to be harvested per household	4.0
Average number of resources harvested per household	3.7
Average number of resources received per household	3.0
Average number of resources given away per household	2.3
Percentage of total harvest taken by top 25% ranked households	34.1%
Percentage of households that harvested 70% of harvest	33.3%
Per capita harvest by lowest ranked 50% of households	62.8
Percentage of total harvest taken by lowest ranked 50% of harvesting households	32.7%
Average number of resources used by lowest ranked 50% of households	5.0
Average number of resources used by top 25% ranked households	12.0

Source ADF&G Division of Subsistence household surveys, 2019.

a. Includes income from sources other than employment.

2. RESULTS

Jeff Park

Seasonal Round

Prior to a shift toward year-round settlement, inhabitants of the Birch Creek region relocated seasonally to take advantage of various opportunities to harvest wild foods. One elder key respondent shared memories of this nomadic seasonal round that continued into the mid-1900s: "It used to be trapping area here, Birch Creek. Ever since they put in the school 1960, that's when we settle down. Before that we go to Fort Yukon every spring. We go fishing down there" (02062019KBC1). Trappers targeted furbearers around Birch Creek all winter: "You come here, and you trap up in the mountains, and up Beaver Creek, up that way toward Circle" (02062019KBC1). They stayed in this area until spring when they harvested muskrats, waterfowl, and eggs before moving to fish camps on the Yukon River near Fort Yukon:

> June six is when we pick eggs up there on the lake. Every year June sixth you got to be on that lake paddling around picking eggs. And then [June] eight, nine they'd come back, fill in the boat, take off, Fort Yukon…We're going to Fort Yukon to sell fur, muskrat, beaver. We went down there to get ready for the king salmon that's coming up the river. (02062019KBC1)

Salmon fishing continued on the Yukon River until mid-July when people would begin preparing to travel to upper Birch Creek for moose hunting and berry picking:

> July sixteen is the end of getting king salmon. So, pile up everything in a box and go sheefishing…Come hunt slowly upriver and get here first of August. Put everything away. And all the women, they go upriver [Birch Creek] and drop 'em off. They pick berries, and we keep on going to find moose too. We lucky, get moose, then we come back and pick them up. And we leave about ten canoe there. They paddle home if they want to. (02062019KBC1)

Current-day Birch Creek residents take advantage of many of the same harvesting opportunities without relocating from Birch Creek for long periods of time. Figure 2-1 shows all areas that respondents used to hunt and gather wild resources in 2018. Birch Creek residents reported searching for wild resources on Birch Creek from the community to approximately seven air miles upriver. Respondents also indicated searching for subsistence resources in a few locations within a mile of the community, including small lakes immediately to the west and east of town. Finally, Birch Creek residents searched for wild resources on a seven-mile section of winter trail that begins in Birch Creek and leads to Fort Yukon to the north.

The following description of contemporary seasonal subsistence opportunities in Birch Creek includes resources that were not harvested in 2018, such as salmon, nonsalmon fish, and some furbearers; however, respondents incicated that these resources are harvested in some years.

Early in the spring, prior to breakup, fishers can set an under-ice net or jig through holes in the ice to catch humpback whitefish and northern pike[1] on Birch Creek. Early spring is also a good time to snare beavers near their lodges: "In springtime, once you make a hole it stays open a little bit. You cover it with sticks, and you put snow on it. And the next day like that and set the snares. But if you do that wintertime it will freeze up, and chip, chip, chip" (02062019KBC1). Trappers may also target muskrats at this time of year by setting traps in the muskrat houses, called push-ups, that are found on the ice of nearby lakes.

Waterfowl move through the area on their spring migration. One key respondent said that they are arriving earlier now than in the past: "Yeah they come there early now. They don't go there in June now they come in May" (02012020KBC6). Waterfowl hunters target a variety of ducks and geese, including mallards, teals, Canada geese, and white-fronted geese; however, they tend to prefer black scoters: "…black duck

1. Hereinafter, *pike*.

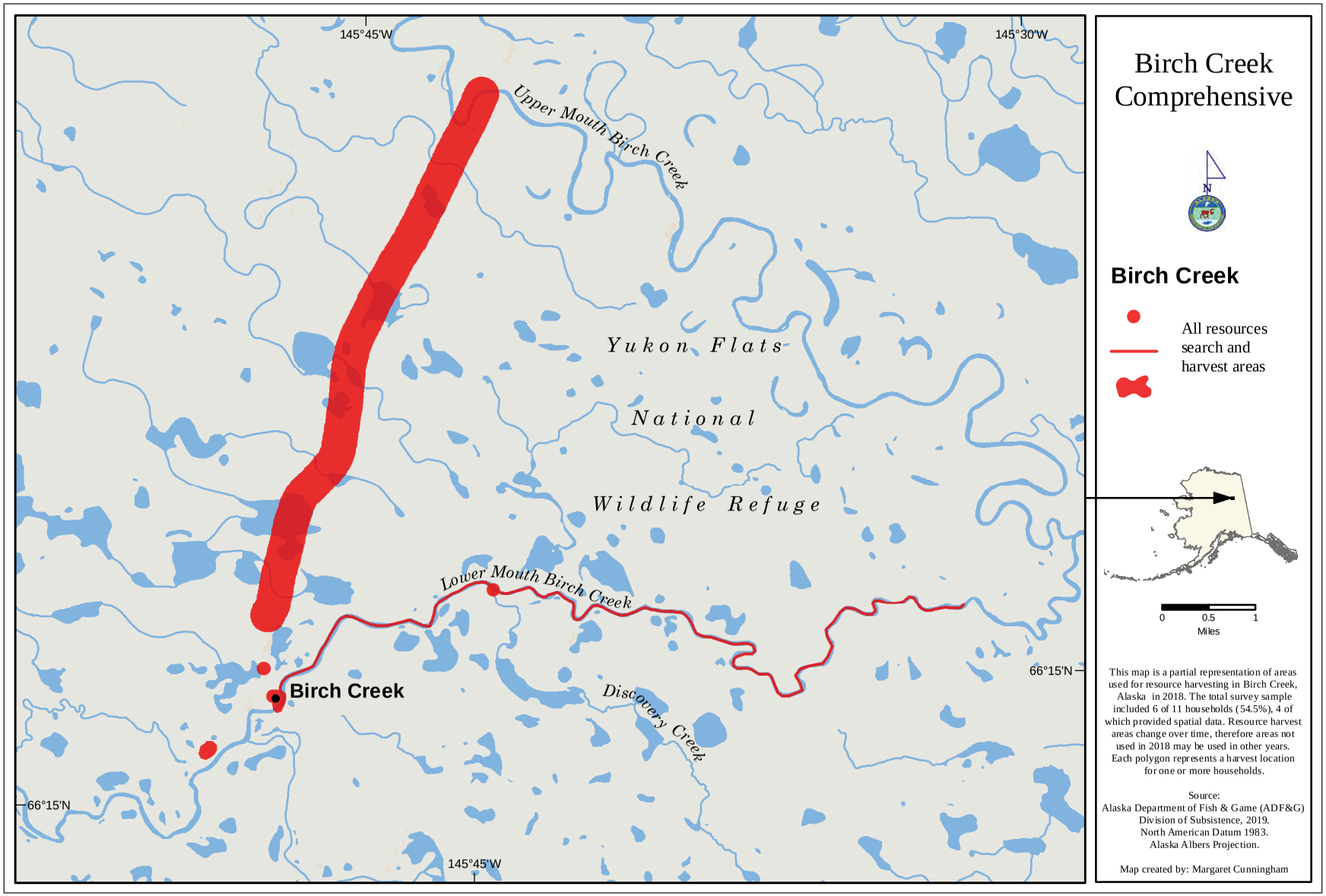

Figure 2-1.–Wild resources search and harvest areas, Birch Creek, 2018.

is the main duck. That's 'cause it's fat" (02062019KBC1). Whitefish nets may be placed in Birch Creek immediately after breakup to catch whitefishes, pike, longnose sucker, and Arctic grayling[2]. Finally, hunters may target black bears, or take one opportunistically, in the spring.

Birch Creek fishers harvest Chinook salmon in the first half of July and chum salmon in the second half. However, salmon fishing requires a costly boat trip down Birch Creek to the Yukon River or a flight to nearby Fort Yukon to fish with friends or family residents of that community. Nonsalmon fish such as whitefishes and sheefish may also be caught in nets while fishing for salmon, and fishers may catch pike and grayling in Birch Creek with rod and reel in the summer.

Fall moose hunting is one of the most important subsistence activies of the year. Hunters target bull moose throughout September. Behavior changes brought about by the moose mating season, or rut, allows hunters to call the moose to them by mimicking sounds made by other bulls, or by using a moose cow call. In past decades, people also targeted black bears in the fall; however, no respondents to this study indicated that this is still common. Migratory birds may be hunted as they move through the area again in the fall. One key respondent explained that migratory bird hunting is not as popular in the fall as it is in the spring because the birds have less body fat (02062019KBC1). Fishers may continue to set gillnets for a variety of nonsalmon fish in Birch Creek in the fall. Residents also pick cranberries and rosehips around nearby lakes in the fall.

Furbearer trappers may target marten, mink, beaver, lynx, and fox throughout the winter. Trappers may also set snare trap lines near town to harvest snowshoe hares. Residents may also hunt for grouses and ptarmigans throughout the winter. Winter fishing can include setting a gillnet for nonsalmon fish in Birch Creek under the ice as soon as the creek freezes as well as jigging through holes in the ice for grayling.

Population Estimates and Demographic Information

Nine residents lived in the six surveyed households in Birch Creek in 2018 (Table 1-2). Expanding for the unsurveyed households, the estimated population of 17 includes 9 males (56%) and 7 females (44%); all were Alaska Native (figures 2-2 and 2-3; tables 2-1 and D2-1).

Household sizes ranged from one to two occupants (Table 2-2). The average age during the study year was 59 and the average length of residency was 47 years. Eleven percent of household heads reported Birch Creek as their birthplace (Table D2-2). A greater number of household heads (44%) originated from nearby Fort Yukon. Household heads were also from Ambler and Stevens Village. Table D2-3 shows birthplaces of the population.

Table 2-1.–Population estimates, Birch Creek, 2018.

	Census	5-year American Community Survey (2014–2018)		This study (2018)	
	(2010)	Estimate	Range[a]	Estimate	Range[b]
Total population					
Households	17	2.0	0 – 4	11.0	
Population	33	2.0	0 – 4	16.5	12 – 21
Alaska Native					
Population	33	2.0	0 – 4	16.5	12 – 21
Percentage	100.0%	100.0%	.0% – 100.0%	100.0%	74.2% – 100.%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey (ACS) 2018 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2019 for 2018 estimate.

Note Division of Subsistence household survey elegiblity 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.

2. Hereinafter, *grayling*.

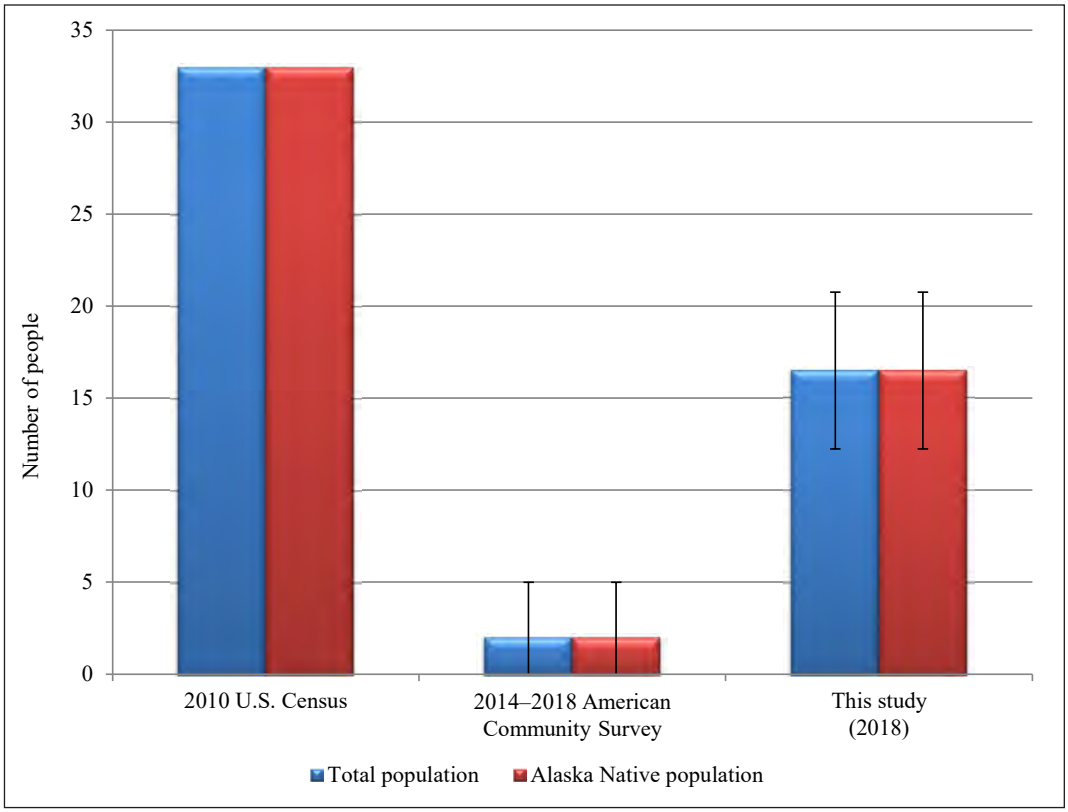

Figure 2-2.–Alaska Native and overall population estimates, Birch Creek, 2018.

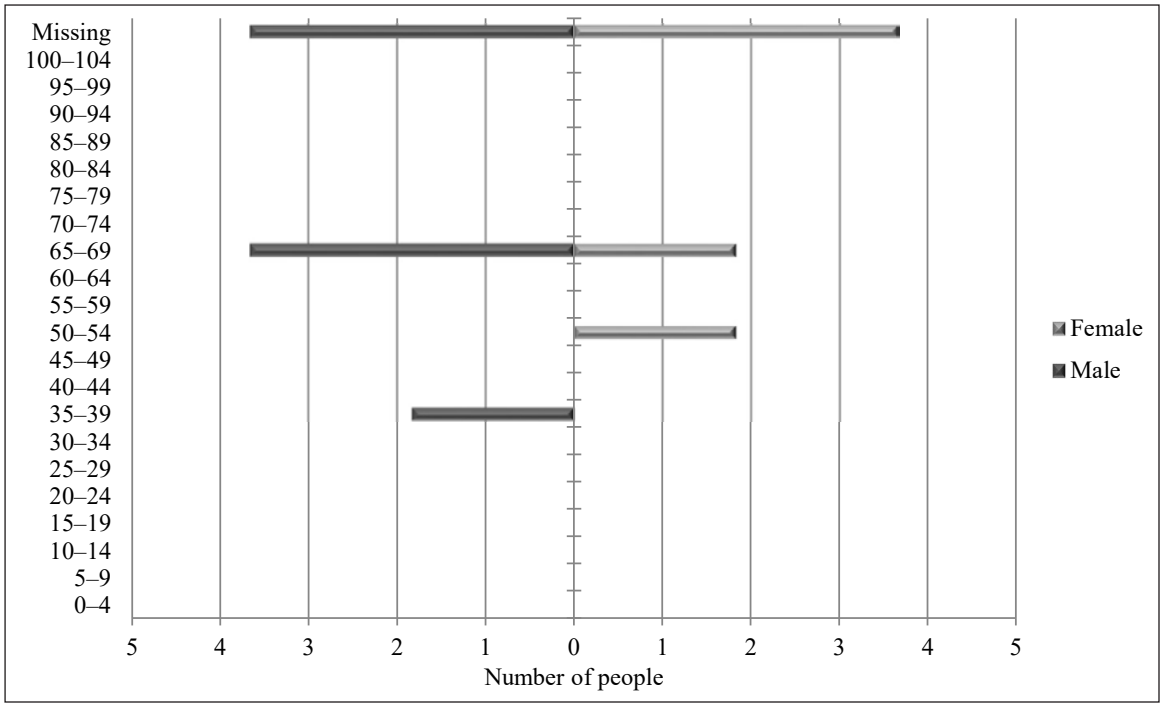

Figure 2-3.–Population profile, Birch Creek, 2018.

Table 2-2.–Sample and demographic characteristics, Birch Creek, 2018.

Characteristics	Community Birch Creek
Sampled households	6
Eligible households	11
Percentage sampled	54.5%
Sampled population	9
Estimated community population	16.5
Household size	
Mean	1.5
Minimum	1.0
Maximum	2.0
Age	
Mean	58.6
Minimum[a]	39
Maximum	68
Median	65.0
Length of residency	
Total population	
Mean	47.4
Minimum[a]	14
Maximum	65
Heads of household	
Mean	47.4
Minimum[a]	14
Maximum	65
Alaska Native	
Estimated households[b]	
Number	11.0
Percentage	100.0%
Estimated population	
Number	16.5
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2019.

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

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

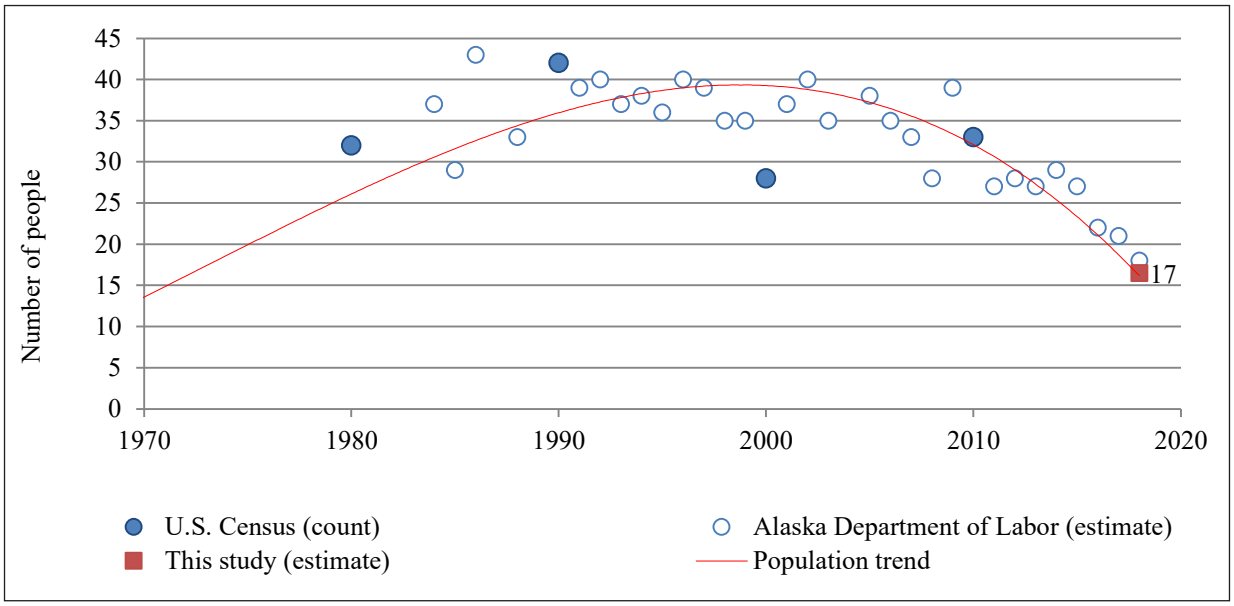

Figure 2-4.–Population estimates, Birch Creek, 1980–2018.

Figure 2-4 shows historical population estimates between 1980 and 2018. The figure shows decadal counts from the U.S. Census Bureau, annual estimates the Alaska Department of Labor, and this study's estimate for 2018. With the exception of decennial U.S. census years, the Alaska Department of Labor estimates the population annually. The population of Birch Creek has decreased gradually since a peak of an estimated 43 residents in 1986; the current estimate of 17 residents is the lowest recorded estimate. In 2010, the U.S. Census Bureau counted 33 residents in Birch Creek (Table 2-1), suggesting that the population has decreased by half between the last census and the current study.

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 other income (e.g., Alaska Permanent Fund dividend, Social Security). The survey also asked about months worked and work schedules for employed residents in 2018. In 2018, Birch Creek households earned or received an estimated $97,840 with an average household income of $8,895 (Table 2-3). The estimated median income for Birch Creek households is far less than the estimated median household income for the state of Alaska (Table 2-4). Of the total community income, $32,267 (33%) was from employment, and $65,573 (67%) was from other sources.

Employment with local government was the only earned income source and the most significant income source for Birch Creek in 2018. It provided 33% of all income to the community (Table 2-3; Figure 2-5). Other contributions to the community's income came from a variety of sources, with significant contributions from the Alaska Permanent Fund dividend (15%), Supplemental Nutrition Assistance Program[3] (13%), and Social Security (12%).

Fifty percent of employed adults worked year-round, and Birch Creek residents were employed for an average of four months in 2018 (Table 1-4). Half of all jobs were full time and half were part time (Table D2-4). An estimated seven adults (44%) were employed an average of eight months in 2018 (Table D2-5). At least one employed adult lived in 50% of households.

3. Cash equivalent benefits for assistance with food purchases that are issued to qualifying households originate from the Supplemental Nutrition Assistance Program (SNAP), a program funded by the U.S. Department of Agriculture and administered by the State of Alaska. These benefits are commonly referred to as food stamps.

Table 2-3.–Estimated earned and other income, Birch Creek, 2018.

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	7.3	5.5	$32,267	$2,200 – $68,200	$2,933	33.0%
Earned income subtotal	**7.3**	**5.5**	**$32,267**	**$2,200 – $68,200**	**$2,933**	**33.0%**
Other income						
Alaska Permanent Fund dividend		7.3	$14,667	$2,933 – $20,533	$1,333	15.0%
SNAP (Supplemental Nutrition Assistance Program)		5.5	$12,540	$55 – $33,440	$1,140	12.8%
Social Security		1.8	$12,100	$6,600 – $24,200	$1,100	12.4%
Native corporation dividend		7.3	$11,820	$2,415 – $25,782	$1,075	12.1%
Supplemental Security Income		1.8	$5,500	$3,000 – $11,000	$500	5.6%
Alaska longevity bonus		3.7	$5,280	$2,880 – $13,200	$480	5.4%
Fuel voucher		3.7	$3,667	$2,000 – $7,333	$333	3.7%
TANF (Temporary Assistance for Needy Families)		0.0	$0	$0 – $0	$0	0.0%
Adult public assistance (OAA, APD)		0.0	$0	$0 – $0	$0	0.0%
Heating assistance		0.0	$0	$0 – $0	$0	0.0%
Pension / retirement		0.0	$0	$0 – $0	$0	0.0%
Worker's compensation / insurance		0.0	$0	$0 – $0	$0	0.0%
Unemployment insurance		0.0	$0	$0 – $0	$0	0.0%
Disability		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%
Foster care		0.0	$0	$0 – $0	$0	0.0%
Meeting honoraria		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**0.0**	**$65,573**	**$11,215 – $145,831**	**$5,961**	**67.0%**
Community income total			**$97,840**	**$49,571 – $192,044**	**$8,895**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2019.

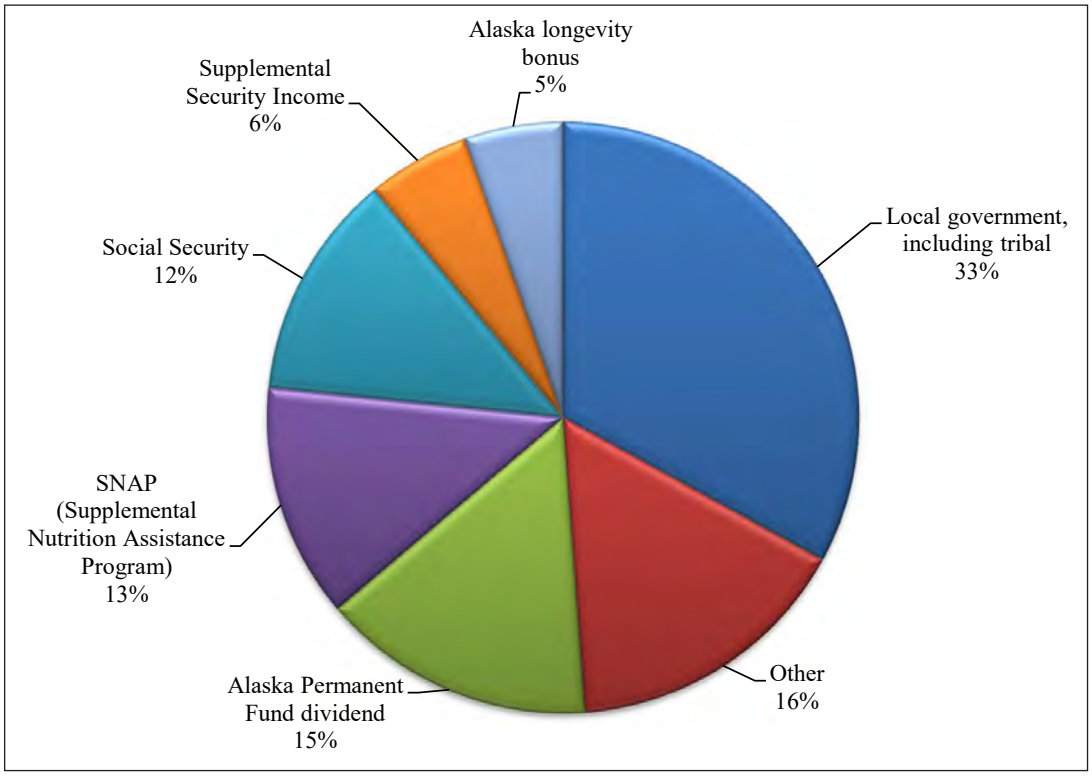

Figure 2-5.–Top income sources, Birch Creek, 2018.

Table 2-4.–Comparison of median income estimates, Birch Creek, 2018.

Data source	Median[a]	Range[b,c]
2018 Division of Subsistence estimate	$3,800	$2,039 – $12,704
2014–2018 ACS (Birch Creek City)[d]	N/A	N/A
2014–2018 ACS (All Alaska)	$74,346	$72,058 – $76,634

Sources ADF&G Division of Subsistence household surveys, 2019, for 2018 estimate; U.S. Census Bureau for American Community Survey (ACS) 5-year survey estimate.

a. Division of Subsistence 2018 estimate does not include categories of income excluded by the 2014–2018 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.

d. ACS 5-year estimates are not available for Birch Creek for 2014–2018.

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 divided 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 Birch Creek residents are summarized in Figure 2-6. Eight of the ten statements listed in the figure are used to calculate a household's food security. Seventeen percent of responding households worried that they would not have enough food, and 17% lacked resources that they needed to get food, such as equipment, transportation, or money. Forty 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. Thirty-three percent of households reported that their food, either store-bought or subsistence, ran out and they were unable to get more. Finally, one household (17%) reported not eating for an entire day in 2018 because they did not have enough food.

Food security results for surveys for Birch Creek, the state of Alaska, and the United States are summarized in Figure 2-7. Eighty-three percent of Birch Creek households experienced high and marginal food security in 2018; less than the state of Alaska (89%), and the United States (89%). No Birch Creek households fell into the low food security category, and one household (17%) experienced very low food security.

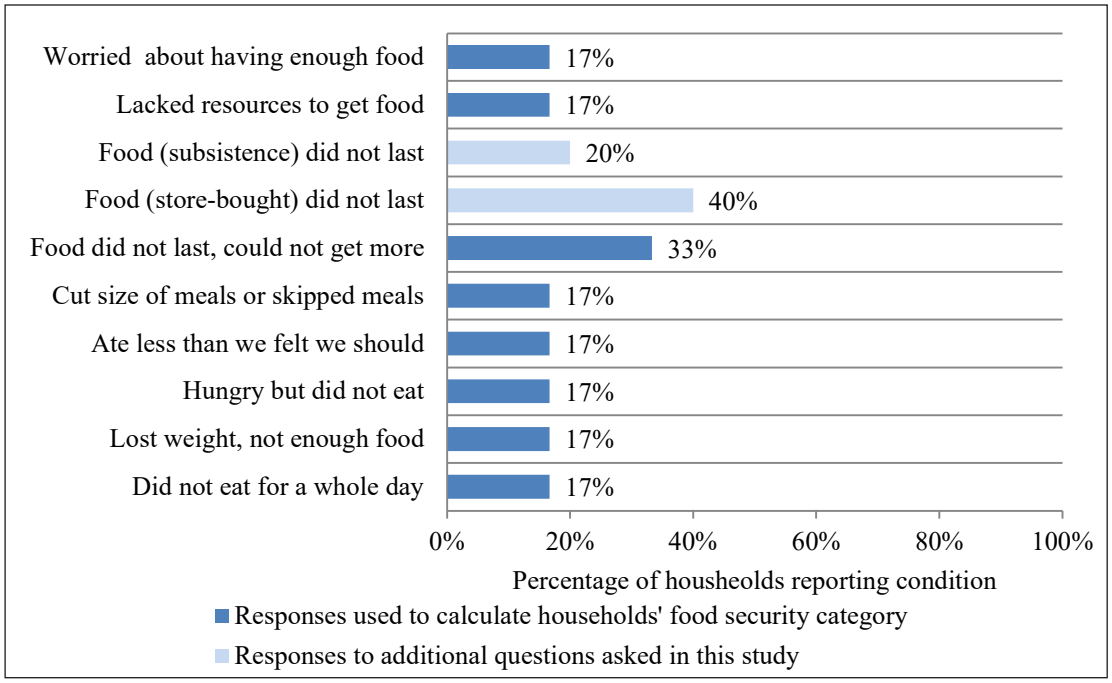

Figure 2-6.–Responses to questions about food insecure conditions, Birch Creek, 2018.

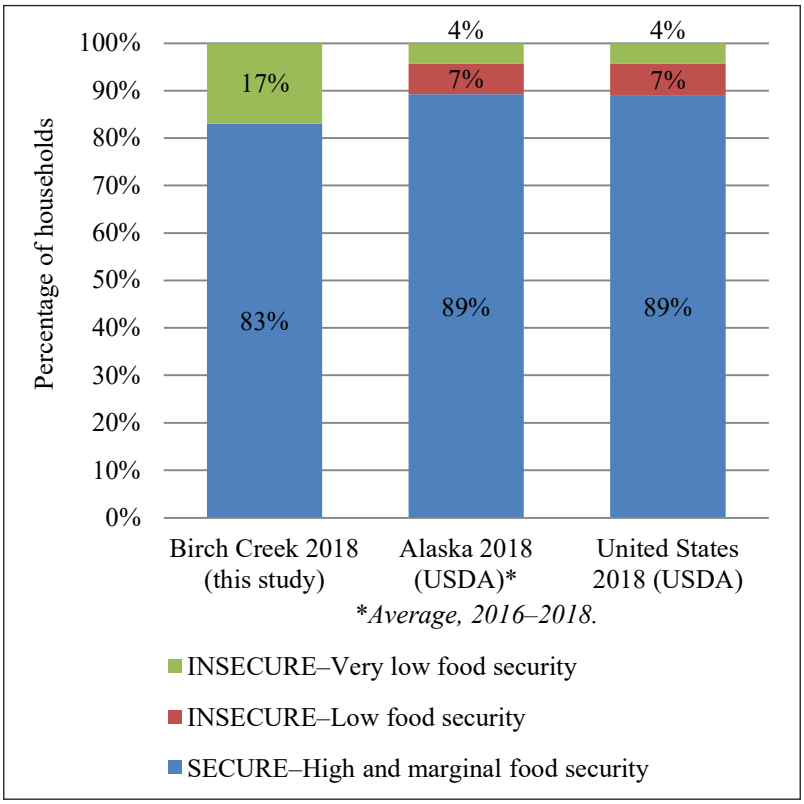

Figure 2-7.–Comparison of food security categories, Birch Creek, Alaska, and United States, 2018.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Table 2-5 reports the levels of individual participation in the harvest and processing of wild resources by all Birch Creek residents in 2018. Seventy-one percent harvested some wild resource and 86% participated in processing a resource. Seventy-one percent of individuals harvested vegetation, and 43% harvested small land mammals. Seventy-one percent of individuals processed small land mammals, and 57% participated in processing large land mammals. No one fished in the study year, but 29% processed fish.

Harvest and Use of Wild Resources at the Household Level

Figure 2-8 shows by resource category the percentages of Birch Creek households that used wild resources, attempted to harvest, and harvested wild foods during the 2018 study year. One hundred percent of surveyed Birch Creek households reported using vegetation. Eighty-three percent utilized large land mammals. Sixty-seven percent of households used resources in the small land mammals and birds and eggs categories. Only 50% of households used salmon, and no households reported using nonsalmon fish in 2018.

Sixty-seven percent of households harvested vegetation: more than any other resource category. Fifty percent of households hunted large land mammals, 50% hunted or trapped small land mammals, and 50% hunted birds. No households reported attempting to harvest salmon or nonsalmon fish. All households that reported attemping to harvest a resource category were successful in harvesting a resource in that category. This 100% success rate is unusual particularly in the large land mammal category where locating and harvesting an animal can be difficult. However, all Birch Creek residents who hunted for moose in 2018 were successful. In part, the high success rate reflects the small size of the community.

Table 2-6 summarizes resource harvest and use characteristics for Birch Creek in 2018 at the household level. The average harvest was 288 lb usable weight per household, 192 lb per capita. During the study year, community households harvested an average of four different resources and used an average of seven resources. The maximum number of resources used by any household was 12. Households received an average of three resources and gave away an average of two different resources.

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 2-9, 33% of the community's households harvested about 67% of wild resources, as estimated in pounds usable weight in 2018. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Birch Creek.

Table 2-5.–Individual participation in subsistence harvesting and processing activities, Birch Creek, 2018.

Total number of people	**16.5**
Fish	
Fish	
Number	0.0
Percentage	0.0%
Process	
Number	4.7
Percentage	28.6%
Large land mammals	
Hunt	
Number	4.7
Percentage	28.6%
Process	
Number	9.4
Percentage	57.1%
Small land mammals	
Hunt or trap	
Number	7.1
Percentage	42.9%
Process	
Number	11.8
Percentage	71.4%

-continued-

Table 2-5.–Continued.

Birds and eggs	
Hunt/gather	
Number	4.7
Percentage	28.6%
Process	
Number	7.1
Percentage	42.9%
Vegetation	
Gather	
Number	11.8
Percentage	71.4%
Process	
Number	7.1
Percentage	42.9%
Any resource	
Attempt harvest	
Number	11.8
Percentage	71.4%
Process	
Number	14.1
Percentage	85.7%

Source ADF&G Division of Subsistence household surveys, 2019.

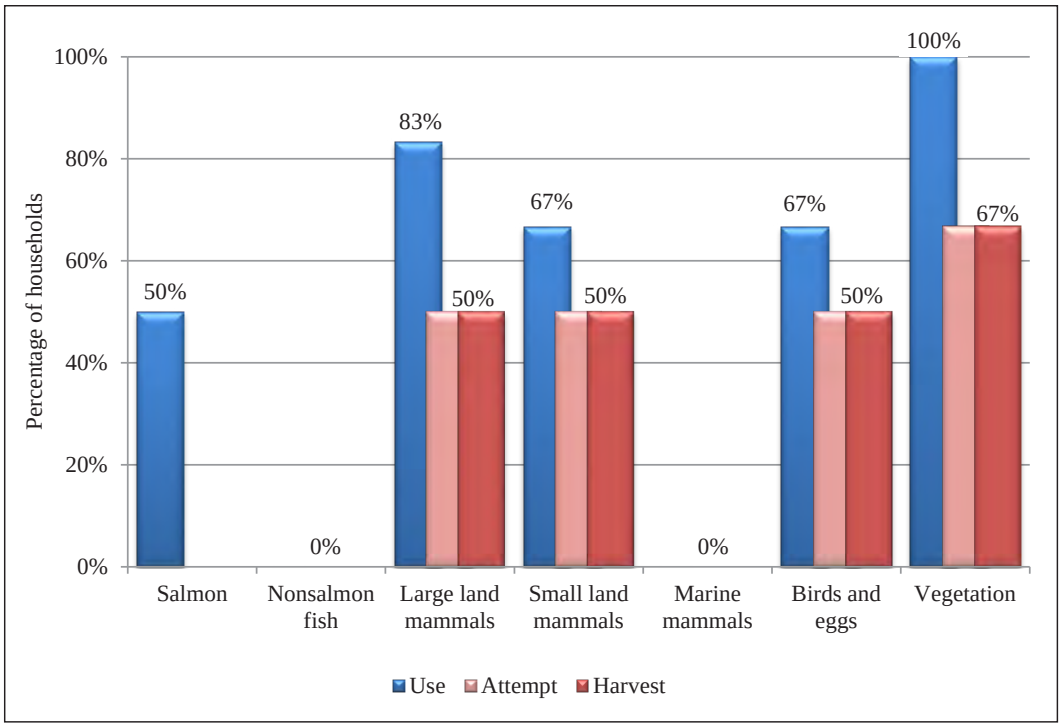

Figure 2-8.–Percentages of households using, attempting to harvest, and harvesting wild resources by category, Birch Creek, 2018.

Table 2-6.–Resource harvest and use characteristics, Birch Creek, 2018.

Characteristic	
Mean number of resources used per household	**6.8**
Minimum	3
Maximum	12
95% confidence limit (±)	36.1%
Median	7.0
Mean number of resources attempted to harvest per household	**4.0**
Minimum	0
Maximum	10
95% confidence limit (±)	68.0%
Median	3.0
Mean number of resources harvested per household	**3.7**
Minimum	0
Maximum	9
95% confidence limit (±)	65.3%
Median	3.0
Mean number of resources received per household	**3.0**
Minimum	0
Maximum	7
95% confidence limit (±)	61.5%
Median	2.5
Mean number of resources given away per household	**2.3**
Minimum	0
Maximum	6
95% confidence limit (±)	62.6%
Median	2.0
Household harvest (pounds)	
Minimum	0
Maximum	589
Mean	288.4
Median	282.3
Total harvest weight (lb)	3,172.5
Community per capita harvest (lb)	192.3
Percentage using any resource	100%
Percentage attempting to harvest any resource	83%
Percentage harvesting any resource	83%
Percentage receiving any resource	83%
Percentage giving away any resource	83%
Number of households in sample	6
Number of resources asked about and identified voluntarily by respondents	107

Source ADF&G Division of Subsistence household surveys, 2019.

Harvest Quantities and Composition

Table 2-7 reports estimated wild resource harvests and uses by Birch Creek residents in 2018 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 factors[4]). 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.

Birch Creek residents harvested 3,173 edible pounds of wild foods for an estimated harvest of 288 lb per household or 192 lb per capita (Table 2-7). Figure 2-10 shows the composition of Birch Creek's harvest by resource category. Large land mammals accounted for nearly all of the total harvest (93%). Each of the remaining resource categories made up much smaller percentages of the harvest: birds and eggs added 3%; vegetation, 2%; and small land mammals, 2%. Sampled households did not report harvesting any salmon or nonsalmon fish in 2018.

Use and Harvest Characteristics by Resource Category

Table 2-8 lists the top resources used by Birch Creek households in 2018. Moose was the most used resource (83% of households). Half of all surveyed households used Chinook salmon, snowshoe hare, white-fronted goose, and lowbush cranberry. One third of households used fall chum salmon, mallard, black scoter, teals,

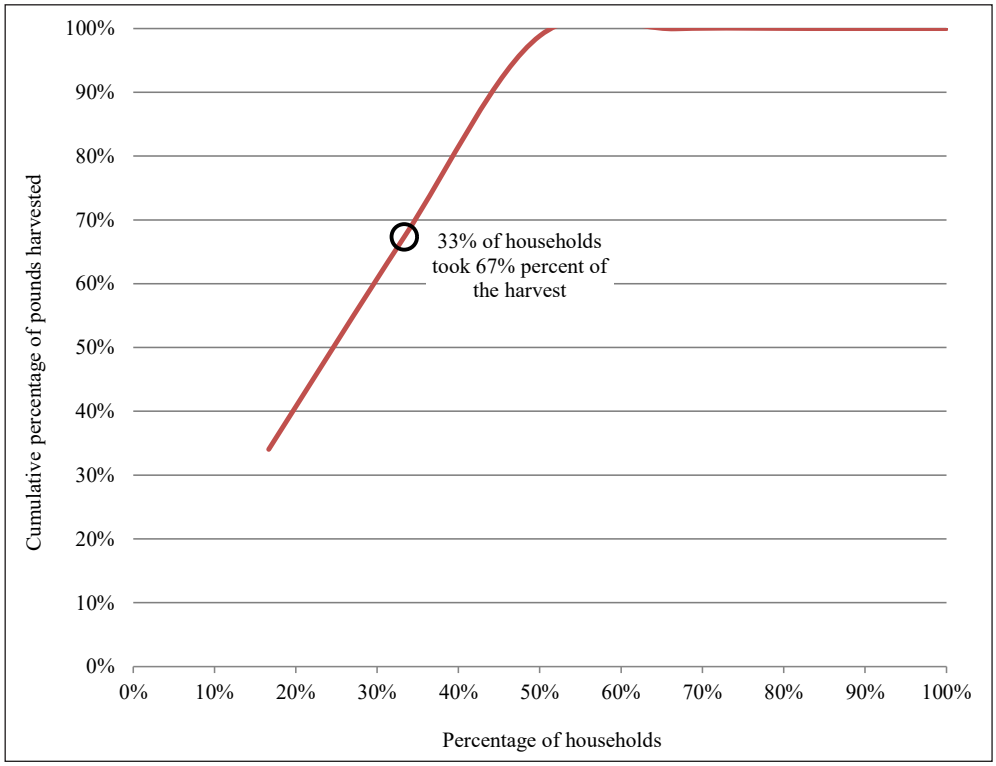

Figure 2-9.–Household specialization, Birch Creek, 2018.

4. 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 2-7.–Estimated harvest and use of wild resources, Birch Creek, 2018.

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**	**83.3**	**83.3**	**83.3**	**83.3**	**3,172.5**	**288.4**	**192.3**	**3,172.5**	**lb**	**288.4**	**75.9**
Salmon	**50.0**	**0.0**	**0.0**	**50.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**0.0**	**0.0**
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	33.3	0.0	0.0	33.3	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	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
Nonsalmon fish	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**0.0**	**0.0**
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
Smelts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
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

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Table 2-7.–Page 2 of 4.

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												
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
Large land mammals	**83.3**	**50.0**	**50.0**	**50.0**	**50.0**	**2,959.0**	**269.0**	**179.3**	**2,959.0**	**lb**	**269.0**	**77.5**
Black bear	16.7	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	16.7	0.0	0.0	16.7	0.0	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	83.3	50.0	50.0	33.3	50.0	2,959.0	269.0	179.3	5.5	ind	0.5	77.5
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	**66.7**	**50.0**	**50.0**	**33.3**	**16.7**	**68.8**	**6.3**	**4.2**	**68.8**	**lb**	**6.3**	**136.0**
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	50.0	33.3	33.3	16.7	16.7	68.8	6.3	4.2	45.8	ind	4.2	136.0
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	16.7	0.0	0.0	16.7	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	16.7	16.7	16.7	0.0	0.0	0.0	0.0	0.0	55.0	ind	5.0	173.3
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
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
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

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Table 2-7.–Page 3 of 4.

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												
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
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	**66.7**	**50.0**	**50.0**	**16.7**	**16.7**	**83.4**	**7.6**	**5.1**	**83.4**	**lb**	**7.6**	**129.4**
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	16.7	16.7	16.7	0.0	16.7	3.2	0.3	0.2	1.8	ind	0.2	173.3
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	33.3	33.3	33.3	0.0	16.7	17.7	1.6	1.1	11.0	ind	1.0	141.5
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	16.7	16.7	16.7	0.0	0.0	4.3	0.4	0.3	3.7	ind	0.3	173.3
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	33.3	16.7	16.7	16.7	0.0	27.7	2.5	1.7	18.3	ind	1.7	173.3
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
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
Teals	33.3	33.3	33.3	0.0	16.7	2.6	0.2	0.2	5.5	ind	0.5	118.4
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/cackling geese	33.3	16.7	16.7	16.7	0.0	10.4	0.9	0.6	3.7	ind	0.3	173.3
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	50.0	50.0	50.0	0.0	16.7	17.5	1.6	1.1	5.5	ind	0.5	77.5
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
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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

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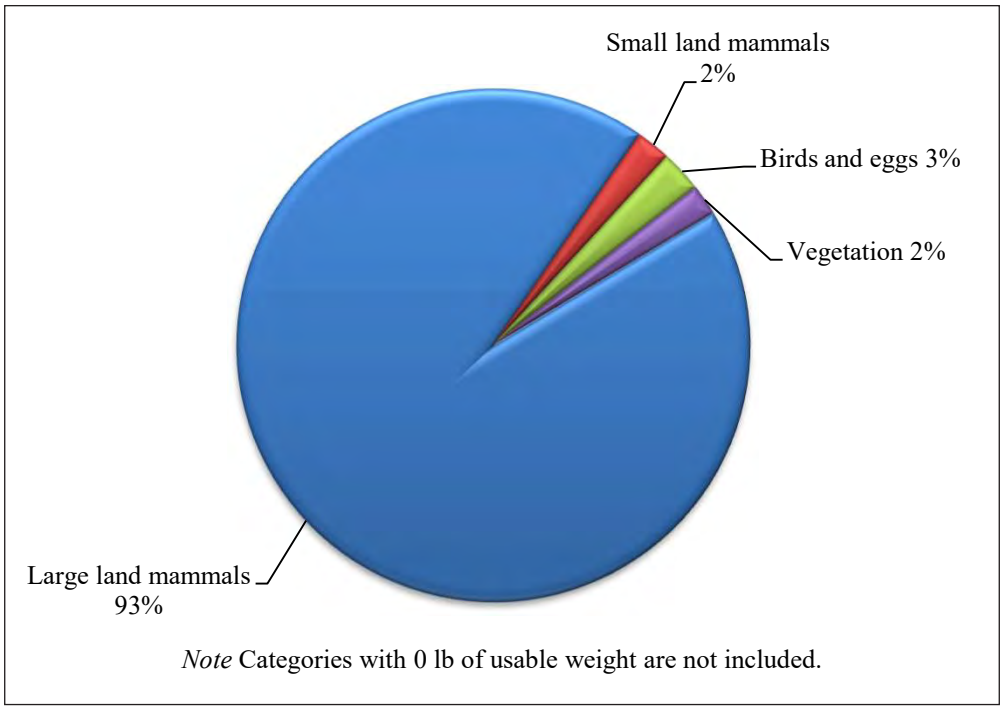
Table 2-7.–Page 4 of 4.

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 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
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
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**	**66.7**	**66.7**	**66.7**	**83.3**	**61.4**	**5.6**	**3.7**	**61.4**	**lb**	**5.6**	**87.5**
Blueberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Lowbush cranberry	50.0	50.0	50.0	16.7	16.7	37.6	3.4	2.3	9.4	gal	0.9	108.9
Highbush cranberry	16.7	16.7	16.7	0.0	0.0	14.7	1.3	0.9	3.7	gal	0.3	173.3
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
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
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	16.7	16.7	16.7	0.0	0.0	9.2	0.8	0.6	9.2	gal	0.8	173.3
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
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	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	100.0	33.3	0.0	66.7	83.3	0.0	0.0	0.0	0.0	lb	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2019.

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 wight. Harvest weight is not calculated for species harvested but not eaten.



Note Categories with 0 lb of usable weight are not included.

Figure 2-10.–Composition of harvest by percentage of harvest weight, by resource category, Birch Creek, 2018.

Table 2-8.–Top ranked resources used by households, Birch Creek, 2018.

Rank[a]	Resource	Percentage of households using
1.	Moose	83.3%
2.	Chinook salmon	50.0%
2.	Snowshoe hare	50.0%
2.	White-fronted goose	50.0%
2.	Lowbush cranberry	50.0%
6.	Fall chum salmon	33.3%
6.	Mallard	33.3%
6.	Black scoter	33.3%
6.	Teals	33.3%
6.	Canada/cackling geese	33.3%

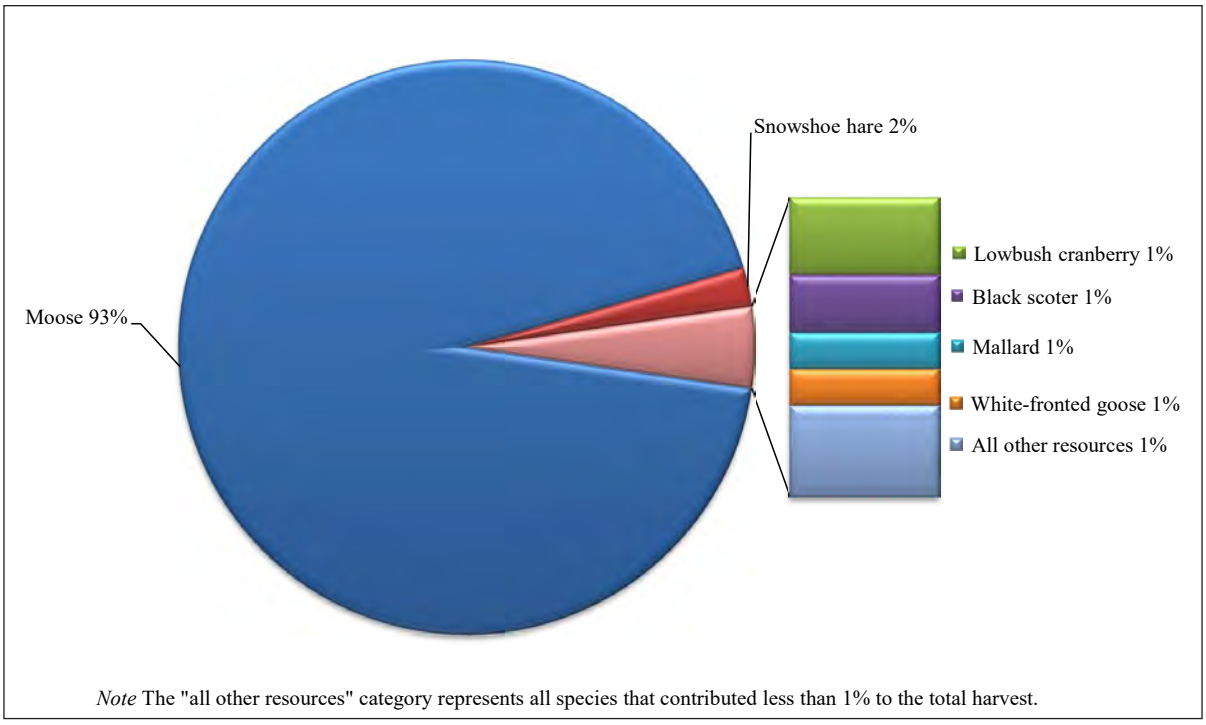
Source ADF&G Division of Subsistence household surveys, 2019.
a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.

and Canada goose. Figure 2-11 shows the species with the highest harvests during the 2018 study year. Moose was by far the most harvested resource (93% of the total harvest). Snowshoe hare accounted for 2% of the harvest, and a variety of other resources each made up 1% or less of the remaining harvest.

Salmon

No salmon were harvested by any surveyed households in 2018. However, key respondents indicated that in other recent years a Birch Creek fisher has boated to the Yukon River to harvest Chinook salmon to share with the community. Fishers typically target Chinook salmon, but they will also keep other salmon that are incidentally harvested in their gillnets: "Just what you catch you bring home, that's all" (02012020KBC7).

A key respondent explained that the cost of the gasoline required to travel from Birch Creek to the Yukon River, a trip that covers over 70 river miles in each direction, can be prohibitive: "Present day, a lot of people have to save up money to go from Birch Creek with a boat either up- or downriver to the Yukon depending on where their camp is" (01302020KBC4). Another key respondent said that low water on Birch Creek can make it difficult to travel, which can prevent Birch Creek fishers from accessing the Yukon River: "Yeah, once in a while people go down there if they got gas or if the water is good. The water is pretty low in July" (02012020KBC6). Low water on Birch Creek can also limit the amount of salmon that fishers can transport back to the community: "You just have to estimate how much load you have in order to bring it back. If you have too much load then you're just going to have to walk your boat" (02012020KBC5). A final difficulty arises from the amount of time it takes to return to Birch Creek from the Yukon River. Fishers must set up a fish camp and dry the salmon to preserve them and prevent spoilage on the long trip home: "…they have to dry it down there in order to bring it back" (02012020KBC5); "They can't take it to a freezer quick enough. That's a long haul on the river" (02012020KBC7). Some Birch Creek residents avoid the expense and difficulty of boating to the Yukon River by flying to Fort Yukon to help relatives in that community maintain their fish camps in exchange for a share of salmon (02062019KBC1; 02012020KBC5).



Note The "all other resources" category represents all species that contributed less than 1% to the total harvest.

Figure 2-11.–Top resources harvested by percentage of total harvest weight, Birch Creek, 2018.

A key respondent described a plan to make Chinook salmon fishing more accessible to the community by making it a tribal effort:

> It's something that we want to try bring back and make it more obtainable…What our tribe wants to do is make a fish camp for tribal members this summer. So we cleared the camp on the Yukon, hopefully get tribal members into Birch Creek and we'll do that for a week or something. (02012020KBC5)

Half of surveyed households reported receiving Chinook salmon, and a third of households received fall chum salmon. One key respondent explained that although few residents are likely to fish for salmon in a given year, those who do harvest salmon typically distribute them throughout the community: "That's not fishing, but it's a way of, you know, they share with us and they say to share with the community too. So that's exactly what I do throughout the year" (02012020KBC5).

Nonsalmon Fish

No surveyed households reported fishing for or using nonsalmon fish in 2018. However, a key respondent pointed out that nonsalmon fish have always been very important to the community because salmon are not available locally:

> …lot of people used to drop nets. And we would survive, since we're not close to the Yukon for king salmon. We'd eat pike, sheefish, lush…grayling, basically a lot of variety of fish…They would just get pike all summer, dry it just like king salmon, and live off of that in the winter. (01302020KBC4)

Another key respondent described their experiences harvesting nonsalmon fish using a spear in conjuction with a fish fence built across Birch Creek: "Oh, yeah, use it for everything [spear]…We made a dam all the way across the river here up around the bend. And before school five o'clock in the morning we run up there and spear fish" (02062019KBC1). This practice has since been made illegal:

> Yeah, they make law about that…They tell you, you make dam across, you got to leave one end open so the fish will go through. This dam we made, it's not closed. It just willows down there like that. They can go through any time…You got to let some of the fish go on by. (02062019KBC1)

Key respondents also indicated that in a typical recent year some residents may catch several different species of nonsalmon fish in Birch Creek including whitefishes, pike, burbot, grayling, sheefish, and longnose sucker. However, the primary species currently available in Birch Creek are humpback whitefish and pike: "Mostly you can find whitefish and pike with a net. And if you go fishing with a pole you can get a lot of pike. 'Cause we'll do that in the summer" (01302020KBC4). Several key respondents voiced concerns that pike are far more abundant in Birch Creek than in the past and that their abundance may be limiting the populations of other nonsalmon species:

> Sometimes we'll put up a little net at one of the sloughs for whitefish…But there's so many pike in the area. Pike are overrunning that river…We would prefer more whitefish and stuff like that, but the pike eat all the whitefish too. (01212020KBC3)

Large Land Mammals

Birch Creek residents harvested an estimated six moose in 2018, amounting to 2,959 edible pounds (179 lb per capita; Table 2-7). All moose were harvested in September and all were bulls (Table D2-6). Fifty percent of households reported hunting for moose, 50% of all households successfully harvested a moose, and 50% of all households shared moose with other households (Table 2-7). One third of all Birch Creek households reported receiving moose meat from another household in 2018. Surveyed households did not report hunting any other large land mammals; however, one household (17%) reported receiving caribou, and one household received black bear. Large land mammal search and harvest locations included a section

of the trail leading from Birch Creek north to Fort Yukon, as well as along the lower mouth of Birch Creek upstream from the community.[5]

Key respondents indicated that the moose population on Birch Creek has been healthy lately and hunters are often able to harvest moose on Birch Creek near the community: "Yeah, upriver, downriver…some people have gotten moose right upriver really close. And I know if you go towards, if you're going into Twin Island there's been moose on that slough" (01302020KBC4). Hunters typically do not have to travel to the Yukon River to hunt moose.

Key respondents also explained that moose hunting can be a community event during which many moose hunters travel together to save money on gasoline or to provide transportation for hunters without a boat: "[Birch Creek resident] always makes sure that he gets a moose and he brings people who has a permit out to get a moose as well…There's always a good boatful" (01302020KBC4). This respondent explained that moose hunters always distribute portions of their harvest to others in the community:

> Because our community, a lot of people are older, some people don't go out very much…So when we do get a moose we actually distribute it. Certain parts go to certain people. Like the valued parts go to the older people. Some of the prized parts is the backstrap, kidney fat. There's two places in the moose to get fat, but the kidney fat is better. Then there's rump fat. And then, what else, the head definitely, and the legs because of the marrow…That's really normal. Everybody who gets a moose distributes it. (01302020KBC4)

No signicant caribou harvest has been reported near Birch Creek since 1940; however, trappers have opportunistically harvested caribou in the White Mountains since then (Caulfield 1979). One key respondent believes that caribou changed their migration patterns because brush and trees have grown in the region and replaced the caribou's preferred open habitat: "Way back in 1920s and '30s. Before everything grew. There's no food around here for them. There's no caribou food. They used to migrate through there. They don't do that no more" (02012020KBC7).

Key respondents indicated that most residents do not target bears; however, residents do occasionally harvest opportuntistically: "If we see it, if we see a chance. We don't hunt them" (02012020KBC7). People may also take bears when they become a nuisance close to town:

> Oh, yeah, we shoot bears. When there's too many of them, yeah. Get rid of them. Yeah, if there's too many they tend to come to the village and...They'll even come to the door and try to push your door in. Push on your window. (02012020KBC6)

Key respondents also said that although some people may eat bear meat, residents often use it for dog food or trapping bait: "Some people do [eat black bear]. Mostly dry it for dogs" (02012020KBC6), and "We don't eat bear. We use it for bait" (01302020KBC4).

Small Land Mammals/Furbearers

Birch Creek residents harvested an estimated 69 edible pounds of small land mammals (4 lb per capita) (Table 2-7). Three surveyed Birch Creek households (50%) reported hunting for small land mammals and all of them were successful. Forty-six snowshoe hares harvested in November accounted for all 69 lb of the small mammals used for human consumption (Table D2-7; Figure 2-12). One surveyed household harvested 55 red squirrels between May and July to feed to their dogs (Table D2-7), and one surveyed household received a lynx from another household (Table 2-7).[6] Respondents reported harvesting small land mammals close to the community.[7]

5. A map depicting 2018 large land mammal search and harvest areas has not been included in this report in order to preserve the confidentiality of the two households that provided mapping data for this resource category.

6. Survey notes, February 2019.

7. A map depicting 2018 small land mammal search and harvest areas has not been included in this report in order to preserve the confidentiality of the three households that provided mapping data for this resource category.

Though no surveyed households reported significant targeting of furbearers, key respondents indicated that furbearer trapping may take place in any given year and likely results in the harvesting of lynx, muskrat, and beaver. One key respondent has seen an increase in the number of river otters in the area: "I started seeing signs of them like a few years ago. I can see them swimming around. See them on land sometime" (02012020KBC6). This key respondent also reported a reduction in muskrat numbers which he believes is correlated to the increased presence of river otters: "No muskrat around. Yeah, a few years ago I was trying to set muskrat traps and I noticed this otter was into the muskrat houses and eating those muskrat" (02012020KBC6).

Marine Mammals

No surveyed households reported using or attempting to harvest any marine mammals.

Birds and Eggs

Birch Creek residents harvested seven different kinds of birds totaling 83 lb (5 lb per capita) in 2018 (Table 2-7). Three surveyed households (50%) harvested birds and four (68%) used them. Migratory waterfowl accounted for the entire bird harvest: surveyed households did not report harvesting any upland game birds or bird eggs. All birds were harvested in the spring (Table D2-8). Figure 2-13 shows the composition of the bird harvest by percentage of edible weight. Black scoter accounted for 33% of the bird harvest, followed by mallard and white-fronted goose (21% each) and Canada goose (13%). The remainder of the harvest consisted of canvasback (4%), northern pintail (5%), and teals (3%). Respondents reported hunting ducks and geese in a small area a few miles north of the community as well as in an area on the lower mouth of Birch Creek upstream from the community.[8]

A key respondent explained that some people prefer the taste of black scoters: "Yeah, the black ducks and then I know there's other ducks, but, like mallards and stuff. I think the black ducks taste the best, though. I think that's the vote on ducks" (01212020KBC3). Another key respondent said that black scoters have become more difficult to harvest because nearby lakes that they once frequented are now dry.

Key respondents also described variation in the availability of migratory birds, depending on the timing of spring breakup: "It depends on the snow and whether it thaws out early or late" (02012020KBC6). Years of late Yukon River breakup may be better for waterfowl hunting around Birch Creek: "There was a lot of birds last year because the Yukon didn't go out for a long time. And all the geese stuck around Birch Creek for a while. Until the Yukon went out and they all took off after that" (02012020KBC6).

Marine Invertebrates

No surveyed households reported using or attempting to harvest any marine invertebrates.

Vegetation

Birch Creek residents harvested an estimated 61 lb (4 lb per capita) of vegetation in 2018 (Table 2-7). One-hundred percent of households used vegetation and 67% harvested it. Fifty percent ofhouseholds harvested 9 gallons (38 lb) of lowbush cranberries, 17% harvested 4 gallons (15 lb) of highbush cranberries, and 17% gathered 9 gallons (9 lb) of Hudson's Bay tea (Table 2-7). Figure 2-14 shows the composition of the edible vegetation harvest by percentage of edible weight. Respondents reported gathering vegetation in a few small areas several miles north of the community.[9] All surveyed Birch Creek households used firewood for home heating, and 33% of households harvested firewood (tables 2-7 and D2-9). Firewood harvest locations included an area on the lower mouth of Birch Creek downstream from the community.[10]

8. A map depicting 2018 ducks and geese search and harvest areas has not been included in this report in order to preserve the confidentiality of the two households that provided mapping data for this resource category.
9. A map depicting 2018 vegetation search and harvest areas has not been included in this report in order to preserve the confidentiality of the two households that provided mapping data for this resource category.
10. A map depicting 2018 firewood search and harvest areas has not been included in this report in order to preserve the confidentiality of the two households that provided mapping data for this resource category.

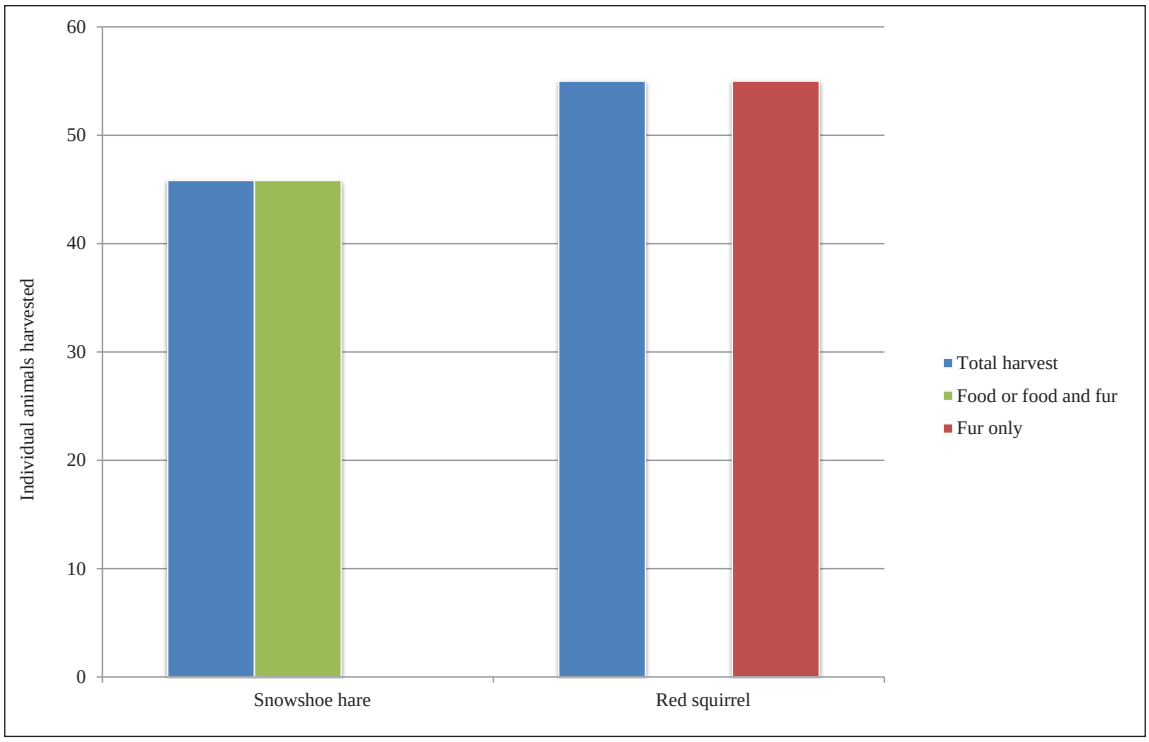


Figure 2-12.–Estimated small land mammal harvests for fur or food, Birch Creek, 2018.

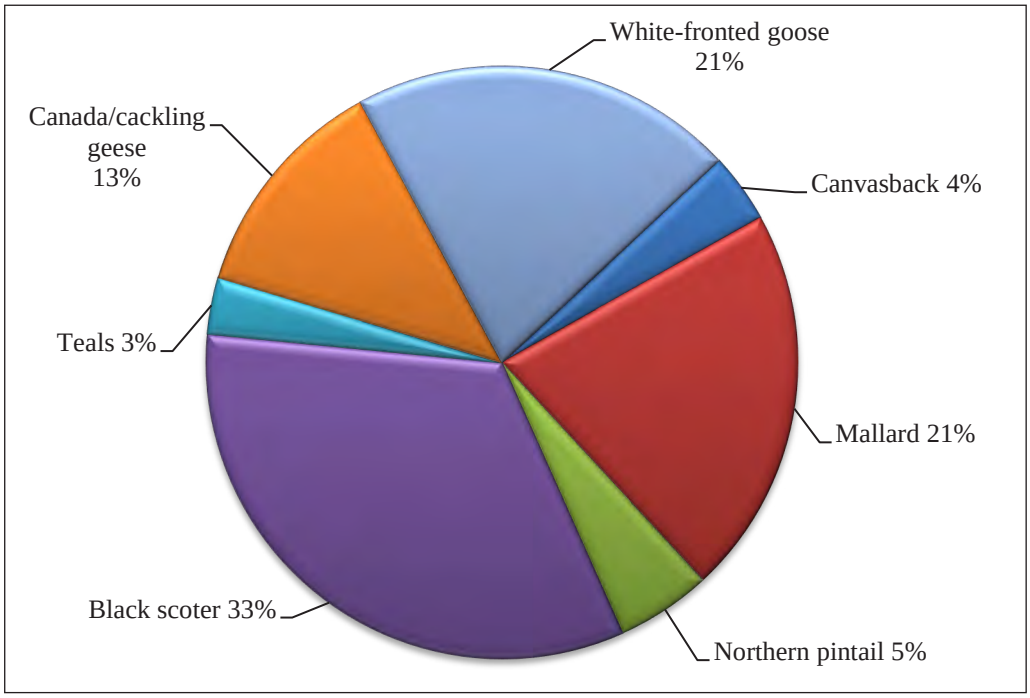


Figure 2-13.–Composition of bird harvest by percentage of harvest weight, Birch Creek, 2018.

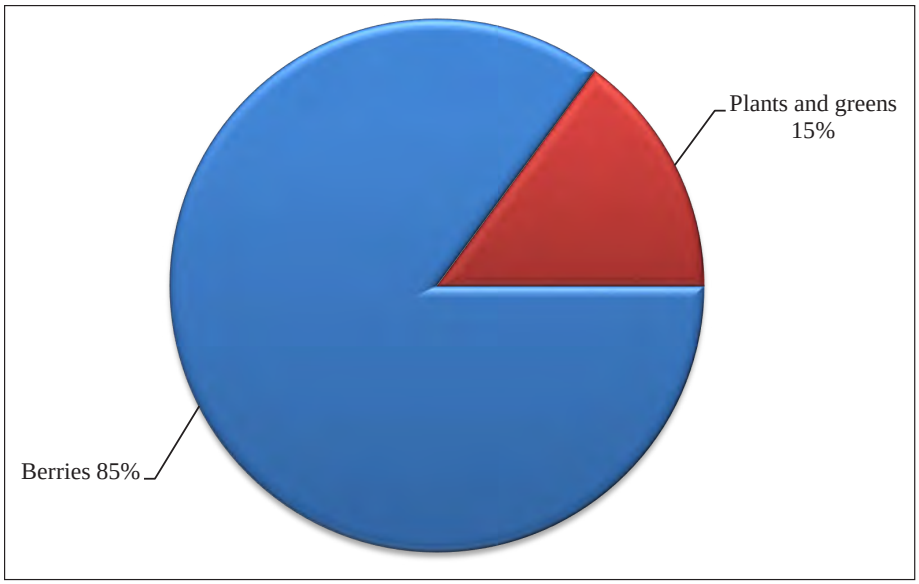


Figure 2-14.–Composition of vegetation harvest by percentage of harvest weight, by type, Birch Creek, 2018.

Several respondents described the area around Birch Creek as excellent lowbush cranberry habitat: "… we're really good for cranberries, lowbush…Fort Yukon you'd have to go like really far away, or they can't find it, or they're just not as big as Birch Creek" (01302020KBC4). One key respondent said that raspberries have just recently started to grow in the area: "Raspberries started to grow over there too. They started a few years ago…Not as big as around here [Fairbanks], but a pretty good size, though" (02012020KBC6).

Finally, key respondents described a few other vegetation resources, including rosehips and spruce pitch, that tend to be utilized, but were not reported as harvested by any surveyed households in 2018:

> Pitch…we used it in the winter when we were sick. You get a whole can of water, you put it in a can 'cause it gets really sticky when you boil it and it will ruin whatever you are boiling it in, so we had like a coffee can, water, put a handful of pitch in there. And you drink it. It's like yellow water basically. And it's supposed to be good for your cold. (01302020KBC4)

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.

Several survey and key respondents voiced concerns about hunters from other communities harvesting animals, primarily moose, near Birch Creek. These hunters tend to come from nearby community of Fort Yukon as well as from communities on the road system such as Fairbanks. Some respondents believe that access to the land immediately adjacent to the community should be limited: "We've got to have some kind of boundaries. We can't just have people coming from other villages harvest all our wildlife" (01212020KBC3). Other respondents felt that outside hunters should at least communicate with the community if they are going to hunt nearby:

> I mean they should say "Hey, I got this permit to hunt," or something like that. They should say what they're doing and explain what they're doing…And talk to the villagers and say "Hey I'm doing this. Do you mind if I do this? Do you mind if I go here?"…"If I find one I'll bring some back for you guys," or something like that. I mean that's how they used to probably do it. (02012020KBC5)

The majority of other comments focused on changes to the climate and environment. Some key respondents talked about lakes drying in the region:

> If you're in a plane and you're looking across, whenever you're going from Fairbanks to Birch Creek to Fort Yukon and all around, you could look at all those lakes and all the lakes, even the big lakes are getting smaller. And some are no longer a lake. They're just grown over. (02012020KBC5)

Another key respondent voiced concern about lack of precipitation compared to the past:

> We don't see no rain, no more rain nowadays. It doesn't rain like it used to back in the heydays. It would pour down for almost one week back in the '60s and '50s and '40s, way back, but it's not like that no more. Just mostly drought all summer. Maybe just rain once in a while, we see one downpour, maybe one or two days that's all we see. Drizzle here and there. That's not rain. (02012020KBC7)

Finally, some respondents indicated that they are concerned about a great increase in the number of beavers in the region compared to recent decades. Beaver dams across sloughs and small streams can prevent access to hunting and fishing areas that were used in the past: "Blocking up…slough after slough after slough. More than ever. When we go back there we're gonna have to clear it ourselves. With something" (02012020KBC5).

3. DISCUSSION AND CONCLUSIONS

Jeff Park and Alida Trainor

This report described the contemporary subsistence uses of wild resources by Birch Creek residents. The information gathered will serve as a baseline to assess future changes in harvest patterns and participation in subsistence activities. This chapter presents information gathered through survey questions asking respondents to assess their 2018 subsistence harvest at the household level in comparison to recent years. It also compares harvest data gathered in this study to data from previous research.

Comparing Harvests and Uses in 2018 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 2018 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 3-1 and figures 3-1 and 3-2 provide a broad overview of households' assessments of their harvests in 2018. 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.

Figure 3-1 and Table 3-1 report the percentages of sampled households that reported getting less, the same amount, or more of each resource category in 2018 compared to recent years. Four households (67%) reported using less wild resources in 2018 and two (33%) reported using about the same amount. No households reported using more subsistence resources in 2018 compared to recent years. Due to the low number of responses it is difficult to draw conclusions about resource use in 2018 compared to recent years at the resource category level.

Figure 3-2 shows the percentages of sampled households that reported whether they got enough of each resource category. Two households (33%) reported not getting enough vegetation in 2018. Four households (67%) reported getting enough small land mammals, and three (50%) got enough large land mammals.

Table D3-1 reports the reasons that Birch Creek households used less of each resource category and Table D3-2 reports the reasons households used more of each category compared to recent years. Notable patterns did not emerge in these data due to the small sample and low number of responses provided for each reason.

Survey respondents who answered that they did not get enough of a resource were asked to assess the severity of the resulting impact to their household. Respondents chose either minor, major, severe, or not noticeable

Table 3-1.–Changes in household uses of resources compared to recent years, Birch Creek, 2018.

			Households reporting use									
			Total households		Less		Same		More		Households not using	
Resource category	Sampled households	Valid responses[a]	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**6**	**6**	**6**	**100.0%**	**5**	**83.3%**	**6**	**100.0%**	**1**	**16.7%**		
All resources	6	6	6	100.0%	4	66.7%	2	33.3%	0	0.0%	0	0.0%
Salmon	6	5	2	40.0%	1	20.0%	1	20.0%	0	0.0%	3	60.0%
Nonsalmon fish	6	6	2	33.3%	2	33.3%	0	0.0%	0	0.0%	4	66.7%
Large land mammals	6	6	5	83.3%	3	50.0%	2	33.3%	0	0.0%	1	16.7%
Small land mammals	6	6	4	66.7%	0	0.0%	3	50.0%	1	16.7%	2	33.3%
Marine mammals	6	6	1	16.7%	1	16.7%	0	0.0%	0	0.0%	5	83.3%
Birds	6	5	2	40.0%	1	20.0%	1	20.0%	0	0.0%	3	60.0%
Marine invertebrates	6	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
Vegetation	6	4	3	75.0%	1	25.0%	1	25.0%	1	25.0%	1	25.0%

Source ADF&G Division of Subsistence household surveys, 2019.

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

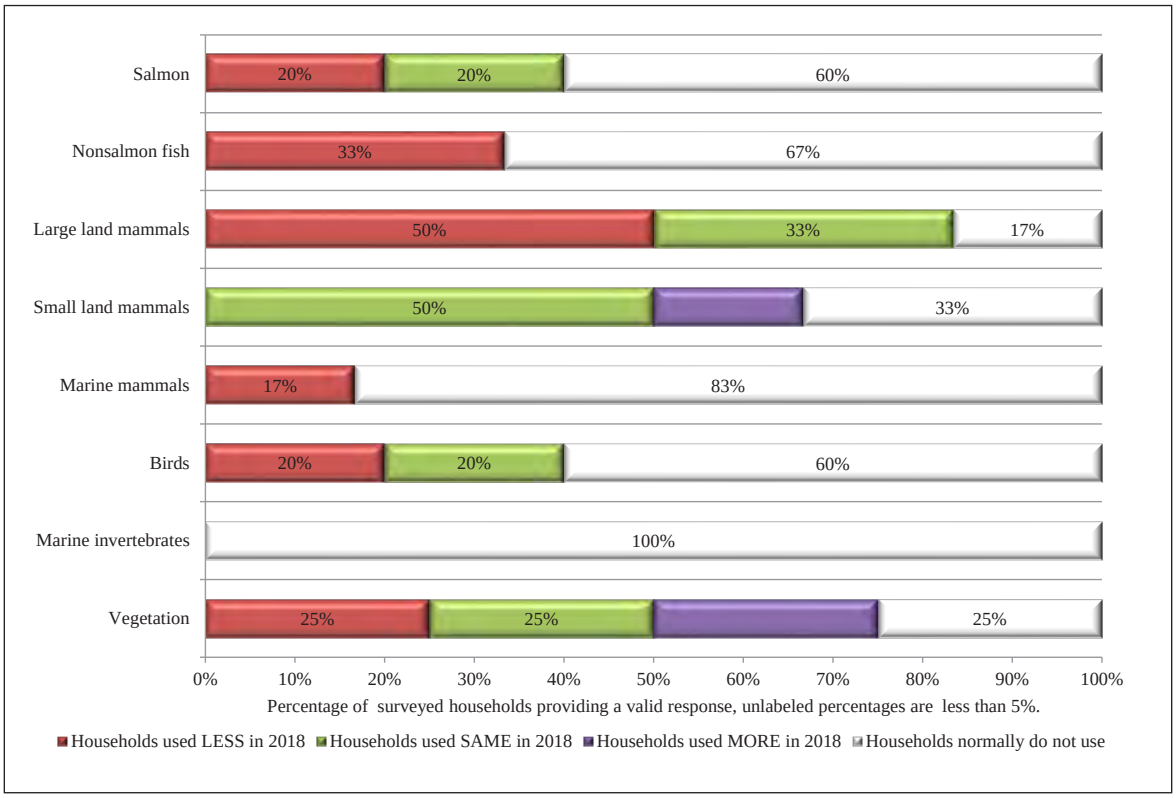


Figure 3-1.–Changes in household uses of resources compared to recent years, Birch Creek, 2018.

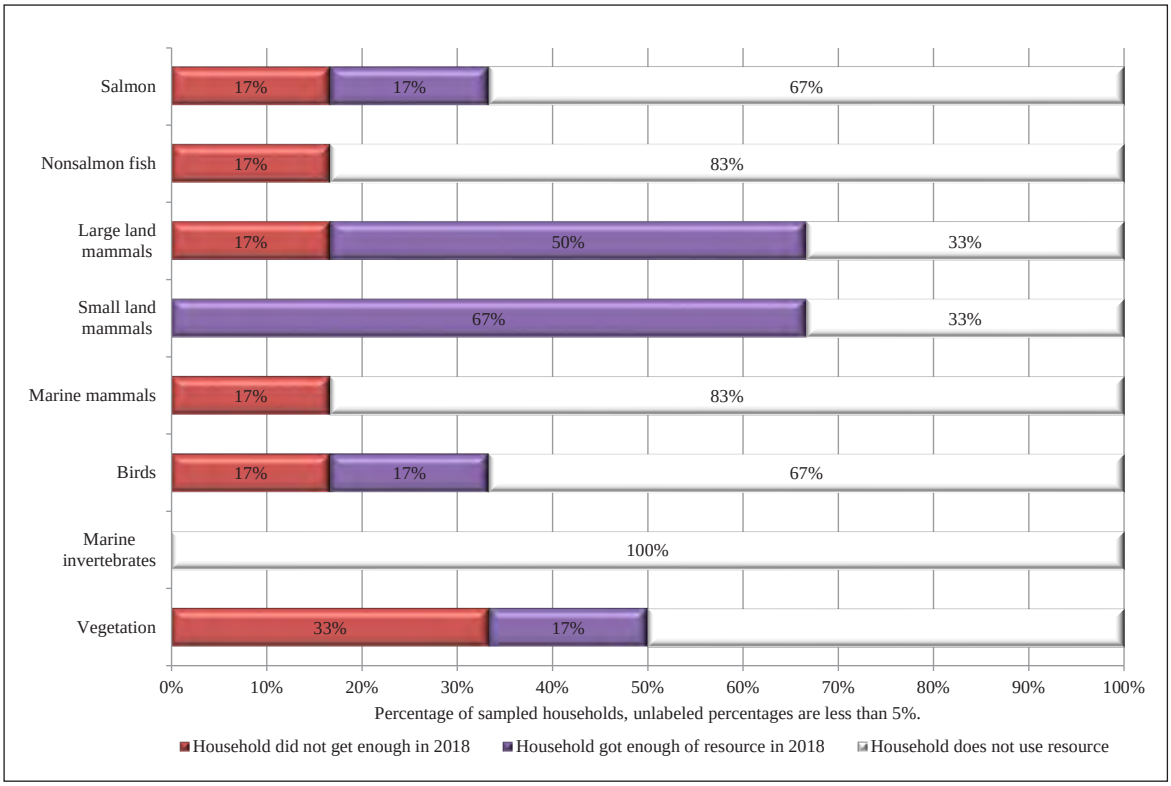


Figure 3-2.–Percentages of households reporting whether they got enough resources, Birch Creek, 2018.

to describe the effect of not getting enough. Of the four households (67%) that reported not getting enough resources in 2018, three (75%) reported a minor impact and one (25%) reported a major impact (Table D3-3). Respondents who indicated that they did not get enough of a resource category were asked to identify what specific resources were needed. Table D3-4 shows the resource categories and specific resources of which Birch Creek respondents reported needing more in 2018. Answers to this question varied in specificity: respondents may have 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. Four households reported needing a type of nonsalmon fish, three households needed more salmon, two reported needing moose, and two needed geese.

Harvest Data

Changes in the harvest of resources by Birch Creek 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 in Birch Creek. However, the ADF&G Subsistence Division has conducted studies gathering harvest data for nonsalmon fish in 2005 (Koskey and Mull 2011), land mammals in 2008 and 2009 (Van Lanen et al. 2012), and migratory waterfowl in 2000 (Andersen and Jennings 2001). Also, salmon harvest data have been documented annually since 1991 through ADF&G Division of Commercial Fisheries subsistence harvest surveys.

Salmon

Figure 3-3 shows the estimated annual salmon harvests by species and year between 1991 and 2017 for residents of Birch Creek. Data for this figure were gathered by the ADF&G Division of Commercial Fisheries during annual postseason subsistence salmon harvest surveys. Years with no data indicate that no surveyed households reported harvesting salmon that year. Birch Creek's salmon harvest has been almost exclusively Chinook salmon over this 27-year period: only 32 fall chum salmon, 36 summer chum salmon, and one coho salmon were reported harvested and retained. A key respondent confirmed that Birch Creek fishers tend to target only Chinook salmon: "Yeah, just kings. We don't go for silvers [fall chum salmon], just kings" (02012020KBC7). Birch Creek's Chinook salmon harvest has fluctuated over this time period and has fallen to zero salmon harvest each year since 2011, with the exception of 20 Chinook salmon harvested in 2017. Key respondents confirmed that only a few households in the community currently have the resources to travel to the Yukon River to fish for salmon and in some recent years no salmon were

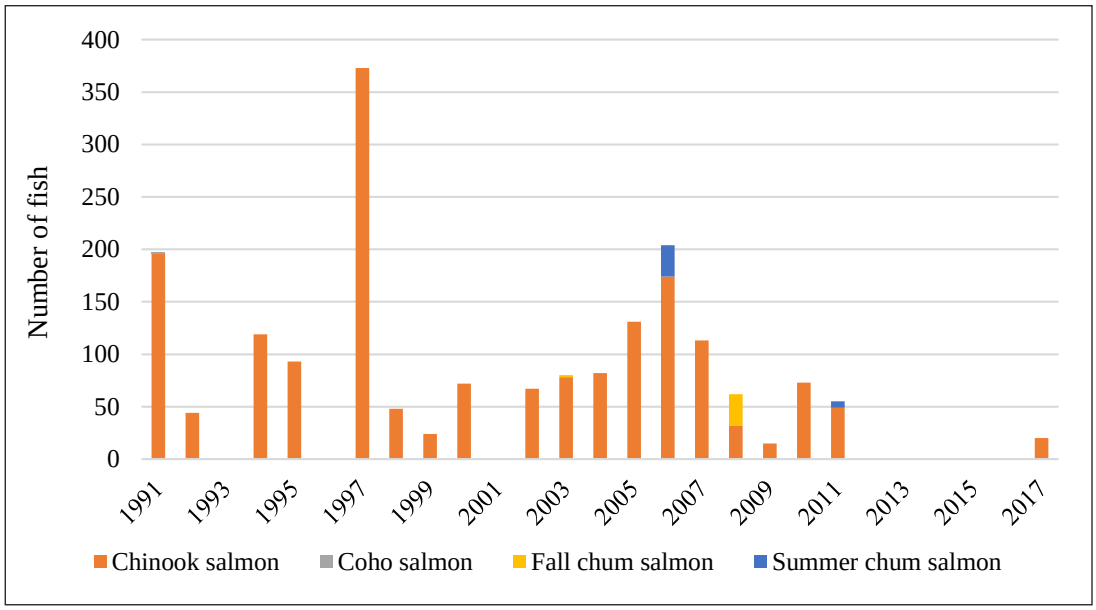


Figure 3-3.–Salmon harvests, Birch Creek, 1991–2017.

harvested by Birch Creek residents. One key respondent characterized contemporary salmon fishing in Birch Creek as happening "every year or every few years, or however it happens" (02012020KBC5).

Nonsalmon Fish[1]

Koskey and Mull (2011) estimated that Birch Creek's nonsalmon fish harvest was 88 lb per capita in 2005. Also, 100% of households reported harvesting nonsalmon fish. Nonsalmon fish harvested in 2005 include broad whitefish (42 lb per capita), northern pike (35 lb per capita), and humpback whitefish (7 lb per capita). These data contrast the zero harvest and use of all nonsalmon fish reported in this study. This drastic reduction in nonsalmon fishing may be due to the low number of people living in Birch Creek in 2018 compared to 2005. Also, key respondents indicated that the local area has a smaller variety of nonsalmon fish now compared to the past. One key respondent offered a reason why this might be the case: "All the waterways are clogged up with grass and bushes all through those lakes. No more fish in there" (02012020KBC7).

Large Land Mammals[2]

Forty percent of Birch Creek households hunted moose in 2008, and 25% of households were successful (Van Lanen et al. 2012). In 2009, 60% of households hunted and 33% were successful. The current study documented a comparable portion of the community hunting for moose (50%). However, in 2018, all households that reported hunting moose also reported successfully harvesting a moose. Approximately five moose were harvested in each of the study years. However, the 2018 harvest resulted in a much larger amount of meat per capita (179 lb) compared to 2008 (92 lb) and 2009 (113 lb) because fewer were people living in Birch Creek in 2018.

No surveyed households reported hunting for black bears in 2018. Four bears were harvested in 2008, and five were harvested in 2009 (Van Lanen et al. 2012).

Waterfowl[3]

Migratory bird harvest data for study year 2000 estimated a harvest of 701 birds: far more than the current study's estimate of 50. The 2000 harvest took place in both spring and fall; however in the current study all birds were harvested in the spring. The primary waterfowl species harvested (black scoter, mallard, Canada goose, and white-fronted goose) were consistent between the two study years.

Small Land Mammals[4]

ADF&G collected harvest data for furbearers in 2008 and 2009 (Van Lanen et al. 2012). Birch Creek trappers harvested eight lynx in 2008 and 20 in 2009. No households in the current study reported trapping for or harvesting lynx. Seventy-one muskrat were harvested in 2008 compared to zero in the current study. This decline in harvest is consistent with information provided by key respondents who indicated that the muskrat population has declined in recent years. Finally, snowshoe hare harvest is consistent across all study years. Birch Creek residents harvested 56 snowshoe hares in 2008, 45 in 2009, and 46 in the current study.

Current and Historical Harvest Areas

This study asked surveyed households to indicate where they searched for and harvested wild resources in 2018. This mapping information was documented for each resource category; however, due to a low number of respondents, only one map showing search and harvest areas for all resources has been included in this report (Figure 2-1).

1. Data for this section are sourced from Koskey and Mull (2011) for 2005 and Table 2-7 for 2018.
2. Data for this section are sourced from Van Lanen et al (2012) for 2008 and 2009 and Table 2-7 for 2018.
3. Harvest data in this section are sourced from Andersen and Jennings (2001) for 2000 and Table 2-7 for 2018.
4. Data in this section are sourced from Van Lanen et al. (2012) for 2008 and 2009 and Table 2-7 for 2018.

Unlike the current study, Caulfield (1983) documented Birch Creek residents' land use over their lifetimes. As such, that report shows vastly greater areas used by Birch Creek residents. Respondents used all of Birch Creek from where both the upper and lower mouths of Birch Creek meet the Yukon River all the way to Circle. Birch Creek residents also searched along the Yukon River, including nearby sloughs and lower portions of tributaries from the lower mouth of Birch Creek to Fort Yukon. Respondents also reported extensive use of Beaver Creek, which they accessed by portage from Birch Creek. Finally, respondents reported using lakes and overland areas surrounding the community approximately four miles in all directions and areas extending south to the foothills of the White Mountains.

Conclusions

Birch Creek is a very small community with an aging population. Many young families moved to Fairbanks after the school was closed in 1999. After the fire in 2011, much of the local infrastructure was destroyed and more people moved away from the community. This terrible accident has significantly affected the subsistence way of life of Birch Creek residents by fundamentally changing the population and demographics of the community.

The community of Birch Creek differs from all other Yukon Flats communities because it is located on a tributary of the Yukon River that does not have a significant salmon run, and residents must travel over 70 miles to the Yukon River to fish for salmon. As a result, salmon is not a keystone species as it is in other Yukon Flats communities such as Fort Yukon, Circle, and Stevens Village, which depend on salmon for the majority of their harvests (Brown et al. 2016; Trainor et al. 2020).[5] Birch Creek relies on moose to a greater degree than these communities.

Only a few residents have the resources, ability, and time to harvest large amounts of subsistence resources. However, several households are able to successfully harvest a moose most years, which can require community-wide cooperation and pooling of resources. Residents also tend to harvest a variety of other wild foods, including whitefishes, birds, salmon (when travel to the Yukon River is feasible), and cranberries. These resources are widely shared.

Birch Creek community operations through the tribe have moved to Fairbanks; however, strong connections to Birch Creek still remain. Despite this unusual logistical arrangement, tribal members living in Fairbanks still identify with Birch Creek and deeply value the subsistence way of life that connects them to that place. Kinship relationships to residents in other Yukon Flats communities such as Fort Yukon, Chalkyitsik, Beaver, and Stevens Village also keep Birch Creek residents connected to the region. The sharing and distribution of wild foods between Birch Creek residents, Birch Creek tribal members living in Fairbanks, and those in other Yukon Flats communities is likely a notable way in which harvests are distributed. This distribution is one way that people maintain cultural ties despite profound changes to their community. High levels of sharing were documented in this study; however, a descriptive networks analysis of regional distribution of food was outside the scope of this report. Future studies could explore the ways small communities like Birch Creek continue to engage in the subsistence economies of the Yukon Flats.

5. A. Trainor, B. McDavid, J. Park, and M. Cunningham. *In prep.* Harvest and use of wild resources in four communities bordering the Yukon-Charley National Rivers Preserve: Central, Circle, Eagle, and Eagle Village, 2016 and 2017. ADF&G Division of Subsistence, Fairbanks.

ACKNOWLEDGMENTS

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APPENDIX A–SURVEY INSTRUMENT

COMPREHENSIVE WILD FOOD HARVEST SURVEY

BIRCH CREEK, ALASKA

From January 1, 2018 to December 31, 2018

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:

COOPERATING ORGANIZATIONS

ALASKA DEPARTMENT OF FISH AND GAME
1300 COLLEGE RD.
FAIRBANKS, AK 99701
907-328-6116

BIRCH CREEK TRIBAL COUNCIL
P.O. BOX 73505
FAIRBANKS, AK 99707
907-374-9925

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, 2018 and December 31, 2018 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 Birch Creek?
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 **BIRCH CREEK: 64**

HOUSEHOLD PARTICIPATION

HOUSEHOLD ID

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, 2018 and December 31, 2018

Did this person ….

PERSON ID# FROM PAGE 2	FISH		LARGE LAND MAMMALS		SMALL LAND MAMMALS/ FURBEARERS		BIRDS AND EGGS		PLANTS / BERRIES / WOOD	
	FISH FOR	PROCESS	HUNT / TRAP	PROCESS	HUNT / TRAP	PROCESS	HUNT / GATHER	PROCESS	GATHER	PROCESS
ID #	*(circle)*	*(circle)*	*(circle)*	*(circle)*	*(circle)*	*(circle)*	*(circle)*	*(circle)*	*(circle)*	*(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 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018), did you, or members of your household PARTICIPATE in any commercial fishery?..... 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 ... FISH commercially for _____?

B ... KEEP any ____ from your commercial catch for your own use[2] or to share?

C Was the ____ that you kept INCIDENTAL[4] 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 COMMERCIALLY 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.

Read names below in blanks above	A COMM FISH?	B KEEP?	C INCI?	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*
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, 2018 and December 31, 2018.*

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 commerical 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, 2018 and December 31, 2018),
did you, or members of your household USE or TRY TO HARVEST salmon?..... 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 … use[2] _____?
B …receive _____ from another HH or community
C …give _____ to another HH or community?
D …try[2] 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*
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					/	IND.
	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, 2018 and December 31, 2018.*
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.*

SALMON: 04 **BIRCH CREEK: 64**

HARVEST SUMMARY: SALMON

HOUSEHOLD ID

If this household did NOT USE or HARVEST salmon 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 salmon…*

ASSESSMENTS: SALMON 110000000

To conclude our salmon section, I am going to ask a few general questions about salmon.

During the last year,[1]
… did your household use LESS, SAME, or MORE salmon 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 salmon?..... Y N

If NO…

What KIND of salmon did you need? _____

How would you describe the impact to your household of not getting enough salmon last year?

… not noticable?	*… minor ?*	*… major?*	*… Severe?*
(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF SALMON: 66, 67 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018), 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 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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] to harvest _____?
- **E** …actually harvest any _____?

if harvest is "yes"

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ….

INCLUDE other fish 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	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, 2018 and December 31, 2018.*

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.*

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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] to harvest _____?
- **E** …actually harvest any _____?

if harvest is "yes"

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD got during the last year. How many were harvested with ….

INCLUDE other fish 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	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											
	Y N	Y N	Y N	Y N	Y N					/	GAL.
	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, 2018 and December 31, 2018.*

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.*

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 noticable?	*… minor ?*	*… major?*	*… Severe?*
(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF OTHER FISH: 66, 67 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018), 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 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 … use[2] _____?
B …receive _____ from another HH or community
C …give _____ to another HH or community?
D …try[2] 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[3] *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, 2018 and December 31, 2018.*
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 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 noticable?*	*… minor ?*	*… major?*	*… Severe?*
	(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF MARINE INVERTEBRATES: 66, 67 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018), 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 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 … use[2] _____?
B …receive _____ from another HH or community
C …give _____ to another HH or community?
D …try[2] to harvest _____?
E …actually harvest any _____?

if harvest is "yes"

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.

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)*
MOOSE	Y N	Y N	Y N	Y N	Y N	M														IND
						F														IND
211800000						UNK														IND
211800001						1														
211800002						2														
211800009						-9														
CARIBOU	Y N	Y N	Y N	Y N	Y N	M														IND
						F														IND
211000000						UNK														IND
211000001						1														
211000002						2														
211000009						-9														
BLACK BEAR	Y N	Y N	Y N	Y N	Y N															IND.
210600000																				
BROWN BEAR	Y N	Y N	Y N	Y N	Y N															IND.
210800000																				
MOUNTAIN GOAT	Y N	Y N	Y N	Y N	Y N															IND.
211600000																				
DALL SHEEP	Y N	Y N	Y N	Y N	Y N															IND.
212200000																				
	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 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, 2018 and December 31, 2018.*

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 **BIRCH CREEK: 64**

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 noticable?	… minor ?	… major?	… Severe?
(0)	(1)	(2)	(3)

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF LARGE LAND MAMMALS: 66, 67 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018),
   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 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** ... use[2] _____?
- **B** ...receive _____ from another HH or community
- **C** ...give _____ to another HH or community?
- **D** ...try[2] 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 USE	B REC	C GIVE	D TRY	E HAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	NUMBER USED FOR FOOD OR FOR FOOD & FUR	UNITS[3]
						(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 *(SPECIFY)*	Y N	Y N	Y N	Y N	Y N															IND.
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, 2018 and December 31, 2018.*

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 **BIRCH CREEK: 64**

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** … use[2] _______?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] 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 USE	B REC	C GIVE	D TRY	E HAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	NUMBER USED FOR FOOD OR FOR FOOD & FUR	UNITS[3]
						(specify amount harvested per month)													*(amount)*	*specify*
LAND OTTER 221200000	Y N	Y N	Y N	Y N	Y N															IND.
MARMOT 221800000	Y N	Y N	Y N	Y N	Y N															IND.
MINK 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.
	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, 2018 and December 31, 2018.*
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: 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 noticable?	*… minor ?*	*… major?*	*… Severe?*
(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

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, 2018 and December 31, 2018), 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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] 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 *(UNKNOWN)*	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, 2018 and December 31, 2018.*

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.*

MARINE MAMMALS: 12 **BIRCH CREEK: 64**

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 noticable?*	*… minor ?*	*… major?*	*… Severe?*
	(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF MARINE MAMMALS: 66, 67 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018), 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 … use[2] _____?
B …receive _____ from another HH or community
C …give _____ to another HH or community?
D …try[2] 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 USE	B REC	C GIVE	D TRY	E HAR	November - March WINTER	**April** - June SPRING	July - August SUMMER	**September** - October FALL	Season of harvest unknown (number)	UNITS[3] (specify)
						(number killed in each season)					
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, 2018 and December 31, 2018.*

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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] 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 USE	B REC	C GIVE	D TRY	E HAR	November - March WINTER	**April** - June SPRING	July - August SUMMER	**September** October FALL	Season of harvest unknown *(number)*	UNITS[3] *(specify)*
						(number killed in each season)					
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, 2018 and December 31, 2018.*

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, 2018 and December 31, 2018), 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 … use[2] _____?
B …receive _____ from another HH or community
C …give _____ to another HH or community?
D …try[2] 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	November - March WINTER	**April** - June SPRING	July SUMMER	**August** - October FALL	(number)	UNITS[3] (specify)
						(number killed in each season)					
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						

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, 2018 and December 31, 2018.*

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, 2018 and December 31, 2018), 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 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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] 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, 2018 and December 31, 2018.*

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 **BIRCH CREEK: 64**

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 noticable?*	*… minor ?*	*… major?*	*… Severe?*
	(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF BIRDS AND EGGS: 66, 67 **BIRCH CREEK: 64**

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, 2018 and December 31, 2018),
   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 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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] 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 USE	B REC	C GIVE	D TRY	E HAR	AMOUNT *(amt)*	Units[4] *specify*	COMMENTS *(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, 2018 and December 31, 2018.*
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.*

PLANTS AND BERRIES (INCLUDING WOOD): 17 **BIRCH CREEK: 64**

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** … use[2] _____?
- **B** …receive _____ from another HH or community
- **C** …give _____ to another HH or community?
- **D** …try[2] 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								
	Y N	Y N	Y N	Y N	Y N		GAL.	
	Y N	Y N	Y N	Y N	Y N		GAL.	
	Y N	Y N	Y N	Y N	Y N			

FIREWOOD

	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?
FIREWOOD	Y N	Y N	Y N	Y N	Y N
604000000					

Please estimate the percentage of your household's heating needs in 2018 that came from firewood.

0%	1% - 25%	26% - 50%	51% - 75%	76% - 99%	100%
(0)	(1)	(2)	(3)	(4)	(5)

(circle one)

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, 2018 and December 31, 2018.*

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.*

PLANTS AND BERRIES (INCLUDING WOOD): 17 **BIRCH CREEK: 64**

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 noticable?*	*… minor ?*	*… major?*	*… Severe?*
	(0)	*(1)*	*(2)*	*(3)*

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

NETWORKS & ASSESSMENTS OF PLANTS AND BERRIES: 66, 67 **BIRCH CREEK: 64**

HARVEST SUMMARY: ALL RESOURCES

HOUSEHOLD ID

ASSESSMENTS: ALL RESOURCES 0

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 noticable?* (0)	*… minor ?* (1)	*… major?* (2)	*… Severe?* (3)

1 *"LAST YEAR" means between January 1, 2018 and December 31, 2018.*

ASSESSMENTS OF ALL RESOURCES: 66 **BIRCH CREEK: 64**

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)

HH1

STATEMENT 1. We had enough of the kinds of food we wanted to eat…… 1

❷ **STATEMENT 2**. We had enough food, but not always the KIND of food we wanted to eat…… 2

❸ **STATEMENT 3**. Sometimes, or often, we did **NOT HAVE ENOUGH** food to eat…… 3

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.

❹ **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 you worried 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

❺ **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

❻ **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? …… AD1 N Y ?

If YES…

…in which months did this happen?..... J F M A M J J A S O N D

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?..... AD2 N Y ?

In the last 12 months, were adults in the HH ever HUNGRY BUT DID NOT EAT because there was not enough food?..... AD3 N Y ?

In the last 12 months, did adults in the HH LOSE WEIGHT because there was not enough food?..... AD4 N Y ?

In the last 12 months, were adults in the HH ever NOT EAT FOR A WHOLE DAY because there was not enough food?..... AD5 N Y ?

If YES…

…in which months did this happen?..... J F M A M J J A S O N D

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, 2018 and December 31, 2018 ...

…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 2003, 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]					
				Person code from page 2	What kind of work did he or she do in this job?	For whom did he or she work in this job?	In the past year, what months did he or she work in this job?	FULL TIME	PART TIME	SHIFT - FULL TIME	ON-CALL, VARIES	SHIFT - PART TIME	In the past year how much did hee or she earn in this job?
				(ID #)	*(job title[1])*	*(employer)*	*(circle each month worked)*	*(circle one)*					*gross income[3]*
		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 COMMERCIALLY 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*
-- -Unemployed

GROSS INCOME is the same as TAXABLE INCOME on a W-2 form. Self-employment, enter revenue - expense

EMPLOYMENT: 23 **BIRCH CREEK: 64**

OTHER INCOME

HOUSEHOLD ID

Between January 1, 2018 and December 31, 2018 ...

…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 _____ in 2018 (circle one)		TOTAL amount all members of your household received from _____ in 2018 (dollars)	
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND	Y	N	$	/ YR
	32				
	NATIVE CORPORATION DIVIDENDS	Y	N	$	/ YR
	13				

Alaska PFD IN 2018	
1	*PFD = $1,600*
2	*PFDs = $3,200*
3	*PFDs = $4,800*
4	*PFDs = $6,400*
5	*PFDs = $8,000*
6	*PFDs = $9,600*
7	*PFDs = $11,200*
8	*PFDs = $12,800*
9	*PFDs = $14,400*
10	*PFDs = $16,000*
11	*PFDs = $17,600*

Regional corporations	*Dividend*
Doyon	
AHTNA	
Gwitchyaa Zhee	

Village Corporation(s)	*Dividend*

Between January 1, 2018 and December 31, 2018 ...

…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? (circle one)		Total amount? (dollars)	
EMPLOYMENT RELATED	UNEMPLOYMENT	Y	N	$	/ YR
	12				
	WORKERS' COMP	Y	N	$	/ YR
	8				
	SOCIAL SECURITY	Y	N	$	/ YR
	7				
	PENSION & RETIREMENT	Y	N	$	/ YR
	5				
	DISABILITY	Y	N	$	/ YR
	31				
	VETERANS ASSISTANCE	Y	N	$	/ YR
	35				
ENTITLEMENTS	FOOD STAMPS (SNAP/QUEST CARDS)[a]	Y	N	$	/ YR
	11				
	ADULT PUBLIC ASSISTANCE	Y	N	$	/ YR
	3				
	SUPPLIMENTAL SECURITY INCOME (SSI)	Y	N	$	/ YR
	10				
STATE BENEFIT	ENERGY ASSISTANCE	Y	N	$	/ YR
	9				
	ALASKA SENIOR BENEFITS (LONGEVITY)	Y	N	$	/ YR
	6				

		Received? (circle one)		Total amount? (dollars)	
FAMILY & CHILD	TANF (say "tanif", used to be AFDC)	Y	N	$	/ YR
	2				
	CHILD SUPPORT	Y	N	$	/ YR
	15				
	FOSTER CARE	Y	N	$	/ YR
	41				
OTHER	FUEL VOUCHERS	Y	N	$	/ YR
	49				
	MEETING HONORARIA *(not per diem*)*	Y	N	$	/ YR
	50				
	OTHER (describe)	Y	N	$	/ YR
	OTHER (describe)	Y	N	$	/ YR

* 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

a. If this household used SNAP, please remember to ask the questions on the following page.

ASSESSMENTS: GEAR PURCHASES

HOUSEHOLD ID

SNAP funds (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.

Prior to this survey, were you aware that you could purchase subsistence FISHING or HUNTING GEAR with SNAP funds?..... Y N

Please refer to the previous page: If this household DID NOT report using FOOD STAMPS (SNAP), continue to the next page.

If the household DID report use of SNAP on the previous page, continue.

Did your household use SNAP funds to purchase subsistence FISHING or HUNTING GEAR?..... Y N

If NO,

Why not? _____

_____

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)

How important to your households subsistence fishing and hunting is the availability of SNAP funds for purchasing gear?

Not important *Important* *Very Important*

COMMENTS

HOUSEHOLD ID

DO YOU HAVE ANY QUESTIONS, COMMENTS OR CONCERNS?

INTERVIEW SUMMARY: **DON'T FORGET TO FILL IN THE STOP TIME** _____

COMMENTS: 300 **BIRCH CREEK: 64**

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)

APPENDIX C–CONVERSION FACTORS

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 burbot, the quantity would be multiplied by the appropriate conversion factor (in this case 4.2) to show a harvest of 12.6 lb of burbot.

Resource name	Reported units	Conversion factor
Chum salmon	Individual	4.4799
Chum salmon [CF retention]	Individual	4.4799
Summer chum salmon	Individual	4.4799
Fall chum salmon	Individual	4.4799
Fall chum salmon [CF retention]	Individual	4.4799
Coho salmon	Individual	4.7698
Coho salmon [CF retention]	Individual	4.7698
Chinook salmon	Individual	8.2753
Chinook salmon [CF retention]	Individual	8.2753
Pink salmon	Individual	2.7336
Pink salmon [CF retention]	Individual	2.7336
Sockeye salmon	Individual	3.6925
Sockeye salmon [CF retention]	Individual	3.6925
Pacific herring [CF retention]	Gallons	6.0000
Pacific herring roe [CF retention]	Gallons	6.0000
Unknown smelts	Individual	0.1400
Unknown smelts	Gallons	6.0000
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–unknown	Individual	3.3000
Lake trout	Individual	4.0000
Arctic grayling	Individual	0.9000
Northern pike	Individual	3.3000
Sheefish	Individual	11.4000
Longnose sucker	Individual	1.4000
Unknown trouts	Individual	3.3000
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
Black bear	Individual	88.0000
Brown bear	Individual	86.0000
Caribou	Individual	136.0000
Mountain goat	Individual	72.5000
Moose	Individual	538.0000
Dall sheep	Individual	104.0000
Beaver	Individual	20.0000
Coyote	Individual	0.0000
Red fox	Individual	0.0000

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Resource name	Reported units	Conversion factor
Snowshoe hare	Individual	1.5000
River otter	Individual	0.0000
Lynx	Individual	0.0000
Marmot	Individual	5.0000
Marten	Individual	0.0000
Mink	Individual	0.0000
Muskrat	Individual	0.0000
Porcupine	Individual	8.0000
Red squirrel	Individual	0.5000
Gray wolf	Individual	0.0000
Wolverine	Individual	0.0000
Fur seal	Individual	0.0000
Harbor seal	Individual	0.0000
Sea otter	Individual	0.0000
Steller sea lion	Individual	0.0000
Beluga whale	Individual	0.0000
Bufflehead	Individual	0.5700
Canvasback	Individual	1.7400
Unknown goldeneyes	Individual	1.2700
Mallard	Individual	1.6100
Long-tailed duck	Individual	1.1600
Northern pintail	Individual	1.1800
Unknown scaups	Individual	1.3500
Black scoter	Individual	1.5100
White-winged scoter	Individual	2.6100
Unknown scoters	Individual	1.6165
Northern shoveler	Individual	0.8600
Unknown teals	Individual	0.4700
American wigeon	Individual	1.0500
Unknown Canada/cackling geese	Individual	2.8300
Snow goose	Individual	2.8000
White-fronted goose	Individual	3.1800
Unknown swans	Individual	10.9800
Sandhill crane	Individual	5.4000
Unknown loons	Individual	3.6000
Spruce grouse	Individual	0.8500
Sharp-tailed grouse	Individual	1.0300
Ruffed grouse	Individual	0.8500
Unknown grouses	Individual	0.9100
Ptarmigans	Individual	0.7700
Unknown duck eggs	Individual	0.0000
Unknown goose eggs	Individual	0.0000
Unknown gull eggs	Individual	0.2140
Butter clams	Individual	3.0000
Freshwater clams	Individual	0.0000
Razor clams	Individual	0.2500

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Resource name	Reported units	Conversion factor
Dungeness crab	Individual	0.7000
Unknown king crabs	Individual	2.1014
Shrimps	Individual	0.1300
Blueberry	Gallons	4.0000
Blueberry	Quarts	1.0000
Blueberry	Half-pints	0.2500
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
Crowberry	Quarts	1.0000
Cloudberry	Gallons	4.0000
Cloudberry	Quarts	1.0000
Raspberry	Gallons	4.0000
Raspberry	Quarts	1.0000
Wild rhubarb	Pounds	1.0000
Wild rhubarb	Gallons	1.0000
Wild potato	Gallons	1.0000
Other beach greens	Gallons	1.0000
Hudson's Bay (Labrador) tea	Pounds	1.0000
Hudson's Bay (Labrador) tea	Gallons	1.0000
Hudson's Bay (Labrador) tea	Quarts	0.2500
Spruce tips	Gallons	4.0000
Wild rose hips	Gallons	4.0000
Wild rose hips	Quarts	0.2500
Unknown mushrooms	Gallons	1.0000
Fireweed	Gallons	1.0000
Punk	Gallons	1.0000
Chaga	Gallons	1.0000
Chaga	Quarts	0.2500
Mousefoods	Gallons	1.0000
Wood	Cords	0.0000

Source ADF&G Division of Subsistence household surveys, 2019.

APPENDIX D–ADDITIONAL TABLES

Table D2-1.–Population profile, Birch Creek, 2018.

	Male			Female			Total		
Age	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%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
25–29	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
30–34	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
35–39	1.8	20.0%	20.0%	0.0	0.0%	0.0%	1.8	11.1%	11.1%
40–44	0.0	0.0%	20.0%	0.0	0.0%	0.0%	0.0	0.0%	11.1%
45–49	0.0	0.0%	20.0%	0.0	0.0%	0.0%	0.0	0.0%	11.1%
50–54	0.0	0.0%	20.0%	1.8	25.0%	25.0%	1.8	11.1%	22.2%
55–59	0.0	0.0%	20.0%	0.0	0.0%	25.0%	0.0	0.0%	22.2%
60–64	0.0	0.0%	20.0%	0.0	0.0%	25.0%	0.0	0.0%	22.2%
65–69	3.7	40.0%	60.0%	1.8	25.0%	50.0%	5.5	33.3%	55.6%
70–74	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
75–79	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
80–84	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
85–89	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
90–94	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
95–99	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
100–104	0.0	0.0%	60.0%	0.0	0.0%	50.0%	0.0	0.0%	55.6%
Missing	3.7	40.0%	100.0%	3.7	50.0%	100.0%	7.3	44.4%	100.0%
Total	**9.2**	**100.0%**	**100.0%**	**7.3**	**100.0%**	**100.0%**	**16.5**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2019.

Table D2-2.–Birthplaces of household heads, Birch Creek, 2018.

Birthplace	Percentage
Ambler	11.1%
Birch Creek	11.1%
Fort Yukon	44.4%
Stevens Village	11.1%
Missing	22.2%

Source ADF&G Division of Subsistence household surveys, 2019.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.
Note All survey respondents were household heads.

Table D2-3.–Birthplaces of population, Birch Creek, 2018.

Birthplace	Percentage
Ambler	11.1%
Birch Creek	11.1%
Fort Yukon	44.4%
Stevens Village	11.1%
Missing	22.2%

Source ADF&G Division of Subsistence household surveys, 2019.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.
Note All survey respondents were household heads.

Table D2-4.–Reported job schedules, Birch Creek, 2018.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full time	3.7	50.0%	3.7	50.0%	2.8	50.0%
Part time	3.7	50.0%	3.7	50.0%	2.8	50.0%

Source ADF&G Division of Subsistence household surveys, 2019.

Table D2-5.–Employment characteristics, Birch Creek, 2018.

	Community
Characteristic	Birch Creek
All adults	
Number	16.5
Mean weeks employed	15.4
Employed adults	
Number	7.3
Percentage	44.4%
Jobs	
Number	7.3
Mean	1.0
Minimum	1
Maximum	1
Months employed	
Mean	8.0
Minimum	4
Maximum	12
Percentage employed year-round	50.0%
Mean weeks employed	34.7
Households	
Number	11
Employed	
Number	5.5
Percentage	50.0%
Jobs per employed household	
Mean	1.0
Minimum	1
Maximum	1
Employed adults	
Mean	
Employed households	1.0
Total households	0.7
Minimum	1
Maximum	1
Mean person-weeks of employment	23.1

Source ADF&G Division of Subsistence household surveys, 2019.

Table D2-6.–Estimated large land mammal harvests by month and sex, Birck Creek, 2018.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All large land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**5.5**	**0.0**	**0.0**	**0.0**	**0.0**	**5.5**
Black 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**
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	5.5	0.0	0.0	0.0	0.0	**5.5**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	**5.5**
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	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, 2019.

Table D2-7.–Estimated small land mammal harvests by month, Birch Creek, 2018.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All small land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**18.3**	**18.3**	**18.3**	**0.0**	**0.0**	**0.0**	**45.8**	**0.0**	**0.0**	**100.8**
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	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	45.8	0.0	0.0	**45.8**
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
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	0.0	0.0	18.3	18.3	18.3	0.0	0.0	0.0	0.0	0.0	0.0	**55.0**
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, 2019.

Table D2-8.–Estimated bird harvests by season, Birch Creek, 2018.

Resource	Estimated harvest by season					
	Spring	Summer	Fall	Winter	Season unknown	**Total**
All birds	**49.5**	**0.0**	**0.0**	**0.0**	**0.0**	**49.5**
Bufflehead	0.0	0.0	0.0	0.0	0.0	**0.0**
Canvasback	1.8	0.0	0.0	0.0	0.0	**1.8**
Goldeneyes	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	11.0	0.0	0.0	0.0	0.0	**11.0**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	3.7	0.0	0.0	0.0	0.0	**3.7**
Scaups	0.0	0.0	0.0	0.0	0.0	**0.0**
Black scoter	18.3	0.0	0.0	0.0	0.0	**18.3**
White-winged scoter	0.0	0.0	0.0	0.0	0.0	**0.0**
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**
Teals	5.5	0.0	0.0	0.0	0.0	**5.5**
American wigeon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown Canada/cackling geese	3.7	0.0	0.0	0.0	0.0	**3.7**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	5.5	0.0	0.0	0.0	0.0	**5.5**
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**
Loons	0.0	0.0	0.0	0.0	0.0	**0.0**
Spruce grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ruffed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigans	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2019.

Table D2-9.–Use of firewood for home heating, Birch Creek, 2018.

Percentage of home heating from wood	Households	
	Number	Percentage
0%	0	0.0
1–25%	0	0.0
26–50%	0	0.0
51–75%	0	0.0
76–99%	1	16.7
100%	5	83.3

Source ADF&G Division of Subsistence household surveys, 2019.

Table D3-1.–Reasons for less household use of resources compared to recent years, Birch Creek, 2018.

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
Any resource	**6**	**5**	**1**	**20.0%**	**2**	**40%**	**1**	**20.0%**	**1**	**20%**	**3**	**60%**	**1**	**20%**	**0**	**0.0%**	**1**	**20.0%**
All resources	6	4	1	25.0%	2	50%	1	25.0%	1	25%	1	25%	1	25%	0	0.0%	0	0.0%
Salmon	5	1	1	100.0%	0	0%	0	0.0%	0	0%	0	0%	1	100%	0	0.0%	0	0.0%
Nonsalmon fish	6	2	1	50.0%	0	0%	0	0.0%	0	0%	1	50%	1	50%	0	0.0%	0	0.0%
Large land mammals	6	3	0	0.0%	1	33%	0	0.0%	0	0%	1	33%	0	0%	0	0.0%	0	0.0%
Small land mammals	6	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine mammals	6	1	0	0.0%	0	0%	0	0.0%	0	0%	1	100%	0	0%	0	0.0%	0	0.0%
Birds	5	1	1	100.0%	0	0%	0	0.0%	0	0%	0	0%	1	100%	0	0.0%	0	0.0%
Marine invertebrates	6	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Vegetation	4	1	0	0.0%	1	100%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	1	100.0%

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Table D3-1.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not need		Equipment/ fuel expense		Used other resources		Competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**6**	**5**	**1**	**20%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**40.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
All resources	6	4	0	0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	5	1	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	6	2	0	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	6	3	1	33%	0	0.0%	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	6	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	6	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	5	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	6	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	4	1	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, 2019.

a. Valid responses do not include households that did not provide any response and households reporting never using the resource.

Table D3-2.–Reasons for more household use of resources compared to recent years, Birch Creek, 2018.

Resource category	Valid responses[a]	Households reporting reasons for more use	Personal		Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Regulations	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**6**	**1**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**
All resources	6	0	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	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%
Nonsalmon fish	6	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	6	0	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	6	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%
Marine mammals	6	0	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	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%
Marine invertebrates	6	0	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	4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%

-continued-

Table D3-2.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Traveled farther		More success		Had more time		Store-bought expense		Got/ fixed equipment		Substitue for unavialable resource(s)		Had more help		Other	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**6**	**1**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**100.0%**
All resources	6	0	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	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%
Nonsalmon fish	6	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	6	0	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	6	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%
Marine mammals	6	0	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	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%
Marine invertebrates	6	0	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	4	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%

Source ADF&G Division of Subsistence household surveys, 2019.

a. Valid responses do not include households that did not provide any response and households reporting never use.

Table D3-3.–Reported impact to households that did not get enough resources, by category, Birch Creek, 2018.

		Households not getting enough _____ .				Impact to those not getting enough _____ .									
	Sample	Valid responses[a]		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**6**	**6**	**100.0%**	**4**	**66.7%**	**0**	**0.0%**	**0**	**0.0%**	**3**	**75.0%**	**1**	**25.0%**	**0**	**0.0%**
Salmon	6	2	33.3%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Nonsalmon fish	6	1	16.7%	1	100.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Large land mammals	6	4	66.7%	1	25.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Small land mammals	6	4	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	6	1	16.7%	1	100.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	6	2	33.3%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Marine invertebrates	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	6	3	50.0%	2	66.7%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2019.

a. Includes households failing to respond to the question and those households that never used the resource.

Table D3-4.–Resources of which households reported needing more, Birch Creek, 2018.

Resource	Households needing	Percentage of households
Salmon	1	16.7%
Chum salmon	1	16.7%
Chinook salmon	1	16.7%
Sheefish	1	16.7%
Whitefishes	1	16.7%
Broad whitefish	1	16.7%
Humpback whitefish	1	16.7%
Moose	2	33.3%
Unknown seal oil	1	16.7%
Bowhead whale	1	16.7%
Geese	1	16.7%
Canada goose	1	16.7%
Lowbush cranberry	1	16.7%
Wood	1	16.7%

Source ADF&G Division of Subsistence household surveys, 2019.