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Subsistence Harvests and Uses of Wild Resources by Communities in the Eastern Interior of Alaska, 2011

Edited by

Davin Holen,
Sarah M. Hazell,
and
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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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ABSTRACT

This report provides information about the role of subsistence uses of fish, wildlife, and wild plant resources in the local economy and way of life of the communities of Alatna, Allakaket, Anaktuvuk Pass, Bettles, Beaver, Coldfoot, Dot Lake, Dry Creek, Evansville, Healy Lake, Tok, and Wiseman, Alaska. These communities span eastern interior Alaska from the Brooks Range south to the Canadian border and represent a diversity of environments, resource uses, and cultures. The Alaska Department of Fish and Game, Division of Subsistence designed and implemented this project in response to the need for updated community baseline information about the range of wild resource harvests, uses, and areas of harvest, as well as demographic and economic information, within the area of the proposed Alaska Pipeline Project, a gas pipeline to transport natural gas from Prudhoe Bay on Alaska's Arctic coast to Alberta, Canada. Information was collected through systematic household survey and mapping interviews. In total, 352 households were interviewed. The average sample achieved in the 11 communities where a census was the goal was 77%. In Tok, a 26% sample was achieved, which exceeded the goal of 25% of households. The study documented the continuing importance of subsistence hunting, fishing, and gathering to residents in the study communities. In the study year of 2011, virtually every household used wild resources: 100% in 10 study communities and more than 90% in the other 2. About 75% or more of the households in every community engaged in harvesting activities. Harvest amounts in each community were diverse ranging from 38 lb per capita in Coldfoot to 520 lb per capita in Allakaket. Most participants in this study reported their subsistence uses and harvests have changed in their lifetimes and over the last 5 years, changes which they ascribed to reduced resource populations, economic changes, and a changing climate. Residents from study communities provided a variety of comments and concerns which are incorporated into this report.

Key words: Harvest survey, subsistence uses, subsistence fishing, subsistence hunting, Alaska Pipeline Project, Alatna, Allakaket, Anaktuvuk Pass, Bettles, Beaver, Coldfoot, Dot Lake, Dry Creek, Evansville, Healy Lake, Tok, Wiseman

CHAPTER 1: INTRODUCTION

Prepared by Davin Holen, David S. Koster, and Garrett Zimpelman

PROJECT BACKGROUND

This report provides information about the role of subsistence uses of fish, wildlife, and wild plant resources in the local economy and way of life of the communities of Alatna, Allakaket, Anaktuvuk Pass, Bettles, Beaver, Coldfoot, Dot Lake, Dry Creek, Evansville, Healy Lake, Tok, and Wiseman, Alaska (Figure 1-1). These communities span eastern interior Alaska from the Brooks Range to the Canadian border and represent a diversity of environments, resource uses, and cultures. In the 2011 study year, most residents of the study communities engaged in subsistence hunting, fishing, and gathering for nutrition and to support their way of life. A variety of resources were used, including salmon and other fish, large land mammals (e.g., caribou, moose, black and brown bears, and Dall sheep), small land mammals (small game and furbearers), birds and bird eggs, and wild plants. Table 1-1 presents a list, including the Linnaean taxonomic names, of resources used in the project communities.

The Alaska Department of Fish and Game (ADF&G), Division of Subsistence designed and implemented this project in response to the need for updated community baseline information about the range of wild resource harvests, uses, and areas of harvest, as well as demographic and economic information, along the proposed route of the Alaska Pipeline Project (APP), a gas pipeline to transport natural gas from Prudhoe Bay on Alaska's Arctic coast to Alberta, Canada. The Federal Energy Regulatory Commission (FERC) developed a set of "general requirements" for the analysis of information about subsistence uses of fish, wildlife, and plant resources for communities within 30 miles of the proposed project, and stipulated that the analysis be based on data "no more than 3 years old."[1] The State Pipeline Coordinator's Office (SPCO) at the Alaska Department of Natural Resources (DNR), which acted as the liaison to ADF&G for the subsistence component of the APP study, requested that the Division of Subsistence prepare a data gap analysis followed by a detailed study design. The communities included in the design are located within 50 miles of the proposed pipeline route (Figure 1-1) because, based on existing information, a 50-mile radius reflects the distance residents of road-connected communities generally travel for subsistence hunting, fishing, and gathering. Thirty-one communities were identified within 50 miles of the route or identified by APP as communities that needed updated subsistence data. Two of the 31 communities were surveyed in 2011 as part of a separate project, leaving a total of 29 communities that needed updated information (Table 1-2).

1. Michael J. Boyle, Deputy Director, FERC, Office of Energy Projects, Division of Gas–Environment and Engineering, letter to TransCanada Alaska Company LLC, February 17, 2011.

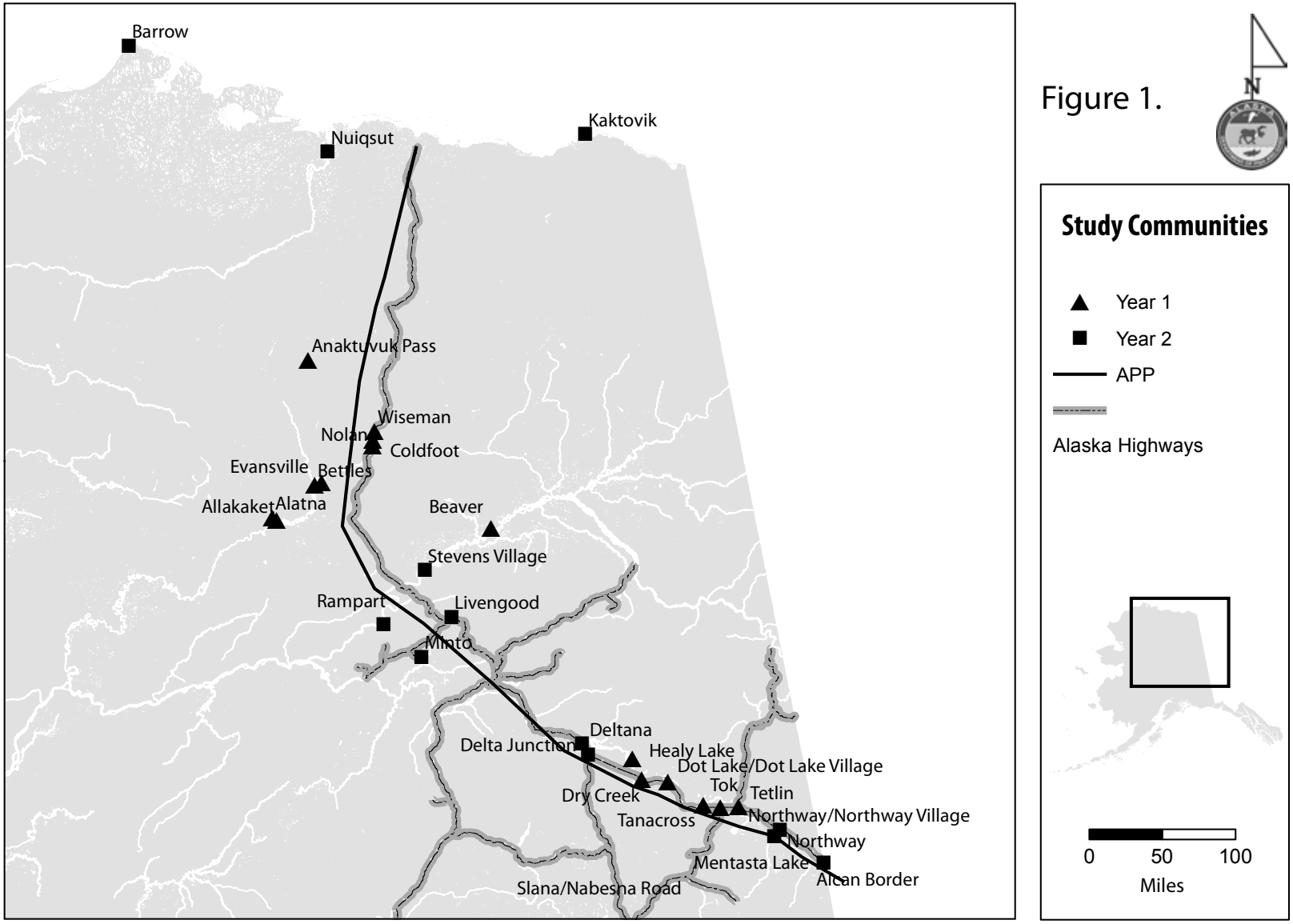

Figure 1-1.–Map of study communities, eastern interior Alaska.

Table 1-1. – List of species used for subsistence in the study communities in 2011 and their associated scientific names.

Common name	Scientific name
Fish	
Salmon	
Chum salmon	*Oncorhynchus keta*
Coho salmon	*Oncorhynchus kisutch*
Chinook salmon	*Oncorhynchus tshawytscha*
Pink salmon[b]	*Oncorhynchus gorbuscha*
Sockeye salmon	*Oncorhynchus nerka*
Landlocked salmon	*Oncorhynchus* spp.
Nonsalmon fish	
Herring[a]	*Clupea pallasi*
Smelt[a]	*Hypomesus* spp.
Cod[a]	
Pacific cod (gray)[a]	*Gadus macrocephalus*
Pacific tomcod[a]	*Microgadus proximus*
Flounder[a]	
Starry flounder[a]	*Platichthys stellatus*
Kelp greenling[a]	
Lingcod[a]	*Ophiodon elongatus*
Pacific halibut[a]	*Hippoglossus stenolepis*
Arctic lamprey[a]	*Lampetra camtshcatica*
Rockfish[a]	*Sebastes* spp.
Sculpin[a]	*Cottus cognatus*
Burbot	*Lota lota*
Char	
Arctic char	*Salvelinus aplinus*
Dolly Varden	*Salvelinus malma*
Lake trout	*Salvelinus namaycush*
Arctic grayling	*Thymallus arcticus*
Northern pike	*Esox lucius*
Sheefish	*Stenodus leucichthys*
Longnose sucker	*Catostomus catostomus*
Trout	
Cutthroat trout[a]	*Oncorhynchus clarkii*
Rainbow trout	*Oncorhynchus mykiss*
Whitefishes	
Broad whitefish	*Coregonus nasus*
Cisco	
Least cisco	*Coregonus sardinella*
Humpback whitefish	*Coregonus pidschian*
Round whitefish	*Prosopium cylindraceum*

–continued–

Table 1-1.–Page 2 of 4.

Land mammals	
Large land mammals	
Bison	*Bison* spp.
Black bear	*Ursus americanus*
Brown bear	*Ursus arctos*
Caribou	*Rangifer tarandus*
Deer[a]	*Odocoileus* spp.
Moose	*Alces alces*
Muskox	*Ovibos moschatus*
Dall sheep	*Ovis dalli*
Small land mammals	
Beaver	*Castor canadensis*
Coyote	*Canis latrans*
Fox	
Arctic fox	*Vulpes lagopus*
Red fox	*Vulpes vulpes*
Hare	
Snowshoe hare	*Lepus americanus*
River (land) otter	*Lontra canadensis*
Lynx	*Lynx canadensis*
Marmot	*Marmota* spp.
Marten	*Martes americana*
Mink	*Mustela vison*
Muskrat	*Ondatra zibethicus*
Porcupine	*Erethizon dorsatum*
Squirrel	
Arctic ground (parka) squirrel	*Spermophilus parryii*
Red (tree) squirrel	*Tamiasciurus hudsonicus*
Weasel	*Mustela nivalis*
Wolf	*Canis lupus*
Wolverine	*Gulo gulo*
Marine mammals	
Seal[a]	
Bearded seal[a]	*Erignathus barbatus*
Fur seal[a]	*Callorhinus ursinus*
Harbor seal[a]	*Phoca vitulina*
Ringed seal[a]	*Pusa hispida*
Spotted seal[a]	*Phoca largha*
Sea otter[a]	*Enhydra lutris*
Steller sea lion[a]	*Eumetopias jubatus*
Walrus[a]	*Odobenus rosmarus*
Whale[a]	
Bowhead[a]	*Balaena mysticetus*
Eider[a]	

–continued–

Table 1-1.–Page 3 of 4.

Birds and eggs	
Migratory birds	
Ducks	
Canvasback	*Aythya valisineria*
Common eider[a]	*Somateria mollissima*
King eider[a]	*Somateria spectabillis*
Spectacled eider[a]	*Somateria fischeri*
Goldeneye	*Bucephala* spp.
Mallard	*Anas platyrhynchos*
Long-tailed duck	*Clangula hyemalis*
Scaup	*Aythya* spp.
Scoter[c]	
Black scoter	*Melanitta nigra*
White-winged scoter	*Melanitta fusca*
Teal	*Anas* spp.
Wigeon	
American wigeon	*Anas americana*
Geese	
Black brant	*Branta bernicla*
Canada goose	*Branta canadensis* spp.
Cacklers	*Branta canadensis minima; Branta hutchinsii minima*
Lesser Canada goose[d]	*Branta canadensis parvipes*
Lesser snow goose	*Chen caerulescens*
Greater white-fronted goose	*Anser albifrons*
Swan[e]	
Tundra (whistling) swan	*Cygnus columbianus*
Crane	
Sandhill crane	*Grus canadensis*
Shorebirds	
Plover	
Golden/black-bellied plover	*Pluvialis* spp.
Seabirds and loons	
Loons[f]	
Red-throated loon	*Gavia stellata*
Yellow-billed loon[a]	*Gavia adamsii*
Other birds	
Upland game birds	
Grouse	
Spruce grouse	*Falcipennis canadenis*
Sharp-tailed grouse	*Tympanuchus phasianellus*
Ruffed grouse	*Bonasa umbellus*
Unknown grouse	
Ptarmigan	*Lagopus* spp.
Owl	
Snowy owl	*Bubo scandiaca*

–continued–

Table 1-1.–Page 4 of 4.

Marine invertebrates	
Clams	
Freshwater clams	*Margaritifera* spp.; *Anodonta* spp.
Razor clams[a]	*Siliqua* spp.
Crabs[a]	
Dungeness crab[a]	*Cancer magister*
King crab[a]	*Paralithodes camtschaticus*
Tanner crab[a]	*Chionoecetes* spp.
Octopus[a]	*Octopus vulgaris*
Shrimp[a]	*Pandalus* spp.
Squid[a]	*Loligo opalescens*
Vegetation	
Berries	
Blueberry	*Vaccinium* spp.
Lowbush cranberry	*Vaccinium vitis idaea*
Highbush cranberry	*Viburnum edule*
Crowberry	*Empetrum nigrum L.*
Cloud berry	*Rubus chamaemorus*
Currants	*Ribes* spp.
Nagoonberry	*Rubus idaeus*
Raspberry	*Rubus spectabilis*
Strawberry	*Fragaria virginiana*
Salmonberry	*Rubus spectabilis*
Plants/greens/mushrooms	
Wild rhubarb	*Polygonum alpinum*
Devil's club	*Echinopanax horridum*
Eskimo potato	
Hudson's Bay tea	*Ledum palustre*
Wild rose hips	*Rosa acicularis*
Spruce tips	*Picea* spp.
Fireweed	*Epilobium angustifolium*
Stinkweed	*Artemisia Tilesii*
Wood	
Willow	*Salix* spp.

Note This species list includes every species that was used by at least one household in a study community in 2011, including resources that are not locally available.

a. Indicates a resource that is not locally available.

b. Not available in the Yukon or Tanana river drainages, but available in the Copper River and accessible by road from the upper Tanana area.

c. Residents may have also used an additional species, surf scoter *Melanitta perspiallata* .

d. Although residents reported using other species, this is the only species that is likely to have been used in the area.

e. Residents may have also used an additional species, trumpeter swan *Cygnus buccinator.*

f. Residents may have also used an additional species, Pacific loon *Gavia pacifica.*

Table 1-2. – Proposed community schedule by study year.

Community	Estimated number of households in 2010[a]	Projected samples (percentage of households)	Projected number of households surveyed	Study year 2010	2011	To be determined
Alatna	12	90%	11		1	
Allakaket[b]	62	90%	59		1	
Anaktuvuk Pass	99	90%	89		1	
Beaver	36	90%	32		1	
Bettles	9	90%	8		1	
Coldfoot	6	90%	5		1	
Dot Lake	7	90%	6		1	
Dot Lake Village	19	90%	17		1	
Dry Creek	29	90%	26		1	
Evansville	12	90%	11		1	
Healy Lake	7	90%	6		1	
Nolan	0	90%	0		1	
Tanacross	53	90%	48		1	
Tetlin	43	90%	39		1	
Tok	532	25%	133		1	
Wiseman	5	90%	5		1	
	931		495			
Barrow	1,280	25%	315			2
Delta Junction and Deltana	1161	25%	310			2
Kaktovik	72	90%	65			2
Livengood	7	90%	6			2
Minto	65	90%	59			2
Nuiqsut	114	90%	103			2
Rampart	10	90%	9			2
Stevens Village	26	90%	23			2
	2,735		890			
Mentasta	46			3		
Slana/Nabesna Road	77			3		
	123					

Note Category 1 = modified Year 1 study communities; category 2 = modified Year 2 study communities (specific dates for the second round of community surveys have not yet been determined); category 3 = study communities with recent (<3 years) data. Category 3 communities were surveyed as part of the *Copper Basin Community Harvest Assessment* project.

a. Source U.S. Census, 2011.

b. Includes Allakaket City and New Allakaket Census Designated Place (CDP).

In order to complete the work in a timely manner the communities were organized into a 2-year study plan. This report presents the findings from the first year of research, conducted in 2012 for the 2011 calendar study year; the plan included 15 communities with an estimated 931 households. Research was completed in 12 of the 15 communities. Two communities, Tanacross and Tetlin declined to participate. Although the community of Nolan had residents in early 2012, the residents had not lived in the community during the 2011 study year. The Year 1 communities reflect a diversity of communities in size and geographic scope for a representative sample of communities located along the proposed pipeline route.

Originally, Year 2 research was to occur in early 2013 and focus on the 2012 study year, but due to uncertainties regarding the APP route, the Year 2 research was postponed in June 2012. When this report was prepared, it was anticipated that surveys in the remaining 14 communities would be conducted in 2014; however, if the pipeline route changes, future research could take place in a different set of communities.

To meet the research goals, data collection followed standard ADF&G comprehensive household survey methods, supplemented with some additional topics and limited key respondent interviews. In combination, these methods address FERC's 7 specific requirements for subsistence analysis: 1) detailed harvest data linked to locations; 2) spatial and temporal trends in subsistence use; 3) harvest maps; 4) demographic data; 5) profiling of community-level subsistence patterns; 6) associations between subsistence harvests and other economic activities; and 7) descriptions of subsistence use patterns and trends based on local and traditional knowledge.[2] The Division of Subsistence included a Health Impact Assessment (HIA) component in the survey. The HIA component was developed in cooperation with the Alaska Department of Health and Social Services (DHSS) and its contractor, Newfields. The results of this component of the study are being analyzed separately by DHSS and Newfields.

The funding for this project provided by the APP was coordinated by the SPCO through a reimbursable services agreement (RSA) between the Alaska Department of Natural Resources and ADF&G. This project was also coordinated with Stephen R. Braund & Associates (SRB&A) and the study communities. SRB&A is an anthropological consulting firm based in Anchorage, Alaska, that specializes in sociocultural research and analysis of subsistence uses, subsistence mapping, traditional knowledge, and cultural resources. SRB&A provided mapping technical support for this project and provided assistance in conducting surveys in Tok where a larger field crew was necessary. ADF&G worked with each community to identify local research assistants (LRA) and key respondents. This report has broad applicability in resource management and land planning, and provides updated baseline information about demographics, economics, and subsistence activities in this area of Alaska.

2. Michael J. Boyle, Deputy Director, FERC, Office of Energy Projects, Division of Gas–Environment and Engineering, letter to TransCanada Alaska Company LLC, February 17, 2011.

STUDY OBJECTIVES

The project had the following objectives:

A. Design a survey instrument to produce comprehensive baseline information about subsistence hunting, fishing, and gathering and other topics that address subsistence harvest and use patterns that is compatible with information collected in past household interviews. Include an HIA component for the DHSS.

B. Conduct community scoping meetings.

C. Train community residents (LRAs) in administration of the systematic household survey.

D. Conduct household surveys to record the following information:

   a. Demographic information.

   b. Involvement in use, harvest, and sharing of fish, wildlife, and wild plants in the 2011 study year.

   c. Estimates of amount of resources harvested in the study year.

   d. Information about cash employment and other sources of cash income.

   e. Assessments of changes in subsistence harvest and use patterns.

   f. Location of fishing, hunting, and gathering activities in the study year.

   g. Collect data about food security and health impacts.

E. Collaboratively review and interpret study findings.

F. Communicate study findings to the communities.

G. Produce a final report.

RESEARCH METHODS

Ethical Principles for the Conduct of Research

The project was guided by the research principles adopted by the Alaska Federation of Natives in its Guidelines for Research (ANKN 2009) and by the National Science Foundation, Office of Polar Programs in its Principles for the Conduct of Research in the Arctic (National Science Foundation Interagency Social Science Task Force 2012), as well as the Alaska confidentiality statute (AS

16.05.815). These principles stress community approval of research designs, informed consent, anonymity of study participants, community review of draft study findings, and the provision of study findings to each study community upon completion of the research.

Project Planning and Approvals

Between late May and the end of July 2011 ADF&G met several times with the SPCO, APP, and representatives from FERC. During this time the gap analysis was developed. In July 2011 ADF&G met with DHSS and Newfields to coordinate the HIA component of the study. This project required a great deal of planning. In addition, in order to complete this study from conception to draft report in one year, ADF&G hired a project coordinator and 2 long-term nonpermanent employees to work on the APP project full time.

Following the approval of the gap analysis by the SPCO, ADF&G prepared a scope of work for the overall project that described the project purpose, standards, methods, and schedules. This was followed by a contract with the SPCO. Elements of the design were discussed during meetings in the Year 1 proposed study communities in October, November, and December 2011. Following receipt of comments from the communities, the design, including the household survey, was revised and finalized in advance of the January 2012 start date for research. A key goal was to administer a survey instrument to collect information about the full range of wild resource harvesting activities and uses in each community, as well as demographic and other economic data to provide a context for understanding and harvest and use information.

The Division of Subsistence used its standard household harvest survey instrument to collect updated baseline data. The survey instrument also included information on the HIA and additional questions for resident zone communities of the Gates of the Arctic National Park and Preserve (National Park Service or NPS). "Resident zone communities" are those whose residents are eligible to participate in subsistence activities within a specific national park. An additional page addressing the economic cost of fuel and transportation was included for the Institute of Social and Economic Research (ISER) at the University of Alaska Anchorage. As noted above the results from the HIA component are being analyzed separately by DHSS and Newfields. The NPS and ISER components have not been included in this report. The tables for these 2 components were provided to NPS and ISER for their own analysis. The Division of Subsistence also used a standard method of collecting subsistence map data, recording on a paper map the locations where members of participating households hunted, fished, and gathered subsistence resources during the 2011 study year. SRB&A assisted in collecting these data in the field, digitized the data, and produced the maps found in this report.

This project was managed by the Southern Region Subsistence Program Manager Davin Holen and Sarah M. Hazell, a Subsistence Resource Specialist III hired specifically to work on this project. Hazell sent letters to introduce the project to all 15 proposed study communities. Following this, she contacted

tribal governments by phone to arrange project scoping meetings. Scoping meetings or community visits were held between October and early December 2011 in all 15 proposed study communities.

Following these meetings, each of the participating communities having a tribal government (6 of 12) passed resolutions in support of the project. The contracting of LRAs was negotiated between ADF&G and the tribal governments. Each of the contracted LRAs was paid directly by ADF&G. Table 1-3 provides a list of staff who worked on this project.

Before the fieldwork began, ADF&G Division of Subsistence held a 2-day training session in December 2011 for all ADF&G staff who were assigned to the project. In addition, staff from Newfields and DHSS attended, as well as a contractor for the project, Dr. William E. Simeone, who participated in fieldwork in the upper Tanana communities. This training addressed the administration of the household surveys and research ethics. Following the first round of community surveys in January 2012, a 1-day follow-up review session was held to address any issues that were identified in the field and to modify protocols to ensure a smoother fieldwork process in communities that were to be surveyed in February and March. Only minor procedural modifications were necessary that had no implications for data analysis.

In April 2012 all project staff met for 2 days to discuss the results of the survey. The lead author for each community chapter gave a presentation on the study findings for that community. Staff who participated in the fieldwork in that community commented on the research findings. These presentations were organized to prepare staff to write the summaries of the research findings for this report as well as to present the findings to the communities. In May and June 2012, community review meetings were held in each of the 12 study communities where research occurred. A discussion of the meetings and fieldwork is included below in the "Methods" section.

Systematic Household Surveys

The primary method for collecting subsistence harvest and use information in this project was a systematic household survey. Following receipt of comments at the scoping meetings, ADF&G finalized the survey instrument in December 2011. A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and other economic data that are comparable with information collected in other household surveys in the study communities and with data in the Community Subsistence Information System (CSIS)[3]. Appendix A is an example of the survey instrument used in this project. Due to regional differences in the range of fish and wildlife resources, 2 survey instruments were developed; one for communities located north of Fairbanks and one for communities located southeast of Fairbanks. Both surveys included the additional questions for the HIA and for the ISER; however, only the communities north of Fairbanks, which are resident zone communities of the Gates of the Arctic National Park and Preserve, were asked the additional questions for the NPS. The goal was to interview a representative of each year-round household in all study communities, except for the

3. ADF&G CSIS: http://www.adfg.alaska.gov/sb/CSIS/.

Table 1-3. – Comprehensive subsistence baseline update study staff.

Task	Name	Chapter lead author	Organization
Project design and management	Davin Holen		ADF&G Division of Subsistence
Gap analysis	James Van Lanen		ADF&G Division of Subsistence
Project lead	Sarah M. Hazell		ADF&G Division of Subsistence
SRB&A lead	Stephen R. Braund		Stephen R. Braund & Associates
Data management lead	David Koster		ADF&G Division of Subsistence
Alatna research lead	Robbin La Vine	Meredith Marchioni	ADF&G Division of Subsistence
Allakaket research lead	Lisa Hutchinson-Scarbrough	Lisa Hutchinson-Scarbrough	ADF&G Division of Subsistence
Anaktuvuk Pass research lead	Sarah M. Hazell	Sarah M. Hazell	ADF&G Division of Subsistence
Bettles research lead	Sarah Evans	Sarah M. Hazell	ADF&G Division of Subsistence
Beaver research lead	Theodore Krieg	Theodore Krieg	ADF&G Division of Subsistence
Coldfoot research lead	Theodore Krieg	Malla Kukkonen	ADF&G Division of Subsistence
Dot Lake research lead	Robbin La Vine	Robbin La Vine	ADF&G Division of Subsistence
Dry Creek research lead	Robbin La Vine	Robbin La Vine	ADF&G Division of Subsistence
Evansville research lead	Sarah M. Hazell	Sarah M. Hazell	ADF&G Division of Subsistence
Healy Lake research lead	Ben Balivet	Ben Balivet	ADF&G Division of Subsistence
Tok research lead	Sarah Evans	Sarah Evans	ADF&G Division of Subsistence
Wiseman research lead	Theodore Krieg	Malla Kukkonen	ADF&G Division of Subsistence
Administrative support	Ana Lewis		ADF&G Division of Subsistence
	Jennifer Bond		ADF&G Division of Subsistence
	Maegan Smith		ADF&G Division of Subsistence
Programmer	Jacob Jawson		ADF&G Division of Subsistence
Data entry	Margaret Cunningham		ADF&G Division of Subsistence
	John Dwyer		ADF&G Division of Subsistence
	Zayleen Kalalo		ADF&G Division of Subsistence
	Barbara Dodson		ADF&G Division of Subsistence
Data cleaning/validation	Margaret Cunningham		ADF&G Division of Subsistence
	Garrett Zimpelman		ADF&G Division of Subsistence
Data analysis	David S. Koster		ADF&G Division of Subsistence
	Garrett Zimpelman		ADF&G Division of Subsistence
Cartography	Raena K. Schraer		Stephen R. Braund & Associates
	Sarah Kessick		Stephen R. Braund & Associates
	Megen Theobald		Stephen R. Braund & Associates
	Davin Holen		ADF&G Division of Subsistence
Editorial review lead	Lisa Ka'aihue		ADF&G Division of Subsistence
Editor	Mary Lamb		ADF&G Division of Subsistence
Field research staff	Benjamin Balivet		ADF&G Division of Subsistence
	Margaret Cunningham		ADF&G Division of Subsistence
	Sarah Evans		ADF&G Division of Subsistence
	Kelly Gwynn		ADF&G Division of Subsistence
	Sarah M. Hazell		ADF&G Division of Subsistence
	Davin Holen		ADF&G Division of Subsistence
	Lisa Hutchinson-Scarbrough		ADF&G Division of Subsistence
	Ted Krieg		ADF&G Division of Subsistence
	Malla Kukkonen		ADF&G Division of Subsistence
	Robbin La Vine		ADF&G Division of Subsistence
	Meredith Marchioni		ADF&G Division of Subsistence
	James Shewmake		ADF&G Division of Subsistence
	James Van Lanen		ADF&G Division of Subsistence

-continued-

Table 1-3.–Page 2 of 2.

Task	Name	Chapter lead author	Organization
Field research staff, continued			
	Hollie Wynne		ADF&G Division of Subsistence
	Theodore Krieg		ADF&G Division of Subsistence
	Sarah Yoder		Department of Health and Social Services
	Derek Moss		Newfields, LLC
	David Andersen		Research North
	William E. Simeone		Enterprise North
	Sarah Kessick		Stephen R. Braund & Associates
	Monty Rogers		Stephen R. Braund & Associates
	Peter Schnurr		Stephen R. Braund & Associates
	Raena Schraer		Stephen R. Braund & Associates
Local research assistants	Charlotte Mayo		Allakaket
	Jared Sam		Alatna and Allakaket
	Julia Wholecheese		Allakaket
	Kenneth Douglas Bergman		Allakaket
	Pollock Simon Jr.		Allakaket
	Russell Moses		Alatna and Allakaket
	Laura Ticket		Anaktuvuk Pass
	Riley Sikuayugak		Anaktuvuk Pass
	Craig Edwards		Beaver
	James Paul Erick		Beaver
	Jennifer Dillard		Bettles
	Kathleen Tipler		Evansville
	Charles Miller		Dot Lake
	Tommy Isaac		Dot Lake
	Alexandria Buongiorn		Dry Creek
	Olivia Geyer		Dry Creek
	Alicia Brooks		Tok
	Deanne James		Tok
	Douglas Harmon		Tok
	James Milhard		Tok
	Jeanne Morris		Tok
	Margit Brooks		Tok
	Teslin Hoyem		Wiseman

Table 1-4. – Sample of study communities.

Community	Estimated number of households in 2011	Households failed to contact	Refusal Rate	Household surveys completed	Sample achieved (percentage of households)
Completed project communities					
Alatna	9	2	14%	6	67%
Allakaket	57	11	9%	42	74%
Anaktuvuk Pass	85	14	13%	62	73%
Beaver	36	6	17%	25	69%
Bettles	8	0	0%	8	100%
Coldfoot	5	1	0%	4	80%
Dot Lake	21	3	22%	14	67%
Dry Creek	30	1	7%	27	90%
Evansville	13	0	0%	13	100%
Healy Lake	4	1	0%	3	75%
Wiseman	5	0	0%	5	100%
	273	39	7%	209	77%
Tok	555	3	11%	143	26%
Total surveys completed				352	

Source ADF&G Division of Subsistence household surveys, 2012.

larger community of Tok where a 25% sample was employed (Table 1-2). Participation was voluntary and all individual- and household-level responses are confidential.

As shown in Table 1-4, the study team interviewed 352 households in the 12 study communities. The average sample achieved in the 11 communities where a census was the goal was 77%, for a total of 209 surveys. A 100% sample was not achieved for the 11 communities combined because either households declined to participate, or a household could not be reached after 3 attempts to conduct an interview. In Tok, a 26% sample was achieved (143 surveys), which exceeded the goal of 25% of households. More detailed sampling information is included in a sample achievement table presented in each community chapter.

Mapping of Locations of Subsistence Hunting, Fishing, and Gathering, 2011

During household interviews, the researchers asked respondents to indicate the locations of their hunting, fishing, and gathering activities during the 2011 study year. In addition, interviewers asked the respondents to mark on the maps the sites of each harvest, the species harvested, the amounts harvested, and the months of harvest. ADF&G and SRB&A staff established a standard mapping method. Points were used for harvest locations and polygons (circled areas) were used for harvest effort areas, such as areas searched while hunting moose. Some lines were also drawn in order to depict traplines or courses taken while trolling for fish, for example, when the harvesting activity did not occur at a specific point.

The maps used in each community consisted of a set of 3 paper maps: 1) a map covering the larger area at a scale of 1:750,000; 2) a map covering the general area around the community, at 1:500,000; and 3) a map covering the immediate area around the community at a scale of 1:250,000. The maps were produced by Division of Subsistence staff using ArcGIS 10.3 software[4] on 11” x 17” paper and displayed a U.S. Geological Survey (USGS) topographic relief. Each surveyed household recorded subsistence activities for 2011 onto 2 sets of maps: fishing (water-based) activities were recorded on the first set of maps, while hunting, trapping, and plant gathering (land-based) activities were recorded on the second set. Maps were organized by writing the community identification number, the household’s identification number, the survey date, and the interviewer’s initials on each map. For the most part, ADF&G, SRB&A, DHSS, and Newfields researchers conducted all the mapping portions of the interviews. Division of Subsistence staff checked all maps for consistency by matching them to the survey forms at the end of each day.

Mapping of harvest areas encountered some difficulties in the field. These included small font size on the maps or difficulty identifying local landmarks without extensive study. Although in most cases after the respondents studied the map, these problems were overcome, but some details regarding harvest areas might have been lost. Additionally, some hunting and fishing took place in areas not shown on

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

the base maps because some harvesters traveled well outside the areas generally associated with their communities. These areas are not shown on the maps in this report. Therefore, the 2011 maps depict the minimum area used during the study year. In addition, the proposed APP route is displayed on the maps included in this report but it was not displayed on the maps used during the household survey. The proposed route is shown to demonstrate areas where overlap of harvesting activities and pipeline activities may occur.

While researchers were in the study communities they consulted with tribal governments and other community leaders to identify key respondents to interview. The purpose of the key respondent interviews was to provide additional context for the quantitative data, and to provide information for the community overview section at the beginning of each chapter, the seasonal round section, harvest over time analysis, and the community comments and concerns section at the end of each chapter. The number of key respondent interviews varied among communities. Key respondent interviews were semi-structured and directed by a key respondent interview protocol designed by ADF&G researcher Robbin La Vine that has proven successful on other baseline study projects (see Appendix B). Besides gathering qualitative data through the key respondent interview protocol, ADF&G, Newfields, and SRB&A staff took notes during interviews to provide additional context for this report. Researchers analyzed key respondent interviews and interview notes in preparation for this report. Following analysis, narratives were written between February and May so that they could be inserted into the draft report when the outline became available in May 2012. Key respondents were informed that, to maintain anonymity, their names would not be included in this report.

Household Survey Implementation and Community Meetings

Alatna and Allakaket

Preliminary community contact and scoping meetings were conducted by Hazell and Meredith Marchioni on December 12, 2011. On Monday, January 9, 2012, Lisa Hutchinson-Scarbrough, Robbin La Vine, Marchioni, and Hollie Wynne flew from Anchorage to Fairbanks where they were joined by independent researcher David Andersen for the final flights to Allakaket and Alatna. ADF&G contracted with Andersen to assist with introducing the project and conducting interviews because of his previous research experience in both study communities. Lodging was secured for the Alatna and Allakaket team of researchers at Allakaket School, which serves both communities.

Members of the Alatna Traditional Council attended a prior project scoping meeting in Allakaket held in the fall 2011 and had given tentative approval to proceed; a full Alatna-based community scoping meeting was held the first day the field team arrived. The Alatna Traditional Council prepared a dinner of wild foods for the occasion. Eight adults and a number of children were present in addition to the 5-member research team. All in attendance were receptive to the project and researcher presence in

their community. Almost all in attendance were motivated to participate in the project because they felt the data generated from the research would serve the community in the coming years considering that there was a recent spate of development interests from outside the area.

The Allakaket Traditional Council had a meeting at 12 p.m. on January 10, the same day as the training. While Hazell and Marchioni had visited the community the month before for a scoping meeting and received verbal support for the project, there were other items on the agenda and another group in town; subsequently, no resolution of support had been signed. The team took advantage of the Tuesday meeting to reintroduce the project to the community and secure a resolution of support. Fifteen people were in attendance in addition to all 5 research team members and 3 LRAs. Both Hutchinson-Scarbrough and La Vine were present to reintroduce the project to the council and answer questions. The community was very supportive of the idea of updating their subsistence harvest information. In particular they were interested in information that would document the importance of subsistence resources and community use of the area in consideration of the number of development proposals currently being forwarded. Council members present agreed to pass the amendment to support the project but they did not have a quorum. The resolution of support was held until all members could be polled about a week later.

Two LRAs from Alatna and 4 from Allakaket attended training. The training was conducted by Hutchinson-Scarbrough and La Vine, who later formed the LRAs into teams for deeper review of the survey process.

Surveys were initiated in Alatna the evening after the training. Andersen conducted 2 key respondent interviews over the following week in Alatna and 5 interviews in Allakaket. Surveys were completed in Alatna by January 15. A handful of surveys remained with the LRAs who conducted the few remaining interviews over the following weeks, until January 27 and 28, when Wynne and Kelly Gwynn returned to retrieve the last of the surveys and assist with any remaining to be administered.

Anaktuvuk Pass

Hazell traveled to Anaktuvuk Pass in mid-November in 2011 to meet with the tribal administrator to establish a time for the community scoping meeting. The meeting took place on November 29, 2011. At the scoping meeting, a translator was retained and the meeting was moderately attended. A timeline for the survey was proposed for between January 22 and 28, 2012. Due to inclement weather, ADF&G staff arrived on January 23, 2012 to conduct the comprehensive harvest survey. The team included Hazell, Margaret Cunningham, Benjamin Balivet, Gwynn, James Shewmake, and James Van Lanen from ADF&G, Sarah Yoder from the Alaska Department of Health and Social Services, and Derek Moss from Newfields. Two LRAs, Riley Sikuayugak and Laura Ticket, were trained on January 23. Alaska Power and Telephone Company provided a household list of current clients that was ground-truthed a number of times with the assistance of the LRAs. The ground-truthing effort

continued until the project lead, Hazell, was confident that all of the Anaktuvuk Pass households were identified (85 households at the time). Between January 23 and 28, 48 households were interviewed. Division representatives Balivet and Gwynn returned February 19 to interview additional households. The total households surveyed was 62 of 85 households, or 73% of resident households. ADF&G staff Hazell and Sarah Evans and Newfields health representative Moss traveled to Anaktuvuk Pass on June 12 for the community scoping meeting, which was well attended.

Beaver

Hazell traveled to Beaver to meet with members of the community to discuss the project on December 1, 2011. On January 9, 2012, Theodore Krieg and Balivet traveled to Beaver. A LRA who had already been selected had prepared a household list in advance. One other LRA was identified and contacted and training was held at the Beaver tribal office for the 2 LRAs on January 10, 2012. As suggested by the First Chief, fliers were posted at strategic locations around the community announcing a Community Informational Meeting starting at 6 p.m. at the Beaver Tribal Council office. Balivet volunteered to do a free concert with his guitar at the community meeting; however, even this was not enough to encourage residents to travel in the evening in the cold. The fliers that were posted had a considerable amount of information to alert residents that the survey was taking place.

On January 11, surveys commenced as Krieg and Balivet teamed up with local assistants and split up to contact households. By January 16, of the 36 households on the household list for Beaver, 25 were surveyed. On January 17, Krieg and Balivet returned to Anchorage with the completed surveys, maps, and 2 key respondent interviews.

Malla Kukkonen and Krieg facilitated a community review meeting in Beaver on May 15, 2012. Krieg presented a Microsoft PowerPoint presentation to about a dozen community members.

Bettles and Evansville

A community scoping meeting was held in Bettles and Evansville on November 2 and 3, 2011, by Holen and Hazell. On January 8, 2012, Holen held a training meeting in Bettles for the LRAs for both Bettles and Evansville. Surveys began on January 9. Upon arrival, a household list for both communities had been provided by a lodge employee. Hazell was responsible for Evansville and Sarah Evans for Bettles. Surveys were completed with 100% of the households in each community (census) by January 12. Key respondent interviews were completed with 2 people from each community. The community review meeting was held in Bettles on June 6, 2012, and in Evansville on June 7, 2012; Hazell and Evans conducted both meetings, which were well attended.

Coldfoot and Wiseman

On November 8, 2011, Balivet, Gwynn, and Hazell traveled to Coldfoot and Wiseman and spoke to a few of the local residents. The research team learned that the best time to conduct the household surveys in Coldfoot and Wiseman would be around March because several community members were traveling in January and February. At the end of February, Krieg confirmed with community members in both communities that a research team would be conducting the household surveys on March 12–17, 2012.

Derek Moss of Newfields and Krieg drove from Fairbanks to Coldfoot on March 12, 2012. They conducted the household surveys in Coldfoot without the help of an LRA. An LRA was contracted to assist the research team to set up interviews in Wiseman, but was not present in the community when surveys took place. Krieg conducted a key respondent interview in Wiseman during the visit. The research team was unable to conduct a key respondent interview in Coldfoot because local residents were busy with work during the fieldwork.

Krieg and Kukkonen of ADF&G traveled back to Coldfoot and Wiseman on May 14–15, 2012, to hold community review meetings. The Wiseman meeting took place in the community center on May 14 and 4 Wiseman residents attended. The Coldfoot meeting occurred in the morning of May 15 at Coldfoot Camp with 3 residents in attendance.

Dot Lake and Dry Creek

On October 26, 2011, Holen, Hazell, La Vine, and Sarah Yoder (Newfields) traveled to Tok to facilitate community scoping meetings in Dot Lake and Dry Creek, and begin facilitating logistics in Tok. On October 27, Holen held a community meeting in Dot Lake. Following the meeting in Dot Lake, the team traveled to Dry Creek to meet with community members. After this meeting, La Vine maintained contact in order to address logistics and arrange for contracting LRAs in both Dot Lake and Dry Creek. Fieldwork in Dot Lake was coordinated with fieldwork in Dry Creek since the 2 communities are close. On February 5, 2012, La Vine and Balivet of ADF&G, and Moss of Newfields, traveled to Tok to use the community as a base for their work in Dot Lake.

On the morning of February 6, 2012, La Vine, Balivet, and Moss met with 2 Dot Lake LRAs to conduct the training, and surveys began that evening. On February 7, La Vine, Balivet, and Moss were joined by Raena Schraer from SRB&A. On February 8, La Vine was joined by independent contractor Simeone, who conducted key respondent interviews with 2 members of the Dot Lake community. Surveys were completed in Dot Lake on February 11, 2012.

Also, on February 6, 2012, La Vine and Moss met with 2 LRAs from Dry Creek and introduced them to the project. By previous arrangement, La Vine and Moss were invited to join the residents of Dry Creek for their 5 p.m. dinner in the tabernacle, a large multi-purpose community hall. After

dinner La Vine was able to address the entire community and provide information on the scope of the project, implications of conducting the project in their community (no previous subsistence studies had been conducted in Dry Creek), and to answer any questions the community members had. The meeting took approximately 30 minutes, during which time community members expressed interest and support. After dinner, La Vine and Moss returned with the LRAs to finish the training session and finalize the household list. La Vine and Moss divided their time between Dot Lake in the mornings and Dry Creek in the afternoons; Balivet worked in Dry Creek when appointments were slow in Dot Lake. La Vine conducted key respondent interviews on Friday, February 10, at which time all surveys had been completed.

The community review meetings were held by La Vine in Dry Creek on June 13 and in Dot Lake on June 14, 2012.

Healy Lake

No community scoping meeting was held in Healy Lake in the fall of 2011 because it was difficult to determine if Healy Lake was occupied year-round. After several months of unsuccessful attempts to contact the Healy Lake Traditional Tribal Council, a decision was made to send Balivet to the community with the intent to gain permission to survey those community residents who were present. Community members were informed that the Healy Lake Traditional Council, which is based in Fairbanks, could not be contacted and participation was left up to the individual households residing in Healy Lake. On Tuesday, March 13, 2012, Balivet flew from Anchorage to Fairbanks where he then traveled via the U.S. Postal Service mail plane to Healy Lake. A resident provided transportation for equipment and the researcher from the ice landing strip to the home of another resident where the researcher stayed for the duration of the survey. By March 15, 2012, 4 surveys and 3 key respondent interviews were completed in Healy Lake, which had a community of 5 households during the 2011 study year.

On June 8, 2012, Balivet returned to Healy Lake to present the research findings. Since Healy Lake has only 5 households, Balivet discussed whether, due to potential confidentiality issues, presenting the results in this report at the community level would be appropriate. The community agreed that they would like to see the results included in this report.

Tok

ADF&G researchers posted project overview fliers in December 2011 in many local business and community centers to introduce the project to the community of Tok. Researchers also posted fliers announcing the hiring of LRAs and times for training for the job. On February 6, a 1-day training

occurred for the LRAs in Tok. ADF&G staff, along with staff from SRB&A, conducted the surveys in Tok. The surveys occurred February 6–13, 2012.

The DNR office in Tok had aerial photographs taken in the year 2000 that showed every home in Tok at the time; these were then assigned a house or building number. On a separate Microsoft Excel sheet, DNR matched the house number with the name of the owner of the house or building. ADF&G staff worked with the LRAs from Tok to update the aerial maps by determining if the houses or buildings were vacant or had been sold or rented to different residents of Tok. The maps were "groundtruthed" in many cases by driving around to various subdivisions to determine if houses were indeed occupied. Once researchers were confident they had a good list of occupied households, a sample was created. The list of names of all the homeowners or tenants was then randomized using a computer program. The list of households was then surveyed systemically, until at least 25% of the households in Tok were surveyed. Each household was contacted 3 times at various times of the day either via phone or in person before researchers went onto the next household on the random sample list and marked the household as no contact (17 total).

To complete the surveys, project researchers divided the household identification numbers and assigned each list to the LRAs, each of whom was partnered with a researcher from ADF&G or SRB&A. The surveys were mainly conducted at the respondents' homes, or at a spare room at a local restaurant. Every day all surveys were turned in to Evans, who kept track of which households had been surveyed or contacted, and who was next on the list. The study team interviewed 143 households in Tok, representing 26% of the final estimated 555 year-round resident households.

ADF&G staff presented preliminary survey findings at a meeting in Tok on June 4, 2012. The meeting was organized in collaboration with community members from Tok and the public meeting was held at the Tok visitor center. There were 6 community members in attendance and comments have been included in the section presenting local concerns in the Tok chapter.

DATA ANALYSIS AND REVIEW

SURVEY DATA ENTRY AND ANALYSIS

All data were coded for data entry by Division of Subsistence staff in Anchorage and Dillingham. Surveys were reviewed and coded by the project leads in each community for consistency. Responses were coded following standardized conventions used by the Division of Subsistence to facilitate data entry. Information management staff within the Division of Subsistence set up database structures within Microsoft SQL Server at ADF&G in Anchorage to hold the survey data. The database structures included rules, constraints, and referential integrity to ensure that data were entered completely and accurately. Data entry screens were available on a secured 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 1 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 19. 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. Analysis 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 "non-response" 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

$$H_i = \overline{h}_i S_i \tag{1}$$

where:

$\overline{h}_i = \dfrac{h_i}{n_i}$ (mean harvest per returned survey)

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

h_i = the total harvest reported in returned surveys,

n_i = the number of returned surveys, and

S_i = the number of households in a community.

As an interim step, the standard deviation (SD), or variance (V; which is the SD squared), was also calculated with the raw, unexpanded data. The standard error (SE), or SD, of the mean was also calculated for each community. This was used to estimate the relative precision of the mean, or the likelihood that an unknown value would fall within a certain distance from the mean. In this study,

the relative precision of the mean is shown in the tables as a confidence limit (CL), expressed as a percentage. Once the standard error 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 constant for 95% confidence limits is 1.96. Though there are numerous ways to express the formula below, it contains the components of an SD, V, and SE.

Relative precision of the mean (CL%):

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

where:

s = sample standard deviation,

n = sample size,

N = population size, and

$t_{\alpha/2}$ = Student's t statistic for alpha level (α=.95) with n–1 degrees of freedom.

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

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

POPULATION ESTIMATES AND OTHER DEMOGRAPHIC INFORMATION

As noted above, a goal of the research was to collect demographic information for all year-round households in each study community, with the exception of Tok where a randomly selected sample was interviewed. For this study, "year-round" was defined as being domiciled in the community when the surveys took place and for at least 9 months during the 2011 study year. 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 between the population estimates for each community, as well as other demographic data, generated from the division's household survey (as of December 31, 2011), and estimates developed by the 2010 federal census (U. S. Census Bureau 2011a). The Division survey results may reflect changes in the population of each community since the April 2010 federal census. Also, the Division survey took place between January

and March 2012, months when seasonal residents of the community were likely to be absent. Some of these seasonal residents may have been part of the U.S. Bureau of the Census estimates. Differences in the composition of the sample upon which each population estimate was based may also account for some of the differences between the estimates and this is discussed in each chapter.

MAP DATA ENTRY AND ANALYSIS

As noted, ADF&G staff checked maps for consistency with data recorded on the survey forms. They also removed extraneous marks from the maps to make sure the digitizing process would go as smoothly as possible. SRB&A's geographic information system (GIS) team digitized the polygons, points, and lines that field staff had hand-drawn on the paper maps during the interviews. Using a map template agreed upon by ADF&G, SRB&A produced the maps for this report.

FINAL REPORT ORGANIZATION

This report summarizes the results of systematic household surveys and mapping interviews conducted by staff from ADF&G, Newfields, and SRB&A, as well as LRAs, and summarizes community meetings. Each chapter includes tables and figures that report findings on demographic characteristics, employment characteristics, individual participation in harvesting and processing of wild resources, and characteristics of resource harvests and uses including the sharing of wild foods, and trends over time. Because of the large number of maps of hunting, fishing, and gathering areas used by each community in 2011, selected maps have been included in the individual chapters and the remaining maps are published as Appendix D, "Harvest Use Area Maps by Community." The final chapter of the report provides a short, general overview of patterns of harvests and uses of wild resources in the study communities.

ADF&G researchers prepared this final report; author(s) are listed at the beginning of each chapter and in Table 1-3. The content in terms of harvest data is consistent in each chapter; however, there are differences in terms of documenting historical trends because not all communities have had past comprehensive harvest surveys upon which to base comparisons. This is noted below in the chapter organization.

Additionally, some communities are larger and more key respondent interviews were conducted in those communities; therefore, more contextual information has been included in the chapter. The section "Local Concerns Regarding Resources" varies by community depending on what topics community members chose to explore and how vocal community members were during the course of the study.

This report is divided into 2 geographic sections. The community chapters begin with Chapter 2: Alatna. The beginning of Chapter 2 includes an ethnographic and historical overview that applies to the northern area of this study. This includes additional ethnographic information by Andersen of

Research North. Because much of this overview applies to Allakaket, only a short summary of the contemporary community of Allakaket is included in Chapter 3. Previous harvest studies conducted in the communities of Alatna and Allakaket by the Division of Subsistence have been presented in a single combined report with combined community harvest estimates; the data from these previous studies cannot be disaggregated for each community. For the harvest over time section, for the purpose of creating historical comparisons, the summary of Allakaket includes a combined data set that includes both communities that can be compared to past harvest surveys.

Chapter 4 covers Anaktuvuk Pass and since this community is far to the north of other study communities and has a unique ethnohistory, a more detailed ethnographic section has been included at the beginning of this chapter. Anaktuvuk Pass has had harvest surveys in the past, conducted by the North Slope Borough, and those data have also been included in the historical comparison section of this chapter. The community of Beaver has had several studies over the past few years and the ethnographic data are rich; therefore, a more detailed ethnographic section has been included in Chapter 5. Beaver also includes a robust historical harvest section.

The communities of Evansville and Bettles are presented as separate chapters—chapters 6 and 7. However, like Alatna and Allakaket, they are close together—the community of Evansville actually surrounds Bettles—so the ethnographic and historical section for both communities is presented at the beginning of Chapter 6. Also, like Alatna and Allakaket, previous harvest studies conducted in the communities of Evansville and Bettles by the Division of Subsistence were presented in a single combined report with combined harvest estimates. So, for this section, for the purpose of creating historical comparisons, the summary of Bettles includes a combined data set for both communities that can be compared to past harvest surveys.

The communities of Coldfoot and Wiseman are geographically close, yet have very different histories. Chapter 8 for Coldfoot includes some information for the area in general; however, a separate ethnographic and historical overview has been provided for Wiseman in Chapter 9. This is the first survey for Coldfoot so no historical harvest section has been included. Although the Division of Subsistence has not conducted a comprehensive harvest survey in Wiseman, Carol Patricia Scott (1980) collected wild resource harvest data from Wiseman residents for her master's thesis for the study year 1991. Her data are presented in numbers of animals/fish harvested, and for the purposes of this study, these data have been converted to pounds usable weight by using the Division of Subsistence standard conversion factors for that period. This is the final chapter for the northern region of this report.

Healy Lake (Chapter 10) begins the section for the upper Tanana communities of Healy Lake, Dot Lake, Dry Creek, and Tok. A detailed ethnographic and historical section has been included in Chapter 10. Although much of this was compiled by the author of this chapter, Balivet, this section drew heavily from the work of Dr. William E. Simeone, a contractor on this project from Enterprise North. This is the first harvest survey for Healy Lake so no historical harvest section is included. The

ethnographic information included in Chapter 10 is relevant for Chapter 11 (Dot Lake); therefore, the ethnographic and historical overview for Chapter 11 is short. A historical harvest comparison is included in the Dot Lake section because there was a comprehensive survey in Dot Lake for study year 1987. Dry Creek is a fairly new community and author La Vine interviewed local residents to understand the recent history of this community and has included this information at the beginning of Chapter 12. Since this is a new community, there are no historical harvest data for comparisons so this section is not included in Chapter 12. As noted above, much of the discussion regarding the upper Tanana is included in Chapter 10 (Healy Lake). There is also a discussion of the establishment of Tok in that chapter. Therefore, the Tok chapter has a short introduction to the community. Tok (Chapter 13) also includes a historical harvest comparison because a survey was conducted in the community for study year 1987.

As noted earlier, these are diverse communities and Chapter 14 provides comparisons of harvest amounts and composition of the harvest. This short chapter concludes this report.

ADF&G provided a draft report to the APP and to the study communities for their review and comment. After receipt of comments, the report was finalized. ADF&G mailed a short (4-page) summary of the study findings to every household in the 12 study communities (Appendix E).

CHAPTER 2: ALATNA

Prepared by Meredith Marchioni and David Andersen

COMMUNITY BACKGROUND

NORTHERN AREA ETHNOHISTORY OVERVIEW

The purpose of this section, which was written primarily by David Andersen of Research North, is to provide a background for the communities of Alatna and Allakaket. However, it also provides a more in-depth ethnohistory for the study communities located north of Fairbanks, including Alatna, Allakaket, Anaktuvuk Pass, Beaver, Bettles, Evansville, Coldfoot, and Wiseman. Additional ethnohistoric context specific to the communities of Anaktuvuk Pass, Beaver, Coldfoot, and Wiseman are provided in those chapters as well.

The contemporary communities of Alatna and Allakaket are located 185 miles north of Fairbanks on opposite sides of the upper Koyukuk River just below the mouth of the Alatna River. Because of this co-location and a shared infrastructure, they are frequently referred to in tandem as Alatna–Allakaket. The Koyukuk River meanders southwest from the communities and confluences with the Yukon River approximately 300 miles downstream. The southern areas of the Gates of the Arctic National Park and Preserve and the Brooks Range are situated north approximately 90 miles. The Brooks Range is a distinctive feature that can be seen from the communities and is the headwaters area of the Alatna and John rivers. The communities are within the Koyukuk River Valley, which contains a wide range of habitats that support a variety of plant, wildlife, fish, and bird species that are important to the residents of these communities.

While Allakaket and Alatna share enough common elements with respect to geography, contact, and settlement for their history to be discussed together, they have decidedly different cultural origins. The residents of Alatna have strong ancestral ties to Eskimo groups in the Kobuk River, Selawik River, and Kotzebue Sound vicinity, and residents of Allakaket have predominantly Koyukon Athabascan roots. This nexus is unique among the contemporary communities of interior Alaska and stands as a 20th century testament and manifestation of certainly centuries, and perhaps millennia, of generally cordial interactions between these neighboring cultures.

THE TRADITIONAL SETTLEMENT PATTERN

The pre-contact inhabitants of the Koyukuk River drainage belonged to the Koyukon Athabascan language group and constituted the northern-most division of the Koyukon (Clark 1981). From the mouth of the Koyukuk to its upper reaches, 4 closely related Koyukon dialects or linguistic subdivisions are recognized. Speakers of 2 of these subdivisions—the Todatonten-Kanuti and the South Fork—were the major occupants of the upper Koyukuk River region. Each linguistic subdivision was represented within its respective territory by one or more extended family bands. Exact territorial and linguistic boundaries between groups tended to be fluid with significant mixing and interchange.

What united and distinguished the Koyukuk Koyukon from their counterparts on the lower and middle Yukon River was their longstanding and close trade relationships with neighboring Eskimo groups from the Kobuk River and Kotzebue Sound region as well as the Nunamiut (inland Inupiat) of Anaktuvuk Pass (Clark 1981; Simeone 1980). These exchanges took place through an elaborate network of reciprocal partnerships that were maintained from generation to generation and included inter-regional feasts, inter-group hunting, adoption of children between partner families, and intermarriage (Clark and Clark 1976). The Alatna and Kobuk rivers provided one of the major trade routes by which Siberian and coastal Alaska trade goods such as seal oil, baleen, seal skins, and jade made their way inland, and interior resources such as furs, hides, birch bark containers, and spruce pitch found their way to the coast (Clark 1974). The Koyukuk Koyukon served as key participants in this flow of traditional goods as middleman traders (Clark and Clark 1976; Simeone 1980). The confluence of the Alatna and Koyukuk rivers was one of several known inter- and intra-divisional trading sites located along the Koyukuk River (Clark 1981). Well-traveled overland trails connected the upper Koyukuk with key Yukon River trade locations in the vicinity of present-day Tanana and Stevens Village. The Kotzebue–Kobuk–Koyukuk trade connection was also a source of rivalry and hostility between the Koyukuk Koyukon and the lower Yukon Koyukon who had similar trade relationships with Norton Sound Eskimo groups and vied with the Koyukuk Koyukon for control of trade goods to and from the interior (Simeone 1980).

While the Koyukuk River drainage as far north as the lower Alatna River falls firmly within the traditional homeland of the Koyukon, the occupation history of the northern headwaters of the Koyukuk, upper Alatna, and the Brooks Range foothills is less clear. This region is on the margins of multiple cultural and linguistic groups known to have variously utilized, occupied, claimed, or regularly traveled through the region and scholars have developed multiple occupation scenarios for the centuries leading up to Euro-American contact. At one time or another, Gwich'in and Koyukon Athabascan groups are both said to have claimed areas as far north and west as the Noatak River in their sphere of influence (Raboff 2001). Suffice it to say that in the early 19th century, the Koyukuk headwaters and the central Brooks Range foothills appear to have been a cultural crossroads—a region utilized periodically and jointly by Kobuk River Eskimo and Nunamiut groups, as well as the Chandalar Gwich'in and

Koyukon Athabascan groups (Raboff 2001; Slobodin 1981). There is evidence that by 1850, Eskimo groups from primarily the Kobuk River drainage had established themselves firmly enough so that the central Brooks Range foothills region and the Koyukuk tributaries draining them, including the upper Alatna River, were largely regarded as Eskimo territory (Slobodin 1981). This juxtaposition, and the extensive trade, shared customs, and intermarriage that is known to have taken place, resulted in the cultures of the upper Koyukuk River Koyukon and the upper Kobuk River Eskimos becoming, for all practical purposes, amalgamated (Clark 1974). Though there were language differences and they had different ancestral ties, the general seasonal round and methods used by these 2 groups to exact a living from the boreal forests of the upper Koyukuk were necessarily similar.

THE TRADITIONAL LAND USE AND SUBSISTENCE PATTERN

The general land use pattern of the Koyukon involved extended family bands utilizing a series of semi-permanent settlements or seasonal camps within a relatively defined territory (Clark 1981). This seasonal round was

> … distinctly structured in terms of time, place, type of activity, and type of interacting units. These units at various appropriate times consisted of families, households, fishing encampments, and hunting-foraging groups that comprised major portions of a band, entire bands, joint hunting groups from two major hunting bands and, for trading festivals, various aggregates of Koyukon as well as other Athabascan and sometimes Eskimo groups. (Clark 1981:588)

In May and June, families vacated spring fishing and hunting camps and gathered at the mouths of major tributary streams to hold communal feasts of spring-caught foods such as fish, waterfowl, and muskrats. The summer months were focused primarily on fishing activities along major streams followed by late-summer berry picking and fall hunting activities. With the approach of winter, families moved to camp locations near large lakes where "men set grayling and whitefish traps in the streams and continued to hunt locally, while women and children dried fish and snared small game" (Clark 1981:588). During the deep winter months the focus was on hunting big game such as caribou and den hunting for black bears. As spring approached, families relocated to spring camp locations where they netted fish, hunted waterfowl, and trapped for muskrats and beavers. The river ice breaking up signaled that it was time to move back to their summer camps situated near or along the major rivers.

This generalized picture of the seasonal strategy adopted by the Koyukon as a whole was customized to fit the different resource circumstances of each corner of the Koyukon territory. The upper Koyukuk River, for example, lacked direct access to the abundant salmon runs available along the Yukon mainstem. The lack of salmon in the upper Koyukuk was compensated for through an elaborate and year-round exploitation of resident fish species such as whitefishes, sheefish, northern pike, Arctic grayling, burbot, and Alaska blackfish (Andersen et al. 2004). Similarly, moose, a major food source

for neighboring groups in the middle and upper Yukon, were not common in the Koyukuk drainage until the mid-1930s (Andersen et al. 2004; Madison and Yarber 1979). Residents of the upper Koyukuk made up for this absence by taking full advantage of increased access to caribou, accentuating den hunting for bears, and making long fall hunting excursions to the Brooks Range to harvest Dall sheep (Marcotte and Haynes 1985; Nelson et al. 1982).

Within a particular extended family band's region there were areas and resources that were shared communally and specific sites and resources that were recognized as individually or family owned. Among the Koyukuk River bands, most big game, waterfowl hunting, and berry picking areas were considered open to all, while "beaver houses and ponds, muskrat swamps, fishing locations, bear hibernation holes, certain big game territories where fences were built, berrying grounds adjacent to fish camps, and some bird hunting areas were privately held" (Clark 1981:585).

THE PERIOD OF CONTACT AND CONSOLIDATION 1884–1920

For residents of the middle and upper Koyukuk River, direct contact with Euro-Americans came relatively late because most of the early exploration of interior Alaska associated with the Russian and American fur trade was initially concentrated along the main stem Yukon River. A Russian trading post was established at Nulato in 1839 and represented the first extended presence of non-Natives in Koyukon territory (Hosley 1981). Brief excursions by Russian traders from Nulato had succeeded in penetrating the lower Koyukuk River to the mouth of the Kateel River by 1843 (Simeone 1980; Zagoskin 1967). But it was not until 1884 that the inhabitants of the upper Koyukuk River experienced direct in-region contact by outsiders. That year, a trader by the name of Mayo is known to have traveled overland from the vicinity of present-day Tanana to the upper Koyukuk River and reported a small Native settlement (now referred to as Lake Creek) on the lower Kanuti River (Allen 1985; Clark 1981). The following year, U.S. Army Lt. Henry Allen led a small group over the same route, obtained birch-bark canoes from the 13 residents of the Lake Creek settlement, and ascended the Koyukuk River to the John River in the vicinity of present-day Bettles before turning around and floating the entire length of the Koyukuk to the Yukon and the coast of Alaska (Allen 1985).

While the ethnographic observations provided by Allen on his late summer passage down the Koyukuk River drainage in 1885 were limited, they provide the earliest record we have of the indigenous occupants and settlement patterns. Aside from his exchange at the Lake Creek site on the Kanuti, his encounters with Natives were few and he mentions no signs of settlement at the site of present-day Allakaket. Ascending the Koyukuk and passing the mouth of the Nohoolchintna River (now known as South Fork Koyukuk River), Allen's Native guides made him aware of the "last settlement on the Koyukuk" located a mile or so up that branch of the Koyukuk (Allen 1985:83–84). On his downward journey, Allen met a single "Mahlemute" (Eskimo) ascending the John River and bound for the Brooks Range with dried salmon he had obtained at the South Fork Koyukon settlement. The following day

they met "some women and children from the Nohoolchintna enroute to the Allenkaket (or Alatna) for fish" (Allen 1985:83–84).

The presence of 2 small seasonal settlements located off the main stem Koyukuk is interesting in that, while these settlements do not exist today, family ties to both the South Fork Koyukuk and Kanuti River drainages are still recognized among contemporary residents of the region today and roughly correspond to the 2 linguistic subdivisions that traditionally occupied the upper Koyukuk River. Allen's observation of an Eskimo traveler returning to the Brooks Range with fish obtained in trade at the South Fork Koyukon settlement also illustrates the generally close trade relationships maintained with Eskimo groups to the north. Allen's mid-August meeting of South Fork Koyukon residents bound for fishing on the Alatna River fits with fall fishing efforts on spawning concentrations of whitefishes and sheefish that remain a major winter food source for area residents to this day (Andersen et al. 2004; Andersen 2007).

In the decade following Allen's excursion through the Koyukuk region, Koyukon contact with outsiders rapidly increased, driven primarily by the quest for gold. Between 1885 and 1895 a growing number of gold prospectors passed through the upper Koyukuk region and small deposits of gold had been discovered in the Koyukuk headwaters by 1893 (Marshall 1933). Word of these strikes spread among the thousands of miners flooding into the Klondike Gold Fields and more than a few re-routed to the Koyukuk diggings. The first steam-powered boat ascended the Koyukuk in 1897 (Clark 1981) and by 1898 there were an estimated 1,000 Euro-American miners residing in makeshift mining camps within the Koyukuk drainage (Marshall 1933).

The sustained presence of large numbers of Euro-Americans in the upper Koyukuk affected the trade, culture, and settlement pattern of the indigenous inhabitants. The prospect of year-round, in-region trade with non-Natives and new wage-earning opportunities had the effect of increasing Native populations at some long established Native settlements such as the Lake Creek site (Mendenhall 1902) and establishing new concentrations of once-scattered Native families at new locations in the vicinity of mining sites, trading posts, and freighting depots that resulted from the frenzy of mining activity. During the first decade of the 20th century, Kobuk Eskimo families moved in increasing numbers to the Alatna River mouth trading site and a collection of new, sometimes short-lived settlements brought Natives and non-Natives in the upper Koyukuk together at places such as Arctic City, Bergman, Peavy, Bettles, Coldfoot, and Wiseman (Andersen 2007; Marshall 1933; Mendenhall 1902; Nictune 1980; Stuck 1914; Madison and Yvonne 1980).

The actual establishment of present-day Alatna and Allakaket can be directly attributed to the missionary activities of the Episcopal Church and the specific vision of Archdeacon Hudson Stuck. Through a series of annual missionary visits to the upper Koyukuk in the early 1900s, Stuck had become well acquainted with area Alaska Natives who were, by then, seasonally concentrated at Arctic City—some 12 miles downriver from present-day Allakaket near the mouth of the Kanuti

River. A narrative of Stuck's trip through the upper Koyukuk during the winter of 1905–06 contains the following passage:

> Back next day at the mouth of the Alatna, I was again impressed with the eligibility of that spot as a mission site. It was but ten miles above the present native [sic] village, and, with church and school established the whole population would sooner or later move to it. This gives the opportunity for regulating the building of cabins and the advantage of a new, clean start. Moreover, the Alatna is the highway between the Kobuk and the Koyukuks, and the Esquimaux [sic] coming over in increasing numbers, would be served by a mission at this place as well as the Indians. I foresaw two villages, perhaps, on the opposite sides of the river—one clustered about the church and the school, the other a little lower down—where these hereditary enemies might live side by side in peace and harmony under the firm yet gentle influence of the church. So I staked a mission site, and set up notices claiming the ground for that purpose, almost opposite the mouth of the Alatna, which, in the native tongue is Allakaket or Allachaket. (Stuck 1914:70)

While it would be a mistake to describe the longstanding Koyukon–Kobuk Eskimo relationship as universally amicable, Stuck's characterization of Koyukon–Kobuk relations as "hereditary enemies" was equally wrong. That aside, Stuck's vision of a mission serving to attract and concentrate the scattered population of area Alaska Natives from 2 distinct cultures into 2 separate but intermingled communities proved to be prophetic. Construction of the mission began in 1906 and was complete by 1907, and the St. John's-in-the-Wilderness mission and day school served as an immediate magnet for the area Alaska Native population—with Athabascans occupying the Allakaket side and Kobuk Eskimos gathered on the other, as it remains to this day.

THE 20TH CENTURY CHANGES AND CONTEMPORARY COMMUNITIES

The consolidation of once scattered family bands into permanent communities produced modifications to the seasonal round of subsistence activities. By and large, families continued to carry out the familiar seasonal round and utilize the same traditional use areas they had previously, but did so from a community base and began to incorporate seasonal wage earning opportunities in to the seasonal round. From the village base, family networks of summer fish camps, fall hunting camps, and spring camps continued to be utilized and maintained by families throughout the first half of the 20th century. Traplines and wood cutting areas were added to the areas that were informally recognized as individually or family owned (Clark 1981). The advent of statehood in 1959 brought mandatory school attendance and quickly eroded the practice of whole families moving from camp to camp. The gradual replacement of dog team transportation with reliable snowmachines in the 1960s precipitated declines in the harvest of fish to feed dogs. The transition to snowmachines also had the

effect of making it easier to access traditional use areas from a village setting, but required increased ties to the cash economy in order to purchase, operate, and maintain the new technology.

Moose entered the Koyukuk region beginning in the 1930s and have now surpassed caribou as the region's major source of wild meat. While caribou are occasionally available in the vicinity of the community (as they were in 2011), since the 1970s changes in the movement of caribou herds has altered their availability in the upper Koyukuk River region and hunters must frequently make long excursions to hunt them. Sources providing good descriptions of contemporary culture and harvest patterns in the upper Koyukuk include, "Contemporary Resource Use Patterns in the Upper Koyukuk Region, Alaska," by Marcotte and Haynes (1985), *Tracks in the Wildland: A Portrayal of Koyukon and Nunamiut Subsistence* (Nelson et al. 1982), and *Make Prayers to the Raven: A Koyukon View of the Northern Forest* by Nelson (1983).

Through the modernization, expansion, and changes that have come to all rural Alaska communities in the past 100 years, the communities of Alatna and Allakaket have managed to coexist and share critical infrastructure while maintaining their cultural identities and autonomy. The airport and school are both located on the Allakaket side of the Koyukuk River. This necessitates frequent and daily crossings of the river by snowmachine in the winter and by boat in the summer to transport children back and forth to school and get passengers, mail, and freight to and from the airport. Both communities are federally-recognized tribes, maintain their own tribal offices, and have independent tribal councils. With its larger population base, Allakaket is recognized and incorporated as a second class city. Alatna remains unincorporated.

A major flood event occurred in the upper Koyukuk during the fall of 1994 resulting in the loss and relocation of many area homes. Contemporary frame U.S. Department of Housing and Urban Development (HUD) homes have replaced many of the log homes that were commonplace prior to the flood. Most of Allakaket's new construction has taken place on a nearby hilltop area (uptown) approximately a mile from the original town site (downtown) and the population of Allakaket is now spread more or less evenly between these 2 areas. These new homes in Allakaket are outside the boundaries of the incorporated city; the U.S. Census Bureau reports data for this area as a separate Census Designated Place called New Allakaket.

Ties to the land remain strong through active participation in hunting, fishing, and gathering activities and widespread sharing of harvest proceeds. Wild foods remain a cultural cornerstone for most households and are staples in the local diet. On the Alatna side, connections with relatives in the Kobuk, Selawik, and Kotzebue areas are maintained through frequent communication, visits, and exchange of foods. It is worth noting that a community meeting in Alatna welcoming the Division of Subsistence research team included a meal that featured muktuk obtained from relatives on the coast, as well as seal oil, which is a much sought-after resource that still routinely finds its way to this far-

Table 2-1. – Population of Alatna, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
12	37	36	97.3%	9	32	32	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. *Source* U.S. Census, 2011.

inland community. With this basic background, harvest statistics and land use mapping data collected in conjunction with this study are presented below.

DEMOGRAPHY

According to the federal census, Alatna had 37 residents in 2010 (Table 2-1). However, the household survey conducted for this study in 2011 found an estimated population of 32 residents, of which 100% were Alaska Native (Table 2-1). Figure 2-1 shows the population of the community over time. According to the 2010 U.S. Census there were an estimated 12 households in the village of Alatna (U. S. Census Bureau 2011a). The Division of Subsistence researchers found 9 year-round households in Alatna in 2011 (Table 2-1). Of these, 6 households (67%) were surveyed (Table 2-2). The mean number of years of residency in Alatna for all residents was 17 years, with the maximum length of residence at 58 years (Table 2-3). The largest age cohorts for males were 5–9 and 30–34 years of age, and for females they were 5–9 and 25–29 years of age (Figure 2-2; Table 2-4). There were 2 males in the 50–59 age cohort, however, other than these males there were no individuals over the age of 40. Of the Alatna household heads interviewed, an estimated 89% were born in Alaska (Table 2-5). Most of the Alaska-born household heads were born in Alatna (56%) or Allakaket (22%). In comparison, approximately 11% of the household heads were born in locations within the United States that are outside of Alaska.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 2-6 reports the estimated levels of individual participation in the harvesting and processing of wild resources by Alatna residents in 2011. Approximately 91% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 80% of all residents gathered plants, 43% fished, 55% hunted for birds, and 35% hunted for large land mammals. Fewer residents (15%) were involved in furbearer hunting or trapping. In comparison, 86% of all Alatna residents processed some resources in 2011. Most residents participated in processing plants and large land mammals (80% for both categories), followed by 65% of residents participating in processing birds, and 32% of residents processing fish.

Figure 2-1.– Population history, Alatna, 1980–2011.

Table 2-2. – Sample achievement, Alatna, 2011.

Number of dwelling units	9.0
Interview goal	9.0
Households interviewed	6.0
Households failed to contact	2.0
Households declined to be interviewed	1.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	7.0
Refusal rate	14.3%
Final estimate of permanent households	9.0
Percentage of total households interviewed	66.7%
Interview weighting factor	1.5
Sampled population	21.0
Estimated population	31.5

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

Table 2-3. – Demographics and sample characteristics, Alatna, 2011.

Characteristics	Alatna
Sampled households	6.0
Eligible households	9.0
Percentage sampled	66.7%
Household size	
Mean	3.5
Minimum	1.0
Maximum	6.0
Sample population	21.0
Estimated community population	31.5
Age	
Mean	18.2
Minimum[a]	0.0
Maximum	58.0
Median	10.0
Length of residency	
Total population	
Mean	17.2
Minimum[a]	0.0
Maximum	58.0
Heads of household	
Mean	31.3
Minimum[a]	9.0
Maximum	58.0
Sex	
Estimated male	
Number	15.0
Percentage	47.6%
Estimated female	
Number	16.5
Percentage	52.4%
Alaska Native	
Estimated households[b]	
Number	9.0
Percentage	100.0%
Estimated population	
Number	31.5
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.

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

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

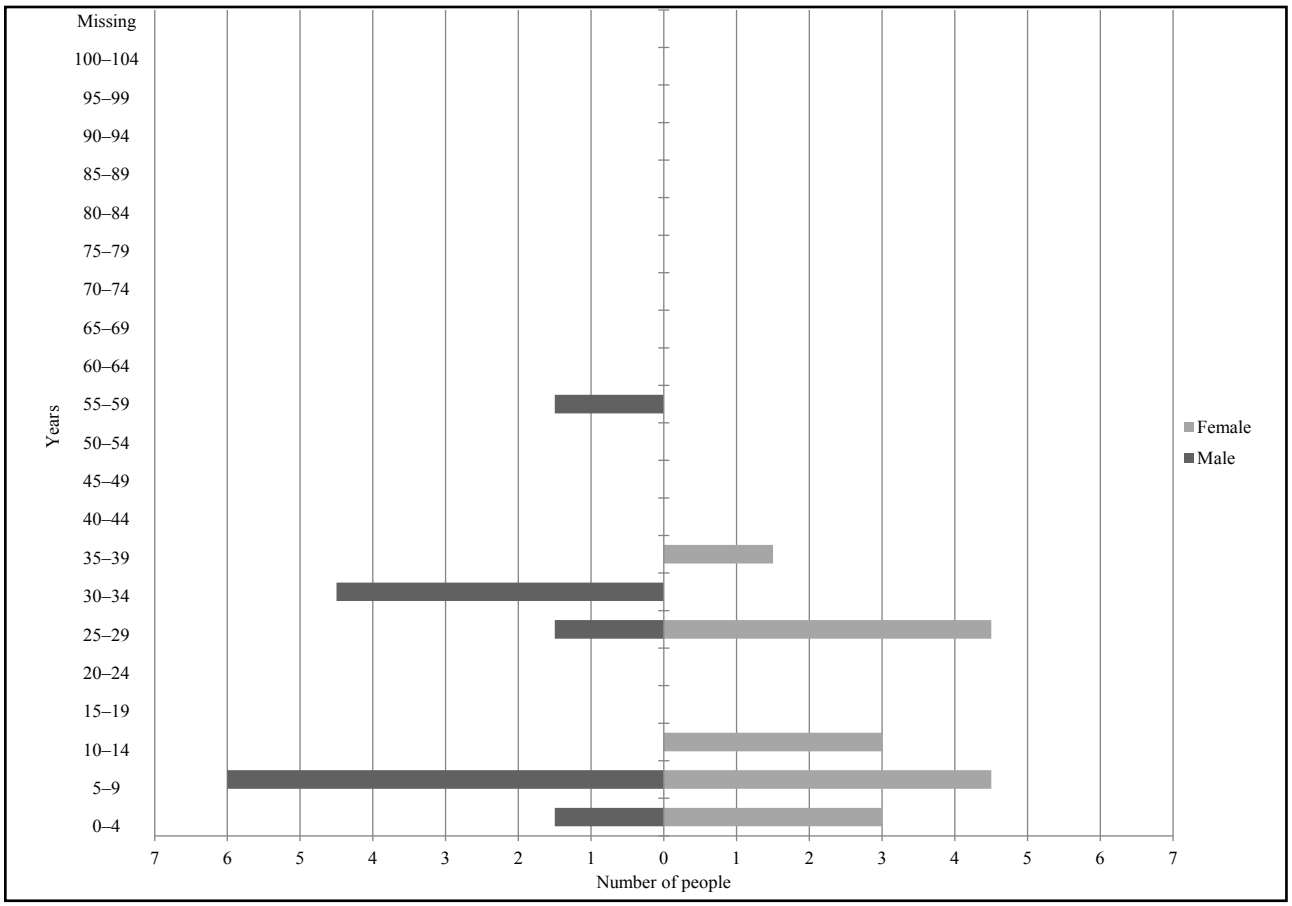

Figure 2-2.– Population profile, Alatna, 2011.

Table 2-4. – Population profile, Alatna, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	1.5	10.0%	10.0%	3.0	18.2%	18.2%	4.5	14.3%	14.3%
5–9	6.0	40.0%	50.0%	4.5	27.3%	45.5%	10.5	33.3%	47.6%
10–14	0.0	0.0%	50.0%	3.0	18.2%	63.6%	3.0	9.5%	57.1%
15–19	0.0	0.0%	50.0%	0.0	0.0%	63.6%	0.0	0.0%	57.1%
20–24	0.0	0.0%	50.0%	0.0	0.0%	63.6%	0.0	0.0%	57.1%
25–29	1.5	10.0%	60.0%	4.5	27.3%	90.9%	6.0	19.0%	76.2%
30–34	4.5	30.0%	90.0%	0.0	0.0%	90.9%	4.5	14.3%	90.5%
35–39	0.0	0.0%	90.0%	1.5	9.1%	100.0%	1.5	4.8%	95.2%
40–44	0.0	0.0%	90.0%	0.0	0.0%	100.0%	0.0	0.0%	95.2%
45–49	0.0	0.0%	90.0%	0.0	0.0%	100.0%	0.0	0.0%	95.2%
50–54	0.0	0.0%	90.0%	0.0	0.0%	100.0%	0.0	0.0%	95.2%
55–59	1.5	10.0%	100.0%	0.0	0.0%	100.0%	1.5	4.8%	100.0%
60–64	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
65–69	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
70–74	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
75–79	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**15.0**	**100.0%**	**100.0%**	**16.5**	**100.0%**	**100.0%**	**31.5**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 2-5. – Birthplaces of household heads, Alatna, 2011.

Birthplace[a]	Percentage
Alatna	55.6%
Huslia	11.1%
Allakaket	22.2%
Other U.S.	11.1%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exlusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

RESOURCE HARVEST AND USE PATTERNS

Table 2-7 summarizes resource harvest and use characteristics for Alatna in 2011 at the household level. All surveyed households used wild resources in 2011; 100% attempted to harvest at least 1 resource and 100% were successful in harvesting resources. The average total harvest was an estimated 1,048 lb usable weight per household, or 299 lb per capita. On average, households attempted to harvest 23 kinds of resources, harvested 16 kinds of resources, and used an average of 24 kinds of resources. The maximum number of resources used by any household was 38. In addition, households gave away an average of 13 resources and received 12 resources. All households (100%) reported both sharing resources with and receiving resources from other households.

SPECIES USED AND SEASONAL ROUND

Residents of Alatna harvest a wide variety of species throughout the year and they often target specific species during certain seasons of the year, following a cyclical harvest pattern. Residents commonly use motorized vehicles, such as skiffs, snowmachines, and all-terrain vehicles (ATVs) to access their hunting, fishing, and gathering areas.

Table 2-8 summarizes the estimated harvest and use of fish, game, and plant resources in Alatna in 2011. Table 2-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Alatna households during the 2011 study year. Residents of Alatna harvested an estimated total of 8,618 lb, or 274 lb per capita, of wild resources (Table 2-8). For total pounds harvested, caribou, moose, and black bears were the top 3 most harvested resources, followed by chum salmon. In comparison, caribou, moose, whales, spruce grouse, blueberries, highbush cranberries, and wood were all used by 100% of the households (Table 2-9). Whale was received through trade with friends and family in Alaska coastal villages. Large land mammals made up the highest percentage of Alatna's total harvest in 2011 and were used by 100% of households. Large land mammal hunting is a traditional and popular fall activity that often stretches into the winter. Respondents reported that in 2011 there were more caribou than in the past 10 years because the Western Arctic caribou herd

Table 2-6. – Estimated participation in subsistence harvesting and processing activities, Alatna, 2011.

Total number of people	**31.5**
Birds	
Hunt	
Number	17.3
Percentage	55.0%
Process	
Number	20.5
Percentage	65.0%
Fish	
Fish	
Number	13.5
Percentage	42.9%
Process	
Number	9.9
Percentage	31.6%
Large land mammals	
Hunt	
Number	11.0
Percentage	35.0%
Process	
Number	25.2
Percentage	80.0%
Furbearers	
Hunt or trap	
Number	4.7
Percentage	15.0%
Process	
Number	6.3
Percentage	20.0%
Plants	
Gather	
Number	25.2
Percentage	80.0%
Process	
Number	25.2
Percentage	80.0%
Any resource	
Attempt	
Number	28.5
Percentage	90.5%
Process	
Number	27.0
Percentage	85.7%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 2-7. – Resource harvest and use characteristics, Alatna, 2011.

Characteristic	
Mean number of resources used per household	23.8
Minimum	12.0
Maximum	38.0
95% confidence limit (±)	23.2%
Median	22.5
Mean number of resources attempted to harvest per household	23.2
Minimum	9.0
Maximum	46.0
95% confidence limit (±)	40.3%
Median	18.0
Mean number of resources harvested per household	15.7
Minimum	6.0
Maximum	31.0
95% confidence limit (±)	38.8%
Median	12.0
Mean number of resources received per household	12.3
Minimum	6.0
Maximum	20.0
95% confidence limit (±)	25.6%
Median	13.0
Mean number of resources given away per household	12.5
Minimum	1.0
Maximum	28.0
95% confidence limit (±)	48.7%
Median	9.5
Household harvest, pounds	
Minimum	290.7
Maximum	1,582.9
Mean	957.5
Median	1,013.2
Total harvest weight, pounds	8,617.8
Community per capita harvest, pounds	273.6
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	100.0%
Number of households in sample	6.0
Number of resources available	113.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 2-8. – Estimated harvests and uses of fish, game, and plant resources, Alatna, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**100%**	**100%**	**100%**	**100%**	**100%**	**8,617.8**	**957.5**	**273.6**	**1,053.5**		**117.1**	**39%**
Fish	**83%**	**83%**	**67%**	**67%**	**67%**	**1,536.5**	**170.7**	**48.8**	**484.5**		**53.8**	**85%**
Salmon	**50%**	**33%**	**33%**	**50%**	**50%**	**860.7**	**95.6**	**27.3**	**169.5**		**18.8**	**94%**
Chum salmon	50%	33%	33%	33%	33%	747.3	83.0	23.7	147.0	Ind.	16.3	97%
Coho salmon	33%	33%	0%	33%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	33%	33%	0%	33%	33%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	17%	17%	17%	17%	0%	113.4	12.6	3.6	22.5	Ind.	2.5	148%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**83%**	**83%**	**50%**	**67%**	**50%**	**675.8**	**75.1**	**21.5**	**315.0**		**35.0**	**101%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific halibut	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Char	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dolly Varden	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Arctic grayling	83%	50%	50%	50%	33%	49.4	5.5	1.6	70.5	Ind.	7.8	90%
Northern pike	33%	17%	17%	17%	17%	67.5	7.5	2.1	15.0	Ind.	1.7	148%
Sheefish	83%	83%	33%	67%	50%	180.0	20.0	5.7	30.0	Ind.	3.3	110%
Longnose sucker	17%	17%	17%	0%	17%	3.2	0.4	0.1	4.5	Ind.	0.5	148%
Trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	83%	33%	33%	50%	33%	375.8	41.8	11.9	195.0		21.7	100%
Broad whitefish	67%	17%	17%	50%	17%	42.0	4.7	1.3	30.0	Ind.	3.3	148%

-continued-

Table 2-8.–Page 2 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Cisco	33%	17%	17%	17%	17%	52.5	5.8	1.7	52.5		5.8	148%
Least cisco	33%	17%	17%	17%	17%	52.5	5.8	1.7	52.5	Ind.	5.8	148%
Humpback whitefish	50%	33%	33%	17%	33%	270.0	30.0	8.6	90.0	Ind.	10.0	101%
Round whitefish	17%	17%	17%	0%	17%	11.3	1.3	0.4	22.5	Ind.	2.5	148%
Unknown whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**100%**	**83%**	**83%**	**100%**	**83%**	**6,394.5**	**710.5**	**203.0**	**80.1**		**8.9**	**57%**
Large land mammals	**100%**	**83%**	**83%**	**100%**	**83%**	**6,075.0**	**675.0**	**192.9**	**39.0**		**4.3**	**61%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	67%	67%	33%	50%	50%	750.0	83.3	23.8	7.5	Ind.	0.8	116%
Brown bear	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	100%	83%	67%	100%	67%	3,705.0	411.7	117.6	28.5	Ind.	3.2	88%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	100%	83%	17%	100%	50%	1,620.0	180.0	51.4	3.0	Ind.	0.3	148%
Muskox	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**67%**	**67%**	**67%**	**67%**	**50%**	**319.5**	**35.5**	**10.1**	**41.1**		**4.6**	**82%**
Beaver	67%	50%	50%	33%	33%	270.0	30.0	8.6	18.0	Ind.	2.0	84%
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Fox	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red fox	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red fox—cross phase	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red fox—red phase	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Hare	17%	33%	17%	0%	17%	37.5	4.2	1.2	15.0		1.7	148%
Snowshoe hare	17%	33%	17%	0%	17%	37.5	4.2	1.2	15.0	Ind.	1.7	148%
River (land) otter	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	33%	33%	33%	0%	33%	0.0	0.0	0.0	1.8	Ind.	0.2	136%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	17%	33%	0%	17%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	17%	17%	0%	0%	17%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	33%	33%	33%	17%	33%	12.0	1.3	0.4	3.0	Ind.	0.3	94%
Squirrel	17%	17%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Arctic ground (parka) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red (tree) squirrel	17%	17%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	50%	33%	33%	17%	0%	0.0	0.0	0.0	1.8	Ind.	0.2	136%
Wolverine	50%	17%	17%	33%	0%	0.0	0.0	0.0	1.5	Ind.	0.2	148%
Marine mammals	**100%**	**0%**	**0%**	**100%**	**33%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	17%	0%	0%	17%	0%	0.0	0.0	0.0	0.0		0.0	0%
Northern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 2-8.–Page 3 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Marine mammals, continued												
Harbor seal	17%	0%	0%	17%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	100%	0%	0%	100%	33%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**100%**	**83%**	**83%**	**100%**	**83%**	**570.7**	**63.4**	**18.1**	**429.3**		**47.7**	**68%**
Migratory birds	**100%**	**83%**	**83%**	**83%**	**83%**	**538.3**	**59.8**	**17.1**	**384.3**		**42.7**	**70%**
Ducks	83%	83%	67%	33%	67%	167.5	18.6	5.3	187.5		20.8	63%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	67%	67%	50%	33%	50%	43.5	4.8	1.4	43.5	Ind.	4.8	97%
Long-tailed duck	67%	83%	67%	0%	67%	32.4	3.6	1.0	40.5	Ind.	4.5	66%
Northern pintail	67%	67%	50%	33%	50%	44.4	4.9	1.4	55.5	Ind.	6.2	95%
Scoter	67%	83%	67%	0%	67%	35.1	3.9	1.1	39.0		4.3	58%
Black scoter	67%	83%	67%	0%	67%	35.1	3.9	1.1	39.0	Ind.	4.3	58%
Wigeon	17%	17%	17%	0%	17%	7.9	0.9	0.2	6.0		0.7	148%
Unknown wigeon	17%	17%	17%	0%	17%	7.9	0.9	0.2	6.0	Ind.	0.7	148%
Unknown ducks	17%	17%	17%	0%	17%	4.2	0.5	0.1	3.0	Ind.	0.3	148%
Geese	100%	83%	83%	83%	67%	352.8	39.2	11.2	195.0		21.7	77%
Canada geese	100%	83%	83%	83%	67%	115.2	12.8	3.7	96.0		10.7	56%
Cacklers	67%	67%	67%	33%	50%	81.0	9.0	2.6	67.5	Ind.	7.5	76%
Lesser Canada geese	33%	33%	33%	33%	33%	34.2	3.8	1.1	28.5	Ind.	3.2	115%
Unknown Canada geese	17%	0%	0%	17%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	17%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	83%	67%	50%	40%	40%	237.6	26.4	7.5	99.0	Ind.	11.0	88%
Unknown geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	33%	33%	33%	0%	33%	18.0	2.0	0.6	1.8		0.2	135%
Tundra (whistling) swan	33%	33%	33%	0%	33%	18.0	2.0	0.6	1.8	Ind.	0.2	135%
Crane	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Sandhill crane	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Other birds	**100%**	**83%**	**83%**	**50%**	**67%**	**32.4**	**3.6**	**1.0**	**45.0**		**5.0**	**44%**

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Table 2-8.–Page 4 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Other birds, continued												
Upland game birds	100%	83%	83%	50%	67%	32.4	3.6	1.0	45.0	Ind.	5.0	44%
Grouse	100%	83%	83%	50%	67%	29.4	3.3	0.9	42.0		4.7	38%
Spruce grouse	100%	83%	83%	50%	67%	24.2	2.7	0.8	34.5	Ind.	3.8	35%
Sharp-tailed grouse	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	33%	50%	33%	17%	33%	5.3	0.6	0.2	7.5	Ind.	0.8	97%
Ptarmigan	33%	33%	17%	17%	17%	3.0	0.3	0.1	3.0	Ind.	0.3	148%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**100%**	**100%**	**100%**	**67%**	**116.2**	**12.9**	**3.7**	**59.6**		**6.6**	**42%**
Berries	**100%**	**100%**	**100%**	**83%**	**50%**	**115.9**	**12.9**	**3.7**	**29.0**		**3.2**	**42%**
Blueberry	100%	100%	83%	50%	17%	22.5	2.5	0.7	5.6	Gal.	0.6	37%
Lowbush cranberry	50%	50%	50%	17%	17%	6.2	0.7	0.2	1.5	Gal.	0.2	90%
Highbush cranberry	100%	100%	100%	33%	50%	87.0	9.7	2.8	21.8	Gal.	2.4	49%
Raspberry	17%	33%	17%	0%	0%	0.2	0.0	0.0	0.0	Gal.	0.0	148%
Salmonberry	17%	17%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild berry	17%	33%	0%	17%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**17%**	**17%**	**17%**	**0%**	**0%**	**0.3**	**0.0**	**0.0**	**0.3**	**Gal.**	**0.0**	**148%**
Hudson's Bay tea	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Unknown mushrooms	17%	17%	17%	0%	0%	0.3	0.0	0.0	0.3	Gal.	0.0	148%
Wood	**100%**	**100%**	**100%**	**17%**	**17%**	**0.0**	**0.0**	**0.0**	**30.4**	**Cord**	**3.4**	**41%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 2-9. – Top 10 resources harvested and used, Alatna, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Caribou	117.6	1	1.	Caribou	100.0%
2	2.	Moose	51.4	2	1.	Moose	100.0%
3	3.	Black bear	23.8	3	1.	Whale	100.0%
4	4.	Chum salmon	23.7	4	1.	Spruce grouse	100.0%
5	5.	Humpback whitefish	8.6	5	1.	Blueberry	100.0%
6	5.	Beaver	8.6	6	1.	Highbush cranberry	100.0%
7	6.	White-fronted geese	7.5	7	1.	Wood	100.0%
8	7.	Sheefish	5.7	8	2.	Arctic grayling	83.3%
9	8.	Sockeye salmon	3.6	9	2.	Sheefish	83.3%
10	9.	Highbush cranberry	2.8	10	2.	White-fronted geese	83.3%

Source ADF&G Division of Subsistence household surveys, 2012.

passed through the village. Although 83% of households attempted to harvest caribou and moose, 67% were successful in harvesting caribou and only 17% were successful in harvesting moose. Black bears were also used by many Alatna households (67%), with 67% attempting to harvest, and 33% successfully harvesting. Overall, 83% of households both attempted to harvest and were successful in harvesting some species of large land mammal.

In addition to the unusual caribou hunting activity, the study year was unique because of a boating accident that resulted in a month-long search for a resident of Alatna who went missing along the Koyukuk River. Residents of Alatna, Allakaket, and Hughes were involved in the search for the missing man. Subsistence resources (moose in particular) harvested during the time of the search, August 24 through September 22, were used to feed the search parties. The search also occurred during prime moose hunting time. In response, ADF&G issued an emergency order (No. 03-10-11) that extended the moose hunting season from September 30 until October 9, 2011.[1] In spite of the emergency order, many residents claimed that this was not enough time to take care of their subsistence needs. Even with the extension, no more moose were harvested after September, most likely because of the time needed for the people of Alatna to mourn after the missing man's body was found and because of how late in the season it was at that point.

More than one-half of Alatna's households (67%) participated in small land mammal harvesting in 2011, and all of them were successful. Most small land mammal hunting or trapping took place during the winter and the most harvested species were beavers (50% of households harvesting), lynx (33%), porcupines (33%), and wolves (33%) (Table 2-8).

In 2011, 83% of households in Alatna reported using fish and a significant percentage (67%) reported receiving fish, especially nonsalmon fish (Table 2-8). Summer runs of Chinook (king) salmon and chum salmon migrate up the Koyukuk River and are harvested by Alatna residents. Gillnets were used to

1. ADF&G, "Hunting and trapping emergency order no. 03-10-11," released September 29, 2011, http://www.adfg.alaska.gov/static/home/news/newsreleases/wcnews/2011/orders/03-10-11.pdf.

target salmon, which many respondents spoke of still making today with purchased twine, cottonwood bark (floats), and rocks (sinkers). In general, salmon have declined in both quantity and quality in the middle and upper reaches of the Koyukuk drainage (Andersen et al. 2004:3). As a result, residents in these areas tend to place greater emphasis on the harvest and use of nonsalmon fish species to meet their subsistence needs (Andersen et al. 2004:3). Nonsalmon fish species are harvested throughout the year and in terms of pounds harvested are almost equal the salmon category (Table 2-8). A greater percentage of households used and harvested nonsalmon fish, with 83% of households using nonsalmon fish compared to 50% of households using salmon, and 50% of households harvesting nonsalmon species compared to 33% harvesting salmon.

During the study year, 100% of Alatna households used migratory birds and 83% harvested them. Geese were harvested by 83% of households and used by 100%; Canada, cackling, and white-fronted geese were the most commonly used. Upland game birds, such as spruce grouse, ruffed grouse, and ptarmigan, were harvested by Alatna residents along the Alatna and Koyukuk rivers throughout the year. During the study year, 100% of the Alatna households used upland game birds and 83% reported harvesting them (Table 2-8).

Harvesting vegetation, particularly berries in the summer, is an important activity for Alatna residents. During the study year, 100% of households reported harvesting, and 100% reported using berries. Another commonly used vegetation resource is firewood, which is used for heating homes. During the study year, 100% of households reported harvesting firewood and 100% reported using firewood (Table 2-8).

HARVEST QUANTITIES

Table 2-8 reports estimated wild resource harvests and uses by Alatna residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Alatna was 8,618 lb, or 274 lb per capita (Table 2-8). In terms of pounds harvested, large land mammals constituted the largest portion of the subsistence harvest, which totaled 6,075 lb, or 193 lb per capita (Table 2-8; Figure 2-3).

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

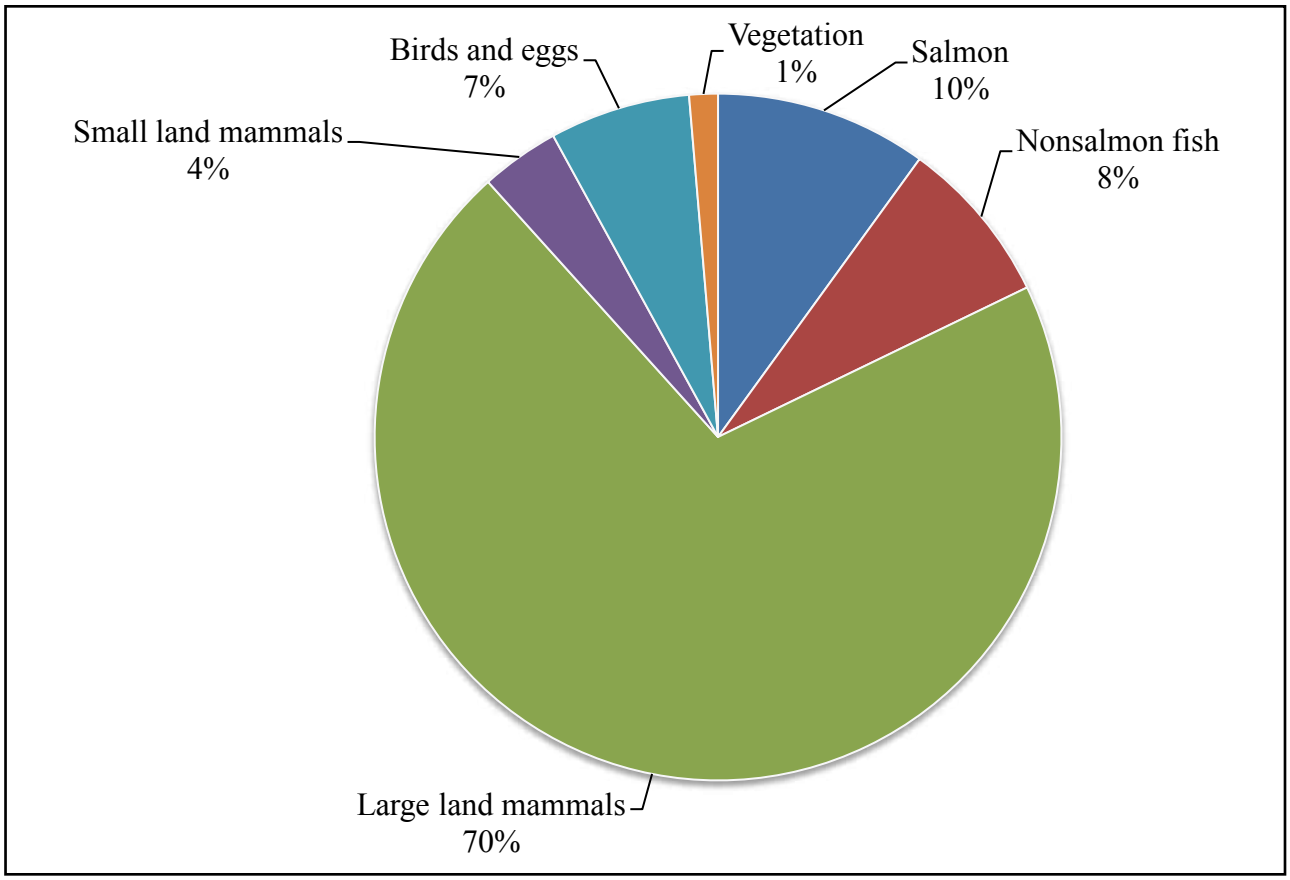


Figure 2-3.– Composition of harvest by category, Alatna, 2011.

Caribou ranked first in terms of total pounds harvested (Table 2-9) at 3,705 lb, or 118 lb per capita, harvested (Table 2-9).

Fish were the other major source of wild foods in Alatna in 2011, with an estimated 1,537 total lb harvested, or 49 lb per capita (Table 2-8; Figure 2-3). More than one-half (56%) of the total pounds of harvested fish were salmon species, with 861 lb harvested, or 27 lb per capita. Salmon was the second largest contributor to Alatna's subsistence harvest at the resource category level (Table 2-8; Figure 2-3). Chum salmon, specifically, made up 747 lb of the total subsistence harvest and ranked fourth among specific resources in terms of pounds harvested (Table 2-9).

As noted above, fishing for nonsalmon fish was another important activity in 2011 with an overall harvest of 676 lb, or 22 lb per capita (Table 2-8). The largest harvests in terms of weight came from whitefishes (376 lb, or 12 lb per capita); in particular, humpback whitefish ranked fifth in terms of overall resource harvest (270 lb); and sheefish (180 lb, or 6 lb per capita), also an important interior Alaska nonsalmon fish species, ranked seventh overall in terms of total pounds harvested (Table 2-9).

Birds made up 7% of all wild resources harvested by Alatna residents during 2011 (Figure 2-3). The Alatna household harvest of birds was 571 lb, or 18 lb per capita. Most of the bird harvest came from migratory birds (538 lb, or 17 lb per capita), which included species such as geese (11 lb per

capita) and ducks (5 lb per capita). Some upland game birds were harvested (32 lb, or 1 lb per capita), including spruce grouse and ptarmigan (Table 2-8). No eggs were harvested during the 2011 study year.

Vegetation such as wild plants and berries were important wild resources used in Alatna in 2011. An estimated 100% of households used vegetation and 100% attempted to and were successful harvesters of wild plants (Table 2-8). The total harvest was 116 lb, or 4 lb per capita, with blueberries and highbush cranberries being the most used species. The largest berry harvests in terms of total pounds included blueberries (23 lb, or 1 lb per capita) and highbush cranberries (87 lb, or 3 lb per capita).

SHARING AND RECEIVING WILD RESOURCES

In Alatna in 2011, the average harvest per household was 16 wild resources and households used 24 kinds of resources on average. Reports of sharing indicated that 100% of households received wild resources from other households and 100% of households gave resources away (tables 2-7 and 2-8). Households received an average of 12 resources and gave away an average of 13 kinds (Table 2-7). Large land mammals was the most harvested resource category used by 100% of households, and was among the most commonly shared resources, with 83% of households giving away and 100% of households receiving large land mammals (Table 2-8). Other resources received and used by 100% of households in Alatna were birds, vegetation, and marine mammals. Marine mammals in Alatna were acquired entirely through trade with family and friends in coastal villages. Along with whales, moose and caribou were the most widely shared resources, with 100% of households receiving moose and caribou and 50% giving away moose and 67% giving away caribou (Table 2-8). Although a small number of Alatna households harvested moose in 2011 (33%), the resource was widely used. It is also notable that 67% of Alatna households harvested, received, and gave away some species of fish, while 83% reported using at least 1 species of fish (Table 2-8). These percentages are significant because the majority of people in Alatna are both harvesting and sharing fish, thereby demonstrating that the traditional subsistence harvesting and sharing lifestyle surrounding this important natural resource continued to be maintained by the residents of Alatna.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

Summer runs of Chinook salmon and chum salmon migrate up the Koyukuk River and are harvested by Alatna residents (Andersen et al. 2004:3). During the study year 2011, Alatna respondents reported harvesting salmon in the immediate vicinity of the village of Alatna in the Koyukuk River.

For Alatna residents, salmon composed 10% of the wild resource harvest in pounds in 2011 (Figure

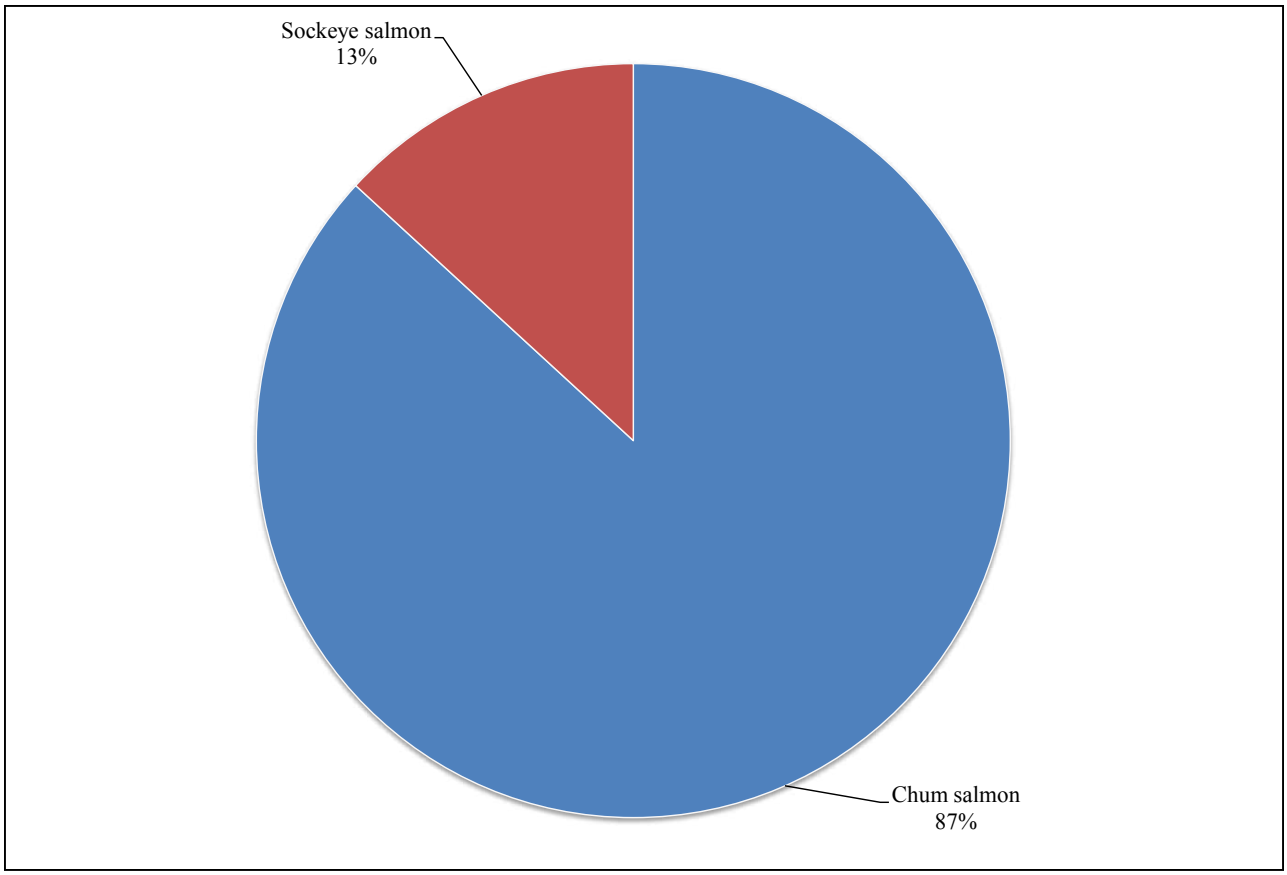


Figure 2-4.– Composition of salmon harvest, Alatna, 2011.

2-3). Alatna residents harvested all of their salmon (100% of the total harvest) with gillnets or seines (Table 2-10). The salmon harvest consisted of sockeye salmon (13%) and chum salmon (87%) in 2011 (Figure 2-4). Fifty percent of Alatna's households used at least 1 species of salmon and 33% harvested at least 1 species in 2011 (Table 2-8). It is worth noting that sockeye salmon are not available locally and that sockeye harvests were the result of a few Alatna residents traveling to other parts of Alaska to harvest these fish. Also, a small Chinook salmon harvest is normally reported by area fishers but due to depressed runs no Chinook harvests were reported by Alatna fishers in 2011 (Andersen 2007; Andersen et al. 2004).

NONSALMON FISH

In 2011, Alatna residents harvested an estimated 676 lb (22 lb per capita) of nonsalmon fish (Table 2-8). In terms of total pounds and percentages, more than half of the harvest was whitefishes, followed by sheefish, northern pike, and Arctic grayling (Figure 2-5). Table 2-11 lists the percentage of each nonsalmon fish species by number of fish and by usable pounds harvested by Alatna residents in 2011 by gear type.

Andersen et al. (2004) documented the seasonal rounds, harvest methods, and uses of all nonsalmon

Table 2-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Alatna, 2011.

		Removed from commercial catch		Subsistence methods													
				Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	86.7%	86.8%	0.0%	0.0%	0.0%	0.0%	86.7%	86.8%	0.0%	0.0%	86.7%	86.8%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	86.7%	86.8%	0.0%	0.0%	0.0%	0.0%	86.7%	86.8%	0.0%	0.0%	86.7%	86.8%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	13.3%	13.2%	0.0%	0.0%	0.0%	0.0%	13.3%	13.2%	0.0%	0.0%	13.3%	13.2%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	13.3%	13.2%	0.0%	0.0%	0.0%	0.0%	13.3%	13.2%	0.0%	0.0%	13.3%	13.2%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

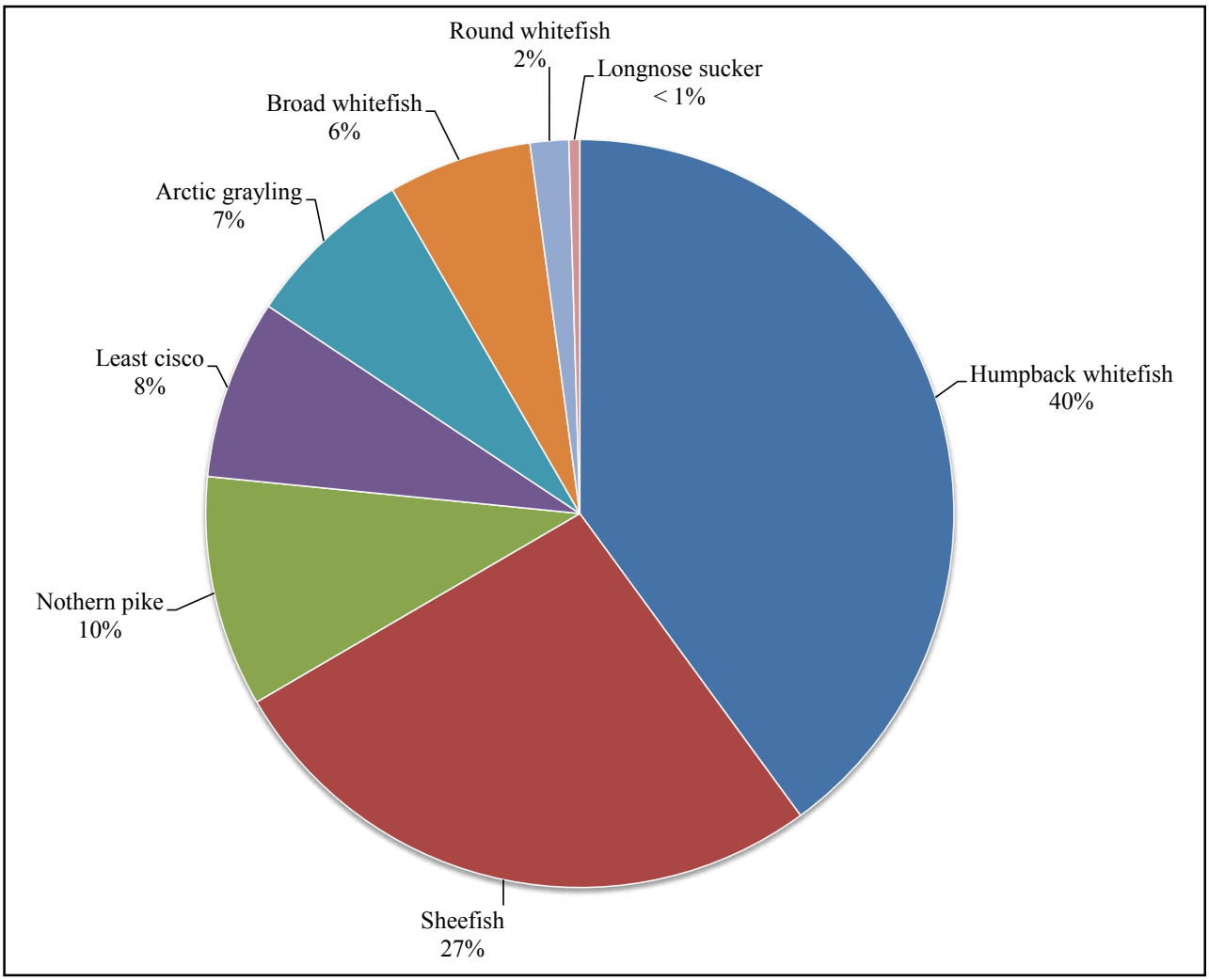


Figure 2-5.– Composition of nonsalmon fish harvest, Alatna, 2011.

fish used by the residents of Alatna. Arctic grayling are widely distributed throughout the Koyukuk River drainage from the Yukon River to the Brooks Range (Andersen et al. 2004). As rivers begin to freeze in October, fishers have traditionally cast artificial lures into open eddies using rod and reel gear to catch Arctic grayling. As fall progresses and river ice becomes strong enough to stand on, holes are made in the ice and Arctic grayling are caught by hooking with lures or baited hooks. Fall harvests using these methods can result in individual fishers taking hundreds of Arctic grayling (Andersen et al. 2004). During this study year (2011), all 49 lb of Arctic grayling were harvested using rod and reel gear (Table 2-11).

Burbot can be found in all portions of the Koyukuk River main stem from the headwaters vicinity near the community of Wiseman to the village of Koyukuk near the Yukon River confluence (Andersen et al. 2004). A targeted harvest of burbot has traditionally occurred during the months ice covers the river using 2 fishing methods: traps and set hooks. Burbot traps are built in channels of the main river shortly after freeze-up and allowed to freeze in place and operate throughout much of the winter

Table 2-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Alatna, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	51.4%	56.5%	0.0%	0.0%	51.4%	56.5%	48.6%	43.5%	100.0%	100.0%
	Total	0.0%	0.0%	51.4%	56.5%	0.0%	0.0%	51.4%	56.5%	48.6%	43.5%	100.0%	100.0%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	46.1%	16.8%	22.4%	7.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.4%	7.3%	22.4%	7.3%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.8%	23.0%	4.8%	10.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	10.0%	4.8%	10.0%
Sheefish	Gear type	0.0%	0.0%	13.9%	35.3%	0.0%	0.0%	13.9%	35.3%	4.9%	15.3%	9.5%	26.6%
	Resource	0.0%	0.0%	75.0%	75.0%	0.0%	0.0%	75.0%	75.0%	25.0%	25.0%	100.0%	100.0%
	Total	0.0%	0.0%	7.1%	20.0%	0.0%	0.0%	7.1%	20.0%	2.4%	6.7%	9.5%	26.6%
Longnose sucker	Gear type	0.0%	0.0%	2.8%	0.8%	0.0%	0.0%	2.8%	0.8%	0.0%	0.0%	1.4%	0.5%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	1.4%	0.5%	0.0%	0.0%	1.4%	0.5%	0.0%	0.0%	1.4%	0.5%
Broad whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.6%	14.3%	9.5%	6.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.5%	6.2%	9.5%	6.2%
Least cisco	Gear type	0.0%	0.0%	32.4%	13.7%	0.0%	0.0%	32.4%	13.7%	0.0%	0.0%	16.7%	7.8%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	16.7%	7.8%	0.0%	0.0%	16.7%	7.8%	0.0%	0.0%	16.7%	7.8%
Humpback whitefish	Gear type	0.0%	0.0%	37.0%	47.1%	0.0%	0.0%	37.0%	47.1%	19.6%	30.6%	28.6%	40.0%
	Resource	0.0%	0.0%	66.7%	66.7%	0.0%	0.0%	66.7%	66.7%	33.3%	33.3%	100.0%	100.0%
	Total	0.0%	0.0%	19.0%	26.6%	0.0%	0.0%	19.0%	26.6%	9.5%	13.3%	28.6%	40.0%
Round whitefish	Gear type	0.0%	0.0%	13.9%	2.9%	0.0%	0.0%	13.9%	2.9%	0.0%	0.0%	7.1%	1.7%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	7.1%	1.7%	0.0%	0.0%	7.1%	1.7%	0.0%	0.0%	7.1%	1.7%

Source ADF&G Division of Subsistence household surveys, 2012.

(Andersen et al. 2004). Trap construction typically takes place as early in November as possible in order to take advantage of the large run of burbot moving upstream at that time (Andersen et al. 2004). In spite of traditional burbot harvest practices, no burbot were harvested by Alatna residents during the 2011 study year (tables 2-8 and 2-11).

Longnose suckers occur throughout the Koyukuk River drainage and are abundant in the nutrient-rich mouth of Siruk Creek on the Alatna River (Andersen et al. 2004). Longnose suckers are typically harvested in the spring in small-mesh gillnets targeting small whitefishes. Fall seining activities for whitefishes and sheefish in the middle Koyukuk and Alatna rivers often result in significant harvests of longnose suckers. According to Andersen et al. (2004), longnose suckers are primarily used to feed dogs. No longnose suckers were harvested during the 2011 study year (tables 2-8 and 2-11).

Northern pike are said to be present throughout most of the Koyukuk River drainage, inhabiting most of the main stem of the Koyukuk River, area lakes, sloughs, and slow-moving tributaries (Andersen et al. 2004). Northern pike are widely distributed, available for harvest almost year-round, can be taken using a variety of fishing methods, can be used to feed both people and dogs, and can be prepared in many ways. Both spring and fall are harvest periods for northern pike. In the spring, gillnets are set in ice-free channels of the Koyukuk to catch pike as soon as river conditions permit (Andersen et al. 2004). All 68 lb of northern pike in 2011 were caught using rod and reel gear (Table 2-11).

Sheefish have a distinct geographic distribution in the Koyukuk River drainage. They move seasonally up the Koyukuk River, apparently restricting themselves to the main stem of the Koyukuk River, and virtually all sheefish head for spawning locations in the upper Alatna River (Andersen et al. 2004). As a result, they are reportedly not found in any of the upper forks of the Koyukuk River or any other tributary streams other than the Alatna River (Andersen et al. 2004). Sheefish can be harvested with rod and reel gear at the mouths of certain sloughs and tributaries where they feed as they are migrating upstream. Sheefish can also be "hooked" in the late fall, as they migrate downstream under the ice (Andersen et al. 2004). Sheefish were harvested using seine or gillnet (135 lb) and rod and reel gear (45 lb) in 2011 (Table 2-11).

Whitefishes are present throughout the Koyukon River drainage from its confluence with the Yukon River to its headwaters. They occupy a wide variety of habitats seasonally and are reported as year-round residents in certain lakes (Andersen et al. 2004). Gillnets are often set near the mouths of tributary streams right after spring breakup to take advantage of fish moving into and out of side streams. Gillnets are also used to target whitefishes again in the fall as fish are moving out of lake systems through smaller streams toward the Koyukuk River. Because the different species of whitefishes vary significantly in size, fishers use gillnets of various lengths and mesh sizes, often placing multiple nets out at the same time in different locations to maximize their harvest of whitefishes (Andersen et al. 2004). Gillnets approximately 50 to 100 feet in length, and of various mesh sizes, were stated to be the most common method used to take a wide variety of fish species (Andersen et al. 2004). In late

summer and fall, small-mesh beach seines are used to harvest spawning concentrations of whitefishes in the upper reaches of the Koyukuk and Alatna rivers. Gillnets are also used in main river locations in the fall to harvest whitefishes moving from the spawning grounds to wintering areas. During freeze-up in October, gillnets placed in eddies can be productive for harvesting whitefishes, and fishing for them sometimes continues under the ice into November (Andersen et al. 2004). In 2011, all broad whitefish were caught using rod and reel gear (42 lb), all round whitefish were caught using gillnet or seine (11 lb), and humpback whitefish were caught using both rod and reel gear (90 lb) and gillnet or seine (180 lb) (Table 2-11).

Alatna is typical of many inland and headwaters communities in that the harvest of resident salmon species makes a larger contribution to the annual food supply than nonsalmon. However, the numbers harvested of both nonsalmon fish and salmon species are very close, showing that both types of fish significantly contribute to the Alatna subsistence harvest. Gillnets of various lengths and mesh sizes were used in open water wherever there was the prospect of harvesting resident fish such as northern pike, large and small whitefishes, and longnose suckers. Participants in the key respondent interviews remembered elders speaking of a time (prior to 1950) when large in-river fish traps (funnel traps) were used in 2 locations during the fall months. A communal fishing effort by several combined families resulted in large harvests of whitefishes, longnose suckers, northern pike, and Arctic grayling. Lake Creek on the lower Kanuti River, and Fish Creek on the South Fork Koyukuk River, were specific fall fish trap locations mentioned by respondents. Fish harvested during the early fall months were dried or smoked, while fish caught later in the fall season were allowed to freeze naturally. When motorized vehicles and steady income jobs became common for residents of Alatna, and dog sled teams and seasonal relocation to fishing and hunting camps were no longer necessary or feasible, the traditional funnel traps were abandoned and fall fishing no longer took place at these remote sites.

LARGE LAND MAMMALS

In 2011, large land mammals made up 70% of the estimated total Alatna harvest by weight (Figure 2-3). A large percentage of households (83%) attempted to harvest large land mammals, and all of them were successful (Table 2-8). All households (100%) used large land mammals during the study year (Table 2-8). In terms of pounds harvested in 2011, caribou ranked first and moose ranked second (Table 2-9). By weight, caribou composed 61% of the harvest of large land mammals, moose 27%, and black bears 11% (Figure 2-6). According to the study, all successful moose hunting took place in September 2011, which was during the time of the missing person search (Table 2-12). Most of the meat acquired from these moose was used to feed the search parties. Most caribou hunting occurred in November and the harvest of black bears was split between the spring and fall hunt (Table 2-12).

Moose harvest areas in 2011 were unique, as stated earlier, because of the multi-village missing person search that occurred during August and September. People looked for moose while they were

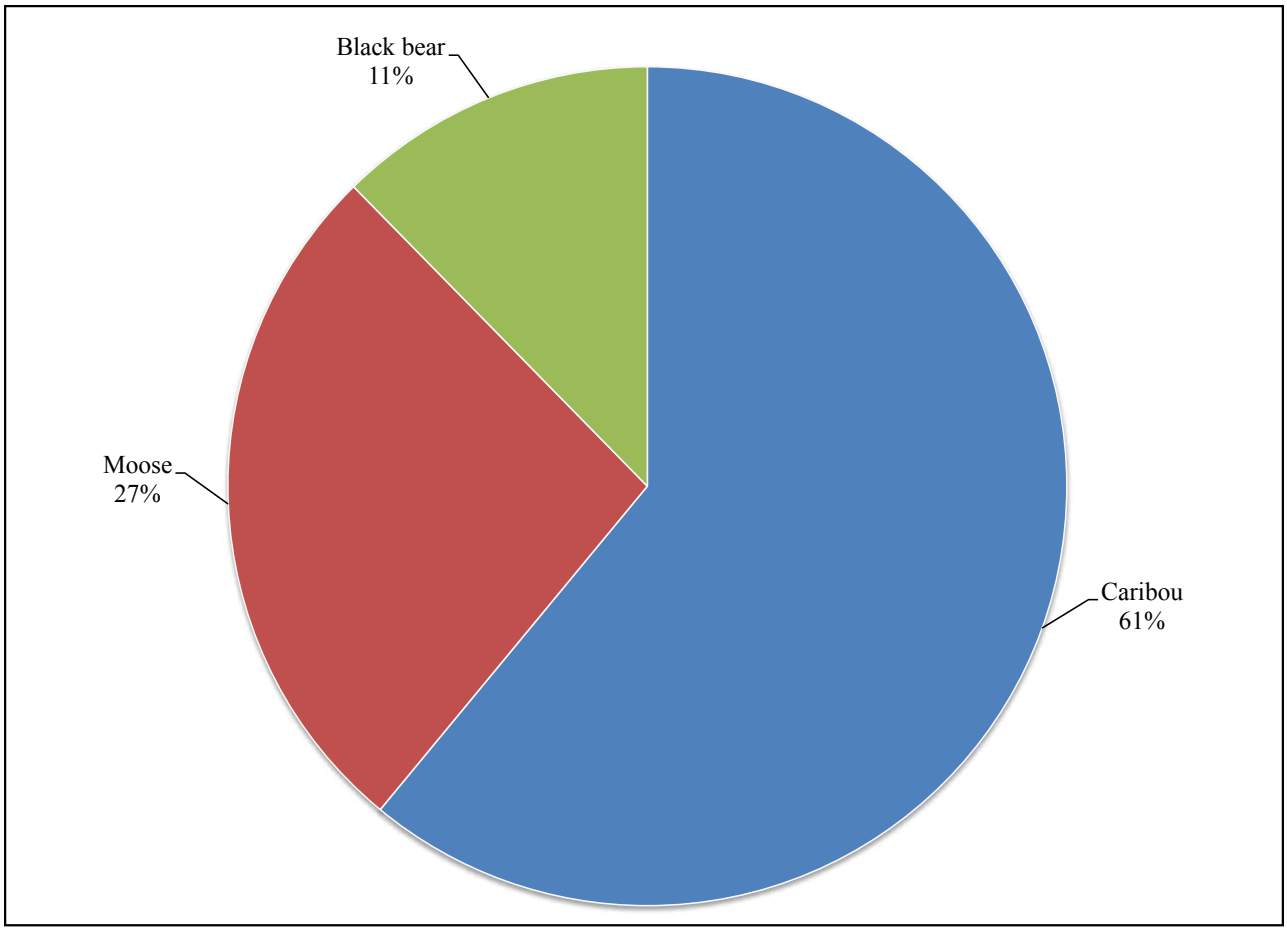


Figure 2-6.– Composition of large land mammal harvest, Alatna, 2011.

searching the Koyukuk River for the missing man. When the search ended in October, their typical hunting locations were not used due to the limited amount of time and because moose were in different locations than those hunting areas used in August and September.

The presence of caribou in the immediate vicinity of Alatna is now a rare occurrence (but had just occurred several weeks prior to the Division of Subsistence interviews in early January 2012). More commonly, residents must travel more than 100 miles to get caribou after animal sightings are reported. Alatna residents used large areas for hunting all large land mammals. Much of the hunting was done using motorized vehicles, such as ATVs and snowmachines, depending on the time of the year.

The harvest and search areas for black and brown bears in 2011 included the land surrounding the Alatna River north of the village and the Koyukuk River south of the village. Residents also reported harvest areas for bears in the upper portion of the Kanuti River and in the immediate vicinity of the village of Allakaket on the Koyukuk River (Figure 2-7).

Table 2-12. – Estimated harvests of large game by month and sex, Alatna, 2011.

				Caribou				Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	4.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	6.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**7.5**	**0.0**	**6.0**	**3.0**	**19.5**	**0.0**	**3.0**	**0.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

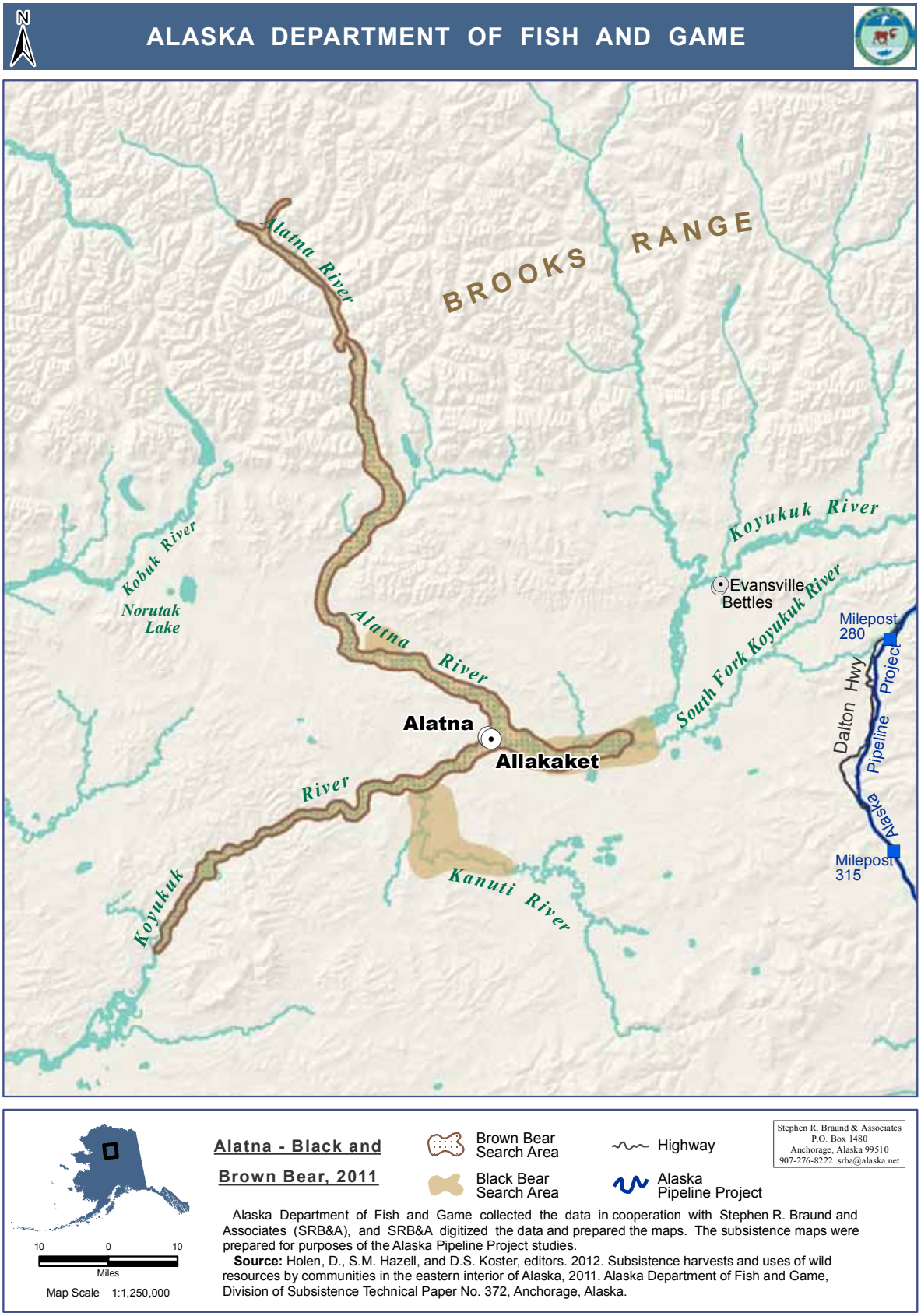


Figure 2-7.– Brown and black bear search and harvest areas, Alatna, 2011.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 2-8, the total harvest of small land mammals by Alatna residents in 2011 for wild foods was 320 lb (10 lb per capita). Most of the harvest was beaver (270 lb, or 9 lb per capita) and snowshoe hare (38 lb, or 1 lb per capita), both of which are edible small land mammal species. The harvest of small land mammals for wild foods composed 4% of the total harvest in 2011 (Figure 2-3). Some small land mammals, such as wolves and wolverines, were taken only for their fur. The harvest and search areas for small land mammals in 2011 included the Buzodoc Slough area, the land just north of Alatna on the Alatna River, and the area immediately south and southeast of Allakaket (Figure 2-8).

BIRDS

In 2011, Alatna residents harvested migratory waterfowl near Alatna and Allakaket and north of the 2 communities on the Alatna River, east on the Koyukuk River, and northeast toward Double Point Mountain (Figure 2-9). Upland game birds were harvested along the Koyukuk River northwest of Alatna. No gathering of bird eggs took place during the study year. The total harvest of birds was an estimated 571 lb, (18 lb per capita) (Table 2-8). The total harvest of upland game birds was 32 lb (1 lb per capita). The migratory bird harvest was composed of geese and ducks, such as mallards, and also swans; the total harvest was estimated at 538 lb (17 lb per capita) (Table 2-8).

VEGETATION

The subsistence resource category vegetation was the only resource type that was used and also successfully harvested by 100% of Alatna households in 2011 (Table 2-8). Each household had preferred harvest areas for berries. Berries that ripen in August, such as blueberries and raspberries, were often taken in the vicinity of summer fish camps. Also, according to Alatna respondents, people often pick berries as they search for moose and caribou and near the community. Figure 2-10 depicts harvest areas for berries in 2011. Although residents sometimes harvest wild onions and Eskimo potatoes, during the study year the reported harvest of other vegetation only included unknown mushrooms (0.3 lb). In 2011, Alatna residents harvested 116 lb (4 lb per capita) of vegetation, consisting mostly of berries (Table 2-8). The harvest of highbush cranberries placed tenth in terms of pounds per capita harvested in 2011 and was 1 of 7 resources that all (100%) households used (Table 2-9).

CASH EMPLOYMENT AND MONETARY INCOME

Table 2-13 is a summary of the estimated earned income as well as other sources of income for residents of Alatna in 2011. This table shows that earned income accounted for a household average of $16,700 (79% of total community income) compared to other income sources which accounted

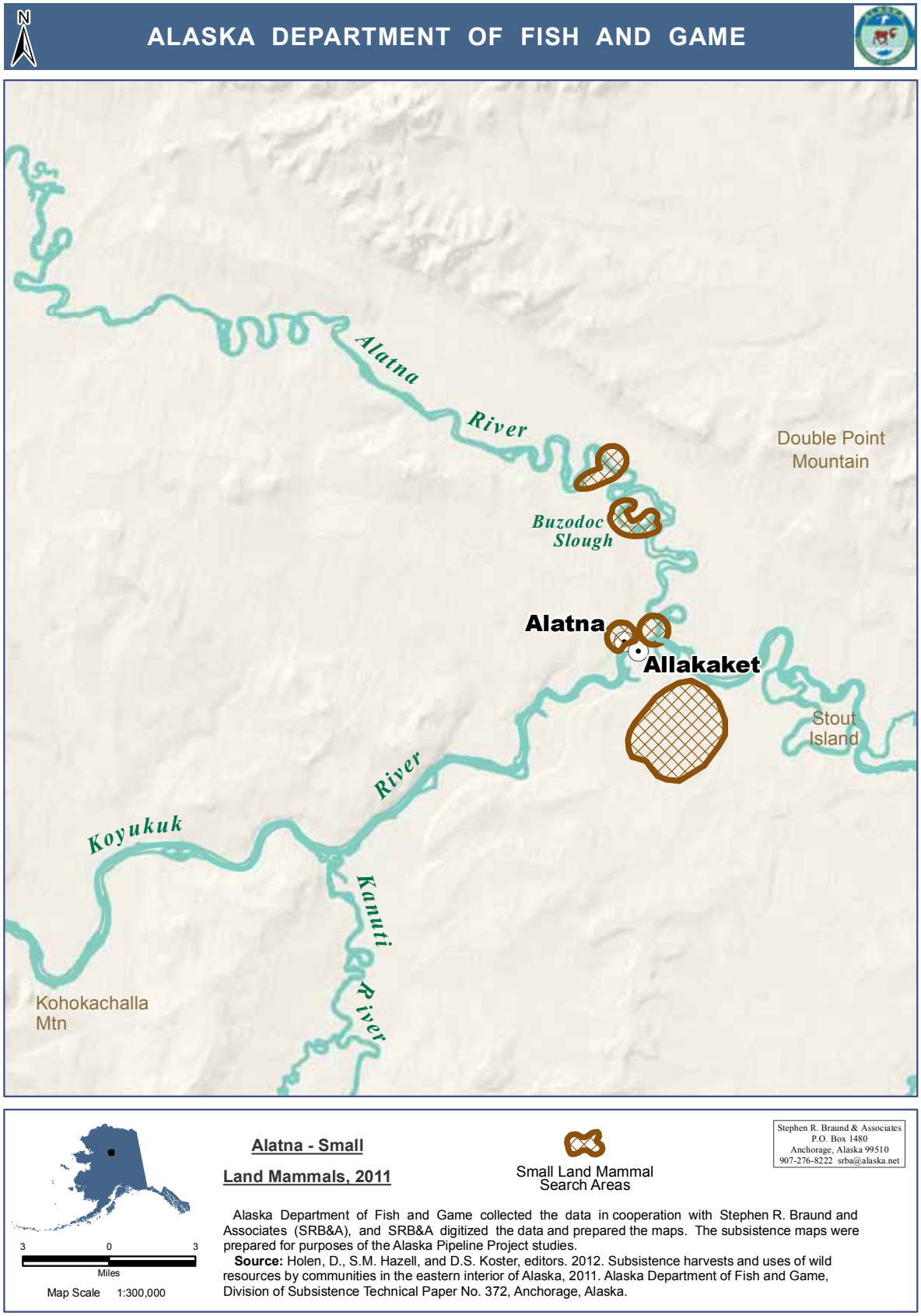


Figure 2-8.– Small land mammals search and harvest areas, Alatna, 2011.

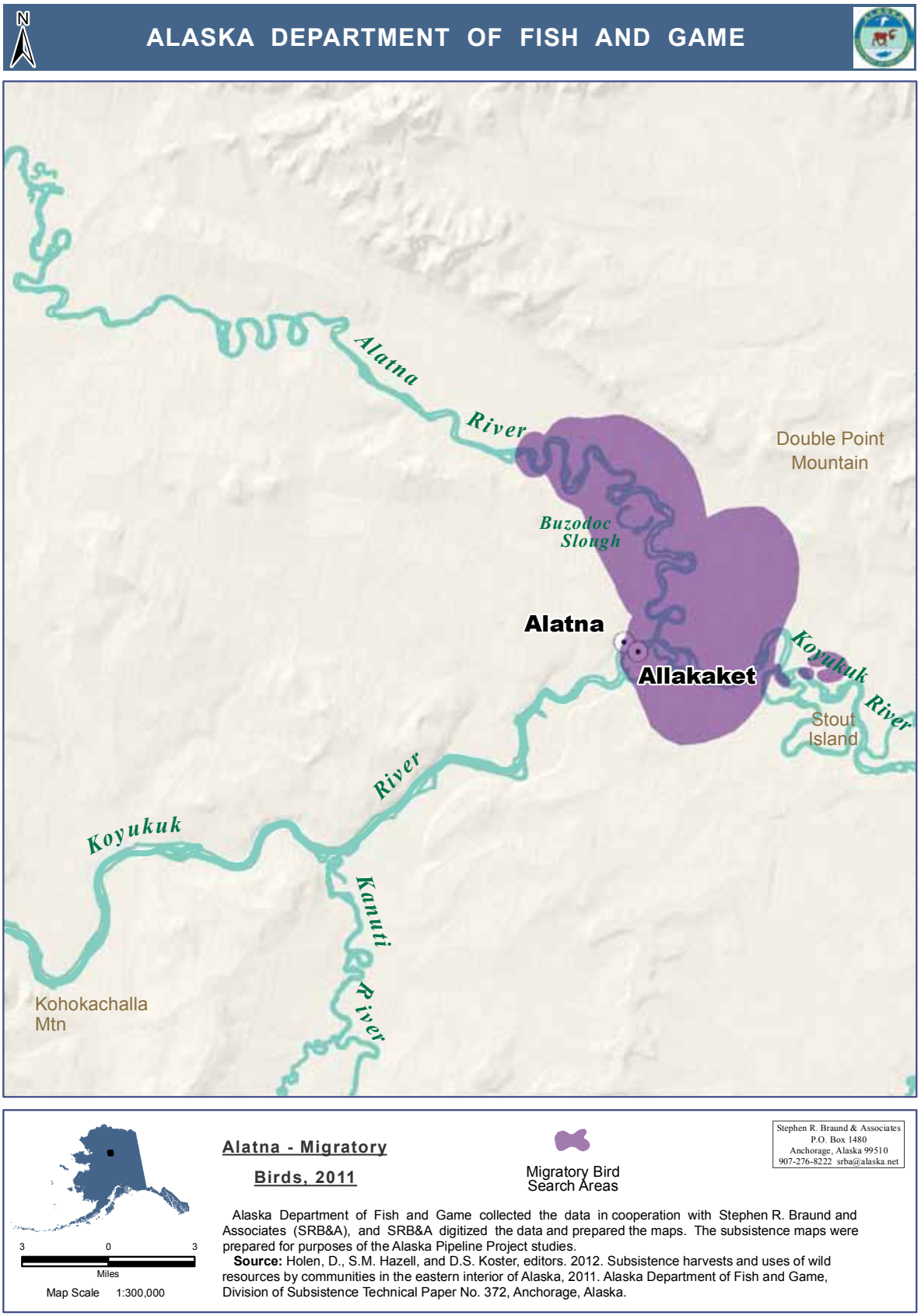


Figure 2-9.– Migratory birds search and harvest areas, Alatna, 2011.

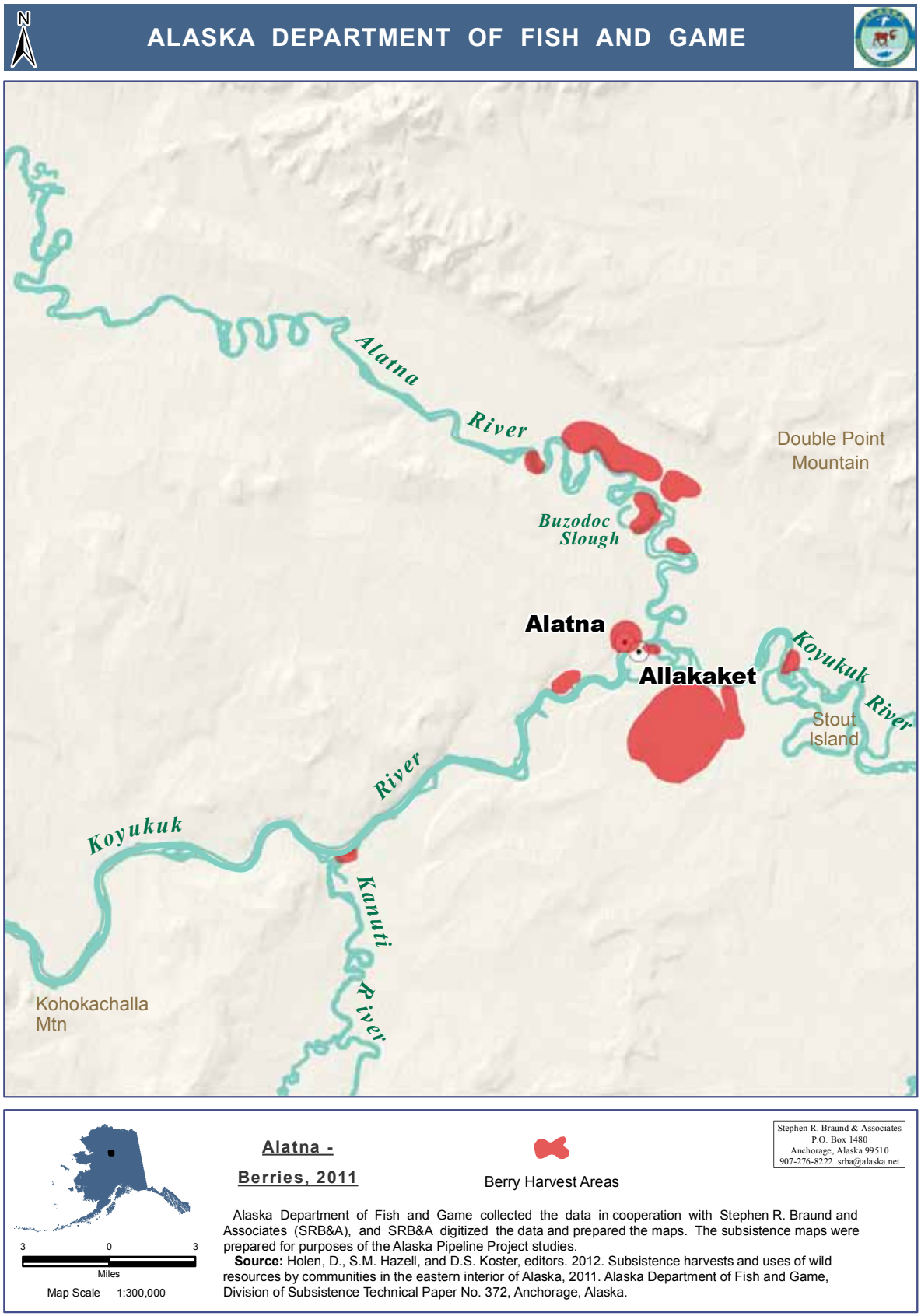


Figure 2-10.– Berries search and harvest areas, Alatna, 2011.

for an average household income of $4,439 (21% of total community income). In 2011, 83% of the jobs in Alatna were with local and tribal governments, 8% were with the federal government, and 8% were with other categories (Table 2-14). The largest source of other income was the Alaska Permanent Fund dividend in 2011 (Table 2-13).

In 2011, 89% of adults were employed at some point during the year in Alatna, and of those employed adults 75% were employed year-round (Table 2-15). The average length of employment was 9.5 months (Table 2-15). On average in 2011, employed households had 1 employed adult, and 100% of households had at least 1 adult who was employed. Most jobs held by Alatna residents were located in Alatna, but a couple of people traveled to Allakaket for employment as well.

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" (Nord et al. 2009:2). 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. Core questions and responses from Alatna residents are summarized in Figure 2-11. In Alatna, a lack of subsistence foods was the most frequently reported source of food insecurity followed by a lack of store-bought foods; 100% of Alatna households said their subsistence foods did not last and 85% said that their store-bought foods did not last (Figure 2-11).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Alatna, the state of Alaska, and the United States are summarized in Figure 2-12. In Alatna in 2011, 67% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 17% had low food security and 17% had very low food security. Alatna households had notably lower levels of food security and higher levels of food insecurity than surveyed households in Alaska as well as the United States as a whole (Nord et al. 2009:21).

Figure 2-13 portrays the mean number of food insecure conditions per household by food security category by month. For households with high and marginal food security, food insecurity conditions

Table 2-13. – Estimated earned and other income, Alatna, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Local government	12.0	9.0	$143,218.49	$15,913.17	$4,475.58	75.3%
Federal government	1.5	1.5	$5,819.92	$646.66	$181.87	3.1%
Services	1.5	1.5	$1,262.92	$140.32	$39.47	0.7%
Earned income subtotal	**12.0**	**9.0**	**$150,301.33**	**$16,700.15**	**$4,696.92**	**79.0%**
Other income						
Alaska Permanent Fund dividend		9.0	$28,135.50	$3,126.17	$879.23	14.8%
Native corporation dividend		9.0	$9,915.99	$1,101.78	$309.87	5.2%
Energy assistance		3.0	$1,903.50	$211.50	$59.48	1.0%
Adult public assistance		0.0	$0.00	$0.00	$0.00	0.0%
Supplemental Security income		0.0	$0.00	$0.00	$0.00	0.0%
Food stamps		1.5	$0.00	$0.00	$0.00	0.0%
Longevity bonus		0.0	$0.00	$0.00	$0.00	0.0%
Pension/retirement		0.0	$0.00	$0.00	$0.00	0.0%
Social Security		0.0	$0.00	$0.00	$0.00	0.0%
Workers' compensation/insurance		0.0	$0.00	$0.00	$0.00	0.0%
Unemployment		1.5	$0.00	$0.00	$0.00	0.0%
Child support		0.0	$0.00	$0.00	$0.00	0.0%
Other		0.0	$0.00	$0.00	$0.00	0.0%
Foster care		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**9.0**	**$39,954.99**	**$4,439.44**	**$1,248.59**	**21.0%**
Community income total			**$190,256.32**	**$21,139.59**	**$5,945.51**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources by fewer than 4 households.

Table 2-14. – Employment by industry, Alatna, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**18.0**	**9.0**	**12.0**	
Federal government (total)	**8.3%**	**16.7%**	**12.5%**	**3.9%**
Service occupations	8.3%	16.7%	12.5%	3.9%
Local government, including tribal (total)	**83.3%**	**100.0%**	**100.0%**	**95.3%**
Executive, administrative, and managerial	8.3%	16.7%	12.5%	21.3%
Administrative support occupations, including clerical	33.3%	50.0%	37.5%	33.9%
Handlers, equipment cleaners, helpers, and laborers	41.7%	66.7%	50.0%	40.1%
Industry unknown	**8.3%**	**16.7%**	**12.5%**	**0.8%**
Administrative support occupations, including clerical	8.3%	16.7%	12.5%	0.8%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 2-15. – Employment characteristics, Alatna, 2011.

Characteristic	Community Alatna
All adults	
Number	13.5
Mean weeks employed	36.6
Employed adults	
Number	12.0
Percentage	88.9%
Jobs	
Number	18
Mean	1.5
Minimum	1.0
Maximum	3.0
Months employed	
Mean	9.5
Minimum	2.0
Maximum	12.0
Percentage employed year-round	75.0%
Mean weeks employed	41.2
Households	
Number	9.0
Employed	
Number	9.0
Percentage	100.0%
Jobs per employed household	
Mean	2.0
Minimum	1.0
Maximum	5.0
Employed adults	
Mean	
Employed households	1.3
Total households	1.3
Minimum	1.0
Maximum	5.0
Mean person-weeks of employment	37.6

Source ADF&G Division of Subsistence household surveys, 2012.

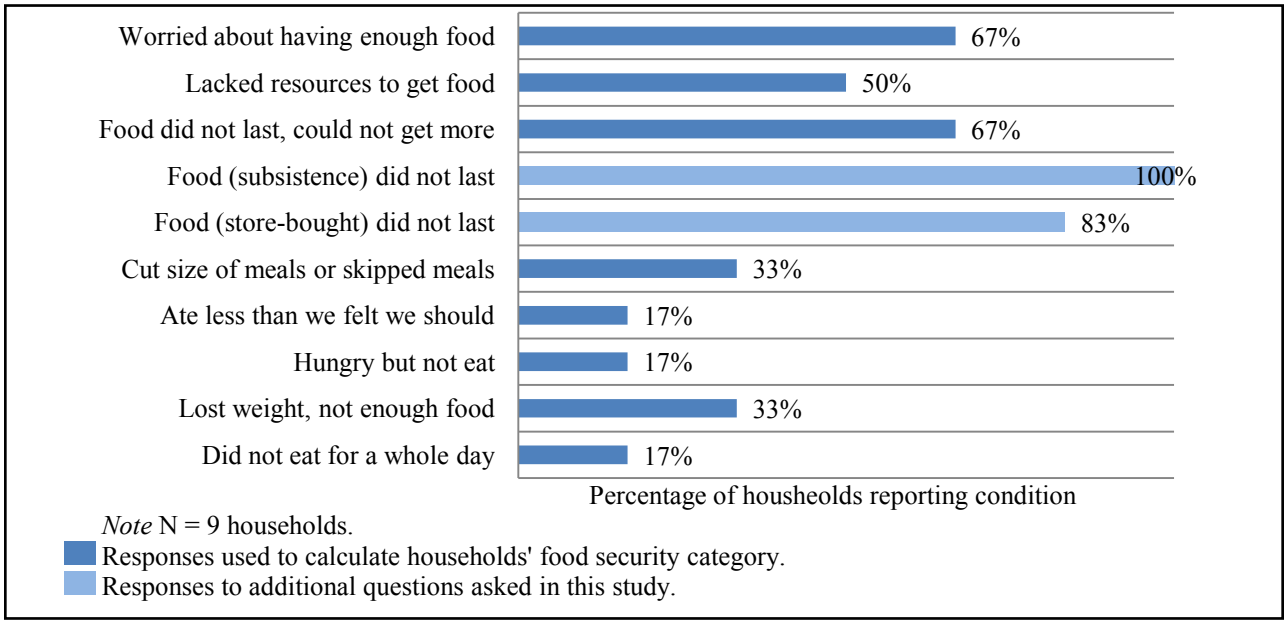


Figure 2-11.– Food insecure conditions, Alatna, 2011.

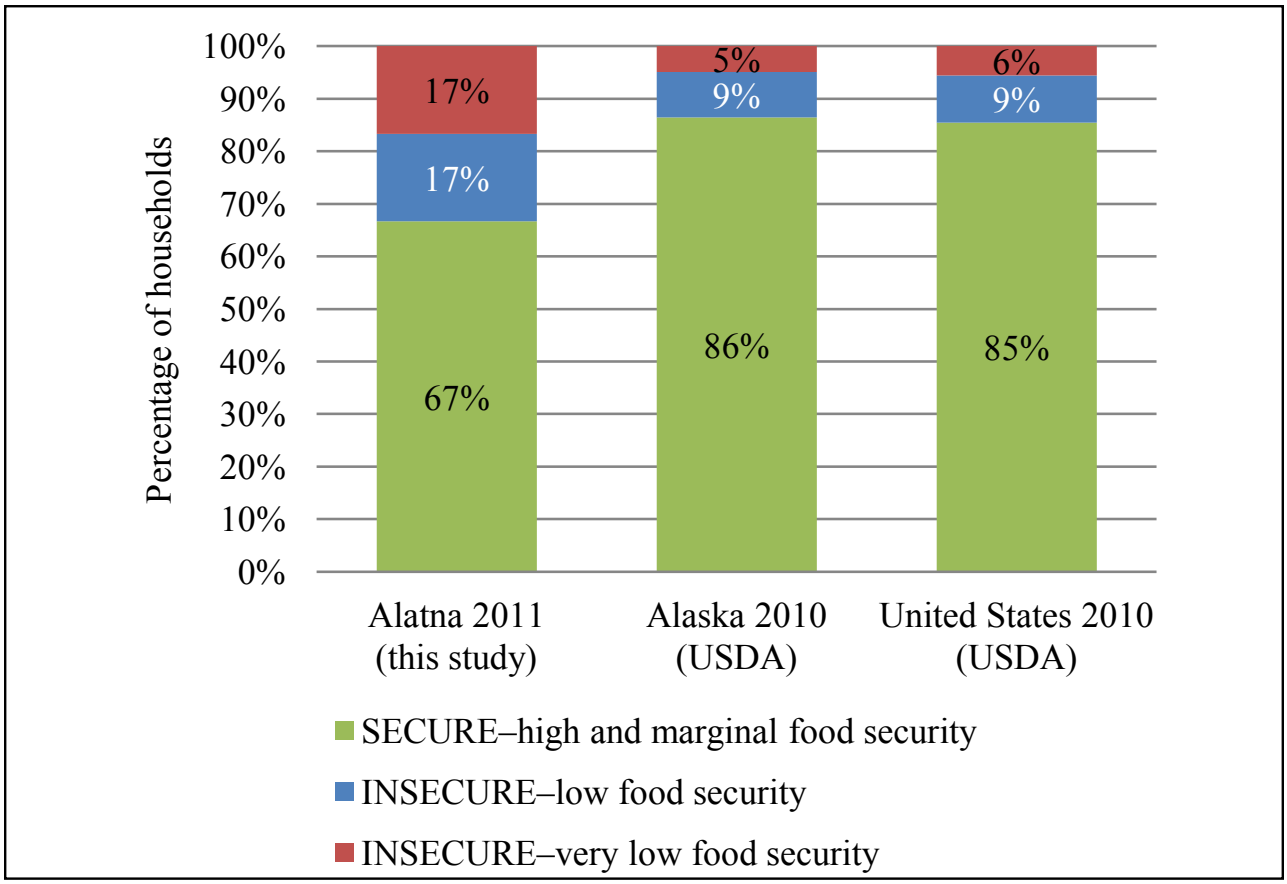


Figure 2-12.– Food insecure categories, Alatna, 2011.

peaked in November, followed by December and January. Figure 2-14 shows that depending upon the month, between 0% and 50% of households reported subsistence foods did not last. Winter months, especially November through February, were the months in which the highest percentage of households reported any food did not last (Figure 2-14).

Late winter and early spring in the interior is often a time of food insecurity. This is a period of time when it is difficult to hunt and the salmon have yet to return. As shown in Figure 2-13, the highest number of food insecurity conditions occurred for high and marginal and low food secure households in Alatna between November and February. The months of April–July, according to respondents in the same 2 categories, were the most food secure because salmon are harvested in the summer, as well as some whitefishes and berries.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 2-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 2-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 2-15 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (6 households), and therefore differ from those reported in Table 2-16.

One-half (50%) of the Alatna respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); 50% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and no respondents (0%) said their overall harvests and uses were higher (Table 2-16). Many respondents claimed that their harvest was less or different because of the month-long missing person search.

As depicted in Figure 2-15, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households. Large mammal harvests, however, are the main exception where 50% of households reported using more of that resource category.

The resource categories that Alatna residents reported to have used significantly less of in 2011 than previous years were salmon (67% of all interviewed households [Figure 2-15], 100% of all households that provided an assessment [Table 2-16]), migratory waterfowl (67% of all interviewed households, 67% of all households that provided an assessment), small land mammals (33% of all interviewed households, 50% of all households that provided an assessment), and vegetation (67% of

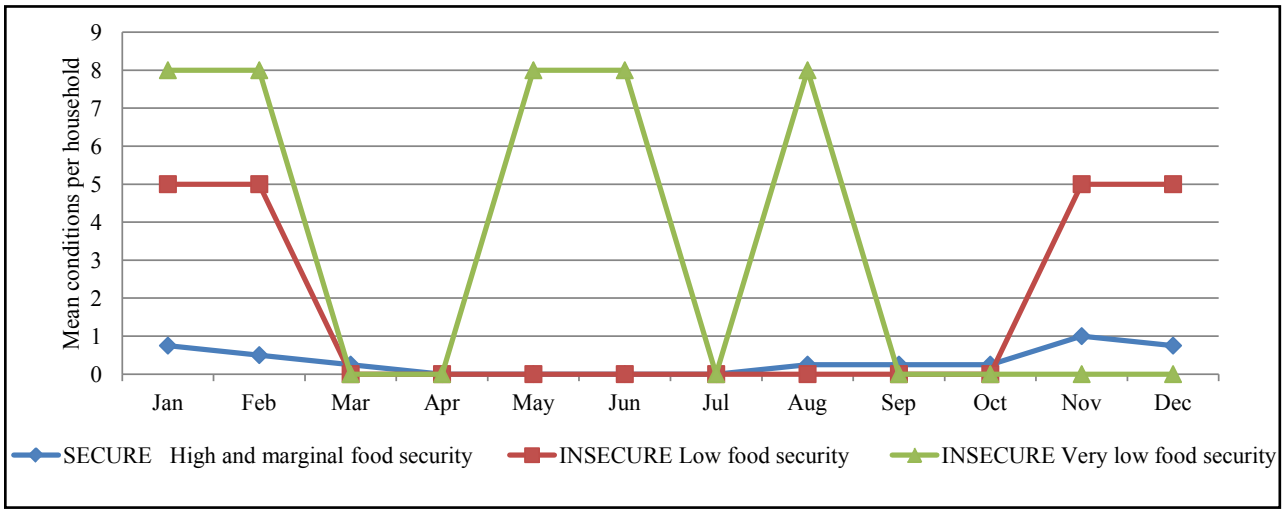


Figure 2-13.– Mean number of food insecure conditions for each month food was reported not to have lasted, Alatna, 2011.

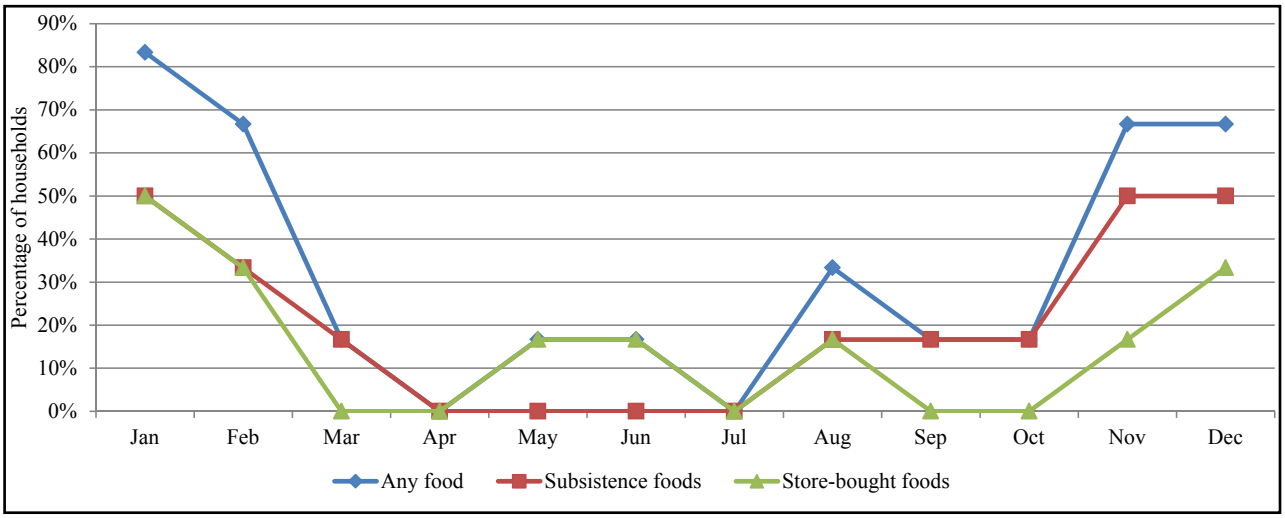


Figure 2-14.– Comparison of months where foods did not last, Alatna, 2011.

Table 2-16. – Changes in household uses of resources compared to recent years, Alatna, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	6	6	6	100%	6	100%	3	50%
All resources	6	6	3	50%	3	50%	0	0%
Salmon	6	4	4	100%	0	0%	0	0%
Nonsalmon fish	6	5	2	40%	3	60%	0	0%
Large game	6	6	2	33%	1	17%	3	50%
Small game	6	4	2	50%	2	50%	0	0%
Marine mammals	6	6	0	0%	6	100%	0	0%
Migratory waterfowl	6	6	4	67%	2	33%	0	0%
Other birds	6	6	2	33%	4	67%	0	0%
Bird eggs	6	0	0	0%	0	0%	0	0%
Marine invertebrates	6	0	0	0%	0	0%	0	0%
Vegetation	6	6	4	67%	2	33%	0	0%

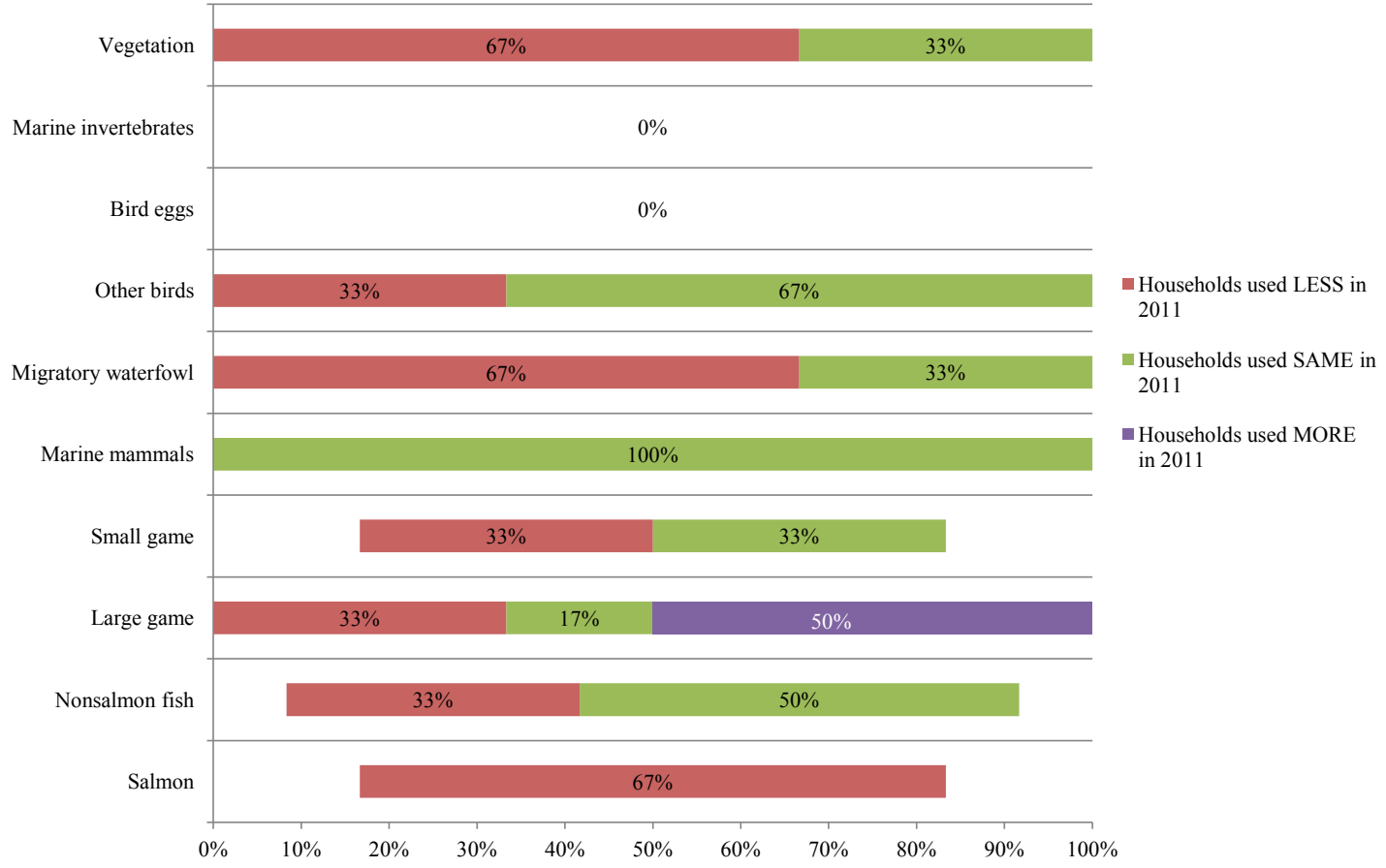
Source ADF&G Division of Subsistence household surveys, 2011.
a. Valid responses do not include households that did not provide any response and households reporting never use.

all interviewed households, 67% if all households that provided an assessment). In comparison, about 100% of all interviewed households and households that provided an assessment reported that they used about the same amount of marine mammals. Regarding other birds (not migratory waterfowl), 67% of all interviewed households and all households that provided an assessment used the same amount in 2011 than in previous years.

Table 2-17 depicts the reasons Alatna respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: availability of animals, unsuccessful hunting, and the weather/environment. Inadequate availability of resources was a main reason cited for less harvests and use of large game, small game, migratory waterfowl, other birds, and vegetation. The weather/environment was given as the as the most common reason for less salmon use. It is worth noting that none of the respondents answering this question cited a lack of effort as the major reason for less use of wild resources in 2011.

Overall, 100% of Alatna's households reported that their uses of at least 1 category of wild resource had declined in 2011 compared to other recent years; 50% said that their uses of at least one category had increased (Table 2-16). Resources being less available was the most frequently cited reason for lower use of any resource category in 2011 (67% of all Alatna households that reported a reason for



Note Percentages are based on the total number of households in the community (N = 6 households). Unlabeled percentages are less than 5%.

Figure 2-15.– Changes in household uses of resources compared to recent years, Alatna, 2011.

Table 2-17. – Reasons for less household uses of resources compared to recent years, Alatna, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	6	6	0	0.0%	4	66.7%	0	0.0	2	33.3%	1	16.7%	0	0.0%	1	16.7%	3	50.0%
All resources	6	2	0	0.0%	1	50.0%	0	0.0	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%
Salmon	4	4	0	0.0%	0	0.0%	0	0.0	1	25.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%
Nonsalmon fish	5	1	0	0.0%	0	0.0%	0	0.0	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Large game	6	2	0	0.0%	1	50.0%	0	0.0	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Small game	4	2	0	0.0%	1	50.0%	0	0.0	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%
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%
Migratory waterfowl	6	2	0	0.0%	2	100.0%	0	0.0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	6	2	0	0.0%	2	100.0%	0	0.0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	0	0	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	6	3	0	0.0%	2	66.7%	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, 2011.

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

Table 2-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	6	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	2	33.3%	0	0.0%
All resources	6	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	4	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	1	25.0%	0	0.0%
Nonsalmon fish	5	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large game	6	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	4	2	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%
Migratory waterfowl	6	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Other birds	6	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	0	0	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	6	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

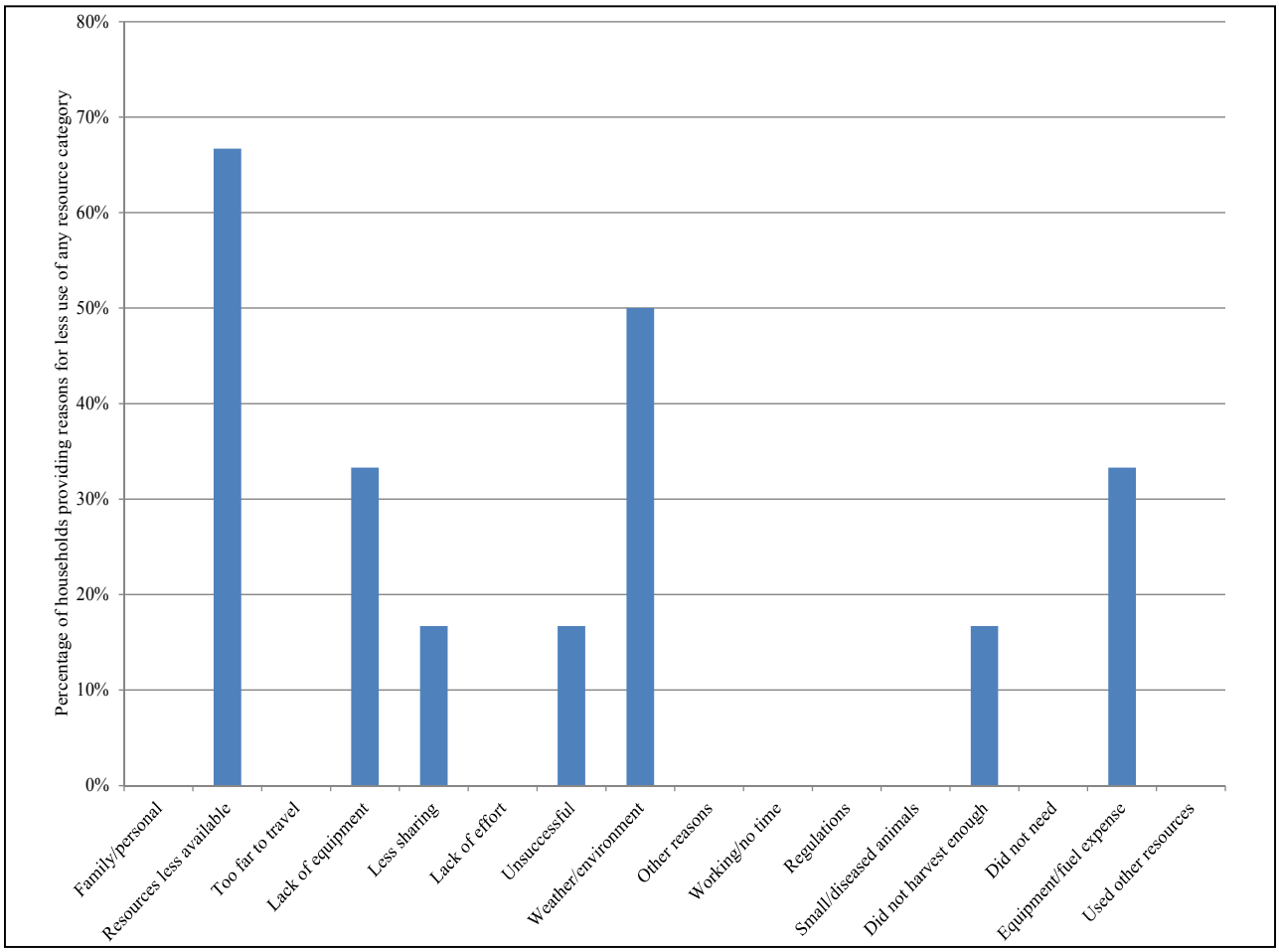


Figure 2-16.– Reasons for less household uses of any resource compared to recent years, Alatna, 2011.

less use), followed by weather/environment (50%); lack of equipment and expenses for fuel/equipment (33% each); and less sharing, unsuccessful harvest effort, and did not get enough (17% each) (Figure 2-16).

LOCAL CONCERNS REGARDING RESOURCES

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Alatna. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary.

FISH

Salmon and nonsalmon fish were important resources for residents of Alatna in 2011. Individuals in both Allakaket and Alatna expressed concern about the possibility of increased toxicity in whitefish species. In particular they were worried about elevated levels of mercury being found in whitefish

species.[3] There was also much concern over the Chinook salmon run in the Koyukuk River because in recent years it has severely declined.[4]

LARGE LAND MAMMALS

In 2011, only a few Alatna respondents reported successful harvests of large land mammals. However, 2011 appears to have been a unique year for 2 reasons: the missing person search affected fall moose hunting activities and an atypical caribou migration through the immediate vicinity of the community resulted in an unusually large number of caribou being harvested. Local residents concur that the building of the trans-Alaska Pipeline in the 1970s altered the annual movement of caribou and made them more difficult to obtain. Also, many community residents spoke of a need for more intensive predator management because, they say, large numbers of moose and caribou are being taken by wolves and bears. The 2012 Alaska Board of Game (BOG) agenda includes a proposal to increase predator control in the Upper Koyukuk Village Moose Management Area in Unit 24B and community members were in favor of this intensive management plan. The purpose of the proposed plan, as stated in the BOG's 2012 Proposal Book, is to allow for the removal of wolves by the Alaska Department of Fish and Game near the villages of Alatna and Allakaket so that the moose population can support historical harvest levels (Alaska Board of Game 2012:238).

TRADITIONAL KNOWLEDGE AND PRACTICES

Two community respondents asserted a similar concern for the youth losing interest in traditional activities. They fear that with fewer youth becoming involved in traditional subsistence practices, much of the community's values, knowledge, and beliefs will be lost.

One younger respondent indicated that over the last 30 years Alatna has been successful at gaining more jobs, which has contributed toward increased means to have needed equipment (such as boats) for hunting and fishing; however there are still skilled hunters and fishers in the community who cannot afford these helpful tools and are limited as to what they can do to contribute toward obtaining subsistence foods for their families.

DEVELOPMENT CONCERNS

During the Alatna community project information meeting with ADF&G researchers that was held in January 2012 prior to the start-up of the household surveys, several community members voiced

3. We do not know the specific source of residents' concern about mercury concentrations in whitefishes. The Section of Epidemiology of the Alaska Division of Public Health has issued several advisories regarding consumption levels for children, women who are pregnant or can become pregnant, and nursing mothers, for certain fish due to elevated concentrations of mercury (e.g., Mclaughlin and Gessner 2007), including burbot and northern pike from the middle Kuskokwim River (ADHSS 2011).
4. ADF&G, "2012 preliminary Yukon River summer season summary," released October 1, 2012, http://www.adfg.alaska.gov/static/home/news/pdfs/newsreleases/cf/229271472.pdf.

concerns about a road proposed by the State of Alaska for mining access. The proposed road could potentially lead from the Dalton Highway east of Alatna to Ambler and would cross through Alatna and Allakaket tribal land, including their traditional hunting, fishing, and trapping areas. Some concerns expressed were that the road would disrupt caribou migration patterns as well as allow easy access for non-local hunters and fishers to cross their land and compete for their local subsistence resources. During the meeting, which was attended by ADF&G survey staff, the Alatna Tribal Council, and community members, the Second Chief of Alatna's Tribal Council encouraged residents to participate in the survey, and advised people present at the meeting that he believed if households participated in the survey that this would be a means to help the community document current subsistence harvests and also could "help support people's future subsistence opportunities."

SUMMARY

The household survey findings demonstrated that residents of Alatna harvested a wide variety of resources in 2011. Residents invested a great deal of time and effort in harvesting fish (salmon and nonsalmon), large and small land mammals, birds, and wild plants. Prior studies conducted by the Division of Subsistence have reported harvests for Alatna and Allakaket combined. Unfortunately, the original data are such that it is not possible to separate the results for each community from the combined data set. Therefore Alatna cannot be analyzed as a single community across all the years the Division of Subsistence has collected data for the area. The combined data from Alatna and Allakaket over the years will be discussed at the conclusion of the next chapter.

ACKNOWLEDGEMENTS

The ADF&G Division of Subsistence would like to thank the community and residents of Alatna for their full support and participation in this project. The enthusiasm expressed by all residents of Alatna afforded the research team the opportunity to collect the best data possible. We would like to thank all of the people of Alatna who took the time our first night in the village to make an incredible welcome dinner. In particular, we would like to thank Harding Sam for such a warm welcome to the community and his assistance with logistics, and Jared Sam and Russell Moses, our community liaisons and Local Research Assistants, for their assistance with the collection of survey and interview data. They worked long hours chauffeuring us on the backs of snowmachines and sleds between villages, and without their endless supply of smiles and eagerness we may never have completed the work.

CHAPTER 3: ALLAKAKET

Prepared by Lisa Hutchinson-Scarbrough, David Andersen, and Meredith Marchioni

COMMUNITY BACKGROUND

Community background, including ethnographic and historic information for Allakaket, is described in Chapter 2: Alatna, in the section "Community Background."

DEMOGRAPHY

According to the U.S. Census, Allakaket consists of 2 places: Allakaket City and New Allakaket (a Census Designated Place outside the city limits of Allakaket City). The combined population of these 2 places totaled 171 residents in 2010 (U. S. Census Bureau 2011a) (Table 3-1). The household survey conducted as part of this project found a population of 147 residents in January 2011. Of these, 140 (95%) were Alaska Native. Figure 3-1 shows the population history of Allakaket from 1960 through 2011. U.S. Census population counts for Allakaket ranged over the last 50 years from as low as 115 to as high as 174. Alaska Department of Labor estimates for the last 30 years ranged from 92 to 152. The U.S. Census population counts show that from 1960 to 1970 there was an increase in population, but in 1980 the population decreased and remained stable through the 2000 census. However, as of the 2010 census, the population has increased back to the level it was in 1970. In 1995, the estimated population dropped to 119 because a large flood occurred in 1994 and the Koyukuk River swept away most of the homes in both Allakaket and Alatna (USFWS 2008). According to residents, there are seasonal fluctuations in the Allakaket population with more people present in the community during the summer than in the winter. This may account for the difference in estimated population between the 2010 federal census and the 2011 survey.

Prior to administering the survey, researchers, in consultation with community officials and other knowledgeable residents, identified a total of 57 year-round households in Allakaket. Of these, 42 households (74%) were surveyed (Table 3-2). The mean number of years of residency in Allakaket was 31 years, with a maximum length of residence of 87 years (Table 3-3). Males (56%) outnumbered females (44%) (Figure 3-2; Table 3-4). Among males, the largest age cohorts were in the 0–4, 10–14, and 55–59 age categories. Other age categories for males were fairly evenly distributed, with the exception of the 15–19, 75–79, and 85–89 age cohorts which had fewer males, and there were no males age 65–69. Among females, ages were more varied. The largest age cohort for females was the

Table 3-1. – Population of Allakaket, 2010 and 2011.

2010 Census[a, b]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
62	171	165	96.5%	57	147	140	95.4%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.
b. Includes Allakaket City and New Allakaket CDP.

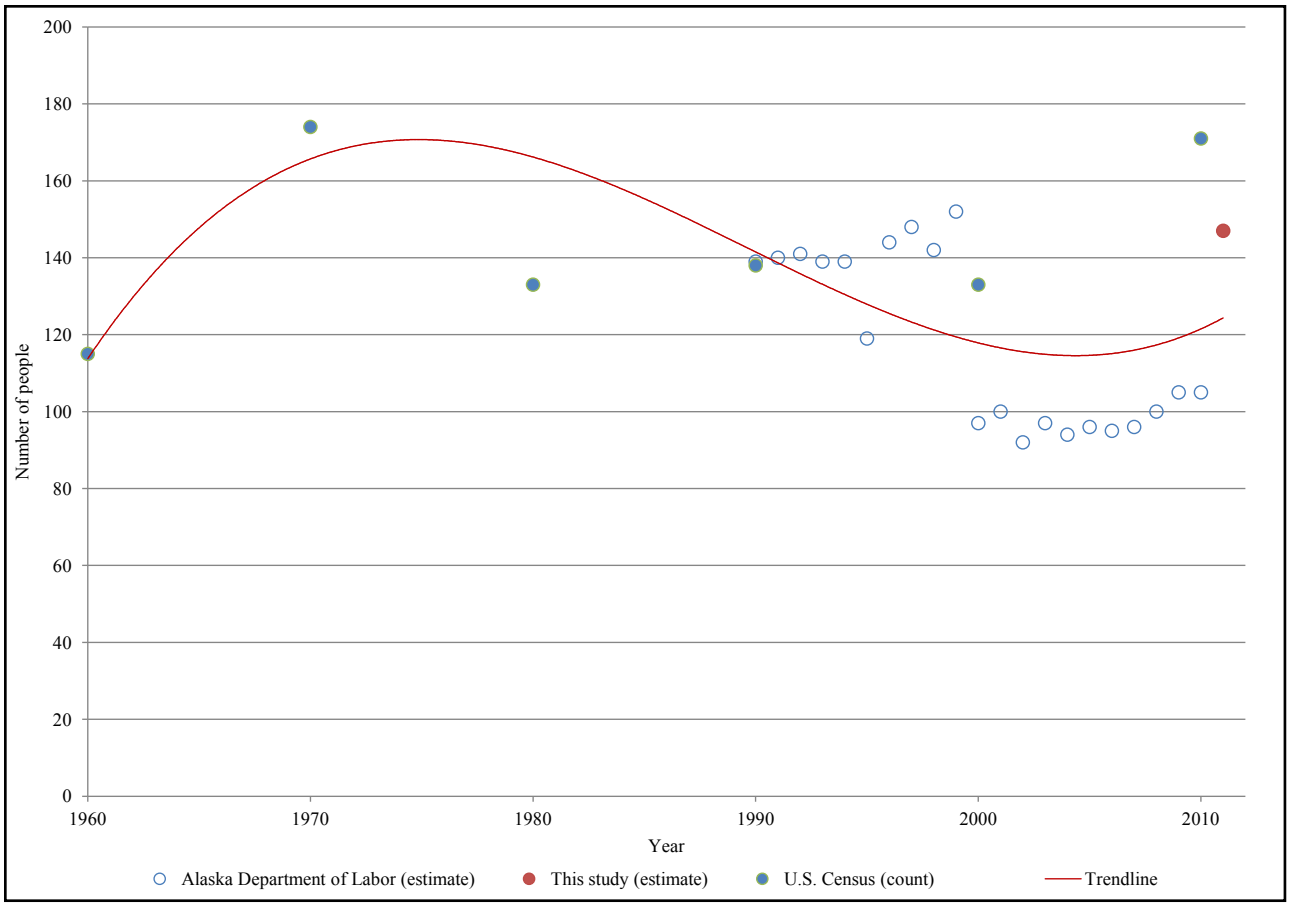


Figure 3-1.– Population history, Allakaket, 1960–2011.

15–19 age group. No females were represented in the 35–39 and 70–74 age cohorts, or in the over 84 age category.

Of the Allakaket household heads surveyed, 92% were born in Alaska (Table 3-5). Seventy-two percent of household heads identified Allakaket as their place of birth. The number of household heads born locally expanded to 81% if other Koyukuk River locations such as neighboring Alatna, Hughes, Huslia, and/or seasonal camps associated with those communities were included. In comparison, 6% of the household heads were born in locations within the United State that were outside the state of Alaska, and 2% were foreign born (Table 3-5).

Table 3-2. – Sample achievement, Allakaket, 2011.

Number of dwelling units	57.0
Interview goal	57.0
Households interviewed	42.0
Households failed to contact	11.0
Households declined to be interviewed	4.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	46.0
Refusal rate	8.7%
Final estimate of permanent households	57.0
Percentage of total households interviewed	73.7%
Interview weighting factor	1.4
Sampled population	108.0
Estimated population	146.6

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

LEVELS OF PARTICIPATION IN THE HARVEST AND USE OF WILD RESOURCES

Table 3-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Allakaket residents in 2011. The majority (68%) of Allakaket residents attempted to harvest 1 or more wild resources in 2011. Looking at the major resource categories, 58% of all residents gathered plants and berries, 47% fished, 43% hunted for birds, and 47% hunted for large land mammals. Fewer residents (22%) participated in furbearer hunting or trapping. Participation in the processing of wild resources was also high with 66% of all Allakaket residents having participated in the processing of wild resources in 2011. More residents (54%) participated in processing plants and berries than any other resource category. Other participation levels for processing harvests are as follows: 53% for large land mammals, 44% for fish, and 40% for wild birds.

RESOURCE HARVEST AND USE PATTERNS

Table 3-7 summarizes resource harvest and use characteristics for Allakaket in 2011 at the household level. All households (100%) used wild resources in 2011, while 95% attempted to harvest 1 or more wild resource, and 90% harvested at least 1 resource. The average total harvest of wild resources was an estimated 1,338 lb edible weight per household, or 520 lb per capita. This represents the highest level of harvest of all the study communities surveyed in 2011. On average, households attempted to harvest 13 kinds of resources, harvested 11 kinds of resources, and used an average of 18 different kinds of resources. The maximum number of resources used by any household was 51. In addition, households gave away an average of 9 resource types and received 10 resources from other households. A large majority of Allakaket households (86%) reported sharing resources with other households.

Table 3-3. – Demographics and sample characteristics, Allakaket, 2011.

Characteristics	Allakaket
Sampled households	42.0
Eligible households	57.0
Percentage sampled	73.7%
Household size	
Mean	2.6
Minimum	1.0
Maximum	6.0
Sample population	108.0
Estimated community population	146.6
Age	
Mean	36.3
Minimum[a]	0.0
Maximum	87.0
Median	33.0
Length of residency	
Total population	
Mean	30.7
Minimum[a]	0.0
Maximum	87.0
Heads of household	
Mean	43.2
Minimum[a]	0.0
Maximum	87.0
Sex	
Estimated male	
Number	81.4
Percentage	55.6%
Estimated female	
Number	65.1
Percentage	44.4%
Alaska Native	
Estimated households[b]	
Number	52.9
Percentage	92.9%
Estimated population	
Number	139.8
Percentage	95.4%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants who are less than 1 year of age.
b. The estimated number of households in which at least 1 head of household is Alaska Native.

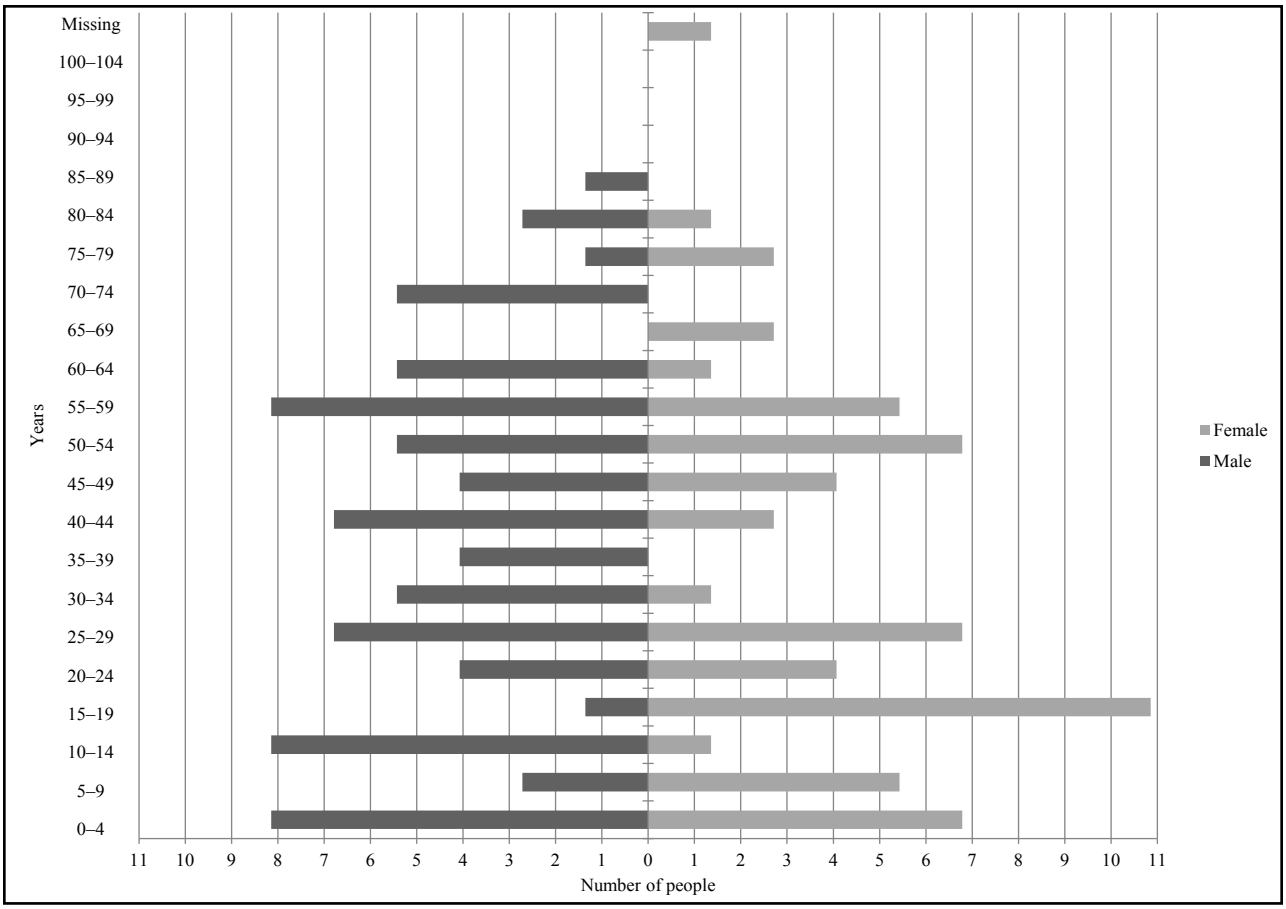


Figure 3-2.– Population profile, Allakaket, 2011.

Table 3-4. – Population profile, Allakaket, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	8.1	10.0%	10.0%	6.8	10.4%	10.4%	14.9	10.2%	10.2%
5–9	2.7	3.3%	13.3%	5.4	8.3%	18.8%	8.1	5.6%	15.7%
10–14	8.1	10.0%	23.3%	1.4	2.1%	20.8%	9.5	6.5%	22.2%
15–19	1.4	1.7%	25.0%	10.9	16.7%	37.5%	12.2	8.3%	30.6%
20–24	4.1	5.0%	30.0%	4.1	6.3%	43.8%	8.1	5.6%	36.1%
25–29	6.8	8.3%	38.3%	6.8	10.4%	54.2%	13.6	9.3%	45.4%
30–34	5.4	6.7%	45.0%	1.4	2.1%	56.3%	6.8	4.6%	50.0%
35–39	4.1	5.0%	50.0%	0.0	0.0%	56.3%	4.1	2.8%	52.8%
40–44	6.8	8.3%	58.3%	2.7	4.2%	60.4%	9.5	6.5%	59.3%
45–49	4.1	5.0%	63.3%	4.1	6.3%	66.7%	8.1	5.6%	64.8%
50–54	5.4	6.7%	70.0%	6.8	10.4%	77.1%	12.2	8.3%	73.1%
55–59	8.1	10.0%	80.0%	5.4	8.3%	85.4%	13.6	9.3%	82.4%
60–64	5.4	6.7%	86.7%	1.4	2.1%	87.5%	6.8	4.6%	87.0%
65–69	0.0	0.0%	86.7%	2.7	4.2%	91.7%	2.7	1.9%	88.9%
70–74	5.4	6.7%	93.3%	0.0	0.0%	91.7%	5.4	3.7%	92.6%
75–79	1.4	1.7%	95.0%	2.7	4.2%	95.8%	4.1	2.8%	95.4%
80–84	2.7	3.3%	98.3%	1.4	2.1%	97.9%	4.1	2.8%	98.1%
85–89	1.4	1.7%	100.0%	0.0	0.0%	97.9%	1.4	0.9%	99.1%
90–94	0.0	0.0%	100.0%	0.0	0.0%	97.9%	0.0	0.0%	99.1%
95–99	0.0	0.0%	100.0%	0.0	0.0%	97.9%	0.0	0.0%	99.1%
100–104	0.0	0.0%	100.0%	0.0	0.0%	97.9%	0.0	0.0%	99.1%
Missing	0.0	0.0%	100.0%	1.4	2.1%	100.0%	1.4	0.9%	100.0%
Total	**81.4**	**100.0%**	**100.0%**	**65.1**	**100.0%**	**100.0%**	**146.6**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 3-5. – Birthplaces of household heads, Allakaket, 2011.

Birthplace[a]	Percentage
Alatna	1.6%
Fairbanks	1.6%
Galena	3.1%
Healy Lake	1.6%
Hughes	3.1%
Huslia	1.6%
Kotzebue	1.6%
West Glenn Highway	3.1%
Allakaket	71.9%
Old Man	3.1%
Other U.S.	6.3%
Foreign	1.6%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category he or she may not belong to a different category.

In comparison, all households (100%) reported receiving a resource, which demonstrates that certain households are harvesting a greater variety of resources and distributing them among other households.

SPECIES USED AND SEASONAL ROUND

Allakaket residents harvest a wide variety of species throughout the year and often target specific species during certain seasons of the year, following a cyclical harvest pattern. While a large portion of Allakaket's subsistence harvest activities occur within 20 miles of the community, subsistence users will sometimes travel 100 miles or more to pursue specific highly sought-after resources. Major harvest corridors were identified along the Alatna, Koyukuk, South Fork Koyukuk, and Kanuti rivers. Transportation for acquiring wild foods is generally accomplished with the use of outboard motor-powered skiffs or ATVs during the summer months, and with the use of snowmachines, dog teams, or snowshoes during the winter months.

Table 3-8 presents estimates for the harvest and use of fish, game, and plant resources. Table 3-9 identifies the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Allakaket households during the 2011 study year. Residents of Allakaket harvested an estimated total of 76,261 lb (520 lb per capita) of wild resources (Table 3-8). Based on the estimated pounds of usable weight harvested, chum salmon, caribou, sheefish, and moose were the 4 most harvested resources, followed by humpback whitefish, northern pike, broad whitefish, black bears, Chinook salmon, and coho salmon (Table 3-9). In comparison, moose, wood, caribou, and sheefish were the 4 most used resources, followed by blueberries, black bears, highbush cranberries, whales, chum salmon, Chinook salmon, humpback whitefish, and mallard ducks (Table 3-9).

Table 3-6. – Estimated participation in subsistence harvesting and processing activities, Allakaket, 2011.

Total number of people	**146.6**
Birds	
Hunt	
Number	62.8
Percentage	42.9%
Process	
Number	58.6
Percentage	40.0%
Fish	
Fish	
Number	68.4
Percentage	46.7%
Process	
Number	64.2
Percentage	43.8%
Large land mammals	
Hunt	
Number	68.4
Percentage	46.7%
Process	
Number	78.2
Percentage	53.3%
Furbearers	
Hunt or trap	
Number	32.1
Percentage	21.9%
Process	
Number	33.5
Percentage	22.9%
Plants	
Gather	
Number	85.2
Percentage	58.1%
Process	
Number	79.6
Percentage	54.3%
Any resource	
Attempt	
Number	99.1
Percentage	67.6%
Process	
Number	96.4
Percentage	65.7%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 3-7. – Resource harvest and use characteristics, Allakaket, 2011.

Characteristic	
Mean number of resources used per household	17.7
Minimum	1.0
Maximum	51.0
95% confidence limit (±)	11.4%
Median	13.0
Mean number of resources attempted to harvest per household	13.3
Minimum	0.0
Maximum	43.0
95% confidence limit (±)	13.8%
Median	11.0
Mean number of resources harvested per household	11.0
Minimum	0.0
Maximum	40.0
95% confidence limit (±)	15.3%
Median	8.0
Mean number of resources received per household	9.9
Minimum	1.0
Maximum	43.0
95% confidence limit (±)	15.3%
Median	6.0
Mean number of resources given away per household	9.2
Minimum	0.0
Maximum	38.0
95% confidence limit (±)	17.4%
Median	5.0
Household harvest, pounds	
Minimum	0.0
Maximum	14,895.4
Mean	1,337.9
Median	445.0
Total harvest weight, pounds	76,261.4
Community per capita harvest, pounds	520.3
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	97.6%
Percentage harvesting any resource	92.9%
Percentage receiving any resource	100.0%
Percentage giving away any resource	88.1%
Number of households in sample	42.0
Number of resources available	124.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 3-8. – Estimated harvests and uses of fish, game, and plant resources, Allakaket, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**100%**	**98%**	**93%**	**100%**	**88%**	**76,261.4**	**1,337.9**	**520.3**	**17,253.3**		**302.7**	**30.5**
Fish	**86%**	**64%**	**62%**	**81%**	**52%**	**47,857.8**	**839.6**	**326.5**	**14,985.6**		**262.9**	**38.9**
Salmon	**67%**	**40%**	**36%**	**60%**	**40%**	**22,254.0**	**390.4**	**151.8**	**4,239.7**		**74.4**	**40.5**
Chum salmon	50%	38%	33%	19%	31%	18,193.8	319.2	124.1	3,578.8	Ind.	62.8	43.8
Coho salmon	29%	21%	17%	19%	14%	1,349.1	23.7	9.2	255.1	Ind.	4.5	61.2
Chinook salmon	48%	29%	17%	43%	24%	1,562.9	27.4	10.7	165.6	Ind.	2.9	57.3
Pink salmon	7%	5%	5%	2%	5%	54.0	0.9	0.4	23.1	Ind.	0.4	91.9
Sockeye salmon	14%	7%	5%	14%	7%	1,094.3	19.2	7.5	217.1	Ind.	3.8	85.9
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Unknown salmon	7%	0%	0%	7%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Nonsalmon fish	**81%**	**62%**	**60%**	**64%**	**52%**	**25,603.8**	**449.2**	**174.7**	**10,745.9**		**188.5**	**38.8**
Herring	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Herring Roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Smelt	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Cod	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0		0.0	0.0
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Pacific tomcod	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Pacific halibut	10%	0%	0%	10%	5%	0.0	0.0	0.0	0.0	Lbs.	0.0	0.0
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Burbot	17%	10%	10%	10%	2%	81.4	1.4	0.6	33.9	Ind.	0.6	83.3
Char	7%	5%	5%	2%	5%	25.9	0.5	0.2	25.8		0.5	78.6
Dolly Varden	5%	2%	2%	2%	2%	18.3	0.3	0.1	20.4	Ind.	0.4	103.6
Lake trout	5%	2%	2%	2%	5%	7.6	0.1	0.1	5.4	Ind.	0.1	103.6
Arctic grayling	43%	40%	36%	14%	21%	356.3	6.4	2.4	536.1	Lbs.	9.4	33.5
Northern pike	45%	43%	43%	5%	26%	3,511.6	61.6	24.0	780.4	Ind.	13.7	60.8
Sheefish	71%	57%	50%	38%	43%	10,333.3	185.7	70.5	1,742.6	Lbs.	30.6	30.1
Longnose sucker	21%	19%	19%	7%	10%	255.6	4.5	1.7	365.1	Ind.	6.4	77.3
Trout	10%	7%	7%	2%	5%	24.7	0.4	0.2	17.6		0.3	81.1

-continued-

Table 3-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Rainbow trout	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Unknown trout	7%	7%	7%	0%	2%	24.7	0.4	0.2	17.6	Ind.	0.3	81.1
Whitefishes	67%	48%	45%	45%	36%	11,015.0	193.2	75.2	7,244.4		127.1	44.1
Broad whitefish	45%	33%	33%	24%	26%	2,329.4	40.9	15.9	1,663.9	Ind.	29.2	46.5
Cisco	19%	17%	17%	12%	17%	1,339.5	23.5	9.1	1,339.5		23.5	84.2
Least cisco	19%	17%	17%	12%	17%	1,339.5	23.5	9.1	1,339.5	Ind.	23.5	84.2
Humpback whitefish	48%	36%	31%	31%	26%	5,748.9	103.3	39.2	1,927.1	Lbs.	33.8	47.7
Round whitefish	26%	17%	17%	17%	17%	919.5	16.1	6.3	1,838.9	Ind.	32.3	58.6
Unknown whitefish	12%	2%	2%	10%	7%	677.8	11.9	4.6	475.0	Ind.	8.3	103.6
Land mammals	**93%**	**79%**	**52%**	**88%**	**67%**	**25,627.6**	**449.6**	**174.8**	**420.7**		**7.4**	**25.8**
Large land mammals	**90%**	**76%**	**43%**	**88%**	**64%**	**24,256.2**	**425.5**	**165.5**	**135.7**		**2.4**	**25.4**
Bison	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Black bear	56%	39%	14%	46%	27%	1,764.3	31.0	12.0	17.6	Ind.	0.3	46.3
Brown bear	12%	12%	2%	10%	5%	191.4	3.4	1.3	1.4	Ind.	0.0	103.6
Caribou	76%	48%	33%	62%	48%	12,350.0	216.7	84.3	95.0	Ind.	1.7	27.9
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Moose	88%	69%	24%	74%	48%	9,527.1	167.1	65.0	17.6	Ind.	0.3	31.2
Muskox	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Dall sheep	14%	12%	5%	10%	7%	423.4	7.4	2.9	4.1	Ind.	0.1	76.5
Small land mammals[b]	**55%**	**40%**	**33%**	**38%**	**26%**	**1,371.4**	**24.1**	**9.4**	**285.0**		**5.0**	**51.7**
Beaver	45%	29%	21%	31%	17%	1,201.1	21.1	8.2	80.1	Ind.	1.4	54.3
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Fox	5%	7%	5%	0%	0%	0.0	0.0	0.0	4.1		0.1	76.5
Red fox	5%	7%	5%	0%	0%	0.0	0.0	0.0	4.1		0.1	76.5
Red fox—cross phase	2%	5%	2%	0%	0%	0.0	0.0	0.0	1.4	Ind.	0.0	103.6
Red fox—red phase	5%	7%	5%	0%	0%	0.0	0.0	0.0	2.7	Ind.	0.0	72.4
Hare	10%	7%	7%	5%	5%	78.0	1.4	0.5	31.2		0.5	63.9
Snowshoe hare	10%	7%	7%	5%	5%	78.0	1.4	0.5	31.2	Ind.	0.5	63.9
River (land) otter	7%	5%	5%	2%	5%	0.0	0.0	0.0	4.1	Ind.	0.1	76.5
Lynx	10%	12%	10%	0%	0%	0.0	0.0	0.0	29.9	Ind.	0.5	76.6
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Marten	10%	10%	10%	0%	2%	0.0	0.0	0.0	66.5	Ind.	1.2	58.0
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Muskrat	7%	5%	2%	5%	2%	0.0	0.0	0.0	20.4	Ind.	0.4	103.6

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Table 3-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Porcupine	36%	29%	24%	21%	24%	92.3	1.6	0.6	23.1	Ind.	0.4	33.9
Squirrel	2%	2%	2%	0%	0%	0.0	0.0	0.0	13.6		0.2	103.6
Arctic ground (parka) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Red (tree) squirrel	2%	2%	2%	0%	0%	0.0	0.0	0.0	13.6	Ind.	0.2	103.6
Weasel	5%	5%	5%	0%	0%	0.0	0.0	0.0	6.8	Ind.	0.1	73.9
Wolf	7%	7%	5%	5%	5%	0.0	0.0	0.0	5.4	Ind.	0.1	72.4
Wolverine	7%	5%	0%	7%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Marine mammals	**55%**	**0%**	**0%**	**55%**	**17%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seal	33%	0%	0%	33%	7%	0.0	0.0	0.0	0.0		0.0	0.0
Bearded seal	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Fur seal	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Harbor seal	5%	0%	0%	5%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Spotted seal	5%	0%	0%	5%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Unknown seal	19%	0%	0%	19%	2%	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	Ind.	0.0	0.0
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Walrus	7%	0%	0%	7%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Whale	52%	0%	0%	52%	14%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Birds and eggs	**74%**	**62%**	**60%**	**40%**	**50%**	**1,903.6**	**33.4**	**13.0**	**1,430.4**		**25.1**	**26.4**
Migratory birds	**69%**	**55%**	**50%**	**40%**	**48%**	**1,698.1**	**29.8**	**11.6**	**1,187.5**		**20.8**	**27.5**
Ducks	60%	48%	40%	31%	40%	626.0	11.0	4.3	685.4		12.0	31.3
Eider	2%	2%	2%	0%	0%	28.6	0.5	0.2	13.6		0.2	103.6
Common eider	2%	2%	2%	0%	0%	15.0	0.3	0.1	6.8	Ind.	0.1	103.6
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Spectacled eider	2%	2%	2%	0%	0%	13.6	0.2	0.1	6.8	Ind.	0.1	103.6
Mallard	48%	40%	31%	24%	31%	177.8	3.1	1.2	177.8	Ind.	3.1	33.9
Long-tailed duck	29%	29%	21%	14%	19%	123.8	2.2	0.8	154.7	Ind.	2.7	40.5
Northern pintail	45%	36%	31%	21%	29%	152.0	2.7	1.0	190.0	Ind.	3.3	31.6
Scoter	38%	36%	29%	17%	29%	117.3	2.1	0.8	130.3		2.3	32.5
Black scoter	38%	36%	29%	17%	29%	117.3	2.1	0.8	130.3	Ind.	2.3	32.5
Unknown ducks	12%	10%	7%	7%	5%	26.6	0.5	0.2	19.0	Ind.	0.3	76.1
Geese	64%	55%	45%	31%	38%	842.0	14.8	5.7	475.0		8.3	30.0
Canada geese	52%	48%	40%	21%	29%	298.0	5.2	2.0	248.4		4.4	29.6
Cacklers	33%	31%	29%	14%	19%	151.5	2.7	1.0	126.2	Ind.	2.2	39.0

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Table 3-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Lesser Canada geese	2%	5%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Unknown Canada geese	24%	24%	14%	10%	10%	146.6	2.6	1.0	122.1	Ind.	2.1	49.6
Snow geese	2%	5%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
White-fronted geese	43%	33%	29%	21%	31%	495.1	8.7	3.4	206.3	Ind.	3.6	41.1
Unknown geese	7%	7%	2%	5%	5%	48.9	0.9	0.3	20.4	Ind.	0.4	103.6
Swan	2%	2%	2%	0%	2%	13.6	0.2	0.1	1.4		0.0	103.6
Tundra (whistling) swan	2%	2%	2%	0%	2%	13.6	0.2	0.1	1.4	Ind.	0.0	103.6
Crane	26%	21%	19%	12%	19%	216.6	3.8	1.5	25.8		0.5	44.3
Sandhill crane	26%	21%	19%	12%	19%	216.6	3.8	1.5	25.8	Ind.	0.5	44.3
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Other birds	**38%**	**43%**	**36%**	**10%**	**24%**	**205.5**	**3.6**	**1.4**	**242.9**		**4.3**	**33.8**
Upland game birds	38%	43%	36%	10%	24%	205.5	3.6	1.4	242.9		4.3	33.8
Grouse	33%	38%	31%	7%	17%	87.4	1.5	0.6	124.9		2.2	34.1
Spruce grouse	29%	32%	24%	7%	17%	70.3	1.2	0.5	100.4	Ind.	1.8	36.3
Sharp-tailed grouse	5%	5%	5%	0%	0%	6.7	0.1	0.0	9.5	Ind.	0.2	89.7
Ruffed grouse	12%	10%	7%	7%	2%	8.6	0.2	0.1	12.2	Ind.	0.2	72.8
Unknown grouse	2%	2%	2%	0%	0%	1.9	0.0	0.0	2.7	Ind.	0.0	103.6
Ptarmigan	26%	29%	21%	10%	17%	118.1	2.1	0.8	118.1	Ind.	2.1	42.0
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0.0
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Marine invertebrates	**2%**	**0%**	**0%**	**2%**	**2%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Clams	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0		0.0	0.0
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Razor clams	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0

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Table 3-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Marine invertebrates, continued												
Crabs	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0		0.0	0.0
Dungeness crab	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Lbs.	0.0	0.0
King crab	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Lbs.	0.0	0.0
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0.0
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Vegetation	**88%**	**81%**	**83%**	**57%**	**60%**	**872.4**	**15.3**	**6.0**	**416.5**		**7.3**	**22.3**
Berries	76%	62%	69%	43%	43%	860.1	15.1	5.9	215.0		3.8	22.2
Blueberry	64%	55%	60%	26%	31%	315.5	5.5	2.2	78.9	Gal.	1.4	22.7
Lowbush cranberry	46%	32%	31%	26%	26%	200.9	3.5	1.4	50.2	Gal.	0.9	34.0
Highbush cranberry	55%	43%	50%	26%	26%	289.4	5.1	2.0	72.4	Gal.	1.3	28.4
Crowberry	2%	2%	2%	0%	0%	1.4	0.0	0.0	0.3	Gal.	0.0	103.6
Cloud berry	12%	12%	12%	2%	10%	36.6	0.6	0.3	9.2	Gal.	0.2	56.5
Nagoonberry	2%	2%	2%	0%	0%	5.4	0.1	0.0	1.4	Gal.	0.0	103.6
Raspberry	12%	17%	12%	0%	5%	10.9	0.2	0.1	2.7	Gal.	0.0	58.6
Other wild berry	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Plants/greens/mushrooms	14%	10%	12%	7%	7%	12.3	0.2	0.1	14.8	Gal.	0.3	70.0
Wild rhubarb	5%	2%	5%	2%	5%	8.8	0.2	0.1	8.8	Gal.	0.2	95.8
Devil's club	2%	2%	2%	0%	2%	0.7	0.0	0.0	0.7	Gal.	0.0	103.6
Hudson's Bay tea	2%	2%	2%	0%	0%	0.7	0.0	0.0	0.7	Gal.	0.0	103.6
Spruce tips	2%	2%	2%	0%	0%	0.0	0.0	0.0	4.1	Gal.	0.1	103.6
Wild rose hips	5%	2%	5%	2%	0%	2.0	0.0	0.0	0.5	Gal.	0.0	76.5
Other wild greens	2%	2%	2%	0%	0%	0.1	0.0	0.0	0.1	Gal.	0.0	103.6
Unknown mushrooms	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0
Wood	79%	69%	69%	33%	36%	0.0	0.0	0.0	186.7	Cord.	3.3	18.2
Willow	2%	2%	2%	0%	0%	0.0	0.0	0.0	1.4	Bag	0.0	103.6

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 3-9. – Top 10 resources harvested and used, Allakaket, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Chum salmon	124.1	1	1.	Moose	88.1%
2	2.	Caribou	84.3	2	2.	Wood	78.6%
3	3.	Sheefish	70.5	3	3.	Caribou	76.2%
4	4.	Moose	65.0	4	4.	Sheefish	71.4%
5	5.	Humpback whitefish	39.2	5	5.	Blueberry	64.3%
6	6.	Northern pike	24.0	6	6.	Black bear	54.8%
7	7.	Broad whitefish	15.9	7	6.	Highbush cranberry	54.8%
8	8.	Black bear	12.0	8	7.	Whale	52.4%
9	9.	Chinook salmon	10.7	9	8.	Chum salmon	50.0%
10	10.	Coho salmon	9.2	10	9.	Chinook salmon	47.6%
				11	9.	Humpback whitefish	47.6%
				12	9.	Mallard	47.6%

Source ADF&G Division of Subsistence household surveys, 2012.

While the survey did not specifically ask households to depict the seasonal nature of all hunting, fishing, and gathering activities, the key respondent interviews and mapping information collected in conjunction with this study suggest that the current seasonal pattern of resource harvest activities and use areas have not varied much from a 1982 study conducted in Allakaket (Marcotte and Haynes 1985). Nonsalmon fish make a larger contribution to Allakaket's annual wild food supply than salmon. A wide variety of nonsalmon fish are harvested virtually year-round with 60% of households reporting harvests of nonsalmon fish in 2011. Gillnets of various mesh sizes are typically utilized in both open water conditions and under the ice to take nonsalmon fish at key locations. Respondents spoke of "throwing in a fish net" whenever open water offered the prospect of harvesting resident fish. Harvests of northern pike (*k'oolkkoye*), large whitefishes (*taaseze/holehge*), small whitefishes (*tsaabaaye*), and longnose suckers (*toonts'ode*) were the primary species harvested in the spring, summer, and fall months. Sheefish (*nedlaaghe*) can be caught in the main stem Koyukuk River throughout the summer and fall months.[1] The Alatna River is a major spawning area for whitefishes and sheefish that have migrated as many as 1,000 miles up the Yukon and Koyukuk rivers to spawn in late September. Historically, and today, families with ties to the Alatna River drainage conduct their major fall fishing activities on this seasonal concentration of fish using fine-mesh beach seines. Proceeds of these fall fish harvests were formerly cached in place for use as winter food for people and sled dogs. Today, the fall harvests resulting from seining trips are transported back to Allakaket for processing and storage.

While the traditional family use of spring, fall, and winter seasonal camps began to vanish with mandatory school attendance in the late 1950s and 1960s, the maintenance of family fish camps has persisted into the contemporary period. Today many families still spend a portion of their summer occupying fish camps located along the banks of the Koyukuk and Alatna rivers. Salmon fishing is

1. The source for Koyukon terms is: Jetté, J., and E. Jones. 2000. Koyukon Athabaskan dictionary. Alaska Native Language Center, University of Alaska Fairbanks, Fairbanks, AK.

a major focus during the short Chinook salmon run from July into August, followed closely by the chum salmon run during August and September. Chinook salmon are preferred for table use over chum salmon; however, chum salmon are more abundant. Because of the proximity to the spawning grounds and distance traveled, much of the chum salmon harvested in the upper Koyukuk are of poor quality and have been traditionally used as food for dog teams. While Chinook salmon have never been abundant on the upper Koyukuk, recent declines in the number of Chinook salmon returning to the Yukon River drainage have had a dramatic affect on the number of Chinook salmon harvested and used in Allakaket. This is reflected in the low harvest numbers reported for 2010 (Estensen et al. 2012). Harvests of sockeye salmon were reported by 5% of Allakaket households. Sockeye salmon are not available locally and reportedly came from the Copper River (Chitina) personal use dip net fishery (Table 3-10). Allakaket households also reported harvests of coho, pink, and Chinook salmon resulting from fishing activities with relatives in main stem Yukon River communities such as Galena or at other Yukon River fish camps operated by extended family members.

During the 2011 survey year, 76% of Allakaket households hunted for large land mammals and 43% successfully harvested large land mammals (Table 3-8). Large land mammal hunting is a traditional and popular fall activity that often stretches into the winter. Depending on the time of year and environmental conditions, boats, ATVs, or snowmachines are used to access hunting areas. Moose were absent from the Koyukuk River drainage prior to the 1930s but are now common. Today, moose are the major target of fall hunting trips and generally constitute the largest source of protein for most households. Following traditional rules, hunters are encouraged to not shoot cow moose near the community because local hunters want to encourage them to come near the community and away from predators to have their calves. According to key respondents, it is a traditional taboo to shoot a cow accompanied by a calf.

Dall sheep hunting is a longstanding activity by Allakaket hunters. As described by key respondents, there are 2 distinct hunting areas traditionally used for sheep hunting; both are located in the south flank of the Brooks Range. One location is in the headwaters of the Alatna River drainage (where harvests occurred in 2011) and the other is in the headwaters of the John River drainage. Both areas are accessed by boat on long, group hunting excursions that typically take place in mid- to late August or early September and involve multiple families. In 2011, 12% of Allakaket households participated in hunts for Dall sheep and 5% reported harvesting Dall sheep.

In 2011, 40% of Allakaket households participated in harvesting small land mammals and 33% were successful. Beavers, porcupines, and snowshoe hares or “rabbits” accounted for the edible weight harvested (Table 3-8). Local respondents said that rabbits were a more important resource in the past than they are today. Rabbits were once viewed as a year-round source of meat and their pelts were used as glove liners. Rabbit leg tendons could also be twisted into useful sinew floss. Informants said that at every seasonal camp, rabbit snares would be commonplace and that young children hunted them

with their first guns. Rabbits are still taken today but hunting them appears to be more opportunistic and they have a much less prominent position in the overall diet than in the past. Most small land mammal hunting or trapping done in 2011 took place during the winter.

The harvest and use of wild birds includes resident upland game birds such as ptarmigan and grouse that are harvested from September through April, and migratory waterfowl such as geese and ducks that are hunted primarily in the spring and fall when they are traveling through the area. During the study year, 50% of Allakaket households reported harvesting migratory waterfowl. Upland game birds were harvested by 36% of surveyed households. In 2011, there was no reported harvest or use of wild bird eggs (Table 3-8).

Certain plants, particularly berries, constitute important resources for many Allakaket households. In 2011, blueberries and highbush cranberries both ranked within the top 6 resources used by surveyed households (Table 3-9). During the study year, 69% of households reported harvesting berries (Table 3-8). Another commonly used vegetation resource is firewood. During the study year, 69% of Allakaket households reported harvesting wood, primarily firewood used for home heating, but wood was also used for smoking fish (northern pike, whitefishes, and Chinook salmon when available), cooking dog food, and sled construction. Wild rhubarb and rose hips, categorized as other plants and greens, were each harvested by 5% of all households in 2011 (Table 3-8).

HARVEST QUANTITIES

Table 3-8 reports estimated wild resource harvests and uses by Allakaket residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Allakaket was 76,261 lb, or 520 lb per capita (Table 3-8). Nonsalmon fish constituted the largest portion of the subsistence harvest (34% of overall harvest) which totaled 25,604 lb, or 175 lb per capita (Table 3-8; Figure 3-3). To put this harvest in perspective, the total harvest of nonsalmon fish slightly exceeded the total harvest of moose, caribou and other large land mammals; however all fish species harvested for human consumption in Allakaket are also used for dog food (legal subsistence harvest) whereas game species

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

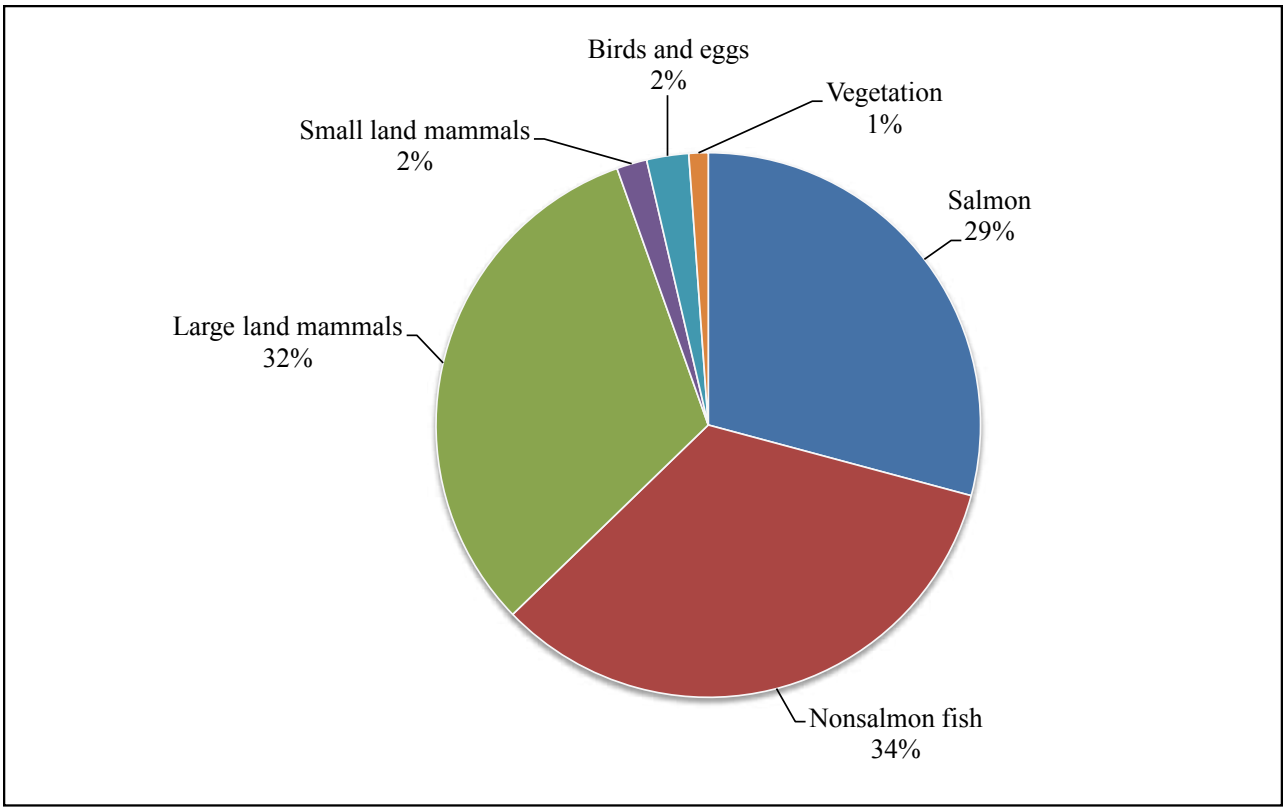

Figure 3-3.– Composition of harvest by category, Allakaket, 2011.

are only harvested for human consumption. The single most harvested nonsalmon fish was sheefish, with an estimated total harvest of 10,333 lb (71 lb per capita). Overall, sheefish was the third most harvested and fourth most used resource by Allakaket households in 2011 (Table 3-9).

Large land mammals were another major source of wild food for Allakaket households. The total harvest of large land mammals in 2011 was estimated at 24,256 lb, or 166 lb per capita, contributing 32% of the total harvest of wild resources (Table 3-8; Figure 3-3). The majority of this harvest (51%) was caribou, with 12,350 total pounds harvested (84 lb per capita). Overall, caribou ranked as the second most harvested and third most used wild resource by Allakaket households in 2011 (Table 3-9). Residents commented that caribou were unusually abundant and available to hunters in proximity to the community during the 2011 study year and that the 2011 harvest of caribou by Allakaket hunters was not typical of other recent years. Moose was the other primary large land mammal species harvested by Allakaket residents, with a total of 9,527 lb harvested, or 65 lb per capita. Moose represented the fourth overall resource harvested, and were ranked first for households using the resource (88%) (Table 3-9). The project also determined that 69% of the households hunted moose, and 24% indicated harvesting.

In 2011, salmon composed an estimated 29% of all the wild resources harvested by Allakaket households, with an overall harvest of 22,254 lb, or 152 lb per capita (Table 3-8; Figure 3-3). An estimated 36% of all Allakaket households harvested salmon in 2011. Five species of salmon were

harvested and used by residents of Allakaket; however, chum salmon were the leading salmon species harvested, with a total of 18,194 lb harvested, or 124 lb per capita.

Bird harvests, though one of the lower resource categories harvested in terms of usable pounds, also contributed to the diet of Allakaket residents in 2011 and provided 2% of all the wild resources harvested (Figure 3-3). Seventy-four percent of Allakaket household reported using birds, and 62% reported hunting them (Table 3-8). The total harvest of 1,430 birds (migratory and upland birds combined) contributed an estimated total of 1,904 lb, or 13 lb per capita.

Small land mammals composed 2% of the overall harvest, totaling 1,371 lb, or 9 lb per capita (Figure 3-3). Beavers, which are harvested for both meat and fur, constituted the large majority of the edible harvest weight. An estimated total of 80 beavers were harvested by Allakaket households in 2011, contributing a total of 1,201 lb of meat, or 8 lb per capita. Porcupines were also important and 23 were harvested, or 92 lb harvested with 36% of households using porcupines. Snowshoe hares were harvested to a lesser degree with 31 individuals harvested, providing 78 lb with only 10% of households using this resource (Table 3-8).

Though wild plants and berries represented only 1% of the total resources harvested in pounds (Figure 3-3), these were important wild resources used in Allakaket in 2011 with nearly all households (88%) using vegetation and 83% of households harvesting vegetation. The estimated total harvest of plants was 872 lb, or 6 lb per capita. Blueberries, highbush cranberries, and lowbush cranberries were the most harvested edible resources in this category (Table 3-8).

Although marine mammals were not actually harvested by any Allakaket households, 55% of Allakaket households reported receiving and using marine mammal resources. This is a reflection of the long-standing trade and sharing traditions between residents of the upper Koyukuk and friends and relatives in the Kotzebue Sound region. Specifically, 52% of Allakaket households reported using whales (muktuk) and 33% reported using seals or seal oil (most likely ringed and or bearded seals).

SHARING AND RECEIVING WILD RESOURCES

The sharing of wild resources is one of the hallmarks of rural subsistence economies. All Allakaket households (100%) reported using as well as receiving wild resources in 2011. In addition, 86% of Allakaket households reported giving resources away (Table 3-8). Households received an average of 10 resources and gave away an average of 9 resources (Table 3-7). The extensive sharing of wild resources can be illustrated by looking at the data for moose. Although a relatively small number of Allakaket households actually harvested moose in 2011 (24%), moose was the most used resource (88%) and the most widely shared, with 48% of households giving away moose and 74% of households receiving moose (Table 3-8). Black bear harvests were also widely shared. Whereas only 14% of Allakaket households reported harvesting black bears, 46% of households reported receiving black bears. Salmon and nonsalmon fish were also received by a large number of

households (81%) even though the number of households harvesting fish was also quite high (62%). Marine mammals (whales, walrus, and seals) were received by 55% of all Allakaket households from relatives in coastal communities (Table 3-8).

With regard to sharing, key respondents said it is the custom of residents to share harvested resources with others and look out for those in need. Each of the elderly key respondents spoke very fondly of the days of their youth, and though in retrospect they acknowledged it was a hard life, none of them remembered a time when they did not have what their family needed to get by. The same attitude seems to prevail today. The senior-most respondents were no longer active in harvest activities themselves but were all being provided with traditional foods taken by younger family members. To further promote this sharing ethic, the Allakaket Village Council often provides fuel subsidies for hunters so they can travel far from the community in order to obtain moose or caribou for the community and wood for elders. Single mothers and others who, for one reason or another, are simply not involved in harvesting wild resources themselves generally receive food and firewood from friends or relatives. There is also an established network of sharing that goes on among communities for key items. Respondents related that fresh caribou meat from animals harvested in December was shared with residents downriver in Hughes. Also, as mentioned above, seal oil and muktuk from coastal communities continues to find its way to Alatna and Allakaket on an annual basis via trade and barter with relatives.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

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

As shown in Figure 3-4, in the 2011 study year in Allakaket, about 70% of the harvests of wild resource as estimated in usable pounds were harvested by 17% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Allakaket and the other study communities.

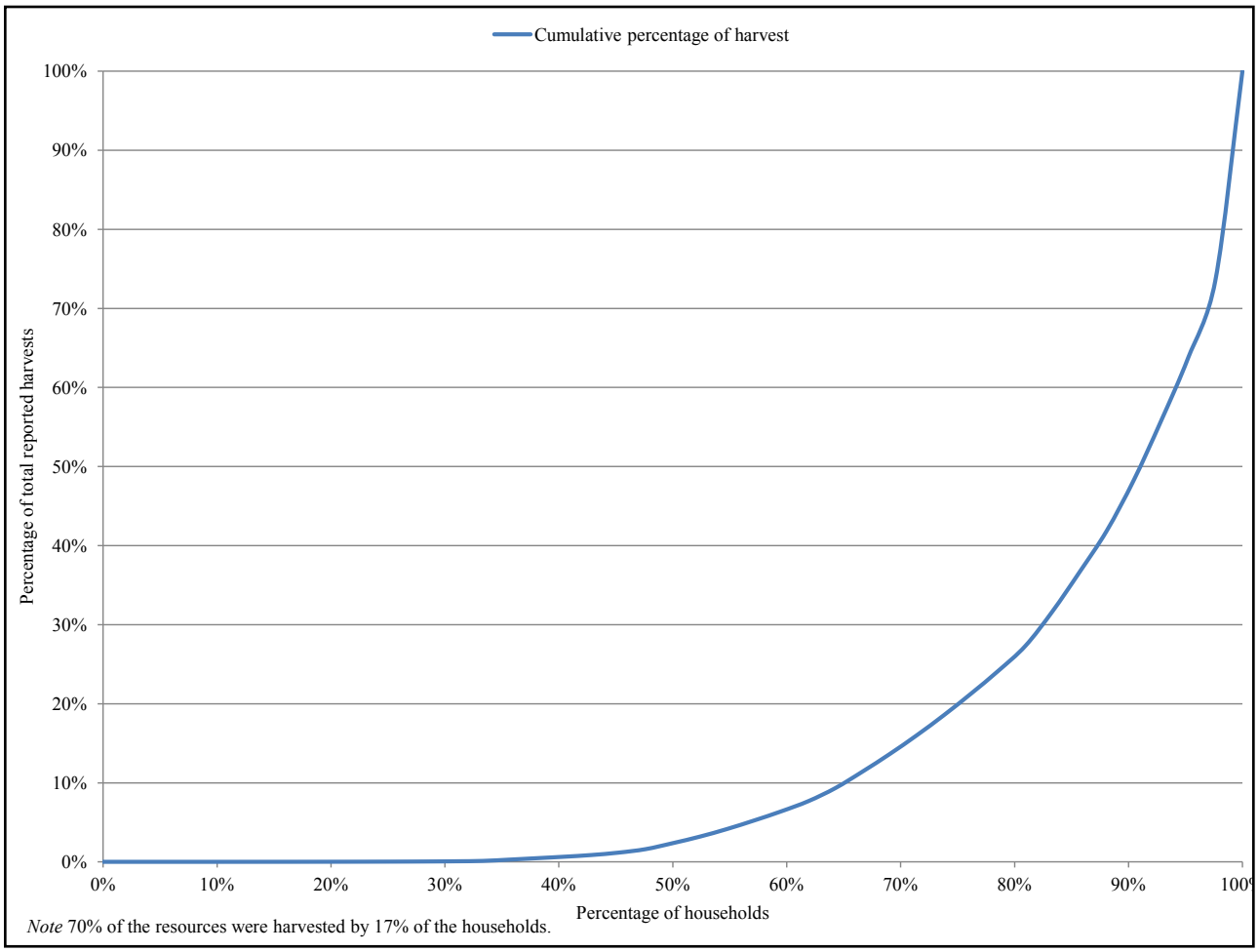

Figure 3-4.– Household specialization, Allakaket, 2011.

HARVEST AND USE CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

In 2011, 36% of Allakaket households reported harvesting salmon, while 40% reported giving away salmon and 67% of households reported using salmon (Table 3-8). Salmon composed 29% of the estimated total wild resource harvest in pounds (22,254 lb). A large majority (82%) of Allakaket's salmon harvest in 2011 consisted of chum salmon (Figure 3-5). Chinook salmon composed another 7% of the salmon harvest and was also widely shared. Just 17% of Allakaket households reported harvesting Chinook salmon, 43% reported receiving Chinook salmon, and almost one-half of all households (48%) reported using Chinook salmon. Other salmon species harvested in conjunction with fishing activities outside the Allakaket vicinity made up the remainder of the salmon harvest

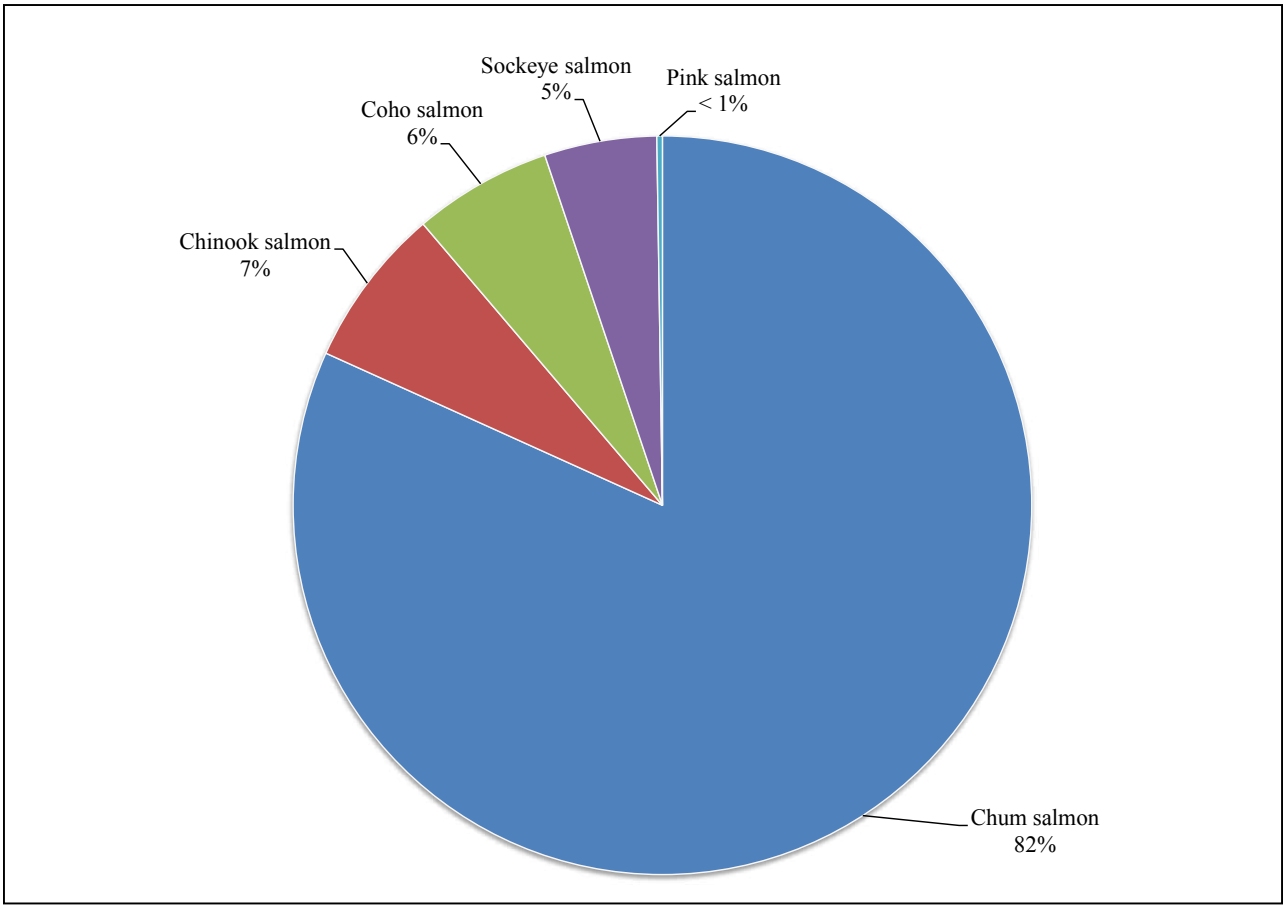

Figure 3-5.– Composition of salmon harvest, Allakaket, 2011.

with coho salmon contributing 6% of the overall salmon harvest, sockeye salmon contributing 5%, and pink salmon making up less than 1% of the total salmon harvested (Figure 3-5).

As described earlier in this report, chum salmon are the primary salmon species available in the area, but by the time they arrive to the area to spawn, they are generally in poor condition. One local resident estimated that only about 20% of locally harvested chum salmon are used for human consumption. In the Allakaket area, salmon are taken using set gillnets of various mesh sizes (Table 3-10). Most chum salmon are fed to sled dogs. Chinook salmon are the preferred species for consumption, and compose the second largest percentage of salmon harvested for a total of 1,563 lb (11 lb per capita). Salmon are cured by the following methods: halfway drying, fully drying, jarring or canning, salting, or freezing. Depending on the timing of harvest and weather conditions, salmon used for dog food may be split and dried or frozen whole, and is typically prepared by cooking in large outdoor cookers or dog-pots.

Most salmon fishing takes place for other families at fishing locations close enough to the community so that nets can be checked regularly with a short boat or ATV ride. Most fishing locations for salmon identified by Allakaket residents were located between Allakaket and the mouth of the Kanuti River. Occasional harvests also occur along the Alatna River, and in 2011 this area was used to harvest salmon to supplement a hunting excursion (Figure 3-6). A few families continue to maintain fish camps at

Table 3-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Allakaket, 2011.

		Removed from commercial catch		Subsistence methods													
				Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	94.6%	94.7%	5.4%	5.3%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	94.6%	94.7%	5.4%	5.3%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	89.1%	86.2%	2.9%	2.9%	0.0%	0.0%	84.4%	81.8%	0.0%	0.0%	84.4%	81.8%
	Resource	0.0%	0.0%	0.0%	0.0%	99.8%	99.8%	0.2%	0.2%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	84.3%	81.6%	0.2%	0.2%	0.0%	0.0%	84.4%	81.8%	0.0%	0.0%	84.4%	81.8%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	6.3%	6.3%	1.8%	1.8%	0.0%	0.0%	6.0%	6.1%	0.0%	0.0%	6.0%	6.1%
	Resource	0.0%	0.0%	0.0%	0.0%	98.4%	98.4%	1.6%	1.6%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	5.9%	6.0%	0.1%	0.1%	0.0%	0.0%	6.0%	6.1%	0.0%	0.0%	6.0%	6.1%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	4.1%	7.3%	1.2%	2.2%	0.0%	0.0%	3.9%	7.0%	0.0%	0.0%	3.9%	7.0%
	Resource	0.0%	0.0%	0.0%	0.0%	98.4%	98.4%	1.6%	1.6%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	3.8%	6.9%	0.1%	0.1%	0.0%	0.0%	3.9%	7.0%	0.0%	0.0%	3.9%	7.0%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.5%	0.2%	0.0%	0.0%	0.5%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.5%	0.2%	0.0%	0.0%	0.5%	0.2%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	94.1%	93.1%	0.0%	0.0%	5.1%	4.9%	0.0%	0.0%	5.1%	4.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	4.9%	0.0%	0.0%	5.1%	4.9%	0.0%	0.0%	5.1%	4.9%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

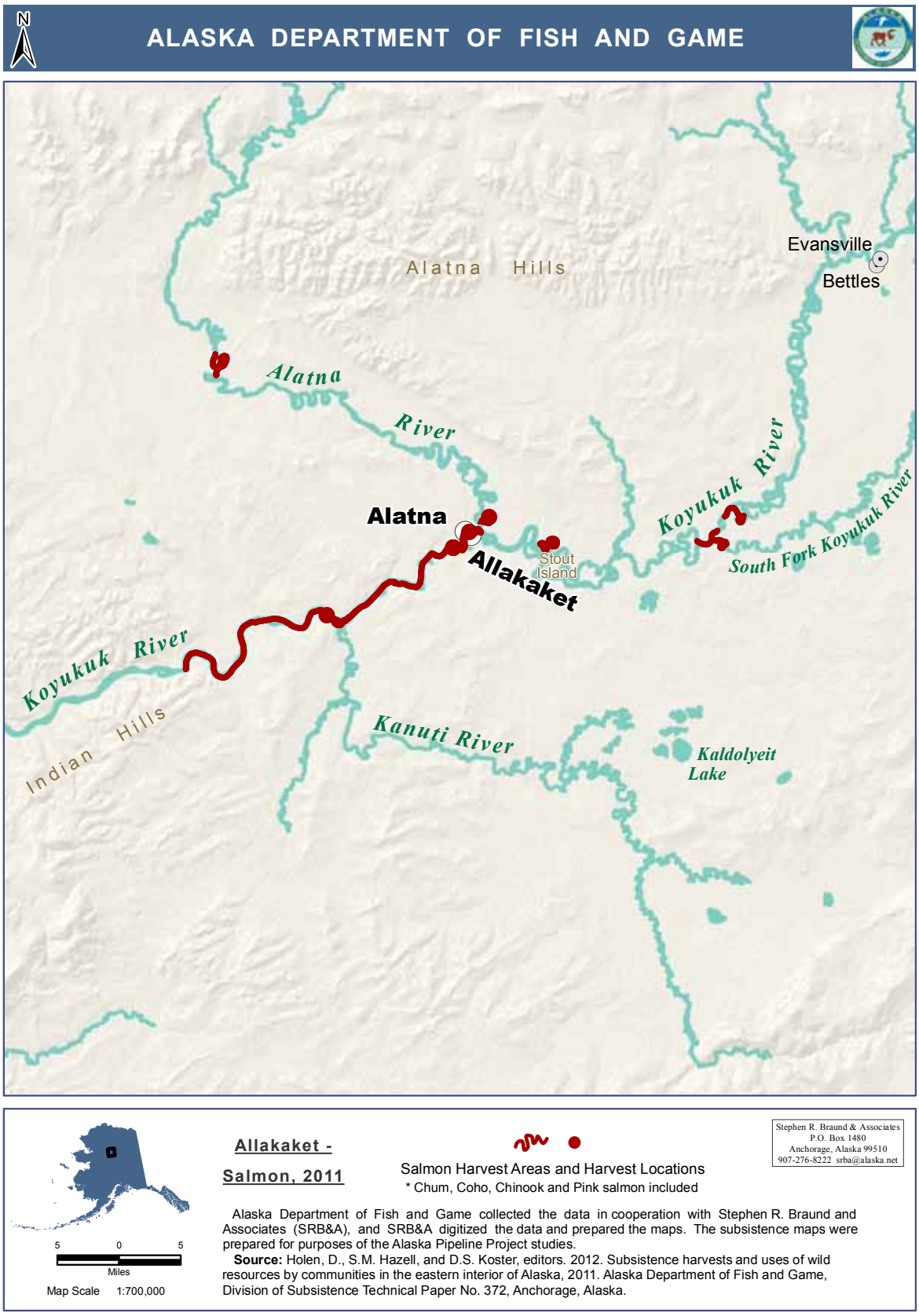

Figure 3-6.– Salmon search and harvest areas, Allakaket, 2011.

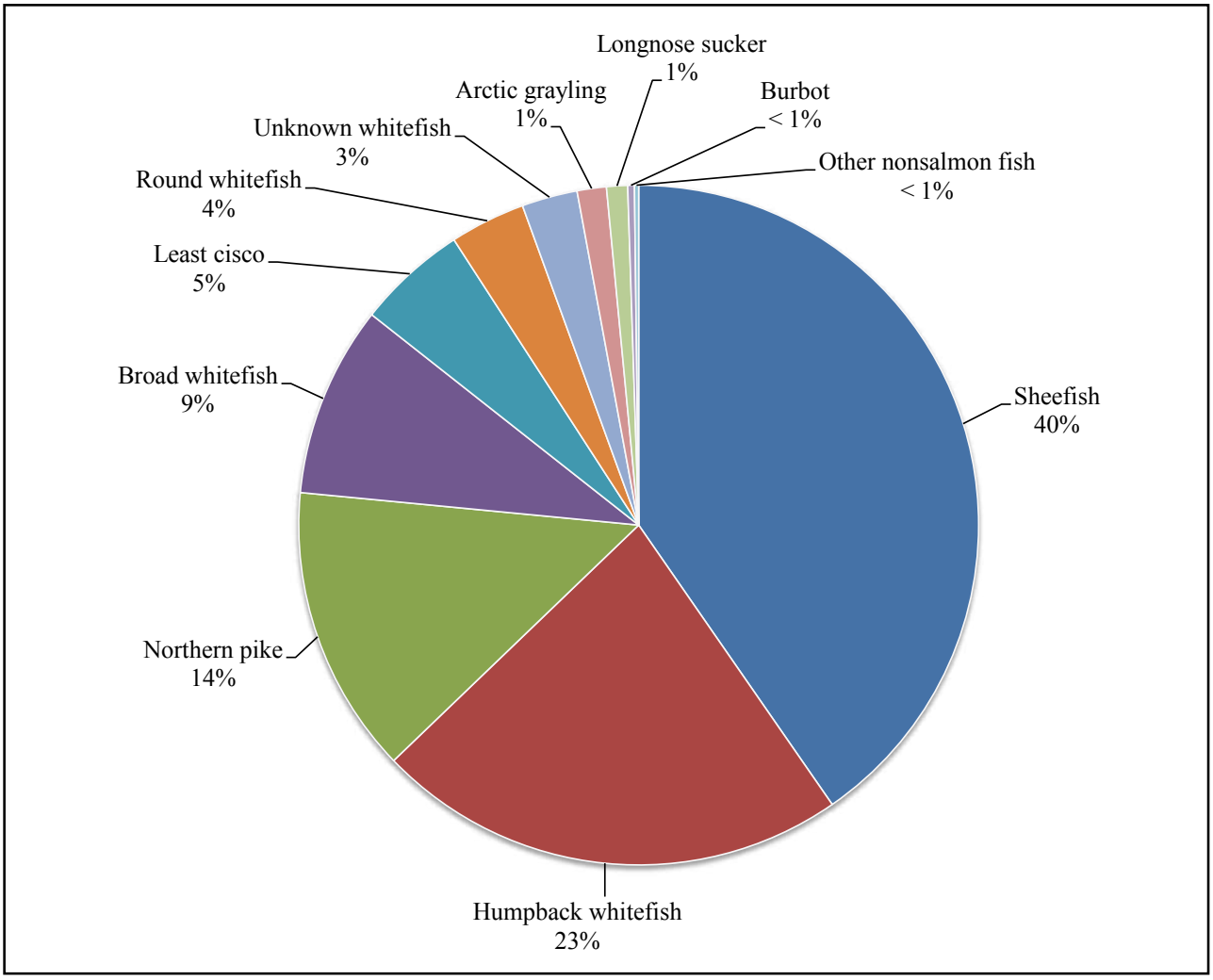

Figure 3-7.– Composition of nonsalmon fish harvest, Allakaket, 2011.

more distant locations from Allakaket and use them on weekends or weeklong trips during the peak of the salmon runs. Some of the Chinook harvest reportedly came from the Yukon River where some Allakaket households have family ties near Galena. Local respondents indicated that the recent declines in Yukon River salmon runs have further depleted the relatively small numbers of salmon that typically return to the upper Koyukuk and this has had a significant effect on the amount of salmon (primarily Chinook) available for the community to harvest.

NONSALMON FISH

Nonsalmon fish made up one-third (34%) of Allakaket's overall harvest of wild resources (Figure 3-3). In 2011 a total of 25,604 lb (175 lb per capita) of nonsalmon fish were harvested by residents of Allakaket (Table 3-8). Nonsalmon fish are harvested year-round, with 81% of households reporting using nonsalmon fish and 60% harvesting these species. An estimated 40% of the nonsalmon harvest

by weight consisted of sheefish (Figure 3-7), totaling 10,333 lb, or 71 pounds per capita. Seventy-one percent of Allakaket households reported using sheefish, making it the third most harvested and fourth most used resource in 2011 (Table 3-9). Humpback whitefish contributed the second largest proportion (23%) of the nonsalmon fish harvest (Figure 3-7), with a total harvest of 5,749 lb, or 39 lb per capita. With all whitefish species combined, the total weight harvested for whitefishes exceed sheefish with a combined harvest of 11,015 lb, or 75 lb per capita.

Gillnets of various sizes are used to harvest the majority of nonsalmon fish (Table 3-11). Respondents often seek out whitefishes and will carry a net with them specifically for these species whenever traveling by boat. Families with ties to the Alatna drainage conducted their major fall fishing activities with seine nets. Burbot were also taken under the ice by baited set hooks, or with gillnets (the only method used in 2011 by interviewed households). Gillnets set under the ice are also a common method used to harvest nonsalmon fish. These nets are strung between holes chopped in the ice and are an effective means of harvesting whitefishes and sheefish moving downstream under the fall ice following the spawning event. Nets set under the ice are generally set in the main Koyukuk River channel near the community so they can be easily tended to and removed once the fish have passed (Figure 3-8).

Burbot arrive in the upper Koyukuk region in September and one respondent stated, "I don't stop fishing even when iced up." In some years a trap is constructed in the Koyukuk River as ice forms to provide the community with burbot (Andersen et al. 2004). These traps target burbot as they ascend the Koyukuk to spawn from November to January. Burbot are prized for their eggs and oil-rich livers, and 1 trap can produce harvests of 1,000 or more fish in a season. In 2011 burbot were exclusively harvested using gillnets set through the ice (Table 3-11).

LARGE LAND MAMMALS

Large land mammals composed 32% of the total harvest of wild resources by Allakaket residents in 2011 (Figure 3-3). Moose and caribou combined made up the vast majority (90%) of this harvest (Figure 3-9). Two-thirds of Allakaket households (69%) reported hunting for moose and 24% of all households were successful in taking 1 or more moose (Table 3-8). Similarly, almost one-half of all Allakaket households (48%) reported hunting for caribou during the survey year and 33% of households were successful. As with moose, proceeds from caribou hunts were widely shared, with 76% of households reporting that they used caribou in 2011. The 2011 harvest of caribou by Allakaket hunters was higher than normal due to an unusual migration pattern that brought caribou closer to the community than usual. The total number of caribou harvested by Allakaket residents was estimated at 95 animals, and contributed 84 lb of meat per capita. The total number of moose taken by Allakaket hunters was estimated at 18 animals and contributed 65 lb of meat per capita. In terms of edible pounds, caribou contributed 51% of the large land mammal harvest, while moose contributed 39% (Figure

Table 3-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Allakaket, 2011.

				Subsistence methods									
		Removed from commercial catch		Gillnet or seine		Other		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	94.4%	95.7%	0.2%	0.1%	94.5%	95.8%	5.5%	4.2%	100.0%	100.0%
	Total	0.0%	0.0%	94.4%	95.7%	0.2%	0.1%	94.5%	95.8%	5.5%	4.2%	100.0%	100.0%
Burbot	Gear type	0.0%	0.0%	0.3%	0.3%	8.3%	23.0%	0.3%	0.3%	0.0%	0.0%	0.3%	0.3%
	Resource	0.0%	0.0%	96.0%	96.0%	4.0%	4.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.3%	0.3%
Dolly Varden	Gear type	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%
Lake trout	Gear type	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%
Arctic grayling	Gear type	0.0%	0.0%	1.4%	0.4%	83.3%	63.6%	1.5%	0.4%	65.1%	23.4%	5.0%	1.4%
	Resource	0.0%	0.0%	26.1%	26.1%	2.5%	2.5%	28.6%	28.6%	71.4%	71.4%	100.0%	100.0%
	Total	0.0%	0.0%	1.3%	0.4%	0.1%	0.0%	1.4%	0.4%	3.6%	1.0%	5.0%	1.4%
Northern pike	Gear type	0.0%	0.0%	7.5%	13.9%	0.0%	0.0%	7.5%	13.9%	3.7%	9.0%	7.3%	13.7%
	Resource	0.0%	0.0%	97.2%	97.2%	0.0%	0.0%	97.2%	97.2%	2.8%	2.8%	100.0%	100.0%
	Total	0.0%	0.0%	7.1%	13.3%	0.0%	0.0%	7.1%	13.3%	0.2%	0.4%	7.3%	13.7%
Sheefish	Gear type	0.0%	0.0%	16.2%	39.6%	0.0%	0.0%	16.1%	39.6%	17.8%	57.1%	16.2%	40.4%
	Resource	0.0%	0.0%	94.0%	94.0%	0.0%	0.0%	94.0%	94.0%	6.0%	6.0%	100.0%	100.0%
	Total	0.0%	0.0%	15.2%	37.9%	0.0%	0.0%	15.2%	37.9%	1.0%	2.4%	16.2%	40.4%
Longnose sucker	Gear type	0.0%	0.0%	3.6%	1.0%	0.0%	0.0%	3.6%	1.0%	0.0%	0.0%	3.4%	1.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	3.4%	1.0%	0.0%	0.0%	3.4%	1.0%	0.0%	0.0%	3.4%	1.0%
Unknown trout	Gear type	0.0%	0.0%	0.2%	0.1%	8.3%	13.4%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%
	Resource	0.0%	0.0%	92.3%	92.3%	7.7%	7.7%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%
Broad whitefish	Gear type	0.0%	0.0%	16.3%	9.5%	0.0%	0.0%	16.3%	9.5%	1.2%	0.9%	15.5%	9.1%
	Resource	0.0%	0.0%	99.6%	99.6%	0.0%	0.0%	99.6%	99.6%	0.4%	0.4%	100.0%	100.0%
	Total	0.0%	0.0%	15.4%	9.1%	0.0%	0.0%	15.4%	9.1%	0.1%	0.0%	15.5%	9.1%
Least cisco	Gear type	0.0%	0.0%	12.7%	5.3%	0.0%	0.0%	12.7%	5.3%	8.1%	4.4%	12.5%	5.2%
	Resource	0.0%	0.0%	96.5%	96.5%	0.0%	0.0%	96.5%	96.5%	3.5%	3.5%	100.0%	100.0%
	Total	0.0%	0.0%	12.0%	5.0%	0.0%	0.0%	12.0%	5.0%	0.4%	0.2%	12.5%	5.2%
Humback whitefish	Gear type	0.0%	0.0%	18.8%	23.2%	0.0%	0.0%	18.8%	23.2%	3.0%	4.9%	17.9%	22.5%
	Resource	0.0%	0.0%	99.1%	99.1%	0.0%	0.0%	99.1%	99.1%	0.9%	0.9%	100.0%	100.0%
	Total	0.0%	0.0%	17.8%	22.2%	0.0%	0.0%	17.8%	22.2%	0.2%	0.2%	17.9%	22.5%

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Table 3-11.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Round whitefish	Gear type	0.0%	0.0%	18.1%	3.7%	0.0%	0.0%	18.0%	3.7%	1.2%	0.3%	17.1%	3.6%
	Resource	0.0%	0.0%	99.6%	99.6%	0.0%	0.0%	99.6%	99.6%	0.4%	0.4%	100.0%	100.0%
	Total	0.0%	0.0%	17.0%	3.6%	0.0%	0.0%	17.0%	3.6%	0.1%	0.0%	17.1%	3.6%
Unknown whitefish	Gear type	0.0%	0.0%	4.7%	2.8%	0.0%	0.0%	4.7%	2.8%	0.0%	0.0%	4.4%	2.6%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	4.4%	2.6%	0.0%	0.0%	4.4%	2.6%	0.0%	0.0%	4.4%	2.6%

Source ADF&G Division of Subsistence household surveys, 2012.

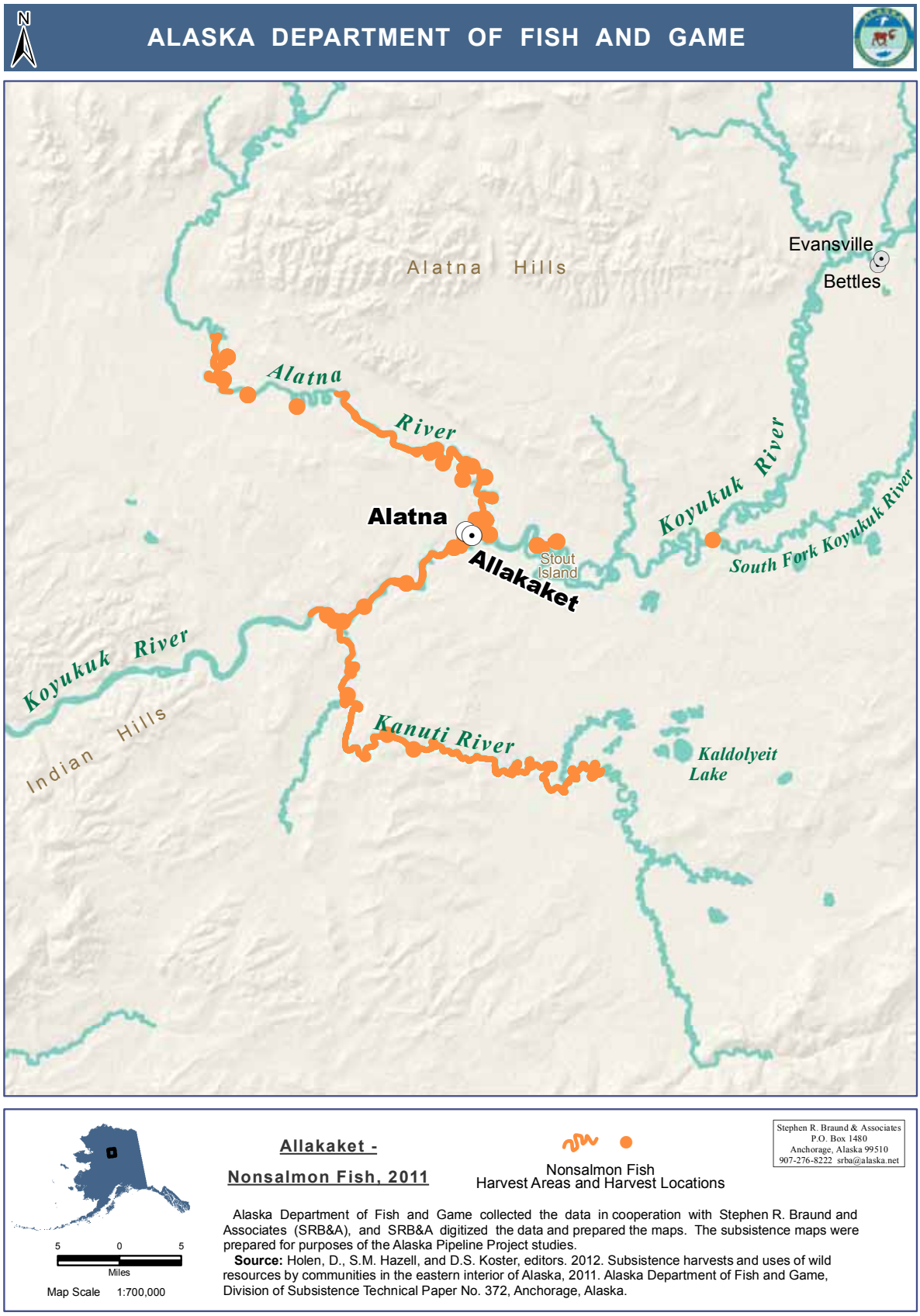


Figure 3-8.– Nonsalmon fish search and harvest areas, Allakaket, 2011.

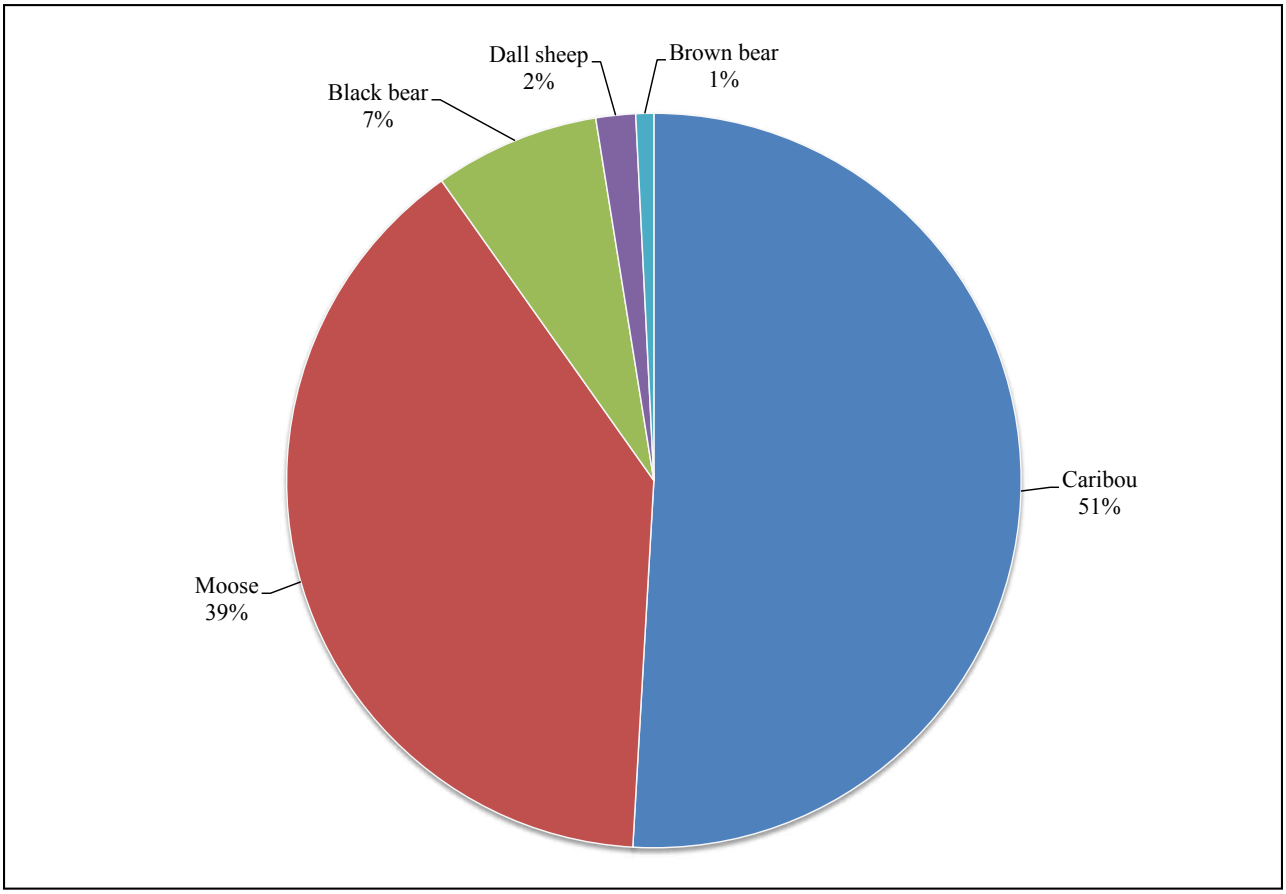


Figure 3-9.– Composition of large land mammal harvest, Allakaket, 2011.

3-9). The remainder of the large land mammal harvest was composed of black bears (7%), Dall sheep (2%), and brown bears (1%). Table 3-12 shows the harvest of large land mammals by month and sex.

Allakaket residents used large areas for hunting and searching for large land mammals. Most hunting was conducted using motorized vehicles, such as skiffs, ATVs, and snowmachines. Additionally some residents used dog teams or hunted on foot. In 2011, the search areas for large land mammals were concentrated along area river corridors, including the Koyukuk, South Fork Koyukuk, Alatna, and Kanuti rivers within a 60-mile radius of Allakaket. In 2011, hunters searched for moose and caribou along the Koyukuk River near Bettles and Hughes (Figure 3-10). Hunting also occurred along the South Fork Koyukuk River near mile 280 of the Dalton Highway and along the Kanuti and Alatna rivers to the foothills of the Brooks Range where Dall sheep were also hunted.

In winter, hunters are more likely to harvest a moose for community or potlatch use than for personal consumption. Hunts for moose or caribou sometimes involve excursions covering 100 miles or more. With skyrocketing fuel prices, it is increasingly common for several families or groups of hunters to pool expenses to defray costs.

Caribou were more common in the Allakaket vicinity prior to the 1970s. Elders spoke of a nearly annual migration of caribou through the lower Alatna River region in the late fall. There was also

Table 3-12. – Estimated harvests of large game by month and sex, Allakaket, 2011.

				Caribou				Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	5.4	0.0	4.1	0.0	2.7	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	2.7	0.0	1.4	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
August	0.0	1.4	0.0	1.4	0.0	0.0	0.0	2.7	0.0	0.0	0.0	2.7
September	0.0	9.5	0.0	0.0	0.0	0.0	0.0	9.5	1.4	0.0	0.0	0.0
October	0.0	4.1	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	2.7	0.0	16.3	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	33.9	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**17.6**	**1.4**	**58.4**	**29.9**	**6.8**	**0.0**	**16.3**	**1.4**	**0.0**	**0.0**	**4.1**

Source ADF&G Division of Subsistence household surveys, 2012.

reportedly a resident herd in the Ray Mountains, to the south of Allakaket, that would supply a more regular source of meat for residents with a land use pattern which took them in that direction.3 Most residents blame construction of the trans-Alaska Pipeline for disrupting the regular movement of caribou through the Allakaket area. Caribou hunting usually involves the use of snowmachines to access hunting areas and haul the meat and hides back to the community. Often, many caribou are killed in one event and then buried under the snow to be picked up later. This keeps them frozen, prevents them from deteriorating, and keeps the wolves from getting to them. Caribou hunters reported that they typically avoid harvesting the first wave of caribou migrating through the surrounding area because residents believe that if the lead groups are killed, other groups will not follow in their path and this can also affect future migrations. Although caribou are harvested primarily for their meat, caribou skins and hides are also used. Caribou shins (leg skin from the top of the knee to the hoof) are used to make traditional boots and whole caribou hides are frequently used as camp mattresses or sleeping pads. When describing this use of caribou skins, a local elder said that when used, "You don't even need a blanket over you because it is warm enough."

Both black and brown bears were harvested by Allakaket residents in 2011. An estimated total of 18 black bears were taken for a total of 1,764 lb, or 12 lb per capita. Overall, 56% of Allakaket households used black bears, 39% hunted them, and 14% harvested black bears. Brown bears were used by only 12% of households with a total estimated harvest of 1 bear providing 1 lb of meat and fat per capita (Table 3-8). The harvester of this bear indicated that it was harvested for a potlatch for a local person who had died and, following local customs, only the men were allowed to consume the meat. Many male subsistence hunters mentioned they participated in bear hunting, but few were willing to speak of their hunting practices. Elders indicated that there are still taboos that surround the powerful spirits of both black and brown bears. Women only refer to bears as "big animal" (brown bears) or "big black animal" (black bears) and most are not allowed to view, process, or consume bear meat so as not to offend the bear's spirit. Men who did speak of bear hunting indicated that much of the hunting involves locating a den, which the hunter then claims ownership of. Once discovered, the location of a bear den is kept secret by the hunter who discovered it (Nelson 1983). Today's younger hunters are less strict about the taboos that surround bear hunting. Today both black and brown bears are taken whenever they are seen, and late fall den hunting of black bears is common.

Dall sheep are considered a delicacy and harvesting them requires a great deal of effort. Prime sheep hunting areas for Allakaket hunters are located 60 to 100 miles from the community in the Brooks Range foothills. In 2011, an estimated 4 sheep were harvested by Allakaket residents, totaling 423 lb, or 3 lb per capita. The meat from Dall sheep is not as widely distributed as other game resources. Just 5% of Allakaket households reported harvesting Dall sheep and only 14% of households reported using Dall sheep (Table 3-8).

3. The most recent available population estimate for the Ray Mountains caribou herd was 1,848 animals in 2004 (Hollis 2009).

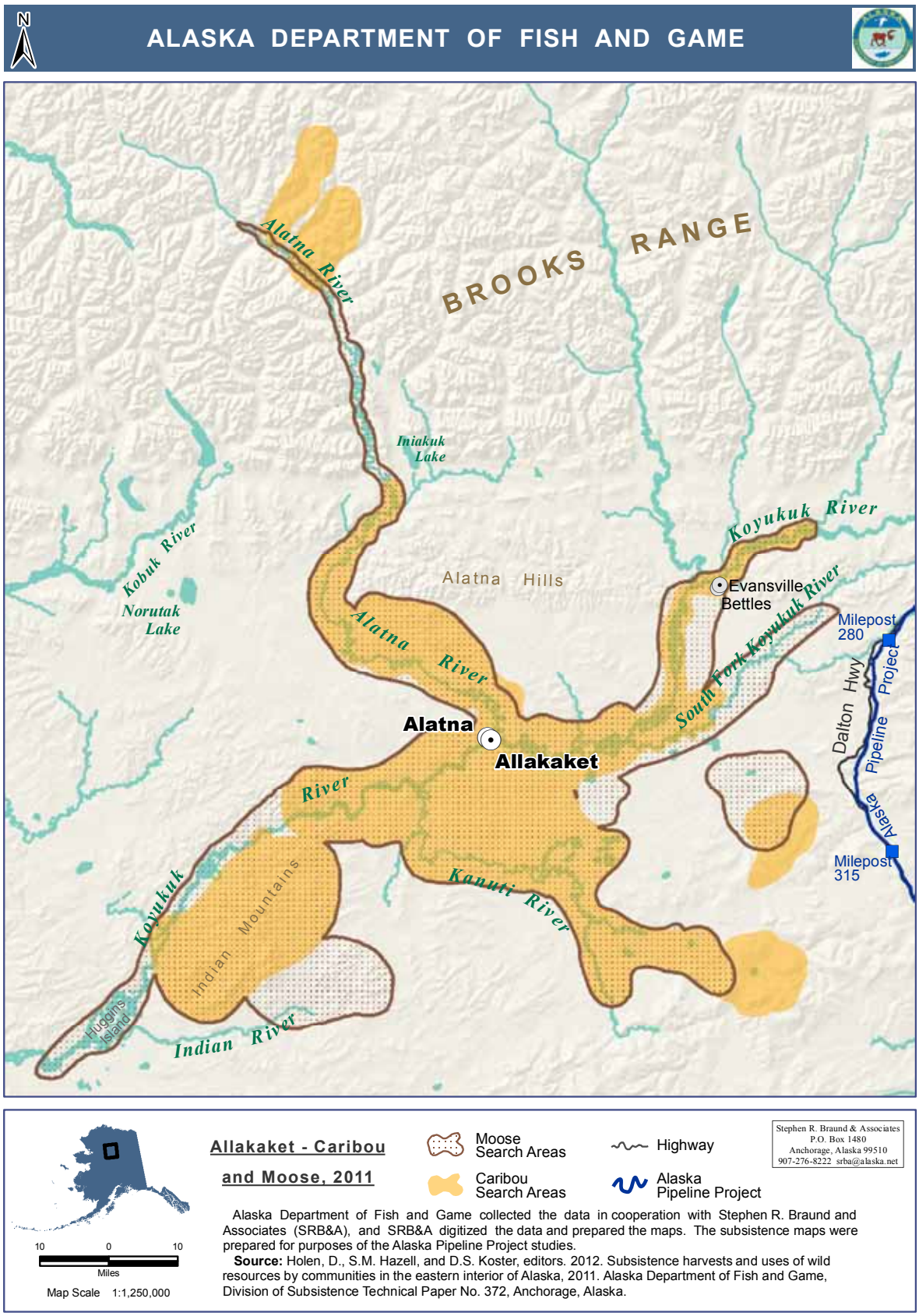


Figure 3-10.– Caribou and moose search and harvest areas, Allakaket, 2011.

Elders spoke of long sheep hunting trips as a sort of rite of passage for young hunters and a chance to engage in a traditional activity that would allow them to "walk in the footsteps of their ancestors." Whereas the ultimate goal of these long excursions to the Brooks Range was to harvest sheep, hunters reportedly harvested any game they came across along the way. As a result, organized sheep hunts involving multiple families pooling time and resources into a concentrated harvest effort most closely resembles the traditional fall hunting camps that typified the semi-nomadic seasonal round of the early 20th century. While transportation technology has changed since that time, the distance traveled, land area used, pooled efforts, communal spirit, shared proceeds, and other common aspects of hunting have remained remarkably unchanged. Respondents believed that because their important hunting locations in the Brooks Range are near the Gates of the Arctic National Park and Preserve, they need to continue to exercise their subsistence hunting rights in these areas or those rights could be taken away.

SMALL LAND MAMMALS/FURBEARERS

During the 2011 survey year small land mammals and furbearers contributed just 2% to Allakaket's overall harvest of wild foods (Figure 3-3). Approximately 55% of Allakaket households used small land mammals (includes trapping for furs), 40% participated in hunting or trapping small land mammals, and 33% harvested these resources in 2011. The 2 small land mammal resources used most by Allakaket households were beavers and porcupines, used by 45% and 36% of households, respectively (Table 3-8). Snowshoe hares are viewed by local respondents as an important resource, although in 2011 only 10% of households reported using them (Table 3-8). As listed in Table 3-8, Allakaket's total harvest of small land mammals for food in 2011 was 1,371 total edible pounds, or 9 lb per capita.

The harvest and search areas used for small land mammals in 2011 were in 4 distinct directions: directly northeast to Bettles, southeast along winter trails to the upper Kanuti River area, southeast down the Koyukuk River corridor 40 miles, and northeast up the Alatna River 20 miles (Figure 3-11).

During the 2011 survey year, furbearers were trapped by only 2 or 3 individuals in the community; one of whom was trapping for personal (financial) gain and the others (elders) trapped so they had fur to tan and use for sewing. According to local respondents interviewed, martens and mink were used primarily for hats and trim on coats. Beaver fur was used for hats, gloves, and boot liners. With an increase in market prices due to international commercial demand, lynx were also being trapped in 2011. Lynx skin is said to be thin, but warm, and is sometimes used to trim out beaver mittens or fur ruffs. Wolverine was reportedly received and used by several surveyed households, although local trappers did not successfully harvest this resource in 2011 (Table 3-8). Wolverine (*nithchieth*) is highly regarded for having a spirit comparable in power to that of bears. When potlatches are given for people who have passed, it is important for a wolverine to be taken for the event. The family of the deceased must pay the trapper or hunter for the catch and donations are not accepted. Once purchased, the wolverine carcass is hoisted to the top of a pole and staked outside the hunter's house until it is

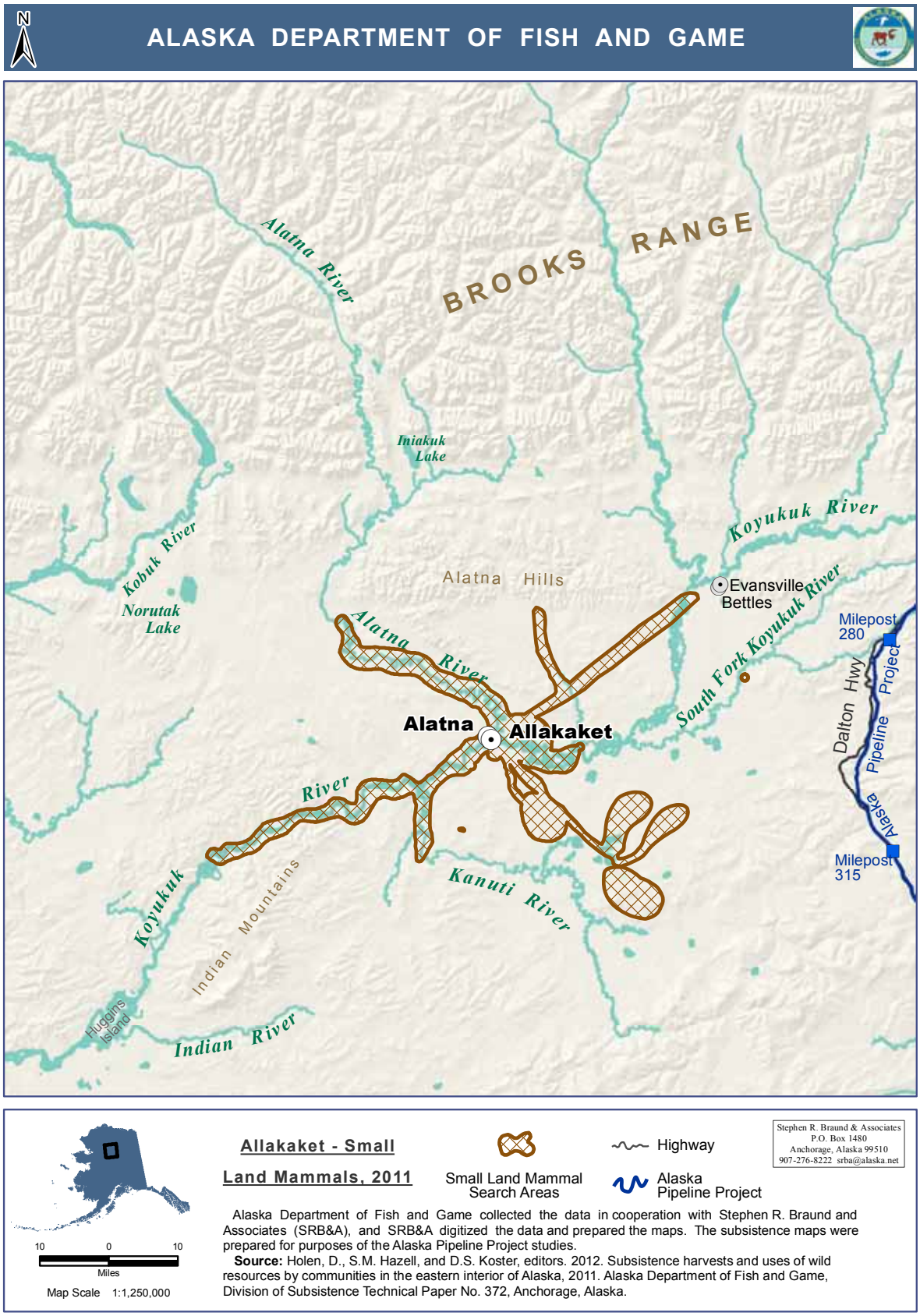


Figure 3-11.– Small land mammals search and harvest areas, Allakaket, 2011.

needed for the potlatch. As indicated by an elder respondent, wolverine fur is used mostly for parka ruffs because it prevents breath moisture from forming frost when one is out in cold weather. Wolves are both actively pursued and taken opportunistically by Allakaket hunters. Wolves are mainly killed to remove pressure from prey species, but wolf pelts also command high prices and are viewed as a welcome source of income. Wolf meat can be used as trapping bait, but, similar to bear meat, is forbidden from being fed to dogs.

Historically, trapping seems to be an activity that virtually every family was involved in. Memories of trapping were some of the most common and vivid early recollections of the elder respondents. Perhaps this is because trapping was the major occupation and income source for most families in the past. According to the respondents, the move to trapline cabins—called winter camp or trapping camp—commenced as soon as snow allowed travel by dog team. Family dog teams consisted of just 3 to 5 dogs, but dogs were larger and sturdier than the lightweight, fast sled dogs used today. An active, larger family might have 6 or 7 dogs that could be divided into 2 utility teams if needed. The burden of fishing for dog food and cooking for dogs daily kept the number of dogs to a minimum. Martens, lynx, foxes, wolves, wolverines, weasels, beavers, and muskrats were all mentioned as targeted furbearer animals in the past. Martens seem to have been the major moneymaker for most area trappers. Key respondent interviews seemed to focus more on dog team travel and family life in "trapping camp" than on specific trapping techniques or methods. One respondent remembered that her mother and father both trapped and worked cooperatively on separate portions of the family trapline. According to respondents, the landscape surrounding Allakaket and Alatna was divided up into defined trapping areas based on generations of family use. The ownership of trapping areas was informal but who trapped where was common knowledge. Each family's trapping area typically contained several traplines with established trails, camps, and cabins. Trappers worked 1 line for 3 or 4 years and then switched to an alternate line within their area in order to let furbearer populations rebound. In this way, furbearer populations were conserved and managed for sustainability. Trapping areas and lines were handed down from fathers to sons.

Beaver and muskrat trapping tended to be distinguished as somehow different from the trapping of land furbearers. One respondent clarified this by saying a trapper had to make a choice whether he or she wanted to trap "the water ones" or "the land ones" because their spirits did not mix well and individual trappers could not be successful at trapping both. Beaver trapping took place in the late winter under the ice at beaver houses using snares. There was a traditional rule about not taking more than 3 beavers from any one house to ensure future beaver populations. In addition to the sale of their pelts, beaver meat is prized as a food item. Muskrat hunting was one of the major activities associated with "spring camp" and muskrats were formerly harvested by the thousands in area lakes. The meat from spring-harvested muskrats was preserved for use by drying. Muskrat pelts formerly sold for as much as $2.50 each and, according to several respondents, the sale of 1 muskrat pelt could

finance the purchase of 5 gallons of gasoline. As late as the 1960s, fur buyers would make spring trips out to villages, camps, and trapping areas to purchase the winter harvest of furs directly from individual tappers.

Fur prices peaked in the 1980s and by all accounts, participation in furbearer trapping declined precipitously in the early 1990s. As a consequence, elders say many traplines languished and became overgrown with brush. A generation has now passed and some of the skills associated with trapping have been lost. This accounts for the greatly diminished participation in trapping today. While higher fur prices have now returned, the increased price of fuel for transportation has made trapping an economically unpredictable activity. A few Allakaket–Alatna residents continue to maintain significant traplines. Today, modern snowmachines allow most traplines to be patrolled on day trips from the community, negating the need for line cabins or camps. Because it takes a special dedication and set of outdoor skills, being recognized as a trapper still carries some weight among village residents and identifies an individual as being in the top tier of subsistence harvesters. Having said that, trapping seems to be viewed by most as a hobby instead of an occupation. It is common for harvested furs to be retained for household use rather than sold. Beavers continue to be taken, primarily for meat with the pelts now viewed as secondary. There is no longer any significant harvest of muskrats. The once ubiquitous occupation of trapping is a shadow of what it was 30 to 50 years ago.

BIRDS

The harvest and use of birds includes resident upland game birds such as ptarmigan and grouse, which are harvested year-round, and migratory waterfowl such as geese and ducks, which are primarily hunted in the spring and fall when they pass through the area on their seasonal migrations. Because upland game birds are often taken opportunistically in conjunction with other harvest activities in all seasons, the areas associated with grouse and ptarmigan harvests tended to encompass the harvest areas of all other species combined. Harvest areas for waterfowl are largely associated with the river corridors of the Koyukuk, Alatna, and Kanuti rivers.

Migratory birds remain an important source of wild food for residents of Allakaket because they provide variety to the diet and represent an early source of fresh meat in the spring before spring fishing becomes active. As shown in Table 3-8, the total harvest of migratory birds was estimated at 1,188 birds, contributing 1,698 lb of meat, or 12 lb per capita. The total harvest of upland game birds by Allakaket residents was estimated at 243 birds (206 lb, or 1 lb per capita). Most of the bird harvest consisted of migratory waterfowl, with geese representing 44% of the total bird harvest, followed by ducks at 33%, other migratory birds such as sandhill cranes at 12%, and upland game birds such as ptarmigan and grouse representing 11% of the total bird harvest by weight (Table 3-8). No gathering or use of wild bird eggs took place during the study year

Key respondents discussed bird use and harvest in 2 completely separate contexts—the year-round

harvest of resident ptarmigan and grouse, and the concentrated spring and fall hunting of migratory waterfowl. Access to ducks and geese was 1 of the 3 main drivers of spring camp back when families were still widely dispersed across the land (the other 2 being fishing and muskrat hunting). Spring camps were situated in surrounding lake and wetland areas and were occupied by families during the months of April and May. From these camps, hunters walked shorelines or used handmade canvas canoes to hunt ducks and geese. The backbone was removed from harvested birds and the carcass was held open with a small stick in order to promote drying. Birds were then dried in the spring sun on open-air racks and lightly smoked. Because spring camps are no longer occupied, waterfowl today are generally hunted on day or weekend trips by snowmachine to former spring camp areas or shot from boats in conjunction with fall moose hunting along major river corridors. The son of one key respondent said he had been taught to use the first few ducks taken as decoys to attract others. In lake areas where an active flyway has been identified he will place 2 or 3 harvested birds on the ground in a visible location with their heads propped up with sticks as if they are resting. The hunters conceal themselves nearby and shoot birds that are drawn close by the decoy birds. Canada geese, white-fronted geese (yellow legs), scoters (black ducks), mallards, and northern pintails were specifically mentioned as targeted waterfowl. The species mix does not appear to have changed over the years although the importance and intensity of bird harvesting seems to have waned from previous years. From the interviews, it appeared that people still long for the taste of ducks and geese in the spring but that harvests were much more significant during the height of the spring camp era.

Ptarmigan were formerly taken in willow thickets using snares. The snaring of ptarmigan was similar to the snaring of rabbits except the snare loops were smaller and set at a different height. One respondent remembered a technique for harvesting ptarmigan whereby a line of freshly cut willow branches was laid out in an open area such as a frozen river to attract ptarmigan and snares were then strategically arranged in and around this artificial thicket to facilitate the snaring of birds. The only mention of grouse (known locally as "spruce chickens") was that they were they were the frequent prey of young hunters using their first guns and were often consumed as camp food.

VEGETATION

Looking at harvest quantities, in 2011 residents of Allakaket harvested an estimated 860 lb of berries, or 6 lb per capita (Table 3-8). The largest berry harvests in terms of total pounds included blueberries (316 lb, or 2 lb per capita), highbush cranberries (289 lb, or 2 lb per capita), and lowbush cranberries (201 lb, or 1 lb per capita). Firewood harvests totaled an estimated 187 cords and were used by 79% of all households. Firewood is used by most Allakaket homeowners as a primary or supplemental heat source to defray the high cost of heating oil.

According to Allakaket respondents, people often pick berries as they search for moose or caribou, or while fishing for whitefishes or fall chum salmon, or while hunting migratory birds. In 2011, harvest

and search areas for plants, berries, and wood was concentrated in the immediate vicinity of Allakaket and Alatna, and at specific sites along a stretch of the Koyukuk River from 10 miles below Allakaket to nearly halfway to Bettles (Figure 3-12). Other areas of vegetation harvests occurred along the Alatna River from the mouth upstream about 40 miles and along a winter trail that runs southeasterly from Allakaket 40 miles to the upper Kanuti River area.

Key respondents interviewed indicated that each family had preferred berry-picking areas within their family use areas. Berries that become ripe in August, such as blueberries and raspberries, were often harvested in the vicinity of summer fish camps and stored there in root cellars—holes dug into the frozen ground. Berries that ripen later in the fall such as lowbush cranberries were generally harvested as families relocated to pursue fall hunting activities. Berries that had the reputation of not preserving as well as whole berries (such as highbush cranberries) would be made into jelly and jarred. In the early days, respondents said that berries represented their primary source of vitamin C and they made the effort to put up large quantities for winter use. They described berries being stored for winter use in crocks or barrels with alternating layers of sugar and berries to promote preservation. The only other use of plants mentioned by respondents was the gathering of wild onions; the gathering, drying, and use of Hudson's Bay (Labrador) tea; and the digging of Eskimo potatoes—a carrot-like root that could be gathered in both spring and fall.

Extended families are said to have each had a wood-cutting area located within their family use area. Wood yards were strategically located upstream from camp and village areas so that harvested logs could be "rafted" down to where they were needed and used. For firewood, lumber, and house logs, dry spruce was preferred. Forward-thinking individuals would create their own dry wood by "blazing" live trees in their wood cutting area to create supplies of standing dead trees that could be taken when needed. Blazing involved the removal of bark from the base of live trees and lightly chopping the trunk. In 2 or 3 years' time, blazed trees would become dry standing dead trees perfect for burning or building. Wood yards were sometimes co-located with fall hunting areas so that the proceeds of fall hunts could be loaded on log rafts and barged back to the village or camp locations. In this way, winter supplies of meat and firewood could be re-supplied on a single trip and boats could avoid being overloaded.

Firewood continues to be an important source of home heating fuel. Most homes have both wood stoves and small oil heaters, but the cost of fuel makes oil prohibitive as a primary heat source. Today, a community wood yard is maintained approximately 8 miles from the villages of Alatna and Allakaket. Wood is hauled by the sled-load as needed using snowmachines. The creation of dry wood by blazing trees is still practiced but is not as common because with the community as a whole involved, people are never certain they will be the recipient of the trees they blaze. Wood was harvested by 69% of all Allakaket households in 2011, and used by 79%. Due to the extreme long and cold winters as well

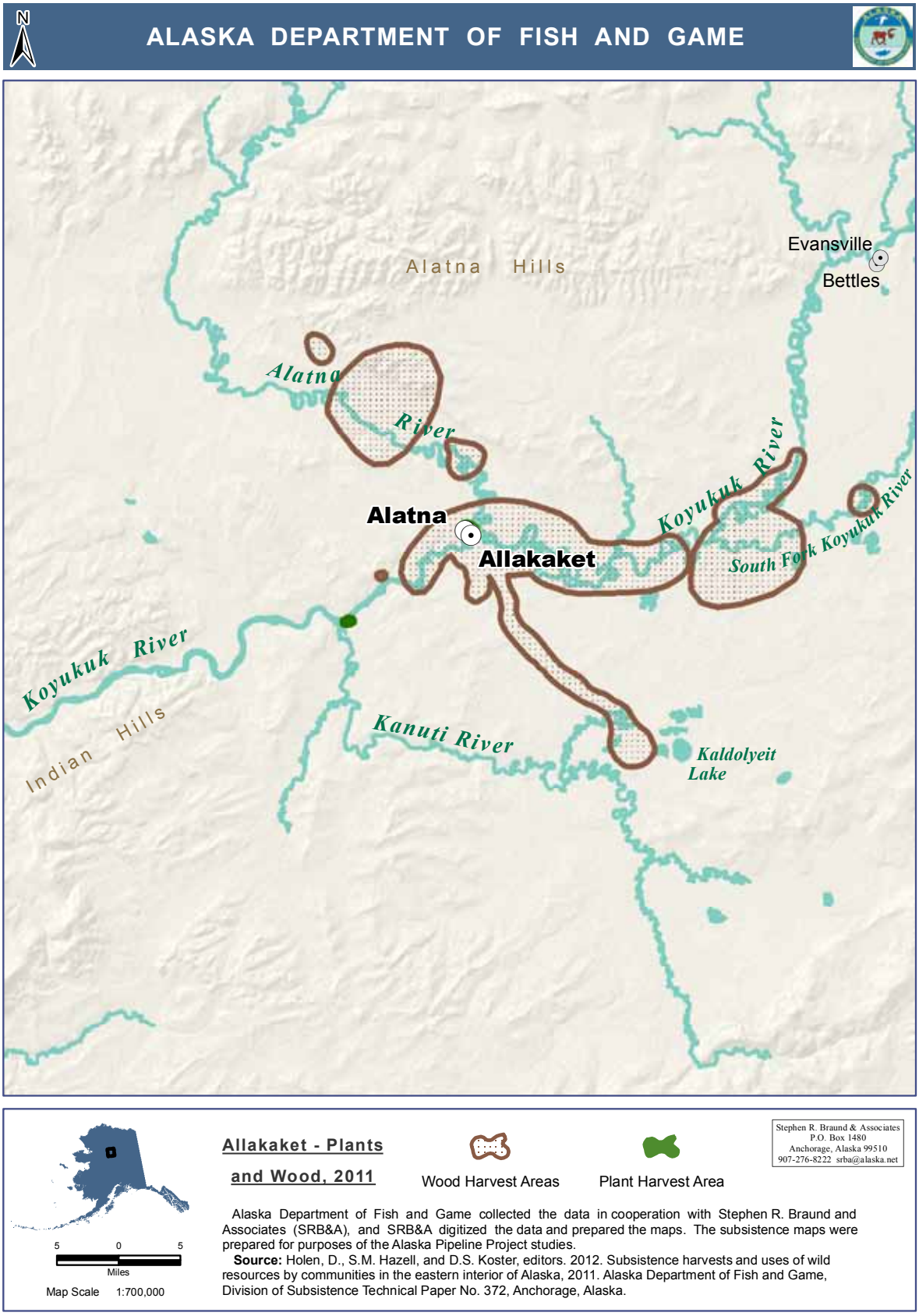


Figure 3-12.– Plants and wood search and harvest areas, Allakaket, 2011.

Table 3-13. – Estimated earned and other income, Allakaket, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Local government	51.6	39.4	$817,047.23	$14,334.16	$5,558.14	44.9%
Services	8.1	8.1	$131,736.53	$2,311.17	$896.17	7.2%
Federal government	19.0	14.9	$126,703.77	$2,222.87	$861.93	7.0%
Construction	1.4	1.4	$85,929.42	$1,507.53	$584.55	4.7%
State government	2.7	2.7	$51,599.77	$905.26	$351.02	2.8%
Retail trade	1.4	1.4	$34,329.64	$602.27	$233.53	1.9%
Manufacturing	1.4	1.4	$6,209.74	$108.94	$42.24	0.3%
Agriculture, forestry, and fishing	1.4	1.4	$1,263.67	$22.17	$8.60	0.1%
Earned income subtotal	**76.1**	**47.5**	**$1,254,819.78**	**$22,014.38**	**$8,536.19**	**68.9%**
Other income						
Alaska Permanent Fund dividend		51.6	$143,175.86	$2,511.86	$973.99	7.9%
Native corporation dividend		52.9	$137,156.77	$2,406.26	$933.04	7.5%
Pension/retirement		5.4	$101,774.86	$1,785.52	$692.35	5.6%
Unemployment		17.6	$51,390.93	$901.60	$349.60	2.8%
Food stamps		10.9	$45,240.68	$793.70	$307.76	2.5%
Social Security		9.5	$39,288.25	$689.27	$267.27	2.2%
Energy assistance		28.5	$31,054.34	$544.81	$211.25	1.7%
Longevity bonus		5.4	$12,214.29	$214.29	$83.09	0.7%
Adult public assistance		2.7	$3,801.36	$66.69	$25.86	0.2%
Other		4.1	$995.24	$17.46	$6.77	0.1%
Supplemental Security income		0.0	$0.00	$0.00	$0.00	0.0%
Workers' compensation/insurance		0.0	$0.00	$0.00	$0.00	0.0%
Child support		1.4	$0.00	$0.00	$0.00	0.0%
Foster care		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**54.3**	**$566,092.56**	**$9,931.45**	**$3,850.97**	**31.1%**
Community income total			**$1,820,912.33**	**$31,945.83**	**$12,387.16**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

as the high price of fuel ($7.50/gallon at time of survey), wood was considered to be a necessity for survival by most responding Allakaket households.

CASH EMPLOYMENT AND MONETARY INCOME

Table 3-13 is a summary of the estimated earned income as well as other sources of income for residents of Allakaket in 2011. This table shows that earned income accounted for an average of $22,014 (69% of all income) per household compared to other income sources which accounted for $9,931 (31%). Local government jobs provided 65% of the community's earned income (Table 3-14). The Alaska Permanent Fund dividend contributed the largest percentage of other income (8% of total community income) (Table 3-13). Most (63%) of the jobs in Allakaket were with local and tribal governments. Other important employment sectors during the study year were federal government at 19% of jobs, and services at 8% of jobs (Table 3-14).

In 2011, 69% of adults were employed at some point during the year in Allakaket, and of these employed adults, 34% were employed year-round. The average length of employment was 8 months. On average in 2011, employed households contained 2 employed adults, and 83% of households contained at least 1 adult who was employed. The mean number of jobs per employed households was 2 (Table 3-15).

Table 3-14. – Employment by industry, Allakaket, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**106**	**48**	**76**	
Federal government (total)	**18.7%**	**31.4%**	**25.9%**	**10.1%**
Executive, administrative, and managerial	1.3%	2.9%	1.9%	2.7%
Engineers, surveyors, and architects	1.3%	2.9%	1.9%	0.1%
Administrative support occupations, including clerical	4.0%	8.6%	5.6%	1.8%
Service occupations	12.0%	20.0%	16.7%	5.5%
State government (total)	**4.0%**	**5.7%**	**3.7%**	**4.1%**
Administrative support occupations, including clerical	1.3%	2.9%	1.9%	0.1%
Service occupations	1.3%	2.9%	1.9%	1.8%
Construction and extractive occupations	1.3%	2.9%	1.9%	2.2%
Local government, including tribal (total)	**62.7%**	**82.9%**	**70.4%**	**65.1%**
Executive, administrative, and managerial	2.7%	5.7%	3.7%	4.4%
Social scientists, social workers, religious workers, and lawyers	2.7%	5.7%	3.7%	3.8%
Teachers, librarians, and counselors	8.0%	17.1%	11.1%	18.0%
Health technologists and technicians	2.7%	5.7%	3.7%	7.3%
Technologists and technicians, except health	1.3%	2.9%	1.9%	2.7%
Administrative support occupations, including clerical	8.0%	17.1%	11.1%	7.3%
Service occupations	12.0%	22.9%	14.8%	6.6%
Mechanics and repairers	2.7%	2.9%	1.9%	1.6%
Construction and extractive occupations	6.7%	14.3%	9.3%	4.1%
Transportation and material moving occupations	4.0%	8.6%	5.6%	7.2%
Handlers, equipment cleaners, helpers, and laborers	10.7%	20.0%	14.8%	1.6%
Miscellaneous occupations	1.3%	2.9%	1.9%	0.5%
Agriculture, forestry, and fishing (total)	**1.3%**	**2.9%**	**1.9%**	**0.1%**
Agricultural, forestry, and fishing occupations	1.3%	2.9%	1.9%	0.1%
Construction (total)	**2.7%**	**2.9%**	**1.9%**	**6.8%**
Construction and extractive occupations	2.7%	2.9%	1.9%	6.8%
Manufacturing (total)	**1.3%**	**2.9%**	**1.9%**	**0.5%**
Writers, artists, entertainers, and athletes	1.3%	2.9%	1.9%	0.5%
Retail trade (total)	**1.3%**	**2.9%**	**1.9%**	**2.7%**
Marketing and sales occupations	1.3%	2.9%	1.9%	2.7%
Services (total)	**8.0%**	**17.1%**	**11.1%**	**10.5%**
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	1.3%	2.9%	1.9%	3.5%
Writers, artists, entertainers, and athletes	1.3%	2.9%	1.9%	0.2%
Service occupations	1.3%	2.9%	1.9%	0.7%
Construction and extractive occupations	1.3%	2.9%	1.9%	4.0%
Handlers, equipment cleaners, helpers, and laborers	2.7%	5.7%	3.7%	2.1%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 3-15. – Employment characteristics, Allakaket, 2011.

Characteristic	Community Allakaket
All adults	
Number	109.9
Mean weeks employed	23.1
Employed adults	
Number	76.1
Percentage	69.2%
Jobs	
Number	105.7
Mean	1.4
Minimum	1.0
Maximum	4.0
Months employed	
Mean	7.7
Minimum	1.0
Maximum	12.0
Percentage employed year-round	33.9%
Mean weeks employed	33.3
Households	
Number	57.0
Employed	
Number	47.5
Percentage	83.3%
Jobs per employed household	
Mean	1.9
Minimum	1.0
Maximum	5.0
Employed adults	
Mean	
Employed households	1.6
Total households	1.3
Minimum	1.0
Maximum	4.0
Mean person-weeks of employment	38.1

Source ADF&G Division of Subsistence household surveys, 2012.

Most jobs were located in Allakaket but some respondents worked remote fire-fighting seasonal jobs or commuted to Fairbanks, the North Slope, or Galena for employment; most of these jobs had shift schedules.

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" (Nord et al. 2009:2). 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. Core questions and responses from Allakaket residents are summarized in Figure 3-13. In Allakaket, a lack of subsistence foods was the most frequently reported source of food insecurity followed by a lack of store-bought foods; 69% of Allakaket households said their subsistence foods did not last and 62% said that their store-bought foods did not last (Figure 3-13).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Allakaket, the state of Alaska, and the United States are summarized in Figure 3-14. In Allakaket in 2011, 69% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 26% had low food security and 5% had very low food security. Allakaket households had notably lower levels of food security and higher levels of food insecurity than surveyed households in Alaska as well as the United States as a whole (Nord et al. 2009:21).

Figure 3-15 portrays the mean number of food insecure conditions per household by food security category by month. For households with very low food security, food insecurity conditions peaked in April and May. Figure 3-16 shows that depending upon the month, between 14% and 29% of households reported subsistence foods did not last. Winter months, especially January and February, were reported as the months in which both store-bought and subsistence foods did not last (Figure 3-16).

Late winter and early spring in the interior is often a time of food insecurity. This is a period of time when it is difficult to hunt and the salmon have yet to return. As shown in Figure 3-15, the highest number of food insecurity conditions occurred for very low food secure households in Allakaket

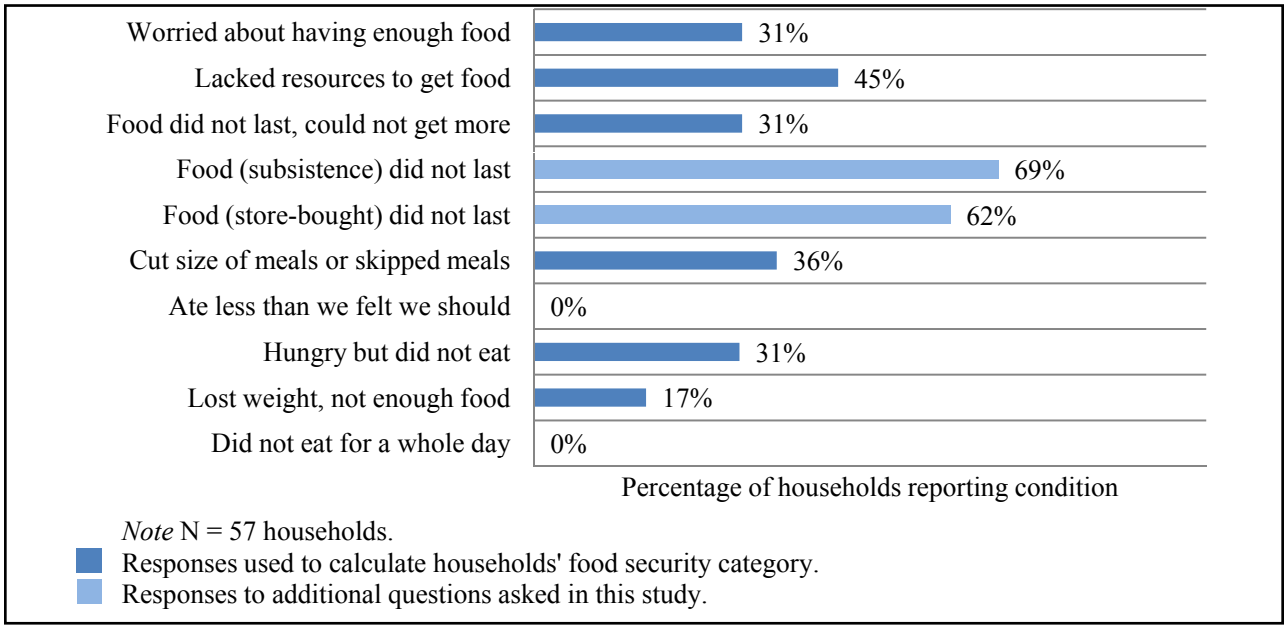


Figure 3-13.– Food insecure conditions, Allakaket, 2011.

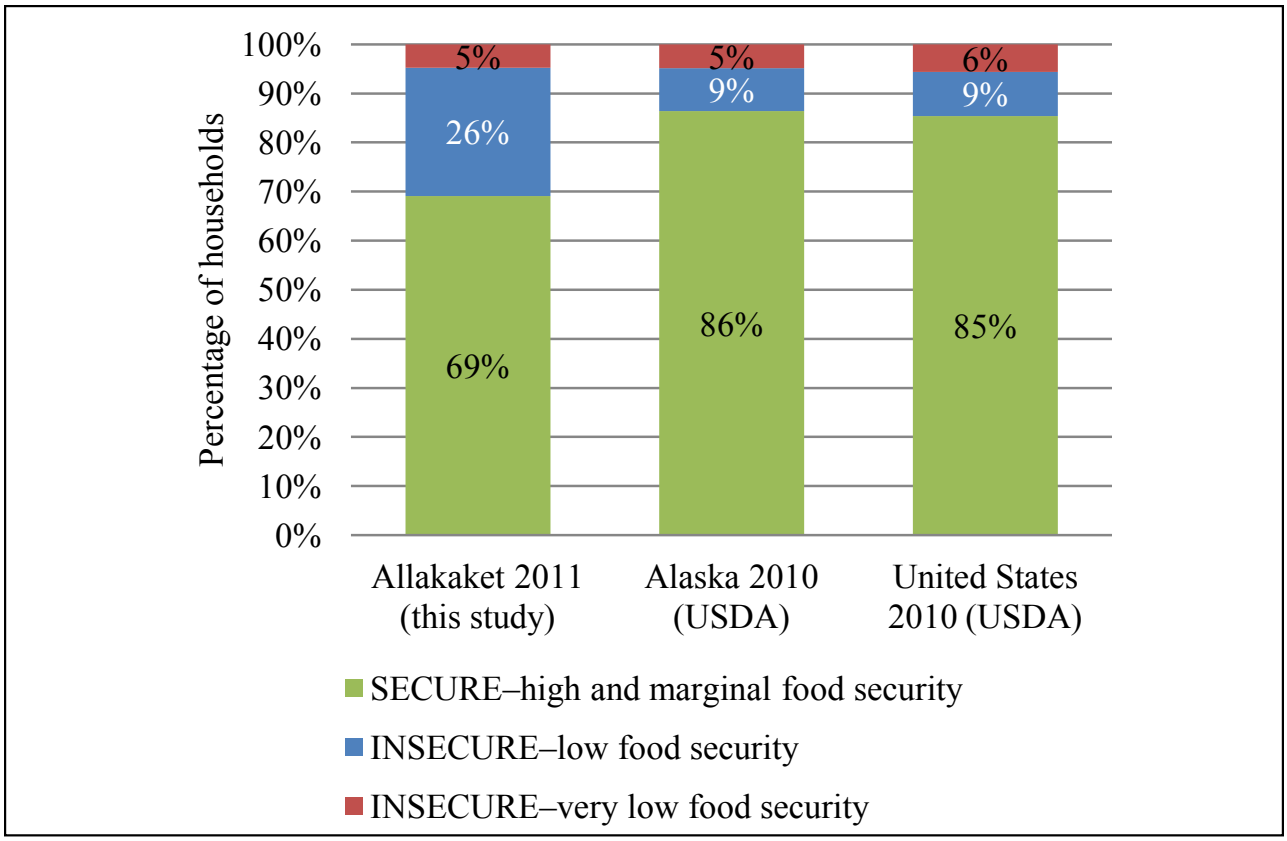


Figure 3-14.– Food insecure categories, Allakaket, 2011.

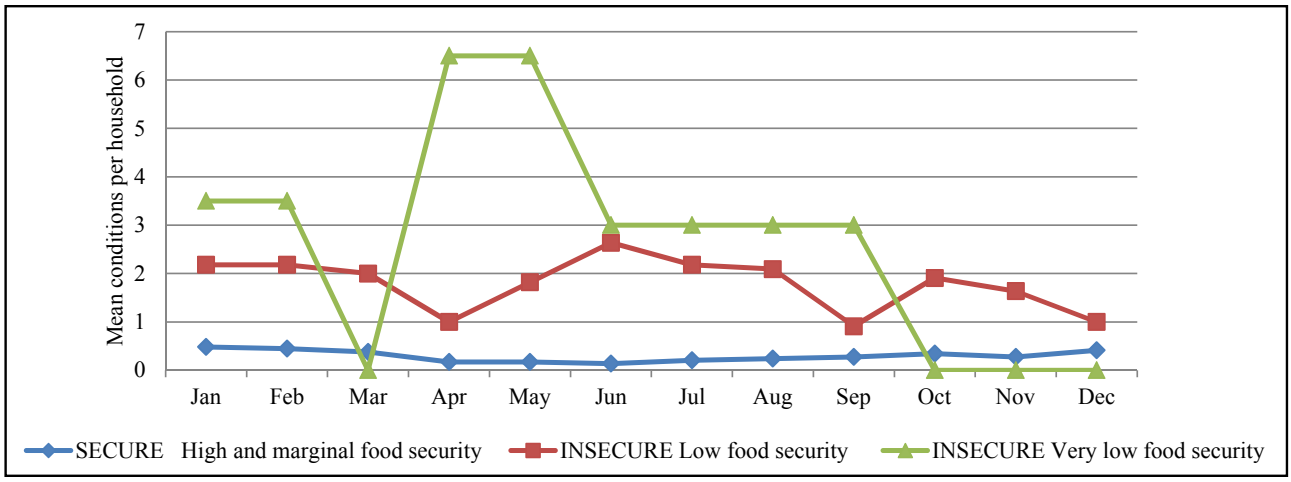


Figure 3-15.– Mean number of food insecure conditions for each month food was reported not to have lasted, Allakaket, 2011.

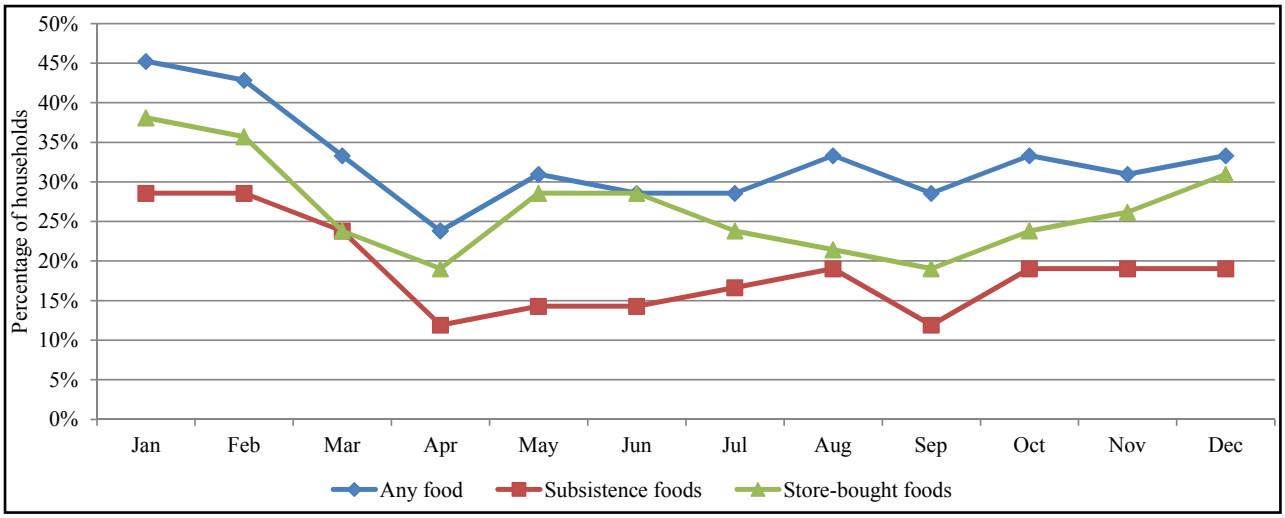


Figure 3-16.– Comparison of months where foods did not last, Allakaket, 2011.

Table 3-16. – Changes in household uses of resources compared to recent years, Allakaket, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage
Any resource	42	42	33	79%	36	86%	15	36%
All resources	42	42	21	50%	15	36%	6	14%
Salmon	42	29	16	55%	6	21%	7	24%
Nonsalmon fish	42	37	18	49%	15	41%	4	11%
Large game	42	40	17	43%	18	45%	5	13%
Small game	42	22	9	41%	11	50%	2	9%
Marine mammals	42	23	6	26%	16	70%	1	4%
Migratory waterfowl	42	34	18	53%	14	41%	2	6%
Other birds	42	21	10	48%	10	48%	1	5%
Bird eggs	42	0	0	0%	0	0%	0	0%
Marine invertebrates	42	1	1	100%	0	0%	0	0%
Vegetation	42	40	23	58%	14	35%	3	8%

Source ADF&G Division of Subsistence household surveys, 2011.
a. Valid responses do not include households that did not provide any response and households reporting never use.

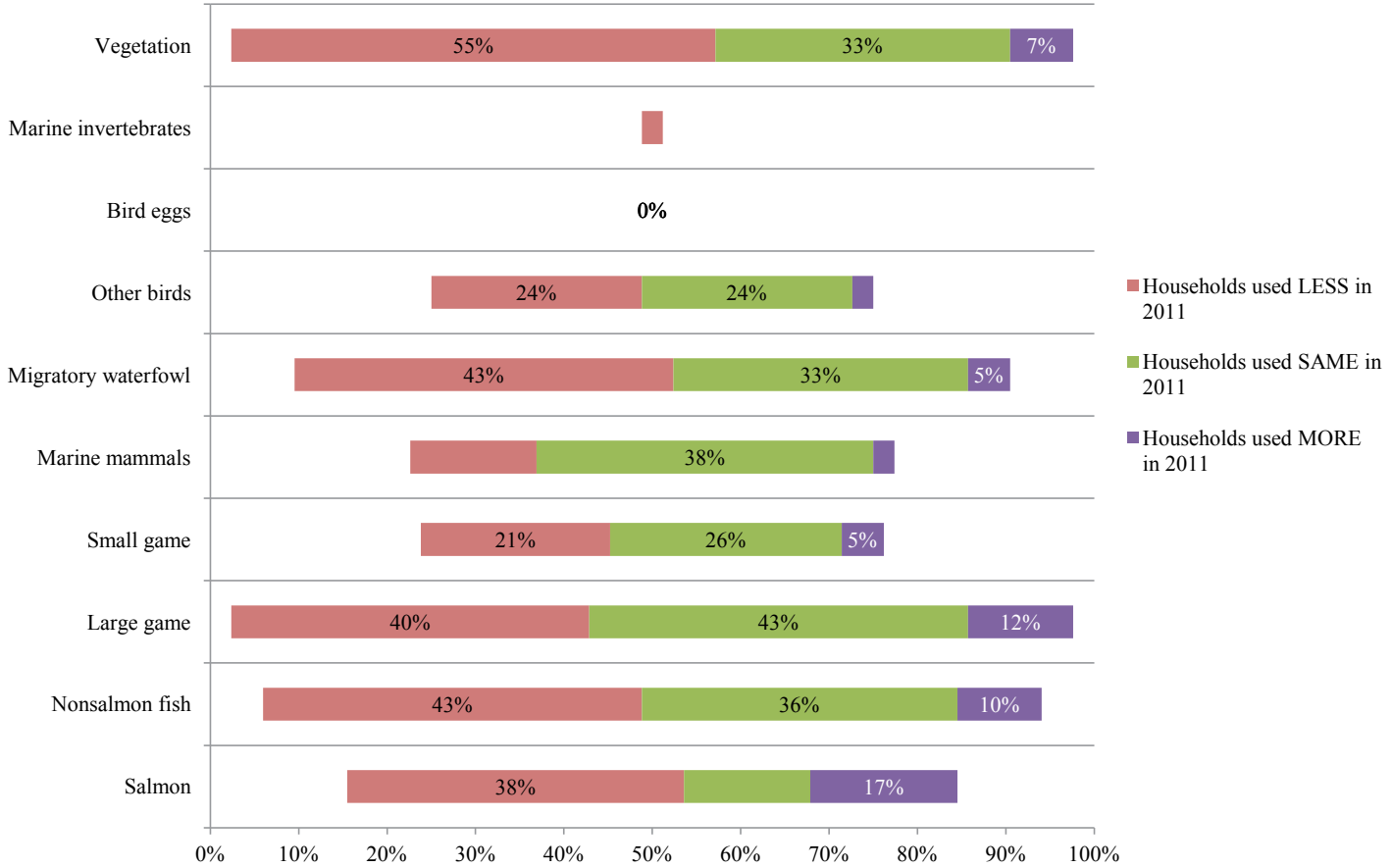
between April and May. Fall months, according to respondents in the same category, were the most food secure because salmon are harvested in the summer into the fall, and whitefishes and moose are commonly harvested just before freeze-up.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. “Other recent years” was defined as about the last 5 years. Table 3-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 3-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 3-17 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (42 households), and therefore differ from those reported in Table 3-16.

One-half (50%) of the Allakaket respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 36% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 14% said their overall harvests and uses were higher (Table 3-16). As depicted in Figure 3-17, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households.

For example, for large land mammals, 40% of all interviewed households (Figure 3-17), and 43%



Note Percentages are based on the total number of households in the community (N = 42 households). Unlabeled percentages are less than 5%.

Figure 3-17.– Changes in household uses of resources compared to recent years, Allakaket, 2011.

Table 3-17. – Reasons for less household uses of resources compared to recent years, Allakaket, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	42	31	12	38.7%	18	58.1%	1	3.2%	7	22.6%	8	25.8%	13	41.9%	4	12.9%	11	35.5%
All resources	42	20	7	35.0%	7	35.0%	0	0.0%	4	20.0%	0	0.0%	1	5.0%	0	0.0%	1	5.0%
Salmon	29	16	1	6.3%	4	25.0%	0	0.0%	0	0.0%	1	6.3%	4	25.0%	1	6.3%	3	18.8%
Nonsalmon fish	37	17	6	35.3%	4	23.5%	0	0.0%	0	0.0%	2	11.8%	4	23.5%	0	0.0%	3	17.6%
Large game	40	16	3	18.8%	7	43.8%	0	0.0%	0	0.0%	2	12.5%	0	0.0%	2	12.5%	1	6.3%
Small game	22	9	1	11.1%	1	11.1%	0	0.0%	1	11.1%	2	22.2%	0	0.0%	0	0.0%	1	11.1%
Marine mammals	23	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	83.3%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	34	16	2	12.5%	3	18.8%	0	0.0%	2	12.5%	0	0.0%	3	18.8%	0	0.0%	1	6.3%
Other birds	21	9	0	0.0%	3	33.3%	1	11.1%	1	11.1%	0	0.0%	1	11.1%	1	11.1%	1	11.1%
Bird eggs	0	0	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	1	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%
Vegetation	40	21	3	14.3%	9	42.9%	0	0.0%	2	9.5%	2	9.5%	2	9.5%	0	0.0%	3	14.3%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 3-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	42	31	7	22.6%	11	35.5%	2	6.5%	0	0.0%	1	3.2%	0	0.0%	11	35.5%	1	3.2%
All resources	42	20	1	5.0%	4	20.0%	1	5.0%	0	0.0%	0	0.0%	0	0.0%	6	30.0%	1	5.0%
Salmon	29	16	1	6.3%	0	0.0%	1	6.3%	0	0.0%	0	0.0%	0	0.0%	4	25.0%	0	0.0%
Nonsalmon fish	37	17	2	11.8%	2	11.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	17.6%	0	0.0%
Large game	40	16	1	6.3%	4	25.0%	1	6.3%	0	0.0%	0	0.0%	0	0.0%	4	25.0%	0	0.0%
Small game	22	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	44.4%	0	0.0%
Marine mammals	23	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	1	16.7%	0	0.0%
Migratory waterfowl	34	16	0	0.0%	5	31.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	37.5%	0	0.0%
Other birds	21	9	0	0.0%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	22.2%	0	0.0%
Bird eggs	0	0	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	1	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%
Vegetation	40	21	4	19.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	14.3%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

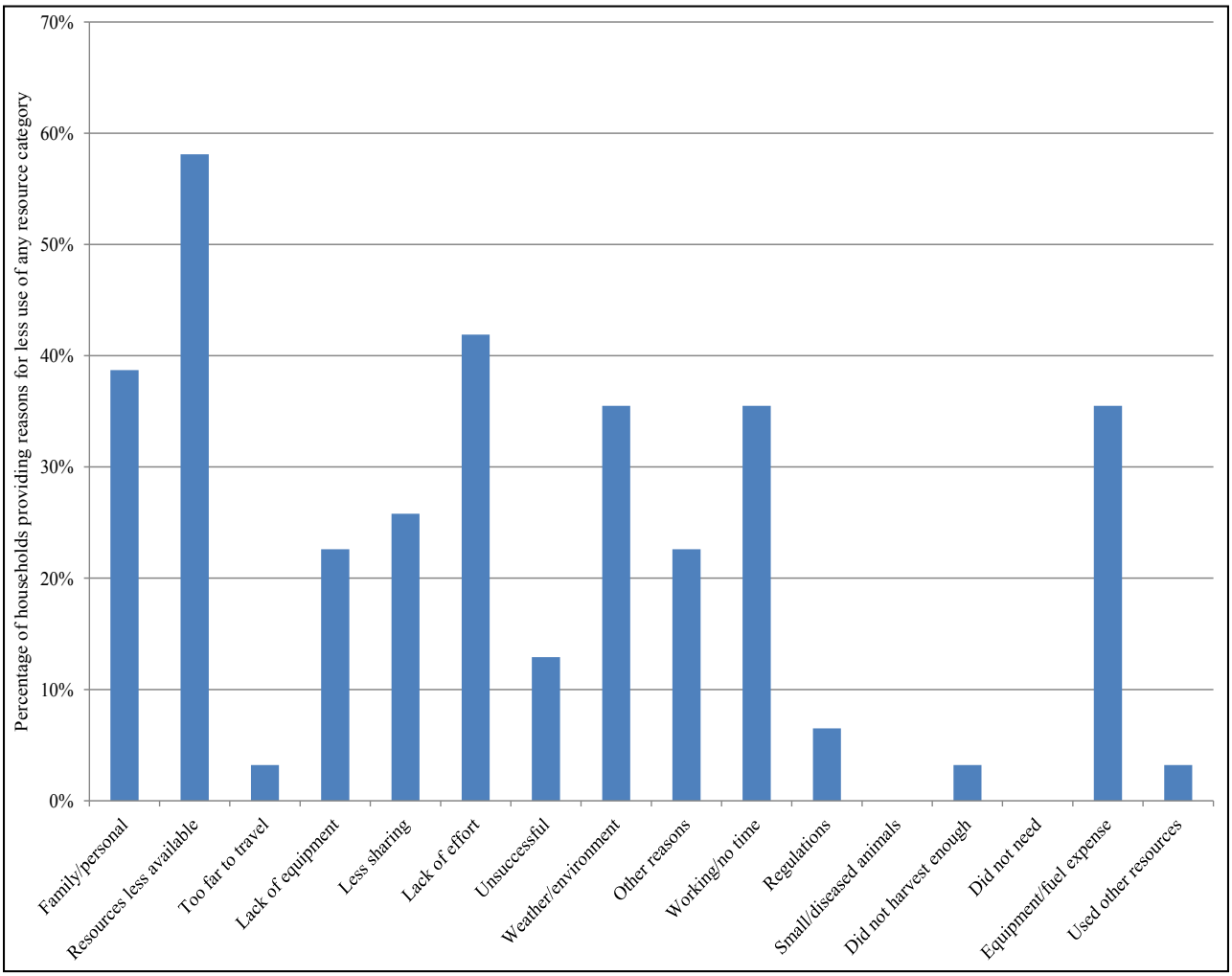


Figure 3-18.– Reasons for less household uses of any resource compared to recent years, Allakaket, 2011.

of all those who provided an assessment (Table 3-16), indicated less use, while 43% of all households and 45% of those providing assessments indicated the same levels of use in 2011 than in previous years. Allakaket households indicated that they used less salmon (38% of all households, 55% of those providing assessment) and nonsalmon fish (43% of all households, 49% of those providing assessment) in 2011 than in recent years. In comparison, about 36% of all households and 41% of those that provided assessments reported using about the same amount of nonsalmon fish in 2011. Regarding migratory waterfowl, more households (43% of all households, 53% of those providing assessments) used less in 2011 compared to the last 5 years.

Table 3-17 depicts the reasons Allakaket respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons

such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: personal and family obligations (35%), availability of resources (35%), fuel and equipment costs (30%), lack of equipment (20%), and not having enough time (20%). Resource availability and family obligations were cited as the main reasons for less use of nonsalmon fish, large game, and vegetation. Interference by work was given as a reason for less use of migratory waterfowl, other birds, nonsalmon fish, and large game. Distance (too far to travel) was mentioned as a reason for less use only for other birds (not migratory waterfowl). Unspecified regulations were cited as a reason for less use of salmon and large game. It is worth noting that for every wild resource category harvested in 2011 at least one respondent cited fuel and equipment expenses as the major reason for less household use.

Overall, 79% of Allakaket's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 36% said that their uses of at least one category had increased (Table 3-16). Resources being less available was the most frequently cited reason for lower use of any resource category in 2011 (58% of all Allakaket households who reported a reason for less use), followed by a decline in effort (42%), family or personal reasons (39%), poor weather (36%), high equipment or fuel expenses (36%), and lack of time due to work commitments (36%) (Figure 3-18).

ALATNA AND ALLAKAKET: COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

The results of previous harvest studies conducted in the communities of Alatna and Allakaket by the Division of Subsistence have been presented as one set of estimates, and the data cannot be disaggregated by community at this time. Therefore, for this section, the trend data for Alatna and Allakaket will be combined. For Alatna and Allakaket, comprehensive subsistence household harvest surveys were administered for the study years 1982, 1983, 1984, and 2011.

Figure 3-19 and Table 3-18 summarize the percentage of the annual harvest for each major resource category from the 4 comprehensive studies. The percentage of the overall harvest of wild resources gradually increased for large land mammals, as shown in Figure 3-19 and Table 3-18. The large land mammal harvest was 13% of the total harvest in 1982, 11% in 1983, 18% in 1984, and 36% in 2011 (Table 3-18). Despite being the resource used by the most households in Alatna and Allakaket traditionally, the percentage of the total harvest provided by salmon has been in decline since 1983. The salmon harvest was 61% of the total harvest in 1982, 64% in 1983, 57% in 1984, and 27% in 2011. Nonsalmon fish, however, show an opposite trend, with the proportion of the total harvest climbing; after holding at 20% in 1982 and 1983, then declining to 18% in 1994, the nonsalmon fish

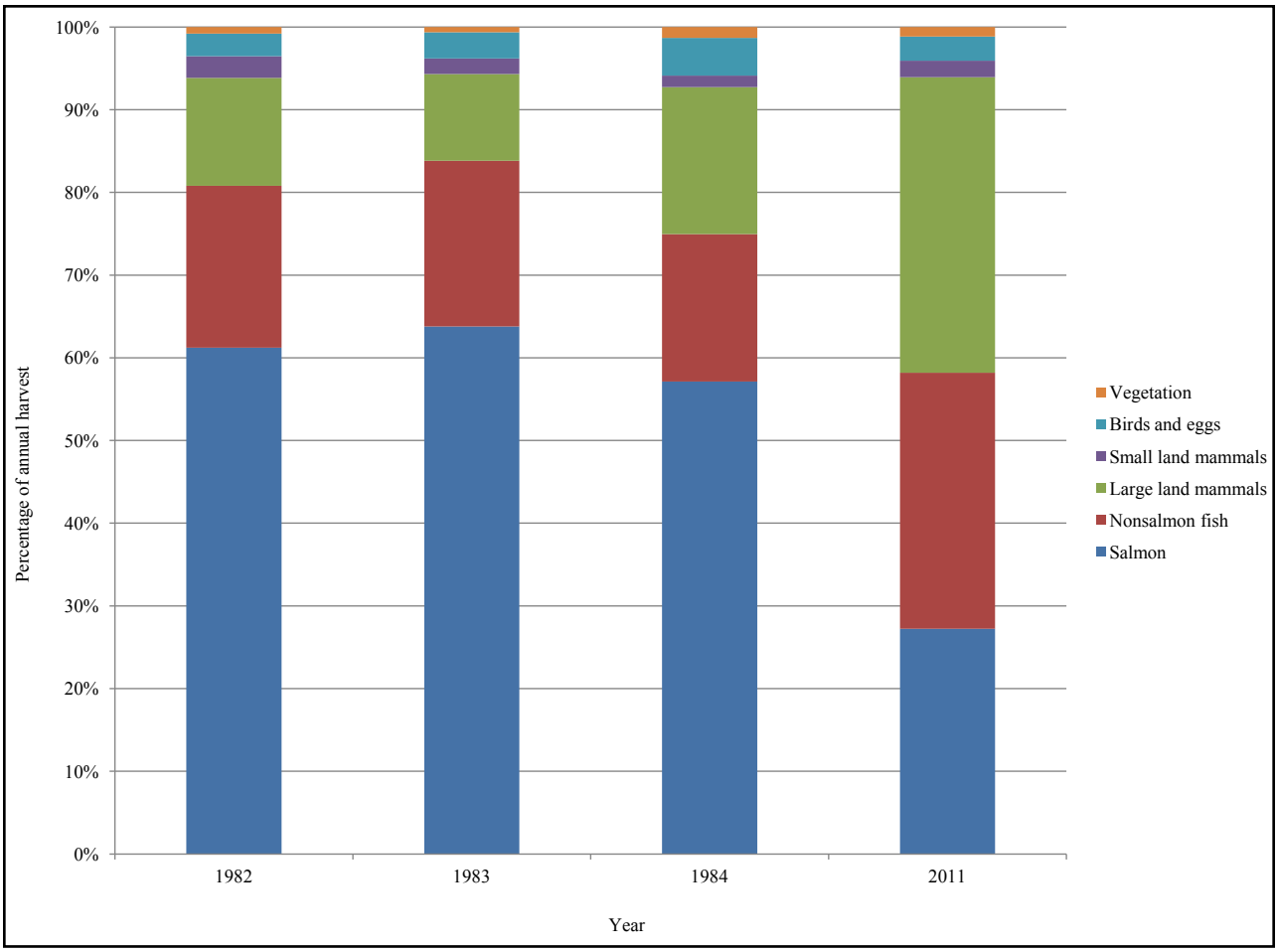


Figure 3-19.– Percentage of harvests, Alatna and Allakaket, 1982, 1983, 1984, and 2011.

Table 3-18. – Percentage of harvests, Alatna and Allakaket, 1982, 1983, 1984, and 2011.

Resource	Percent of total harvest			
	1982	1983	1984	2011
Salmon	61.2%	63.8%	57.1%	27.2%
Nonsalmon fish	19.6%	20.1%	17.8%	31.0%
Large land mammals	13.1%	10.5%	17.8%	35.7%
Small land mammals	2.6%	1.9%	1.4%	2.0%
Birds and eggs	2.7%	3.2%	4.6%	2.9%
Vegetation	0.8%	0.6%	1.3%	1.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source Community Subsistence Information System (CSIS), Alaska Department of Fish and Game, http://www.adfg.alaska.gov/sb/CSIS/.

harvest climbed to 31% of the total harvest in 2011. This suggests a gradual increase in the reliance on nonsalmon species as a major staple of the wild food harvest for Alatna and Allakaket residents because the availability of salmon has declined. The percentage of the harvest coming from small land mammals, birds and eggs, and vegetation has remained fairly stable throughout the study years (Figure 3-19; Table 3-18). Marine mammals are not harvested by Allakaket or Alatna residents due to distance to marine waters; however, marine mammals, particularly bowhead whale products such as muktuk, are commonly received from relatives and friends residing in coastal communities to the north of Allakaket. In 2011, marine mammals were received and used by more than half (55%) of Allakaket and 100% of Alatna households (tables 3-8 and 2-8). The majority of households in both Allakaket (70% of households providing an assessment) and Alatna (100% of all households and of households providing an assessment) responded that their marine mammal use in 2011 was about the same as in previous years (tables 3-16 and 2-16).

Figure 3-20 compares harvest estimates (in pounds usable weight, per capita) for 2011 and previous study years. The total harvests of wild resources in pounds usable weight in Alatna and Allakaket were 906 lb per capita in 1982, 696 lb per capita in 1983, 658 lb per capita in 1984, and 477 lb per capita in 2011. Between 1982 and 2011, the total amount of wild resources harvested in pounds usable weight per capita declined by 47%. The decrease from 1984 to 2011 alone is also notable—an estimated 28%. In terms of the per capita harvest, the 4 study years show a noticeable decrease in the harvest of salmon, small land mammals, vegetation, and birds and eggs. Large land mammals are the only resources that show a notable, but not consistent, increase since 1982. Nonsalmon fish harvests declined from 1982–1984, but then saw a spike in 2011.

Table 3-19 and Figure 3-21 show the estimated harvests of large land mammals for Alatna and Allakaket combined from 1982–1984, 1997–1999, 2001–2002, and 2011. Caribou harvests have had the greatest fluctuation from a low of 0 harvested in 1983 to a high of 140 in 2002. In 2011, the combined caribou harvest was 124 animals. Moose harvests have remained more consistent ranging from a low of 21 in 2011 to a high of 52 in 1997. Black bear harvests have ranged from a low of 9 in 1983 to a high of 25 in 2001 and 2011. Brown bears and Dall sheep were harvested in most study years but at lower levels than the other large land mammal species. The lower harvest of moose in 2011 appears to have been largely offset or compensated for by an increase in the harvest of caribou, which were reportedly more plentiful in the area in late 2011 according to survey respondents.

LOCAL CONCERNS REGARDING RESOURCES

Just prior to the start-up of the household harvest surveys, ADF&G staff presented an overview of the project during a community meeting with the Allakaket tribal council. At this time the community was invited to ask questions of staff about the project or provide any comments or concerns they might have about their local resources utilized for subsistence. In addition, during the survey, respondents also

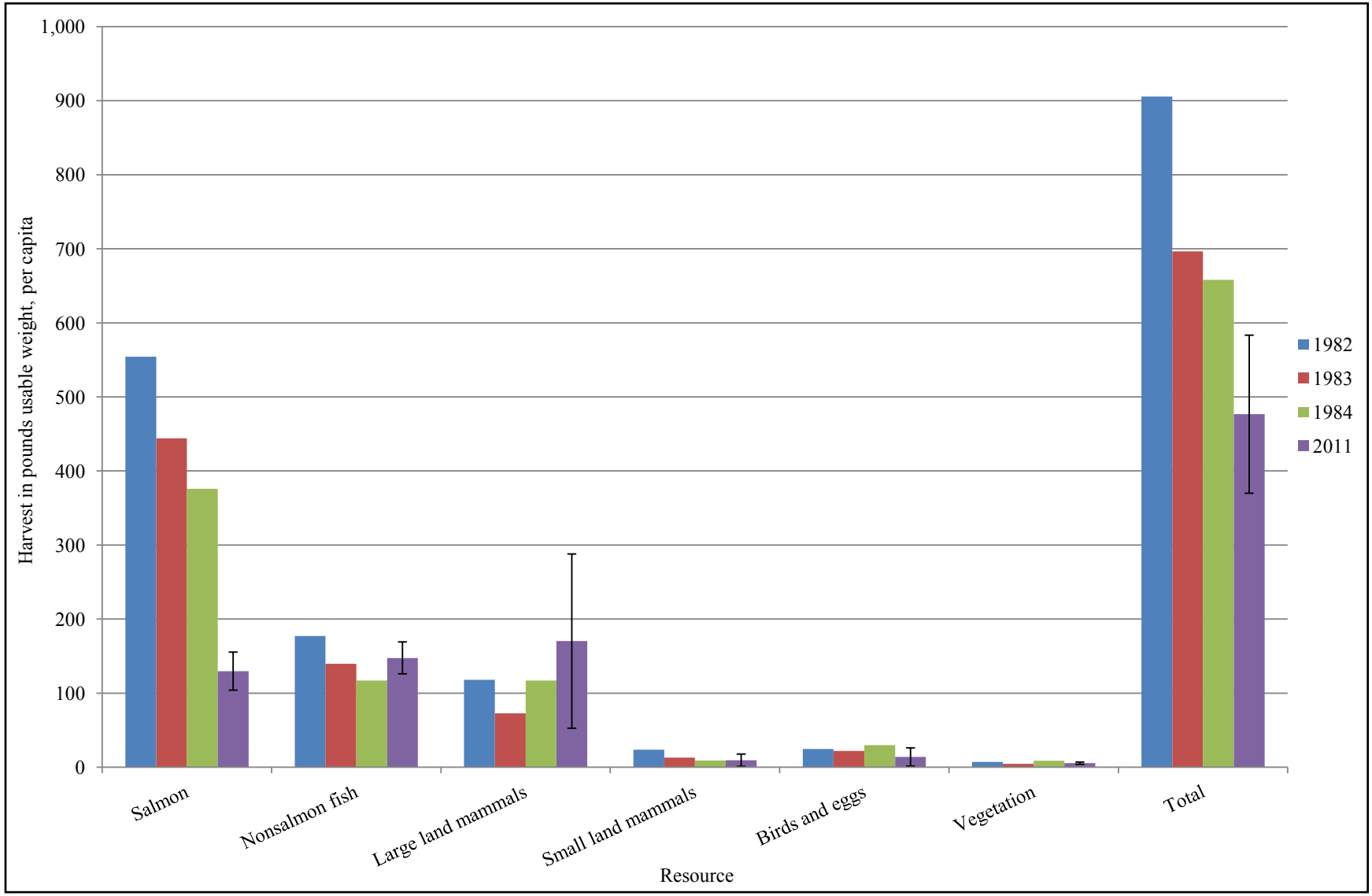


Figure 3-20.– Harvests in pounds usable weight, per capita, Alatna and Allakaket, 1982, 1983, 1984, and 2011.

Table 3-19. – Estimated harvests of large land mammals, Alatna and Allakaket, 1982, 1983, 1984, and 2011.

	Alatna and Allakaket combined								Alatna		Allakaket		**Total**
Resource	1982[a]	1983[a]	1984[a]	1997[a, b]	1998[a, b]	1999[a, b]	2001[a, b]	2002[a, b]	2011	95% confidence limit (±)	2011	95% confidence limit (±)	**2011**
Black bear	21	8	21	14	11	11	25	19	7.5	116.0	17.6	46.3	**25.1**
Brown bear	1	1	1	0	0	2	1	0	0.0	0.0	1.4	103.6	**1.4**
Caribou	4	0	4	32	54	13	9	140	28.5	88.0	95.0	27.9	**123.5**
Moose	39	26	39	52	42	43	41	47	3.0	148.0	17.6	31.2	**20.6**
Dall sheep	2	0	2	ND	ND	ND	ND	ND	0.0	0.0	4.1	76.5	**4.1**

Source Community Subsistence Information System (CSIS), Alaska Department of Fish and Game, http://www.adfg.alaska.gov/sb/CSIS/.
Note In 1982, 1983, and 1984, Alatna and Allakaket were surveyed together, but in 1997, 1998, 1999, 2001, 2002, and 2011 the communities were surveyed separately.
Note ND indicates no data are available.
a. Values in the CSIS are rounded to the nearest whole number.
b. Harvest data for Alatna and Allakaket are combined for data years 1997, 1998, 1999, 2001, and 2002 for the sake of brevity and ease of comparison with other data in this table.

had an opportunity to provide questions, comments, or concerns about their local resources. One main concern that was voiced by several respondents during the meeting was in regard to roads proposed by the State of Alaska that would provide surface access to mineral resources along the Ambler mineral belt located north of Kobuk (DOWL HKM 2011). Several of the proposed corridors connecting to the Dalton Highway, as well as one connecting to Tanana, all cross directly through much of traditional hunting and fishing areas still used by Allakaket and Alatna subsistence users. Some residents indicated that the trans-Alaska pipeline that is only 50 miles to the east of Allakaket disrupted caribou migration patterns which diverted caribou away from their communities. Concerns were voiced that any of the proposed road corridors would, as one person expressed, “devastate traditional hunting grounds” by not only affecting migration routes for caribou, but also allowing easy access for non-local hunters to compete for local resources that local residents rely on for subsistence.

There were also concerns that traditional hunting and fishing areas located farther from the community would not be depicted on the survey maps. There was a massive, multi-week search in the fall of 2011 for a missing local young man that involved the entire communities of Allakaket and Alatna, with help being provided from several surrounding villages. Local subsistence users commented that the harvest of moose, whitefishes, and firewood, in particular, that occurred in the fall of 2011 were confined to the search area for the missing man thus making the mapped harvest areas for the survey unusual. The search area, downriver of Allakaket, does not include broader harvest areas that are typically used where the proposed road corridors would cross. A few other respondents indicated that in 2011, as well as in recent past years, the community’s moose harvest is far below what it was the previous decade, or longer, due to the lack of availability of moose to the area. However, many hunters indicated that there has been an increase in the caribou harvests over the last decade or so. In 2011, the caribou harvest level was due to a herd migrating through the Allakaket area in December.

There were also many local hunters and other survey respondents who commented that in recent

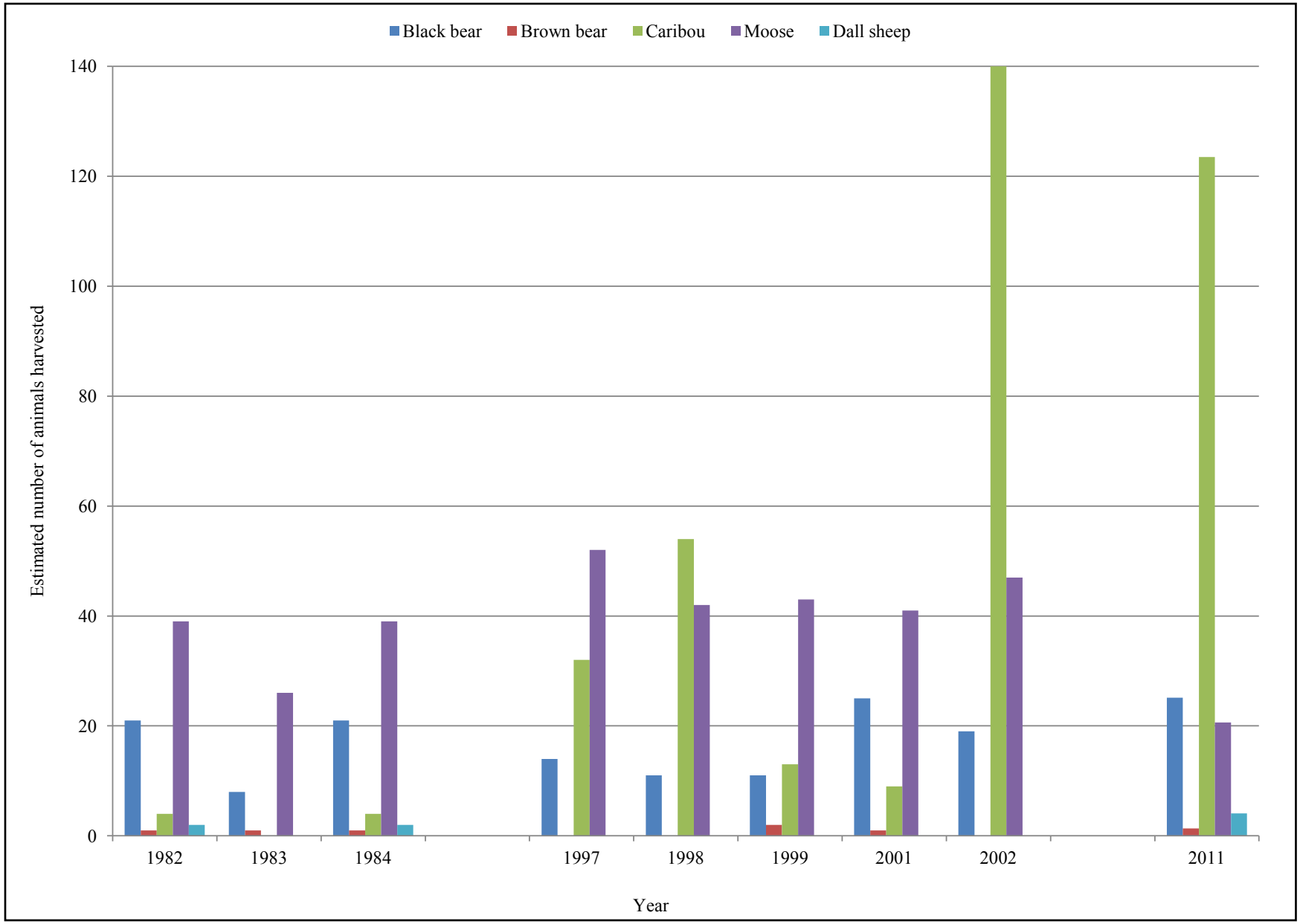


Figure 3-21.– Estimated harvests of large land mammals, Alatna and Allakaket, 1982, 1983, 1984, and 2011.

years there has been a large influx of predators, notably wolves, to the area. This has had a great impact on the local availability of moose. Some elders believed that this increase of predators is in part due to less hunting of bears and trapping of wolves by the community in recent years. In 2012, the ADF&G took these concerns to the Alaska BOG, which adopted an experimental intensive management plan to reallocate moose from wolves to humans.[4] As part of this intensive management project, the Division of Subsistence is conducting a 5-year big game harvest survey in Allakaket and Alatna to track hunter harvest and effort. The first year of this effort occurred in November 2011, prior to the administration of this baseline study. Estimated harvest levels of moose and caribou differ somewhat between these 2 surveys. After careful review of the harvest numbers by study, it was determined that the differences have to do primarily with small differences in survey timing, survey design, and sampling methodologies. The Division of Subsistence baseline study researchers were able to interview some households missed by the large game survey. In addition, the baseline study was able to identify and included moose that were harvested in the local area for use in a potlatch ceremony and to feed people who were in the community in the fall of 2011 while involved in the missing person search. It is thought that these "community use" harvests may have been missed by the big game survey that tallied only those harvests retained by local families. Caribou harvest estimates are higher for this study as well, but this is because the caribou were harvested during months that the big game survey did not cover.

Climate change was also noted as having a negative effect on local resource availability and community elders and youth, in particular, are not getting the amount and consistency of wild resources that they once relied on; this is causing an increased dependence on store-bought foods. Some respondents commented that this shift in diet has contributed toward an increase in disease and other negative health issues in their community. One respondent voiced concern about potentially unsafe mercury levels in whitefishes, sheefish, and northern pike, particularly if eaten by pregnant or lactating women and children.[5]

SUMMARY

Findings resulting from the household survey show that residents of Allakaket harvested and used a wide variety of wild resources in 2011. The per capita harvest total of 520 lb of wild resources per person represents the highest level of harvest of all the communities surveyed in this study in 2011. Residents invested a great deal of time and effort in harvesting fish (salmon and nonsalmon), large and small land mammals, birds, and wild plants. Prior studies conducted by the Division of Subsistence

4. ADF&G, "Feasibility assessment for intensive management program: Game Management Unit 24B (13,523 mi^2) proposed Upper Koyukuk Village Management Area (UKVMA) 1,359.5 mi^2 centered on Alatna and Allakaket (10.1% of Unit 24B) to increase sustainable harvest of moose," version 1 released February 25, 2011, http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2011-2012/interior-3-2-12/24B_feasibility.pdf.
5. ADF&G, "2012 preliminary Yukon River summer season summary," released October 1, 2012, http://www.adfg.alaska.gov/static/home/news/pdfs/newsreleases/cf/229271472.pdf.

have examined both Alatna and Allakaket combined. Unfortunately, the original data are such that it is impossible to extract findings for a single community from the combined data set. Therefore, Allakaket cannot be analyzed as a single community across all Division of Subsistence data sets for this region. Looking at the combined data for Alatna and Allakaket, the data show that the per capita harvest of wild resources in 2011 was lower than in the previous study years of 1982, 1983, and 1984 (Figure 3-20). Significant and steady decreases in salmon harvests account for most of this decline. The percentage of the harvest contributed by nonsalmon fish and large land mammals in 2011 has increased significantly compared to the 1980s, whereas harvests of birds, small mammals, and plants have remained at relatively low and constant proportions of the overall harvest (Figure 3-19).

ACKNOWLEDGEMENTS

The research staff would like to thank the Allakaket Tribal Council for approving and supporting this project, and providing us with input and concerns about local subsistence opportunities and resources, and commercial development. Special recognition to the Local Research Assistants: Kenneth Douglas Bergman, Charlotte Mayo, Russell Moses, Jared Sam, Pollock Simon Jr., and Julia Wholecheese for assisting ADF&G staff with conducting 42 household surveys, mapping, and key respondent interviews. The research staff was especially appreciative of the local research assistants for providing us with transportation, generally by snowmachine, to the individual homes to conduct surveys and interviews. The temperatures dropped as low as -60° F when the research took place, the village fuel supply pumps froze and fuel supplies were low, yet our local assistants were always readily available and willing to help at any time of day, temperature aside, and were willing to use their snowmachines despite the potential damage that could occur to them due to the extreme low temperatures. We would also like to thank the Allakaket School, particularly Principal Tariq Malik, for providing us with use of the school facilities and housing for our crew. And finally, the project would not have been nearly as successful if it were not for the cooperation of elders who recognized the importance of the work and allowed us to record some of their stories and knowledge of how subsistence and understanding of the environment have been interwoven and adapted over time.

CHAPTER 4: ANAKTUVUK PASS

Prepared by Sarah M. Hazell

COMMUNITY BACKGROUND

The people inhabiting the Endicott Mountains sector of the central Brooks Range are known as the *Nunamiut*, which in their language means "people of the land" (Rausch 1951:154). The Nunamiut are an Inupiaq-speaking group but differ significantly from coastal-dwelling *Tareumiut* Inupiat who have traditionally relied heavily on marine resources and a coastal adaptation. The Nunamiut, in contrast, depend on inland resources, mostly caribou, Dall sheep, and, to a lesser extent, nonsalmon fish. The central community of the current-day Nunamiut is called Anaktuvuk Pass, Inupiaq for "the place of many caribou droppings" (Blackman 2004).

The area surrounding Anaktuvuk Pass archaeologically has demonstrated long sequences of occupation by inland dwelling peoples going back as far as 5,000 years (Corbin 1975; Esdale and Gal 2006). Early groups, like the Nunamiut, were also nomadic and depended on caribou to survive. It was relatively recently, however, that the community of Anaktuvuk Pass was established and, consequently, the sedentarization of the Nunamiut occurred.

In the 19th century, it is believed inland-dwelling Inupiat (the *Kuukpigmiut*) were living farther north of Anaktuvuk Pass, along the Colville River and drainage, including its tributaries and creeks, due to the presence of the *Di'haii Gwich'in* in the central Brooks Range (Burch and Mishler 1995). The Di'haii Gwich'in were known to be aggressive and ethnographic records have revealed their hostilities with neighboring groups, which slowly eroded the foundation of Di'haii Gwich'in society (Burch and Mishler 1995). The population of the Di'haii Gwich'in was essentially devastated around 1850 following a series of battles or confrontations with Inupiat groups. The remaining survivors continued for some time in the region before moving east to join the *Neets'aii Gwich'in*, which opened up the territory for the Inupiat/Nunamiut (Burch and Mishler 1995; Burch 1998a).

The Kuukpigmiut moved farther south to take advantage of the geographic vacuum, which was followed by a further influx of Inupiat refugees from all over northern Alaska because of the collapse of caribou populations on the Seward Peninsula and Kotzebue Sound (i.e., the Great Famine). Archaeological sites just west of Anaktuvuk Pass dated to between 1880 and 1890 confirm Inupiat occupation of the area at *Aniganigaruk* (Burch and Mishler 1995; Corbin 1975). Overhunting of caribou and Dall sheep ensued and Inupiat were scattered across the Brooks Range in small groups. This decline forced many Inupiat to the coast in search of work, better hunting grounds, and to trade

for commercial items. By the turn of the century, the northern interior was sparsely populated by the remaining Inupiat who survived on random game and nonsalmon fish that they intercepted (Burch 1998a).

It was not until the 1930s, when former Inupiat residents of the Brooks Range returned from the coast and melded with Inupiat who had been living on the upper Sheenjek River, that the modern way of life of the Nunamiut was established (Burch 1979 and 1998a). The Nunamiut, while semi-nomadic, lived in 2 distinct areas—in Killik Valley and at Chandler Lake (Burch 1979; Clark 1974). Initially, residents would go periodically north to trade but later commercial goods were difficult to procure and they went south instead to Bettles, Kobuk, or Fairbanks (Blackman 2004; Gubser 1965).

In 1943, Sig Wien, partial owner of Wien-Alaskan Airlines, landed at Chandler Lake and met Simon Paneak, a respected elder who later became a significant source of information about the Nunamiut and the Brooks Range for scientists and anthropologists (Blackman 2004). This chance meeting turned into a long-term relationship, where Wien would return many times over the years to trade and provide supplies to the Nunamiut. Eventually, Simon Paneak discussed the possibility of a school for the local children and expressed a desire to have a more permanent residential base. Wien facilitated this request by contacting the Bureau of Indian Affairs and flew teachers to Tulugak Lake in Anaktuvuk Valley where Paneak and his group were camping. Soon after, a group of scientists came to the valley to study regional bird, plant, mammal, insect, and human phenomena (Blackman 2004; Rausch 1951). This led to increased air activity to the area and allowed the Nunamiut to have greater access to commercial goods. A trading post was opened in 1949 and a post office in 1951, which secured regular air service to the valley. In 1960, an airstrip was constructed and most of the remaining nomadic Nunamiut settled in the present location of Anaktuvuk Pass (Blackman 2004; Clark 1974).

Anaktuvuk Pass today is a vibrant community that includes a post office, tribal council office, city office and community hall, fire department, power plant, museum, hotel, grocery store, and a school. While there is a small non-Native population comprising school teachers and skilled workers, the majority of the residents are Nunamiut in addition to Tareumiut Inupiat from other northern Alaska communities.

The key role of subsistence hunting, fishing, and gathering in the lives of the Nunamiut cannot be questioned given the remote inland location of Anaktuvuk Pass. As will be demonstrated in this study, caribou remain the most significant source of protein in the diets of Anaktuvuk Pass residents. However, subsistence resources, and caribou in particular, are not simply a means to physically survive in a biological sense. The Nunamiut have lived alongside caribou in the Brooks Range for thousands of years and caribou are an indelible part of Nunamiut society (Corbin 1975). According to one elder interviewed for this study, caribou hunting is essential for subsistence but also for the Nunamiut way of life and their identity as a people.

Table 4-1. – Population of Anaktuvuk Pass, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
99	324	298	92.0%	85	310	291	93.8%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

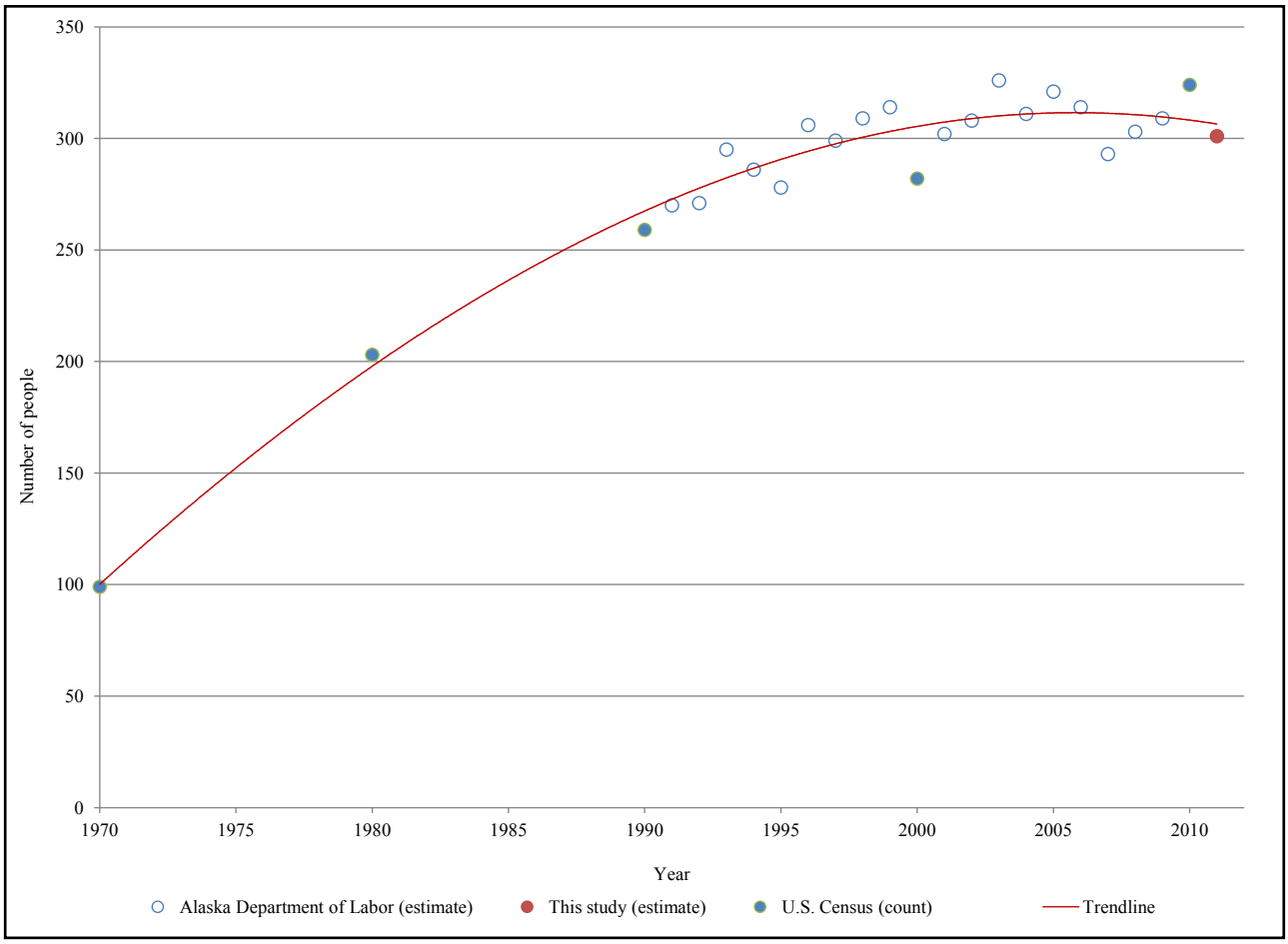


Figure 4-1.– Population history, Anaktuvuk Pass, 1970–2011.

DEMOGRAPHY

According to the federal census, Anaktuvuk Pass had 324 residents in 2010 (U. S. Census Bureau 2011a)(Table 4-1). The household survey conducted for this study in 2011 found an estimated population of 310 residents, of which 94% (291 residents) were Alaska Native (Table 4-1). Figure 4-1 shows the population of the community over time. The population has remained relatively stable since 1990. The survey found 85 year-round households in Anaktuvuk Pass in 2011 and of these, 62 households (73%) were surveyed (Table 4-2). The mean number of years of residency in Anaktuvuk Pass was 21 years, with the maximum length of residence at 73 years (Table 4-3). The largest age cohort for males

Table 4-2. – Sample achievement, Anaktuvuk Pass, 2011.

Number of dwelling units	85.0
Interview goal	85.0
Households interviewed	62.0
Households failed to contact	14.0
Households declined to be interviewed	9.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	71.0
Refusal rate	12.7%
Final estimate of permanent households	85.0
Percentage of total households interviewed	72.9%
Interview weighting factor	1.4
Sampled population	226.0
Estimated population	309.8

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

was 5–9 years of age, and for females it was 0–4 and 25–29 years of age (Figure 4-2; Table 4-4). Age categories under 30 dominate the profile demonstrating a youthful population. In the highest age categories, 75–79 and 80–84, only women were represented.

Of the Anaktuvuk Pass household heads interviewed, approximately 85% were born in Alaska. One-half (50%) of the household heads were born in Anaktuvuk Pass, and other Alaska birthplace locations included Fairbanks, Barrow, the Killik River area, and also other locations throughout Alaska (Table 4-5). A number of household heads migrated to Anaktuvuk Pass from other Inupiat communities (i.e., Colville Village, Sheenjek River area, Shungnak, Selawik, Point Lay, Point Hope, Kobuk, and Kaktovik). In comparison, only 12% of the household heads were born in a different state than Alaska and 2% were foreign born.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 4-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Anaktuvuk Pass residents in 2011. Approximately 77% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 63% of all residents gathered plants and berries, 62% fished, 13% hunted for birds, and 40% hunted for large land mammals. Fewer residents (10%) were involved in furbearer hunting or trapping. In comparison, 67% of all Anaktuvuk Pass residents processed some resources in 2011. More than one-half of the residents (55%) participated in fish processing activities, followed by 52% of the population participating in processing plants and berries. A little less (44%) participated in large land mammal processing, and 18% participated in processing birds.

Table 4-3. – Demographics and sample characteristics, Anaktuvuk Pass, 2011.

Characteristics	Anaktuvuk Pass
Sampled households	62.0
Eligible households	85.0
Percentage sampled	72.9%
Household size	
Mean	3.6
Minimum	1.0
Maximum	10.0
Sample population	226.0
Estimated community population	309.8
Age	
Mean	26.7
Minimum[a]	0.0
Maximum	81.0
Median	24.5
Length of residency	
Total population	
Mean	20.5
Minimum[a]	0.0
Maximum	73.0
Heads of household	
Mean	32.2
Minimum[a]	1.0
Maximum	73.0
Sex	
Estimated male	
Number	168.0
Percentage	54.2%
Estimated female	
Number	141.8
Percentage	45.8%
Alaska Native	
Estimated households[b]	
Number	76.8
Percentage	90.3%
Estimated population	
Number	290.6
Percentage	93.8%

Source ADF&G Division of Subsistence household surveys, 2012.

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

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

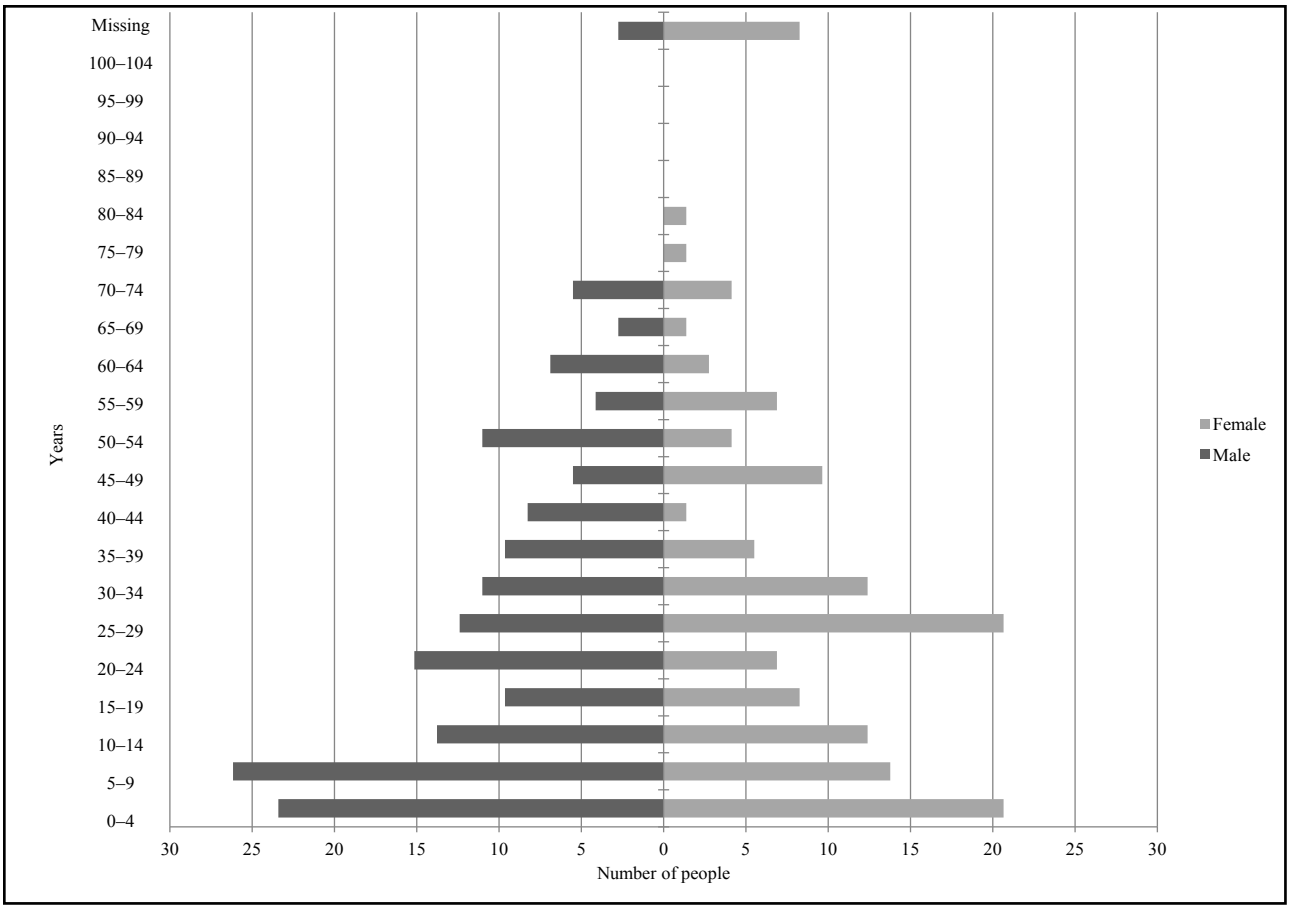


Figure 4-2.– Population profile, Anaktuvuk Pass, 2011.

Table 4-4. – Population profile, Anaktuvuk Pass, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	23.4	13.9%	13.9%	20.7	14.6%	14.6%	44.1	14.2%	14.2%
5–9	26.2	15.6%	29.5%	13.8	9.7%	24.3%	39.9	12.9%	27.1%
10–14	13.8	8.2%	37.7%	12.4	8.7%	33.0%	26.2	8.4%	35.6%
15–19	9.6	5.7%	43.4%	8.3	5.8%	38.8%	17.9	5.8%	41.3%
20–24	15.1	9.0%	52.5%	6.9	4.9%	43.7%	22.0	7.1%	48.4%
25–29	12.4	7.4%	59.8%	20.7	14.6%	58.3%	33.0	10.7%	59.1%
30–34	11.0	6.6%	66.4%	12.4	8.7%	67.0%	23.4	7.6%	66.7%
35–39	9.6	5.7%	72.1%	5.5	3.9%	70.9%	15.1	4.9%	71.6%
40–44	8.3	4.9%	77.0%	1.4	1.0%	71.8%	9.6	3.1%	74.7%
45–49	5.5	3.3%	80.3%	9.6	6.8%	78.6%	15.1	4.9%	79.6%
50–54	11.0	6.6%	86.9%	4.1	2.9%	81.6%	15.1	4.9%	84.4%
55–59	4.1	2.5%	89.3%	6.9	4.9%	86.4%	11.0	3.6%	88.0%
60–64	6.9	4.1%	93.4%	2.8	1.9%	88.3%	9.6	3.1%	91.1%
65–69	2.8	1.6%	95.1%	1.4	1.0%	89.3%	4.1	1.3%	92.4%
70–74	5.5	3.3%	98.4%	4.1	2.9%	92.2%	9.6	3.1%	95.6%
75–79	0.0	0.0%	98.4%	1.4	1.0%	93.2%	1.4	0.4%	96.0%
80–84	0.0	0.0%	98.4%	1.4	1.0%	94.2%	1.4	0.4%	96.4%
85–89	0.0	0.0%	98.4%	0.0	0.0%	94.2%	0.0	0.0%	96.4%
90–94	0.0	0.0%	98.4%	0.0	0.0%	94.2%	0.0	0.0%	96.4%
95–99	0.0	0.0%	98.4%	0.0	0.0%	94.2%	0.0	0.0%	96.4%
100–104	0.0	0.0%	98.4%	0.0	0.0%	94.2%	0.0	0.0%	96.4%
Missing	2.8	1.6%	100.0%	8.3	5.8%	100.0%	11.0	3.6%	100.0%
Total	**168.0**	**100.0%**	**100.0%**	**141.8**	**100.0%**	**100.0%**	**309.8**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 4-5. – Birthplaces of household heads, Anaktuvuk Pass, 2011.

Birthplace[a]	Percentage
Anaktuvuk Pass	49.5%
Anchorage	2.1%
Barrow	5.2%
Fairbanks	6.2%
Kaktovik	2.1%
Kaltag	2.1%
Kobuk	1.0%
Palmer	1.0%
Point Hope	2.1%
Point Lay	1.0%
Selawik	2.1%
Shungnak	2.1%
Killik River area	5.2%
Sheenjek River area	1.0%
Colville Village	1.0%
Ruby/Kokrines	1.0%
Missing	1.0%
Other U.S.	12.4%
Foreign	2.1%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

RESOURCE HARVEST AND USE PATTERNS

Table 4-7 summarizes resource harvest and use characteristics for Anaktuvuk Pass in 2011 at the household level. A total of 98% of households used wild resources in 2011, while 92% attempted to harvest a resource, and 89% harvested at least 1 resource. The average total household harvest was an estimated 1,155 lb usable weight, or 317 lb per capita. On average, households attempted to harvest 8 kinds of resources, harvested 7 kinds of resources, and used an average of 11 distinct kinds of resources. The maximum number of resources used by any household was 30.

SPECIES USED AND SEASONAL ROUND

Residents of Anaktuvuk Pass harvest a wide variety of species throughout the year and they often target specific species during certain seasons of the year following a cyclical harvest pattern. Anaktuvuk Pass residents are highly mobile, traveling to different lakes and hunting locations in the Brooks Range to harvest resources. Residents typically use motorized vehicles, such as trucks, snowmachines, ATVs, and Argos[1] to reach their hunting, fishing, and gathering areas.

Table 4-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table

1. An Argo is an amphibious all-terrain vehicle.

Table 4-6. – Estimated participation in subsistence harvesting and processing activities, Anaktuvuk Pass, 2011.

Total number of people	**309.8**
Birds	
Hunt	
Number	39.9
Percentage	12.9%
Process	
Number	55.1
Percentage	17.8%
Fish	
Fish	
Number	192.8
Percentage	62.2%
Process	
Number	170.8
Percentage	55.1%
Large land mammals	
Hunt	
Number	125.3
Percentage	40.4%
Process	
Number	137.7
Percentage	44.4%
Furbearers	
Hunt or trap	
Number	30.3
Percentage	9.8%
Process	
Number	28.9
Percentage	9.3%
Plants	
Gather	
Number	195.5
Percentage	63.1%
Process	
Number	159.7
Percentage	51.6%
Any resource	
Attempt	
Number	237.2
Percentage	76.5%
Process	
Number	208.4
Percentage	67.3%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 4-7. – Resource harvest and use characteristics, Anaktuvuk Pass, 2011.

Characteristic	
Mean number of resources used per household	11.2
Minimum	0.0
Maximum	30.0
95% confidence limit (±)	8.3%
Median	10.0
Mean number of resources attempted to harvest per household	7.6
Minimum	0.0
Maximum	24.0
95% confidence limit (±)	9.7%
Median	7.0
Mean number of resources harvested per household	6.8
Minimum	0.0
Maximum	24.0
95% confidence limit (±)	10.9%
Median	6.0
Mean number of resources received per household	6.5
Minimum	0.0
Maximum	24.0
95% confidence limit (±)	11.0%
Median	5.0
Mean number of resources given away per household	4.9
Minimum	0.0
Maximum	22.0
95% confidence limit (±)	13.9%
Median	4.0
Household harvest, pounds	
Minimum	0.0
Maximum	11,190.8
Mean	1,154.6
Median	369.0
Total harvest weight, pounds	98,144.9
Community per capita harvest, pounds	316.8
Percentage using any resource	98.4%
Percentage attempting to harvest any resource	91.9%
Percentage harvesting any resource	88.7%
Percentage receiving any resource	95.2%
Percentage giving away any resource	75.8%
Number of households in sample	62.0
Number of resources available	124.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 4-8. – Estimated harvests and uses of fish, game, and plant resources, Anaktuvuk Pass, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**98%**	**92%**	**89%**	**95%**	**76%**	**98,144.9**	**1,154.6**	**316.8**	**7,426.8**		**87.4**	**26%**
Fish	**89%**	**81%**	**71%**	**69%**	**60%**	**5,788.9**	**68.1**	**18.7**	**5,330.9**		**62.7**	**23%**
Salmon	**45%**	**11%**	**10%**	**40%**	**8%**	**622.0**	**7.3**	**2.0**	**87.7**		**1.0**	**57%**
Chum salmon	3%	2%	2%	2%	0%	7.0	0.1	0.0	1.4	Ind.	0.0	104%
Coho salmon	13%	5%	5%	8%	5%	246.5	2.9	0.8	46.6	Ind.	0.5	71%
Chinook salmon	24%	5%	5%	21%	2%	349.4	4.1	1.1	37.0	Ind.	0.4	79%
Pink salmon	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	15%	2%	0%	15%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	8%	5%	2%	8%	2%	19.2	0.2	0.1	2.7	Ind.	0.0	104%
Nonsalmon fish	**87%**	**81%**	**71%**	**61%**	**60%**	**5,166.9**	**60.8**	**16.7**	**5,243.2**		**61.7**	**25%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	8%	0%	0%	8%	5%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	2%	2%	2%	0%	0%	11.0	0.1	0.0	2.7		0.0	104%
Pacific cod (gray)	2%	2%	2%	0%	0%	11.0	0.1	0.0	2.7	Ind.	0.0	104%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific halibut	16%	3%	3%	13%	3%	5.5	0.1	0.0	5.5	Lb.	0.1	82%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	6%	6%	6%	3%	5%	49.4	0.6	0.2	20.6	Ind.	0.2	78%
Char	73%	68%	60%	42%	44%	1,726.7	20.3	5.6	1,534.7		18.1	23%
Arctic char	66%	61%	53%	34%	37%	566.3	6.7	1.8	629.3	Ind.	7.4	28%
Dolly Varden	16%	15%	15%	6%	8%	193.0	2.3	0.6	214.4	Ind.	2.5	69%
Lake trout	63%	56%	52%	32%	35%	967.4	11.4	3.1	691.0	Ind.	8.1	24%
Arctic grayling	73%	73%	63%	31%	40%	1,740.8	20.5	5.6	2,486.8	Ind.	29.3	24%
Northern pike	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sheefish	6%	2%	0%	6%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	15%	13%	13%	3%	8%	739.2	8.7	2.4	528.0		6.2	60%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	5%	3%	3%	3%	3%	55.7	0.7	0.2	39.8	Ind.	0.5	91%
Unknown trout	10%	10%	10%	0%	5%	683.6	8.0	2.2	488.3	Ind.	5.7	65%
Whitefishes	27%	11%	10%	23%	15%	894.4	10.5	2.9	664.9		7.8	63%

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Table 4-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
	Use	Attempt	Harvest	Receive	Give	Total	Mean	Per capita	Total	Unit	Mean	confidence
Nonslamon fish, continued												
Broad whitefish	13%	5%	5%	10%	6%	788.9	9.3	2.5	563.5	Ind.	6.6	71%
Cisco	6%	2%	2%	5%	2%	96.0	1.1	0.3	96.0		1.1	104%
Least cisco	6%	2%	2%	5%	2%	96.0	1.1	0.3	96.0	Ind.	1.1	104%
Humpback whitefish	3%	2%	2%	2%	0%	8.2	0.1	0.0	2.7	Ind.	0.0	104%
Round whitefish	6%	2%	2%	6%	5%	1.4	0.0	0.0	2.7	Ind.	0.0	104%
Unknown whitefish	3%	2%	0%	3%	3%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**95%**	**63%**	**53%**	**82%**	**58%**	**89,919.7**	**1,057.9**	**290.2**	**998.9**		**11.8**	**27%**
Large land mammals	**95%**	**63%**	**53%**	**81%**	**56%**	**89,862.8**	**1,057.2**	**290.0**	**706.9**		**8.3**	**27%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	10%	8%	6%	3%	6%	1,353.1	15.9	4.4	9.6	Ind.	0.1	56%
Caribou	95%	63%	53%	73%	52%	77,706.5	929.2	250.8	616.4	Ind.	7.3	27%
Deer	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	29%	6%	6%	26%	10%	2,961.3	34.8	9.6	5.5	Ind.	0.1	51%
Muskox	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	56%	32%	21%	42%	26%	7,841.9	92.3	25.3	75.4	Ind.	0.9	39%
Small land mammals[b]	**19%**	**18%**	**16%**	**8%**	**8%**	**56.9**	**0.7**	**0.2**	**292.0**		**3.4**	**87%**
Beaver	3%	2%	2%	2%	2%	41.1	0.5	0.1	2.7	Ind.	0.0	104%
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Fox	6%	6%	5%	3%	5%	0.0	0.0	0.0	37.0		0.4	68%
Arctic fox	2%	2%	2%	2%	0%	0.0	0.0	0.0	1.4	Ind.	0.0	104%
Red fox	6%	6%	5%	2%	5%	0.0	0.0	0.0	35.6		0.4	67%
Red fox—cross phase	2%	3%	2%	0%	2%	0.0	0.0	0.0	6.9	Ind.	0.1	104%
Red fox—red phase	6%	5%	5%	2%	5%	0.0	0.0	0.0	28.8	Ind.	0.3	63%
Hare	2%	2%	2%	0%	0%	10.3	0.1	0.0	4.1		0.0	104%
Snowshoe hare	2%	2%	2%	0%	0%	10.3	0.1	0.0	4.1	Ind.	0.0	104%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	3%	3%	3%	0%	2%	0.0	0.0	0.0	6.9	Ind.	0.1	85%
Marmot	2%	3%	2%	0%	2%	0.0	0.0	0.0	1.4	Ind.	0.0	104%
Marten	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	3%	3%	3%	0%	0%	0.0	0.0	0.0	13.7	Ind.	0.2	74%
Porcupine	2%	2%	2%	0%	2%	5.5	0.1	0.0	1.4	Ind.	0.0	104%
Squirrel	11%	11%	11%	0%	2%	0.0	0.0	0.0	148.1		1.7	45%
Arctic ground (parka) squirrel	11%	11%	11%	0%	2%	0.0	0.0	0.0	148.1	Ind.	1.7	45%
Red (tree) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	13%	15%	11%	2%	3%	0.0	0.0	0.0	56.2	Ind.	0.7	46%
Wolverine	13%	10%	8%	5%	0%	0.0	0.0	0.0	20.6	Ind.	0.2	65%

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Table 4-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Marine mammals	**60%**	**2%**	**0%**	**60%**	**27%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	40%	2%	0%	40%	13%	0.0	0.0	0.0	0.0		0.0	0%
Bearded seal	10%	2%	0%	10%	3%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Harbor seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ringed seal	3%	2%	0%	3%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spotted seal	3%	0%	0%	3%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown seal	34%	0%	0%	34%	11%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	5%	2%	0%	5%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	52%	2%	0%	52%	26%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**45%**	**31%**	**26%**	**29%**	**23%**	**432.0**	**5.1**	**1.4**	**314.0**		**3.7**	**31%**
Migratory birds	**35%**	**23%**	**18%**	**21%**	**15%**	**305.9**	**3.6**	**1.0**	**187.8**		**2.2**	**35%**
Ducks	19%	10%	8%	11%	5%	49.1	0.6	0.2	39.8		0.5	75%
Eider	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	3%	0%	0%	3%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Long-tailed duck	2%	2%	2%	0%	0%	5.5	0.1	0.0	6.9	Ind.	0.1	104%
Northern pintail	5%	3%	3%	2%	2%	3.3	0.0	0.0	4.1	Ind.	0.0	77%
Scoter	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-winged scoter	2%	0%	0%	2%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown ducks	10%	5%	3%	6%	3%	40.3	0.5	0.1	28.8	Ind.	0.3	90%
Geese	32%	21%	16%	19%	13%	219.8	2.6	0.7	144.0		1.7	36%
Brant	5%	0%	0%	5%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Canada geese	24%	18%	16%	11%	11%	125.0	1.5	0.4	104.2		1.2	41%
Cracklers	6%	5%	5%	3%	2%	11.5	0.1	0.0	9.6	Ind.	0.1	67%
Lesser Canada geese	15%	10%	10%	6%	6%	90.5	1.1	0.3	75.4	Ind.	0.9	51%
Unknown Canada geese	3%	3%	2%	2%	3%	23.0	0.3	0.1	19.2	Ind.	0.2	104%
Snow geese	2%	2%	2%	0%	0%	15.8	0.2	0.1	6.9	Ind.	0.1	104%
White-fronted geese	10%	8%	8%	2%	3%	79.0	0.9	0.3	32.9	Ind.	0.4	54%
Unknown geese	6%	3%	0%	6%	2%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%

-continued-

Table 4-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	3%	3%	3%	0%	0%	37.0	0.4	0.1	4.1		0.0	77%
Loons	3%	3%	3%	0%	0%	37.0	0.4	0.1	4.1		0.0	77%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	3%	3%	3%	0%	0%	37.0	0.4	0.1	4.1	Ind.	0.0	77%
Other birds	**27%**	**18%**	**16%**	**18%**	**13%**	**126.1**	**1.5**	**0.4**	**126.1**		**1.5**	**42%**
Upland game birds	27%	18%	16%	18%	13%	126.1	1.5	0.4	126.1		1.5	42%
Grouse	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ptarmigan	27%	18%	16%	18%	13%	126.1	1.5	0.4	126.1	Ind.	1.5	42%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loon eegs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**87%**	**79%**	**79%**	**47%**	**44%**	**2,004.2**	**23.6**	**6.5**	**782.9**		**9.2**	**16%**
Berries	**84%**	**76%**	**76%**	**44%**	**42%**	**1,978.0**	**23.3**	**6.4**	**727.7**		**8.6**	**16%**
Blueberry	82%	74%	74%	32%	34%	907.9	11.2	2.9	342.1	Gal.	4.0	18%
Lowbush cranberry	60%	52%	52%	24%	27%	397.8	4.8	1.3	109.0	Gal.	1.3	20%
Highbush cranberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crowberry (blackberry)	44%	37%	37%	13%	20%	1.4	0.0	0.0	96.5	Gal.	1.1	59%
Cloud berry	61%	55%	55%	24%	29%	599.7	7.3	1.9	162.3	Gal.	1.9	21%
Raspberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild berry	3%	3%	3%	2%	3%	71.3	0.8	0.2	17.8	Gal.	0.2	83%

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Table 4-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Plants/greens/mushrooms	**13%**	**13%**	**13%**	**6%**	**8%**	**26.2**	**0.3**	**0.1**	**27.5**	**Gal.**	**0.3**	**50%**
Wild Rhubarb	3%	3%	3%	3%	2%	8.2	0.1	0.0	8.2	Gal.	0.1	77%
Eskimo potato	13%	11%	11%	6%	8%	18.0	0.2	0.1	17.9	Gal.	0.2	47%
Hudson's Bay tea	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Unknown mushrooms	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Wood	**18%**	**18%**	**18%**	**3%**	**5%**	**0.0**	**0.0**	**0.0**	**27.8**	**Cord**	**0.3**	**41%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 4-9. – Top 10 resources harvested and used, Anaktuvuk Pass, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Caribou	250.8	1	1.	Caribou	95.2%
2	2.	Dall sheep	25.3	2	2.	Blueberry	82.3%
3	3.	Moose	9.6	3	3.	Arctic grayling	72.6%
4	4.	Arctic grayling	5.6	4	4.	Arctic char	66.1%
5	5.	Brown bear	4.4	5	5.	Lake trout	62.9%
6	6.	Lake trout	3.1	6	6.	Cloud berry	61.3%
7	7.	Blueberry	2.9	7	7.	Lowbush cranberry	59.7%
8	8.	Broad whitefish	2.5	8	8.	Dall sheep	56.5%
9	9.	Unknown trout	2.2	9	9.	Whale	51.6%
10	10.	Cloud berry	1.9	10	10.	Crowberry (blackberry)	43.5%

Source ADF&G Division of Subsistence household surveys, 2012.

4-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Anaktuvuk Pass households during the 2011 study year. Residents of Anaktuvuk Pass harvested an estimated total of 98,145 lb, or 317 lb per capita of wild resources (Table 4-8). Caribou, Dall sheep, and moose were the top 3 most harvested resources, as estimated in usable pounds, followed by Arctic grayling. In comparison, caribou, blueberries, Arctic grayling, and Arctic char were the top 4 most used resources (Table 4-9). Caribou are central to Anaktuvuk Pass residents' diets and cultural practices and this is evidenced by the high per capita harvest of caribou at 251 lb—more than 200 lb more than the second-ranked resource harvested (Table 4-9).

The discussion on various resources used starts with large land mammals because they composed the highest percentage of the total harvest in 2011 (Figure 4-3). Large land mammal hunting, particularly caribou hunting, is a traditional and popular activity typically practiced in fall, but occurs almost year-round for Anaktuvuk Pass hunters. Respondents reported hunting for caribou in almost every month except June, but most harvesting occurred in August and September (Table 4-10). Most hunters utilize Argos, ATVs, and snowmachines. Sixty-three percent of the households hunted caribou and 53% of households successfully harvested this species (84% of all caribou hunting households) (Table 4-8). For Dall sheep, the second most harvested large land mammal, residents of 32% of the households hunted and 21% of households successfully harvested (66% of all sheep hunting households) mostly during July and August (tables 4-8 and 4-10).

Fewer households participated in harvesting small land mammals in 2011, but the success rate was higher with 16% harvesting and 18% attempting (Table 4-8). Most small land mammal hunting or trapping took place during the winter months, although ground (parka) squirrel trapping occurred in the spring and summer. Small mammals trapped specifically for their fur included foxes, snowshoe hares, muskrats, wolves, and wolverines. In comparison, species that were trapped and often consumed were ground (parka) squirrels, beavers, lynx, and occasionally marmots, although no survey respondents indicated that ground squirrels, lynx, or marmots were used for food in the study year.

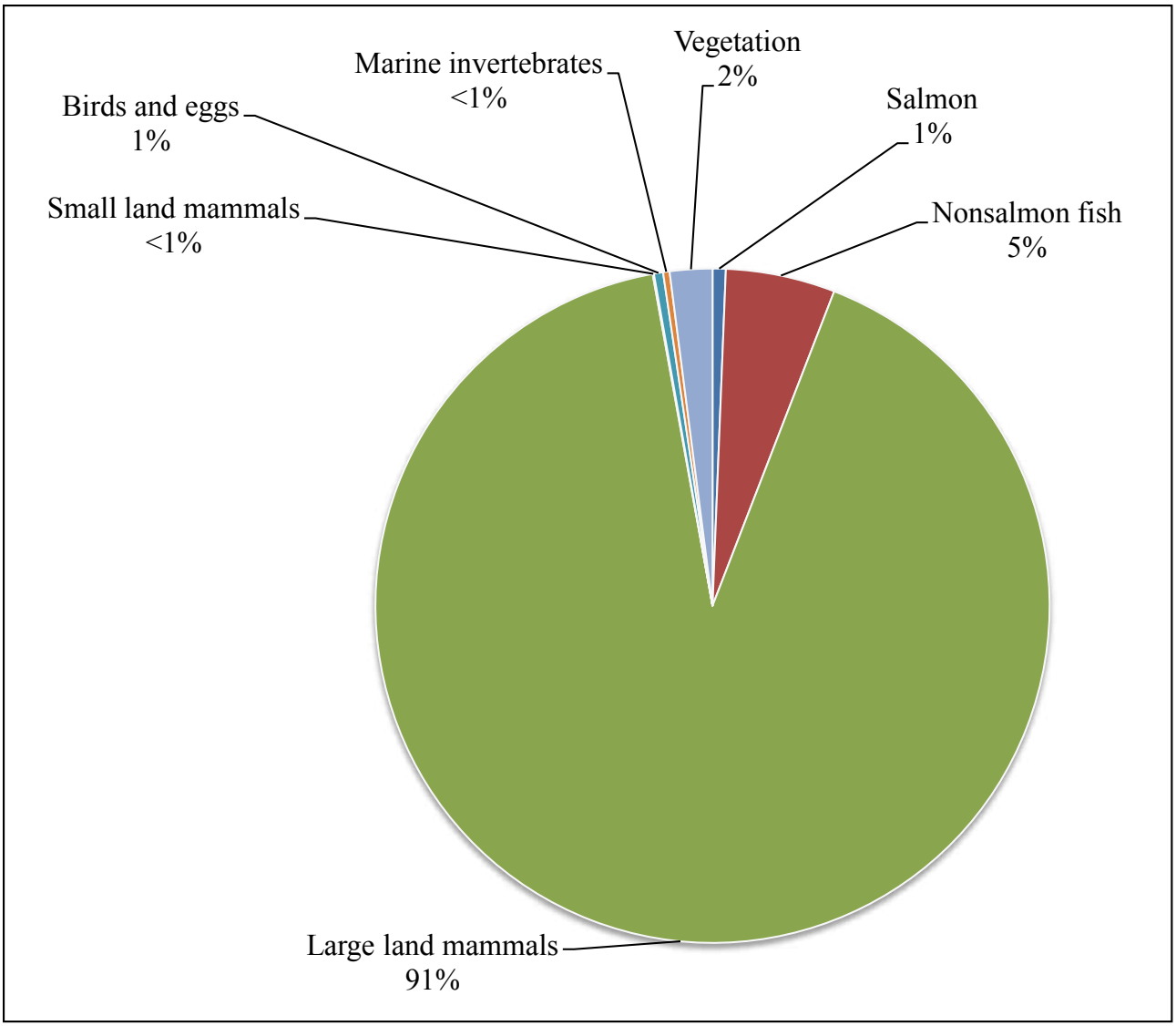


Figure 4-3.– Composition of harvest by category, Anaktuvuk Pass, 2011.

During the study year, 71% of households in Anaktuvuk Pass harvested fish and 71% of households harvested nonsalmon fish, most of which were char species that are abundant in nearby lakes and streams (60% of households harvested char species) (Table 4-8). Nonsalmon fish were typically caught with rod and reel gear between January and March and from July through September.

Because of its geographic position within the Brooks Range, salmon are not commonly harvested in Anaktuvuk Pass. Only 10% of households reported harvesting salmon; in comparison, households reported a relatively high use of salmon (45%) and 40% of households received salmon, either sharing in the small harvests by community members or receiving gifts of salmon from outside Anaktuvuk Pass (Table 4-8). Chinook and coho salmon species were harvested with either rod and reel gear or by gillnet/seine during the summer in areas well south of the community. Occasionally, a salmon is caught in Anaktuvuk Pass but this is extremely rare and the species is typically chum salmon.

Table 4-10. – Estimated harvests of large game by month and sex, Anaktuvuk Pass, 2011.

				Caribou				Goat			Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Male	Female	Unknown	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	4.1	31.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	2.7	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	2.7	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
April	0.0	0.0	0.0	19.2	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	19.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	1.4	2.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.7
August	0.0	0.0	5.5	196.3	23.3	0.0	0.0	2.7	2.7	0.0	2.7	0.0	0.0	0.0	30.2
September	0.0	0.0	2.7	104.5	20.6	0.0	0.0	2.7	2.7	0.0	2.7	0.0	0.0	0.0	8.2
October	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1
November	0.0	0.0	0.0	0.0	38.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9
December	0.0	0.0	0.0	1.4	92.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**9.6**	**352.9**	**263.5**	**0.0**	**0.0**	**5.5**	**5.5**	**0.0**	**5.5**	**0.0**	**0.0**	**0.0**	**75.4**

Source ADF&G Division of Subsistence household surveys, 2012.

Migratory birds are available near the community in the summer, spring, and fall. During the study year, 18% of households harvested migratory birds. In terms of upland game birds, only ptarmigan are available locally and were harvested by community residents along Anaktuvuk Pass. During the study year 16% of households reported harvesting ptarmigan (Table 4-8).

Harvesting vegetation, particularly berries in the summer, is an important activity for Anaktuvuk Pass residents. During the study year, 76% of households reported harvesting berries. Other than blueberries, commonly used berry resources are lowbush cranberries and cloud berries (locally referred to as salmonberries). During the study year, 52% of households reported harvesting lowbush cranberries (Table 4-8).

HARVEST QUANTITIES

Table 4-8 reports estimated wild resource harvests and uses by Anaktuvuk Pass residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

As noted above, the total estimated harvest for all wild resources during 2011 for the community of Anaktuvuk Pass was 98,145 lb, or 317 lb per capita (Table 4-8). In terms of pounds harvested, large land mammals constituted the largest portion of the subsistence harvest, which totaled 89,863 lb, or 290 lb per capita (Table 4-8). As shown in Figure 4-3, large land mammals composed 91% of the overall harvest. The most common single resource harvested was caribou, at an estimated 77,707 lb, or 251 lb per capita harvested (Table 4-8). Dall sheep was the second most harvested large land mammal resource and made up 7,842 lb of the total harvest (25 lb per capita). Moose were also harvested by community members with a total of 2,961 lb (10 lb per capita).

Nonsalmon fishing was another major activity in 2011; this resource category made up 5% of the overall harvest (5,167 lb, or 17 lb per capita) (Figure 4-3; Table 4-8). The largest harvests in terms of weight included Arctic grayling (1,741 lb, or 6 lb per capita), lake trout (967 lb, or 3 lb per capita), and broad whitefish (789 lb, or 3 lb per capita). For these 3 resources, 73% of households reported using Arctic grayling and 63% used lake trout, compared to only 13% of households reporting use of broad whitefish. Many households reported using Arctic char (66%) despite relatively low harvests of

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

this resource (566 lb total, or 2 lb per capita). Salmon harvesting was not as prevalent as nonsalmon fish harvesting with a total of only 622 lb harvested for the entire community.

Wild plants and berries were important wild resources in Anaktuvuk Pass in 2011 and composed 2% of the overall harvest (Figure 4-3). Most households (79%) attempted to harvest vegetation. The total harvest was 2,004 lb (7 lb per capita), with blueberries, lowbush cranberries, and cloud berries (salmonberries) being the most used species. The largest berry harvests in terms of total pounds included blueberries (908 lb, or 3 lb per capita), cloud berries (600 lb, or 2 lb per capita), and lowbush cranberries (398 lb, or 1 lb per capita) (Table 4-8).

The Anaktuvuk Pass household harvest of birds was 432 lb, or 1 lb per capita and composed less than 1% of the overall harvest (Figure 4-3). Most of the bird harvest was migratory birds (306 lb, or 1 lb per capita) and predominantly included different species of geese (Table 4-8). As mentioned previously, of the upland game birds only ptarmigan were harvested. No eggs were harvested during 2011.

SHARING AND RECEIVING WILD RESOURCES

In Anaktuvuk Pass in 2011, estimates of sharing indicated that 95% of households received wild resources from other households and 76% of households gave resources away (tables 4-7 and 4-8). Households received an average of 7 resources and gave away an average of 5 resources (Table 4-7). Large land mammals were the most commonly shared resource with 81% of households receiving and 57% giving away resources. Caribou was the most used resource, and was among the resources most commonly shared with 52% of households giving away and 73% of households receiving caribou (Table 4-8). Nonsalmon fish were also frequently shared among Anaktuvuk Pass residents with 61% receiving and 60% giving away to others. One class of resources—marine mammals—was not harvested by community members but very high levels of sharing were documented (60% receiving and 27% giving away). Despite Anaktuvuk Pass being an inland community, close family and social ties to coastal Inupiat (Tareumiut) are likely the reasons for the reported sharing practices. Finally, vegetation, and berries in particular, played an important role in the sharing customs of Anaktuvuk Pass residents with 44% of community households receiving and 42% giving away berries.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

A previous study by the Division of Subsistence (Wolfe 1987) and follow-up research sponsored by the National Science Foundation in which the Division of Subsistence participated (Wolfe et al. 2010) have shown that in most Alaska Native communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 Alaska Native communities found that about 33% of the

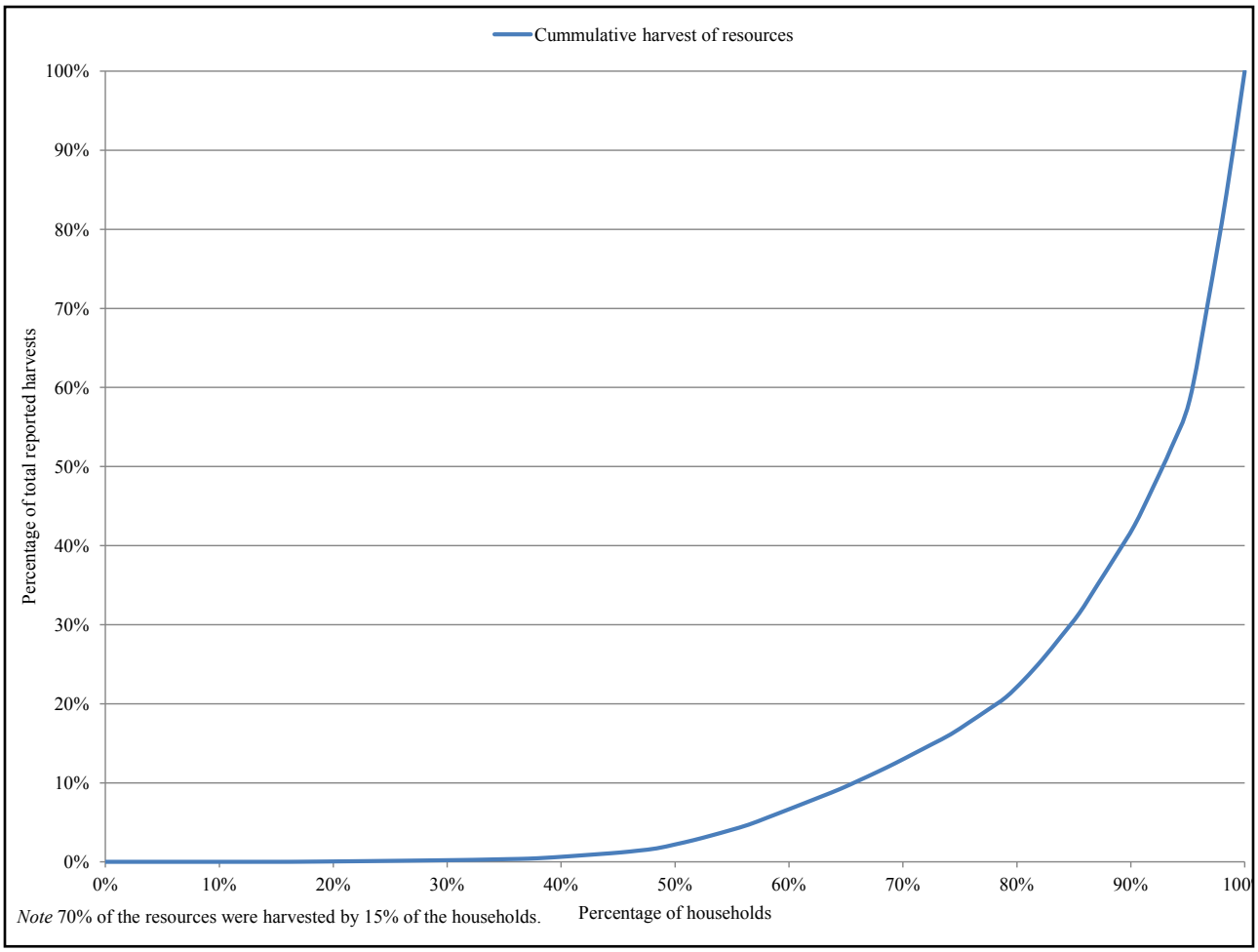


Figure 4-4.– Household specialization, Anaktuvuk Pass, 2011.

households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 4-4, in the 2011 study year in Anaktuvuk Pass, about 70% of the harvests of wild resource as estimated in usable pounds was harvested by 15% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Anaktuvuk Pass and the other study communities.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Anaktuvuk Pass residents, salmon composed 1% of the pounds of wild resources harvested in 2011 (Figure 4-3). For the entire community, this is equivalent to 622 lb. Chinook salmon represented

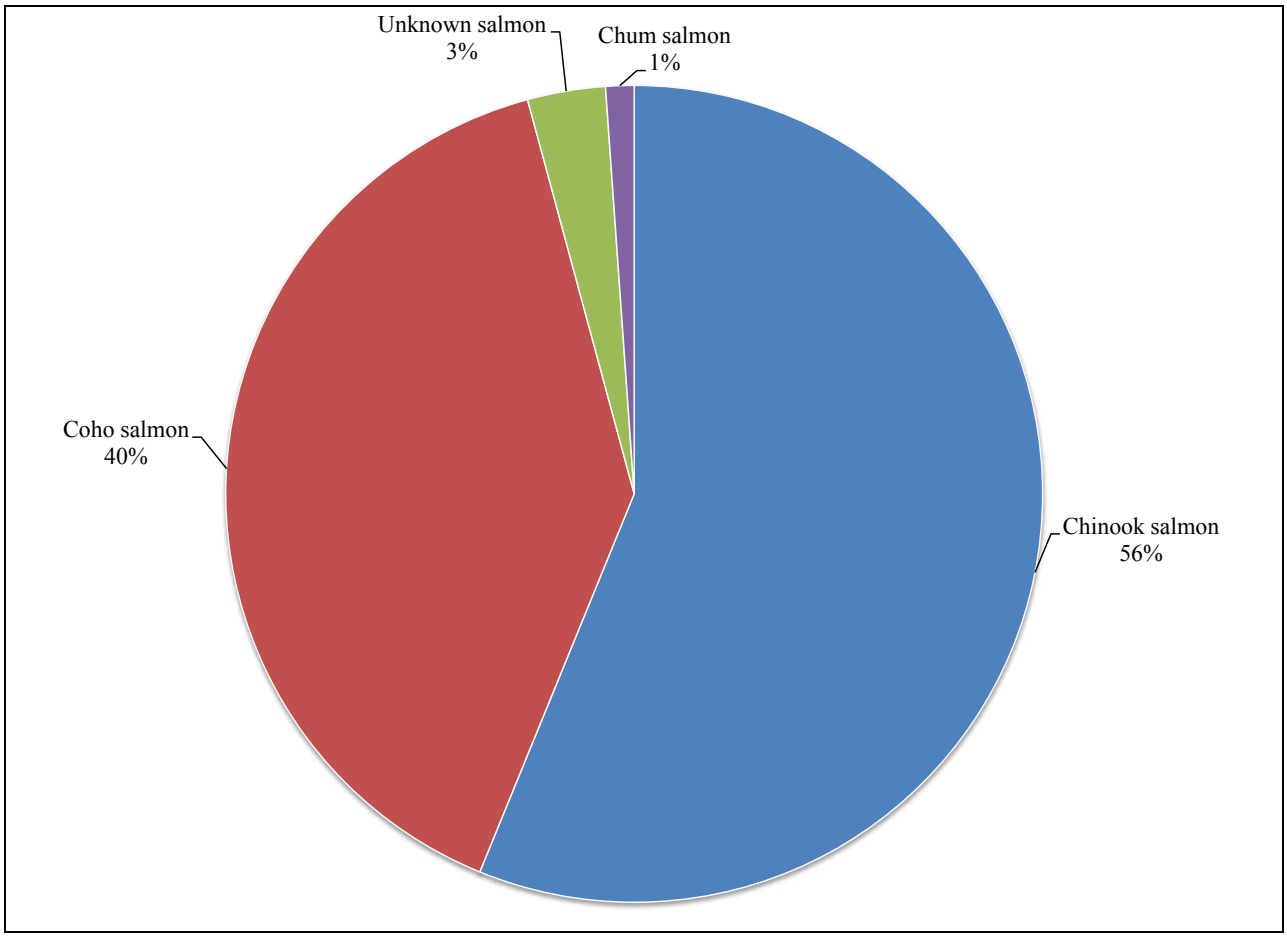


Figure 4-5.– Composition of salmon harvest, Anaktuvuk Pass, 2011.

a harvest of 349 lb (1 lb per capita) while harvests of coho salmon were reported at 247 lb total (0.8 lb per capita), and chum salmon at 7 lb, or less than 0.1 lb per capita (Table 4-8; Figure 4-5). The presence of salmon this far north is rare and residents commented that they do not expect to catch salmon when fishing; rather, a salmon harvest is completely by chance. Salmon harvested in the vicinity are typically chum salmon caught in the summer with rod and reel gear along the Anaktuvuk River (Table 4-11).

NONSALMON FISH

As noted above, in 2011 Anaktuvuk Pass residents harvested an estimated of 5,167 lb of nonsalmon fish (17 lb per capita) (Table 4-8). Figure 4-6 shows the composition of the nonsalmon fish harvest and demonstrates a diverse harvest of these resources. The largest harvests, in terms of weight, included Arctic grayling (34%), lake trout (19%), and broad whitefish (15%). Table 4-12 lists the number and pounds of each nonsalmon fish species harvested by Anaktuvuk Pass residents in 2011 in percentages by gear type. Anaktuvuk Pass residents harvested most of their nonsalmon fish by ice fishing (listed as "Subsistence Methods: Other"), with gillnet or seine, or with rod and reel gear. Most Arctic grayling, lake trout, Dolly Varden, and Arctic char were harvested through the ice or caught with rod and reel

Table 4-11. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Anaktuvuk Pass, 2011.

		Removed from commercial catch		Subsistence methods													
				Fishwheel		Gillnet or seine		Dipnet		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	3.1%	4.2%	0.0%	0.0%	31.3%	41.6%	0.0%	0.0%	0.0%	0.0%	31.3%	41.6%	65.6%	54.2%	100.0%	100.0%
	Total	3.1%	4.2%	0.0%	0.0%	31.3%	41.6%	0.0%	0.0%	0.0%	0.0%	31.3%	41.6%	65.6%	54.2%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	2.1%	1.6%	1.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	1.1%	1.6%	1.1%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	81.0%	73.1%	53.1%	39.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	53.1%	39.6%	53.1%	39.6%
Chinook salmon	Gear type	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	11.9%	19.2%	42.2%	56.2%
	Resource	7.4%	7.4%	0.0%	0.0%	74.1%	74.1%	0.0%	0.0%	0.0%	0.0%	74.1%	74.1%	18.5%	18.5%	100.0%	100.0%
	Total	3.1%	4.2%	0.0%	0.0%	31.3%	41.6%	0.0%	0.0%	0.0%	0.0%	31.3%	41.6%	7.8%	10.4%	42.2%	56.2%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	5.7%	3.1%	3.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	3.1%	3.1%	3.1%

Source ADF&G Division of Subsistence household surveys, 2012.

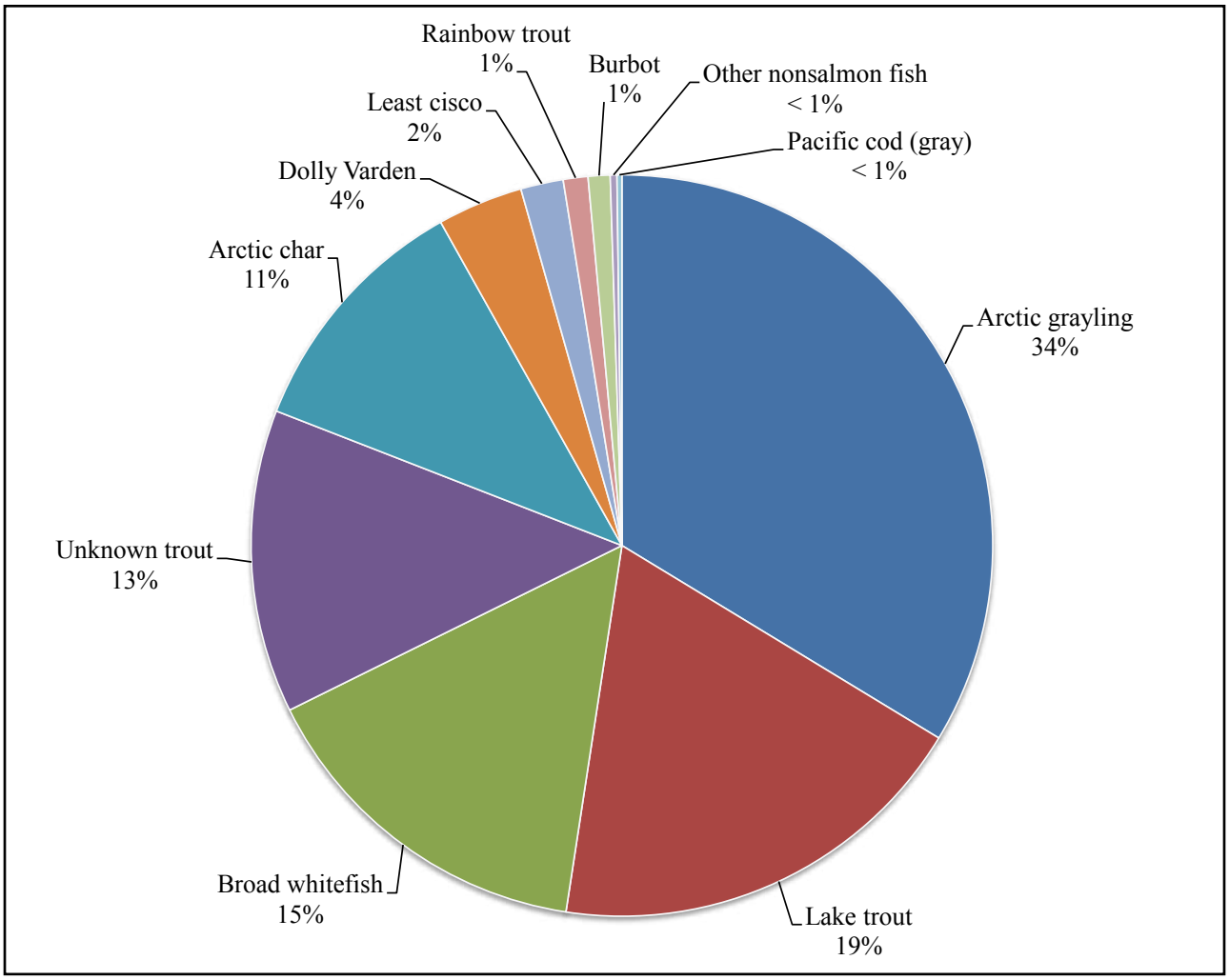


Figure 4-6.– Composition of nonsalmon fish harvest, Anaktuvuk Pass, 2011.

(Table 4-12). In contrast, whitefish species, such as broad whitefish and least cisco, were generally harvested with gillnets or seines. Arctic grayling and Arctic char species were harvested in the summer and winter, while whitefishes were harvested in late summer and early fall.

In the study year 2011, Anaktuvuk Pass residents harvested nonsalmon fish in a variety of locations in lakes and rivers in the vicinity of Anaktuvuk Pass, which are depicted in Figure 4-7. Arctic grayling, the fish most common to the Anaktuvuk Pass area, had the largest use areas, encompassing expanses along Chandler Lake and Chandler River, Anaktuvuk and John rivers, Natvakruak and Shainan lakes, and numerous creeks stemming from these rivers. Lake trout harvesting was generally concentrated around Chandler Lake and Chandler River and Natvakruak and Shainan lakes. Broad whitefish had much smaller catchment areas on the Chandler, Anaktuvuk, and John rivers. Fishing typically happened in the summer and ice fishing often occurred early in the year.

Table 4-12. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Anaktuvuk Pass, 2011.

		Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	14.7%	16.3%	26.0%	31.0%	40.7%	47.3%	59.3%	52.7%	100.0%	100.0%
	Total	0.0%	0.0%	14.7%	16.3%	26.0%	31.0%	40.7%	47.3%	59.3%	52.7%	100.0%	100.0%
Pacific cod (gray)	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.1%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Burbot	Gear type	0.0%	0.0%	0.2%	0.4%	1.4%	2.9%	1.0%	2.0%	0.0%	0.0%	0.4%	1.0%
	Resource	0.0%	0.0%	6.7%	6.7%	93.3%	93.3%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.1%	0.4%	0.9%	0.4%	1.0%	0.0%	0.0%	0.4%	1.0%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	20.1%	15.4%	12.8%	10.1%	11.4%	11.7%	12.0%	11.0%
	Resource	0.0%	0.0%	0.0%	0.0%	43.6%	43.6%	43.6%	43.6%	56.4%	56.4%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	5.2%	4.8%	5.2%	4.8%	6.8%	6.2%	12.0%	11.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	10.2%	7.8%	6.5%	5.1%	2.4%	2.5%	4.1%	3.7%
	Resource	0.0%	0.0%	0.0%	0.0%	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	2.7%	2.4%	2.7%	2.4%	1.4%	1.3%	4.1%	3.7%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	30.3%	36.1%	19.3%	23.7%	9.0%	14.3%	13.2%	18.7%
	Resource	0.0%	0.0%	0.0%	0.0%	59.7%	59.7%	59.7%	59.7%	40.3%	40.3%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	7.9%	11.2%	7.9%	11.2%	5.3%	7.5%	13.2%	18.7%
Arctic grayling	Gear type	0.0%	0.0%	37.3%	23.9%	13.1%	7.8%	21.9%	13.4%	65.0%	51.9%	47.4%	33.7%
	Resource	0.0%	0.0%	11.6%	11.6%	7.2%	7.2%	18.8%	18.8%	81.2%	81.2%	100.0%	100.0%
	Total	0.0%	0.0%	5.5%	3.9%	3.4%	2.4%	8.9%	6.3%	38.5%	27.4%	47.4%	33.7%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	2.0%	0.8%	1.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	1.1%	0.8%	1.1%
Unknown trout	Gear type	0.0%	0.0%	12.6%	16.2%	24.7%	29.4%	20.3%	24.8%	1.8%	2.8%	9.3%	13.2%
	Resource	0.0%	0.0%	20.0%	20.0%	68.8%	68.8%	88.8%	88.8%	11.2%	11.2%	100.0%	100.0%
	Total	0.0%	0.0%	1.9%	2.6%	6.4%	9.1%	8.3%	11.7%	1.0%	1.5%	9.3%	13.2%
Broad whitefish	Gear type	0.0%	0.0%	37.5%	48.1%	0.0%	0.0%	13.6%	16.6%	8.8%	14.1%	10.7%	15.3%
	Resource	0.0%	0.0%	51.3%	51.3%	0.0%	0.0%	51.3%	51.3%	48.7%	48.7%	100.0%	100.0%
	Total	0.0%	0.0%	5.5%	7.8%	0.0%	0.0%	5.5%	7.8%	5.2%	7.4%	10.7%	15.3%
Least cisco	Gear type	0.0%	0.0%	12.4%	11.4%	0.0%	0.0%	4.5%	3.9%	0.0%	0.0%	1.8%	1.9%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	1.8%	1.9%	0.0%	0.0%	1.8%	1.9%	0.0%	0.0%	1.8%	1.9%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.2%	0.5%	0.1%	0.3%	0.0%	0.0%	0.1%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.1%	0.2%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

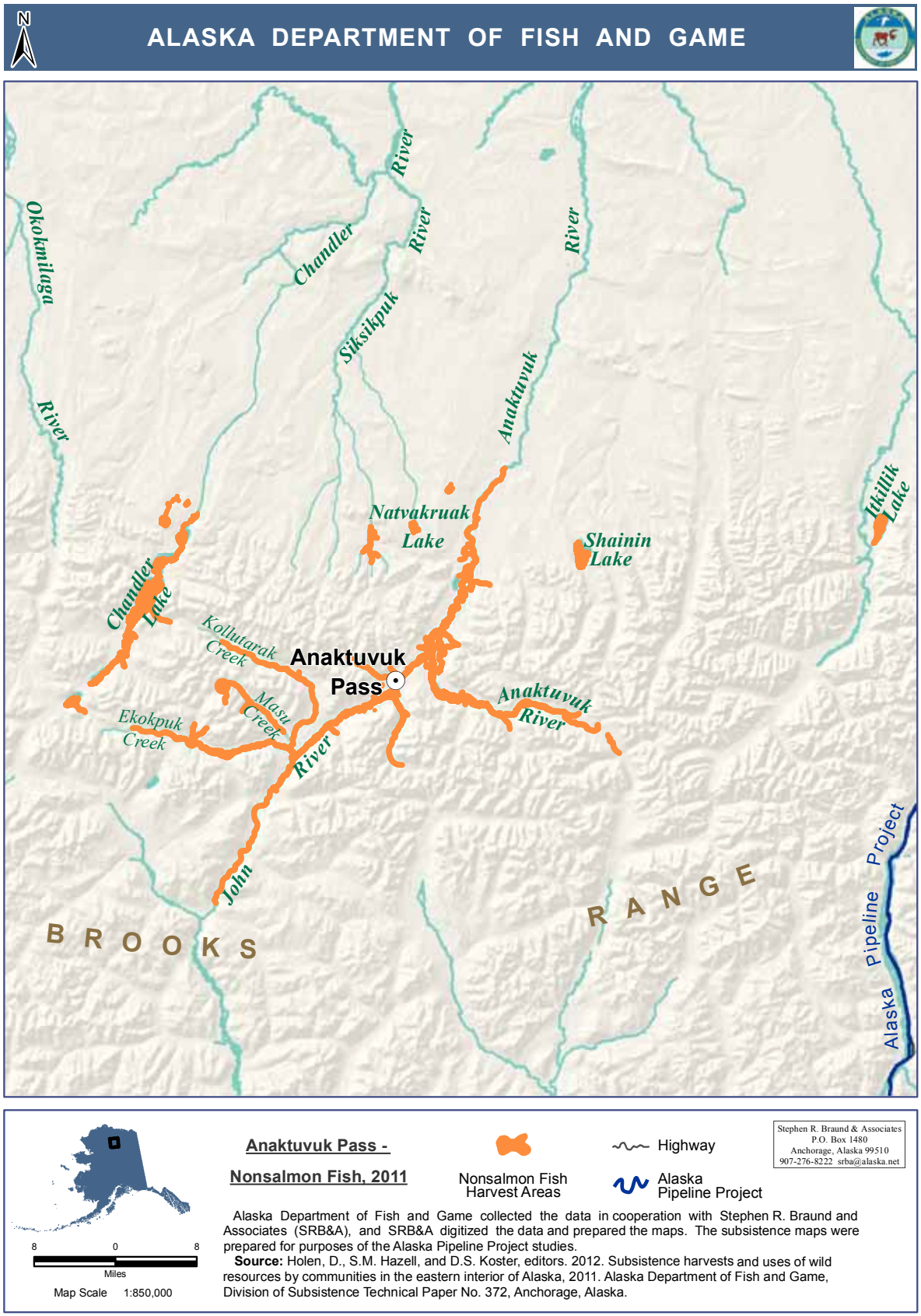


Figure 4-7.– Nonsalmon fish search and harvest areas, Anaktuvuk Pass, 2011.

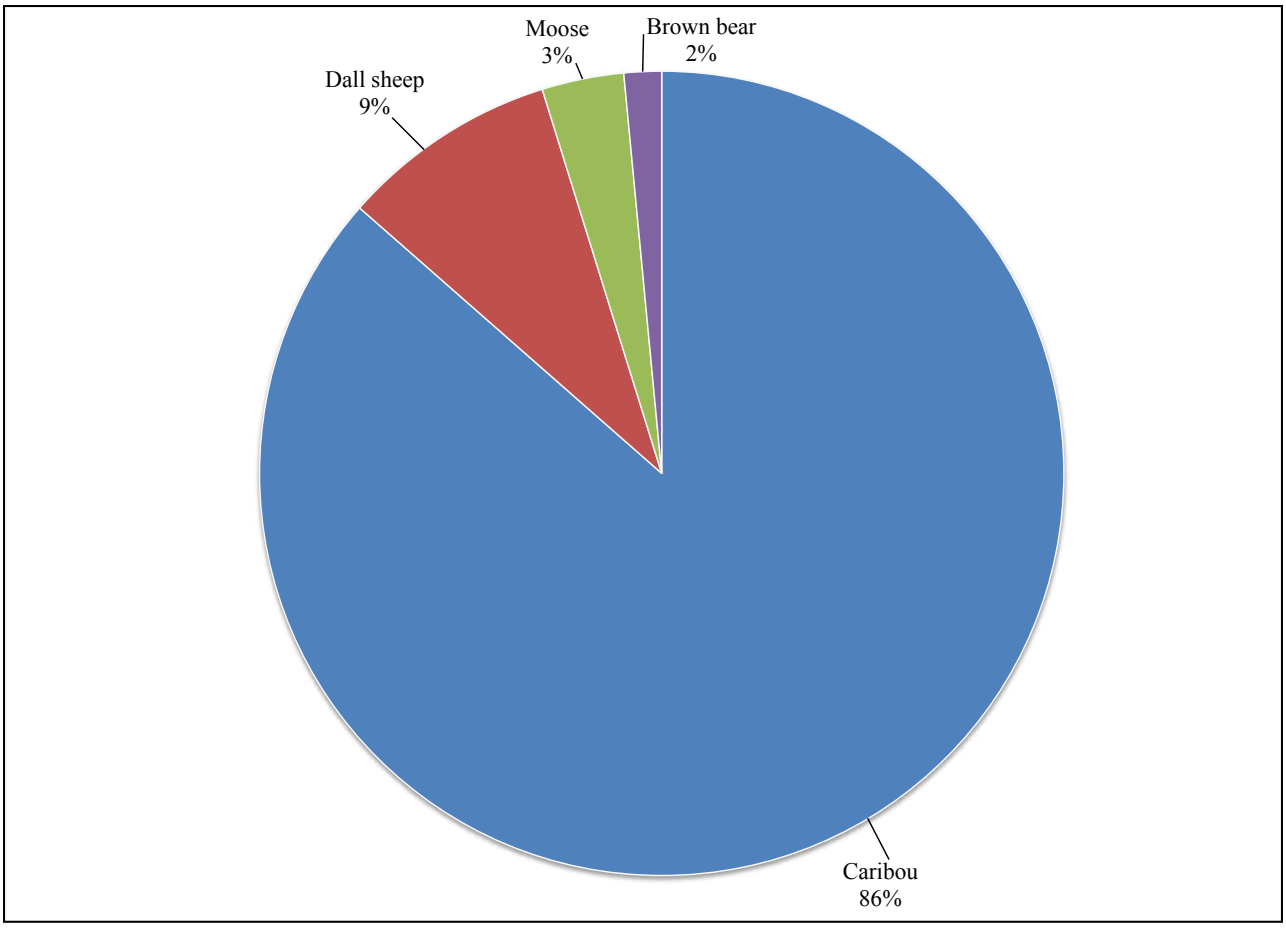


Figure 4-8.– Composition of large land mammal harvest, Anaktuvuk Pass, 2011.

LARGE LAND MAMMALS

In 2011, large land mammals made up 91% of the total Anaktuvuk Pass harvest by weight (Figure 4-3). Caribou was the most bountiful wild resource with 95% of households using caribou. As shown in Figure 4-8, caribou composed 86% of the overall large land mammal harvest. Sixty-three percent of households hunted caribou, and 53% were successful harvesters (Table 4-8). In terms of pounds harvested in 2011, caribou ranked first on the list of top 10 resources harvested and first for the resource most used (Table 4-9). Respondents reported considerable effort invested in hunting caribou and asserted that caribou hunting is essential for subsistence, but also for their way of life and their identity as a people. Caribou were mostly hunted in August and September; however, caribou were taken less commonly at other times of the year (Table 4-10). Community residents commented that caribou migration timing has become less predictable in recent years, in part they believe due to road traffic on the Dalton Highway that panics caribou causing them to travel different routes.

Dall sheep were harvested (7,842 lb) mainly during the summer or warm weather months. Dall sheep composed 9% of the overall large land mammal harvest (Figure 4-9). Residents commented that Dall sheep have become less available and hunters have to go farther to find them, which requires extra

fuel and is extremely costly. A smaller percentage of respondents reported harvests of brown bears (2% of large land mammal harvest) and moose (3% of large land mammal harvest) during summer/early fall (Figure 4-8; tables 4-8 and 4-10).

Large land mammal hunting was accomplished with the use of motorized vehicles such as trucks, Argos, ATVs, and snowmachines, depending on the time of year. In 2011, large land mammal harvest and search areas were located in the Brooks Range as far west as Chandler Lake, north along the Chandler, Siksikpuk, and Anaktuvuk rivers, east halfway to Itkillik Lake, and south to prized Dall sheep hunting grounds, but also areas near the community (figures 4-9 and 4-10).

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 4-8, the total harvest of small land mammals by Anaktuvuk Pass residents in 2011 for wild foods was 57 lb (0.2 lb per capita). The edible harvest included beavers, snowshoe hares, and porcupines. Although small, it was a diverse harvest when including animals harvested but not typically eaten. Most of the harvest was ground (parka) squirrels (148 individuals), with wolves being the second largest harvest (56 individuals), and neither species was reportedly consumed. Residents harvested these resources near the community in the Chandler Lake area, on John River, and in remote locations north of the community. Due to the small number of traplines mapped, this report does not show these locations to maintain confidentiality.

BIRDS

In 2011, the total harvest of birds by Anaktuvuk Pass residents was an estimated 432 lb, or 1 lb per capita (Table 4-8). As shown in Figure 4-3 this was less than 1% of the overall harvest. The total harvest of migratory birds was 306 lb (1 lb per capita) and upland game birds provided 126 lb (0.4 lb per capita). The most harvested migratory birds were lesser Canada geese and white-fronted geese. According to an elder interviewed for this survey, the harvested yellow-billed loons were used for ceremonial purposes. The only upland game bird species harvested was ptarmigan.

Migratory waterfowl were harvested in the vicinity of the community and along the Anaktuvuk and John rivers and south of Chandler Lake (Figure 4-11). Ptarmigan were harvested near the community and east along the Anaktuvuk River (Figure 4-12). No gathering of bird eggs took place during the study year.

VEGETATION

Vegetation made up 2% of the total harvest of wild resources in 2011 (Figure 4-3). This is represented by 2,004 lb, or 7 lb per capita. Although vegetation composes a relatively small proportion of the overall harvest of subsistence resources, blueberries were used by 82% of residents, putting them

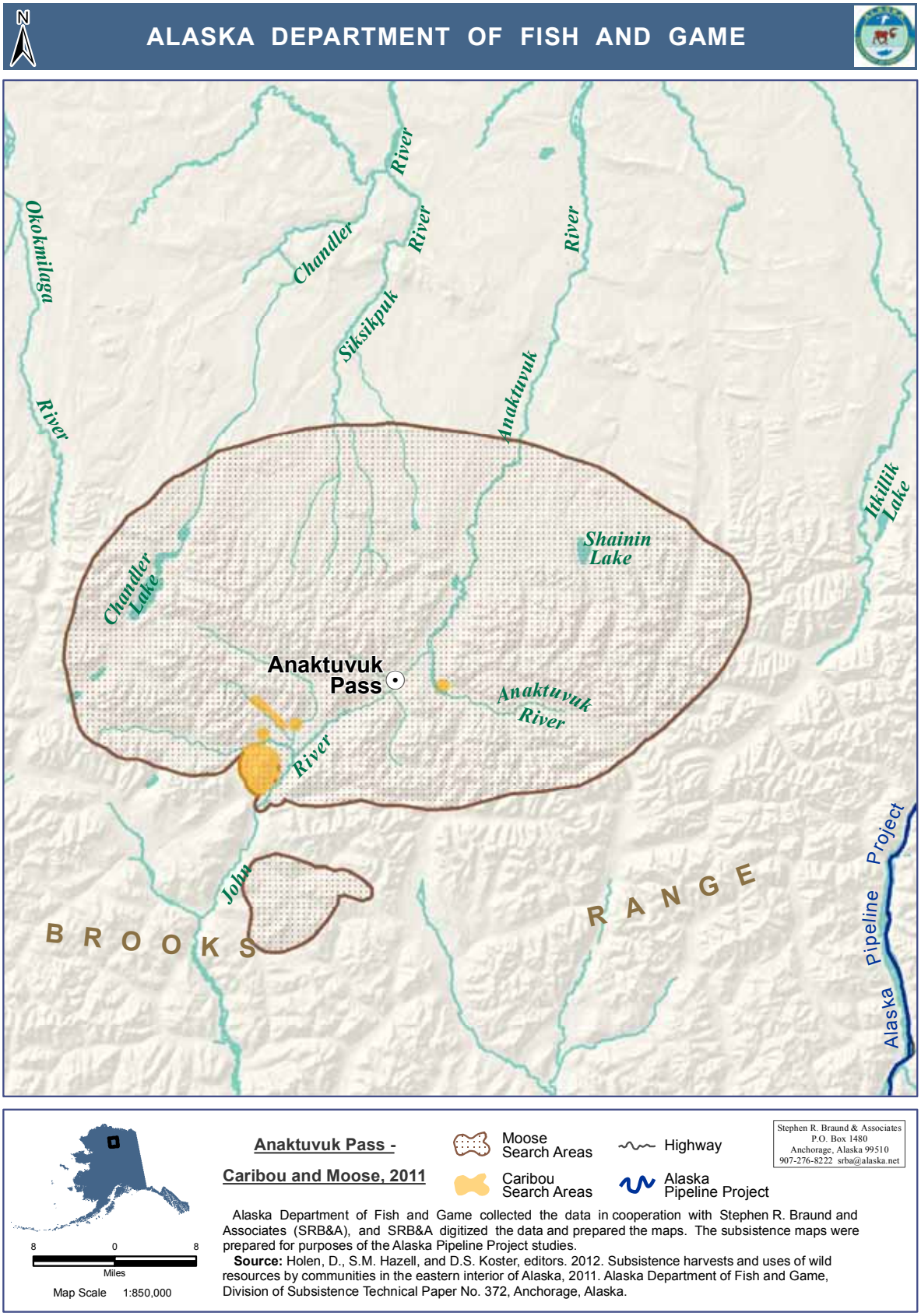


Figure 4-9.– Caribou and moose search and harvest areas, Anaktuvuk Pass, 2011.

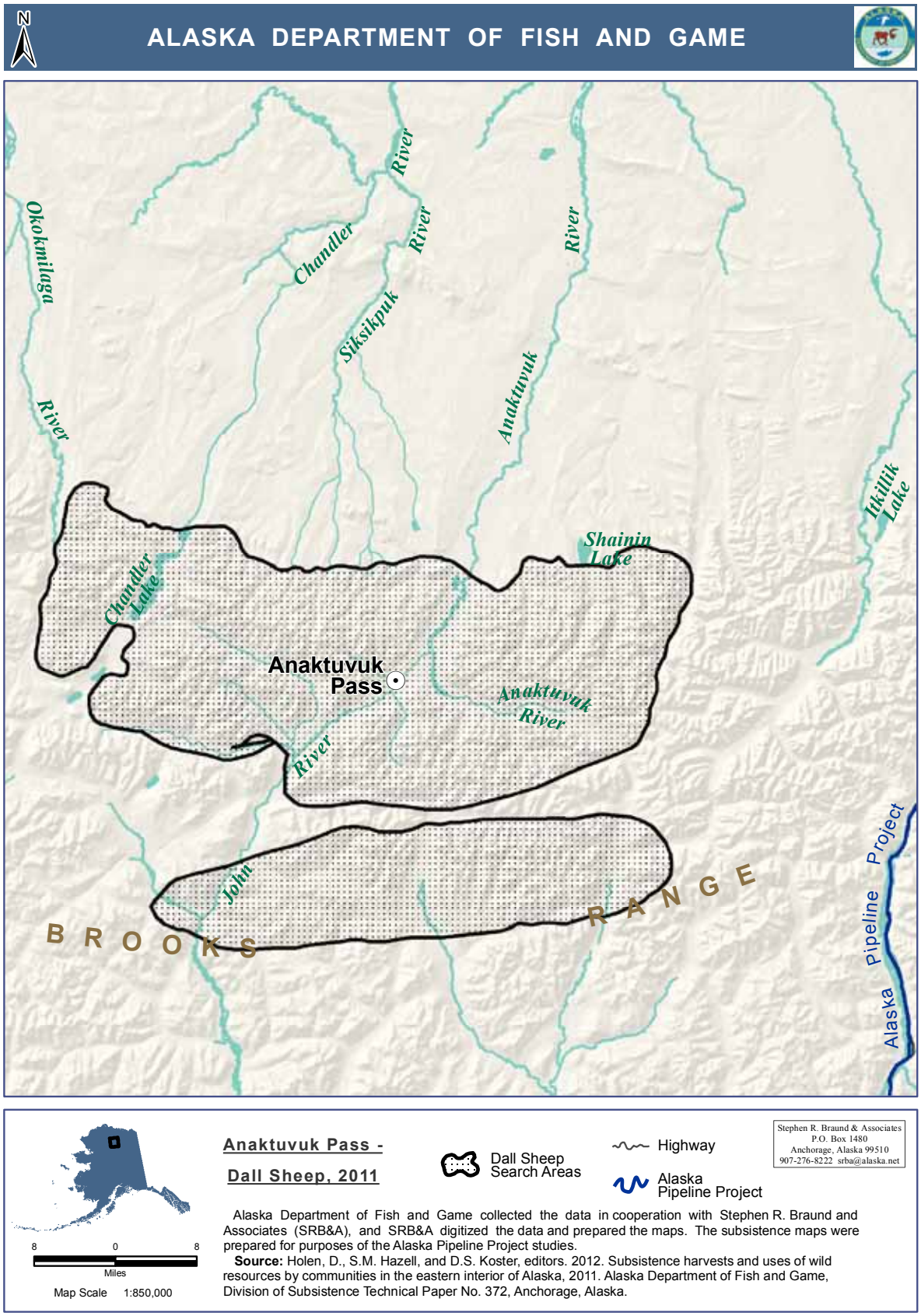


Figure 4-10.– Dall sheep search and harvest areas, Anaktuvuk Pass, 2011.

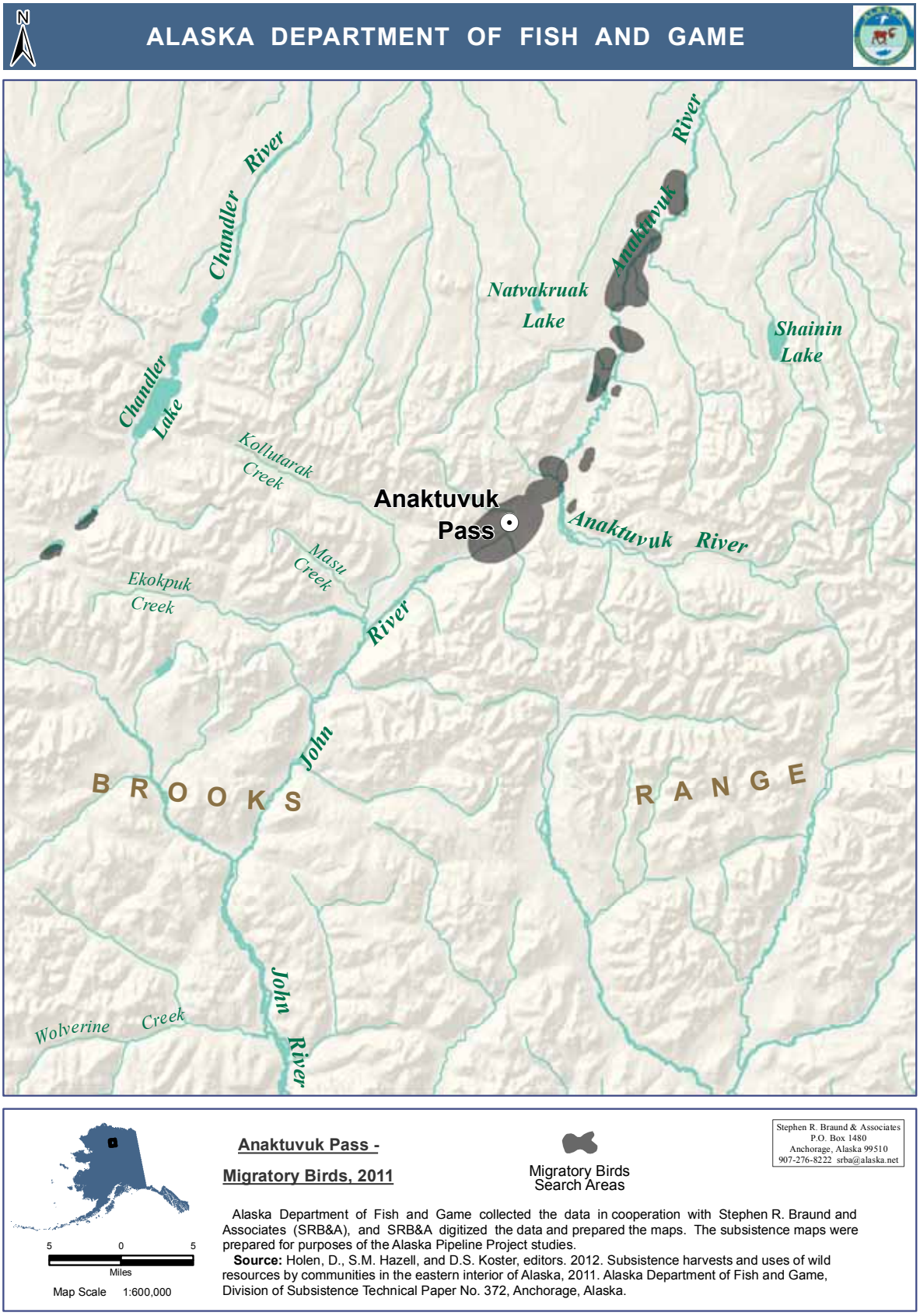


Figure 4-11.– Migratory birds search and harvest areas, Anaktuvuk Pass, 2011.

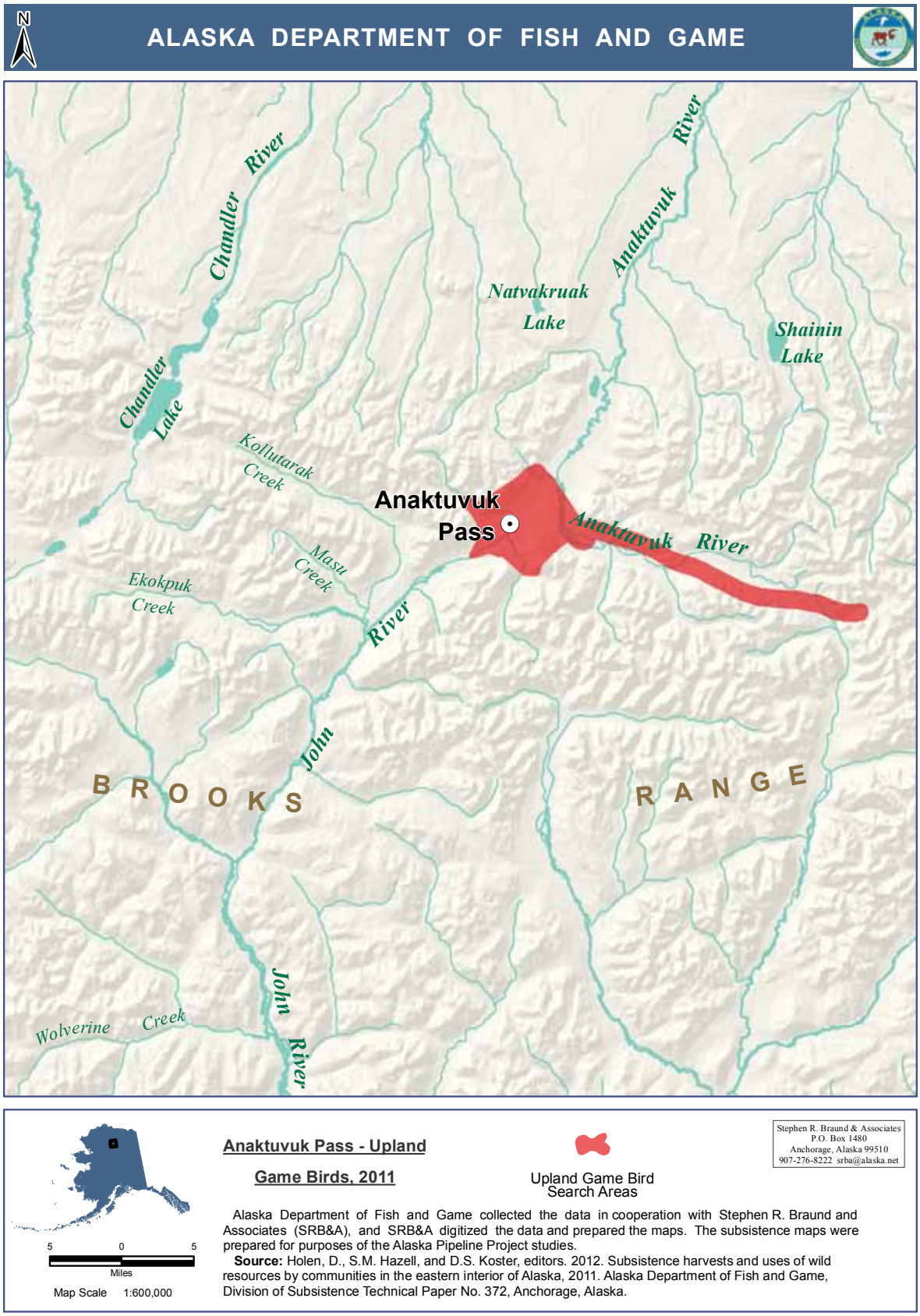


Figure 4-12.– Upland game birds search and harvest areas, Anaktuvuk Pass, 2011.

second behind caribou in the ranking for household use (Table 4-9). Furthermore, cloud berries were used by 61% of residents and lowbush cranberries were used by 60% of community households (Table 4-8). Harvest areas for berries encompass a vast area surrounding Anaktuvuk Pass that extends north past Natvakruak Lake and south on the John River (Figure 4-13). Harvest and search areas for plants and wood had more restricted ranges along the Anaktuvuk and John rivers (Figure 4-14). According to Anaktuvuk Pass respondents, people often pick berries as they search for caribou or when they are fishing.

CASH EMPLOYMENT AND MONETARY INCOME

Table 4-13 is a summary of the estimated earned income as well as other sources of income for residents of Anaktuvuk Pass in 2011. This table shows that in 2011 earned income accounted for an average of $38,639 per household, or 66% of the total community income, compared to other income sources that accounted for an average of $19,755 per household, or 34% of the total community income. In 2011, most of the jobs in Anaktuvuk Pass were with local and tribal governments (72%) and retail trade (10%) (Table 4-14). Other employment sectors providing a notable percentage of jobs during the study year were services, at 4%, and transportation, communication, and utilities, also at 4% (Table 4-14). The largest source of other income came from Alaska Native corporation dividends in 2011 (Table 4-13).

In 2011, 59% of the adults of working age (16 and over) at Anaktuvuk Pass were employed at some point during the year. Of those employed adults, 57% were employed year-round (Table 4-15). On average in 2011, employed households contained 2 employed adults, and 88% of households contained at least 1 adult who was employed. The mean number of jobs per employed households was 2. Because of the remote location of Anaktuvuk Pass, most jobs were located in the community.

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" (Nord et al. 2009:2). 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. Core questions and responses from Anaktuvuk Pass residents are summarized in Figure 4-15. In Anaktuvuk Pass, a lack of subsistence foods was the most frequently reported source of food insecurity followed by a lack of store-bought foods; 52% of Anaktuvuk Pass households said their subsistence foods did not last and 46% said that their store-bought foods did not last (Figure 4-15).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food

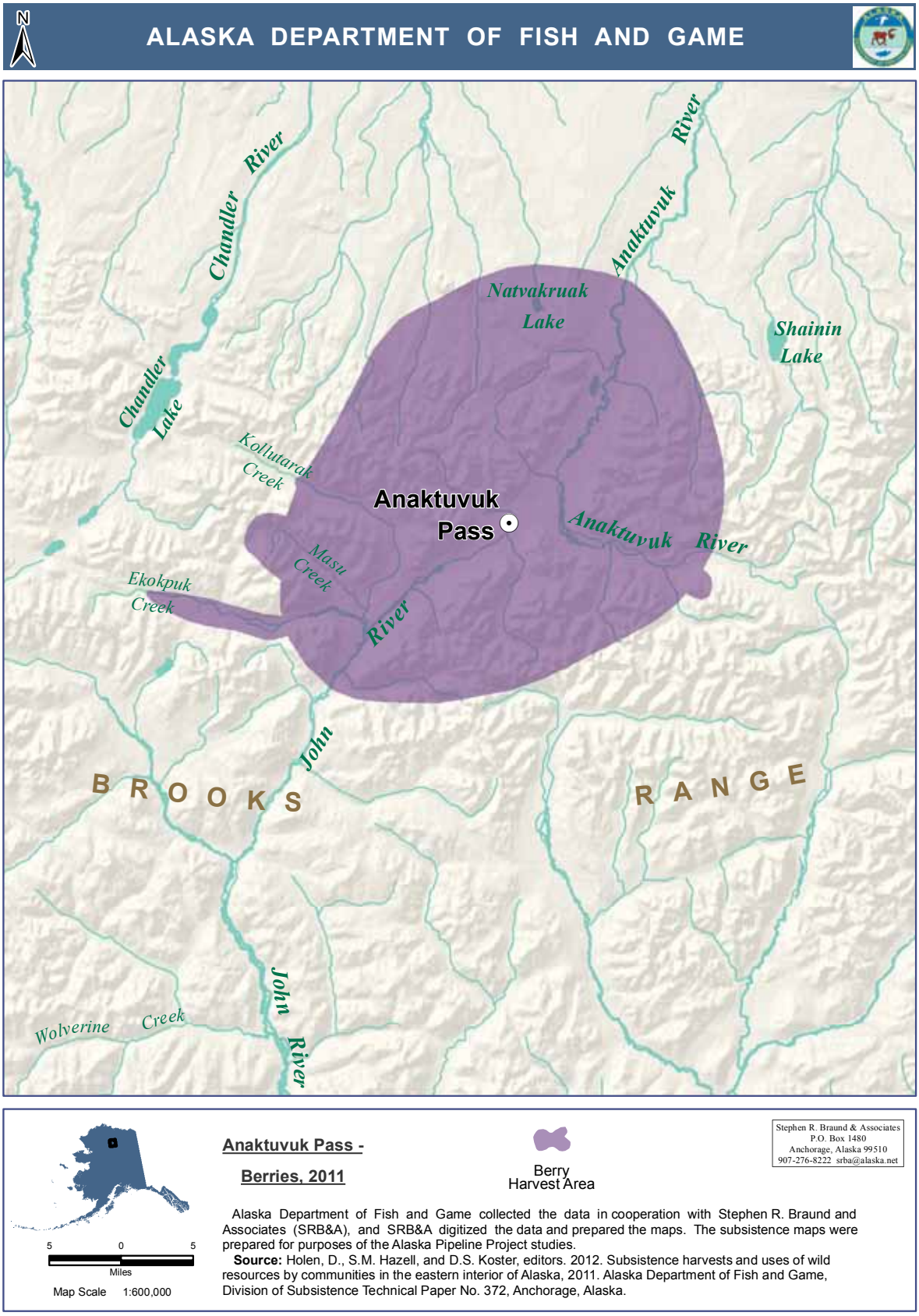


Figure 4-13.– Berries search and harvest areas, Anaktuvuk Pass, 2011.

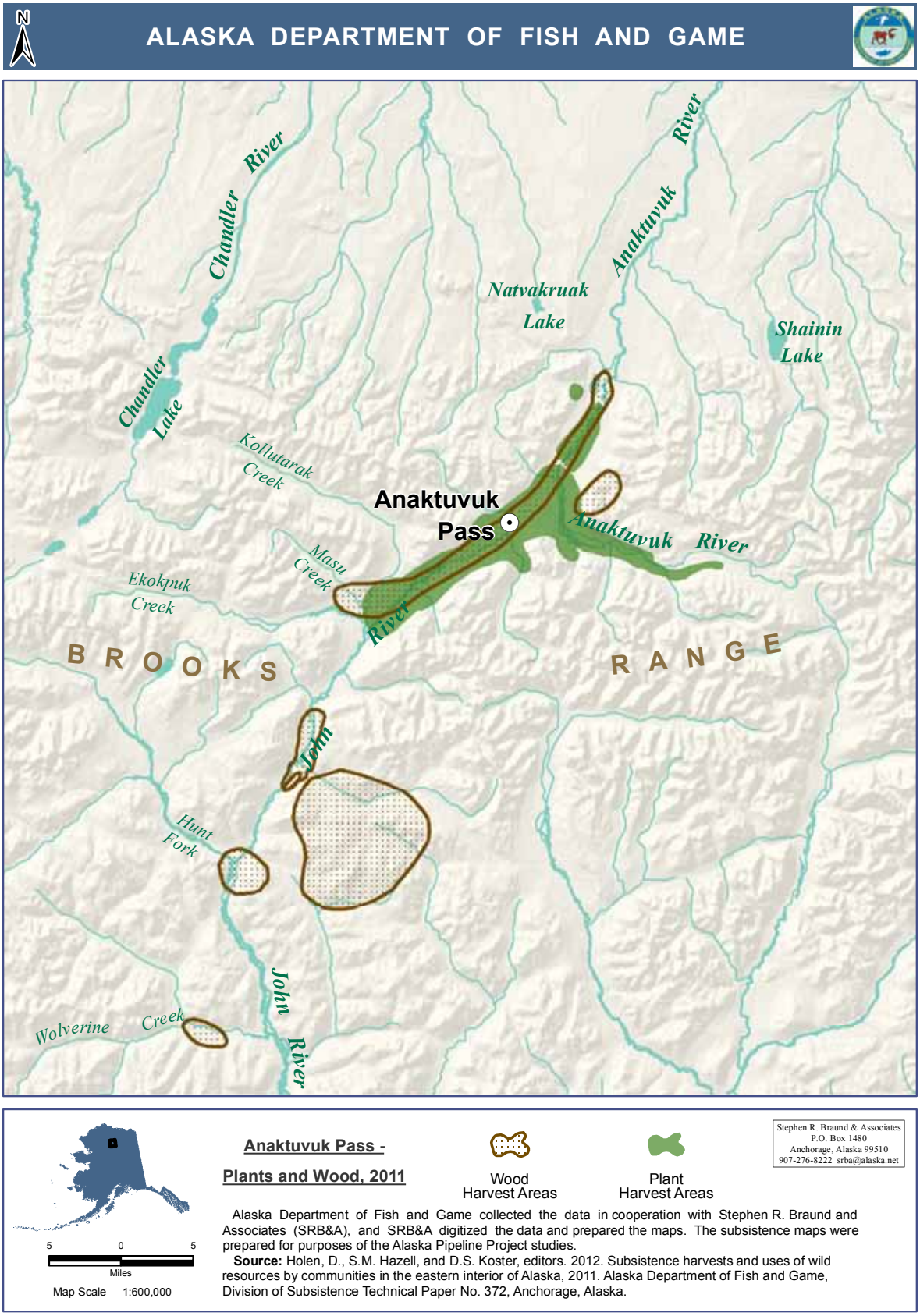


Figure 4-14.– Plants and wood search and harvest areas, Anaktuvuk Pass, 2011.

Table 4-13. – Estimated earned and other income, Anaktuvuk Pass, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Local government	80.9	61.9	$2,700,552.87	$31,771.21	$8,711.46	54.4%
Retail trade	12.3	11.5	$336,203.18	$3,955.33	$1,084.53	6.8%
Services	5.5	5.8	$87,396.25	$1,028.19	$281.92	1.8%
Federal government	1.4	1.4	$39,205.62	$461.24	$126.47	0.8%
Mining	1.4	1.4	$33,209.47	$390.70	$107.13	0.7%
Transportation, communication, and utilities	5.5	5.8	$27,231.77	$320.37	$87.84	0.5%
Agriculture, forestry, and fishing	2.7	2.9	$19,925.68	$234.42	$64.28	0.4%
Construction	1.4	1.4	$15,940.55	$187.54	$51.42	0.3%
Other employment	1.4	1.4	$13,283.79	$156.28	$42.85	0.3%
State government	2.7	2.9	$8,235.95	$96.89	$26.57	0.2%
Manufacturing	1.4	1.4	$3,112.20	$36.61	$10.04	0.1%
Earned income subtotal	**107.6**	**74.9**	**$3,284,297.34**	**$38,638.79**	**$31,845.16**	**66.2%**
Other income						
Native corporation dividend		72.7	$876,876.86	$10,316.20	$2,828.64	17.7%
Alaska Permanent Fund dividend		75.4	$282,162.98	$3,319.56	$910.20	5.7%
Social Security		15.1	$181,738.58	$2,138.10	$586.25	3.7%
Pension/retirement		6.9	$156,024.97	$1,835.59	$503.31	3.1%
Food stamps		15.1	$109,017.94	$1,282.56	$351.67	2.2%
Unemployment		13.7	$49,620.19	$583.77	$160.07	1.0%
Child support		2.7	$12,777.42	$150.32	$41.22	0.3%
Energy assistance		6.9	$6,686.78	$78.67	$21.57	0.1%
Other		2.7	$3,564.52	$41.94	$11.50	0.1%
Workers' compensation/insurance		2.7	$417.92	$4.92	$1.35	0.0%
Sale of personal property		1.4	$274.19	$3.23	$0.88	0.0%
Adult public assistance		0.0	$0.00	$0.00	$0.00	0.0%
Supplemental Security income		1.4	$0.00	$0.00	$0.00	0.0%
Longevity bonus		0.0	$0.00	$0.00	$0.00	0.0%
Foster care		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**79.5**	**$1,679,162.37**	**$19,754.85**	**$5,416.65**	**33.8%**
Community income total			**$4,963,459.70**	**$58,393.64**	**$37,261.81**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Anaktuvuk Pass, the state of Alaska, and the United States are summarized in Figure 4-16. In Anaktuvuk Pass in 2011, 63% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 19% had low food security and 18% had very low food security. Anaktuvuk Pass households had significantly lower levels of food security and higher levels of food insecurity than surveyed households in Alaska as well as the United States as a whole (Nord et al. 2009:21).

Figure 4-17 portrays the mean number of food insecure conditions per household by food security

Table 4-14. – Employment by industry, Anaktuvuk Pass, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**130.5**	**74.9**	**109.0**	
Federal government (total)	**1.1%**	**1.9%**	**1.3%**	**1.2%**
Administrative support occupations, including clerical	1.1%	1.9%	1.3%	1.2%
State government (total)	**2.2%**	**3.8%**	**2.6%**	**0.3%**
Teachers, librarians, and counselors	1.1%	1.9%	1.3%	0.0%
Transportation and material moving occupations	1.1%	1.9%	1.3%	0.2%
Local government, including tribal (total)	**71.7%**	**82.7%**	**77.6%**	**82.2%**
Executive, administrative, and managerial	1.1%	1.9%	1.3%	0.1%
Social scientists, social workers, religious workers, and lawyers	1.1%	1.9%	1.3%	0.6%
Teachers, librarians, and counselors	12.0%	15.4%	13.2%	20.7%
Writers, artists, entertainers, and athletes	1.1%	1.9%	1.3%	0.2%
Marketing and sales occupations	1.1%	1.9%	1.3%	0.8%
Administrative support occupations, including clerical	13.0%	23.1%	15.8%	11.3%
Service occupations	16.3%	21.2%	19.7%	20.9%
Mechanics and repairers	1.1%	1.9%	1.3%	0.2%
Construction and extractive occupations	2.2%	3.8%	2.6%	3.1%
Precision production occupations	8.7%	13.5%	10.5%	12.6%
Transportation and material moving occupations	5.4%	9.6%	6.6%	7.2%
Handlers, equipment cleaners, helpers, and laborers	3.3%	5.8%	3.9%	0.9%
Miscellaneous occupations	2.2%	3.8%	2.6%	3.1%
Occupation not indicated	3.3%	5.8%	3.9%	0.6%
Agriculture, forestry, and fishing (total)	**2.2%**	**3.8%**	**2.6%**	**0.6%**
Agricultural, forestry, and fishing occupations	2.2%	3.8%	2.6%	0.6%
Mining (total)	**1.1%**	**1.9%**	**1.3%**	**1.0%**
Construction and extractive occupations	1.1%	1.9%	1.3%	1.0%
Construction (total)	**1.1%**	**1.9%**	**1.3%**	**0.5%**
Handlers, equipment cleaners, helpers, and laborers	1.1%	1.9%	1.3%	0.5%
Manufacturing (total)	**1.1%**	**1.9%**	**1.3%**	**0.1%**
Writers, artists, entertainers, and athletes	1.1%	1.9%	1.3%	0.1%
Transportation, communication, and utilities (total)	**4.3%**	**7.7%**	**5.3%**	**0.8%**
Technologists and technicians, except health	1.1%	1.9%	1.3%	0.1%
Administrative support occupations, including clerical	1.1%	1.9%	1.3%	0.5%
Transportation and material moving occupations	1.1%	1.9%	1.3%	0.1%
Handlers, equipment cleaners, helpers, and laborers	1.1%	1.9%	1.3%	0.1%
Retail Trade (total)	**9.8%**	**15.4%**	**11.8%**	**10.2%**
Executive, administrative, and managerial	3.3%	5.8%	3.9%	6.7%
Marketing and sales occupations	3.3%	5.8%	3.9%	0.7%
Administrative support occupations, including clerical	1.1%	1.9%	1.3%	0.4%
Service occupations	2.2%	3.8%	2.6%	2.4%
Services (total)	**4.3%**	**7.7%**	**5.3%**	**2.7%**
Writers, artists, entertainers, and athletes	1.1%	1.9%	1.3%	0.5%
Service occupations	3.3%	5.8%	3.9%	2.2%
Industry not indicated (total)	**1.1%**	**1.9%**	**1.3%**	**0.4%**
Service occupations	1.1%	1.9%	1.3%	0.4%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 4-15. – Employment characteristics, Anaktuvuk Pass, 2011.

Characteristic	Community Anaktuvuk Pass
All adults	
Number	183.7
Mean weeks employed	23.7
Employed adults	
Number	109.0
Percentage	59.3%
Jobs	
Number	130.5
Mean	1.2
Minimum	1.0
Maximum	4.0
Months employed	
Mean	9.2
Minimum	0.0
Maximum	12.0
Percentage employed year-round	56.6%
Mean weeks employed	40.0
Households	
Number	85.0
Employed	
Number	74.9
Percentage	88.1%
Jobs per employed household	
Mean	1.5
Minimum	1.0
Maximum	6.0
Employed adults	
Mean	
Employed households	1.5
Total households	1.3
Minimum	1.0
Maximum	4.0
Mean person-weeks of employment	41.3

Source ADF&G Division of Subsistence household surveys, 2012.

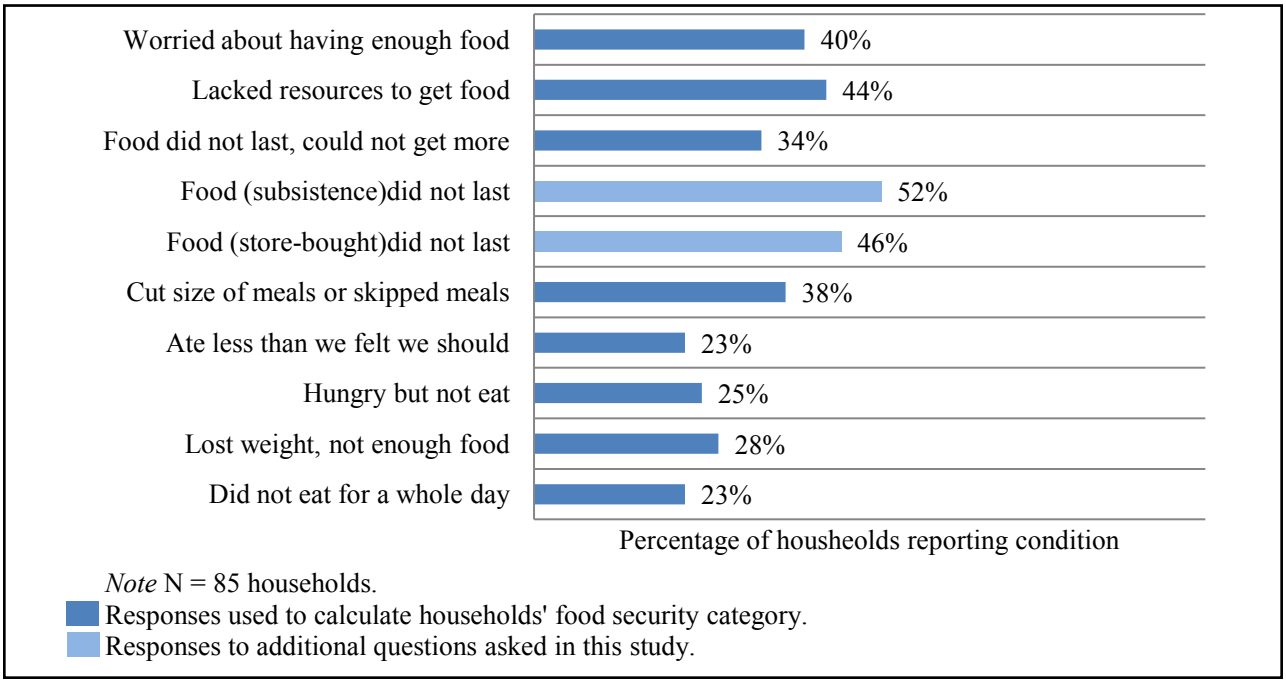


Figure 4-15.– Food insecure conditions, Anaktuvuk Pass, 2011.

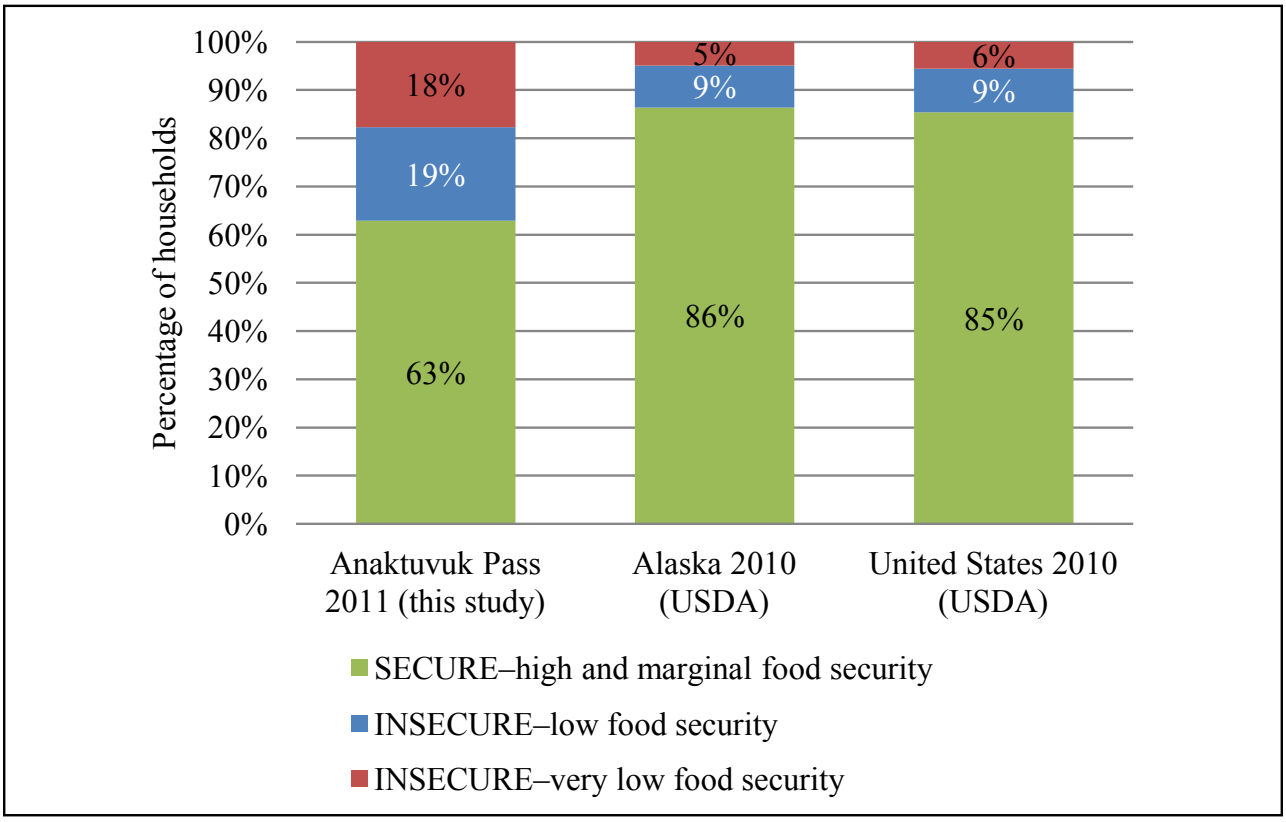


Figure 4-16.– Food insecure categories, Anaktuvuk Pass, 2011.

category by month. For households with very low food security, food insecurity conditions peaked in January and February. Figure 4-18 shows that depending upon the month, between 7% and 24% of households reported subsistence foods did not last. Store-bought foods were also reported as not lasting throughout the year, particularly in December (23%) and January (24%) (Figure 4-18).

Late winter and early spring in the interior is often a time of food insecurity. This is a period of time when it is difficult to hunt and ice fishing is difficult or not possible. As shown in Figure 4-17, households in both the low food security and very low food security categories exhibited the highest levels of food insecure conditions from June through August and again in December through February. Fall in general has been more food secure than other months because of large land mammal hunting. April and May food security conditions are associated with fishing and birding activities.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 4-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 4-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 4-19 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (62 households), and therefore differ from those reported in Table 4-16.

Nearly one-half (48%) of the Anaktuvuk Pass respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 34% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 18% said their overall harvests and uses were higher (Table 4-16). As depicted in Figure 4-19, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households.

For large land mammals, 48% of all interviewed households (Figure 4-19), and 52% of all those who provided an assessment (Table 4-16), indicated less use, while 31% of all households and 33% of those providing assessments indicated the same levels of use in 2011 than in previous years. Anaktuvuk Pass households indicated that they used less nonsalmon fish (34% of all households, 38% of those providing assessment), vegetation (27% of all households, 31% of those providing assessment),

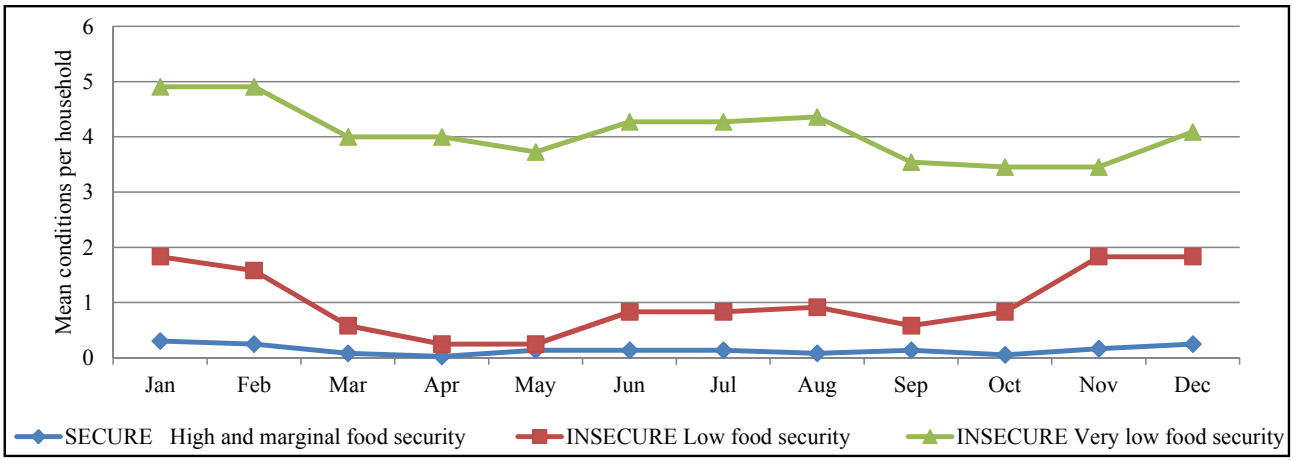


Figure 4-17.– Mean number of food insecure conditions for each month food was reported not to have lasted, Anaktuvuk Pass, 2011.

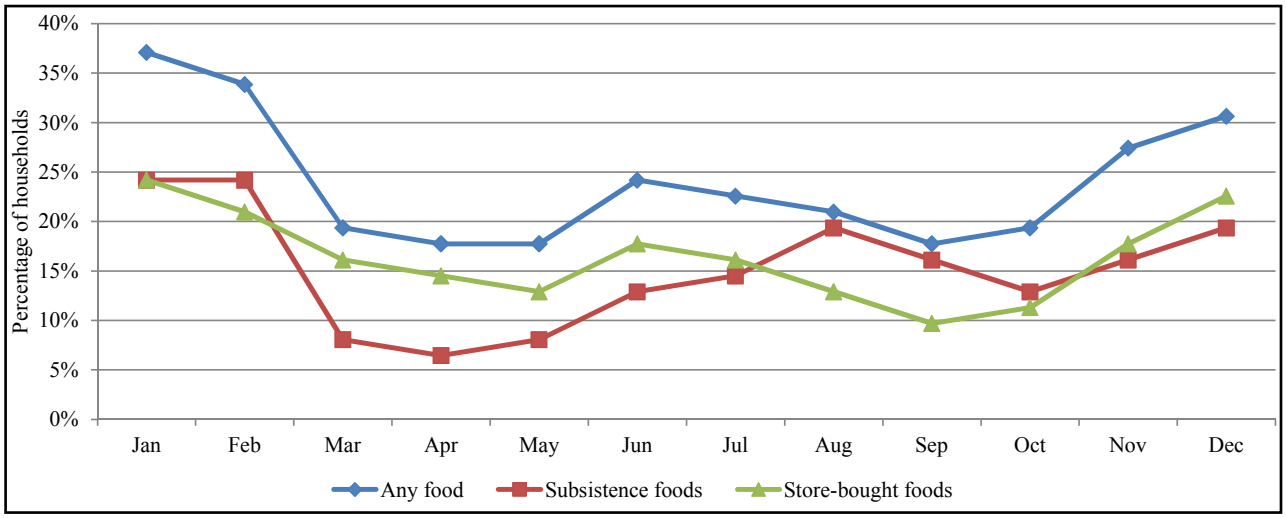


Figure 4-18.– Comparison of months where foods did not last, Anaktuvuk Pass, 2011.

Table 4-16. – Changes in household uses of resources compared to recent years, Anaktuvuk Pass, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	62	62	48	77%	46	74%	32	52%
All resources	62	62	30	48%	21	34%	11	18%
Salmon	62	27	12	44%	8	30%	7	26%
Nonsalmon fish	62	55	21	38%	16	29%	18	33%
Large game	62	58	30	52%	19	33%	9	16%
Small game	62	15	6	40%	7	47%	2	13%
Marine mammals	62	39	6	15%	22	56%	11	28%
Migratory waterfowl	62	26	13	50%	10	38%	3	12%
Other birds	62	21	11	52%	9	43%	1	5%
Bird eggs	62	1	0	0%	1	100%	0	0%
Marine invertebrates	62	1	0	0%	1	100%	0	0%
Vegetation	62	55	17	31%	21	38%	17	31%

Source ADF&G Division of Subsistence household surveys, 2011.

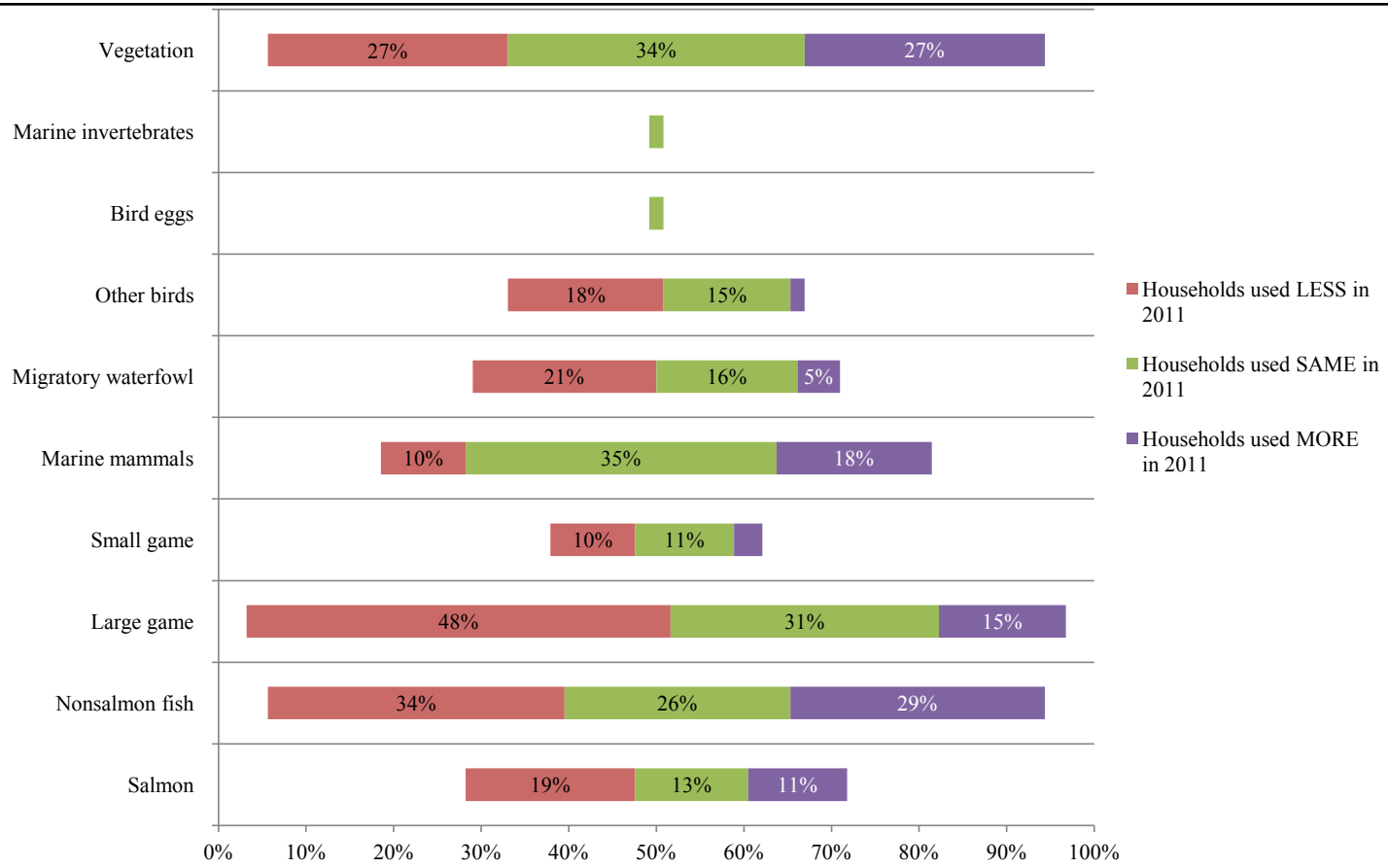
a. Valid responses do not include households that did not provide any response and households reporting never use.

migratory waterfowl (21% of all households, 50% of those providing assessments), and salmon (19% of all households, 44% of those providing assessment) in 2011 than in recent years.

In comparison, a smaller amount of households reported using more resources than recent years, including vegetation (27% of all households, 31% of those providing assessment), migratory waterfowl (5% of all households, 12% of those providing assessment), marine mammals (18% of all households, 28% of those providing assessment), large land mammals (15% of households, 16% of those providing assessment), nonsalmon fish (29% of all households, 33% of those providing assessment), and salmon (11% of all households, 26% of those providing assessment).

Table 4-17 depicts the reasons Anaktuvuk Pass respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reason most cited for less use of wild resources overall was resources being less available, followed by: family/personal circumstances, working/no time, lack of effort, less sharing, and expenses for equipment/fuel. Lack of effort was the most cited explanation for less use of the resource categories of nonsalmon fish, small game, and migratory waterfowl. Less sharing was given as the only reason cited for less use of marine mammals, but less sharing was also indicated as a reason for less use of salmon, migratory waterfowl, large game, nonslamon fish, and vegetation.



Note Percentages are based on the total number of households in the community (N = 62 households). Unlabeled percentages are less than 5%.

Figure 4-19.– Changes in household uses of resources compared to recent years, Anaktuvuk Pass, 2011.

Table 4-17. – Reasons for less household uses of resources compared to recent years, Anaktuvuk Pass, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	62	46	9	19.6%	19	41.3%	4	8.7%	3	6.5%	16	34.8%	19	41.3%	5	10.9%	5	10.9%
All resources	62	28	7	25.0%	12	42.9%	1	3.6%	0	0.0%	3	10.7%	4	14.3%	1	3.6%	0	0.0%
Salmon	27	11	0	0.0%	2	18.2%	0	0.0%	0	0.0%	5	45.5%	2	18.2%	2	18.2%	0	0.0%
Nonsalmon fish	55	20	1	5.0%	5	25.0%	1	5.0%	1	5.0%	2	10.0%	6	30.0%	0	0.0%	2	10.0%
Large game	58	30	3	10.0%	11	36.7%	2	6.7%	1	3.3%	4	13.3%	6	20.0%	0	0.0%	0	0.0%
Small game	15	6	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	3	50.0%	0	0.0%	0	0.0%
Marine mammals	39	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	26	12	0	0.0%	2	16.7%	0	0.0%	0	0.0%	4	33.3%	5	41.7%	1	8.3%	1	8.3%
Other birds	21	10	0	0.0%	3	30.0%	1	10.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	55	17	1	5.9%	3	17.6%	0	0.0%	0	0.0%	1	5.9%	6	35.3%	1	5.9%	2	11.8%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 4-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	62	46	3	6.5%	9	19.6%	3	6.5%	1	2.2%	2	4.3%	5	10.9%	4	8.7%	2	4.3%
All resources	62	28	0	0.0%	6	21.4%	0	0.0%	0	0.0%	1	3.6%	0	0.0%	3	10.7%	0	0.0%
Salmon	27	11	0	0.0%	0	0.0%	2	18.2%	0	0.0%	0	0.0%	0	0.0%	1	9.1%	0	0.0%
Nonsalmon fish	55	20	0	0.0%	2	10.0%	0	0.0%	0	0.0%	1	5.0%	0	0.0%	1	5.0%	0	0.0%
Large game	58	30	1	3.3%	3	10.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.3%	1	3.3%
Small game	15	6	1	16.7%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	1	16.7%	0	0.0%	0	0.0%
Marine mammals	39	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%
Migratory waterfowl	26	12	1	8.3%	1	8.3%	1	8.3%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%
Other birds	21	10	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	40.0%	0	0.0%	1	10.0%
Bird eggs	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	55	17	0	0.0%	4	23.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	11.8%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

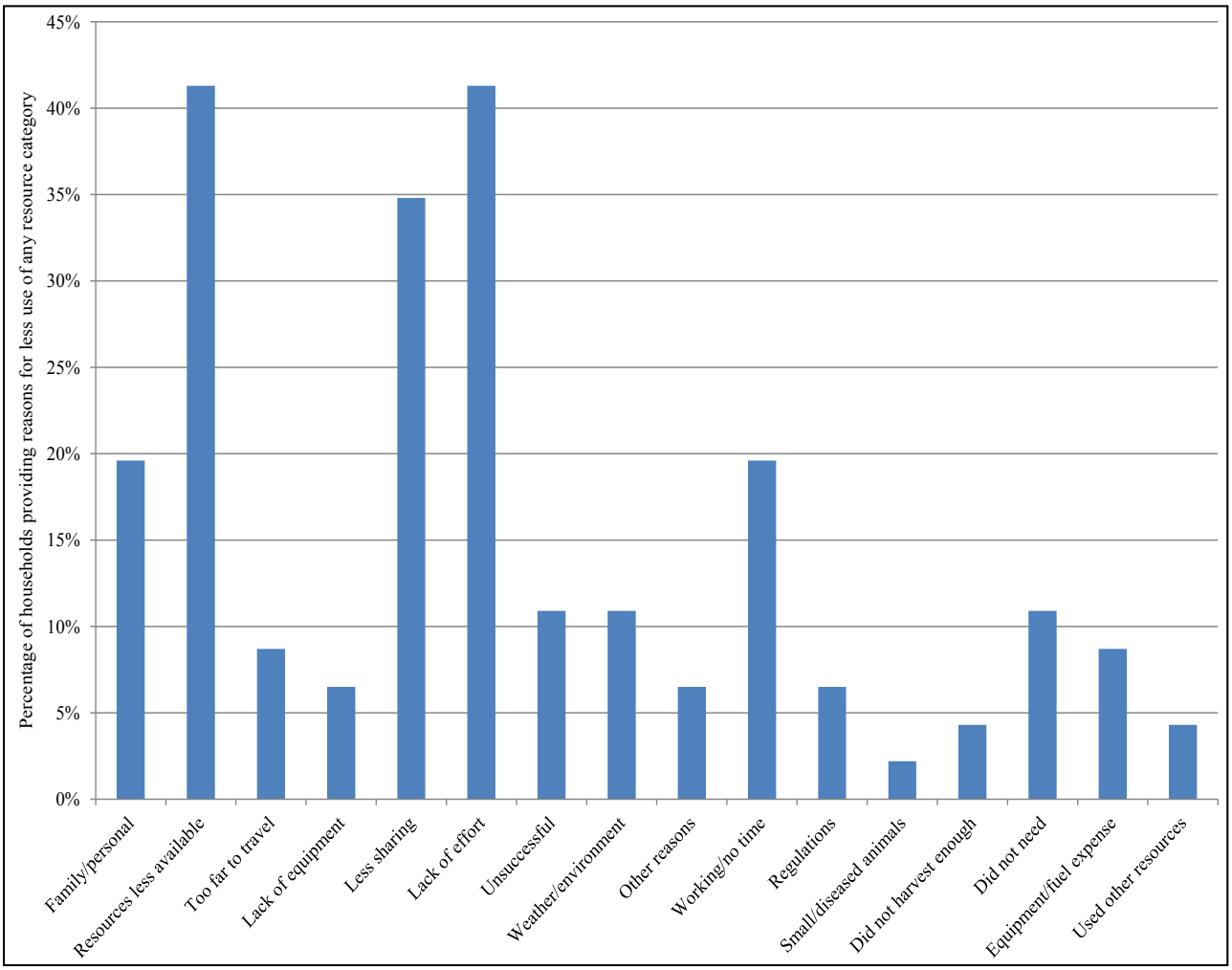


Figure 4-20.– Reasons for less household uses of any resource compared to recent years, Anaktuvuk Pass, 2011.

Overall, 77% of Anaktuvuk Pass households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 52% said that their uses of at least one category had increased (Table 4-16). Resources being less available and lack of effort were the most frequently cited reasons for lower use of any resource category in 2011 (41% of all Anaktuvuk Pass households who reported a reason for less use) followed by: less sharing (35%); family or personal reasons and working/no time (20%); unsuccessful hunting effort, weather/environment, and did not need the resource (11%); too far to travel and expenses for fuel/equipment (9%); lack of equipment, other reasons, and regulations (7%); did not get enough and used other resources (4%); and small/diseased animals (2%) (Figure 4-20).

Changes in the resource harvest by Anaktuvuk Pass residents can also be discerned through comparisons with findings from other study years. Summary results for some comparison studies are published online at the CSIS website; historical information about caribou harvests is available for Anaktuvuk Pass for 1990, 1991, 1993, and 2006. Additional caribou harvest data are available

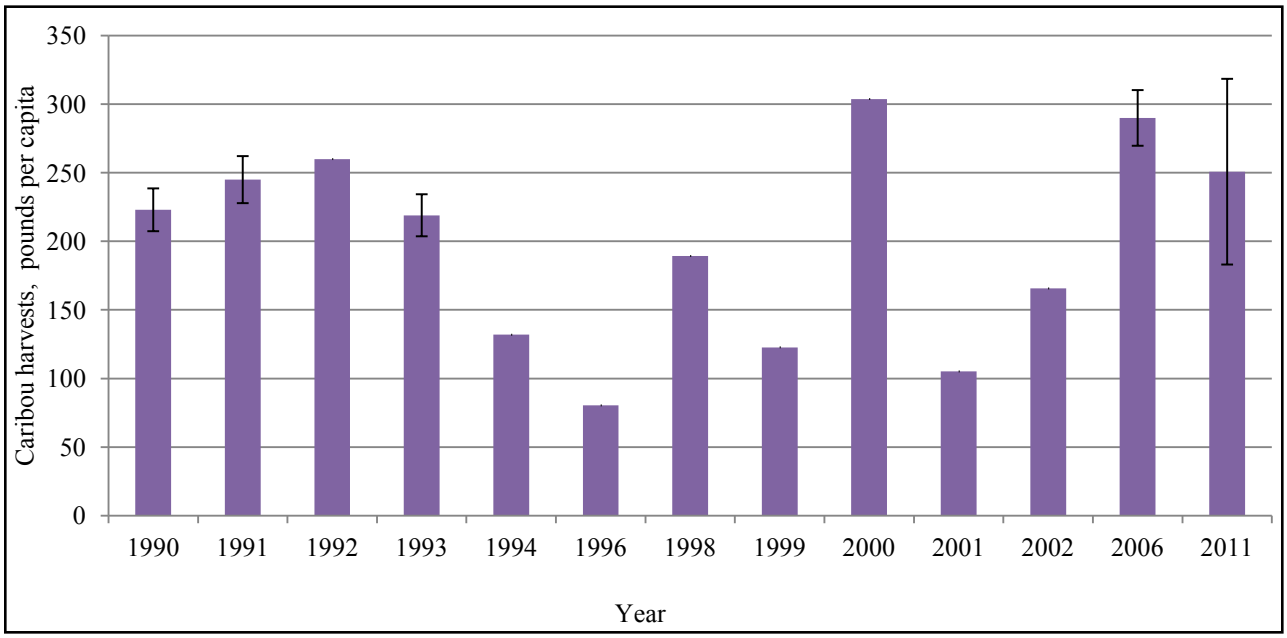


Figure 4-21.– Historical caribou harvests, Anaktuvuk Pass, 1990–1994, 1996, 1998–2002, 2006, and 2011.

for 1992, 1994, 1996, and 1998–2002 (Fuller and George 1997 [reprint 1999]; H. K. Brower Jr. and Opie 1996; Bacon et al. 2009). When comparing these harvest data with survey results from 2011, caribou harvests appear to be relatively stable over time, with the exception of 2006 (Figure 4-21). Typical harvests are between 200 and 250 lb per capita. The caribou harvest in 2006 was exceptional for reasons currently unknown. The average of the years combined is 246 lb per capita. Overall, this comparison demonstrates the enduring significance that caribou have for the people of Anaktuvuk Pass.

Published data collected by the North Slope Borough Department of Wildlife Management between 1992 and 2003 can also be used to identify general patterns when comparing resources at the categorical level (e.g., salmon, large land mammals, etc.) (Fuller and George 1997 [reprint 1999]; Bacon et al. 2009). The study year 2000–2001 was an uncommonly good year for the harvest of both large land mammals and nonsalmon fish for reasons currently unknown. When comparing resource categories together according to pounds per capita, the 2000–2001 survey remains the highest recorded harvest; however, the 2011 study year ranks second in terms of harvest per capita in the past 20 years (Figure 4-22).

LOCAL CONCERNS REGARDING RESOURCES

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

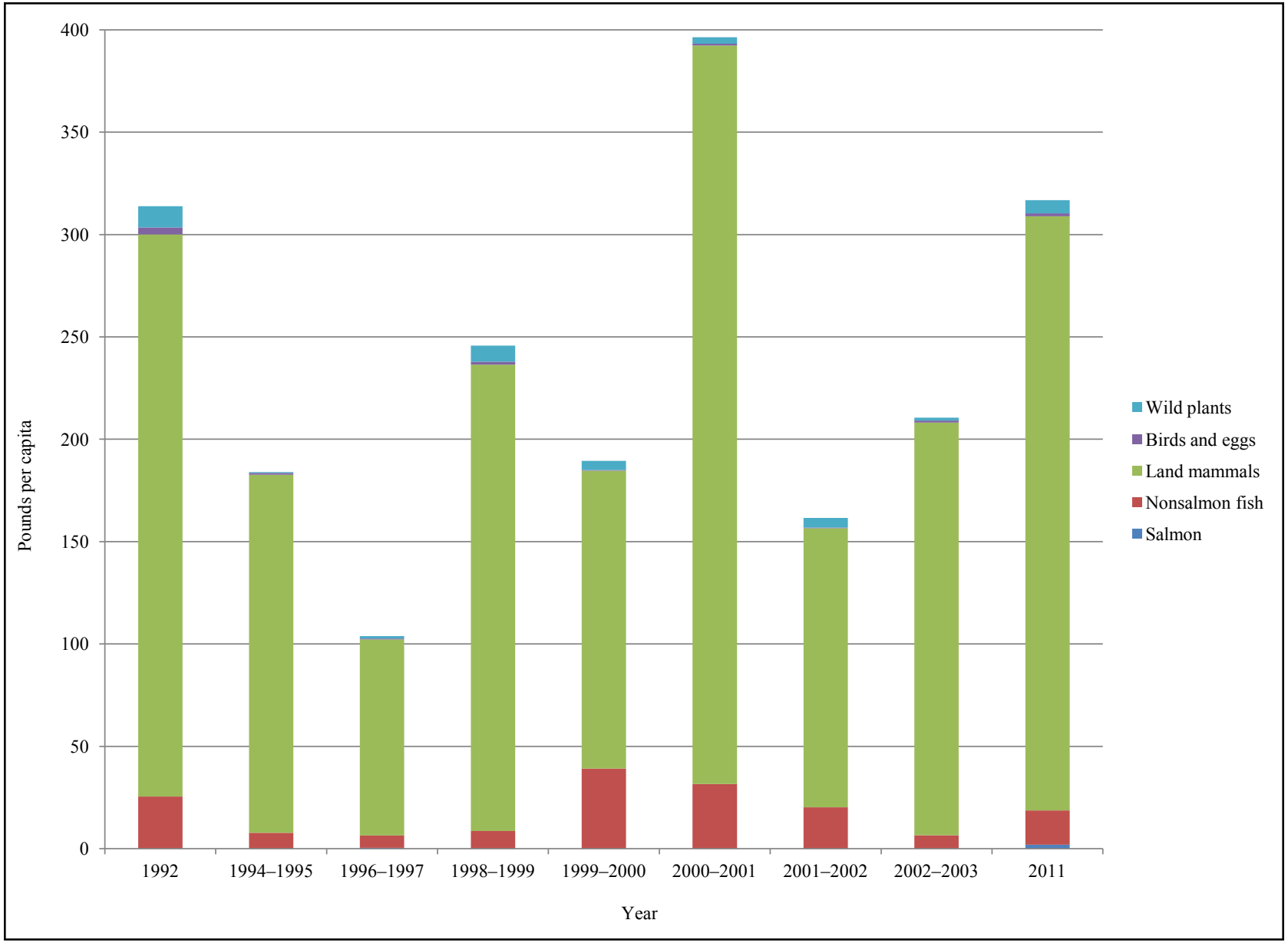


Figure 4-22.– Historical harvests for all resource categories, Anaktuvuk Pass, 1992, 1994–2003, 2011.

summary and fall into 3 categories: general concerns, concerns about development (e.g., related to extracting resources), and concerns about large land mammals, particularly caribou.

GENERAL

A number of residents expressed concern about increasing costs associated with hunting and gathering of subsistence resources. The high price of fuels makes subsistence harvests quite expensive, which is particularly worrisome to community members because they rely on subsistence foods to offset the price of store-bought foods. Furthermore, residents said subsistence foods are essential for survival in such a remote location and to maintaining their traditional lifestyle. Several community members expressed concern that younger generations were not learning their subsistence way of life. Elders worried about not receiving enough subsistence foods.

Residents were concerned about family allotments[3] farther south where they traditionally engaged in subsistence pursuits but could no longer travel to in warm weather months because of restrictions on motorized vehicles by the National Park Service (NPS). Community residents suggested working with the NPS to resolve the matter, but also suggested that the NPS should provide transportation to the allotments for families at various times during the spring/summer/fall so community members could have access to favored hunting and berry picking areas. Some residents expressed concerns during the community review meeting that NPS boundaries were limiting their access to subsistence resources and also that the NPS should be more involved in educating the public and people from outside the community about visiting the Gates of Arctic National Park and Preserve because, as one resident related, "It is not just a park, it is the home of the Nunamiut as well" (participant, community review meeting, Anaktuvuk Pass, personal communication, June 2012).

DEVELOPMENT

Numerous residents expressed concern about the proposed road to Umiat—the Foothills West Transportation Access project by the State of Alaska Department of Transportation and Public Facilities Northern Region. During interviews, many residents brought up their opposition to the road without reference to particular subsistence resources. However, many more residents explained their resistance by saying that they were concerned that respect and honor for their way of life was not being considered, and others mentioned that the road would affect subsistence activities in a broad spectrum. Some community members were also concerned about mining developments and some members opposed the proposed natural gas pipeline. Additionally, exploratory drilling at Chandler Lake concerned residents.

Few community members had positive things to say about the proposed road but one resident

3. The Alaska Native Allotment Act of 1906 allowed Alaska Native individuals to apply for title of up to 160 acres of land. This act was repealed in 1971 with the passage of the Alaska Native Claims Settlement Act.

reported that the road would be good for Anaktuvuk Pass because it would promote growth and costs would decrease for things like fuel and shipping. Another community member suggested an ice road would also decrease fuel costs.

LARGE LAND MAMMALS

Most of the concerns that Anaktuvuk Pass residents expressed during interviews and at the public meetings held for this project involved opposition to the proposed road to Umiat because they believed the road would negatively affect caribou availability vis-à-vis commercial activities that would alter caribou migration routes. Furthermore, community members were worried the road would provide greater access to "sport hunters" (meaning any non-local Alaska resident or nonresident hunters), thereby decreasing the availability of large land mammal resources and particularly caribou for the residents of Anaktuvuk Pass. The Nunamiut have said that caribou hunting is part of who they are as a group and that the potential decrease in caribou numbers and availability would have an enormous effect not just on their ability to acquire food but on their cultural and social fabric—their identity.

Anaktuvuk Pass community members believed that air traffic and noise pollution caused by non-local residents' activities are directly responsible for changes to caribou migration behavior and caused a late migration in 2011. Changes to caribou migration routes directly affect the availability and access to animals that are within a reasonable hunting distance for local residents. Numerous residents said they have to travel much farther to hunt caribou and that the animals are less predictable nowadays. Some residents suggested non-local hunters should only be allowed north of Anaktuvuk Pass between January and July so that caribou would be available for local residents who depend heavily on caribou for subsistence.

A number of residents gave accounts of non-local hunters returning from excursions with only antlers and horns and no meat, which they said was extremely upsetting to the community. These residents continued by saying that the community would prefer that, instead of leaving meat in the field, these hunters bring the meat to the community so it can be divided among local residents. Several suggestions were made about public education (especially to non-local hunters and tourists) concerning the importance of caribou and large land mammals to remote indigenous communities and meat/carcass preparation to prevent spoilage and habitat disturbance. Despite repeated attempts to change and/or influence hunting activities by non-local residents, which community members have brought up with several different organizations, including the Alaska Board of Game, Arctic Slope Regional Advisory Council, and the Western Arctic Caribou Herd Working Group, regulations have not changed.

Anaktuvuk Pass residents were also concerned about the effect that government agencies' activities have on caribou populations. In particular, residents were concerned about noise pollution and artificial landmarks posted by federal agencies, such as signs. Community members do not want state and federal agencies erecting any sort of landmarks that could upset or scare herds of migrating caribou.

However, community members were open to the idea of partnering with the NPS to implement a program to educate local youth about caribou behavior and protection schemes, which, they said, NPS has done previously in Kobuk.

Regarding Dall sheep, the aforementioned issues with non-local hunting and agency noise pollution were also documented in the community. Additionally, "sport hunting planes" were reported as flying very low or too close to Dall sheep ranges and scaring Dall sheep, which affected their availability to the community. Community members said on the ground, tourists also had an effect on Dall sheep movements, and community members would like to see more education provided for these visitors. Finally, the community commented that they were not informed about a Dall sheep project that was conducted by ADF&G (community members did not provide any specific information about the project.) The community of Anaktuvuk Pass wants prior and informed consent about projects being conducted on animals on which they rely for subsistence in the vicinity of their community.

SUMMARY

The household survey findings demonstrated that residents of Anaktuvuk Pass harvested a wide variety of resources in 2011. Residents invested a great deal of time and effort in harvesting fish, birds, and wild plants, but particularly large land mammals (i.e., caribou). A review of harvest data for all resource categories recorded by the North Slope Borough from 1992 through 2003 shows per capita harvests in 2011 were lower than in 2000–2001 but higher than all other study years (Figure 4-22). Caribou data from 2006 indicate that this might also have been an uncommonly good year since the per capita harvest for caribou was almost as high as in 2000, the highest per capita harvest recorded (Figure 4-21). Overall, caribou harvests seem to be stable with occasional poor years, likely correlating to changes in the annual migration route(s). Many residents believe caribou migrations have been affected by air traffic caused by agencies and non-local outfitters/hunters, whom they refer to as "sport hunters." Community members are concerned that the proposed road to Umiat will facilitate "outsider" hunting and that the increased traffic will exacerbate changes to caribou migrations. Community feelings about Dall sheep are similar to caribou (i.e., air traffic scares sheep to higher grounds making them inaccessible). Regarding non-caribou resources, these resources make up a much smaller percentage of the per capita harvest. However, Arctic grayling and berries also play a significant role in the lives of Anaktuvuk Pass residents as demonstrated by the consistent harvest of these resources over time (Figure 4-22). Furthermore, Anaktuvuk Pass residents traditionally travel great distances to harvest and search for resources; however, the rising price of gasoline continues to be a challenge to all subsistence activities. In general, the use and sharing of subsistence resources are essential for the largely Inupiat community of Anaktuvuk Pass and consistent access to caribou is critical to Nunamiut culture and identity.

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank the community and residents of Anaktuvuk Pass for their support and participation in the project. The Tribal Council of Anaktuvuk Pass approved the project and helped ensure its success. The sections of the report on history and cultural context were much improved by supplemental reflective and informative interviews with local elders. Furthermore, the lively exchange of ideas and feedback at the community review meeting about our findings was instrumental in clarifying several important issues and this was made possible by the high rate of community attendance. We would also like to thank our community Local Research Assistants Riley Sikuayugak and Laura Ticket for their assistance with the collection of survey data, and also our translators Rachel Riley and James Nageak.

CHAPTER 5: BEAVER

Prepared by Theodore Krieg

COMMUNITY BACKGROUND[1]

At 66˚ latitude Beaver, Alaska, or *Ts'aahudaaneekk'onh Denh* in *Koyukon* Athabascan, is located about 13.5 miles south of the Arctic Circle. Beaver is located downstream from Fort Yukon and is a little more than 60 miles southwest of Fort Yukon by air. Farther downstream from Beaver is the community of Stevens Village, which is located about 53.5 air miles southwest of Beaver. The history of Beaver is ethnically diverse and tied to trade patterns of the mid-18th and early 19th centuries. Prior to the arrival of Euro-Americans, the area was primarily inhabited by *Gwich'in* Athabascans but Beaver's location, on the eastern cusp of Koyukon territory, blended the Gwich'in culture and dialect with that of the neighboring Koyukon Athabascans.

The early economic history of the area after contact with Euro-Americans was tied to fur trapping. Prior to the establishment of a Hudson Bay Company trading post at Fort Yukon in the early 1840s the Russian trading post at Nulato was the nearest one to the Beaver area on the Yukon River. The Hudson Bay Company post closed in 1869.

Orth provides the following information about Beaver:

> Eskimo and Indian Village was originally established about 1906 as a river landing. About 1911 ARC [Alaska Road Commission] built a trail from the "Chandalar diggings" to the Yukon River here. With the expectation of much travel and town growth a town site was staked and many cabins built. The "Chandalar quartz" did not prove productive and the place reverted to a "native village" with a post office, established in 1913 and trading post to serve the Yukon in that area. Its population was 103 in 1930; 88 in 1939; and 101 in 1950. (1971:117)

Beaver was officially founded by Japanese trader Frank Yasuda in 1910 (Schneider 1976a). Schneider (1976b:7) relates, "By 1919, sections of the government trail, built under the auspices of the Alaska Road Commission, had been completed and was used regularly by Eskimos and Whites in travelling back and forth between Beaver and Chandalar." Japanese trader Frank Yasuda, and Inupiaq families that worked for him at Barrow and on the Arctic Coast, moved into the area to take advantage of the Chandalar Gold Rush of 1907. They became involved in mining and freighting supplies into the gold mining area (Schneider 1976b:1). Schneider (1976b) demonstrated that the establishment of Inupiaq

1. Unless otherwise noted, the source for the community background information is Brown et al. (in prep).

families in Beaver was not a single decisive event; rather, over time, different Inupiaq families that were related or knew each other moved in and out Beaver. This social base established a sense of community for them at Beaver. Schneider (1976b) also noted that the land that the Inupiaq inhabitants of Beaver used for trapping and hunting was oriented along the government road toward Chandalar because that was the area that they traveled and were familiar with. The Athabascan residents of Beaver trapped and hunted areas along the Yukon River. This practice prevented conflict between the different groups living in Beaver before and after the gold rush activities died out, and these land use practices continued.

The closure of the Hudson Bay Company in 1869 initially reduced economic activity in the area. Then the lucrative fur trade, discoveries of gold, missionary establishments, and steam boat operations occurring well after 1910 continued to bring Euro-American settlers to the area. Commercial salmon fishing and the sale of roe constituted a profitable industry for many residents in the years that followed, but in the late 1990s commercial fishing on the upper Yukon River came to an end thus contributing to the decline of income opportunities.[2] Today, Beaver is no longer at the center of interior trade routes. The lack of commercial fishing or a variety of employment opportunities means that subsistence-caught resources are a vitally important source of food. Residents particularly rely on subsistence salmon fishing and moose hunting to meet dietary needs throughout the winter months.

During field work in January 2012, a small store was open in the evening for a couple of hours almost every day. It stocked some basic items a household might need like sugar, coffee, canned meat, and rice. The tribal council provided fuel services and maintained a building with clothes washing and shower services. The tribal council also hired young men to cut and deliver firewood to homes at a reported cost of $250 per cord.

DEMOGRAPHY

According to the federal census, Beaver had 84 residents in 2010 (U. S. Census Bureau 2011a) and the 1990 census indicated a population of 103 (Figure 5-1). The household survey conducted for this study in 2011 estimated the population at 72 residents, of which 100% were Alaska Native (Table 5-1). Prior to the study, the Division of Subsistence researchers, in consultation with community officials and other knowledgeable respondents, estimated they would find 36 year-round households in Beaver; the survey confirmed this (Table 5-1). Of these, 25 households (69%) were interviewed (Table 5-2). The mean number of years of residency in Beaver was 27 years, with the maximum length of residence being 66 years (Table 5-3). The largest age cohort for males was tied for the 50–54 and 60–64 age ranges, and for females it tied for the 10–14 and 15–19 age ranges (Figure 5-2; Table 5-4).

2. Low returns of salmon to the Yukon River coupled with diminishing markets for Yukon River salmon collapsed the viable commercial fishery in the late 1990s. Since that time the upper Yukon River commercial fishery has not recovered to provide any meaningful income to the residents of the area.

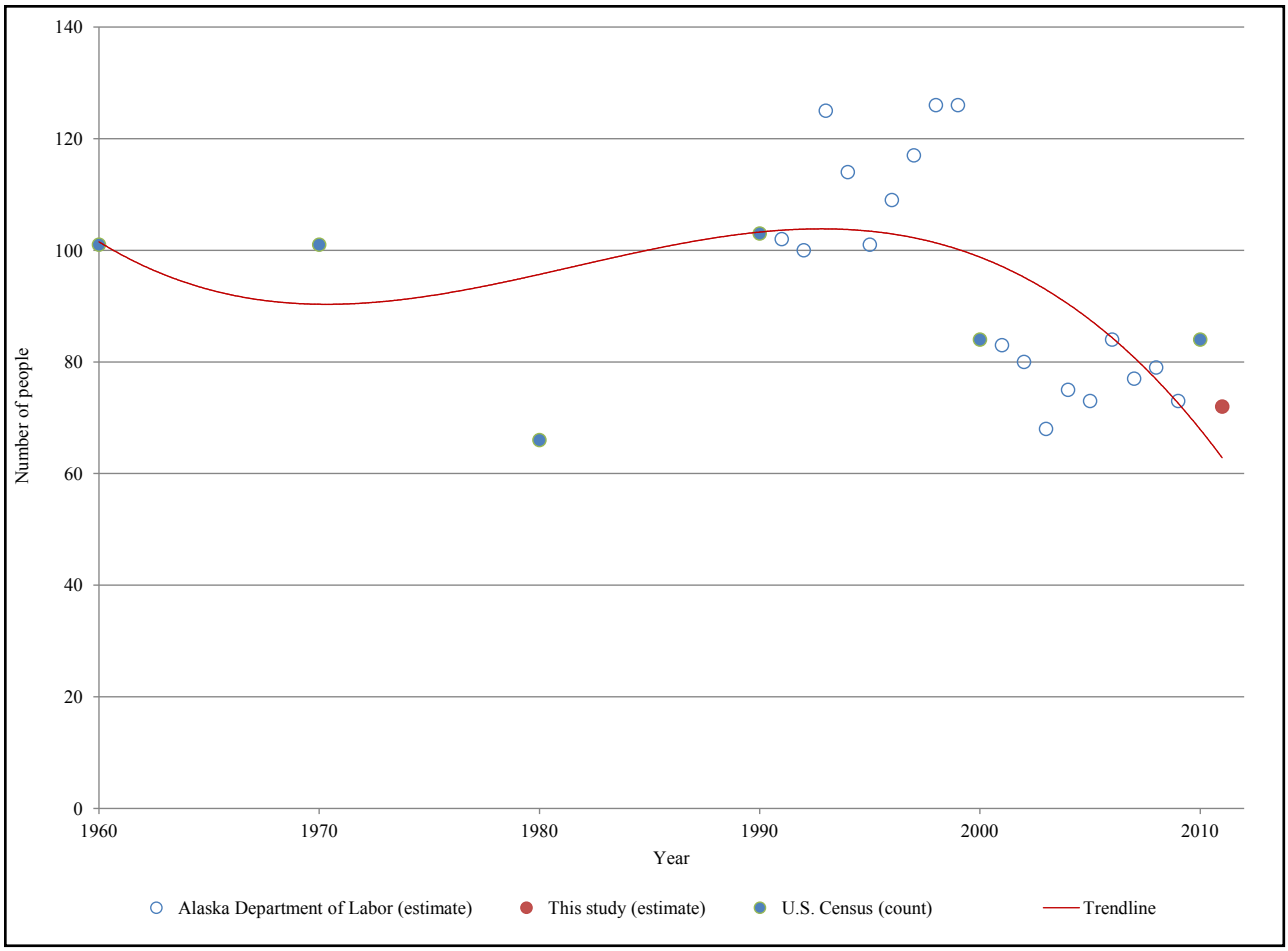


Figure 5-1.– Population history, Beaver, 1960–2011.

Table 5-1. – Population of Beaver, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
36	84	82	97.6%	36	72	72	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

Table 5-2. – Sample achievement, Beaver, 2011.

Number of dwelling units	36.0
Interview goal	36.0
Households interviewed	25.0
Households failed to contact	6.0
Households declined to be interviewed	5.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	30.0
Refusal rate	16.7%
Final estimate of permanent households	36.0
Percentage of total households interviewed	69.4%
Interview weighting factor	1.4
Sampled population	50.0
Estimated population	72.0

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

Only females were represented in the 15–19 age range and only males were represented in the 35–39 and 45–49 age ranges. There were no females older than the 50–54 age range whereas males were represented in the categories ranging from 55–79 years of age.

One reason for the lower population estimate for 2011 compared to the 2010 U.S. Census is derived from the overrepresentation of single male occupied households in the sample because not all households were interviewed for the 2011 study year (69% sample) (Table 5-2).

Of the Beaver household heads interviewed, all were born in Alaska (Table 5-5). Most (62%) of the household heads were born in Beaver, followed by Fairbanks at about 14%, and the remainder at just over 3% each were born in Arctic Village, Chalkyitsik, Nome, Stevens Village, Tanana, and "Other, Yukon" communities (Table 5-5).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 5-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Beaver residents in 2011. Approximately 68% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 65% of all residents gathered plants and berries, 41% fished, 57% hunted for birds, and 64% hunted for large land mammals. Fewer residents (37%) were involved in furbearer hunting or trapping. In comparison, 74% of all Beaver residents processed some resources in 2011. Most residents (72%) participated in processing birds, followed by 70% of the population participating in plant processing; fewer residents (65%) participated in large land mammal processing, and 63% participated in processing fish.

Table 5-3. – Demographics and sample characteristics, Beaver, 2011.

Characteristics	Beaver
Sampled households	25.0
Eligible households	36.0
Percentage sampled	69.4%
Household size	
Mean	2.0
Minimum	1.0
Maximum	6.0
Sample population	50.0
Estimated community population	72.0
Age	
Mean	35.4
Minimum[a]	0.0
Maximum	75.0
Median	34.5
Length of residency	
Total population	
Mean	26.5
Minimum[a]	0.0
Maximum	66.0
Heads of household	
Mean	35.0
Minimum[a]	2.0
Maximum	66.0
Sex	
Estimated male	
Number	43.2
Percentage	60.0%
Estimated female	
Number	28.8
Percentage	40.0%
Alaska Native	
Estimated households[b]	
Number	36.0
Percentage	100.0%
Estimated population	
Number	72.0
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

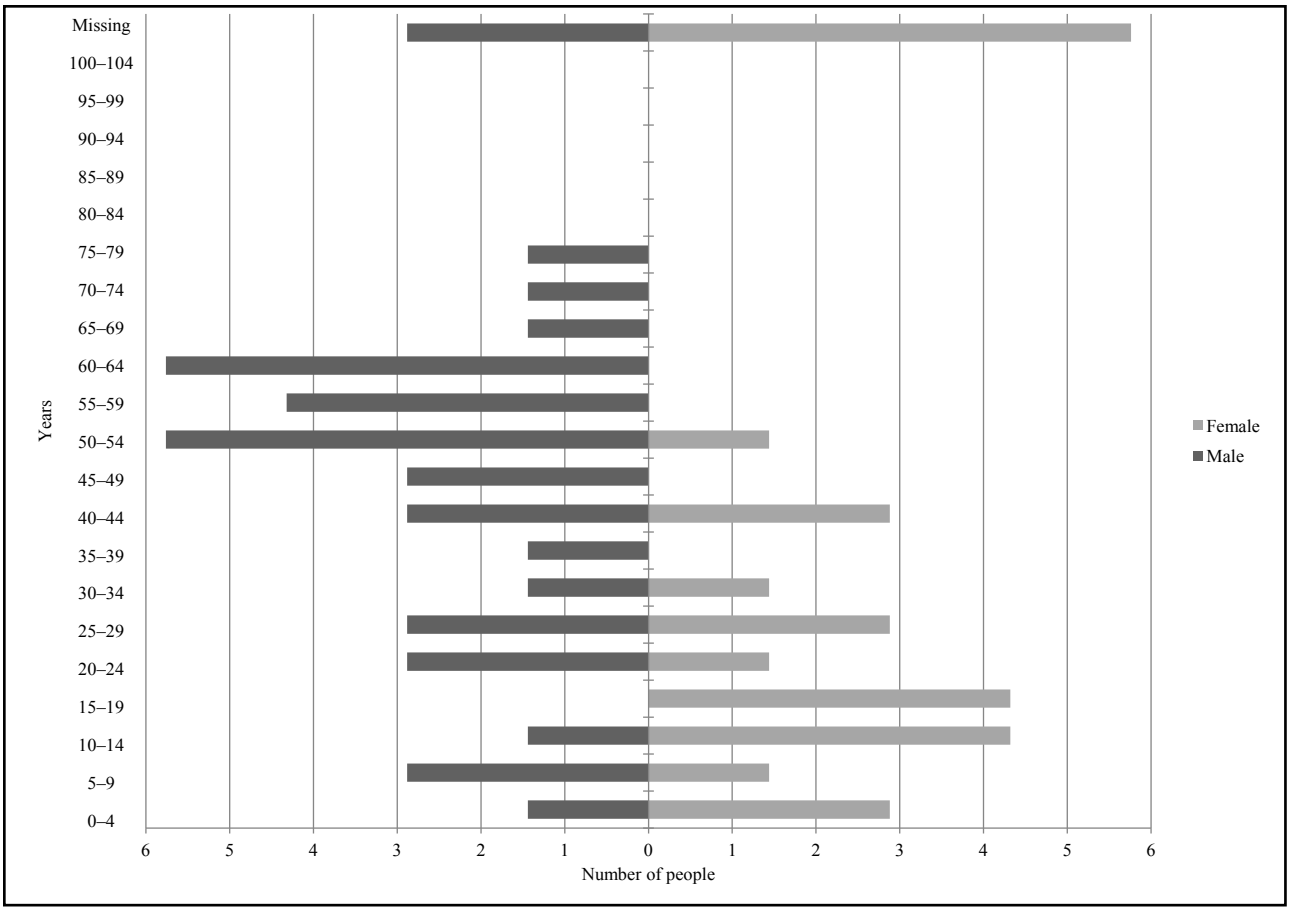


Figure 5-2.– Population profile, Beaver, 2011.

Table 5-4. – Population profile, Beaver, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	1.4	3.3%	3.3%	2.9	10.0%	10.0%	4.3	6.0%	6.0%
5–9	2.9	6.7%	10.0%	1.4	5.0%	15.0%	4.3	6.0%	12.0%
10–14	1.4	3.3%	13.3%	4.3	15.0%	30.0%	5.8	8.0%	20.0%
15–19	0.0	0.0%	13.3%	4.3	15.0%	45.0%	4.3	6.0%	26.0%
20–24	2.9	6.7%	20.0%	1.4	5.0%	50.0%	4.3	6.0%	32.0%
25–29	2.9	6.7%	26.7%	2.9	10.0%	60.0%	5.8	8.0%	40.0%
30–34	1.4	3.3%	30.0%	1.4	5.0%	65.0%	2.9	4.0%	44.0%
35–39	1.4	3.3%	33.3%	0.0	0.0%	65.0%	1.4	2.0%	46.0%
40–44	2.9	6.7%	40.0%	2.9	10.0%	75.0%	5.8	8.0%	54.0%
45–49	2.9	6.7%	46.7%	0.0	0.0%	75.0%	2.9	4.0%	58.0%
50–54	5.8	13.3%	60.0%	1.4	5.0%	80.0%	7.2	10.0%	68.0%
55–59	4.3	10.0%	70.0%	0.0	0.0%	80.0%	4.3	6.0%	74.0%
60–64	5.8	13.3%	83.3%	0.0	0.0%	80.0%	5.8	8.0%	82.0%
65–69	1.4	3.3%	86.7%	0.0	0.0%	80.0%	1.4	2.0%	84.0%
70–74	1.4	3.3%	90.0%	0.0	0.0%	80.0%	1.4	2.0%	86.0%
75–79	1.4	3.3%	93.3%	0.0	0.0%	80.0%	1.4	2.0%	88.0%
80–84	0.0	0.0%	93.3%	0.0	0.0%	80.0%	0.0	0.0%	88.0%
85–89	0.0	0.0%	93.3%	0.0	0.0%	80.0%	0.0	0.0%	88.0%
90–94	0.0	0.0%	93.3%	0.0	0.0%	80.0%	0.0	0.0%	88.0%
95–99	0.0	0.0%	93.3%	0.0	0.0%	80.0%	0.0	0.0%	88.0%
100–104	0.0	0.0%	93.3%	0.0	0.0%	80.0%	0.0	0.0%	88.0%
Missing	2.9	6.7%	100.0%	5.8	20.0%	100.0%	8.6	12.0%	100.0%
Total	**43.2**	**100.0%**	**100.0%**	**28.8**	**100.0%**	**100.0%**	**72.0**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 5-5. – Birthplaces of household heads, Beaver, 2011.

Birthplace[a]	Percentage
Arctic Village	3.4%
Beaver	62.1%
Chalkyitsik	3.4%
Fairbanks	13.8%
Nome	3.4%
Stevens Village	3.4%
Tanana	3.4%
Other, Yukon	3.4%
Missing	3.4%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

RESOURCE HARVEST AND USE PATTERNS

Table 5-7 summarizes resource harvest and use characteristics at the household level for Beaver in 2011. All households (100%) used wild resources in 2011, while 96% attempted to harvest a resource and 92% harvested at least 1 resource. The average total harvest was an estimated 718 lb per household and 359 lb edible weight per capita. On average, households attempted to harvest 8 kinds of resources, harvested 8 kinds of resources, and used an average of 11 different kinds of resources. The maximum number of resources used by any household was 32. In addition, households gave away an average of 4 kinds of resources and received 4 kinds of resources. Seventy-two percent of Beaver households reported sharing resources with other households. In comparison, 96% reported receiving a resource.

SPECIES USED AND SEASONAL ROUND

Following a seasonal round of subsistence activities, the residents of Beaver harvest a wide variety of species throughout the year. Beaver residents are highly mobile, traveling along the channels of the Yukon River and surrounding Yukon Flats area to harvest resources. Residents use motorized boats suitable for travel on waterways, and snowmachines and ATVs to reach their hunting, fishing, and gathering areas. A few hunters said they used bicycles along the government trail. The government trail was developed in the early 1900s by the Alaska Road Commission as a travel route to deliver supplies from the Yukon River at Beaver north to Caro, a trading location and mining camp (Sumida 1989:9). Over the years the government trail was used extensively by the residents of Beaver. In 2012 the government trail appeared to be unmaintained.

Table 5-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table 5-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Beaver households during the study year 2011. Residents of Beaver harvested an estimated total of

Table 5-6. – Estimated participation in subsistence harvesting and processing activities, Beaver, 2011.

Total number of people	**72.0**
Birds	
Hunt	
Number	40.7
Percentage	56.5%
Process	
Number	51.7
Percentage	71.7%
Fish	
Fish	
Number	29.7
Percentage	41.3%
Process	
Number	45.4
Percentage	63.0%
Large land mammals	
Hunt	
Number	46.4
Percentage	64.4%
Process	
Number	47.0
Percentage	65.2%
Furbearers	
Hunt or trap	
Number	26.6
Percentage	37.0%
Process	
Number	28.2
Percentage	39.1%
Plants	
Gather	
Number	47.0
Percentage	65.2%
Process	
Number	50.1
Percentage	69.6%
Any resource	
Attempt	
Number	49.0
Percentage	68.0%
Process	
Number	53.3
Percentage	74.0%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 5-7. – Resource harvest and use characteristics, Beaver, 2011.

Characteristic	
Mean number of resources used per household	10.5
Minimum	3.0
Maximum	32.0
95% confidence limit (±)	15.0%
Median	8.0
Mean number of resources attempted to harvest per household	8.2
Minimum	0.0
Maximum	32.0
95% confidence limit (±)	20.5%
Median	5.0
Mean number of resources harvested per household	7.6
Minimum	0.0
Maximum	32.0
95% confidence limit (±)	22.2%
Median	4.0
Mean number of resources received per household	4.0
Minimum	0.0
Maximum	12.0
95% confidence limit (±)	16.4%
Median	3.0
Mean number of resources given away per household	4.4
Minimum	0.0
Maximum	31.0
95% confidence limit (±)	37.1%
Median	1.0
Household harvest, pounds	
Minimum	0.0
Maximum	3,738.6
Mean	717.6
Median	160.7
Total harvest weight, pounds	25,833.6
Community per capita harvest, pounds	358.8
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	96.0%
Percentage harvesting any resource	92.0%
Percentage receiving any resource	96.0%
Percentage giving away any resource	72.0%
Number of households in sample	25.0
Number of resources available	116.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 5-8. – Estimated harvests and uses of fish, game, and plant resources, Beaver, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All Reasources	**100%**	**96%**	**92%**	**96%**	**72%**	**25,833.6**	**717.6**	**358.8**	**3,659.0**		**101.6**	**31%**
Fish	**100%**	**48%**	**48%**	**68%**	**32%**	**12,094.5**	**336.0**	**168.0**	**2,011.4**		**55.9**	**37%**
Salmon	**100%**	**44%**	**44%**	**68%**	**32%**	**11,116.2**	**308.8**	**154.4**	**1,660.1**		**46.1**	**38%**
Chum salmon	44%	40%	36%	12%	12%	4,288.7	119.1	59.6	843.6	Ind.	23.4	46%
Coho salmon	24%	16%	16%	8%	8%	837.5	23.3	11.6	158.4	Ind.	4.4	67%
Chinook salmon	96%	40%	36%	68%	28%	5,736.0	159.3	79.7	607.7	Ind.	16.9	46%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon[b]	8%	12%	8%	0%	0%	254.0	7.1	3.5	50.4	Ind.	1.4	80%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**52%**	**32%**	**32%**	**24%**	**12%**	**978.3**	**27.2**	**13.6**	**351.4**		**9.8**	**41%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific halibut	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	12%	4%	4%	8%	4%	13.8	0.4	0.2	5.8	Ind.	0.2	114%
Char	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dolly Varden	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Arctic grayling	8%	4%	4%	4%	4%	18.1	0.5	0.3	25.9	Ind.	0.7	114%
Northern pike	24%	12%	12%	12%	4%	213.8	5.9	3.0	47.5	Ind.	1.3	66%
Sheefish	8%	8%	8%	0%	8%	77.8	2.2	1.1	13.0	Ind.	0.4	80%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 5-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Rainbow trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	44%	28%	28%	16%	8%	654.7	18.2	9.1	259.2		7.2	47%
Broad whitefish	12%	12%	12%	0%	8%	100.8	2.8	1.4	72.0	Ind.	2.0	66%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	36%	20%	20%	16%	4%	522.7	14.5	7.3	174.2	Ind.	4.8	53%
Round whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown whitefish	8%	8%	8%	0%	4%	31.2	0.9	0.4	13.0	Ind.	0.4	91%
Land mammals	**100%**	**72%**	**44%**	**88%**	**44%**	**11,738.9**	**326.1**	**163.0**	**302.4**		**8.4**	**39%**
Large land mammals	**100%**	**72%**	**44%**	**80%**	**36%**	**11,263.7**	**312.9**	**156.4**	**41.8**		**1.2**	**39%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	40%	32%	32%	16%	24%	2,304.0	64.0	32.0	23.0	Ind.	0.6	46%
Brown bear	8%	8%	8%	0%	8%	406.1	11.3	5.6	2.9	Ind.	0.1	79%
Caribou	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	96%	64%	32%	76%	32%	8,553.6	237.6	118.8	15.8	Ind.	0.4	40%
Muskox	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[c]	**36%**	**40%**	**36%**	**16%**	**24%**	**475.2**	**13.2**	**6.6**	**260.6**		**7.2**	**48%**
Beaver	28%	20%	20%	8%	12%	302.4	8.4	4.2	20.2	Ind.	0.6	51%
Coyote	4%	4%	4%	0%	4%	0.0	0.0	0.0	5.8	Ind.	0.2	114%
Fox	8%	8%	8%	0%	4%	0.0	0.0	0.0	34.6		1.0	80%
Red Fox	8%	8%	8%	0%	4%	0.0	0.0	0.0	34.6		1.0	80%
Red fox—cross phase	8%	8%	8%	0%	4%	0.0	0.0	0.0	13.0	Ind.	0.4	80%
Red fox—red phase	8%	8%	8%	0%	4%	0.0	0.0	0.0	21.6	Ind.	0.6	84%
Hare	16%	8%	8%	8%	4%	144.0	4.0	2.0	57.6		1.6	79%
Snowshoe hare	16%	8%	8%	8%	4%	144.0	4.0	2.0	57.6	Ind.	1.6	79%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	16%	20%	16%	4%	4%	0.0	0.0	0.0	51.8	Ind.	1.4	68%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	8%	8%	8%	0%	4%	0.0	0.0	0.0	11.5	Ind.	0.3	89%
Mink	4%	4%	4%	0%	4%	0.0	0.0	0.0	2.9	Ind.	0.1	114%
Muskrat	8%	12%	8%	0%	0%	0.0	0.0	0.0	23.0	Ind.	0.6	82%
Porcupine	20%	20%	20%	0%	17%	28.8	0.8	0.4	7.2	Ind.	0.2	47%
Squirrel	8%	8%	8%	0%	4%	0.0	0.0	0.0	2.9		0.1	79%

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Table 5-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Arctic ground (parka) squirrel	4%	4%	4%	0%	0%	0.0	0.0	0.0	1.4	Ind.	0.0	114%
Red (tree) squirrel	4%	4%	4%	0%	4%	0.0	0.0	0.0	1.4	Ind.	0.0	114%
Weasel	4%	4%	4%	0%	4%	0.0	0.0	0.0	5.8	Ind.	0.2	114%
Wolf	4%	4%	4%	0%	4%	0.0	0.0	0.0	23.0	Ind.	0.6	114%
Wolverine	4%	4%	4%	0%	4%	0.0	0.0	0.0	14.4	Ind.	0.4	114%
Marine Mammals	**4%**	**0%**	**0%**	**4%**	**4%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Nothern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Harbor seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	4%	0%	0%	4%	4%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**92%**	**76%**	**76%**	**40%**	**40%**	**1,837.5**	**51.0**	**25.5**	**1,162.0**		**32.3**	**31%**
Migratory birds	**92%**	**72%**	**72%**	**36%**	**36%**	**1,756.4**	**48.8**	**24.4**	**1,043.3**		**29.0**	**30%**
Ducks	64%	56%	56%	12%	24%	367.6	10.2	5.1	391.7		10.9	34%
Canvasback	4%	4%	4%	0%	4%	5.7	0.2	0.1	2.9	Ind.	0.1	114%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goldeneye	4%	4%	4%	0%	4%	8.9	0.2	0.1	5.8	Ind.	0.2	114%
Mallard	28%	28%	28%	0%	17%	109.4	3.0	1.5	109.4	Ind.	3.0	46%
Long-tailed duck	8%	8%	8%	0%	8%	19.6	0.5	0.3	24.5	Ind.	0.7	83%
Northern pintail	4%	4%	4%	0%	4%	9.2	0.3	0.1	11.5	Ind.	0.3	114%
Scoter	56%	48%	48%	8%	16%	203.5	5.7	2.8	226.1		6.3	32%
Black scoter	56%	48%	48%	8%	16%	203.5	5.7	2.8	226.1	Ind.	6.3	32%
Teal	4%	4%	4%	0%	4%	1.5	0.0	0.0	2.9	Ind.	0.1	114%
Wigeon	4%	4%	4%	0%	4%	9.8	0.3	0.1	8.6		0.2	114%
American wigeon	4%	4%	4%	0%	4%	9.8	0.3	0.1	8.6	Ind.	0.2	114%
Unknown ducks	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese	92%	72%	72%	32%	32%	1,388.8	38.6	19.3	651.7		18.1	34%
Canada geese	64%	56%	56%	20%	24%	172.0	4.8	2.4	143.3		4.0	32%
Cacklers	20%	20%	20%	4%	4%	72.6	2.0	1.0	60.5	Ind.	1.7	61%
Lesser Canada geese	36%	32%	32%	13%	17%	66.6	1.9	0.9	55.5	Ind.	1.5	41%
Unknown Canada geese	12%	4%	4%	8%	4%	32.8	0.9	0.5	27.4	Ind.	0.8	114%

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Table 5-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Snow geese	20%	20%	20%	4%	17%	72.9	2.0	1.0	31.7	Ind.	0.9	59%
White-fronted geese	56%	52%	52%	8%	25%	1,143.9	31.8	15.9	476.6	Ind.	13.2	39%
Unknown geese	12%	0%	0%	12%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Other birds	**32%**	**32%**	**28%**	**12%**	**16%**	**77.5**	**2.2**	**1.1**	**104.3**		**2.9**	**56%**
Upland game birds	32%	32%	28%	12%	16%	77.5	2.2	1.1	104.3		2.9	56%
Grouse	32%	32%	28%	8%	16%	62.5	1.7	0.9	89.3		2.5	49%
Spruce grouse	24%	24%	20%	8%	13%	28.2	0.8	0.4	40.3	Ind.	1.1	54%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	12%	12%	12%	0%	8%	34.3	1.0	0.5	49.0	Ind.	1.4	73%
Ptarmigan	8%	8%	8%	4%	4%	15.0	0.4	0.2	15.0	Ind.	0.4	112%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**4%**	**4%**	**4%**	**0%**	**4%**	**3.6**	**0.1**	**0.1**	**14.4**		**0.4**	**114%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	4%	4%	4%	0%	4%	3.6	0.1	0.1	14.4	Ind.	0.4	114%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%

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Table 5-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Marine invertebrates, continued												
Tanner Crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**84%**	**84%**	**56%**	**36%**	**162.7**	**4.5**	**2.3**	**183.2**		**5.1**	**54%**
Berries	**32%**	**28%**	**28%**	**12%**	**20%**	**161.3**	**4.5**	**2.2**	**40.3**		**1.1**	**54%**
Blueberry	20%	16%	16%	8%	8%	49.0	1.4	0.7	12.2	Gal.	0.3	62%
Lowbush cranberry	12%	12%	12%	8%	8%	40.3	1.1	0.6	10.1	Gal.	0.3	83%
Highbush cranberry	20%	20%	20%	8%	16%	72.0	2.0	1.0	18.0	Gal.	0.5	65%
Raspberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild berry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**4%**	**4%**	**4%**	**0%**	**0%**	**1.4**	**0.0**	**0.0**	**0.4**	**Gal.**	**0.0**	**114%**
Hudson's Bay tea	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Wild rose hips	4%	4%	4%	0%	0%	1.4	0.0	0.0	0.4	Gal.	0.0	114%
Unknown mushrooms	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Wood	**100%**	**72%**	**72%**	**48%**	**28%**	**0.0**	**0.0**	**0.0**	**142.5**	**Cord**	**4.0**	**21%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

b. Attendees of the Beaver community review meeting about survey results expressed doubts about the accuracy of the sockeye salmon harvest as indicated by a few survey participants, noting that sockeye salmon are not available locally. Please see a discussion of the comments by attendees in the section "Harvest Quantities."

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

Table 5-9. – Top 10 resources harvested and used, Beaver, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	118.8	1	1.	Wood	100.0%
2	2.	Chinook salmon	79.7	2	2.	Chinook salmon	96.0%
3	3.	Chum salmon	59.6	3	2.	Moose	96.0%
4	4.	Black bear	32.0	4	3.	Black scoter	56.0%
5	5.	White-fronted geese	15.9	5	3.	White-fronted geese	56.0%
6	6.	Coho salmon	11.6	6	4.	Chum salmon	44.0%
7	7.	Humpback whitefish	7.3	7	5.	Black bear	40.0%
8	8.	Brown bear	5.6	8	6.	Humpback whitefish	36.0%
9	9.	Beaver	4.2	9	6.	Lessr Canada geese	36.0%
10	10.	Sockeye salmon	3.5	10	7.	Beaver	28.0%
				11	7.	Mallard	28.0%

Source ADF&G Division of Subsistence household surveys, 2012.

25,834 lb, or 359 lb per capita of wild resources (Table 5-8). As shown in Table 5-9, moose, Chinook salmon, and chum salmon were the top 3 most harvested resources as estimated in pounds per capita, followed by black bear; in comparison, wood, Chinook salmon, moose, black scoter, and white-fronted geese were the top 5 most used resources.

In 1985, salmon composed the highest percentage of the total harvest for the community of Beaver but in 2011 the salmon harvest was slightly less than the total harvest of large land mammals. During the study year, 48% of the households in Beaver harvested at least 1 kind of fish, and 44% harvested salmon, with most of the salmon harvest (52%) being Chinook salmon (Table 5-8). Chinook salmon are usually the first to arrive in the latter half of June and continue running through July into early August. Chum salmon (those designated as "summer" and "fall") start to arrive the latter half of July and continue to return through September and into October. Coho salmon arrive in the area toward the end of August and continue to return into the early part of October. Salmon are caught by gillnets at setnet sites and with fish wheels along the Yukon River. Harvest areas are mainly upstream from Beaver with a lesser number of fishing locations downstream from the village also being used.

Burbot, Arctic grayling, and northern pike are caught by ice fishing and in some cases with nets set under the ice. Northern pike, sheefish, broad whitefish, and humpback whitefish are caught with gillnets.

Moose hunting is a traditional and popular fall activity; additionally, moose hunting regulations allow for some winter hunting in game management unit (GMU) 25D. Most of the hunts take place along the Yukon River and adjacent waterways that are accessible by boat. Households or individuals that do not have access to a boat hunt with individuals who have the necessary equipment. Some moose hunting takes place along the government trail accessed from Beaver by motorized vehicle and bicycle. At least 2 households indicated that hunters rode their bicycles a few miles up the government road to look for moose.

Black bears were harvested in July, August, and September. Occasionally, these harvests were

opportunistic in that the hunter harvested black bears during other subsistence activities. Brown bears were harvested in September and October. No caribou harvests were reported by the residents of Beaver in 2011 (Table 5-8).

Forty percent of households participated in small land mammal harvesting efforts in 2011, and 36% of households were successful (Table 5-8). Trapping for furs is primarily a winter activity but small mammals are harvested in most months of the year. Snowshoe hares were the most heavily harvested small land mammal, in terms of individuals harvested, and harvests occurred in September and October. Lynx, the next most harvested small land mammal, were caught in the months of December, January, and February.

Migratory birds travel through the area in fall and spring, stopping to rest along the Yukon River and surrounding waterways. During the study year, 92% of the households used migratory birds and 72% harvested them (Table 5-8). Upland game birds, such as spruce grouse and ptarmigan, were harvested by Beaver residents adjacent to and north of the village throughout the year. During the study year, 32% of the Beaver households used upland game birds and 28% reported harvesting (Table 5-8).

Harvesting vegetation, particularly firewood, is an important activity for Beaver residents. Berries, although very important to the harvesting households, were moderately harvested and used in 2011 with 28% of households reporting harvesting berries, and 32% using berries (Table 5-8). Firewood is used for heating homes and was harvested by 72% of households and 100% of Beaver households reported using firewood (Table 5-8).

HARVEST QUANTITIES

Table 5-8 reports estimated wild resource harvests and uses by Beaver residents in 2011 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[3]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Beaver was 25,834 lb, or 359 lb per capita (Table 5-8). The following paragraphs describe use levels, household attempted harvest and harvest percentages, and total pound and per capita harvest totals as shown in Table 5-8. Figure 5-3 depicts the composition of the total harvest by resource category.

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

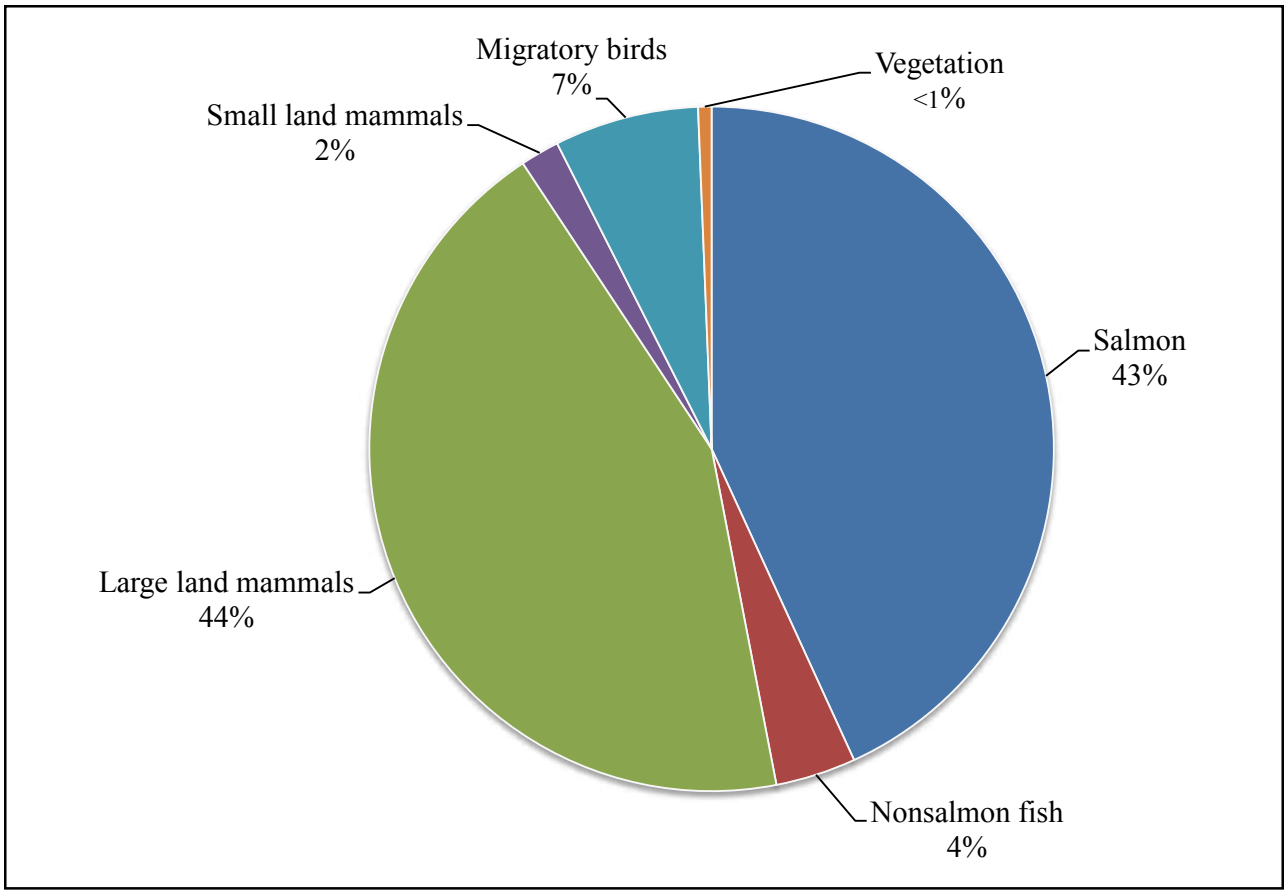


Figure 5-3.– Composition of harvest by category, Beaver, 2011.

In terms of pounds harvested, land mammals constituted the largest portion of the subsistence harvest at Beaver in 2011 with a total contribution of 11,739 lb, or 163 lb per capita. The most common single resource harvested was moose, at an estimated 8,554 lb, or 119 lb per capita harvested. Black bears accounted for 2,304 lb (32 lb per capita) and brown bears accounted for 406 lb (6 lb per capita). The study found that, whereas 96% of Beaver households used moose during 2011, only 32% of households successfully harvested moose. This resource was widely distributed within the community, with 76% of households reporting receiving moose during the study year. For the small land mammals category, beavers contributed the most edible pounds (302 lb, or 4 lb per capita) and snowshoe hares accounted for 144 lb (2 lb per capita).

Salmon were nearly on par with land mammals in terms of total weight harvested. Salmon accounted for 11,116 lb, or an estimated 154 lb per capita. The majority of the salmon were caught with gillnets but 25% of the total were caught with fish wheels. In 2011, Beaver residents harvested 5,736 lb of Chinook salmon (80 lb per capita), 4,289 lb of chum salmon (60 lb per capita), 838 lb of coho salmon (12 lb per capita), and 254 lb (4 lb per capita) of sockeye salmon. At the community review meeting conducted in Beaver on May 15, 2012, participants believed that although a few sockeye salmon might

be caught each summer in the waters near Beaver, it seemed unlikely that the amount indicated by the survey could be harvested locally and that those fish most likely represented another salmon species.

Birds were an important resource used by the residents of Beaver during 2011. The Beaver harvest of birds was 1,838 lb, or 26 lb per capita. Most of the bird harvest (1,756 lb, or 24 lb per capita) was composed of migratory birds. White-fronted geese accounted for 1,144 lb (16 lb per capita). The category of Canada geese, which includes cackling and lesser Canada geese, accounted for 172 lb (2 lb per capita), and snow geese contributed 73 lb (1 lb per capita). Upland birds harvested included both spruce and ruffed grouse (63 lb combined, or 1 lb per capita combined), and ptarmigan accounted for 15 lb (less than 0.5 lb per capita). A small number of goose eggs were harvested (4 lb, or less than 0.5 lb per capita).

Nonsalmon fishing was another major activity in 2011 with an overall harvest of 978 lb, or 14 lb per capita. The largest harvests, in terms of total weight, included humpback whitefish (523 lb, or 7 lb per capita), northern pike (214 lb, or 3 lb per capita), and broad whitefish (101 lb, or 1 lb per capita). Of these 3 resources, 24% of households used northern pike, while 36% reported using humpback whitefish and 12% reported using broad whitefish. For humpback whitefish, 20% of households both attempted to harvest and successfully harvested this resource. Other nonsalmon harvest activity included the following: 12% of households reported using burbot; 8% of households used Arctic grayling and 8% used sheefish; 4% of households attempted to harvest burbot and 4% fished for Arctic grayling; and 8% of households attempted to harvest sheefish. The per capita harvest for sheefish was just over 1 lb, whereas the burbot and Arctic grayling per capita harvests were less than one-half pound each.

The wild plants and berries harvested for Beaver in 2011 accounted for less than 1% of the total harvest in edible weight (Figure 5-3). All (100%) of the households used vegetation and 84% attempted to harvest vegetation. The total harvest was 163 lb, or 2 lb per capita. The largest berry harvests, in terms of total pounds, included highbush cranberries (72 lb, or 1 lb per capita), blueberries (49 lb, or less than 1 lb per capita), and lowbush cranberries (40 lb, or less than 1 lb per capita). Wild rose hips were also reported being harvested (1 lb).

SHARING AND RECEIVING WILD RESOURCES

In Beaver in 2011, the average harvest per household was 8 kinds of resources (Table 5-7). Estimates of sharing indicated that 96% of households received wild resources from other households and 72% of households gave resources away (tables 5-7 and 5-8). Households received an average of 4 resources and gave away an average of 4 resources (Table 5-7). Salmon, large land mammals, and vegetation were used by all (100%) households and were among the most commonly shared resources. Salmon were given away by 32% of households and 68% of households received salmon. Large land mammals were shared by 36% of households and received by 80%. Vegetation was given away by 36% and received by 56% of households. Moose were the most widely shared species with 76% of households

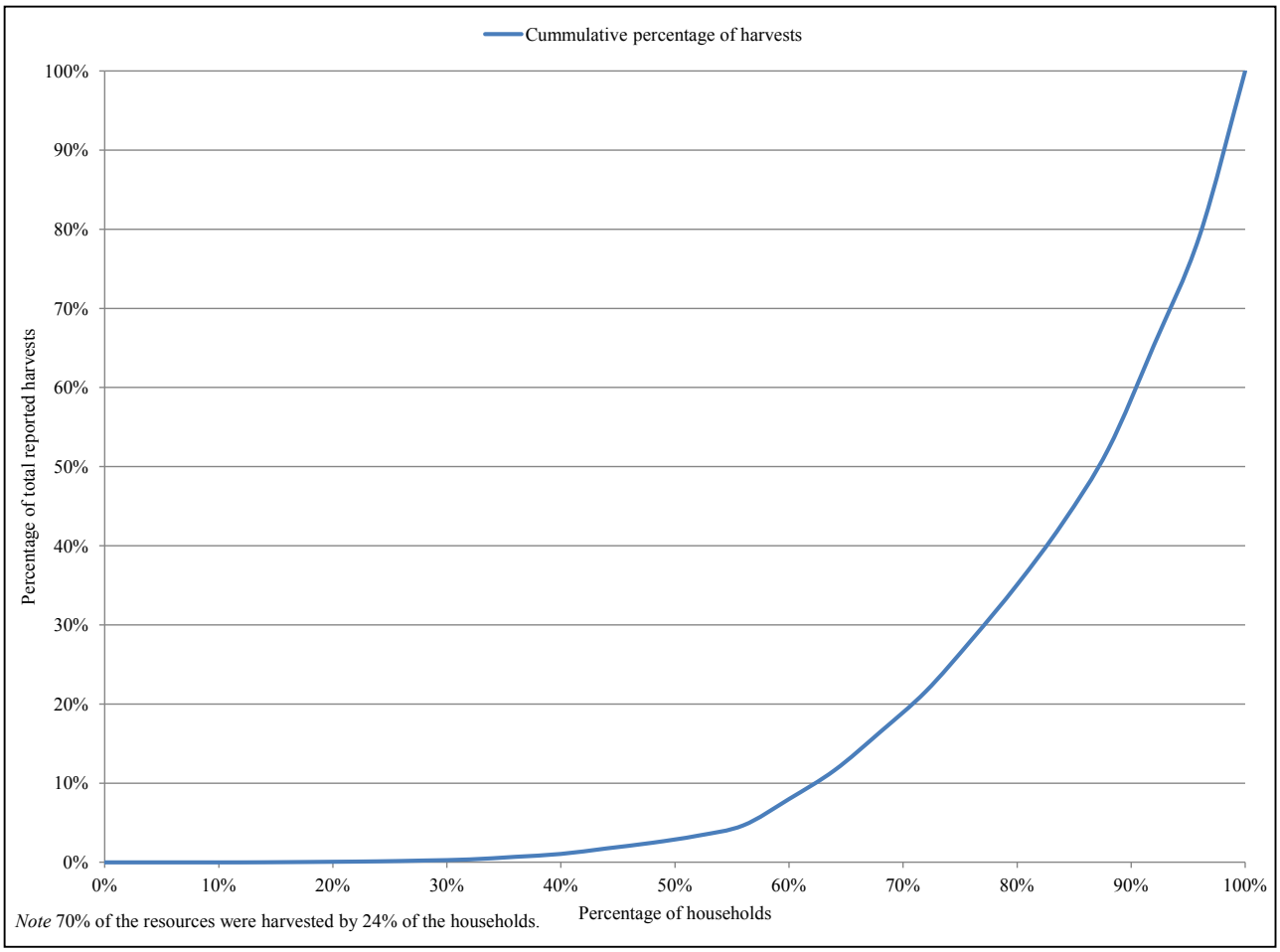


Figure 5-4.– Composition of harvest by category, Beaver, 2011.

receiving and 32% of households giving away this resource. Birds and eggs were used by 92% of households and were given away and received by 40% of the households in Beaver.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

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

As shown in Figure 5-4, in the 2011 study year in Beaver, about 70% of the harvests of wild resource

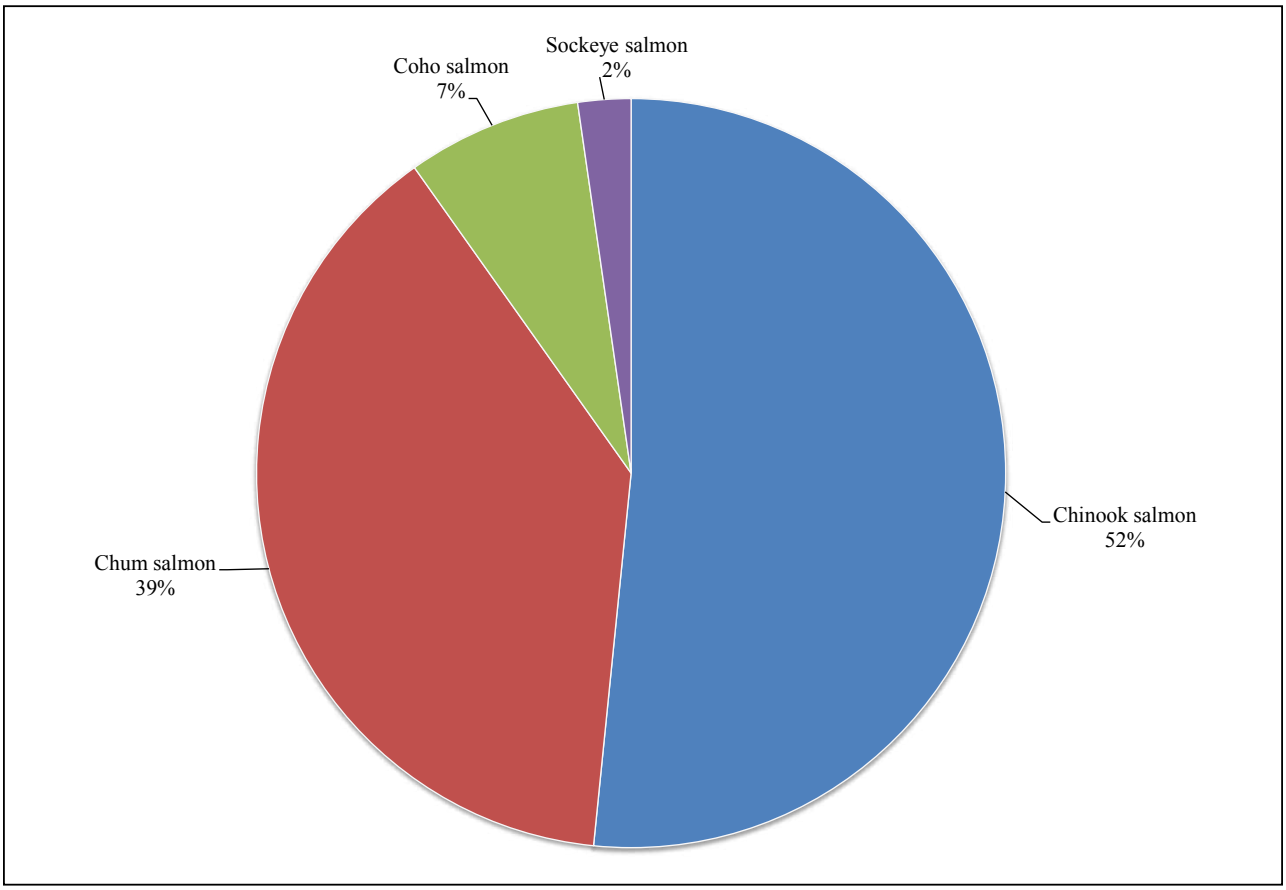


Figure 5-5.– Composition of salmon harvest, Beaver, 2011.

as estimated in usable pounds were harvested by 24% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Beaver and the other study communities.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Beaver residents, salmon composed 43% of the wild resource harvest in pounds in 2011 (Figure 5-3). The composition of the salmon harvest is as follows: 52% Chinook salmon (5,736 lb); 39% chum salmon (4,289); 7% coho salmon (838 lb); and 2% sockeye salmon (254 lb), although as mentioned previously species designation is suspect (Figure 5-5; Table 5-8).

In 2011 set gillnets were used to harvest an estimated 75% of the salmon and fish wheels were used to harvest about 25% of all salmon harvested during the study year (Table 5-10).

Beaver residents identified reduced abundance of Chinook salmon returning to the Yukon River as the reason that salmon harvests were lower in the community. In response to low Chinook salmon

Table 5-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Beaver, 2011.

		Removed from commercial catch		Subsistence methods													
				Fishwheel		Gillnet or seine		Dipnet		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	23.4%	25.2%	76.6%	74.8%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	23.4%	25.2%	76.6%	74.8%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	33.3%	23.5%	56.2%	43.7%	0.0%	0.0%	0.0%	0.0%	50.8%	38.6%	0.0%	0.0%	50.8%	38.6%
	Resource	0.0%	0.0%	15.4%	15.4%	84.6%	84.6%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	7.8%	5.9%	43.0%	32.7%	0.0%	0.0%	0.0%	0.0%	50.8%	38.6%	0.0%	0.0%	50.8%	38.6%
Coho salmon	Gear type	0.0%	0.0%	14.8%	10.9%	7.9%	6.4%	0.0%	0.0%	0.0%	0.0%	9.5%	7.5%	0.0%	0.0%	9.5%	7.5%
	Resource	0.0%	0.0%	36.4%	36.4%	63.6%	63.6%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	3.5%	2.7%	6.1%	4.8%	0.0%	0.0%	0.0%	0.0%	9.5%	7.5%	0.0%	0.0%	9.5%	7.5%
Chinook salmon	Gear type	0.0%	0.0%	48.1%	63.0%	33.1%	47.7%	0.0%	0.0%	0.0%	0.0%	36.6%	51.6%	0.0%	0.0%	36.6%	51.6%
	Resource	0.0%	0.0%	30.8%	30.8%	69.2%	69.2%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	11.3%	15.9%	25.3%	35.7%	0.0%	0.0%	0.0%	0.0%	36.6%	51.6%	0.0%	0.0%	36.6%	51.6%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	3.7%	2.6%	2.8%	2.2%	0.0%	0.0%	0.0%	0.0%	3.0%	2.3%	0.0%	0.0%	3.0%	2.3%
	Resource	0.0%	0.0%	28.6%	28.6%	71.4%	71.4%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.9%	0.7%	2.2%	1.6%	0.0%	0.0%	0.0%	0.0%	3.0%	2.3%	0.0%	0.0%	3.0%	2.3%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

returns, regulations reduced subsistence fishing time. This primary reason for less salmon being harvested was expressed by attendees at the community review meeting held on May 15, 2012. A number of comments indicated specifically that fishing for Chinook salmon was closed by ADF&G right when the fish started to arrive so that they "never got to catch a run." For some households high water at the time that they wanted to fish resulted in reduced salmon harvests in 2011.

During the survey, 1 household head indicated that Chinook salmon are being caught earlier than in the past. This household head also indicated that he did not use his fish camp in 2011 due to work responsibilities. Also, he traveled back and forth with a boat to check his net, which resulted in an increase of his use of gasoline. He said that during the fishing season he monitored the radio fish reports along the Yukon River.

One household indicated that its harvest of salmon was less in 2011 because "an old [river] eddy filled in" so the household had to move its fish camp. Changing the Chinook salmon net mesh size was a hardship for them.[4] For more comments and concerns about salmon, see the section "Local Concerns Regarding Resources" below.

During the study year 2011, Beaver respondents reported harvesting salmon along the Yukon River mainly upstream from Beaver, with a few locations downstream from Beaver also being used. The most heavily used areas are upstream from Beaver in both channels around Joe Devlin Island, in Jack Uheen Slough, and in the main Yukon River channel down to Beaver (Figure 5-6). One respondent related that the channels are too narrow for driftnet fishing.

NONSALMON FISH

In 2011, Beaver residents harvested an estimated total of 978 lb, or 14 lb per capita, of nonsalmon fish (Table 5-8). In terms of total pounds and percentages, most of the harvest was humpback whitefish, followed by northern pike, broad whitefish, and sheefish (Table 5-8; Figure 5-7). Table 5-11 lists the number and pounds of each nonsalmon fish species harvested by Beaver residents in 2011 in percentages by gear type. Beaver residents harvested most of their nonsalmon fish with set gillnets (70%). Broad whitefish were the only species caught only by gillnet. Arctic grayling and burbot were only caught by ice fishing. One household indicated that spearing was an "other" subsistence method used to catch humpback whitefish on the Slana River near Mentasta. Another household caught broad whitefish at Chalkyitsik. Because they are not in the local area, the Slana River and Chalkyitsik use areas are not shown on the harvest use area map (Figure 5-8).

In the study year 2011, the locations of the harvest of nonsalmon fish were wide-ranging and included: Shovun Lake, the lower Chandalar River area, Lower Birch Creek Slough, areas adjacent

4. Net mesh size restrictions are specified in 5 AAC 05.331: Gillnet specifications and operations, http://www.legis.state.ak.us/basis/folio.asp. Net mesh size restrictions that were enacted in 2011 are summarized in ADF&G, "2011 preliminary Yukon River summer season summary," released September 30, 2011, http://www.adfg.alaska.gov/static/fishing/PDFs/commercial/2011_yukonriver_summersalmon_summary.pdf.

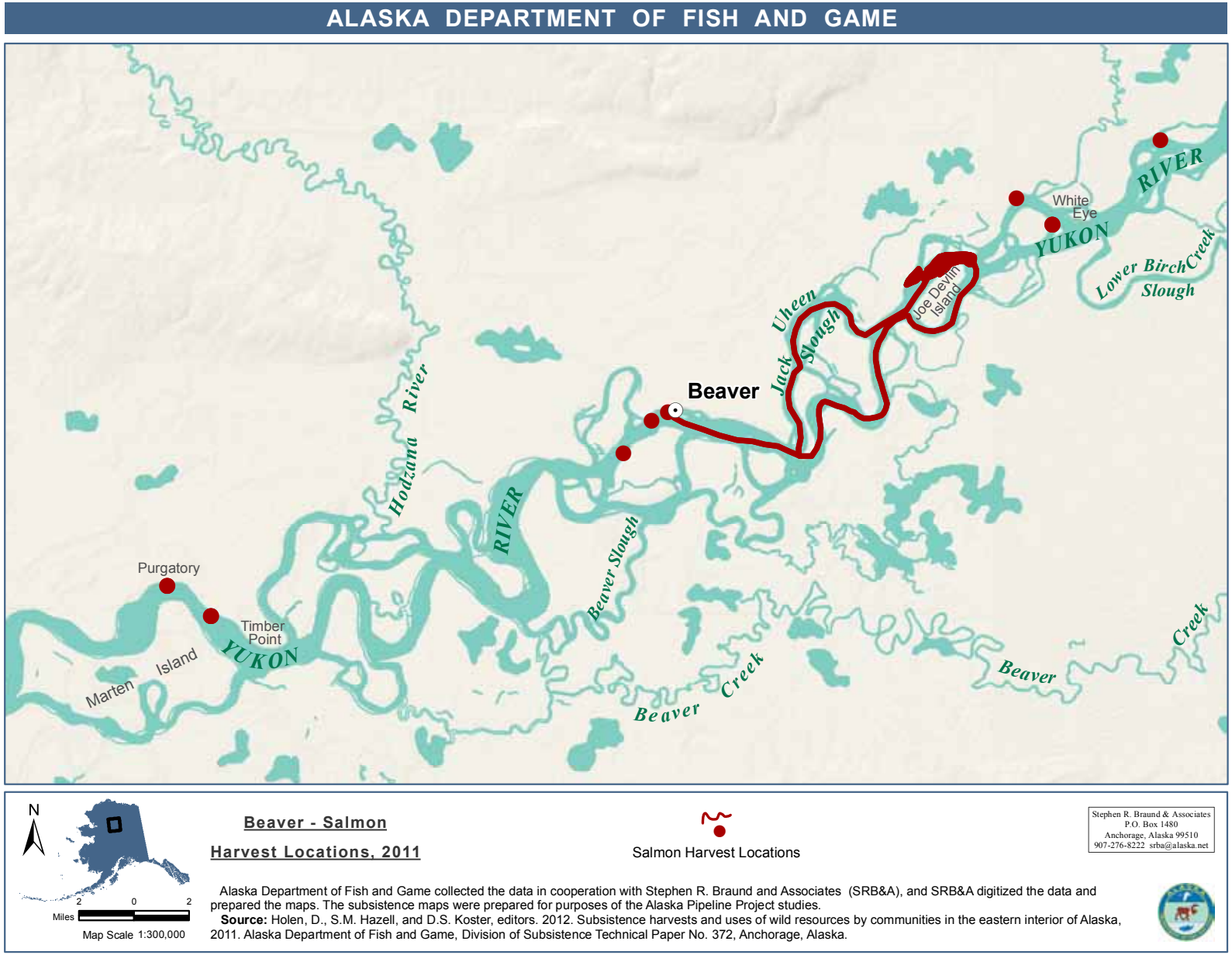


Figure 5-6.– Salmon search and harvest areas, Beaver, 2011.

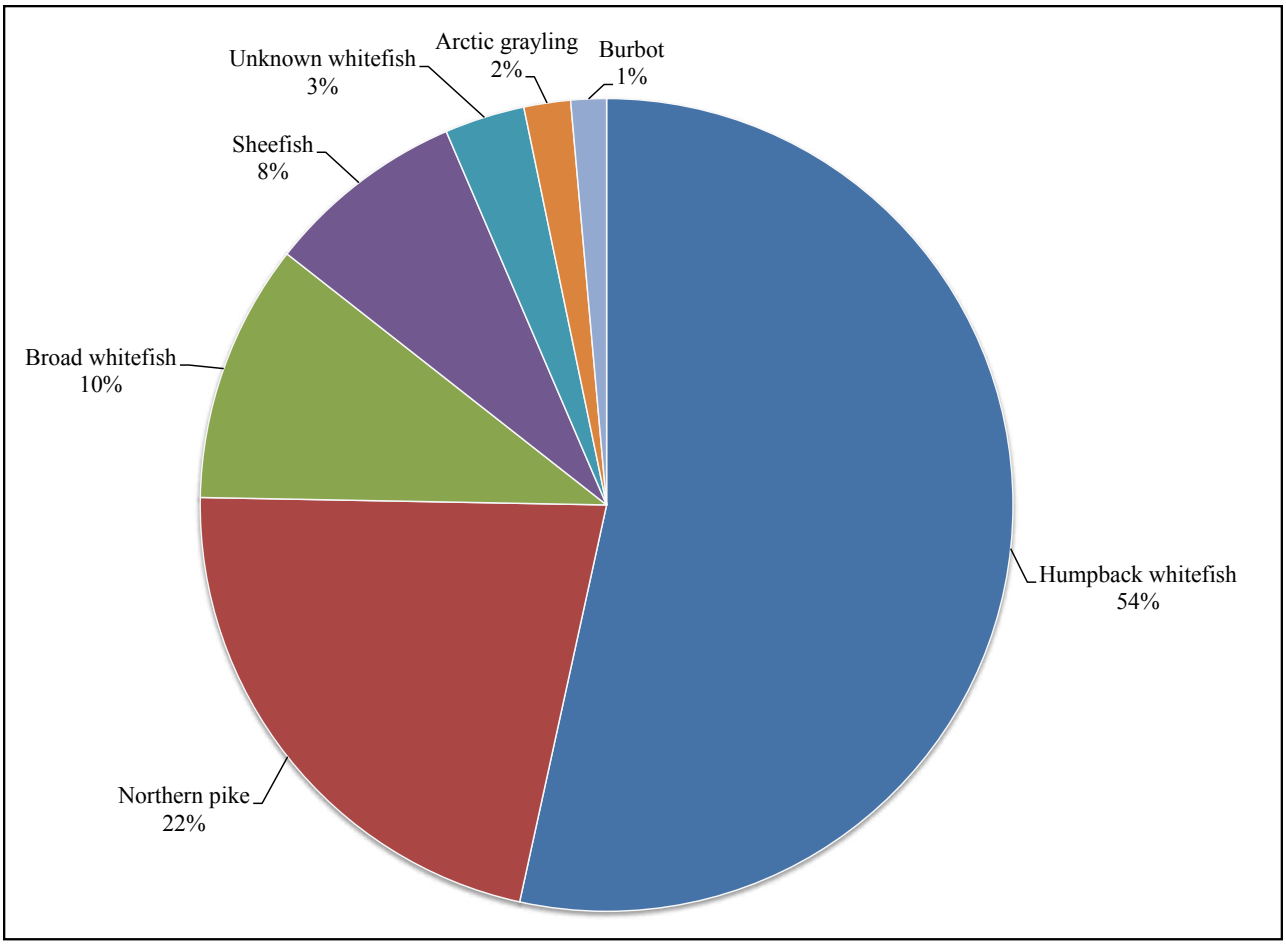


Figure 5-7.– Composition of nonsalmon fish harvest, Beaver, 2011.

to the community of Beaver, Beaver Slough, the lower Hodzana River, and Purgatory (Figure 5-8). As described above, some search and harvest areas that were not within the boundaries of the field maps used during the surveys were not mapped. Other locations may not have been mapped during the survey for various reasons. For example, at the community review meeting on May 15, 2012, 1 person indicated a salmon and nonsalmon harvest area at his/her camp on the Yukon River downstream from Beaver that was not shown on the final harvest area map, most likely because the household was unavailable to participate in the survey in January 2012.

LARGE LAND MAMMALS

In 2011, large land mammals, predominantly moose, made up 44% of the total Beaver harvest by weight (Figure 5-3). The composition of the large land mammal harvest is depicted in Figure 5-9. A large percentage (64%) of households hunted moose, and 32% of households were successful harvesters (Table 5-8). An estimated 96% of households used moose during the study year (Table 5-8). In terms of pounds harvested in 2011, moose ranked first on the list of top 10 resources harvested (Table 5-9). According to the study, the majority of the successful moose hunting took place in September 2011

Table 5-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Beaver, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	69.7%	70.2%	30.3%	29.8%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	69.7%	70.2%	30.3%	29.8%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	5.4%	4.7%	1.6%	1.4%	0.0%	0.0%	1.6%	1.4%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.6%	1.4%	1.6%	1.4%	0.0%	0.0%	1.6%	1.4%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	24.3%	6.2%	7.4%	1.9%	0.0%	0.0%	7.4%	1.9%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	7.4%	1.9%	7.4%	1.9%	0.0%	0.0%	7.4%	1.9%
Northern pike	Gear type	0.0%	0.0%	14.7%	23.6%	10.8%	17.8%	13.5%	21.9%	0.0%	0.0%	13.5%	21.9%
	Resource	0.0%	0.0%	75.8%	75.8%	24.2%	24.2%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	10.2%	16.6%	3.3%	5.3%	13.5%	21.9%	0.0%	0.0%	13.5%	21.9%
Sheefish	Gear type	0.0%	0.0%	2.9%	6.3%	5.4%	11.9%	3.7%	7.9%	0.0%	0.0%	3.7%	7.9%
	Resource	0.0%	0.0%	55.6%	55.6%	44.4%	44.4%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	2.0%	4.4%	1.6%	3.5%	3.7%	7.9%	0.0%	0.0%	3.7%	7.9%
Broad whitefish	Gear type	0.0%	0.0%	29.4%	14.7%	0.0%	0.0%	20.5%	10.3%	0.0%	0.0%	20.5%	10.3%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	20.5%	10.3%	0.0%	0.0%	20.5%	10.3%	0.0%	0.0%	20.5%	10.3%
Humpback whitefish	Gear type	0.0%	0.0%	47.6%	50.9%	54.1%	59.3%	49.6%	53.4%	0.0%	0.0%	49.6%	53.4%
	Resource	0.0%	0.0%	66.9%	66.9%	33.1%	33.1%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	33.2%	35.8%	16.4%	17.7%	49.6%	53.4%	0.0%	0.0%	49.6%	53.4%
Unknown whitefish	Gear type	0.0%	0.0%	5.3%	4.5%	0.0%	0.0%	3.7%	3.2%	0.0%	0.0%	3.7%	3.2%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	3.7%	3.2%	0.0%	0.0%	3.7%	3.2%	0.0%	0.0%	3.7%	3.2%

Source ADF&G Division of Subsistence household surveys, 2012.

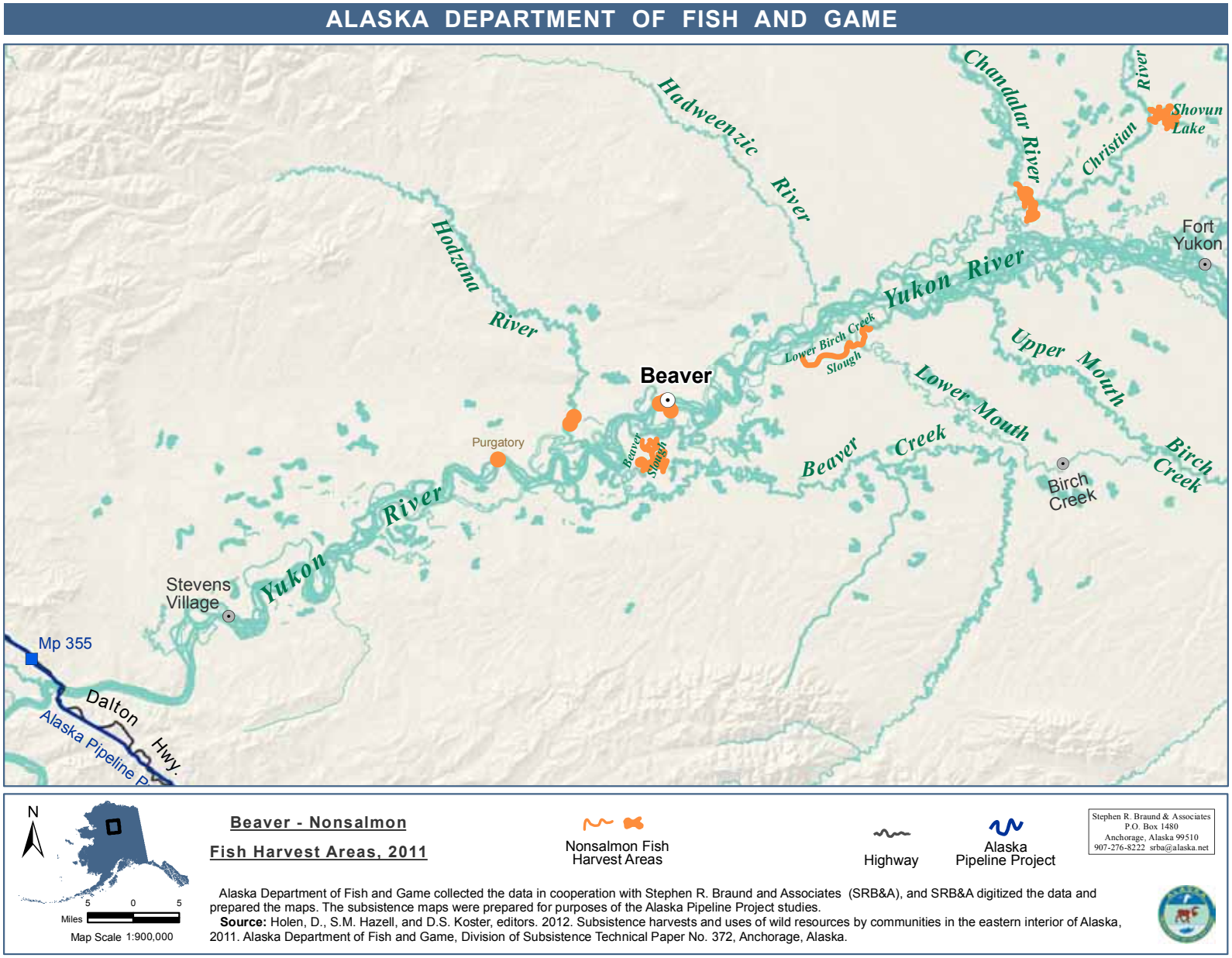


Figure 5-8.– Nonsalmon fish search and harvest areas, Beaver, 2011.

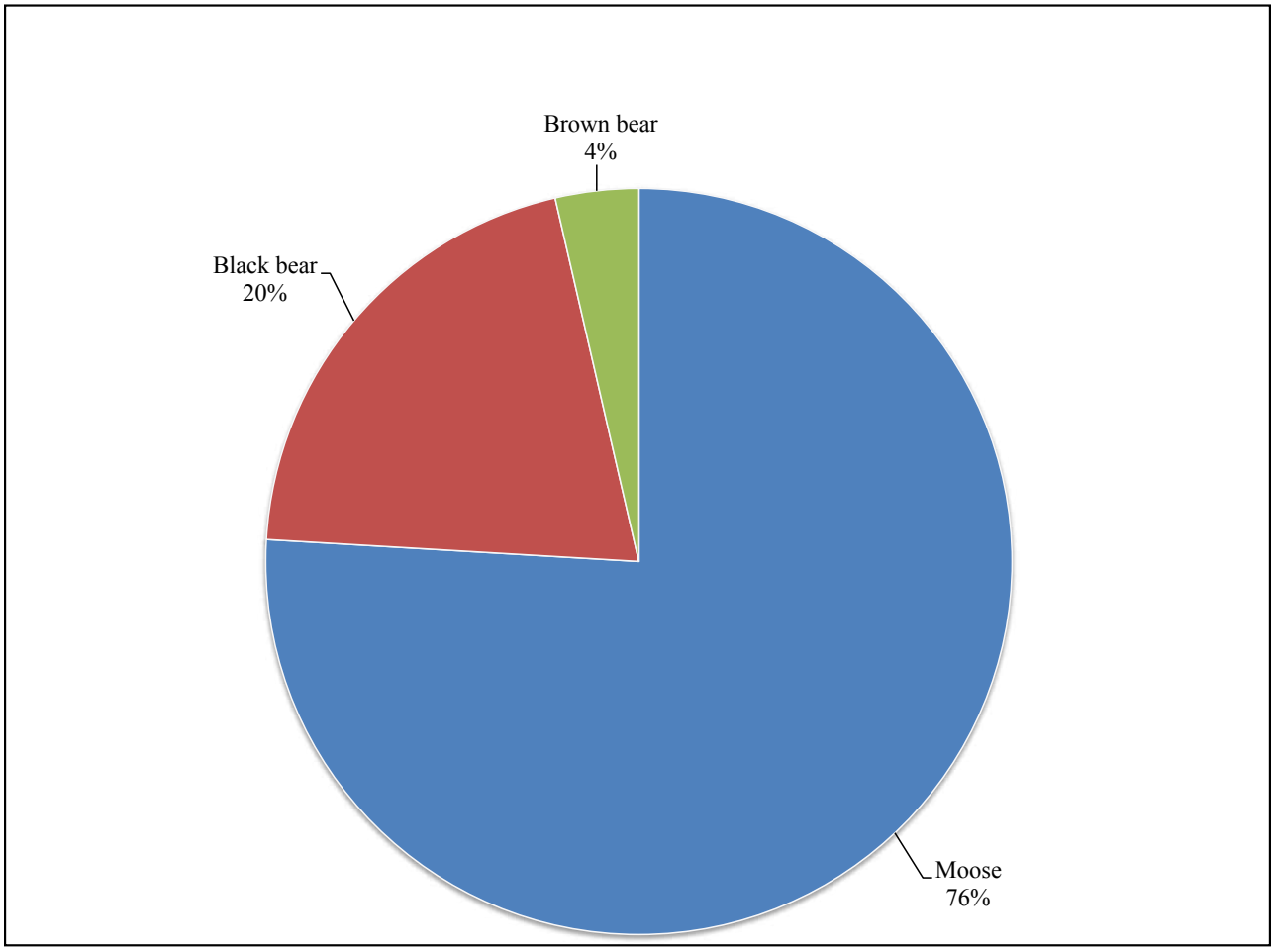


Figure 5-9.– Composition of large land mammal harvest, Beaver, 2011.

with 1 moose harvested in February (Table 5-12). Generally respondents believe there is a shortage of moose in the Beaver area. Also, the expense of maintaining equipment, especially a boat and motor, and the expense of gasoline needed to hunt moose are prohibitive for many community members. Many of the household members who indicated that they hunted moose said they hunted with a household that had a boat and motor for transportation.

None of the Beaver households surveyed said that they attempted to hunt caribou and no household used caribou in 2011 (Table 5-8). One respondent commented that "you have to go a long ways for caribou." Black bears were ranked fourth on the list of top 10 resources harvested (Table 5-9). In 2011, about 32% of Beaver residents reported attempting to harvest black bears and all of those households were successful. Forty percent of Beaver households reported using black bears during the study year (Table 5-8). Black bears were harvested in the months of July, August, and September; more than half (13 animals) of the estimated harvest of 23 black bears occurred in August (Table 5-12). Although households target black bears during some hunts, comments by hunters during the surveys indicated that black bears are also harvested opportunistically as they are encountered in July, August, and

Table 5-12. – Estimated harvests of large game by month and sex, Beaver, 2011.

				Caribou				Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	5.8	1.4	0.0	0.0	0.0	0.0	14.4	0.0	0.0	0.0	0.0
October	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**23.0**	**2.9**	**0.0**	**0.0**	**0.0**	**0.0**	**14.4**	**0.0**	**1.4**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

September. Brown bears were harvested in September and October with 8% of households harvesting brown bears and the same percentage using them (Table 5-8).

Beaver residents used a large area for searching for and hunting large land mammals. Moose hunting was conducted mainly by motorized boat along the Yukon River channels from the bridge on the Dalton Highway to just upstream of the confluence with the Chandalar River. Other waterways accessed off of the Yukon River were the Upper Mouth Birch Creek, Lower Mouth Birch Creek, Beaver Creek, and Hodzana River. Moose were also hunted in areas accessed by the government road from Beaver (Figure 5-10). Bears were hunted in an area centered slightly east of Beaver spanning approximately 22 miles in diameter, with a few additional areas upstream used at White Eye and in the Purgatory area. Areas not accessed by boat were accessed by ATVs (Figure 5-11).

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 5-8, the total harvest of small land mammals by Beaver residents in 2011 for food was 475 lb, or 7 lb per capita. Most of the harvest was beavers (302 lb, or 4 lb per capita) and snowshoe hares (144 lb, or 2 lb per capita). The harvest of small land mammals for wild foods totaled approximately 2% of the total harvest in 2011 (Figure 5-3). The search and harvest areas for small land mammals in 2011 included corridors extending east and west from Beaver on the north side of the Yukon River and extending north along the Hodzana River and generally to the south of Beaver. A small number of more localized areas were identified along the Yukon River upstream and downstream from Beaver (Figure 5-12).

BIRDS

The total harvest of migratory birds was an estimated 1,756 lb, or 24 lb per capita (Table 5-8). The total harvest of upland game birds, which includes grouse and ptarmigan, was 78 lb, or a little more than 1 lb per capita. Ducks, mainly mallards and black scoters, accounted for 368 lb total, or 5 lb per capita, of the migratory bird harvest. Geese, especially white-fronted geese, were by far the most heavily harvested bird species, accounting for 1,389 lb total, or 19 lb per capita (Table 5-8).

In 2011, Beaver residents harvested migratory birds mainly along the Yukon River and adjacent waterways and sloughs from just upstream of the mouth of the Chandalar River to approximately 30 miles downstream from Beaver. Upland game birds were harvested immediately around the village of Beaver and in a hunting area extending to the north. Another area a little more than 3 miles to the west of Beaver and an area around Purgatory were also utilized. A small number of goose eggs, less than 4 lb total for the community, were harvested.

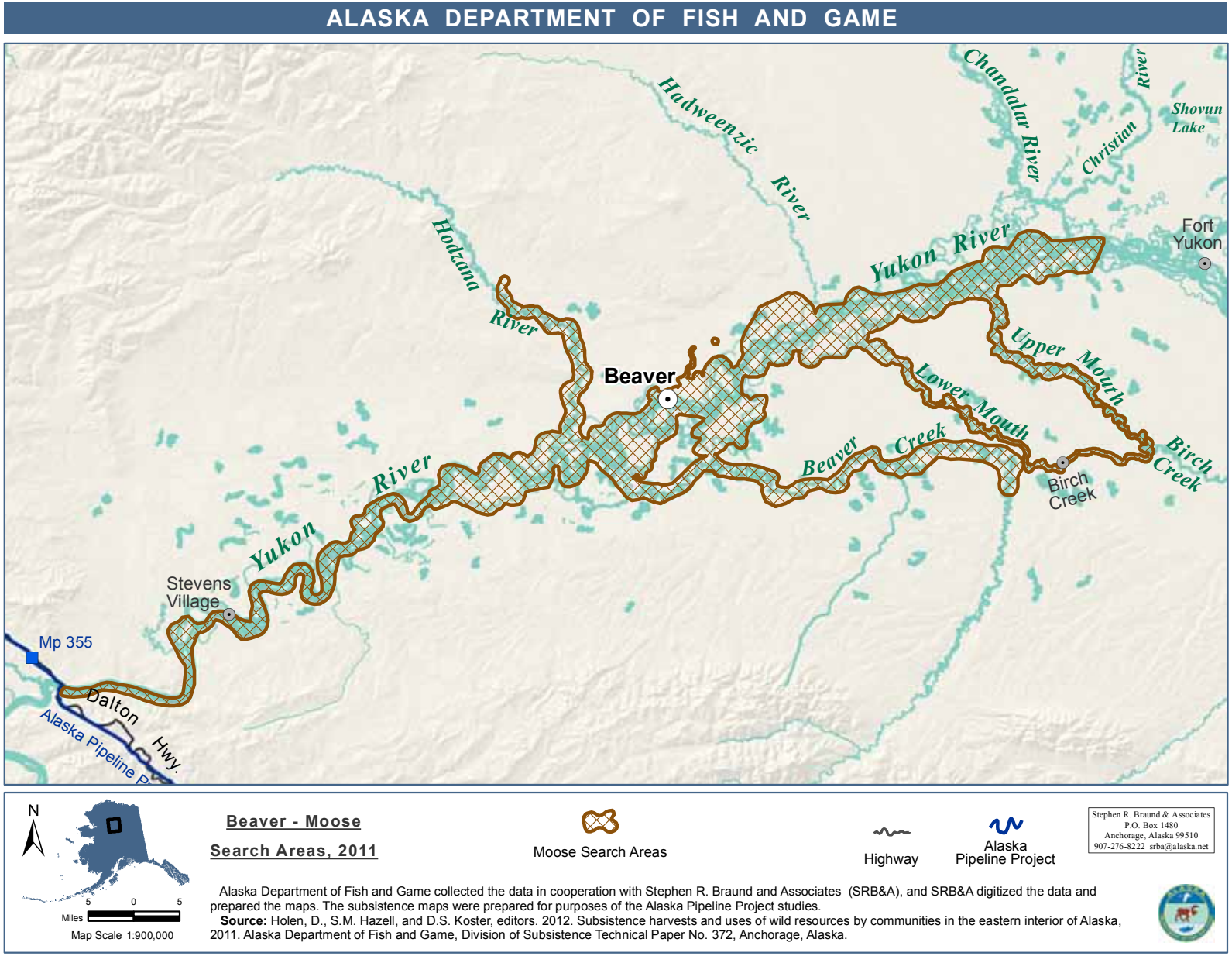


Figure 5-10.– Moose search and harvest areas, Beaver, 2011.

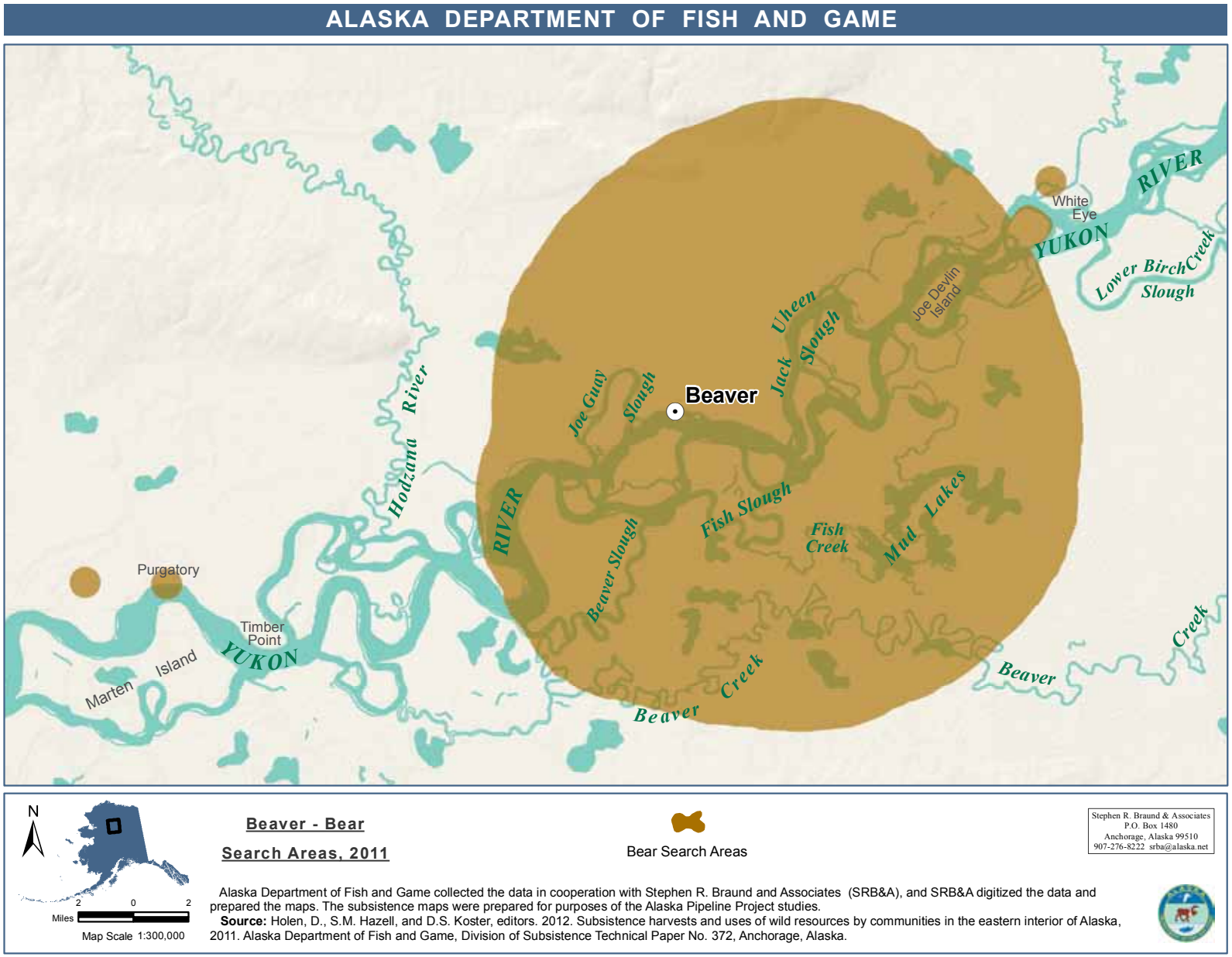


Figure 5-11.– Bear search and harvest areas, Beaver, 2011.

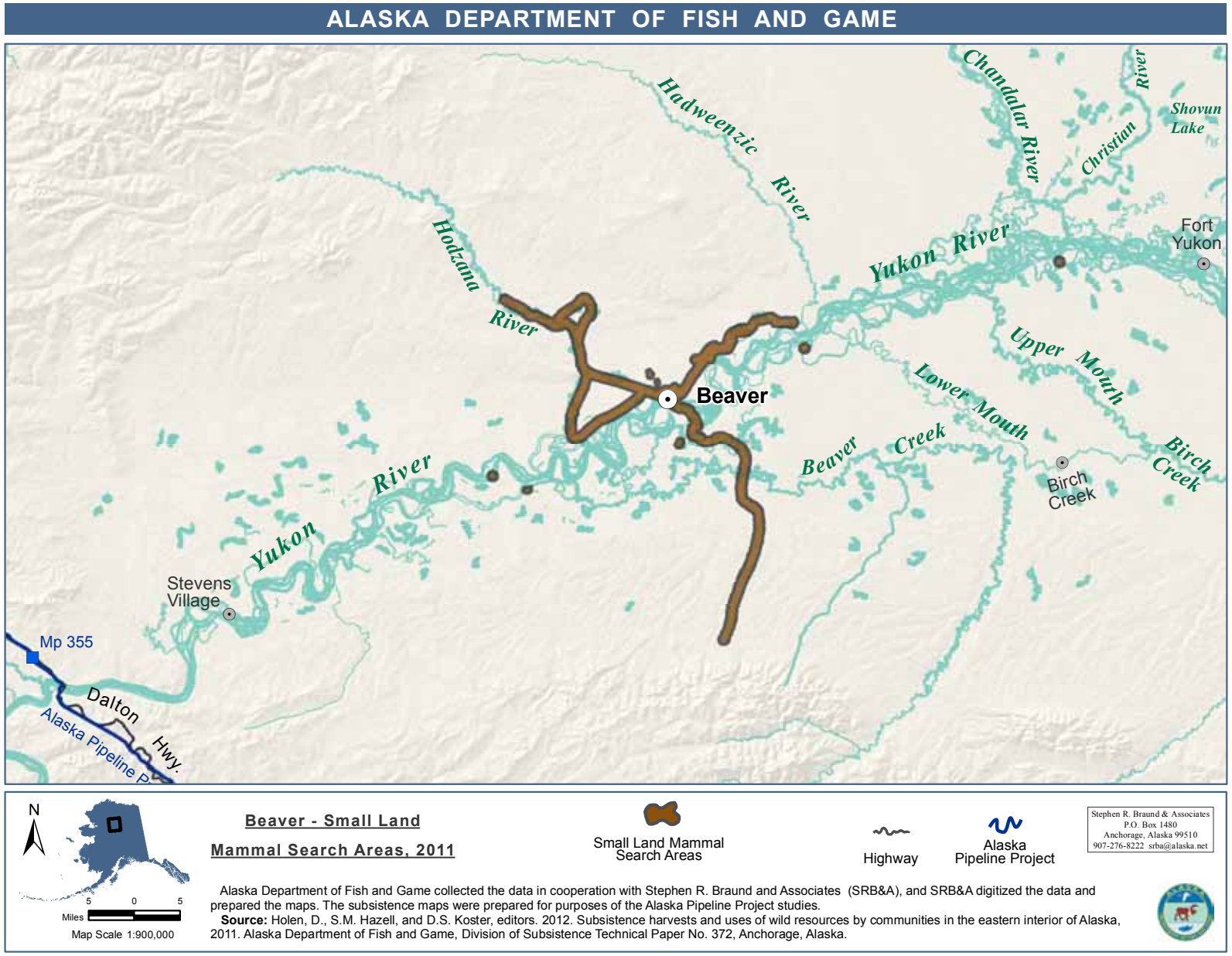


Figure 5-12.– Small land mammals search and harvest areas, Beaver, 2011.

Table 5-13. – Estimated earned and other income, Beaver, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Local government	25.9	22.3	$375,975.20	$10,443.76	$5,221.88	48.2%
Transportation, communication and utilities	2.9	3.4	$124,807.01	$3,466.86	$1,733.43	16.0%
Mining	2.9	3.4	$63,393.59	$1,760.93	$880.47	8.1%
Federal government	5.8	6.9	$40,749.15	$1,131.92	$565.96	5.2%
Earned income subtotal	**33.6**	**25.7**	**$604,924.94**	**$16,803.47**	**$8,401.74**	**77.6%**
Other income						
Alaska permanent fund dividend		30.2	$56,537.28	$1,570.48	$785.24	7.3%
Unemployment		8.6	$25,683.84	$713.44	$356.72	3.3%
Native corporation dividend		28.8	$22,376.68	$621.57	$310.79	2.9%
Social security		7.2	$18,385.92	$510.72	$255.36	2.4%
Energy assistance		18.7	$17,208.58	$478.02	$239.01	2.2%
Food stamps		10.1	$14,097.89	$391.61	$195.80	1.8%
Supplemental Security Income		2.9	$7,188.48	$199.68	$99.84	0.9%
Pension / retirement		5.8	$6,773.76	$188.16	$94.08	0.9%
Longevity bonus		5.8	$4,838.40	$134.40	$67.20	0.6%
Other		4.3	$1,497.60	$41.60	$20.80	0.2%
Adult public assistance		0.0	$0.00	$0.00	$0.00	0.0%
Workmans' compensation/insurance		0.0	$0.00	$0.00	$0.00	0.0%
Child support		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**33.1**	**$174,588.42**	**$4,849.68**	**$2,424.84**	**22.4%**
Community income total			**$779,513.37**	**$21,653.15**	**$10,826.57**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

VEGETATION

All (100%) households in Beaver used vegetation during the 2011 study year, and 84% of households harvested vegetation (Table 5-8). The high percentage of use and harvest in this category was due to the harvest of firewood which is used by all households in Beaver to heat their homes, and most of the households rely on firewood for all of their heat. All of the firewood was harvested within about 8 miles of Beaver except for wood harvested at Purgatory. Berries were harvested within about 10 miles of Beaver. In 2011, Beaver residents harvested 163 lb, or more than 2 lb per capita, of edible vegetation. All edible vegetation consisted of highbush cranberries, blueberries, and lowbush cranberries except for a little more than 1 lb of wild rose hips that was collected (Table 5-8). Twenty-eight percent of households harvested berries and 32% of households used berries (Table 5-8). A few households indicated that it was not a good year for berries and 1 household said that it did not have time to pick berries in 2011.

CASH EMPLOYMENT AND MONETARY INCOME

Table 5-13 is a summary of the estimated earned income as well as other sources of income for residents of Beaver in 2011. This table shows that in 2011 earned income accounted for an average of $16,803 per household, or 78% of the total community income, compared to other income sources

Table 5-14. – Employment by industry, Beaver, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**43**	**26**	**34**	
Federal government (total)	**14.3%**	**26.7%**	**18.2%**	**6.7%**
Administrative support occupations, including clerical	3.6%	6.7%	4.5%	4.2%
Service occupations	7.1%	13.3%	9.1%	1.6%
Agricultural, forestry, and fishing occupations	3.6%	6.7%	4.5%	0.9%
Local government, including tribal (total)	**71.4%**	**86.7%**	**81.8%**	**62.2%**
Executive, administrative, and managerial	7.1%	13.3%	9.1%	9.1%
Teachers, librarians, and counselors	10.7%	20.0%	13.6%	11.4%
Health technologists, and technicians	3.6%	6.7%	4.5%	7.3%
Technologists and technicians, except health	10.7%	13.3%	13.6%	15.0%
Service occupations	10.7%	20.0%	13.6%	6.5%
Agricultural, forestry, and fishing occupations	3.6%	6.7%	4.5%	0.4%
Mechanics and repairers	3.6%	6.7%	4.5%	2.2%
Construction and extractive occupations	3.6%	6.7%	4.5%	2.2%
Precision production occupations	3.6%	6.7%	4.5%	0.4%
Handlers, equipment cleaners, helpers, and laborers	14.3%	26.7%	18.2%	7.6%
All occupations				
Mining (total)	**7.1%**	**13.3%**	**9.1%**	**10.5%**
Transportation and material moving occupations	3.6%	6.7%	4.5%	7.8%
Occupation not indicated	3.6%	6.7%	4.5%	2.7%
Transportation, communication, and utilities (total)	**7.1%**	**13.3%**	**9.1%**	**20.6%**
Technologists and technicians, except health	3.6%	6.7%	4.5%	0.6%
Transportation and material moving occupations	3.6%	6.7%	4.5%	20.1%

Source ADF&G Division of Subsistence household surveys, 2012.

that accounted for an average of $4,850 per household, or 22% of the total community income. The largest source of other income was the Alaska Permanent Fund dividend, which accounted for 7% of the total community income in 2011 (Table 5-13). In 2011, most (71%) of the jobs in Beaver were with local and tribal governments. Other important employment sectors during the study year were transportation, communication, and utilities (7% of jobs); mining, which includes oil extraction (7% of jobs); and federal government jobs (14% of jobs) (Table 5-14).

In 2011, 58% of the adults of working age (16 and over) at Beaver were employed at some point during the study year. Of these employed adults, 26% were employed year-round (Table 5-15). On average in 2011, 71% of employed households contained at least 1 adult who was employed. The mean number of jobs per employed household was 1. Most jobs were located in Beaver but some respondents reported working on the North Slope.

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" (Nord et al. 2009:2). 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. Core questions and responses from Beaver residents are summarized in Figure

Table 5-15. – Employment characteristics, Beaver, 2011.

Characteristic	Community Beaver
All adults	
Number	57.6
Mean weeks employed	16.8
Employed adults	
Number	33.6
Percentage	58.3%
Jobs	
Number	43
Mean	1.3
Minimum	1.0
Maximum	2.0
Months employed	
Mean	6.6
Minimum	0.0
Maximum	12.0
Percentage employed year-round	25.7%
Mean weeks employed	28.8
Households	
Number	36.0
Employed	
Number	25.7
Percentage	71.4%
Jobs per employed household	
Mean	1.2
Minimum	1.0
Maximum	4.0
Employed adults	
Mean	
Employed households	1.3
Total households	0.9
Minimum	1.0
Maximum	4.0
Mean person-weeks of employment	26.2

Source ADF&G Division of Subsistence household surveys, 2012.

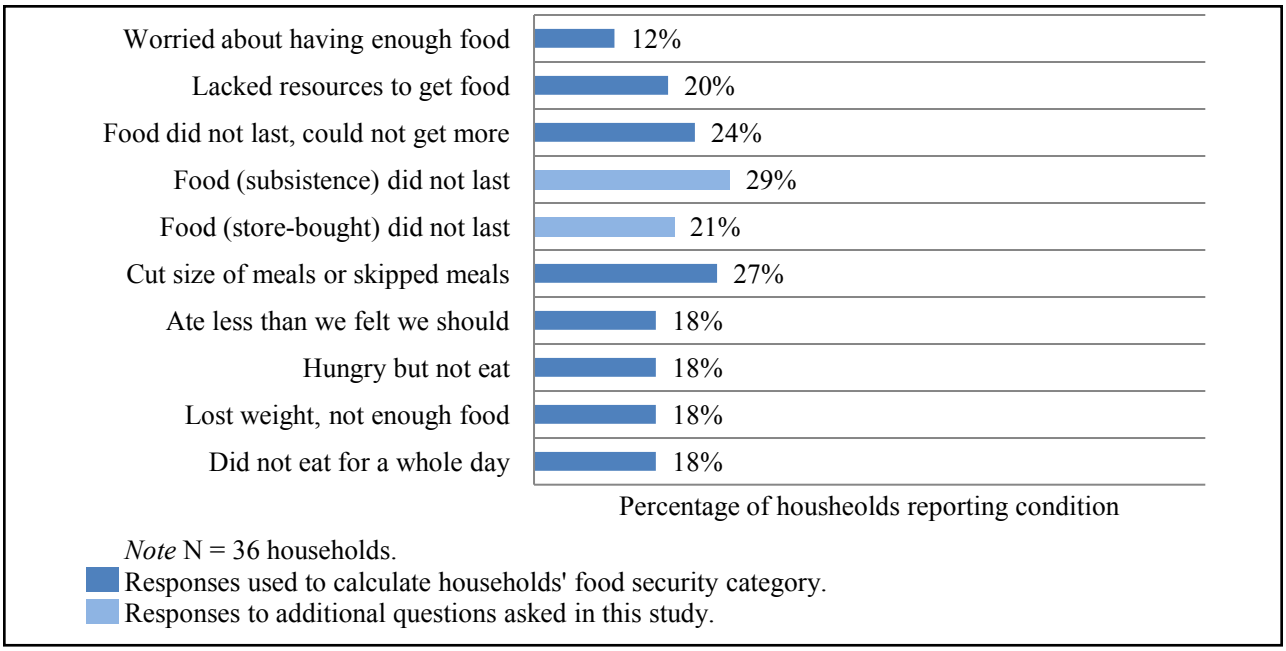


Figure 5-13.– Food insecure conditions, Beaver, 2011.

5-13. In Beaver, a lack of subsistence foods was the most frequently reported source of food insecurity followed by cutting the size of or skipping meals; 29% of Beaver households said their subsistence foods did not last and 27% said that meals were skipped or cut in size (Figure 5-13).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Beaver, the state of Alaska, and the United States are summarized in Figure 5 -14. In Beaver in 2011, 80% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 12% had low food security and 8% had very low food security. Beaver households had lower levels of food security and higher levels of food insecurity than surveyed households in Alaska as well as the United States as a whole (Nord et al. 2009:21).

Figure 5-15 portrays the mean number of food insecure conditions per household by food security category by month. For households with very low food security, food insecurity conditions remained consistent at about 7.5 conditions per household for all 12 months. Figure 5-16 shows that depending

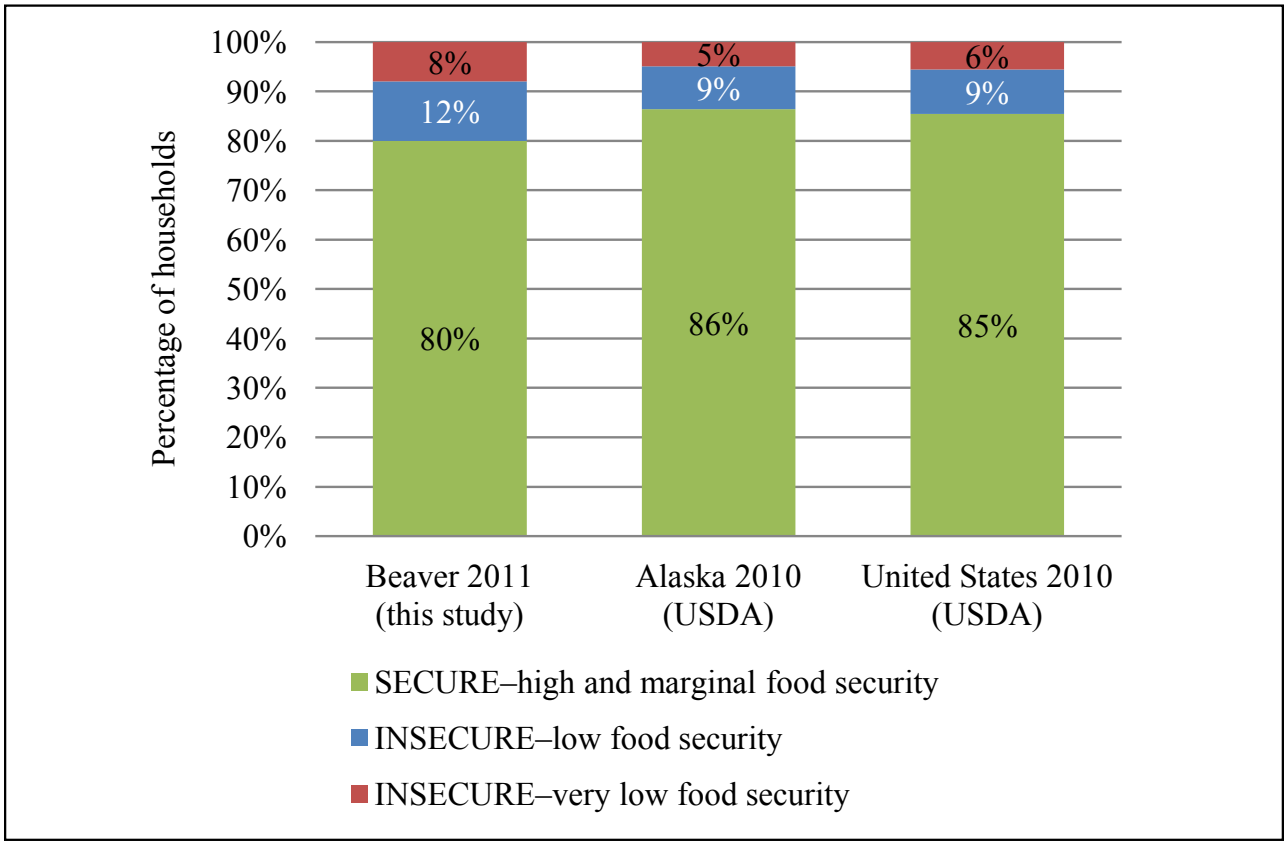


Figure 5-14.– Food insecure categories, Beaver, 2011.

upon the month, between 8% and 16% of households reported subsistence foods did not last. There were reports of any food, including store-bought and subsistence food, not lasting in each month of the year; in June through September there were elevated percentages of households reporting any food did not last (Figure 5-16).

In Beaver food insecurity was constant throughout the year. As shown in Figure 5-15, reports of food insecure conditions were stable for each food security category throughout 2011. Figure 5-16 indicates the most food secure months for subsistence foods were January through March and November and December; one reason for these months being more food secure is that subsistence foods have all been harvested and processed by early winter but supplies begin to deplete in early spring and are not replenished until the end of the summer fishing and fall large mammal hunting seasons.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. “Other recent years” was defined as about the last 5 years. Table 5-16 reports the number of valid responses for each category, which may differ from the total number of interviewed

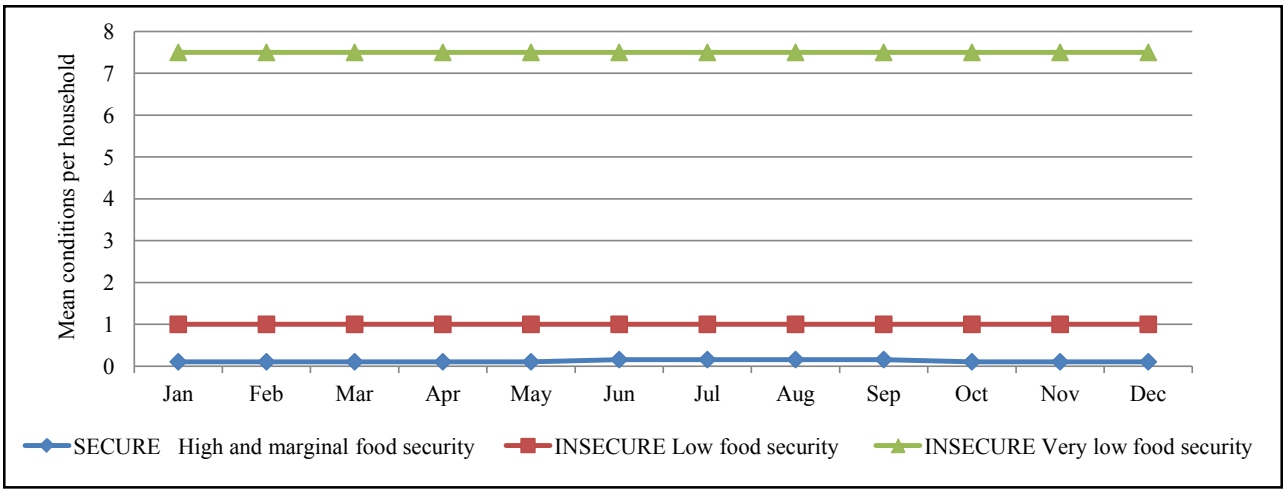


Figure 5-15.– Mean number of food insecure conditions for each month food was reported not to have lasted, Beaver, 2011.

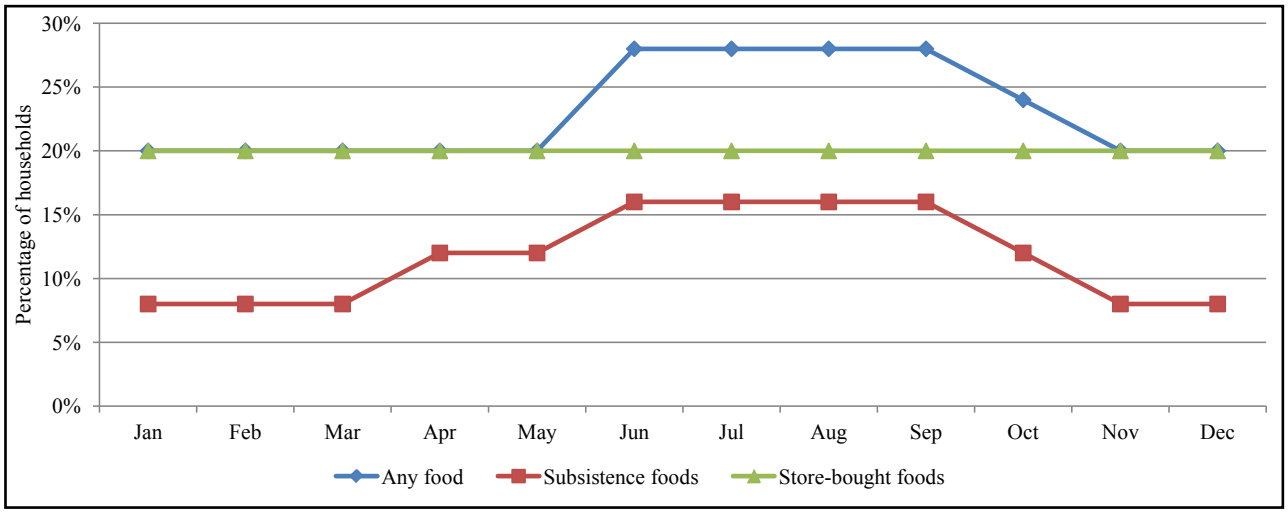


Figure 5-16.– Comparison of months where foods did not last, Beaver, 2011.

Table 5-16. – Changes in household uses of resources compared to recent years, Beaver, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	25	25	20	80%	25	100%	7	28%
All resources	25	24	5	21%	18	75%	1	4%
Salmon	25	25	15	60%	9	36%	1	4%
Nonsalmon fish	25	14	1	7%	13	93%	0	0%
Large game	25	25	9	36%	13	52%	3	12%
Small game	25	11	5	45%	4	36%	2	18%
Marine mammals	25	1	0	0%	1	100%	0	0%
Migratory waterfowl	25	22	4	18%	17	77%	1	5%
Other birds	25	9	3	33%	5	56%	1	11%
Bird eggs	25	2	0	0%	1	50%	1	50%
Marine invertebrates	25	0	0	0%	0	0%	0	0%
Vegetation	25	25	2	8%	22	88%	1	4%

Source ADF&G Division of Subsistence household surveys, 2011.

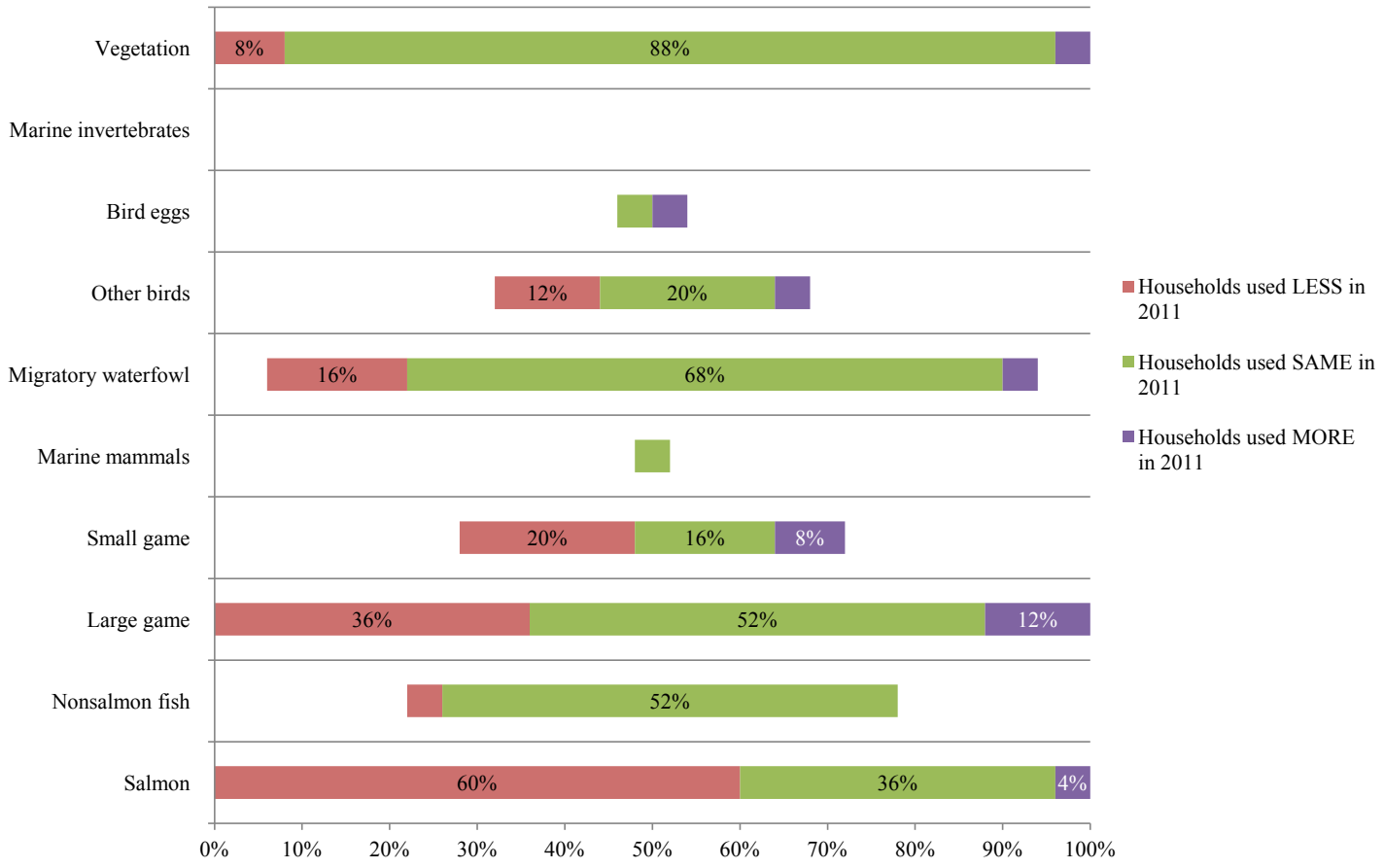
a. Valid responses do not include households that did not provide any response and households reporting never use.

households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 5-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 5-17 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (25 households), and therefore differ from those reported in Table 5-16.

Twenty-one percent of the Beaver respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 75% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 4% said their overall harvests and uses were higher (Table 5-16). As depicted in Figure 5-17, for all resource categories, harvests and uses were lower or about the same for the majority of households that provided assessments.

For example, for salmon, 60% of all interviewed households (Figure 5-17), and 60% of all those who provided an assessment (Table 5-16), indicated less use, while 36% of all households and 36% of those providing assessments indicated the same levels of use in 2011 than in previous years. Households reported the same level of use in 2011 than in previous years as follows: vegetation (88% of all households and those providing assessment), migratory waterfowl (68% of all households and 77% of those providing assessment), large game (52% of all households and those providing assessment), nonsalmon fish (52%of all households and 93% of those providing assessment), other birds (20% of all households and 56% of those providing assessment), and small game (16% of all households and 36% of those providing assessment).

Table 5-17 depicts the reasons Beaver respondents gave for lower harvests and uses by resource



Note Percentages are based on the total number of households in the community (N = 25 households). Unlabeled percentages are less than 5%.

Figure 5-17.– Changes in household uses of resources compared to recent years, Beaver, 2011.

Table 5-17. – Reasons for less household uses of resources compared to recent years, Beaver, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	25	20	2	10.0%	12	60.0%	0	0.0%	3	15.0%	4	20.0%	0	0.0%	4	20.0%	3	15.0%
All resources	24	5	0	0.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	25	15	0	0.0%	5	33.3%	0	0.0%	2	13.3%	1	6.7%	0	0.0%	1	6.7%	1	6.7%
Nonsalmon fish	14	0	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 game	25	9	0	0.0%	4	44.4%	0	0.0%	0	0.0%	2	22.2%	0	0.0%	2	22.2%	0	0.0%
Small game	11	5	1	20.0%	3	60.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%
Marine mammals	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	22	4	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%	1	25.0%
Other birds	9	3	0	0.0%	1	33.3%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	2	0	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	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	25	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 5-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	25	20	3	15.0%	2	10.0%	5	25.0%	0	0.0%	4	20.0%	2	10.0%	1	5.0%	0	0.0%
All resources	24	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	40.0%	1	20.0%	0	0.0%	0	0.0%
Salmon	25	15	2	13.3%	1	6.7%	4	26.7%	0	0.0%	2	13.3%	0	0.0%	1	6.7%	0	0.0%
Nonsalmon fish	14	0	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 game	25	9	1	11.1%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	11	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%
Marine mammals	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	22	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	9	3	0	0.0%	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	2	0	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	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	25	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

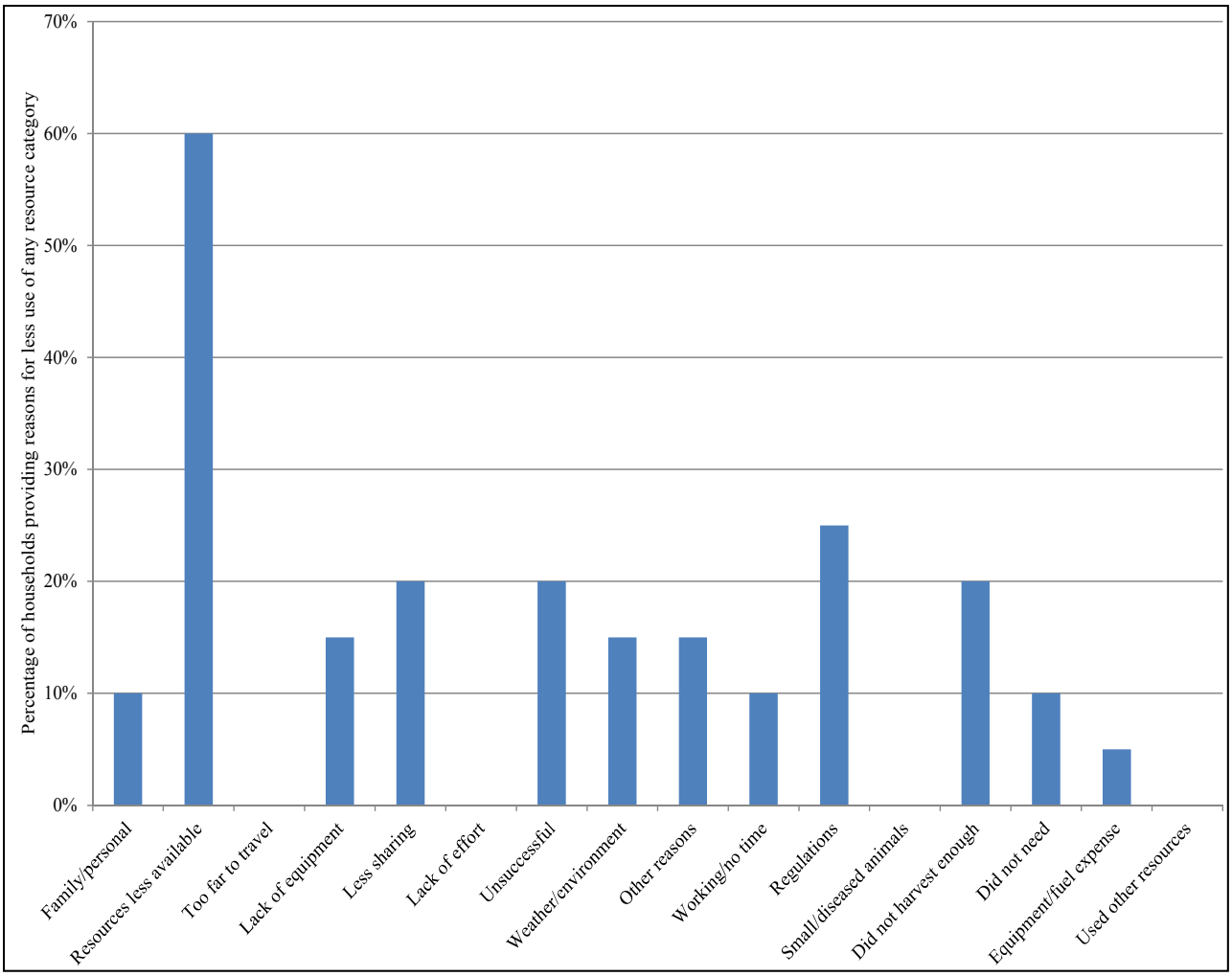


Figure 5-18.– Reasons for less household uses of any resource compared to recent years, Beaver, 2011.

category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: did not get enough (40%), resources being less available (20%), lack of equipment (20%), and did not need (20%). Resource availability was the main reason cited for less use of salmon, large game, and small game. Notably, in addition to the availability of resources, regulations were also frequently given as a reason for less use of salmon, and less sharing and unsuccessful hunts were frequent reasons given for less use of large land mammals. Unsuccessful hunting was the main reason given for less use of migratory birds. Resources being less available, lack

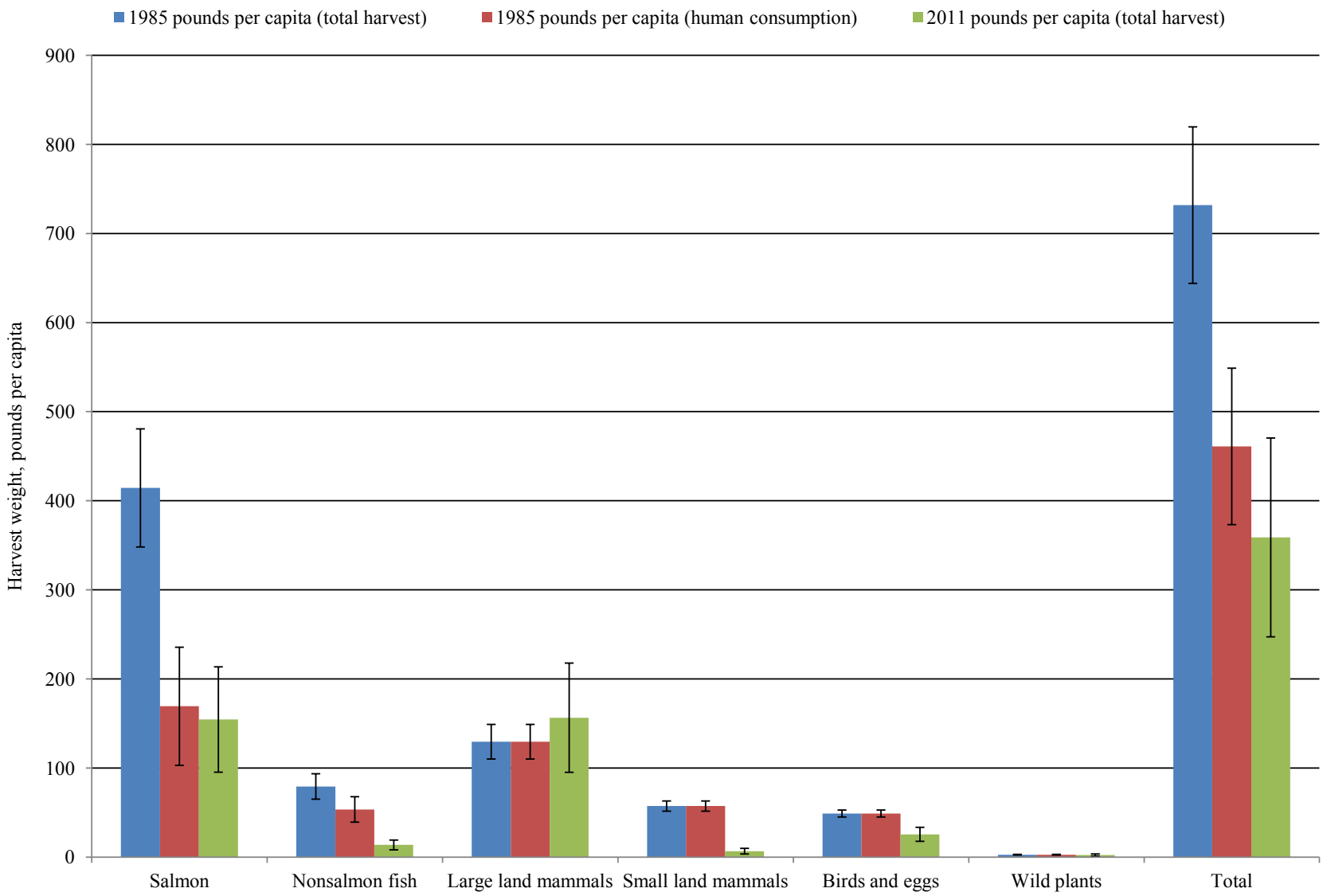
of equipment, working/no time, and regulations were equal responses explaining less use of other birds. The 2 reasons cited for less use of vegetation were weather/environment and did not need (50% each).

Overall, 80% of Beaver's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 28% said that their uses of at least one category had increased (Table 5-16). Resources being less available was the most frequently cited reason for lower use of any resource category in 2011 (60% of all Beaver households who reported a reason for less use), followed by regulations (25%); less sharing, unsuccessful hunting effort, and did not get enough (20% each); lack of equipment, weather/environment conditions, and other reasons (15% each); family/personal obligations, working/no time, and did not need (10% each); and equipment/fuel expenses (5%) (Figure 5-18).

Changes in resource harvests by Beaver residents can also be discerned through comparisons with findings from other study years; summary results for some comparison studies are published online at the CSIS website. For Beaver, comprehensive subsistence household harvest data have been collected for 1985 and 2011 (Figure 5-19). Figure 5-20 summarizes the percentage of the annual harvest for each major resource category from the 2 comprehensive studies from 1985 and 2011. Household surveys documenting migratory bird and waterfowl harvests took place in 2000. Nonsalmon fish harvests were documented in 2005. Additionally the Council of Athabascan Tribal Governments (CATG) conducted harvest surveys for selected resources in 1993, 1994, 1995, and 1996 but the complete data sets are not available to the Division of Subsistence, and are therefore not used in this analysis.

In 1985, the total harvest of wild resources in pounds usable weight in Beaver was 57,084 lb (732 lb per capita), compared to 25,834 lb (359 lb per capita) in 2011 (Figure 5-19). Between 1985 and 2011, the total amount of wild resources harvested in pounds usable weight decreased by approximately half. Sumida's (1989:32) 1985 data indicate an estimated per capita harvest of 732 lb but that figure dropped to 461 lb per capita "solely for human consumption" when the minimum amount of salmon and nonsalmon fish (21,127 lb) used for dog food in 1985 was removed from the total harvest (Sumida 1989:71). Although a similar figure cannot be compiled for 2011 (see below), these figures seem to indicate a much closer per capita harvest figure for both years when the amount used for dog food in 1985 is not included. In 2011, the per capita harvest was 359 lb; however, at least 1 household, and possibly more than 1 of the households that were out of the village and could not be contacted to do the survey, may have been what are considered to be fairly high subsistence harvesters. Missing potentially high harvesting households could have resulted in a lower total harvest when the data were expanded to take into account the households that were not surveyed.

Figure 5-20 shows the increase in percentages in the proportion of large land mammals, birds and eggs, and wild plants in the overall harvest of wild resources. In 1985, the harvest of large land mammals was 18% of the harvest, and 44% in 2011. This is the most notable change and can be attributed to the need for another wild food source due to the lack of Chinook salmon available for harvest. For both



Note The 1985 pounds per capita (total harvest) confidence limit was used for the 1985 pounds per capita (human cunsumption) confidence limit.

Figure 5-19.– Harvest weight, pounds per capita, by resource, Beaver, 1985 and 2011.

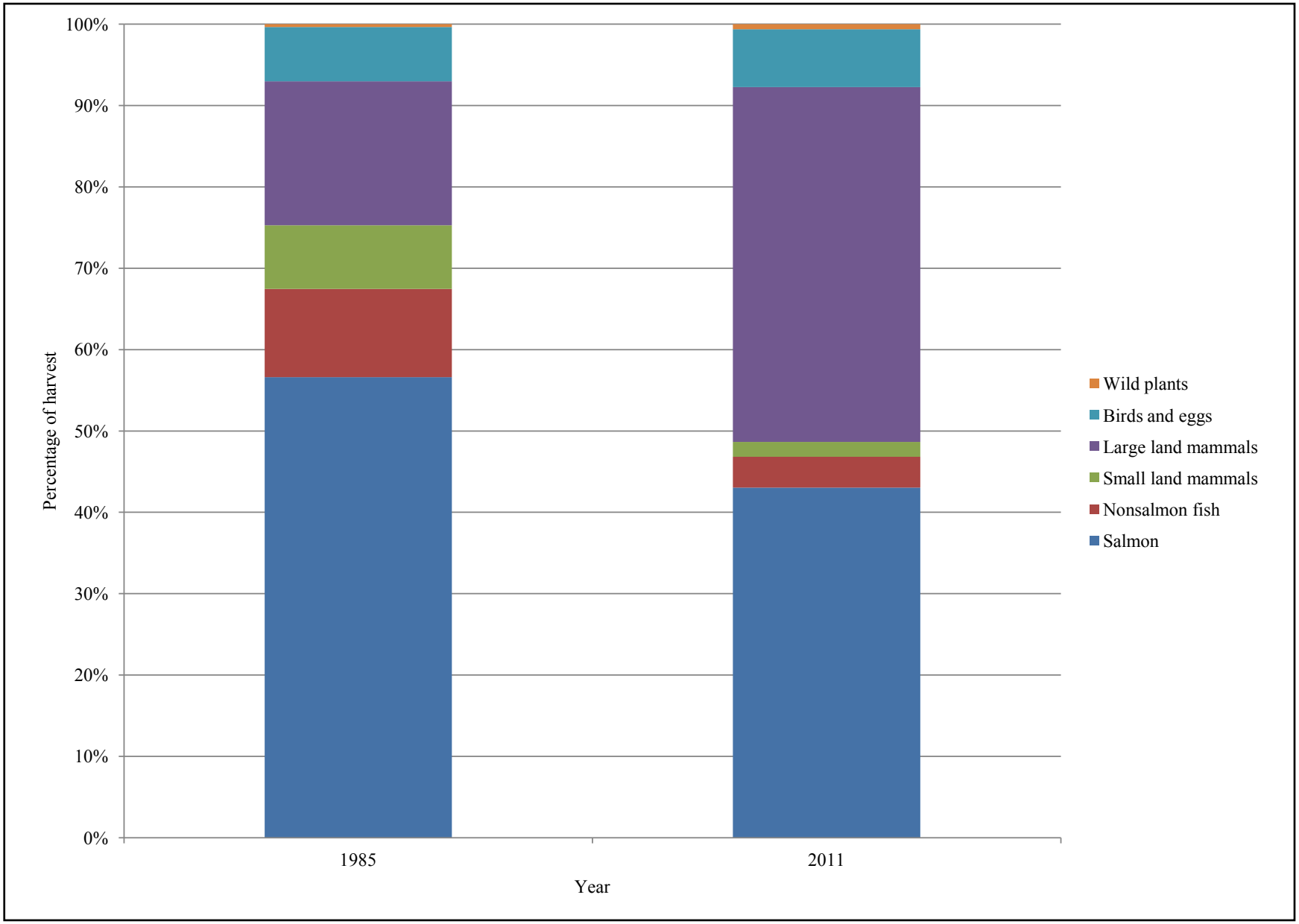


Figure 5-20.– Percentage of harvest, Beaver, 1985 and 2011.

Table 5-18. – Harvests by category in pounds per capita, Beaver, 1985, 2000, 2005, and 2011.

	1985	2011	2000	2005
Salmon	414.4	154.4	na	na
Nonsalmon fish	79.3	13.6	na	78.9
Large land mammals	129.5	156.4	na	na
Small land mammals	57.2	6.6	na	na
Birds and eggs	48.9	25.5	27.9	na
Wild plants	2.6	2.3	na	na
Total	**731.85**	**358.80**	**27.9**	**78.9**

Source Community Subsistence Information System (CSIS), Alaska Department of Fish and Game, http://www.adfg.alaska.gov/sb/CSIS/.

the birds and eggs and wild plants categories, the increase in the overall harvest percentages from 1985 to 2011 was very small—less than 0.5%. In 1985, birds and eggs constituted just less than 7% of the total harvest and a little more than 7% in 2011. Wild plants constituted less than 0.5% of the harvest in 1985 and slightly more than 0.5% in 2011. Birds and eggs harvests dropped, but by just less than one-half from 1985 to 2011 (49 lb per capita in 1985 to 26 lb per capita in 2011). The year 2000 harvest of birds and eggs documented as 28 lb per capita was closer to the 2011 harvest of 26 lb per capita than the 1985 harvest of 49 lb per capita (Table 5-18).

The portion of the total harvest composed of salmon declined from 57% in 1985 to 43% in 2011 (Table 5-18; Figure 5-20); this reflects the poorer returns of salmon, mainly Chinook salmon, to the Yukon River in 2011 compared to the 1980s. Another reason for the decline is the likelihood that more salmon were caught in 1985 to feed dogs than in 2011. For the 1985 study Sumida (1989:56) reported, "Although some households used chum salmon for human consumption, 98% of the fall chum and 96% of the summer chum harvest was reported as being used for dog food." Sumida (1989:53) shows that the total number of dogs in the community in 1985 was 66. For 2011 the amount of fish used for dog food and the number of dogs in the community were not documented. In 1985 the estimated total harvest of Chinook salmon was 13,001 lb, or 157 lb per person. In 2011 the estimated total harvest of Chinook salmon was 5,736 lb, or 80 lb per person, a reduction of almost 56% from the 1985 harvest. The estimated total harvest of chum salmon used for dogs in 1985 was 19,118 lb out of an estimated total harvest of 19,810 lb of chum salmon (Sumida 1989:32, 33). In 2011 the estimated total harvest of chum salmon was 4,289 lb, or about 60 lb per person. Residents indicated that the regulations restricting subsistence harvests of Chinook salmon for conservation purposes were problematic and forced them to fish at unfavorable times when salmon were not likely to be caught, hence, less salmon harvest.

For nonsalmon fish, the 2011 harvest was 14 lb per capita. The 2005 harvest (79 lb per capita) was essentially the same as the 1985 harvest (just over 79 lb per capita) (Table 5-18). This is interesting because concerning the harvest of freshwater fish in 1985, Sumida (1989:57) states, "Much of the fishing that took place throughout the year was aimed toward providing food for dogs, for both immediate

and later use." The 2005 nonsalmon fish harvest study does not document the amount of fish used for feeding dogs; however, the expectation is that there would be fewer dogs in the community in 2005 than in 1985 and therefore less harvest of nonsalmon fish in 2005 because there were not as many dogs to feed. If this was not the case, then the harvest of nonsalmon fish in 2011 seems exceptionally low for no apparent reason. Sumida (1989:33) indicates that in 1985 an estimated 1,560 lb of whitefishes, 401 lb of northern pike, 26 lb of sheefish, and 23 lb of longnose suckers were fed to dogs.

In terms of pounds of usable weight per capita, large land mammals was the only resource category in which the harvest in 2011 was higher than the harvest in 1985 with a per capita harvest of 130 lb in 1985 and 156 lb in 2011 (Figure 5-19). Based on the confidence ranges of the data, the per capita harvest of large land mammals from the 2 study years was not significantly different (Figure 5-19).

The 1985 study identified the range of total household wild food harvests: from a low of 0 to a maximum of almost 10,347 lb (Sumida 1989:34). The range of total resource harvests per household in 2011 varied less extremely: from 0 to just less than 3,739 lb (Table 5-7).

Chinook salmon were received by 65% of households in 1985 (Sumida 1989:41) and 68% of households in 2011 (Table 5-8) and were given by 29% of households in 1985 and 28% of households in 2011; these are comparable percentages even though there is a general decline in the harvest amounts.

The percentage of households hunting moose stayed about the same at about 68% in 1985 (Sumida 1989:29) and 64% in 2011 (Table 5-8). The percentage of successful moose hunting household likewise was similar across the 2 study years: 29% in 1985 and 32% in 2011. In 1985, 3% of households hunted caribou and none were successful; in 2011 no one reported hunting caribou. Black bear harvests were attempted by 45% of households in 1985 with only 10% successfully harvesting (Sumida 1989:29). In 2011, 32% of households reported hunting black bears and they all were successful (Table 5-8). This substantiates what some respondents discussed in 2011 about harvesting black bears opportunistically when available near camps and when encountered along the Yukon River and in the course of other activities. It also generally appears to indicate a healthy black bear population in the area. No household that hunted black bears in 2011 failed to harvest one, while in 1985 a significant percentage of households expended effort to harvest black bears with a relatively small percentage of households successfully harvesting. It should also be noted that Beaver respondents generally commented that they believed that the moose population in the area was low in 2011 and therefore required a fair amount of effort to harvest a moose.

CURRENT AND HISTORICAL HARVEST AREAS

As part of the study to document subsistence harvests in Beaver for the 1985 study year, a selected sample of 15 households (48%) mapped areas used during their lifetimes for subsistence activities (Sumida 1989:4–5)[5]. These maps represent harvest areas for Beaver residents spanning the years 1930

5. Mapping methodology is included on pages 4–5 of Sumida (1989).

to 1986. One map figure (Sumida 1989:44)[6] shows the use area for caribou, moose, and black and brown bears. It also depicts a boundary around Beaver that the legend describes as "Tribal Council Designated Subsistence Use Area." The origin and history of this designated subsistence use area are not discussed in the text.

The historical (ca. 1930 to 1986) caribou hunting area depicted is exclusively along the government trail which extends from Beaver to Caro on the Chandalar River. No comparison can be made to 2011 mapping data (see Appendix D for additional 2011 search and harvest maps) because no caribou hunting was attempted by surveyed households in Beaver in 2011. For moose the difference from 1986 to 2011 is that the earlier hunting areas extended farther upstream on the Hodzana River, farther upstream on the Hadweenzic River, and on the Yukon River upstream north to Fort Yukon. A larger area extending to the north and west of Beaver to the Hodzana River was also hunted for moose. Moose hunting in 2011 on the Yukon River did not extend all the way to Fort Yukon but did extend much farther downstream all the way to the Dalton Highway bridge. At least 1 household indicated that it drove supplies on the Dalton Highway to the bridge and then transported the supplies by boat to Beaver, with moose hunting taking place along the way. Apparently in 2011 hunters were also looking for moose farther upstream on Beaver Creek, and on Lower Mouth Birch Creek and Upper Mouth Birch Creek. The text for the historical mapping indicates that other hunting, including for moose, also took place in conjunction with winter trapping and goes on to say that hunting moose "took place beyond the extent of the documented trapping areas" (Sumida 1989:47).

Black and brown bear hunting areas depicted on the historical map were in proximity to the Yukon River and adjacent waterways. In 2011, the bear hunting area is a circular polygon almost centered around Beaver. The northern bear hunting boundary along the Yukon River is similar on the historic map and on the 2011 map. The historic hunting area extended farther downstream and to the southwest from Beaver than the area that was hunted in 2011. The areas used at and near Purgatory on the 2011 map were not used during the historical timeframe. On initial viewing, the 2011 bear use area depicted on the map seemed somewhat suspect because of the hunting area away from the waterways. The search area to the north only extends 10 miles from Beaver and can be easily accessed by traveling the government trail. This map was shown at the May 15, 2012, community review meeting and attendees agreed that this was an accurate depiction of their bear hunting area.

Another map figure in Sumida (1989:45) depicts waterfowl hunting areas, furbearer trapping and hunting areas, and cabin and tent camp sites. The 2011 hunting area for waterfowl is confined to the Yukon River and adjacent waterways and extends farther upstream on the Yukon River than the historic area. The historical waterfowl hunting area extended farther downstream on the Yukon River and included more area off of the Yukon River. Historical furbearer trapping and hunting areas are more extensive than the obvious travel corridors and isolated spots used for small land mammals depicted on the 2011 map.

6. See Figure 8 on page 44 of Sumida (1989) to view the map.

Sumida (1989:46) depicts historical freshwater fish fishing areas and salmon fishing areas. Substantially more historical nonsalmon fishing areas (30) are identified than on the 2011 nonsalmon fish use area map. However, it is important to note that Sumida represents historical use areas while this study only represents 1 year. Seven nonsalmon fish use areas are depicted on the 2011 map: areas that are close or similar to the historical locations are the lower Hodzana River, Beaver Slough, and adjacent to and immediately south of Beaver. Purgatory, Lower Birch Creek Slough, lower Chandalar River, and Shovun Lake were not used historically. Sumida (1989:47) gives this description of the historical areas: "Most freshwater fishing occurred in lakes and sloughs such as Elbow, Mud, and Twin lakes and Marten, Howard, Elbow, and Joe Guay sloughs. The Hodzana and Hadweenzic Rivers and Beaver and Fish creeks were among the tributaries used for harvesting freshwater fish."

Historically, salmon fishing took place in 3 areas: on about a 5-mile stretch of the Yukon River adjacent to Beaver, downriver about 9 air miles southwest of Beaver and upstream near Lower Birch Creek Slough (Sumida 1989:47). The 2011 salmon fishing areas adjacent to Beaver cover an area similar to the historical area but the 2011 areas have extended upstream 11 miles or more. The Lower Birch Creek Slough and the fishing location southwest of Beaver have changed or were not fished in 2011. The Yukon River area adjacent to Beaver has changed in the recent memory of lifetime residents: a sandbar island now covered with trees has developed to form a slough immediately adjacent to the community that separates it from the main Yukon River channel. This long-term event has changed the fishing topography near Beaver. Additionally, respondents related changes in the river where they used to fish, most notably, as described above, 1 household said that the eddy where residents used to fish was gone due to changes in the river so they had to move their fish camp.

LOCAL CONCERNS REGARDING RESOURCES

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Beaver. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary. A limited number of key respondent interviews were conducted in Beaver and additional information comes from respondents who commented about wild resources in the community review meeting. Their concerns are included in the text that follows.

FISH

Salmon, despite lower harvests in 2011 compared to 1985, was still a substantial component of the wild food diet of Beaver residents in 2011. The amount of nonsalmon fish harvested in 2011 was also substantially less than documented by previous studies in 1985 and 2005. The only reported concern about nonsalmon fish was that 1 household said that they could have used more whitefishes.

The majority of comments stemmed from concerns for salmon harvests—almost all about Chinook salmon. A couple of households said that they could have used more chum salmon but they did not express resource concerns for chum salmon. The poor return of Chinook salmon to the Yukon River was a common discussion theme by many households. Households frequently characterized subsistence fishing regulations as a problem, called the management actions to limit fishing openings restrictive, and said they did not allow fishers to fish at optimum times to catch main upriver pushes of Chinook salmon. “Stay the hell out of fish camp,” was the comment of 1 household. High water was mentioned by several households as a problem that hindered catching Chinook salmon. One household said that its salmon fishing spot got "wiped out" by the Yukon River. Another said that its harvest of Chinook salmon was less due to the fact that the household had to move its fish camp because the old eddy where they fished “filled in.”

One household related that dog food is expensive so residents replaced it with salmon; they have about a half-dozen dogs. The household could have used more Chinook salmon because that is what they share with relatives; they ate moose instead. High water and the closed season schedule allowed them to fish for only a short time at the landing by their camp. They were concerned that children are not learning to smoke fish like in the past. They have an issue with the timing of subsistence fishing openers allowed by the subsistence salmon fishing regulations. They bought more food because they did not get enough subsistence resources in 2011.

Another household indicated that they were working on their boat to get it operational and, additionally, the expense of gas was prohibitive to fish for salmon. They said that they did not go to camp so they bartered to get salmon. They also stated that the Chinook salmon run was a “bust.”

One household had to make do with less salmon because in 2011 it was not received from a family member like usual. Food costs go up when salmon are not available, but the respondent said that he has a job and is able to buy food.

LARGE LAND MAMMALS

In 2011, moose, black bears, and brown bears were the large land mammals harvested. Residents of Beaver in 2011 reported an overall harvest of large land mammals that was slightly higher than the harvest of salmon. Generally, although not mentioned as frequently as Chinook salmon, there were concerns that the local moose population is low. The lack of moose to eat was a hardship for some households. One household said that they got a moose in the fall, but they would have liked to get another moose during the winter season. The high cost of gasoline for hunting was reported as a problem for a number of households but a number mentioned that they were able to hunt with or help another household and could receive part of the harvest of the hunt. In addition to gas, equipment and ammunition were expensive and resulted in numerous households sharing resources to hunt.

Respondents said that the travel distance to hunt caribou was too far so caribou hunting was not attempted.

Generally, a few comments indicated that the bear (black and brown) populations are healthy, although 1 household said that they needed more brown bear.

One household made the following statements:

> We [Beaver residents] were hunting on our land before Alaska was a state, we had our land from the homestead act. Each village used to hunt its own area—the Tier II hunting areas[7] overlap [traditional] village hunting areas, which has created competition between villages for the resource. The moose hunt should be limited to a harvest ticket hunt. It appears that Tier II permits are given to anyone. We are trying to feed ourselves but then they allow the Tier II hunt which brings in more hunters. Also dual management areas of state and federal land is confusing because then there are 2 different permits to hunt—state and federal. Moose don't understand the Tier II hunt—our moose population is down and Tier II permits are still being handed out—what is the purpose if the moose are down and they are still letting others hunt them? What is the purpose of the wildlife refuge if the hunting of people from outside the area is not more restricted [to conserve the resource]? Costs a lot to hunt. In the past the Feds [i.e., wildlife enforcement] were arresting us—we have some bad feelings against them because in the 1970s we would just get a moose and share it—now we can't share it like we used to. Don't want the Feds around—want to get on with life… . Fish and Game busts us—it's not good—let us have our own laws and rules so we will be able to pass out moose to share with the community—feels like breaking the law to help ourselves.

Another household suggested that wildlife enforcement needs to be posted at the Dalton Highway bridge to ensure that moose are not being wasted. The concern is that only the antlers are being taken out by people who come in on the road and put in their boats to hunt along the Yukon River. The respondent said that Stevens Village people have found wasted moose carcasses, with the antlers gone, along the river; he went on to say, "Native people don't do that!"

SMALL LAND MAMMALS/FURBEARERS

Small land mammals provided about 2% of the overall harvest in pounds usable weight for Beaver in 2011. One household commented that there are fewer hares around. Another household commented

7. During the study year, the Tier II hunt permit number was TM940 and allowed the harvest of 1 bull by permit from August 15–February 28 in GMU 25D in the area lying west of a line extending from the Unit 25D boundary on Preacher Creek, then downstream along the west banks of Preacher Creek, Birch Creek, and Lower Mouth Birch Creek to the Yukon River, then downstream along the north bank of the Yukon River (including islands) to the confluence of the Hadweenzik River, then upstream along the west bank of the Hadweenzik River to the confluence of Forty and One-Half Mile Creek, then upstream along the Forty and One-Half Mile Creek to Nelson Mountain on the Unit 25D boundary (Alaska Department of Fish and Game 2010; Alaska Department of Fish and Game 2011).

that their small land mammal use was less because they only got 1 porcupine. One household that trapped said their harvest of small land mammals was less in 2011 but they attributed this to the biological cycle of the animals.

BIRDS

Spring hunting for geese and ducks provides a valued and appreciated food source at the end of winter. Spring is the time that the great majority of the waterfowl are harvested; a comparatively small harvest of mallards was reported in the fall of 2011. Other birds, namely ptarmigan and grouse, were hunted mostly during the fall and spring and are a small portion of the overall bird harvest for Beaver. Overall, at 7% of the total harvested pounds, birds were the third most harvested resource (trailing large land mammals and salmon) in terms of pounds usable weight in 2011 for Beaver. Survey comments did not indicate concerns for the resource with 1 household stating that spruce grouse and ptarmigan were healthy. One household indicated that it could not locate enough spruce grouse for its needs. Another household indicated that the harvest of spruce grouse was less due to ADF&G regulations, but no more details were recorded to clarify how the regulations were responsible for this.[8] For 1 household the harvest of geese in 2011 was about half of its usual harvest due to the loss of a family member. A household was able to harvest goose eggs and attributed this to good luck. One household provided shotgun shells to a hunter who gave them 10 geese.

One household related that it did not get very many geese in 2011 because the birds had already passed through in the spring. The timing was wrong—high water and too much ice on the Yukon River—so the household could not go where it wanted to hunt; residents usually go out right after the ice moves. The household also related that it saw an eider 1 year while hunting which was an unusual event.

Following is local knowledge from 2 households concerning ducks and geese:

> First: black ducks [black scoter] fly up the river [Yukon] to Chuathbaluk. Second: honkers [Canada lesser] come first, then white-fronted come in. Honkers have eggs before spreckled [white-fronted geese] leave to go up north. Some spreckled lay eggs along the Beaver River and Birch Creek. We don't hunt after they have eggs. Late fall before freeze up ducks come past Beaver.

VEGETATION

Vegetation was less than 1% of the total harvest of pounds usable weight for Beaver in 2011. Only 1 household said that there were "no berries around." Although not recorded as usable (edible) weight, the harvest of firewood was documented in the survey and firewood was used by 100% of the Beaver

8. During the study year, the bag limits for grouse, including spruce grouse, in GMU 25 was 15 per day, 30 in possession for August 10–March 31 (Alaska Department of Fish and Game 2010; Alaska Department of Fish and Game 2011).

households to heat their homes. Therefore, the majority of the survey comments were about firewood and heating homes. During the time the surveys were being conducted in Beaver in January 2012, the temperature was -40˚ F during the entire fieldwork trip with at least 1 reading of -50˚F, which highlights residents' concerns about maintaining a warm home. A common and collective concern in Beaver was the high cost of fuel oil which was reported to be $7–$8 per gallon in the community. One household said that it was too hard to get fuel; it is expensive so they use firewood for heat. Concerning the harvest of firewood, 1 household said that snow depth influences the harvest location of firewood—in this case the household said the snow conditions allowed it to harvest upriver in 2011 which is not usually done. For 1 household its wood hauling has changed so that now firewood is hauled with a boat, which this household did not do in the past.

GENERAL

Some comments, concerns, local knowledge, and pertinent information recorded during the surveys and not related above are documented in this section.

Concerning the subsistence way of life, 1 respondent stated: "My way of living should be preserved more, resources are still there, to jeopardize with development is not a good idea."

One household respondent had concerns about where the information collected in this survey was going so that it is not used against Beaver residents. The respondent also had concerns about why they were being asked questions about income. The household provides subsistence food for 5 other families and needs the boat and motor and other equipment that was asked about during the survey; the respondent said, "All the stuff is expensive." The reason the household maintains a subsistence camp is it "benefits us." The respondent also related: "Glad you are doing the survey—it shows how much it [subsistence] costs."

There were concerns stated by some households that the survey was too long. One household became offended because they felt that the Food Security section line of questioning implied that the community was living in poverty and could not feed themselves—they ended the survey at that point. The Food Security section seemed to create some confusion for the respondents and required additional explanation. For some households the Jobs and Other Income sections asked sensitive questions which the respondents felt uncomfortable answering. Those questions placed at the very end of the survey when respondents were tired of answering questions, in some cases, may have led to further reluctance by the household to complete those sections.

One elder household related: "When you go for beaver—eat beaver. When you go on a muskrat hunt—eat muskrat, and when you go on a moose hunt—eat moose. And, when plants can be seen underwater, usually late May, it is a good time for pike."

To conserve heating costs during the winter, 2 brothers combined their households. Another household said that it sometimes uses a fuel-oil burning stove for about a month to heat the house during

the winter, which costs about $500. One household was borrowing a snowmachine to get firewood but at one point they were forced to get fuel oil when no equipment was available to get wood.

SUMMARY

The household survey findings demonstrated that residents of Beaver harvested a wide variety of resources in 2011. Residents invested a great deal of time and effort in harvesting fish, land mammals, birds, and wild plants. Per capita harvests in 2011 were lower than in 1985. The only resource category in which the harvest in pounds of usable weight increased from 1985 to 2011 was large land mammals (Figure 5-19); the number of moose harvested for 2011 increased by 1 compared to 1985, but the black bear harvest increased from 3 in 1985 to 23 in 2011. Salmon harvests decreased from 414 lb per capita in 1985 to 154 lb per capita in 2011. Most concerning to the residents of Beaver was the poor returns of Chinook salmon on the Yukon River, which has reduced the harvest of that important food resource. Nonsalmon fish harvests dropped from about 79 lb per capita in 1985 to 14 lb per capita in 2011 although an interim study in 2005 also recorded a harvest of about 79 lb per capita. Use data were not documented in the 1985 study but in 2011 all (100%) of the households used salmon, large land mammals, and wood while 92% of households used geese, and the same percentage (92%) reported use of migratory birds as a whole.

As stated earlier, there were concerns stated by some households that the survey was too long. This may have resulted in respondent fatigue when starting with the Health Impact Assessments, Food Security, Energy and Equipment Costs, Additional Assessments, Jobs, and Other Income sections. The main concern with regulations was that the opportunity to harvest Chinook salmon is restricted at the time when runs are passing through the area. Moose regulations due to state and federal management can be confusing but the main concern seems to be that non-local residents are not more restricted from hunting a moose population considered to be down. The most shared resources were large land mammals (given away by 36% of households and received by 80% of households) and salmon (given away by 32% of households and received by 68% of households).

Expected shifts and changes in wild resource search and harvest areas have taken place since the historical 1930 to 1986 time period mapped for the 1985 study. In 2011 the salmon fishing locations have an area near Beaver in common with the historical map, but a much more extensive area of the Yukon River upstream by about 11 miles from Beaver was fished in 2011. Moose hunting areas in 2011 were more narrowly confined to the Yukon River and a few adjacent areas, and for a greater distance downstream to the Dalton Highway bridge. The rising price of gasoline and the cost of equipment continue to be a challenge to conducting all subsistence activities.

ACKNOWLEDGEMENTS

We would like to thank the community of Beaver for their participation in this project. We would especially like to thank the Beaver Traditional Council. A special thanks to Traditional Council Chief Rhonda Pitka for her help during the field work, and Tribal Council Administrator Wilma Pitka for her assistance to get the project started and to coordinate the community review meeting on May 15, 2012. Also, thank you to Charleen Fisher, Cruikshank School Principal/Teacher, and the school staff for providing lodging and work space. In addition, thank you to Local Research Assistants Craig Edwards, who assisted the Division of Subsistence with a previous project, and James P. Erick, for sharing their knowledge of the community and collaborating with us to conduct the household surveys.

CHAPTER 6: EVANSVILLE

Prepared by Sarah M. Hazell

The Division of Subsistence conducted a comprehensive baseline study of Evansville in the early 1980s. Although Evansville is a federally-recognized Census Designated Place (CDP), it was amalgamated with the adjacent CDP of Bettles for research purposes (Marcotte and Haynes 1985). In the 2011 study conducted by the Division of Subsistence, Evansville was surveyed and studied separately from Bettles. However, Evansville and Bettles share many aspects of their historical development because of their proximity to one another. Consequently, the following "Community Background" section contains relevant information for both communities and provides the necessary context for Evansville as well as Bettles. Because past survey data were reported collectively for Evansville and Bettles, and cannot now be disaggregated, temporal comparisons will also be discussed from a combined perspective. In general, however, data collected for Evansville and Bettles are reported separately for 2011.

COMMUNITY BACKGROUND

Evansville is located in the Alaska interior at the base of the foothills of the Brooks Range on the Koyukuk River. Historically, the northern Athabascan population that lived in the vicinity of Evansville around the time of Russian contact was considered to be part of the Upper Koyukuk or South Fork Athabascan band (Clark 1975). It was not until the gold rush of the late 19th century, however, when both Upper and Middle Koyukon band members, Kobuk Inupiat, prospectors, and traders moved to Old Bettles for employment opportunities that the significant melding of these cultures occurred; this commingling is reflected by the contemporary residents of the area today.

The Koyukon Athabascans and Kobuk Inupiat had long been aware of each other and it is very likely kinship ties already existed when, in 1899, several groups came to settle at Old Bettles, located 5 miles downstream from the current location of Evansville. In the early 19th century, however, the Koyukon were residing in what now would effectively be considered the Kobuk Valley, rather than on the Koyukon side of the Koyukon–Kobuk divide. Inupiat residing close to Koyukon territory are reputed to have had some knowledge of the Koyukon and in several documented cases individuals were known to be fully bilingual, and intermarriage between the 2 groups was not uncommon (Burch 1998b). It was the Koyukon who were eventually assimilated by the Inupiat. While they retained many of their traditional customs, the Koyukon adopted the Inupiaq language and Inupiat practices to the point that they even participated in the annual Inupiat trade fair at Sheshalik. During the late

1800s, the upper Kobuk Inupiat were often referred to as *Itqiliagruitch* ("like Indians") because of their Koyukon connections (Burch 1998b:136). The Itqiliagruitch relied heavily on the Western Arctic caribou herd (WACH) for food, clothing, and other by-products (Burch 1998b). The decline of the WACH forced several groups to migrate to the Koyukon valley. The Itqiliagruitch would have been well equipped to enter Koyukon territory given their knowledge of the language and customs and possibly existing kinship ties.

Russian and American military explorers were the first outsiders to physically visit South Fork Koyukon territory, followed by Euro-American gold prospectors between 1885 and 1890 (Clark 1974). By this time, however, most Koyukon residents would likely have had at least indirect knowledge of foreigners, if not direct contact at trading posts (e.g., Nulato). At the height of the gold rush, it is estimated more than 1,000 Euro-Americans entered the region pursuing their fortunes; however, it was not until 1899 that Bettles was established as a small gold mining base camp (Marcotte and Haynes 1985). It was named after the trading post founder Gordon C. Bettles and attracted members from several Koyukon bands and upper Kobuk Inupiat (Itqiliagruitch) who settled there looking for employment and trading opportunities. According to an early resident of Evansville:

> They struck gold up Bettles and Wiseman that year. Lots of people were traveling in that direction … . The first thing I remember is being tied to Mama's back. She was packing me around Gold Creek mining camp, thirty miles out of Wiseman. I saw those miners working. They work and never stop, no matter how hot the sun. They don't think about mosquitoes, nothing. They just want that gold and get it, too.
>
> — Oscar Nictune, Kobuk Eskimo born 1901
>
> (Capps and Tacquard 1999:3)

A post office was instituted with regular service, and the activities at Bettles also attracted some *Nunamiut,* people inhabiting the Endicott Mountains sector of the central Brooks Range. "Nunamiut" means "people of the land" (Rausch 1951:154). However, with the exception of a single man who married a local Koyukon woman, most Nunamiut traveled north back to their territory in the Brooks Range and only occasionally came into the area for trade goods (Gubser 1965).

The U.S. Geological Survey documented a total of 100 Alaska Natives on the Koyukuk River in 1901 (Schrader and Peters 1904). Although the trading post increased opportunities to acquire commercial goods through the exchange of guiding and other services, "Their chief source of food and clothing is the wild Alaskan reindeer or caribou, bear, salmon, whitefish, rabbits, grouse and ptarmigan" (Schrader and Peters 1904:33). The rapid influx of gold miners was relatively short-lived and by the time World War I began most Euro-Americans had left the area or were mining farther north near Wiseman (Smith 1917; Smith 1939; Capps and Tacquard 1999).

The period between the end of gold mining in the area and the early 1940s is not well documented. During this time (i.e., 1900–1940), some South Fork Athabascan residents moved to Allakaket with the

establishment of the mission and day school there in 1906 (Clark 1974). Burch (1998b) speculated it was a time of relative stability without significant population movements. The graveyard established at Bettles at the turn of the century by local Alaska Natives continues to be used by Evansville residents (Clark 1974), which suggests the Koyukon, Kobuk Inupiat, and other Alaska Natives indeed remained in the area practicing a semi-nomadic seasonal round that centered on the acquisition of wild resources for subsistence uses and to exchange for commercial goods. The local post office functioned until 1956.

A sizable population moved permanently back into the vicinity, including some families from Alatna, when work prospects came about from the construction of a U.S. Navy airstrip at the newly appointed Bettles Field, located 5 miles upstream from Old Bettles (Marcotte and Haynes 1985; community elders, Evansville, personal communication, January 2012). Bettles Field or "Bettles" was established in 1945 to support the exploration of petroleum reserves near Umiat on the Arctic Slope and was inhabited by Euro-Americans (Brown 1969). The mixed Athabascan/Inupiat group resided in Evansville, which was the Alaska Native community established adjacent to Bettles Field and which was named after the entrepreneur Wilford Evans Sr., who built the local sawmill, the general store, and the first lodge (ADCCED 2011a). The main employers were Wien-Alaska Airlines and the Federal Aviation Agency (FAA). The population of Evansville in 1960 was 77 individuals but the decline of petroleum-associated activities significantly affected job prospects and by 1967 only 3 Alaska Native families remained (Brown 1969). Clark (1974), during her field work in the 1960s concerning the material culture of the Koyukuk River groups, documented that Evansville residents had fully adopted a cash-based economy and abandoned any kind of mobile seasonal subsistence activities. In fact, she noted that community members barely engaged in such activities at all. Clark attributed Evansville peoples' disinterest in hunting and gathering to the acculturation of the Athabascan/Inupiat residents by their non-Native Bettles counterparts.

The Division of Subsistence conducted a comprehensive baseline study of Evansville and Bettles as a single entity in the early 1980s because of their proximity to one another (i.e., Evansville–Bettles). Although Evansville community members were generally sedentary in 1982, a number of dispersed regional families used it as a central base (Marcotte and Haynes 1985). At that time, Evansville had a community hall, a post office, and a health clinic. The restaurant, lodge, public school (K-12), store, and utility company were located in Bettles (Marcotte and Haynes 1985). With the exception of the school, which closed in 2002, this arrangement has not changed in the intervening 30 years. Furthermore, Evansville has a recognized Alaska Native tribal government, while Bettles remains entirely Euro-American. Much of the joint economy continues to revolve around the Bettles Lodge, local air carriers, and postal activities. Most of the year, Evansville can only be reached by airplane, although for a short period between January and March an ice road can be used.

Table 6-1. – Population of Evansville, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
12	15	8	53.3%	13	20	9	45.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S Census, 2011.

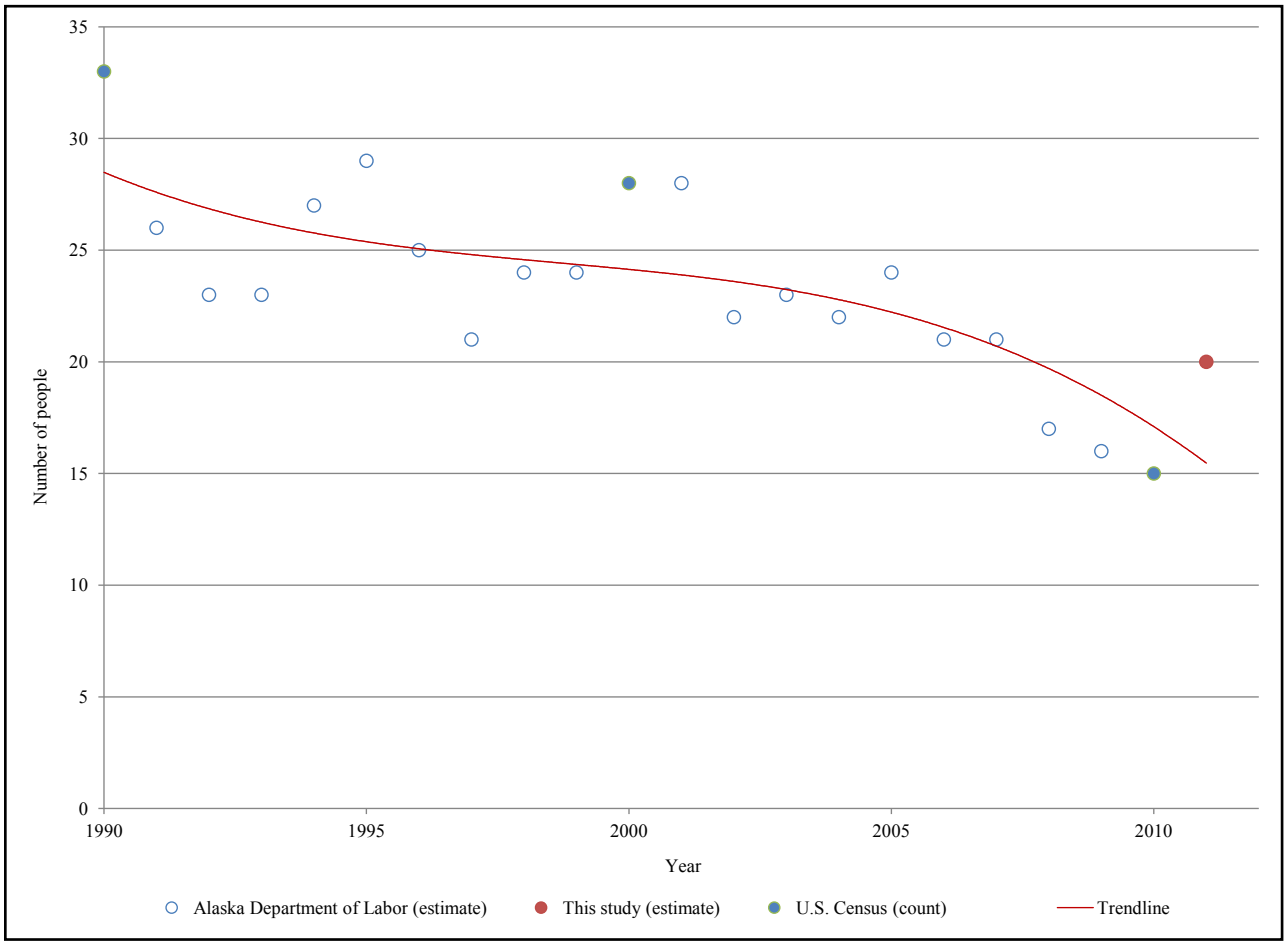


Figure 6-1.– Population history, Evansville, 1990–2011.

DEMOGRAPHY

According to the federal census, Evansville had 15 residents in 2010 (U. S. Census Bureau 2011a) (Table 6-1). Figure 6-1 shows the population of the community over time. This chapter provides an additional figure that shows the historical population of the communities of Evansville and Bettles combined (Figure 6-2). Available population data from the federal census and the Alaska Department of Labor were combined for both Evansville and Bettles because they were surveyed jointly due to their proximity to one another. Figure 6-2 indicates that the population of Evansville and Bettles has decreased significantly.

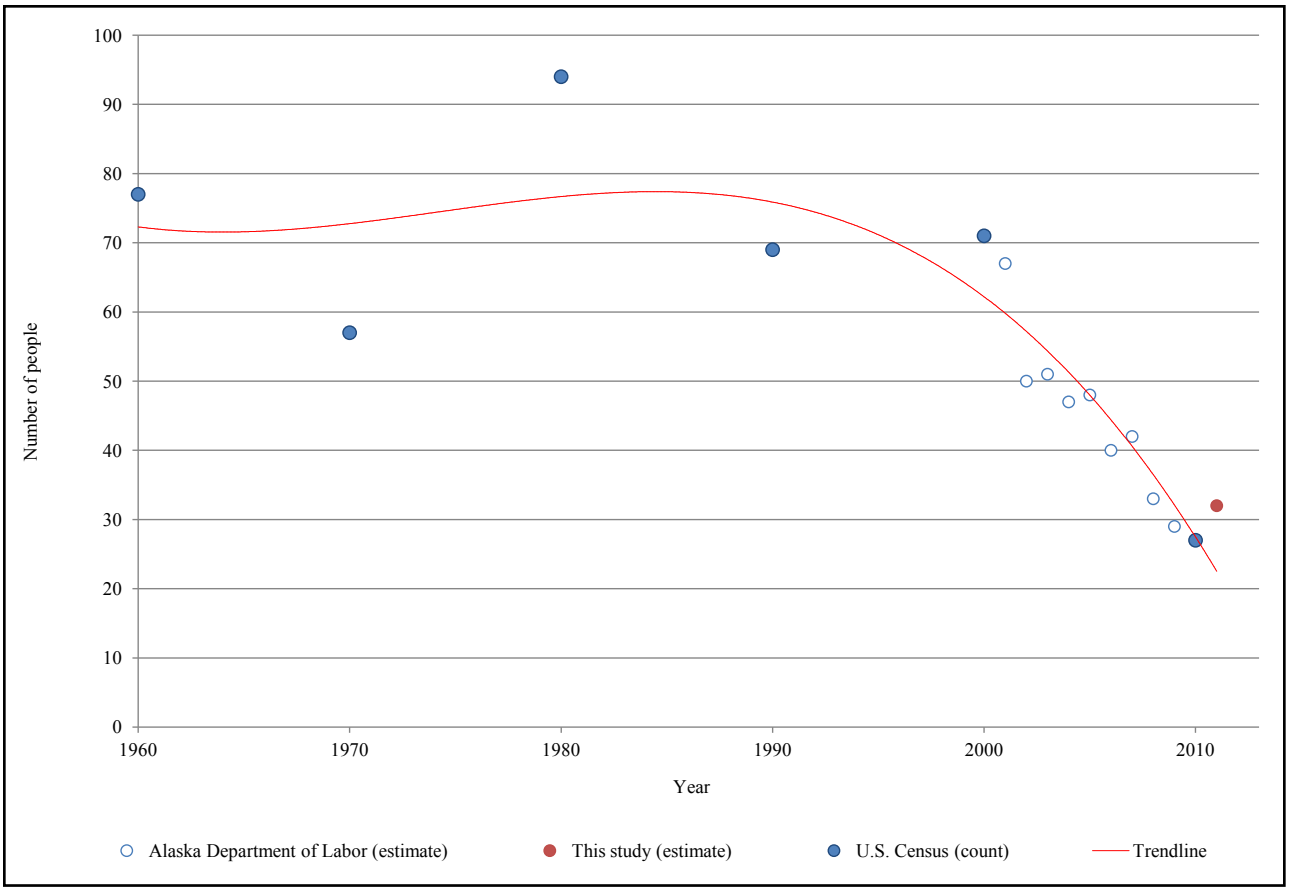


Figure 6-2.– Population history, Bettles and Evansville, 1960–2011.

The household survey conducted in 2011 found a population of 20 residents, of which 45% (9 residents) were Alaska Native (Table 6-1). This indicates a marked decline in the Alaska Native population over the life of a community that has generally been described as the Alaska Native counterpart to Bettles (Clark 1974; Marcotte and Haynes 1985:21). The federal census indicated a total of 12 households resided in Evansville in 2010 (Table 6-1). The 2011 survey identified 13 households and all were interviewed (100%) (Table 6-2).

The mean number of years of residency in Evansville was 22 years, with the maximum length of residence at 74 years (Table 6-3). The largest age cohort for males was 45–49 years of age, and for females it was 50–54 years of age (Figure 6-3; Table 6-4). Three children are included in the households surveyed—2 are schooled outside of the community and 1 lives full-time in the community. Otherwise, age categories are generally made up of single male and female individuals between the ages of 35–89.

Of the Evansville household heads surveyed, approximately 41% were born in Alaska and 41% were born outside of Alaska but in the United States (Table 6-5). Only 6% of household heads were born in Evansville, but if Evansville is combined with Bettles, then the proportion increases to 24%. Twelve percent of households heads were born outside the United States, and the birthplace is unknown for 6% of household heads.

Table 6-2. – Sample achievement, Evansville, 2011.

Number of dwelling units	13.0
Interview goal	13.0
Households interviewed	13.0
Households failed to contact	0.0
Households declined to be interviewed	0.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	13.0
Refusal rate	0.0%
Final estimate of permanent households	13.0
Percentage of total households interviewed	100.0%
Interview weighting factor	1.0
Sampled population	20.0
Estimated population	20.0

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 6-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Evansville residents in 2011. Approximately 85% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 85% of all residents gathered plants and berries, 45% fished, 20% hunted for birds, and 10% hunted for large land mammals and trapped furbearers, respectively. In comparison, 90% of all Evansville residents processed some resources in 2011. Most residents (85%) participated in processing plants and berries, with 68% of the population participating in large land mammal processing, 55% participated in fish processing, and 30% participated in processing birds.

RESOURCE HARVEST AND USE PATTERNS

Table 6-7 summarizes resource harvest and use characteristics for Evansville in 2011, at the household level. All households used, attempted to harvest, and harvested a wild resource in 2011. The average total harvest was an estimated 81 lb usable weight per household, or 53 lb per capita. During the study year, a maximum of 28 resources were used by Evansville households. On average, households used 12 different kinds of resources. Households gave away an average of 5 types of resources and received 8 kinds of resources. More than three-quarters (77%) of households reported sharing resources with other households.

Table 6-3. – Demographics and sample characteristics, Evansville, 2011.

Characteristics	Evansville
Sampled households	13.0
Eligible households	13.0
Percentage sampled	100.0%
Household size	
Mean	1.5
Minimum	1.0
Maximum	4.0
Sample population	20.0
Estimated community population	20.0
Age	
Mean	45.5
Minimum[a]	3.0
Maximum	87.0
Median	47.0
Length of residency	
Total population	
Mean	22.2
Minimum[a]	1.0
Maximum	74.0
Heads of household	
Mean	25.0
Minimum[a]	1.0
Maximum	74.0
Sex	
Estimated male	
Number	9.0
Percentage	45.0%
Estimated female	
Number	11.0
Percentage	55.0%
Alaska Native	
Estimated households[b]	
Number	7.0
Percentage	53.8%
Estimated population	
Number	9.0
Percentage	45.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

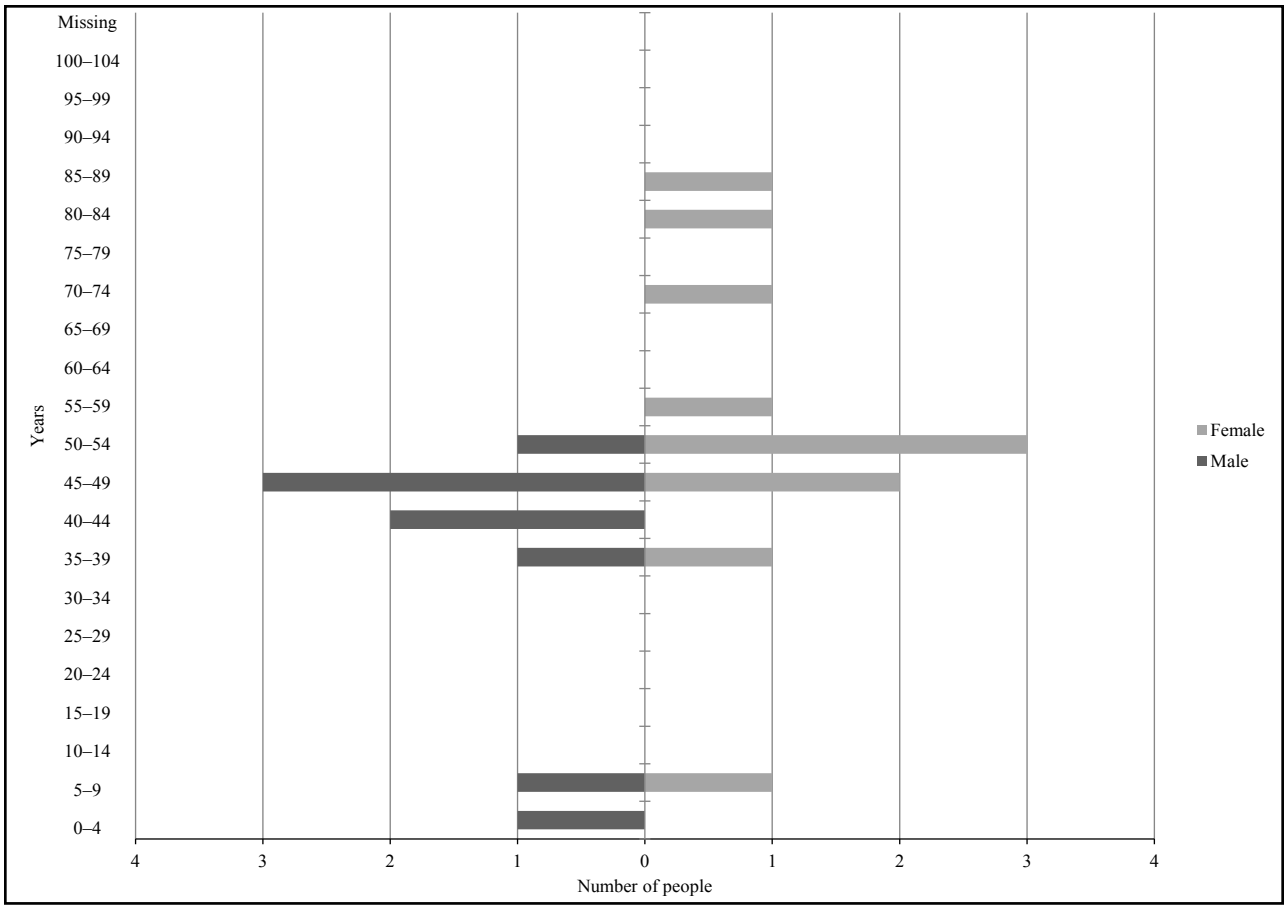


Figure 6-3.– Population profile, Evansville, 2011.

Table 6-4. – Population profile, Evansville, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	1.0	11.1%	11.1%	0.0	0.0%	0.0%	1.0	5.0%	5.0%
5–9	1.0	11.1%	22.2%	1.0	9.1%	9.1%	2.0	10.0%	15.0%
10–14	0.0	0.0%	22.2%	0.0	0.0%	9.1%	0.0	0.0%	15.0%
15–19	0.0	0.0%	22.2%	0.0	0.0%	9.1%	0.0	0.0%	15.0%
20–24	0.0	0.0%	22.2%	0.0	0.0%	9.1%	0.0	0.0%	15.0%
25–29	0.0	0.0%	22.2%	0.0	0.0%	9.1%	0.0	0.0%	15.0%
30–34	0.0	0.0%	22.2%	0.0	0.0%	9.1%	0.0	0.0%	15.0%
35–39	1.0	11.1%	33.3%	1.0	9.1%	18.2%	2.0	10.0%	25.0%
40–44	2.0	22.2%	55.6%	0.0	0.0%	18.2%	2.0	10.0%	35.0%
45–49	3.0	33.3%	88.9%	2.0	18.2%	36.4%	5.0	25.0%	60.0%
50–54	1.0	11.1%	100.0%	3.0	27.3%	63.6%	4.0	20.0%	80.0%
55–59	0.0	0.0%	100.0%	1.0	9.1%	72.7%	1.0	5.0%	85.0%
60–64	0.0	0.0%	100.0%	0.0	0.0%	72.7%	0.0	0.0%	85.0%
65–69	0.0	0.0%	100.0%	0.0	0.0%	72.7%	0.0	0.0%	85.0%
70–74	0.0	0.0%	100.0%	1.0	9.1%	81.8%	1.0	5.0%	90.0%
75–79	0.0	0.0%	100.0%	0.0	0.0%	81.8%	0.0	0.0%	90.0%
80–84	0.0	0.0%	100.0%	1.0	9.1%	90.9%	1.0	5.0%	95.0%
85–89	0.0	0.0%	100.0%	1.0	9.1%	100.0%	1.0	5.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**9.0**	**100.0%**	**100.0%**	**11.0**	**100.0%**	**100.0%**	**20.0**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 6-5. – Birthplaces of household heads, Evansville, 2011.

Birthplace[a]	Percentage
Alatna	5.9%
Kobuk	5.9%
Nulato	5.9%
Evansville	5.9%
Bettles	17.6%
Other U.S.	41.2%
Foreign	11.8%
Missing	5.9%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

SPECIES USED AND SEASONAL ROUND

The 2011 study demonstrated households engage in subsistence harvesting activities for a number of resources. The documentation that 100% of households used, attempted to harvest or harvested, and received subsistence items (Table 6-7) suggests wild resources continue to play an important role in the lives of Evansville residents. Because many residents are employed by local government agencies and businesses, however, resources tend to be procured in the immediate vicinity of the community because residents cannot spend long periods traveling to harvest resources due to constraints on their time. Evansville households harvest a wide variety of species throughout the year and they often target specific species during certain seasons of the year, following a cyclical harvest pattern. While many residents travel on foot to hunt, fish, and gather, some use motorized vehicles, such as trucks, snowmachines, and ATVs.

Table 6-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table 6-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Evansville households during the study year 2011. Residents of Evansville harvested an estimated total of 1,057 lb, or 53 lb per capita of wild resources (Table 6-8). Moose, sockeye salmon, and lowbush cranberries were the top 3 most harvested resources, followed by blueberries. In comparison, moose, blueberries, caribou, and lowbush cranberries were the top 4 most used resources (Table 6-9).

The discussion on harvest activities begins with moose because it composes the highest percentage of the total harvest in 2011. Large land mammal hunting is a traditional and popular fall activity that often stretches into the winter. Most of the hunt takes place using trucks or ATVs, which are essential to “pack out” the meat and/or carcass. Respondents reported that in 2011 there were few moose or caribou nearby; only 15% of households hunted large land mammals and just over one-half of them were successful. Only one household participated in harvesting small land mammals in 2011 and was

Table 6-6. – Estimated participation in subsistence harvesting and processing activities, Evansville, 2011.

Total number of people	**20.0**
Birds	
Hunt	
Number	4.0
Percentage	20.0%
Process	
Number	6.0
Percentage	30.0%
Fish	
Fish	
Number	9.0
Percentage	45.0%
Process	
Number	11.0
Percentage	55.0%
Large land mammals	
Hunt	
Number	2.0
Percentage	10.0%
Process	
Number	13.7
Percentage	68.4%
Furbearers	
Hunt or trap	
Number	2.0
Percentage	10.0%
Process	
Number	1.0
Percentage	5.0%
Plants	
Gather	
Number	17.0
Percentage	85.0%
Process	
Number	17.0
Percentage	85.0%
Any resource	
Attempt	
Number	17.0
Percentage	85.0%
Process	
Number	18.0
Percentage	90.0%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 6-7. – Resource harvest and use characteristics, Evansville, 2011.

Characteristic	
Mean number of resources used per household	11.5
Minimum	2.0
Maximum	28.0
95% confidence limit (±)	0.0%
Median	10.0
Mean number of resources attempted to harvest per household	5.3
Minimum	1.0
Maximum	14.0
95% confidence limit (±)	0.0%
Median	5.0
Mean number of resources harvested per household	4.8
Minimum	1.0
Maximum	14.0
95% confidence limit (±)	0.0%
Median	3.0
Mean number of resources received per household	8.5
Minimum	1.0
Maximum	26.0
95% confidence limit (±)	0.0%
Median	8.0
Mean number of resources given away per household	4.7
Minimum	0.0
Maximum	18.0
95% confidence limit (±)	0.0%
Median	2.0
Household harvest, pounds	
Minimum	0.0
Maximum	598.4
Mean	81.3
Median	21.0
Total harvest weight, pounds	1,056.5
Community per capita harvest, pounds	52.8
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	76.9%
Number of households in sample	13.0
Number of resources available	116.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 6-8. – Estimated harvests and uses of fish, game, and plant resources, Evansville, 2011.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
All resources	**100%**	**100%**	**100%**	**100%**	**77%**	**1,056.5**	**81.3**	**52.8**	**233.1**		**17.9**	**0%**
Fish	**77%**	**38%**	**38%**	**69%**	**38%**	**256.8**	**19.8**	**12.8**	**93.0**		**7.2**	**0%**
Salmon	**62%**	**8%**	**8%**	**62%**	**31%**	**147.3**	**11.3**	**7.4**	**24.0**		**1.8**	**0%**
Chum salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coho salmon	23%	0%	0%	23%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	46%	8%	8%	46%	15%	56.6	4.4	2.8	6.0	Ind.	0.5	0%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	46%	8%	8%	46%	31%	90.7	7.0	4.5	18.0	Ind.	1.4	0%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**77%**	**38%**	**38%**	**54%**	**31%**	**109.5**	**8.4**	**5.5**	**69.0**		**5.3**	**0%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific halibut	23%	0%	0%	23%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Char	31%	15%	15%	15%	23%	30.8	2.4	1.5	22.0		1.7	0%
Dolly Varden	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	31%	15%	15%	15%	15%	30.8	2.4	1.5	22.0	Ind.	1.7	0%
Unknown char	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Arctic grayling	62%	38%	31%	31%	15%	14.7	1.1	0.7	21.0	Ind.	1.6	0%
Northern pike	15%	8%	0%	15%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sheefish	31%	8%	8%	23%	8%	36.0	2.8	1.8	6.0	Ind.	0.5	0%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	15%	8%	8%	8%	0%	28.0	2.2	1.4	20.0		1.5	0%

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Table 6-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	15%	8%	8%	8%	0%	28.0	2.2	1.4	20.0	Ind.	1.5	0%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0		0.0	0%
Broad whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Round whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown whitefish	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**92%**	**23%**	**15%**	**92%**	**54%**	**540.0**	**41.5**	**27.0**	**14.0**		**1.1**	**0%**
Large land mammals	**92%**	**15%**	**8%**	**92%**	**54%**	**540.0**	**41.5**	**27.0**	**1.0**		**0.1**	**0%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	77%	0%	0%	77%	25%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	85%	15%	8%	85%	46%	540.0	41.5	27.0	1.0	Ind.	0.1	0%
Muskox	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	62%	0%	0%	62%	15%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**15%**	**8%**	**8%**	**8%**	**15%**	**0.0**	**0.0**	**0.0**	**13.0**		**1.0**	**0%**
Beaver	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Fox	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0		0.0	0%
Red fox	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0		0.0	0%
Red fox—cross phase	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red fox—red phase	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Hare	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	Ind.	0.0	0%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	15%	8%	8%	8%	15%	0.0	0.0	0.0	13.0	Ind.	1.0	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 6-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Arctic ground (parka) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red (tree) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolverine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine mammals	**23%**	**0%**	**0%**	**23%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	23%	0%	0%	23%	0%	0.0	0.0	0.0	0.0		0.0	0%
Northern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Harbor seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown seal	23%	0%	0%	23%	0%	0.0	0.0	0.0	0.0		0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	23%	0%	0%	23%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bowhead	15%	0%	0%	15%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**62%**	**46%**	**38%**	**38%**	**31%**	**31.3**	**2.4**	**1.6**	**40.0**		**3.1**	**0%**
Migratory birds	**15%**	**0%**	**0%**	**15%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Ducks	8%	0%	0%	8%	0%	0.0	0.0	0.0	0.0		0.0	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Long-tailed duck	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pintail	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown ducks	8%	0%	0%	8%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese	15%	0%	0%	15%	0%	0.0	0.0	0.0	0.0		0.0	0%
Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cacklers	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lesser Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	8%	0%	0%	8%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 6-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Unknown geese	8%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Other birds	**62%**	**46%**	**38%**	**38%**	**31%**	**31.3**	**2.4**	**1.6**	**40.0**		**3.1**	**0%**
Upland game birds	62%	46%	38%	38%	31%	31.3	2.4	1.6	40.0		3.1	0%
Grouse	62%	46%	31%	38%	23%	20.3	1.6	1.0	29.0		2.2	0%
Spruce grouse	54%	38%	23%	38%	23%	18.2	1.4	0.9	26.0	Ind.	2.0	0%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	23%	23%	15%	8%	8%	2.1	0.2	0.1	3.0	Ind.	0.2	0%
Ptarmigan	38%	23%	15%	31%	23%	11.0	0.8	0.6	11.0	Ind.	0.8	0%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**15%**	**0%**	**0%**	**15%**	**8%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	15%	0%	0%	15%	8%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	8%	0%	0%	8%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	8%	0%	0%	8%	8%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%

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Table 6-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Marine invertebrates, continued												
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**100%**	**100%**	**62%**	**62%**	**228.3**	**17.6**	**11.4**	**86.1**		**6.6**	**0%**
Berries	**92%**	**92%**	**92%**	**46%**	**62%**	**228.3**	**17.6**	**11.4**	**57.1**		**4.4**	**0%**
Blueberry	85%	85%	85%	46%	46%	84.0	6.5	4.2	21.0	Gal.	1.6	0%
Lowbush cranberry	77%	69%	69%	46%	54%	89.0	6.8	4.5	22.3	Gal.	1.7	0%
Highbush cranberry	31%	23%	23%	15%	15%	28.0	2.2	1.4	7.0	Gal.	0.5	0%
Raspberry	38%	38%	38%	15%	15%	12.8	1.0	0.6	3.2	Gal.	0.2	0%
Salmonberry	23%	23%	23%	8%	8%	14.0	1.1	0.7	3.5	Gal.	0.3	0%
Strawberry	8%	8%	8%	8%	8%	0.5	0.0	0.0	0.1	Gal.	0.0	0%
Other wild berry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**8%**	**8%**	**8%**	**0%**	**0%**	**0.1**	**0.0**	**0.0**	**0.1**	**Gal.**	**0.0**	**0%**
Hudson's Bay tea	8%	8%	8%	0%	0%	0.1	0.0	0.0	0.1	Gal.	0.0	0%
Unknown mushrooms	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Wood	**62%**	**54%**	**54%**	**31%**	**23%**	**0.0**	**0.0**	**0.0**	**29.0**	**Cord**	**2.2**	**0%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 6-9. – Top 10 resources harvested and used, Evansville, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	27.0	1	1.	Moose	84.6%
2	2.	Sockeye salmon	4.5	2	1.	Blueberry	84.6%
3	2.	Lowbush cranberry	4.5	3	2.	Caribou	76.9%
4	3.	Blueberry	4.2	4	2.	Lowbush cranberry	76.9%
5	4.	Chinook salmon	2.8	5	3.	Arctic grayling	61.5%
6	5.	Sheefish	1.8	6	3.	Dall sheep	61.5%
7	6.	Lake trout	1.5	7	3.	Wood	61.5%
8	7.	Rainbow trout	1.4	8	4.	Spruce grouse	53.8%
9	7.	Highbush cranberry	1.4	9	5.	Chinook salmon	46.2%
10	8.	Spruce grouse	0.9	10	5.	Sockeye salmon	46.2%

Source ADF&G Division of Subsistence household surveys, 2012.

successful. Most small land mammal hunting and trapping targeted martens and took place during the winter during January and February.

During the study year, 38% of the households in Evansville harvested fish. Salmon have never been very abundant in the vicinity of Evansville (Marcotte and Haynes 1985:33) and the 2011 survey data, in combination with elders' accounts, indicate a further decline in the availability of resources. One key respondent noted that salmon were traditionally used for dog food. Since Evansville residents no longer maintain dog teams, according to one respondent there is a greatly reduced effort in harvesting salmon. Only 8% of households harvested salmon, specifically Chinook and sockeye salmon, and these were obtained outside of the area (Table 6-8). All of the salmon were caught with rod and reel gear (Table 6-10). In 2011, a greater number of households harvested nonsalmon fish (38%), in particular lake trout (15%), Arctic grayling (31%), and rainbow trout (8%) (Table 6-8). According to residents who attended the community review meeting, most nonsalmon fish were caught using rod and reel gear during the summer months, because of changes in ice conditions that made ice fishing more difficult.

Upland game birds, such as grouse (spruce and ruffed) and ptarmigan, were harvested by Evansville residents throughout the year. During 2011, an estimated 38% of households reported harvesting upland game birds (Table 6-8).

Harvesting vegetation, particularly berries in the summer, is an important activity for Evansville residents. During the study year, 92% of households reported harvesting and using berries. Blueberries tied with moose for the top ranked resource used by households (85%). Another commonly used vegetation resource is firewood, which is used for heating. During the study year, 54% of households reported harvesting firewood (Table 6-8).

Table 6-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Evansville, 2011.

		Removed from commercial catch		Subsistence methods													
				Fishwheel		Gillnet or seine		Dipnet		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	38.4%	25.0%	38.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	38.4%	25.0%	38.4%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	75.0%	61.6%	75.0%	61.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	75.0%	61.6%	75.0%	61.6%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

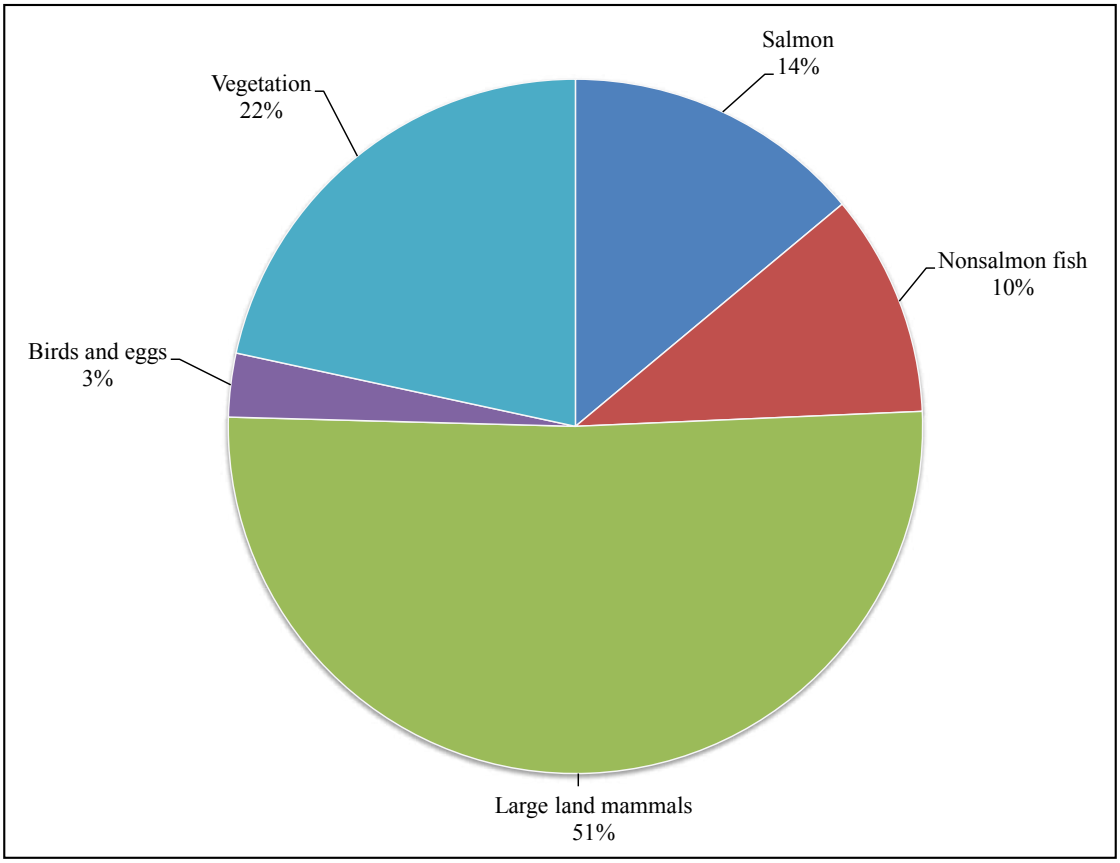


Figure 6-4.– Composition of harvest by category, Evansville, 2011.

HARVEST QUANTITIES

Table 6-8 reports estimated wild resource harvests and uses by Evansville residents in 2011 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[1]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Evansville was 1,057 lb, or 53 lb per capita (Table 6-8). Figure 6-4 shows the composition of wild resource harvests for Evansville in pounds usable weight. In terms of pounds harvested, moose constituted the largest portion of the entire subsistence harvest, which totaled 540 lb, or 27 lb per capita; this was the only large mammal harvested (Table 6-8; Figure 6-4). It is notable that during the 2011 study year no other large land

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

mammals species were harvested by Evansville residents despite past reports of caribou harvesting in the area (Marcotte and Haynes 1985). Additionally, in the small mammal category, only martens were obtained through trapping. A total of 13 individuals were taken for their furs (Table 6-8).

Wild plants and berries were the second most harvested wild resources used in Evansville in 2011 (Table 6-8). In the study year, 100% of Evansville households used and harvested vegetation. With a total harvest of 228 lb, or 11 lb per capita, the vegetation harvest quantity was second only to large land mammals (Figure 6-4). For vegetation, in total harvest weight lowbush cranberries (89 lb) ranked highest, followed by blueberries (84 lb).

A total of 147 lb of salmon were harvested (7 lb per capita) (Table 6-8). Nonsalmon fishing was another major activity in 2011 with an overall harvest of 110 lb (6 lb per capita) (Table 6-8). The nonsalmon harvest has changed quite significantly over time, both in terms of the types and amount of resources obtained. This will be discussed in detail later in the section "Comparing Harvests and Uses in 2011 with Previous Years."

Birds made up the smallest percentage of the total harvest by category (Figure 6-4). The Evansville household harvest of birds was 31 lb (2 lb per capita) (Table 6-8). Only upland game birds, including spruce grouse (18 lb), ruffed grouse (2 lb), and ptarmigan (11 lb) were harvested.

SHARING AND RECEIVING WILD RESOURCES

In Evansville in 2011, the average number of resources used per household was 12 (Table 6-7). Estimates of sharing indicated that 100% of households received wild resources from other households and 77% of households gave resources away (Table 6-7). Households received an average of 9 resources and gave away an average of 5 resources (Table 6-7). As mentioned previously, moose and blueberries were tied as a most used resource, and moose were among the most commonly shared resources with 46% of households giving away and 85% receiving moose despite the fact that only 1 moose was harvested in the community (Table 6-8). Although this 1 moose could have been widely shared, moose could also have been obtained from nearby Bettles residents or from non-resident or non-local hunters staying at the Bettles Lodge. The sharing of large land mammals in general was a common occurrence in Evansville with 77% receiving and 25% giving away caribou and 62% receiving and 15% giving away Dall sheep (Table 6-8). Although there were no harvests of these resources, this indicates that caribou and Dall sheep that were received were then passed on to other households, which is a common occurrence in rural Alaska communities.

The resource with the highest level of sharing in terms of both receiving and giving was lowbush cranberries with 46% receiving and 54% of households sharing this resource (Table 6-8). Berries played a significant role in the sharing practices of Evansville community members as demonstrated by the high level of blueberries shared (46% of households both giving and receiving), in addition to the sharing of lowbush cranberries (Table 6-8). Another notable resource shared was marine mammals,

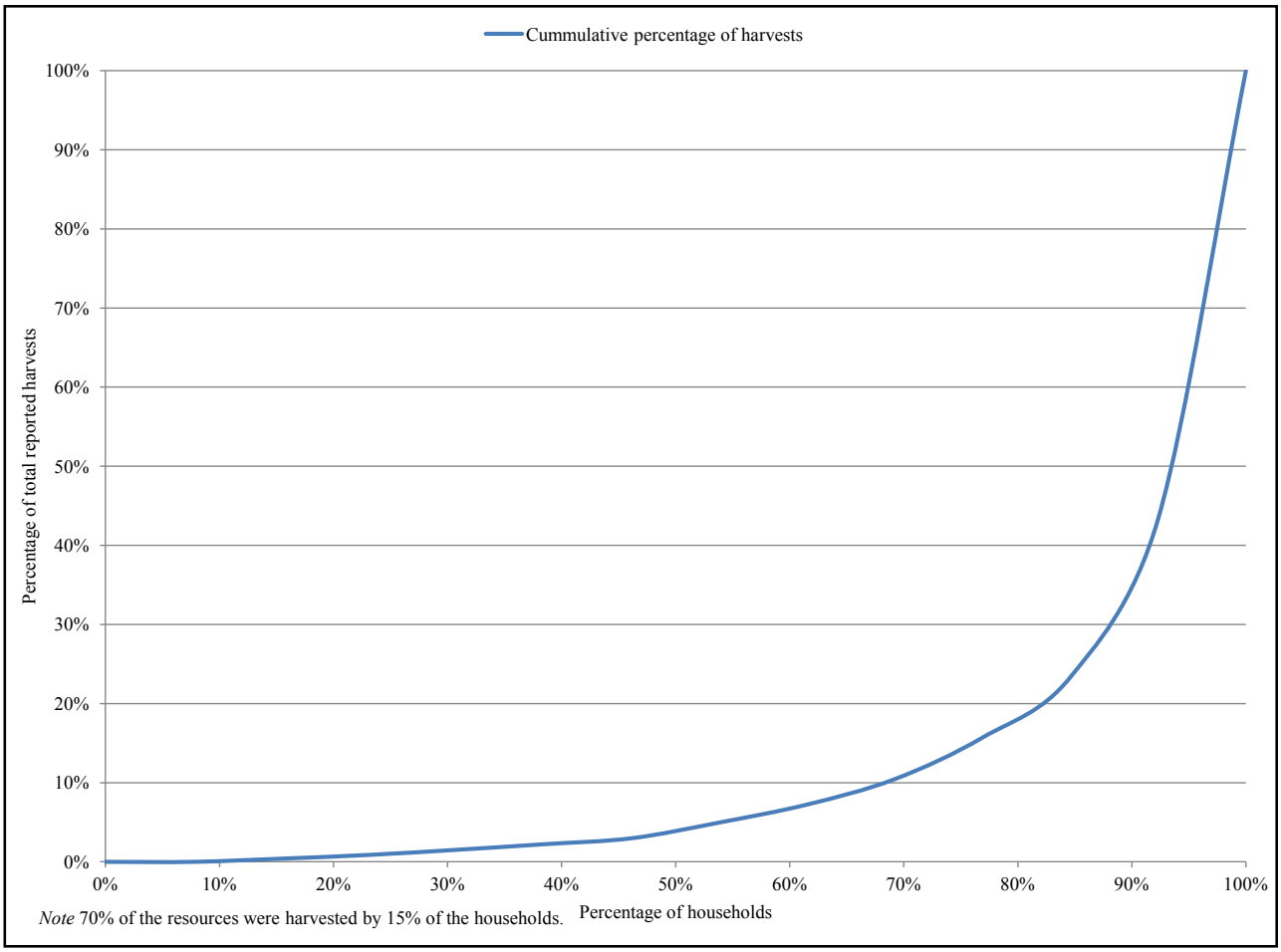


Figure 6-5.– Household specialization, Evansville, 2011.

which were acquired due to the enduring connections by residents to their Inupiat relations (community residents, Evansville, personal communication, January 9–12, 2012). Both seals and whales were received by 23% of community households, and 15% indicated that they knew it was bowhead whale they were receiving.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

A previous study by the Division of Subsistence (Wolfe 1987) and follow-up research sponsored by the National Science Foundation in which the Division of Subsistence participated (Wolfe et al. 2010) have shown that in most Alaska Native communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 Alaska Native 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

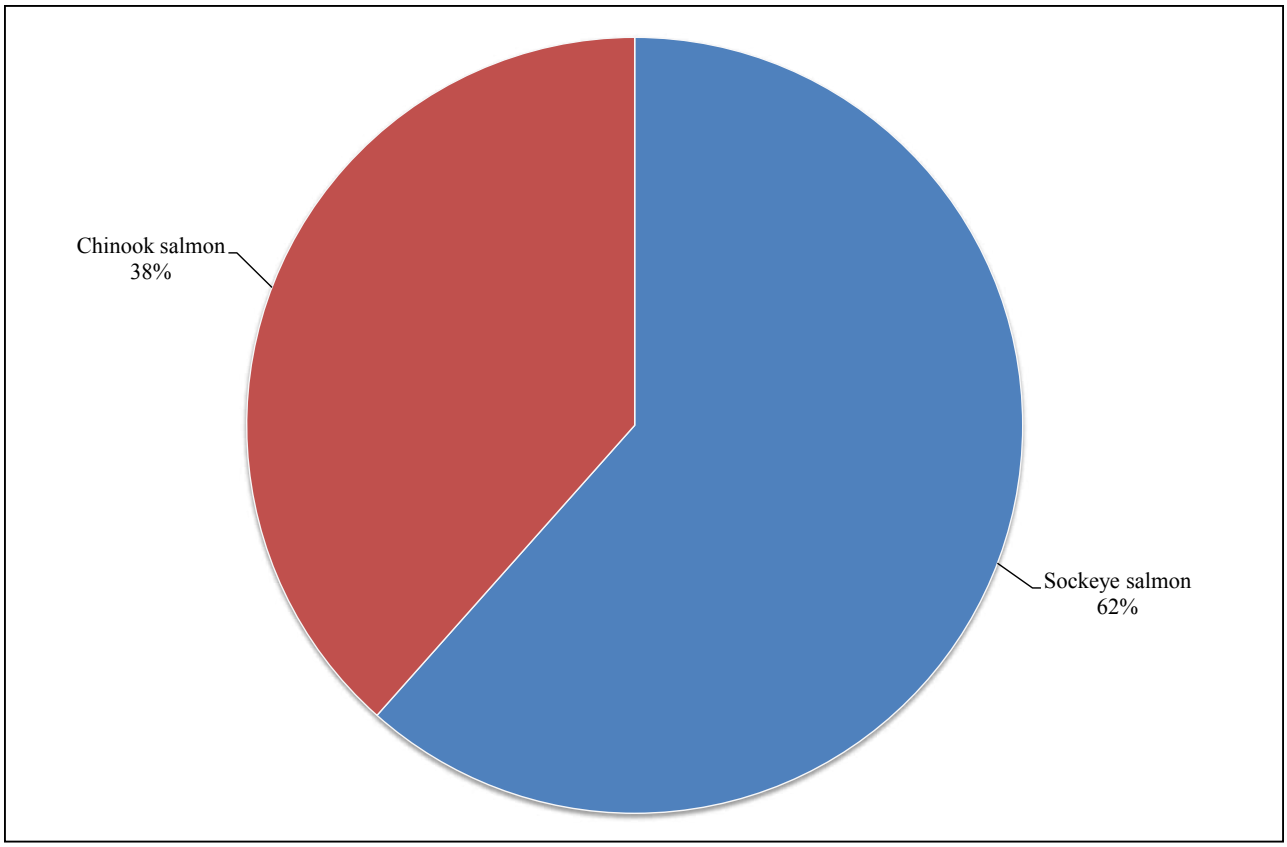


Figure 6-6.– Composition of salmon harvest, Evansville, 2011.

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 6-5, in the 2011 study year in Evansville, about 70% of the harvests of wild resources as estimated in usable pounds was harvested by 15% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Evansville and the other study communities.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Evansville residents, salmon composed 14% of the wild resource harvest in pounds in 2011 (Figure 6-4). Figure 6-6 depicts the composition of the salmon harvest, showing that 62% of this harvest was sockeye salmon (91 lb). Chinook salmon were the only other salmon species harvested and made up 38% (57 lb) of the salmon harvest. None of the salmon were harvested in the area. Salmon have never been abundant locally or harvested in great quantities in Evansville. The Koyukuk River is a principal tributary of the Yukon River and Evansville's position on the most northern branch of

the Koyukuk River means that relatively few spawning salmon survive the migration to reach the vicinity of Evansville on the South Fork. According to a key respondent, in the past, locally-caught salmon were typically low quality and used for dog food. Recently, for reasons not well understood, but perhaps linked to factors affecting both marine and freshwater environments, Yukon salmon have been on the decline and low stocks have severely affected subsistence pursuits along the Yukon River and, consequently, the Koyukuk River (United States and Canada Yukon River Joint Technical Committee 2006). This trend appears to extend to the vicinity of Evansville since chum salmon, both summer and fall runs, were an important resource in the past, but were not harvested locally during the study year. During the study year, Evansville residents harvested all (100%) of their salmon with rod and reel gear at locations far from the community (Table 6-10).

Salmon are favored by community members over other types of fish resources. Although elders relocated to Evansville during their youth, they continued to fish for salmon at Old Bettles in late June. Some residents remarked upon the change in weather and how it is "too warm" for the fish in the summer which has affected the resource's fitness and quantities. The overall decline in salmon resources over time has resulted in the deterioration of salmon fishing activity in Evansville. Salmon in the area are generally considered "not good to eat" and most salmon fishing occurs for providing dog food, according to survey respondents.

NONSALMON FISH

In 2011, Evansville residents harvested an estimated total of 110 lb (6 lb per capita) of nonsalmon fish (Table 6-8). In terms of total pounds and percentages, sheefish were the most harvested, followed by lake trout, and rainbow trout (Table 6-8; Figure 6-7). Arctic grayling, once the most important fish overall, came in fourth with only 15 lb harvested total (Table 6-8) (Marcotte and Haynes 1985). Table 6-11 lists the percentage of each nonsalmon fish species by number of fish and by usable pounds harvested by Evansville residents in 2011 by gear type. Evansville residents prefer to fish with nets but some community members remarked that there were too many regulations for net fishing; in particular, respondents commented that the regulated gillnet mesh size is "too big." Consequently, this may have discouraged residents from fishing. Furthermore, the environmental conditions that affected salmon were likely inhibiting the quality and productivity of nonsalmon resources (i.e., too warm) (participant, community review meeting, Evansville, June 7, 2012). These factors in combination likely contributed to the relatively low harvest of nonsalmon fish (Table 6-8).

In the study year 2011, Evansville residents concentrated their nonsalmon fish harvests on the Koyukuk River in the vicinity of the community, and also at Wild and Iniakuk lakes (Figure 6-8). Fishing occurred mainly during the summer months from June through August.

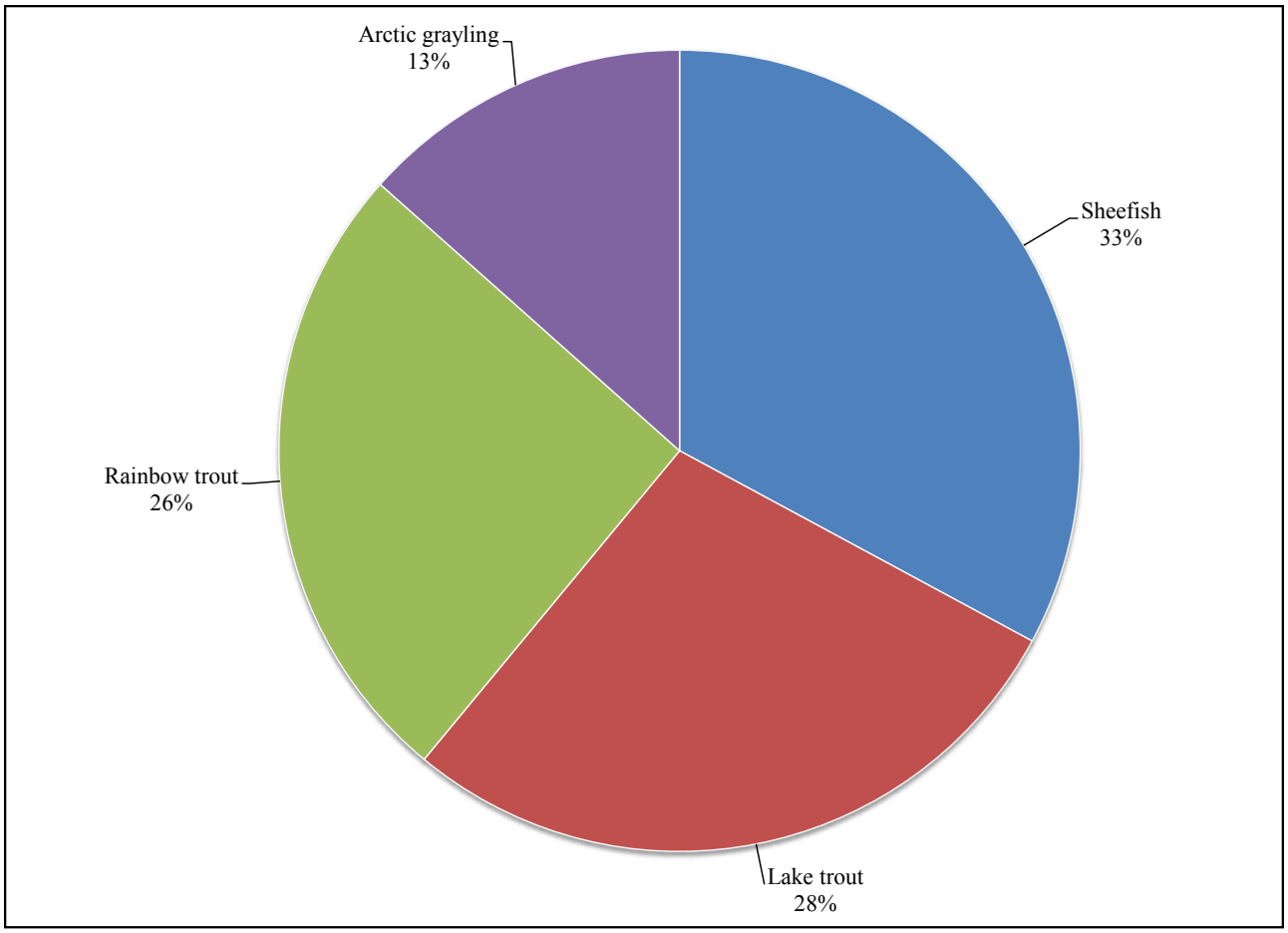


Figure 6-7.– Composition of nonsalmon fish harvest, Evansville, 2011.

LARGE LAND MAMMALS

In 2011, large land mammals, specifically moose, made up 51% of the total Evansville harvest by weight and 100% of the large mammal harvest (Figure 6-4). A large percentage (85%) of households used moose, but only 8% (1 household) harvested moose (Table 6-8). Despite the small local harvest, moose was the most harvested resource both in terms of total pounds harvested and pounds per capita harvested (tables 6-8 and 6-9). Moose and blueberries were tied for being the most used resource by households (85% of households each). Three significant factors likely contributed to the low moose harvest in Evansville. Most residents are employed, which takes up a considerable amount of their time, and leaves few occasions for hunting. Furthermore, many community members are retired and not able to actively hunt. Finally, many residents expressed concerns about the availability of moose in the area; opinions as to the causes included predation by wolves, non-local "sport hunters," and moose emigration to other areas.

Moose was not the only large mammal species to experience a harvest decline. In 2011, no caribou were harvested by Evansville residents (Table 6-8). While caribou harvests documented in the early 1980s were combined with Bettles, the relatively large community harvest total of 11 animals suggests

Table 6-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Evansville, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	5.8%	2.6%	5.8%	2.6%	94.2%	97.4%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	5.8%	2.6%	5.8%	2.6%	94.2%	97.4%	100.0%	100.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.8%	28.9%	31.9%	28.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.9%	28.1%	31.9%	28.1%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	26.2%	11.2%	30.4%	13.4%
	Resource	0.0%	0.0%	0.0%	0.0%	19.0%	19.0%	19.0%	19.0%	81.0%	81.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	5.8%	2.6%	5.8%	2.6%	24.6%	10.9%	30.4%	13.4%
Sheefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.2%	33.7%	8.7%	32.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.7%	32.9%	8.7%	32.9%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.8%	26.2%	29.0%	25.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.0%	25.6%	29.0%	25.6%

Source ADF&G Division of Subsistence household surveys, 2012.

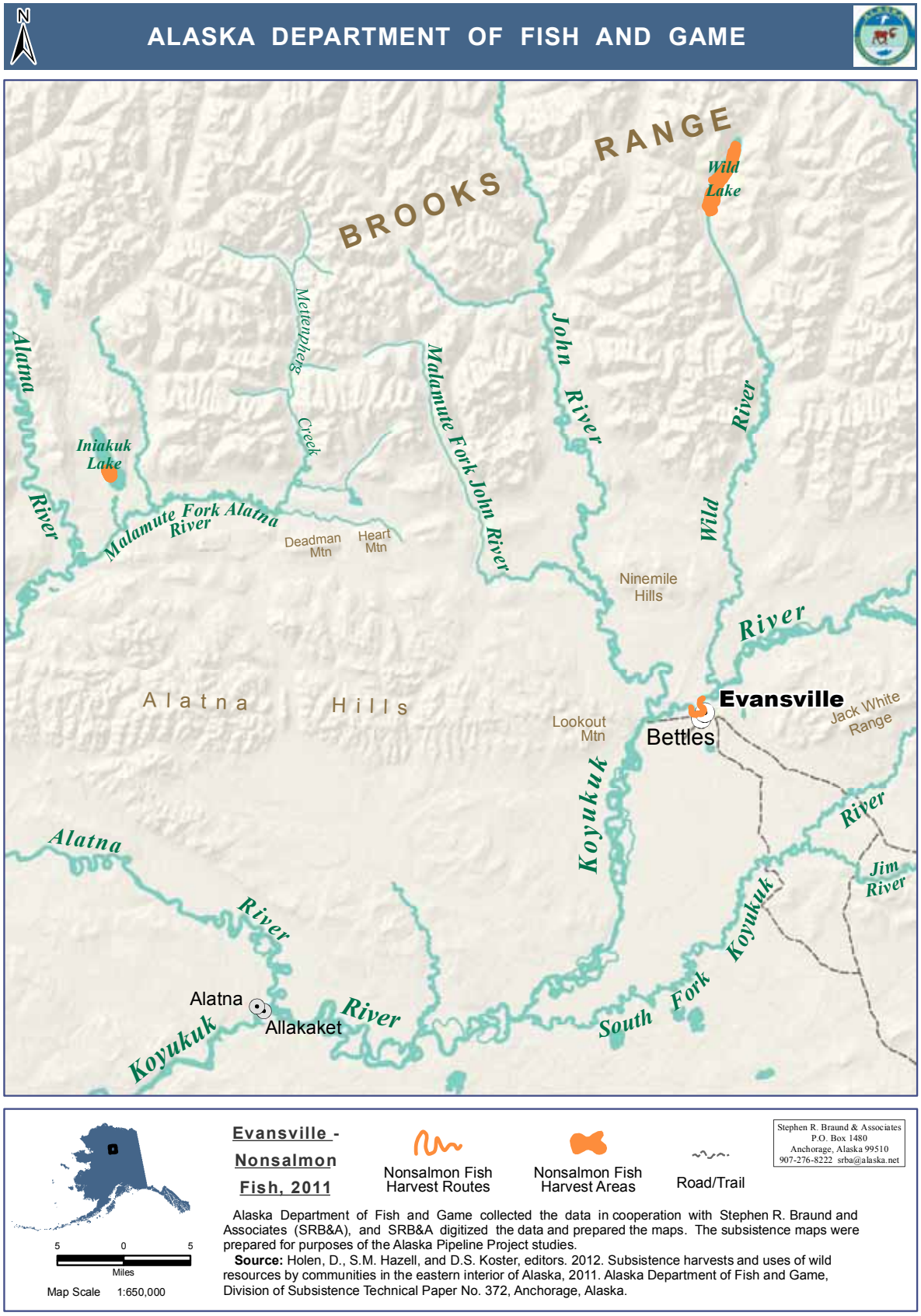


Figure 6-8.– Nonsalmon fish search and harvest areas, Evansville, 2011.

Evansville residents likely would have harvested at least 1 (Marcotte and Haynes 1985). At that time, 11 caribou were considered a low harvest, which was attributed to the scarcity of caribou in the area. Between 1997 and 1999, Evansville residents harvested between 2 and 4 caribou a year (CSIS). While it is not exactly clear why Evansville residents did not harvest caribou in 2011, the combination of caribou availability and a shortage of active hunters likely played a role.

Evansville residents used a large radius surrounding the community for hunting and searching for large land mammals (Figure 6-9). This was done primarily with 4 x 4[2] trucks. Moose hunting occurred in September (Table 6-12).

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 6-8, the total harvest of small land mammals by Evansville residents in 2011 was 13, all of which were martens. Martens were harvested for their fur and were not consumed by Evansville residents. Trapping occurred east from Evansville along the Koyukuk River and north along the John and Wild rivers (Figure 6-10).

BIRDS

In 2011, Evansville residents harvested upland game birds in the direct vicinity of Evansville eastward along the Koyukuk River and north along the John and Wild rivers, mirroring trapping activities, which would often occur simultaneously (Figure 6-11). A number of community members reported harvesting birds in their respective front and back yards and spoke of the general abundance of upland game birds. Upland game birds harvested consisted of spruce grouse (18 lb), ruffed grouse (2 lb), and ptarmigan (11 lb) (Table 6-8). No migratory birds were harvested nor bird eggs gathered during the study year.

MARINE INVERTEBRATES

Evansville residents did not harvest or attempt to harvest marine invertebrates, none of which are locally available. However, 15% of households reported using shellfish, specifically both freshwater clams (8%) and razor clams (8%) (Table 6-8).

VEGETATION

The most used category of subsistence resources in Evansville during the 2011 study year was vegetation, with 100% of the households harvesting and using a resource in this category for a per capita harvest of 11 lb (Table 6-8). Lowbush cranberries ranked first in harvest quantity with 89 lb

2. A four-wheeled vehicle with a drivetrain that allows all four wheels to receive torque from the engine simultaneously, which provides better control of the vehicle.

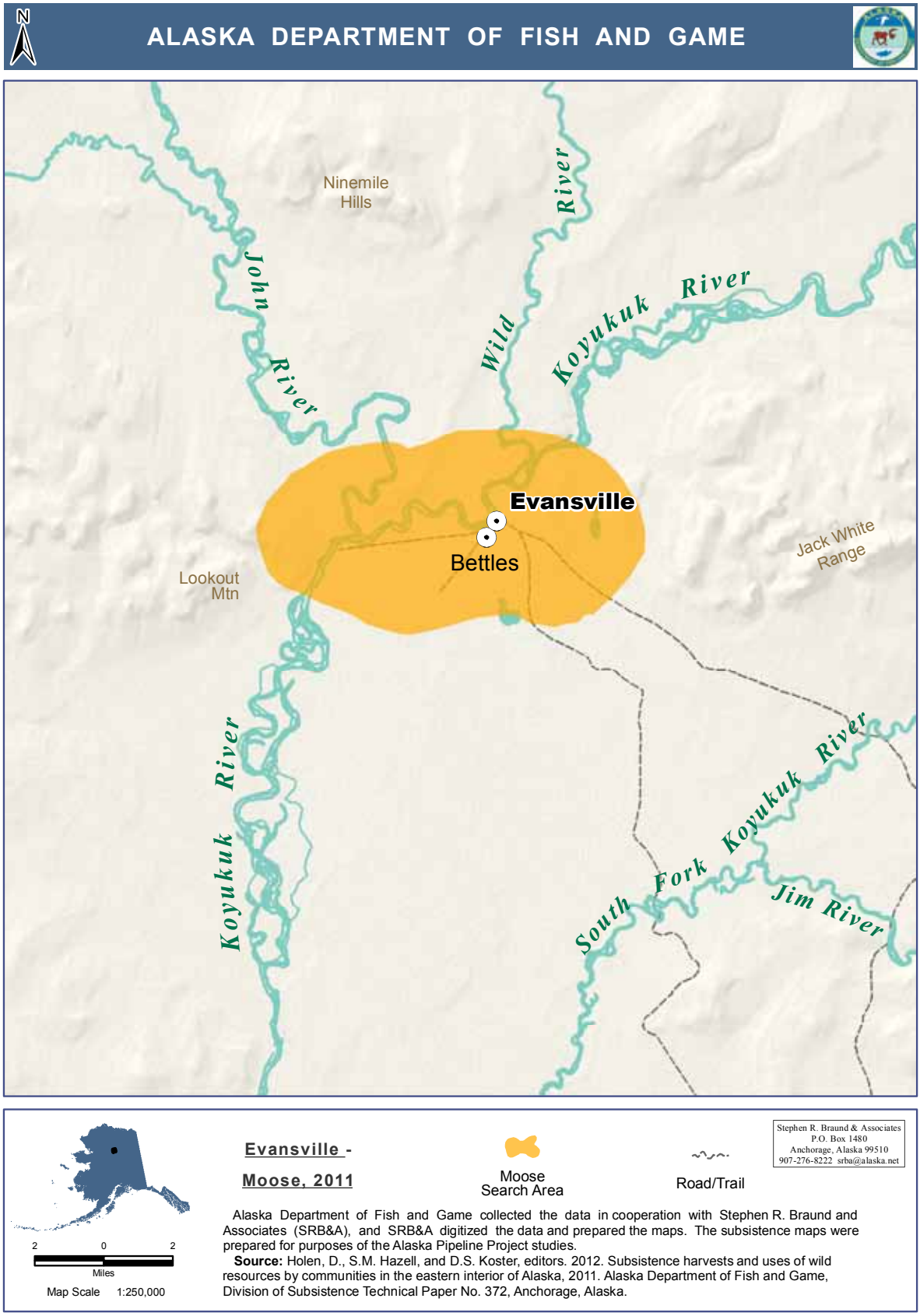


Figure 6-9.– Moose search and harvest areas, Evansville, 2011.

Table 6-12. – Estimated harvests of large game by month and sex, Evansville, 2011.

				Caribou				Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

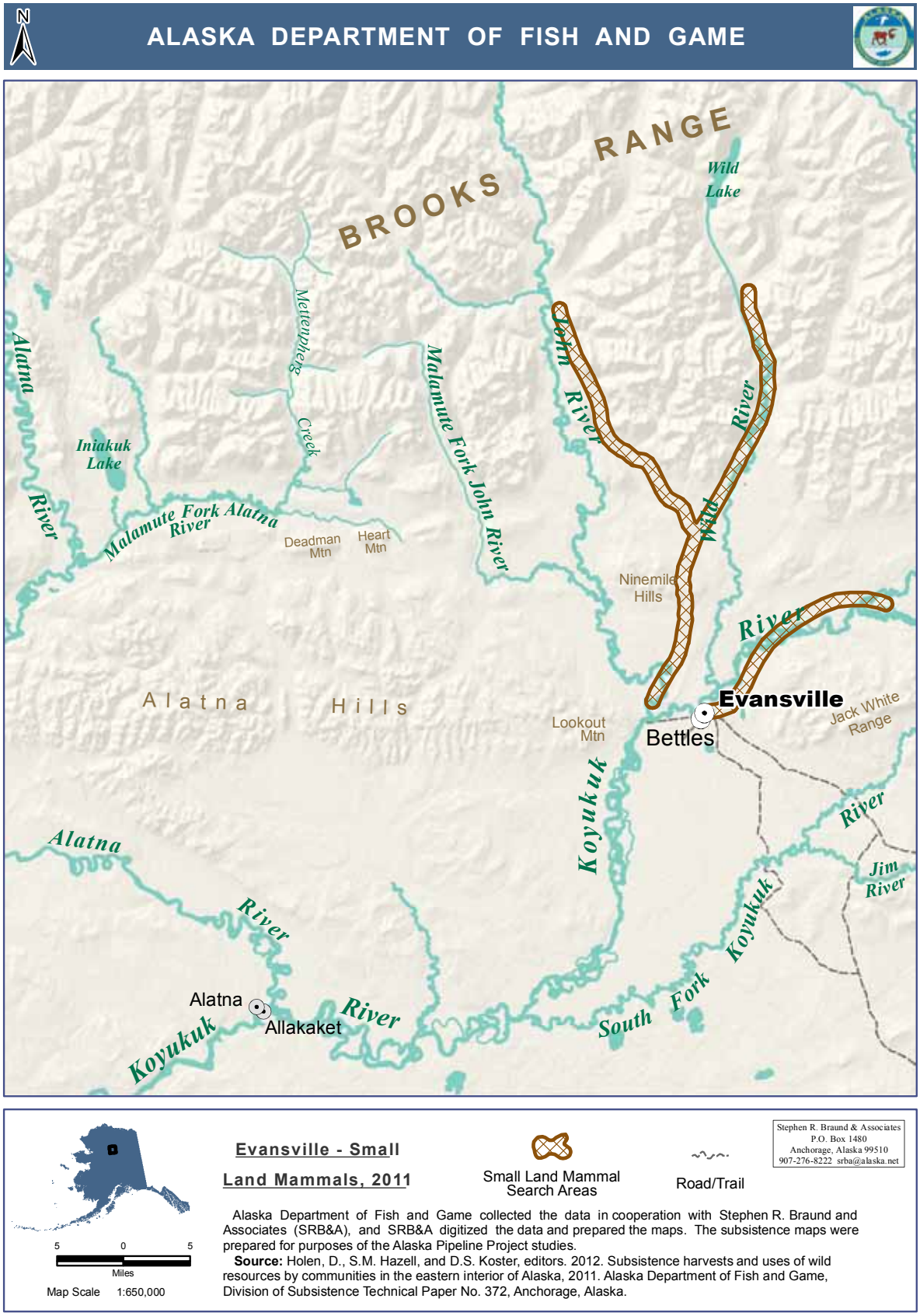


Figure 6-10.– Small land mammals search and harvest areas, Evansville, 2011.

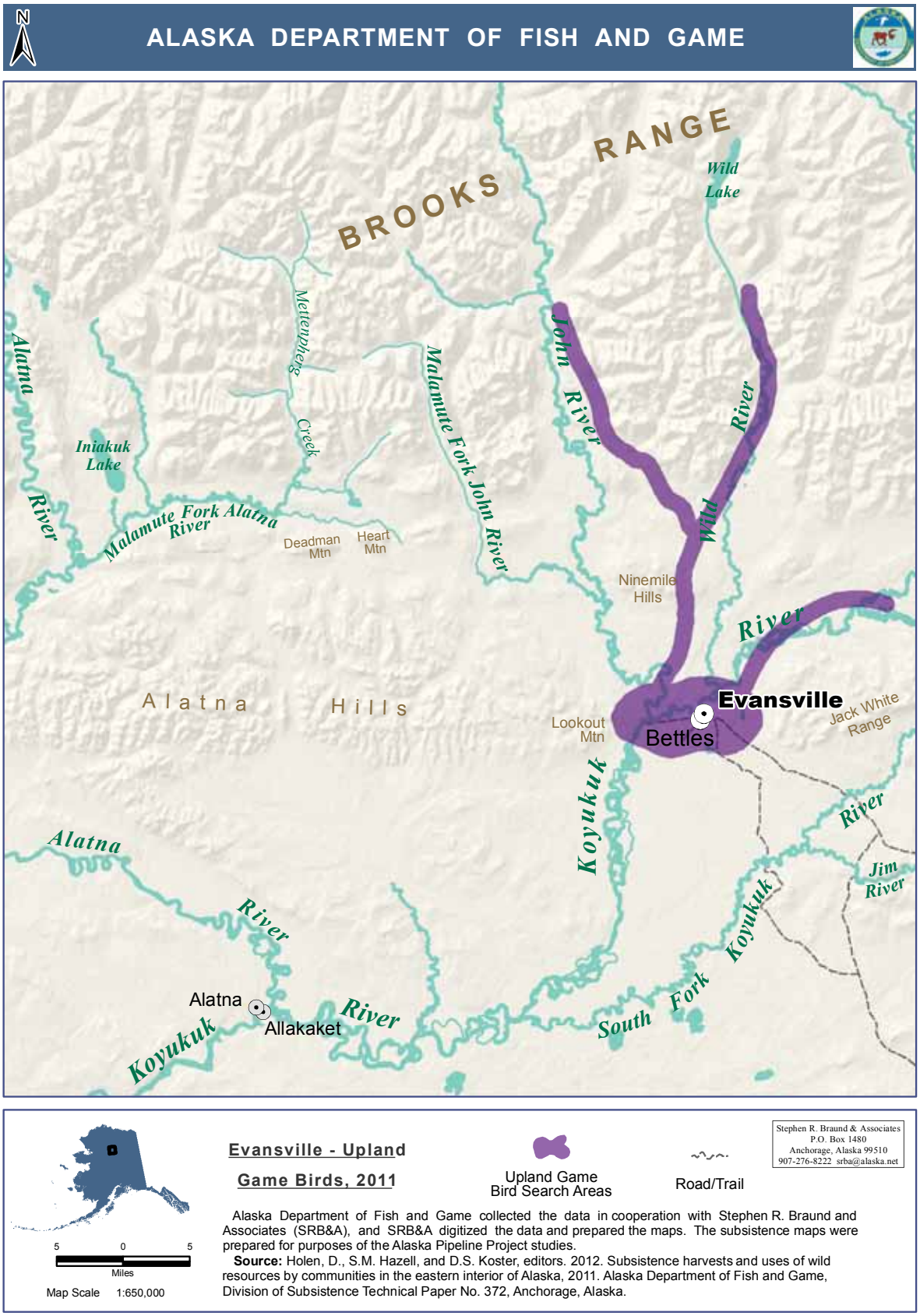


Figure 6-11.– Upland game birds search and harvest areas, Evansville, 2011.

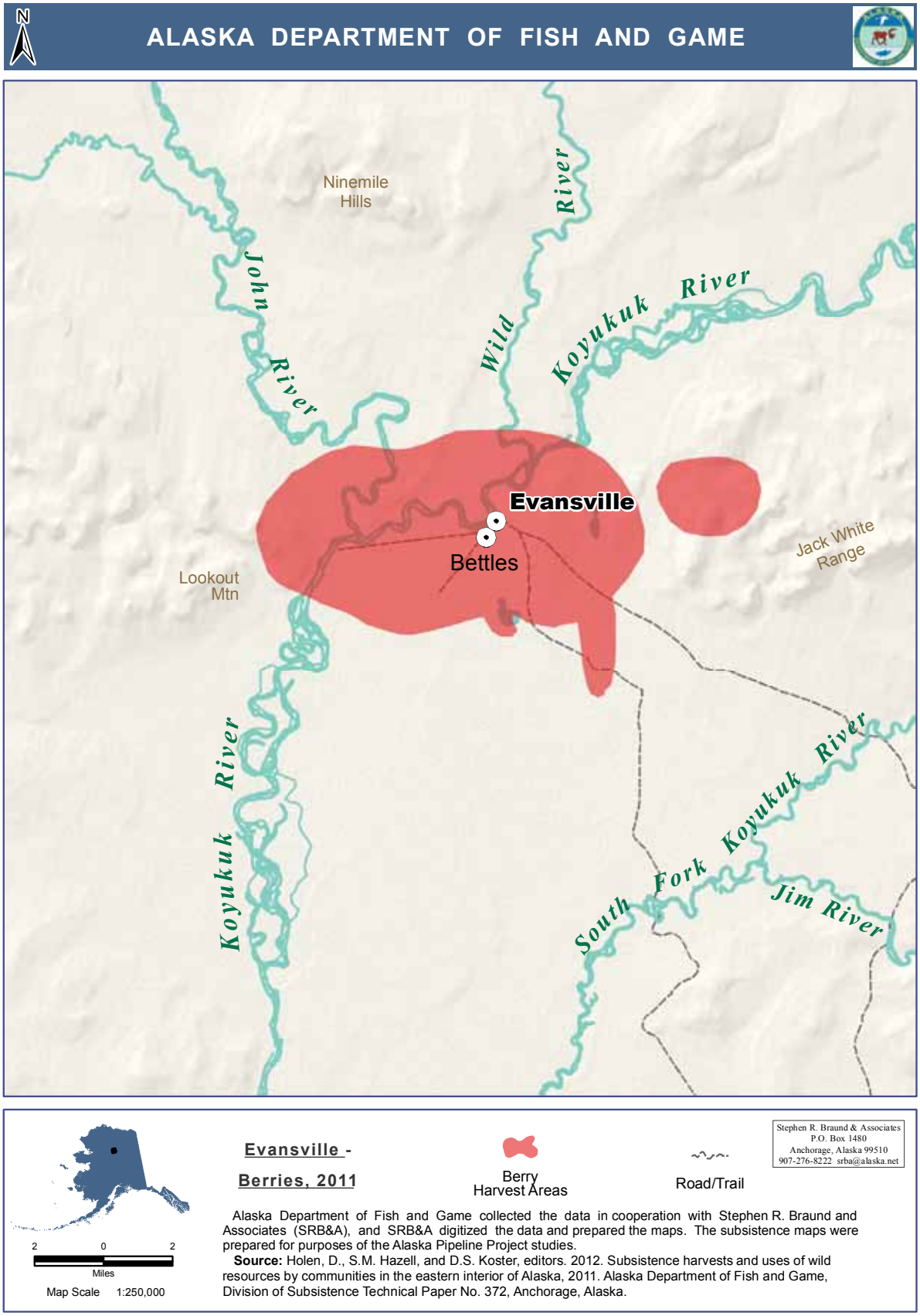


Figure 6-12.– Berries search and harvest areas, Evansville, 2011.

total (5 lb per capita), followed by blueberries (84 lb total), and highbush cranberries (28 lb total). According to Evansville respondents, 2011 was a poor year for berries because of wet conditions during the summer; therefore, numbers reported here are likely lower than past years. Most wild plants and berries were harvested close to the community of Evansville and about a mile to the west of Bettles past the floatplane pond (Figure 6-12).

CASH EMPLOYMENT AND MONETARY INCOME

Table 6-13 is a summary of the estimated earned income as well as other sources of income for residents of Evansville in 2011. This table shows that earned income accounted for an average of $41,279 per household (88% of the total income) compared to other income sources, which accounted for $5,452 (12%) in 2011. Almost one-half the jobs (42%) were service based and 50% of income was earned from combined local, state, and federal government employment (Table 6-14). The largest source of other income was Social Security in 2011 (Table 6-13).

In 2011, 65% of the adults of working age (16 and over) in Evansville were employed at some point during the study year. Of those employed adults, 54% were employed year-round and the average length of employment was 10 months (Table 6-15). On average in 2011, employed households contained 1 employed adult, and 69% of households contained at least 1 adult who was employed. The mean number of jobs per employed households was 2. Most jobs were located in Evansville but some respondents worked in the neighboring community of Bettles.

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" (Nord et al. 2009:2). 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. Core questions and responses from Evansville residents are summarized in Figure 6-13. In Evansville, a lack of subsistence foods was the most frequently reported source of food insecurity; 62% of Evansville households said their subsistence foods did not last (Figure 6-13).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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

Table 6-13. – Estimated earned and other income, Evansville, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Services	5.0	4.0	$265,451.39	$20,419.34	$13,272.57	43.7%
Local government	6.0	6.0	$170,307.29	$13,100.56	$8,515.36	28.0%
State government	1.0	1.0	$54,000.00	$4,153.85	$2,700.00	8.9%
Federal government	2.0	2.0	$44,055.56	$3,388.89	$2,202.78	7.3%
Manufacturing	1.0	1.0	$2,807.29	$215.95	$140.36	0.5%
Earned income subtotal	**11.0**	**9.0**	**$536,621.53**	**$41,278.58**	**$26,831.08**	**88.3%**
Other income						
Social security		3.0	$21,372.00	$1,644.00	$1,068.60	3.5%
Alaska Permanent Fund Dividend		10.0	$17,610.00	$1,354.62	$880.50	2.9%
Native corporation dividend		7.0	$14,950.00	$1,150.00	$747.50	2.5%
Unemployment		1.0	$6,720.00	$516.92	$336.00	1.1%
Energy assistance		3.0	$5,400.00	$415.38	$270.00	0.9%
Longevity bonus		2.0	$4,260.00	$327.69	$213.00	0.7%
Food stamps		1.0	$560.00	$43.08	$28.00	0.1%
Adult public assistance		0.0	$0.00	$0.00	$0.00	0.0%
Supplemental Security Income		0.0	$0.00	$0.00	$0.00	0.0%
Pension/retirement		1.0	$0.00	$0.00	$0.00	0.0%
Workmans' compensation/insurance		0.0	$0.00	$0.00	$0.00	0.0%
Child support		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**11.0**	**$70,872.00**	**$5,451.69**	**$3,543.60**	**11.7%**
Community income total			**$607,493.53**	**$46,730.27**	**$30,374.68**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

Table 6-14. – Employment by industry, Evansville, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**19.0**	**9.0**	**11.0**	
Federal government (total)	**10.5%**	**22.2%**	**18.2%**	**8.2%**
Administrative support occupations, including clerical	5.3%	11.1%	9.1%	0.2%
Service occupations	5.3%	11.1%	9.1%	8.0%
State government (total)	**5.3%**	**11.1%**	**9.1%**	**10.1%**
Mechanics and repairers	5.3%	11.1%	9.1%	10.1%
Local government, including tribal (total)	**36.8%**	**66.7%**	**54.5%**	**31.7%**
Administrative support occupations, including clerical	15.8%	33.3%	27.3%	25.0%
Mechanics and repairers	10.5%	22.2%	18.2%	6.1%
Transportation and material moving occupations	10.5%	22.2%	18.2%	0.7%
Manufacturing (total)	**5.3%**	**11.1%**	**9.1%**	**0.5%**
Writers, artists, entertainers, and athletes	5.3%	11.1%	9.1%	0.5%
Services (total)	**42.1%**	**44.4%**	**45.5%**	**49.5%**
Executive, administrative, and managerial	5.3%	11.1%	9.1%	8.8%
Social scientists, social workers, religious workers, and lawyers	5.3%	11.1%	9.1%	8.4%
Service occupations	26.3%	22.2%	18.2%	19.6%
Mechanics and repairers	5.3%	11.1%	9.1%	12.7%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 6-15. – Employment characteristics, Evansville, 2011.

Characteristic	Community Evansville
All adults	
Number	17.0
Mean weeks employed	28.3
Employed adults	
Number	11.0
Percentage	64.7%
Jobs	
Number	19
Mean	1.7
Minimum	1.0
Maximum	5.0
Months employed	
Mean	10.1
Minimum	1.0
Maximum	12.0
Percentage employed year-round	54.5%
Mean weeks employed	43.7
Households	
Number	13.0
Employed	
Number	9.0
Percentage	69.2%
Jobs per employed household	
Mean	1.5
Minimum	1.0
Maximum	7.0
Employed adults	
Mean	
Employed households	1.2
Total households	0.8
Minimum	1.0
Maximum	2.0
Mean person-weeks of employment	47.2

Source ADF&G Division of Subsistence household surveys, 2012.

very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (USDA 2011).

Food security results for surveys for Evansville, the state of Alaska, and the United States are summarized in Figure 6-14. In Evansville in 2011, 92% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 8% had low food security. Evansville households had slightly higher levels of food security than the state and nation as a whole (Nord et al. 2009:21).

Figure 6-15 portrays the mean number of food insecure conditions per household by food security category by month. For households with low food security, food insecurity conditions peaked in August and September. Figure 6-16 shows that depending upon the month, between 15% and 45% of households reported subsistence foods did not last. Six months, especially April through September, were reported as the months in which subsistence foods did not last (Figure 6-16). The 2011 study year was a particularly poor year for salmon and berries which could have contributed to the low subsistence food security observed in warm weather months and represented in Figures 6-15 and 6-16.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 6-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 6-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 6-17 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (13 households), and therefore differ from those reported in Table 6-16.

More than one-half (62%) of the Evansville respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 15% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 23% said their overall harvests and uses were higher (Table 6-16).

As depicted in Figure 6-17, for all resource categories, harvests and uses were lower, and in some cases significantly lower, or about the same than in previous years for the majority of households that provided assessments.

For example, for large game, 38% of all interviewed households (Figure 6-17), and 42% of all those who provided an assessment (Table 6-16), indicated less use, while 23% of all interviewed households

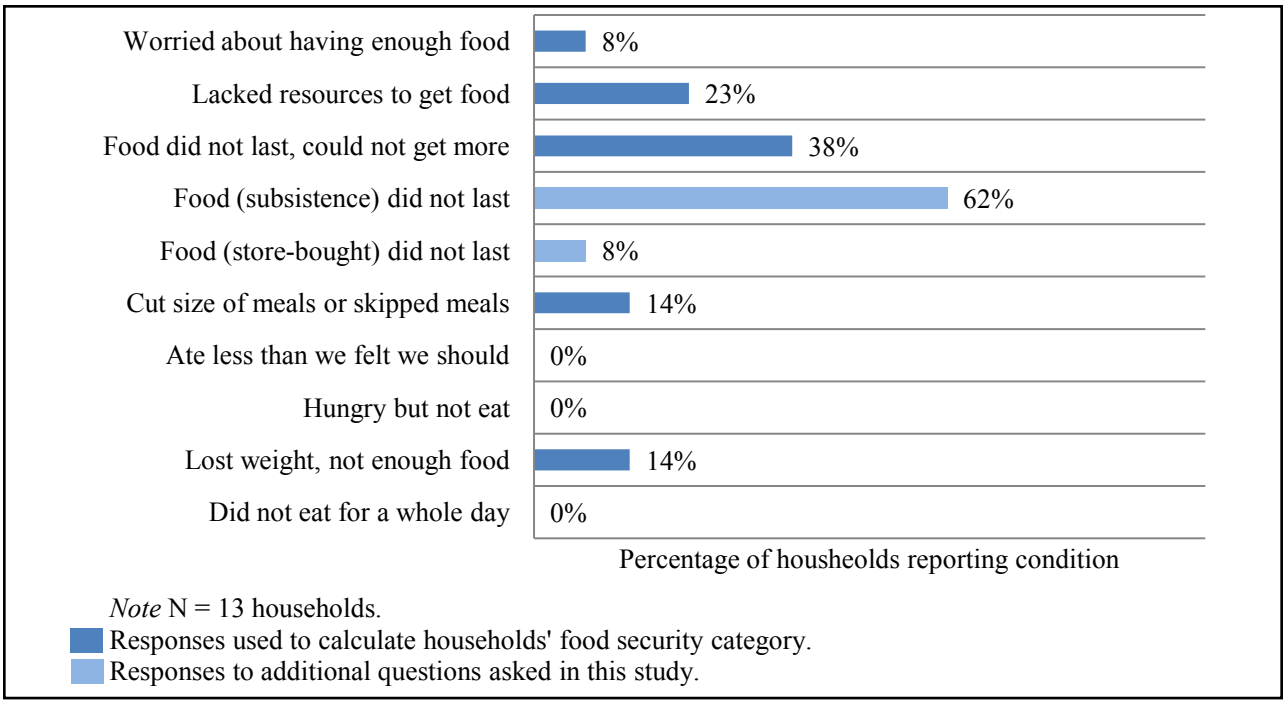


Figure 6-14.– Food insecure conditions, Evansville, 2011.

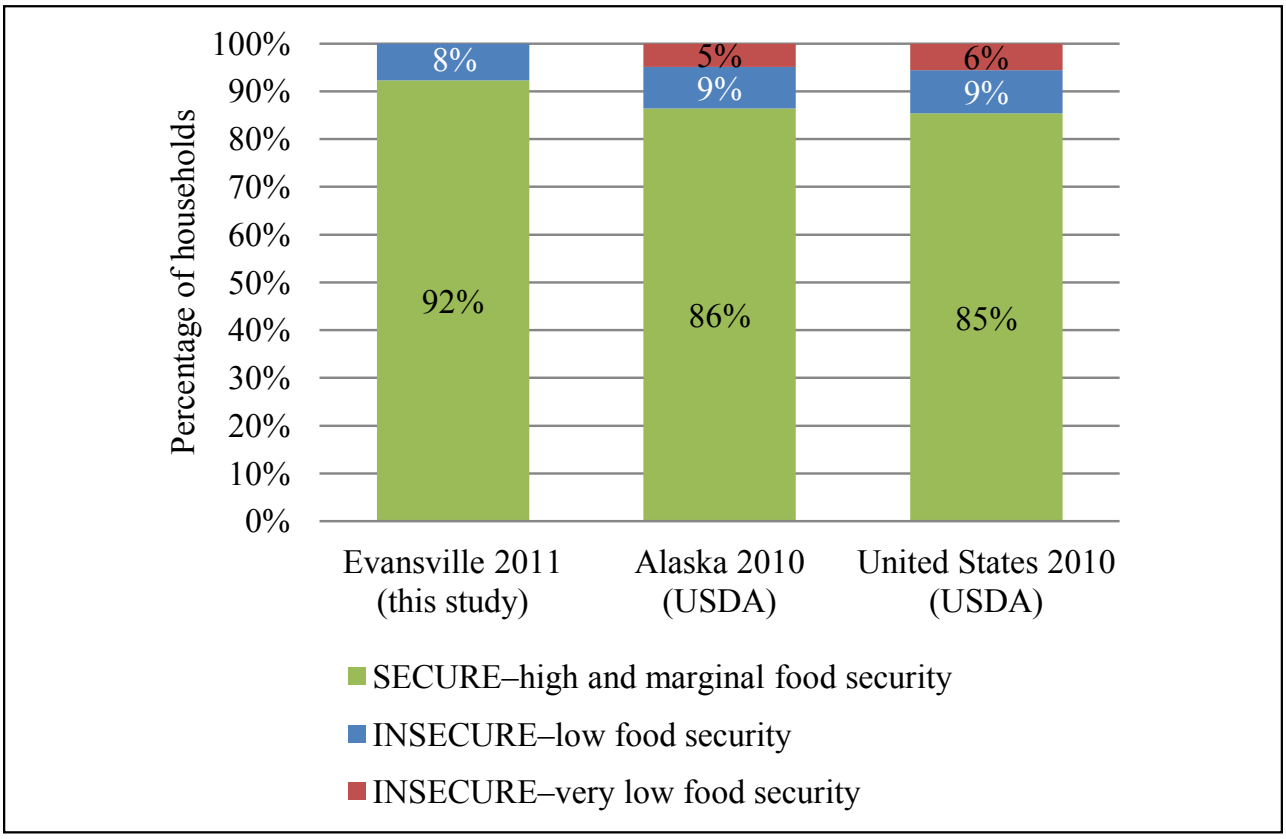


Figure 6-13.– Food insecure categories, Evansville, 2011.

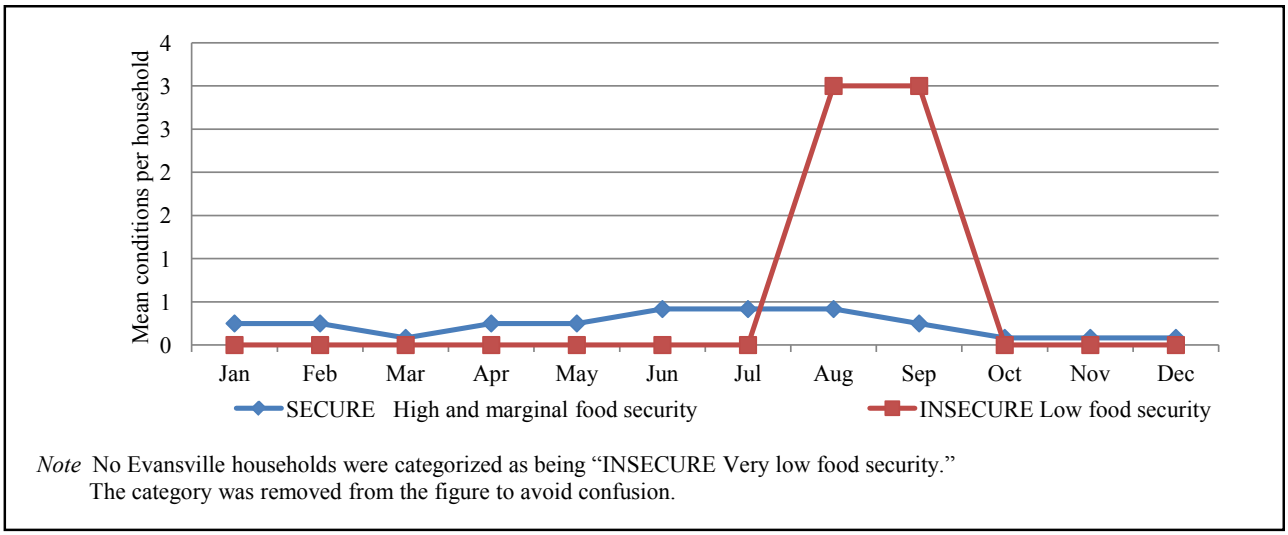


Figure 6-15.– Mean number of food insecure conditions for each month food was reported not to have lasted, Evansville, 2011.

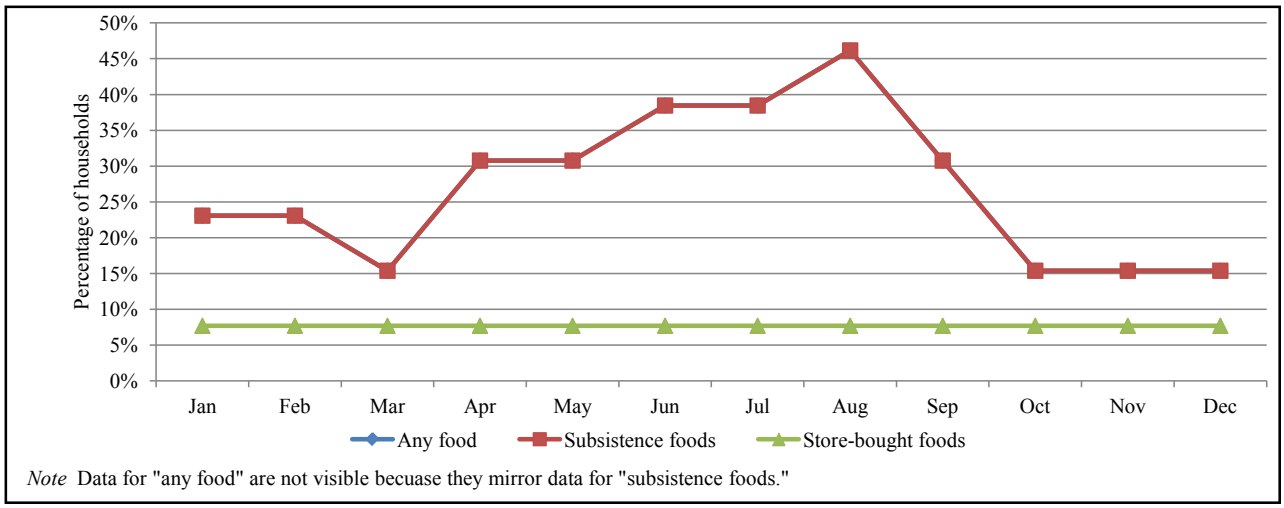


Figure 6-16.– Comparison of months where foods did not last, Evansville, 2011.

Table 6-16. – Changes in household uses of resources compared to recent years, Evansville, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage
Any resource	13	13	10	77%	8	62%	7	54%
All resources	13	13	8	62%	2	15%	3	23%
Salmon	13	8	4	50%	2	25%	2	25%
Nonsalmon fish	13	10	5	50%	3	30%	2	20%
Large game	13	12	5	42%	3	25%	4	33%
Small game	13	2	1	50%	0	0%	1	50%
Marine mammals	13	3	1	33%	2	67%	0	0%
Migratory waterfowl	13	2	1	50%	1	50%	0	0%
Other birds	13	8	3	38%	3	38%	2	25%
Bird eggs	13	0	0	0%	0	0%	0	0%
Marine invertebrates	13	2	2	100%	0	0%	0	0%
Vegetation	13	13	9	69%	2	15%	2	15%

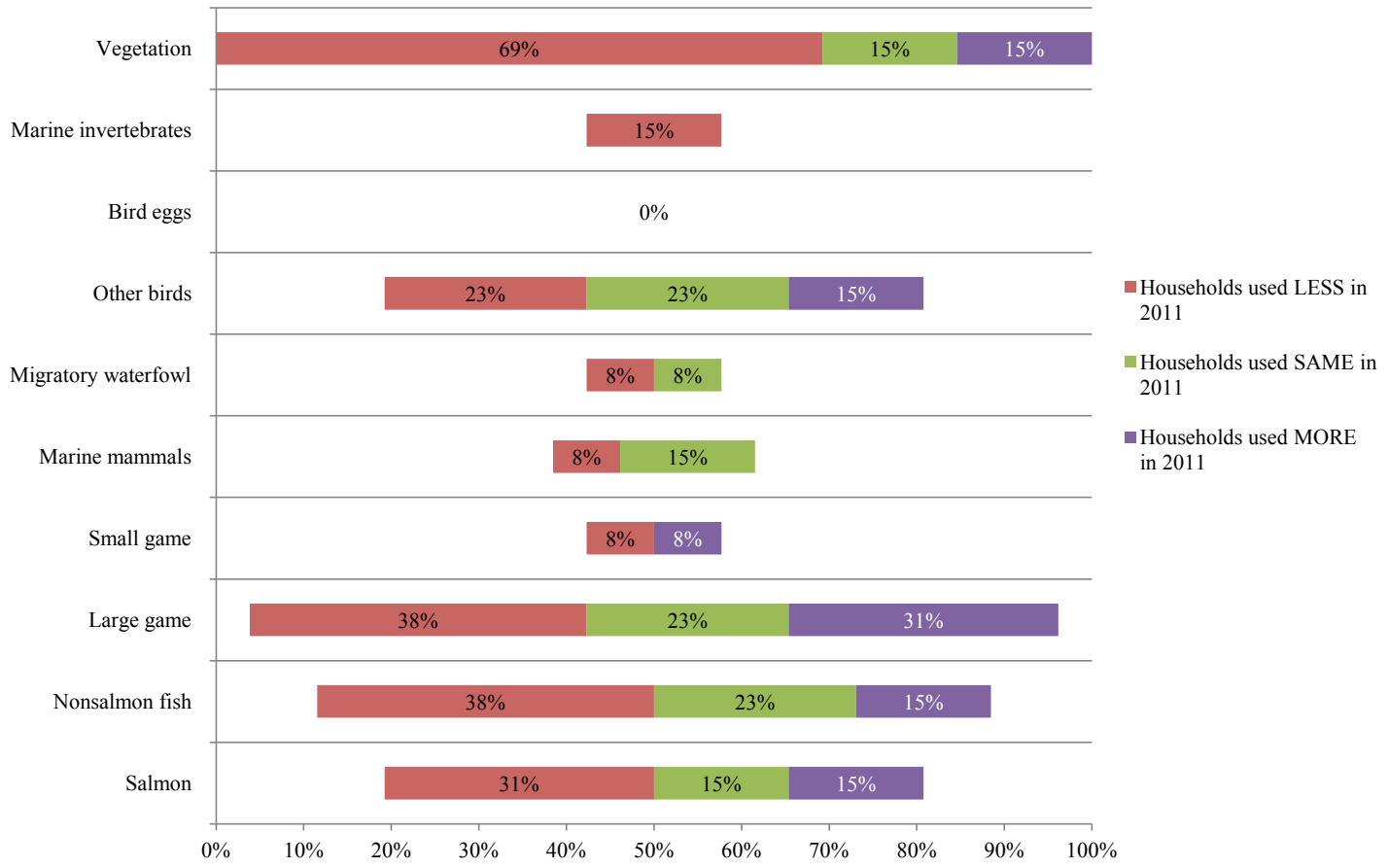
Source ADF&G Division of Subsistence household surveys, 2011.

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

and 25% of those providing assessments indicated the same levels of use in 2011 than in previous years. While some Evansville households reported using more of some resource categories in 2011 than previous years (e.g., 15% of all interviewed households for vegetation, other birds, nonsalmon fish, and salmon; 8% of all interviewed households for small game; and 31% of all interviewed households for large game), more community members said they used less of each resource except bird eggs in 2011 compared to the last 5 years (Figure 6-17). Evansville households indicated that they used less vegetation (69% of all interviewed households, 69% of those providing assessment), nonsalmon fish (38% of all interviewed households, 50% of those providing assessment), salmon (31% of all interviewed households, 50% of those providing assessment), and other birds (23% of all interviewed households, 38% of those providing assessment).

Table 6-17 depicts the reasons Evansville respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: resources being less available (63%), weather/environment (38%), and working/no time and other reasons (25% each). Resource availability and lack of effort were among the main reasons cited for less use of salmon, nonsalmon fish, and large game. Lack of effort was also cited for less use of migratory waterfowl and other birds. Working/no time was cited for less use of nonsalmon fish, small game, other birds, and vegetation. To a lesser extent, community



Note Percentages are based on the total number of households in the community (N = 13 households). Unlabeled percentages are less than 5%.

Figure 6-17.– Changes in household uses of resources compared to recent years, Evansville, 2011.

Table 6-17. – Reasons for less household uses of resources compared to recent years, Evansville, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	13	10	0	0.0%	9	90.0%	0	0.0%	0	0.0%	4	40.0%	5	50.0%	0	0.0%	4	40.0%
All resources	13	8	0	0.0%	5	62.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	37.5%
Salmon	8	4	0	0.0%	2	50.0%	0	0.0%	0	0.0%	2	50.0%	1	25.0%	0	0.0%	0	0.0%
Nonsalmon fish	10	5	0	0.0%	2	40.0%	0	0.0%	0	0.0%	1	20.0%	1	20.0%	0	0.0%	0	0.0%
Large game	12	5	0	0.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%	2	40.0%	0	0.0%	0	0.0%
Small game	2	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	3	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	2	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%
Other birds	8	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	66.7%	0	0.0%	0	0.0%
Bird eggs	0	0	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	2	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	13	9	0	0.0%	4	44.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	33.3%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 6-16.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	13	10	3	30.0%	3	30.0%	1	10.0%	0	0.0%	1	10.0%	0	0.0%	2	20.0%	0	0.0%
All resources	13	8	2	25.0%	2	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	8	4	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	10	5	0	0.0%	2	40.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	2	40.0%	0	0.0%
Large game	12	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Small game	2	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Marine mammals	3	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%
Migratory waterfowl	2	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%
Other birds	8	3	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	2	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	13	9	1	11.1%	1	11.1%	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, 2011.

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

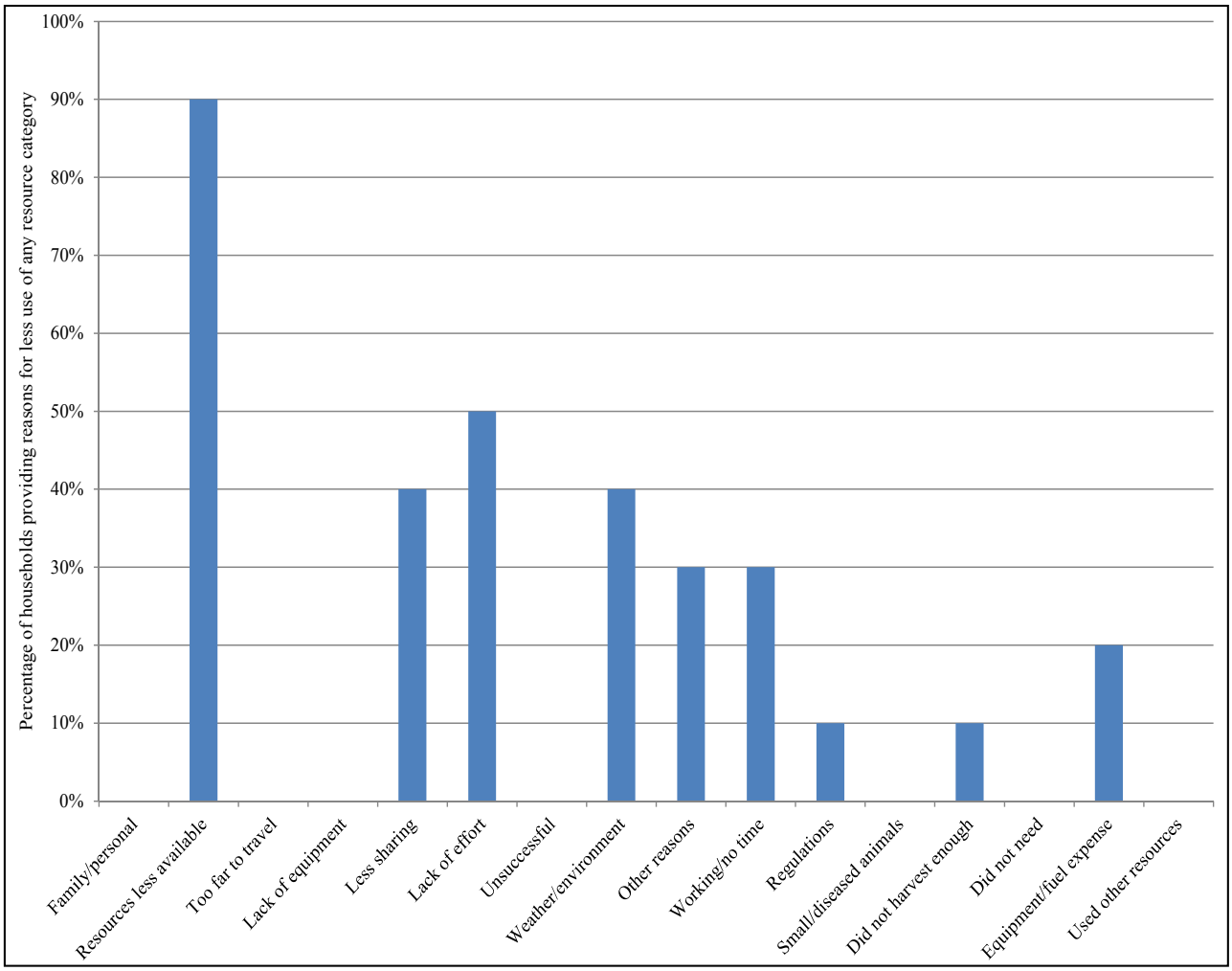


Figure 6-18.– Reasons for less household uses of any resource compared to recent years, Evansville, 2011.

members reported less sharing and the cost of equipment and/or fuel as reasons for reduced use of several types of resources.

Overall, 77% of Evansville's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years, 62% reported that their use of at least one wild resource was about the same, and 54% said that their uses of at least one category had increased (Table 6-16). Resources being less available was the most frequently cited reason for lower use of any resource category in 2011 (90% of all Evansville households who reported a reason for less use), followed by a decline in effort (50%), less sharing and weather/environment (40% each), working/no time and other reasons (30% each), expenses for equipment/fuel (20%), and regulations or having not gotten enough (10% each) (Figure 6-18).

Changes in the resource harvest by Evansville residents can also be discerned through comparisons with findings from other study years. Specifically, the 2011 study year can be compared with 1997, 1998, and 1999 for large land mammal uses and harvests (CSIS). However, comprehensive data were

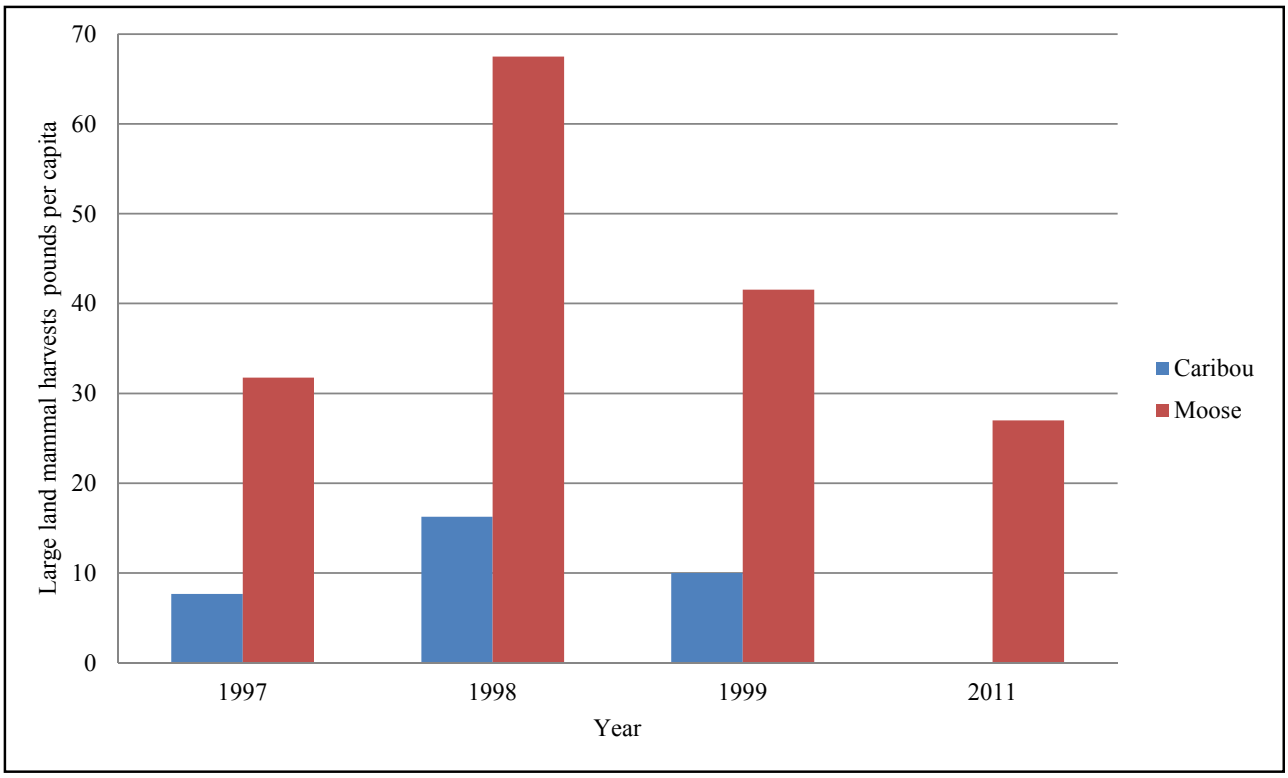


Figure 6-19.– Large land mammal harvests, pounds per capita, Evansville, 1997, 1998, 1999, and 2011.

collected and grouped with the adjacent census area of Bettles in the early 1980s and for large land mammals and nonsalmon fish in 2002. Consequently, data from Evansville for the 2011 study year is amalgamated with Bettles in order to make further comparisons over time. While Evansville and Bettles represent different federal census areas, in many ways the communities have functioned and continue to act together for social, economic, health, and subsistence reasons, among others.

Regarding Evansville residents' harvest of large land mammals in 1997, 1998, and 1999 compared with the 2011 study, the data suggest caribou harvests continued to decline over time. For instance, Marcotte and Haynes noted caribou were rare in their 1982 study of the area and that caribou had failed to pass through the Koyukuk region in the past decade (1985:48). In 2011, no caribou were reported harvested; however, 77% of the community used and received this resource indicating caribou remains important despite its scarcity (Table 6-8). Community members reported that caribou are generally not locally available and to obtain caribou great distances must be traveled, which is extremely costly both in terms of fuel and the financial resources required to purchase and maintain equipment. Moose, on the other hand, continued to have a consistent role over time irrespective of concerns about their availability (Figure 6-19).

Further temporal comparisons are made in the comparative section "Bettles and Evansville: Comparing Harvests and Uses in 2011 with Previous Years" that appears in Chapter 7: Bettles.

LOCAL CONCERNS REGARDING RESOURCES

Following is a summary of local observations of wild resource populations and trends that were documented during the survey. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary. In addition to responses during the survey, respondents expressed their concerns about wild resources during the community review meeting. These concerns have been included in the summary and are reported first by overall comments that could affect subsistence activities and then concerns grouped by resource category. Evansville had a very high proportion of households respond to the community concerns section of the survey. Of the 13 households, 10 (77%) communicated a number of issues.

GENERAL COMMENTS

Elders who are not able to actively hunt are concerned that there are not enough local residents hunting to provide for their subsistence needs. Most physically able residents are gainfully employed, which means there are few individuals with enough time to subsistence hunt.

A great number of community members reported that the high cost of fuel and the cost to purchase and maintain equipment prevented them from engaging in subsistence activities.

FISH

Regarding fish resources, several Evansville residents indicated there had been a decline in local fish populations and those that were harvested were of extremely poor quality. The poor quality has been attributed by some community members as stemming from a change in the temperature of rivers (i.e., warmer). Residents also said high levels of debris and silt in the water has affected fish resources. Poor ice fishing conditions arising from overflow and deep or thick ice has prevented access to underlying fish habitats/resources. Some community members also expressed concern over fish netting regulations (i.e., too many); residents said setnet regulations have inhibited local customary fish harvest practices.

LARGE LAND MAMMALS

Only 1 moose was harvested in Evansville in 2011. Residents reported that large land mammal resources have been extremely scarce in the area. While it has been several decades since caribou have been locally available, moose have also generally been reported as rare in the area. In 2011, community members reported several moose sightings and suggest that the moose population is recovering and/or migrating back into the area after a long hiatus. This is particularly concerning for Evansville residents because of potential extractive projects planned for the area. Community members expressed concerns that a road constructed for the proposed Ambler Mine would bring in more “sport” or non-

local hunters to the area, which could result in overharvesting and the disruption of moose population recovery. Traffic from airplanes and boats was also believed to scare away resources, thus affecting their availability. Furthermore, some residents felt non-local "sport" hunters who had hunted in the vicinity were disrespectful of subsistence resources as evidenced by the spoiled meat they had left behind after taking the antlers.

VEGETATION

Evansville residents continued to harvest a significant amount of vegetation in 2011—berries in particular. The overall consensus among surveyed households was that berries were hard to find in 2011 and that overall it had been a bad berry year. Only a few households mentioned harvesting less of any specific kind of berry, but a few mentioned they would have liked to get more. Several households commented that wood had been more difficult to find in the area. The problem of more restricted access to traditional wood harvesting areas due to changes in land ownership status was brought up as a reason for the challenging wood harvest. Access maps were mentioned as a desired tool for residents to better track changing land access issues.

SUMMARY

The household survey findings demonstrated that residents of Evansville harvested a wide variety of resources in 2011. When possible, residents invested a great deal of time and effort in harvesting fish, land mammals, birds, and wild plants. However, a number of social and environmental factors affected the ability of Evansville residents to hunt and gather subsistence foods. In particular, the aging population and poor weather were major obstacles to local subsistence harvesters. Large mammals and vegetation continue to be important wild resources despite reports by residents that moose have been scarce in the area over the past few decades and poor weather conditions affected berry availability in 2011. The quality and availability of salmon and nonsalmon resources, once an important component of Evansville harvests, have declined significantly since the 1980s due to environmental changes. Residents are particularly concerned about non-local hunters in the area in terms of traffic, overharvesting, and wanton waste. Finally, the rising price of gasoline continues to be a challenge to all subsistence activities.

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank the community and residents of Evansville for their full support and participation in the project. Evansville Tribal Council approved and helped ensure the success of the project. The history and context of the report was much improved by supplemental

reflective and informative interviews with local elders. Furthermore, the lively exchange of ideas and feedback at the community review of our findings was instrumental in clarifying several important issues and was made possible by the high community attendance facilitated by Tribal Council Administrator Naomi Costello and Tribal Council Leader Frank Thompson. We would also like to thank Kathleen Tipler, our community liaison and Local Research Assistant, for her assistance with the collection of survey data, and Hazel Pagkalinawan for her help with identifying local households.

CHAPTER 7: BETTLES

Prepared by Bronwyn Jones and Sarah M. Hazell

COMMUNITY BACKGROUND

The community of Bettles, formerly known as Bettles Field for the original airstrip, is located on the Koyukuk River adjacent to the community of Evansville. Bettles lies 35 miles north of the Arctic Circle, which attracts many visitors to the main commercial enterprise, Bettles Lodge, and supports a thriving tourism industry. Furthermore, Bettles is located at the edge of the Kanuti National Wildlife Refuge and just south of the Brooks Range and the Gates of the Arctic National Park and Preserve. Because the community of Bettles is entirely surrounded by the Alaska Native corporation-owned lands of Evansville, there is significant overlap concerning their histories, which was described previously in Chapter 6: Evansville. Bettles is a separate Census Designated Place.

DEMOGRAPHY

According to the federal census, Bettles had 12 residents in 2010 (U. S. Census Bureau 2011a) (Table 7-1). Figure 7-1 shows the population of the community over time. This figure indicates that the population of Bettles has decreased significantly, from 36 individuals in 1990 to 12 in 2011. The household survey conducted in 2011 found a population of 12 residents, which was consistent with the 2010 U.S. Census. No residents indicated that they were Alaska Native (Table 7-1). Of the Bettles household heads interviewed, 100% were born outside of Alaska in other states (Table 7-2). The survey identified 8 households present in 2011, all of which were interviewed (100%) (Table 7-3). The mean number of years of residency in Bettles was 16 years, with the maximum length of residence at 35 years (Table 7-4). The 2 largest age cohorts for males were 55–59 and 65–69 years of age, and for females the largest cohort was 60–64 years of age (Figure 7-2; Table 7-5).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 7-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Bettles residents in 2011. Approximately 92% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 92% of all residents gathered plants and berries, 25% fished, 8% hunted for birds, and 25% hunted for large land mammals and trapped

Table 7-1. – Population of Bettles, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
9	12	0	0.0%	8	12	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

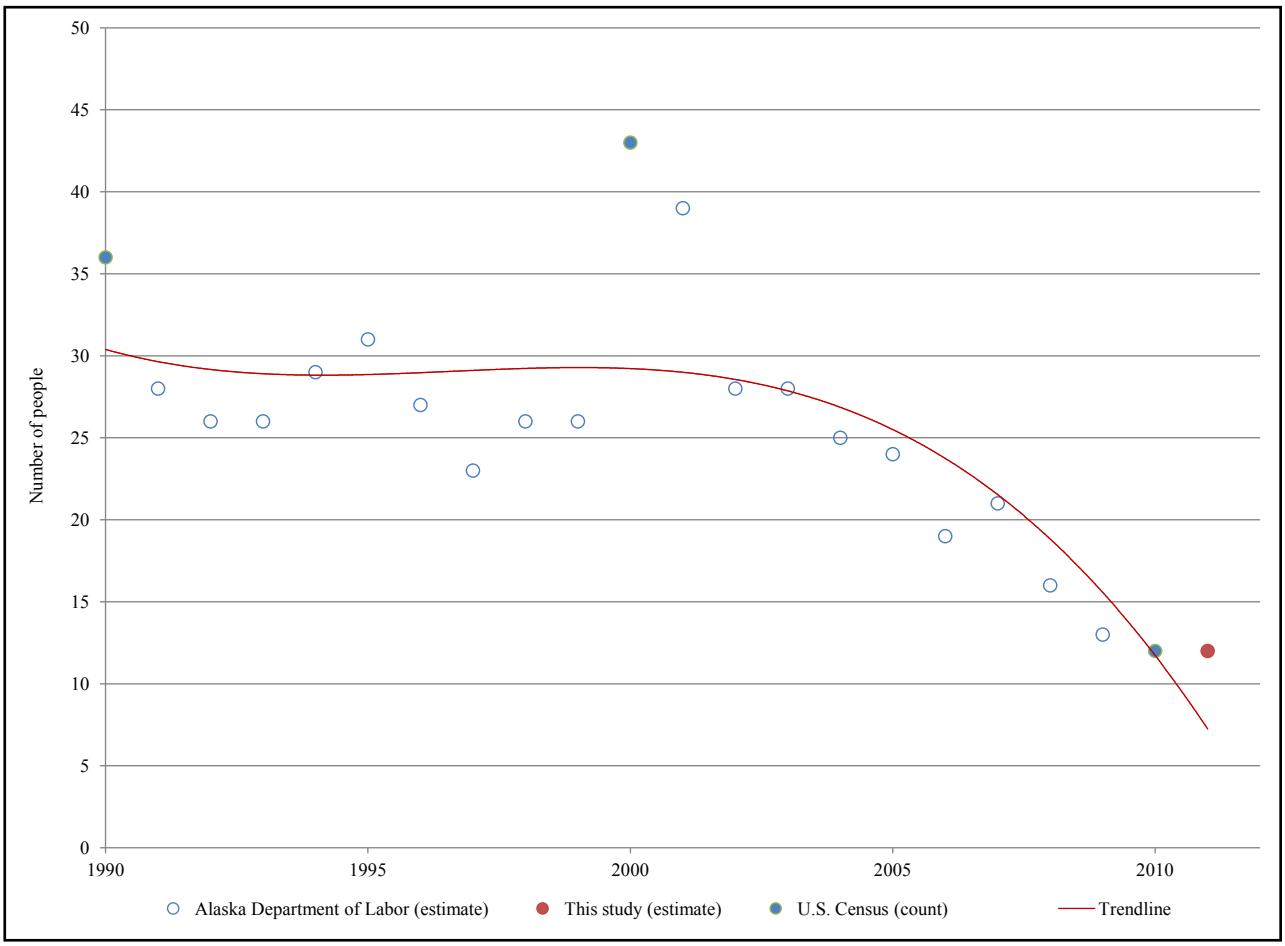


Figure 7-1.– Population history, Bettles, 1990–2011.

Table 7-2. – Birthplaces of household heads, Bettles, 2011.

Birthplace	Percentage
Other U.S.	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 7-3. – Sample achievement, Bettles, 2011.

Number of dwelling units	8.0
Interview goal	8.0
Households interviewed	8.0
Households failed to contact	0.0
Households declined to be interviewed	0.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	8.0
Refusal rate	0.0%
Final estimate of permanent households	8.0
Percentage of total households interviewed	100.0%
Interview weighting factor	1.0
Sampled population	12.0
Estimated population	12.0

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

Table 7-4. – Demographics and sample characteristics, Bettles, 2011.

Characteristics	Bettles
Sampled households	8.0
Eligible households	8.0
Percentage sampled	100.0%
Household size	
Mean	1.5
Minimum	1.0
Maximum	3.0
Sample population	12.0
Estimated community population	12.0
Age	
Mean	52.9
Minimum[a]	26.0
Maximum	66.0
Median	56.0
Length of residency	
Total population	
Mean	15.6
Minimum[a]	1.0
Maximum	35.0
Heads of household	
Mean	15.1
Minimum[a]	1.0
Maximum	35.0
Sex	
Estimated male	
Number	6.0
Percentage	50.0%
Estimated female	
Number	6.0
Percentage	50.0%
Alaska Native	
Estimated households[b]	
Number	0.0
Percentage	0.0%
Estimated population	
Number	0.0
Percentage	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

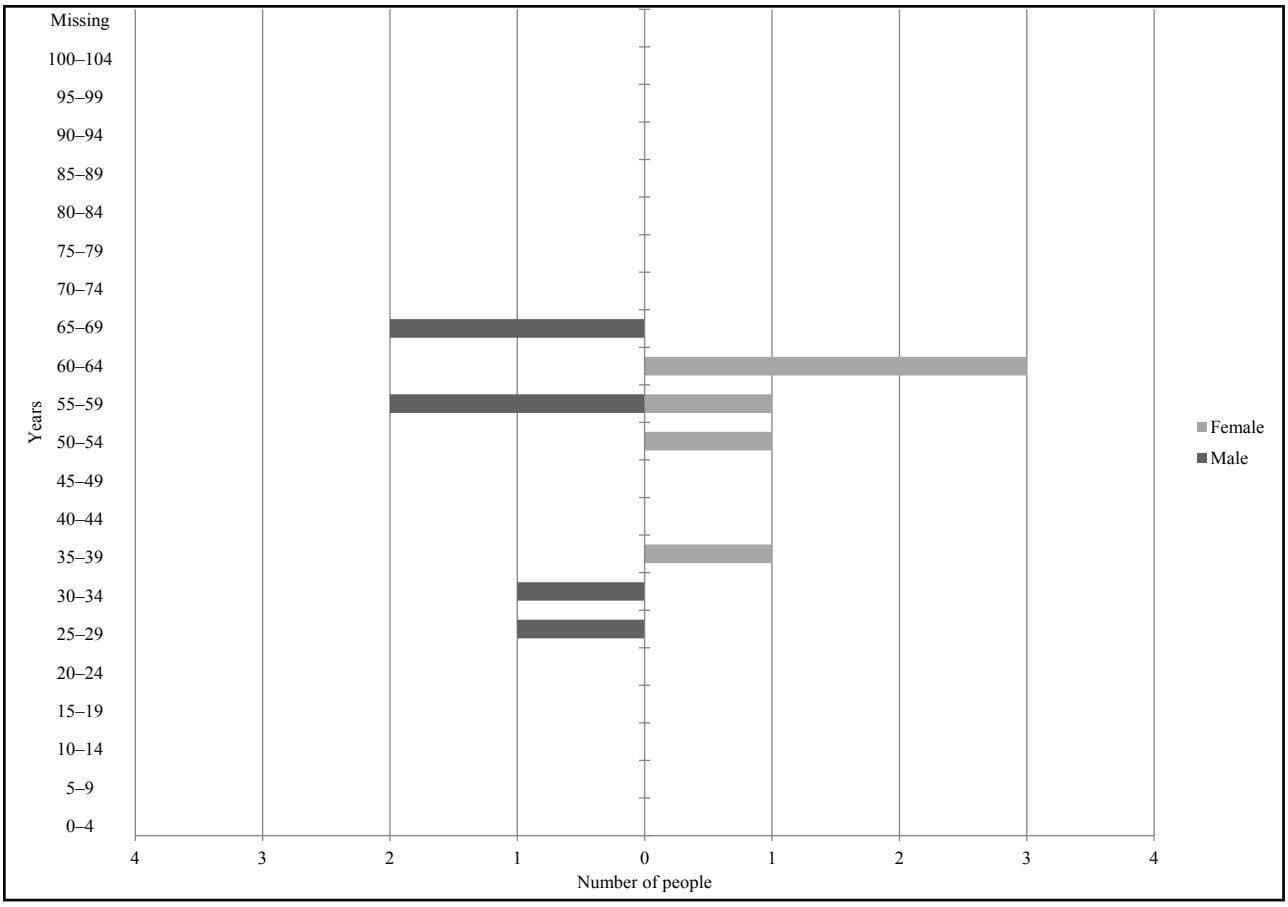


Figure 7-2.– Population profile, Bettles, 2011.

Table 7-5. – Population profile, Bettles, 2011.

	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	1.0	16.7%	16.7%	0.0	0.0%	0.0%	1.0	8.3%	8.3%
30–34	1.0	16.7%	33.3%	0.0	0.0%	0.0%	1.0	8.3%	16.7%
35–39	0.0	0.0%	33.3%	1.0	16.7%	16.7%	1.0	8.3%	25.0%
40–44	0.0	0.0%	33.3%	0.0	0.0%	16.7%	0.0	0.0%	25.0%
45–49	0.0	0.0%	33.3%	0.0	0.0%	16.7%	0.0	0.0%	25.0%
50–54	0.0	0.0%	33.3%	1.0	16.7%	33.3%	1.0	8.3%	33.3%
55–59	2.0	33.3%	66.7%	1.0	16.7%	50.0%	3.0	25.0%	58.3%
60–64	0.0	0.0%	66.7%	3.0	50.0%	100.0%	3.0	25.0%	83.3%
65–69	2.0	33.3%	100.0%	0.0	0.0%	100.0%	2.0	16.7%	100.0%
70–74	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
75–79	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**6.0**	**100.0%**	**100.0%**	**6.0**	**100.0%**	**100.0%**	**12.0**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 7-6. – Estimated participation in subsistence harvesting and processing activities, Bettles, 2011.

Total number of people	**12.0**
Birds	
Hunt	
Number	1.0
Percentage	8.3%
Process	
Number	2.0
Percentage	16.7%
Fish	
Fish	
Number	3.0
Percentage	25.0%
Process	
Number	4.0
Percentage	33.3%
Large land mammals	
Hunt	
Number	3.0
Percentage	25.0%
Process	
Number	6.0
Percentage	50.0%
Furbearers	
Hunt or trap	
Number	3.0
Percentage	25.0%
Process	
Number	3.0
Percentage	25.0%
Plants	
Gather	
Number	11.0
Percentage	91.7%
Process	
Number	11.0
Percentage	91.7%
Any resource	
Attempt	
Number	11.0
Percentage	91.7%
Process	
Number	11.0
Percentage	91.7%

Source ADF&G Division of Subsistence household surveys, 2012.

furbearers, respectively. Coinciding with harvest percentages, 92% of all Bettles residents processed some resources in 2011. Most residents (92%) participated in processing plants and berries, followed by 50% of the population participating in large land mammal processing. A smaller proportion (33%) participated in fish processing, and 17% participated in processing birds.

RESOURCE HARVEST AND USE PATTERNS

Table 7-7 summarizes resource harvest and use characteristics for Bettles in 2011, at the household level. All households used wild resources in 2011. Seven of 8 households (88%) attempted to harvest and harvested a wild resource in 2011. The average total household harvest was 263 lb usable weight, or 175 lb per capita.

During the study year, the maximum number of resources used by any Bettles household was 20, with an average of 11 different kinds of resources used per household. On average, households attempted to harvest 8 different kinds of resources. In addition, households gave away and received 4 types of resources. More than three-quarters (88%) of households reported sharing resources with other households.

SPECIES USED AND SEASONAL ROUND

The 2011 study demonstrated that households in Bettles engage in subsistence harvesting activities for a number of resources. The documentation that 100% of households used subsistence resources suggests wild resources play an important role in the lives of Bettles residents. Because many residents are employed by local government agencies and businesses, however, resources tend to be procured locally around the community due to constraints on residents' time. Bettles households harvested a variety of species throughout the year and they often target specific species during certain seasons of the year, following a cyclical harvest pattern. While many residents travel on foot to hunt, fish, and gather, some use motorized vehicles, such as trucks, snowmachines, and ATVs.

Table 7-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table 7-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Bettles households during the study year 2011. Moose, caribou, northern pike, and chum salmon were the top 4 most harvested resources. In comparison, blueberries, lowbush cranberries, firewood, and moose and were the top 4 most used resources (Table 7-9).

The discussion of various resource harvesting activities starts with moose because it composed the highest percentage of the total harvest in 2011. During the study year, 38% of the households in Bettles harvested large land mammals and 25% harvested moose during the fall hunt. Most hunting activity took place using vehicles or ATVs. Respondents reported that in 2011 there were few moose

Table 7-7. – Resource harvest and use characteristics, Bettles, 2011.

Characteristic	
Mean number of resources used per household	11.0
Minimum	1.0
Maximum	20.0
95% confidence limit (±)	0.0%
Median	10.5
Mean number of resources attempted to harvest per household	8.0
Minimum	0.0
Maximum	17.0
95% confidence limit (±)	0.0%
Median	7.0
Mean number of resources harvested per household	7.6
Minimum	0.0
Maximum	17.0
95% confidence limit (±)	0.0%
Median	6.5
Mean number of resources received per household	4.1
Minimum	1.0
Maximum	7.0
95% confidence limit (±)	0.0%
Median	4.0
Mean number of resources given away per household	3.8
Minimum	0.0
Maximum	8.0
95% confidence limit (±)	0.0%
Median	3.5
Household harvest, pounds	
Minimum	0.0
Maximum	843.4
Mean	263.0
Median	10.7
Total harvest weight, pounds	2,103.7
Community per capita harvest, pounds	175.3
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	87.5%
Percentage harvesting any resource	87.5%
Percentage receiving any resource	100.0%
Percentage giving away any resource	87.5%
Number of households in sample	8.0
Number of resources available	118.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 7-8. – Estimated harvests and uses of fish, game, and plant resources, Bettles, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All Resources	**100%**	**88%**	**88%**	**100%**	**88%**	**2,103.7**	**263.0**	**175.3**	**190.1**		**23.8**	**0%**
Fish	**63%**	**38%**	**25%**	**50%**	**13%**	**144.2**	**18.0**	**12.0**	**52.0**		**6.5**	**0%**
Salmon	**38%**	**13%**	**13%**	**25%**	**13%**	**50.8**	**6.4**	**4.2**	**10.0**		**1.3**	**0%**
Chum salmon	13%	13%	13%	0%	0%	50.8	6.4	4.2	10.0	Ind.	1.3	0%
Coho salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	25%	0%	0%	25%	13%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	25%	0%	0%	25%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**50%**	**38%**	**25%**	**25%**	**0%**	**93.4**	**11.7**	**7.8**	**42.0**		**5.3**	**0%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacfic halibut	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Char	25%	13%	13%	13%	0%	14.0	1.8	1.2	10.0		1.3	0%
Arctic char	13%	0%	0%	13%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dolly Varden	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	13%	13%	13%	0%	0%	14.0	1.8	1.2	10.0	Ind.	1.3	0%
Arctic grayling	38%	38%	25%	13%	0%	11.9	1.5	1.0	17.0	Ind.	2.1	0%
Northern pike	13%	13%	13%	0%	0%	67.5	8.4	5.6	15.0	Ind.	1.9	0%
Sheefish	13%	0%	0%	13%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

-continued-

Table 7-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Rainbow trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Broad whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Round whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**88%**	**50%**	**50%**	**88%**	**50%**	**1,860.0**	**232.5**	**155.0**	**52.3**		**6.5**	**0%**
Large land mammals	**88%**	**38%**	**38%**	**88%**	**38%**	**1,860.0**	**232.5**	**155.0**	**8.0**		**1.0**	**0%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	63%	25%	25%	50%	25%	780.0	97.5	65.0	6.0	Ind.	0.8	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	75%	38%	25%	63%	25%	1,080.0	135.0	90.0	2.0	Ind.	0.3	0%
Muskox	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	38%	13%	0%	38%	13%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**63%**	**50%**	**50%**	**13%**	**13%**	**0.0**	**0.0**	**0.0**	**44.3**	**Ind.**	**5.5**	**0%**
Beaver	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coyote	13%	13%	13%	0%	0%	0.0	0.0	0.0	1.0	Ind.	0.1	0%
Fox	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%
Red fox—cross phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red fox—red phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Hare	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	Ind.	0.0	0%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	25%	25%	25%	0%	0%	0.0	0.0	0.0	6.0	Ind.	0.8	0%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	50%	38%	38%	13%	0%	0.0	0.0	0.0	26.3	Ind.	3.3	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Squirrel	13%	13%	13%	0%	13%	0.0	0.0	0.0	3.0		0.4	0%
Arctic ground (parka) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 7-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Red (tree) squirrel	13%	13%	13%	0%	13%	0.0	0.0	0.0	3.0	Ind.	0.4	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	25%	25%	25%	0%	0%	0.0	0.0	0.0	4.0	Ind.	0.5	0%
Wolverine	25%	25%	25%	0%	0%	0.0	0.0	0.0	4.0	Ind.	0.5	0%
Marine mammals	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Northern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Harbor seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**38%**	**25%**	**25%**	**13%**	**25%**	**28.8**	**3.6**	**2.4**	**33.0**		**4.1**	**0%**
Migratory birds	**13%**	**13%**	**13%**	**0%**	**0%**	**3.6**	**0.5**	**0.3**	**3.0**		**0.4**	**0%**
Ducks	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Long-tailed duck	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pintail	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown ducks	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese	13%	13%	13%	0%	0%	3.6	0.5	0.3	3.0		0.4	0%
Canada geese	13%	13%	13%	0%	0%	3.6	0.5	0.3	3.0		0.4	0%
Cacklers	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lesser Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown Canada geese	13%	13%	13%	0%	0%	3.6	0.5	0.3	3.0	Ind.	0.4	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sandhill crane	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%

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Table 7-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Other birds	**38%**	**25%**	**25%**	**13%**	**25%**	**25.2**	**3.2**	**2.1**	**30.0**		**3.8**	**0%**
Upland game birds	38%	25%	25%	13%	25%	25.2	3.2	2.1	30.0		3.8	0%
Grouse	38%	25%	25%	13%	25%	11.2	1.4	0.9	16.0		2.0	0%
Spruce grouse	38%	25%	25%	13%	25%	7.7	1.0	0.6	11.0	Ind.	1.4	0%
Sharp-tailed grouse	13%	13%	13%	0%	13%	2.8	0.4	0.2	4.0	Ind.	0.5	0%
Ruffed grouse	13%	13%	13%	0%	13%	0.7	0.1	0.1	1.0	Ind.	0.1	0%
Ptarmigan	38%	25%	25%	13%	25%	14.0	1.8	1.2	14.0	Ind.	1.8	0%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**88%**	**88%**	**63%**	**75%**	**70.6**	**8.8**	**5.9**	**52.8**		**6.6**	**0%**
Berries	**100%**	**75%**	**75%**	**50%**	**63%**	**61.1**	**7.6**	**5.1**	**16.3**		**2.0**	**0%**
Blueberry	100%	75%	75%	25%	50%	31.3	3.9	2.6	7.8	Gal.	1.0	0%
Lowbush cranberry	88%	75%	75%	25%	38%	18.0	2.3	1.5	4.5	Gal.	0.6	0%
Highbush cranberry	25%	13%	13%	13%	0%	4.0	0.5	0.3	1.0	Gal.	0.1	0%

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Table 7-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Berries, continued												
Crowberry	25%	25%	25%	0%	0%	1.1	0.1	0.1	0.3	Gal.	0.0	0%
Cloud berry	13%	0%	0%	13%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Raspberry	50%	38%	38%	13%	38%	1.8	0.2	0.1	0.4	Gal.	0.1	0%
Salmonberry	13%	0%	0%	13%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Strawberry	38%	38%	38%	0%	25%	3.0	0.4	0.3	1.8	Gal.	0.2	0%
Other wild berry	13%	13%	13%	0%	0%	2.0	0.3	0.2	0.5	Gal.	0.1	0%
Plants/greens/mushrooms	**38%**	**38%**	**38%**	**0%**	**13%**	**9.5**	**1.2**	**0.8**	**6.5**	**Gal.**	**0.8**	**0%**
Hudson's Bay tea	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Wild rose hips	13%	13%	13%	0%	0%	4.0	0.5	0.3	1.0	Gal.	0.1	0%
Unknown mushrooms	25%	25%	25%	0%	13%	5.5	0.7	0.5	5.5	Gal.	0.7	0%
Wood	**88%**	**88%**	**88%**	**38%**	**50%**	**0.0**	**0.0**	**0.0**	**30.0**	**Cord**	**3.8**	**0%**
Willow	13%	13%	13%	0%	0%	0.0	0.0	0.0	0.5	Gal.	0.1	0%

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 7-9. – Top 10 resources harvested and used, Bettles, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	90.0	1	1.	Blueberry	100.0%
2	2.	Caribou	65.0	2	2.	Lowbush cranberry	87.5%
3	3.	Northern pike	5.6	3	2.	Wood	87.5%
4	4.	Chum salmon	4.2	4	3.	Moose	75.0%
5	5.	Blueberry	2.6	5	4.	Caribou	62.5%
6	6.	Lowbush cranberry	1.5	6	5.	Marten	50.0%
7	7.	Lake trout	1.2	7	5.	Raspberry	50.0%
8	7.	Ptarmigan	1.2	8	6.	Arctic grayling	37.5%
9	8.	Arctic grayling	1.0	9	6.	Dall sheep	37.5%
10	9.	Spruce grouse	0.6	10	6.	Spruce grouse	37.5%
				11	6.	Ptarmigan	37.5%
				12	6.	Strawberry	37.5%

Source ADF&G Division of Subsistence household surveys, 2012.

or caribou nearby, and despite 38% of households attempting to harvest moose, only 25% were successful (Table 7-8).

Four households participated in small land mammal harvesting in 2011 and all were successful. All small land mammal hunting and trapping took place during the winter months between November and March. Targeted animals included martens, lynx, wolves, and wolverines (Table 7-8).

During the study year, 25% of the households in Bettles harvested fish. Salmon have never been very abundant in the vicinity of Bettles (Marcotte and Haynes 1985:33) and key respondent interviews revealed a further decline in the availability of salmon. Consequently, only 13% of households harvested salmon, specifically chum salmon. In 2011, more households harvested nonsalmon fish (25%), in particular Arctic grayling, northern pike, and lake trout (Table 7-8).

During the study year 25% reported harvesting birds (Table 7-8). Upland game birds, such as grouse (spruce, sharp-tailed, and ruffed) and ptarmigan, were harvested by Bettles residents throughout the year. Harvests of migratory waterfowl were limited to 3 unknown species of Canada geese.

Harvesting vegetation, particularly berries in the summer, was an important activity for Bettles residents. During the study year, 75% of households reported harvesting berries. Two kinds of berries were ranked above moose as the top ranked resources used by households: blueberries (100%) were the most used resource followed by lowbush cranberries (88%). Firewood was another commonly used vegetation resource. During the study year, 75% of households reported harvesting blueberries and lowbush cranberries and 88% reported harvesting firewood (Table 7-8).

HARVEST QUANTITIES

Table 7-8 reports estimated wild resource harvests and uses by Bettles residents in 2011 and is organized first by general category and then by species. All edible resources are reported in pounds

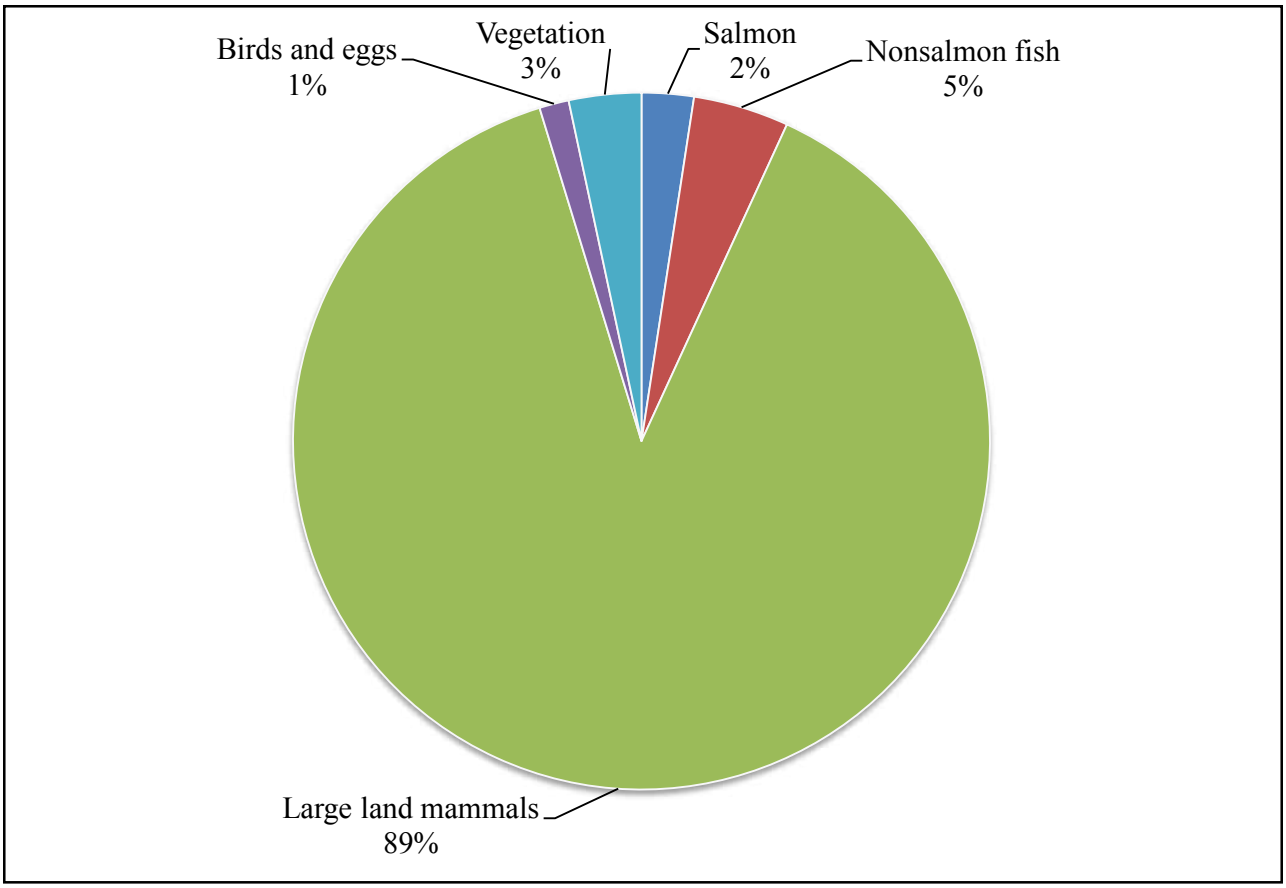


Figure 7-3.– Composition of harvest by category, Bettles, 2011.

usable weight (see Appendix C for conversion factors[1]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Bettles was 2,104 lb, or 175 lb per capita (Table 7-8). Figure 7-3 shows the composition of the wild resource harvest for Bettles in pounds usable weight. In terms of pounds harvested, moose constituted the largest portion of the entire subsistence harvest, which totaled 1,080 lb (90 lb per capita). The second largest harvest by pounds was caribou, which totaled 780 lb (65 lb per capita) (Table 7-8).

Following large land mammals, nonsalmon fish was the second most harvested resource category by Bettles households (Figure 7-3). A total of 93 lb were harvested (8 lb per capita). The largest harvest of nonsalmon fish in terms of weight was northern pike with a total harvest of 68 lb (6 lb per capita).

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

Salmon ranked fourth in terms of pounds harvested after nonsalmon fish and plants, with an overall harvest of 51 lb (4 lb per capita) (Table 7-8).

Wild plants and berries were an important wild resource used in Bettles in 2011 (Table 7-8). In the study year, 92% of Bettles households gathered and processed vegetation (Table 7-6). With a total harvest of 71 lb (6 lb per capita), vegetation was ranked third, after large land mammals and nonsalmon fish, for total harvest weight in pounds (Figure 7-3).

The Bettles household harvest of birds was 29 lb (2 lb per capita). Most of the harvested birds were upland game birds totaling a harvest of 25 lb (2 lb per capita) in 2011 (Table 7-8).

SHARING AND RECEIVING WILD RESOURCES

In Bettles in 2011, the average number of resources used per household was 11, and the average harvest per household was 8 resources. Estimates of sharing indicated that 100% of households received wild resources from other households and 88% of households gave resources away. Households received an average of 4 resources and gave away an average of 4 resources (Table 7-7).

Moose was the most harvested resource, and was among the most commonly shared resources with 25% of households giving away and 63% receiving moose despite the fact that only 2 moose were harvested by the community (Table 7-8). Although these 2 moose could have been widely shared, moose could also have been obtained from non-resident or non-local hunters staying at the Bettles Lodge. The sharing of large land mammals in general was a common occurrence in Bettles with 50% of households receiving and 25% giving away caribou, and 38% receiving and 13% giving away Dall sheep. The vegetation resource with the highest level of sharing in terms of households both receiving and giving was firewood with 38% receiving and 50% giving away. Berries played a significant role in the sharing practices of Bettles community members, as demonstrated by the high level of blueberry sharing, with 50% of households receiving and 25% giving away; in addition, 38% received and 25% gave away lowbush cranberries (Table 7-8).

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Bettles residents, salmon composed 2% of the wild resource harvest in pounds in 2011 (Figure 7-3). Salmon were harvested locally using gillnets (Table 7-10). All (51 lb) of this harvest was chum salmon, which equates to 4 lb per capita. Chum salmon were not harvested by Evansville residents, which means that the 51 lb harvested by Bettles households represents the total for both communities. This represents a significant decrease from the 1982 combined harvest for Bettles and Evansville of

Table 7-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Bettles, 2011.

		Removed from commercial catch		Subsistence methods													
				Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

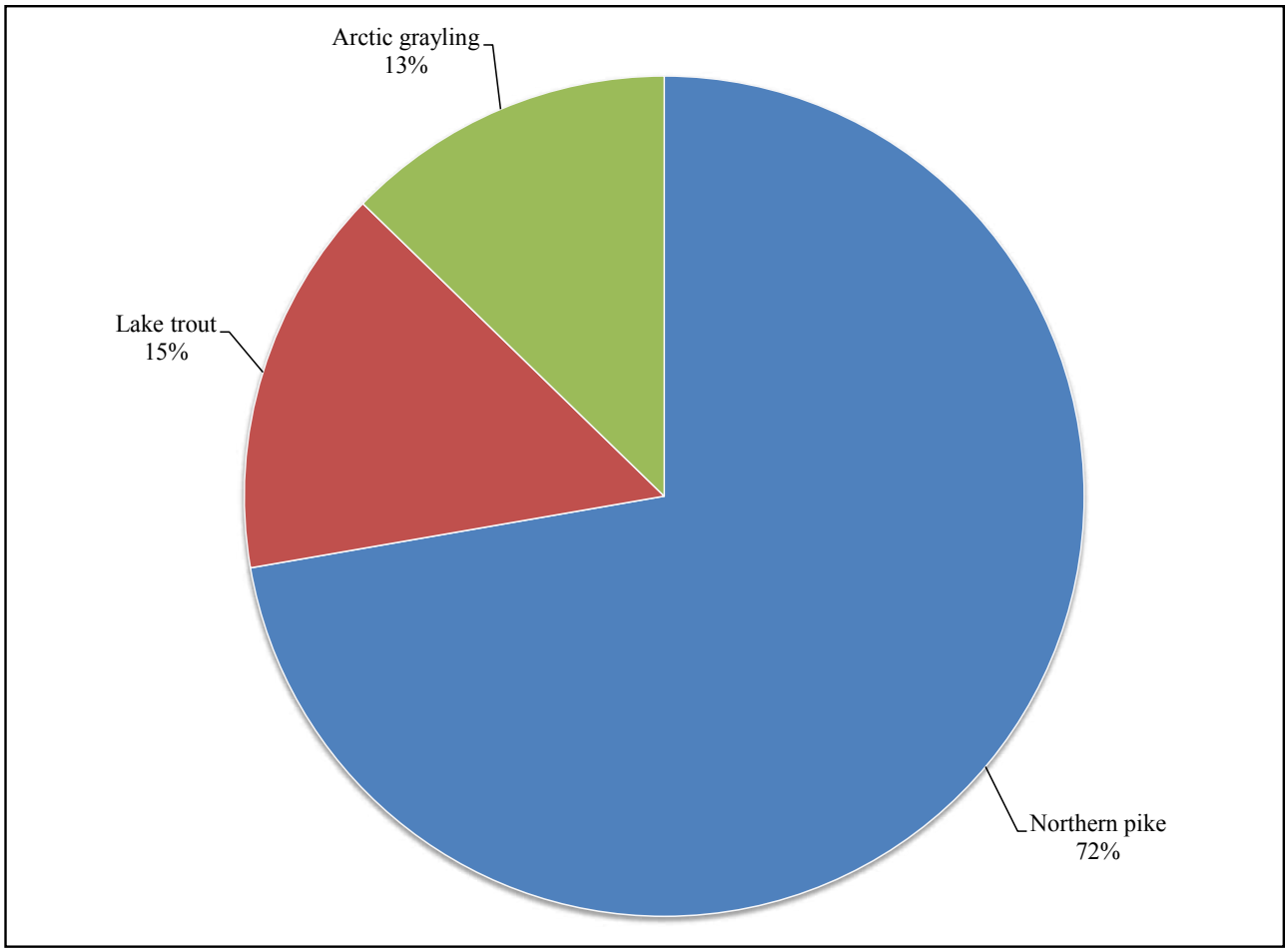


Figure 7-4.– Composition of nonsalmon fish harvest, Bettles, 2011.

62 lb per capita (Marcotte and Haynes 1985:107). Salmon populations have recently been declining for reasons not well understood, but may be linked to factors affecting both the freshwater and marine environments, which could account for the very low numbers of chum salmon harvested in the vicinity (United States and Canada Yukon River Joint Technical Committee 2006). According to a local resident, Chinook salmon were once locally available, but over the past decade have become nonexistent, and chum salmon are of poor quality and spawned out.

NONSALMON FISH

In 2011, Bettles residents harvested an estimated total of 93 lb, or 8 lb per capita of nonsalmon fish (Table 7-8). In terms of total pounds, northern pike (68 lb) were the most harvested, followed by lake trout (14 lb), and Arctic grayling (12 lb) (Table 7-8; Figure 7-4). Harvest data were mirrored by comments made by key respondents describing a decrease in Arctic grayling in local lakes and rivers, and a marked increase in northern pike abundance. Northern pike were harvested on the John River and lake trout at Colorado Creek. Arctic grayling were also harvested on the John River and also north

along the Wild River and at Colorado Creek (Figure 7-5). Most nonsalmon fish were caught using gillnets; however, some Arctic grayling were caught using rod and reel gear (Table 7-11).

LARGE LAND MAMMALS

In 2011, moose composed 51% of the total Bettles harvest by weight and 58% of the large mammal harvest. The other 42% of the large mammal harvest was caribou (Figure 7-6). A large percentage (75%) of households used moose, but only 25% harvested moose (Table 7-8). Caribou had a similar pattern with 63% of households using caribou and only 25% of households harvesting caribou. However, there was a greater effort for moose hunting than caribou hunting; although moose and caribou were harvested by only 25% of households, 38% attempted to harvest moose and 25% attempted to harvest caribou. Moose ranked first for amount of pounds harvested, but ranked fourth for percentage of households using this resource (Table 7-9).

Despite local reports of moose scarcity and the majority of residents working long hours, thus reducing their availability for harvesting activities, 2 moose were harvested in Bettles. Effort was expended in searching for moose north along the John River and to the west at Lookout Mountain and on the Koyukuk River. Moose harvesting took place in September (Table 7-12). Some community members expressed concern about the moose population and indicated support for a predator control program. One survey respondent suggested a sex imbalance favoring bulls was responsible for the low moose population because of a big fire that happened in 2004.[2]

While the total usable weight for caribou is less than moose (i.e., 780 lb versus 1,080 lb), more individual caribou were harvested. A total of 6 caribou were harvested compared to 2 moose. This difference may also be due to the much greater search and harvest areas for caribou versus moose. Caribou hunting effort was focused north along the John River, the John River Malamute Fork, and Mettenpherg Creek. Farther west, caribou hunting occurred at Iniakuk Lake (Figure 7-7). Caribou harvesting occurred in September, December, and January (Table 7-12).

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 7-8, the total harvest of small land mammals by Bettles residents in 2011 was 44 animals. Fifty-nine percent of the total harvest of small land mammals was martens. Martens were harvested for their fur. The second largest harvest of small land mammals was lynx (14%), followed by wolves (9%), and wolverines (9%). None of the small mammals were consumed by Bettles residents.

Trapping occurred in the direct vicinity of Bettles and Evansville along and between the Koyukuk River and its tributaries, and northeast from Bettles along the Alatna River Malamute Fork and at Iniakuk Lake (Figure 7-8).

2. In 2004, lightning started a fire within sight of Bettles that burned 122,000 acres. http://forestry.alaska.gov/pdfs/Bettles_Evansville_CWPP_Rick_Assessment.pdf and http://www.nifc.gov/fireInfo/fireInfo_stats_lgFires.html.

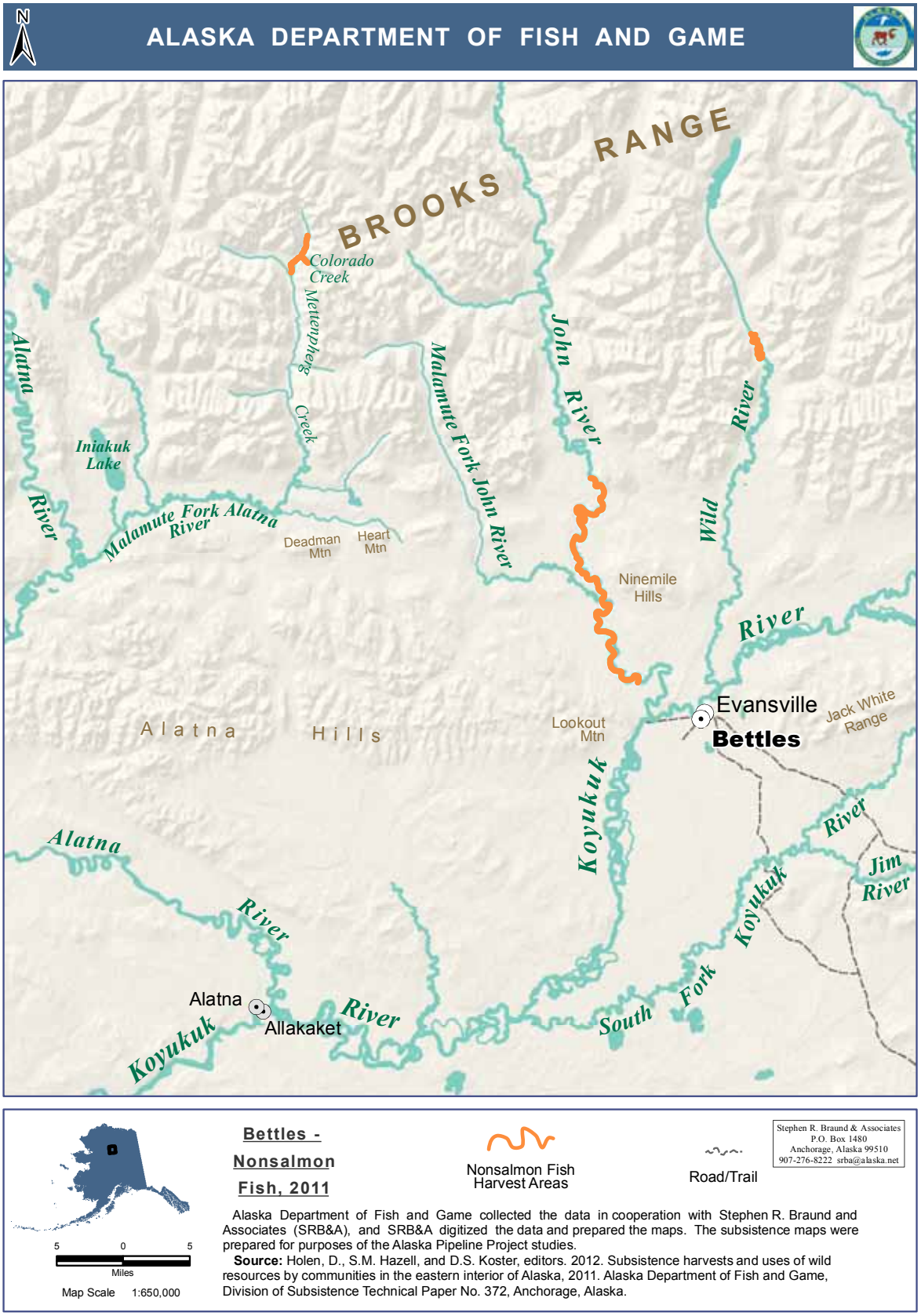


Figure 7-5.– Nonsalmon fish search and harvest areas, Bettles, 2011.

Table 7-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Bettles, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	95.2%	98.5%	0.0%	0.0%	95.2%	98.5%	4.8%	1.5%	100.0%	100.0%
	Total	0.0%	0.0%	95.2%	98.5%	0.0%	0.0%	95.2%	98.5%	4.8%	1.5%	100.0%	100.0%
Lake trout	Gear type	0.0%	0.0%	25.0%	15.2%	0.0%	0.0%	25.0%	15.2%	0.0%	0.0%	23.8%	15.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	23.8%	15.0%	0.0%	0.0%	23.8%	15.0%	0.0%	0.0%	23.8%	15.0%
Arctic grayling	Gear type	0.0%	0.0%	37.5%	11.4%	0.0%	0.0%	37.5%	11.4%	100.0%	100.0%	40.5%	12.7%
	Resource	0.0%	0.0%	88.2%	88.2%	0.0%	0.0%	88.2%	88.2%	11.8%	11.8%	100.0%	100.0%
	Total	0.0%	0.0%	35.7%	11.2%	0.0%	0.0%	35.7%	11.2%	4.8%	1.5%	40.5%	12.7%
Northern pike	Gear type	0.0%	0.0%	37.5%	73.4%	0.0%	0.0%	37.5%	73.4%	0.0%	0.0%	35.7%	72.3%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	35.7%	72.3%	0.0%	0.0%	35.7%	72.3%	0.0%	0.0%	35.7%	72.3%

Source ADF&G Division of Subsistence household surveys, 2012.

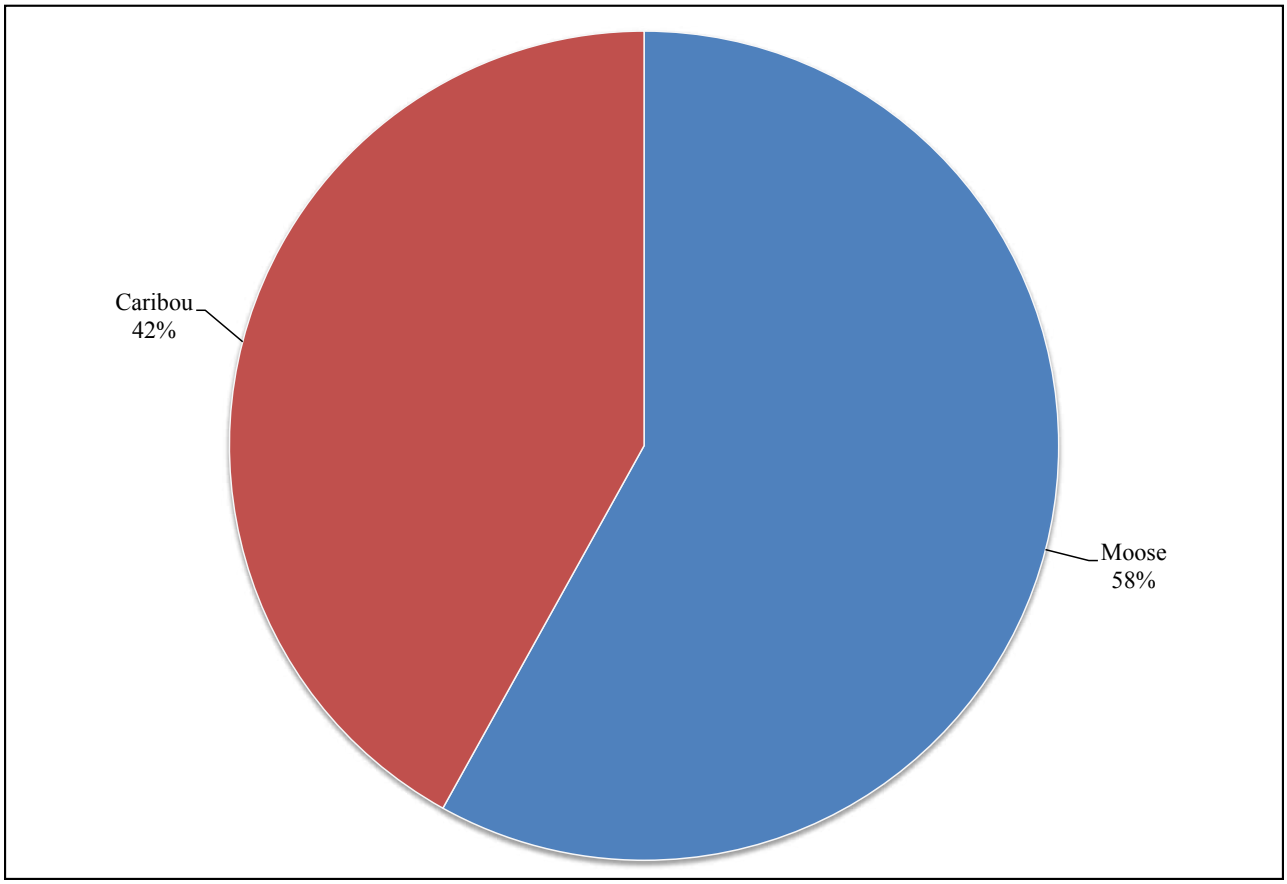


Figure 7-6.– Composition of large land mammal harvest, Bettles, 2011.

BIRDS

In 2011, Bettles bird harvests were 1% of all resources harvested as estimated in pounds edible weight (Figure 7-3). During key respondent interviews, a number of community members reported that harvesting birds was not a priority. The only migratory birds harvested were 3 Canada geese (unknown subspecies). Bettles residents reported harvesting 4 types of upland game birds, including spruce grouse (11), sharp-tailed grouse (4), ruffed grouse (1), and ptarmigan (14). No eggs were harvested during 2011 (Table 7-8). Residents harvested upland game birds in the vicinity of Bettles and Evansville, as well as eastward along the Koyukuk River and north along the John River Malamute Fork, mirroring trapping activities, which often occurred simultaneously (Figure 7-9).

VEGETATION

The most used category of subsistence resources in Bettles during the 2011 study year was vegetation, with 100% of the households using a resource in this category (Table 7-8). Blueberries ranked first in resources used (Table 7-9); 100% of the households reported use and 75% reported harvesting blueberries (31 lb). Wood (30 cords) and lowbush cranberries (18 lb) both ranked second with 88% of

Table 7-12. – Estimated harvests of large game by month and sex, Bettles, 2011.

				Caribou				Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**0.0**	**0.0**	**1.0**	**5.0**	**0.0**	**1.0**	**0.0**	**1.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

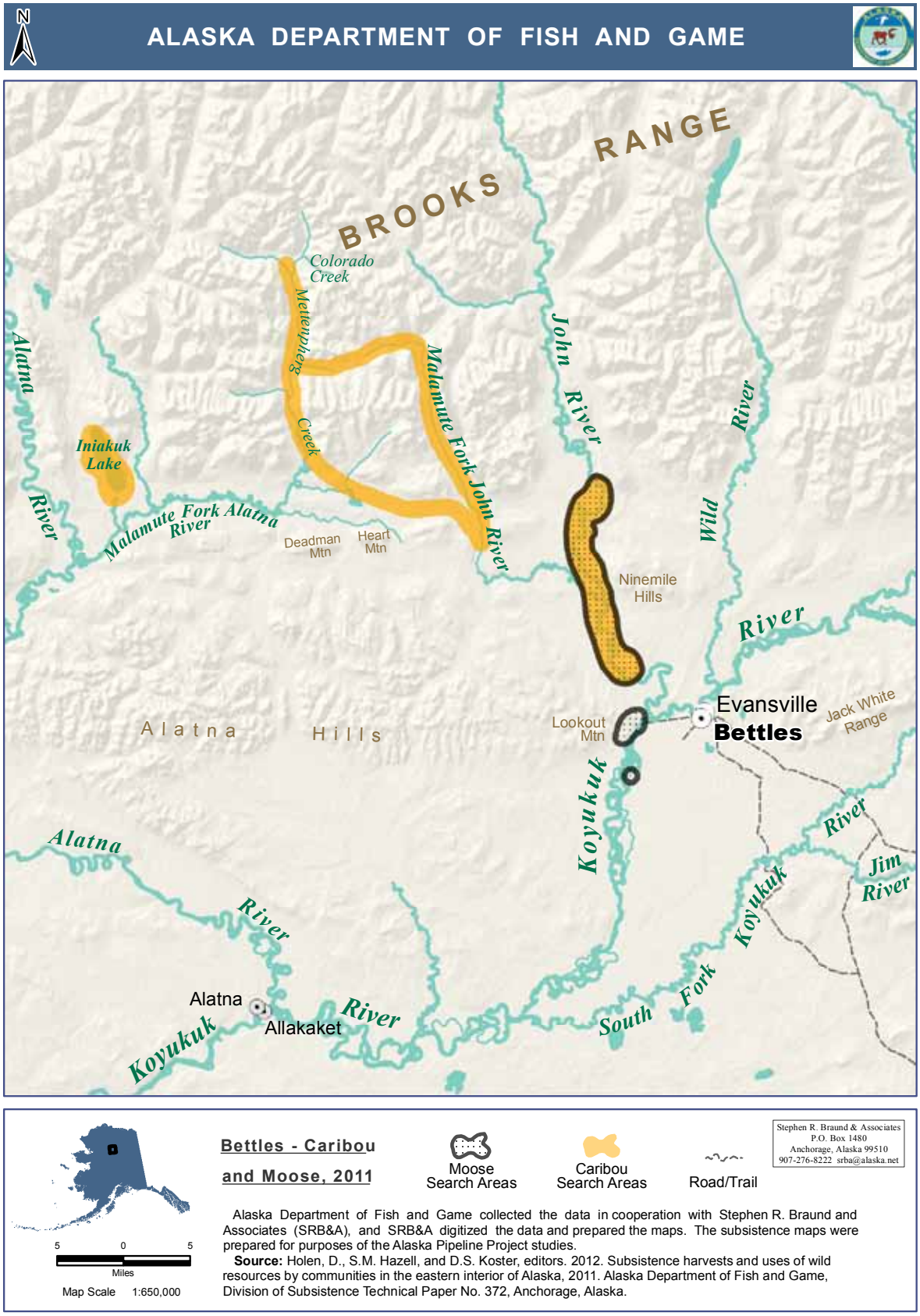


Figure 7-7.– Caribou and moose search and harvest areas, Bettles, 2011.

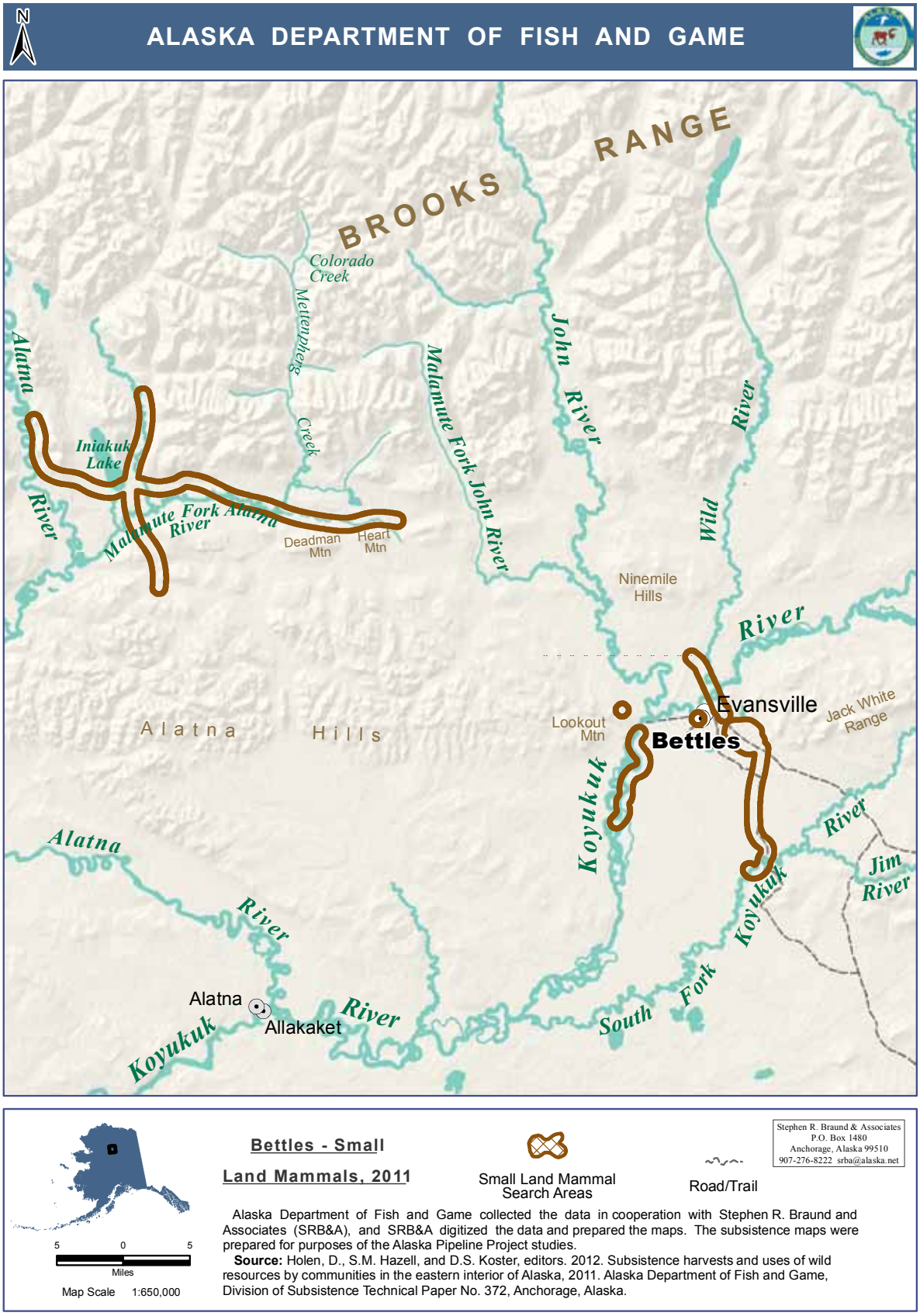


Figure 7-8.– Small land mammals search and harvest areas, Bettles, 2011.

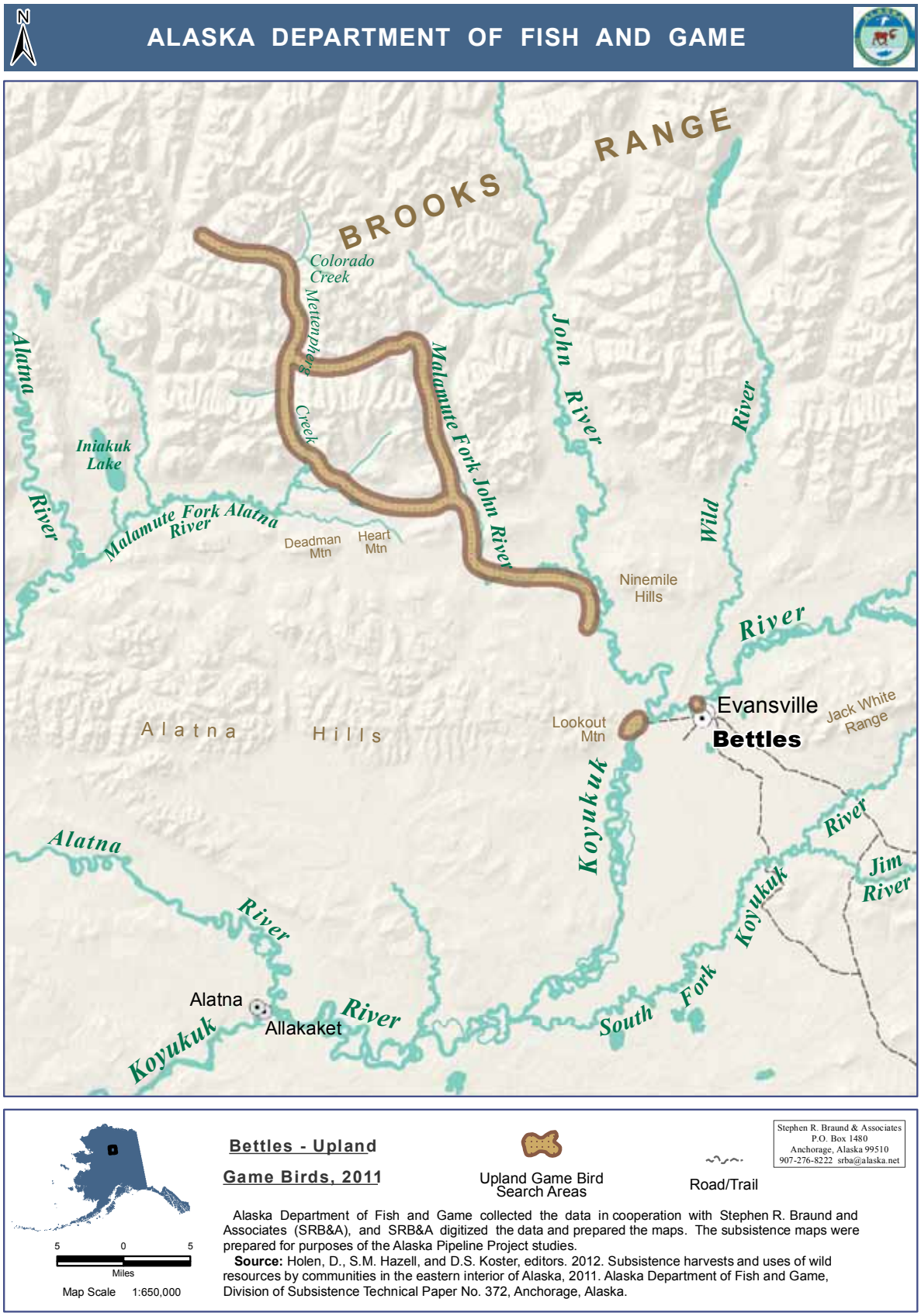


Figure 7-9.– Upland game birds search and harvest areas, Bettles, 2011.

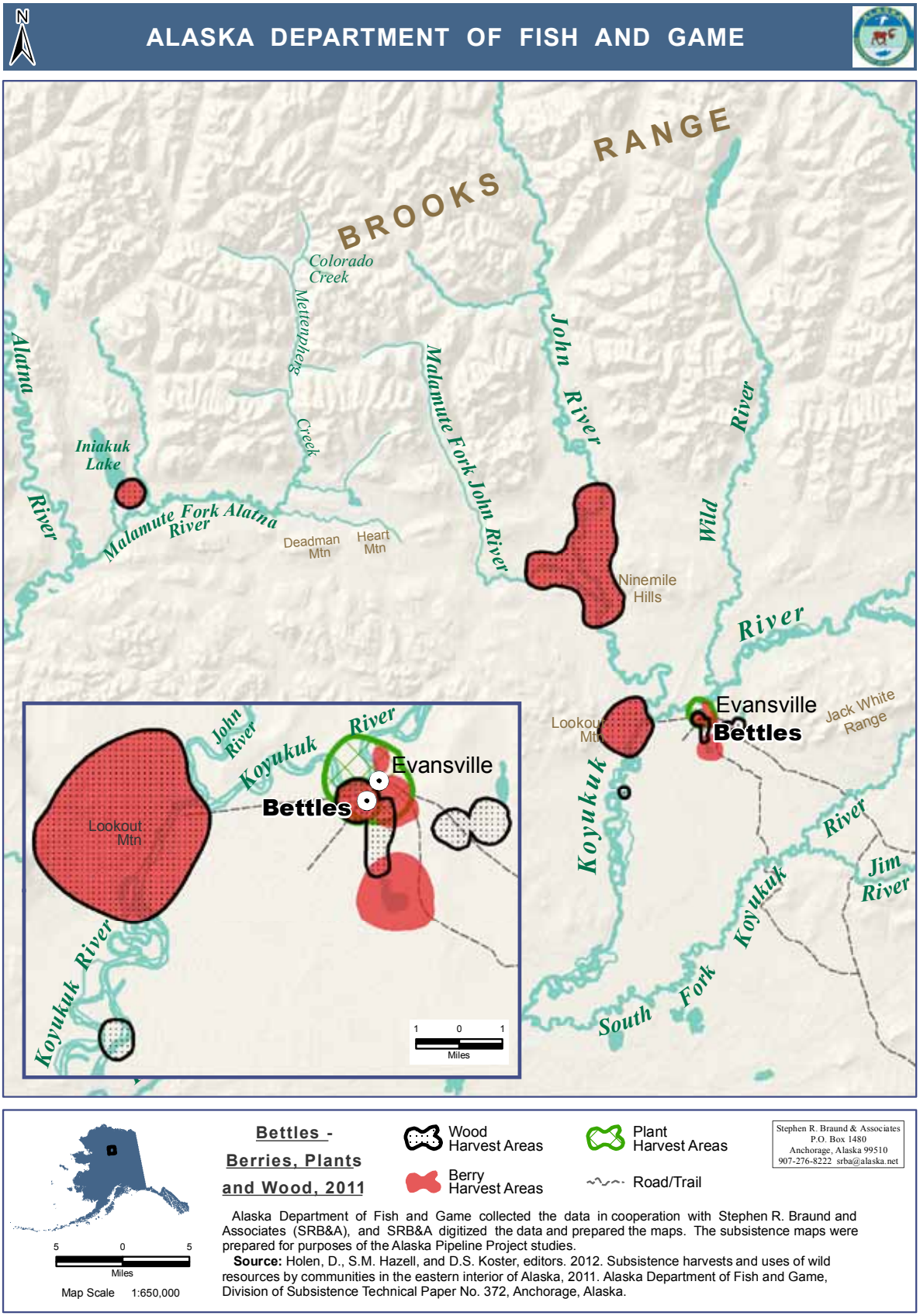


Figure 7-10.– Vegetation search and harvest areas, Bettles, 2011.

households reporting use of each resource. Most wild plants were harvested close to the community of Bettles. Much of the berry and firewood harvests occurred to the west of Bettles along the Koyukuk River, as well as the north in the Ninemile Hills area (Figure 7-10).

CASH EMPLOYMENT AND MONETARY INCOME

Table 7-13 is a summary of the estimated earned income as well as other sources of income for residents of Bettles in 2011. This table shows that earned income accounted for an average of $55,601 (97%) compared to other income sources which accounted for an average of $1,873 (3%) per household in 2011. The largest source of income came from service-based jobs, which made up more than one-half of the total community income (62%) for Bettles residents. Thirty-seven percent of total income was earned from the federal government and 2% was from combined agriculture, forestry, fishing, and local government employment. Of the 21 jobs held by Bettles residents, 10 (48%) were in services industries (Table 7-14).

In 2011, 83% of the adult residents of Bettles (16 and over) were found by this survey to be employed at some point during the study year. Of those employed adults, 60% were employed year-round (Table 7-15). On average in 2011, 88% of households contained at least 1 adult who was employed. The mean number of jobs per employed household was 3. Almost all jobs were located in Bettles.

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" (Nord et al. 2009:2). 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. Core questions and responses from Bettles residents are summarized in Figure 7-11. In Bettles, the most frequently reported sources of food insecurity were cutting the size of or skipping meals, feeling hungry but not eating, and losing weight from not having enough food (50% of Bettles households), followed by a lack of subsistence foods (25% of Bettles households) (Figure 7-11).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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

Table 7-13. – Estimated earned and other income, Bettles, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Services	7.0	6.0	$273,930.22	$34,241.28	$22,827.52	59.6%
Federal government	5.0	5.0	$162,600.00	$20,325.00	$13,550.00	35.4%
Agriculture, forestry, and fishing	2.0	2.0	$7,975.00	$996.88	$664.58	1.7%
Local government	2.0	2.0	$300.00	$37.50	$25.00	0.1%
Earned income subtotal	**10.0**	**7.0**	**$444,805.22**	**$55,600.65**	**$37,067.10**	**96.7%**
Other income						
Alaska Permanent Fund dividend		6.0	$10,566.00	$1,320.75	$880.50	2.3%
Social Security		1.0	$3,200.00	$400.00	$266.67	0.7%
Unemployment		2.0	$1,215.00	$151.88	$101.25	0.3%
Adult public assistance		0.0	$0.00	$0.00	$0.00	0.0%
Supplemental Security income		0.0	$0.00	$0.00	$0.00	0.0%
Food stamps		0.0	$0.00	$0.00	$0.00	0.0%
Longevity bonus		0.0	$0.00	$0.00	$0.00	0.0%
Energy assistance		0.0	$0.00	$0.00	$0.00	0.0%
Pension/retirement		0.0	$0.00	$0.00	$0.00	0.0%
Workers' compensation/insurance		1.0	$0.00	$0.00	$0.00	0.0%
Native corporation dividend		0.0	$0.00	$0.00	$0.00	0.0%
Child support		0.0	$0.00	$0.00	$0.00	0.0%
Other		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**7.0**	**$14,981.00**	**$1,872.63**	**$1,248.42**	**3.3%**
Community income total			**$459,786.22**	**$57,473.28**	**$38,315.52**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

Table 7-14. – Employment by industry, Bettles, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**21.0**	**7.0**	**10.0**	
Federal government (total)	**23.8%**	**71.4%**	**50.0%**	**36.6%**
Natural scientists and mathematicians	4.8%	14.3%	10.0%	10.1%
Administrative support occupations, including clerical	9.5%	28.6%	20.0%	19.5%
Service occupations	9.5%	28.6%	20.0%	6.9%
Local government, including tribal (total)	**9.5%**	**28.6%**	**20.0%**	**0.1%**
Executive, administrative, and managerial	4.8%	14.3%	10.0%	0.0%
Administrative support occupations, including clerical	4.8%	14.3%	10.0%	0.0%
Agriculture, forestry, and fishing (total)	**19.0%**	**28.6%**	**20.0%**	**1.8%**
Agricultural, forestry, and fishing occupations	19.0%	28.6%	20.0%	1.8%
Services (total)	**47.6%**	**85.7%**	**70.0%**	**61.6%**
Technologists and technicians, except health	4.8%	14.3%	10.0%	9.0%
Administrative support occupations, including clerical	4.8%	14.3%	10.0%	19.3%
Service occupations	33.3%	85.7%	60.0%	19.3%
Handlers, equipment cleaners, helpers, and laborers	4.8%	14.3%	10.0%	14.0%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 7-15. – Employment characteristics, Bettles, 2011.

Characteristic	Community Bettles
All adults	
Number	12.0
Mean weeks employed	37.2
Employed adults	
Number	10.0
Percentage	83.3%
Jobs	
Number	21.0
Mean	2.1
Minimum	1.0
Maximum	3.0
Months employed	
Mean	10.3
Minimum	5.0
Maximum	12.0
Percentage employed year-round	60.0%
Mean weeks employed	44.6
Households	
Number	8.0
Employed	
Number	7.0
Percentage	87.5%
Jobs per employed household	
Mean	2.6
Minimum	1.0
Maximum	6.0
Employed adults	
Mean	
Employed households	1.4
Total households	1.3
Minimum	1.0
Maximum	2.0
Mean person-weeks of employment	48.3

Source ADF&G Division of Subsistence household surveys, 2012.

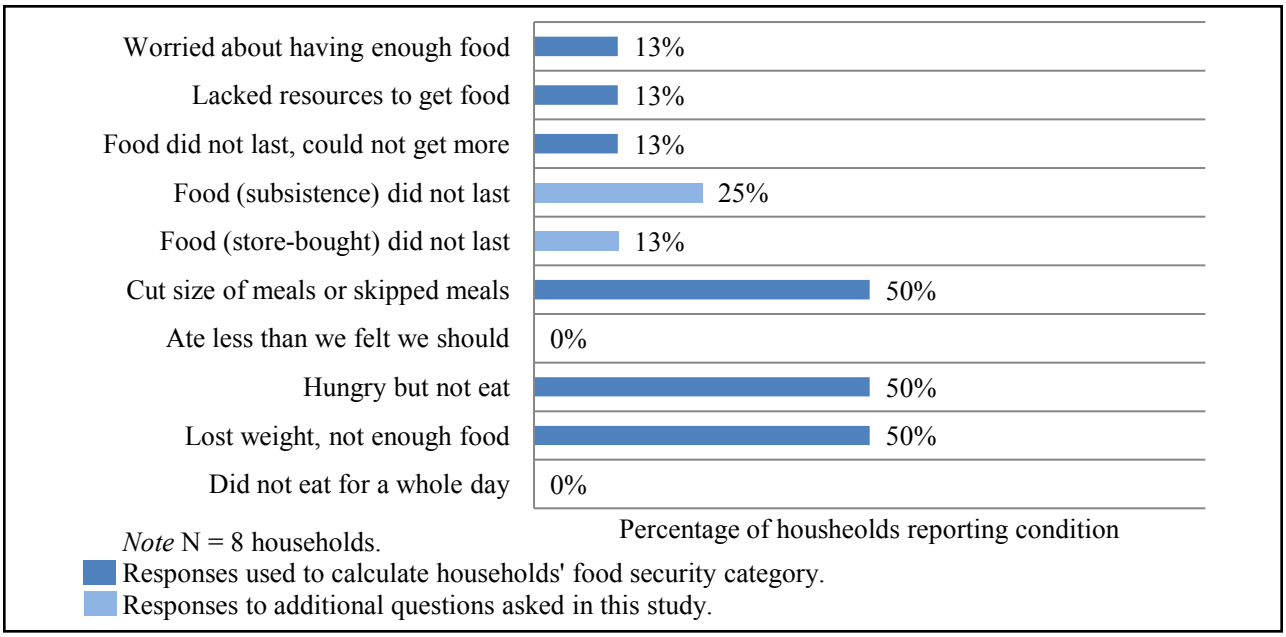


Figure 7-11.– Food insecure conditions, Bettles, 2011.

very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (USDA 2011).

Food security results for surveys for Bettles, the state of Alaska, and the United States are summarized in Figure 7-12. In Bettles in 2011, 88% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 13% had very low food security. Bettles households had similar levels of food security and food insecurity as surveyed households in Alaska as well as the United States as a whole (Nord et al. 2009:21).

Figure 7-13 portrays the mean number of food insecure conditions per household by food security category by month. For households with very low food security, food insecurity conditions peaked for the months of February through April. Figure 7-14 shows that depending upon the month, between 13% and 25% of households reported subsistence foods did not last. During the months of February through April, respondents indicated foods did not last for both subsistence and store-bought foods. For the remainder of the year (May through December), reports of food not lasting were stable for both subsistence and store-bought food (Figure 7-14).

Late winter and early spring in the interior is often a time of food insecurity. This is a period of time when it is difficult to hunt. As shown in Figure 7-13, the highest number of food insecurity conditions occurred for very low food secure households in Bettles in February through April. Summer and fall months, according to all respondents, were the most food secure likely because salmon are harvested in the summer into the fall, and moose and berries are harvested in the fall.

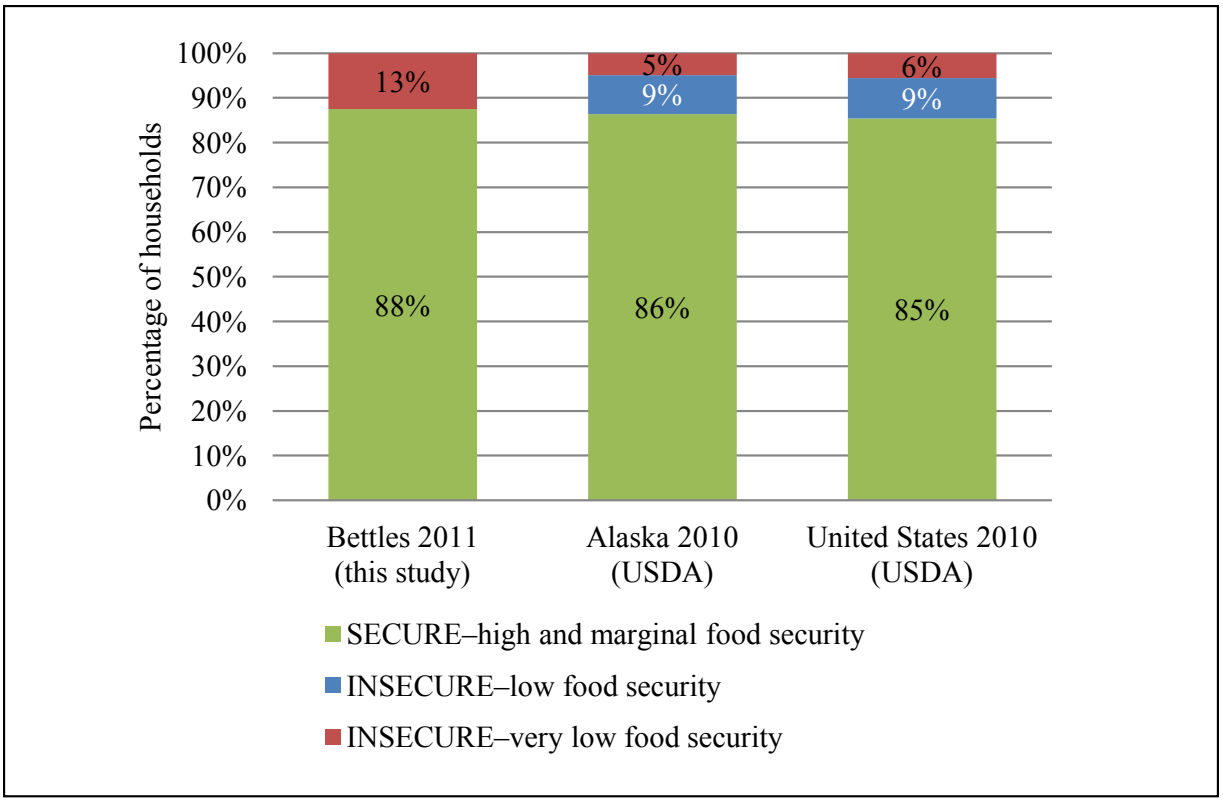


Figure 7-12.– Food insecure categories, Bettles, 2011.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 7-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 7-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 7-15 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (8 households), and therefore differ from those reported in Table 7-16.

One-quarter (25%) of the Bettles respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 38% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 38% said their overall harvests and uses were higher (Table 7-16). As depicted in Figure 7-15, for most resource

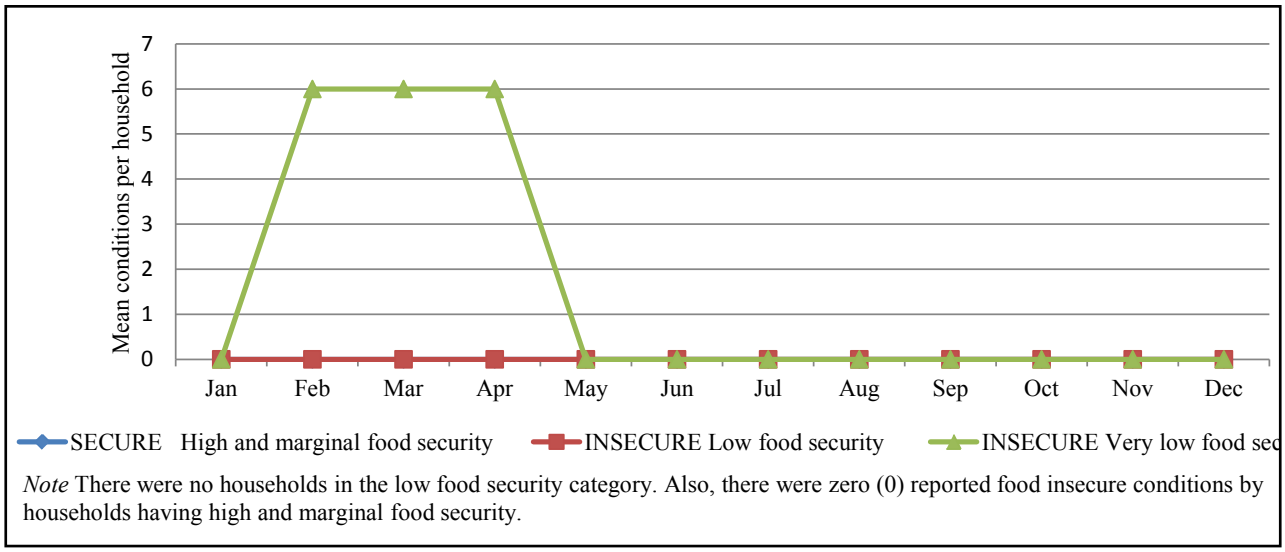


Figure 7-13.– Mean number of food insecure conditions for each month food was reported not to have lasted, Bettles, 2011.

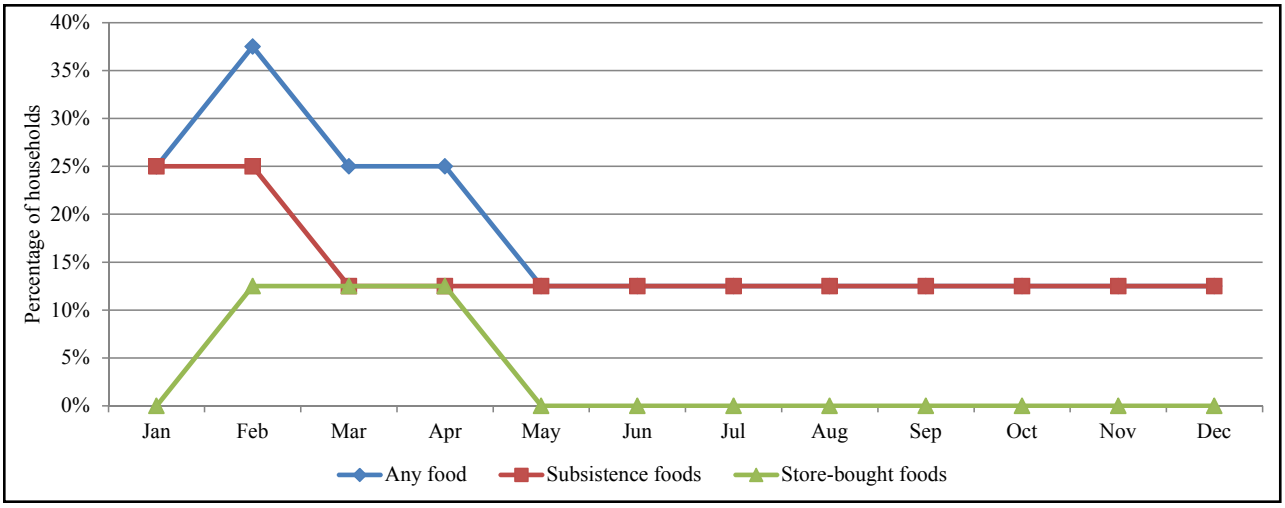


Figure 7-14.– Comparison of months where foods did not last, Bettles, 2011.

Table 7-16. – Changes in household uses of resources compared to recent years, Bettles, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage
Any resource	8	8	5	63%	8	100%	5	63%
All resources	8	8	2	25%	3	38%	3	38%
Salmon	8	3	2	67%	1	33%	0	0%
Nonsalmon fish	8	4	2	50%	2	50%	0	0%
Large game	8	7	1	14%	3	43%	3	43%
Small game	8	4	2	50%	2	50%	0	0%
Marine mammals	8	0	0	0%	0	0%	0	0%
Migratory waterfowl	8	1	0	0%	0	0%	1	100%
Other birds	8	3	0	0%	1	33%	2	67%
Bird eggs	8	0	0	0%	0	0%	0	0%
Marine invertebrates	8	0	0	0%	0	0%	0	0%
Vegetation	8	8	2	25%	3	38%	3	38%

Source ADF&G Division of Subsistence household surveys, 2011.

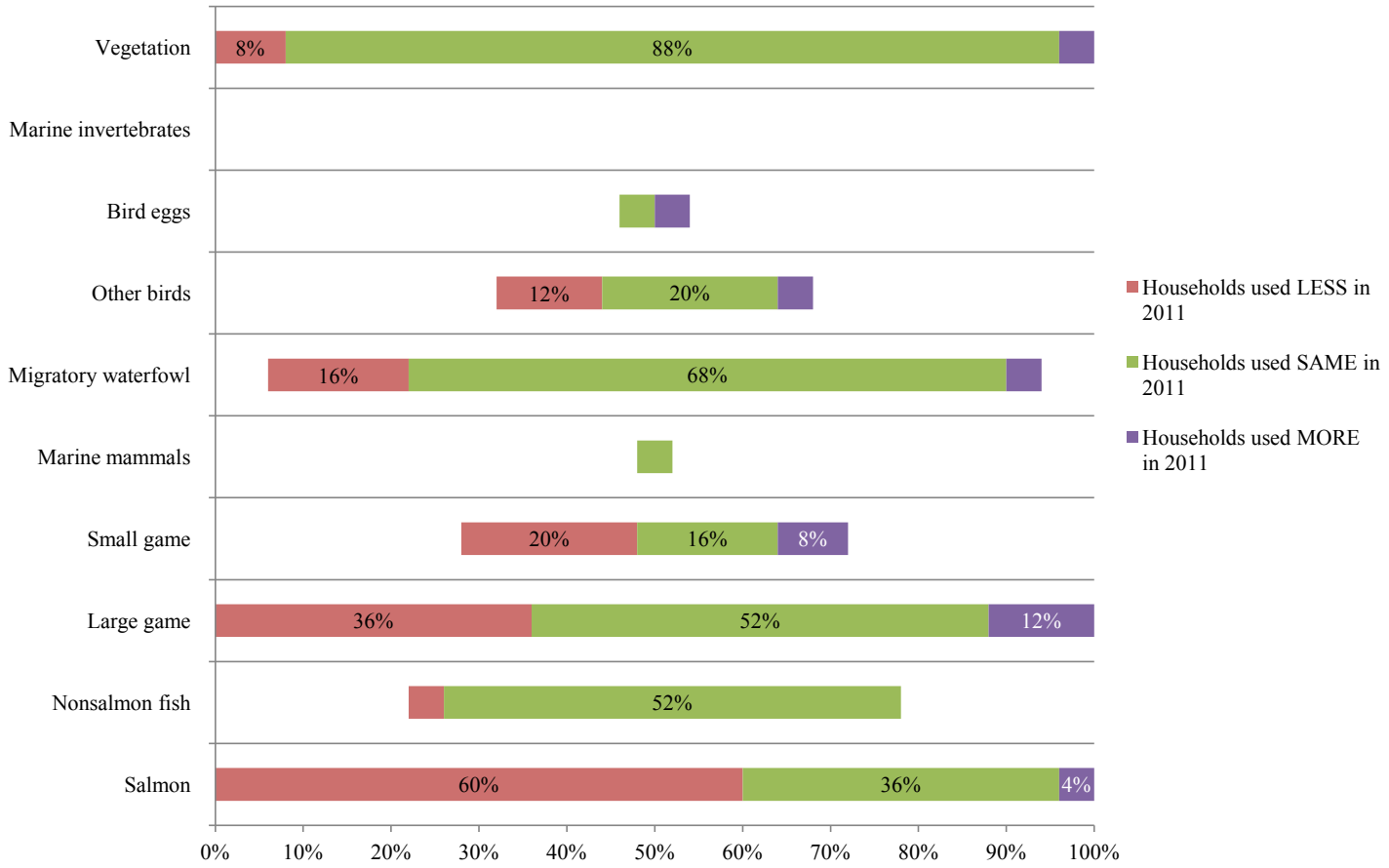
a. Valid responses do not include households that did not provide any response and households reporting never use.

categories, harvests and uses were lower or about the same for the majority of households that provided assessments.

For example, for both nonsalmon fish and small game, 25% of all interviewed households (Figure 7-15) and 50% of all those who provided an assessment (Table 7-16), indicated less use and also the same percentage of all interviewed households and of those who provided an assessment indicated the same level of use in 2011 than in previous years. Bettles households indicated that they used less salmon (25% of all households, 67% of those providing assessment), vegetation (25% of all households, 25% of those providing assessment), and large game (13% of all households, 14% of those providing assessment). In comparison, Bettles households indicated that they had the same level of use for these 3 resource categories as follows: salmon (13% of all households/33% of those providing assessment), vegetation (38% of all households/38% of those providing assessment), and large game (38% of all households/43% of those providing assessment). Households did indicate more use for vegetation, large game, other birds, and migratory waterfowl.

Table 7-17 depicts the reasons Bettles respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reason cited for less use of wild resources overall was weather/environment. Less use of salmon and large game was attributed to small or diseased animals. Although not as many residents reported instances of less harvesting,



Note Percentages are based on the total number of households in the community (N = 25 households). Unlabeled percentages are less than 5%.

Figure 7-15.– Changes in household uses of resources compared to recent years, Bettles, 2011.

Table 7-17. – Reasons for less household uses of resources compared to recent years, Bettles, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	0	5	1	20.0%	1	20.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	1	20.0%	2	40.0%
All resources	8	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%
Salmon	3	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%
Nonsalmon fish	4	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%
Large game	7	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%
Small game	4	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	3	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	0	0	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	8	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 7-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	8	5	0	0.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All resources	8	2	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	3	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	4	2	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 game	7	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	4	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	3	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	0	0	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	8	2	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, 2011.

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

some reported that people were sharing less or were unsuccessful in obtaining nonsalmon fish. Some community members stated that family/personal reasons and a lack of time were the reasons for less small mammal use than in recent years.

Overall, 63% of Bettles households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 63% said that their uses of at least one category had increased (Table 7-16). Weather/environment was the most frequently cited reason for lower use of any resource category in 2011 (40% of all Bettles households who reported a reason for less use), followed by family/personal reasons, resources being less available, less sharing, unsuccessful harvest effort, working/no time, and small/diseased animals (20% each) (Figure 7-16).

BETTLES AND EVANSVILLE: COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

The results of previous studies conducted in the communities of Bettles and Evansville by the Division of Subsistence were presented in a single combined report, and findings cannot be disaggregated by community. Therefore, for this section, the 2011 data for Bettles and Evansville are combined to examine changes over time. For Bettles and Evansville, comprehensive subsistence household harvest surveys were administered for the study years 1982, 1983, 1984, and the current 2011 study. An additional study was conducted in 2002; however, this study only collected data regarding nonsalmon fish and large land mammal harvests. When applicable, past study years were utilized to make data comparisons about long-term trends of resources.

With the exception of a large sheefish harvest in 1982 (29 lb per capita), it appears that nonsalmon fish have not been harvested in sizeable quantities over the past 30 years in Bettles and Evansville (Figure 7-17). However, sheefish, Arctic grayling, lake trout, and northern pike harvests, while small, were a constant subsistence resource over time (Figure 7-17). Marcotte and Haynes (1985) indicate that time commitments to wage-earning jobs by Evansville–Bettles residents contributed to low fish harvests in the past and this trend is supported by 2011 reports by residents saying that they have "no time" to fish or that people are not fishing as much in general. In the past (1982), low nonsalmon harvests were likely offset by relatively high moose and caribou harvests with 96 lb and 28 lb per capita, respectively (Marcotte and Haynes 1985:107). Elders frequently commented that moose and caribou populations have declined significantly over the past 2 decades. However, community members have observed more large land mammals in the area, but only very recently. Their observation of the migration of moose and caribou back into the vicinity may have had a positive effect in 2011 when 24 lb per capita of caribou and 51 lb per capita of moose were harvested for Evansville and Bettles combined (Figure 7-18).

When analyzing the combined Evansville and Bettles per capita harvest data from 1982, 1983, 1984, and 2011 by resource category, there is a noticeable decline in harvests in general over time (Figure

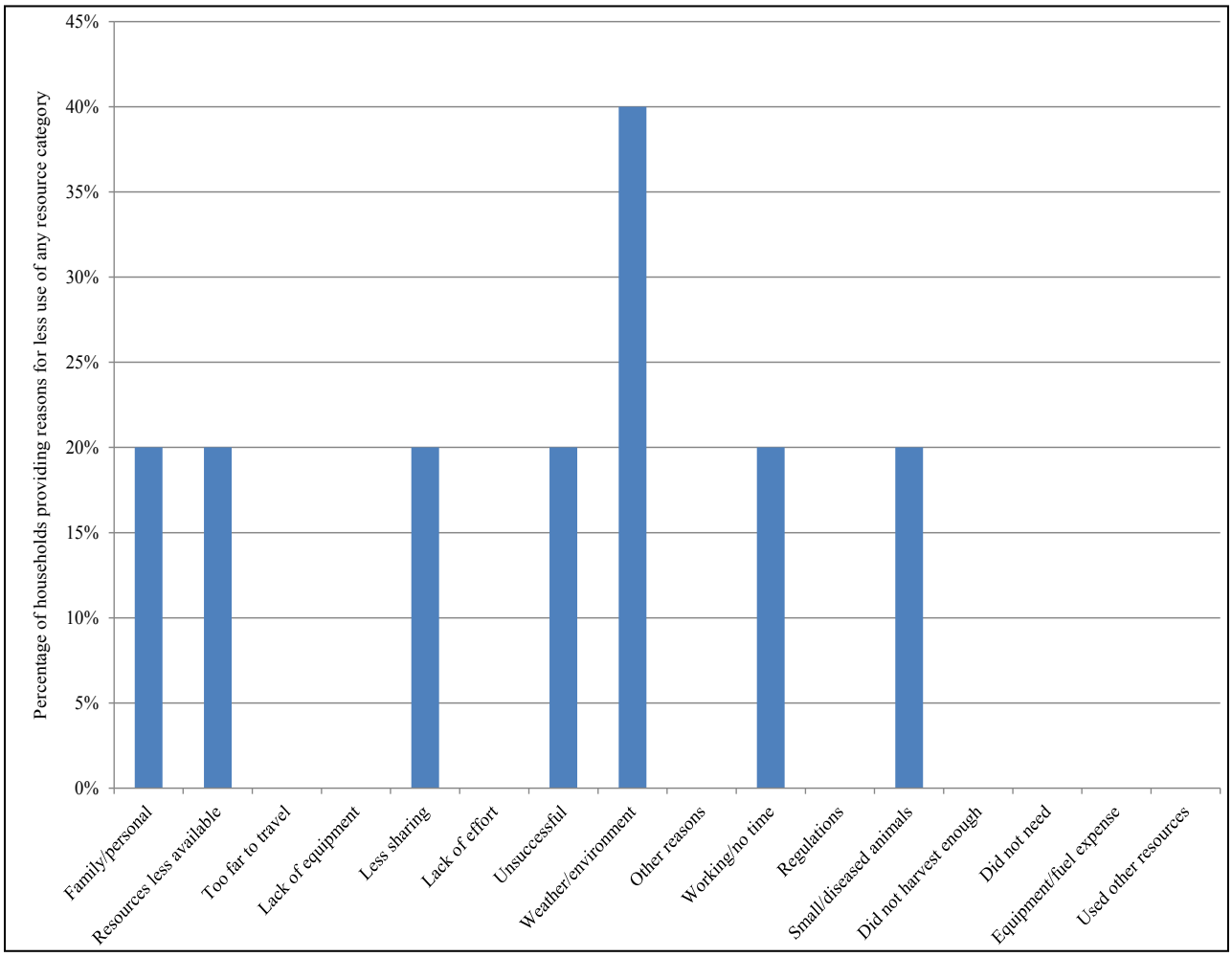


Figure 7-16.– Reasons for less household uses of any resource compared to recent years, Bettles, 2011.

7-19). During the 3-year period between 1982 and 1984 there was a significant decline, from 260 lb per person in 1982 to 185 lb per person in 1983 and 123 lb per person in 1984. Some residents believed the rapid decline of subsistence resource use by 1984 was directly related to the termination of mining and local Federal Aviation Agency operations. Mining closures were the result of the institution of federal parks in the Brooks Range and its foothills. Consequently, many residents, including, most likely, several productive hunters, relocated out of Evansville and Bettles for employment opportunities, which probably contributed to the observed decline in subsistence harvests. This outmigration eventually resulted in the closure of the local school in 2002 because there were no families with young children to meet the state quota for remote public education. Currently, there is only 1 elementary school-aged child in the combined communities of Evansville and Bettles.

It appears that small mammals likely did not make a significant contribution to the diet of community members in any study year (Figure 7-19). Similarly, estimated bird harvests were low but constant, and consisted mostly of upland game birds. Vegetation, including berries, has remained stable over

time and continues to play an important role in the subsistence use patterns of Evansville and Bettles residents, with per capita harvests of 7 lb (1982), 11 lb (1983), 6 lb (1984), and 9 lb (2011) (Figure 7-20). This is despite accounts by community members that 2011 was a particularly poor year for berries.

The harvests of both salmon and nonsalmon fish have declined significantly over the past 30 years (Figure 7-20). In 1982, combined salmon and nonsalmon fish harvests made up more than 40% of the total harvest by Evansville and Bettles residents compared to only 12% in 2011 (Figure 7-21). This decline has most likely resulted in a rise in the relative importance of large land mammal harvests and vegetation. Respondents said poor fish quality, in conjunction with lack of free time for fishing, likely contributed to the patterns observed.

LOCAL CONCERNS REGARDING RESOURCES

The following is a summary of local observations of wild resource populations and trends recorded during surveys. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary. In addition to responses given during the survey, Bettles residents expressed their concerns about wild resources during the community review meeting.

Bettles residents expressed diverse opinions about a potential predator control program.[3] Some residents believed it was necessary to control the local wolf population, which is believed to be contributing to the low large land mammal populations in the area (participant, community review meeting, Bettles, June 7, 2012). However, this view was not shared by all residents. A number of community members were opposed to predator control and felt that it was unnecessary and harmful to interfere with local wildlife (e.g., the food chain) (participant, community review meeting, Bettles, June 7, 2012).

Some community members felt non-local hunters are unregulated when they visit the area to hunt. Residents suggested that more patrol and enforcement is required to monitor activities and hunting by non-local residents. Some residents reported observing illegal kills of moose from non-local hunters who were not apprehended because of the time it took for law enforcement to arrive on scene. Furthermore, respondents reported wanton waste by non-local hunters, despite the hunters' awareness that the communities would appreciate having the meat.

Finally, some residents were worried about the quality of food they were able to obtain in the remote community of Bettles. Due to of the fly-in nature of the Bettles commercial grocery supply, community members felt subsistence foods were even more important than commercial groceries because subsistence foods were locally available and considered higher in nutritional value.

3. ADF&G, "Feasibility assessment for intensive management program: Game Management Unit 24B (13,523 mi^2) proposed Upper Koyukuk Village Management Area (UKVMA) 1,359.5 mi^2 centered on Alatna and Allakaket (10.1% of Unit 24B) to increase sustainable harvest of moose," version 1 released February 25, 2011, http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2011-2012/interior-3-2-12/24B_feasibility.pdf.

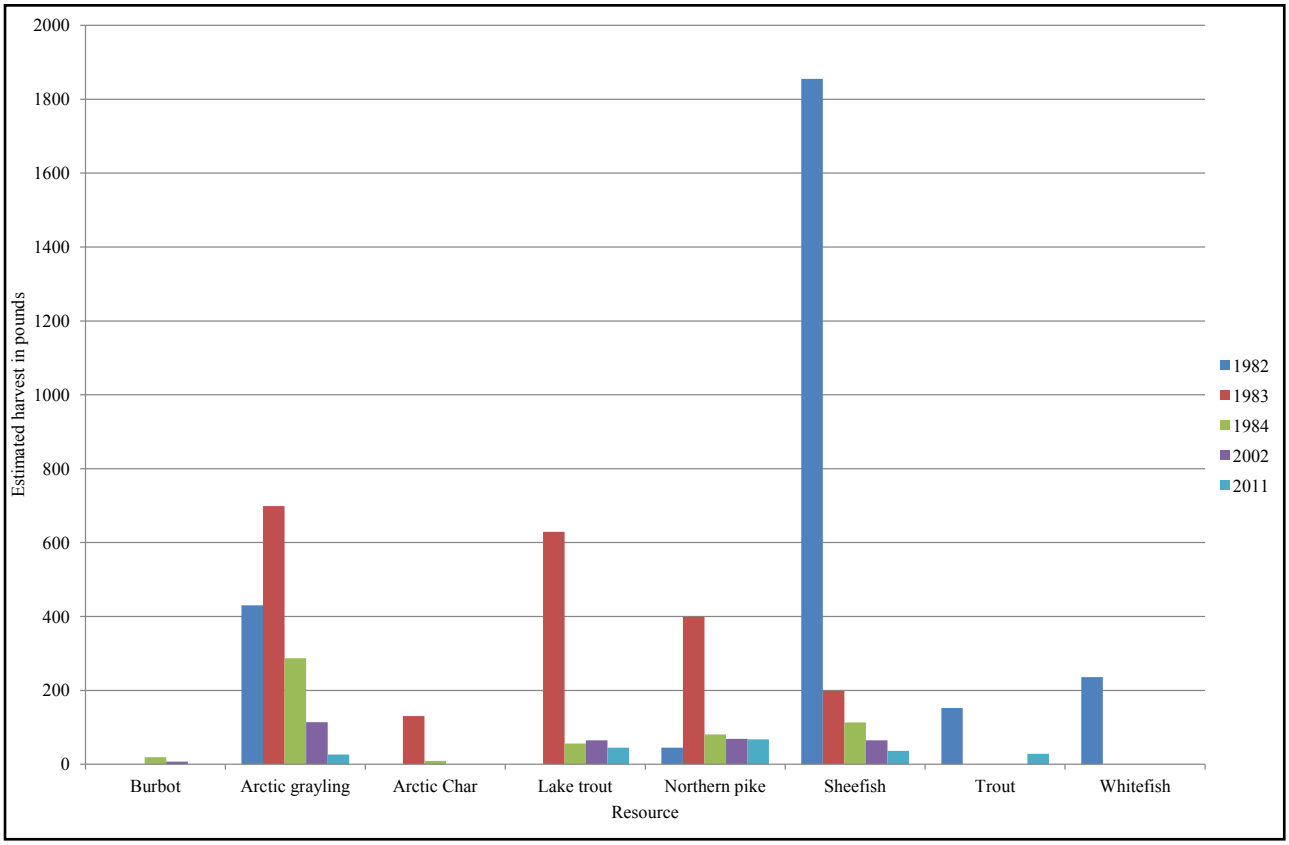


Figure 7-17.– Nonsalmon fish harvests, pounds per capita, Evansville and Bettles, 1982, 1983, 1984, 2002, and 2011.

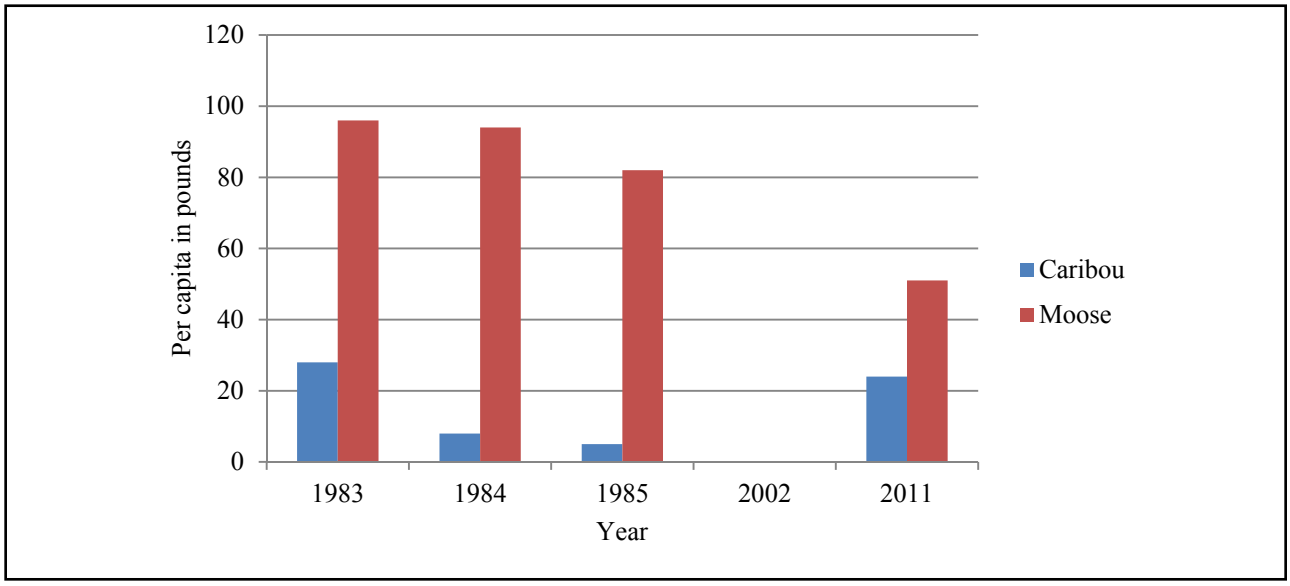


Figure 7-18.– Caribou and moose harvests, pounds per capita, Evansville and Bettles, 1983, 1984, 1985, 2002, and 2011.

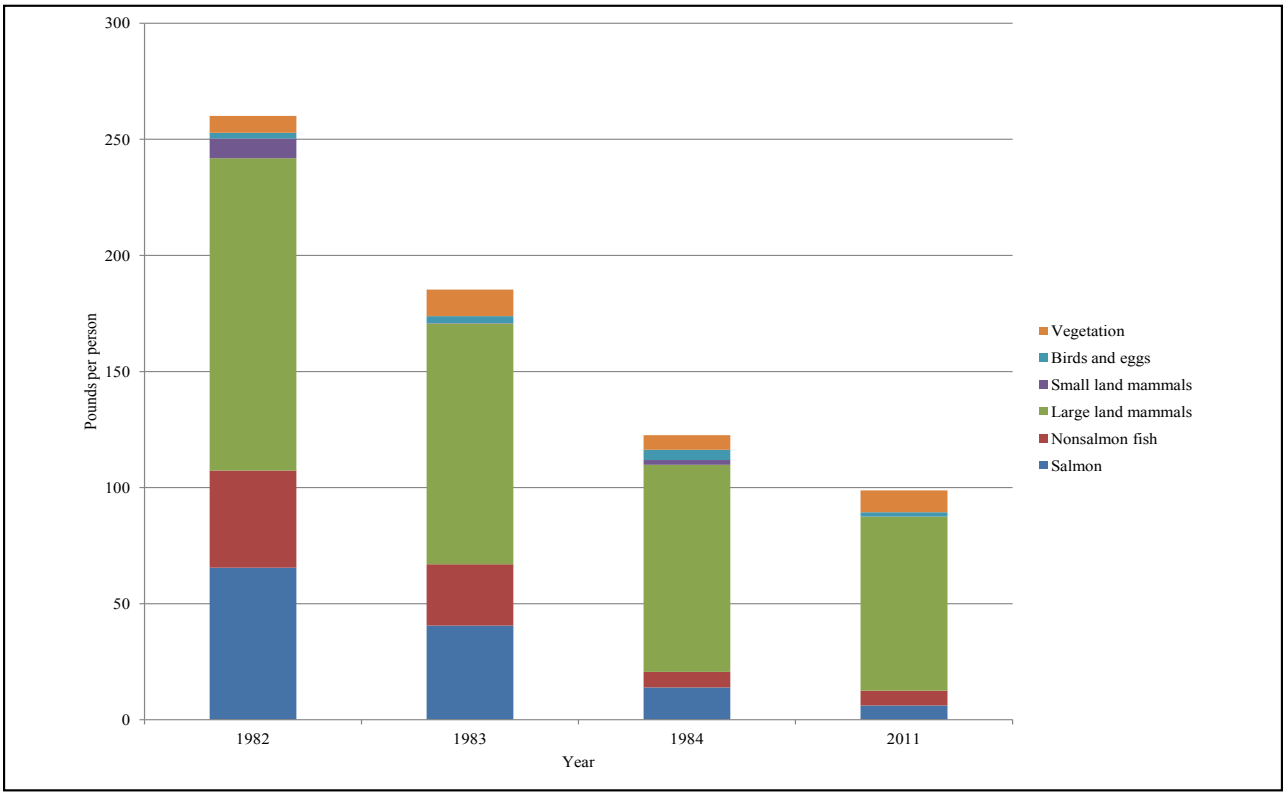


Figure 7-19.– Estimated subsistence harvests by category, pounds per capita, Evansville and Bettles, 1983, 1984, and 2011.

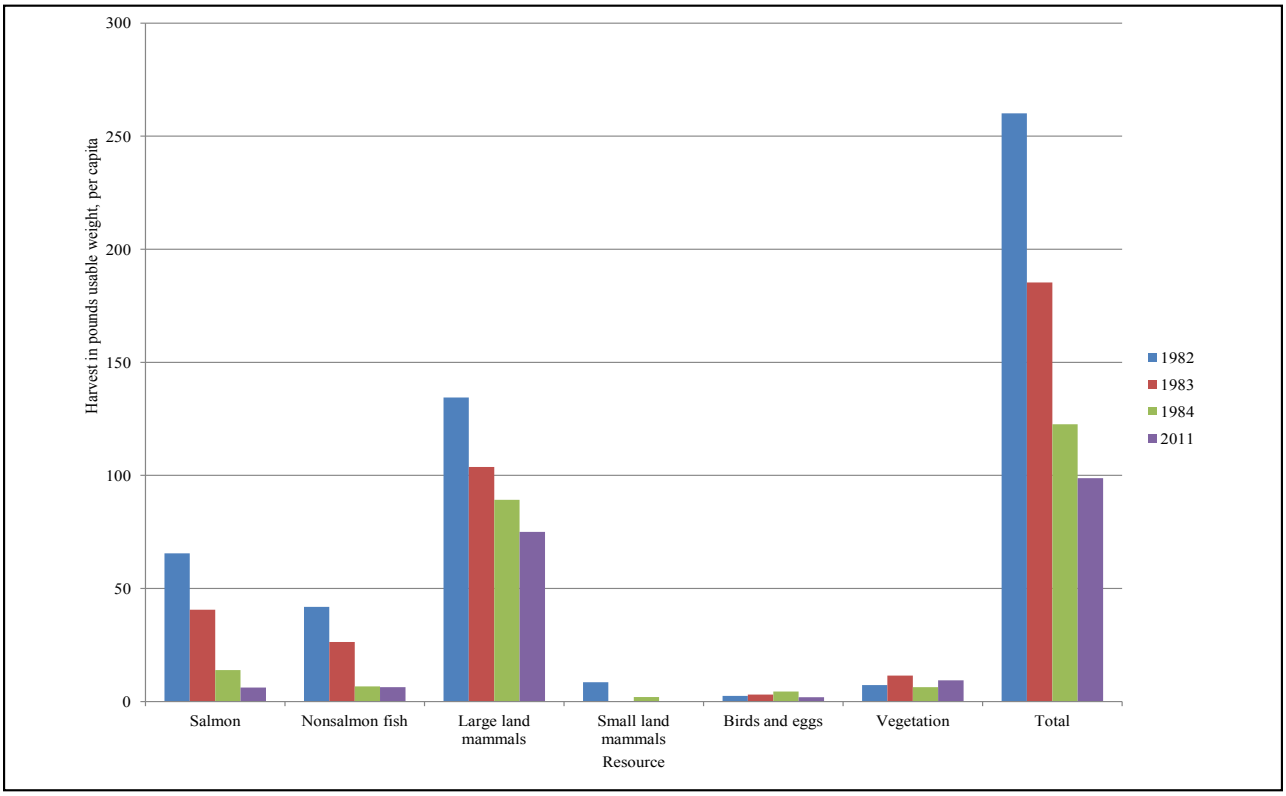


Figure 7-20.– Harvests in pounds usable weight, per capita, Evansville and Bettles, 1982, 1983, 1984, and 2011.

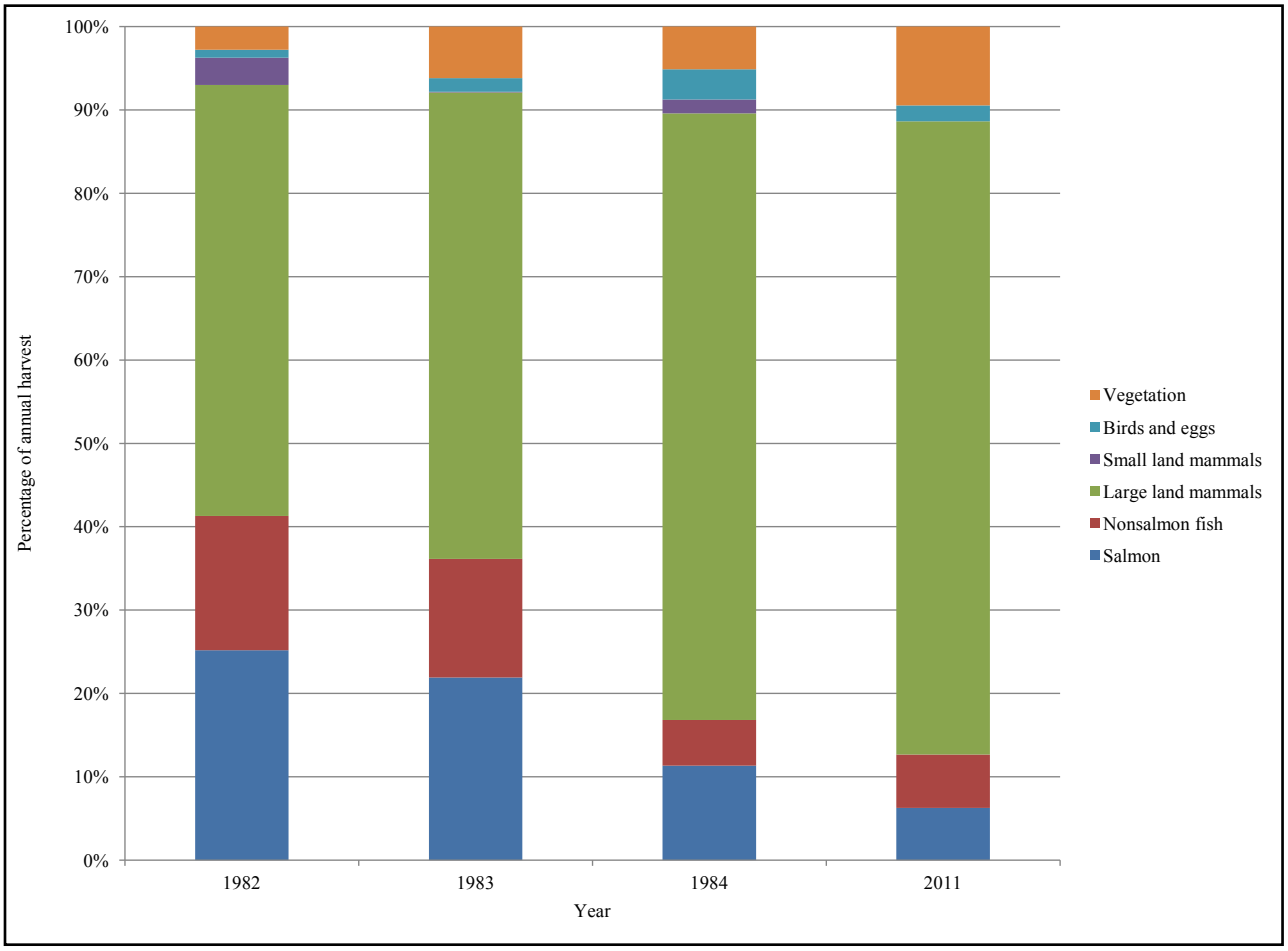


Figure 7-21.– Percentage of harvests, Evansville and Bettles, 1982, 1983, 1984, and 2011.

SUMMARY

The household survey findings demonstrated that residents of Bettles harvested a variety of resources in 2011. The per capita harvest in 2011 for Bettles and Evansville combined was lower than in 1982 and 1983, but similar to the per capita harvest in 1984 (Figure 7-19). Local residents speculated that this change might be linked to the rather sudden closure of mining operations and aviation agency activities in the vicinity, which caused residents to look for employment opportunities outside of the community. The rather pronounced decline between 1982 and 1984 of the per capita usable weight of subsistence resources suggests that a number of key harvesters likely relocated out of Evansville and/or Bettles.

When Bettles is grouped with Evansville, the per capita harvest over time appears fairly stable between 1984 and 2011 (Figure 7-19). However, when the Bettles per capita harvest in pounds is compared to the combined estimate, the Bettles harvest is much higher at 175 lb per person versus the Evansville–Bettles estimate of just under 100 lb per capita. This difference can be attributed to the much higher harvest of moose and caribou by Bettles residents, despite community member reports of periodic scarcity of large mammals. Salmon and nonsalmon resources, once an important part of

Bettles and Evansville subsistence harvests, have declined significantly since the 1980s; residents said that they believe that a combination of environmental and social/economic factors have contributed to the decline in fish harvests. Residents were particularly concerned about non-local hunters, predator control programs, and the availability of subsistence foods locally.

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank the community and residents of Bettles for their full support and participation in the project. The community of Bettles approved the project and helped ensure its success. The sections of the report on history and cultural context were much improved by supplemental reflective and informative interviews with local community members. Furthermore, the lively exchange of ideas and feedback at the community review meeting about the findings was instrumental in clarifying several important issues and was made possible by the high community attendance facilitated by DaleLynn Gardner of the National Park Service. We would also like to thank Jennifer Dillard, our community liaison and Local Research Assistant, for her assistance with the collection of survey data, and Hazel Pagkalinawan for her help identifying local households.

CHAPTER 8: COLDFOOT

Prepared by Malla Kukkonen

COMMUNITY BACKGROUND

COLDFOOT: FROM A GOLD RUSH BOOM TOWN TO A FAR NORTH TRUCK STOP

The origins of Coldfoot (formerly known as Slate Creek) date back to the late 1890s when gold exploration and extraction events occurred in interior Alaska as a result of the 1896 gold discovery in the Klondike, Canada. Gold was discovered on the Koyukuk River earlier—sometime between 1885 and 1890 when a few prospectors made small discoveries on gravel bars at Hughes, Florence, and Tramway Bar. However, it was not until 1898 that the area started to gain more attention after men and women, disappointed with the Klondike discovery, started to work their way down the Yukon River, prospecting its tributaries along the way. Between 1,200 and 1,500 miners traveling in steamboats and various types of watercrafts followed a series of discoveries up the Koyukuk River north of Tramway Bar. About 500–600 of them wintered in the Koyukuk River drainage between 1898–1899. The majority of these fortune seekers were discouraged by the harsh winter and minimal returns, and by 1899 only about 100 people continued to prospect the tributaries of the Middle Fork Koyukuk River (Buzzell 2007:8–9; Spude et al. 2011:225).

The first large placer gold discovery occurred in the area of modern-day Coldfoot in 1898 at the confluence of Slate and Myrtle creeks, about 16 miles above Tramway Bar. As a result, Slate Creek, which is the largest eastern tributary of the Middle Fork Koyukuk River, saw hundreds of gold prospectors entering the area from the upper Koyukuk either on foot or by boat (Buzzell 2007:11). As early as 1899, Slate Creek had become a supply center for mining operations in the upper Koyukuk. By the summer of 1900, the name "Slate Creek" was changed to "Coldfoot" after some new gold prospectors reportedly got "cold feet" and turned back at this location on the Koyukuk River (Buzzell 2007:11–12; Spude et al. 2011:226; Marshall 1991:39). The 1900 U.S Census does not mention Coldfoot in the Koyukuk but did record a population of people residing at Slate Creek. It is unknown whether this refers to the people along the creek itself, or to the original name of Coldfoot, but a total of 20 adult Euro-American men were counted at the time (Spude et al. 2011:227–228).

In the early 20th century, the Koyukuk gold fields were the northernmost mining camps in the world (Buzzell 2007:14). After initial development, the area quickly evolved into a self-supporting mining community. Slate Creek produced $1,000 in gold during 1900 and an unknown quantity the next

year. Myrtle Creek, in turn, produced $40,000 in gold in 1900 and $7,000 in 1901. An estimated 200 people, mostly non-Native miners and prospectors, wintered in the Upper Koyukuk during 1901–1902 (Buzzell 2007:14; Maddren 1910:288, 292). During this period, the official site of Coldfoot was recorded on a plat map by the Koyukuk District Recorder and developed into an economic center for area residents. The population of Coldfoot peaked from 1902 to about 1904 with an estimated 350 people and 80 structures in town (Buzzell 2007:21; Maddren 1910:288). During its heyday in those peak population years, the community had a variety of services, including a federal post office, 2 general stores, a gambling establishment, 2 roadhouses, 7 saloons, a number of brothels, 2 lawyers, and a doctor (Spude et al. 2011:228).

The falling gold production from the creeks surrounding Coldfoot and new strikes farther upriver led to the decline of the town. A particularly rich strike in Nolan Creek in 1907 led to the relocation of most Coldfoot residents; by 1912 all government officials and most commercial establishments had moved to a new settlement called Wright's (now called Wiseman) about 16 miles upstream from Coldfoot. The 1910 U.S. Census recorded 24 people residing in Coldfoot—15 men, 4 women, and 5 children. Euro-Americans composed most of the population but there were a few Alaska Natives in the community at the time. Between 1910 and 1920, Coldfoot underwent a small revival with several families settling there. A roadhouse and an associated store operated by a Euro-American man and his Alaska Native spouse continued to provide services for community residents and travelers at least until 1919. In 1920, the population of Coldfoot was 68, which included 6 families (4 Alaska Native families, 1 Japanese man with his Alaska Native wife and children, and 1 Euro-American man with his Alaska Native wife and children) and mostly male Euro-American miners. With the increased number of children in Coldfoot, the Wiseman School District was established in 1918. A school house was subsequently built and a teacher hired in the fall of 1919 (Spude et al. 2011:230–231). The few remaining services and the school in Coldfoot closed in the early 1920s. In 1924, only 2 families continued to live in Coldfoot, and by 1930 it was completely abandoned (Spude et al. 2011:232–233; Marshall 1991:42).

Researchers continue to be unsure whether there were any permanent residents in Coldfoot between 1930 and the late 1940s. Research indicates that during this period the town site was intermittently used by Alaska Native families while pursuing seasonal subsistence activities. Oral and archeological sources suggest that the old town site had been occupied by at least 1 Alaska Native family and 1 Euro-American miner in the early 1950s. Apparently the main attraction to the old town site in the 1950s was the abandoned buildings, which area residents dismantled for firewood. The historical Coldfoot site lost its last permanent residents in the mid-1950s and the town site became abandoned again for the next 15 years (Spude et al. 2011:234–235).

With the construction of the James W. Dalton Highway (also known as the North Slope Haul Road), and the trans-Alaska Pipeline System (TAPS) in the 1970s, Coldfoot was once again occupied. A

large construction camp was established close to the original town site. In 1978, the State of Alaska established a Department of Transportation facility close by as well (Scott 1993:67; Coldfoot Camp 2012). After the completion of the TAPS, truck traffic along the Dalton Highway continued but there were no services available to truck drivers between Fairbanks and Prudhoe Bay. In 1981, Dick Mackey, the famous Iditarod champion, set up an old school bus at the old construction camp site and began to sell food to truck drivers. This service was greatly appreciated by the truck drivers, who in turn started to drop off materials such as packing crates at the site to be used as building materials. During their breaks, the drivers helped with the construction of the Coldfoot truck stop, which continues to operate today (Coldfoot Camp 2012).

The current community of Coldfoot is located above the Arctic Circle at mile 175 of the Dalton Highway. From the 1980s to 1993 Coldfoot served as an essential, year-round service and relief point for truck drivers. In 1994, the 414-mile long Dalton Highway was opened to personal vehicles and the community became an important service point for the general public as well, especially during summer months (U.S. Department of the Interior 2012b:3; U.S. Department of the Interior 2012a). Other than the various services provided at the Coldfoot truck stop, the community also has a post office, an RV park, a state trooper, an ADF&G office, and a U.S Bureau of Land Management field office. Coldfoot also has a seasonal interagency visitor center generally open to the public from late May to early September (U.S. Department of the Interior 2012a). The community does not have a grocery store but a truck regularly delivers groceries to the Coldfoot truck stop, and some residents purchase food via this service. Residents also make trips to Fairbanks or rely on subsistence foods.

Coldfoot has only a few permanent residents and employment is focused on either government services or services provided to travelers. In the past 10 years, year-round international tourism to the region has been increasing, and as a result there are often several seasonal employees residing in the community for a few months of the year, or sometimes longer. While work keeps the majority of Coldfoot residents busy year-round, select subsistence activities are practiced by most residents at some point during the year. Currently, Coldfoot is a far-north service point for travelers entering the Alaska arctic and community residents rely on subsistence foods modestly when compared to other communities in the region.

DEMOGRAPHY

According to the federal census, Coldfoot had 10 residents in 6 households in 2010 (U. S. Census Bureau 2011a) (Table 8-1). Figure 8-1 shows the population of the community from 1990 to 2011. The chart shows that after a gradual decline from 1990 to 2000, the population has more recently been experiencing a more stable period.

The household survey conducted for study year 2011 found an estimated population of 10 residents, consistent with the U.S. Census. There were no Alaska Natives residing in the community in 2011

Table 8-1. – Population of Coldfoot, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
6	10	0	0.0%	5	10	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

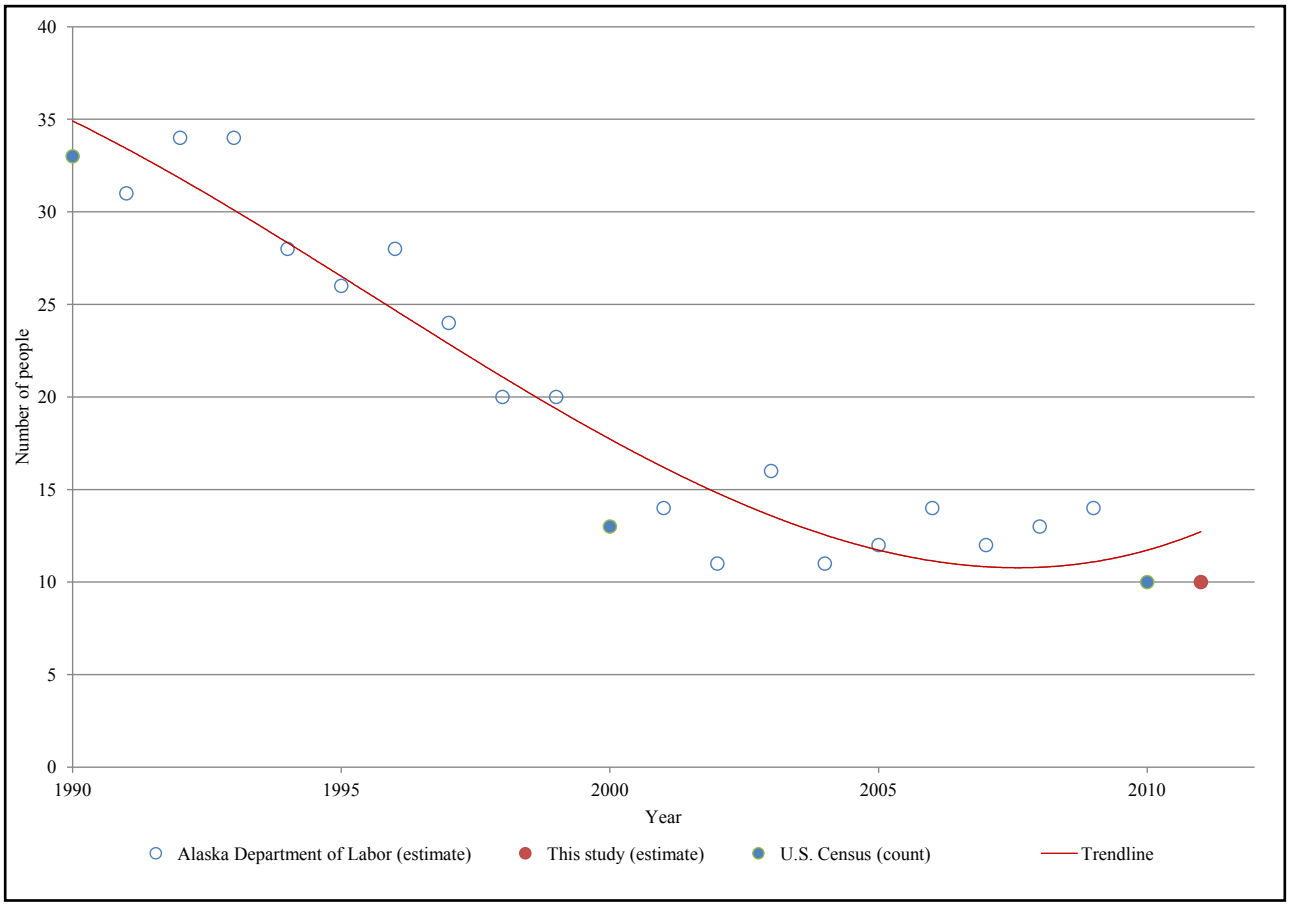


Figure 8-1.– Population history, Coldfoot, 1990–2011.

Table 8-2. – Sample achievement, Coldfoot, 2011.

Number of dwelling units	5.0
Interview goal	5.0
Households interviewed	4.0
Households failed to contact	1.0
Households declined to be interviewed	0.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	4.0
Refusal rate	0.0%
Final estimate of permanent households	5.0
Percentage of total households interviewed	80.0%
Interview weighting factor	1.3
Sampled population	8.0
Estimated population	10.0

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

(Table 8-1). The survey documented 5 year-round households in Coldfoot, 4 of which were surveyed (80% sample) (Table 8-2). The mean number of years of residency for both household heads and the overall population of Coldfoot was 6 years, with the maximum length of residency being 10 years (Table 8-3). Most of the community members were male (62%) and only 38% of the population was female. The largest age cohorts for males were 35–39 years of age, and 50–54 years of age. In comparison, the female population was evenly distributed among the age cohorts 30–34 years of age, 35–39 years of age, and 55–59 years of age (Figure 8-2; Table 8-4). The study did not find any children residing in the community during the study year (Table 8-4). The majority of the Coldfoot household heads interviewed were born in the United States (86%) while the remaining 14% were foreign born (Table 8-5).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 8-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Coldfoot residents in 2011. Approximately 88% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 88% of all residents gathered plants and berries, and 38% hunted for large land mammals. According to the study, Coldfoot residents did not fish, hunt or trap furbearers, or hunt birds. In comparison, 88% of all Coldfoot residents processed some resources in 2011. Most residents (88%) participated in processing plants and berries. One-half (50%) participated in processing large land mammals.

Table 8-3. – Demographics and sample characteristics, Coldfoot, 2011.

Characteristics	Coldfoot
Sampled households	4.0
Eligible households	5.0
Percentage sampled	80.0%
Household size	
Mean	2.0
Minimum	2.0
Maximum	2.0
Sample population	8.0
Estimated community population	10.0
Age	
Mean	42.0
Minimum[a]	31.0
Maximum	56.0
Median	38.0
Length of residency	
Total population	
Mean	5.9
Minimum[a]	2.0
Maximum	10.0
Heads of household	
Mean	5.9
Minimum[a]	2.0
Maximum	10.0
Sex	
Estimated male	
Number	6.3
Percentage	62.5%
Estimated female	
Number	3.8
Percentage	37.5%
Alaska Native	
Estimated households[b]	
Number	0.0
Percentage	0.0%
Estimated population	
Number	0.0
Percentage	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

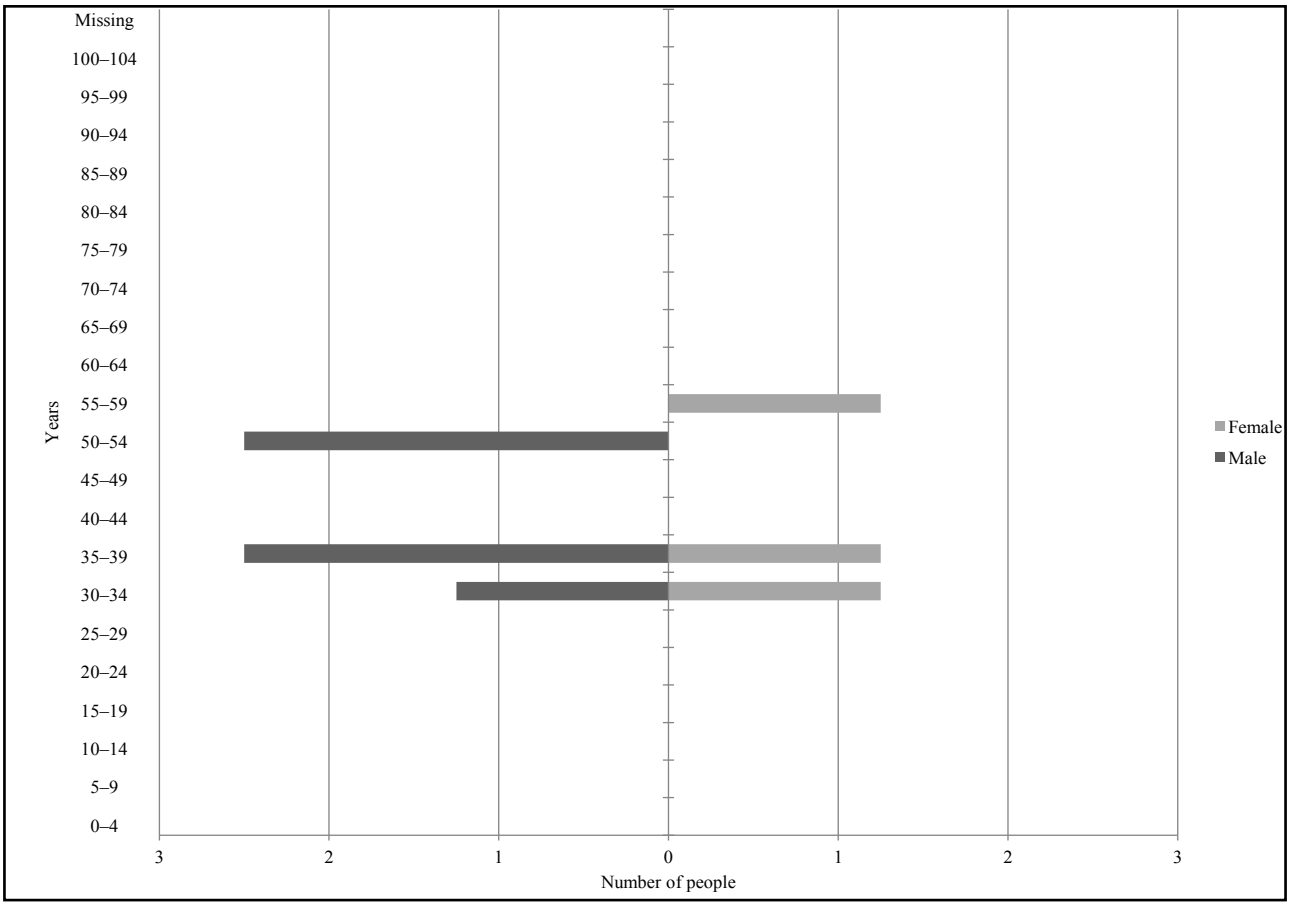


Figure 8-2.– Population profile, Coldfoot, 2011.

Table 8-4. – Population profile, Coldfoot, 2011.

	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	1.3	20.0%	20.0%	1.3	33.3%	33.3%	2.5	25.0%	25.0%
35–39	2.5	40.0%	60.0%	1.3	33.3%	66.7%	3.8	37.5%	62.5%
40–44	0.0	0.0%	60.0%	0.0	0.0%	66.7%	0.0	0.0%	62.5%
45–49	0.0	0.0%	60.0%	0.0	0.0%	66.7%	0.0	0.0%	62.5%
50–54	2.5	40.0%	100.0%	0.0	0.0%	66.7%	2.5	25.0%	87.5%
55–59	0.0	0.0%	100.0%	1.3	33.3%	100.0%	1.3	12.5%	100.0%
60–64	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
65–69	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
70–74	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
75–79	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**6.3**	**100.0%**	**100.0%**	**3.8**	**100.0%**	**100.0%**	**10.0**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 8-5. – Birthplaces of household heads, Coldfoot, 2011.

Birthplace[a]	Percentage
Other U.S.	85.7%
Foreign	14.3%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutally exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

RESOURCE HARVEST AND USE PATTERNS

Table 8-7 summarizes resource harvest and use characteristics for Coldfoot in 2011 at the household level. All households used wild resources, attempted to harvest, and harvested wild resources in 2011. The average household harvest was an estimated 76 lb usable weight, or 38 lb per capita. On average, households attempted to harvest and harvested 2 kinds of resources, and used an average of 3 kinds of resources. The maximum number of resources used by any household was 5. In addition, households gave away 1 type of resource and received 2 kinds of resources. One-half (50%) of households reported sharing resources with other households while all households reported receiving at least 1 resource.

SPECIES USED AND SEASONAL ROUND

Coldfoot residents harvest a small variety of species during specific seasons of the year. Because there were no permanent residents in Coldfoot in 1980 when the Alaska National Interest Lands Conservation Act (ANILCA) was signed into law, the National Park Service does not recognize that the community of Coldfoot has customary and traditional subsistence use areas within the Gates of the Arctic National Park (Jack Reakoff, Wiseman resident, personal communication, October 4, 2012). Therefore the community of Coldfoot is not included among the designated resident zone communities that have special privileges to practice subsistence activities within the park boundaries.[1] Without the eligibility to subsistence hunt in the park, Coldfoot residents' hunting areas are significantly limited compared to other communities in the region. Most of the permanent residents of Coldfoot work full-time, year-round, and thus do not usually travel very far away from the community to harvest wild resources. They use motorized vehicles such as airplanes and highway vehicles to reach their hunting and gathering areas.

Table 8-8 summarizes the estimated harvests and uses of fish, game, and plant resources in Coldfoot in 2011. Table 8-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Coldfoot households during the study year 2011. Coldfoot residents harvested an estimated total of 381 lb of edible wild resources, or 38 lb per capita (Table 8-8). Caribou, blueberries,

1. There are 11 designated resident zone communities for the Gates of the Arctic National Park and Preserve; Nuiqsut, Wiseman, Anaktuvuk Pass, Bettles, Evansville, Allakaket, Alatna, Hughes, Kobuk, Shungnak, and Ambler (U.S. Department of the Interior 2012c).

Table 8-6. – Estimated participation in subsistence harvesting and processing activities, Coldfoot, 2011.

Total number of people	**10.0**
Birds	
Hunt	
Number	0.0
Percentage	0.0%
Process	
Number	0.0
Percentage	0.0%
Fish	
Fish	
Number	0.0
Percentage	0.0%
Process	
Number	0.0
Percentage	0.0%
Large land mammals	
Hunt	
Number	3.8
Percentage	37.5%
Process	
Number	5.0
Percentage	50.0%
Furbearers	
Hunt or trap	
Number	0.0
Percentage	0.0%
Process	
Number	0.0
Percentage	0.0%
Plants	
Gather	
Number	8.8
Percentage	87.5%
Process	
Number	8.8
Percentage	87.5%
Any resource	
Attempt	
Number	8.8
Percentage	87.5%
Process	
Number	8.8
Percentage	87.5%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 8-7. – Resource harvest and use characteristics, Coldfoot, 2011.

Characteristic	
Mean number of resources used per household	3.3
Minimum	2.0
Maximum	5.0
95% confidence limit (±)	32.8%
Median	3.0
Mean number of resources attempted to harvest per household	2.0
Minimum	1.0
Maximum	3.0
95% confidence limit (±)	41.1%
Median	2.0
Mean number of resources harvested per household	1.8
Minimum	1.0
Maximum	3.0
95% confidence limit (±)	38.9%
Median	1.5
Mean number of resources received per household	1.5
Minimum	1.0
Maximum	2.0
95% confidence limit (±)	27.4%
Median	1.5
Mean number of resources given away per household	0.5
Minimum	0.0
Maximum	1.0
95% confidence limit (±)	82.2%
Median	0.5
Household harvest , pounds	
Minimum	0.0
Maximum	292.0
Mean	76.3
Median	6.5
Total harvest weight, pounds	381.3
Community per capita harvest, pounds	38.1
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	50.0%
Number of households in sample	4.0
Number of resources available	110.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 8-8. – Estimated harvests and uses of fish, game, and plant resources, Coldfoot, 2011.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
All Resources	**100%**	**100%**	**100%**	**100%**	**50%**	**381.3**	**76.3**	**38.1**	**21.3**		**4.3**	**134%**
Fish	**25%**	**0%**	**0%**	**25%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Salmon	**25%**	**0%**	**0%**	**25%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Chum salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coho salmon	25%	0%	0%	25%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	25%	0%	0%	25%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacfic halibut	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Char	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dolly Varden	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Arctic grayling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pike	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

-continued-

Table 8-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Broad whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Round whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**100%**	**50%**	**25%**	**75%**	**50%**	**325.0**	**65.0**	**32.5**	**2.5**		**0.5**	**142%**
Large land mammals	**100%**	**50%**	**25%**	**75%**	**50%**	**325.0**	**65.0**	**32.5**	**2.5**		**0.5**	**142%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	75%	50%	25%	50%	50%	325.0	65.0	32.5	2.5	Ind.	0.5	142%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	25%	0%	0%	25%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskox	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Beaver	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Fox	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%
Red fox—cross phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red fox—red phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Hare	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	Ind.	0.0	0%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Arctic ground (parka) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 8-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Red (tree) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolverine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine mammals	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Northern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Harbor seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**25%**	**0%**	**0%**	**25%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Migratory birds	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Ducks	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Long-tailed duck	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pintail	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown ducks	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cacklers	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lesser Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%

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Table 8-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Sandhill crane	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Other birds	**25%**	**0%**	**0%**	**25%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Upland game birds	25%	0%	0%	25%	0%	0.0	0.0	0.0	0.0		0.0	0%
Grouse	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ptarmigan	25%	0%	0%	25%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**100%**	**100%**	**0%**	**0%**	**56.3**	**11.3**	**5.6**	**18.8**		**3.8**	**90%**
Berries	**100%**	**100%**	**100%**	**0%**	**0%**	**55.0**	**11.0**	**5.5**	**17.5**		**3.5**	**93%**

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Table 8-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Berries, continued												
Blueberry	100%	100%	100%	0%	0%	40.0	10.7	4.0	13.8	Gal.	2.8	56%
Lowbush cranberry	25%	25%	25%	0%	0%	15.0	3.0	1.5	3.8	Gal.	0.8	142%
Highbush cranberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Raspberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild berry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**25%**	**25%**	**25%**	**0%**	**0%**	**1.3**	**0.3**	**0.1**	**1.3**	**Gal.**	**0.3**	**142%**
Hudson's Bay tea	25%	25%	25%	0%	0%	1.3	0.3	0.1	1.3	Gal.	0.3	142%
Unknown mushrooms	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Wood	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**	**Cord.**	**0.0**	**0%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 8-9. – Top 10 resources harvested and used, Coldfoot, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Caribou	32.5	1	1.	Blueberry	100.0%
2	2.	Blueberry	4.0	2	2.	Caribou	75.0%
3	3.	Lowbush cranberry	1.5	3	3.	Coho salmon	25.0%
4	4.	Hudson's Bay tea	0.1	4	3.	Sockeye salmon	25.0%
				5	3.	Moose	25.0%
				6	3.	Ptarmigan	25.0%
				7	3.	Lowbush cranberry	25.0%
				8	3.	Hudson's Bay tea	25.0%

Source ADF&G Division of Subsistence household surveys, 2012.

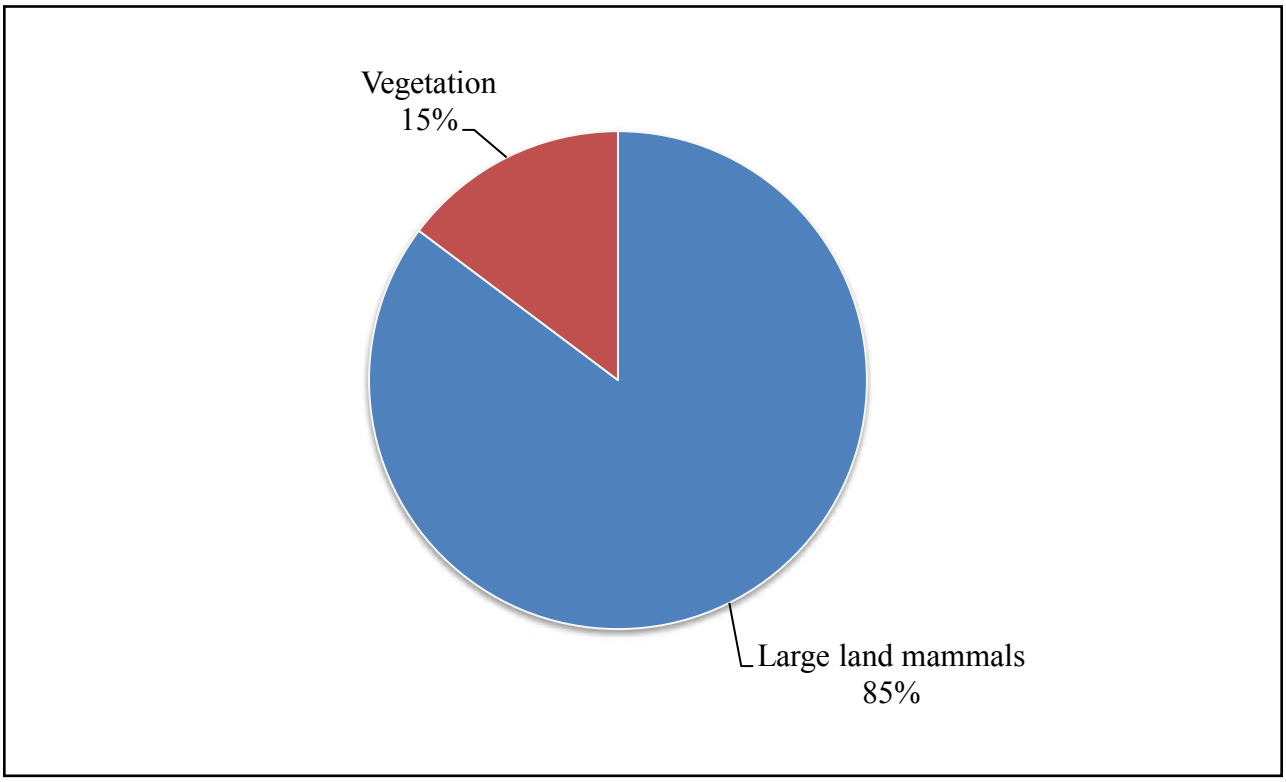


Figure 8-3.– Composition of harvest by category, Coldfoot, 2011.

and lowbush cranberries were the top 3 most harvested resources. In comparison, blueberries and caribou were the top 2 used resources, with coho salmon, sockeye salmon, moose, ptarmigan, lowbush cranberries, and Hudson's Bay tea all sharing the third rank for most used resources (Table 8-9).

For Coldfoot residents, large land mammals made up the highest percentage (85%) of the total harvest in 2011 (Figure 8-3). During the study year, 50% of Coldfoot households reported hunting large land mammals, specifically caribou, and 25% of households were successful. Most of the hunting

took place using highway vehicles or snowmachines, but sometimes residents also flew to hunting areas located farther away. Respondents reported that 2011 was the first year in a while where they saw caribou in the area and that they were glad to be able to hunt them again.

Other than large land mammals, Coldfoot residents harvested only plants and berries during the 2011 study year. Regardless, harvesting of vegetation, particularly berries in the summer, was an important activity for Coldfoot residents. During the study year, all Coldfoot households reported harvesting and using berries, and 25% said they harvested other wild plants (Table 8-8).

HARVEST QUANTITIES

Table 8-8 reports estimated wild resource harvests and uses by Coldfoot residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Coldfoot was 381 lb, or 38 lb per capita (Table 8-8). In terms of pounds harvested, large land mammals, specifically caribou, constituted the largest portion of the subsistence harvest, at 325 lb, or 33 lb per capita (Table 8-8; Figure 8-3). Caribou were also the single most harvested resource and second most used resource (Table 8-9). It is notable that during the 2011 study year, no other large land mammal species were hunted or harvested by Coldfoot residents.

Vegetation was the other important wild resource category used in Coldfoot in 2011 (Table 8-8). All households used vegetation, attempted to harvest, and harvested vegetation. The total harvest was 56 lb, or 6 lb per capita, with blueberries, lowbush cranberries, and Hudson's Bay tea being the most used species.

SHARING AND RECEIVING WILD RESOURCES

In Coldfoot in 2011, the highest number of resources used by a household was 5, and the average harvest per household was 2 resources (Table 8-7). Estimates of sharing indicated that all households received wild resources from other households and 50% of households gave resources away (Table

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

8-7). Households received an average of 2 resources and gave away 1 resource (Table 8-7). The total harvest of wild foods by Coldfoot residents in 2011 was entirely composed of large land mammals and vegetation, and all households used these resources. Large land mammals were the most shared resource with 50% of households giving away and 75% of households receiving large land mammals; caribou was the only large land mammal harvested and 50% of households gave away and 50% of households received caribou (Table 8-8). In addition, 25% of households reported receiving moose and 25% used moose (Table 8-8). Because there was no reported moose harvest in the community, it is possible that the received and used moose was harvested meat from outside the community that was given to households in Coldfoot at some point during 2011.

Vegetation was the other resource category harvested by Coldfoot residents but this study did not find any sharing of this resource taking place in the community in 2011. Even though Coldfoot residents did not harvest any other resources, 25% of households reported receiving and using coho salmon and sockeye salmon. In addition, 25% of households reported receiving and using ptarmigan (Table 8-8).

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

LARGE LAND MAMMALS

In 2011, large land mammals, specifically caribou, made up 85% of the total Coldfoot harvest by weight (Figure 8-3). One-half (50%) of households attempted to harvest caribou, but only 25% of households were successful (Table 8-8). As noted above, Coldfoot households did not report attempting to harvest any other large land mammal species. Nevertheless, 25% of households used moose during the study year (Table 8-8). In terms of pounds harvested in 2011, caribou ranks first on the list of top 10 resources harvested (Table 8-9). Some Coldfoot respondents commented that only a small number of caribou had been seen around the community in the past few years and that overharvesting is depleting the Central Arctic, Teshekpuk, and Western Arctic caribou herds that utilize the area. According to the study, all successful caribou hunting took place in April 2011 and the estimated 3 caribou harvested were male (Table 8-10).

Coldfoot residents mainly used local areas for hunting and searching for large land mammals. A lot of the hunting was done using motorized vehicles, such as highway vehicles, and snowmachines, depending on the time of the year.

VEGETATION

The second most used category of subsistence resources in Coldfoot during the study year was vegetation, with all households harvesting and using a resource in this category (Table 8-8). Most wild plants and berries were harvested close to the community of Coldfoot (Figure 8-4). In 2011, Coldfoot

Table 8-10. – Estimated harvests of large game by month and sex, Coldfoot, 2011.

				Caribou				Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**0.0**	**2.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

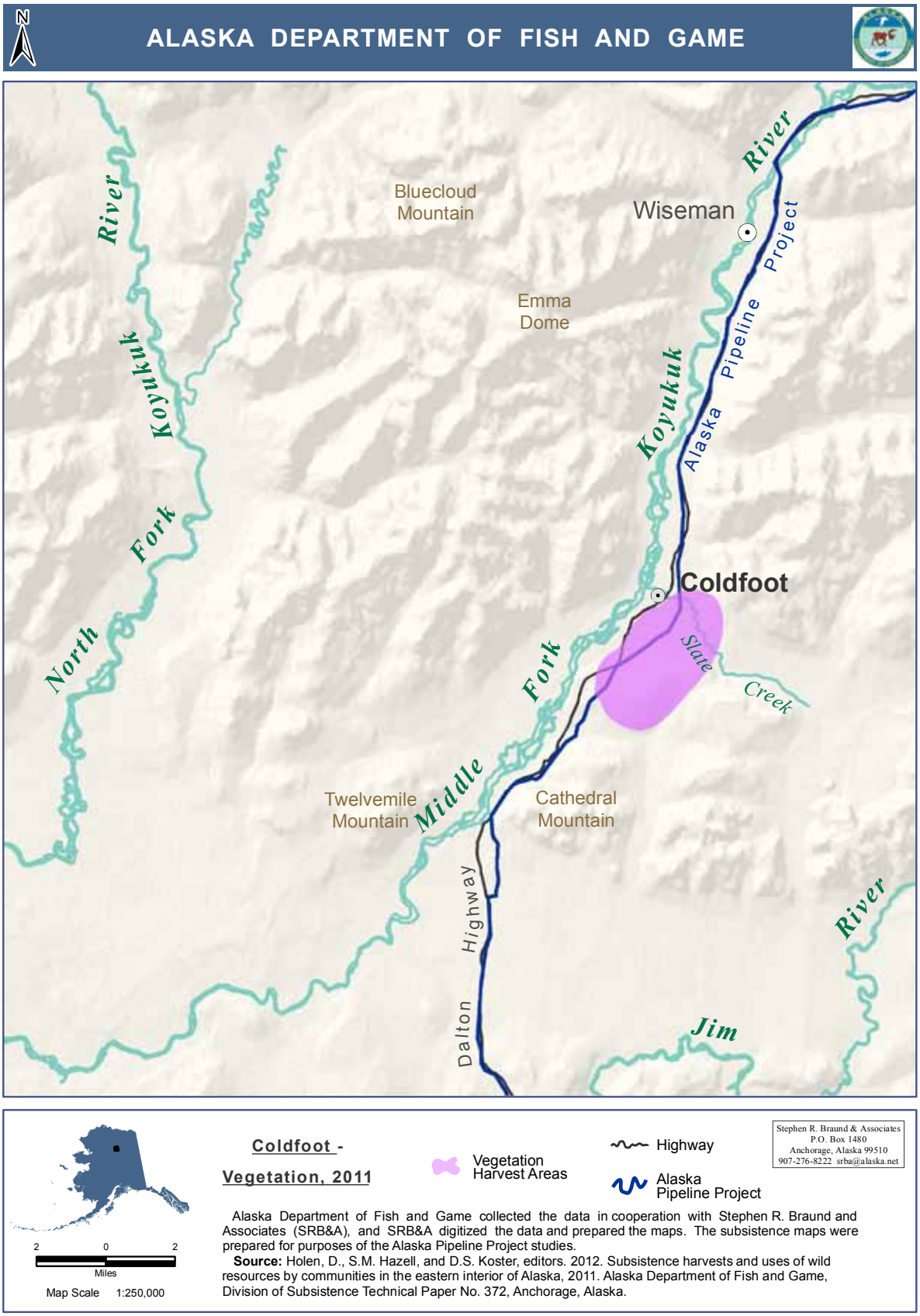


Figure 8-4.– Vegetation harvest areas, Coldfoot, 2011.

residents harvested 56 lb, or 6 lb per capita of vegetation, consisting mostly of berries (Table 8-8). The harvest of blueberries placed second in terms of pounds per capita harvested in 2011 and ranked first in terms of percentage of households using the resource. Lowbush cranberries ranked third on the list of most harvested resources and used resource (Table 8-9). Hudson's Bay tea was the only other plant harvested (less than 0.5 lb per capita).

CASH EMPLOYMENT AND MONETARY INCOME

Because Coldfoot is a small community with few households, the estimated earned and other income data are not included in this chapter. Due to privacy concerns, only the employment by industry percentages are included here. In 2011, most (43%) of the jobs in Coldfoot were in the service industry. Other important employment sectors were state government (14%) and federal government (14%); transportation, communication and utilities (14%); and mining (14%) (Table 8-11).

The study found 10 adults over the age of 16 in Coldfoot in 2011, and the calculated average length of employment for all Coldfoot adults was approximately 9 months. All the households in Coldfoot had at least 1 employed household member during 2011, and the average number of jobs per employed households was about 2 (Table 8-12). Most jobs were located in Coldfoot but some respondents worked in Wiseman.

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" (Nord et al.

Table 8-11. – Employment by industry, Coldfoot, 2011.

Industry	Jobs	Households	Individuals
Estimated total number	**8.8**	**5.0**	**8.8**
Federal government (total)	**14.3%**	**25.0%**	**14.3%**
Administrative support occupations, including clerical	14.3%	25.0%	14.3%
State government (total)	**14.3%**	**25.0%**	**14.3%**
Service occupations	14.3%	25.0%	14.3%
Mining (total)	**14.3%**	**25.0%**	**14.3%**
Mechanics and repairers	14.3%	25.0%	14.3%
Transportation, communication, and utilities (total)	**14.3%**	**25.0%**	**14.3%**
Mechanics and repairers	14.3%	25.0%	14.3%
Services (total)	**42.9%**	**50.0%**	**42.9%**
Executive, administrative, and managerial	14.3%	25.0%	14.3%
Service occupations	14.3%	25.0%	14.3%
Mechanics and repairers	14.3%	25.0%	14.3%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 8-12. – Employment characteristics, Coldfoot, 2011.

Characteristic	Community Coldfoot
All adults	
Number	10.0
Mean weeks employed	38.5
Employed adults	
Number	8.8
Percentage	87.5%
Jobs	
Number	9
Mean	1.0
Minimum	1.0
Maximum	1.0
Months employed	
Mean	10.1
Minimum	4.0
Maximum	12.0
Percentage employed year-round	71.4%
Mean weeks employed	44.0
Households	
Number	5.0
Employed	
Number	5.0
Percentage	100.0%
Jobs per employed household	
Mean	1.8
Minimum	1.0
Maximum	2.0
Employed adults	
Mean	
Employed households	1.8
Total households	1.8
Minimum	1.0
Maximum	2.0
Mean person-weeks of employment	50.9

Source ADF&G Division of Subsistence household surveys, 2012.

2009:2). 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. Core questions and responses from Coldfoot residents are summarized in Figure 8-5. In 2011, residents of Coldfoot reported being equally concerned about a lack of subsistence foods and a lack of store-bought foods; 25% of Coldfoot households said their subsistence foods did not last and 25% said that their store-bought foods did not last (Figure 8-5). In addition, 50% of households worried about having enough food. However, even more households (75%) were concerned that the food they had did not last and that they could not get more. It is noticeable that 25% of Coldfoot households said that they lacked resources to get food at some point during the study year 2011 (Figure 8-5).

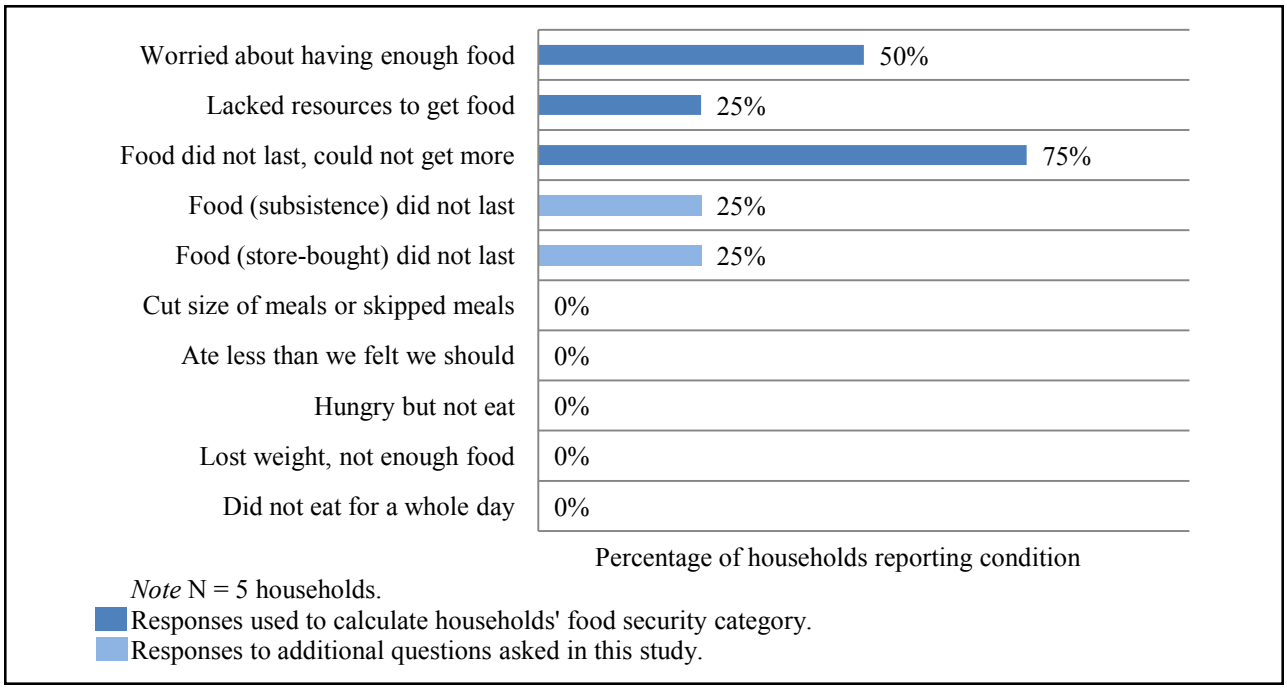


Figure 8-5.– Food insecure conditions, Coldfoot, 2011.

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Coldfoot, the state of Alaska, and the United States are summarized in Figure 8-6. In Coldfoot in 2011, 75% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." The remaining households (25%) had low food security. In 2011, Coldfoot households had approximately 10% lower levels of high and marginal food security and approximately 16% higher levels of low food security than surveyed households in Alaska as well as the United States in 2010 as a whole (Nord et al. 2009:21). It is important to note that the study did not find any Coldfoot households in the category of very low food security (Figure 8-6).

Figure 8-7 portrays the mean number of food insecure conditions per household by food security category by month. For households with low food security, food insecurity conditions peaked during winter months from December to February. Figure 8-8 shows that from November through February

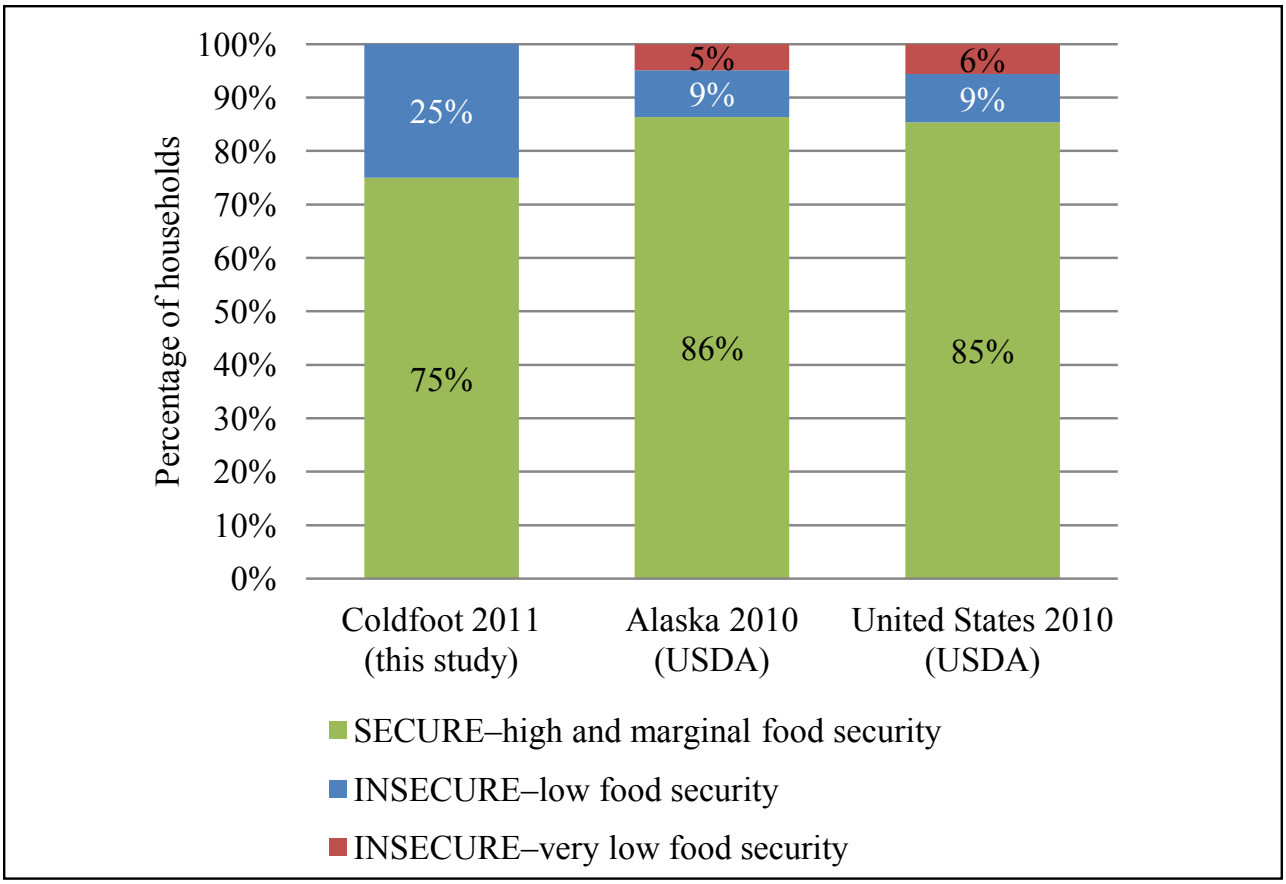


Figure 8-6.– Food insecure categories, Coldfoot, 2011.

between 25% and 50% of Coldfoot households reported that their food did not last. Late fall, especially the months of November and December were reported as the months when households worried about either their subsistence or store-bought foods not lasting. Furthermore, November was the only month during 2011 when 50% of Coldfoot households had concerns about their overall food sources not lasting. In comparison, January and February were reported as the months in which store-bought foods as well as any foods did not last (Figure 8-8).

Late fall and winter in interior Alaska can often be a time of food insecurity. As shown in Figure 8-7, the highest number of food insecurity conditions occurred for low food secure households in Coldfoot between November and February. The months of November and December were also the months in which Coldfoot households with high and marginal food security reported some concerns over their food sources. One possible explanation for the increased number of households with concerns about food security during the winter months could be that Coldfoot households either did not have the time, or were not able to harvest important subsistence resources such as caribou, and were thus running low on their existing wild food resources harvested in the previous year. According to the study, spring, summer, and early fall months, were the most food secure. This might be explained by greater abundance for subsistence harvesting and seasonal employment opportunities.

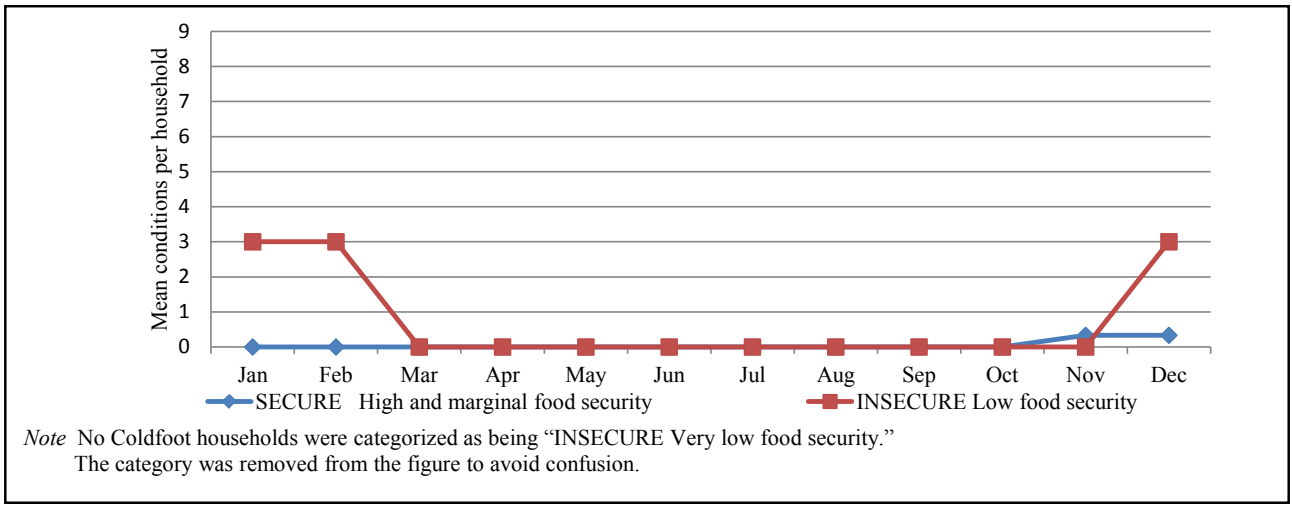


Figure 8-7.– Mean number of food insecure conditions for each month food was reported not to have lasted, Coldfoot, 2011.

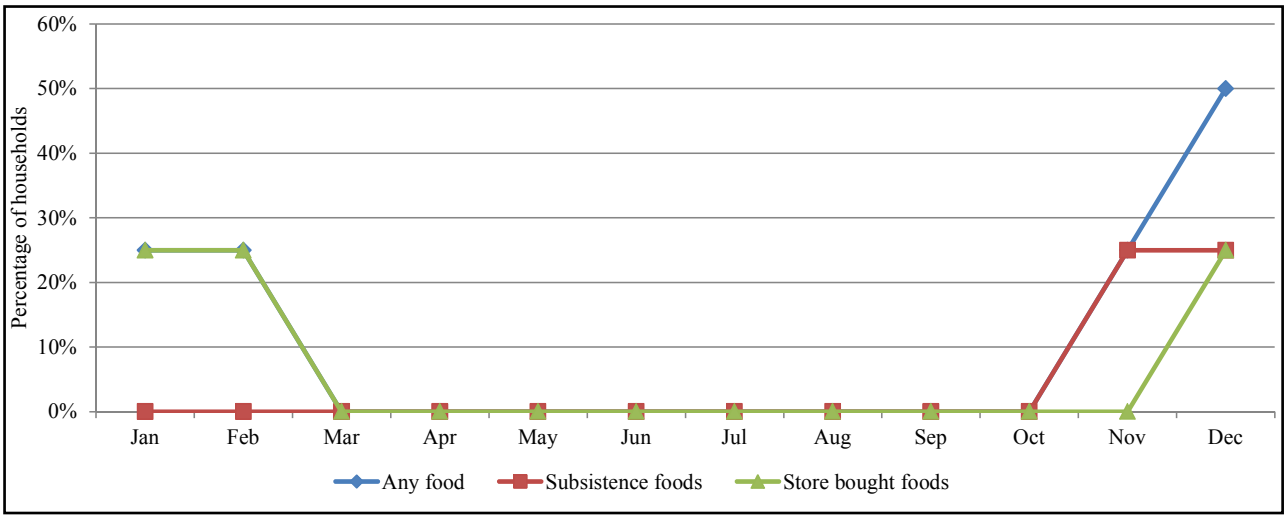


Figure 8-8.– Comparison of months where foods did not last, Coldfoot, 2011.

Table 8-13. – Changes in household uses of resources compared to recent years, Coldfoot, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	4	4	4	100%	4	100%	1	25%
All resources	4	4	2	50%	2	50%	0	0%
Salmon	4	1	0	0%	1	100%	0	0%
Nonsalmon fish	4	0	0	0%	0	0%	0	0%
Large game	4	4	2	50%	1	25%	1	25%
Small game	4	0	0	0%	0	0%	0	0%
Marine mammals	4	0	0	0%	0	0%	0	0%
Migratory waterfowl	4	0	0	0%	0	0%	0	0%
Other birds	4	1	1	100%	0	0%	0	0%
Bird eggs	4	0	0	0%	0	0%	0	0%
Marine invertebrates	4	0	0	0%	0	0%	0	0%
Vegetation	4	4	2	50%	2	50%	0	0%

Source ADF&G Division of Subsistence household surveys, 2011.

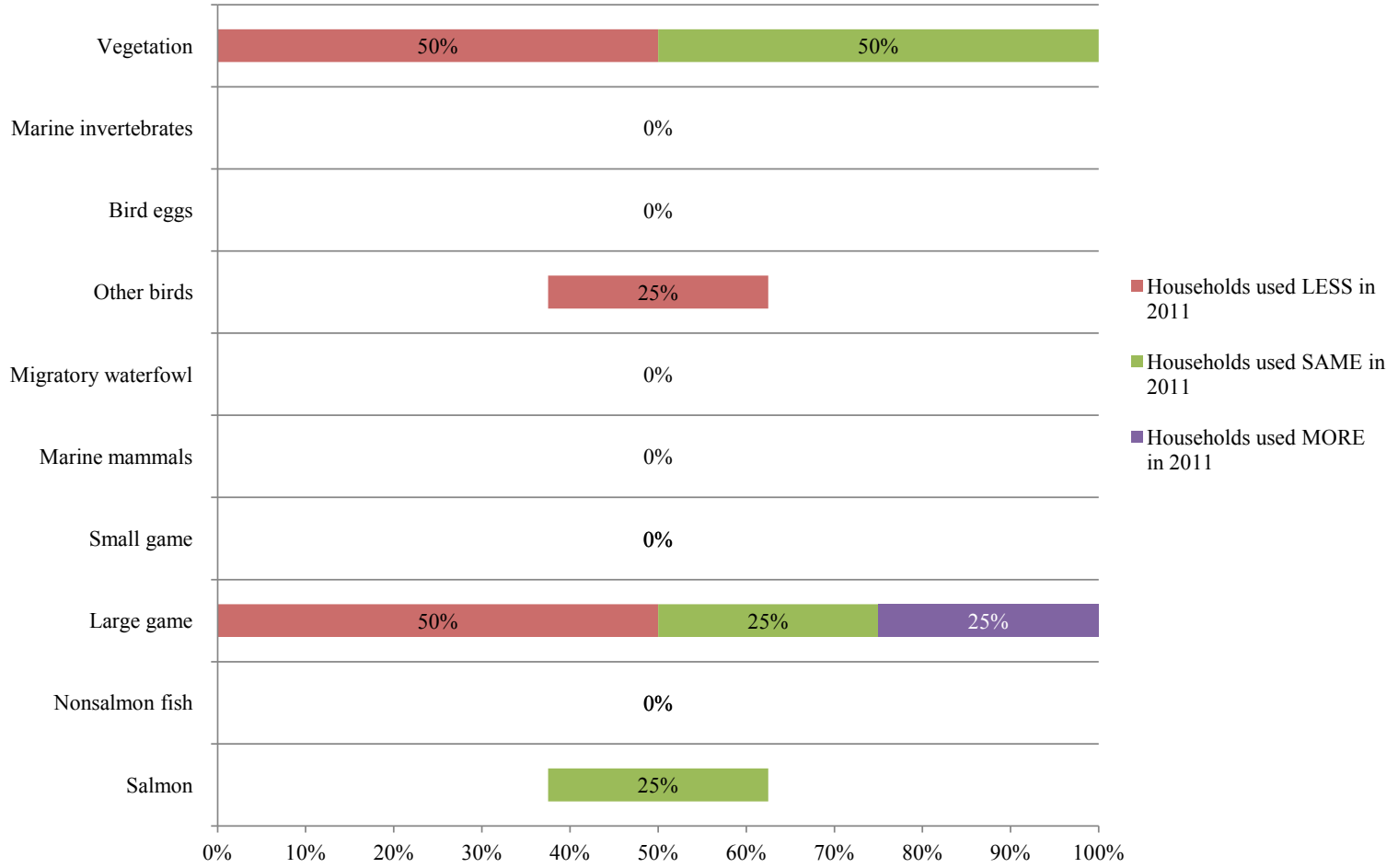
a. Valid responses do not include households that did not provide any response and households reporting never use.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 8-13 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 8-13, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 8-9 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (4 households), and therefore differ from those reported in Table 8-13.

One-half (50%) of the Coldfoot respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); 50% said that, overall, their harvests and uses of wild resources were about the same as the recent past (Table 8-13). As depicted in Figure 8-9, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households.

For example, for vegetation, 50% of all interviewed households (Figure 8-9), and 50% of all those who provided an assessment (Table 8-13), indicated less use, while 50% of all households and 50% of those providing assessments indicated the same levels of use in 2011 than in previous years. Coldfoot households indicated that they used less large game (50% of all households, 50% of those providing



Note Percentages are based on the total number of households in the community (N = 4 households). Unlabeled percentages are less than 5%.

Figure 8-9.– Changes in household uses of resources compared to recent years, Coldfoot, 2011.

assessment) in 2011 than in recent years. In comparison, about 25% of all households and 25% of those that provided assessments reported using about the same amount of large game in 2011.

Table 8-14 depicts the reasons Coldfoot respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reason most cited for less use of wild resources overall was working/no time (100%). Personal and family obligations and interference by work were cited as the 2 main reasons for less use of large game. In comparison, availability of resources and lack of effort were cited as the 2 main reasons for less use of vegetation. Interference by work was cited as the main reason for less use of other birds.

Overall, 100% of Coldfoot's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; all households also said that their use of a wild resource category had remained the same. In comparison, 25% of households said that their use of at least one category had increased (Table 8-13). Interference by work was the most frequently cited reason for lower use of any resource category in 2011 (50% of all Coldfoot's households who reported a reason for less use), followed by personal and family obligations (25%), availability of resources (25%), and lack of effort (25%) (Figure 8-10).

LOCAL CONCERNS REGARDING RESOURCES

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

Most of the Coldfoot residents' concerns about wild resources were related to large land mammals. In 2011, only a few Coldfoot respondents reported successful harvest of large land mammals, and the entire harvest was comprised solely of caribou. One respondent said that he had seen only a few caribou in the area for several years, and that large game animals had become scarce around Coldfoot. Some residents interviewed noted that this was potentially due to the increased number of non-local hunters coming to the area to hunt, especially for caribou and Dall sheep. Another respondent noted that current regulations greatly limit access to nearby hunting areas thus making hunting very challenging. Another respondent expressed concern for the declining number of Dall sheep in the area and said that

Table 8-14. – Reasons for less household uses of resources compared to recent years, Coldfoot, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	4	4	1	25.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%
All resources	4	2	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	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	0	0	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 game	4	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	0	0	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	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	1	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%
Bird eggs	0	0	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	0	0	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	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 8-14.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	4	4	0	0.0%	2	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All resources	4	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	0	0	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 game	4	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	0	0	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	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	1	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	0	0	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	2	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, 2011.

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

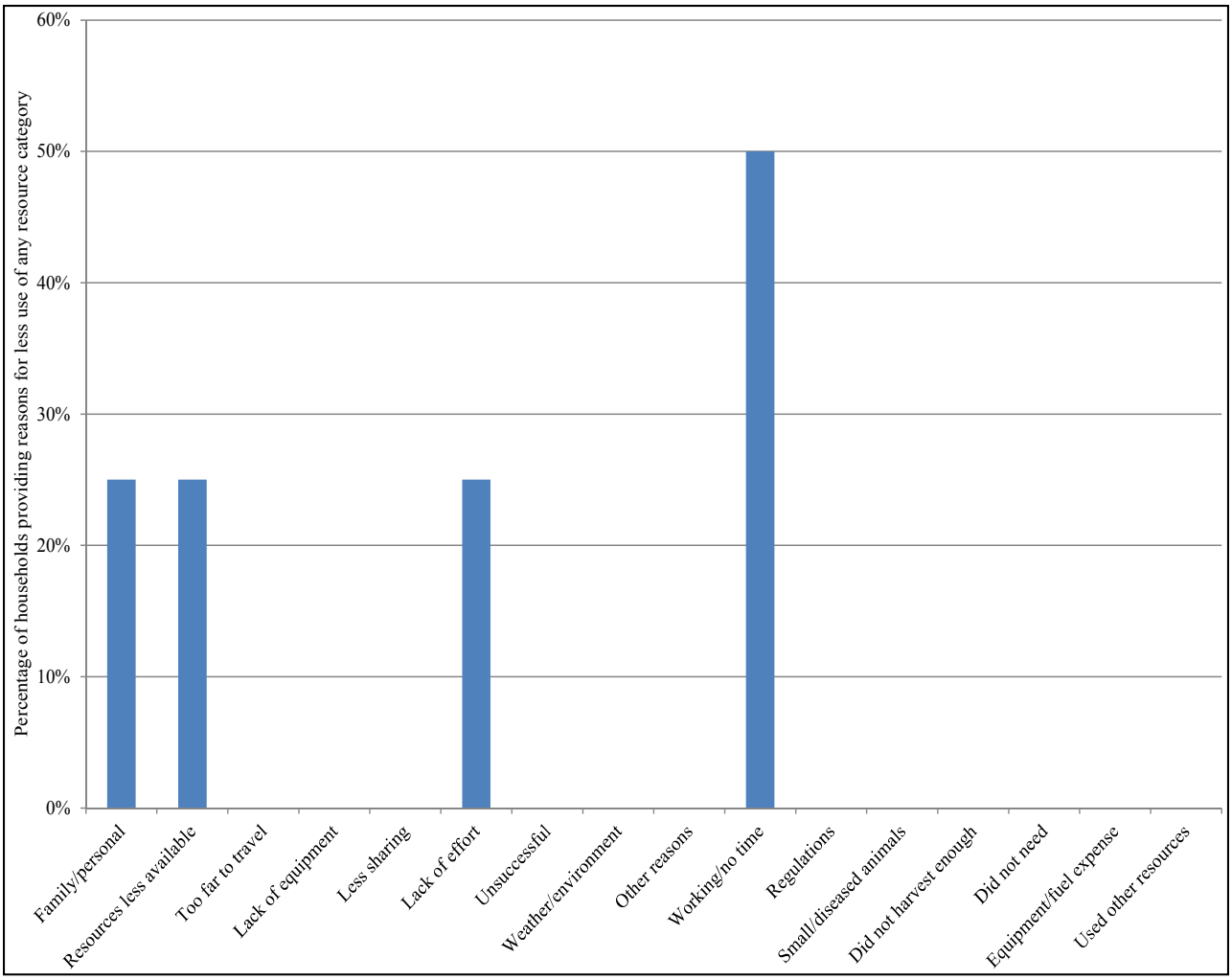


Figure 8-10.– Reasons for less household uses of any resource compared to recent years, Coldfoot, 2011.

current federal management is giving too much opportunity for non-local hunters and hunting guides to use the area for harvesting large land animals. Residents would like to see more priority given to hunting opportunities for local residents.

SUMMARY

The household survey findings demonstrated that residents of Coldfoot harvested a small but important amount of selected wild resources in 2011. Most Coldfoot residents are busy working throughout the year, which makes the time available for harvesting wild resources limited, and the resources themselves even more greatly appreciated. Most wild resources are harvested close to the community. Compared to the neighboring community of Wiseman, or other rural Alaska communities, the per capita harvest by Coldfoot residents was small in 2011. Several households said that regulations, particularly those related to access to hunting areas, severely limit their large mammal hunting. As

noted above, community members also expressed concern over the increased hunting pressure brought on by non-local hunters on the Central Arctic, Teshekpuk, and Western caribou herds as well as on the local Dall sheep populations.

ACKNOWLEDGEMENTS

The research team would like to thank the people of Coldfoot for their affability and for taking the time to participate in this study. Our research was conducted in March, which is prime Aurora Borealis viewing time, and there were many guests using the food, lodging, and fuel facilities at Coldfoot Camp. Everyone in the greater community of Coldfoot was very busy but took the time to participate and assist us with our research. Chad Konklin, the manager of Coldfoot Camp, was our main contact and provided much-needed assistance with identifying and locating local households.

CHAPTER 9: WISEMAN

Prepared by Malla Kukkonen

COMMUNITY BACKGROUND

The original settlement of Wiseman was established at the confluence of Wiseman Creek and Middle Fork Koyukuk River in 1908. It was originally called Wright's, then Wright's City, then Nolan, and finally Wiseman, as it is known today. The community first developed around Wright's Roadhouse about 12 road miles north of Coldfoot. With declining gold production around Coldfoot, and a particularly rich strike at Nolan Creek in 1907, Wiseman quickly evolved into the new center of gold mining activity in the upper Koyukuk River region. Between 1907 and 1912, most of the commercial establishments and government officials from Coldfoot relocated upriver to Wiseman (Spude et al. 2011:229–230; Buzzell 2007:21). By 1916, the population of Wiseman had increased to 320 residents and the settlement rapidly grew into the biggest town in the Koyukuk mining district (Scott 1993:39).

Many prospectors working the gold mines at both Nolan Creek and Hammond River left soon after 1916 to serve in World War I (Marshall 1991:43–44). Declining gold production did not, however, stop the remaining Wiseman residents from pursuing development of their community and in 1918 Wiseman residents petitioned to get radio service in the community. Their request was filled by the Army Signal Corps sometime between 1923 and 1925 when a wireless station came to town. With the radio connection, Wiseman became the radio communication center for the Arctic. More development quickly followed—the first gravel airstrip was built in 1926 with the help of residents' fiscal contributions and manual labor. The airstrip was further improved in 1930 (Scott 1993:40–42).

Wiseman got its first school in 1924 and the area school, which originally operated in Coldfoot from the fall of 1919 to 1923, moved to Wiseman in 1927 (Jack Reakoff, Wiseman resident, personal communication, October 4, 2012; Spude et al. 2011:232). The territorial school cabin, which was originally built for the school in Coldfoot, was relocated to Wiseman in 1928 to become the new schoolhouse. Today, this log cabin is one of the several surviving historical structures, and it continues to be inhabited by a current Wiseman resident (Jack Reakoff, Wiseman resident, personal communication, October 4, 2012). By 1930, the population of Wiseman had dropped to 58, and by 1939 there were only 53 people in Wiseman. Regardless, the community school served as a territorial school from 1934 to 1941 (ADCCED 2012b). During this period, both the Euro-Americans and Alaska Natives living in the community engaged in both the subsistence and cash economy (Scott 1993:44).

With the onset of World War II, many of the remaining young miners left to join the armed forces

and the mining economy in the region continued to decline (Scott 1993:42). The community school also closed and many residents, especially families with children, left Wiseman (Jack Reakoff, Wiseman resident, personal communication, October 4, 2012). Other than the post office, which closed in 1956, the community had minimal services in the postwar years. The remaining population began to rely more and more on wild resources; first as a source of food and then as a source of cash income through selling furs. Alaska census figures for 1950, 1960, 1970, and 1980 do not include Wiseman as a place of residency since the census only recorded cities, towns, and villages of more than 25 residents. It is remarkable that unlike neighboring Coldfoot, Wiseman was never entirely abandoned: between 1940 and 1972 the population of Wiseman is estimated to have varied between 8–25 residents (Scott 1993:42–50, 52–53).

The construction of the James W. Dalton Highway (also known as the North Slope Haul Road) and the trans-Alaska Pipeline System (TAPS) in the 1970s brought an end to the quiet life of the few remaining Wiseman residents. The Haul Road was opened to local traffic in 1976, and after the State of Alaska took over the maintenance of the highway in the late 1970s, several Wiseman residents were hired to work on the road. At the time, Wiseman residents were very concerned about the changes the new road would bring to their everyday life; at the same time, the road provided a new, more affordable route for acquiring supplies from Fairbanks (Scott 1993:51–52). As described earlier, there are no census estimates available for the population of Wiseman until 1990, but according to Scott (1993:54) a total of 18 households moved in and out of Wiseman between 1980 and 1990. The 1990 census recorded a population of 33 (Scott 1993:53).

Since the 1990s the population of Wiseman has gradually declined, and according to the 2010 census, Wiseman had a population of 14 permanent residents (U. S. Census Bureau 2011a). The school, which was operated in the community center, closed in November 2002, and since then Wiseman children have been home-schooled (ADCCED 2012b). Current Wiseman residents continue to rely heavily on wild resources, and as 1 of the 11 resident zone communities of the Gates of the Arctic National Park and Preserve, community residents have preferential access to harvest wild resources in the park (U.S. Department of the Interior 2012c). The cash economy of current Wiseman residents is largely comprised of self-employment, including selling of handcrafted items and furs, seasonal visitor services, seasonal highway maintenance jobs, or employment provided by federal or state agencies.

DEMOGRAPHY

According to the federal census, Wiseman had 14 residents in 2010 (U. S. Census Bureau 2011a) (Table 9-1). Figure 9-1 shows the population of the community from 1990 through 2011. The chart shows that the population of Wiseman has been gradually declining since the 1990s.

The household survey conducted for this study during the month of March in 2012 found an estimated population of 13 residents. There were no Alaska Natives residing in the community in 2011 (Table

Table 9-1. – Population of Wiseman, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
5	14	0	0.0%	5	13	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. U.S. Census, 2011.

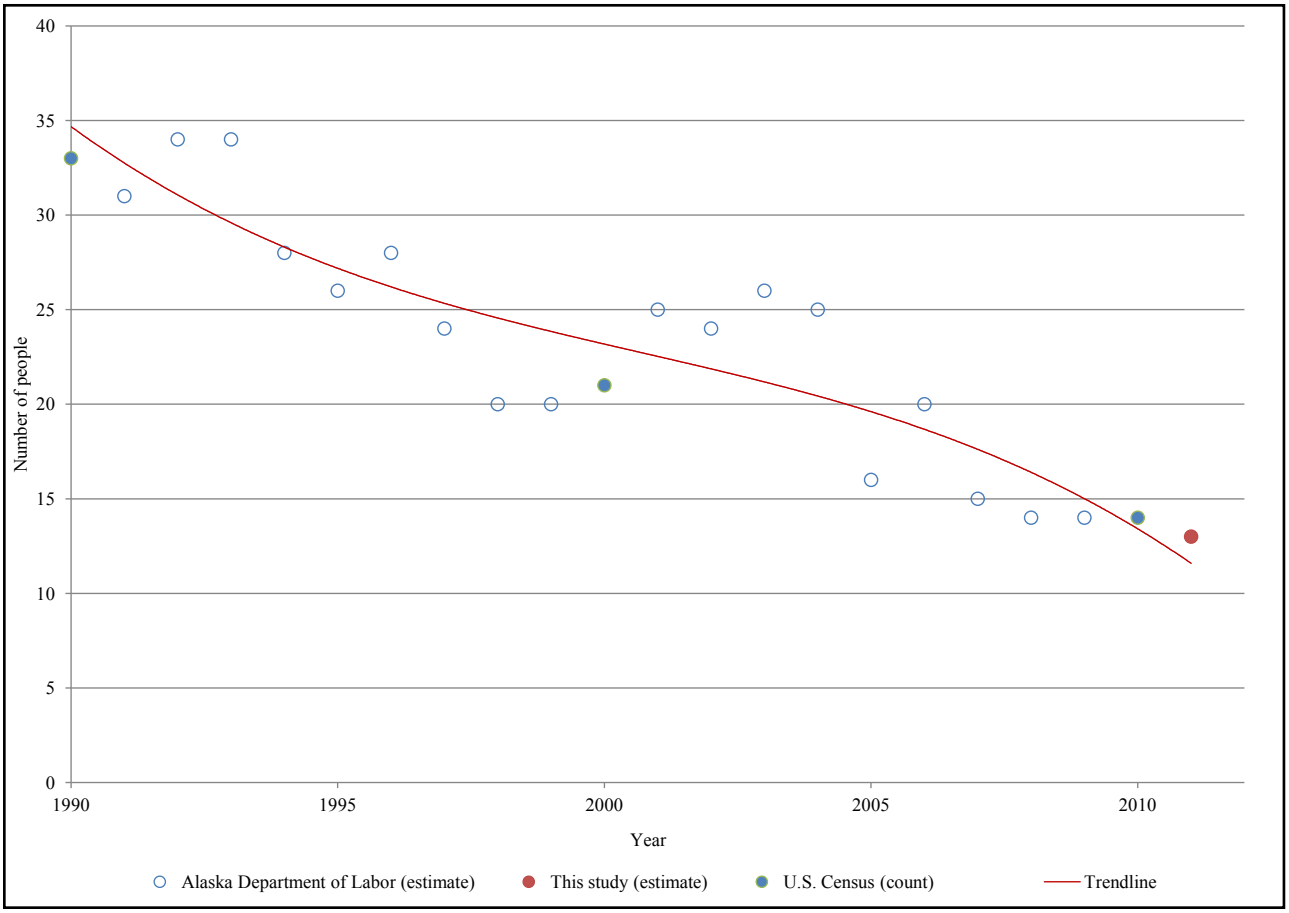


Figure 9-1.– Population history, Wiseman, 1990–2011.

Table 9-2. – Sample achievement, Wiseman, 2011.

Number of dwelling units	5.0
Interview goal	5.0
Households interviewed	5.0
Households failed to contact	0.0
Households declined to be interviewed	0.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	5.0
Refusal rate	0.0%
Final estimate of permanent households	5.0
Percentage of total households interviewed	100.0%
Interview weighting factor	1.0
Sampled population	13.0
Estimated population	13.0

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

9-1). The survey documented 5 year-round households in Wiseman in 2011 and all were interviewed (Table 9-2).

The mean number of years of residency for Wiseman household heads was about 26 years, and the average for the overall population was 21 years. The maximum length of residence was 45 years (Table 9-3). During the study year, 54% of residents were male and 46% were female. The largest age cohorts for males were 10–14 years of age, and 45–49 years of age. In comparison, the female population was evenly distributed between the age cohorts ranging from 10–19 years of age, 35–49 years of age, and the 75–79 age cohort (Figure 9-2; Table 9-4).

Of the Wiseman household heads interviewed, most (50%) were born in the United States outside the state of Alaska. Approximately 13% were born in Anchorage and 13% were born in other communities in Alaska. In comparison, approximately 25% of the household heads were foreign born (Table 9-5).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 9-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Wiseman residents in 2011. All Wiseman residents attempted to harvest resources in 2011. With reference to specific resource categories, 92% of residents hunted for large land mammals and gathered plants and berries, and 85% fished and hunted for birds. Fewer (69%) residents were involved in hunting or trapping furbearers. In comparison, all Wiseman residents processed some resources in 2011. Most residents (92%) participated in processing birds, fish, large land mammals, and plants and berries. A little less (77%) participated in processing furbearers.

Table 9-3. – Demographics and sample characteristics, Wiseman, 2011.

Characteristics	Wiseman
Sampled households	5.0
Eligible households	5.0
Percentage sampled	100.0%
Household size	
Mean	2.6
Minimum	1.0
Maximum	5.0
Sample population	13.0
Estimated community population	13.0
Age	
Mean	38.1
Minimum[a]	10.0
Maximum	77.0
Median	44.0
Length of residency	
Total population	
Mean	20.9
Minimum[a]	2.0
Maximum	45.0
Heads of household	
Mean	25.9
Minimum[a]	2.0
Maximum	45.0
Sex	
Estimated male	
Number	7.0
Percentage	53.8%
Estimated female	
Number	6.0
Percentage	46.2%
Alaska Native	
Estimated households[b]	
Number	0.0
Percentage	0.0%
Estimated population	
Number	0.0
Percentage	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

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

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

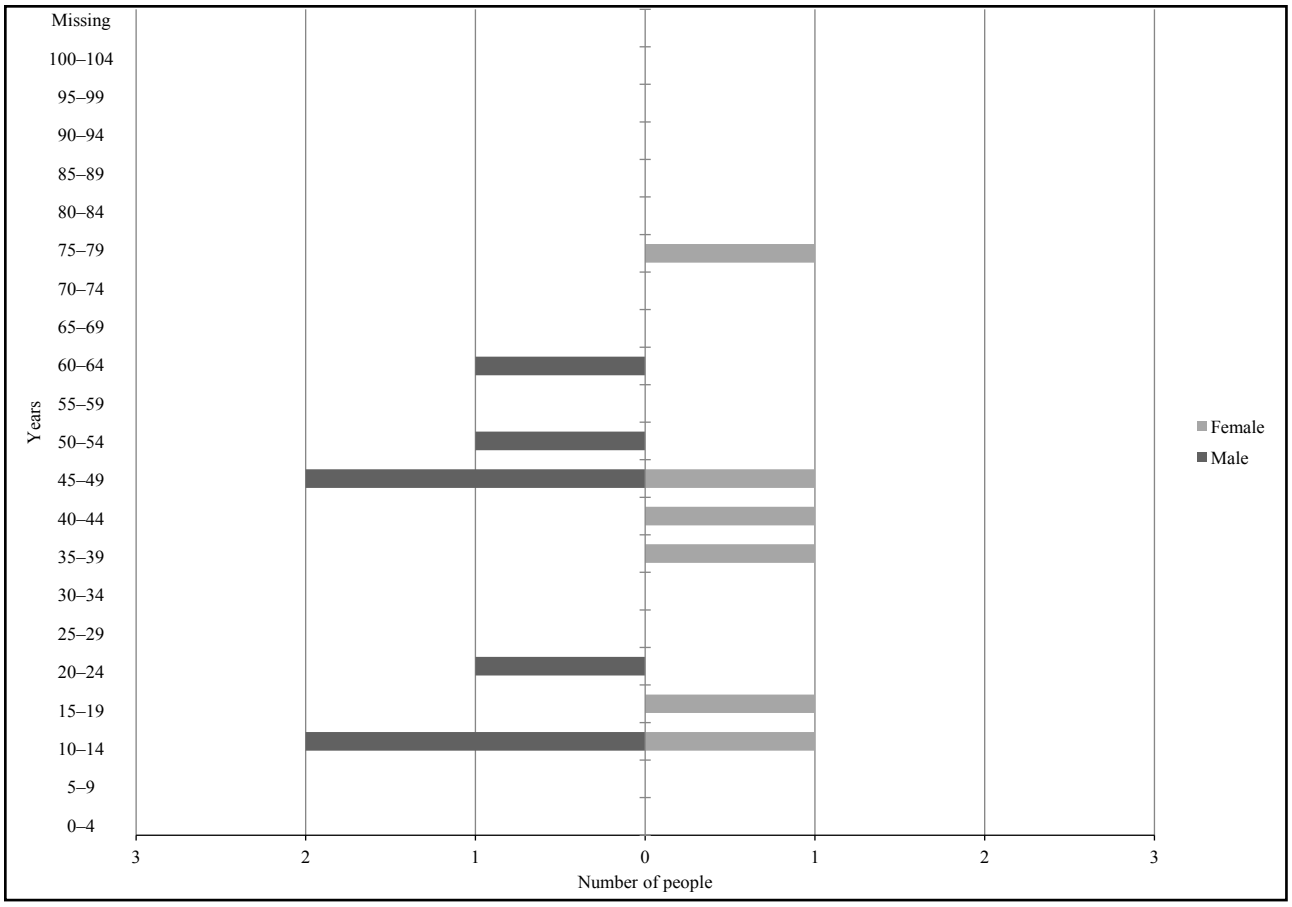


Figure 9-2.– Population profile, Wiseman, 2011.

Table 9-4. – Population profile, Wiseman, 2011.

	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	2.0	28.6%	28.6%	1.0	16.7%	16.7%	3.0	23.1%	23.1%
15–19	0.0	0.0%	28.6%	1.0	16.7%	33.3%	1.0	7.7%	30.8%
20–24	1.0	14.3%	42.9%	0.0	0.0%	33.3%	1.0	7.7%	38.5%
25–29	0.0	0.0%	42.9%	0.0	0.0%	33.3%	0.0	0.0%	38.5%
30–34	0.0	0.0%	42.9%	0.0	0.0%	33.3%	0.0	0.0%	38.5%
35–39	0.0	0.0%	42.9%	1.0	16.7%	50.0%	1.0	7.7%	46.2%
40–44	0.0	0.0%	42.9%	1.0	16.7%	66.7%	1.0	7.7%	53.8%
45–49	2.0	28.6%	71.4%	1.0	16.7%	83.3%	3.0	23.1%	76.9%
50–54	1.0	14.3%	85.7%	0.0	0.0%	83.3%	1.0	7.7%	84.6%
55–59	0.0	0.0%	85.7%	0.0	0.0%	83.3%	0.0	0.0%	84.6%
60–64	1.0	14.3%	100.0%	0.0	0.0%	83.3%	1.0	7.7%	92.3%
65–69	0.0	0.0%	100.0%	0.0	0.0%	83.3%	0.0	0.0%	92.3%
70–74	0.0	0.0%	100.0%	0.0	0.0%	83.3%	0.0	0.0%	92.3%
75–79	0.0	0.0%	100.0%	1.0	16.7%	100.0%	1.0	7.7%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**7.0**	**100.0%**	**100.0%**	**6.0**	**100.0%**	**100.0%**	**13.0**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 9-5. – Birthplaces of household heads, Wiseman, 2011.

Birthplace[a]	Percentage
Anchorage	12.5%
Other Alaska	12.5%
Other U.S.	50.0%
Foreign	25.0%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

RESOURCE HARVEST AND USE PATTERNS

Table 9-7 summarizes resource harvest and use characteristics for Wiseman in 2011, at the household level. All households used wild resources, attempted to harvest, and harvested at least 1 resource in 2011. The average total harvest was an estimated 764 lb usable weight per household, or 294 lb per capita. On average, households attempted to harvest 19 kinds of resources, harvested 17 kinds of resources, and used an average of 22 distinct kinds of resources. The maximum number of resources used by any household was 37. In addition, households, on average, gave away 5 resources and received 5 kinds of resources. All households reported sharing resources and all households reported receiving at least 1 kind of resource.

SPECIES USED AND SEASONAL ROUND

Residents of Wiseman harvest a wide variety of species throughout the year and often target specific species during certain seasons of the year following a cyclical harvest pattern. Wiseman residents are highly mobile, traveling around the area to harvest resources. Residents use motorized vehicles, such as highway vehicles and snowmachines, to access their hunting, fishing, and gathering areas.

Table 9-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table 9-9 lists the top 10 resources harvested, in terms of pounds per capita, and the most used resources by Wiseman households during 2011. Residents of Wiseman harvested an estimated total of 3,819 lb, or 294 lb per capita of wild resources (Table 9-8). Moose, caribou, and ptarmigan were the top 3 most harvested resources. Resources used by all households included Arctic grayling, moose, spruce grouse, blueberries, lowbush cranberries, and wood (Table 9-9).

Large land mammals are by far the most important subsistence resource for Wiseman residents as a source of protein. Hunting for large land mammals is a traditional and popular fall activity that often stretches into the winter, and most of the hunting takes place using highway vehicles or snowmachines. During the study year, 80% Wiseman households hunted large land mammals and 60% harvested large land mammals. Most of the large land mammal harvest was moose followed by caribou and Dall sheep (Table 9-8).

Table 9-6. – Estimated participation in subsistence harvesting and processing activities, Wiseman, 2011.

Total number of people	**13.0**
Birds	
Hunt	
Number	11.0
Percentage	84.6%
Process	
Number	12.0
Percentage	92.3%
Fish	
Fish	
Number	11.0
Percentage	84.6%
Process	
Number	12.0
Percentage	92.3%
Large land mammals	
Hunt	
Number	12.0
Percentage	92.3%
Process	
Number	12.0
Percentage	92.3%
Furbearers	
Hunt or trap	
Number	9.0
Percentage	69.2%
Process	
Number	10.0
Percentage	76.9%
Plants	
Gather	
Number	12.0
Percentage	92.3%
Process	
Number	12.0
Percentage	92.3%
Any resource	
Attempt	
Number	13.0
Percentage	100.0%
Process	
Number	13.0
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 9-7. – Resource harvest and use characteristics, Wiseman, 2011.

Characteristic	
Mean number of resources used per household	21.8
Minimum	10.0
Maximum	37.0
95% confidence limit (±)	0.0%
Median	20.0
Mean number of resources attempted to harvest per household	18.6
Minimum	6.0
Maximum	31.0
95% confidence limit (±)	0.0%
Median	19.0
Mean number of resources harvested per household	17.4
Minimum	6.0
Maximum	28.0
95% confidence limit (±)	0.0%
Median	19.0
Mean number of resources received per household	4.8
Minimum	1.0
Maximum	10.0
95% confidence limit (±)	0.0%
Median	4.0
Mean number of resources given away per household	4.6
Minimum	1.0
Maximum	11.0
95% confidence limit (±)	0.0%
Median	3.0
Household harvest, pounds	
Minimum	12.9
Maximum	1,585.8
Mean	763.7
Median	1,010.3
Total harvest weight, pounds	3,818.5
Community per capita harvest, pounds	293.7
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	100.0%
Number of households in sample	5.0
Number of resources available	120.0

Source ADF&G Division of Subsistence household surveys, 2012.

Table 9-8. – Estimated harvests and uses of fish, game, and plant resources, Wiseman, 2011.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
All resources	**100%**	**100%**	**100%**	**100%**	**100%**	**3,818.5**	**763.7**	**293.7**	**973.7**		**194.7**	**0%**
Fish	**100%**	**80%**	**80%**	**100%**	**60%**	**323.4**	**64.7**	**24.9**	**230.0**		**46.0**	**0%**
Salmon	**100%**	**20%**	**20%**	**100%**	**40%**	**151.2**	**30.2**	**11.6**	**30.0**		**6.0**	**0%**
Chum salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coho salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	60%	0%	0%	60%	20%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	60%	20%	20%	40%	20%	151.2	30.2	11.6	30.0	Ind.	6.0	0%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	20%	0%	0%	20%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**100%**	**80%**	**80%**	**60%**	**60%**	**172.2**	**34.4**	**13.2**	**200.0**		**40.0**	**0%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacfic halibut	40%	0%	0%	40%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	40%	40%	40%	0%	0%	21.6	4.3	1.7	9.0	Ind.	1.8	0%
Char	40%	40%	40%	0%	20%	14.4	2.9	1.1	11.0		2.2	0%
Dolly Varden	20%	20%	20%	0%	0%	1.8	0.4	0.1	2.0	Ind.	0.4	0%
Lake trout	20%	20%	20%	0%	20%	12.6	2.5	1.0	9.0	Ind.	1.8	0%
Arctic grayling	100%	60%	60%	40%	40%	77.7	15.5	6.0	111.0	Ind.	22.2	0%
Northern pike	40%	40%	40%	0%	0%	18.0	3.6	1.4	4.0	Ind.	0.8	0%
Longnose sucker	20%	20%	20%	0%	0%	28.0	5.6	2.2	40.0	Ind.	8.0	0%
Trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

-continued-

Table 9-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Whitefishes	20%	20%	20%	20%	0%	12.5	2.5	1.0	25.0		5.0	0%
Broad whitefish	20%	0%	0%	20%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Round whitefish	20%	20%	20%	0%	0%	12.5	2.5	1.0	25.0	Ind.	5.0	0%
Unknown whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**100%**	**80%**	**60%**	**60%**	**60%**	**2,905.5**	**581.1**	**223.5**	**103.0**		**20.6**	**0%**
Large land mammals	**100%**	**80%**	**60%**	**60%**	**60%**	**2,888.0**	**577.6**	**222.2**	**10.0**		**2.0**	**0%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	80%	80%	60%	20%	60%	520.0	104.0	40.0	4.0	Ind.	0.8	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	100%	80%	60%	40%	60%	2,160.0	432.0	166.2	4.0	Ind.	0.8	0%
Muskox	20%	0%	0%	20%	20%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	80%	80%	40%	40%	20%	208.0	41.6	16.0	2.0	Ind.	0.4	0%
Small land mammals[b]	**60%**	**60%**	**60%**	**0%**	**0%**	**17.5**	**3.5**	**1.3**	**93.0**		**18.6**	**0%**
Beaver	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Fox	40%	40%	40%	0%	0%	0.0	0.0	0.0	27.0		5.4	0%
Arctic fox	20%	20%	20%	0%	0%	0.0	0.0	0.0	15.0	Ind.	3.0	0%
Red fox	40%	40%	40%	0%	0%	0.0	0.0	0.0	12.0		2.4	0%
Red fox—cross phase	20%	40%	20%	0%	0%	0.0	0.0	0.0	5.0	Ind.	1.0	0%
Red fox—red phase	40%	40%	40%	0%	0%	0.0	0.0	0.0	7.0	Ind.	1.4	0%
Hare	40%	40%	40%	0%	0%	17.5	3.5	1.3	7.0		1.4	0%
Snowshoe hare	40%	40%	40%	0%	0%	17.5	3.5	1.3	7.0	Ind.	1.4	0%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	60%	60%	60%	0%	0%	0.0	0.0	0.0	13.0	Ind.	2.6	0%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	60%	60%	60%	0%	0%	0.0	0.0	0.0	31.0	Ind.	6.2	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Arctic ground (parka) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red (tree) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 9-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Wolf	40%	60%	40%	0%	0%	0.0	0.0	0.0	7.0	Ind.	1.4	0%
Wolverine	60%	60%	60%	0%	0%	0.0	0.0	0.0	8.0	Ind.	1.6	0%
Marine mammals	**20%**	**0%**	**0%**	**20%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Seal	20%	0%	0%	20%	0%	0.0	0.0	0.0	0.0		0.0	0%
Bearded seal	20%	0%	0%	20%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern fur seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Harbor seal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sea otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Steller sea lion	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Walrus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whale	20%	0%	0%	20%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**100%**	**80%**	**80%**	**40%**	**40%**	**311.8**	**62.4**	**24.0**	**317.0**		**63.4**	**0%**
Migratory birds	**60%**	**60%**	**60%**	**20%**	**0%**	**50.6**	**10.1**	**3.9**	**42.0**		**8.4**	**0%**
Ducks	60%	60%	60%	0%	0%	23.0	4.6	1.8	26.0		5.2	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Common eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
King eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	20%	20%	20%	0%	0%	6.0	1.2	0.5	6.0	Ind.	1.2	0%
Long-tailed duck	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pintail	40%	40%	40%	0%	0%	6.4	1.3	0.5	8.0	Ind.	1.6	0%
Scaup	20%	20%	20%	0%	0%	0.0	0.0	0.0	2.0	Ind.	0.4	0%
Scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Teal	20%	20%	20%	0%	0%	1.0	0.2	0.1	2.0	Ind.	0.4	0%
Wigeon	20%	20%	20%	0%	0%	6.8	1.4	0.5	6.0		1.2	0%
American wigeon	20%	20%	20%	0%	0%	6.8	1.4	0.5	6.0	Ind.	1.2	0%
Unknown ducks	20%	20%	20%	0%	0%	2.8	0.6	0.2	2.0	Ind.	0.4	0%
Geese	60%	60%	60%	20%	0%	27.6	5.5	2.1	16.0		3.2	0%
Canada geese	60%	60%	60%	0%	0%	10.8	2.2	0.8	9.0		1.8	0%
Cacklers	20%	20%	20%	0%	0%	2.4	0.5	0.2	2.0	Ind.	0.4	0%
Lesser Canada geese	40%	40%	40%	0%	0%	8.4	1.7	0.6	7.0	Ind.	1.4	0%
Unknown Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	40%	20%	20%	20%	0%	16.8	3.4	1.3	7.0	Ind.	1.4	0%
Unknown geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%

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Table 9-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Shorebirds	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Golden plover	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabirds and loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Loons	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red-throated loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow-billed loon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Other birds	**100%**	**80%**	**80%**	**20%**	**40%**	**261.2**	**52.2**	**20.1**	**275.0**		**55.0**	**0%**
Upland game birds	100%	80%	80%	20%	40%	261.2	52.2	20.1	275.0		55.0	0%
Grouse	100%	80%	80%	20%	20%	32.2	6.4	2.5	46.0		9.2	0%
Spruce grouse	100%	80%	80%	20%	20%	32.2	6.4	2.5	46.0	Ind.	9.2	0%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ptarmigan	80%	80%	80%	0%	40%	229.0	45.8	17.6	229.0	Ind.	45.8	0%
Owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowy owl	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**100%**	**100%**	**60%**	**40%**	**277.8**	**55.6**	**21.4**	**323.7**		**64.7**	**0%**

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Table 9-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
	Use	Attempt	Harvest	Receive	Give	Total	Mean	Per capita	Total	Unit	Mean	confidence
Berries	**100%**	**100%**	**100%**	**40%**	**40%**	**264.8**	**53.0**	**20.4**	**68.2**		**13.6**	**0%**
Blueberry	100%	100%	100%	20%	20%	60.8	12.2	4.7	15.2	Gal.	3.0	0%
Lowbush cranberry	100%	100%	100%	20%	40%	169.0	33.8	13.0	42.3	Gal.	8.5	0%
Highbush cranberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crowberry (blackberry)	60%	60%	60%	0%	0%	1.0	0.3	0.1	1.3	Gal.	0.3	0%
Currants	20%	20%	20%	0%	0%	0.0	0.0	0.0	1.0	Gal.	0.2	0%
Raspberry	80%	80%	80%	0%	20%	34.0	6.8	2.6	8.5	Gal.	1.7	0%
Other wild berry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**60%**	**60%**	**60%**	**0%**	**40%**	**13.0**	**2.6**	**1.0**	**220.5**	**Gal.**	**44.1**	**0%**
Hudson's Bay tea	20%	20%	20%	0%	0%	3.0	0.6	0.2	3.0	Gal.	0.6	0%
Wild rose hips	20%	20%	20%	0%	0%	2.0	0.4	0.2	0.5	Gal.	0.1	0%
Unknown mushrooms	40%	40%	40%	0%	0%	8.0	1.6	0.6	8.0	Gal.	1.6	0%
Fireweed	20%	20%	20%	0%	0%	0.0	0.0	0.0	0.3	Gal.	0.1	0%
Stinkweed	40%	40%	40%	0%	20%	0.0	0.0	0.0	76.0	Gal.	15.2	0%
Wood	**100%**	**80%**	**80%**	**20%**	**20%**	**0.0**	**0.0**	**0.0**	**35.0**	**Cord**	**7.0**	**0%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 9-9. – Top 10 resources harvested and used, Wiseman, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	166.2	1	1.	Arctic grayling	100.0%
2	2.	Caribou	40.0	2	1.	Moose	100.0%
3	3.	Ptarmigan	17.6	3	1.	Spruce grouse	100.0%
4	4.	Dall Sheep	16.0	4	1.	Blueberry	100.0%
5	5.	Lowbush cranberry	13.0	5	1.	Lowbush cranberry	100.0%
6	6.	Sockeye salmon	11.6	6	1.	Wood	100.0%
7	7.	Arctic grayling	6.0	7	2.	Caribou	80.0%
8	8.	Blueberry	4.7	8	2.	Ptarmigan	80.0%
9	9.	Raspberry	2.6	9	2.	Raspberry	80.0%
10	10.	Spruce grouse	2.5	10	3.	Chinook salmon	60.0%
				11	3.	Sockeye salmon	60.0%
				12	3.	Dall sheep	60.0%
				13	3.	Lynx	60.0%
				14	3.	Marten	60.0%
				15	3.	Wolverine	60.0%
				16	3.	Crowberry	60.0%

Source ADF&G Division of Subsistence household surveys, 2012.

Small land mammals and furbearers are very important to Wiseman residents for personal use but also as a source of income. The species valued most by community residents include wolves, wolverines, and lynx. The yearly timing of small land mammal hunting or trapping depends on the snow depth but takes place during the winter months. During the study year, 60% of households participated in small land mammal harvesting and all were successful. In 2011, the 3 most harvested small land mammal species in terms of numbers of animals harvested included martens, Arctic foxes, and lynx. Snowshoe hares made up all the edible weight of small land mammal harvest in the study year (Table 9-8).

Migratory birds travel through the Wiseman area in the spring and stop to rest along the rivers, marshes, various ponds, and even roadside areas. At times, residents also travel to the North Slope to hunt geese. During the study year, 60% of Wiseman households reported harvesting migratory birds. Upland game birds, such as spruce grouse and ptarmigan, are harvested by Wiseman residents throughout the year. During the study year, all Wiseman households used upland game birds and 80% reported harvesting them (Table 9-8).

Harvesting vegetation, particularly berries in the summer, is another important activity for Wiseman residents. During the study year, all households reported harvesting berries. Another commonly used vegetation resource is firewood, which is used for heating homes. During the study year, 80% of Wiseman households reported harvesting wood while all households reported using wood (Table 9-8).

Regardless of being more than 1,000 miles from the mouth of the Yukon River, the residents of Wiseman have historically harvested and used small amounts of salmon in their diet. Salmon, mainly chum and Chinook salmon, arrive at the Wiseman area in July, but because subsistence salmon fishing

in the Wiseman area has been closed since 1978, residents are not able to fish for salmon locally.[1] Instead some residents travel to other locations around the state to fish for salmon. In 2011, only 20% of Wiseman households said they had harvested salmon, but all households used the resource (Table 9-8).

Before the salmon fishing closure, Wiseman residents traditionally relied on nonsalmon fish such as Arctic grayling, burbot, and whitefishes prior to the arrival of the salmon. The nonsalmon fish usually arrive in mid-May— depending on the timing of breakup. Since the salmon fishing closure was initiated, nonsalmon fish have become even more important to Wiseman residents. During the summer months many community members engage in rod and reel fishing for Arctic grayling and whitefishes along the Koyukuk and Jim rivers in the vicinity of Wiseman. In the winter, residents ice fish in nearby lakes for, for example, lake trout. During the study year, 80% of households reported harvesting and all households reported using nonsalmon fish (Table 9-8).

HARVEST QUANTITIES

Table 9-8 reports estimated wild resource harvests and uses by Wiseman residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Wiseman was 3,819 lb, or 294 lb per capita (Table 9-8). In terms of pounds harvested, large land mammals constituted the largest portion of the subsistence harvest totaling 2,888 lb (222 lb per capita) (Table 9-8; Figure 9-3). The most common single resource harvested was moose, at an estimated 2,160 lb (166 lb per capita) (tables 9-8 and 9-9).

Birds constituted the second largest percentage (8%) of the total harvest of wild resources during 2011 (Figure 9-3). The Wiseman household total harvest of birds was 312 lb, or 24 lb per capita (Table 9-8). Most of the bird harvest was upland game birds (261 lb, or 20 lb per capita), and included mostly ptarmigan but also spruce grouse (Table 9-8). In 2011, ptarmigan ranked third on the list of top 10 most harvested resources, and second on the list of percentage of households using the resource (Table 9-9).

1. During the construction of the Dalton Highway in the late 1970s, all waters in the highway corridor were closed to subsistence fishing. The closure continues to be in place for subsistence salmon fishing because there is concern for possible overharvesting due to the easy access to various creeks from along the road, and also because the waters are considered essential spawning grounds for salmon (John Burr, Sport Fish Biologist, ADF&G, Fairbanks, personal communication, September 28, 2012).
2. Resources that are not eaten, such as firewood and some furbearers, are included in the table but are given a conversion factor of zero.

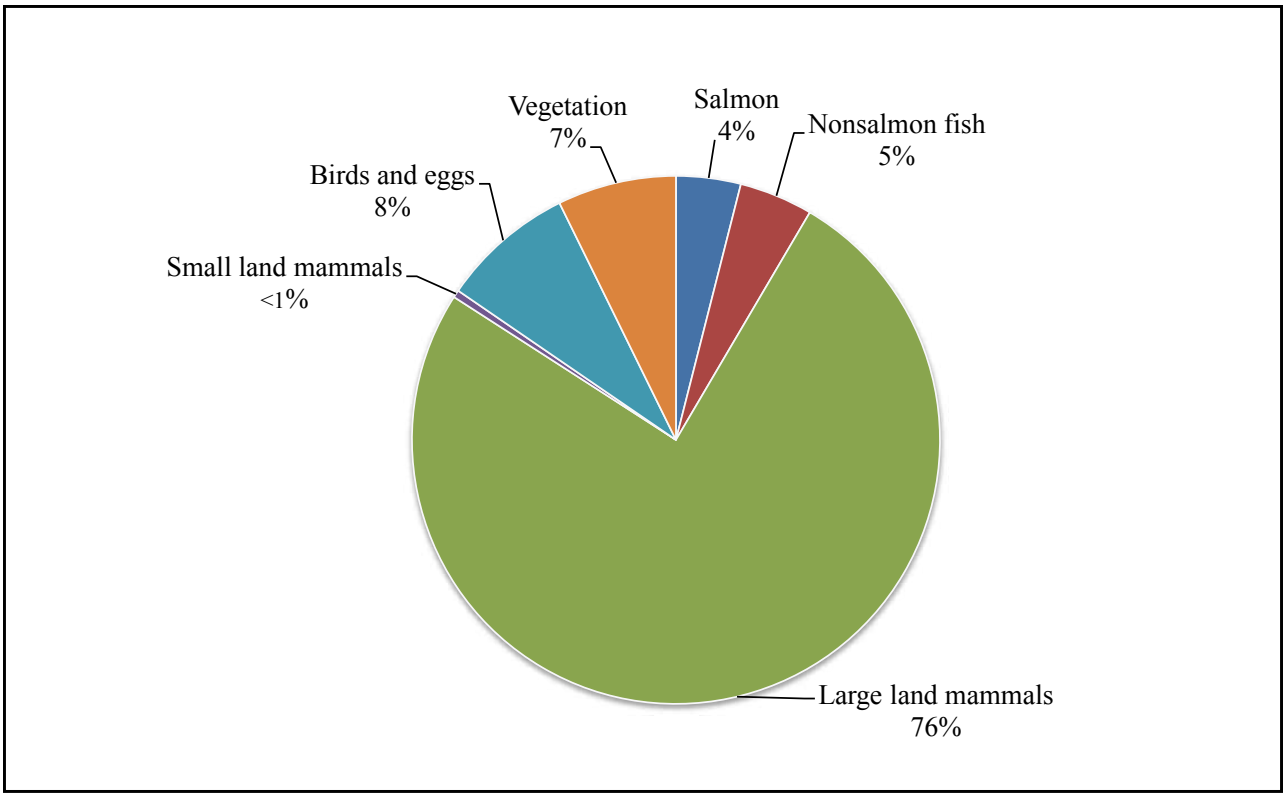


Figure 9-3.– Composition of harvest by category, Wiseman, 2011.

Vegetation was the third most harvested wild resource category used by Wiseman residents in 2011 (Figure 9-3). All Wiseman households used and harvested vegetation, particularly berries, during the study year (Table 9-8). The total harvest was 278 lb (21 lb per capita) with lowbush cranberries, blueberries, and raspberries being the most used species (Table 9-9). In 2011, the per capita harvest of lowbush cranberries ranked fifth, blueberries eighth, and raspberries ninth on the list of top 10 resources harvested by Wiseman residents (Table 9-9).

Nonsalmon fish and salmon were harvested in smaller amounts compared to large land mammals, birds, and vegetation during the study year (Figure 9-3). The total harvest of nonsalmon fish in 2011 was 172 lb (13 lb per capita) (Table 9-8). The largest harvests in terms of weight included Arctic grayling (78 lb, or 6 lb per capita), longnose suckers (28 lb, or 2 lb per capita), and burbot (22 lb, or 2 lb per capita) (Table 9-8; Figure 9-4). In 2011, the per capita harvest of Arctic grayling ranked seventh on the list of top 10 resources harvested by Wiseman residents (Table 9-9).

The harvest of small land mammals for wild foods composed less than 1% of the total Wiseman wild resource harvest in 2011 (Figure 9-3). Instead, the majority of small land mammals were taken for their furs. The only species taken for food consumption in 2011 was snowshoe hare with a total of 18 lb, or 1 lb per capita, harvested (Table 9-8).

SHARING AND RECEIVING WILD RESOURCES

In 2011, Wiseman households harvested an average of 17 different kinds of resources (Table 9-7). The maximum number of resources harvested by a household was 28. It is notable that in 2011, all Wiseman households used wild resources from nearly all the resource categories included in this survey. Estimates of sharing indicated that all Wiseman households received and gave away wild resources. On average households both received and gave away 5 kinds of resources (Table 9-7). One of the highest received resources was fish, with all Wiseman households receiving fish and 60% giving away fish (Table 9-8). Of the large variety of received wild resources, Chinook salmon was received by most (60%) Wiseman households while only 20% reported giving some away (Table 9-8). It needs to be noted that because there was no reported harvest of Chinook salmon in the community in 2011, Wiseman households received this resource from outside the community. However, this pattern also indicates that once received, the resource was shared with other community members.

Another widely shared resource was large land mammals with 60% of Wiseman households both giving and receiving large land mammals (Table 9-8). The 2 most shared large land mammal species were moose and caribou. Forty percent of Wiseman households received moose and 60% gave away moose in 2011. In comparison, 20% of households received caribou while 60% gave away the resource. Even though Wiseman residents did not harvest any marine mammals in 2011, a small number (20%) of Wiseman households used bearded seals and whales. Another resource that was received from outside the community was Pacific halibut, with 40% of Wiseman households using the resource (Table 9-8).

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Wiseman residents, salmon composed only 4% of the total wild resource harvest in pounds in 2011 (Figure 9-3). The total harvest of salmon during the study year was 151 lb (12 lb per capita). All of the harvest was sockeye salmon, which was harvested with dip nets (tables 9-8 and 9-10). In addition, some Wiseman households used Chinook salmon during the study year; however, as noted above, these salmon were received, not harvested (Table 9-8). The waters from Yukon River north to Prudhoe Bay have been closed for salmon fishing since 1978, therefore, Wiseman residents harvest their salmon from other locations, such as the Copper and Yukon rivers.

NONSALMON FISH

In 2011, Wiseman residents harvested an estimated total of 172 lb (13 lb per capita) of nonsalmon fish (Table 9-8). In terms of total pounds and percentages, most of the harvest was Arctic grayling

Table 9-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Wiseman, 2011.

		Removed from commercial catch		Subsistence methods													
				Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

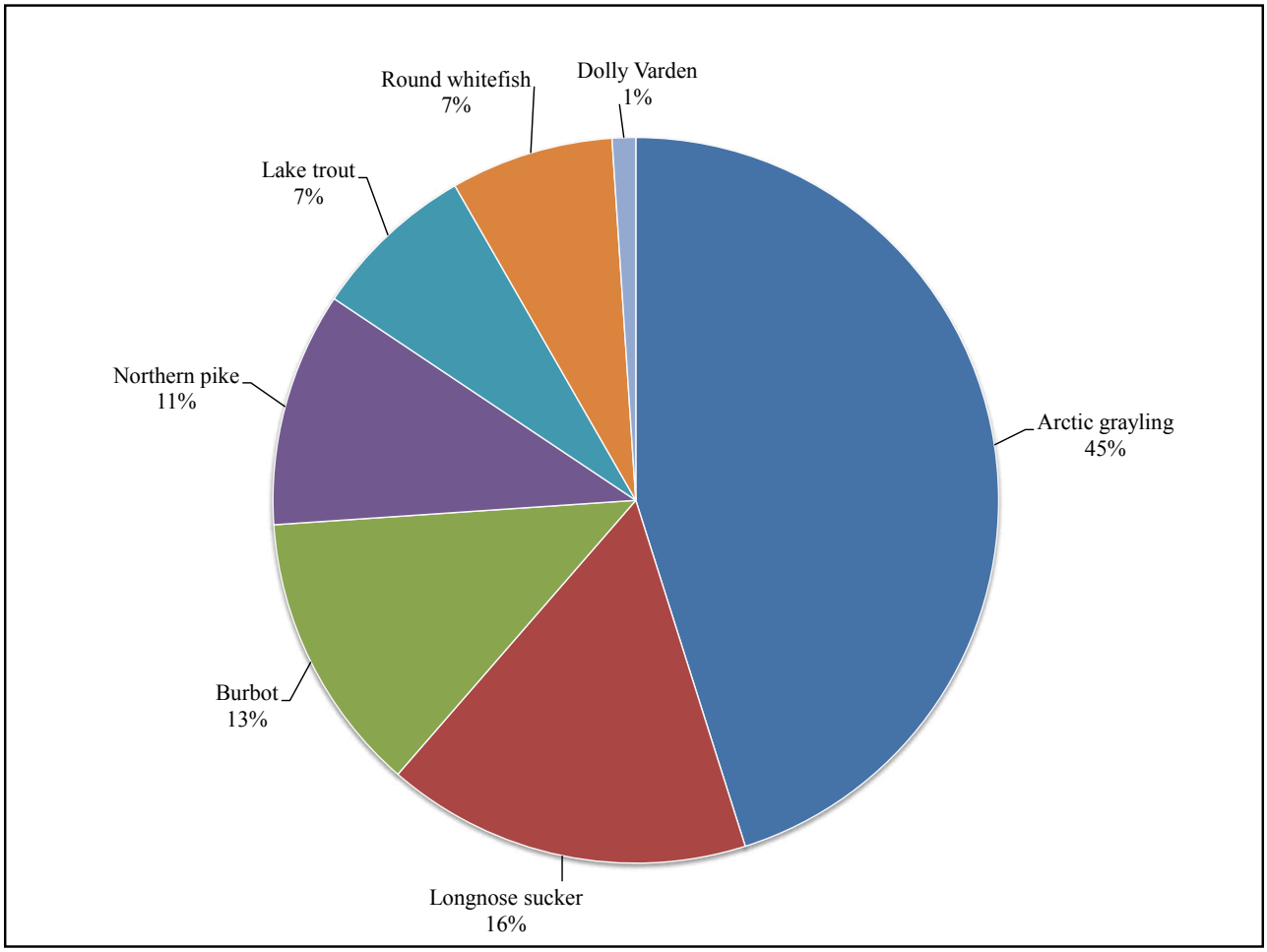


Figure 9-4.– Composition of nonsalmon fish harvest, Wiseman, 2011.

(45%), followed by longnose suckers (16%), burbot (13%), and northern pike (11%) (Table 9-8; Figure 9-4). Table 9-11 presents the estimated percentages of nonsalmon fish harvested by gear type, resource, and total number harvested in 2011. Wiseman residents harvested most of their nonsalmon fish with subsistence gear such as gillnets, set lines, or by ice fishing. A considerable amount of Arctic grayling were also caught with rod and reel gear (Table 9-11).

In the study year 2011, Wiseman residents used several areas for harvesting nonsalmon fish. For example, the closest fishing locations for Arctic grayling and whitefishes were in the vicinity of Wiseman and Coldfoot. The more remote harvest areas included Bob Johnson and Chandalar lakes. In addition, there were 2 other harvest areas south of Coldfoot: one on the South Fork Koyukuk River and another one on Jim River (Figure 9-5).

LARGE LAND MAMMALS

In 2011, large land mammals made up 76% of the total Wiseman harvest by weight (Figure 9-3). Moose composed 75% of the large land mammal harvest by weight, caribou 18%, and Dall sheep 7%

Table 9-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Wiseman, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	64.0%	51.6%	10.5%	27.7%	74.5%	79.3%	25.5%	20.7%	100.0%	100.0%
	Total	0.0%	0.0%	64.0%	51.6%	10.5%	27.7%	74.5%	79.3%	25.5%	20.7%	100.0%	100.0%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	42.9%	45.3%	6.0%	15.8%	0.0%	0.0%	4.5%	12.5%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	4.5%	12.5%	4.5%	12.5%	0.0%	0.0%	4.5%	12.5%
Arctic char	Gear type	0.0%	0.0%	1.6%	2.0%	0.0%	0.0%	1.3%	1.3%	0.0%	0.0%	1.0%	1.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	1.0%	1.0%	0.0%	0.0%	1.0%	1.0%	0.0%	0.0%	1.0%	1.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	42.9%	26.4%	6.0%	9.2%	0.0%	0.0%	4.5%	7.3%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	4.5%	7.3%	4.5%	7.3%	0.0%	0.0%	4.5%	7.3%
Lake trout	Gear type	0.0%	0.0%	46.9%	47.3%	0.0%	0.0%	40.3%	30.8%	100.0%	100.0%	55.5%	45.1%
	Resource	0.0%	0.0%	54.1%	54.1%	0.0%	0.0%	54.1%	54.1%	45.9%	45.9%	100.0%	100.0%
	Total	0.0%	0.0%	30.0%	24.4%	0.0%	0.0%	30.0%	24.4%	25.5%	20.7%	55.5%	45.1%
Arctic grayling	Gear type	0.0%	0.0%	0.8%	5.1%	14.3%	28.3%	2.7%	13.2%	0.0%	0.0%	2.0%	10.5%
	Resource	0.0%	0.0%	25.0%	25.0%	75.0%	75.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.5%	2.6%	1.5%	7.8%	2.0%	10.5%	0.0%	0.0%	2.0%	10.5%
Northern pike	Gear type	0.0%	0.0%	31.3%	31.5%	0.0%	0.0%	26.8%	20.5%	0.0%	0.0%	20.0%	16.3%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	20.0%	16.3%	0.0%	0.0%	20.0%	16.3%	0.0%	0.0%	20.0%	16.3%
Least cisco	Gear type	0.0%	0.0%	19.5%	14.1%	0.0%	0.0%	16.8%	9.2%	0.0%	0.0%	12.5%	7.3%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	12.5%	7.3%	0.0%	0.0%	12.5%	7.3%	0.0%	0.0%	12.5%	7.3%

Source ADF&G Division of Subsistence household surveys, 2012.

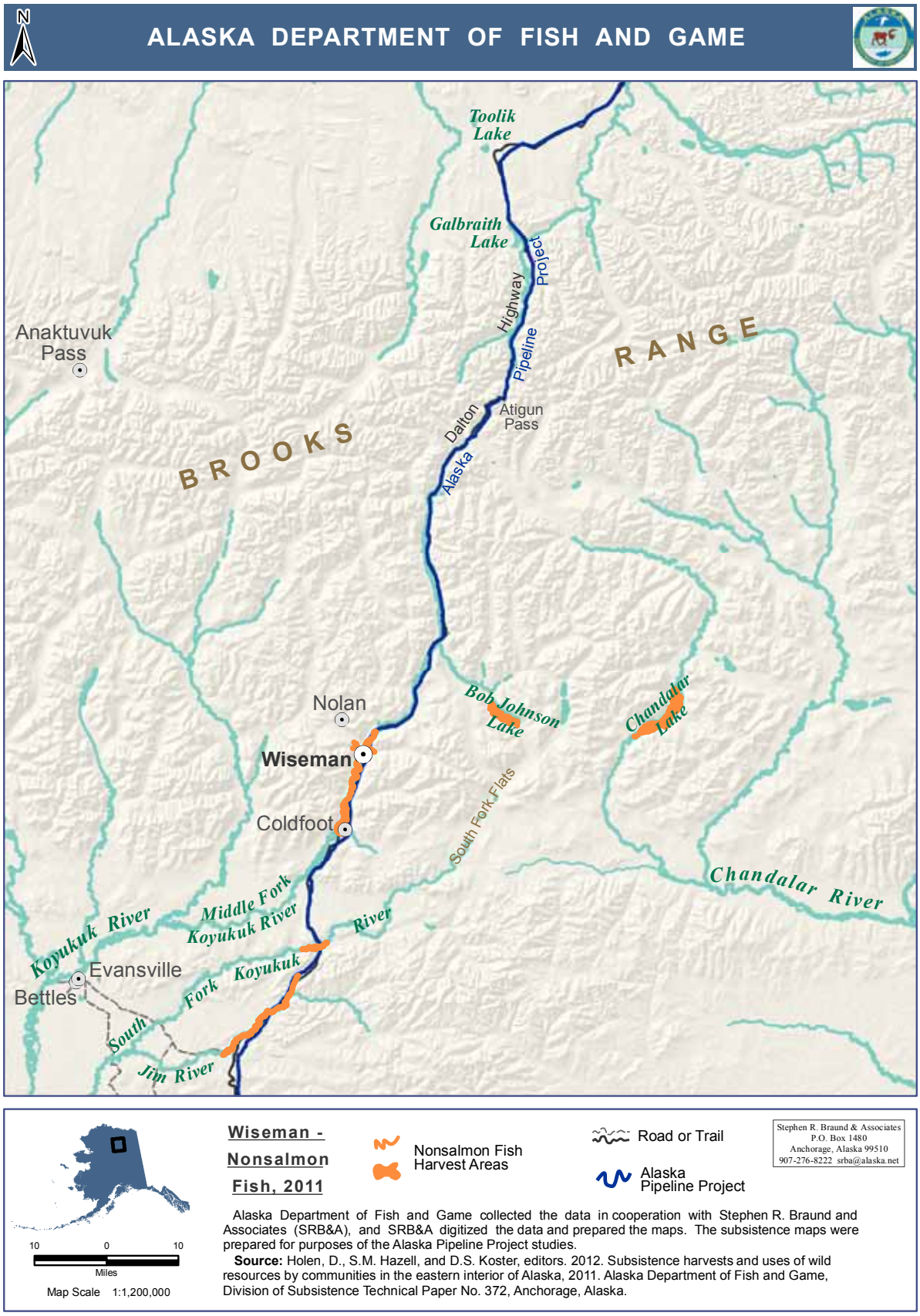


Figure 9-5.– Nonsalmon fish search and harvest areas, Wiseman, 2011.

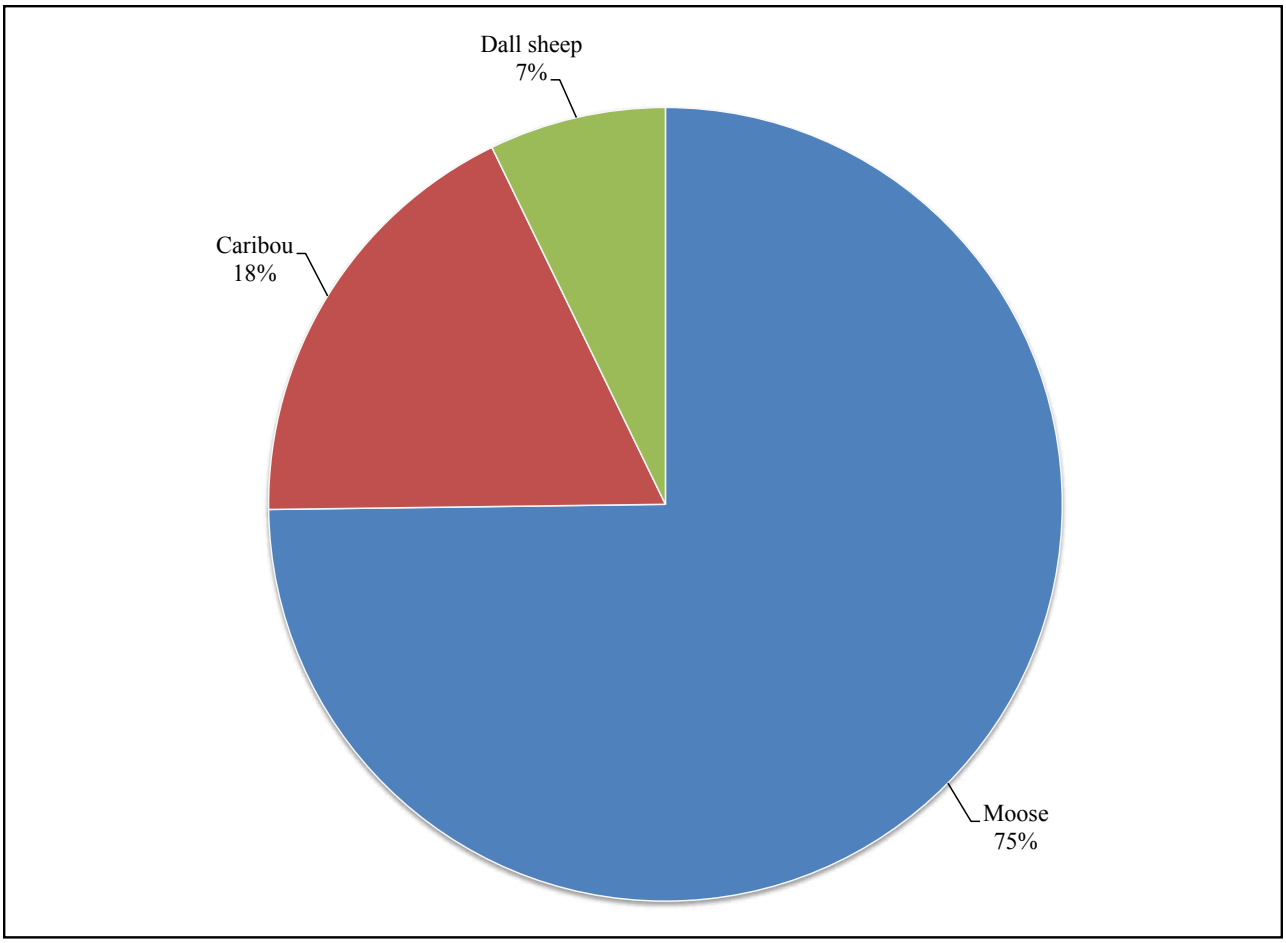


Figure 9-6.– Composition of large land mammal harvest, Wiseman, 2011.

(Figure 9-6). A large percentage (80%) of households hunted caribou, moose, and Dall sheep, but only 60% successfully harvested moose or caribou, and even less (40%) were successful at harvesting Dall sheep (Table 9-8). Nevertheless, all Wiseman households used moose and 80% of households used both caribou and Dall sheep during the study year (Table 9-8). In 2011, the total harvest of moose was 2,160 lb (166 lb per capita), the total caribou harvest 520 lb (40 lb per capita), and the total Dall sheep harvest 208 lb (16 lb per capita) (Table 9-8). Wiseman residents did not attempt to harvest any other large land mammal species in 2011. A small percentage (20%) of households did, however, report receiving and using muskoxen (Table 9-8).

In terms of pounds per capita harvested in 2011, moose and caribou rank first and second on the list of top 10 resources harvested (Table 9-9). According to the study, all successful moose and Dall sheep hunting took place in September 2011, while caribou were harvested in April, May, and November (Table 9-12). Wiseman respondents commented that for the past several years, hunting pressure on caribou and Dall sheep from non-local hunters coming to the area has increased substantially, making it harder for the local residents to meet their harvest goals.

Wiseman residents have traditionally used large areas for large land mammal hunting and knowledge

Table 9-12. – Estimated harvests of large game by month and sex, Wiseman, 2011.

				Caribou				Moose				
Harvest month	Bison	Black Bear	Brown Bear	Male	Female	Unknown	Goat	Male	Female	Unknown	Muskox	Dall Sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	2.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**0.0**	**2.0**	**2.0**	**0.0**	**0.0**	**4.0**	**0.0**	**0.0**	**0.0**	**2.0**

Source ADF&G Division of Subsistence household surveys, 2012.

of good hunting areas is passed along in families, and sometimes among community residents. In addition to using the Gates of the Arctic National Park area, Wiseman residents utilize select areas in game management units 24A, 26B, and 25A for searching for and hunting large land mammals. Wiseman residents also hunt along the Dalton Highway in the Dalton Highway Corridor Management Area (DHCMA). Under current regulations, hunting in the DHCMA is limited to areas 5 miles from each side of the highway and the use of motorized vehicles in the area is very limited; hunters are permitted to use only aircraft, boats, and licensed highway vehicles (only on designated roads). The use of snowmachines in the DHCMA is only allowed for subsistence taking of wildlife by residents living within the DHCMA. The use of firearms for hunting within the DHCMA is also very limited, but Wiseman residents are allowed to use firearms for subsistence hunting of large game. Any other harvesting of large land mammals in the DHCMA requires use of a bow and arrow.

In 2011, the hunting areas for moose largely followed the Dalton Highway Corridor extending north from Wiseman toward Atigun Pass, and south from Wiseman past Coldfoot. In addition there was a separate, large hunting area around Chandalar Lake. The 2011 caribou hunting areas followed the Dalton Highway Corridor north from Wiseman all the way up to the areas surrounding Galbraith and Toolik lakes. In addition, there were 2 small caribou hunting areas in the vicinity of Wiseman and Nolan (Figure 9-7). The 2011 Dall sheep hunting areas were very similar to the moose hunting areas with the exception of extending farther north, to the Galbraith Lake area, and stopping in the area of Coldfoot to the south. In the community review meeting Wiseman residents pointed out that the 2011 harvest area maps for Dall sheep and caribou in particular do not represent all of their traditional harvest and search areas. Rather they are a snapshot of the areas used during the study year 2011.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 9-8, the total harvest of edible small land mammals by Wiseman residents in 2011 was 18 lb (1 lb per capita) of snowshoes hares. In numbers of all small land mammals harvested, most of the harvest was martens (31 animals), Arctic foxes (15 animals), and lynx (13 animals). Most of these animals were taken for their furs but according to a key respondent occasionally some Wiseman residents consume lynx for food; however, because furbearers are not typically used for food consumption, no edible harvest weight estimates are usually produced. The harvest of small land mammals species for food consumption was less than 1% of the total harvest in 2011 (Figure 9-3). Wiseman residents' southernmost harvesting areas for small land mammals and furbearers in 2011 were along the Middle Fork Koyukuk River south of Coldfoot, and the northernmost area extended close to the Dietrich Camp landing strip. In addition, there were 2 separate harvest areas—one east of Coldfoot toward South Fork Flats and another one northeast of Wiseman toward Bob Johnson Lake (Figure 9-8).

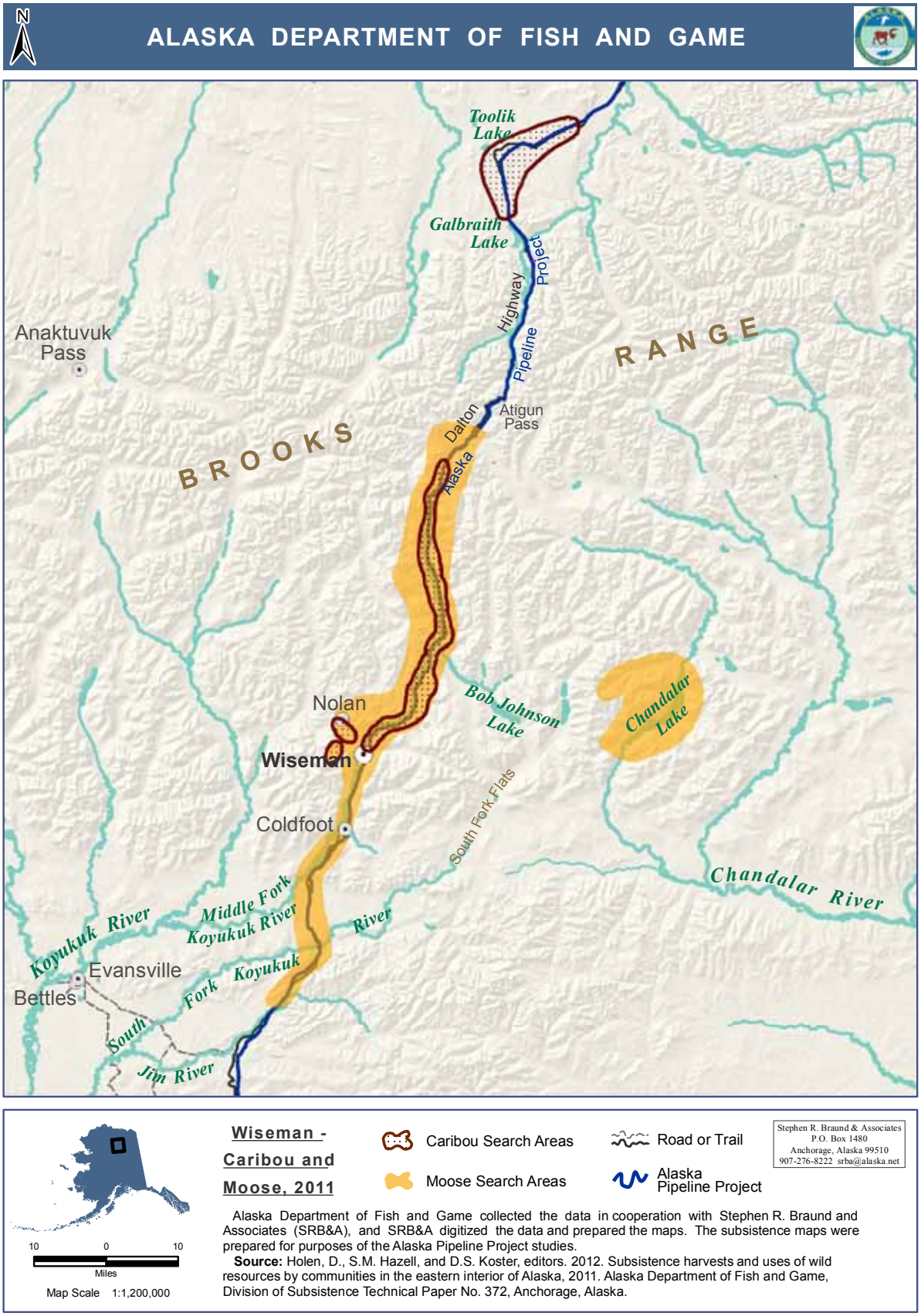


Figure 9-7.– Caribou and moose search and harvest areas, Wiseman, 2011.

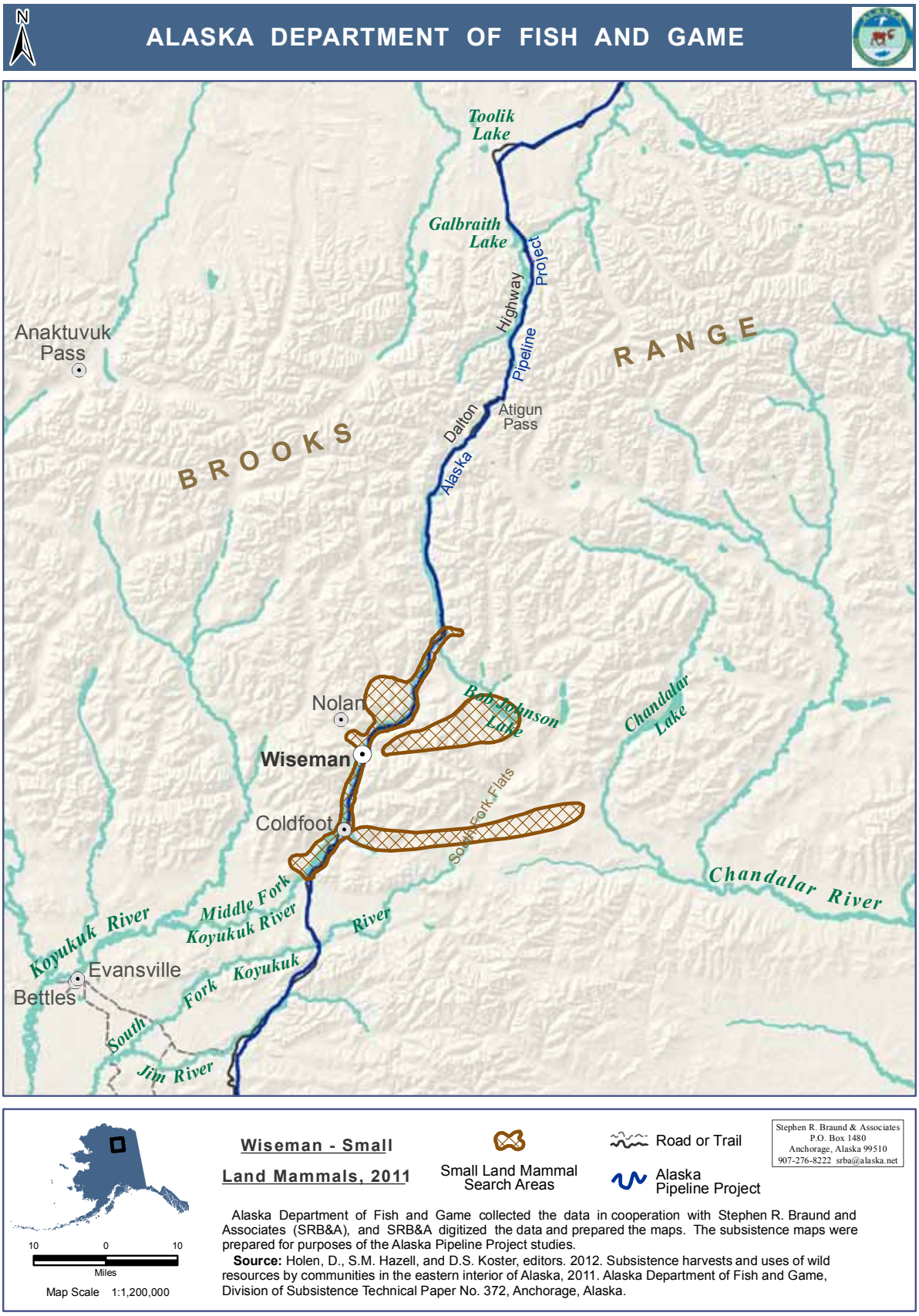


Figure 9-8.– Small land mammals search and harvest areas, Wiseman, 2011.

BIRDS

In 2011, the estimated total harvest of birds was 312 lb, or 24 lb per capita (Table 9-8). The majority of this harvest constituted upland game birds (261 lb, or 20 lb per capita), specifically ptarmigan. In comparison, the estimated total migratory waterfowl harvest was substantially less; 51 lb, or 4 lb per capita (Table 9-8). The migratory bird harvest constituted ducks, such as mallards and northern pintails, and geese, such as white-fronted geese and lesser Canada geese (Table 9-8).

In 2011, Wiseman residents harvested waterfowl along the Dalton Highway Corridor in the vicinity of Wiseman as well as north of Wiseman close to the Dietrich Camp landing strip. In addition, there was a larger waterfowl use area along the highway corridor south of Coldfoot (Figure 9-9). Upland game birds were harvested along the highway corridor in the vicinity of Wiseman but also south of Wiseman and past Coldfoot. In addition there were 2 separate use areas—one east of Coldfoot toward the South Fork Flats and another one northeast of Wiseman toward Bob Johnson Lake. (Figure 9-10). No gathering of bird eggs took place during the study year.

VEGETATION

All Wiseman households used and harvested vegetation in 2011 and the total harvest was an estimated 278 lb or 21 lb per capita (Table 9-8). The majority of this harvest was berries, particularly blueberries, lowbush cranberries, and raspberries. According to a Wiseman resident, berry crops can vary greatly from year to year, and 2011 was reported to be a fairly good berry year. Most of the other plants harvested were wild mushrooms but a small number of residents also gathered wild rose hips (Table 9-8). It should also be mentioned that 80% of Wiseman households harvested wood and all households reported using the resource, most likely for firewood to heat homes (Table 9-8). Wiseman respondents commented that for several years now it has been easier to find wood near the community because a lot of the trees were killed by beetles a few years back.

Most berries and firewood were harvested close to the communities of Wiseman and Coldfoot along the Dalton Highway Corridor (Figure 9-11). In addition, there were 2 small berry harvest areas south of Coldfoot near and along Jim River. In comparison, there were only 2 small localized wild plant harvest areas—one around Wiseman and another one around Coldfoot (Figure 9-11).

CASH EMPLOYMENT AND MONETARY INCOME

Because Wiseman is a small community with few households, the estimated earned and other income data are not included here. Due to concerns over privacy, only the percentage of employment by industry is included in this section. In 2011, 2 industries—services and also agriculture, forestry, and fishing—each made up 25% of jobs in Wiseman (Table 9-13). Other important employment sectors

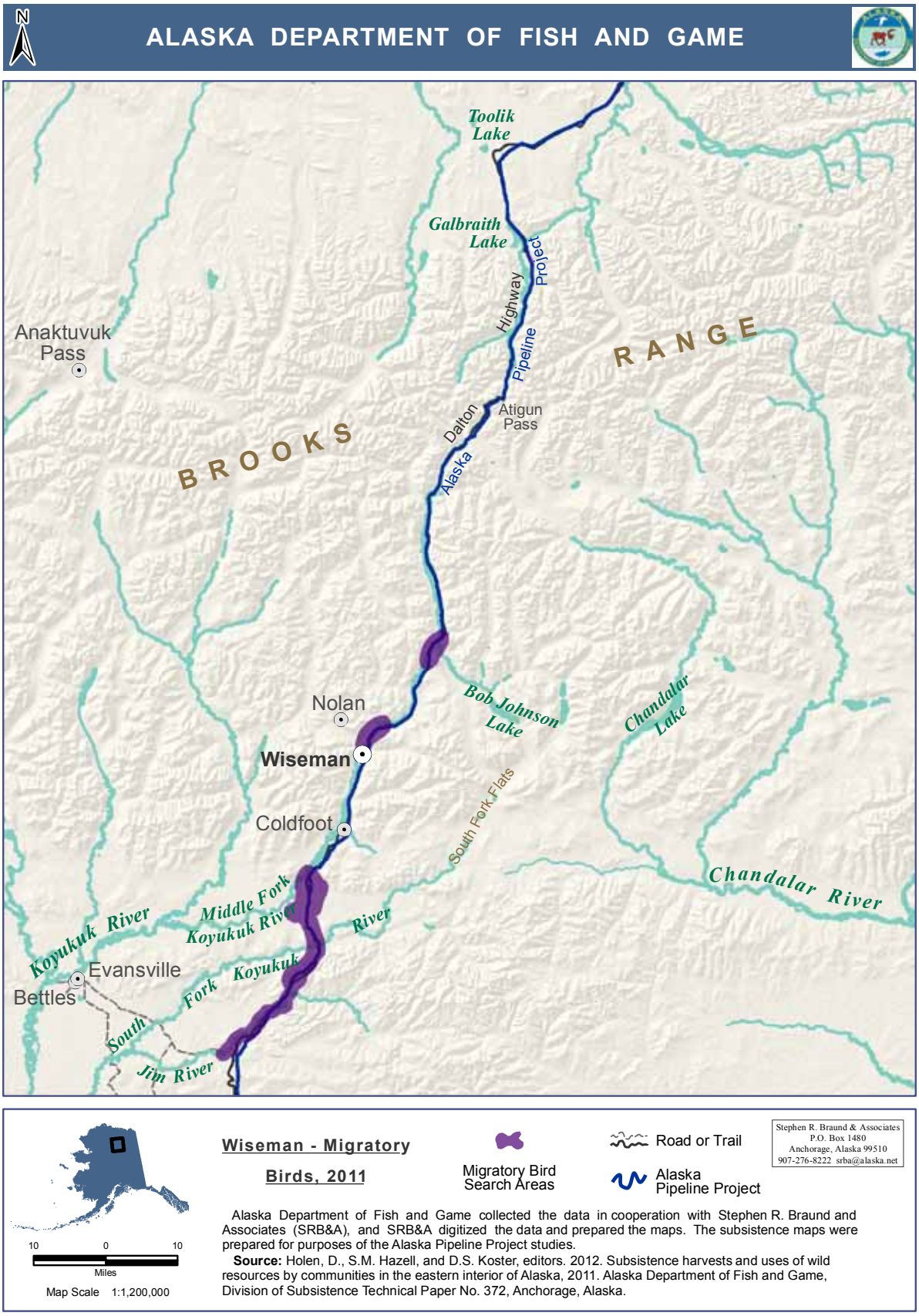


Figure 9-9.– Migratory birds search and harvest areas, Wiseman, 2011.

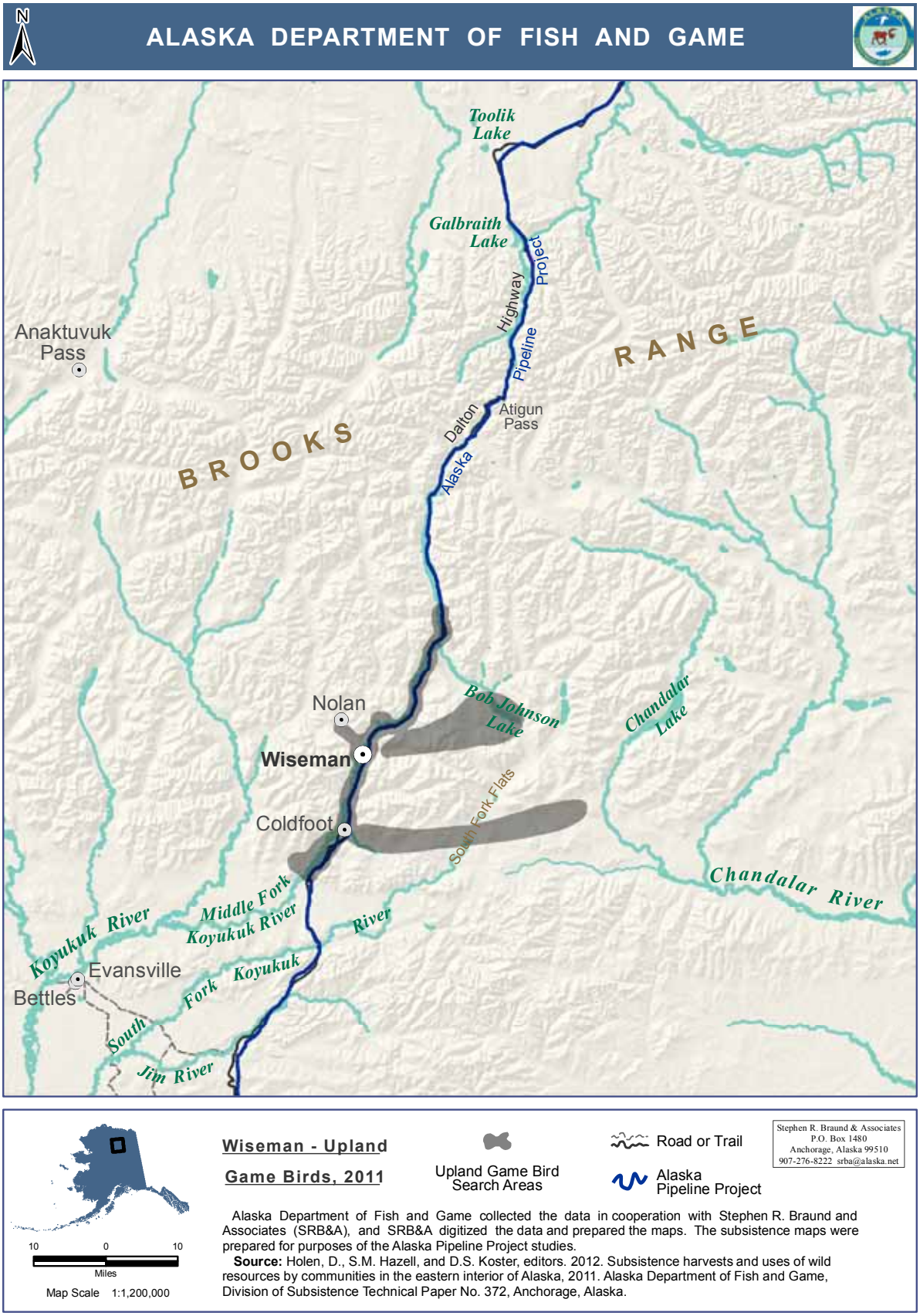


Figure 9-10.– Upland game birds search and harvest areas, Wiseman, 2011.

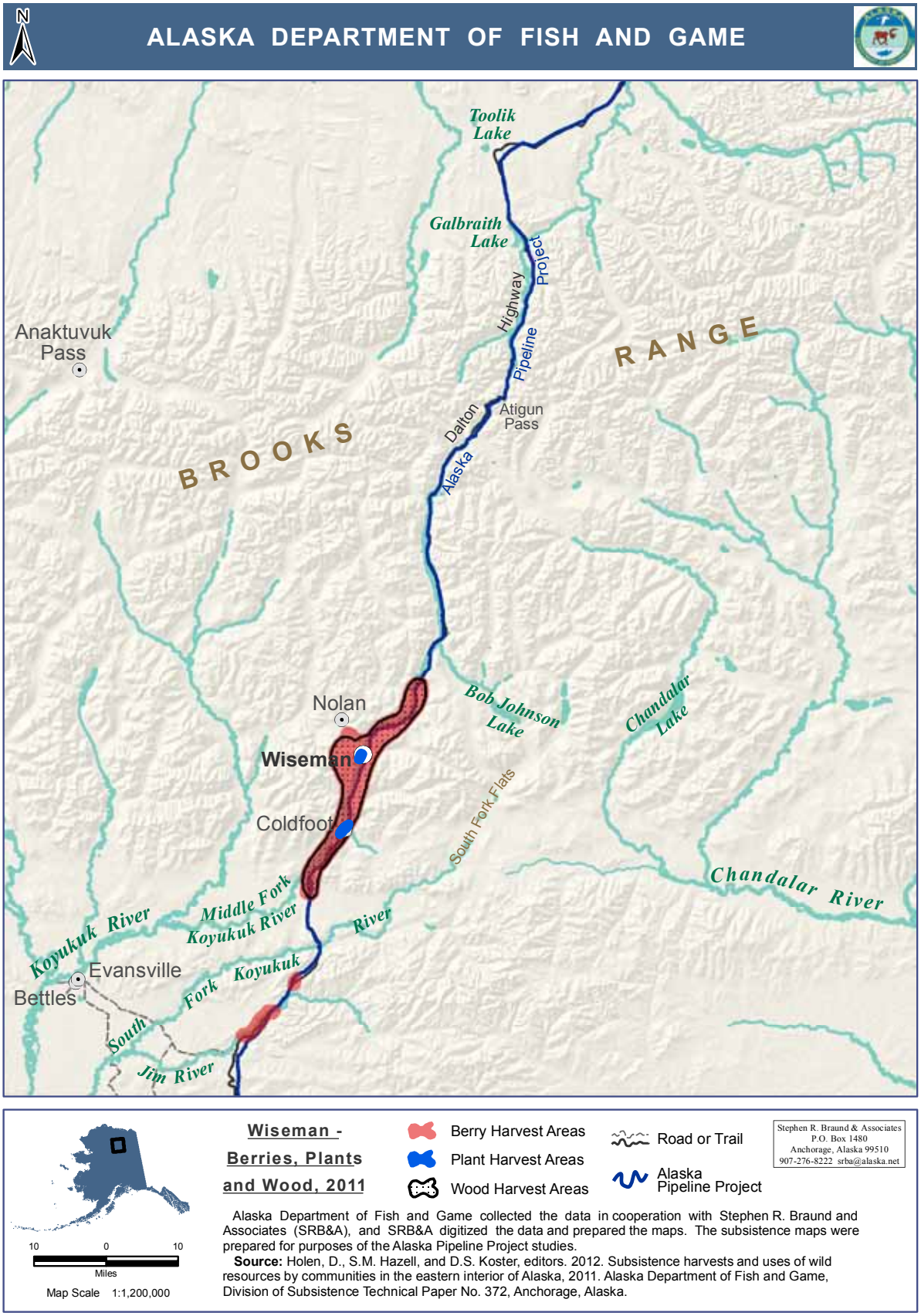


Figure 9-11.– Vegetation search and harvest areas, Wiseman, 2011.

Table 9-13. – Employment by industry, Wiseman, 2011.

Industry	Jobs	Households	Individuals
Estimated total number	**16.0**	**3.0**	**8.0**
Federal government (total)	**18.8%**	**66.7%**	**37.5%**
Natural scientists and mathematicians	12.5%	66.7%	25.0%
Mechanics and repairers	6.3%	33.3%	12.5%
State government (total)	**6.3%**	**33.3%**	**12.5%**
Technologists and technicians, except health	6.3%	33.3%	12.5%
Agriculture, forestry, and fishing (total)	**25.0%**	**100.0%**	**50.0%**
Agricultural, forestry, and fishing occupations	25.0%	100.0%	50.0%
Mining (total)	**18.8%**	**33.3%**	**37.5%**
Service occupations	6.3%	33.3%	12.5%
Construction and extractive occupations	12.5%	33.3%	25.0%
Retail trade (total)	**6.3%**	**33.3%**	**12.5%**
Marketing and sales occupations	6.3%	33.3%	12.5%
Services (total)	**25.0%**	**100.0%**	**50.0%**
Executive, administrative, and managerial	18.8%	66.7%	37.5%
Social scientists, social workers, religious workers, and lawyers	6.3%	33.3%	12.5%

Source ADF&G Division of Subsistence household surveys, 2012.

were federal government and mining; each provided 19% of the jobs in Wiseman in 2011. Industries providing the least amount of jobs were state government (6%) and retail trade (6%) (Table 9-13).

The study found 10 adults over the age of 16 in Wiseman in 2011, of which 8 were employed. For the employed adults, the mean length of employment was a little less than 11 months. Of the 5 households in Wiseman, 3 had at least 1 employed household member during 2011, and the average number of jobs per employed household was about 3 (Table 9-14). Most jobs were located in Wiseman but some respondents worked in Coldfoot.

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" (Nord et al. 2009:2). 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. Core questions and responses from Wiseman residents are summarized in Figure 9-12. In 2011, Wiseman residents reported being equally concerned about a lack of subsistence foods and a lack of store-bought foods; 20% of Wiseman households said their subsistence foods did not last and 20% said that their store-bought foods did not last (Figure 9-12). In addition, 20% of Wiseman households had worried about having enough food, and 20% said that their food had not lasted and

Table 9-14. – Employment characteristics, Wiseman, 2011.

Characteristic	Community Wiseman
All adults	
Number	10.0
Mean weeks employed	36.8
Employed adults	
Number	8.0
Percentage	80.0%
Jobs	
Number	16.0
Mean	2.0
Minimum	1.0
Maximum	4.0
Months employed	
Mean	10.6
Minimum	5.0
Maximum	12.0
Percentage employed year-round	62.5%
Mean weeks employed	46.0
Households	
Number	5.0
Employed	
Number	3.0
Percentage	60.0%
Jobs per employed household	
Mean	3.2
Minimum	3.0
Maximum	9.0
Employed adults	
Mean	
Employed households	2.7
Total households	1.6
Minimum	2.0
Maximum	4.0
Mean person-weeks of employment	52.0

Source ADF&G Division of Subsistence household surveys, 2012.

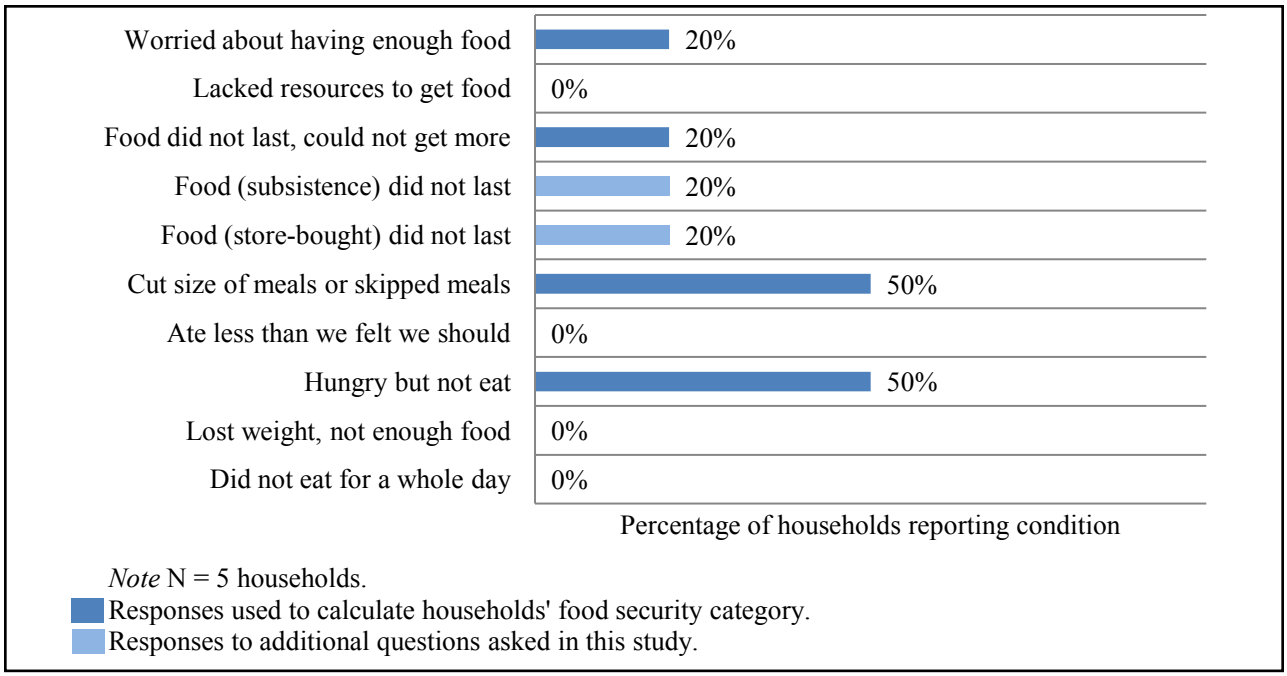


Figure 9-12.– Food insecure conditions, Wiseman, 2011.

that they could not get more. However, even more households (50%) said they had cut the size of their meals or skipped meals, and 50% of households had actually not eaten regardless of being hungry (Figure 9-12). Note that no Wiseman household reported that they lacked resources to get food.

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Wiseman, the state of Alaska, and the United States are summarized in Figure 9-13 (Nord et al. 2009:21). In Wiseman in 2011, 80% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." The remaining households (20%) had low food security. Whereas Alaska and the United States had households in the very low food security category, Wiseman had no households in that category (Figure 9-13).

Figure 9-14 portrays the mean number of food insecure conditions per household by food security category by month. For households with low food security, food insecurity conditions peaked during

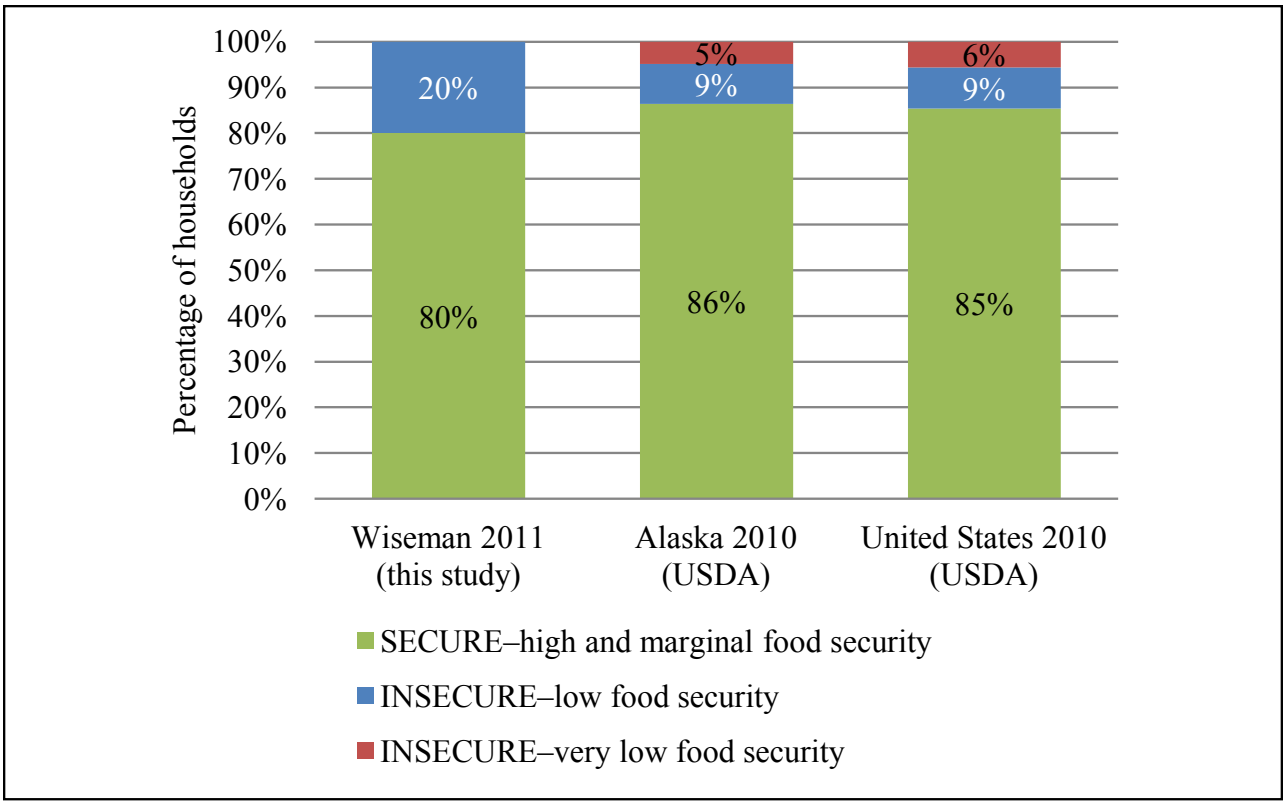


Figure 9-13.– Food insecure categories, Wiseman, 2011.

the winter months of January and March. Figure 9-14 also shows that Wiseman households in the high and marginal food security category did not report any food insecurity concerns during the whole study period. Figure 9-15 shows that 20% of Wiseman households reported concern for their subsistence foods not lasting in January and in March 20% of households reported concern for their store-bought food not lasting. Wiseman households did not report concern for their foods not lasting during any other month in 2011 (Figure 9-15).

In interior Alaska, late winter and early spring can often be a time of food insecurity. As Figure 9-14 portrays, the highest number of food insecurity conditions occurred for households in the low food security category during January and March. The later months of the year were in general more food secure. This might be explained by greater abundance of resources for subsistence harvesting and seasonal employment opportunities later in the year.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. “Other recent years” was defined as about the last 5 years. Table 9-15 reports the number of valid responses for each category, which may differ from the total number of interviewed

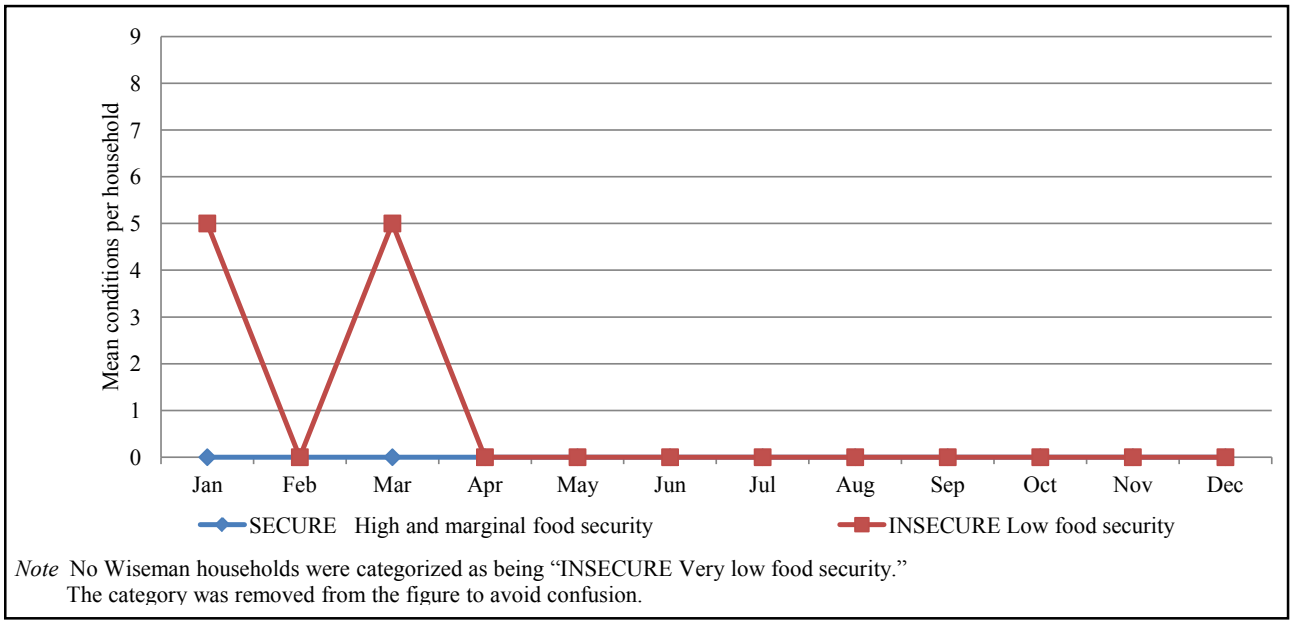


Figure 9-14.– Mean number of food insecure conditions for each month food was reported not to have lasted, Wiseman, 2011.

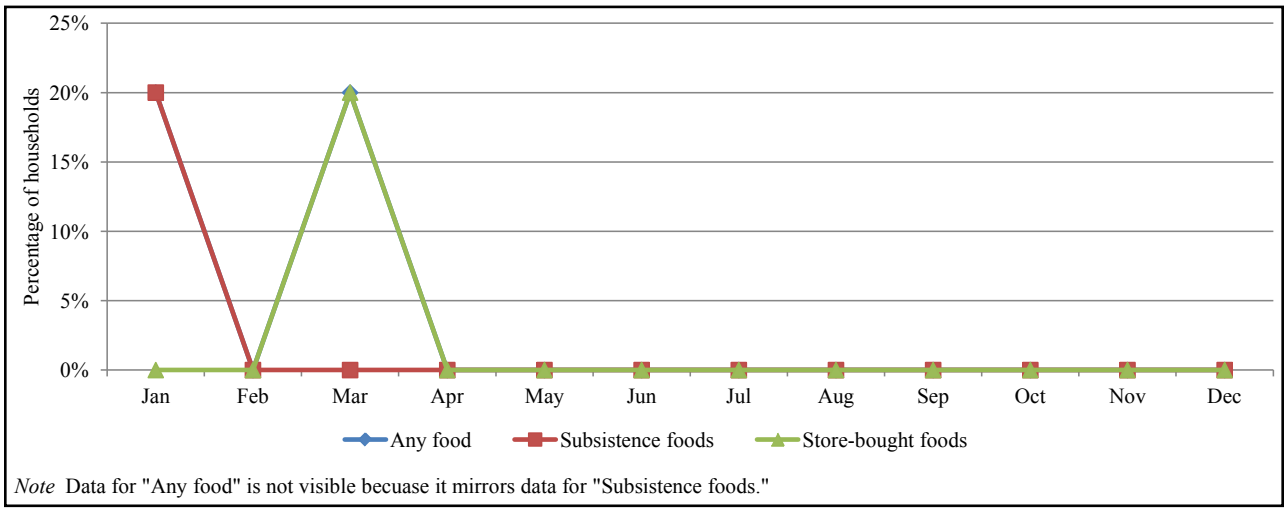


Figure 9-15.– Comparison of months where foods did not last, Wiseman, 2011.

Table 9-15. – Changes in household uses of resources compared to recent years, Wiseman, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	5	5	3	60%	5	100%	2	40%
All resources	5	5	1	20%	4	80%	0	0%
Salmon	5	5	2	40%	3	60%	0	0%
Nonsalmon fish	5	5	1	20%	4	80%	0	0%
Large game	5	4	1	25%	3	75%	0	0%
Small game	5	4	2	50%	2	50%	0	0%
Marine mammals	5	1	0	0%	0	0%	1	100%
Migratory waterfowl	5	3	1	33%	2	67%	0	0%
Other birds	5	5	0	0%	4	80%	1	20%
Bird eggs	5	1	0	0%	1	100%	0	0%
Marine invertebrates	5	0	0	0%	0	0%	0	0%
Vegetation	5	4	3	75%	1	25%	0	0%

Source ADF&G Division of Subsistence household surveys, 2011.

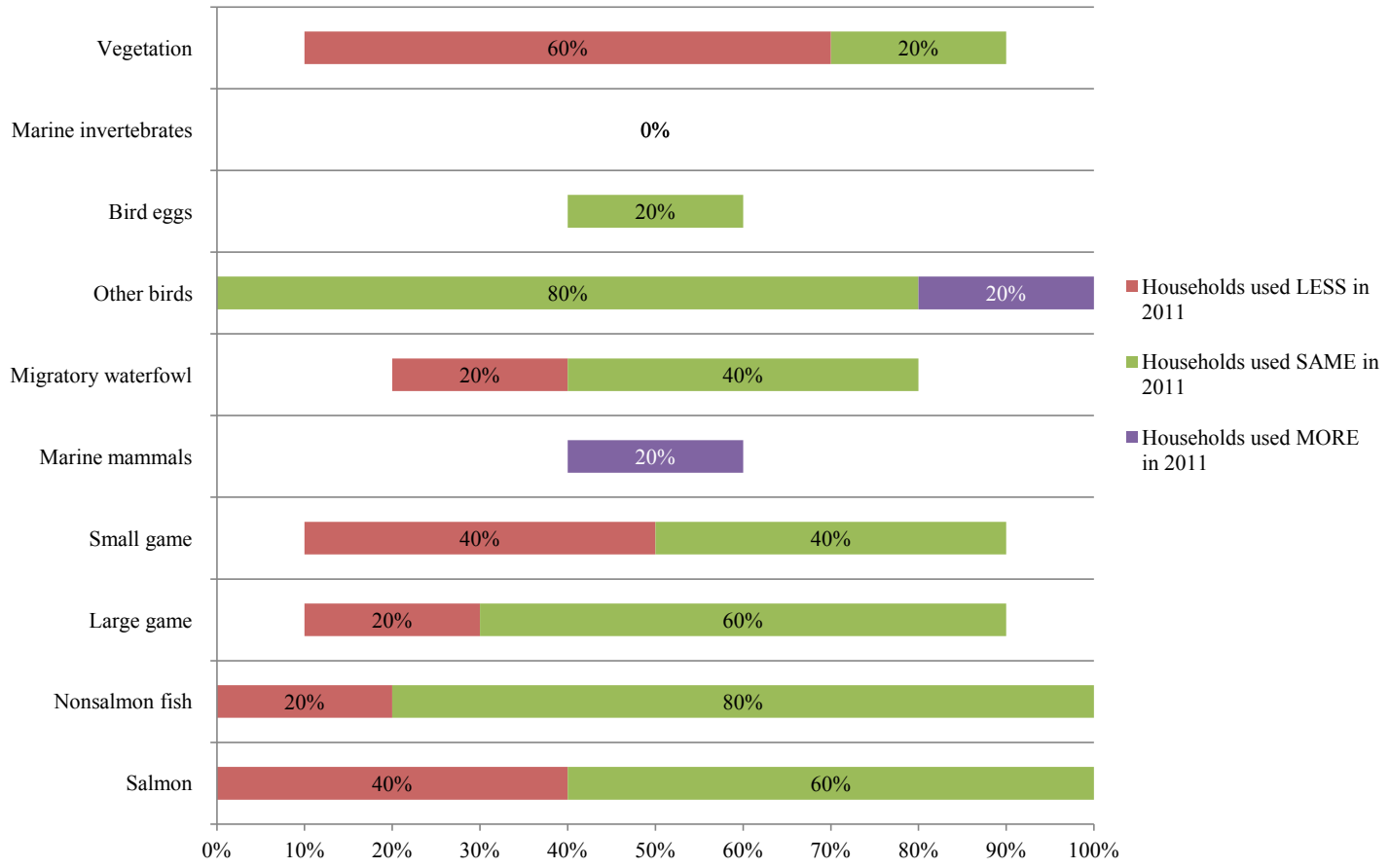
a. Valid responses do not include households that did not provide any response and households reporting never use.

households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 9-15, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 9-16 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (5 households), and therefore differ from those reported in Table 9-15.

A small percentage (20%) of the Wiseman respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); 80% said that, overall, their harvests and uses of wild resources were about the same as the recent past. (Table 9-15).

As depicted in Figure 9-16, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households. For the study year 2011, 60% of all interviewed households (Figure 9-16), and 75% of all those households who provided an assessment (Table 9-15), indicated using less vegetation, while 20% of all households (Figure 9-16), and 25% of those providing assessments (Table 9-15), reported the same level of use in 2011 than in previous years. Wiseman households indicated that they used less salmon (40% of all households, 40% of those providing assessment) and nonsalmon fish (20% of all households, 20% of those providing assessment) in 2011 than in recent years. In comparison, about 80% of all households and 80% of those that provided assessments reported using about the same amount of nonsalmon fish in 2011.

Table 9-16 depicts the reasons Wiseman respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of



Note Percentages are based on the total number of households in the community (N = 5 households). Unlabeled percentages are less than 5%.

Figure 9-16.– Changes in household uses of resources compared to recent years, Wiseman, 2011.

Table 9-16. – Reasons for less household uses of resources compared to recent years, Wiseman, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	5	3	1	33.3%	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%
All resources	5	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	5	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%
Nonsalmon fish	5	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large game	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%
Small game	4	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	3	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other 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%
Bird eggs	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	0	0	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	3	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 9-16.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	5	3	1	33.3%	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All resources	5	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	5	2	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	5	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large game	4	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	4	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	3	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%
Other 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%
Bird eggs	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	0	0	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	3	1	33.3%	2	66.7%	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, 2011.

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

weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: personal and family obligations (100%). Personal and family obligations was cited as a reason for less use of nonsalmon fish, small game, and vegetation. Too far to travel, and weather or environment were cited as the main reasons for less use of salmon. Not having enough time or constraints on time for working was cited as the main reason for less use of large game and vegetation. In comparison, resource availability was given as the main reason for less use of migratory waterfowl, and was a reason for less use of small game (Table 9-16).

Overall, 60% of Wiseman's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 40% said that their uses of at least one category had increased. In addition, all households said that they had used the same amount of at least one category of wild resources in 2011 than in recent years (Table 9-15). Not having enough time or interference from work was the most frequently cited reason for lower use of any resource category in 2011 (100% of all Wiseman households who reported a reason for less use), followed by: personal and family obligations (33%), availability of resources (33%), too far to travel (33%), weather or environment (33%), and other reasons (Figure 9-17).

Changes in the resource harvest by Wiseman residents can also be discerned through limited comparisons with findings from other study years. The Division of Subsistence collected comprehensive subsistence household harvest data for Wiseman for study years 1983 and 2011. Unfortunately the data for study year 1983 are only available in numbers of households participating in the harvest of a limited number of wild resources. It is not possible to convert these data into a comparable format to be included in this study and therefore they are not included here.

Carol Patricia Scott (1993) collected wild resource harvest data from Wiseman residents for her master's thesis for the study year 1991. Her data are presented in numbers of animals/fish harvested, and for the purposes of this study, these data have been converted to pounds usable weight by using the Division of Subsistence standard conversion factors consistent with studies from that area and period of time.

Figure 9-18 depicts the composition of the total wild resource harvest in Wiseman for 1991 and 2011. Table 9-17 summarizes the estimated total pounds harvested and per capita harvests for each major resource category from the 2 studies. In 1991, the total harvest of wild resources in pounds usable weight in Wiseman was 4,696 lb, or 162 lb per capita; in 2011 the harvest was 3,819 lb, or 294 per capita (Table 9-17). Between 1991 and 2011 the population of Wiseman declined from 29 people to 13 people, which probably explains the increase in per capita harvest regardless of the decline in the total harvest amount.

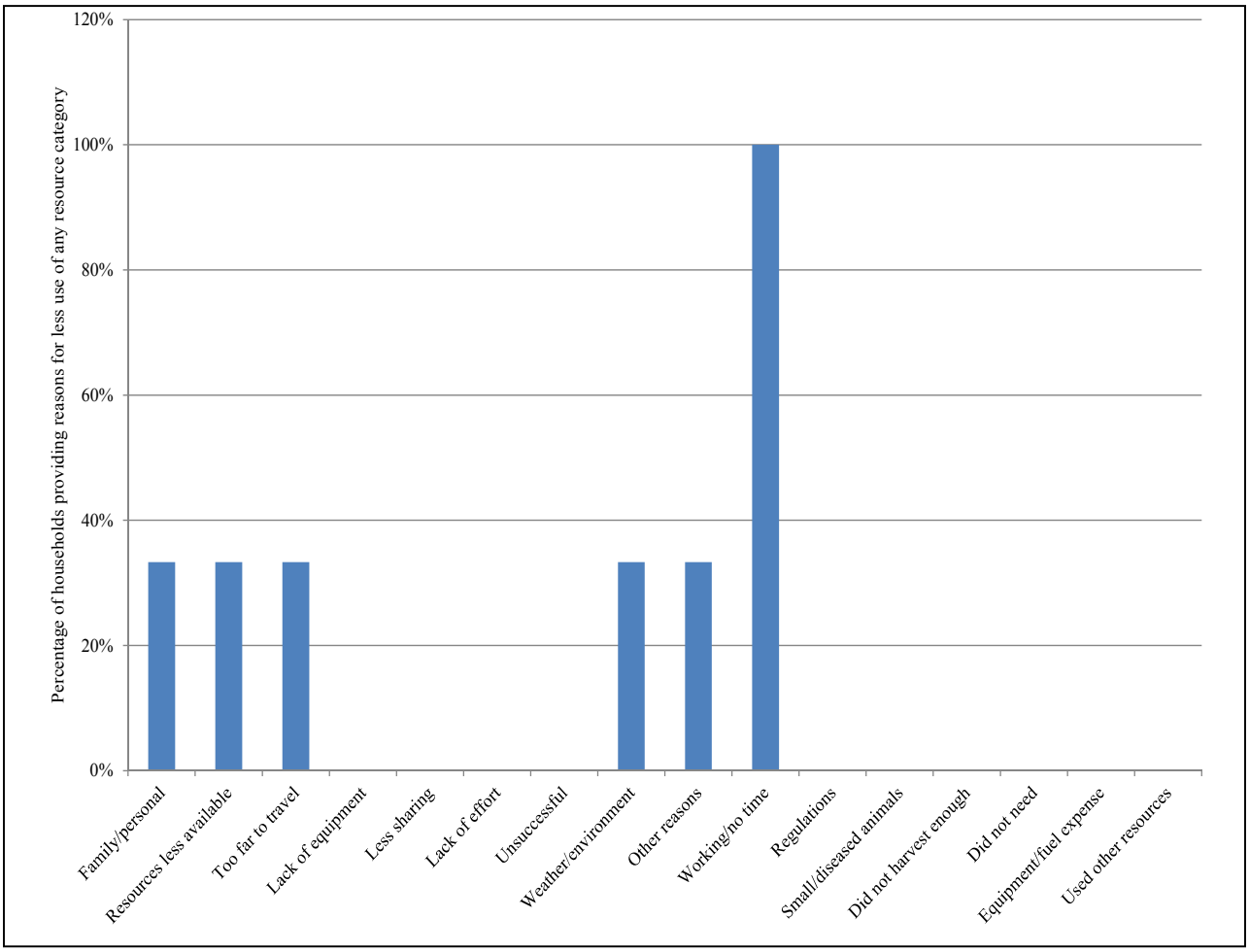


Figure 9-17.– Reasons for less household uses of any resource compared to recent years, Wiseman, 2011.

Table 9-17 shows that in 2011, in terms of the per capita harvest, Wiseman households harvested more resources in all resource categories except small land mammals. The increase in the per capita harvest was largest in the category of large land mammals, increasing nearly 90 lb per capita from 1991 to 2011 (Table 9-17). A possible explanation for the substantial increase in the per capita harvest of large land mammals is the noticeable decline in the total Wiseman population from 1991 to 2011. One Wiseman resident commented that another possible reason for the increase in the per capita harvest could be the changes in general hunting regulations, which have helped to balance the local subsistence and non-local "sport" harvest of area moose. In his opinion, the new general hunting regulations have also allowed the area moose population to greatly improve since 1991. According to the same resident, there also were not as many caribou present in the Wiseman–Coldfoot area in 1991, which could have brought the per capita harvest estimate of large land mammals down in the 1991 study.

In terms of total pounds harvested, the harvest of large and small land mammals declined the most between 1991 and 2011 (Figure 9-19). With regard to other resource categories, the total harvests

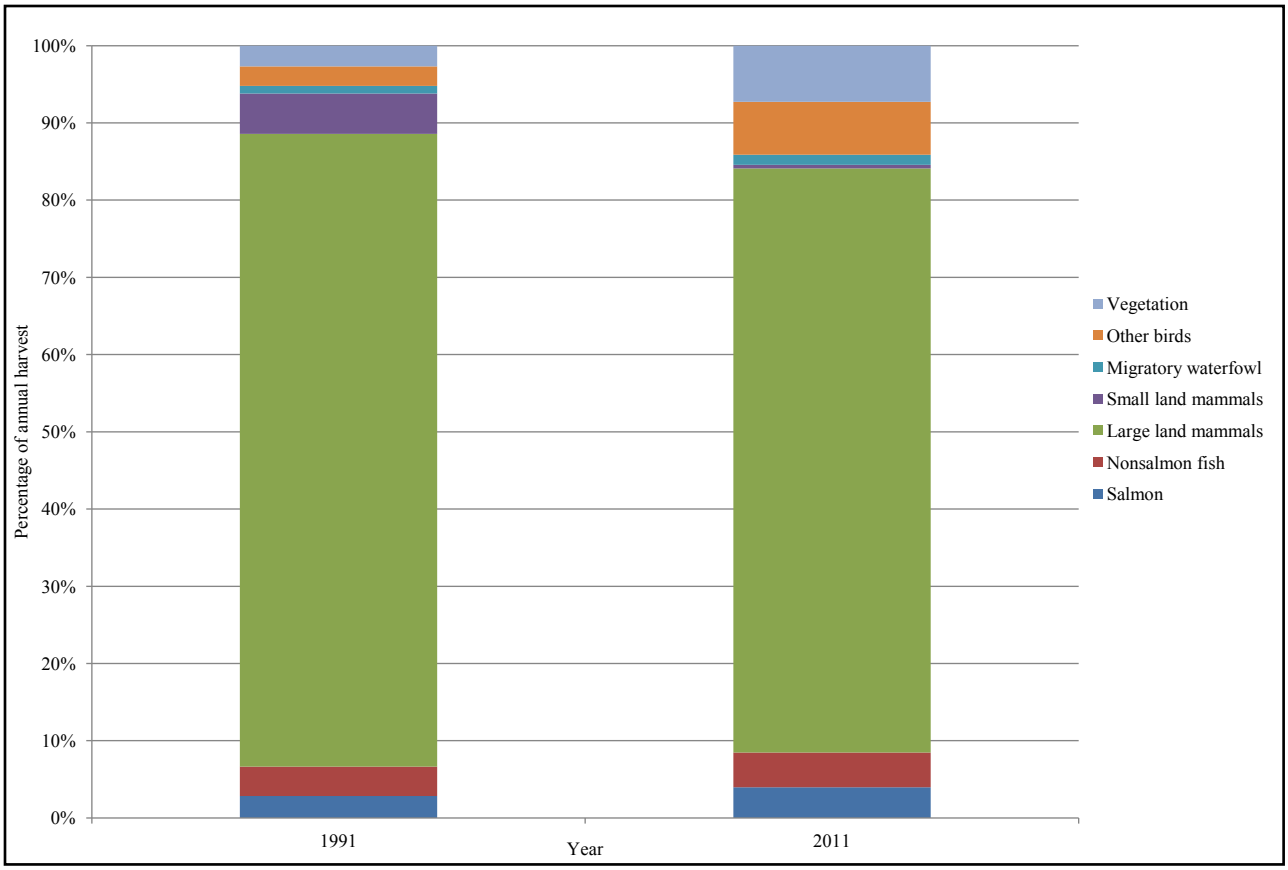


Figure 9-18.– Composition of the total wild resource harvest, Wiseman, 1991 and 2011.

Table 9-17. – Comparison of estimated harvests, Wiseman, 1991 and 2011.

	Estimated harvest (pounds usable weight)		Estimated per capita harvest	
Resource	1991	2011	1991	2011
Salmon	133.0	151.2	4.6	11.6
Nonsalmon fish	178.4	172.2	6.2	13.2
Large land mammals	3,848.0	2,888.0	132.7	222.2
Small land mammals	245.5	17.5	8.5	1.3
Migratory waterfowl	46.9	50.6	1.6	3.9
Other birds	118.3	261.2	4.1	20.1
Vegetation	126.0	277.8	4.3	21.4
All resources	**4,696.0**	**3,818.5**	**161.9**	**293.7**

Source Community Subsistence Information System (CSIS), Alaska Department of Fish and Game, http://www.adfg.alaska.gov/sb/CSIS/.

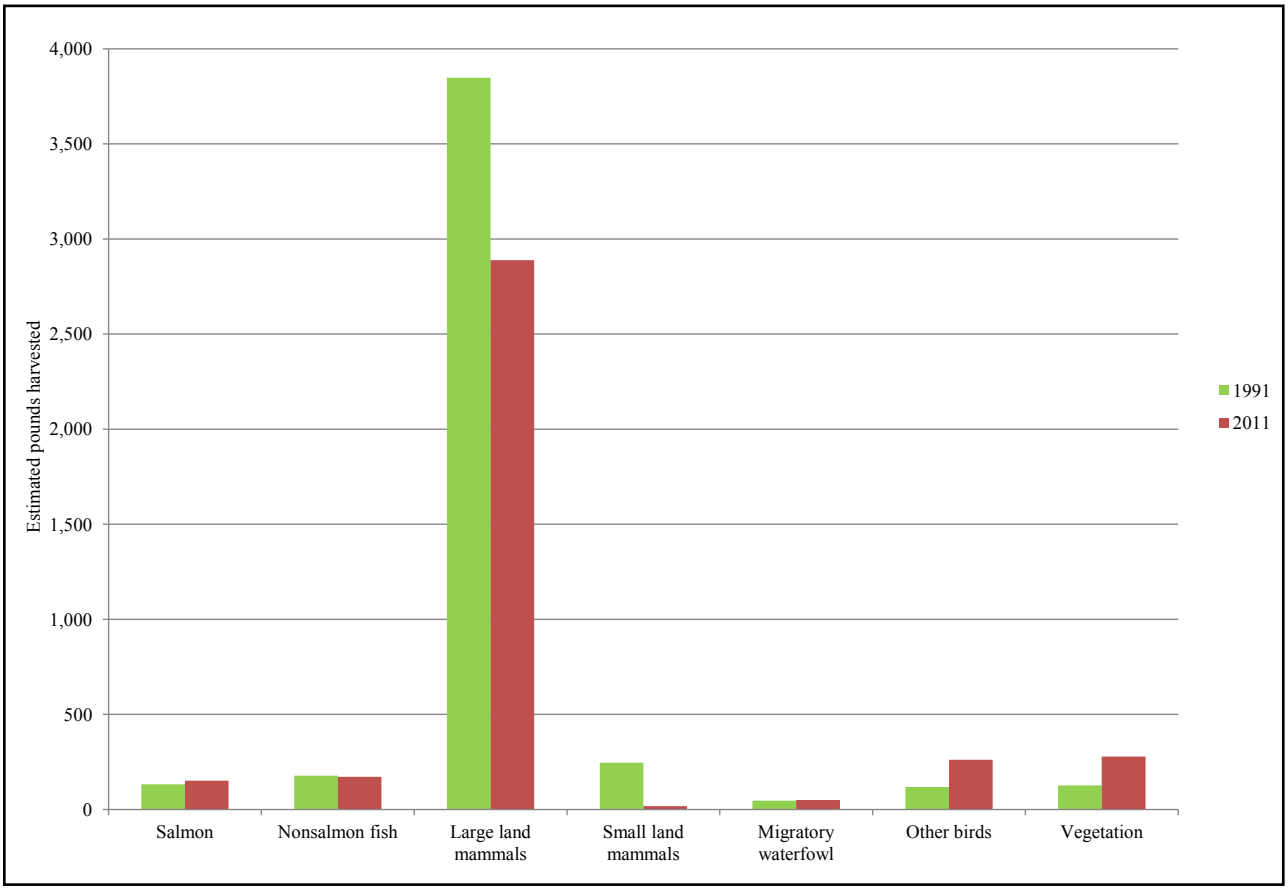


Figure 9-19.– Harvests by resource category, Wiseman, 1991 and 2011.

of salmon, nonsalmon fish, and migratory waterfowl were very similar in both study years (Figure 9-19). In comparison, the 1991 study found the total harvest of other birds and vegetation substantially smaller than the 2011 study. It needs to be noted that Scott's (1993) vegetation estimate for 1991 only includes a quart-based harvest estimate for berries and wild rose hips but does not provide any harvest estimates for other plants, greens, or mushrooms, which are included in the total harvest estimate for vegetation in this study. However, as Table 9-8 shows, in 2011 the total harvest of plants, greens, and mushrooms was only an estimated 13 lb. In comparison, the 2011 estimated berry harvest by Wiseman households was 265 lb. In spite of the difference in calculating the total vegetation harvest estimates, the 2 studies show that Wiseman residents harvested substantially more berries in 2011 than in 1991.

As mentioned above, the total harvest of small and large land mammals decreased substantially from 1991 to 2011. One Wiseman household commented that the decrease in the harvest of small land mammals from 1991 to 2011 can be partially explained by the cyclical population patterns of the various species included in the resource category, and not by the effort expended to harvest these important resources. Another resident commented that because large land mammals, particularly moose and caribou, were scarcer in the area in 1991, residents harvested more small land mammals to meet their subsistence needs. A possible explanation for the decrease of total large land mammal harvest in

2011 is that in the early 1990s Wiseman had more and larger households with children, which probably harvested more large land mammals. Another possible explanation offered by Wiseman residents for the decline in total large land mammal harvest is that in recent years species such as caribou and Dall sheep have become less abundant in the area.

Regardless of the substantially smaller total harvest of large and small land mammals in 2011, Figure 9-18 shows that the composition of the Wiseman wild resource harvest has remained very similar between 1991 and 2011. Large land mammals continue to constitute the largest share of the harvest even though total harvest has declined a bit from 1991 to 2011. The resource categories that have increased the most from 1991 to 2011 were vegetation and other birds, and small land mammals has decreased the most (Figure 9-18). The contributions of other resource categories in the total harvest have remained very similar.

LOCAL CONCERNS REGARDING RESOURCES

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

In 2011, Wiseman residents successfully harvested moose, caribou, and Dall sheep. Several respondents expressed concern for the increased pressure by non-local hunters on caribou and Dall sheep populations in the local area. Residents expressed particular concern for the new general caribou hunting regulations for Game Management Unit 26B, which the Alaska Board of Game adopted in 2010. Residents were especially concerned about the increase in the non-local hunter bag limit from 2 bull caribou during the 2009–2010 hunting season to up to 5 caribou in 2010–2011. In addition, Wiseman residents expressed concern about the earlier opening of the cow caribou hunting season (now July 1 instead of October 1) because it allows hunters to kill lactating cows with very young calves. Residents mentioned that the caribou herds most affected by these new regulations are the Central Arctic and Teshekpuk herds but also potentially the Western Arctic caribou herd, which at times utilizes the Wiseman–Coldfoot area.

One household asserted that the number of bow hunters in the area has increased in the past few years because of stricter hunting regulations in other parts of the Alaska. Another important point made was that current non-local bow hunters appear to be less experienced with their equipment, thus making it dangerous for anyone in the area to go out, especially during the early days of hunting seasons. In addition, Wiseman residents also reported seeing wounded animals in the area after hunting seasons. A few households pointed out that, in general, large game has become scarce in the area and that they are particularly concerned for the health of the caribou and Dall sheep populations because

of perceived overharvest by non-local hunters. The overall consensus among respondents was that subsistence hunting should have priority over anything else.

Other concerns expressed by Wiseman residents were related to their perceptions of compounding environmental changes that the Dalton Highway continues to cause to the local environment and locally-available wild resources. For example, residents said that salmonberries have disappeared from the area since the construction of the highway. In springtime, migratory waterfowl are now attracted to roadside areas, which have open water as a result of the snow melting earlier along the road corridor. In the early fall, the fresh grass growing on the roadside as a result of highway improvement work attracts moose cows and their calves, which run the risk of being killed by passing truck traffic. Wiseman residents recalled several incidents where this had happened, and expressed concern for the stability of the area moose population. With regard to new development projects, Wiseman residents stated concerns over the proposed Foothills and Ambler road projects because they would transect the traditional caribou migration routes.

SUMMARY

The household survey findings demonstrated that residents of Wiseman harvested a wide variety of resources in 2011. The total community harvest was lower in 2011 than in 1991, but with a smaller population, the per capita harvests were higher in 2011 than in 1991. The total harvests of land mammals have declined the most. The harvests of other birds, mainly upland game birds, and vegetation have increased since 1991. The harvests of both salmon and nonsalmon fish, as well as migratory waterfowl, have held steady. The study findings indicate that community residents use large areas to obtain various subsistence resources, and they share their wild resource harvests generously in the community. It needs to be noted that causes of changes in subsistence harvests and uses are complex and the limited availability of harvest data for Wiseman makes discerning harvest trends particularly challenging. Wiseman respondents expressed concerns over the mounting hunting pressure by non-local hunters on local resources, particularly caribou and Dall sheep. In addition, Wiseman residents expressed concerns about the Foothills and Ambler road development projects that would affect the caribou migration routes. At the same time, residents continue to be concerned about the ongoing environmental changes to the local environment and wildlife that, in their view, are a result of the construction of the Dalton Highway.

ACKNOWLEDGEMENTS

The research team would like to thank Wiseman residents for their hospitality and assistance in completing the study. In addition, the team would like to say a special thank you to Jack Reakoff for his invaluable assistance on this project. Jack provided a wealth of local information about the

seasonal round of subsistence before and after the construction of the trans-Alaska Pipeline and the Dalton Highway. He was our main contact and graciously introduced us to the beautiful community of Wiseman.

Chapter 10: HEALY LAKE

Prepared by Benjamin Balivet

COMMUNITY BACKGROUND

Just north of the Alaska Highway and less than 50 miles to the east of Delta Junction lies the small Athabascan community of Healy Lake (Haynes and Simeone 2007:135). The community of Healy Lake is located on the shore of a 5-mile long lake that bears the same name and according to residents the village is labeled "Indian Village" on most maps. Healy Lake Village is a federally recognized tribe and the village is located within the Fairbanks Recording District (ADCCED 2011b). The average temperature in Healy Lake ranges from -32 to 72° F (ADCCED 2011b). The area is taiga with "coniferous forests interspersed with stands of deciduous trees, gently rolling hills and small lakes" (Haynes and Simeone 2007:6; ADCCED 2011b). The name "Healy Lake" was first recorded in 1914 by the U. S. Geological Survey and named after long-time resident Chief Healy, who in turn gained his name from a local trader in the area named John J. Healy (Cook 1989:115).

Chief Healy was a tribal elder and chief of Healy Lake village. He "was born in 1849 apparently at Joseph Village on the Middle Fork of the Fortymile River, although one informant says down the Tanana River" (Cook 1989:115). It has been said that Chief Healy possessed a high degree of luck due to his work ethic and exemplary leadership, leading to his becoming a leader in the community and important figure in the region during the early 20th century (Haynes and Simeone 2007:62).

PRE-CONTACT PERIOD AT HEALY LAKE

The purpose of this section is to provide a background for the communities of the upper Tanana River area included in this report, including the 2 predominantly Athabascan communities of Healy Lake and Dot Lake. Additional ethnohistoric context specific to the communities of Dry Creek and Tok are provided in those chapters as well.

Healy Lake and Dot Lake are Athabascan communities where people have hunted, fished, and trapped for thousands of years (Haynes and Simeone 2007:135). Excavations near the current village site at Old Healy Lake Village have yielded evidence of human habitation for more than 10,000 years (Cook 1989:115). The earliest subarctic North American home site and human remains unearthed were found near Healy Lake dating to 11,500 years ago (Handwerk 2011).

In the upper Tanana region there are 2 distinct Athabascan languages: *Upper Tanana*, traditionally spoken by people living in Northway and Tetlin, and *Tanacross*, traditionally spoken by residents of

Healy Lake, Dot Lake, and Tanacross (Haynes and Simeone 2007:6). Traditionally the Athabascans of the middle and upper Tanana regions, including the people of Healy Lake, have been semi-nomadic: hunting, fishing, and gathering in a seasonal cycle through a well-defined area in eastern interior Alaska (Haynes and Simeone 2007:21; McKennan 1959; McKennan 1981).

Although the people of the upper Tanana area are referred to by local and regional governing bodies as individual tribal members, the word "tribe" was never applied by the Upper Tanana when referring to themselves until relatively recently; today, the "tribal" designation is a means of providing political recognition by the U.S. government (Haynes and Simeone 2007:6). Prior to intensive contact with Euro-Americans, the people of Healy Lake lived in "local bands," each of which at its core involved a large extended family of 20 to 75 people (Haynes and Simeone 2007:6). During times of scarcity the local band divided into smaller groups of paired nuclear families (Haynes and Simeone 2007:6). In addition to local bands there were also regional bands comprising "two or more local bands that worked together to hunt caribou, for example or fish for whitefish" (Haynes and Simeone 2007:7). Furthermore: "Regional bands held a common language and tradition and were connected by a multitude of kin ties" (VanStone 1974:45).

The area in and around Healy Lake and Dot Lake experienced seasonal fluctuations in resource populations, and in order to adjust to these circumstances cultural institutions were in place to curb the risk of starvation and allow expansion of harvest areas in times of shortages (Callaway 2001:xiii). Haynes and Simeone (2007:7–8) explain that, "Since relations between members of the regional band involved many ties of blood and marriage, individuals or families could easily shift their affiliations from one local band to another; moreover, this flexibility allowed for people to move in response to a shifting resource base."

In the Upper Tanana Athabascan culture, individuals belonged to 1 of 8 or 9 matrilineal clans, which were further grouped into 2 exogamous moieties, namely the Raven and the Crow (Haynes and Simeone 2007:56). Marriage partners came from separate bands (band exogamy) (Callaway 2001:xi). This cultural institution created ties among families, local bands, and regional bands and led to cooperation among groups in order to survive in the harsh environment.

Residents of the area were intimately linked by marriage across the moiety system socially and geographically. For example, the 1937 census lists Laura Healy's birthplace as Mansfield. Laura, who was married to Arthur Healy, is the granddaughter of Chief Isaac (from the *Mansfield–Kechumstuk* band) while Arthur is the grandson of Chief Healy (from the *Healy Lake–Joseph* band). Numerous other marriages occurring during this period link Healy Lake–Joseph, Mansfield–Kechumstuk, and Tanana Crossing residents with *Ahtna* band members now residing in Mentasta Lake, Batzulnetas, Chistochina, and Copper Center. As a consequence of these residence and marriage patterns, early census data from 1910, 1920, and 1937 for the community of Healy Lake list a variety of birthplaces for the inhabitants (Callaway 2001:xi).

HEALY LAKE: THE HISTORICAL PERIOD

By the late 1800s, between the United States–Canada border and Healy Lake there were 7 Athabascan regional bands (Haynes and Simeone 2007:7). These bands had semi-permanent villages and camps located near important harvest areas within the territories that they held through common consent (Haynes and Simeone 2007:6). Specifically:

> The Healy River-Joseph band was recognized to utilize a section of land about 3,000 square miles. On the northern boundary of their band territory was the "village" of Joseph, a seasonal caribou hunting camp about 50 miles northeast of Healy Lake. Healy Lake "residents" would often over-winter in Joseph and subsist on dried caribou that had been taken in great numbers by the use of fences when the animals migrated south. Kechumstuk [about 30 miles southeast of Joseph] served a similar function for Mansfield Lake band members (i.e., the Mansfield Lake-Kechumstuk band although the Mansfield and Healy Lake bands sometimes cooperated in caribou hunts in the Molly Creek area). The current year-round settlements of Healy Lake, Dot Lake, Tanacross, Tetlin and Northway represent a consolidation of formerly fluid band residence pattern. (Callaway 2001:x)

The region that the Healy River band occupied included the entire Healy River drainage (which flows into Healy Lake), the Gerstle and the Johnson rivers to the south, and the Middle Fork Fortymile River to the north; in addition, there were fish camps on the George, Healy, and Sand lakes (Haynes and Simeone 2007:6-7). In the spring, summer, and fall, extended families spread out to set up temporary camps to harvest seasonally-available resources; in the winter, a semi-subterranean multi-family structure served as a center of life in a winter village setting (Callaway 2001:x). It has been said of the Upper Tanana Athabascans that: "Cooperation and collaboration both within and between bands persisted as fundamental characteristics of the upper Tanana food quest at the turn of the 20th century. In addition to the communal efforts involved in operating fish weirs and caribou fences, the partnership system was a critical form of collaboration when resources were scarce and helped ensure the survival of the group" (Haynes and Simeone 2007:39).

As early as the mid-1800s, the nomadic way of life of the Upper Tanana slowly began to give way to semi-permanent settlements as the first traded goods arrived in the area (Haynes and Simeone 2007:46). In order to serve the fur trading industry, a trading post was added to the region of Healy Lake by W.H. Newton in 1907 (Callaway 2001:x). It has been noted that, "Sometime after 1910 and perhaps not until 1917—the community became permanent and more sedentary with more focused trading patterns" (Cook 1989:1).

In the mid-19th century, disease, the Episcopal Church, and mining contributed to the centralizing of Upper Tanana settlements (Callaway 2001:xi). The use of steel tools and firearms allowed the people to hunt and trap more efficiently, and traders extended credit to the Upper Tanana people,

which increased their reliance on the cash economy (Haynes and Simeone 2007:49). The gradual shift to centralization was slow because "Native people generally ignored the efforts of the missionaries to consolidate them into villages because their economy and pattern of living did not fit a sedentary existence" (Haynes and Simeone 2007:14). In 1912, the Episcopal Church established a mission in Tanacross, which attracted people from the surrounding areas: Ketchumstuk, Mansfield, Batzulnetas, and Salchaket (Haynes and Simeone 2007:13). The mission's goal was to attract Native people from outlying areas in order to educate them and provide them with health care (Haynes and Simeone 2007:13). Moreover, the Tanacross mission aimed to help prevent the exodus of Native people from the region (Haynes and Simeone 2007:14). In the 1930s the U.S. government compelled "families to keep their children in school" and this separated the families as women and younger children stayed near the school while men and older boys went out hunting and trapping in the winter (Haynes and Simeone 2007:14).

Robert McKennan, an anthropologist working in the area during the early part of the 20th century, remarked that the increase in modern rifles made hunting easier and this ease of harvest offset disease as a factor in population size; moreover, he claimed that before the 1900s the population was stable in the upper Tanana (Haynes and Simeone 2007:12). It should be noted, however, that McKennan had been informed by Native people themselves that their population was much larger before 1900, and that disease had decimated villages and camps just prior to the arrival of the Euro-Americans (Haynes and Simeone 2007:14). Healy Lake's relative isolation contributed to the high death toll from diseases, such as tuberculosis which struck Healy Lake in 1943, because medical aid was "not readily available"; moreover, "Probably two-thirds of Healy Lake residents died within months" (Haynes and Simeone 2007:13, 15). Children and elders were affected most by diseases (Haynes and Simeone 2007:13). Steam baths, which were commonly used to ward off illnesses, may have helped spread epidemics in the region (Haynes and Simeone 2007:119). After Chief John Healy lost his children to diseases, he "moved the survivors to a site on the Little Gerstle River near the newly constructed Alaska Highway," and some families moved to Dot Lake and Tanacross where schools had been established (Haynes and Simeone 2007:135; Callaway 2001:xi).

According to the U.S. Census, the area between Healy Lake and Chisana had a population of 216 Alaska Native people in 1910, and 277 in 1920 (Haynes and Simeone 2007:12). In the upper Tanana region during the 1930s and 1940s villages became the organizing unit for groups that previously followed a nomadic approach to harvesting resources in different areas within a circumscribed geographic area throughout the year.

The organization into communities had to do with the effort to comply with Bureau of Indian Affairs (BIA) policies requiring that children attend school (Haynes and Simeone 2007:135). In choosing locations for villages, people often chose to settle in seasonal camps that happened to be near road

systems because the band members sought work during the construction of the Alaska Highway and other U.S. military installations, which took place in the 1940s (Haynes and Simeone 2007:47).

Tok, which is situated at the junction of the Alaska Highway and the Glenn Highway, slowly became the regional center beginning in 1942, and Dot Lake village came into existence with the complete abandonment of Healy Lake as a year-round village (McMillan and Cuccarese 1988). Simeone (Simeone 1992; see also Haynes and Simeone 2007:121), an anthropologist who lived in Tanacross during the 1970s, points out that prior to the construction of the Alaska Highway, there was always a symbiosis between the Alaska Native people of the upper Tanana (with their knowledge and ability to hunt and trap) and the traders and the Episcopal Church members who provided goods, medical care, and other services. Simeone argues that road construction altered this exchange and made Native people "strangers in their own land" (Haynes and Simeone 2007:121). "Men worked as guides for survey crews or as construction workers, while women served as domestic help or made money selling mittens, moccasins, and beadwork to the workers. … while hunting was still considered the 'regular life,' almost everyone in the village devoted at least half his or her time to earning cash for the purchase of food." (Haynes and Simeone 2007:119).

Other factors affected rural upper Tanana village populations. For instance, the U.S. military placed Army barracks directly upstream from the traditional water source of Northway, and this polluted the stream, according to Walter Goldschmidt, who was in the Northway area just after World War II (Goldschmidt 1946:47; Haynes and Simeone 2007:119, 121).

By the end of World War II (late 1945), a few families returned to Healy Lake seasonally in the summer to fish. In 1947, the once-seasonal camp of Healy Lake was established by Paul Kirstetter as a year-round village (Callaway 2001:xii). By the late 1940s, the once-seasonal use of Healy Lake had been almost entirely replaced by a centralized living arrangement involving wage labor and year-round residency (Haynes and Simeone 2007:15). Additional factors strained the return to a traditional hunting and gathering lifestyle, including the Euro-American population of Alaska doubling between 1939 and 1950, and the number of resident hunters more than tripling; moreover, the Alaska Highway opened up the upper Tanana to hunters from Fairbanks and Anchorage (Haynes and Simeone 2007:120).

More families returned to Healy Lake in the 1980s and during the 1990s as conveniences, such as a washeteria, were installed. The Healy Lake Village tribe administers federal programs in the community that provide most of the limited employment opportunities available there (Haynes and Simeone 2007:135).

In 1999, the Healy Lake School closed because residents moved out and school enrollment fell below the minimum threshold to remain open. With only 4 year-round households, there is presently no post office, store, or health clinic in operation (ADCCED 2011b). There are many structures located at Healy Lake Village; however, as one resident explained during the 2011 study year, most were empty and the only ones that were occupied (4) were north of the washeteria that is no longer

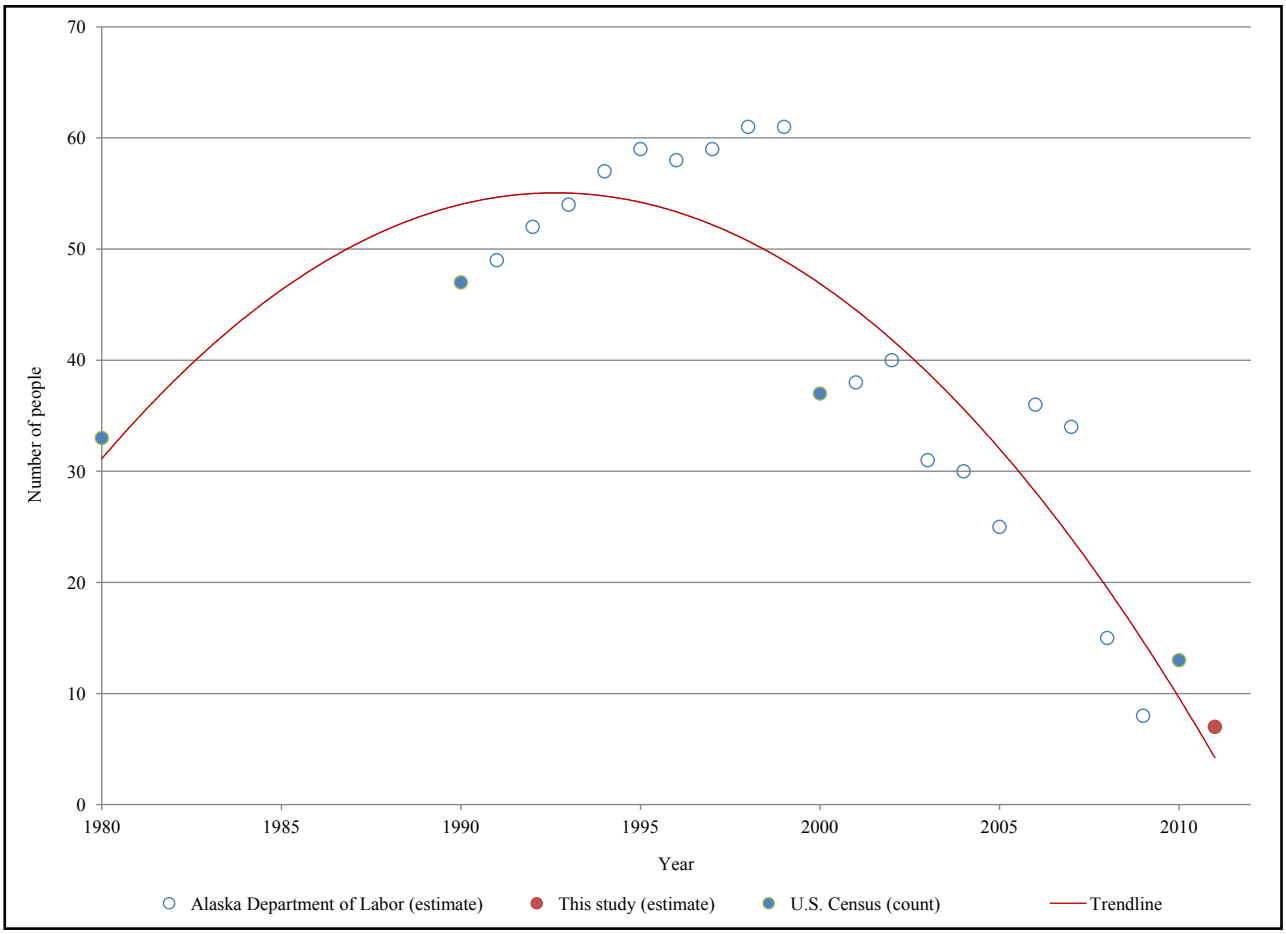


Figure 10-1.– Population history, Healy Lake, 1980–2011.

operational. Seasonal homes are located around the lake and local residents watch these during the winter months. Although there are some jobs available through private and government institutions, one key respondent reported that jobs are scarce and people have moved away in the past few years to find work. One resident claims that he remains at Healy Lake because he loves the area and because he has a birthright to this location. Relative isolation has meant for Healy Lake a greater reliance on subsistence foods (Haynes and Simeone 2007:134).

DEMOGRAPHY

Figure 10-1 shows the population of the community of Healy Lake between 1980 and 2011. This chart indicates that between 1980 and the mid-1990s, the population of Healy Lake was increasing, but then sharply declined. The household survey for the 2011 study year found a population of 7 residents in 4 households, of whom 60% (4 residents) were Alaska Native (Table 10-1). This indicates a marked decline in the total population since the 2010 U.S. Census, which reported 13 residents in 7 households, 84% of whom were Alaska Native (Table 10-1). Of the 4 households identified for the 2011 study year at Healy Lake, 3 households were interviewed (75%) (Table 10-2). The mean number of years

Table 10-1. – Population of Healy Lake, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
7	13	11	84.6%	4	7	4	60.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

Table 10-2. – Sample achievement, Healy Lake, 2011.

Number of dwelling units	4.0
Interview goal	4.0
Households interviewed	3.0
Households failed to contact	1.0
Households declined to be interviewed	0.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	3.0
Refusal rate	0.0%
Final estimate of permanent households	4.0
Percentage of total households interviewed	75.0%
Interview weighting factor	1.3
Sampled population	5.0
Estimated population	6.7

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

of residency in Healy Lake was approximately 46 years, with the maximum length of residence being 72 years (Table 10-3). There was a 3-way tie for the male age cohorts: 25–29, 55–59 and 85–89 years of age, and the female age cohorts were 40–49 and 70–74 years of age (Figure 10-2; Table 10-4).

Of the Healy Lake household heads interviewed, approximately 75% were born in Alaska and 25% were born outside of Alaska but in the United States. Only 25% of household heads were born in Healy Lake (Table 10-5).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 10-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Healy Lake residents in 2011. It should be noted that the Division of Subsistence has a policy of not reporting harvest estimates for communities of fewer than 6 households to protect anonymity. However, during the community review meeting residents of the community indicated that they would like the data included in this report.

An estimated 100% of the community's residents attempted to harvest resources in 2011 (Table 10-6). With reference to specific resource categories, 100% gathered plants and berries, 40% fished,

Table 10-3. – Demographics and sample characteristics, Healy Lake, 2011.

Characteristics	Healy Lake
Sampled households	3.0
Eligible households	4.0
Percentage sampled	75.0%
Household size	
Mean	1.7
Minimum	1.0
Maximum	2.0
Sample population	5.0
Estimated community population	6.7
Age	
Mean	58.4
Minimum[a]	28.0
Maximum	89.0
Median	58.0
Length of residency	
Total population	
Mean	45.8
Minimum[a]	4.0
Maximum	72.0
Heads of household	
Mean	39.3
Minimum[a]	4.0
Maximum	65.0
Sex	
Estimated male	
Number	4.0
Percentage	60.0%
Estimated female	
Number	2.7
Percentage	40.0%
Alaska Native	
Estimated households[b]	
Number	2.7
Percentage	66.7%
Estimated population	
Number	4.0
Percentage	60.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

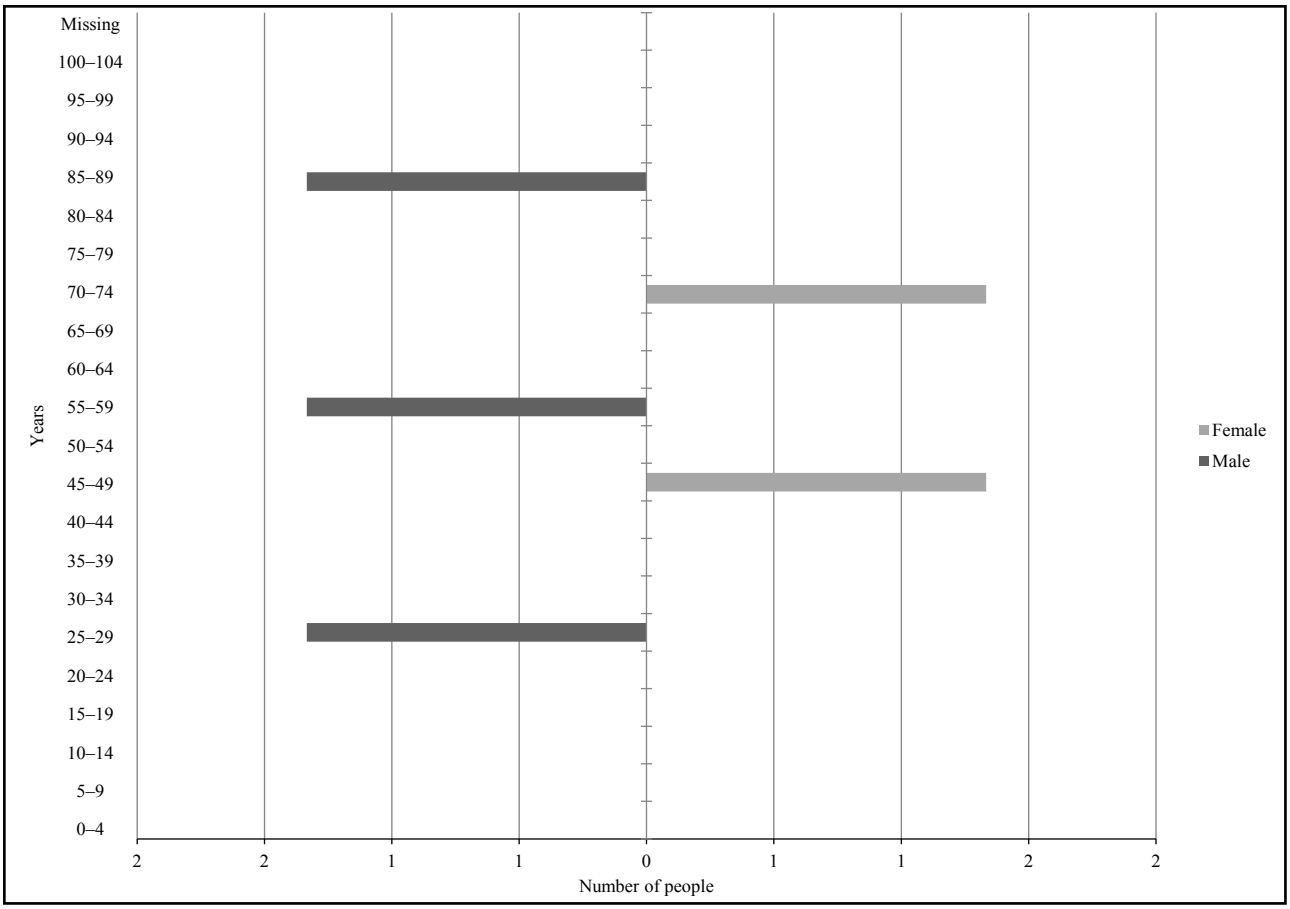


Figure 10-2.– Population profile, Healy Lake, 2011.

Table 10-4. – Population profile, Healy Lake, 2011.

	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	1.3	33.3%	33.3%	0.0	0.0%	0.0%	1.3	20.0%	20.0%
30–34	0.0	0.0%	33.3%	0.0	0.0%	0.0%	0.0	0.0%	20.0%
35–39	0.0	0.0%	33.3%	0.0	0.0%	0.0%	0.0	0.0%	20.0%
40–44	0.0	0.0%	33.3%	0.0	0.0%	0.0%	0.0	0.0%	20.0%
45–49	0.0	0.0%	33.3%	1.3	50.0%	50.0%	1.3	20.0%	40.0%
50–54	0.0	0.0%	33.3%	0.0	0.0%	50.0%	0.0	0.0%	40.0%
55–59	1.3	33.3%	66.7%	0.0	0.0%	50.0%	1.3	20.0%	60.0%
60–64	0.0	0.0%	66.7%	0.0	0.0%	50.0%	0.0	0.0%	60.0%
65–69	0.0	0.0%	66.7%	0.0	0.0%	50.0%	0.0	0.0%	60.0%
70–74	0.0	0.0%	66.7%	1.3	50.0%	100.0%	1.3	20.0%	80.0%
75–79	0.0	0.0%	66.7%	0.0	0.0%	100.0%	0.0	0.0%	80.0%
80–84	0.0	0.0%	66.7%	0.0	0.0%	100.0%	0.0	0.0%	80.0%
85–89	1.3	33.3%	100.0%	0.0	0.0%	100.0%	1.3	20.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**4.0**	**100.0%**	**100.0%**	**2.7**	**100.0%**	**100.0%**	**6.7**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 10-5. – Birthplaces of household heads, Healy Lake, 2011.

Birthplace[a]	Percentage
Fairbanks	25.0%
Healy Lake	25.0%
Soldotna	25.0%
Outside Alaska[b]	25.0%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All catagories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different catagory.
b. "Outside Alaska" refers to birthplaces which are not located within Alaska, however further details on location are unknown.

40% hunted for birds, 40% hunted for large land mammals, and 20% trapped furbearers (Table 10-6). Most residents (80%) participated in processing plants and berries and 100% participated in large land mammal processing (Table 10-6). Forty percent participated in fish processing, and 40% participated in processing birds (Table 10-6).

RESOURCE HARVEST AND USE PATTERNS

Table 10-7 summarizes resource harvest and use characteristics for Healy Lake in 2011, at the household level. All households used, attempted to harvest, and harvested wild resources in 2011. The average total harvest was an estimated 381 lb usable weight per household, or 229 lb per capita. During the study year, a maximum of 19 resources were used by Healy Lake households, with a mean of 16 types per household; on average, households attempted to harvest 6 distinct kinds of resources (Table 10-7). In addition, households gave away an average of 3 types of resources and received 12 kinds of resources (Table 10-7).

SPECIES USED AND SEASONAL ROUND

That 100% of households used, attempted to harvest or harvested, and received resources in 2011 suggests wild resources continue to play an important role in the lives of Healy Lake residents. Healy Lake households harvest a wide variety of species throughout the year and they often target specific species during certain seasons of the year, following a cyclical harvest pattern. While many residents travel on foot to hunt, fish, and gather, some use motorized vehicles, such as trucks, snowmachines, ATVs, and motor boats.

In the present-day upper Tanana region, the 3 major resources are large land mammals, fish, and wild plants; however, there are sub-regional differences depending on the local abundance of resources (Haynes and Simeone 2007:122). For Healy Lake specifically, the seasonal round begins with the harvest of freshwater fish throughout the winter months and this continues into the summer.

Table 10-6. – Estimated participation in subsistence harvesting and processing activities, Healy Lake, 2011.

Total number of people	**6.7**
Birds	
Hunt	
Number	2.7
Percentage	40.0%
Process	
Number	2.7
Percentage	40.0%
Fish	
Fish	
Number	2.7
Percentage	40.0%
Process	
Number	2.7
Percentage	40.0%
Large land mammals	
Hunt	
Number	2.7
Percentage	40.0%
Process	
Number	6.7
Percentage	100.0%
Furbearers	
Hunt or trap	
Number	1.3
Percentage	20.0%
Process	
Number	1.3
Percentage	20.0%
Plants	
Gather	
Number	6.7
Percentage	100.0%
Process	
Number	5.3
Percentage	80.0%
Any resource	
Attempt	
Number	6.7
Percentage	100.0%
Process	
Number	6.7
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 10-7. – Resource harvest and use characteristics, Healy Lake, 2011.

Characteristic	
Mean number of resources used per household	16.0
Minimum	10.0
Maximum	19.0
95% confidence limit (±)	40.3%
Median	19.0
Mean number of resources attempted to harvest per household	6.3
Minimum	5.0
Maximum	9.0
95% confidence limit (±)	45.3%
Median	5.0
Mean number of resources harvested per household	5.7
Minimum	5.0
Maximum	7.0
95% confidence limit (±)	25.3%
Median	5.0
Mean number of resources received per household	12.3
Minimum	6.0
Maximum	16.0
95% confidence limit (±)	55.5%
Median	15.0
Mean number of resources given away per household	3.0
Minimum	0.0
Maximum	5.0
95% confidence limit (±)	109.5%
Median	4.0
Household harvest, pounds	
Minimum	9.3
Maximum	576.7
Mean	380.8
Median	556.5
Total harvest weight, pounds	1,523.3
Community per capita harvest, pounds	228.5
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	66.7%
Number of households in sample	3.0
Number of resources available	103.0

Source ADF&G Division of Subsistence household surveys, 2012.

This is followed by the hunting of upland game birds in the spring. Salmon are often harvested in the Copper River area where one resident explained that his family owns land, whereas nonsalmon fish are typically harvested locally.

Table 10-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table 10-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Healy Lake households during the 2011 study year. Residents of Healy Lake harvested an estimated 1,523 lb of wild resources, or 229 lb per capita (Table 10-8). Moose, caribou, and whitefishes were the top 3 most harvested resources in terms of usable pounds; in comparison, burbot, caribou, moose, mallards, and blueberries were each used by 100% of households, thus sharing the first place rank for most use by households (Table 10-9).

Large land mammal hunting is a traditional and popular fall activity that often stretches into the winter. Most of the hunt takes place by boat or using ATVs, which are essential to "pack out" the meat. Respondents reported that in 2011 there were moose and caribou accessible from the community. An estimated 67% of households hunted large land mammals, all of which were successful (Table 10-8).

During the study year, an estimated 67% of the households in Healy Lake harvested fish. Salmon are not abundant in the vicinity of Healy Lake (Haynes and Simeone 2007:5) and the 2011 survey data indicate that no households in Healy Lake attempted to harvest salmon; however an estimated 67% of Healy Lake residents received Chinook salmon and 33% received sockeye salmon (Table 10-8). As mentioned above there is a long-standing connection between Upper Tanana people and Ahtna people of the Copper River Basin that has helped provide salmon in the upper Tanana area (Haynes and Simeone 2007:124).

Unknown whitefishes, burbot, Arctic grayling, and sheefish were harvested by 33% of the households in 2011 (Table 10-8). In the past, one resident explained, whitefishes made up the bulk of non-salmon fish harvests and were used to feed dogs and humans.

Upland game birds, such as grouse (spruce and ruffed) and ptarmigan, were harvested by Healy Lake residents in the summer. During 2011, 67% of households reported harvesting upland game birds (Table 10-8). Migratory birds were harvested by 33% of the Healy Lake households and all households used migratory birds (Table 10-8).

Harvesting vegetation, particularly berries in the summer, is an important activity for Healy Lake residents. During the study year, 67% of households reported harvesting berries while 100% used berries.

HARVEST QUANTITIES

Table 10-8 reports estimated wild resource harvests and uses by Healy Lake residents in 2011 and is organized first by general category and then by species. All edible resources are reported in pounds

Table 10-8. – Estimated harvests and uses of fish, game, and plant resources, Healy Lake, 2011.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**100%**	**100%**	**100%**	**100%**	**67%**	**1,523.3**	**380.8**	**228.5**	**341.7**		**85.4**	**105%**
Fish	**100%**	**67%**	**67%**	**100%**	**33%**	**403.6**	**100.9**	**60.5**	**233.3**		**58.3**	**209%**
Salmon	**67%**	**0%**	**0%**	**67%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Chum salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coho salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	67%	0%	0%	67%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**100%**	**67%**	**67%**	**100%**	**33%**	**403.6**	**100.9**	**60.5**	**233.3**		**58.3**	**209%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific Cod (gray)	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific Tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific halibut	67%	0%	0%	67%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Unknown rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	100%	33%	33%	67%	33%	160.0	40.0	24.0	66.7	Ind.	16.7	215%
Char	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dolly Varden	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Arctic grayling	33%	33%	33%	0%	0%	22.4	5.6	3.4	32.0	Ind.	8.0	215%
Northern pike	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sheefish	33%	33%	33%	0%	0%	8.0	2.0	1.2	1.3	Ind.	0.3	215%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%

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Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	100%	33%	33%	100%	33%	213.2	53.3	32.0	133.3		33.3	215%
Broad whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Round whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown whitefish	100%	33%	33%	100%	33%	213.2	53.3	32.0	133.3	Ind.	33.3	215%
Land mammals	**100%**	**67%**	**67%**	**100%**	**33%**	**1,066.7**	**266.7**	**160.0**	**26.7**		**6.7**	**126%**
Large land mammals	**100%**	**67%**	**67%**	**100%**	**33%**	**1,066.7**	**266.7**	**160.0**	**4.0**		**1.0**	**126%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	100%	33%	33%	67%	33%	346.7	86.7	52.0	2.7	Ind.	0.7	215%
Deer	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	100%	33%	33%	100%	33%	720.0	180.0	108.0	1.3	Ind.	0.3	215%
Dall sheep	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**33%**	**33%**	**33%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**22.7**		**5.7**	**215%**
Beaver	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coyote	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Fox	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%
Red fox–cross phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red fox–red phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Hare	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowshoe hare	0%	33%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	33%	33%	33%	0%	0%	0.0	0.0	0.0	22.7	Ind.	5.7	215%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red (tree) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolverine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**100%**	**67%**	**67%**	**100%**	**67%**	**15.4**	**3.8**	**2.3**	**20.0**		**5.0**	**150%**
Migratory birds	**100%**	**33%**	**33%**	**100%**	**33%**	**1.5**	**0.4**	**0.2**	**1.3**		**0.3**	**215%**
Ducks	100%	33%	33%	100%	33%	1.5	0.4	0.2	1.3		0.3	215%
Canvasback	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goldeneye	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	100%	33%	0%	100%	33%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pintail	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Teal	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0		0.0	0%
Green-winged teal	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wigeon	67%	33%	33%	67%	0%	1.5	0.4	0.2	1.3		0.3	215%
American wigeon	67%	33%	33%	67%	0%	1.5	0.4	0.2	1.3	Ind.	0.3	215%
Unknown ducks	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese	67%	0%	0%	67%	33%	0.0	0.0	0.0	0.0		0.0	0%
Brant	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Canada geese	67%	0%	0%	67%	33%	0.0	0.0	0.0	0.0		0.0	0%
Cacklers	33%	0%	0%	33%	33%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lesser Canada geese	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Emperor geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	33%	0%	0%	33%	33%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Other birds	**67%**	**67%**	**67%**	**33%**	**33%**	**13.9**	**3.5**	**2.1**	**18.7**		**4.7**	**174%**

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Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Other birds, continued												
Upland game birds	67%	67%	67%	33%	33%	13.9	3.5	2.1	18.7		4.7	174%
Grouse	67%	67%	67%	0%	33%	11.2	2.8	1.7	16.0		4.0	164%
Spruce grouse	67%	67%	67%	0%	33%	7.5	1.9	1.1	10.7	Ind.	2.7	142%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	33%	33%	33%	0%	0%	3.7	0.9	0.6	5.3	Ind.	1.3	215%
Ptarmigan	33%	33%	33%	33%	0%	2.7	0.7	0.4	2.7	Ind.	0.7	215%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**33%**	**0%**	**0%**	**33%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lbs.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**100%**	**100%**	**100%**	**33%**	**37.7**	**9.4**	**5.7**	**61.7**		**15.4**	**131%**
Berries	**100%**	**67%**	**67%**	**100%**	**0%**	**37.3**	**9.3**	**5.6**	**9.3**		**2.3**	**134%**
Blueberry	100%	33%	33%	100%	0%	10.7	2.7	1.6	2.7	Gal.	0.7	215%
Lowbush cranberry	67%	0%	0%	67%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Highbush cranberry	33%	33%	33%	0%	0%	26.7	6.7	4.0	6.7	Gal.	1.7	215%
Raspberry	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild berry	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**67%**	**33%**	**33%**	**33%**	**0%**	**0.3**	**0.1**	**0.1**	**0.3**		**0.1**	**215%**
Hudson's Bay tea	33%	0%	0%	33%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild greens	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Unknown mushrooms	67%	33%	33%	33%	0%	0.3	0.1	0.1	0.3	Gal.	0.1	215%
Wood	67%	67%	67%	33%	33%	0.0	0.0	0.0	52.0	Cord.	13.0	143%
Other wood	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Cord.	0.0	0%

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 10-9. – Top 10 resources harvested and used, Healy Lake, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	108.0	1	1.	Burbot	100.0%
2	2.	Caribou	52.0	2	1.	Caribou	100.0%
3	3.	Unknown whitefishes	32.0	3	1.	Moose	100.0%
4	4.	Burbot	24.0	4	1.	Mallard	100.0%
5	5.	Highbush cranberry	4.0	5	1.	Blueberry	100.0%
6	6.	Arctic grayling	3.4	6	2.	Chinook salmon	66.7%
7	7.	Blueberry	1.6	7	2.	Halibut	66.7%
8	8.	Sheefish	1.2	8	2.	Unknown whitefishes	66.7%
9	9.	Spruce grouse	1.1	9	2.	American wigeon	66.7%
10	10.	Ruffed grouse	0.6	10	2.	Spruce grouse	66.7%

Source ADF&G Division of Subsistence household surveys, 2012.

usable weight (see Appendix C for conversion factors[1][1]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

In terms of pounds harvested, large land mammals constituted 70% of the harvest, nonsalmon fish 27% of the harvest, vegetation 2% of the harvest, and birds 1% of the harvest (Figure 10-3). The single most important wild resource for the community of Healy Lake was moose. Moose made up the highest percentage of the total pounds harvested (720 lb, or 108 lb per capita) and was used by every household (100%) surveyed in 2011 (Table 10-8). The moose population, residents say, is in flux and the community has made an effort to control predators in recent years. Caribou was another important wild food resource (52 lb per capita) (Table 10-8).

Whitefishes were another major source of wild foods in Healy Lake in 2011, with a harvest of 213 lb (32 lb per capita) (Table 10-8). All of the whitefishes harvested for 2011 came from Healy Lake. The community of Healy Lake works together to harvest whitefishes with a setnet placed just off shore at the site of the abandoned Old Healy Lake Village.

Vegetation made up about 2% of the total community harvest (Figure 10-3), with an estimated harvest of 38 lb (6 lb per capita). All households surveyed (100%) reported harvesting vegetation (Table 10-8). The highest harvest in pounds usable weight was berries, most of which was highbush cranberries (27 lb, or 4 lb per capita) (Table 10-8).

Birds made up a very small portion of the total community harvest in 2011, approximately 1%

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

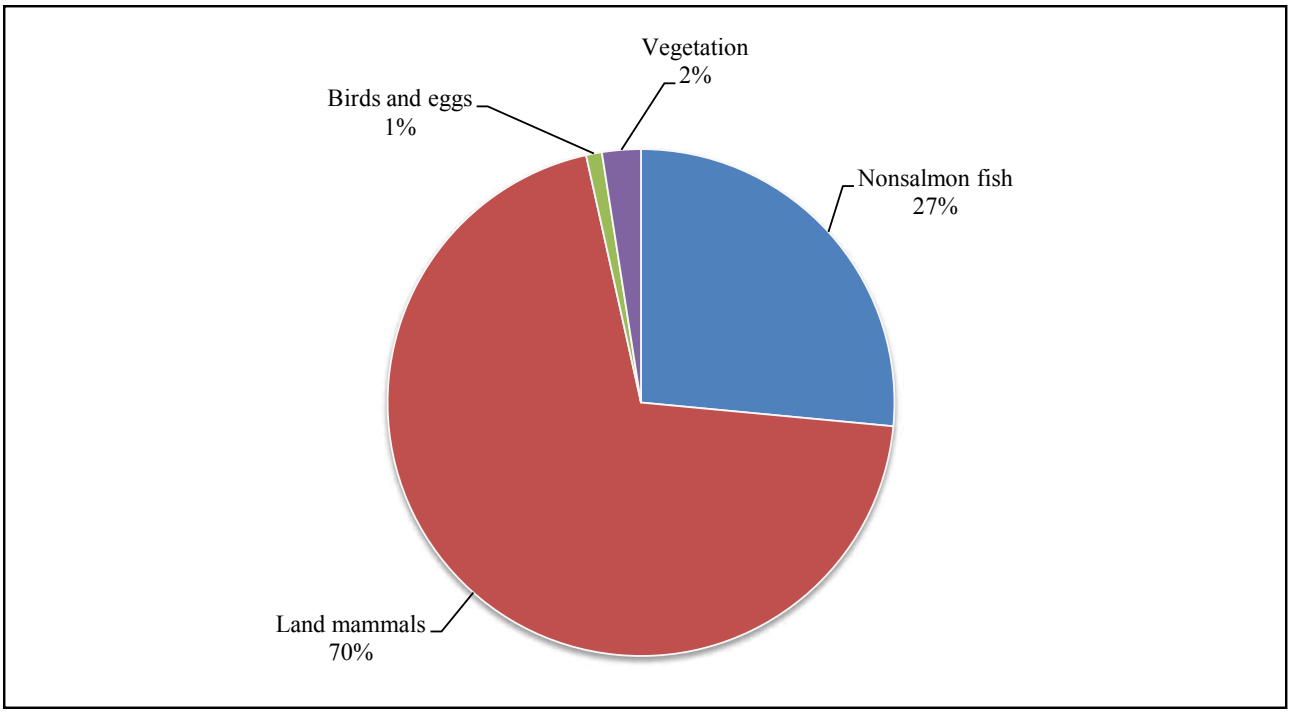


Figure 10-3.– Composition of harvest by category, Healy Lake, 2011.

(Figure 10-3). The Healy Lake household harvest of birds was 15 lb (2 lb per capita) (Table 10-8). Most of the bird harvest (14 lb, or 2 lb per capita) was upland game birds, including ruffed grouse, spruce grouse, and some ptarmigan. In 2011, 67% of the Healy Lake households reported harvesting and using upland game birds.

SHARING AND RECEIVING WILD RESOURCES

In Healy Lake in 2011, estimates of sharing indicated that 100% of households received wild resources from other households and an estimated 67% of households gave resources away (Table 10-7). Households received an average of 12 resources and gave away an average of 3 resources (Table 10-7). Burbot, caribou, moose, mallards, and blueberries were the most used resources (all households surveyed reported using these resources) (Table 10-9). In addition, moose, mallards, and blueberries were received by 100% of households (Table 10-8).

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

Healy Lake residents did not harvest salmon in 2011; however, approximately 67% of Healy Lake residents received and used salmon (Table 10-8). Salmon are not readily available in the upper

Tanana River near Healy Lake because there are rapids that prevent salmon from reaching the Healy Lake area from the lower Tanana River (Haynes and Simeone 2007:5). As mentioned earlier, salmon were and sometimes are still harvested in the Copper River. Two studies to examine resource-related linkages between residents of the upper Tanana region and Copper River Basin found that upper Tanana residents used 5 of the 13 defined areas bordering the northern part of the Wrangell–St. Elias National Park where they would harvest salmon (Haynes and Simeone 2007:124-125). According to one key respondent interviewed for this study, in the recent past salmon were harvested in fish wheels on the Copper River by residents of Healy Lake.

NONSALMON FISH

In 2011, Healy Lake residents harvested a total of 404 lb, or nearly 61 lb per capita of nonsalmon fish (Table 10-8). In terms of total pounds and percentages, most of the harvest was unknown whitefishes (53%), followed by burbot (40%), Arctic grayling (5%), and sheefish (2%) (Figure 10-4). Table 10-10 lists the number and pounds of each nonsalmon fish species harvested by Healy Lake residents in 2011 in percentages by gear type. Healy Lake residents harvested the majority of their nonsalmon fish with setnets (see subsistence methods gillnet or seine in Table 10-10). For example, all whitefishes, making up 53% of the total nonsalmon harvest (Figure 10-4) were harvested by setnet (Table 10-10). All Arctic grayling were harvested using rod and reel gear, and all burbot were fished with other subsistence gear, which might include jigging through ice in the winter (Table 10-10). Residents of Healy Lake harvested nonsalmon species in the 2011 study year in Healy Lake nearby the Old Healy Lake Village site located to the southwest of the community (Figure 10-5). Nonsalmon fish were also harvested on the Tanana, Volkmar, and Healy rivers (Figure 10-5). Northern pike stocks plummeted following the eruption of Mount Spurr in Cook Inlet in 1992, according to respondents, because ash covered the area. According to residents, northern pike are only now returning in the numbers and in the size they once were before the eruption.

Fish, including burbot, northern pike, Arctic grayling, lake trout, and whitefishes were traditionally caught in Healy Lake, Healy River, and in other waters surrounding the area using fish traps, weirs, spears, fish wheels, nets, and bow and arrow (Haynes and Simeone 2007). In winter, according to one fisher, whitefishes are traditionally caught in nets under the ice and allowed to freeze in the cold winter weather. Later, this same longtime resident explained, they are stacked like firewood on sleds and stored frozen. Traditionally the people of Healy Lake either ate the fish fresh, smoked, dried, boiled, or frozen (Haynes and Simeone 2007). In the past, people boiled the fish in a birch bark bowl that had heated stones placed in it (Haynes and Simeone 2007:28). Some fish were stored in pits dug into the permafrost that were lined with birch bark on the sides and had small poles on the bottom (Haynes and Simeone 2007:28).

Whitefishes are an especially important food because they are relatively abundant and perennially

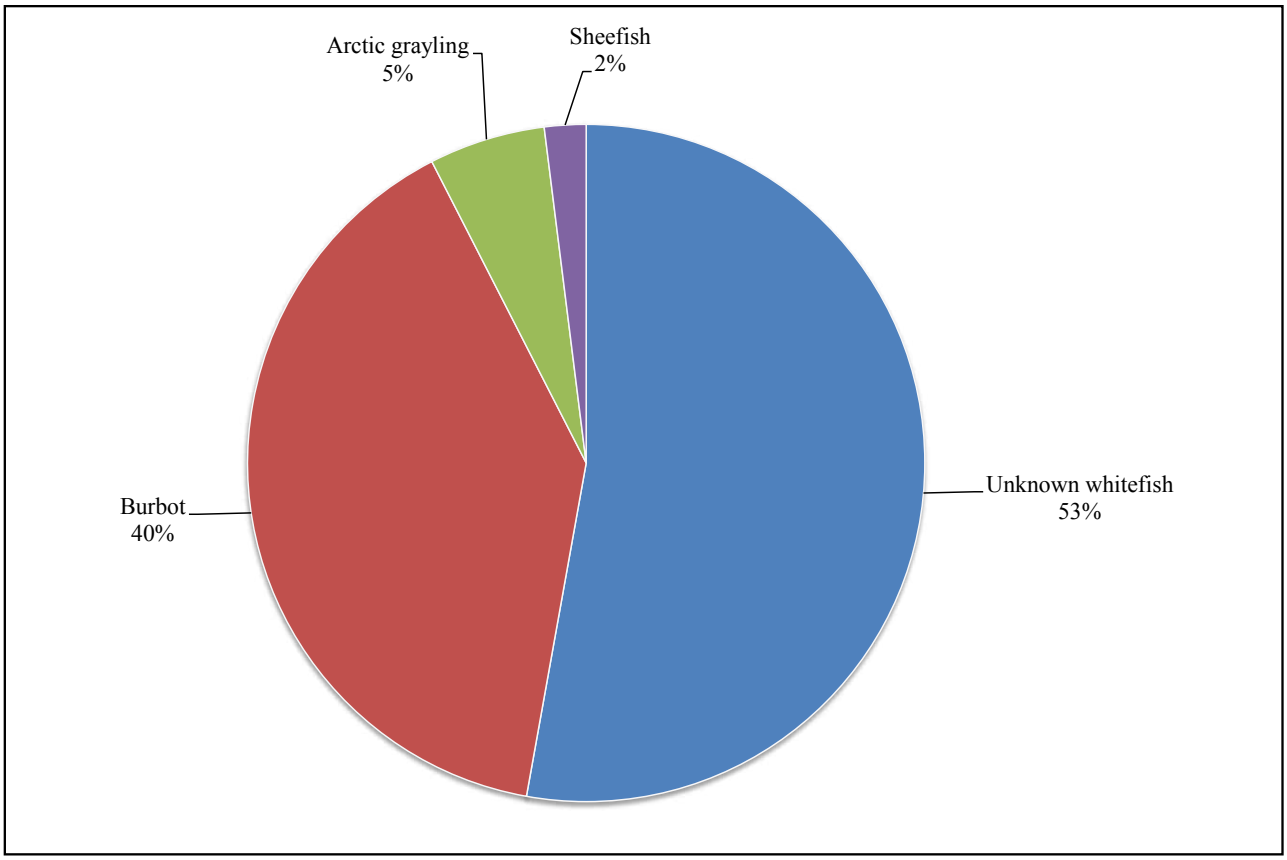


Figure 10-4.– Composition of nonsalmon fish harvest, Healy Lake, 2011.

reliable (Haynes and Simeone 2007:28). In addition, according to one longtime resident of Healy Lake, whitefishes have traditionally made up the bulk of the food given to dogs; however, there are no longer dog sled teams at Healy Lake, which provides more time for hunting large land mammals.

LARGE LAND MAMMALS

In 2011, in terms of pounds usable weight, moose made up 68% of the large land mammal harvest followed by caribou at 32% (Figure 10-6). Thirty-three percent of households participated in the fall moose hunt, with all of them successfully harvesting a moose (Table 10-8). In terms of pounds harvested in 2011, moose ranks first on the list of top 10 resources harvested (Table 10-9). Residents related that they prefer moose over caribou. All moose were harvested in September (Table 10-11) in the area just east of the community (Figure 10-7).

Caribou made up a smaller percentage (32%) of the 2011 large mammal harvest in pounds usable weight and an estimated 3 caribou were harvested (Table 10-8). Thirty-three percent of Healy Lake residents attempted to harvest caribou and all were successful (Table 10-8). During the 2011 study year, in August, Healy Lake residents reported harvesting caribou near the community and to the northeast past the headwaters of the Volkmar River (Table 10-11; Figure 10-7).

Table 10-10. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Healy Lake, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	57.1%	52.8%	28.6%	39.6%	85.7%	92.5%	14.3%	7.5%	100.0%	100.0%
	Total	0.0%	0.0%	57.1%	52.8%	28.6%	39.6%	85.7%	92.5%	14.3%	7.5%	100.0%	100.0%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	33.3%	42.9%	0.0%	0.0%	28.6%	39.6%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	28.6%	39.6%	28.6%	39.6%	0.0%	0.0%	28.6%	39.6%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	96.0%	73.7%	13.7%	5.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.7%	5.6%	13.7%	5.6%
Sheefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	26.3%	0.6%	2.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	2.0%	0.6%	2.0%
Unknown whitefish	Gear ype	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	66.7%	57.1%	0.0%	0.0%	57.1%	52.8%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	57.1%	52.8%	0.0%	0.0%	57.1%	52.8%	0.0%	0.0%	57.1%	52.8%

Source ADF&G Division of Subsistence household surveys, 2012.

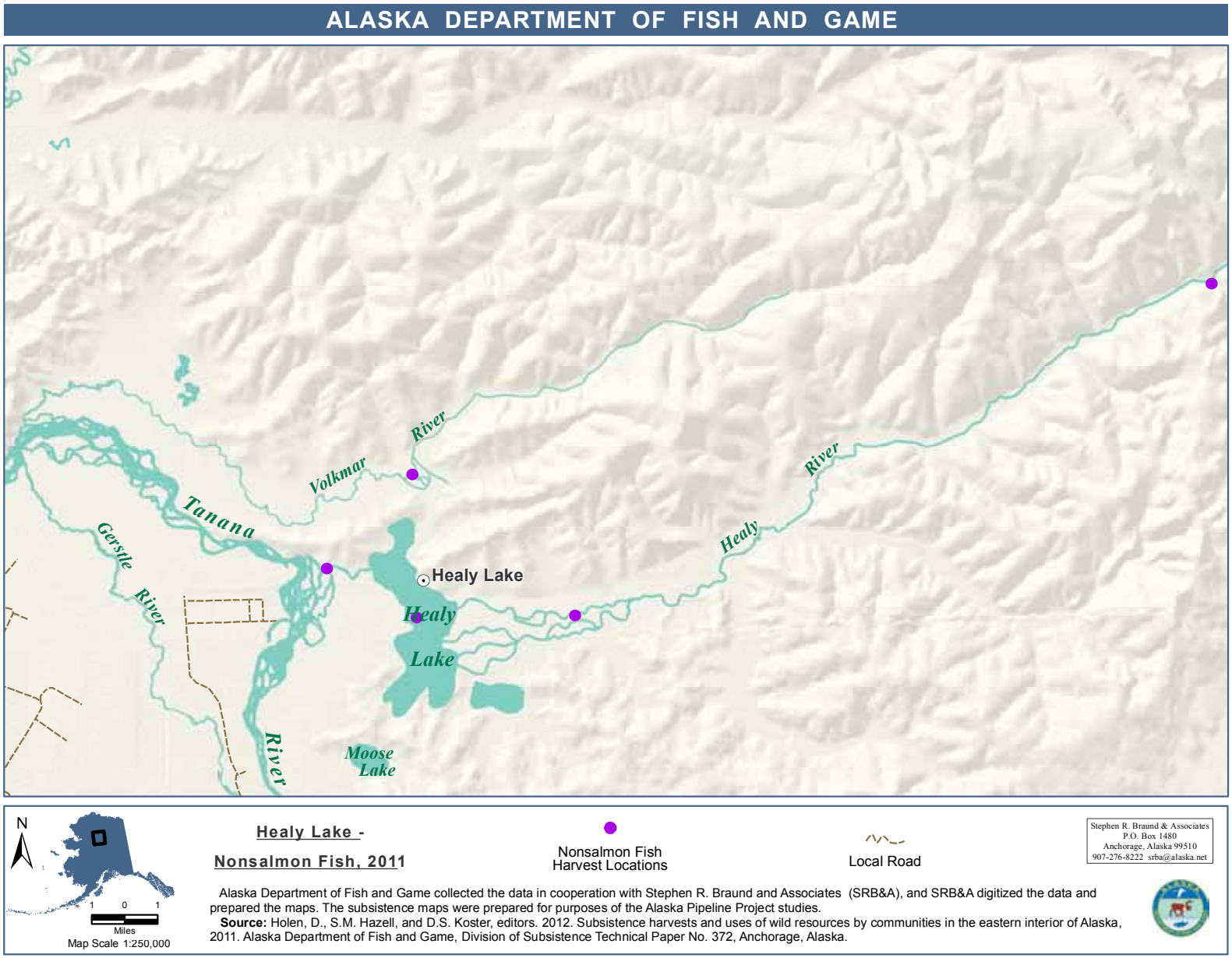


Figure 10-5.– Nonsalmon fish search and harvest areas, Healy Lake, 2011.

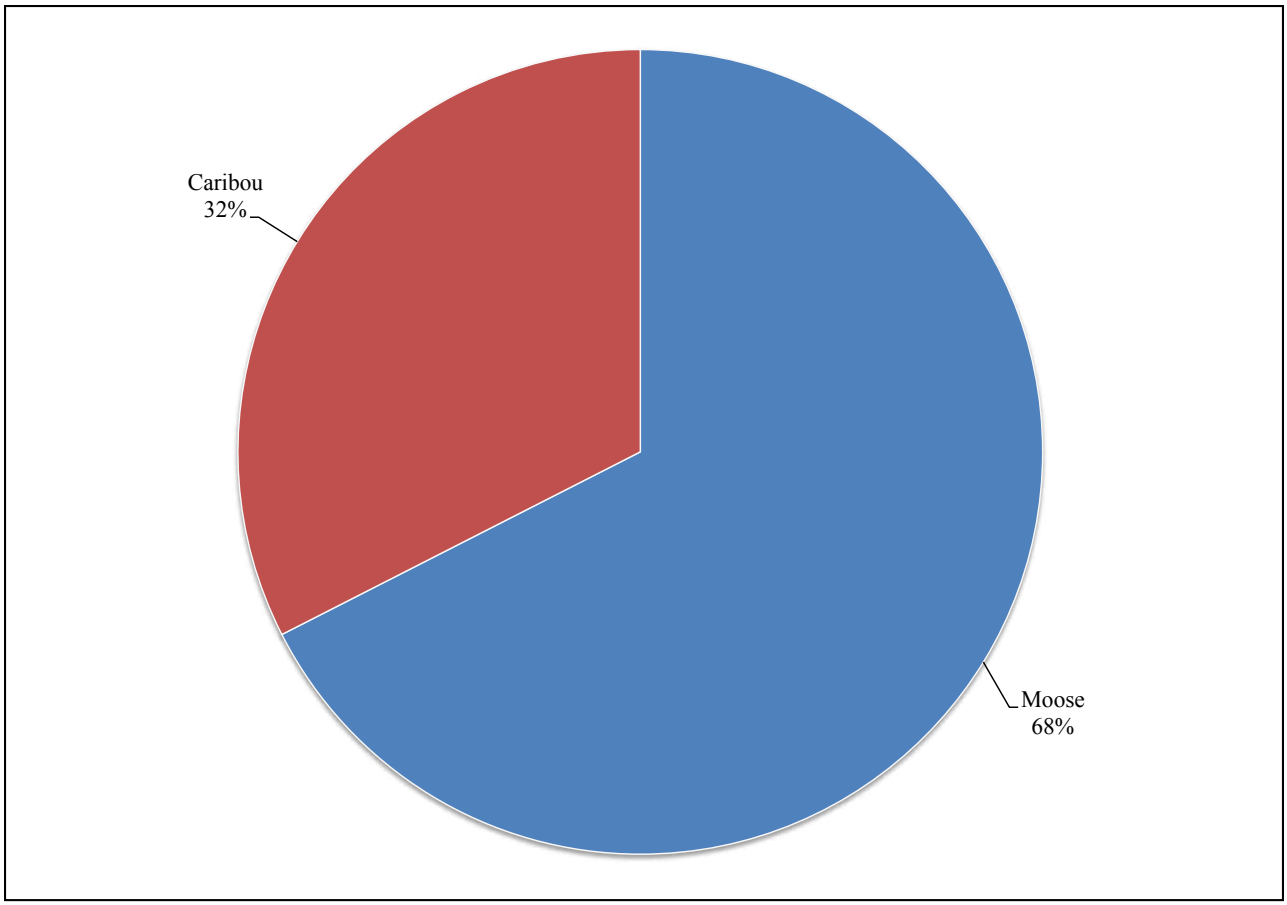


Figure 10-6.– Composition of large land mammal harvest, Healy Lake, 2011.

Under Alaska Native Claims Settlement Act legislation, village corporations were allotted land around their communities (Haynes and Simeone 2007:132). In contemporary Healy Lake these corporation lands are used for subsistence purposes; specifically caribou are harvested near the headwaters of the Volkmar River and also right near the village of Healy Lake (Figure 10-7).

According to several local hunters, the Fortymile caribou herd's migration route often includes the area surrounding Healy Lake. Residents have a registration hunt opportunity for caribou in the fall beginning in August, and a longer caribou registration hunt begins in December; however, these caribou hunting seasons can change with short notice and hunters are requested to call the ADF&G Fortymile caribou hotline for updates. Respondents reported that in recent times only small numbers of caribou have migrated into the area. Caribou are not the main source of food for people at Healy Lake, but as residents of Healy Lake explained, they are harvested if the opportunity arises. A Healy Lake resident claims that caribou have a lower nutritional value and no flavor and that he prefers moose meat but that he will make jerky from caribou meat. One resident believes that the Fortymile herd is mixing in with the Nelchina herd, and said that "old timers" have seen this merging of caribou herds over time as well. The Fortymile herd comes through this area more often in recent years, according

Table 10-11. – Estimated harvests of large game by month and sex, Healy Lake, 2011.

				Caribou					Moose			
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**0.0**	**2.7**	**0.0**	**0.0**	**0.0**	**0.0**	**1.3**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

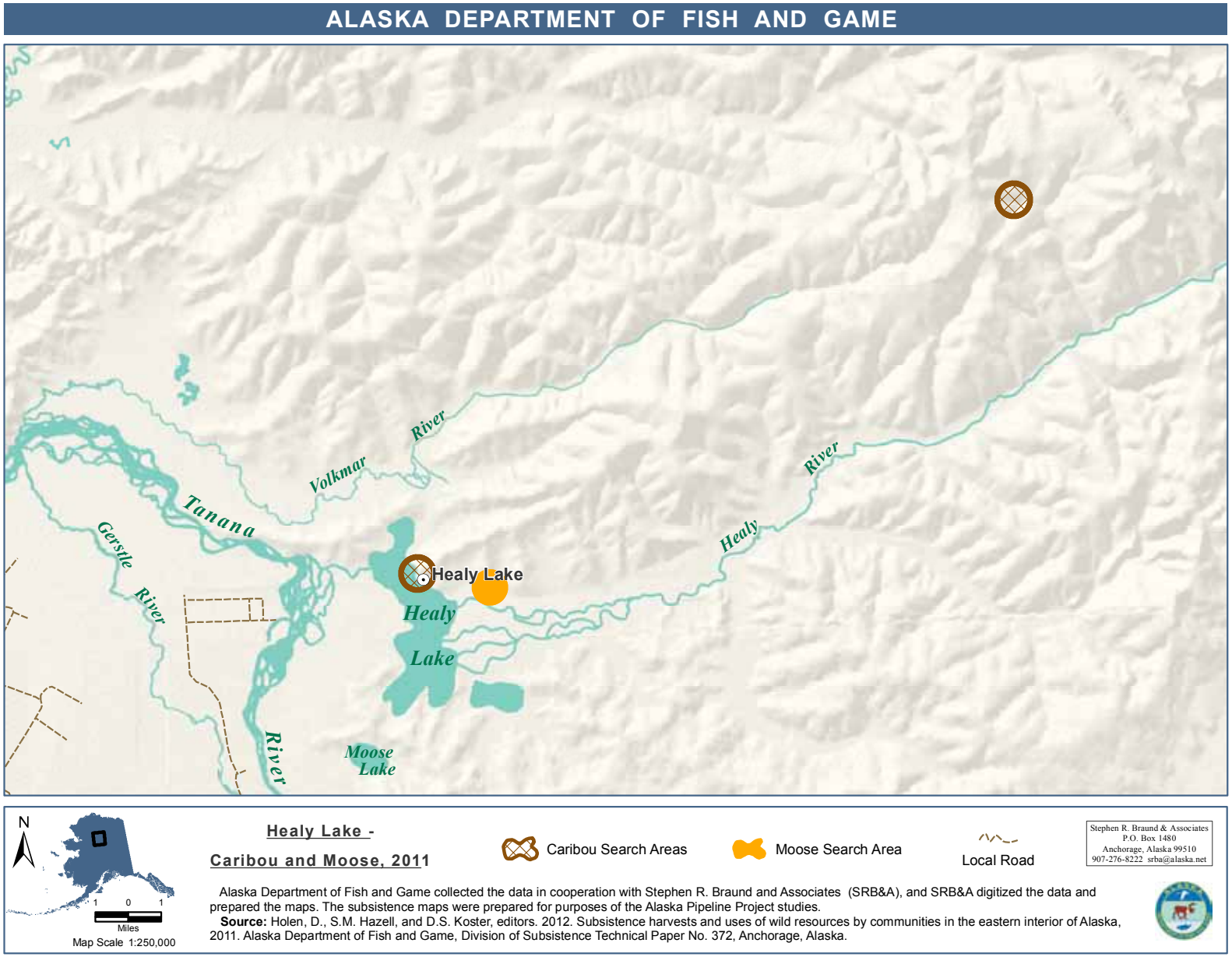


Figure 10-7.– Caribou and moose search and harvest areas, Healy Lake, 2011.

to one resident, due to a fire in the Fortymile area. Having said this, this same resident claimed that in the recent season, he has only seen a few caribou near Healy Lake.

Concerning moose specifically, this resident said that there are often moose near the flats across the lake from the community. This same resident added that it is important to wait for the moose that come near the Tanana River because if a hunter tries to harvest one farther back on the flats, it will be impossible or very difficult to bring the moose out. The resident also said that there is an area of dead "geese grass" that moose like to graze near the Gerstle River in the spring when they come down out of the mountains. This respondent worries that the construction of a natural gas pipeline through the area could prevent the moose from moving down into the region.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 10-8, the total harvest of small land mammals by Healy Lake residents in 2011 was an approximate 23 animals, specifically martens. Harvests of small land mammals occurred between 5 to 10 miles to the northeast of Healy Lake village between the Volkmar and Healy rivers and in one isolated location across Healy Lake to the southwest of Healy Lake village (Figure 10-8). As discussed in the section “Community Background,” trapping has been a longstanding traditional harvesting activity for Healy Lake residents although the number of residents participating and the number of animals trapped has decreased over time, according to local respondents.

BIRDS

In 2011, the total harvest of birds by Healy Lake households was an estimated 15 lb (2 lb per capita) (Table 10-8). The migratory bird harvest total was approximately 2 lb and was made up entirely of American wigeon (Table 10-8). Healy Lake upland game birds were taken in the hills 5 to 10 miles to the northeast of the village between the Volkmar and Healy rivers (Figure 10-9). No gathering of bird eggs took place during the study year.

VEGETATION

In 2011, Healy Lake residents harvested an approximate 38 lb, or 6 lb per capita of vegetation (Table 10-8). In 2011, highbush cranberries made up the bulk of the harvest with a total harvest of 27 lb (4 lb per capita). For 2011, the community harvested approximately 11 lb of blueberries (2 lb per capita). Less than 1 lb of wild mushrooms was harvested (Table 10-8).

Harvest areas for berries included an area approximately 10–13 miles to the northeast of Healy Lake in an area between the Healy and Volkmar rivers (Figure 10-9). An area along the mouth of the Gerstle River was also used to harvest berries (Figure 10-10). Healy Lake residents harvested approximately

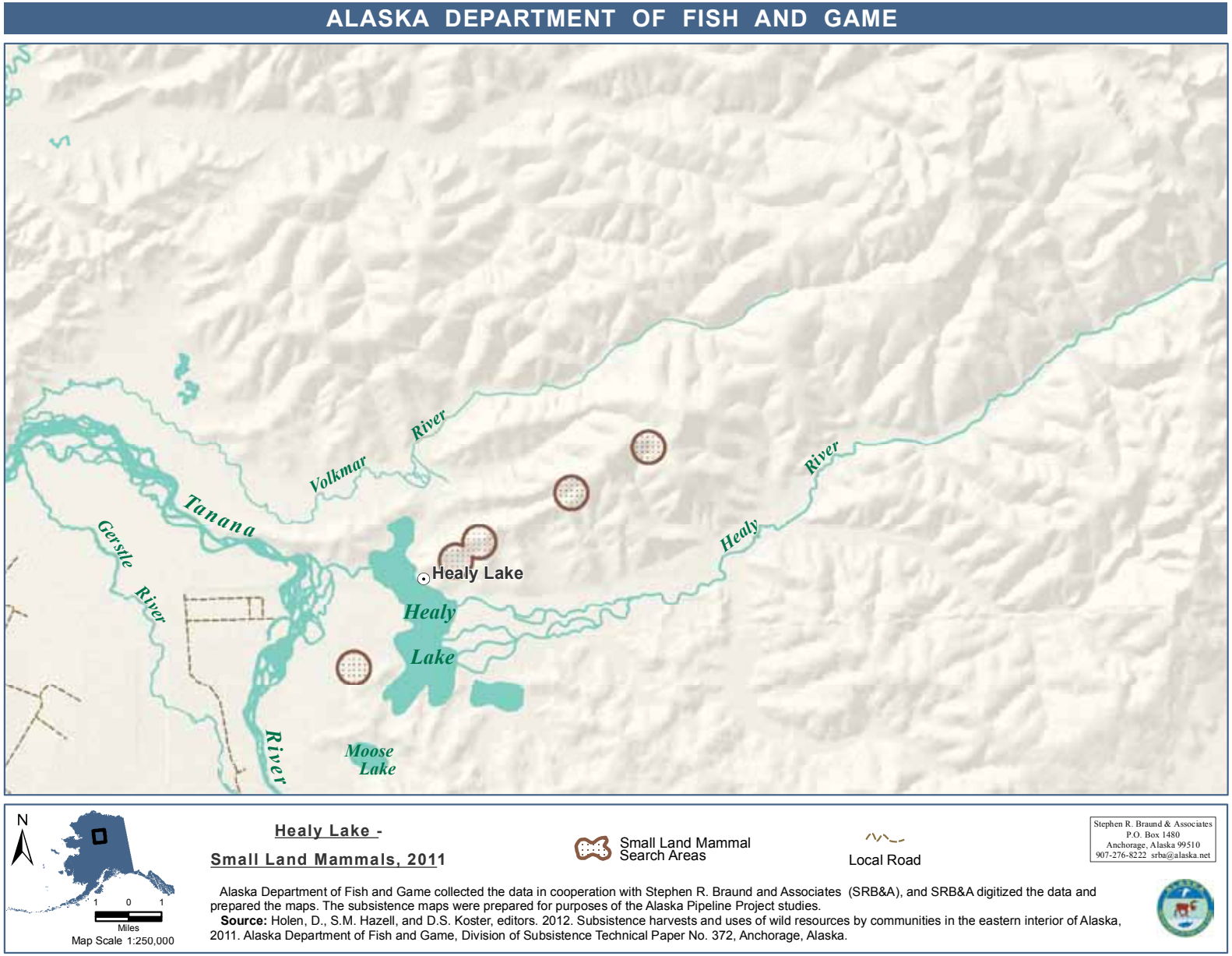


Figure 10-8.– Small land mammals search and harvest areas, Healy Lake, 2011.

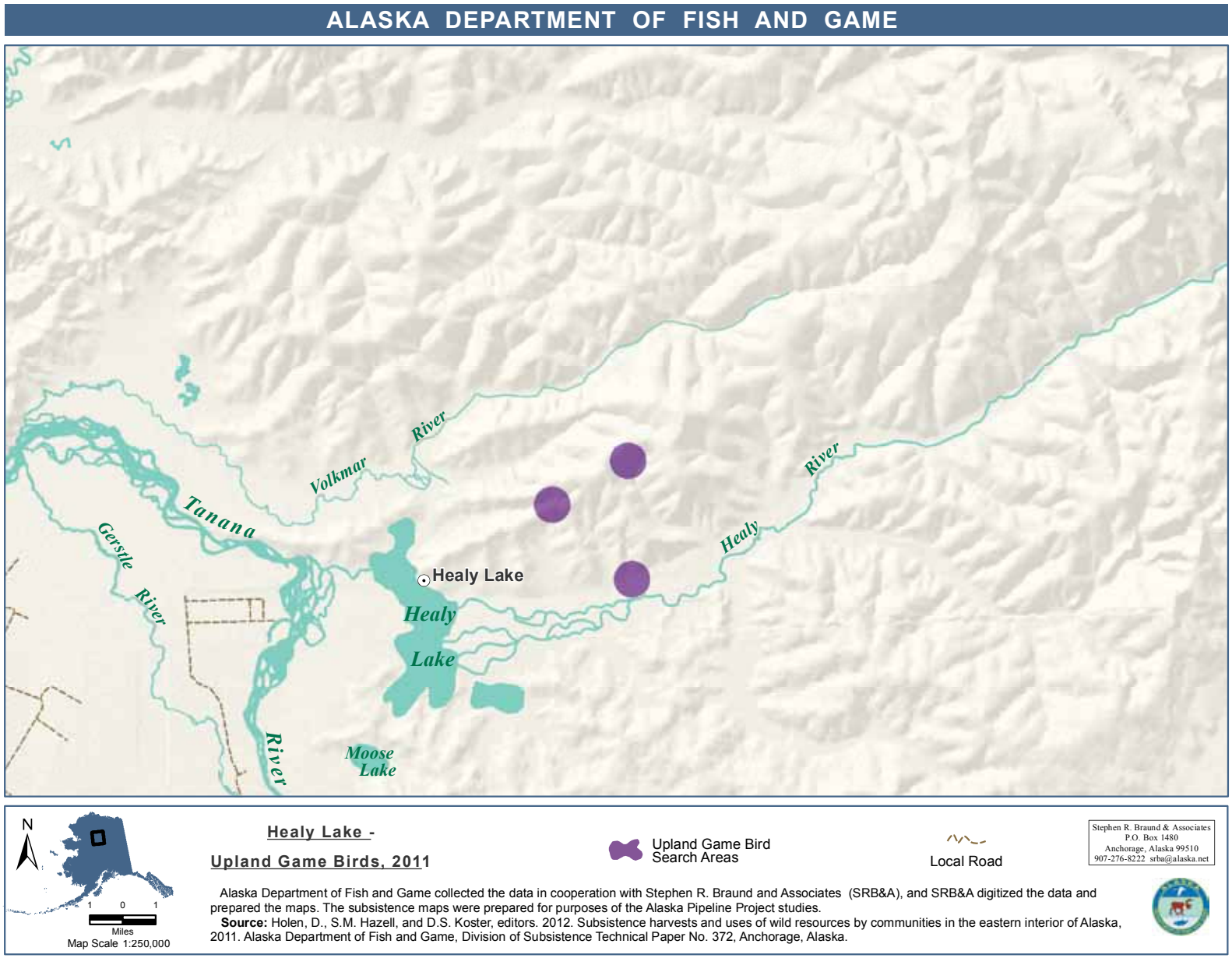


Figure 10-9.– Upland game birds search and harvest areas, Healy Lake, 2011.

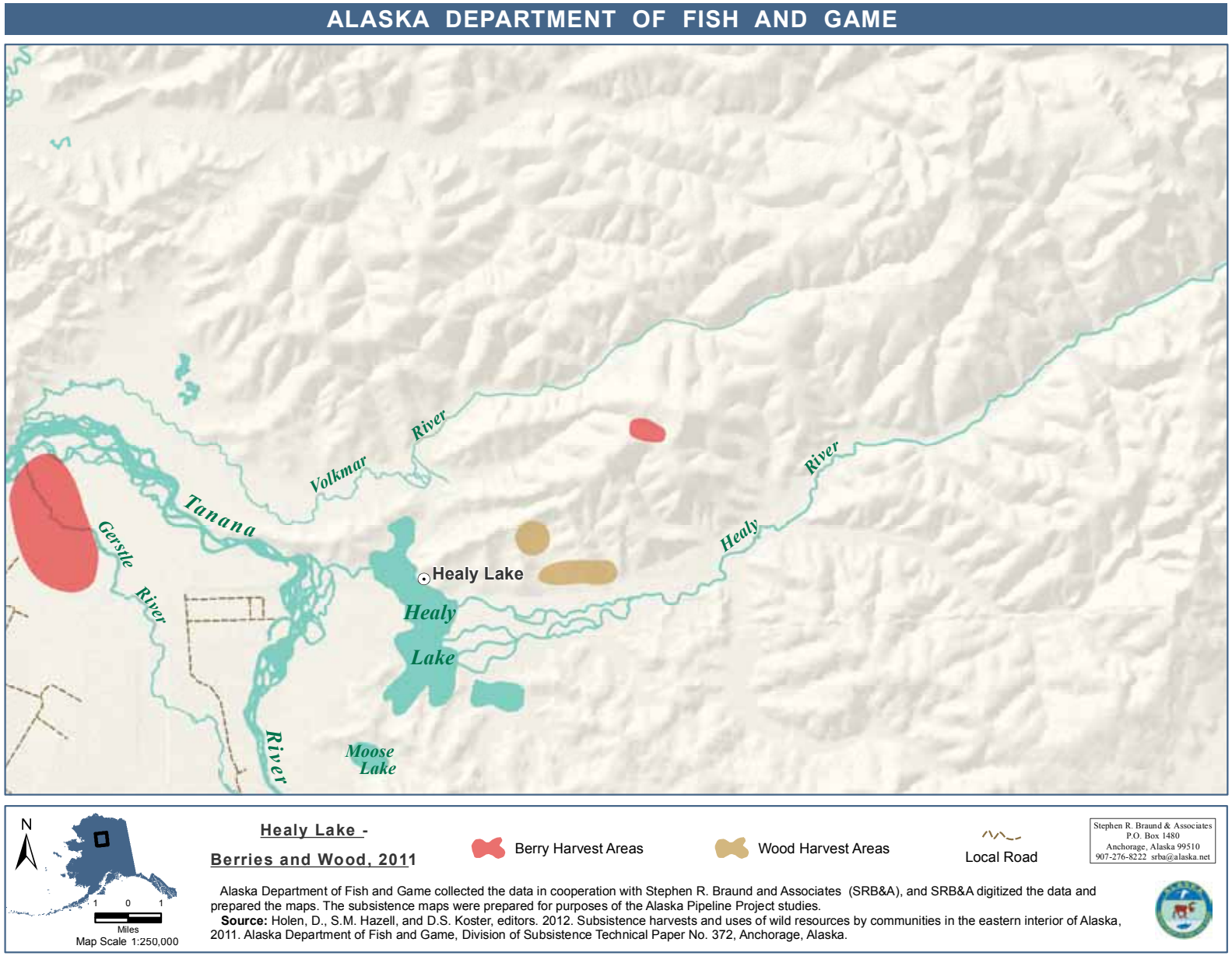


Figure 10-10.– Berries and wood search and harvest areas, Healy Lake, 2011.

52 cords of wood (Table 10-8) in the hills near the same general vicinity where some berries were harvested—between the Volkmar and Healy rivers and about 5–7 miles from the village (Figure 10-10).

CASH EMPLOYMENT AND MONETARY INCOME

Because Healy Lake is a small community with few households, for confidentialy reasons, the estimated earned and other income data are not included in this chapter, nor are the tables showing employment statistics.

FOOD SECURITY

Because Healy Lake is a small community with few households, the food security data and associated figures depicting answers to food security questions are not included in this chapter for confidentiality reasons.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 10-12 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 10-12, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 10-11 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (3 households), and therefore differ from those reported in Table 10-12.

More than one-half (67%) of the Healy Lake respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); none said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 33% said their overall harvests and uses were higher (Table 10-12). As depicted in Figure 10-11, harvests and uses were lower or about the same for the majority of households that provided assessments.

For example, for nonsalmon fish, 67% of all interviewed households (Figure 10-11), and 67% of all those who provided an assessment (Table 10-12), indicated less use, and 33% of all households and 33% of those providing assessments indicated the same levels of use in 2011 than in previous years. Healy Lake households indicated the same levels of use for vegetation (67% of all households, 67%

Table 10-12. – Changes in household uses of resources compared to recent years, Healy Lake, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	3	3	3	100%	3	100%	2	67%
All resources	3	3	2	67%	0	0%	1	33%
Salmon	3	2	0	0%	2	100%	0	0%
Nonsalmon fish	3	3	2	67%	1	33%	0	0%
Large game	3	3	1	33%	1	33%	1	33%
Small game	3	1	0	0%	0	0%	1	100%
Migratory waterfowl	3	3	0	0%	2	67%	1	33%
Other birds	3	2	1	50%	0	0%	1	50%
Bird eggs	3	0	0	0%	0	0%	0	0%
Marine invertebrates	3	1	0	0%	1	100%	0	0%
Vegetation	3	3	0	0%	2	67%	1	33%

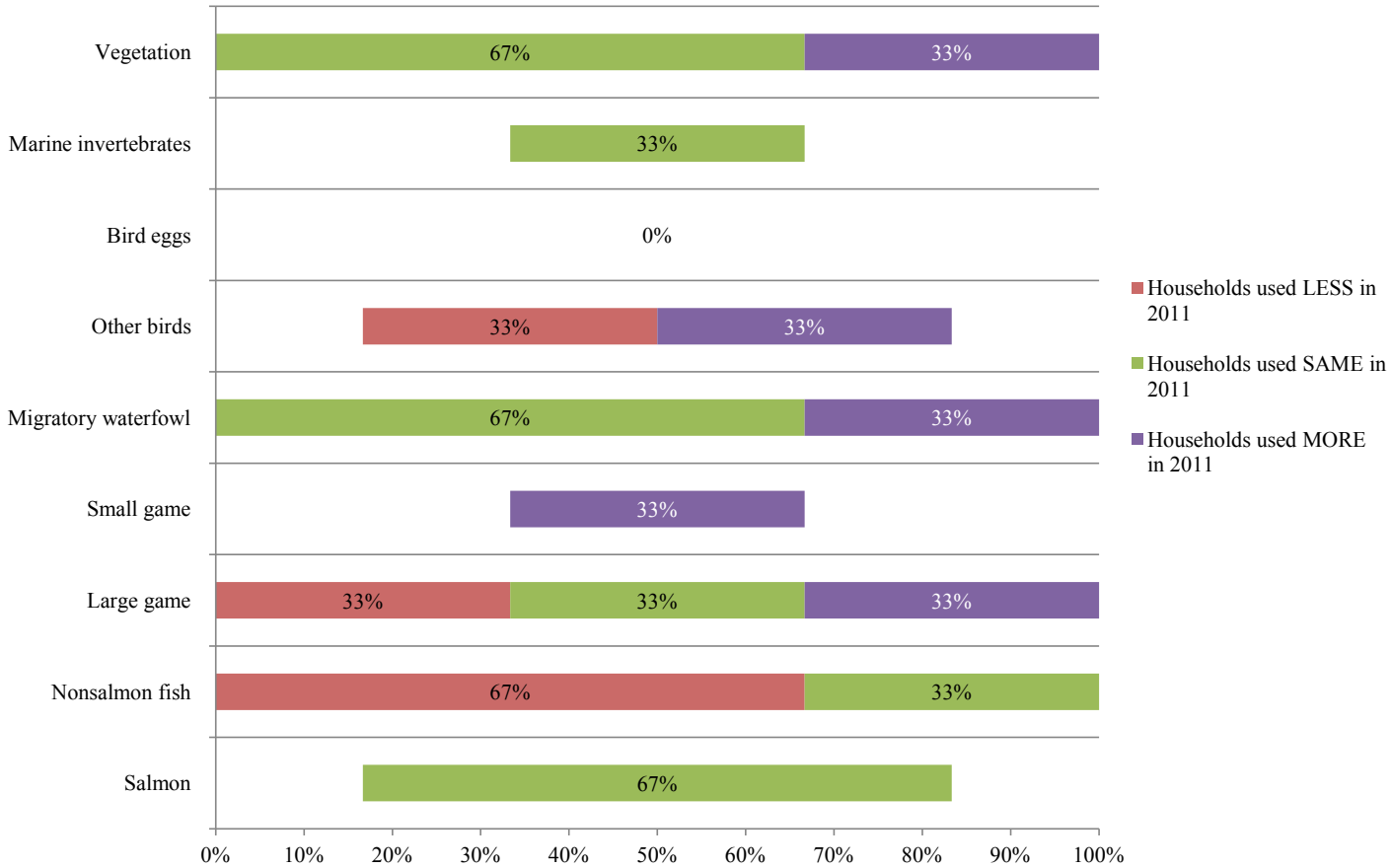
Source ADF&G Division of Subsistence household surveys, 2011.
a. Valid responses do not include households that did not provide any response and households reporting never use.

of those providing assessment), migratory waterfowl (67% of all households, 67% of those providing assessment), and salmon (67% of all households, 100% of those providing assessment) in 2011 than in recent years.

Table 10-13 depicts the reasons Healy Lake respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: lack of effort (50%) and other reasons (50%). Lack of effort and unsuccessful harvest efforts were cited as the main reasons for less use of nonsalmon fish. Unsuccessful hunting was the reason given for less use of large game, and less availability of resources was given as the reason for less use of other birds.

Overall, 100% of Healy Lake's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 67% said that their uses of at least one category had increased (Table 10-12). Lack of effort was the most frequently cited reason for lower use of any resource category in 2011 (67% of all Healy Lake households who reported a reason for less use), followed by resources being less available, unsuccessful efforts, and other reasons (33% each) (Figure 10-12).



Note Percentages are based on the total number of households in the community (N = 3 households). Unlabeled percentages are less than 5%.

Figure 10-11.– Changes in household uses of resources compared to recent years, Healy Lake, 2011.

Table 10-13. – Reasons for less household uses of resources compared to recent years, Healy Lake, 2011.

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	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Any resource	3	3	0	0%	1	33%	0	0%	0	0%	0	0%	2	67%	1	33%	0	0%
All resources	3	2	0	0%	0	0%	0	0%	0	0%	0	0%	1	50%	0	0%	0	0%
Salmon	2	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Nonsalmon fish	3	2	0	0%	0	0%	0	0%	0	0%	0	0%	1	50%	1	50%	0	0%
Large game	3	1	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%	0	0%
Small game	1	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Migratory waterfowl	3	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Other birds	2	1	0	0%	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Bird eggs	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Marine invertebrates	1	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Vegetation	3	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, 2011.

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

Table 10-13.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Any resource	3	3	1	33%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
All resources	3	2	1	50%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Salmon	2	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Nonsalmon fish	3	2	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Large game	3	1	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Small game	1	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Migratory waterfowl	3	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Other birds	2	1	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Bird eggs	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Marine invertebrates	1	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Vegetation	3	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, 2011.

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

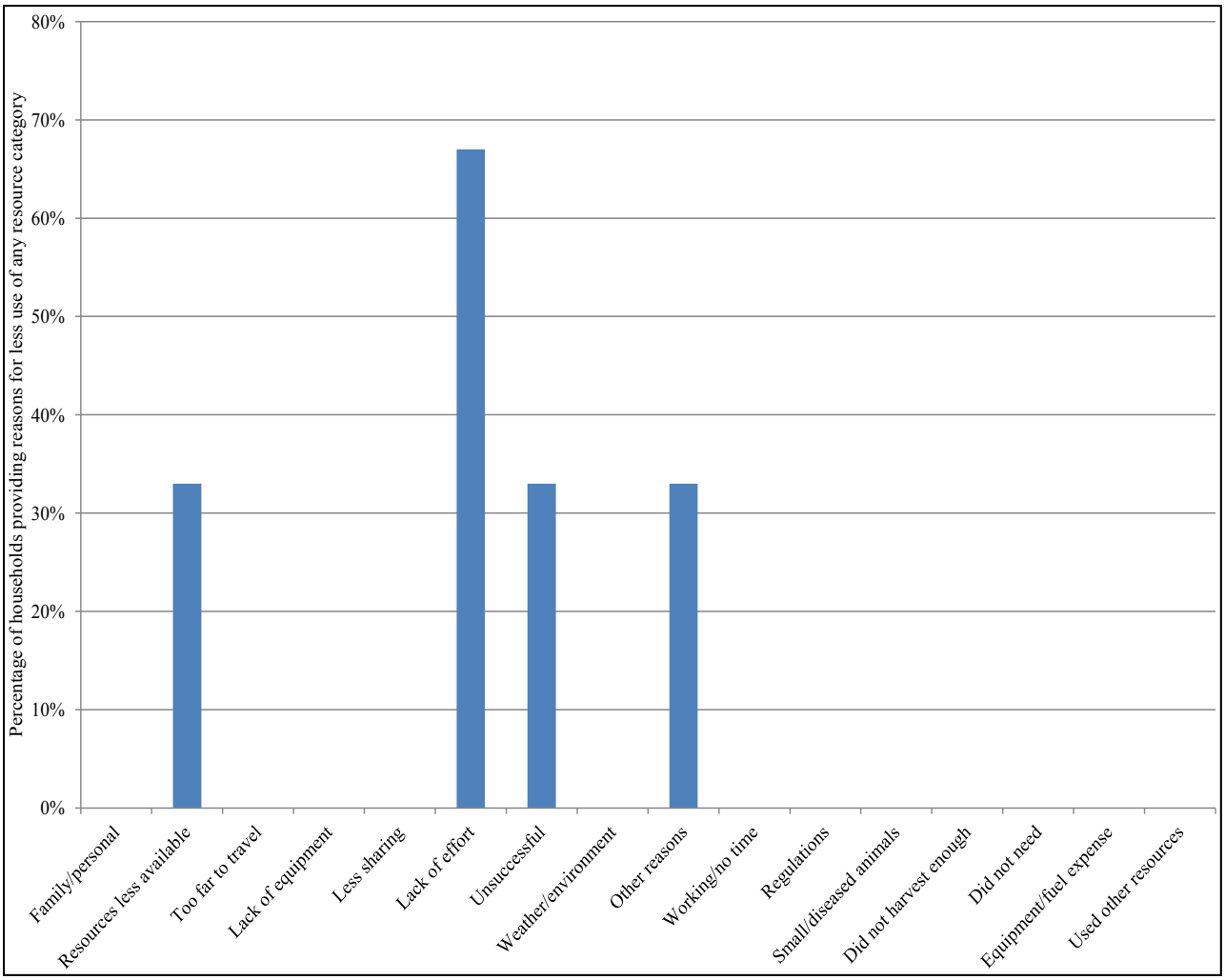


Figure 10-12.– Reasons for less household uses of any resource compared to recent years, Anaktuvuk Pass, 2011.

LOCAL CONCERNS REGARDING RESOURCES

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

Most comments have been included in earlier sections. Residents were particularly concerned about the harvest of large land mammals because these have become a critical resource for the community of Healy Lake. Large land mammals make up a large portion of the total annual community harvest and residents share these resources with each other. The primary concern for Healy Lake residents is to protect the moose and large game populations from illegal hunting and overhunting. Residents claim that non-local residents have been trespassing on Mandas Cha-ag Native Corporation land to

harvest moose and other game over the last 20 years. Predator control continues in the area and even with this, residents claim that the moose population is not what it used to be. One resident claimed that a fire in the larger vicinity has led to the increased caribou population in the Healy Lake region; however, most Healy Lake residents prefer moose and harvest caribou only when the opportunity presents itself. One resident mentioned that if the proposed gas pipeline were to follow the route of the existing trans-Alaska Pipeline, he was concerned the construction might disrupt the moose migration pattern that was mentioned previously in the section "Use and Harvest Characteristics by Resource Category: Large Land Mammals."

SUMMARY

This chapter summarizes the first comprehensive subsistence survey to be conducted in the community of Healy Lake. Overall, the findings demonstrated the community depends on the harvest of wild resources, particularly because there is no road access to services and stores. Large land mammals, mostly moose, constituted 70% of the harvest in 2011, followed by nonsalmon fish at 27%, and vegetation at 2%. The per capita harvest of 229 lb demonstrates that residents of this community rely on subsistence activities to provide food and support their cultural traditions.

ACKNOWLEDGEMENTS

The Division of Subsistence would like to thank everyone who helped make the work in Healy Lake a success. We would especially like to thank Paul Kirsteatter for his assistance on this project. Paul was very helpful in providing logistics support for the research and the community review meeting. In addition, at the community review meeting, several residents participated in reviewing the research findings. Due to the small number of year-round households in the community, we wanted to ensure that the research findings were presented in a way that interviewed residents were comfortable with. We appreciate the community's active engagement in this meeting.

CHAPTER 11: DOT LAKE

Prepared by Robbin La Vine

COMMUNITY BACKGROUND

Dot Lake is situated along the Alaska Highway within the upper Tanana River region of eastern interior Alaska. The Tanana River drainage is bordered by the mountains of the Alaska Range stretching to the south and west, the Wrangell and Nutzotin mountains to the south, and the rolling hills and mountains of the Yukon–Tanana uplands to the north and east. The Tanana River headwaters originate in the wetlands of the Tetlin National Wildlife Refuge. Traversing and feeding the wetlands of the refuge are the Tetlin Lake and Tetlin River, and the Nabesna and Chisana rivers, the confluence of which becomes the Tanana River that in turn feeds into the Yukon River near Fairbanks.

THE COMMUNITY OF DOT LAKE

The community of Dot Lake was established on the site of a temporary Alaska Highway construction camp called Sears City. Built during the early 1940s, the road-building camp was the site traditionally occupied by the *Masfield–Ketchumstuk* band of Athabascans as a seasonal camp (Marcotte 1991:21). After the Alaska Highway was completed, the camp was abandoned and the structures remained (Brown 1969). In the mid-1940s, Doris Charles left Tanacross with her children. She traveled first to a traditional hunting camp of the *Tanacross* people called Paul's Cabin, about 13 miles east of Dot Lake on the Tanana River, and then on to the temporary camp of Sears City along the newly constructed Alaska Highway. At first, Doris and her children were the only residents, but she was soon joined by her husband Peter and her father Big Albert, establishing what is now known as the Native Village of Dot Lake (Brown 1969).

The early days of the founding and growth of Dot Lake are best described by the current president of the Dot Lake Village Council, and longtime resident, William Miller. He wrote:

> Over the years, other individuals and families moved to the area, the first among these was the Fred Vogel family (non-Native missionaries from California), and the Andrew Isaac family (a Native family from Tanacross). Shortly thereafter, Abraham Luke and his family moved to the area from Sam Lake (now known as Sand Lake) and Gene Henry of Batzulnetas–Tanacross moved to Dot Lake followed later by Paul Henry and his family.
>
> Peter and Andrew were informed that if they wanted to ensure that they retained the

> land they would have to get a title to it. Peter applied for a lot with good highway frontage, while Andrew and Fred applied for lots with less highway frontage. A land swap between Peter Charles and Fred Vogel resulted in Peter's and Andrew's land being next to each other and Fred's land being on the highway, outside what is now considered as the Native Village of Dot Lake. Abraham, Gene, and Paul applied for and received Native Allotments[1] within the area and made Dot Lake their home.
>
> Some of the old Sears City structures were relocated to the village area. In addition, some of the materials left behind by the Army were used to construct small homes for the remaining families. This resulted in the five Native families having small, poorly insulated homes to live in. The Charles home was the largest and had been insulated with sawdust. With the arrival of Maggie Isaac's Mother Bessie (also lovingly known as Grandma Walters) and her brother Jimmie, who lived in a tent until they obtained a small cabin, the village had about twenty-five Native residents. Fred constructed a lodge and a church on his land. (Miller n.d.)

According to the U.S. Census Bureau (2011a), Dot Lake is divided into the predominately Alaska Native community of Dot Lake Village, and Dot Lake Census Designated Place (CDP), the primarily Euro-American community along the Alaska Highway in and around the church and old lodge now serving as the community post office. For this survey both communities were grouped together as Dot Lake.

DEMOGRAPHY

According to the federal census, Dot Lake had 75 residents in 2010 which, as mentioned above, includes Dot Lake CDP and Dot Lake Village (Table 11-1). The household survey conducted for this study in 2011 found an estimated population of 50 residents for the combined community, of which 64% (32 residents) were Alaska Native (Table 11-1). For the purposes of this project, both communities were included in the survey. Figure 11-1 shows the population of the community over time. The chart depicts some yearly fluctuations, with population numbers being both recently higher and lower than the estimated population of 50 people for the study year.

Prior to the start of the survey, researchers and local research assistants estimated and confirmed 21 year-round households that resided in Dot Lake in 2011. Of these, 14 households (67%) were interviewed (Table 11-2). The following population data are expanded to cover the remaining households not surveyed. The mean number of years of residency in Dot Lake was 18 years, with the maximum length of residence at 58 years (Table 11-3). Of the households surveyed, 61% of the population was male, while the remaining 39% were female (Table 11-3). The largest age cohort for

1. The Alaska Native Allotment Act of 1906 allowed Alaska Native individuals to apply for title of up to 160 acres of land. This act was repealed in 1971 with the passage of the Alaska Native Claims Settlement Act.

Table 11-1. – Population of Dot Lake, 2010 and 2011.

2010 Census[a, b]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
26	75	54	72.0%	21	50	32	63.6%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.
b. Includes Dot Lake CDP and Dot Lake Village CDP

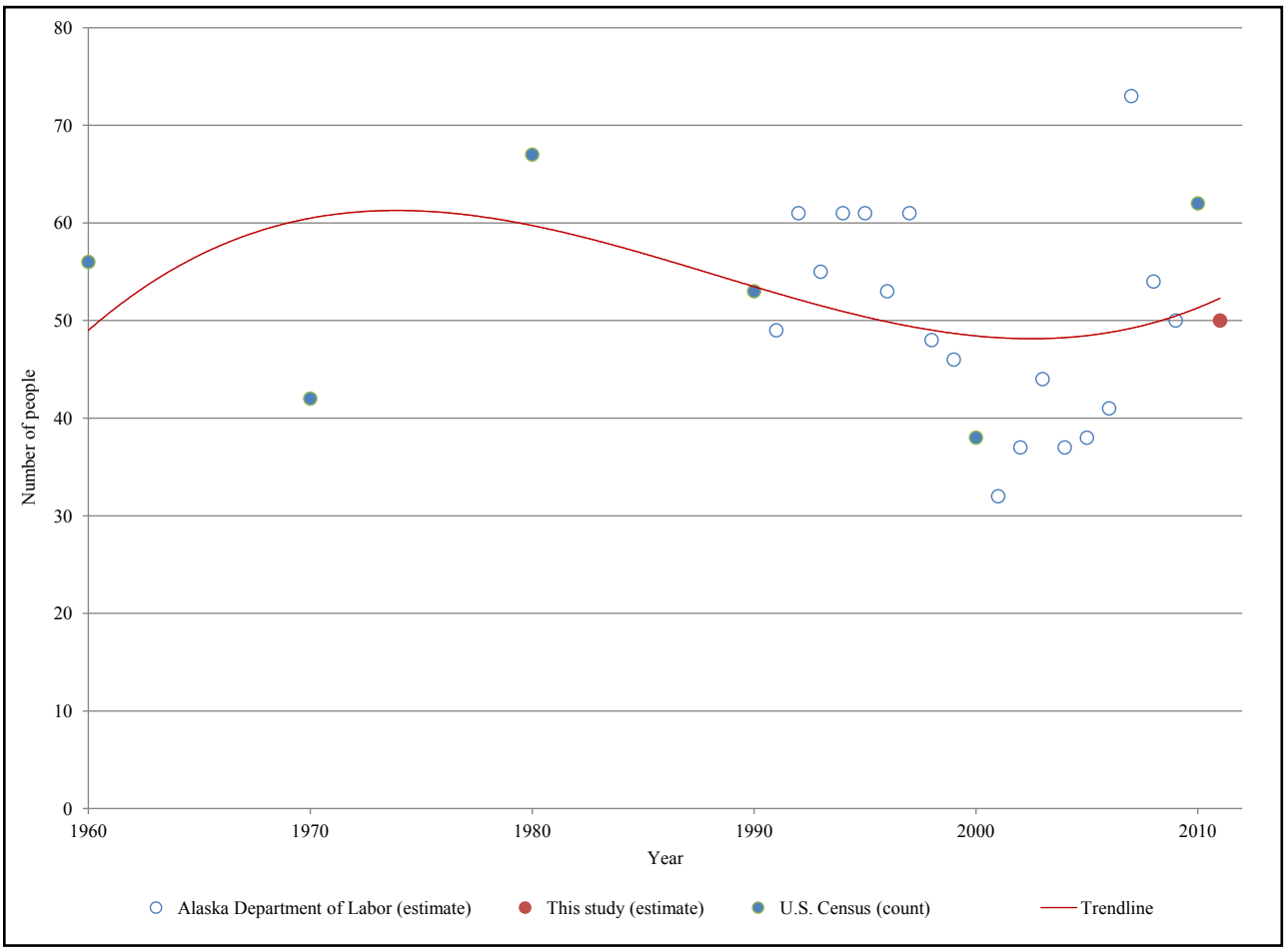


Figure 11-1.– Population history, Dot Lake, 1960–2011.

Table 11-2. – Sample achievement, Dot Lake, 2011.

Number of dwelling units	21.0
Interview goal	21.0
Households interviewed	14.0
Households failed to contact	3.0
Households declined to be interviewed	4.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	18.0
Refusal rate	22.2%
Final estimate of permanent households	21.0
Percentage of total households interviewed	66.7%
Interview weighting factor	1.5
Sampled population	33.0
Estimated population	49.5

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

both males (30% of the male population) and females (31% of the female population) was 15–19 years of age (Figure 11-2; Table 11-4). Missing representation for females were the 10–14, 20–24, 30–34, 45–49, 60–64, and 70–74 age categories; all other age categories were evenly distributed. Most notable was 31% of the female population age cohort data was missing. Males had greater representation in the 5–9, 30–34, 55–59, 60–64, and 70–74 age group categories; missing were 0–4, 10–14, 35–39, and 65–69 age categories. The remainder of the male population was evenly distributed among the other categories (Figure 11-2).

Of the Dot Lake household heads interviewed, approximately 55% were born in Alaska. Most (approximately 25% of all household heads) of the Alaska-born household heads were born in Dot Lake, followed by Tanacross at 15% (Table 11-5). When summed together, significant portions (approximately 50%) of the household heads were born in eastern interior Alaska and within easy driving distance to Dot Lake. The remaining residents claimed other U.S locations as their place of birth (30%), 5% were foreign born, and 10% of the data are missing.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 11-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Dot Lake residents in 2011. Approximately 70% of residents participated in the harvest of resources in 2011. With reference to specific resource categories, 69% of all residents gathered plants and berries, 24% fished, 34% hunted for birds and small game, 38% hunted for large land mammals, and 22% of the residents were involved in furbearer hunting or trapping. Likewise, 70% of all Dot Lake residents processed some resources in 2011. Most residents (66%) participated

Table 11-3. – Demographics and sample characteristics, Dot Lake, 2011.

Characteristics	Dot Lake
Sampled households	14.0
Eligible households	21.0
Percentage sampled	66.7%
Household size	
Mean	2.4
Minimum	1.0
Maximum	5.0
Sample population	33.0
Estimated community population	49.5
Age	
Mean	39.0
Minimum[a]	4.0
Maximum	77.0
Median	38.0
Length of residency	
Total population	
Mean	18.4
Minimum[a]	1.0
Maximum	58.0
Heads of household	
Mean	22.8
Minimum[a]	1.0
Maximum	58.0
Sex	
Estimated male	
Number	30.0
Percentage	60.6%
Estimated female	
Number	19.5
Percentage	39.4%
Alaska Native	
Estimated households[b]	
Number	13.5
Percentage	64.3%
Estimated population	
Number	31.5
Percentage	63.6%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

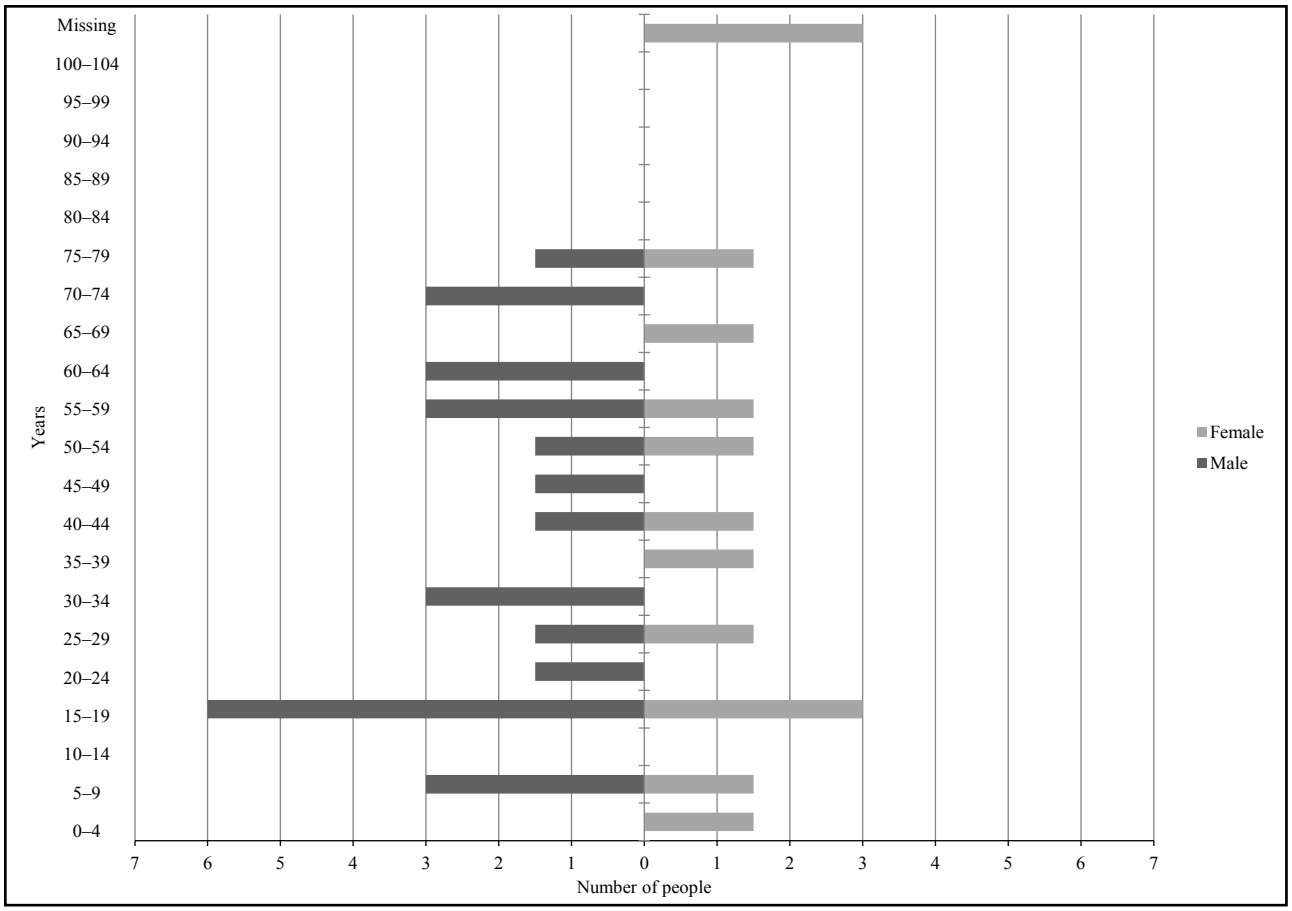


Figure 11-2.– Population profile, Dot Lake, 2011.

Table 11-4. – Population profile, Dot Lake, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	0.0	0.0%	0.0%	1.5	7.7%	7.7%	1.5	3.0%	3.0%
5–9	3.0	10.0%	10.0%	1.5	7.7%	15.4%	4.5	9.1%	12.1%
10–14	0.0	0.0%	10.0%	0.0	0.0%	15.4%	0.0	0.0%	12.1%
15–19	6.0	20.0%	30.0%	3.0	15.4%	30.8%	9.0	18.2%	30.3%
20–24	1.5	5.0%	35.0%	0.0	0.0%	30.8%	1.5	3.0%	33.3%
25–29	1.5	5.0%	40.0%	1.5	7.7%	38.5%	3.0	6.1%	39.4%
30–34	3.0	10.0%	50.0%	0.0	0.0%	38.5%	3.0	6.1%	45.5%
35–39	0.0	0.0%	50.0%	1.5	7.7%	46.2%	1.5	3.0%	48.5%
40–44	1.5	5.0%	55.0%	1.5	7.7%	53.8%	3.0	6.1%	54.5%
45–49	1.5	5.0%	60.0%	0.0	0.0%	53.8%	1.5	3.0%	57.6%
50–54	1.5	5.0%	65.0%	1.5	7.7%	61.5%	3.0	6.1%	63.6%
55–59	3.0	10.0%	75.0%	1.5	7.7%	69.2%	4.5	9.1%	72.7%
60–64	3.0	10.0%	85.0%	0.0	0.0%	69.2%	3.0	6.1%	78.8%
65–69	0.0	0.0%	85.0%	1.5	7.7%	76.9%	1.5	3.0%	81.8%
70–74	3.0	10.0%	95.0%	0.0	0.0%	76.9%	3.0	6.1%	87.9%
75–79	1.5	5.0%	100.0%	1.5	7.7%	84.6%	3.0	6.1%	93.9%
80–84	0.0	0.0%	100.0%	0.0	0.0%	84.6%	0.0	0.0%	93.9%
85–89	0.0	0.0%	100.0%	0.0	0.0%	84.6%	0.0	0.0%	93.9%
90–94	0.0	0.0%	100.0%	0.0	0.0%	84.6%	0.0	0.0%	93.9%
95–99	0.0	0.0%	100.0%	0.0	0.0%	84.6%	0.0	0.0%	93.9%
100–104	0.0	0.0%	100.0%	0.0	0.0%	84.6%	0.0	0.0%	93.9%
Missing	0.0	0.0%	100.0%	3.0	15.4%	100.0%	3.0	6.1%	100.0%
Total	**30.0**	**100.0%**	**100.0%**	**19.5**	**100.0%**	**100.0%**	**49.5**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 11-5. – Birthplaces of household heads, Dot Lake, 2011.

Birthplace[a]	Percentage
Dot Lake	25.0%
Mentasta Lake	5.0%
Northway	5.0%
Skagway	5.0%
Tanacross	15.0%
Missing	10.0%
Other U.S.	30.0%
Foreign	5.0%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

in processing plants and berries, followed by 53% of the population participating in fish processing. Fewer (50%) participated in large land mammal processing, and 44% participated in the processing of birds and small game. Only 19% participated in the processing of furbearing animals.

RESOURCE HARVEST AND USE PATTERNS

Table 11-7 summarizes resource harvest and use characteristics for Dot Lake in 2011, at the household level. All households used wild resources in 2011, while 79% attempted to harvest a resource and 79% harvested at least one resource. The average total harvest was an estimated 279 lb usable weight per household, or 118 lb per capita. On average, households attempted to harvest 6 kinds of resources, harvested 6 kinds of resources, and used an average of 10 distinct kinds of resources. The maximum number of resources used by any household was 20. In addition, households gave away an average of 2 kinds of resources and received 5 kinds of resources. While 64% of households reported sharing resources with other households, 100% reported receiving a resource.

SPECIES USED AND SEASONAL ROUND

Dot Lake residents harvest a wide variety of species throughout the year and similar to most rural Alaska communities, they often target specific species during certain seasons of the year, following a cyclical harvest pattern that is in part defined by tradition, and in part by laws and regulations. Much of Dot Lake subsistence harvest activities occur in the immediate vicinity of the community in the upper Tanana Valley, where most of the critical resources can be found. Residents will travel far, however, to harvest salmon and halibut. For this community, road corridor access to resources is critical, because much of the best hunting areas are off-limits to any motorized vehicle and residents must walk in from the road to hunt.

Table 11-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table

Table 11-6. – Estimated participation in subsistence harvesting and processing activities, Dot Lake, 2011.

Total number of people	**49.5**
Birds	
Hunt	
Number	17.0
Percentage	34.4%
Process	
Number	21.7
Percentage	43.8%
Fish	
Fish	
Number	12.0
Percentage	24.2%
Process	
Number	26.3
Percentage	53.1%
Large land mammals	
Hunt	
Number	18.6
Percentage	37.5%
Process	
Number	24.8
Percentage	50.0%
Furbearers	
Hunt or trap	
Number	10.8
Percentage	21.9%
Process	
Number	9.3
Percentage	18.8%
Plants	
Gather	
Number	34.0
Percentage	68.8%
Process	
Number	32.5
Percentage	65.6%
Any resource	
Attempt	
Number	34.5
Percentage	69.7%
Process	
Number	34.5
Percentage	69.7%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 11-7. – Resource harvest and use characteristics, Dot Lake, 2011.

Characteristic	
Mean number of resources used per household	9.5
Minimum	2.0
Maximum	20.0
95% confidence limit (±)	16.6%
Median	9.0
Mean number of resources attempted to harvest per household	6.1
Minimum	0.0
Maximum	20.0
95% confidence limit (±)	32.7%
Median	6.5
Mean number of resources harvested per household	5.6
Minimum	0.0
Maximum	19.0
95% confidence limit (±)	33.1%
Median	6.0
Mean number of resources received per household	4.9
Minimum	1.0
Maximum	16.0
95% confidence limit (±)	27.4%
Median	4.0
Mean number of resources given away per household	1.9
Minimum	0.0
Maximum	6.0
95% confidence limit (±)	35.8%
Median	1.5
Household harvest, pounds	
Minimum	0.0
Maximum	1,392.2
Mean	278.8
Median	64.7
Total harvest weight, pounds	5,855.8
Community per capita harvest, pounds	118.3
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	78.6%
Percentage harvesting any resource	78.6%
Percentage receiving any resource	100.0%
Percentage giving away any resource	64.3%
Number of households in sample	14.0
Number of resources available	107.0

Source ADF&G Division of Subsistence household surveys, 2012.

11-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Dot Lake households during the study year 2011. Residents of Dot Lake harvested an estimated total of 5,856 lb of edible wild resources, or 118 lb per capita (Table 11-8). Moose, coho salmon, and caribou were the top 3 most harvested resources, followed by sockeye salmon. In comparison, moose, sockeye salmon, and wood were the top 3 most used resources, followed by blueberries and lowbush cranberries, which were each used by 57% of households (Table 11-9).

Moose made up the highest percentage of the total pounds harvested and was used by the highest percentage of households in 2011 (Table 11-8). During the study year, 50% of the households in Dot Lake harvested fish and 43% harvested salmon, most of which was coho salmon (Table 11-8). Salmon were not harvested locally. Instead individuals traveled to other locations along the road system such as Valdez or Chitina to harvest salmon. In addition, community members were given access to fish wheels in the Copper River Basin in communities where they have kinship ties. The harvest was then shared with other households in the community upon the fishers' return. The bulk of the salmon (coho and pink) were caught using rod and reel gear (Table 11-10). Most of the sockeye salmon was harvested by fish wheel or dip net. A few Chinook salmon were also taken by fish wheel. Nonsalmon fish, such as lake trout, rainbow trout, and humpback whitefish, were harvested mostly during the winter months by jigging through the ice in areas local to Dot Lake. Some residents took charters for halibut and Pacific cod.

Large land mammal hunting is an important fall activity that often stretches into the winter, but traditionally and currently, animals may be harvested throughout the year for the purpose of a potlatch within the Alaska Native community. Most of the hunt takes place using highway vehicles or, occasionally and where allowed, on ATVs. Respondents reported that in 2011 there were few moose or caribou nearby and that the restrictions on using motorized vehicles to access the nearby Macomb Plateau, prime area hunting grounds, were a hardship on the community. In 2011, 50% of the households surveyed reported hunting large land mammals with only 21% reporting success. These resources are widely distributed with 93% of the households reported using large land mammals. Fewer households (29%) participated in small land mammal harvesting in 2011 with 21% reporting success. Small mammal species targeted included beavers, coyotes, and snowshoe hares (Table 11-8).

Migratory birds and waterfowl travel through the area in fall and spring, stopping to rest and often nest in the lush wetlands of the Tetlin National Wildlife Refuge and other portions of the upper Tanana River Valley. During the study year, 14% of the households harvested migratory birds. Upland game birds, such as grouse and ptarmigan, were harvested by Dot Lake residents along the highway and in the vicinity of the community. During the study year, 36% of Dot Lake households reported harvesting upland game birds (Table 11-8). Just 7% of the households reported harvesting and using eggs. Many residents are active in harvesting berries—57% of households reported harvesting berries, and 50% reported harvesting a variety of plants, greens, and mushrooms (Table 11-8).

Table 11-8. – Estimated harvests and uses of fish, game, and plant resources, Dot lake, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**100%**	**79%**	**79%**	**100%**	**64%**	**5,855.8**	**278.8**	**118.3**	**1,165.7**		**55.5**	**56%**
Fish	**100%**	**50%**	**50%**	**86%**	**21%**	**2,598.3**	**123.7**	**52.5**	**736.5**		**35.1**	**58%**
Salmon	**100%**	**43%**	**43%**	**79%**	**21%**	**2,186.1**	**104.1**	**44.2**	**513.0**		**24.4**	**64%**
Chum salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coho salmon	43%	29%	29%	29%	7%	986.3	47.0	19.9	154.5	Ind.	7.4	96%
Chinook salmon	21%	7%	7%	14%	7%	42.6	2.0	0.9	3.0	Ind.	0.1	125%
Pink salmon	7%	7%	7%	0%	0%	527.7	25.1	10.7	210.0	Ind.	10.0	125%
Sockeye salmon	79%	29%	29%	57%	14%	629.4	30.0	12.7	145.5	Ind.	6.9	77%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	14%	0%	0%	14%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**79%**	**36%**	**36%**	**57%**	**14%**	**412.2**	**19.6**	**8.3**	**223.5**		**10.6**	**73%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	7%	7%	7%	0%	0%	4.8	0.2	0.1	1.5		0.1	125%
Pacific cod (gray)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	7%	7%	7%	0%	0%	4.8	0.2	0.1	1.5	Ind.	0.1	125%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacfic halibut	50%	7%	7%	43%	0%	18.0	0.9	0.4	18.0	Lb.	0.9	125%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Unknown Rockfish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Char	43%	29%	21%	21%	0%	31.5	1.5	0.6	22.5		1.1	85%
Dolly Varden	7%	0%	0%	7%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	36%	29%	21%	14%	0%	31.5	1.5	0.6	22.5	Ind.	1.1	85%
Arctic grayling	29%	7%	7%	21%	0%	4.2	0.2	0.1	6.0	Ind.	0.3	125%
Northern pike	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	21%	21%	21%	0%	7%	151.2	7.2	3.1	108.0		5.1	90%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Rainbow trout	21%	21%	21%	0%	7%	151.2	7.2	3.1	108.0	Ind.	5.1	90%

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Table 11-8.–Page 2 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	29%	7%	7%	29%	7%	202.5	9.6	4.1	67.5		3.2	125%
Broad whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Least cisco	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Humpback whitefish	7%	7%	7%	7%	7%	202.5	9.6	4.1	67.5	Ind.	3.2	125%
Round whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown whitefish	21%	0%	0%	21%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**93%**	**50%**	**29%**	**86%**	**21%**	**2,515.5**	**119.8**	**50.8**	**27.0**		**1.3**	**66%**
Large land mammals	**93%**	**50%**	**21%**	**86%**	**14%**	**2,487.0**	**118.4**	**50.2**	**10.5**		**0.5**	**66%**
Bison	7%	0%	0%	7%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	21%	14%	7%	14%	0%	87.0	4.1	1.8	1.5	Ind.	0.1	125%
Brown bear	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Caribou	14%	7%	7%	7%	0%	780.0	37.1	15.8	6.0	Ind.	0.3	125%
Deer	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	93%	50%	14%	86%	14%	1,620.0	77.1	32.7	3.0	Ind.	0.1	85%
Dall sheep	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**36%**	**29%**	**21%**	**21%**	**7%**	**28.5**	**1.4**	**0.6**	**16.5**		**0.8**	**100%**
Beaver	7%	7%	7%	0%	0%	22.5	1.1	0.5	1.5	Ind.	0.1	125%
Coyote	7%	7%	7%	0%	7%	0.0	0.0	0.0	1.5	Ind.	0.1	125%
Fox	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%
Red fox–cross phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Red fox–red phase	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Hare	7%	7%	0%	7%	0%	0.0	0.0	0.0	0.0		0.0	0%
Snowshoe hare	7%	7%	0%	7%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
River (land otter)	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mink	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Muskrat	14%	7%	7%	7%	0%	0.0	0.0	0.0	12.0	Ind.	0.6	125%
Porcupine	21%	7%	7%	14%	0%	6.0	0.3	0.1	1.5	Ind.	0.1	125%
Squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Red (tree) squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 11-8.–Page 3 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolverine	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**43%**	**36%**	**43%**	**14%**	**14%**	**62.6**	**3.0**	**1.3**	**87.0**		**4.1**	**46%**
Migratory birds	**14%**	**7%**	**14%**	**7%**	**0%**	**12.5**	**0.6**	**0.3**	**13.5**		**0.6**	**97%**
Ducks	7%	7%	7%	0%	0%	9.5	0.5	0.2	10.5		0.5	125%
Canvasback	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goldeneye	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Mallard	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Northern pintail	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Scoter	7%	7%	7%	0%	0%	9.5	0.5	0.2	10.5		0.5	125%
Black scoter	7%	7%	7%	0%	0%	9.5	0.5	0.2	10.5	Ind.	0.5	125%
Teal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Green-winged teal	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown ducks	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese	7%	0%	7%	7%	0%	3.1	0.1	0.1	3.0		0.1	125%
Brant	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Cacklers	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lesser Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Emperor geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown geese	7%	0%	7%	7%	0%	3.1	0.1	0.1	3.0	Ind.	0.1	125%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	0%	0%	0%	0%	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	0.0	Ind.	0.0	0%
Other birds	**36%**	**36%**	**36%**	**7%**	**14%**	**45.6**	**2.2**	**0.9**	**60.0**		**2.9**	**50%**
Upland game birds	36%	36%	36%	7%	14%	45.6	2.2	0.9	60.0		2.9	50%
Grouse	21%	21%	21%	7%	14%	33.6	1.6	0.7	48.0		2.3	68%
Spruce grouse	21%	21%	21%	7%	14%	16.8	0.8	0.3	24.0	Ind.	1.1	68%
Sharp-tailed grouse	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	21%	21%	21%	7%	14%	16.8	0.8	0.3	24.0	Ind.	1.1	68%

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Table 11-8.–Page 4 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Other birds, continued												
Ptarmigan	14%	14%	14%	0%	0%	12.0	0.6	0.2	12.0	Ind.	0.6	88%
Bird eggs	**7%**	**7%**	**7%**	**0%**	**0%**	**4.5**	**0.2**	**0.1**	**13.5**		**0.6**	**125%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan eggs	7%	7%	7%	0%	0%	0.9	0.0	0.0	1.5	Ind.	0.1	125%
Seabird and loon eggs	7%	7%	7%	0%	0%	3.6	0.2	0.1	12.0		0.6	125%
Gull eggs	7%	7%	7%	0%	0%	3.6	0.2	0.1	12.0	Ind.	0.6	125%
Uknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**7%**	**7%**	**7%**	**0%**	**0%**	**1.8**	**0.1**	**0.0**	**0.9**		**0.0**	**125%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Shrimp	7%	7%	7%	0%	0%	1.8	0.1	0.0	0.9	Gal.	0.0	125%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**100%**	**79%**	**79%**	**36%**	**57%**	**677.6**	**32.3**	**13.7**	**314.3**		**15.0**	**49%**
Berries	**79%**	**57%**	**57%**	**29%**	**29%**	**590.6**	**28.1**	**11.9**	**147.7**		**7.0**	**53%**
Blueberry	57%	36%	36%	29%	21%	231.0	11.0	4.7	57.8	Gal.	2.8	68%
Lowbush cranberry	57%	43%	43%	21%	21%	288.0	13.7	5.8	72.0	Gal.	3.4	58%
Highbush cranberry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cloud berry	7%	7%	7%	7%	0%	12.0	0.6	0.2	3.0	Gal.	0.1	125%
Raspberry	43%	36%	36%	14%	7%	57.0	2.7	1.2	14.3	Gal.	0.7	52%
Strawberry	14%	14%	14%	0%	0%	2.6	0.1	0.1	0.7	Gal.	0.0	86%
Other wild berry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**50%**	**50%**	**50%**	**7%**	**21%**	**87.0**	**4.1**	**1.8**	**86.4**		**4.1**	**85%**
Wild rhubarb	7%	7%	7%	0%	0%	3.0	0.1	0.1	3.0	Gal.	0.1	125%
Hudson's Bay tea	7%	7%	7%	7%	0%	0.2	0.0	0.0	0.2	Gal.	0.0	125%
Wild rose hips	7%	7%	7%	0%	0%	0.7	0.0	0.0	0.2	Gal.	0.0	125%
Other wild greens	7%	7%	7%	0%	0%	6.0	0.3	0.1	6.0	Gal.	0.3	125%
Unknown mushrooms	36%	36%	36%	7%	21%	77.1	3.7	1.6	77.1	Gal.	3.7	97%
Wood	**71%**	**64%**	**64%**	**14%**	**21%**	**0.0**	**0.0**	**0.0**	**80.3**	**Cord.**	**3.8**	**42%**
Other wood	7%	7%	7%	0%	0%	0.0	0.0	0.0	1.5	Cord.	0.1	125%

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 11-9. – Top 10 resources harvested and used, Dot Lake, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	32.7	1	1.	Moose	92.9%
2	2.	Coho salmon	19.9	2	2.	Sockeye salmon	78.6%
3	3.	Caribou	15.8	3	3.	Wood	71.4%
4	4.	Sockeye salmon	12.7	4	4.	Blueberry	57.1%
5	5.	Pink Salmon	10.7	5	4.	Lowbush cranberry	57.1%
6	6.	Lowbush cranberry	5.8	6	5.	Pacific halibut	50.0%
7	7.	Blueberry	4.7	7	6.	Coho salmon	42.9%
8	8.	Humpback whitefish	4.1	8	6.	Raspberry	42.9%
9	9.	Rainbow trout	3.1	9	7.	Lake trout	35.7%
10	10.	Black bear	1.8	10	7.	Unknown mushrooms	35.7%

Source ADF&G Division of Subsistence household surveys, 2012.

HARVEST QUANTITIES

Table 11-8 reports estimated wild resource harvests and uses by Dot Lake residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Dot Lake was 5,856 lb, or 118 lb per capita (Table 11-8). In terms of pounds harvested, large land mammals constituted the largest portion (42%) of the subsistence harvest, which totaled 2,487 lb (50 lb per capita) (Table 11-8; Figure 11-3). The majority (65%) of this was moose, with 1,620 lb harvested (33 lb per capita), making moose the most harvested and used resource in the community (tables 11-8 and 11-9). The remaining large land mammal harvest consisted mainly of caribou (780 lb, or 16 lb per capita), and black bears (87 lb, or 2 lb per capita). However, it should be noted that while both caribou and black bears appear in the community's top 10 resources harvested, they were not in the category for most used (Table 11-9). So, while some households had success in harvest, caribou and black bears were not as widely shared within the community as moose.

Salmon also made up a significant portion of the wild foods harvested by the Dot Lake community, even though residents must travel out of the immediate vicinity to get them. In 2011, an estimated 2,186 lb, or 37% of the total harvest by pounds usable weight were salmon (Figure 11-3). Coho salmon were

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

Table 11-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Dot Lake, 2011.

		Removed from commercial catch		Subsistence methods													
				Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	16.7%	18.3%	0.0%	0.0%	12.9%	13.3%	0.0%	0.0%	29.5%	31.6%	70.5%	68.4%	100.0%	100.0%
	Total	0.0%	0.0%	16.7%	18.3%	0.0%	0.0%	12.9%	13.3%	0.0%	0.0%	29.5%	31.6%	70.5%	68.4%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	6.6%	0.0%	0.0%	2.0%	2.8%	41.9%	64.7%	30.1%	45.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.0%	0.0%	1.9%	1.9%	98.1%	98.1%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.9%	0.0%	0.0%	0.6%	0.9%	29.5%	44.2%	30.1%	45.1%
Chinook salmon	Gear type	0.0%	0.0%	3.5%	10.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	6.2%	0.0%	0.0%	0.6%	2.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.6%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	2.0%	0.0%	0.0%	0.6%	2.0%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	58.1%	35.3%	40.9%	24.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	40.9%	24.1%	40.9%	24.1%
Sockeye salmon	Gear type	0.0%	0.0%	96.5%	89.3%	0.0%	0.0%	95.5%	93.4%	0.0%	0.0%	96.0%	91.1%	0.0%	0.0%	28.4%	28.8%
	Resource	0.0%	0.0%	56.7%	56.7%	0.0%	0.0%	43.3%	43.3%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	16.1%	16.3%	0.0%	0.0%	12.3%	12.5%	0.0%	0.0%	28.4%	28.8%	0.0%	0.0%	28.4%	28.8%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

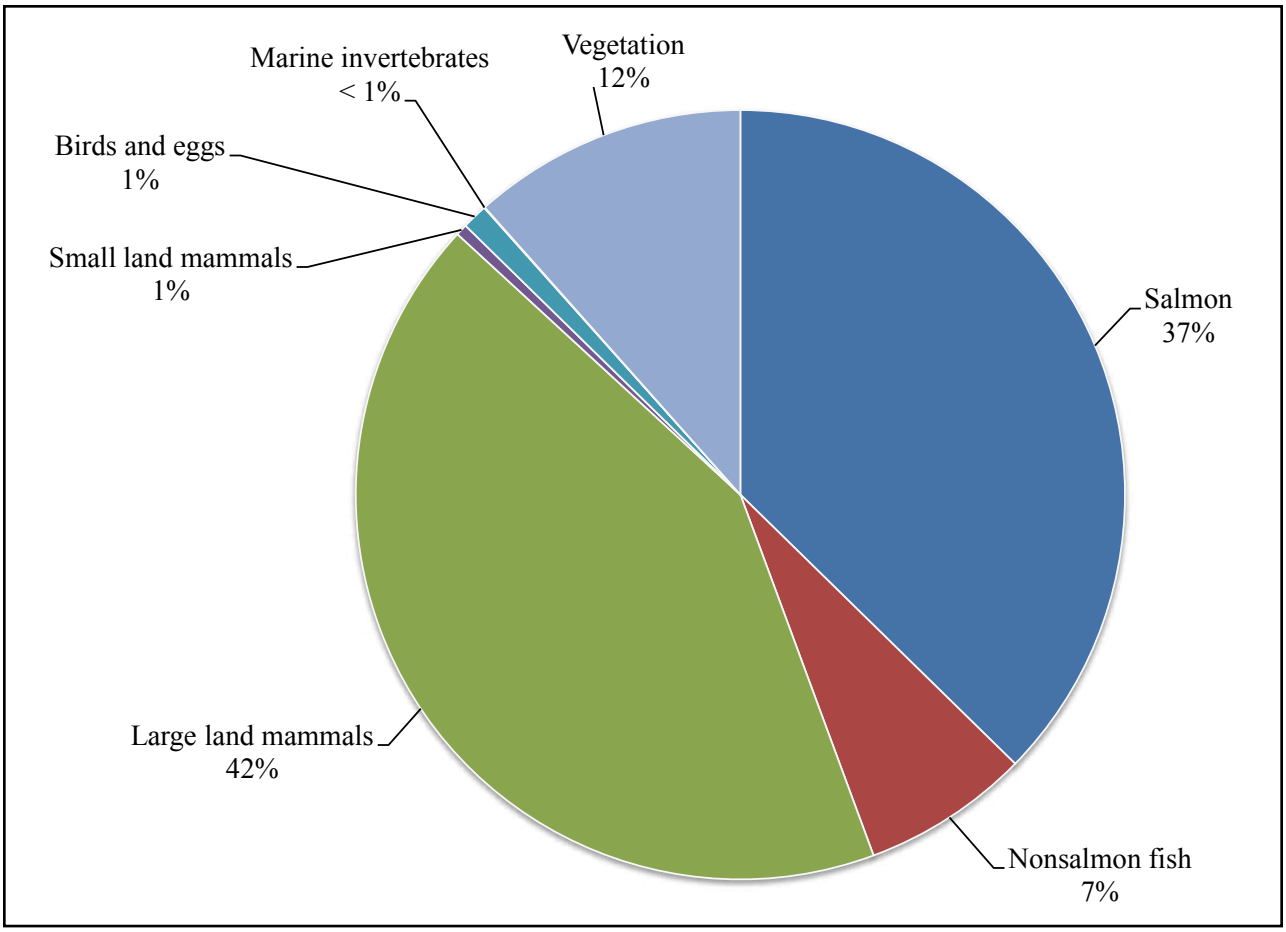


Figure 11-3.– Composition of harvest by category, Dot Lake, 2011.

harvested using primarily rod and reel gear, although a few were harvested by dip net. The majority of sockeye salmon were harvested with fish wheels from the upper Copper River, but a large percent were also harvested using dip nets. A few Chinook salmon were harvested with fish wheels and a few pink salmon were harvested by rod and reel gear. In 2011, Dot Lake residents harvested 986 lb of coho salmon (20 lb per capita), 629 lb of sockeye salmon (13 lb per capita), 528 lb of pink salmon (11 lb per capita), and 43 lb of Chinook salmon (1 lb per capita).

Wild plants and berries made up approximately 12% of the total harvest for Dot Lake in 2011 (Figure 11-3). All of the households (100%) used vegetation and 79% attempted to harvest vegetation. The total harvest was 678 lb (14 lb per capita), with berries making up the bulk of the harvest at 591 lb. The largest berry harvests in terms of total pounds included lowbush cranberries (288 lb, or 6 lb per capita), and blueberries (231 lb, or 5 lb per capita). Other plants and greens harvested included mushrooms, wild rhubarb, Hudson's Bay tea, wild rose hips, and other greens (Table 11-8).

Nonsalmon fishing was another notable activity in 2011 at 7% of the overall harvest (412 lb, or 8 lb per capita) (Table 11-8). The largest harvests in terms of weight included whitefishes (203 lb, or 4 lb per capita), rainbow trout (151 lb, or 3 lb per capita), and to a lesser degree lake trout (32 lb, or 0.6

lb per capita). Of interest, halibut was the most used of the nonsalmon fish. Even though it made up a small portion of the harvest at 18 lb, halibut was used in 50% of the households surveyed, which shows that once harvested, halibut is widely shared. Additionally, use of halibut caught in previous years kept in frozen storage possibly contributed to the high level of use of halibut among surveyed households. The greatest effort was focused on the harvest of lake trout (29% of the households) and rainbow trout (21%).

Birds and eggs made up approximately 1% of the total annual harvest for Dot Lake in 2011 (Figure 11-3). The overall household harvest of birds and eggs was 63 lb (1 lb per capita). Upland game birds composed most of the bird harvest (46 lb, less than 1 lb per capita), which included spruce grouse, ruffed grouse, and ptarmigan. Some migratory birds were used when other hunters shared their harvests of geese and ducks, but only scoters were claimed as a harvest (less than 0.5 lb per capita) by the households surveyed. Less than 5 lb of eggs were harvested during 2011 (Table 11-8).

SHARING AND RECEIVING WILD RESOURCES

In Dot Lake in 2011, the average household used about 10 kinds of resources and the average harvest per household was 6 resources. Estimates of sharing indicated that 100% of households received wild resources from other households and 64% of households gave resources away (Table 11-8). Households received an average of 5 resources and gave away an average of 2 resources (Table 11-7). All households (100%) used fish and vegetation, and 93% of households used large land mammals. Fish and large land mammals were also the most commonly received resource, with 86% of households receiving fish and large land mammals—21% of households gave away fish, and 14% gave away large land mammals (Table 11-8). The most commonly shared fish resource was salmon with 79% of the surveyed households receiving salmon and 21% sharing salmon. Although a small number of Dot Lake households harvested moose in 2011 (just 14%), it was the most commonly received large land mammal species at 86%; 14% of the households reported sharing moose and 93% of households reported using moose. Vegetation was also widely shared with 57% of the households surveyed reporting giving and 36% reporting receiving the resource. Nonsalmon fish were widely used (79%) and received (57%) with fewer households reportedly sharing (14%). It is also notable that of Dot Lake households surveyed, 50% reported using halibut and 43% reported receiving halibut, but just 7% reported harvesting halibut and none surveyed reported sharing any halibut. Thus the halibut used in the homes may have come from homes that were missed by the survey or from outside the community (Table 11-8).

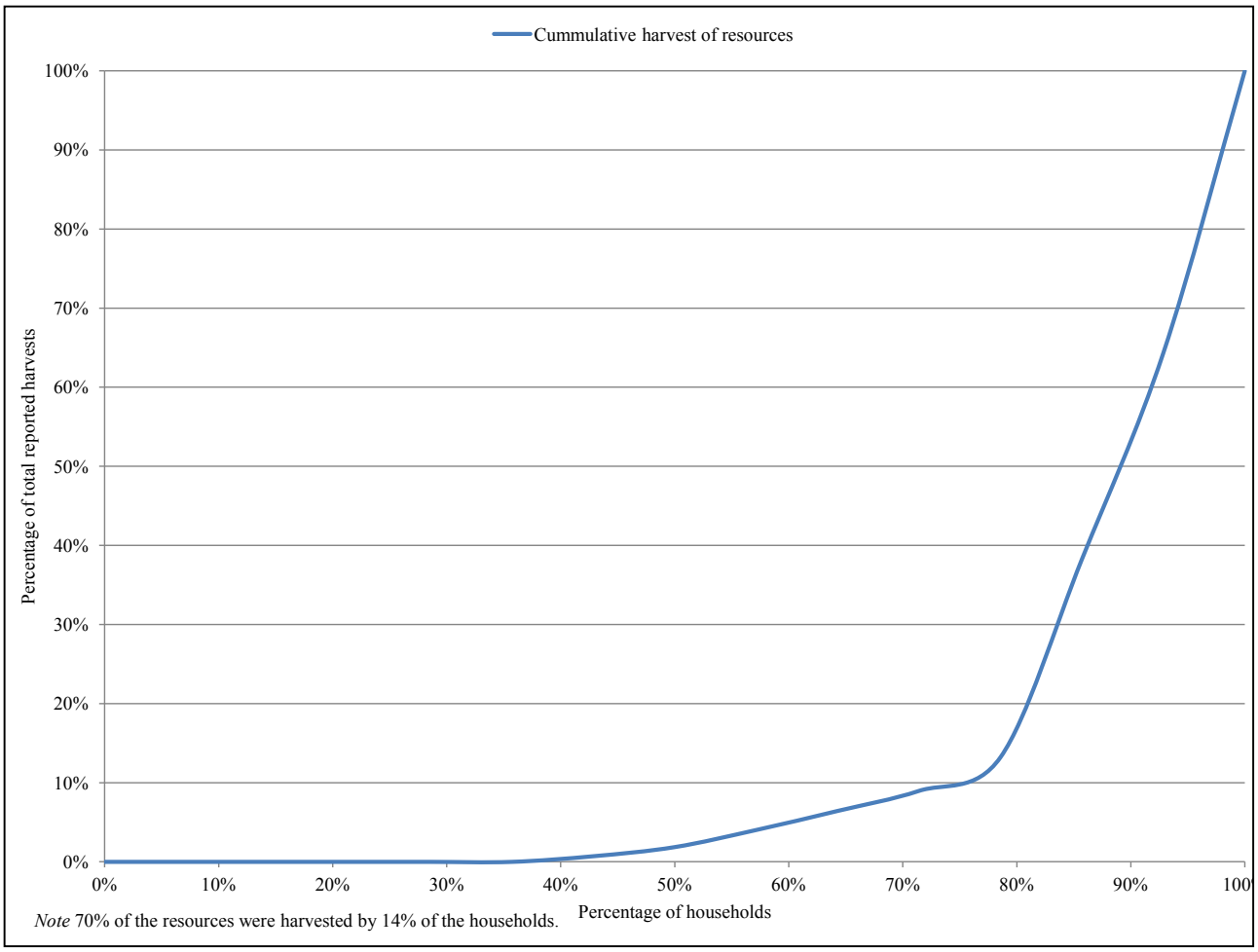


Figure 11-4.– Composition of harvest by category, Dot Lake, 2011.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

A previous study by the Division of Subsistence (Wolfe 1987) and follow-up research sponsored by the National Science Foundation in which the Division of Subsistence participated (Wolfe et al. 2010) have shown that in most Alaska Native communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 Alaska Native 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 11-4, in the 2011 study year in Dot Lake, about 70% of the harvests of wild resource as estimated in usable pounds was harvested by 14% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Dot Lake and the other study communities.

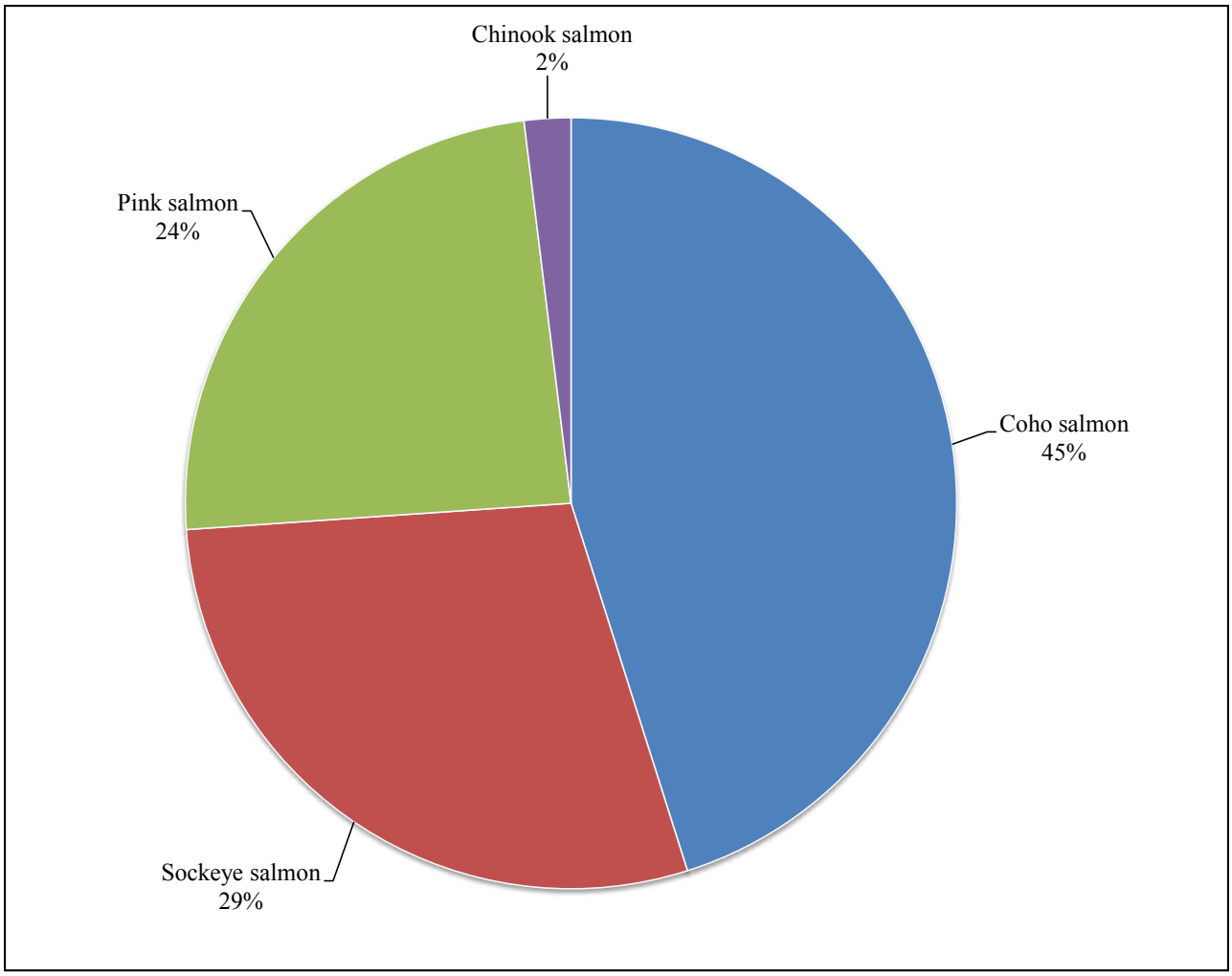


Figure 11-5.– Composition of salmon harvest, Dot Lake, 2011.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Dot Lake residents, salmon composed 37% of the wild resource harvest in pounds usable weight for 2011 (Figure 11-3). Approximately 45% (986 lb) of this harvest was coho salmon. Sockeye salmon made up 29% (629 lb) of the salmon harvest, pink salmon 24% (528 lb), and Chinook salmon approximately 2% (Figure 11-5; Table 11-8).

During the study year, Dot Lake residents harvested the bulk of their salmon (68% of the total harvest in pounds) with rod and reel gear. Approximately 18% of the salmon was harvested using a fish wheel and 13% harvested by dip net (Table 11-10). As mentioned above, salmon are not harvested locally in the Dot Lake area of the upper Tanana Valley. Residents must travel away from their immediate communities, mostly to the Copper River Basin, for salmon. Fish wheel harvests occurred through

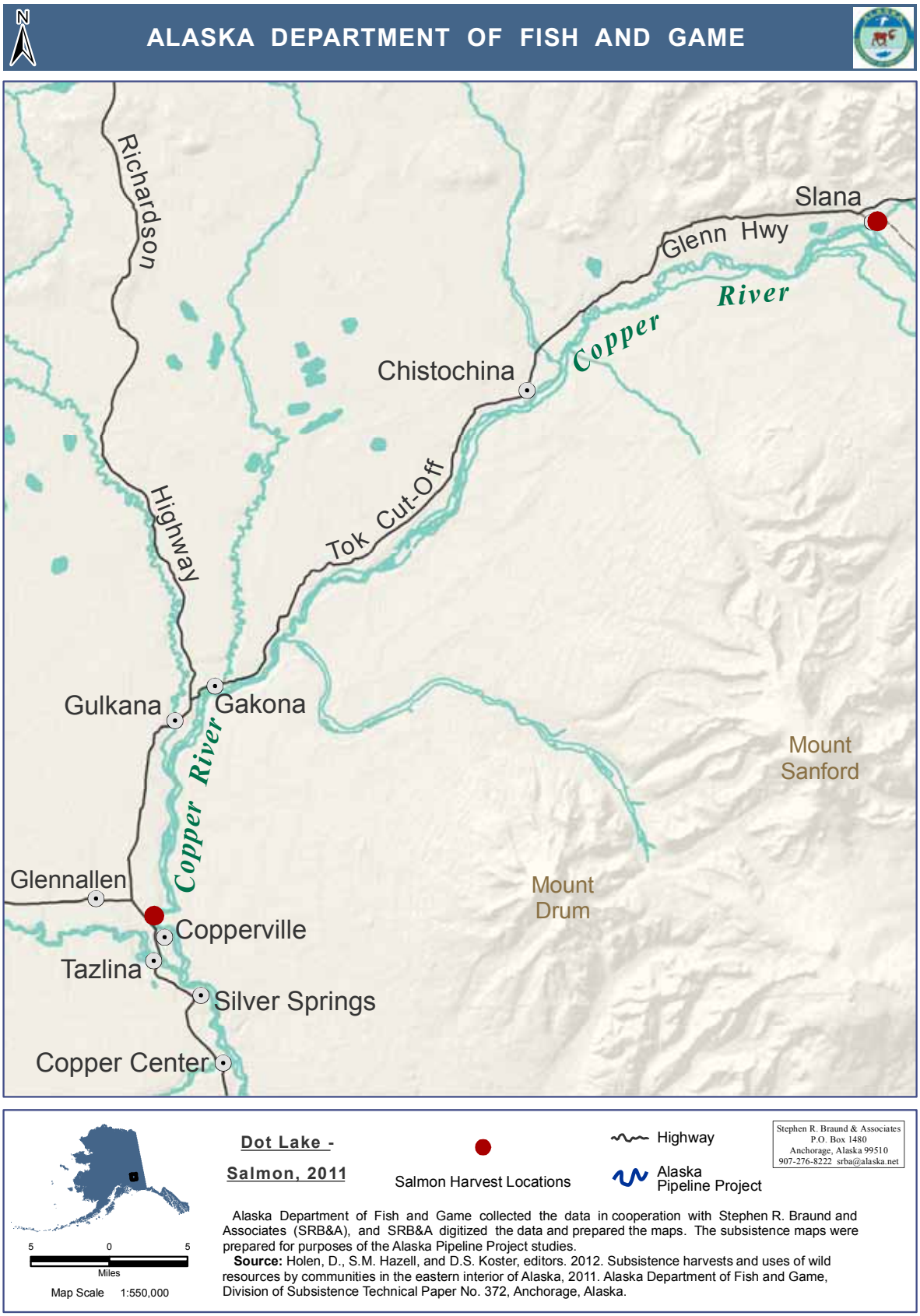


Figure 11-6.– Salmon search and harvest areas, Dot Lake, 2011.

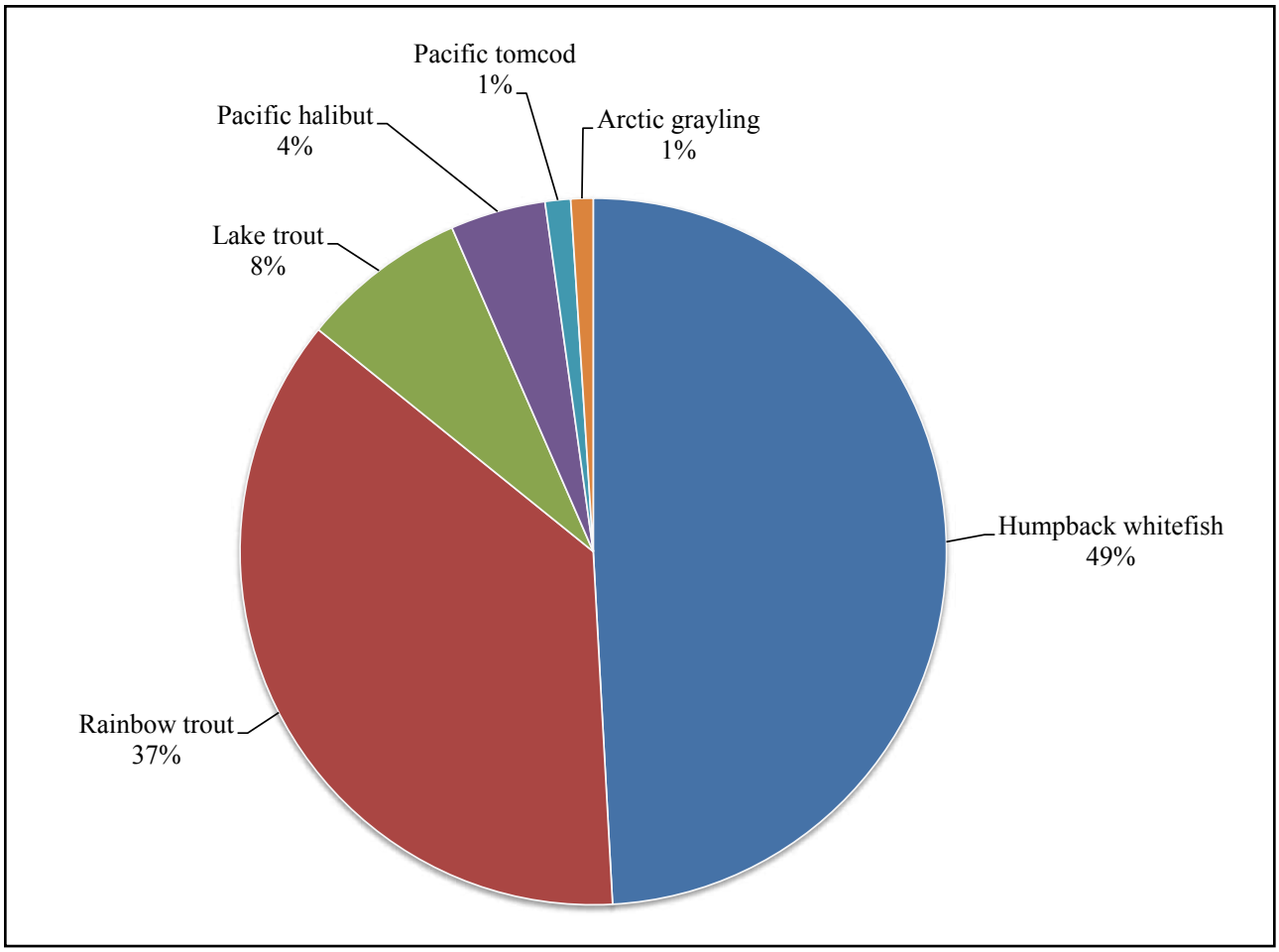


Figure 11-7.– Composition of nonsalmon fish harvest, Dot Lake, 2011.

invitation or familial ties in the communities of Slana and Copperville, dip netting took place at Chitina in the Copper River personal use fishery, and rod and reel harvests took place in the Copper River Basin or on special trips to Valdez (Figure 11-6).

NONSALMON FISH

Figure 11-7 shows the composition of nonsalmon fish harvest in pounds usable weight in Dot Lake for 2011. In terms of total pounds and percentages, most of the harvest was humpback whitefish (49%), followed by rainbow trout (37%), lake trout (8%), and Pacific halibut (4%) (Table 11-8; Figure 11-7). Table 11-11 lists the number and pounds of each nonsalmon fish species harvested by Dot Lake residents in 2011 in percentages by gear type. Dot Lake residents harvested all of their humpback whitefish with gillnets or seines. Sixty-nine percent of the rainbow trout harvest was accomplished by jigging through the ice and 31% were harvested with rod and reel gear. Similarly, residents mostly (67%) jigged through the ice for lake trout while approximately 33% were harvested with rod and reel gear. Pacific halibut, tomcod, and Arctic grayling were all harvested using rod and reel.

Table 11-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Dot Lake, 2011.

		Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	30.2%	49.1%	40.3%	30.6%	70.5%	79.7%	29.5%	20.3%	100.0%	100.0%
	Total	0.0%	0.0%	30.2%	49.1%	40.3%	30.6%	70.5%	79.7%	29.5%	20.3%	100.0%	100.0%
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	5.7%	0.7%	1.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.2%	0.7%	1.2%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.3%	21.5%	8.1%	4.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.1%	4.4%	8.1%	4.4%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	16.7%	16.7%	9.5%	6.4%	11.4%	12.5%	10.1%	7.6%
	Resource	0.0%	0.0%	0.0%	0.0%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	6.7%	5.1%	6.7%	5.1%	3.4%	2.5%	10.1%	7.6%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	5.0%	2.7%	1.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	1.0%	2.7%	1.0%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	83.3%	83.3%	47.6%	32.0%	50.0%	55.2%	48.3%	36.7%
	Resource	0.0%	0.0%	0.0%	0.0%	69.4%	69.4%	69.4%	69.4%	30.6%	30.6%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	33.6%	25.5%	33.6%	25.5%	14.8%	11.2%	48.3%	36.7%
Humpback whitefish	Gear type	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	42.9%	61.6%	0.0%	0.0%	30.2%	49.1%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	30.2%	49.1%	0.0%	0.0%	30.2%	49.1%	0.0%	0.0%	30.2%	49.1%

Source ADF&G Division of Subsistence household surveys, 2012.

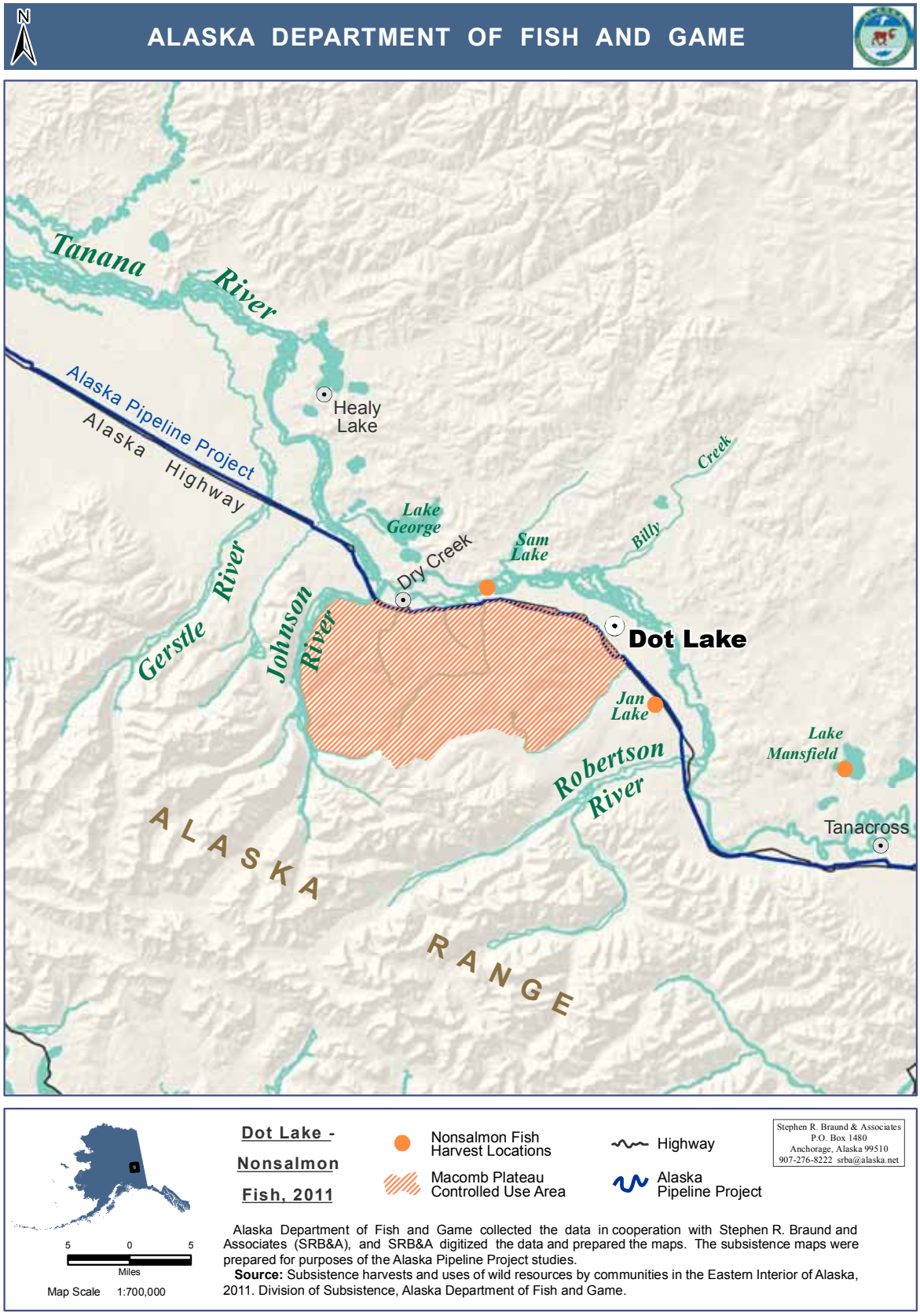


Figure 11-8.– Nonsalmon fish search and harvest areas, Dot Lake, 2011.

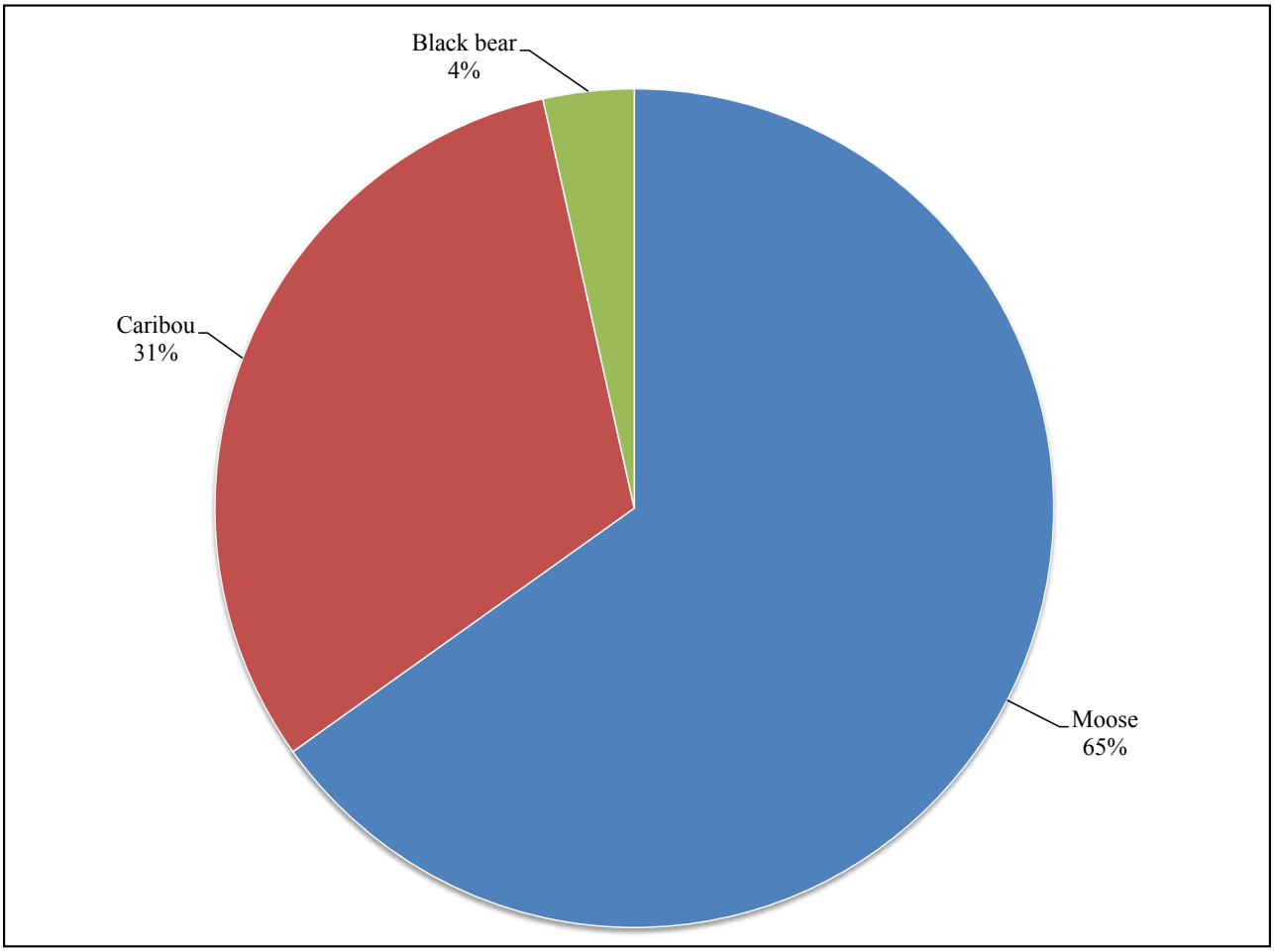


Figure 11-9.– Composition of large land mammal harvest, Dot Lake, 2011.

In the study year 2011, Dot Lake residents concentrated their nonsalmon freshwater fish harvests in the area close to Dot Lake between Dry Creek and Tanacross. Locations for harvesting include the Tanana River and smaller lakes in the region. The lakes were most frequently visited in the winter months, and the lakes and Tanana River during the summer months (Figure 11-8).

LARGE LAND MAMMALS

In 2011, large land mammals made up 42% of the total Dot Lake harvest by weight, the largest portion of harvest by resource category (Figure 11-3). In terms of pounds usable weight, moose made up 65% of the large land mammal harvest followed by caribou at 31%, and black bears at 4% (Figure 11-9). Fifty percent of households hunted moose, with only 14% of community households experiencing success (Table 11-8). Nevertheless, 93% of households used moose during the study year (Table 11-8). As noted above, in terms of pounds harvested in 2011, moose ranked first on the list of top 10 resources harvested (Table 11-9). Respondents commented on the significance of moose specifically for their subsistence diet and traditional practices, but noted that access to the most abundant moose

areas was difficult due to restrictions against all motorized vehicles. Additionally, some community members suggested that not all moose harvests were reported during this survey, and that residents were reluctant to report on large land mammal harvest activities (moose, caribou, bears) in general. According to the results of the household surveys, and consistent with a regulatory hunting season that for residents stretches from September 1 through September 15, all successful moose hunting took place in September 2011 (Table 11-12).

Caribou made up 31% of the large land mammal harvest for Dot Lake in 2011 with some interesting differences from the moose harvest. In 2011, about 7% of Dot Lake residents reported harvesting caribou (Table 11-8). Only 14% of the households surveyed reported using the resource, so while caribou is in third place of the top 10 resources by virtue of pounds per capita harvested, it was not among the top 10 used resources (Table 11-9). Additionally, black bears ranked tenth of the top 10 harvested resources in pounds per capita, making up 4% of the large land mammal harvest in 2011. More residents (14%) reported hunting black bears than caribou, with only one-half (7%) reporting success. Twenty-one percent of the households reported using black bears and 14% of the households reported receiving black bears (Table 11-8).

Dot Lake residents relied primarily on the road corridors for access to large land mammal hunting. Moose search areas included the Alaska Highway from Gerstle River to Tok, and small portions of the Tanana River near the community and on Sam Creek and caribou were searched for and harvested along the Taylor Highway (Figure 11-10). Black bears were sought and harvested in the Dot Lake community area. Most of the hunting in 2011 was done using highway vehicles, but boats and ATVs were also used.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 11-8, the total harvest of small land mammals by Dot Lake residents in 2011 for human consumption was 29 lb, or less than 1 lb per capita. The majority of the harvest, including for purposes other than just human consumption, was muskrats (73% of small game harvest) followed by beavers, porcupines, and coyotes (not eaten), (each making up 9% of the small game harvest). While a small portion of the households surveyed (7%) reported using and attempting to harvest hares in 2011, none were successful. The harvest of small land mammals for wild foods composed approximately 1% of the total harvest in 2011 (Figure 11-3). The harvest and search areas for small land mammals in 2011 were mostly within the Dot Lake community area, but also included a few other areas within the upper Tanana drainage (Figure 11-11).

Table 11-12. – Estimated harvests of large game by month and sex, Dot Lake, 2011.

				Caribou					Moose			
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**1.5**	**0.0**	**6.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

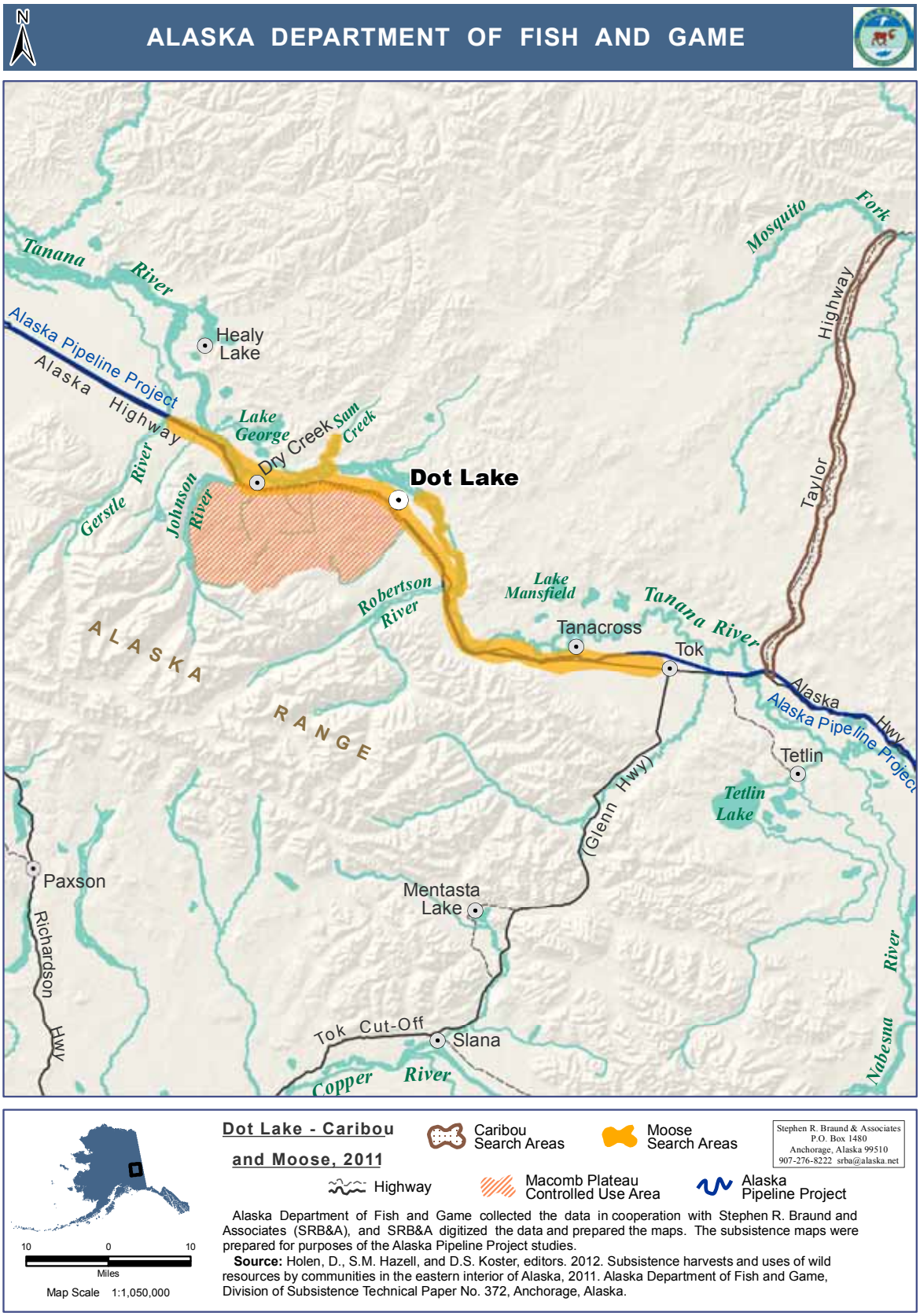


Figure 11-10.– Caribou and moose search and harvest areas, Dot Lake, 2011.

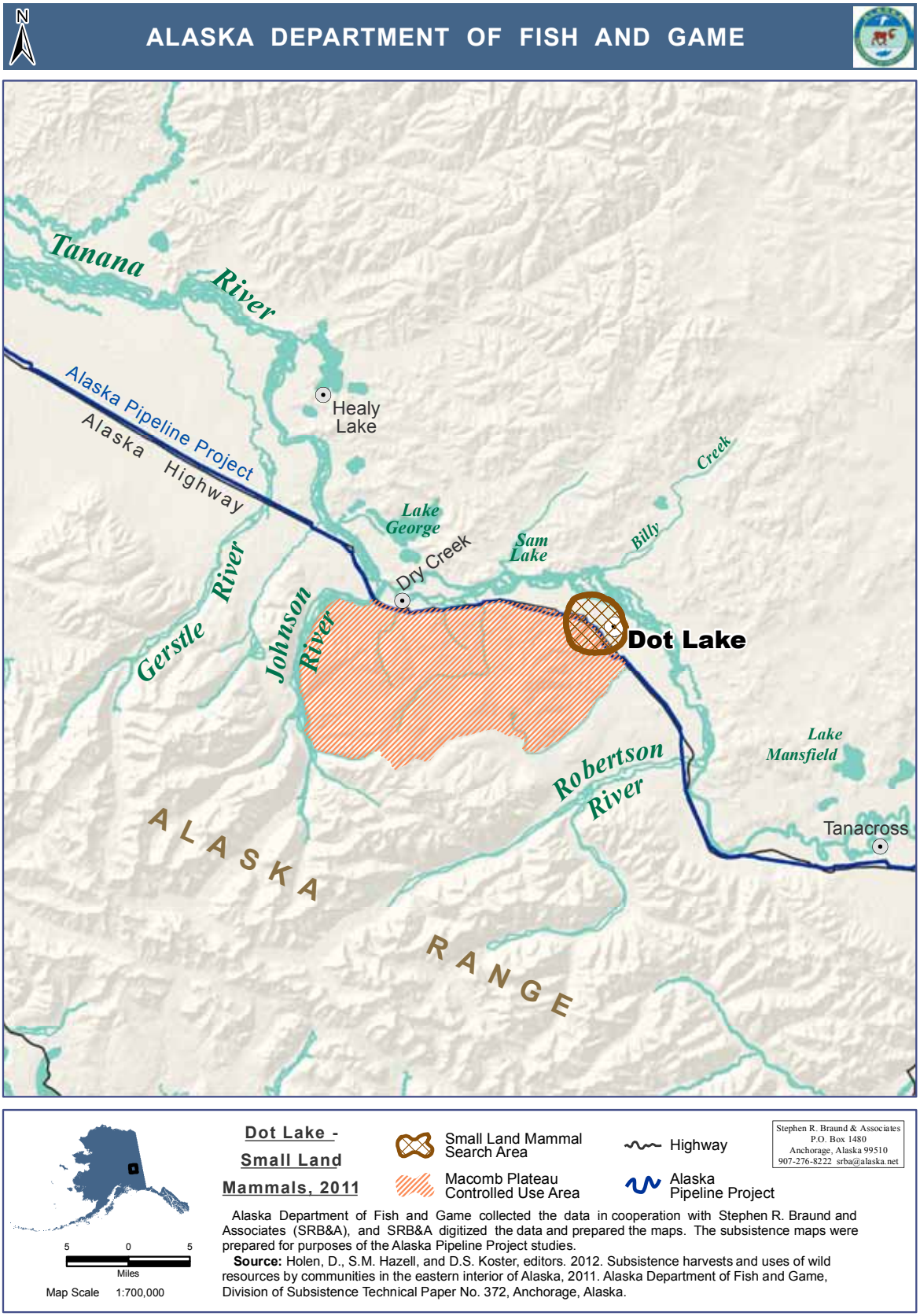


Figure 11-11.– Small land mammals search and harvest areas, Dot Lake, 2011.

BIRDS

In 2011, birds were harvested in slightly larger numbers than were small land mammals. The total harvest of birds was an estimated 63 lb, or a little more than 1 lb per capita (Table 11-8). The total harvest of upland game birds was 46 lb, or less than 1 lb per capita. The migratory bird harvest included ducks, such as black scoters, and geese. The total harvest of migratory waterfowl was estimated at about 13 lb, or less than one-half pound per capita (Table 11-8). Approximately 7% of the households surveyed harvested a small amount of gull and swan eggs. These were not shared. Upland game birds were harvested within and just outside the Dot Lake community, and along the road as far north as Johnson River (Figure 11-12). Migratory waterfowl and eggs were taken in the flats just north of the village and from a small lake nearby (Figure 11-13).

MARINE INVERTEBRATES

The harvest of marine invertebrates by Dot Lake residents in 2011 was very small because residents must travel far outside the area, usually to Valdez or sometimes Kenai, to harvest them. These resources made up a tiny fraction of the total harvest (< 1%) with approximately 2 lb harvested for the whole community (Table 11-8; Figure 11-3). The only resource claimed harvested was shrimp. No additional households claimed use or received this resource outside of the household that did the harvesting (Table 11-8).

VEGETATION

While vegetation made up approximately 12% of the total harvest of edible foods in 2011, 100% of the households surveyed used some form of vegetation and 79% harvested vegetation (Table 11-8; Figure 11-3). In 2011, Dot Lake residents harvested 678 lb of vegetation (14 lb per capita), consisting mostly of berries. The harvest of lowbush cranberries and blueberries placed sixth and seventh, respectively, in terms of pounds per capita harvested in 2011, while blueberries and lowbush cranberries tied for being ranked fourth place in terms of percentage of households using the resource (Table 11-9). Other berries harvested included raspberries, strawberries, and cloud berries. Residents of Dot Lake harvested 591 lb of berries, or 12 lb per capita, and 87 lb of other plants, or less than 2 lb per capita (Table 11-8). Most of the other plants harvested included 77 lb of mushrooms (residents reported the recent fires made mushrooms bountiful over the last several years), 6 lbs of wild greens, and a small amount of rhubarb, wild rose hips, and Hudson's Bay tea. Wood was the third most used resource (Table 11-9), and is an important resource in 71% of the households surveyed (wood does not appear in the top 10 list of resources harvested because this list only factors in resources that are edible and used for food). Wood is used extensively for heating homes in Dot Lake. Most plants and

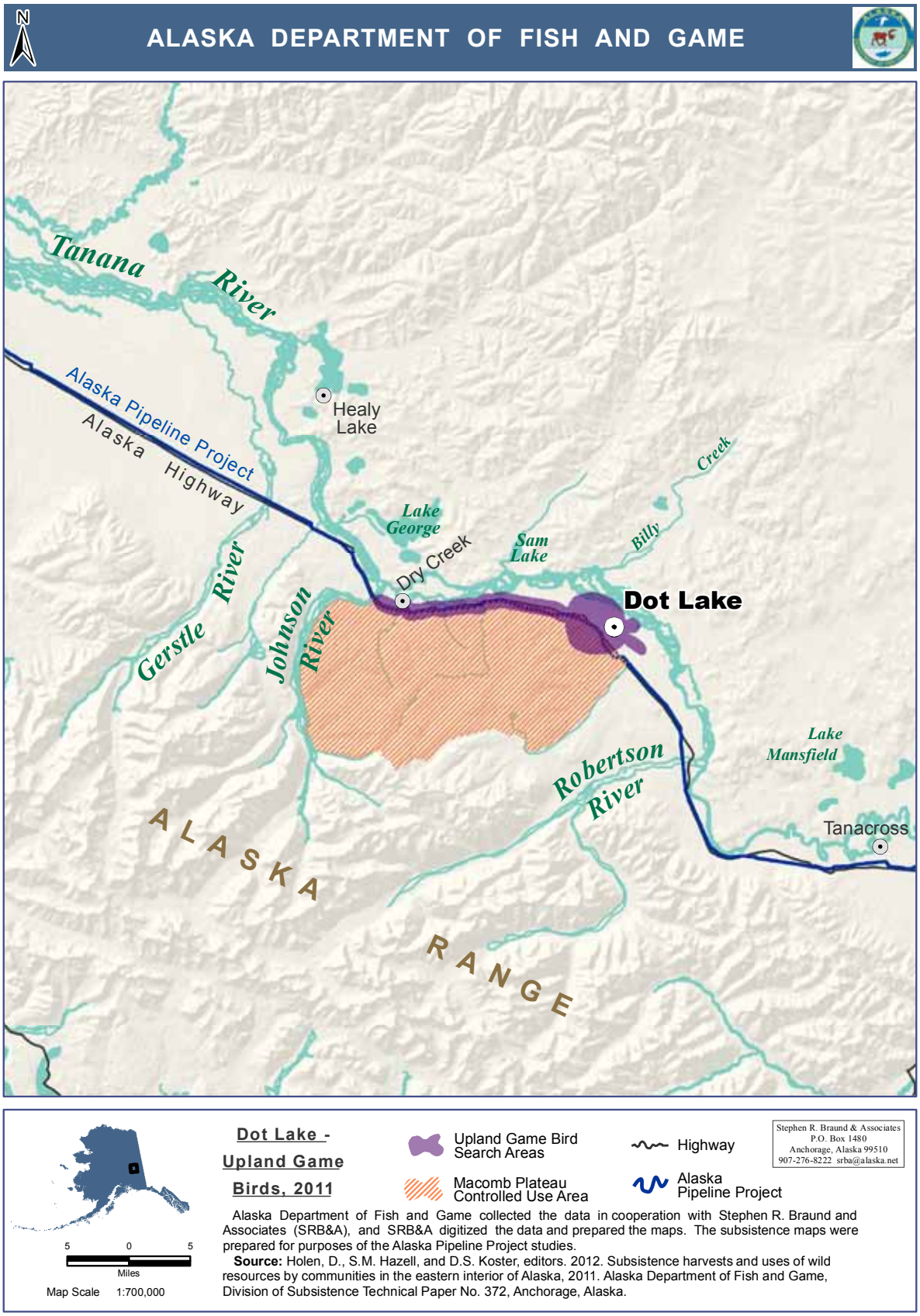


Figure 11-12.– Upland game birds search and harvest areas, Dot Lake, 2011.

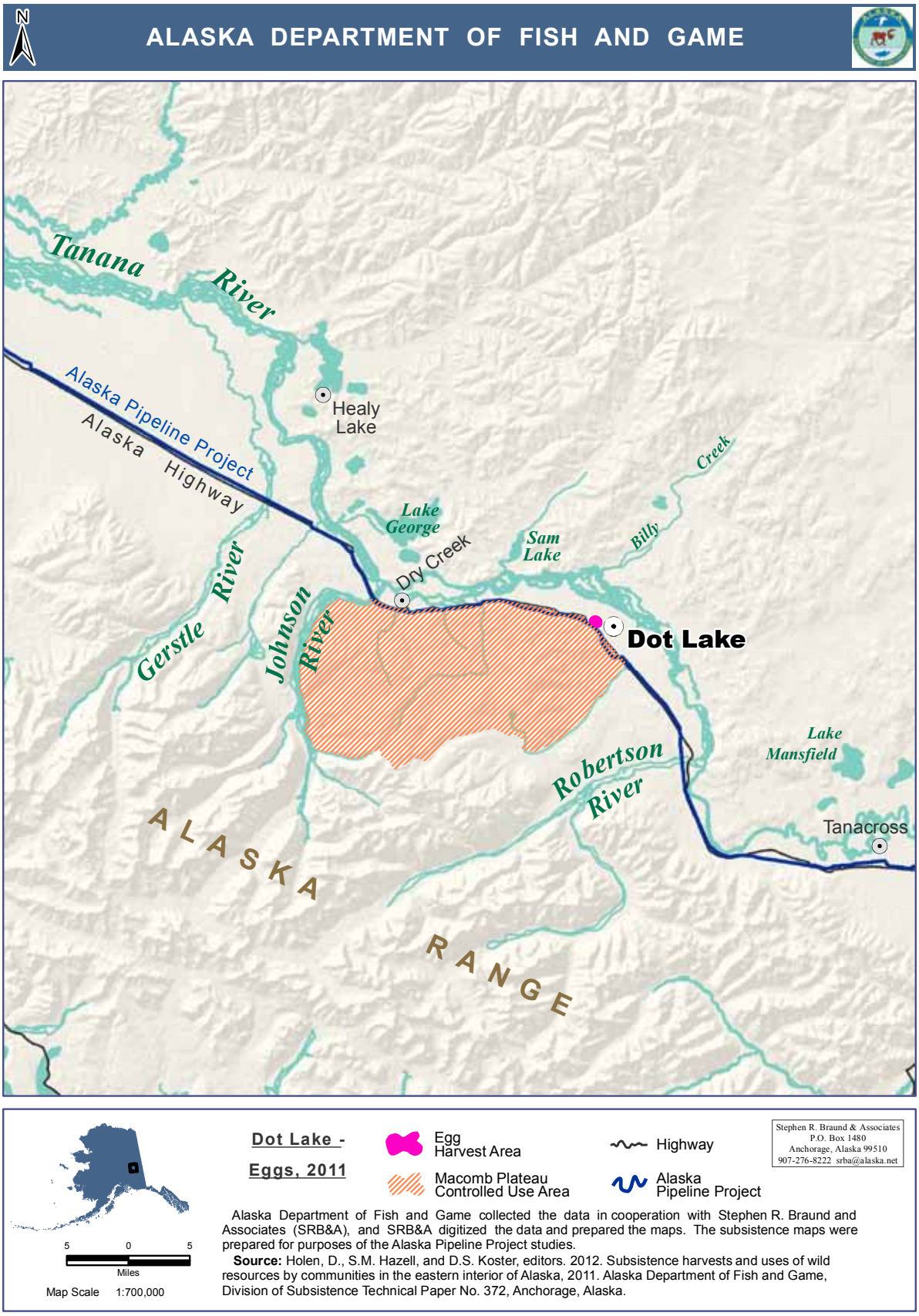


Figure 11-13.– Birds eggs search and harvest areas, Dot Lake, 2011.

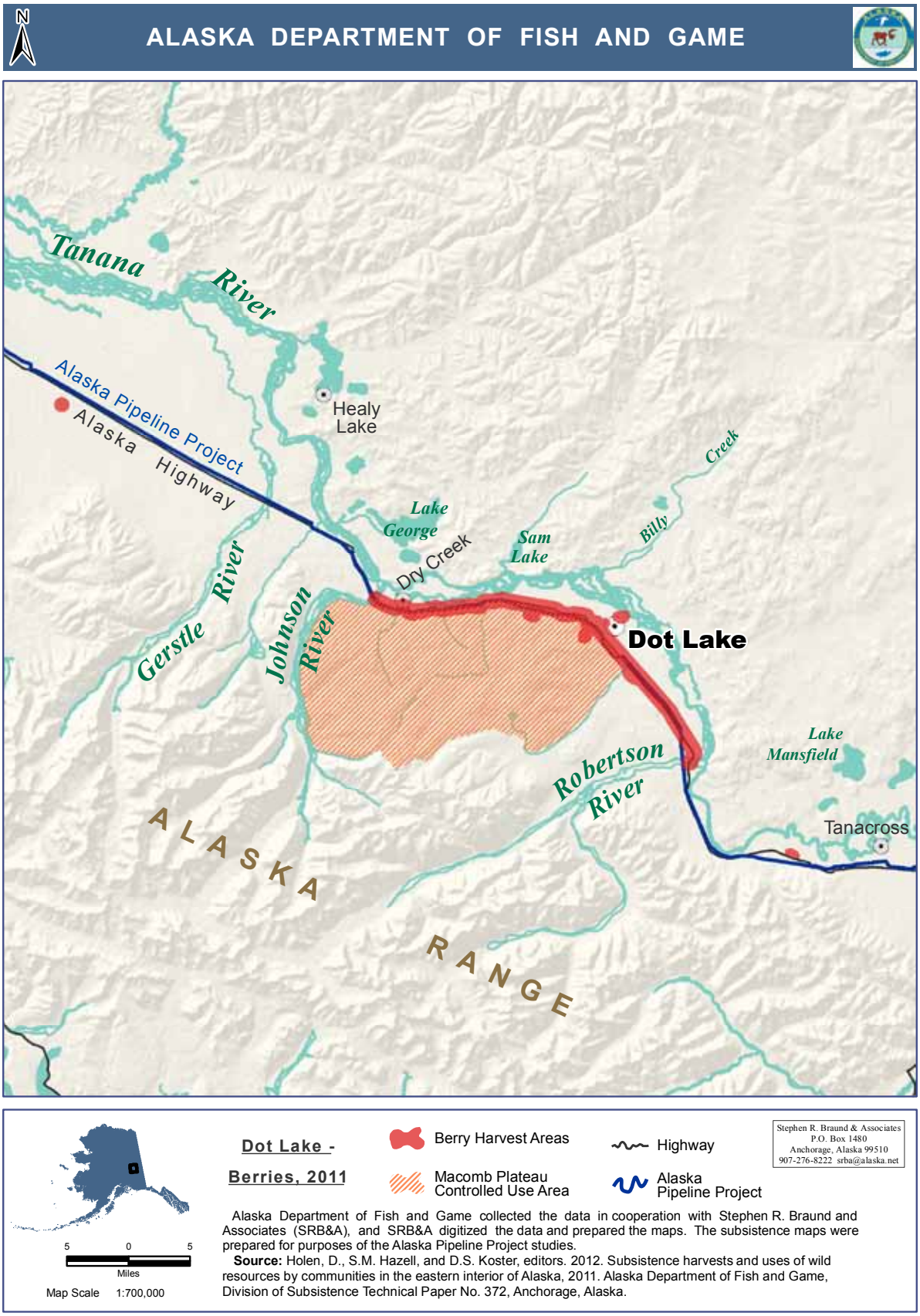


Figure 11-14.– Berries search and harvest areas, Dot Lake, 2011.

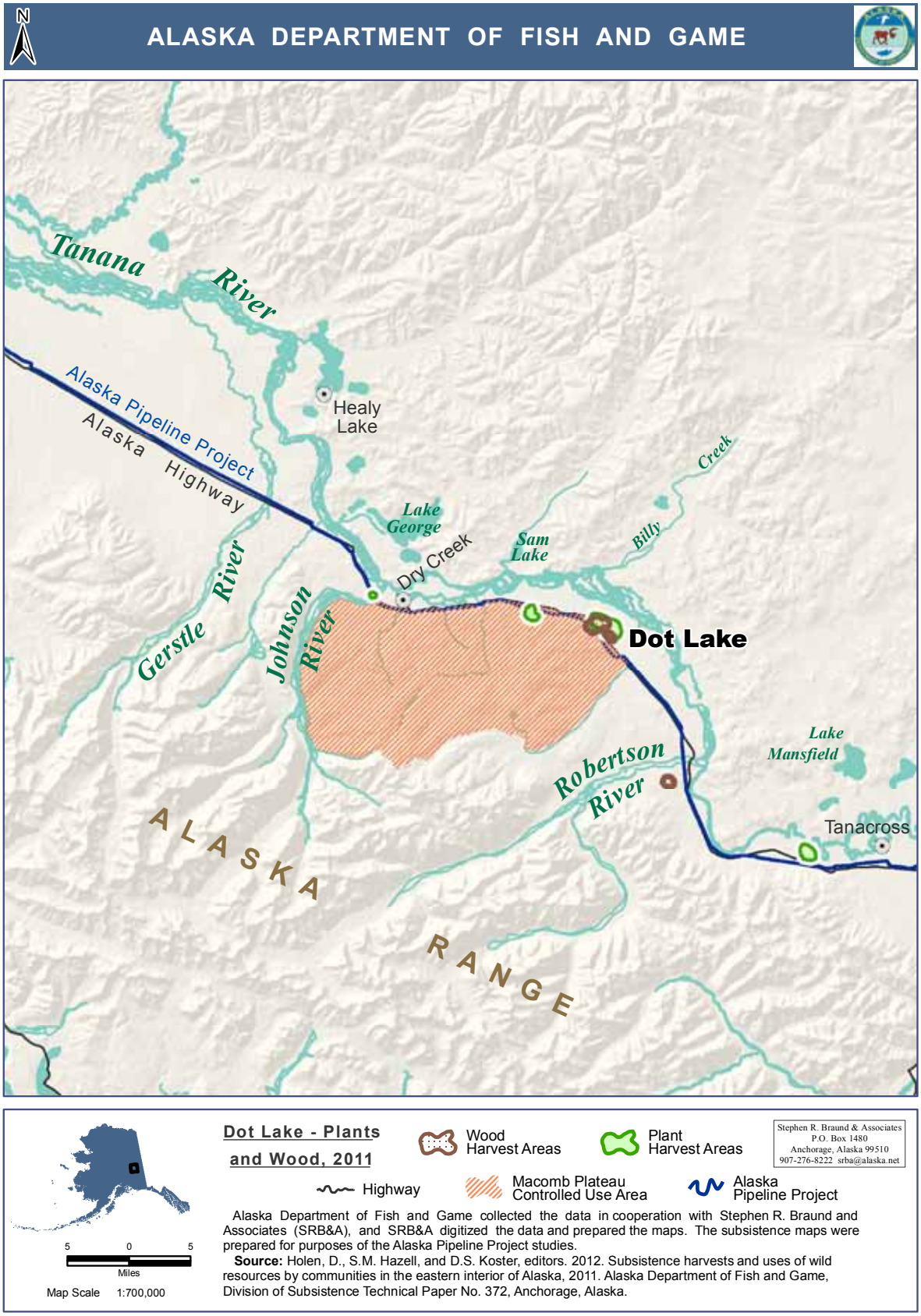


Figure 11-15.– Plants and wood search and harvest areas, Dot Lake, 2011.

Table 11-13. – Estimated earned and other income, Dot Lake, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Local government	13.5	9.7	$251,396.65	$11,971.27	$5,078.72	55.6%
Federal government	1.5	1.6	$14,386.03	$685.05	$290.63	3.2%
Construction	1.5	1.6	$14,357.32	$683.68	$290.05	3.2%
Earned income subtotal	**17.2**	**12.9**	**$280,140.00**	**$13,340.00**	**$5,659.39**	**62.0%**
Other income						
Alaska Permanent Fund dividend		19.5	$51,069.00	$2,431.86	$1,031.70	11.3%
Social Security		6.0	$25,500.00	$1,214.29	$515.15	5.6%
Supplemental Security income		3.0	$23,955.00	$1,140.71	$483.94	5.3%
Pension/retirement		3.0	$22,500.00	$1,071.43	$454.55	5.0%
Unemployment		3.0	$22,500.00	$1,071.43	$454.55	5.0%
Native corporation dividend		15.0	$10,242.71	$487.75	$206.92	2.3%
Food stamps		6.0	$10,067.14	$479.39	$203.38	2.2%
Longevity bonus		4.5	$2,571.43	$122.45	$51.95	0.6%
Energy assistance		6.0	$2,008.93	$95.66	$40.58	0.4%
Child support		1.5	$1,500.00	$71.43	$30.30	0.3%
Adult public assistance		0.0	$0.00	$0.00	$0.00	0.0%
Workmans' compensation/insurance		0.0	$0.00	$0.00	$0.00	0.0%
Other		0.0	$0.00	$0.00	$0.00	0.0%
Foster care		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**19.5**	**$171,914.21**	**$8,186.39**	**$3,473.01**	**38.0%**
Community income total			**$452,054.21**	**$21,526.39**	**$9,132.41**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

berries were harvested close to the community of Dot Lake, but harvest and search areas also extended along the Alaska Highway from the Robertson River to the Johnson River (figures 11-14 and 11-15).

CASH EMPLOYMENT AND MONETARY INCOME

Table 11-13 is a summary of the estimated earned income as well as other sources of income for residents of Dot Lake in 2011. This table shows that earned income accounted for a household average of $13,340 (62%) compared to other income sources that accounted for approximately $8,136 (38%) per household in 2011. In 2011, most (86%) of the jobs in Dot Lake were with local and tribal governments. Other important employment sectors during the study year included federal positions and construction, at approximately 7% each (Table 11-14). The largest source of other income for most households in Dot Lake was the Alaska Permanent Fund dividend in 2011 (Table 11-13).

In 2011, 52% of adults (ages 16 and over) in Dot Lake were employed year-round with an estimated 62% of those working adults being employed at some point during the year. The average length of employment was approximately 9 months. In addition, in 2011, employed households contained about 1 employed adult (Table 11-15). The mean number of jobs per employed households was also 1. Some Dot Lake residents took advantage an unusual seasonal cash earning opportunity in 2011 from a bumper mushroom crop due to recent fires in the area. Most jobs were located in Dot Lake but some respondents commuted to Tok for employment.

Table 11-14. – Employment by industry, Dot Lake, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**21.8**	**12.9**	**17.2**	
Federal government (total)	**7.1%**	**12.5%**	**9.1%**	**5.1%**
Administrative support occupations, including clerical	7.1%	12.5%	9.1%	5.1%
Local government, including tribal (total)	**85.7%**	**75.0%**	**81.8%**	**89.7%**
Executive, administrative, and managerial	14.3%	25.0%	18.2%	33.3%
Teachers, librarians, and counselors	7.1%	12.5%	9.1%	5.1%
Health technologists, and technicians	14.3%	25.0%	18.2%	19.8%
Administrative support occupations, including clerical	7.1%	12.5%	9.1%	15.4%
Service occupations	21.4%	25.0%	18.2%	11.0%
Handlers, equipment cleaners, helpers, and laborers	21.4%	25.0%	18.2%	5.1%
Construction (total)	**7.1%**	**12.5%**	**9.1%**	**5.1%**
Precision production occupations	7.1%	12.5%	9.1%	5.1%

Source ADF&G Division of Subsistence household surveys, 2012.

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" (Nord et al. 2009:2). 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. Core questions and responses from Dot Lake residents are summarized in Figure 11-16. In Dot Lake, a lack of subsistence foods was the most frequently reported source of food insecurity followed by a lack of store-bought foods; 23% of Dot Lake households said their subsistence foods did not last and 15% said that their store-bought foods did not last (Figure 11-16).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Dot Lake, the state of Alaska, and the United States are summarized in Figure 11-17. In Dot Lake in 2011, 93% of the surveyed households were categorized as having high or marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 7% had low food security and there were no households that had very low food security. Dot Lake households had notably lower levels of food insecurity and

Table 11-15. – Employment characteristics, Dot Lake, 2011.

Characteristic	Community Dot Lake
All adults	
Number	39.0
Mean weeks employed	16.5
Employed adults	
Number	17.2
Percentage	44.0%
Jobs	
Number	21.8
Mean	1.3
Minimum	1.0
Maximum	2.0
Months employed	
Mean	8.7
Minimum	1.0
Maximum	12.0
Percentage employed year-round	52.4%
Mean weeks employed	37.5
Households	
Number	21.0
Employed	
Number	12.9
Percentage	61.5%
Jobs per employed household	
Mean	1.0
Minimum	1.0
Maximum	3.0
Employed adults	
Mean	
Employed households	1.3
Total households	0.8
Minimum	1.0
Maximum	2.0
Mean person-weeks of employment	37.2

Source ADF&G Division of Subsistence household surveys, 2012.

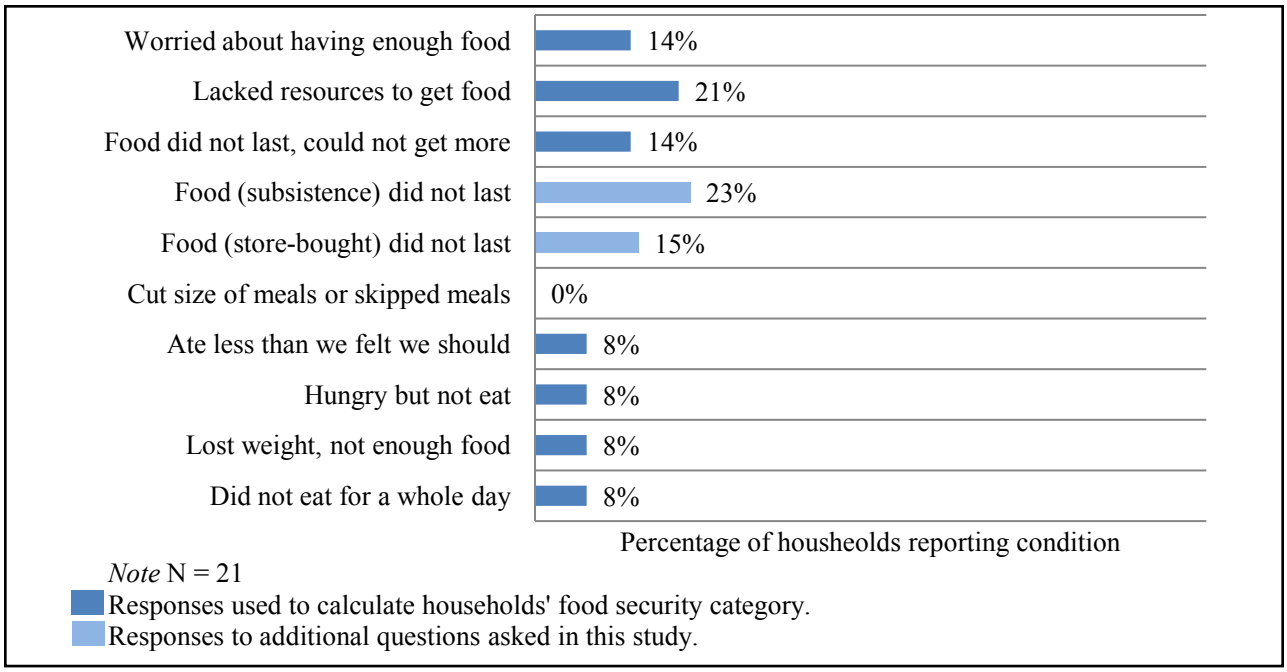


Figure 11-16.– Food insecure conditions, Dot Lake, 2011.

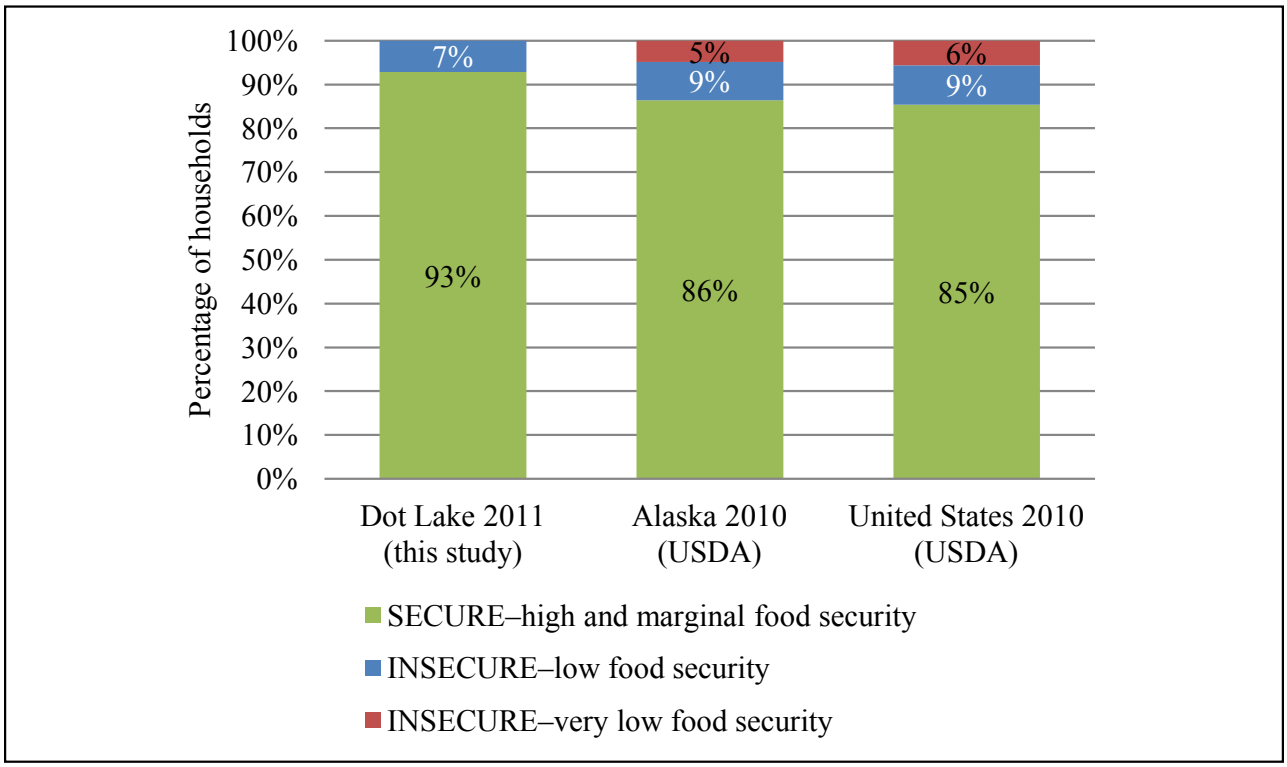


Figure 11-17.– Food insecure categories, Dot Lake, 2011.

higher levels of food security than surveyed households in Alaska as well as the United States as a whole (Nord et al. 2009:21).

Figure 11-18 portrays the mean number of food insecure conditions per household by food security category by month. For households with low food security, food insecurity conditions peaked during the months of October through March. Figure 11-19 shows that depending upon the month, between 0% and 23% of households reported subsistence foods did not last. November through May, especially the month of February, were reported as the months in which both subsistence and store-bought foods did not last (Figure 11-19).

Late winter and early spring in the interior is often a time of food insecurity. This is a period of time when it is difficult to hunt and migratory waterfowl have yet to arrive . As shown in Figure 11-18, the highest number of food insecurity conditions occurred for low food secure households in Dot Lake between October and March. Thus, summer in general was more food secure than other months, which might be explained by both seasonal employment and the greater abundance of resources for subsistence harvesting during those months.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 11-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 11-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 11-20 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (14 households), and therefore differ from those reported in Table 11-16.

One-half (50%) of the Dot Lake respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 36% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 14% said their overall harvests and uses were higher (Table 11-16). As depicted in Figure 11-20, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households.

For example, for large land mammals, 64% of all interviewed households (Figure 11-20), and 64% of all those who provided an assessment (Table 11-16), indicated less use, while 14% of all households and 14% of those providing assessments indicated the same levels of use in 2011 than in previous years. Dot Lake households indicated that they used less salmon (50% of all households, 50% of

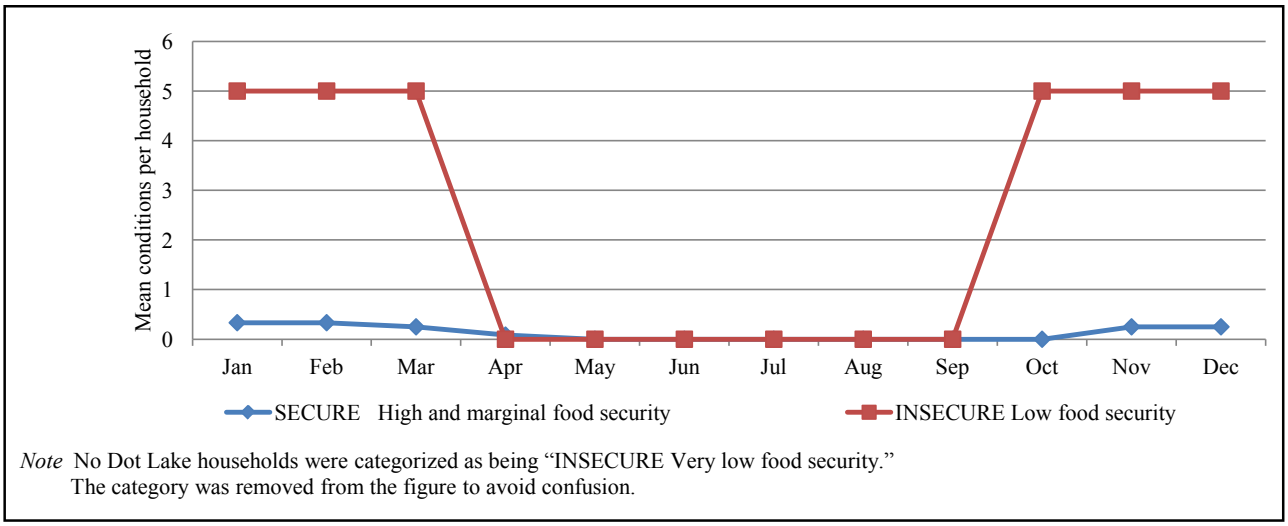


Figure 11-18.– Mean number of food insecure conditions for each month food was reported not to have lasted, Dot Lake, 2011.

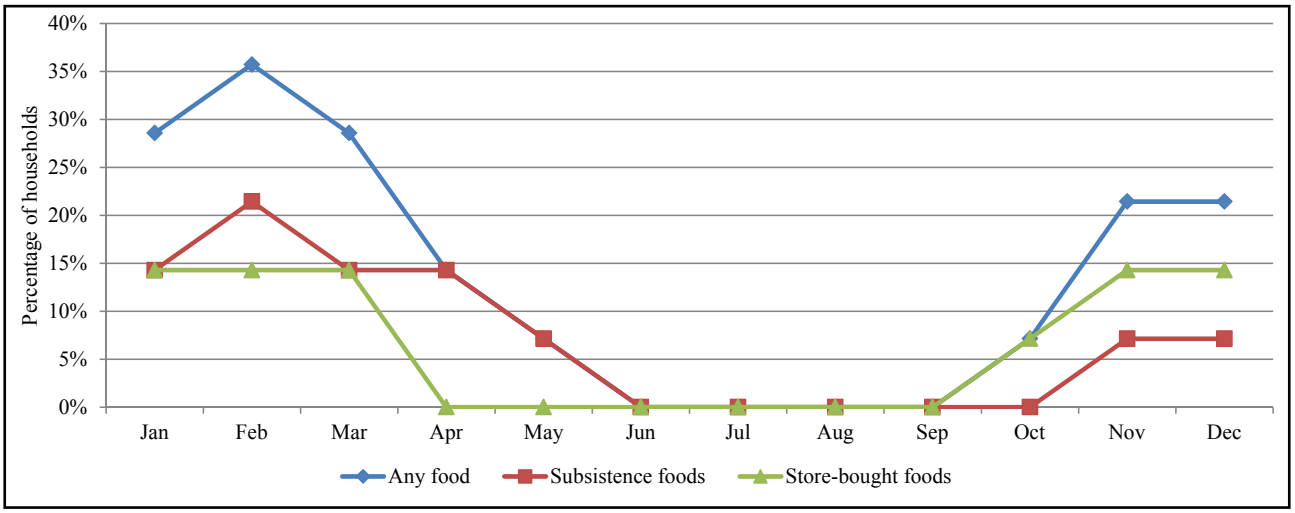


Figure 11-19.– Comparison of months where foods did not last, Dot Lake, 2011.

Table 11-16. – Changes in household uses of resources compared to recent years, Dot Lake, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage
Any resource	14	14	13	93%	9	64%	7	50%
All resources	14	14	7	50%	5	36%	2	14%
Salmon	14	14	7	50%	5	36%	2	14%
Nonsalmon fish	14	12	7	58%	4	33%	1	8%
Large game	14	14	9	64%	2	14%	3	21%
Small game	14	6	3	50%	2	33%	1	17%
Migratory waterfowl	14	4	1	25%	3	75%	0	0%
Other birds	14	7	2	29%	4	57%	1	14%
Bird eggs	14	2	1	50%	1	50%	0	0%
Marine invertebrates	14	1	0	0%	1	100%	0	0%
Vegetation	14	14	6	43%	4	29%	4	29%

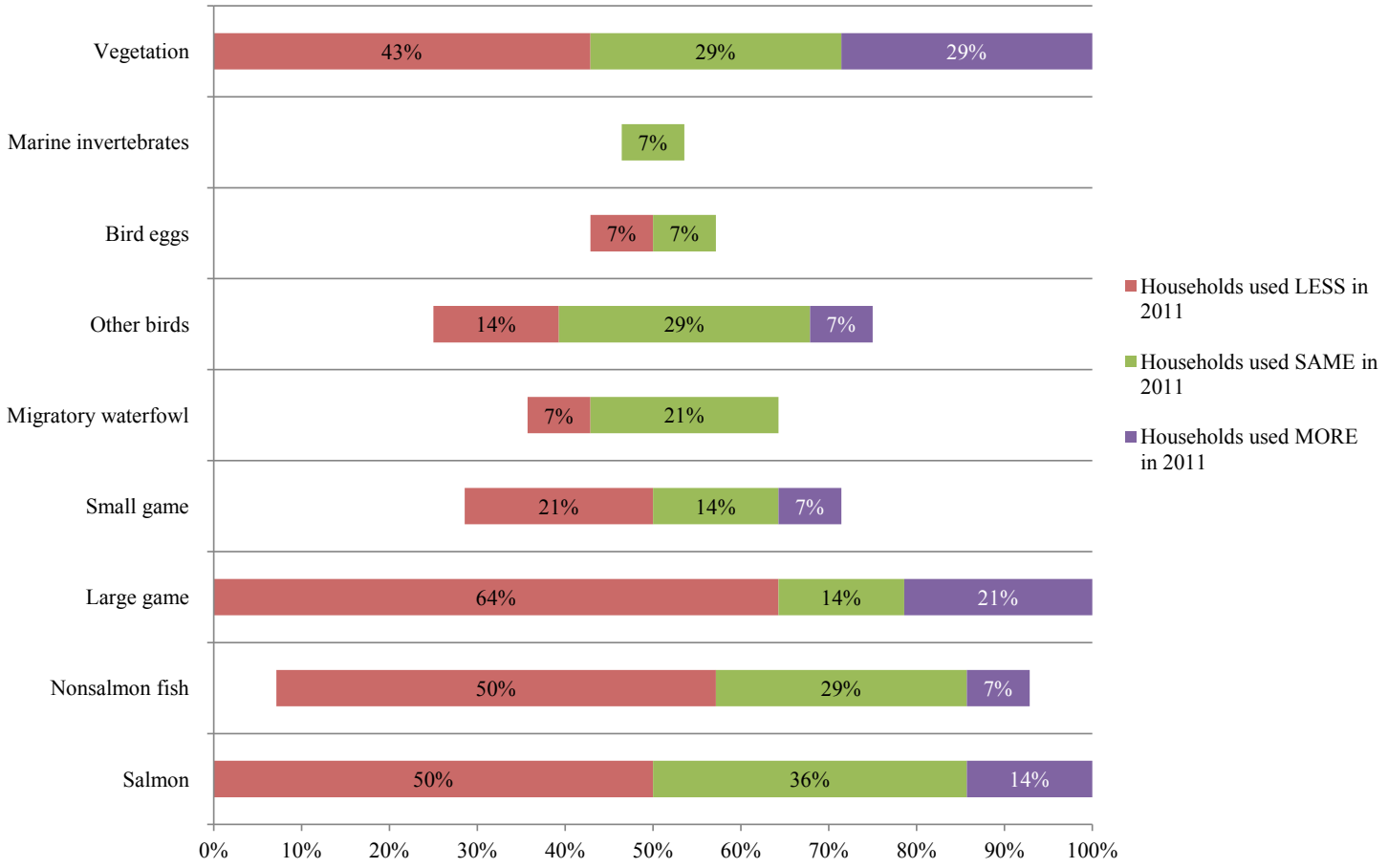
Source ADF&G Division of Subsistence household surveys, 2011.
a. Valid responses do not include households that did not provide any response and households reporting never use.

those providing assessment) and nonsalmon fish (50% of all households, 58% of those providing assessment) in 2011 than in recent years. In comparison, about 29% of all households and 33% of those that provided assessments reported using about the same amount of nonsalmon fish in 2011. Regarding vegetation, more households (43% of all households, 53% of those providing assessments) used less in 2011 compared to the last 5 years.

Table 11-17 depicts the reasons Dot Lake respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were: lack of time due to working (50%), less sharing (17%), and a level response for the reasons of family/personal obligations, weather/environment, and other reasons (33% each). Less sharing, lack of effort and unsuccessful hunting effort were cited as the main reasons for less use of nonsalmon fish and salmon. Other reasons and working or not having enough time were given as the reasons for less use of large game and other birds.

Overall, 93% of Dot Lake's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 50% said that their uses of at least one category had increased (Table 11-16). Less sharing, lack of effort, and other reasons were each the most frequently cited reasons for lower use of any resource categories in 2011 (31% of all Dot Lake households who reported a reason for less use), followed by unsuccessful hunting (23%), weather or environment (23%) and working or not having enough time (23%), (Figure 11-21).



Note Percentages are based on the total number of households in the community (N = 14 households). Unlabeled percentages are less than 5%.

Figure 11-20.– Changes in household uses of resources compared to recent years, Dot Lake, 2011.

Table 11-17. – Reasons for less household uses of resources compared to recent years, Dot Lake, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentag
Any resource	14	13	2	15.4%	2	15.4%	0	0.0%	2	15.4%	4	30.8%	4	30.8%	3	23.1%	3	23.1%
All resources	14	6	2	33.3%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	2	33.3%
Salmon	14	7	1	14.3%	1	14.3%	0	0.0%	1	14.3%	1	14.3%	2	28.6%	0	0.0%	0	0.0%
Nonsalmon fish	12	7	0	0.0%	0	0.0%	0	0.0%	1	14.3%	2	28.6%	2	28.6%	2	28.6%	0	0.0%
Large game	14	9	1	11.1%	0	0.0%	0	0.0%	1	11.1%	2	22.2%	2	22.2%	2	22.2%	0	0.0%
Small game	6	2	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	4	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	7	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	2	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	14	6	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	2	33.3%	0	0.0%	1	16.7%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 11-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentag
Any resource	14	13	4	30.8%	3	23.1%	0	0.0%	0	0.0%	1	7.7%	0	0.0%	0	0.0%	0	0.0%
All resources	14	6	2	33.3%	3	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	14	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	12	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large game	14	9	1	11.1%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	6	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory waterfowl	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%
Other birds	7	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	2	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 invertebrates	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	14	6	0	0.0%	1	16.7%	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, 2011.

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

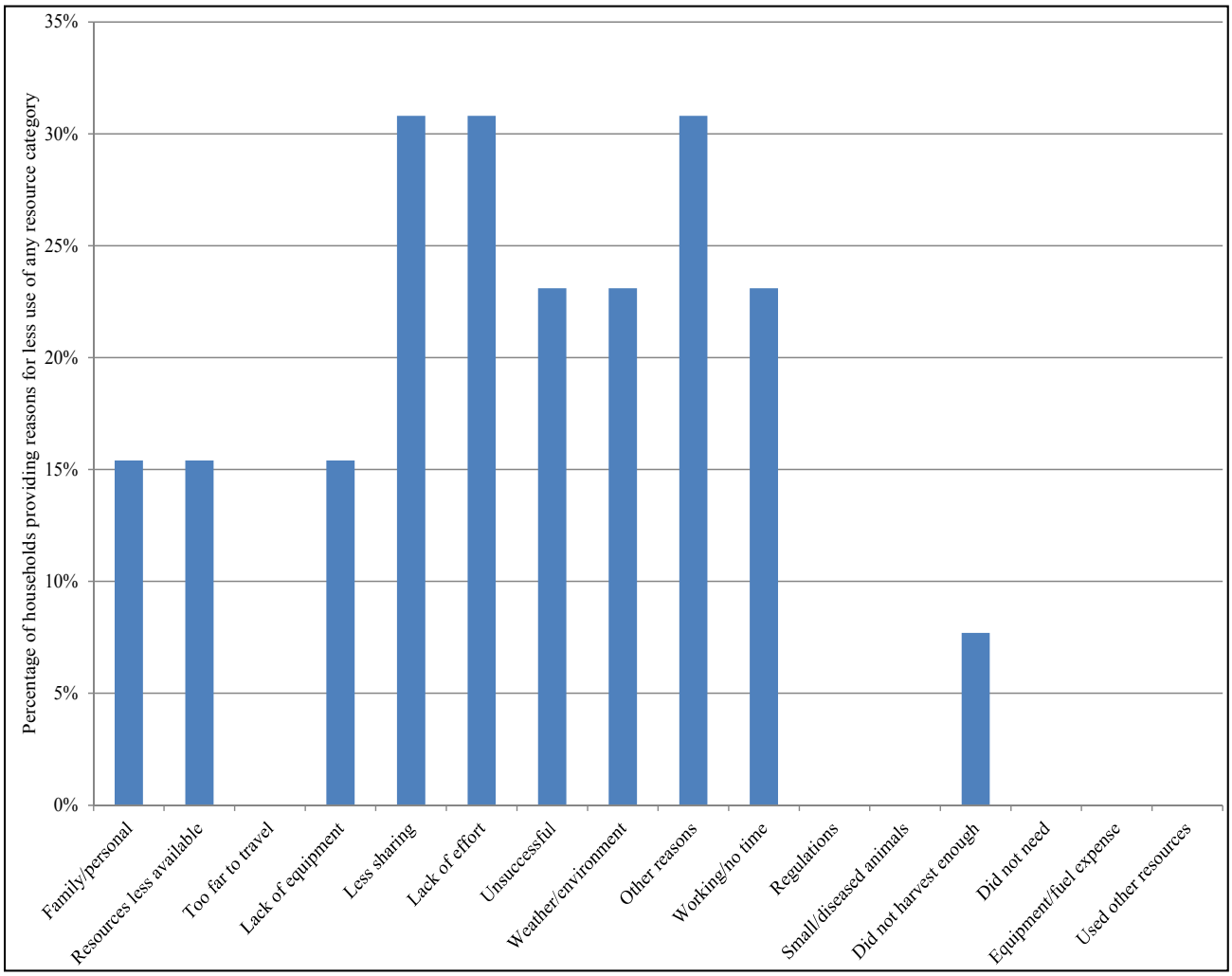


Figure 11-21.– Reasons for less household uses of any resource compared to recent years, Dot Lake, 2011.

Changes in the resource harvest by Dot Lake residents can also be discerned through comparisons with findings from other study years. For Dot Lake, comprehensive subsistence household harvest data were collected for 1987 in addition to this 2011 study (Table 11-18; figures 11-22, 11-23, and 11-24). A household survey documenting large land mammal, small land mammal, and nonsalmon fish harvests occurred in the Tanana region in 2004; data for the 2004 survey appear for the 3 resource categories in Table 11-18, and Figure 11-24 depicts harvests of large land mammals for 1987, 2004, and 2011.

Table 11-18 summarizes the estimated harvests in pounds usable weight for each major resource category from the 3 studies in 1987, 2004, and 2011. Because the 2004 harvest data do not include all resource categories, generalizations about total community harvest cannot be made. The 2004 data will be discussed in the following paragraph. Without considering the 2004 harvest data, the per capita harvest has remained roughly about the same from in 1987 to 2011. In 1987, the total harvest of wild resources in pounds usable weight for Dot Lake was 7,555 lb (116 lb per capita), and in 2011

Table 11-18. – Harvest by resource category, Dot Lake, 1987, 2004, and 2011.

	Pounds usable weight per capita harvest					
	1987		2004		2011	
	Total	Per capita	Total	Per capita	Total	Per capita
Salmon	1,329.0	20.3	ND	ND	2,186.1	44.2
Nonsalmon fish	2,094.0	32.1	1,580.0	28.3	412.2	8.3
Large land mammals	3,177.0	48.6	6,650.0	119.1	2,487.0	50.2
Small land mammals	308.0	4.7	333.0	6.0	28.5	0.6
Birds and eggs	148.0	2.3	ND	ND	62.6	1.3
Marine invertebrates	ND	ND	ND	ND	1.8	0.0
Vegetation	499.0	7.6	ND	ND	677.6	13.7
All resources	7,555.0	115.6	ND	ND	5,855.8	118.3

Source Community Subsistence Information System (CSIS), Alaska Department of Fish and Game, http://www.adfg.alaska.gov/sb/CSIS/.
Note ND indicates no data are available.

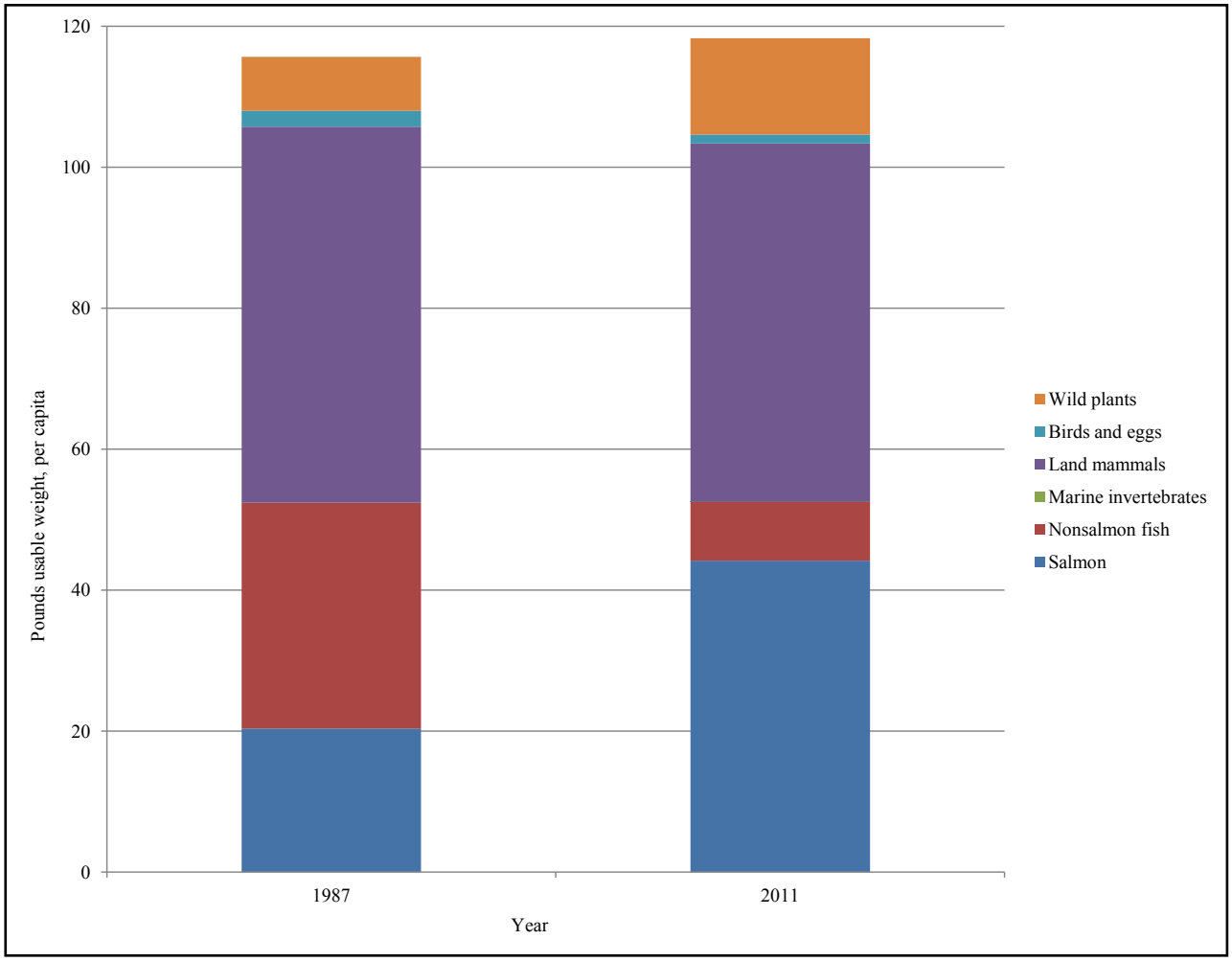


Figure 11-22.– Composition of total harvest in pounds usable weight, per capita, Dot Lake, 1987 and 2011.

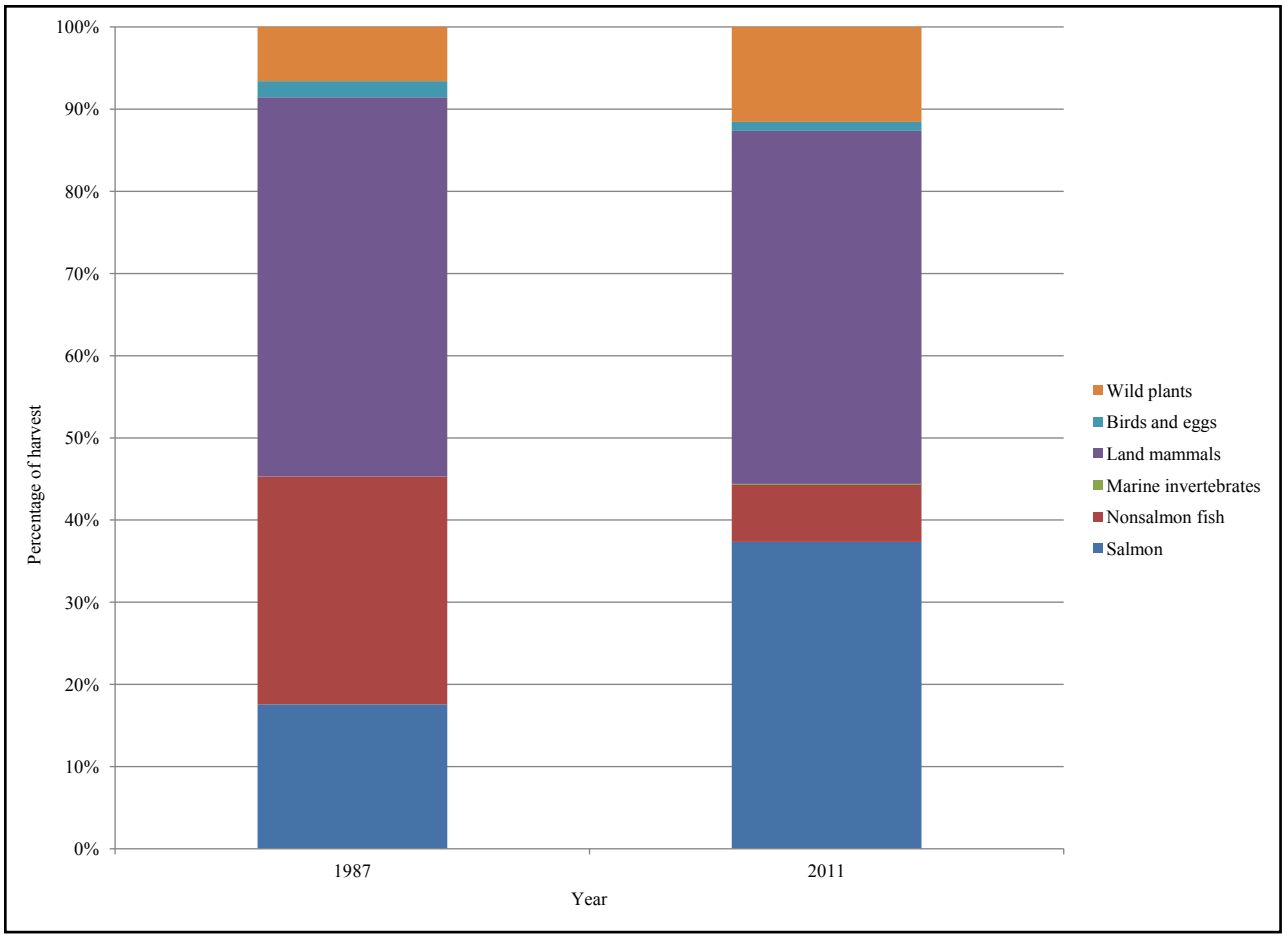


Figure 11-23.– Percentage of total subsistence harvest in pounds usable weight by resource category, Dot Lake, 1987 and 2011.

the total harvest was 5,856 lb (118 lb per capita) (Table 11-17; Figure 11-22), demonstrating that while the total community harvest had decreased somewhat, the per capita harvest has remained the same. The composition of the harvest, however, has varied. Figure 11-23 summarizes the percentage of the total subsistence harvest in pounds usable weight for each major resource category from the 2 comprehensive studies. This chart most dramatically illustrates the rise in reliance upon salmon, the decline in the proportion of the nonsalmon harvest, a small increase in wild plant proportion, and the relative consistency in the community's major reliance upon land mammals from 1987 to 2011. On this last point, it is important to recall that the community felt that use of large and small land mammals was lower in 2011 as compared to recent years. In a particularly successful year, the reported harvest of game may have been significantly higher. In addition, some community members indicated that not all moose were reported for this survey and that harvest numbers for 2011 may be higher than the survey count.

Figure 11-24 utilizes report data from the survey conducted in 2004 for a more detailed examination of large land mammal harvests by number of animals in the 3 study years for Dot Lake. While the

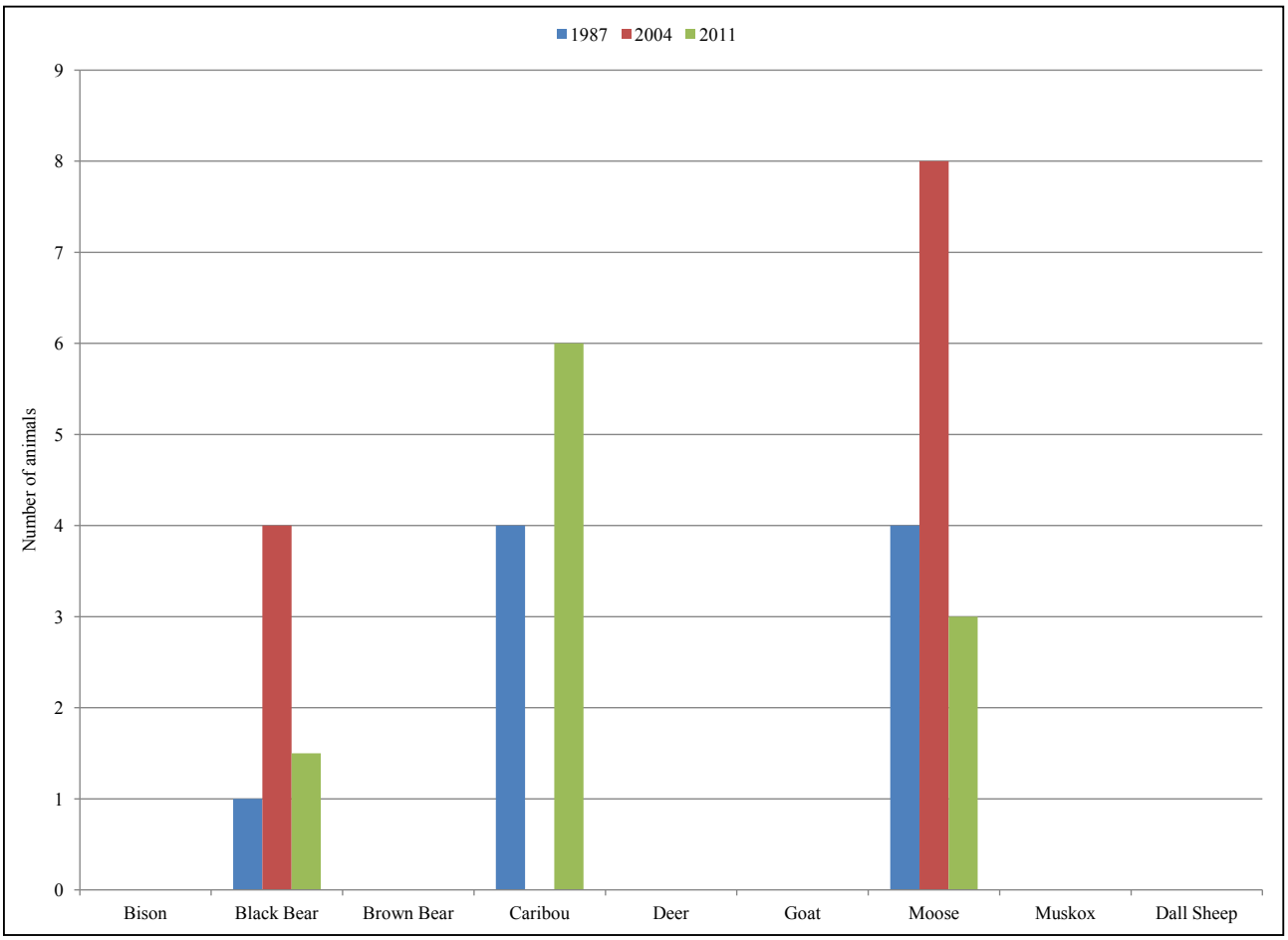


Figure 11-24.– Large land mammal harvests, Dot Lake, 1987, 2004, and 2011.

survey did not record any caribou harvest in 2004, the harvests for both black bears and moose were more than double the amounts in the other 2 study years of 1987 and 2011.

In contrast, the per capita harvests of nonsalmon fish and small land mammals from the 2004 survey were similar to estimates from 1987 but notably higher than 2011. In summary, the inclusion of data from 2004 demonstrates the great variability in harvest that can be found from one year to the next. It is a challenge to make generalized statements about subsistence trends based on only a few studies over the course of 3 decades. However, all respondents agreed that 2011 was a poor harvest year in general, and that not all large land mammal harvest was readily reported.

LOCAL CONCERNS REGARDING RESOURCES

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

LARGE LAND MAMMALS

Dot Lake residents are primarily concerned about access to large land mammal hunting areas. Very few households hunted caribou during the study year. Reasons given for this lack of effort were that Taylor Highway caribou hunts are crowded and unsafe, and Dot Lake residents did not hunt in the Tanacross area to avoid disputes. In addition, their biggest concern is the lack of access to the Macomb Plateau controlled use area for harvest of moose and caribou, the boundary of which runs right along the southwest edge of the highway. Residents have stressed the challenge of non-motorized access for households like theirs that cannot afford a pack animal or float plane transportation. Other upper Tanana hunters use horses to access this area, and residents worry that few large animals come down from the plateau close to the road or the Tanana Flats until later, after the season has closed. Another issue residents see as restrictive to their harvest of large game is conflicting regulations and seasons between game units. This change in harvest pattern discussed by residents is illustrated by the Martin map (1983) comparisons.

Martin (1983) mapped the community resource use areas for Dot Lake during the study year of 1982 (no comprehensive survey was conducted for this study). The maps cover harvest and use areas for moose, caribou, waterfowl, sheep, plants, and trapping and fishing areas. While it is important to keep in mind that the maps produced in 1983 capture multiple decades of activity rather than just one year, it is significant to note how diminished the harvest areas are in 2011 in comparison to the previous study. On all 4 maps from the 1983 publication, use areas cover a wide expanse of land in the immediate watershed, across the flats, and up multiple tributaries to the Tanana River on both the north and south sides of the Alaska Highway. Notably, fall season caribou harvest and search areas were exclusively conducted south of the roadway along the Macomb Plateau and Knob Ridge, the area mentioned above that is now restricted to non-motorized vehicle access only. In 2011, with the exception of a small wood lot on the southeast side of the Robertson River and some small land mammal harvests in immediate proximity to Dot Lake community, no harvest activities were mapped south of the road corridor.

Compared to the historical maps, the 2011 caribou harvest and search pattern completely altered from the Macomb Plateau area in the fall and the flats just north of Dot Lake in the winter, to a roadway hunt along the Taylor Highway. Moose harvest and search areas additionally became limited to road access lands only, with the exception of a small stretch of Sam Creek and a portion of the Tanana to the Robertson River.

SMALL LAND MAMMALS/FURBEARERS

Dot Lake residents observed an increase in beavers in the area since trapping has declined. Additionally, they commented that tree squirrels are often shot as a nuisance but not harvested for food.

BIRDS

Dot Lake residents harvested very few migratory birds in 2011; one person made the observation that waterfowl are not as abundant now as they were in the past. Conversely, some residents commented that upland game birds are found in great abundance in the Dot Lake area.

OTHER COMMENTS

Finally, residents noted that 2011 was overall a poor harvest year; they said that this was due in part to the forest fire of the previous year, diminishing the browse and habitat for game in the area.

SUMMARY

The household survey findings demonstrate that residents of Dot Lake continue to harvest a wide variety of resources in 2011, but that over time, while some resources remain critical and the per capita harvest was similar for 2 study years, the overall composition of harvest has changed from 1987 to 2011. Large land mammals made up 42% of the harvest, salmon 37%, vegetation 12%, and nonsalmon fish made 7% of the overall harvest in 2011. Small land mammals, birds and eggs, and marine invertebrates made up less than 3% of the remaining harvest. Significant changes in harvest composition over time are seen in the decline in harvest of nonsalmon fish, birds and eggs, and small land mammals, but an increase in reliance on salmon and vegetation. Harvest and use areas for Dot Lake residents have significantly reduced since the last mapping effort in 1982 (Martin 1983). Previous patterns that utilized most of the Tanana tributary valleys in the immediate area and demonstrated a significant reliance upon the Macomb Plateau have been reduced primarily to the road corridors along the Alaska and Taylor highways.

By most respondent accounts, the harvest in 2011 was diminished compared to the previous 5 years, and review of the 2004 data would support such statements. Dot Lake residents expressed specific concern about the challenge of access to large land mammals, the resource upon which the community is most dependent. Residents believe that the majority of large game animals are harvested early in the season in the higher elevations of the Macomb Plateau controlled use area before they have time to travel down to the flats where Dot Lake hunters have access to them.

ACKNOWLEDGEMENTS

The Division of Subsistence would like to thank everyone who helped make the work in Dot Lake a success. First, our thanks are extended to the Dot Lake Village Council for their approval of and assistance with our work in their community. We could not have conducted this research without their full support. We would also like to thank our Local Research Assistants Charles Miller and Tommy

Isaac, whose keen understanding of community dynamics both within the village and the broader area helped inform and guide quality data collection; their humor and efforts were indispensable. Finally, the Division of Subsistence would like to thank former Tribal President Bill Miller. Mr. Miller was key to facilitating work within the community and was a wealth of knowledge on the history of Dot Lake village and the road community. Research staff found Mr. Miller to be a tireless advocate for his community and an exemplary individual to work with.

CHAPTER 12: DRY CREEK

Prepared by Robbin La Vine

COMMUNITY BACKGROUND

The community of Dry Creek consists primarily of members of the Living Word Ministry, Inc., a corporate communal settlement of about 25 households, and a broader community immediately surrounding the Living Word Ministry land parcel.[1] According to information obtained through key respondent interviews, the Living Word Ministry addresses and cares for people and issues of the corporate residences (and sometimes beyond), while the broader Dry Creek community comes together to address area-wide concerns. Despite the distinction between the ministry and its neighbors, all surveyed for this project testify to the unity and cohesion they feel as residents who share common interests. The portion of Dry Creek defined as the corporate residences was acquired by founders of the Living Word Ministry through the State of Alaska's Open to Entry land offering program in the early 1970s. Living Word Ministry, Inc., was established in 1973 in Dry Creek, Alaska, by 4 original families.

The Living Word Ministry corporate community is an intentional community founded by families from other U.S. states who felt a calling to live in faith from their labor off the land in Alaska. Upon their arrival in the summer of 1973, few of the original members had much experience with hunting, gathering, or farming, and virtually no experience with such extreme weather conditions as are found in interior Alaska. They learned quickly, and their community grew.

When Living Word Ministry first settled the area, people lived in a few rough cabins or in tents. There was no electricity, no communal building, and water was hauled from a spring about a mile out of camp, even during winter months. While cooking was done in a small cabin with a wood-burning stove, community members ate their meals in a World War II tent with 2 small stoves. The temperature of interior Alaska winters can dip well below -40° F. Residents remember having to eat their meals in a hurry before the food froze to their plates. The tent where they ate also served as a place of worship. Even though the young community was building quickly, during the harsh winters, families still had to double up in cramped little cabins until more structures were built. By 1975 the population had grown to about 88 residents, and with the additional aid from the growing population, the large log-hewn structure called "the tabernacle" was completed.

Dry Creek community life revolves around the tabernacle; it serves as church, kitchen, dining

1. The community background narrative about Dry Creek and the Living Word Ministry, Inc., is based on key respondent interviews.

hall, mail room, common gathering area, and nursery. In the early days it was even used as the schoolhouse. The residents gather in the community tabernacle for lunch and supper most days with the exceptions of Wednesday evenings and all day Saturday, when people prepare meals in their own homes. Additionally, all the major processing of harvested foods is handled in the tabernacle—from the freezing and canning of wild foods and those grown in their gardens to the processing of farm-raised animals and milk into products like butter, yogurt, and cheese.

Dry Creek residents of the corporate community work their land for communal use and for business purposes. There are extensive farmlands across the highway from the settlement totaling about 530 acres (S&K Farms), as well as a community garden and greenhouse within the settlement. In 2011, the land was divided up as follows: 318 acres of hay, 80 acres of grains (primarily oats and barley), and 2 acres of potatoes; all crops were planted and harvested with the aid of draft horses. Additionally, there were 90 acres of pasture and 40 acres of trees. The farm had 20 work horses along with 12 riding horses and mules. An additional 25 horses were boarded at S&K Farms along with the farm's own 65 head of beef cattle, 10 head of dairy cows, 6 pigs raised for slaughter, and 200 chickens kept for eggs. The community makes its own dairy products from its dairy cows, including butter, different kinds of cheeses, yogurt, cream, and kefir (a yogurt drink). The community garden consists of 2.5 acres in the middle of the settlement where residents grow their own broccoli, cauliflower, cabbage, squash, carrots, peas, beets, turnips, potatoes, celery, raspberries, and multiple kinds of greens.

A community business providing wage employment as well as community resources is Logging and Milling Associates, LLC. The mill produced the lumber used to build homes, the school, and other structures in the community, and it continues to produce lumber for sale. Scrap wood and sawdust are used to produce wood pellets for pellet stoves—used to heat many homes—and fuel for the dry kiln boiler. The dry kiln dries the lumber for use in construction projects. Because the community has several support operations for "seconds," or scrap lumber, the mill is able to sell only the highest quality lumber to its customers, and therefore maintains a reputation of high quality products and is well known in Alaska. Services and products include: firewood and firewood delivery; custom computer designed cabins; kiln-dried tongue and groove lumber; kiln-dried 6- and 8-inch log siding; precision milled house logs in 6x8, 8x8, 8x10 dimensions; wood pellets; and other specialty wood products.

DEMOGRAPHY

According to the federal census, Dry Creek Census Designated Place (CDP) had 94 residents in 2010, and the survey team found an estimated population of 91 residents in 2011, all of whom were non-Alaska Native (U. S. Census Bureau 2011a) (Table 12-1). Figure 12-1 shows Dry Creek's population trend over the last 20 years; population data from the previous 18 years since Dry Creek's founding in 1973 are not available because the separate CDP was first established in 1990. Community residents spoke of a population high of approximately 200 residents in the 1980s; it is uncertain why

Table 12-1. – Population of Dry Creek, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
29	94	0	0.0%	30	91	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

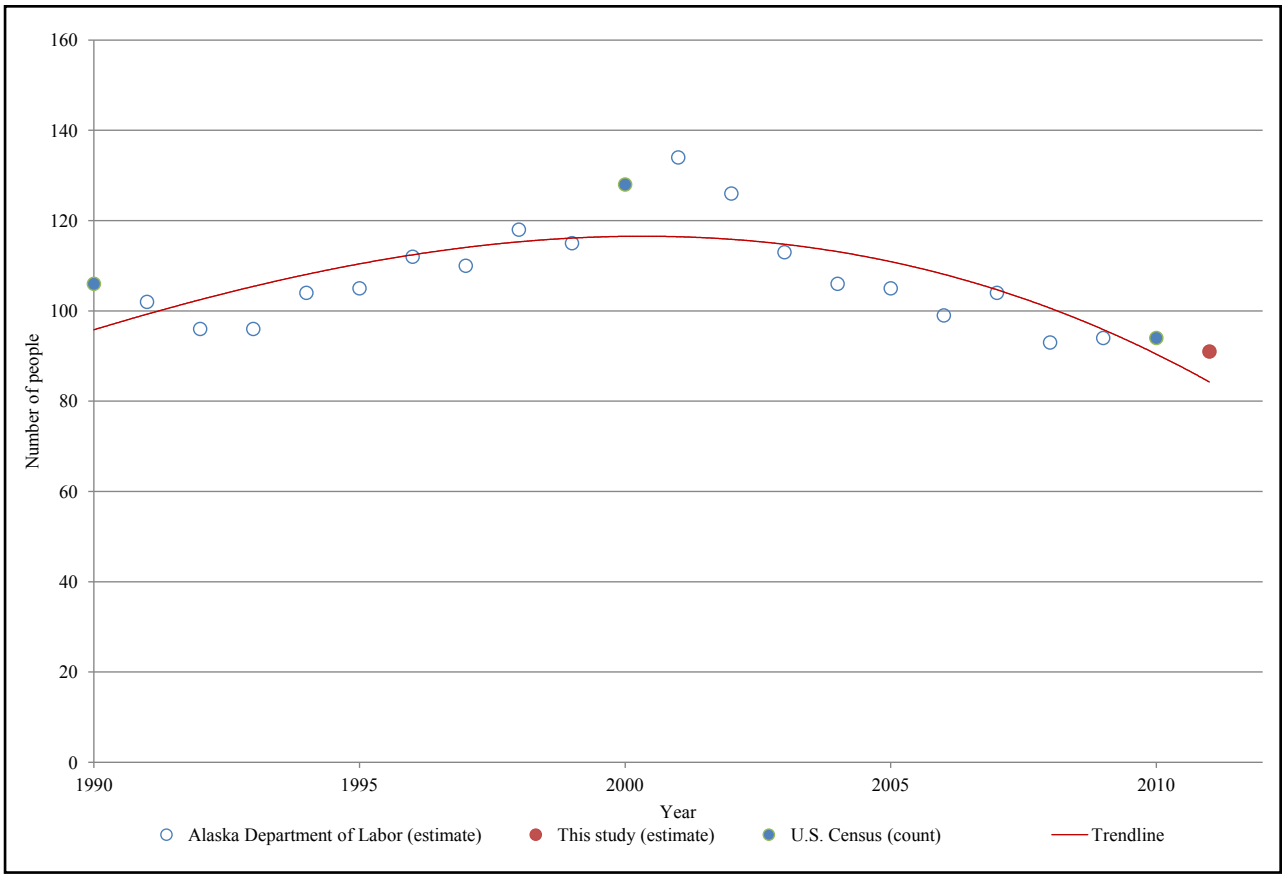


Figure 12-1.– Population history, Dry Creek, 1990–2011.

Table 12-2. – Sample achievement, Dry Creek, 2011.

Number of dwelling units	30.0
Interview goal	30.0
Households interviewed	27.0
Households failed to contact	1.0
Households declined to be interviewed	2.0
Households moved or nonresident[a]	0.0
Total households attempted to interview	29.0
Refusal rate	6.9%
Final estimate of permanent households	30.0
Percentage of total households interviewed	90.0%
Interview weighting factor	1.1
Sampled population	82.0
Estimated population	91.1

Source ADF&G Division of Subsistence household surveys, 2012.
a. Nonresident households had not lived in the community for at least 3 months during the study year.

a subsequent drop occurred. Otherwise, the population has remained fairly consistent over the last 20 years with a slight increase of residents around the year 2000.

Prior to the survey, researchers, in consultation with community representatives and other knowledgeable respondents, established a preliminary list of 30 year-round households in Dry Creek; the survey confirmed this estimate of 30 year-round households. Of these 30 households, 27 households (90%) were interviewed, 5 of which were non-ministry neighbors (Table 12-2). The mean number of years of residency in Dry Creek was 22 years, with the maximum length of residence at 39 years (Table 12-3). The largest age cohort for males included 10–14 and 45–49 years of age at 16% of the men's population each, and for females it was 15–19 years of age at 18% of the total women's population (Figure 12-2; Table 12-4). The high percentage of young people under the age of 25 is notable; 46% of the male population and 44% of the female population are younger than 25 and both of these figures are indicators of a robust young population. Over the age of 30, the cohort categories were fairly evenly distributed with a higher representation of female residents over male residents except for the 45–49 and 55–59 categories. There were no documented residents in the age groups of 25–29 or 65–69, and only women were documented in the 75–79 cohort.

Of the Dry Creek household heads interviewed, an overwhelming majority, approximately 91%, were born elsewhere in the United States demonstrating the community's unique settlement profile. Of the remaining household heads, approximately 4% were foreign born, 2% were born somewhere else in Alaska, and 2% claimed Dry Creek as their birthplace (Table 12-5).

Table 12-3. – Demographics and sample characteristics, Dry Creek, 2011.

Characteristics	Dry Creek
Sampled households	27.0
Eligible households	30.0
Percentage sampled	90.0%
Household size	
Mean	3.0
Minimum	1.0
Maximum	6.0
Sample population	82.0
Estimated community population	91.1
Age	
Mean	37.4
Minimum[a]	3.0
Maximum	84.0
Median	39.0
Length of residency	
Total population	
Mean	21.8
Minimum[a]	3.0
Maximum	39.0
Heads of household	
Mean	28.4
Minimum[a]	3.0
Maximum	39.0
Sex	
Estimated male	
Number	41.1
Percentage	45.1%
Estimated female	
Number	50.0
Percentage	54.9%
Alaska Native	
Estimated households[b]	
Number	0.0
Percentage	0.0%
Estimated population	
Number	0.0
Percentage	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

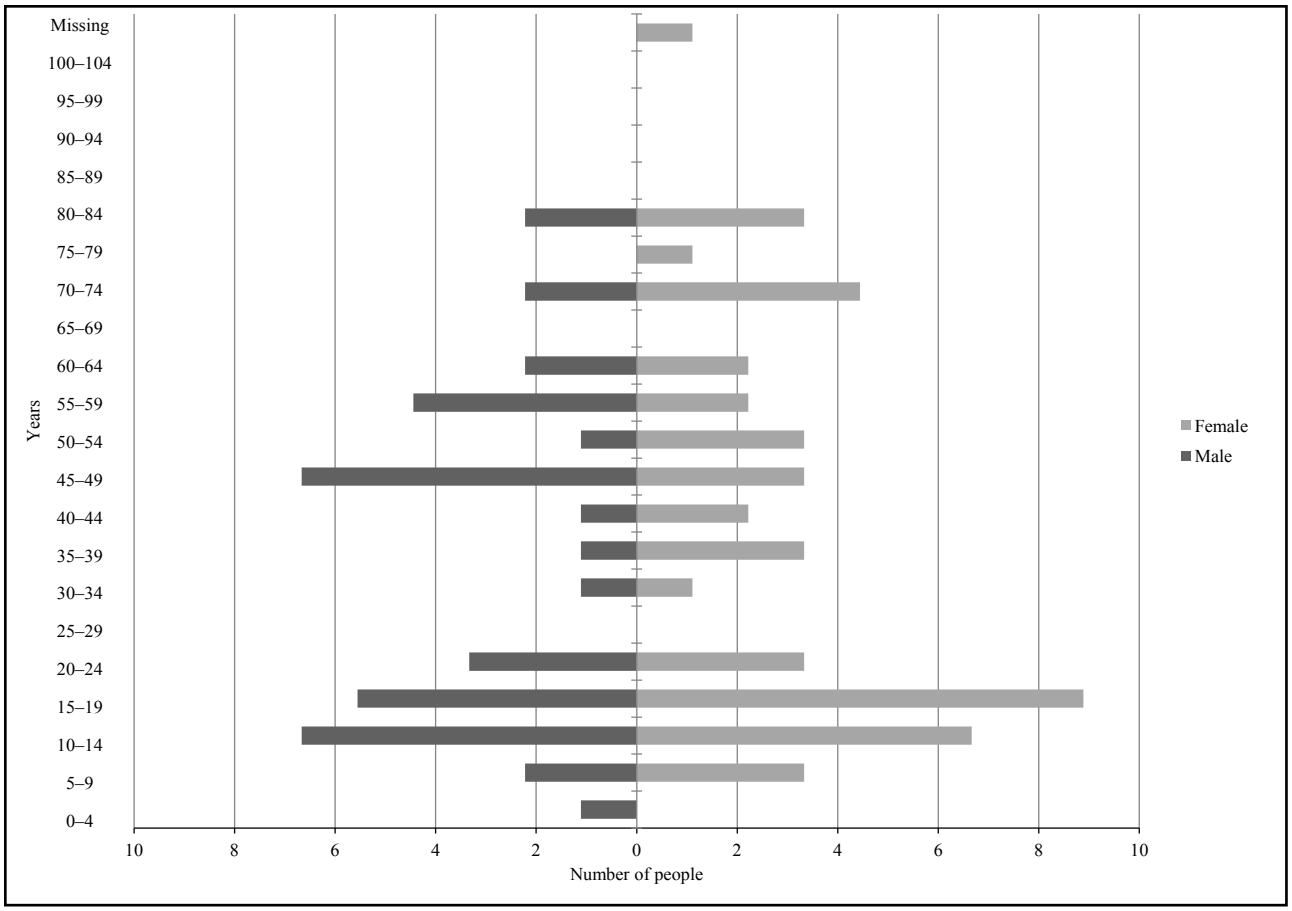


Figure 12-2.– Population profile, Dry Creek, 2011.

Table 12-4. – Population profile, Dry Creek, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	1.1	2.7%	2.7%	0.0	0.0%	0.0%	1.1	1.2%	1.2%
5–9	2.2	5.4%	8.1%	3.3	6.7%	6.7%	5.6	6.1%	7.3%
10–14	6.7	16.2%	24.3%	6.7	13.3%	20.0%	13.3	14.6%	22.0%
15–19	5.6	13.5%	37.8%	8.9	17.8%	37.8%	14.4	15.9%	37.8%
20–24	3.3	8.1%	45.9%	3.3	6.7%	44.4%	6.7	7.3%	45.1%
25–29	0.0	0.0%	45.9%	0.0	0.0%	44.4%	0.0	0.0%	45.1%
30–34	1.1	2.7%	48.6%	1.1	2.2%	46.7%	2.2	2.4%	47.6%
35–39	1.1	2.7%	51.4%	3.3	6.7%	53.3%	4.4	4.9%	52.4%
40–44	1.1	2.7%	54.1%	2.2	4.4%	57.8%	3.3	3.7%	56.1%
45–49	6.7	16.2%	70.3%	3.3	6.7%	64.4%	10.0	11.0%	67.1%
50–54	1.1	2.7%	73.0%	3.3	6.7%	71.1%	4.4	4.9%	72.0%
55–59	4.4	10.8%	83.8%	2.2	4.4%	75.6%	6.7	7.3%	79.3%
60–64	2.2	5.4%	89.2%	2.2	4.4%	80.0%	4.4	4.9%	84.1%
65–69	0.0	0.0%	89.2%	0.0	0.0%	80.0%	0.0	0.0%	84.1%
70–74	2.2	5.4%	94.6%	4.4	8.9%	88.9%	6.7	7.3%	91.5%
75–79	0.0	0.0%	94.6%	1.1	2.2%	91.1%	1.1	1.2%	92.7%
80–84	2.2	5.4%	100.0%	3.3	6.7%	97.8%	5.6	6.1%	98.8%
85–89	0.0	0.0%	100.0%	0.0	0.0%	97.8%	0.0	0.0%	98.8%
90–94	0.0	0.0%	100.0%	0.0	0.0%	97.8%	0.0	0.0%	98.8%
95–99	0.0	0.0%	100.0%	0.0	0.0%	97.8%	0.0	0.0%	98.8%
100–104	0.0	0.0%	100.0%	0.0	0.0%	97.8%	0.0	0.0%	98.8%
Missing	0.0	0.0%	100.0%	1.1	2.2%	100.0%	1.1	1.2%	100.0%
Total	**41.1**	**100.0%**	**100.0%**	**50.0**	**100.0%**	**100.0%**	**91.1**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 12-5. – Birthplaces of household heads, Dry Creek, 2011.

Birthplace[a]	Percentage
Dry Creek	2.2%
Other Alaska	2.2%
Other U.S.	91.3%
Foreign	4.3%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutally exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 12-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Dry Creek residents in 2011. Approximately 83% of residents participated in the harvest of resources in 2011. With reference to specific resource categories, 82% of all residents gathered plants and berries, 43% fished, 29% hunted for birds, and 40% hunted for large land mammals. Almost 20% of residents were involved in furbearer hunting or trapping.

In comparison, 96% of all Dry Creek residents participated in the processing of some resources in 2011, and most residents of Dry Creek participated in the processing of key resources; 89% helped process large land mammals and 88% processed fish. Both of those resources were communally processed primarily for community consumption as described above. While a large percentage (82%) participated in processing plants and berries, this was mostly for personal or household use. Fewer participated in processing birds (31%) or furbearers (12%), which were resources harvested by individual households for family unit consumption and sharing.

RESOURCE HARVEST AND USE PATTERNS

Table 12-7 summarizes resource harvest and use characteristics for Dry Creek in 2011, at the household level. All households used wild resources in 2011, while 78% of households surveyed both attempted to and were successful at harvesting at least one resource. The average total harvest was an estimated 426 lb usable weight per household, or 140 lb per capita. On average, households attempted to harvest 7 kinds of resources, harvested approximately 6 kinds of resources, and used an average of 11 distinct kinds of resources. The maximum number of resources used by any household was 33. In addition, households gave away an average of 3 kinds of resources and received 7 kinds of resources. Approximately 63% of the households reported sharing resources with other households, while 100% reported receiving a resource.

Table 12-6. – Estimated participation in subsistence harvesting and processing activities, Dry Creek, 2011.

Total number of people	**91.1**
Birds	
Hunt	
Number	26.7
Percentage	29.3%
Process	
Number	27.8
Percentage	30.5%
Fish	
Fish	
Number	38.9
Percentage	42.7%
Process	
Number	80.0
Percentage	87.8%
Large land mammals	
Hunt	
Number	36.7
Percentage	40.2%
Process	
Number	81.1
Percentage	89.0%
Furbearers	
Hunt or trap	
Number	17.8
Percentage	19.5%
Process	
Number	11.1
Percentage	12.2%
Plants	
Gather	
Number	74.4
Percentage	81.7%
Process	
Number	74.4
Percentage	81.7%
Any resource	
Attempt	
Number	75.6
Percentage	82.9%
Process	
Number	87.8
Percentage	96.3%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 12-7. – Resource harvest and use characteristics, Dry Creek, 2011.

Characteristic	
Mean number of resources used per household	11.1
Minimum	4.0
Maximum	33.0
95% confidence limit (±)	7.3%
Median	10.0
Mean number of resources attempted to harvest per household	6.8
Minimum	0.0
Maximum	31.0
95% confidence limit (±)	13.8%
Median	5.0
Mean number of resources harvested per household	5.7
Minimum	0.0
Maximum	26.0
95% confidence limit (±)	13.9%
Median	4.0
Mean number of resources received per household	6.7
Minimum	1.0
Maximum	11.0
95% confidence limit (±)	4.5%
Median	7.0
Mean number of resources given away per household	2.9
Minimum	0.0
Maximum	15.0
95% confidence limit (±)	14.9%
Median	2.0
Household harvest, pounds	
Minimum	0.0
Maximum	2,271.8
Mean	425.6
Median	33.7
Total harvest weight, pounds	12,767.2
Community per capita harvest, pounds	140.1
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	77.8%
Percentage harvesting any resource	77.8%
Percentage receiving any resource	100.0%
Percentage giving away any resource	63.0%
Number of households in sample	27.0
Number of resources available	104.0

Source ADF&G Division of Subsistence household surveys, 2012.

SPECIES USED AND SEASONAL ROUND

Residents of corporate Dry Creek have a harvest pattern primarily focused on group harvest efforts of key resources during the productive summer and fall months. In an average year, community members will make a trip or two down to the Copper River Basin for harvesting salmon in the subsistence fishery located above the bridge at Chitina, deep-sea fish for halibut out of Valdez, and organize hunting parties in the fall for moose and caribou. Additionally, some neighbors sometimes join corporate residents in their hunting efforts. The mill is run year-round except for the 2-week moose season when operations are shut down and all able hands go hunting. Not all who join the hunt harvest a moose, but all are present to help with the preliminary processing in the field and to transport the meat. Most households also participate in some harvesting of plants and berries, separate from those grown in the community gardens. Additionally, there are some households that hunt for migratory waterfowl in the spring and fall, upland game birds year-round, hunt and trap for small game in season, or go fishing year-round for nonsalmon fish in the region, but these efforts would be for household use and consumption only and are not considered major contributions to the community in general. Most critical for, and unique to this community, is the use of horses to access the Macomb Plateau controlled use area, especially for hunting large land mammals.

HARVEST QUANTITIES

Table 12-8 reports estimated wild resource harvests and uses by Dry Creek residents in 2011 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[2]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Dry Creek was 12,767 lb, or 140 lb per capita (Table 12-8). In terms of pounds harvested, large land mammals constituted the largest portion of the subsistence harvest (76%), which totaled 9,700 lb, or approximately 107 lb per capita (Table 12-8; Figure 12-3). The single most important wild resource for the community of Dry Creek was moose. Moose made up the highest percentage of the total pounds harvested and was used by every household surveyed in 2011 (Table 12-9).

Salmon was another major source of wild foods in Dry Creek in 2011, making up 12% of the total

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

Table 12-8. – Estimated harvests and uses of fish, game, and plant resources, Dry Creek, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All Resources	**100%**	**78%**	**78%**	**100%**	**63%**	**12,767.2**	**425.6**	**140.1**	**1,259.3**		**42.0**	**19%**
Fish	**100%**	**48%**	**48%**	**96%**	**30%**	**1,878.3**	**62.6**	**20.6**	**611.9**		**20.4**	**54%**
Salmon	**100%**	**15%**	**4%**	**96%**	**19%**	**1,569.7**	**52.3**	**17.2**	**357.8**		**11.9**	**65%**
Chum salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coho salmon	11%	0%	0%	11%	4%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Chinook salmon	93%	15%	4%	89%	11%	31.6	1.1	0.3	2.2	Ind.	0.1	65%
Pink salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sockeye salmon	100%	15%	4%	96%	19%	1,538.1	51.3	16.9	355.6	Ind.	11.9	65%
Landlocked salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown salmon	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Nonsalmon fish	**74%**	**44%**	**44%**	**67%**	**15%**	**308.6**	**10.3**	**3.4**	**254.1**		**8.5**	**34%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Smelt	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0		0.0	0%
Pacific cod (gray)	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	15%	0%	0%	15%	0%	0.0	0.0	0.0	0.0		0.0	0%
Lingcod	15%	0%	0%	15%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Pacific halibut	67%	7%	4%	63%	11%	2.2	0.1	0.0	2.2	Lb.	0.1	0%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	22%	0%	0%	22%	0%	0.0	0.0	0.0	0.0		0.0	0%
Unknown rockfish	22%	0%	0%	22%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	11%	7%	4%	4%	7%	40.0	1.3	0.4	16.7	Ind.	0.6	66%
Char	11%	4%	4%	7%	4%	23.3	0.8	0.3	16.7		0.6	65%
Dolly Varden	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lake trout	7%	4%	4%	4%	4%	23.3	0.8	0.3	16.7	Ind.	0.6	65%
Arctic grayling	19%	26%	19%	0%	4%	52.5	1.8	0.6	75.0	Ind.	2.5	41%
Northern pike	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	37%	33%	37%	4%	7%	176.1	5.9	1.9	125.8		4.2	29%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%

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Table 12-8.–Page 2 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Rainbow trout	37%	33%	37%	7%	4%	176.1	5.9	1.9	125.8	Ind.	4.2	29%
Unknown trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Whitefishes	11%	4%	4%	7%	0%	14.4	0.5	0.2	17.8		0.6	65%
Broad whitefish	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Cisco	4%	4%	4%	0%	0%	5.6	0.2	0.1	5.6		0.2	65%
Least cisco	4%	4%	4%	0%	0%	5.6	0.2	0.1	5.6	Ind.	0.2	65%
Humpback whitefish	4%	4%	4%	0%	0%	3.3	0.1	0.0	1.1	Ind.	0.0	65%
Round whitefish	4%	4%	4%	0%	0%	5.6	0.2	0.1	11.1	Ind.	0.4	65%
Unknown whitefish	7%	0%	0%	7%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Land mammals	**100%**	**52%**	**37%**	**93%**	**44%**	**9,735.6**	**324.5**	**106.9**	**73.3**		**2.4**	**20%**
Large land mammals	**100%**	**52%**	**37%**	**93%**	**44%**	**9,700.0**	**323.3**	**106.5**	**26.7**		**0.9**	**20%**
Bison	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	0%	4%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Brown bear	7%	15%	4%	4%	4%	0.0	0.0	0.0	1.1	Ind.	0.0	65%
Caribou	81%	22%	19%	78%	22%	1,300.0	43.3	14.3	10.0	Ind.	0.3	29%
Deer	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	100%	52%	37%	89%	41%	8,400.0	280.0	92.2	15.6	Ind.	0.5	19%
Dall Sheep	0%	4%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Small land mammals[b]	**15%**	**22%**	**15%**	**0%**	**4%**	**35.6**	**1.2**	**0.4**	**46.7**		**1.6**	**51%**
Beaver	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Coyote	11%	15%	11%	0%	0%	0.0	0.0	0.0	6.7	Ind.	0.2	45%
Fox	11%	11%	11%	0%	0%	0.0	0.0	0.0	6.7		0.2	45%
Red fox	11%	11%	11%	0%	0%	0.0	0.0	0.0	6.7		0.2	45%
Red fox—cross phase	4%	4%	4%	0%	0%	0.0	0.0	0.0	1.1	Ind.	0.0	65%
Red fox—red phase	11%	11%	11%	0%	0%	0.0	0.0	0.0	5.6	Ind.	0.2	42%
Hare	7%	7%	7%	0%	4%	31.1	1.0	0.3	15.6		0.5	56%
Snowshoe hare	7%	7%	7%	0%	4%	31.1	1.0	0.3	15.6	Ind.	0.5	56%
River (land) otter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lynx	4%	4%	4%	0%	0%	0.0	0.0	0.0	6.7	Ind.	0.2	65%
Marmot	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marten	4%	4%	4%	0%	0%	0.0	0.0	0.0	7.8	Ind.	0.3	65%
Mink	4%	4%	4%	0%	0%	0.0	0.0	0.0	2.2	Ind.	0.1	65%
Muskrat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Porcupine	4%	4%	4%	0%	0%	4.4	0.1	0.0	1.1	Ind.	0.0	65%
Squirrel	4%	7%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%

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Table 12-8.–Page 3 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Arctic ground (parka) squirrel	4%	7%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown squirrel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Weasel	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolf	0%	7%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Wolverine	0%	4%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Birds and eggs	**37%**	**37%**	**33%**	**7%**	**4%**	**129.1**	**4.3**	**1.4**	**143.8**		**4.8**	**23%**
Migratory birds	**15%**	**15%**	**15%**	**0%**	**4%**	**47.4**	**1.6**	**0.5**	**40.0**		**1.3**	**37%**
Ducks	11%	11%	11%	0%	0%	22.2	0.7	0.2	25.6		0.9	42%
Canvasback	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goldeneye	4%	4%	4%	0%	0%	1.7	0.1	0.0	1.1	Ind.	0.0	65%
Mallard	4%	4%	4%	0%	0%	6.7	0.2	0.1	6.7	Ind.	0.2	65%
Northern pintail	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Black scoter	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Teal	4%	4%	4%	0%	0%	2.9	0.1	0.0	5.6		0.2	65%
Green winged teal	4%	4%	4%	0%	0%	2.9	0.1	0.0	5.6	Ind.	0.2	65%
Unknown ducks	7%	7%	7%	0%	0%	11.0	0.4	0.1	12.2	Ind.	0.4	59%
Geese	11%	11%	11%	0%	4%	15.8	0.5	0.2	13.3		0.4	55%
Brant	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Canada geese	7%	7%	7%	0%	4%	14.7	0.5	0.2	12.2		0.4	59%
Cacklers	4%	4%	4%	0%	0%	1.3	0.0	0.0	1.1	Ind.	0.0	65%
Lesser Canada geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown Canada geese	4%	4%	4%	0%	4%	13.3	0.4	0.1	11.1	Ind.	0.4	65%
Emperor geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown geese	4%	4%	4%	0%	0%	1.1	0.0	0.0	1.1	Ind.	0.0	65%
Swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Tundra (whistling) swan	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Crane	4%	4%	4%	0%	0%	9.3	0.3	0.1	1.1		0.0	65%
Sandhill crane	4%	4%	4%	0%	0%	9.3	0.3	0.1	1.1	Ind.	0.0	65%
Other birds	**37%**	**37%**	**33%**	**7%**	**0%**	**81.7**	**2.7**	**0.9**	**103.8**		**3.5**	**25%**
Upland game birds	37%	37%	33%	7%	0%	81.7	2.7	0.9	103.8		3.5	25%
Grouse	37%	37%	33%	7%	0%	51.7	1.7	0.6	73.8		2.5	24%

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Table 12-8.–Page 4 of 4.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Birds, continued												
Spruce grouse	33%	33%	30%	7%	0%	28.3	0.9	0.3	40.4	Ind.	1.3	27%
Sharp-tailed grouse	7%	7%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Ruffed grouse	37%	37%	33%	7%	0%	23.4	0.8	0.3	33.5	Ind.	1.1	28%
Ptarmigan	19%	19%	19%	0%	0%	30.0	1.0	0.3	30.0	Ind.	1.0	32%
Bird eggs	**0%**	**0%**	**0%**	**0%**	**0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Duck eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine Invertebrates	**7%**	**0%**	**0%**	**7%**	**4%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0%**
Clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	4%	0%	0%	4%	4%	0.0	0.0	0.0	0.0		0.0	0%
Dungeness crab	4%	0%	0%	4%	4%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
King crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Oyster	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Shrimp	4%	0%	0%	4%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**96%**	**78%**	**78%**	**78%**	**56%**	**1,024.3**	**34.1**	**11.2**	**430.2**		**14.3**	**20%**
Berries	**93%**	**78%**	**78%**	**74%**	**56%**	**904.8**	**30.2**	**9.9**	**226.2**		**7.5**	**20%**
Blueberry	78%	63%	56%	52%	37%	103.3	3.4	1.1	25.8	Gal.	0.9	19%
Lowbush cranberry	93%	78%	78%	56%	56%	759.5	25.3	8.3	189.9	Gal.	6.3	22%
Highbush cranberry	4%	4%	4%	0%	0%	0.3	0.0	0.0	0.1	Gal.	0.0	65%
Raspberry	37%	37%	37%	4%	8%	41.7	1.4	0.5	10.4	Gal.	0.3	22%
Other wild berry	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Plants/greens/mushrooms	**22%**	**22%**	**22%**	**0%**	**11%**	**119.5**	**4.0**	**1.3**	**120.6**		**4.0**	**60%**
Hudson's Bay tea	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Other wild greens	11%	11%	11%	0%	4%	6.1	0.2	0.1	6.1	Gal.	0.2	50%
Unknown mushrooms	11%	11%	11%	0%	7%	113.4	3.8	1.2	113.4	Gal.	3.8	64%
Plantain	4%	4%	4%	0%	4%	0.0	0.0	0.0	1.1	Gal.	0.0	65%
Wood	**70%**	**52%**	**56%**	**37%**	**30%**	**0.0**	**0.0**	**0.0**	**83.5**	**Cord**	**2.8**	**19%**
Other wood	11%	4%	4%	7%	4%	0.0	0.0	0.0	0.1	Cord	0.0	65%

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

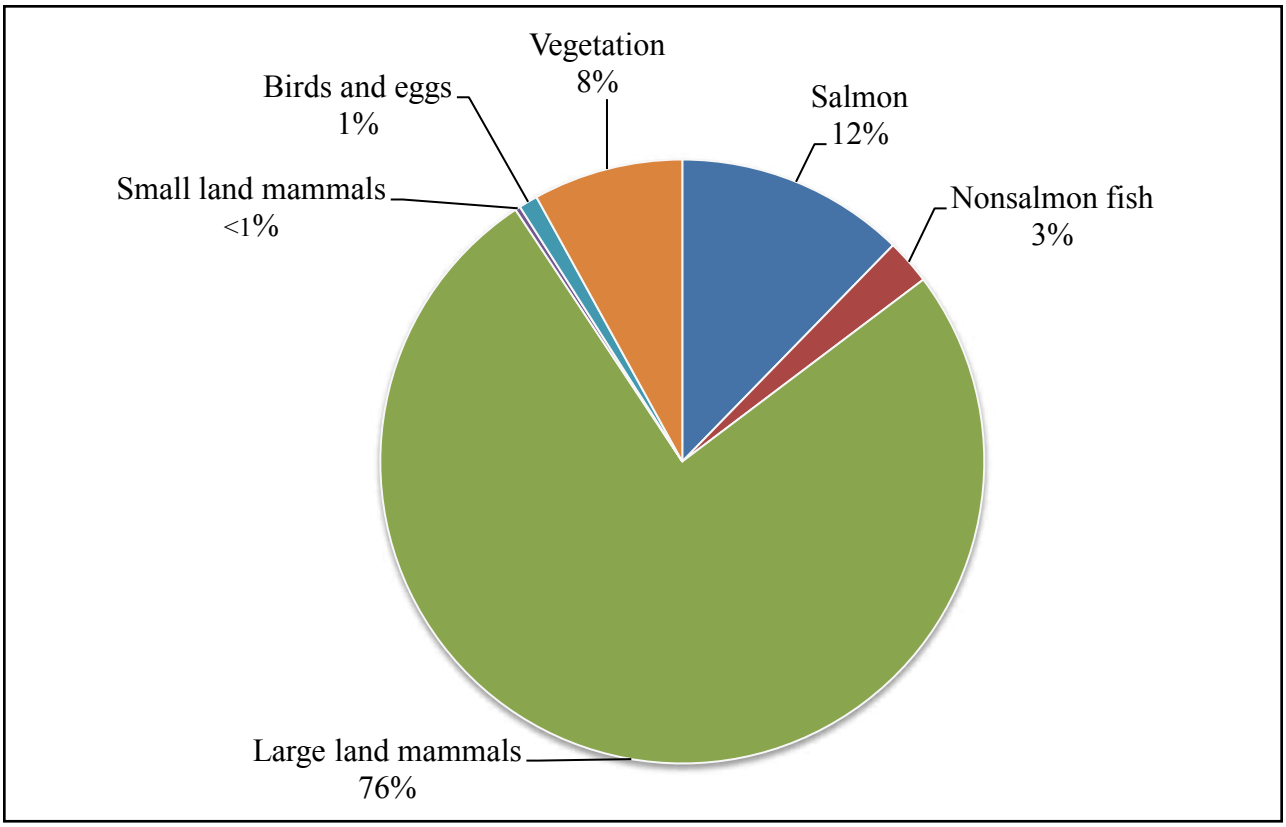


Figure 12-3.– Composition of harvest by category, Dry Creek, 2011.

Table 12-9. – Top 10 resources harvested and used, Dry Creek, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	92.2	1	1.	Sockeye salmon	100.0%
2	2.	Sockeye salmon	16.9	2	1.	Moose	100.0%
3	3.	Caribou	14.3	3	2.	Chinook salmon	92.6%
4	4.	Lowbush cranberry	8.3	4	2.	Lowbush cranberry	92.6%
5	5.	Rainbow trout	1.9	5	3.	Caribou	81.5%
6	6.	Unknown mushrooms	1.2	6	4.	Blueberry	77.8%
7	7.	Blueberry	1.1	7	5.	Wood	70.4%
8	8.	Arctic grayling	0.6	8	6.	Pacific halibut	66.7%
9	9.	Raspberry	0.5	9	7.	Rainbow trout	37.0%
10	10.	Burbot	0.4	10	7.	Ruffed grouse	37.0%
				11	7.	Raspberry	37.0%

Source ADF&G Division of Subsistence household surveys, 2012.

harvest at 1,570 total, or 17 lb per capita (Table 12-8; Figure 12-3). Sockeye salmon was the second most harvested resource in the community (Table 12-9). While 48% of the households in Dry Creek reported harvesting fish during the study year only 4% reported harvesting salmon (Table 12-8). The percentage of successfully harvesting households is so low because only a few members of the community travel to the Copper Basin to harvest salmon, and of those few members who participate in the harvest effort, only 1 person will record the entire harvest on his or her permit.

Wild plants made up about 8% of the total community harvest (Figure 12-3), with 1,024 lb harvested (11 lb per capita) (Table 12-8). Almost all of the households surveyed (96%) reported using vegetation, while approximately 78% were active in harvesting vegetation. The highest harvest in pounds usable weight was berries, most of which was lowbush cranberries (Table 12-8).

Nonsalmon fish, such as burbot, lake trout, Arctic grayling, rainbow trout, and whitefishes were taken throughout the year with gillnets, rod and reel, or by jigging through the ice in areas local to Dry Creek. The community usually organizes a charter for ocean-caught fish but none occurred for 2011. Instead, residents reported using halibut caught by the previous year's charter. During 2011 only 3% of the overall harvest of wild resources came from nonsalmon fish (Figure 12-3).

Birds made up a very small portion of the total community harvest in 2011, approximately 1% (Figure 12-3). The Dry Creek household harvest of birds was 129 lb (1 lb per capita). Most of the bird harvest was upland game birds (82 lb, less than 1 lb per capita), including grouse and some ptarmigan. Migratory birds were also harvested and included a total harvest of about 16 lb of geese, about 22 lb of ducks, and about 9 lb of cranes, which combined provided 0.5 lb per capita (Table 12-8). Households most commonly involved in bird harvests were those with active hunters who harvested for sport as much as for table food. No eggs were harvested during 2011.

Few households (22%) participated in small land mammal harvesting in 2011 (Table 12-8). The small land mammal harvest for human consumption was minimal (36 lb, or less than 0.5 lb per capita), but a number of furbearers were harvested by active trappers for their pelts. Small mammal species harvested and used included coyotes, foxes, snowshoe hares, lynx, martens, minks, and porcupines. The most used species were coyotes and foxes (Table 12-8).

SHARING AND RECEIVING WILD RESOURCES

In Dry Creek in 2011, estimates of sharing indicated that 100% of households received wild resources from other households and 63% of households gave resources away (Table 12-7). Households received an average of about 7 resources and gave away an average of 3 resources (Table 12-7). Moose and sockeye salmon were the most used resources with each used by 100% of households. The resources that were most often received by households were sockeye salmon (96%), moose (89%), and Chinook salmon (89%) (Table 12-8).

The sharing pattern in Dry Creek is quite distinctive (e.g., communal harvests, communal processing

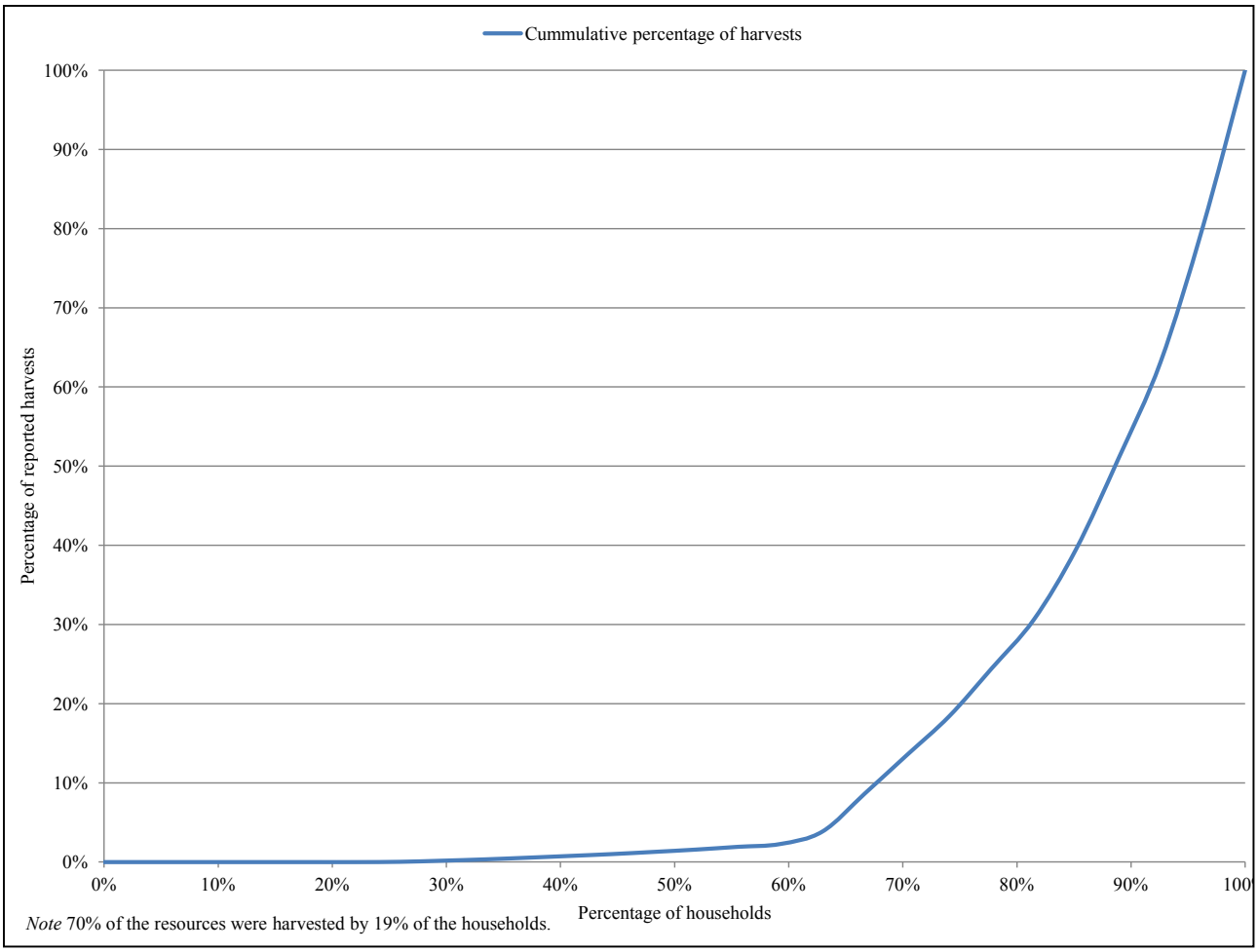


Figure 12-4.– Composition of harvest by category, Dry Creek, 2011.

and storage areas, and the daily sharing of communal meals), and the distribution of all cooperatively harvested and grown foods to every family and household is essential for community survival. All members participate in some stage of food production, whether hunting, gathering, gardening, animal husbandry, or the various efforts of food processing, preservation, and storage. These products of communal labor are then stored in community facilities and are available for residents to use in their own homes as well as for daily meals in the tabernacle. Residents take turns in preparing meals in the tabernacle for all members, and this is where moose, salmon, and wild berries are eaten most regularly. Residents may also cook wild foods they have harvested on their own or communally in their own homes. In this way, sharing and receiving is seen as intrinsic, and something that almost everyone does in some way, whether or not they actually harvested the food.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

A previous study by the Division of Subsistence (Wolfe 1987) and follow-up research sponsored by the National Science Foundation in which the Division of Subsistence participated (Wolfe et al.

2010) have shown that in most Alaska Native communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 Alaska Native 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.

Although this study by Wolfe et al. (2010) evaluated data from a sample of predominately Alaska Native communities, many rural communities throughout Alaska exhibit this pattern. As shown in Figure 12-4, in the 2011 study year in Dry Creek, about 70% of the harvests of wild resource as estimated in usable pounds were harvested by 19% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Dry Creek and the other study communities.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Dry Creek residents, salmon composed 12% of the wild resource harvest in pounds for 2011 (Figure 12-3). Almost all of this harvest (98%) was sockeye salmon (Figure 12-5). Chinook salmon made up the remainder (2%) of the salmon harvest for a community total of 1,570 lb (Figure 12-5; Table 12-8). During the study year, Dry Creek residents harvested all of their salmon with a fish wheel (Table 12-10).

Every year a small group of community members travels to Chitina where they have, by agreement with a fish wheel owner, access to a fish wheel for a few days per season. In 2011, the first trip to the wheel produced fewer fish than the community needed so an additional trip was required. The fish were harvested by multiple community members, but only 1 person recorded the entire harvest on his or her permit. On average, the Dry Creek corporate community will target at least 300 fish per year. Preliminary processing (heading, gutting, filleting) is done at the beach, and the remainder of the processing (freezing and canning) happens upon return to Dry Creek by almost all able-bodied members of the community. For the people who participate, most other responsibilities are put aside until all the fish are processed and the community kitchen is properly cleaned.

In other rural Alaska communities, extended households and families process fish together and share fish with others who did not or could not harvest for themselves. In Dry Creek, very few community members participate in the harvesting of salmon and residents generally do not cook salmon in the kitchens of their own homes. Instead, the women of the community take turns preparing the major

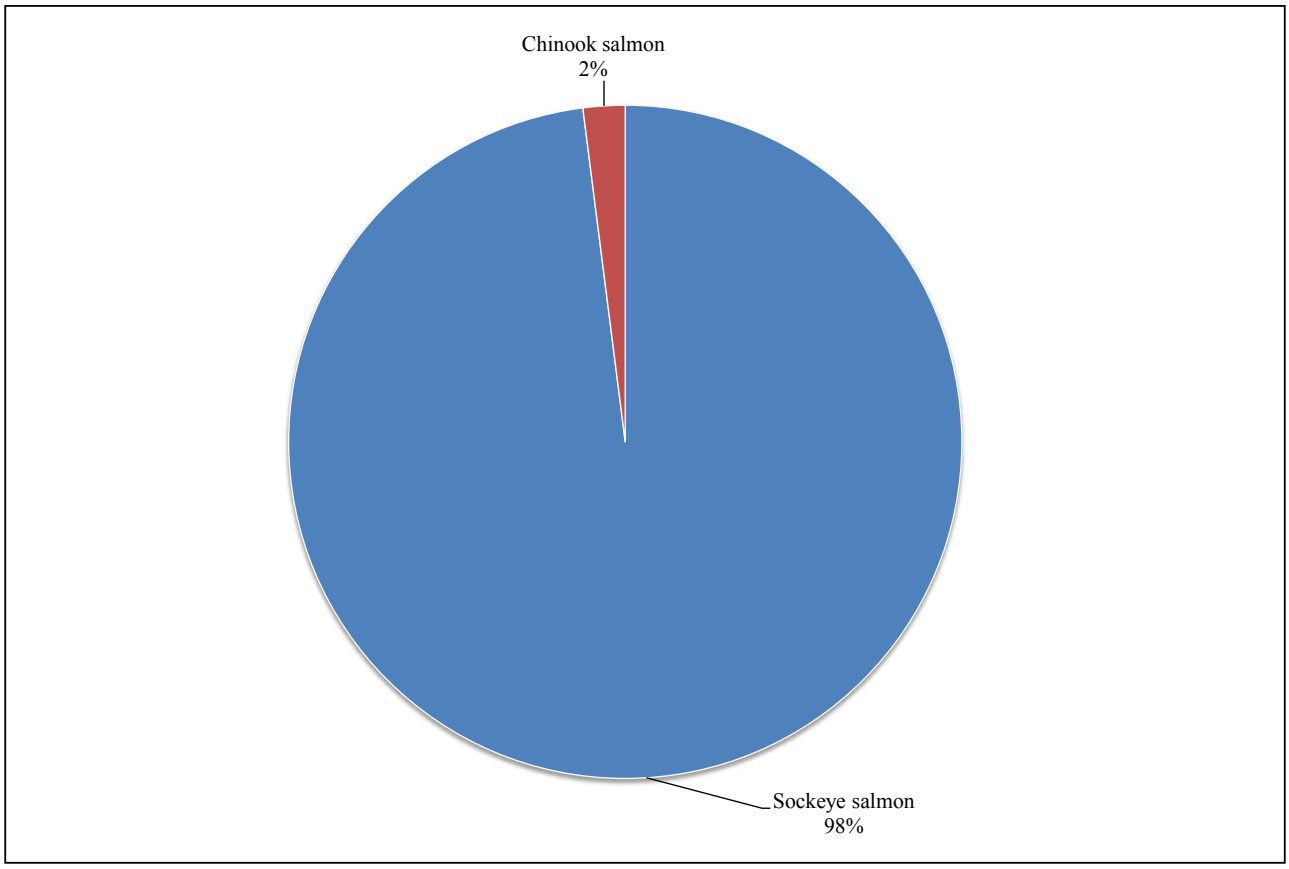


Figure 12-5.– Composition of salmon harvest, Dry Creek, 2011.

meal of the day at lunch and the younger women of the community cook the daily dinners. The tabernacle, in this regard, becomes an extension of community members' homes. This distinctive pattern of involvement, where almost all contribute to the processing of the salmon and all consume the harvested fish at the community dinners, leads to high use of this resource (100%).

Salmon have been an important part of the Dry Creek community harvest from the early days of the settlement's founding. Project respondents recall using a fish wheel near the Kenny Lake community of Sabo (another faith-based cooperative community like Dry Creek). At the time that fish wheel was in use, a large group of men and women traveled to the wheel together and the fish were harvested, processed, and canned on the spot. Now they use a refrigerated cooler with ice to bring the fish back to the community for further processing. At one time, there was also a dog team used by the community. As a child, one resident recalled feeding these dogs gruel made with bits of salmon that the community harvested. Dog teams are no longer used by the corporate community, although they are important for a few other households in the broader Dry Creek area. Salmon are still a featured part of community meals in the tabernacle on a regular basis.

Table 12-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Dry Creek, 2011.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chinook salmon	Gear type	0.0%	0.0%	0.6%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	2.0%	0.0%	0.0%	0.6%	2.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.6%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	2.0%	0.0%	0.0%	0.6%	2.0%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	99.4%	98.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.4%	98.0%	0.0%	0.0%	99.4%	98.0%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	99.4%	98.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.4%	98.0%	0.0%	0.0%	99.4%	98.0%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source ADF&G Division of Subsistence household surveys, 2012.

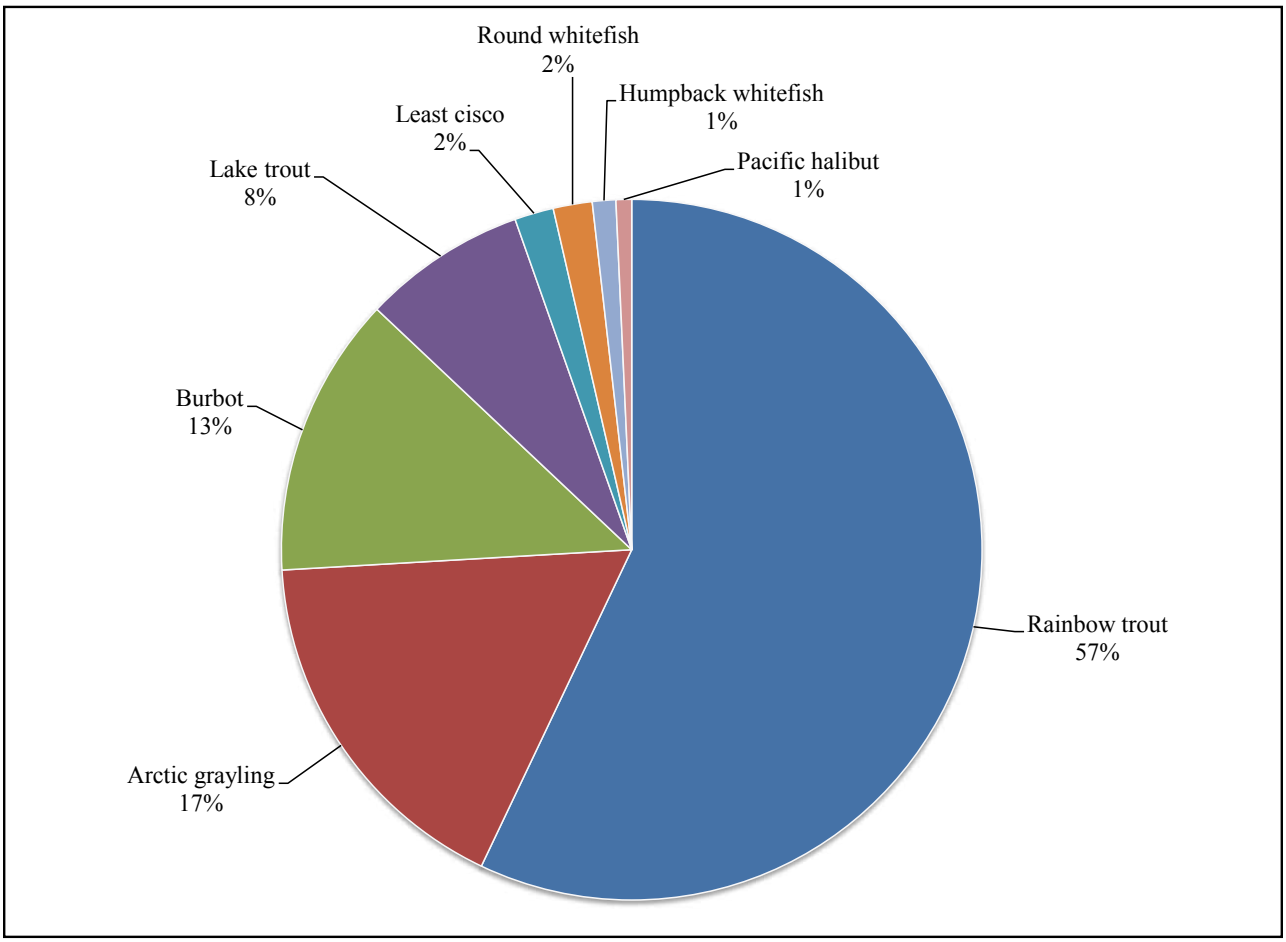


Figure 12-6.– Composition of nonsalmon fish harvest, Dry Creek, 2011.

NONSALMON FISH

In 2011, Dry Creek residents harvested an estimated total of 309 lb of nonsalmon fish (3 lb per capita) (Table 12-8). In terms of total pounds, most of the harvest was rainbow trout (57%), followed by Arctic grayling (17%), burbot (13%), and lake trout (8%) (Figure 12-6). Table 12-11 lists the number and pounds of each nonsalmon fish species harvested by Dry Creek residents in 2011 in percentages by gear type. Dry Creek residents harvested the majority of their nonsalmon fish with rod and reel gear. For example, all lake trout, Arctic grayling, and rainbow trout were caught with rod and reel, making up 82% of the total nonsalmon pounds harvested (Table 12-11). All least cisco, humpback whitefish, and round whitefish were harvested using gillnets or seines, and all the burbot were fished with other subsistence gear, which might include jigging through ice in the winter (Table 12-11).

In the study year 2011, Dry Creek residents concentrated their freshwater nonsalmon fish harvests in the river systems and lakes in their immediate area. Fish were harvested in various portions of the Johnson Slough, the Johnson River, and in the small creek from which Dry Creek got its name, right within the community borders. Additionally, fish were harvested at Fish Lake and other small bodies

Table 12-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Dry Creek, 2011.

Resource	Percentage base	Removed from commercial catch		Subsistence methods: Gillnet or seine		Subsistence methods: Other		Subsistence methods: Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	7.0%	4.7%	6.6%	13.0%	13.6%	17.6%	86.4%	82.4%	100.0%	100.0%
	Total	0.0%	0.0%	7.0%	4.7%	6.6%	13.0%	13.6%	17.6%	86.4%	82.4%	100.0%	100.0%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.9%	0.9%	0.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.7%	0.9%	0.7%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	48.4%	73.5%	0.0%	0.0%	6.6%	13.0%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	6.6%	13.0%	6.6%	13.0%	0.0%	0.0%	6.6%	13.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.6%	9.2%	6.6%	7.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.6%	7.6%	6.6%	7.6%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.1%	20.7%	29.5%	17.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.5%	17.0%	29.5%	17.0%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.3%	69.3%	49.5%	57.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.5%	57.1%	49.5%	57.1%
Least cisco	Gear type	0.0%	0.0%	31.3%	38.5%	0.0%	0.0%	16.1%	10.2%	0.0%	0.0%	2.2%	1.8%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	2.2%	1.8%	0.0%	0.0%	2.2%	1.8%	0.0%	0.0%	2.2%	1.8%
Humpback whitefish	Gear type	0.0%	0.0%	6.3%	23.1%	0.0%	0.0%	3.2%	6.1%	0.0%	0.0%	0.4%	1.1%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.4%	1.1%	0.0%	0.0%	0.4%	1.1%	0.0%	0.0%	0.4%	1.1%
Round whitefish	Gear type	0.0%	0.0%	62.5%	38.5%	0.0%	0.0%	32.3%	10.2%	0.0%	0.0%	4.4%	1.8%
	Resource	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	4.4%	1.8%	0.0%	0.0%	4.4%	1.8%	0.0%	0.0%	4.4%	1.8%

Source ADF&G Division of Subsistence household surveys, 2012.

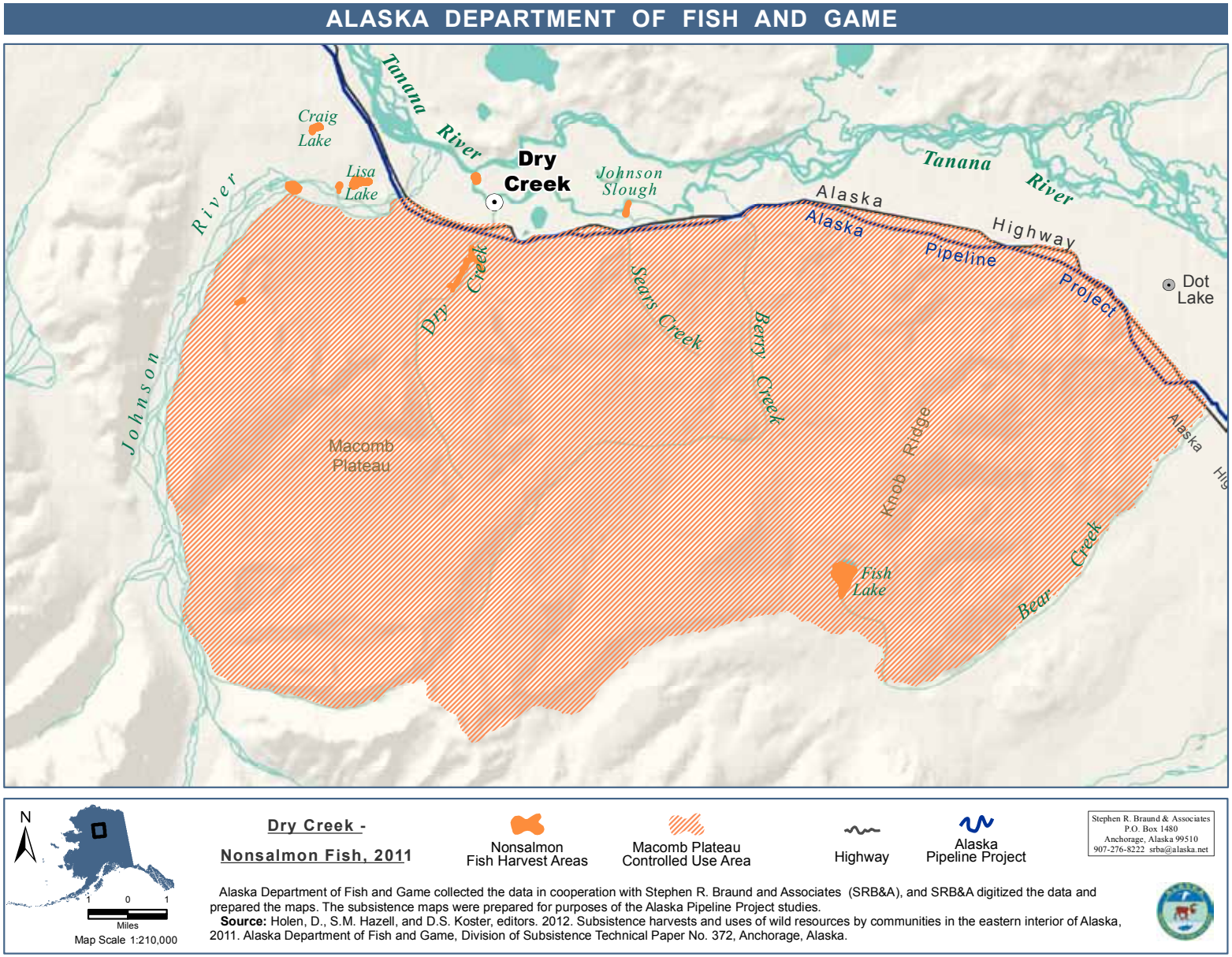


Figure 12-7.– Nonsalmon search and harvest areas, Dry Creek, 2011.

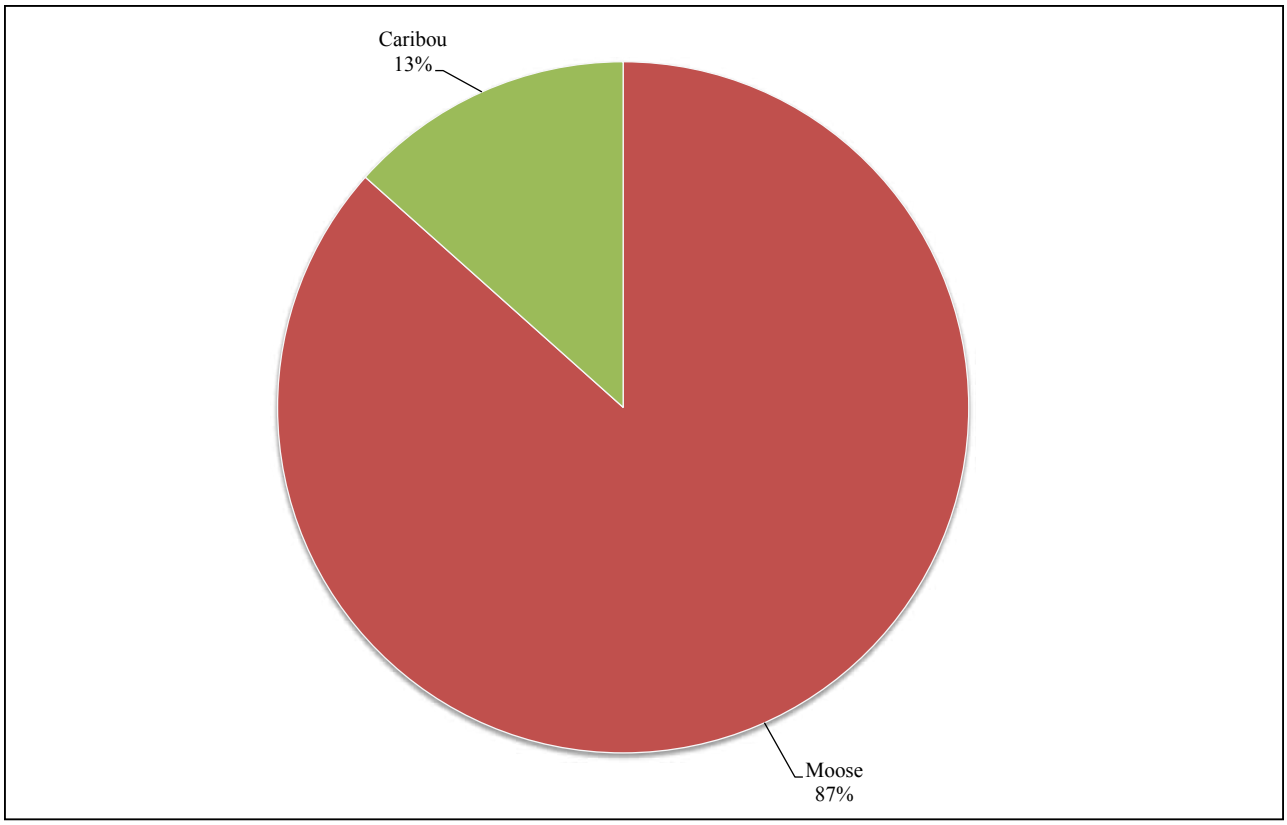


Figure 12-8.– Composition of large land mammal harvest, Dry Creek, 2011.

of water within the Macomb Plateau controlled use area while hunting for large land mammals. Lisa and Craig lakes are stocked with rainbow trout and have long been favored locations for rod and reel fishing and camping (Figure 12-7).

Overall, nonsalmon fishes composed a small portion (3%) of the 2011 harvest (Figure 12-3), but missing from the 2011 harvest activities was an annual trip to Valdez to target marine fish for community use. Out of all the nonsalmon species, only marine fish are harvested for community meals in the tabernacle. In the early part of the year, people were still eating halibut caught the year before. Freshwater nonsalmon fish are harvested by individual households for household use and consumption, and sharing from household to household.

LARGE LAND MAMMALS

In 2011, large land mammals composed 76% of the total Dry Creek harvest of wild resources by weight (Figure 12-3). In terms of pounds usable weight moose made up 87% of the large land mammal harvest followed by caribou at 13% (Figure 12-8). Although a brown bear was harvested in 2011, it was not eaten. Fifty-two percent of households participated in the fall moose hunt, with 37% experiencing success, and 100% using moose (Table 12-8). This pervasive use is due in part to the way in which most of the community shares resources through daily communal meals. Even for the non-corporate

members of the Dry Creek community, large land mammals were a substantial part of their household harvest and weekly diet. The Dry Creek large land mammal harvest almost exclusively takes place in the Macomb Plateau controlled use area, requiring community horses to pack the meat from the harvest sites. Horses are only used in the late summer and early fall during the moose and caribou open seasons. Additionally, brown bears and black bears are targeted only by a few households within the broader community. The corporate community within Dry Creek harvested 15 moose in 2011. In terms of pounds harvested in 2011, moose ranked first on the list of top 10 resources harvested (Table 12-9). Moose is the dominant resource for this community, and although Dry Creek raises its own cows and pigs, the meat harvested from their domestic animals provides only a small amount of variety to a diet that relies heavily on wild game. According to the study, all successful moose hunting took place in September 2011 (Table 12-12).

Caribou made up a smaller percentage (13%) of the 2011 large land mammal harvest in pounds usable weight (Figure 12-8) but still represented a significant number of animals harvested—10 for the year (Table 12-8). Additionally, households invested a smaller effort for harvesting caribou than moose; only 22% attempted to harvest caribou with approximately 19% of the households experiencing success. Regardless, 81% of the households used caribou and 78% received caribou, which demonstrates a generous sharing of the resource (Table 12-8). Caribou was in third place out of the top 10 harvested resources behind moose and sockeye salmon and in third place for the top 10 resources used (Table 12-9). Caribou were harvested during the fall in both August and September (Table 12-12).

While Dry Creek hunting areas for large game include the Alaska Highway road corridor as part of the search area for both moose and caribou, harvests almost exclusively occur in the Macomb Plateau controlled use area. The road corridor is mostly used as transport to an area access trail up Knob Ridge, but hunters, while traveling to the prime harvest area, keep their eyes open for additional resources. Harvest and search areas for moose and caribou stretch from the Little Gerstle River to the Robertson River, encompass part of the Tanana River, then move south to cover the Macomb Plateau (figures 12-9 and 12-10).

When Dry Creek residents first arrived in 1973, their understanding of how to survive off the land was limited, as were their resources (such as vehicles and gear) with which to do it. The Macomb Plateau Management Area Plan prohibiting the use of motorized vehicles was created in 1974 to conserve the dwindling Macomb caribou herd, but moose populations also benefited from the restrictions. Residents of Dry Creek recall that in the early days, they had to hike into the areas on poor access trails. Many households participated. Every member of the family helped with packing in and setting up base camps. Later, the meat was carried out on their backs along with everything they had packed in. Often moose hunting involved 12 to 13 people in order to help pack meat out. Women and children helped, too. In the early days, they canned the meat because there was no refrigeration and nobody knew how to make jerky. But the community did rent a freezer locker in Delta.

Table 12-12. – Estimated harvests of large game by month and sex, Dry Creek, 2011.

				Caribou					Moose			
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Dall sheep
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	1.1	4.4	0.0	0.0	0.0	0.0	15.6	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**0.0**	**1.1**	**10.0**	**0.0**	**0.0**	**0.0**	**0.0**	**15.6**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2012.

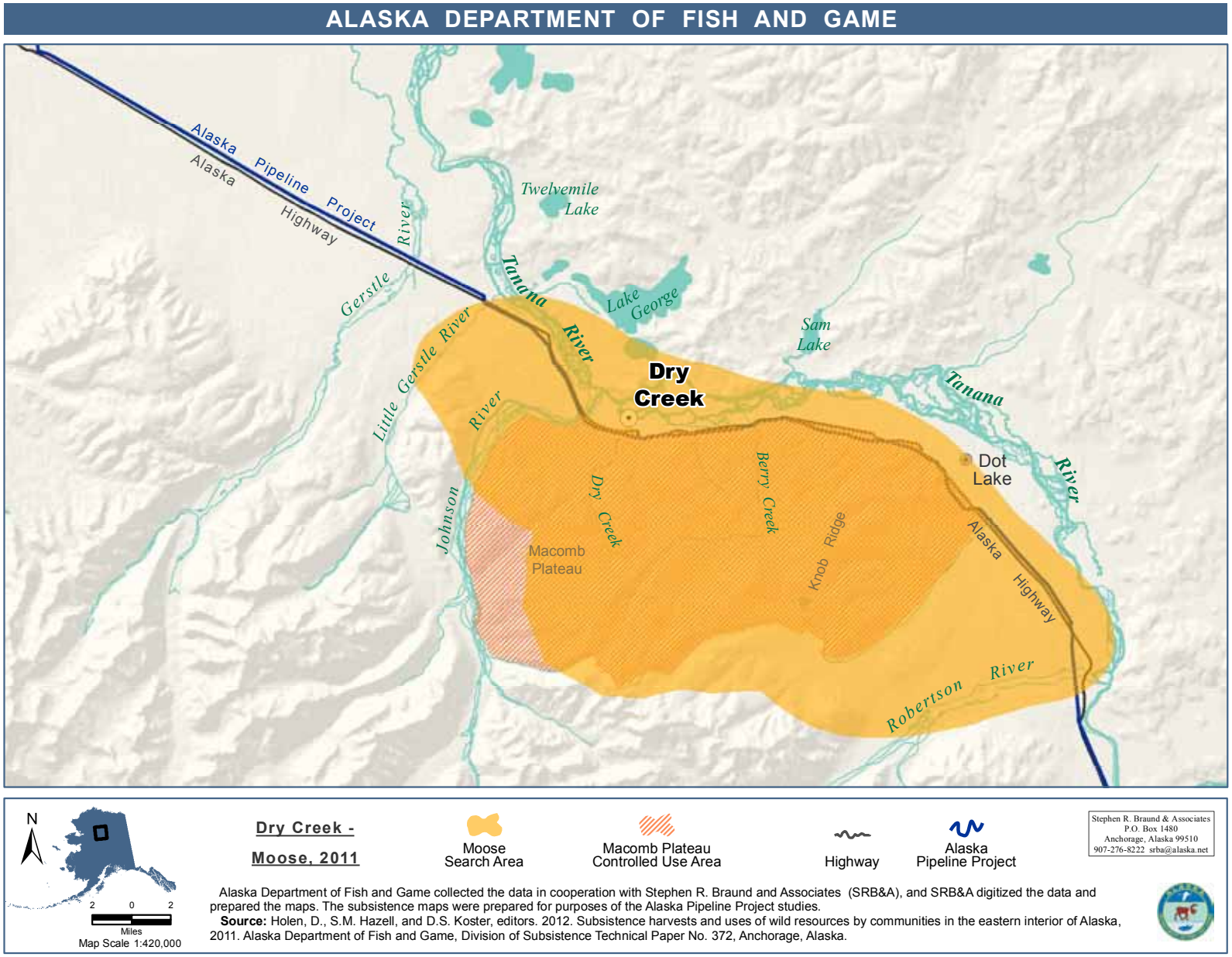


Figure 12-9.– Moose search and harvest areas, Dry Creek, 2011.

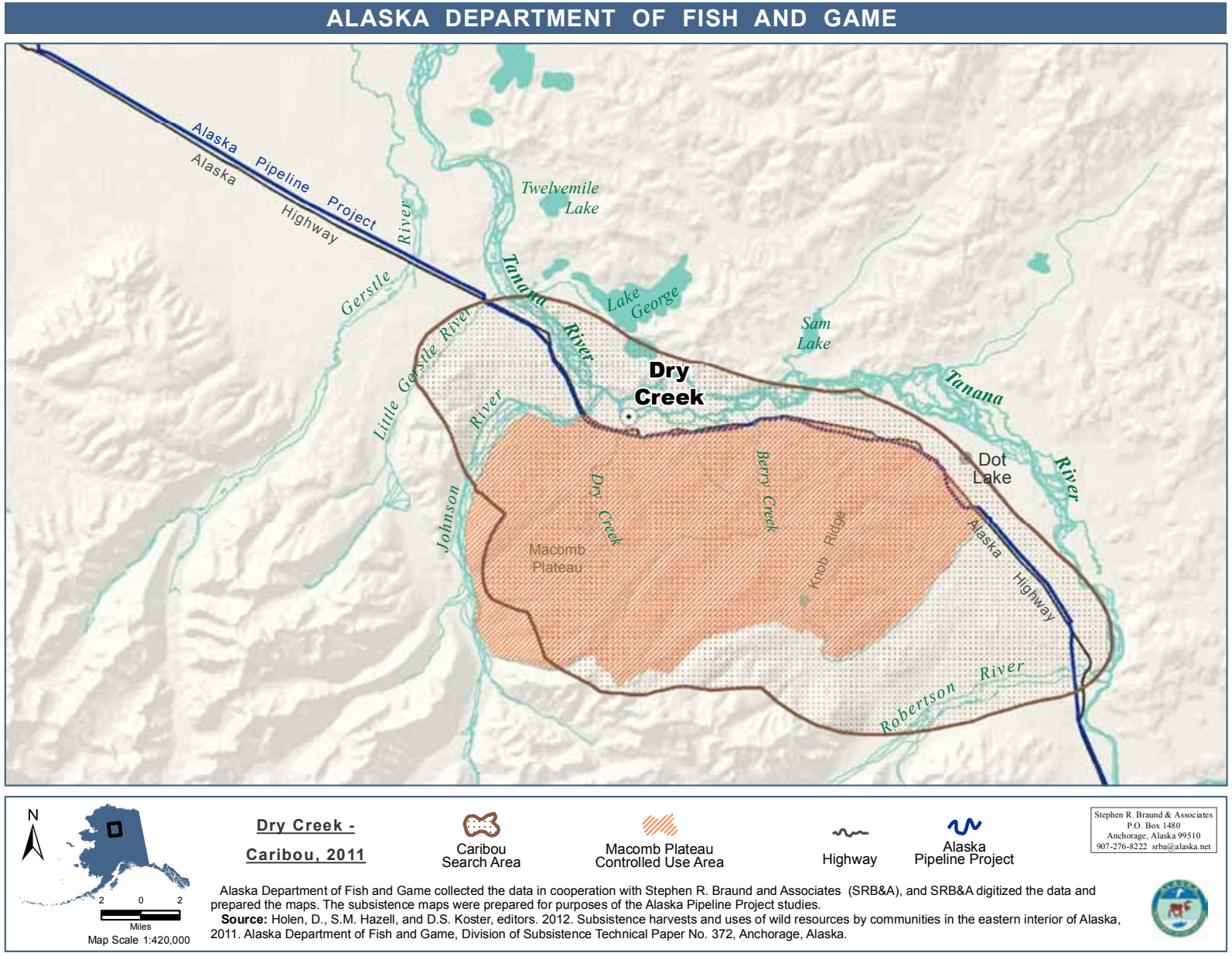


Figure 12-10.– Caribou search and harvest areas, Dry Creek, 2011.

Originally the community had 2 sets of draft horses that helped in the fields and were later used as pack animals for the hunt. Milly and Molly were 2 of these draft horses, and are still remembered fondly as icons of the community's contemporary horse program. A horse was once caught in the rocks and was injured, so eventually smaller, lighter horses were used for the trails. Now Dry Creek residents have better equipment, better trails, better camps, and have gained considerable experience over the years.

In the early days, hunting was a learning process; moose were cut up and laid in the brush. Now hunters have perfected a method for keeping the meat clean. Hunters use bailing twine and a meat rack to hang the moose above the ground and keep it far away from the gut pile. A little bit of the crust from the blood helps preserve the meat. In the old days they hauled out meat and bones, but now they pull the meat off the ribs and the bones are left in the field. Hauling out the meat of 5 moose is exhausting and time-consuming; subsequently Dry Creek has developed a process over time to make it easier, faster, safer, and cleaner. After base camp is established, hunters travel out alone or in small groups while the support crew waits at camp, listening for a signal that a kill has been made. If a moose is caught, it is dressed out on the spot, quartered, then the camp is notified and assistance arrives on horseback. When the meat is brought back down to the community, a whistle or bell notifies all remaining residents that their help is needed. All able-bodied community residents attend the processing of the meat in the tabernacle kitchen.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 12-8, the total harvest of small land mammals by Dry Creek residents in 2011 in edible weight was 36 lb (less than 0.5 lb per capita). Most of the harvest was snowshoe hares, at about 31 lb of the total harvest, and 1 porcupine was harvested. The rest of the harvest was furbearers and included coyotes, foxes, lynx, martens, and minks. Aside from the animals harvested opportunistically around the home sites of the community, the majority of the harvest occurred on traplines south of the Alaska Highway along tributaries to the Tanana River. A few harvest areas occurred just north of the community between the Alaska Highway and the Tanana River (Figure 12-11). Typically, the Dry Creek corporate community is not a trapping community, but other residents within the broader area do trap.

BIRDS

In 2011, the total harvest of birds by Dry Creek was an estimated 129 lb (1 lb per capita) (Table 12-8). The migratory bird harvest totaled approximately 47 lb and included ducks such as mallards, goldeneyes, and the green-winged teals, and a variety of geese (Table 12-8). Birds harvested were eaten in the home, and some were shared with other community members. During the study year, 37% of the households used birds and 33% harvested them (Table 12-8). Most of the migratory waterfowl

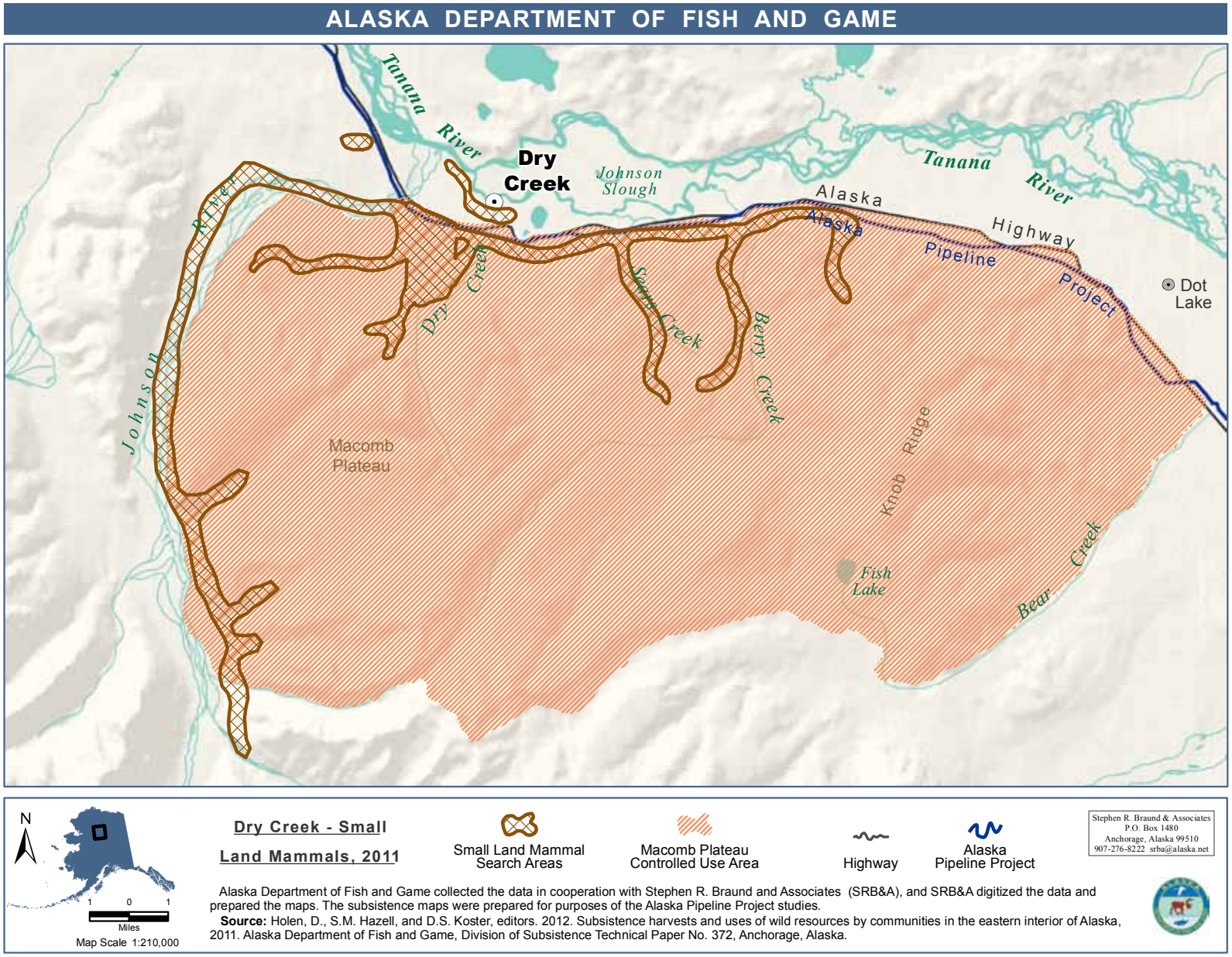


Figure 12-11.– Small land mammals search and harvest areas, Dry Creek, 2011.

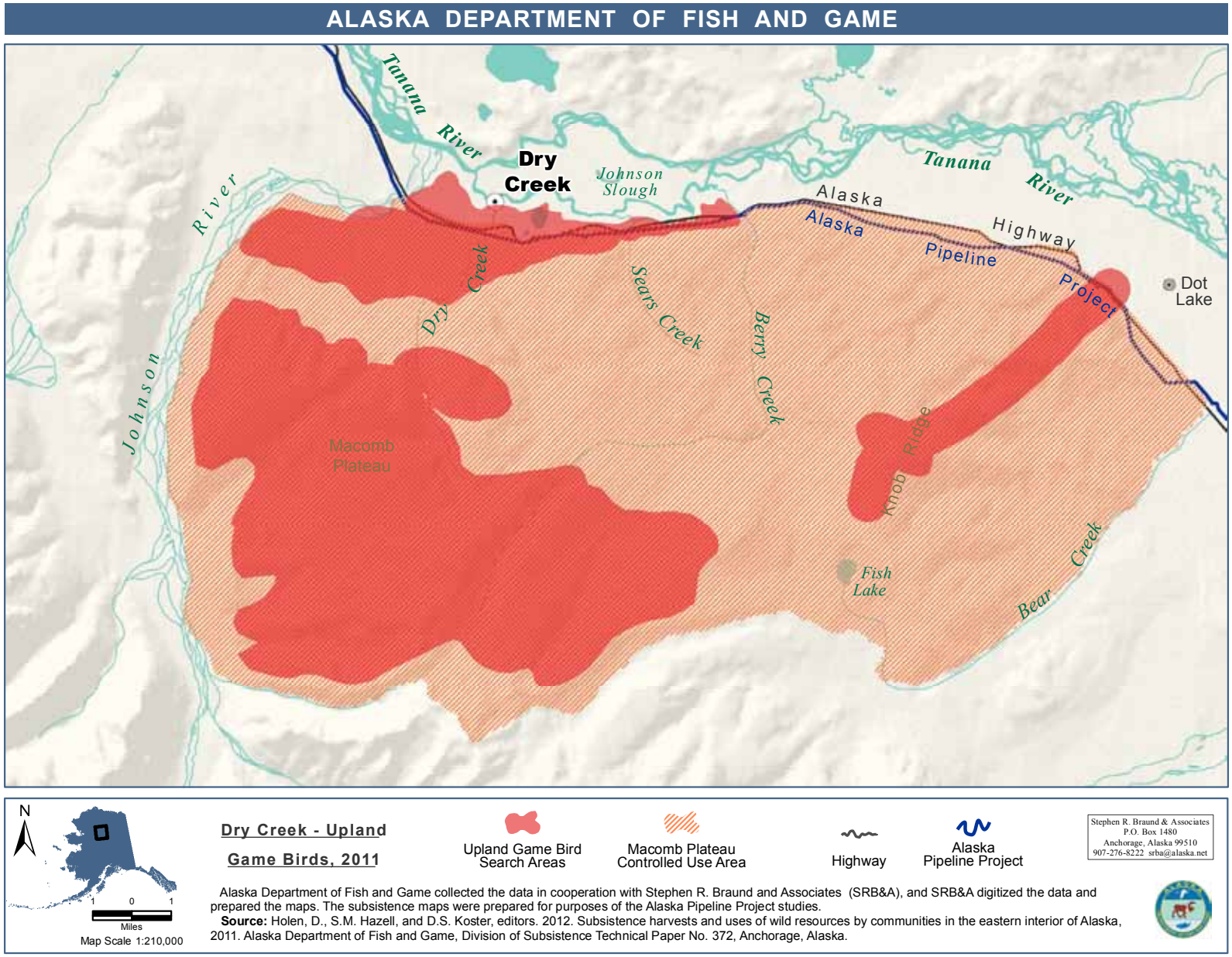


Figure 12-12.– Upland game birds search and harvest areas, Dry Creek, 2011.

were harvested in the spring, but there was a small fall harvest as well. Migratory waterfowl were harvested primarily in the immediate area when the birds migrated through in the spring.

Upland game birds made up the majority of the bird harvest, totaling 82 lb (1 lb per capita). Other birds harvested included spruce grouse, ruffed grouse, and ptarmigan. About 33% of the Dry Creek households reported harvesting upland game birds and 37% reported using upland game birds (Table 12-8). These birds were taken year-round except during the spring. Upland game birds, such as grouse and ptarmigan, were harvested around the community of Dry Creek and along access corridors to and within large land mammal hunting areas. Dry Creek upland game birds were either harvested close within the community, or opportunistically while in pursuit of other game and resources. The Macomb Plateau and the trail to Knob Ridge feature prominently in the game bird harvest pattern of Dry Creek (Figure 12-12). No gathering of bird eggs took place during the study year or any previous year.

MARINE INVERTEBRATES

While there was no harvest of marine invertebrates in 2011, some Dry Creek residents reported using and receiving marine invertebrates. Marine invertebrates that were shared with a few Dry Creek households were Dungeness crabs, oysters, and shrimp (Table 12-8).

VEGETATION

In 2011, Dry Creek residents harvested 1,024 lb (11 lb per capita) of wild plants (Table 12-8). Vegetation made up 8% of the total community harvest in pounds usable weight (Figure 12-3) and was used by 96% of the households surveyed (Table 12-8). In 2011, lowbush cranberries made up the bulk of the harvest with a total of 760 lb (8 lb per capita). Many respondents said that it was a poor year for blueberries, and that usually they made up a larger portion of the annual harvest. For 2011, the community harvested approximately 103 lb of blueberries (1 lb per capita). Other berries harvested included some highbush cranberries and wild raspberries, but the community has a large number of domestic raspberry plants in their gardens, the harvest of which was not included in the survey. Dry Creek also harvested approximately 120 lb of other plants, greens, and mushrooms (1 lb per capita). Wood is mostly harvested communally.

Harvest and search areas for berries extended out from Dry Creek to areas reached mostly by foot (Figure 12-13). Additionally, berries were harvested from locations along the Alaska Highway and from the Macomb Plateau controlled use area while parties were hunting for moose and caribou. Although some wood came from deadfalls around the community property and along the highway, the Dry Creek corporate community harvests most of its wood for the mill and member needs from its wood lot north of the Alaska Highway (Figure 12-13). All other plant harvest and use areas remained local to Dry Creek.

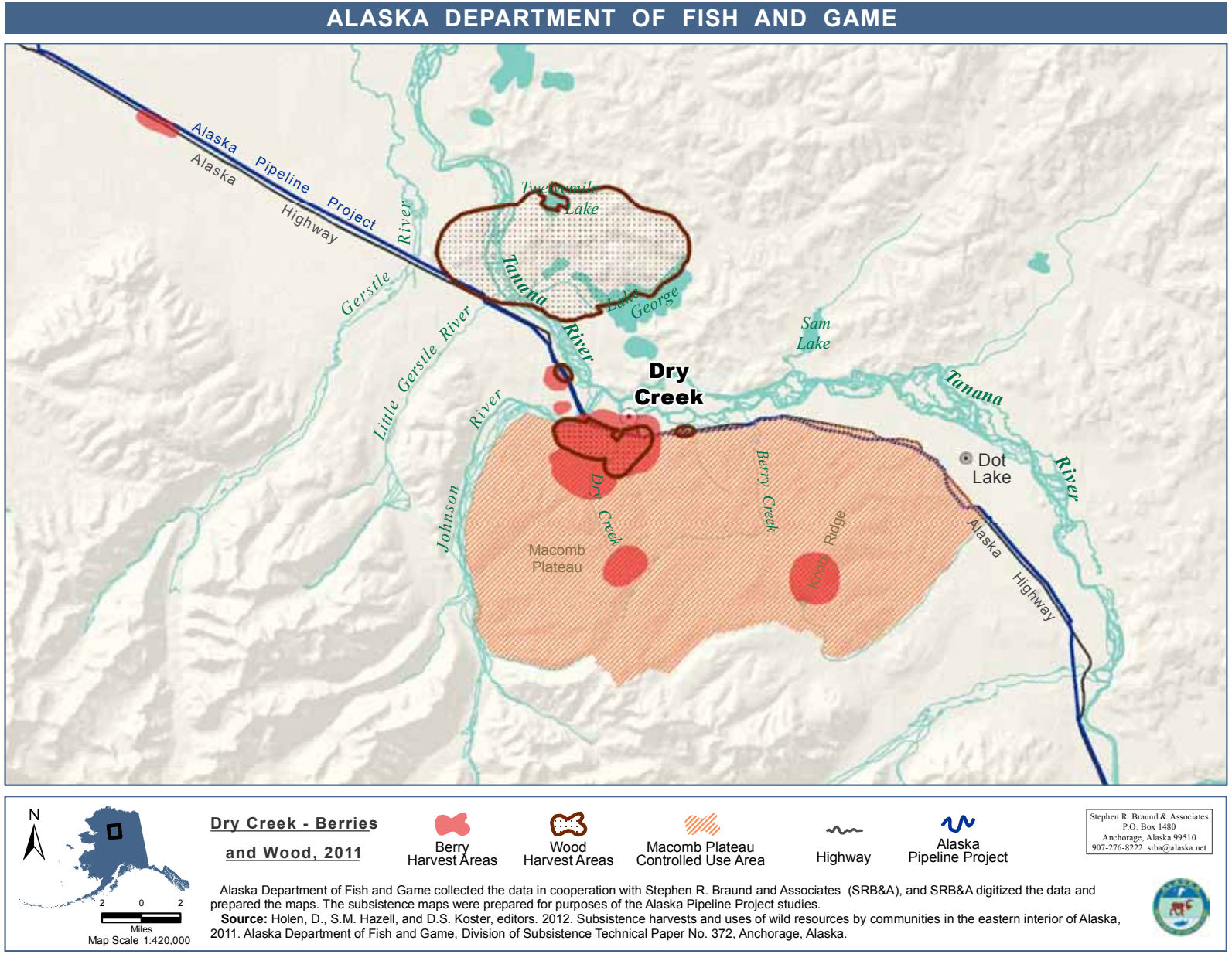


Figure 12-13.– Berries and wood search and harvest areas, Dry Creek, 2011.

In general, wild vegetation is a harvest that benefits both individual households and the community as a whole. Originally, the harvest of blueberries and cranberries was an orchestrated affair, reaping large amounts to be made into jams and jellies served at community meals. Some respondents recall multiple 50-gallon drums filled with the blueberry harvest for the season. The same effort that went into the harvest and processing of other communal resources such as moose and salmon also went into the harvest of berries. This is still the case, but perhaps on a smaller scale. Smaller work groups of mostly women and children do the picking and the canning. Additionally, individual community members and households harvest wild plants for in-home use to serve at their table or to share with others.

CASH EMPLOYMENT AND MONETARY INCOME

Table 12-13 is a summary of the estimated earned income as well as other sources of income for residents of Dry Creek in 2011. This table shows that earned income accounted for a community household average of $14,716 (71%) compared to other income sources which accounted for $6,088 (29%) in 2011. In 2011, most (56%) of the jobs in Dry Creek were involved with the local mill and construction trade. Other important employment sectors during the study year were services, at 20% of jobs, and retail trade and local government, at 8% of jobs respectively (12-14). The largest source of other income came from the Alaska Permanent Fund dividend in 2011 (Table 12-13).

In 2011, 44% of the community adults of working age (16 and over) were employed at some point during the study year. Of these employed adults, 64% were employed year-round (Table 12-15). On average in 2011, households contained about 2 employed adults, and the mean number of jobs per employed household was 1. Most jobs were located in Dry Creek but some respondents traveled to other upper Tanana communities for employment opportunities.

Missing from the above assessment are those individuals performing services within Dry Creek considered essential to the maintenance and productivity of the corporate community. Some members are employed and receive a salary from the corporate businesses, which include the mill and farm. Others are employed outside the community with unaffiliated organizations and services. All others who do not make a salary are gainfully employed in fulfilling the needs of the community as a whole; people teach as volunteers in the community school (there are no paid teachers), tend the extensive gardens, or care for the animals. Others perform regular maintenance of the community buildings and utility services. For these efforts, contributing members receive a monthly stipend that was not documented by the survey. All corporate community members' basic needs for food and shelter are met by the community corporation.

Table 12-13. – Estimated earned and other income, Dry Creek, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Construction	14.4	12.2	$243,701.80	$8,123.39	$2,675.10	39.0%
Services	5.6	3.3	$110,236.47	$3,674.55	$1,210.06	17.7%
Retail trade	2.2	2.2	$54,735.69	$1,824.52	$600.83	8.8%
Federal government	1.1	1.1	$25,678.41	$855.95	$281.87	4.1%
Local government	2.2	2.2	$7,115.64	$237.19	$78.11	1.1%
Earned income subtotal	**29.6**	**18.9**	**$441,468.01**	**$14,715.60**	**$4,845.97**	**70.7%**
Other income						
Alaska permanent fund dividend		28.9	$100,442.22	$3,348.07	$1,102.55	16.1%
Social Security		10.0	$64,806.58	$2,160.22	$711.38	10.4%
Longevity bonus		4.4	$12,333.33	$411.11	$135.38	2.0%
Native corporation dividend		1.1	$4,333.33	$144.44	$47.57	0.7%
Energy assistance		1.1	$722.22	$24.07	$7.93	0.1%
Adult public assistance		1.1	$0.00	$0.00	$0.00	0.0%
Supplemental Security Income		0.0	$0.00	$0.00	$0.00	0.0%
Food stamps		0.0	$0.00	$0.00	$0.00	0.0%
Pension/retirement		1.1	$0.00	$0.00	$0.00	0.0%
Workmans' compensation/insurance		0.0	$0.00	$0.00	$0.00	0.0%
Unemployment		0.0	$0.00	$0.00	$0.00	0.0%
Child support		0.0	$0.00	$0.00	$0.00	0.0%
Other		0.0	$0.00	$0.00	$0.00	0.0%
Foster care		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**1.1**	**$182,637.70**	**$6,087.92**	**$2,004.80**	**29.3%**
Community income total			**$624,105.70**	**$20,803.52**	**$6,850.78**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

Table 12-14. – Employment by industry, Dry Creek, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**30.8**	**18.9**	**29.6**	
Federal government (total)	**4.0%**	**5.9%**	**4.2%**	**5.8%**
Health diagnosing and treating practitioners	4.0%	5.9%	4.2%	5.8%
Local government, including tribal (total)	**8.0%**	**11.8%**	**8.3%**	**1.6%**
Teachers, librarians, and counselors	4.0%	5.9%	4.2%	1.5%
Service occupations	4.0%	5.9%	4.2%	0.1%
Construction (total)	**56.0%**	**64.7%**	**54.2%**	**55.2%**
Administrative support occupations, including clerical	8.0%	11.8%	8.3%	6.3%
Construction and extractive occupations	4.0%	5.9%	4.2%	6.8%
Production working occupations	8.0%	11.8%	8.3%	17.9%
Handlers, equipment cleaners, helpers, and laborers	36.0%	41.2%	37.5%	24.2%
Manufacturing (total)	**4.0%**	**5.9%**	**4.2%**	**0.0%**
Writers, artists, entertainers, and athletes	4.0%	5.9%	4.2%	0.0%
Retail trade (total)	**8.0%**	**11.8%**	**8.3%**	**12.4%**
Writers, artists, entertainers, and athletes	4.0%	5.9%	4.2%	2.5%
Marketing and sales occupations	4.0%	5.9%	4.2%	9.9%
Services (total)	**20.0%**	**17.6%**	**20.8%**	**25.0%**
Teachers, librarians, and counselors	4.0%	5.9%	4.2%	5.8%
Writers, artists, entertainers, and athletes	4.0%	5.9%	4.2%	5.0%
Health technologists, and technicians	4.0%	5.9%	4.2%	2.6%
Agricultural, forestry, and fishing occupations	8.0%	5.9%	8.3%	11.6%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 12-15. – Employment characteristics, Dry Creek, 2011.

Characteristic	Community Dry Creek
All adults	
Number	67.8
Mean weeks employed	17.5
Employed adults	
Number	29.6
Percentage	43.6%
Jobs	
Number	30.8
Mean	1.0
Minimum	1.0
Maximum	2.0
Months employed	
Mean	9.2
Minimum	1.0
Maximum	12.0
Percentage employed year-round	63.9%
Mean weeks employed	40.0
Households	
Number	30.0
Employed	
Number	18.9
Percentage	63.0%
Jobs per employed household	
Mean	1.0
Minimum	1.0
Maximum	5.0
Employed adults	
Mean	
Employed households	1.6
Total households	1.0
Minimum	1.0
Maximum	5.0
Mean person-weeks of employment	46.6

Source ADF&G Division of Subsistence household surveys, 2012.

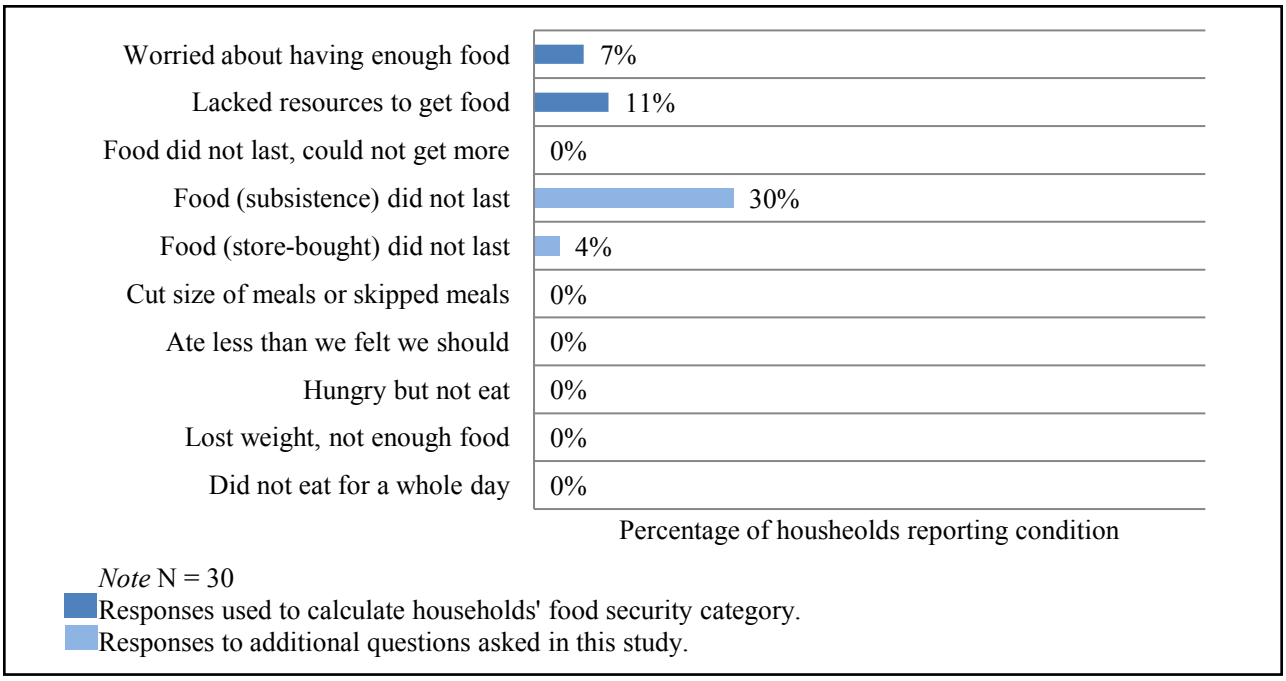


Figure 12-14.– Food insecure conditions, Dry Creek, 2011.

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" (Nord et al. 2009:2). 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. Core questions and responses from Dry Creek residents are summarized in Figure 12-14. In Dry Creek, a lack of subsistence foods was the most frequently reported source of food insecurity followed by a lack of resources to get food; 30% of Dry Creek households said their subsistence foods did not last and 11% said that they lacked resources to get food (Figure 12-14).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Dry Creek, the state of Alaska, and the United States are summarized in Figure 12-15. In Dry Creek in 2011, 100% of the surveyed households were categorized

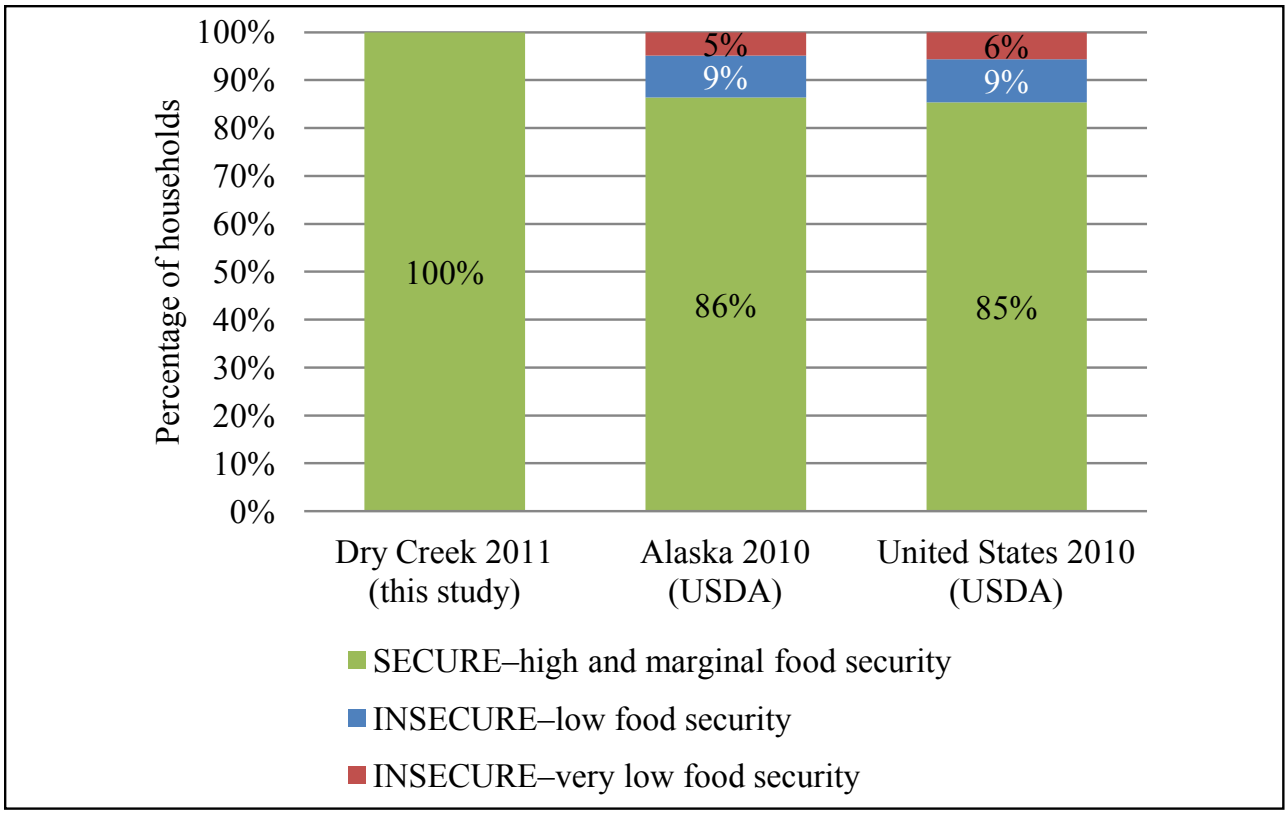


Figure 12-15.– Food insecure categories, Dot Lake, 2011.

as having high or marginal food security; USDA considers households in both categories to be "food secure." This is, by far, higher than the national average and that of Alaska itself (Nord et al. 2009:21).

Figure 12-16 portrays the mean number of food insecure conditions per household by food security category by month. For households with high and marginal food security, food insecurity conditions peaked during the month of August. Figure 12-17 shows that, depending upon the month, up to 11% of households reported subsistence foods did not last. The months of January, February, March, June, July, and especially the month of August, were reported as the months in which subsistence foods did not last (Figure 12-17).

As shown in Figure 12-16, the highest number of food insecurity conditions occurred for high and marginal food secure households in Dry Creek during the month of August. This may occur more specifically for the non-corporate households that did not harvest salmon and were awaiting the fall hunting season upon which a large portion of their diet depended.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent years. "Other recent years" was defined as about the last 5 years. Table 12-16 reports the number of

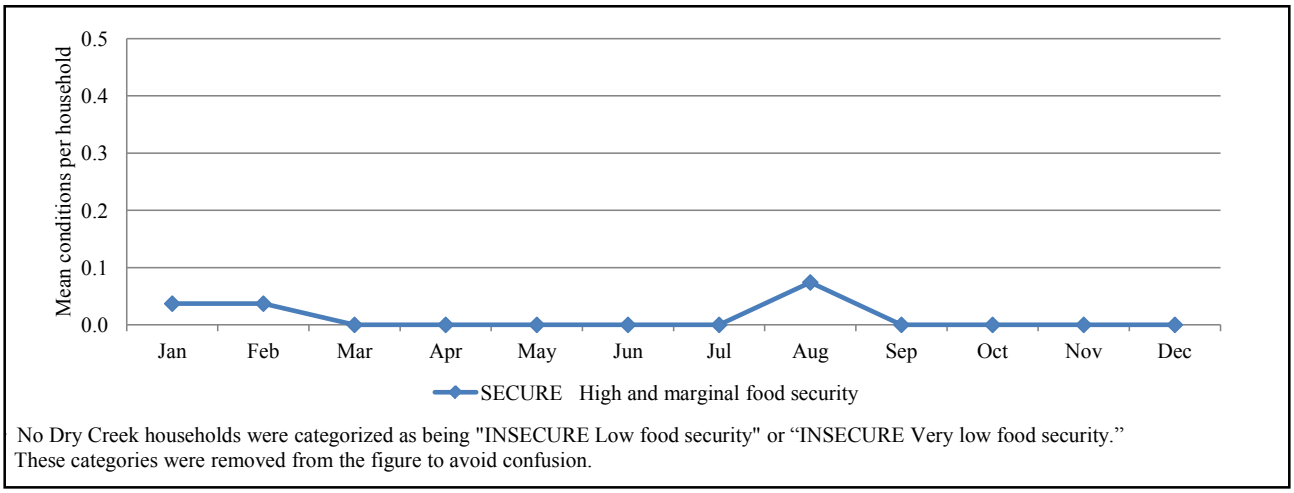


Figure 12-16.– Mean number of food insecure conditions for each month food was reported not to have lasted, Dry Creek, 2011.

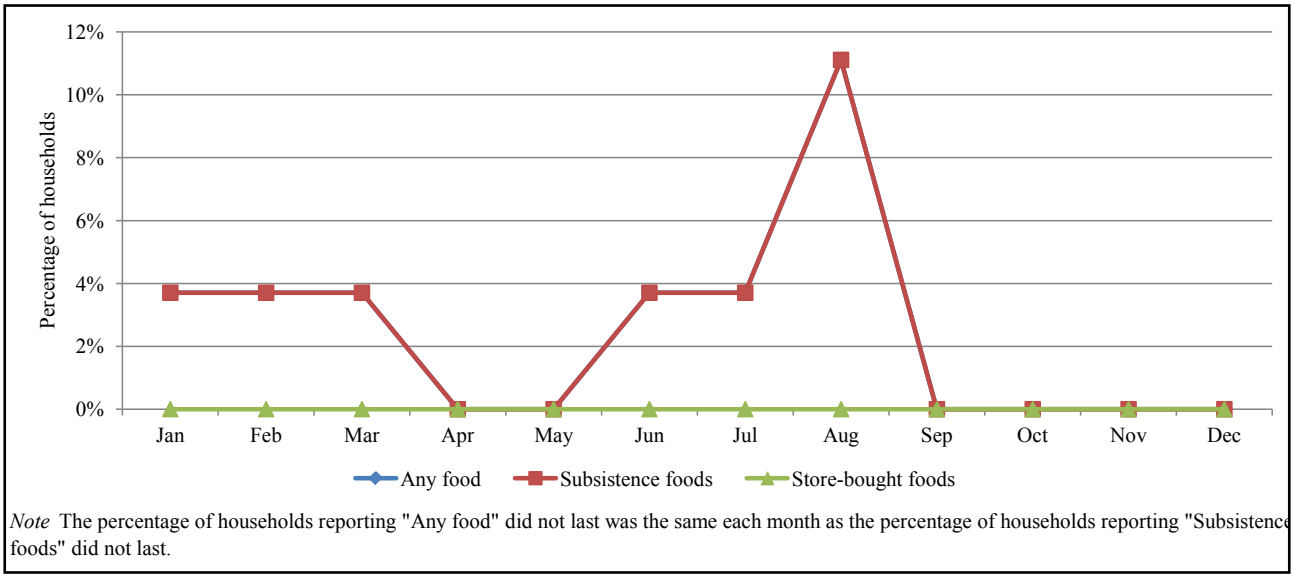


Figure 12-17.– Comparison of months where foods did not last, Dry Creek, 2011.

Table 12-16. – Changes in household uses of resources compared to recent years, Dry Creek, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource	27	27	14	52%	26	96%	19	70%
All resources	27	27	2	7%	19	70%	6	22%
Salmon	27	27	2	7%	12	44%	13	48%
Nonsalmon fish	27	21	10	48%	9	43%	2	10%
Large game	27	27	2	7%	18	67%	7	26%
Small game	27	5	0	0%	5	100%	0	0%
Migratory waterfowl	27	5	2	40%	1	20%	2	40%
Other birds	27	11	5	45%	5	45%	1	9%
Bird eggs	27	0	0	0%	0	0%	0	0%
Marine invertebrates	27	2	2	100%	0	0%	0	0%
Vegetation	27	26	8	31%	11	42%	7	27%

Source ADF&G Division of Subsistence household surveys, 2011.

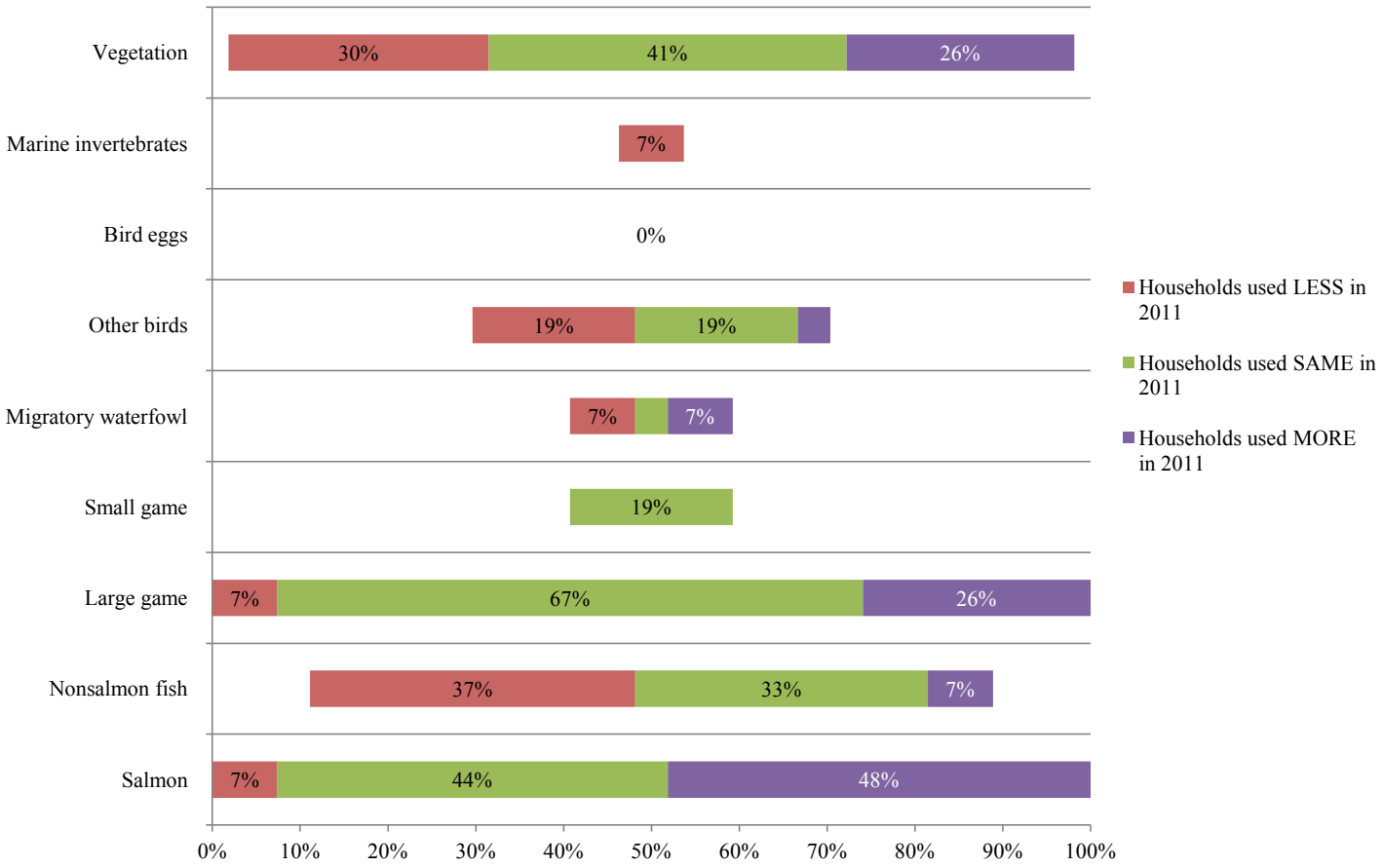
a. Valid responses do not include households that did not provide any response and households reporting never use.

valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 12-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 12-18 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (27 households), and therefore differ from those reported in Table 12-16.

A small percentage (7%) of the Dry Creek respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 70% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 22% said their overall harvests and uses were higher (Table 12-16). As depicted in Figure 12-18, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households.

For example, for small game 19% of all interviewed households (Figure 12-18), and 100% of all those who provided an assessment (Table 12-16), indicated the same levels of use in 2011 than in previous years. Dry Creek households indicated that they used less nonsalmon fish (37% of all households, 48% of those providing assessment) in 2011 than in recent years. In comparison, about 7% of all households and 7% of those that provided assessments reported using less large game in 2011; most (67%) used about the same amount and 26% used more. Regarding other birds, households (19% of all households, 45% of those providing assessments) used less in 2011.

Respondents provided assessments of more use for several resource categories, although typically assessments of more use were a relatively low proportion of total responses. For example, for vegetation, 26% of all interviewed households (Figure 12-18), and 27% of all those who provided assessment (Table 12-16), indicated more use. In comparison, 30% of all households and 31% of all



Note Percentages are based on the total number of households in the community (N = 27 households). Unlabeled percentages are less than 5%.

Figure 12-18.– Changes in household uses of resources compared to recent years, Dry Creek, 2011.

Table 12-17. – Reasons for less household uses of resources compared to recent years, Dry Creek, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	27	13	2	15.4%	6	46.2%	0	0.0%	0	0.0%	2	15.4%	5	38.5%	6	46.2%	2	15.4%
All resources	27	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	27	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Nonsalmon fish	21	10	0	0.0%	1	10.0%	0	0.0%	0	0.0%	1	10.0%	3	30.0%	6	60.0%	0	0.0%
Large game	27	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	1	50.0%	0	0.0%
Small game	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%
Migratory waterfowl	5	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Other birds	11	4	0	0.0%	4	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	2	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	1	50.0%	0	0.0%	0	0.0%
Vegetation	26	8	1	12.5%	3	37.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	25.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 12-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	27	13	0	0.0%	4	30.8%	0	0.0%	0	0.0%	2	15.4%	0	0.0%	0	0.0%	0	0.0%
All resources	27	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	27	2	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	21	10	0	0.0%	1	10.0%	0	0.0%	0	0.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%
Large game	27	2	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 game	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%
Migratory waterfowl	5	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	11	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	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	2	2	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	26	8	0	0.0%	2	25.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

those who provided an assessment indicated less use of vegetation, and 41% of all households and 42% of those providing an assessment indicated the same levels of use. Salmon is the one resource category having a significant proportion of households indicating more use; 48% of all households and 48% of those providing an assessment reported more use. In comparison, 7% of all households and those providing an assessment reported less use of salmon, and 44% of all households and those providing an assessment reported the same level of use.

Table 12-17 depicts the reasons Dry Creek respondents gave for lower harvests and uses by resource category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed Dry Creek households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were availability of resources (100%) and working/lack of time (100%). However, only 2 households (7%) said their overall uses of wild resources were down in 2001 (Table 12-16). Unsuccessful harvests and lack of effort were cited as the main reasons for less use of nonsalmon fish. Lack of resource availability was the given reason for less use of other birds. Working/lack of time, less resource availability, and the weather/environment were cited as the main reasons for less use of vegetation.

Overall, 52% of Dry Creek's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 70% said that their uses of at least one category had increased (Table 12-16). Less resource availability and unsuccessful hunting efforts were the most frequently cited reasons for lower use of any resource category in 2011 (46% of all Dry Creek households who reported a reason for less use), followed by a decline in effort (39%), working/lack of time (31%), family or personal reasons (15%), less sharing (15%), weather or environment (15%), and did not get enough (15%) (Figure 12-19).

LOCAL CONCERNS REGARDING RESOURCES

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

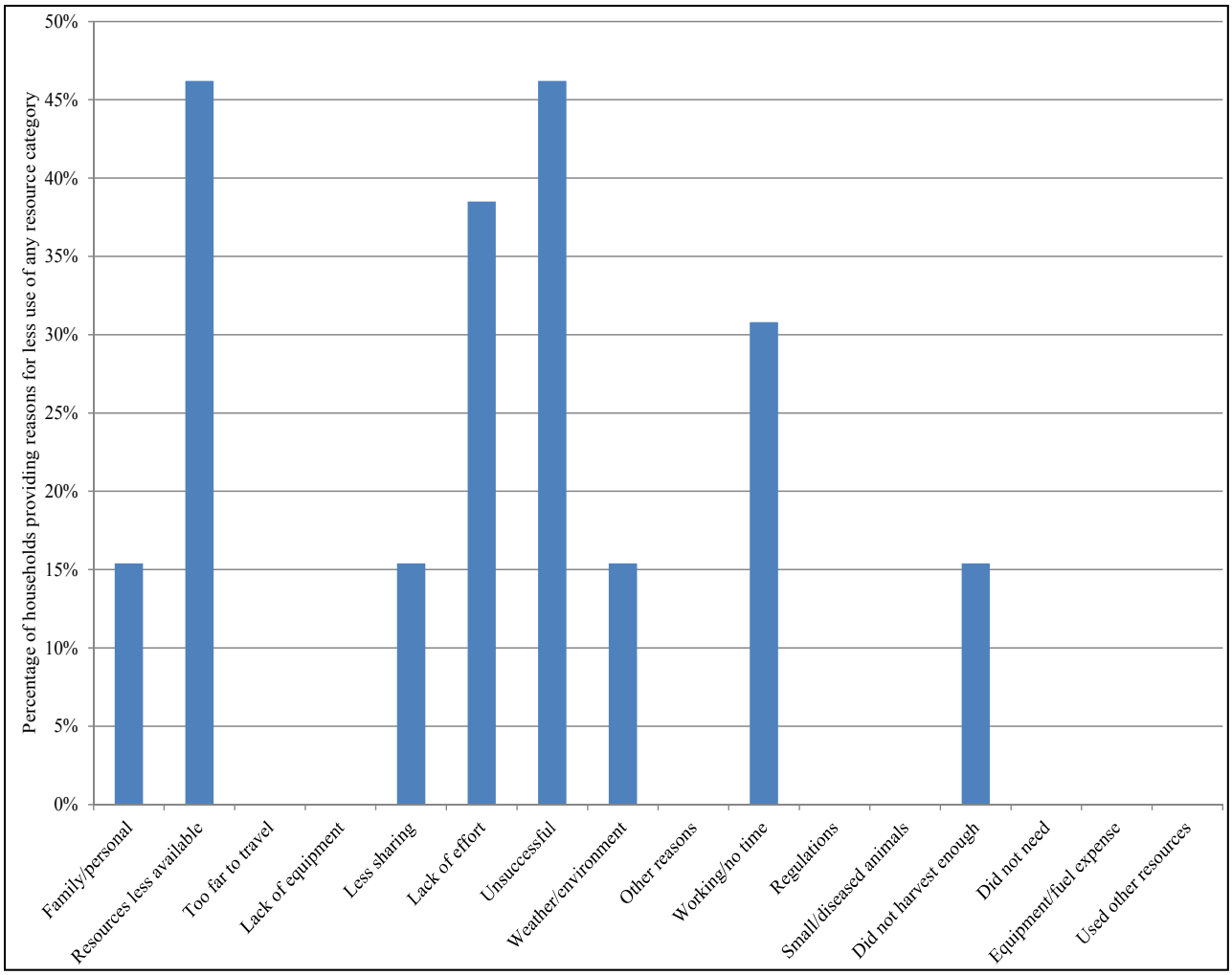


Figure 12-19.– Reasons for less household uses of any resource compared to recent years, Dry Creek, 2011.

LARGE LAND MAMMALS

Large land mammals are a critical resource for the community of Dry Creek. Residents estimated that large land mammals likely make up, on average, 75% of the total community harvest in any given year. Residents have adapted their harvest patterns and communal resources to take advantage of the Macomb Plateau controlled use area where all large game is harvested. The primary concern for Dry Creek residents is to protect and keep the ban on motorized access within the Macomb Plateau. Moose in particular is the top resource for this community and residents rely upon the diminished hunting competition in this area. Some hunters are also concerned that the 15-day season is too short given the access restrictions and logistics it takes to conduct a harvest with horses and on foot. Additionally, other residents feel that the current caribou season is a poor time for harvest and that a later season would improve the quality of the hunt. During the early season the caribou are younger and smaller.

Residents say that the big bull caribou do not travel down from the far back country until later in the season.

BIRDS

Birds in general made up a very small portion of the subsistence harvest in 2011. Both migratory waterfowl and upland game birds are harvested by individual households and not for communal use in the corporate community, but for those households in broader Dry Creek, they held greater importance. Some households reported a greater harvest of migratory waterfowl and upland game birds because of increased effort or more hunter success, but even those households responded that upland bird abundance had declined in 2011.

VEGETATION

Dry Creek residents continued to harvest a significant amount of wild plants in 2011—berries in particular. While some residents reported a good harvest of berries, others said the year was rainy and the weather poor for berries. In general there were slightly more residents who claimed the berry harvest was low. While the survey reports a stellar year for lowbush cranberries, the crop of blueberries was far less.

OTHER CONCERNS

Some community members spoke about the significance of Lisa Lake for their nonsalmon harvest. The lake has long been stocked with rainbow trout by ADF&G and recently the State of Alaska added a public use cabin and built an access gravel road over the pre-existing foot path. The trip takes about 20 minutes by foot from the road but residents report that some non-local users are now trying to bring their ATVs or trucks out to the cabin, effectively destroying the access trail and the area around the cabin. Their main concern was that users be more considerate of communal property.

The corporate community of Dry Creek has a hunter's cabin at Fish Lake on the southern end of the Macomb Plateau. The access trail to Fish Lake is walk-in only, and is a 14-mile trek from the Alaska Highway (unless a hunter is flown in by floatplane). But the first 2 miles of trail is actually a gravel road leading up the hill to a communications tower and is driven regularly by service vehicles. It is also the steepest and most grueling part of the hike in. This road once provided vehicle access to the Knob Hill trailhead. Currently hunters must haul in gear and pack out meat by foot, the hardest part of the journey being the steep gravel road. The community would like to see the road re-opened for motorized access to the trailhead.

SUMMARY

This chapter summarizes the first comprehensive subsistence survey to be conducted in the community of Dry Creek. Overall, the findings demonstrated a subsistence pattern dependent on horses to aid in the harvest of a majority of the community's wild resources. Large land mammals, particularly moose, constituted 76% of the harvest in 2011, followed by salmon at 12%, and vegetation at 8%. Nonsalmon fish would have contributed a higher percentage of the harvest had the community been able to make their annual deep sea charter for halibut out of Valdez. Additionally noteworthy was the community's orchestrated effort in harvesting and processing moose, salmon, and wild berries for consumption in the daily meals of lunch and dinner in the tabernacle. All members who were able-bodied participated in the harvesting of resources, the processing of resources, or both. Some wild resources were harvested strictly for in-home use to be eaten in the private homes of community members or shared with other households. These resources included caribou, nonsalmon fish, migratory waterfowl and upland game birds, small land mammals, and plants and berries. Critical to this community's way of life is the continued ban on motorized vehicles within the Macomb Plateau controlled use area.

ACKNOWLEDGEMENTS

The Division of Subsistence would like to thank everyone who helped make the work in Dry Creek a success. First, our thanks are extended to the Dry Creek Living Word community for their approval and full support of the project. Working within the community was an absolute delight; research staff will not forget the warm welcome and shared meals we experienced every day while there. We would also like to thank our Local Research Assistants Alexandria Buongiorn and Olivia Geyer; both were quick and motivated and fairly ran the project without us. Their efficiency and skill was a wonder to behold. Finally, the Division of Subsistence would like to thank the whole community of Dry Creek who provided support during research and careful coordinated review of the draft report. Community member guidance and feedback helped make this chapter the best that it could be; thank you all.

CHAPTER 13: TOK

Prepared by Sarah Evans and Davin Holen

COMMUNITY BACKGROUND

Tok is an unincorporated community located at the junction of the Alaska Highway and the Tok Cutoff to the Glenn Highway, 200 miles southeast of Fairbanks on a large flat alluvial plain of the Tanana Valley. It is often called the "Gateway to Alaska" because it is the first major community upon entering the state, 93 miles from the Canadian border (ADCCED 2012a). Originally, Tok was a camp during the construction of the Alaska–Canadian and Glenn highways in the 1940s and it is believed to have been initially called Tokyo Camp (Alaska Public Lands Information Centers 2012; community resident, Tok, personal communication, February 2012). Civilian travel on the highway began in 1946 and in the same year a roadhouse was opened. In 1947, the first school was built in Tok. From 1947 to 1971, the U.S. Customs office located its border station in Tok and its role as a transportation hub was further enhanced by the Taylor Highway construction, which began in 1946 and was completed in 1952 (Naske 1986:246).

In 1954, the U.S. Army began construction of an 8-inch petroleum pipeline that extended from Haines to Fairbanks. This pipeline ran through Tok, and a pump station was located on the west side of the community, but the pipeline closed down in 1979. In 1976, the U.S. Coast Guard built the Long Range Aids to Navigation (LORAN) station at Tok, which consisted of four 700-foot towers. The towers were used for transmitting radio navigation signals for air and marine traffic in the Gulf of Alaska. Tok is now the site of several local, state, and federal government offices and serves as a sub-regional center for the upper Tanana River area. Tok is not incorporated as a municipality, but the community formed a nonprofit corporation (Tok Umbrella Corporation), which receives development grants from the State of Alaska, such as to the Tok Community Library. While there are many Euro-American residents living in Tok, it also continues to be a major trade center for the predominately Athabascan communities of Northway, Tetlin, Tanacross, Mentasta, Eagle, and Dot Lake.

DEMOGRAPHY

According to the federal census, Tok had 1,258 residents in 2010 (Table 13-1). Figure 13-1 shows the population of the community over time. The household survey conducted for this study in 2011 resulted in an estimated population of 1,312 residents, of which 16% (213 residents) were Alaska

Table 13-1. – Population of Tok, 2010 and 2011.

2010 Census[a]				Study findings for 2011			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
532	1,258	255	20.3%	555	1,312	213	16.3%

Source ADF&G Division of Subsistence household surveys, 2012.
a. Source U.S. Census, 2011.

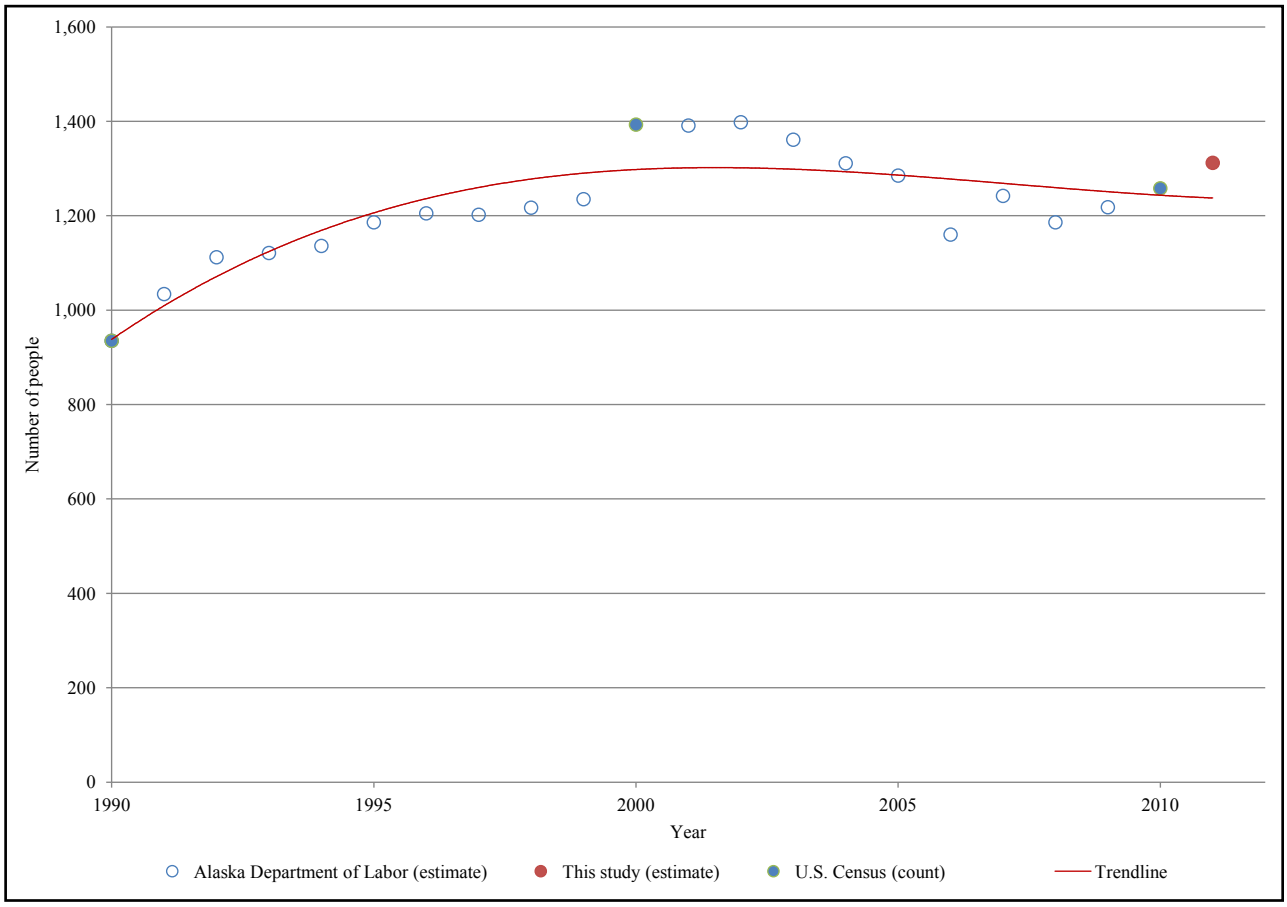


Figure 13-1.– Population history, Tok, 1990–2011.

Table 13-2. – Sample achievement, Tok, 2011.

Number of dwelling units	555.0
Interview goal	136.0
Households interviewed	143.0
Households failed to contact	3.0
Households declined to be interviewed	17.0
Households moved or nonresident	0.0
Total households attempted to interview	160
Refusal rate	10.6%
Final estimate of permanent households	555.0
Percentage of total households interviewed	25.8%
Interview weighting factor	3.9
Sampled population	338.0
Estimated population	1,311.8

Source ADF&G Division of Subsistence household surveys, 2012.

Native (Table 13-1). The survey results estimate that there were 555 year-round households in Tok in 2011 (Table 13-2). Of these, a random sample of 143 households (26%) were interviewed (Table 13-2). The mean number of years of residency in Tok was 19 years, with a maximum length of residence of 68 years (Table 13-3). The largest age cohorts for males were men 15–19 and 45–49 years of age, and for females the largest age cohort was 45–49 years of age (Figure 13-2; Table 13-4). Other age categories for men and women were fairly evenly distributed.

Of the Tok household heads interviewed, an estimated 20% were born in Alaska. Most of the Alaska-born household heads were born in Tok (6% of all household heads), followed by Anchorage (3%) and Northway (3%) (Table 13-5). In comparison, 77% of household heads were born outside of Alaska.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 13-6 reports the estimated levels of individual participation in the harvest and processing of wild resources by Tok residents in 2011. Approximately 78% of residents attempted to harvest wild resources in 2011. With reference to specific resource categories, 73% of all residents gathered plants and berries, 48% fished, 34% hunted for birds, and 53% hunted for large land mammals. Fewer (23%) residents were involved in furbearer hunting or trapping. In comparison, 76% of all Tok residents processed some wild resources in 2011. Most residents (73%) participated in processing plants and berries, followed by 61% of the population participating in large land mammal processing. Fewer (56%) residents participated in fish processing, and 33% participated in processing birds.

Table 13-3. – Demographics and sample characteristics, Tok, 2011.

Characteristics	Tok
Sampled households	143.0
Eligible households	555.0
Percentage sampled	25.8%
Household size	
Mean	2.4
Minimum	1.0
Maximum	8.0
Sample population	338
Estimated community population	1,312
Age	
Mean	40.9
Minimum[a]	0.0
Maximum	95.0
Median	45.0
Length of residency	
Total population	
Mean	18.7
Minimum[a]	1.0
Maximum	68.0
Heads of household	
Mean	22.8
Minimum[a]	1.0
Maximum	68.0
Sex	
Estimated male	
Number	648.1
Percentage	49.4%
Estimated female	
Number	663.7
Percentage	50.6%
Alaska Native	
Estimated households[b]	
Number	93.1
Percentage	16.8%
Estimated population	
Number	213.5
Percentage	16.3%

Source ADF&G Division of Subsistence household surveys, 2012.
a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.
b. The estimated number of households in which at least one head of household is Alaska Native.

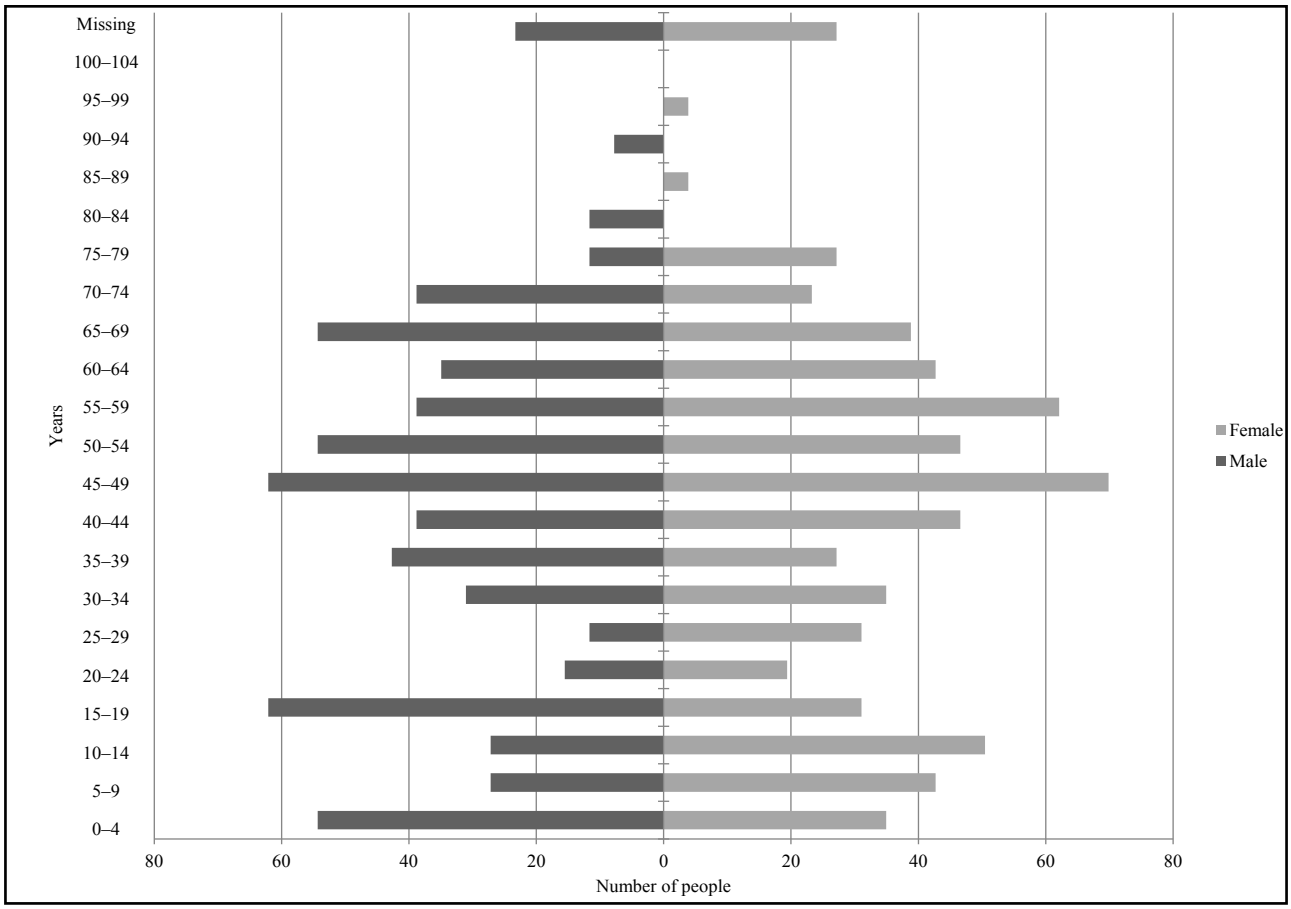


Figure 13-2.– Population profile, Tok, 2011.

Table 13-4. – Population profile, Tok, 2011.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	54.3	8.4%	8.4%	34.9	5.3%	5.3%	89.3	6.8%	6.8%
5–9	27.2	4.2%	12.6%	42.7	6.4%	11.7%	69.9	5.3%	12.1%
10–14	27.2	4.2%	16.8%	50.5	7.6%	19.3%	77.6	5.9%	18.0%
15–19	62.1	9.6%	26.3%	31.0	4.7%	24.0%	93.1	7.1%	25.1%
20–24	15.5	2.4%	28.7%	19.4	2.9%	26.9%	34.9	2.7%	27.8%
25–29	11.6	1.8%	30.5%	31.0	4.7%	31.6%	42.7	3.3%	31.1%
30–34	31.0	4.8%	35.3%	34.9	5.3%	36.8%	66.0	5.0%	36.1%
35–39	42.7	6.6%	41.9%	27.2	4.1%	40.9%	69.9	5.3%	41.4%
40–44	38.8	6.0%	47.9%	46.6	7.0%	48.0%	85.4	6.5%	47.9%
45–49	62.1	9.6%	57.5%	69.9	10.5%	58.5%	132.0	10.1%	58.0%
50–54	54.3	8.4%	65.9%	46.6	7.0%	65.5%	100.9	7.7%	65.7%
55–59	38.8	6.0%	71.9%	62.1	9.4%	74.9%	100.9	7.7%	73.4%
60–64	34.9	5.4%	77.2%	42.7	6.4%	81.3%	77.6	5.9%	79.3%
65–69	54.3	8.4%	85.6%	38.8	5.8%	87.1%	93.1	7.1%	86.4%
70–74	38.8	6.0%	91.6%	23.3	3.5%	90.6%	62.1	4.7%	91.1%
75–79	11.6	1.8%	93.4%	27.2	4.1%	94.7%	38.8	3.0%	94.1%
80–84	11.6	1.8%	95.2%	0.0	0.0%	94.7%	11.6	0.9%	95.0%
85–89	0.0	0.0%	95.2%	3.9	0.6%	95.3%	3.9	0.3%	95.3%
90–94	7.8	1.2%	96.4%	0.0	0.0%	95.3%	7.8	0.6%	95.9%
95–99	0.0	0.0%	96.4%	3.9	0.6%	95.9%	3.9	0.3%	96.2%
100–104	0.0	0.0%	96.4%	0.0	0.0%	95.9%	0.0	0.0%	96.2%
Missing	23.3	3.6%	100.0%	27.2	4.1%	100.0%	50.5	3.8%	100.0%
Total	**648.1**	**100.0%**	**100.0%**	**663.7**	**100.0%**	**100.0%**	**1,311.8**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

Table 13-5. – Birthplaces of household heads, Tok, 2011.

Birthplace[a]	Percentage
Anchorage	3.0%
Beaver	0.4%
Fairbanks	0.4%
Healy Lake	0.4%
Homer	0.4%
Ketchikan	0.4%
McGrath	0.4%
North Pole	0.4%
Northway	2.6%
Sitka	0.4%
Tanacross	2.2%
Tetlin	1.3%
Tok	5.6%
Southeast Alaska	0.9%
Other Alaska	1.3%
Outside Alaska[b]	0.4%
Other U.S.	72.7%
Foreign	3.9%
Missing	2.6%

Source ADF&G Division of Subsistence household surveys, 2012.
Note "birthplace" means the place of residence of the parents of the individual when the individual was born.
a. All categories are mutually exclusive, meaning that if a person belongs to one category, he or she may not belong to a different category.
b. "Outside Alaska" refers to birthplaces which are not located within Alaska, however further details on location are unknown.

RESOURCE HARVEST AND USE PATTERNS

Table 13-7 summarizes resource harvest and use characteristics for Tok in 2011, at the household level. Nearly all surveyed households (92%) used wild resources in 2011, while 87% attempted to harvest at least 1 wild resource, and 85% harvested at least 1 resource. The average total harvest was an estimated 481 lb usable weight per household, or 202 lb per capita. On average, households attempted to harvest 9 kinds of resources, harvested 8 kinds of resources, and used an average of 10 kinds of resources. The maximum number of resources used by any household was 45. In addition, households gave away an average of 3 kinds of resources and received 3 kinds of resources. In Tok, 75% of households reported receiving resources and 59% reported giving away resources in 2011.

SPECIES USED AND SEASONAL ROUND

Residents of Tok harvest a wide variety of species throughout the year and they often target specific species during certain seasons of the year, following a cyclical harvest pattern. Tok residents are highly mobile, due to their location at the junction of the Alaska Highway and the Tok Cutoff to the Glenn Highway, and the community is in proximity to the Taylor Highway. Residents use motorized vehicles,

Table 13-6. – Estimated participation in subsistence harvesting and processing activities, Tok, 2011.

Total number of people	**1,311.8**
Birds	
Hunt	
Number	442.5
Percentage	33.7%
Process	
Number	432.0
Percentage	32.9%
Fish	
Fish	
Number	632.5
Percentage	48.2%
Process	
Number	734.9
Percentage	56.0%
Large land mammals	
Hunt	
Number	699.4
Percentage	53.3%
Process	
Number	798.2
Percentage	60.8%
Furbearers	
Hunt or trap	
Number	300.3
Percentage	22.9%
Process	
Number	281.4
Percentage	21.5%
Plants	
Gather	
Number	963.1
Percentage	73.4%
Process	
Number	951.2
Percentage	72.5%
Any resource	
Attempt	
Number	1,016.9
Percentage	77.5%
Process	
Number	1,016.9
Percentage	77.5%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 13-7. – Resource harvest and use characteristics, Tok, 2011.

Characteristic	
Mean number of resources used per household	9.9
Minimum	0.0
Maximum	45.0
95% confidence limit (±)	12.1%
Median	8.0
Mean number of resources attempted to harvest per household	9.0
Minimum	0.0
Maximum	45.0
95% confidence limit (±)	13.6%
Median	7.0
Mean number of resources harvested per household	8.1
Minimum	0.0
Maximum	40.0
95% confidence limit (±)	14.1%
Median	6.0
Mean number of resources received per household	2.9
Minimum	0.0
Maximum	18.0
95% confidence limit (±)	15.7%
Median	2.0
Mean number of resources given away per household	2.5
Minimum	0.0
Maximum	27.0
95% confidence limit (±)	22.6%
Median	1.0
Household harvest, pounds	
Minimum	0.0
Maximum	2,660.8
Mean	480.7
Median	258.9
Total harvest weight, pounds	264,943.9
Community per capita harvest, pounds	202.0
Percentage using any resource	91.5%
Percentage attempting to harvest any resource	86.6%
Percentage harvesting any resource	84.5%
Percentage receiving any resource	75.4%
Percentage giving away any resource	59.2%
Number of households in sample	143.0
Number of resources available	124.0

Source ADF&G Division of Subsistence household surveys, 2012.

such as highway vehicles, snowmachines, and ATVs to reach hunting, fishing, and gathering areas, which generally follow the paths of the nearby highways.

Table 13-8 summarizes the estimated harvest and uses of fish, game, and plant resources, and Table 13-9 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Tok households during the study year 2011. Residents of Tok harvested an estimated total of 264,944 lb, or 202 lb per capita of wild resources (Table 13-8). Moose, caribou, and sockeye salmon were the top 3 most harvested resources, followed by coho salmon (Table 13-9). Moose, blueberries, wood, and lowbush cranberries were the top 4 most used resources (Table 13-9).

The discussion about various resources used starts with moose because they provided the highest percentage of the total harvest in 2011. Large land mammal hunting is a traditional and popular fall activity that often stretches into the winter. Most of the hunt takes place using highway vehicles or ATVs. In 2011, 62% of the surveyed Tok households hunted large land mammals, and 49% of households were successful. Fewer households (30%) participated in small land mammal harvesting in 2011, and 28% were successful. Most small land mammal hunting or trapping took place during the winter and the species harvested the most included snowshoe hares, red (tree) squirrels, and martens (Table 13-8).

During the study year, 62% of the households in Tok harvested fish and 45% harvested salmon, most of which was sockeye salmon (Table 13-8). More households (77%) used fish, but a lesser percentage (56%) reported receiving fish, especially salmon, during the study year (Table 13-8). Most of the salmon were caught with fish wheels, operated in the Copper River, and were often shared by community members. Chinook and sockeye salmon are usually the first to arrive in the upper Copper River in early June, and both species continue their migration up the Copper River into July. Coho salmon arrive in the area around mid-July and continue running through September. During the summer months, many Tok residents engage in rod and reel fishing in the various lakes around Tok, especially for nonsalmon fish, such as lake trout and whitefishes. They also use rod and reel gear to fish for salmon in the Copper River drainage. In the winter months, residents commonly fish through the ice for other nonsalmon fish, such as Arctic grayling, in small lakes near Tok—many of which are stocked with trout.

Migratory birds travel through the area in fall and spring, stopping to rest along the Tanana and Copper rivers. During the study year, 18% of the households used migratory birds and 13% harvested them. Upland game birds, such as spruce grouse and ptarmigan, were harvested by Tok residents along the Taylor and Alaska highways throughout the year. During the study year, 39% of the Tok households used upland game birds and 37% reported harvesting them (Table 13-8).

Harvesting vegetation, particularly berries in the summer, is an important activity for Tok residents. During the study year, 70% of households reported harvesting berries, and 73% reported using berries. Another commonly used vegetation resource is firewood, which is used for heating homes. During the study year, 61% of households reported both harvesting and using firewood (Table 13-8).

Table 13-8. – Estimated harvests and uses of fish, game, and plant resources, Tok, 2011.

	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95%
Resource	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**92%**	**87%**	**85%**	**75%**	**59%**	**264,943.9**	**480.7**	**202.0**	**54,418.4**		**98.7**	**17%**
Fish	**77%**	**64%**	**62%**	**56%**	**39%**	**98,892.1**	**179.4**	**75.4**	**36,453.8**		**66.1**	**24%**
Salmon	**69%**	**49%**	**45%**	**44%**	**32%**	**67,320.1**	**122.2**	**51.3**	**13,591.7**		**24.7**	**28%**
Chum salmon	4%	4%	4%	1%	2%	794.4	1.4	0.6	166.9	Ind.	0.3	122%
Coho salmon	32%	23%	23%	16%	13%	17,021.8	30.9	13.0	2,666.3	Ind.	4.8	39%
Chinook salmon	24%	18%	16%	11%	12%	9,265.3	16.8	7.1	652.0	Ind.	1.2	61%
Pink salmon	9%	8%	8%	4%	5%	4,203.7	7.6	3.2	1,672.8	Ind.	3.0	88%
Sockeye salmon	50%	39%	36%	30%	20%	35,174.5	63.8	26.8	8,130.9	Ind.	14.8	38%
Landlocked salmon	3%	3%	2%	1%	0%	279.4	0.5	0.2	186.3	Ind.	0.3	103%
Unknown salmon	3%	1%	1%	3%	1%	581.0	1.1	0.4	116.4	Ind.	0.2	170%
Nonsalmon fish	**64%**	**56%**	**54%**	**39%**	**18%**	**31,572.0**	**57.3**	**24.1**	**22,862.1**		**41.5**	**28%**
Herring	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Herring roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Herring sac roe	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Herring spawn on kelp	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Smelt	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Eulachon (hooligan, candlefish)	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Cod	6%	5%	5%	2%	0%	1,117.8	2.0	0.9	279.4		0.5	84%
Pacific cod (gray)	6%	5%	5%	2%	0%	1,117.8	2.0	0.9	279.4	Ind.	0.5	84%
Pacific tomcod	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Starry flounder	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Kelp greenling	4%	2%	2%	2%	1%	186.3	0.3	0.1	46.6		0.1	131%
Lingcod	4%	2%	2%	2%	1%	186.3	0.3	0.1	46.6	Ind.	0.1	131%
Pacific halibut	36%	16%	14%	27%	6%	6,782.8	12.3	5.2	6,782.8	Lb.	12.3	67%
Arctic lamprey	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rockfish	6%	4%	3%	4%	1%	238.7	0.4	0.2	159.1		0.3	97%
Black rockfish	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Yellow eye rockfish	1%	1%	0%	1%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown rockfish	4%	3%	3%	1%	1%	238.7	0.4	0.2	159.1	Ind.	0.3	97%
Sablefish (black cod)	1%	1%	1%	0%	0%	180.5	0.3	0.1	58.2	Ind.	0.1	170%
Sculpin	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Burbot	20%	18%	15%	7%	3%	2,841.0	5.2	2.2	1,183.7	Ind.	2.1	46%
Char	19%	20%	19%	2%	4%	1,880.2	3.4	1.4	1,509.3		2.7	54%
Arctic char	3%	3%	3%	0%	0%	192.1	0.3	0.1	213.5	Ind.	0.4	154%
Dolly Varden	4%	4%	4%	0%	0%	227.0	0.4	0.2	252.3	Ind.	0.5	91%
Lake trout	17%	18%	17%	2%	4%	1,461.1	2.7	1.1	1,043.6	Ind.	1.9	52%

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Table 13-8.–Page 2 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Nonsalmon fish, continued												
Arctic grayling	25%	25%	25%	4%	3%	1,980.9	3.6	1.5	2,829.9	Ind.	5.1	54%
Northern pike	15%	17%	14%	2%	2%	1,886.2	3.4	1.4	419.2	Ind.	0.8	51%
Sheefish	1%	1%	1%	0%	0%	23.3	0.0	0.0	3.9	Ind.	0.0	170%
Longnose sucker	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Trout	23%	23%	21%	7%	4%	6,253.6	11.3	4.8	4,466.8		8.1	48%
Cutthroat trout	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Rainbow trout	21%	20%	20%	6%	4%	6,106.9	11.1	4.7	4,362.0	Ind.	7.9	49%
Unknown trout	4%	4%	3%	3%	1%	146.7	0.3	0.1	104.8	Ind.	0.2	96%
Whitefishes	17%	13%	13%	9%	7%	8,200.8	14.9	6.3	5,123.1		9.3	60%
Broad whitefish	2%	1%	1%	2%	1%	2,363.6	4.3	1.8	1,688.3	Ind.	3.1	157%
Cisco	1%	1%	1%	0%	1%	271.7	0.5	0.2	271.7		0.5	130%
Least cisco	1%	1%	1%	0%	1%	271.7	0.5	0.2	271.7	Ind.	0.5	130%
Humpback whitefish	8%	7%	7%	4%	4%	4,238.2	7.7	3.2	1,412.7	Ind.	2.6	66%
Round whitefish	6%	6%	6%	1%	1%	669.5	1.2	0.5	1,339.0	Ind.	2.4	67%
Unknown whitefish	4%	2%	2%	4%	2%	657.8	1.2	0.5	411.4	Ind.	0.7	113%
Land mammals	**80%**	**64%**	**53%**	**54%**	**37%**	**148,703.7**	**269.8**	**113.4**	**5,037.8**		**9.1**	**20%**
Large land mammals	**79%**	**62%**	**49%**	**52%**	**35%**	**146,177.2**	**265.2**	**111.4**	**575.6**		**1.0**	**21%**
Bison	2%	1%	0%	2%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Black bear	8%	11%	4%	4%	3%	1,350.6	2.5	1.0	23.3	Ind.	0.0	68%
Brown bear	4%	10%	3%	1%	1%	0.0	0.0	0.0	15.5	Ind.	0.0	84%
Caribou	55%	44%	35%	26%	21%	41,470.1	75.2	31.6	319.0	Ind.	0.6	27%
Deer	3%	1%	1%	2%	1%	503.0	0.9	0.4	11.6	Ind.	0.0	170%
Goat	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Moose	70%	55%	28%	47%	26%	100,835.3	183.0	76.9	186.7	Ind.	0.3	26%
Muskox	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Dall sheep	8%	5%	4%	4%	1%	2,018.2	3.7	1.5	19.4	Ind.	0.0	75%
Small land mammals[b]	**29%**	**30%**	**28%**	**2%**	**6%**	**2,526.5**	**4.6**	**1.9**	**4,462.2**		**8.1**	**51%**
Beaver	3%	2%	2%	1%	1%	815.0	1.5	0.6	54.3	Ind.	0.1	112%
Coyote	5%	6%	5%	0%	1%	0.0	0.0	0.0	81.5	Ind.	0.1	102%
Fox	9%	9%	9%	0%	1%	0.0	0.0	0.0	338.3		0.6	70%
Red fox	9%	9%	9%	0%	1%	0.0	0.0	0.0	338.3		0.6	70%
Red fox—cross phase	7%	7%	7%	0%	1%	0.0	0.0	0.0	93.8	Ind.	0.2	90%
Red fox—red phase	8%	8%	8%	0%	1%	0.0	0.0	0.0	244.5	Ind.	0.4	67%
Hare	17%	18%	16%	1%	4%	1,633.8	3.0	1.2	816.9		1.5	48%
Snowshoe hare	17%	18%	16%	1%	4%	1,633.8	3.0	1.2	816.9	Ind.	1.5	48%
Lynx	11%	11%	11%	1%	2%	0.0	0.0	0.0	555.0	Ind.	1.0	56%

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Table 13-8.–Page 3 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Small land mammals, continued												
Marmot	1%	1%	1%	0%	0%	0.0	0.0	0.0	7.8	Ind.	0.0	170%
Marten	9%	11%	9%	0%	1%	0.0	0.0	0.0	694.7	Ind.	1.3	86%
Mink	3%	4%	3%	0%	0%	0.0	0.0	0.0	77.6	Ind.	0.1	109%
Muskrat	3%	3%	2%	1%	0%	0.0	0.0	0.0	388.1	Ind.	0.7	115%
Porcupine	2%	2%	2%	0%	1%	77.6	0.1	0.1	19.4	Ind.	0.0	112%
Squirrel	11%	11%	11%	0%	1%	0.0	0.0	0.0	1,168.5		2.1	66%
Red (tree) squirrel	10%	10%	10%	0%	1%	0.0	0.0	0.0	1,141.3	Ind.	2.1	67%
Unknown squirrel	1%	1%	1%	0%	0%	0.0	0.0	0.0	27.2	Ind.	0.0	147%
Weasel	2%	3%	2%	0%	0%	0.0	0.0	0.0	85.4	Ind.	0.2	124%
Wolf	5%	6%	5%	0%	1%	0.0	0.0	0.0	104.8	Ind.	0.2	95%
Wolverine	5%	5%	4%	1%	0%	0.0	0.0	0.0	69.9	Ind.	0.1	81%
Birds and eggs	**45%**	**45%**	**42%**	**12%**	**9%**	**5,139.4**	**9.3**	**3.9**	**5,458.4**		**9.9**	**47%**
Migratory birds	**18%**	**13%**	**13%**	**11%**	**7%**	**3,045.2**	**5.5**	**2.3**	**2,714.4**		**4.9**	**70%**
Ducks	18%	12%	13%	10%	6%	2,478.6	4.5	1.9	2,551.4		4.6	73%
Bufflehead	3%	3%	3%	0%	1%	74.5	0.1	0.1	186.3	Ind.	0.3	108%
Canvasback	3%	2%	2%	1%	1%	92.7	0.2	0.1	46.6	Ind.	0.1	111%
Eider	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0		0.0	0%
Spectacled eider	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eider	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Goldeneye	4%	4%	4%	0%	1%	292.9	0.5	0.2	190.2	Ind.	0.3	87%
Mallard	15%	12%	12%	7%	6%	940.8	1.7	0.7	940.8	Ind.	1.7	56%
Northern pintail	5%	4%	4%	1%	2%	147.0	0.3	0.1	183.7	Ind.	0.3	85%
Scaup	2%	2%	2%	0%	1%	195.6	0.4	0.1	217.3	Ind.	0.4	114%
Scoter	6%	4%	4%	3%	4%	200.5	0.4	0.2	222.8		0.4	108%
Black scoter	6%	4%	4%	3%	4%	200.5	0.4	0.2	222.8	Ind.	0.4	108%
Northern shoveler	2%	2%	2%	0%	1%	38.8	0.1	0.0	38.8	Ind.	0.1	109%
Teal	6%	5%	5%	1%	2%	69.1	0.1	0.1	132.9		0.2	97%
Green winged teal	6%	5%	5%	1%	2%	69.1	0.1	0.1	132.9	Ind.	0.2	97%
Wigeon	2%	2%	2%	0%	1%	364.0	0.7	0.3	322.1		0.6	116%
American wigeon	2%	2%	2%	0%	1%	364.0	0.7	0.3	322.1	Ind.	0.6	116%
Unknown ducks	4%	2%	3%	2%	1%	62.6	0.1	0.0	69.9	Ind.	0.1	107%
Geese	4%	4%	3%	1%	1%	163.0	0.3	0.1	116.4		0.2	103%
Brant	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Canada geese	4%	4%	3%	1%	1%	116.4	0.2	0.1	97.0		0.2	109%
Cacklers	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Lesser Canada geese	2%	2%	2%	0%	1%	97.8	0.2	0.1	81.5	Ind.	0.1	126%

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Table 13-8.–Page 4 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Unknown Canada geese	1%	2%	1%	1%	0%	18.6	0.0	0.0	15.5	Ind.	0.0	170%
Emperor geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Snow geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
White-fronted geese	1%	1%	1%	0%	1%	46.6	0.1	0.0	19.4	Ind.	0.0	140%
Unknown geese	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Swan	1%	1%	1%	0%	0%	77.6	0.1	0.1	7.8		0.0	170%
Tundra (whistling) swan	1%	1%	1%	0%	0%	77.6	0.1	0.1	7.8	Ind.	0.0	170%
Crane	2%	3%	2%	0%	1%	326.0	0.6	0.2	38.8		0.1	98%
Sandhill crane	2%	3%	2%	0%	1%	326.0	0.6	0.2	38.8	Ind.	0.1	98%
Other birds	**39%**	**42%**	**37%**	**4%**	**4%**	**2,087.3**	**3.8**	**1.6**	**2,697.4**		**4.9**	**39%**
Upland game birds	39%	42%	37%	4%	4%	2,087.3	3.8	1.6	2,697.4		4.9	39%
Grouse	36%	38%	34%	4%	4%	1,423.6	2.6	1.1	2,033.7		3.7	37%
Spruce grouse	26%	27%	25%	3%	3%	695.5	1.3	0.5	993.6	Ind.	1.8	36%
Sharp-tailed grouse	6%	6%	6%	1%	0%	138.6	0.3	0.1	197.9	Ind.	0.4	73%
Ruffed grouse	15%	17%	14%	1%	1%	556.9	1.0	0.4	795.6	Ind.	1.4	50%
Unknown grouse	2%	2%	2%	0%	0%	32.6	0.1	0.0	46.6	Ind.	0.1	103%
Ptarmigan	17%	19%	16%	1%	1%	663.7	1.2	0.5	663.7	Ind.	1.2	51%
Bird eggs	**1%**	**1%**	**1%**	**0%**	**0%**	**7.0**	**0.0**	**0.0**	**46.6**		**0.1**	**170%**
Duck eggs	1%	1%	1%	0%	0%	7.0	0.0	0.0	46.6	Ind.	0.1	170%
Geese eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Seabird and loon eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0		0.0	0%
Gull eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Unknown eggs	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Ind.	0.0	0%
Marine invertebrates	**9%**	**4%**	**4%**	**7%**	**3%**	**639.6**	**1.2**	**0.5**	**323.3**		**0.6**	**102%**
Clams	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0		0.0	0%
Freshwater clams	1%	0%	0%	1%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Razor clams	2%	0%	0%	2%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Crabs	4%	1%	1%	3%	1%	317.5	0.6	0.2	166.1		0.3	145%
Dungeness crab	2%	1%	1%	1%	1%	40.8	0.1	0.0	40.8	Lb.	0.1	170%
King crab	2%	1%	1%	1%	1%	276.7	0.5	0.2	125.4	Lb.	0.2	164%
Tanner crab	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Lb.	0.0	0%
Octopus	1%	1%	1%	0%	1%	15.5	0.0	0.0	3.9	Ind.	0.0	170%
Shrimp	4%	1%	3%	4%	1%	306.6	0.6	0.2	153.3	Gal.	0.3	103%
Squid	0%	0%	0%	0%	0%	0.0	0.0	0.0	0.0	Gal.	0.0	0%
Vegetation	**83%**	**80%**	**80%**	**21%**	**30%**	**11,569.1**	**21.0**	**8.8**	**7,145.2**		**13.0**	**24%**
Berries	**73%**	**70%**	**70%**	**16%**	**23%**	**10,216.5**	**18.5**	**7.8**	**2,556.1**		**4.6**	**25%**

-continued-

Table 13-8.–Page 5 of 5.

Resource	Percentage of households					Harvest weight, pounds			Harvest amount[a]			95% confidence limit (±)
	Use	Attempt	Harvest	Receive	Give	Total	Mean household	Per capita	Total	Unit	Mean household	
Berries, continued												
Blueberry	63%	58%	59%	14%	17%	3,907.7	7.1	3.0	976.9	Gal.	1.8	24%
Lowbush cranberry	55%	54%	54%	6%	13%	3,911.6	7.1	3.0	977.9	Gal.	1.8	31%
Highbush cranberry	12%	13%	12%	1%	4%	371.3	0.7	0.3	92.8	Gal.	0.2	57%
Crowberry	2%	2%	2%	0%	0%	2.9	0.0	0.0	2.7	Gal.	0.0	126%
Currants	2%	2%	2%	0%	1%	94.1	0.2	0.1	23.5	Gal.	0.0	143%
Cloud berry	1%	1%	1%	0%	1%	3.9	0.0	0.0	1.0	Gal.	0.0	170%
Raspberry	38%	37%	37%	5%	7%	1,759.1	3.2	1.3	439.8	Gal.	0.8	52%
Strawberry	6%	6%	6%	0%	1%	30.1	0.1	0.0	7.5	Gal.	0.0	74%
Other wild berry	5%	5%	5%	1%	1%	135.8	0.2	0.1	34.0	Gal.	0.1	72%
Plants/greens/mushrooms	**32%**	**34%**	**32%**	**5%**	**8%**	**1,352.6**	**2.5**	**1.0**	**1,299.7**		**2.4**	**64%**
Wild rhubarb	1%	1%	1%	0%	0%	3.9	0.0	0.0	3.9	Gal.	0.0	170%
Eskimo potato	1%	1%	1%	1%	1%	7.8	0.0	0.0	7.8	Gal.	0.0	120%
Hudson's Bay tea	4%	4%	4%	0%	0%	6.4	0.0	0.0	6.4	Gal.	0.0	116%
Wild rose hips	4%	4%	4%	0%	0%	120.8	0.2	0.1	30.6	Gal.	0.1	117%
Yarrow	1%	1%	1%	0%	0%	79.6	0.1	0.1	78.1	Gal.	0.1	166%
Other wild greens	6%	6%	6%	1%	1%	220.9	0.4	0.2	220.9	Gal.	0.4	108%
Unknown mushrooms	27%	29%	27%	5%	9%	892.9	1.6	0.7	892.9	Gal.	1.6	65%
Fireweed	1%	1%	1%	0%	0%	20.4	0.0	0.0	59.2	Gal.	0.1	169%
Wood	**61%**	**60%**	**61%**	**6%**	**7%**	**0.0**	**0.0**	**0.0**	**3,289.4**	**Cord**	**6.0**	**20%**
Other wood	6%	6%	6%	0%	1%	0.0	0.0	0.0	318.3	Cord	0.6	90%

Source ADF&G Division of Subsistence household surveys, 2012.

a. Summary rows that include incompatible units of measure have been left blank.

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

Table 13-9. – Top 10 resources harvested and used, Tok, 2011.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	76.9	1	1.	Moose	69.9%
2	2.	Caribou	31.6	2	2.	Blueberry	62.2%
3	3.	Sockeye salmon	26.8	3	3.	Wood	60.8%
4	4.	Coho salmon	13.0	4	4.	Lowbush cranberry	54.5%
5	5.	Chinook salmon	7.1	5	5.	Caribou	53.8%
6	6.	Pacific halibut	5.2	6	6.	Sockeye salmon	49.7%
7	7.	Rainbow trout	4.7	7	7.	Raspberry	37.8%
8	8.	Humpback whitefish	3.2	8	8.	Pacific halibut	35.7%
9	8.	Pink salmon	3.2	9	9.	Coho salmon	32.2%
10	9.	Lowbush cranberry	3.0	10	10.	Unknown Mushrooms	27.3%

Source ADF&G Division of Subsistence household surveys, 2012.

HARVEST QUANTITIES

Table 13-8 reports estimated wild resource harvests and uses by Tok residents in 2011 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[1]). 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 non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all subsistence resources during 2011 for Tok was 264,944 lb, or 202 lb per capita (Table 13-8). In terms of pounds harvested, large land mammals constituted the largest portion of the subsistence harvest, which totaled 146,177 lb, or 111 lb per capita (Figure 13-3; Table 13-8). The most common single resource harvested was moose (Table 13-9), at an estimated 100,835 lb, or 77 lb per capita harvested (Table 13-8). The study also found that while 70% of Tok households reported to have used moose during 2011, only 28% were successful in harvesting the species. Moose was received by 47% of the Tok households. Caribou were also harvested in significant quantities (41,470 lb, or 32 lb per capita harvested); caribou were used by more than one-half of the community households (55%).

Salmon was the next largest category contributing to the subsistence harvest at 67,320 lb, or 51 lb per capita (Figure 13-3; Table 13-8). In 2011, Tok residents harvested 35,175 lb of sockeye salmon (27 lb per capita), 17,022 lb of coho salmon (13 lb per capita), and 9,265 lb of Chinook salmon (7 lb

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

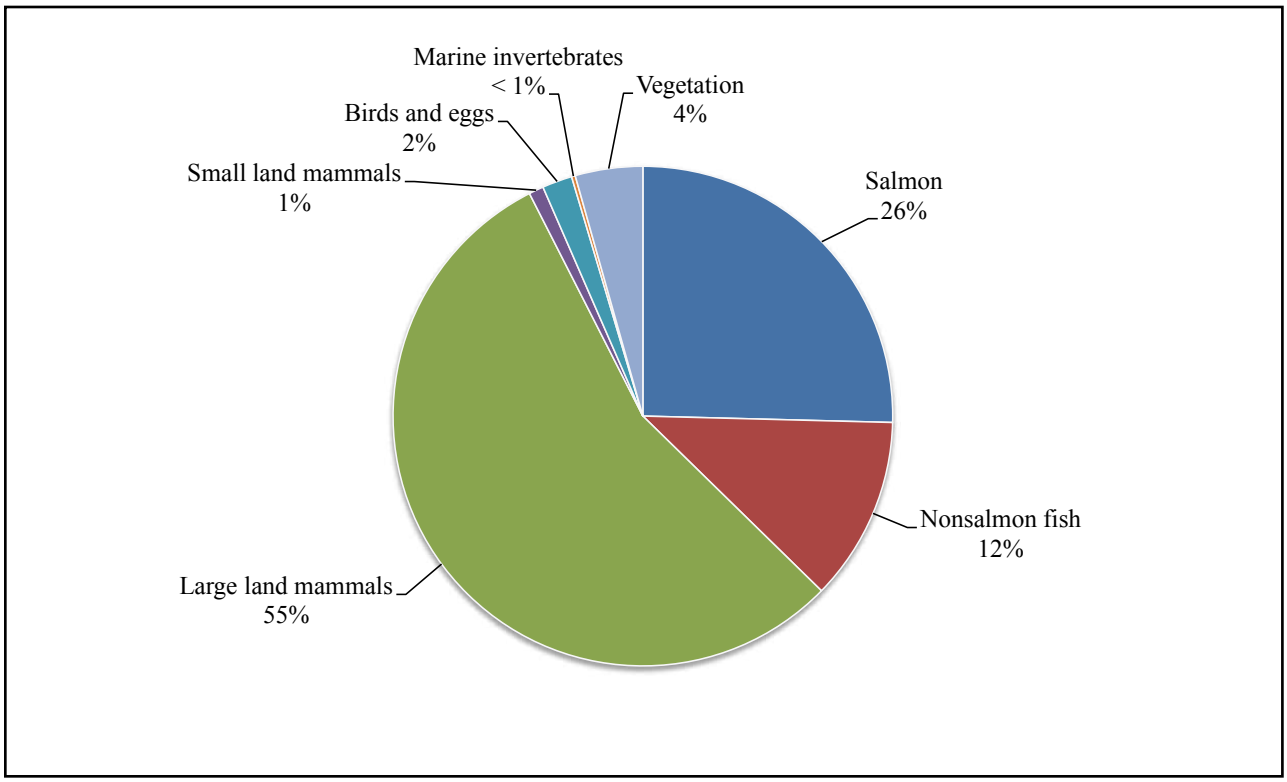


Figure 13-3.– Composition of harvest by category, Tok, 2011.

per capita). These numbers are reflected by household use of salmon with 50% using sockeye salmon, 32% using coho salmon, and 24% using Chinook salmon.

Nonsalmon fishing was another major activity in 2011 with an overall harvest of 31,572 lb, or 24 lb per capita (Table 13-8). The largest harvests in terms of weight included Pacific halibut (6,783 lb), rainbow trout (6,107 lb), and humpback whitefish (4,238 lb). Pacific halibut was also the nonsalmon fish most used (by 36% of households) in Tok whereas only 21% used rainbow trout and 8% used humpback whitefish. Given the interior location of Tok, the relatively high harvest and use of Pacific halibut may appear surprising. However, it appears not uncommon that community members organize charters, or travel on their own, to Valdez to engage in fishing for halibut and other marine species such as rockfish and Pacific cod in Prince William Sound. The relatively high level of household use of Pacific halibut in Tok (36% of households), which is a fish species that is not locally available, was likely the result of an organized fishing trip that a large number of Tok families participated in, after which the fishers redistributed harvested halibut amongst other Tok residents.

Wild plants and berries were important wild resources used in Tok in 2011, composing an estimated 4% of the harvest in 2011 (Figure 13-3). Nearly all (83%) of the households used vegetation and 80% attempted to harvest vegetation. The total harvest was 11,569 lb, or 9 lb per capita, with blueberries, lowbush cranberries, and wood being the most used species. The largest berry harvests in terms of

total pounds included blueberries (3,908 lb, or 3 lb per capita), lowbush cranberries (3,912 lb, or 3 lb per capita), and raspberries (1,759 lb, or 1 lb per capita).

While almost one-third (28%) of community households reported harvesting small land mammals and a significant portion of the population reportedly used them (29%), edible weight of small land mammals made up only 2,527 lb of the total harvest. This is the result of the low edible weight that each small mammal produces, and also because many small mammals are not consumed. In terms of individual species represented, red (tree) squirrels (1,141 individuals), snowshoe hares (817 individuals), and martens (695 individuals) were harvested the most, followed in lower quantities by lynx, muskrats, and red foxes.

Birds made up a small percentage of the harvest composition by category (2%) (Figure 13-3). The Tok harvest of birds was 5,139 lb, or 4 lb per capita. Migratory birds composed 3,045 lb, and upland birds 2,087 lb, of the Tok harvest. Of the migratory birds, mallards (941 lb) and American wigeons (364 lb), as well as sandhill cranes (326 lb) were harvested most in terms of total pounds harvested. Upland game bird harvests included spruce grouse (696 lb) and ptarmigan (664 lb).

Unlike most of the other communities in this study that may have used or received marine invertebrates, community members of Tok harvested marine invertebrates (640 lb). This included the harvest of shrimp (307 lb) and king crab (277 lb). These non-local harvests likely took place during fishing trips to Valdez and Prince William Sound.

SHARING AND RECEIVING WILD RESOURCES

In Tok in 2011, on average, the number of the kinds of resources used per household was 10, and on, average 8 kinds of resources were harvested per household (Table 13-7). Estimates of sharing indicated that 75% of households received wild resources from other households and 59% of households gave resources away (tables 13-7 and 13-8). Households received an average of 3 resources and gave away an average of 3 resources (Table 13-7). Vegetation was the most used resource (83%), and was among the most commonly shared resources with 30% of households giving away and 21% of households receiving vegetation (Table 13-8). The most received resource was, however, fish, with 56% of households receiving fish and 39% giving away fish (Table 13-8). Land mammals were the second highest shared resource, with 37% of households giving away and 54% of households receiving land mammals. In the land mammal category, moose was the most widely shared resource, with 47% of households receiving and 26% giving away moose (Table 13-8).

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

A previous study by the Division of Subsistence (Wolfe 1987) and follow-up research sponsored by the National Science Foundation in which the Division of Subsistence participated (Wolfe et al.

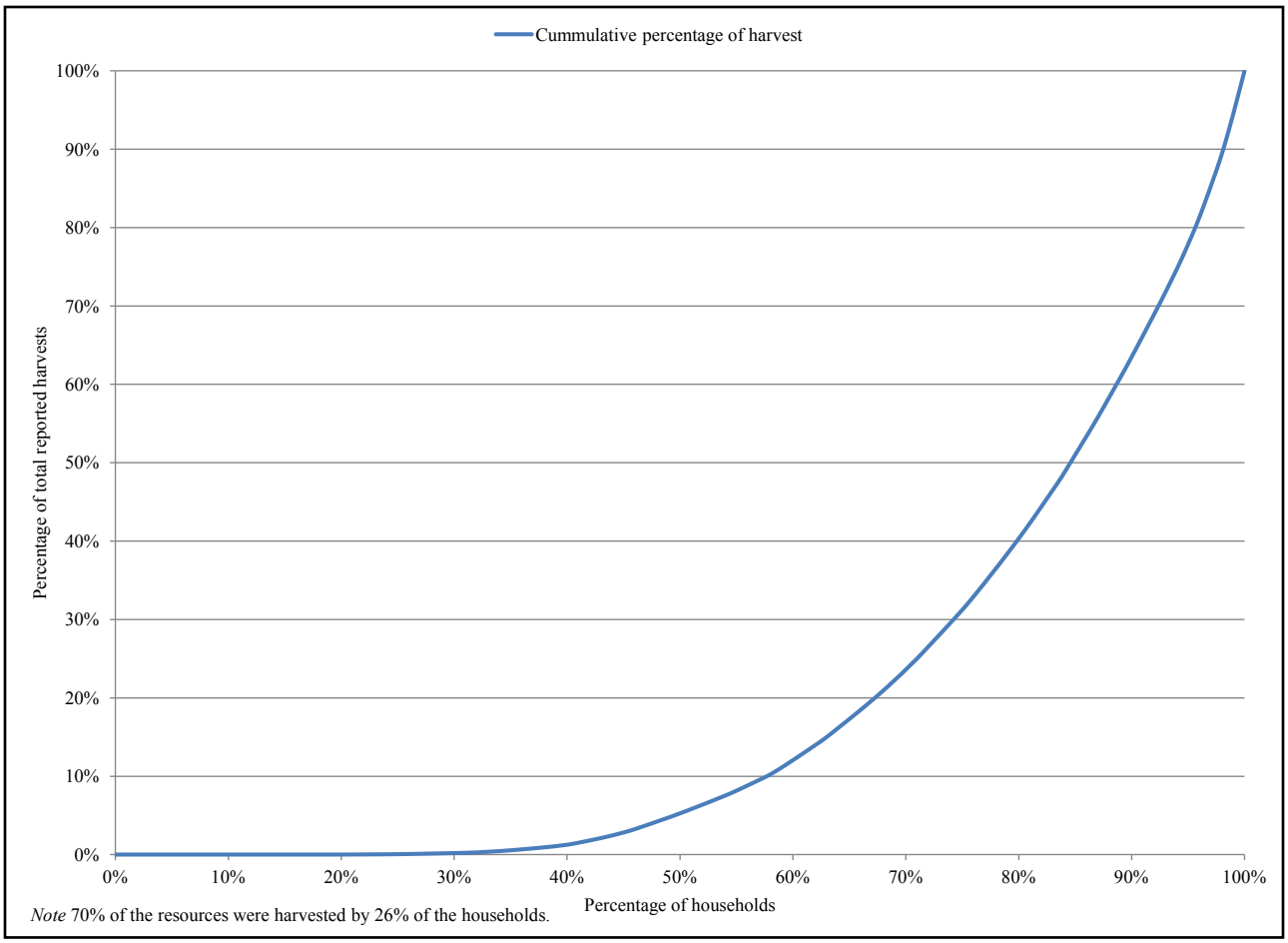


Figure 13-4.– Household specialization, Tok, 2011.

2010) have shown that in most Alaska Native communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 Alaska Native 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.

Although this study by Wolfe et al. (2010) evaluated data from a sample of predominately Alaska Native communities, many rural communities throughout Alaska exhibit this pattern. As shown in Figure 13-4, in the 2011 study year in Tok, about 70% of the harvests of wild resources as estimated in usable pounds were harvested by 26% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Tok and the other study communities.

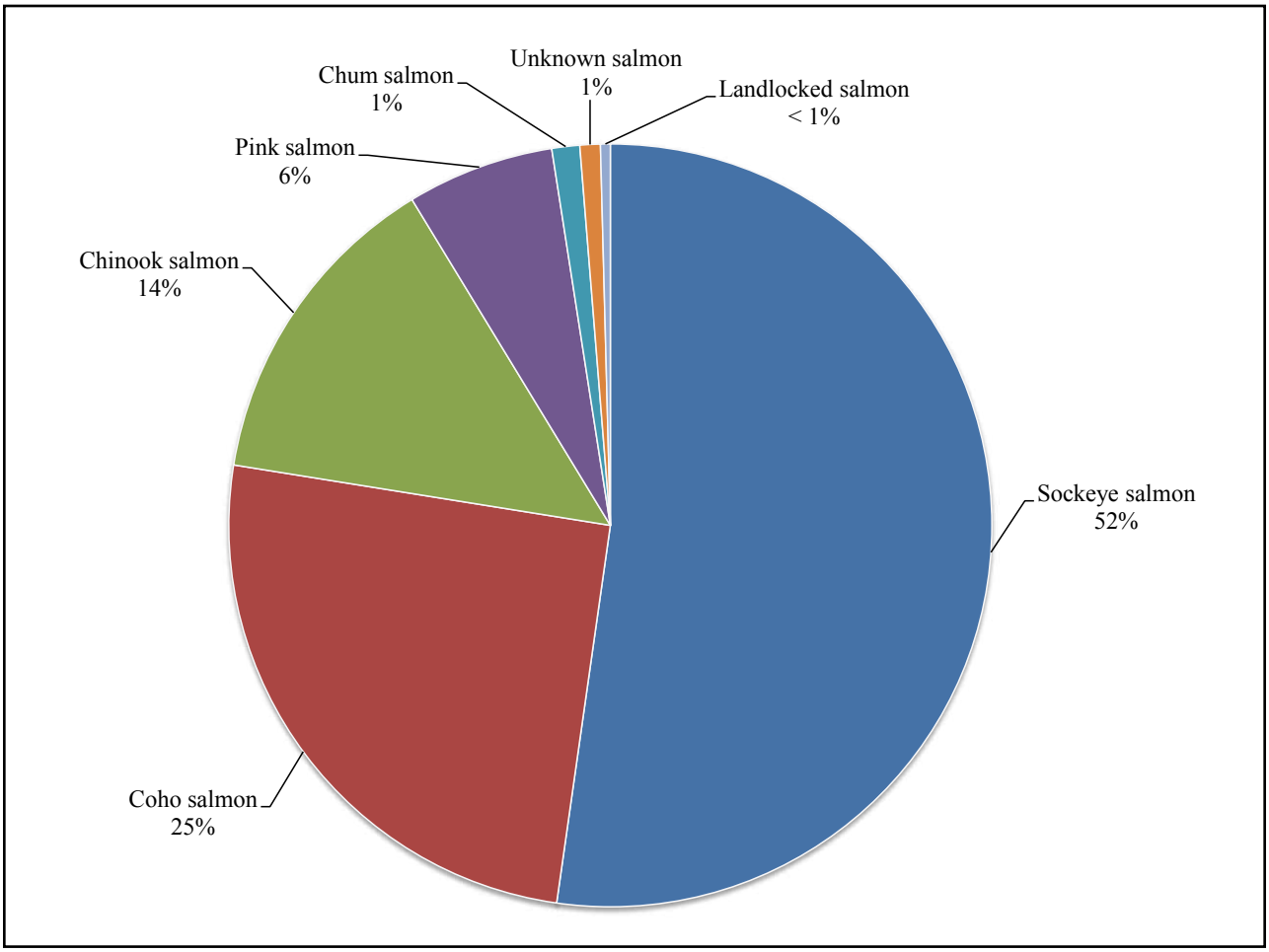


Figure 13-5.– Composition of salmon harvest, Tok, 2011.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For Tok residents, salmon composed 26% of the wild resource harvest in usable pounds in 2011 (Figure 13-3). More than one-half (52%, or 35,175 lb) of this harvest was sockeye salmon (Figure 13-5; Table 13-8). The salmon harvest also included 25% coho salmon (17,022 lb), 14% Chinook salmon (9,265 lb), 6% pink salmon (4,204 lb), 1% chum salmon (794 lb), and less than 1% landlocked salmon (279 lb) (Figure 13-5; Table 13-8).

During the study year, Tok residents harvested most (40% of the total harvest in pounds) of their salmon with fish wheels; another popular harvest method was rod and reel gear (36%) (Table 13-10). The respondents noted that rod and reel fishing was done mostly near the confluence of the Tanana and Tok rivers, or farther north by the Robertson River. All fish wheel harvesting took place south of Tok, along the Copper River.

During the 2011 study year, Tok respondents reported harvesting salmon in various locations

Table 13-10. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Tok, 2011.

		Removed from commercial catch		Subsistence methods													
				Fish wheel		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	40.7%	39.8%	4.5%	7.3%	17.1%	15.9%	0.4%	1.2%	62.7%	64.3%	37.3%	35.7%	100.0%	100.0%
	Total	0.0%	0.0%	40.7%	39.8%	4.5%	7.3%	17.1%	15.9%	0.4%	1.2%	62.7%	64.3%	37.3%	35.7%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	2.5%	2.4%	1.3%	0.7%	0.0%	0.0%	0.0%	0.0%	1.7%	1.6%	0.5%	0.5%	1.2%	1.2%
	Resource	0.0%	0.0%	81.4%	81.4%	4.7%	4.7%	0.0%	0.0%	0.0%	0.0%	86.0%	86.0%	14.0%	14.0%	100.0%	100.0%
	Total	0.0%	0.0%	1.0%	1.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	1.1%	1.0%	0.2%	0.2%	1.2%	1.2%
Coho salmon	Gear type	0.0%	0.0%	3.9%	5.2%	0.0%	0.0%	10.8%	15.0%	0.0%	0.0%	5.5%	6.9%	43.3%	58.4%	19.6%	25.3%
	Resource	0.0%	0.0%	8.2%	8.2%	0.0%	0.0%	9.5%	9.5%	0.0%	0.0%	17.6%	17.6%	82.4%	82.4%	100.0%	100.0%
	Total	0.0%	0.0%	1.6%	2.1%	0.0%	0.0%	1.9%	2.4%	0.0%	0.0%	3.5%	4.5%	16.2%	20.8%	19.6%	25.3%
Chinook salmon	Gear type	0.0%	0.0%	4.3%	12.5%	41.0%	71.5%	0.5%	1.5%	100.0%	100.0%	6.5%	18.2%	1.9%	5.7%	4.8%	13.8%
	Resource	0.0%	0.0%	36.3%	36.3%	38.1%	38.1%	1.8%	1.8%	8.9%	8.9%	85.1%	85.1%	14.9%	14.9%	100.0%	100.0%
	Total	0.0%	0.0%	1.7%	5.0%	1.8%	5.2%	0.1%	0.2%	0.4%	1.2%	4.1%	11.7%	0.7%	2.0%	4.8%	13.8%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	12.8%	4.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.5%	31.4%	16.7%	12.3%	6.2%
	Resource	0.0%	0.0%	0.0%	0.0%	4.6%	4.6%	0.0%	0.0%	0.0%	0.0%	4.6%	4.6%	95.4%	95.4%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.6%	0.3%	11.7%	6.0%	12.3%	6.2%
Sockeye salmon	Gear type	0.0%	0.0%	87.9%	78.4%	44.9%	23.8%	87.0%	81.7%	0.0%	0.0%	84.0%	71.5%	19.2%	17.5%	59.8%	52.2%
	Resource	0.0%	0.0%	59.8%	59.8%	3.3%	3.3%	24.9%	24.9%	0.0%	0.0%	88.0%	88.0%	12.0%	12.0%	100.0%	100.0%
	Total	0.0%	0.0%	35.8%	31.2%	2.0%	1.7%	14.9%	13.0%	0.0%	0.0%	52.7%	46.0%	7.2%	6.3%	59.8%	52.2%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%	1.2%	1.4%	0.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.4%	1.4%	0.4%
Unknown salmon	Gear type	0.0%	0.0%	1.4%	1.4%	0.0%	0.0%	1.7%	1.8%	0.0%	0.0%	1.4%	1.3%	0.0%	0.0%	0.9%	0.9%
	Resource	0.0%	0.0%	66.7%	66.7%	0.0%	0.0%	33.3%	33.3%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.6%	0.6%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.9%	0.9%	0.0%	0.0%	0.9%	0.9%

Source ADF&G Division of Subsistence household surveys, 2012.

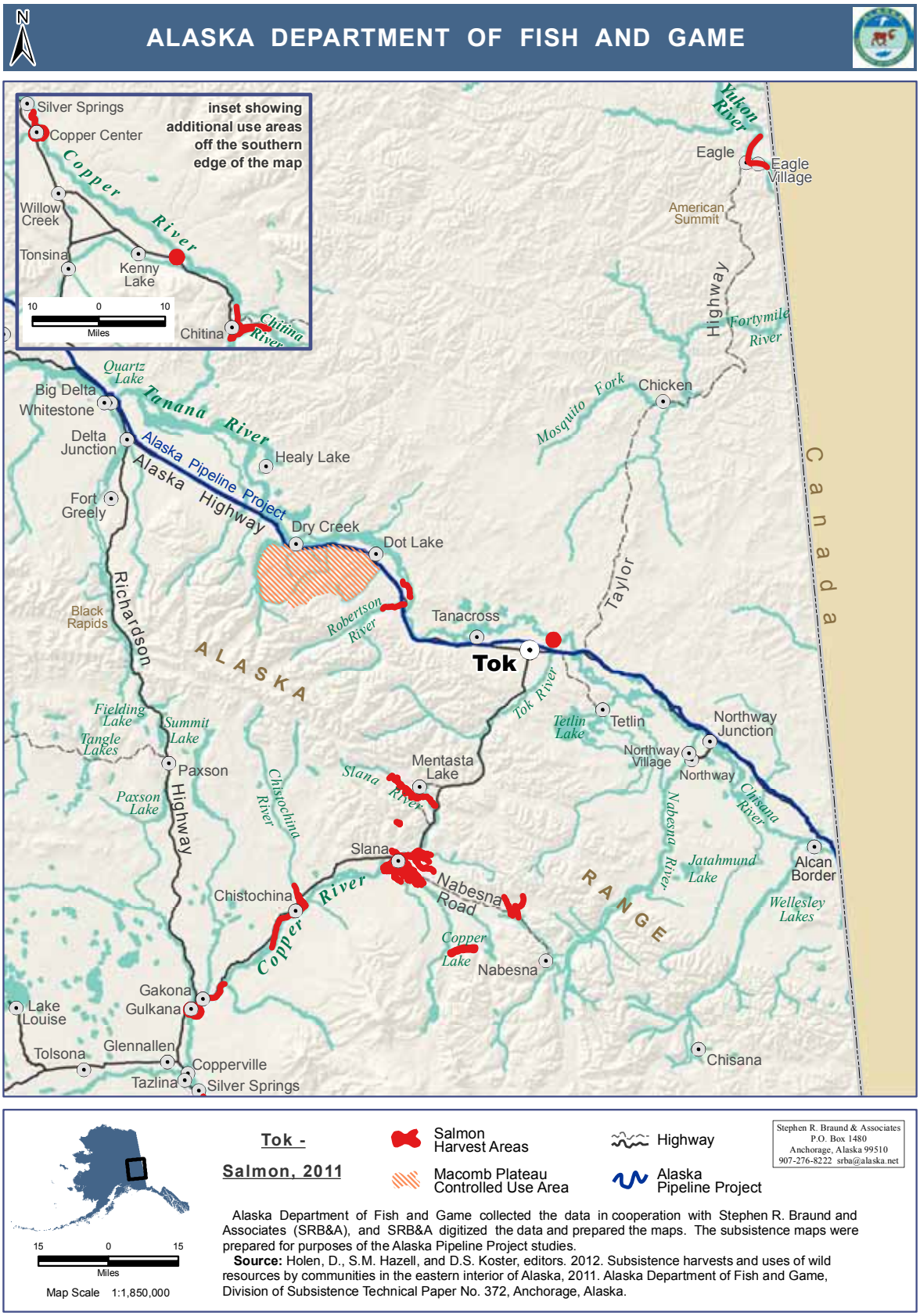


Figure 13-6.– Salmon harvest areas, Tok, 2011.

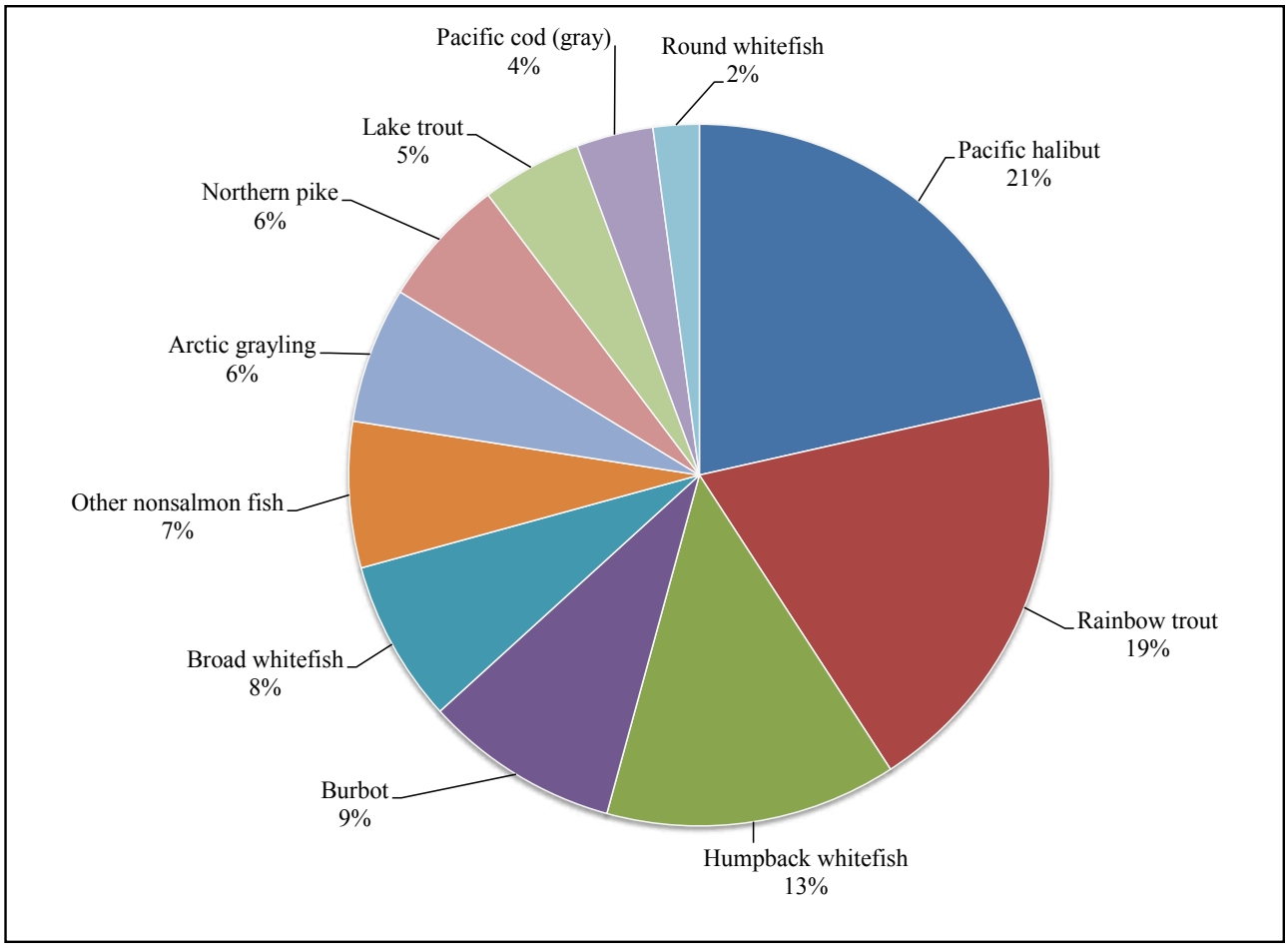


Figure 13-7.– Composition of nonsalmon fish harvest, Tok, 2011.

along the Copper River. The majority of the harvest was caught near Slana, at the mouth of the Slana River. Other popular harvest locations were near the communities of Gulkana and Gakona (Figure 13-6). Usually by the time salmon reach the Tok area, they are spawned out and are not fit for human consumption. Around Tok, salmon are scarce but residents who did harvest salmon near Tok said they would use the meat to feed their dogs.

NONSALMON FISH

In 2011, Tok residents harvested an estimated total of 31,572 lb, or 24 lb per capita, of nonsalmon fish (Table 13-8). In terms of total pounds and percentages, most of the harvest was Pacific halibut, followed by rainbow trout, humpback whitefish, and burbot (Figure 13-7). Table 13-11 lists the number and pounds of each nonsalmon fish species harvested by Tok residents in 2011 in percentages by gear type. Tok residents harvested most of the nonsalmon fish with rod and reel gear. For example, all Pacific halibut, Pacific cod, lingcod, and rockfish were caught with rod and reel gear (Table 13-11).

Table 13-11. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Tok, 2011.

		Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	16.1%	18.2%	17.7%	20.9%	33.8%	39.1%	66.2%	60.9%	100.0%	100.0%
	Total	0.0%	0.0%	16.1%	18.2%	17.7%	20.9%	33.8%	39.1%	66.2%	60.9%	100.0%	100.0%
Pacific cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	5.8%	1.2%	3.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	3.5%	1.2%	3.5%
Lingcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.0%	0.2%	0.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.6%	0.2%	0.6%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	44.8%	35.3%	29.7%	21.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.7%	21.5%	29.7%	21.5%
Unknown rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	1.2%	0.7%	0.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.8%	0.7%	0.8%
Sablefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.9%	0.3%	0.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.6%	0.3%	0.6%
Burbot	Gear type	0.0%	0.0%	0.1%	0.2%	11.7%	17.2%	6.2%	9.3%	4.7%	8.8%	5.2%	9.0%
	Resource	0.0%	0.0%	0.3%	0.3%	40.0%	40.0%	40.3%	40.3%	59.7%	59.7%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	2.1%	3.6%	2.1%	3.6%	3.1%	5.4%	5.2%	9.0%
Arctic char	Gear type	0.0%	0.0%	0.1%	0.1%	4.8%	2.6%	2.6%	1.4%	0.1%	0.1%	0.9%	0.6%
	Resource	0.0%	0.0%	1.8%	1.8%	90.9%	90.9%	92.7%	92.7%	7.3%	7.3%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.8%	0.6%	0.9%	0.6%	0.1%	0.0%	0.9%	0.6%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	1.2%	1.1%	0.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.7%	1.1%	0.7%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	11.5%	9.9%	6.0%	5.3%	3.8%	4.2%	4.6%	4.6%
	Resource	0.0%	0.0%	0.0%	0.0%	44.6%	44.6%	44.6%	44.6%	55.4%	55.4%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	2.0%	2.1%	2.0%	2.1%	2.5%	2.6%	4.6%	4.6%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.7%	10.3%	12.4%	6.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.4%	6.3%	12.4%	6.3%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	1.1%	2.9%	0.6%	1.6%	2.5%	8.8%	1.8%	6.0%
	Resource	0.0%	0.0%	0.0%	0.0%	10.2%	10.2%	10.2%	10.2%	89.8%	89.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.2%	0.6%	0.2%	0.6%	1.6%	5.4%	1.8%	6.0%
Sheefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Rainbow trout	Gear type	0.0%	0.0%	0.4%	0.4%	35.3%	30.3%	18.6%	16.4%	19.3%	21.2%	19.1%	19.3%
	Resource	0.0%	0.0%	0.4%	0.4%	32.7%	32.7%	33.1%	33.1%	66.9%	66.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.1%	0.1%	6.2%	6.3%	6.3%	6.4%	12.8%	12.9%	19.1%	19.3%

Source ADF&G Division of Subsistence household surveys, 2012.

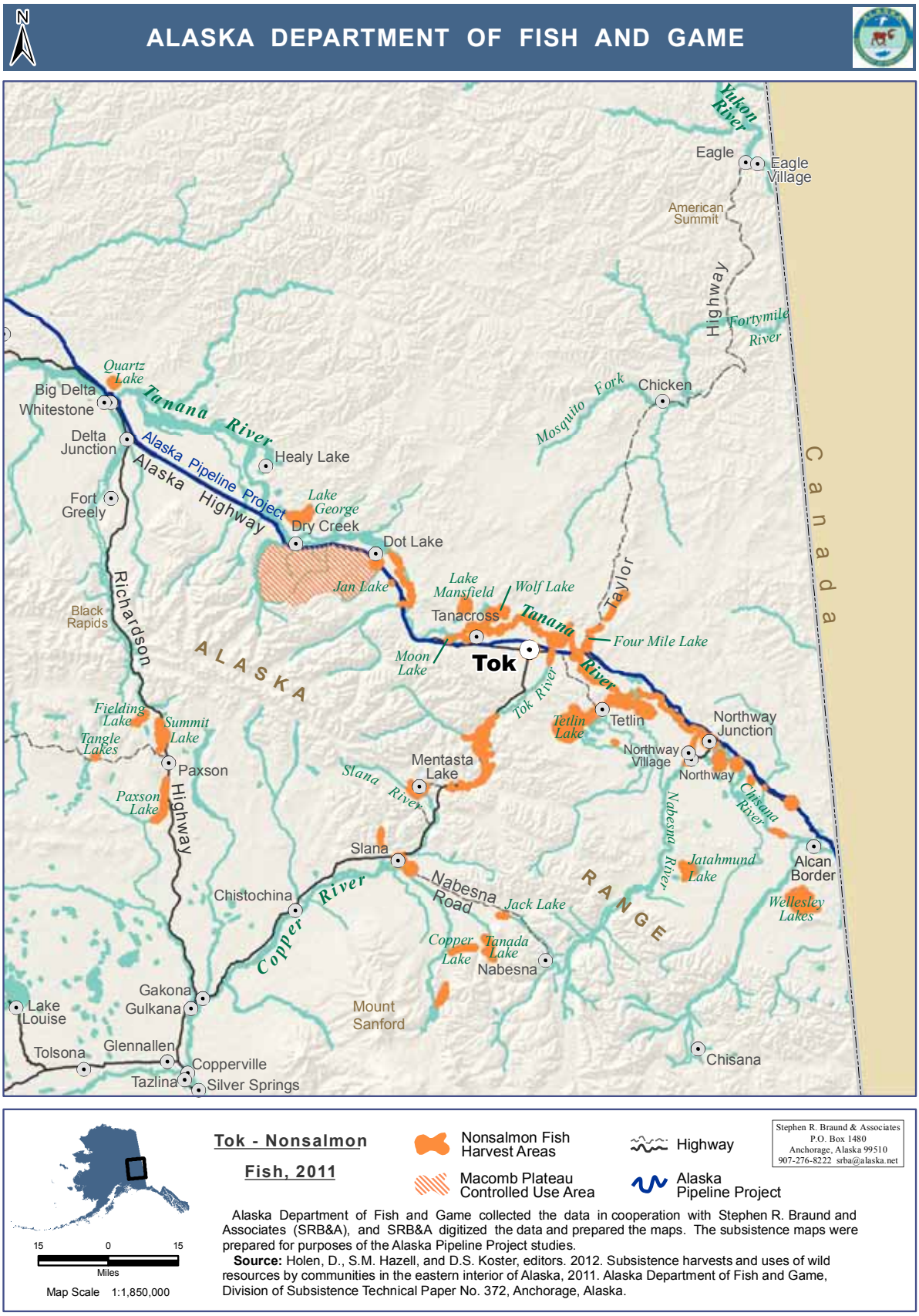


Figure 13-8.– Nonsalmon harvest areas, Tok, 2011.

Most marine fish were likely harvested in Prince William Sound, accessed through Valdez (interview respondent, 2012, Tok, personal communication).

In the study year 2011, Tok residents harvested nonsalmon fish in many different areas. The majority of harvesting of resident (freshwater species) took place near Tok on the Tanana River, down into the Chisana River, and near surrounding lakes—including Lake Mansfield, Wolf Lake, Four Mile Lake, and Tetlin Lake (Figure 13-8). Other important harvesting locations were Mentasta Lake, Slana River, and on the Copper River near the community of Slana. These are popular harvesting locations due to the easy accessibility provided by the road access from the Taylor Highway (Figure 13-8).

LARGE LAND MAMMALS

In 2011, large land mammals made up 55% of the total Tok harvest by weight (Figure 13-3). A large percentage (55%) of households hunted moose, but only 28% of all households were successful (Table 13-8). Nevertheless, 70% of households used moose during the study year (Table 13-8). In terms of pounds harvested in 2011, moose ranks first on the list of top 10 resources harvested (Table 13-9). Some Tok respondents commented that warm fall weather had made moose inactive and kept them far from the community in 2011. According to the study, an estimated 68% (128) of the moose harvests took place in September 2011 (Table 13-12).

In 2011, about 44% of Tok households reported hunting for caribou, 35% were successful, and 55% of households used caribou (Table 13-8). Other large land mammals harvested were 16 brown bears, 23 black bears, 19 Dall sheep, and 12 deer (tables 13-8 and 13-12).

Tok residents covered large areas to search for and hunt large land mammals. Much of the hunting was done using motorized vehicles, such as highway vehicles, ATVs, and snowmachines, depending on the time of year. In 2011, the search areas for moose largely followed the Taylor Highway, from the village of Eagle all the way down to Slana, and over toward Nabesna (Figure 13-9). Search areas also included along the Alaska Highway from Dry Creek, surrounding Tok, and east to Northway Junction (Figure 13-9). During the study year, black and brown bear search areas were largely the same as for moose, except less effort was focused west of Tok. Caribou and Dall sheep search areas mainly followed the Taylor Highway north of Tok, all the way to the village of Eagle, and west of Tok toward the Alaska–Canada border. Although deer were harvested by residents of Tok, hunting locations were not mapped as maps were not available at the time of the survey for the area of harvest.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 13-8, the total harvest of small land mammals by Tok residents in 2011 for wild foods was 2,527 lb, or 2 lb per capita. Most of the harvest was snowshoe hares (1,634 lb, or 1 lb per capita) and beavers (815 lb, or 0.6 lb per capita). The harvest of small land mammals for wild foods

Table 13-12. – Estimated harvests of large game by month and sex, Tok, 2011.

				Caribou					Moose				
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Muskox	Dall sheep
January	0.0	0.0	0.0	15.5	11.6	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	27.2	19.4	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0
April	0.0	0.0	0.0	7.8	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0
August	0.0	7.8	0.0	69.9	0.0	0.0	0.0	0.0	15.5	3.9	0.0	0.0	0.0
September	0.0	7.8	11.6	34.9	0.0	4.3	0.0	0.0	120.3	0.0	8.2	0.0	19.4
October	0.0	0.0	0.0	11.6	0.0	0.0	11.6	0.0	0.0	7.8	0.0	0.0	0.0
November	0.0	0.0	3.9	23.3	50.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	7.8	19.4	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**23.3**	**15.5**	**197.9**	**112.6**	**8.5**	**11.6**	**0.0**	**166.9**	**11.6**	**8.2**	**0.0**	**19.4**

Source ADF&G Division of Subsistence household surveys, 2012.

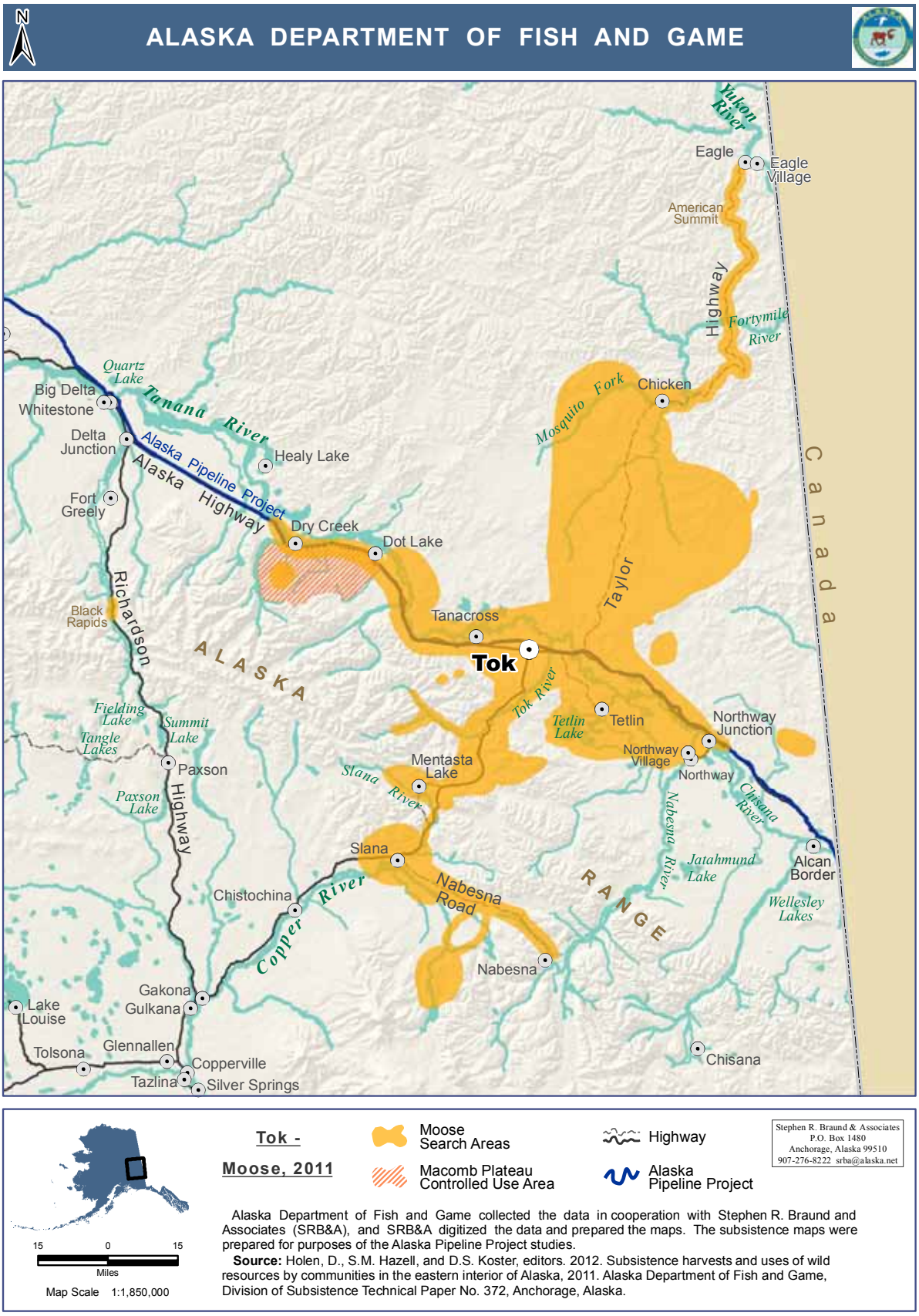


Figure 13-9.– Moose harvest areas, Tok, 2011.

composed approximately 1% of the total harvest in 2011 (Figure 13-3). The harvest and search areas of small land mammals in 2011 included areas north of Tok along the Taylor Highway toward the village of Eagle, and south of Tok toward Slana, as well as along the Nabesna Road corridor. Some small game, such as coyotes, wolves, wolverines, and lynx, among others, were harvested for their furs but not eaten.

BIRDS

In 2011, Tok residents harvested waterfowl toward the Alaska–Canada border, following the Alaska Highway. Waterfowl were also harvested just north of Tok, off the Taylor Highway, and south of Tok near Mentasta Lake. Gathering of bird eggs took place near Tetlin and Northway Village during the study year. The total harvest of birds and eggs was an estimated 5,139 lb, or 4 lb per capita (Table 13-8). The total harvest of upland game birds was 2,087 lb, or 2 lb per capita. All of the migratory bird harvest totaled an estimated 3,045 lb, or 2 lb per capita (Table 13-8). The migratory bird harvest included ducks, geese, swans, and cranes, but ducks composed the bulk of the migratory bird harvest.

MARINE INVERTEBRATES

The harvest of marine invertebrates by Tok residents in 2011 was small, at a total of 640 lb, or 0.6 lb per capita (Table 13-8). Most of the marine invertebrates used during the study year were crabs or shrimp. Only 4% of households reported attempting to harvest marine invertebrates, while 7% reported receiving them (Table 13-8). These harvests likely occurred in Prince William Sound.

VEGETATION

The most used category of subsistence resources in Tok during the study year 2011 was vegetation, with 80% of the households harvesting, and 83% using a resource in this category (Table 13-8). Wild plants and wood were mainly harvested close to the community of Tok. Harvest and search areas for berries, however, ranged far and wide—all the way north to Eagle, south to Slana, along the Nabesna Road corridor, and moving farther south to Glennallen (Figure 13-10). In 2011, Tok residents harvested 11,569 lb, or 9 lb per capita of vegetation, consisting mostly of berries (Table 13-8). The harvest of lowbush cranberries ranked ninth in terms of pounds per capita harvested in 2011 (Table 13-9). Residents of Tok harvested 10,217 lb of berries, or 8 lb per capita, and 1,353 lb of other plants, or 1 lb per capita (Table 13-8). Most of the other plants harvested were wild mushrooms.

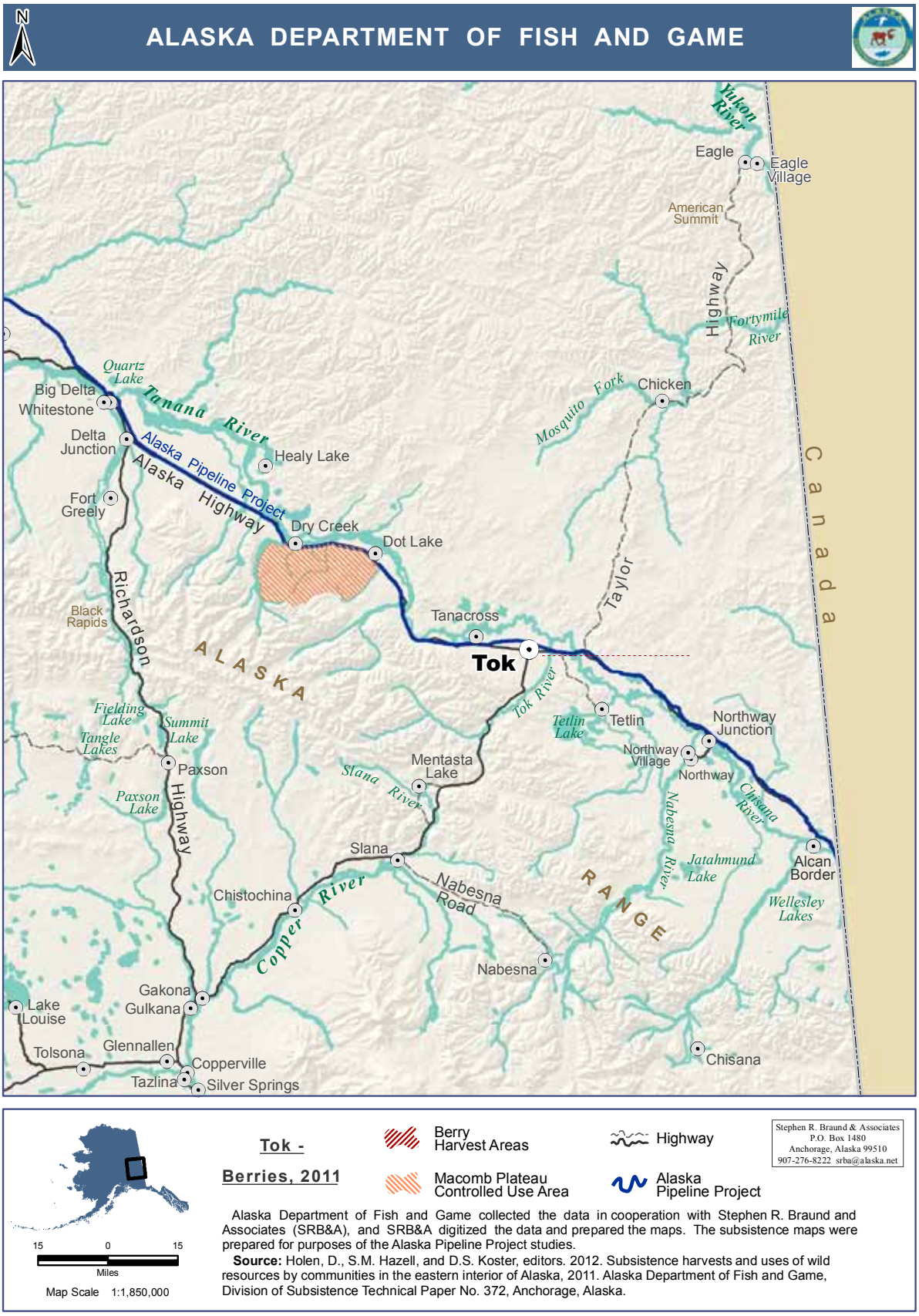


Figure 13-10.– Berries harvest areas, Tok, 2011.

Table 13-13. – Estimated earned and other income, Tok, 2011.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Mean per capita	Percentage of total
Earned income						
Services	197.9	167.3	$3,719,320.38	$6,701.48	$2,834.85	17.1%
State government	116.4	106.1	$3,542,916.93	$6,383.63	$2,700.39	16.3%
Construction	81.5	81.6	$3,202,134.67	$5,769.61	$2,440.65	14.7%
Local government	69.9	73.5	$1,711,672.09	$3,084.09	$1,304.63	7.9%
Federal government	23.3	24.5	$880,261.95	$1,586.06	$670.93	4.0%
Retail trade	93.1	81.6	$767,107.45	$1,382.18	$584.69	3.5%
Transportation, communication, and utilities	42.7	44.9	$753,808.50	$1,358.21	$574.55	3.5%
Mining	7.8	8.2	$512,765.58	$923.90	$390.83	2.4%
Agriculture, forestry, and fishing	46.6	44.9	$491,607.72	$885.78	$374.70	2.3%
Other employment	31.0	32.6	$480,979.86	$866.63	$366.60	2.2%
Manufacturing	15.5	16.3	$370,339.08	$667.28	$282.27	1.7%
Finance, insurance, and real estate	15.5	16.3	$177,959.82	$320.65	$135.64	0.8%
Earned income subtotal	**643.8**	**399.9**	**$16,610,874.03**	**$29,929.50**	**$12,660.73**	**76.2%**
Other income						
Social Security		151.4	$1,458,248.97	$2,627.48	$1,111.47	6.7%
Alaska Permanent Fund dividend		527.8	$1,399,006.48	$2,520.73	$1,066.32	6.4%
Pension/retirement		69.9	$1,270,963.80	$2,290.02	$968.72	5.8%
Unemployment		81.5	$333,652.36	$601.18	$254.31	1.5%
Disability		15.5	$235,537.34	$424.39	$179.53	1.1%
Food stamps		31.0	$130,353.12	$234.87	$99.35	0.6%
Adult public assistance		15.5	$65,606.43	$118.21	$50.00	0.3%
Native corporation dividend		81.5	$56,529.60	$101.86	$43.09	0.3%
Energy assistance		62.1	$55,593.80	$100.17	$42.37	0.3%
Workers' compensation/insurance		3.9	$39,587.41	$71.33	$30.17	0.2%
Weatherization		3.9	$29,108.39	$52.45	$22.19	0.1%
Supplemental Security income		11.6	$26,921.41	$48.51	$20.52	0.1%
Longevity bonus		15.5	$25,615.38	$46.15	$19.52	0.1%
Other		3.9	$19,405.59	$34.97	$14.79	0.1%
Child support		7.8	$12,507.04	$22.54	$9.53	0.1%
Medicare/Medicaid		3.9	$12,248.81	$22.07	$9.34	0.1%
Rental income		3.9	$5,821.68	$10.49	$4.44	0.0%
Foster care		0.0	$0.00	$0.00	$0.00	0.0%
Other income subtotal		**535.6**	**$5,176,707.63**	**$9,327.40**	**$3,945.66**	**23.8%**
Community income total			**$21,787,581.66**	**$39,256.90**	**$16,606.39**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2012.

a. For confidentiality, income amounts are not listed for sources reported by fewer than 4 households.

CASH EMPLOYMENT AND MONETARY INCOME

Table 13-13 is a summary of the estimated earned income as well as other sources of income for residents of Tok in 2011. This table shows that the estimated average earned household income was $29,930. In 2011, 76% of all community income was earned income and total other income was an estimated 24% of the total community income. The largest percentage of earned income came from jobs in the services sector (22%) (Table 13-14). Other important employment sectors during the study year were state government (22% of the earned income), and construction (19% of the earned income) (Table 13-4). The largest source of other income was Social Security in 2011 (Table 13-13).

During the study year, employed households had an average of 2 employed adults (Table 13-15). Of the employed adults, 10 months was the average for months employed, and of the employed adults in the community of Tok, 63% were employed year-round.

Table 13-14. – Employment by industry, Tok, 2011.

Industry	Jobs	Households	Individuals	Percentage of earned income
Estimated total number	**793.0**	**399.9**	**643.8**	
Federal government (total)	**3.0%**	**6.1%**	**3.7%**	**5.3%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	1.5%
Natural scientists and mathematicians	0.5%	1.0%	0.6%	1.2%
Teachers, librarians, and counselors	0.5%	1.0%	0.6%	0.6%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.5%
Service occupations	0.5%	1.0%	0.6%	0.2%
Construction and extractive occupations	0.5%	1.0%	0.6%	1.4%
State government (total)	**15.3%**	**26.5%**	**18.9%**	**21.6%**
Executive, administrative, and managerial	1.5%	3.1%	1.8%	2.5%
Natural scientists and mathematicians	1.5%	3.1%	1.8%	3.3%
Teachers, librarians, and counselors	1.0%	2.0%	1.2%	0.7%
Technologists and technicians, except health	0.5%	1.0%	0.6%	0.9%
Administrative support occupations, including clerical	1.5%	3.1%	1.8%	2.0%
Service occupations	3.0%	4.1%	3.7%	1.8%
Agricultural, forestry, and fishing occupations	2.0%	4.1%	2.4%	3.0%
Construction and extractive occupations	1.0%	2.0%	1.2%	1.5%
Transportation and material moving occupations	3.5%	6.1%	4.3%	5.9%
Local government, including tribal (total)	**9.4%**	**18.4%**	**11.0%**	**10.2%**
Executive, administrative, and managerial	1.0%	2.0%	1.2%	2.0%
Teachers, librarians, and counselors	4.5%	9.2%	5.5%	5.6%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.1%
Service occupations	1.5%	3.1%	1.8%	0.5%
Mechanics and repairers	0.5%	1.0%	0.6%	0.4%
Handlers, equipment cleaners, helpers, and laborers	1.0%	2.0%	1.2%	1.1%
Occupation not indicated	0.5%	1.0%	0.6%	0.5%
Agriculture, forestry, and fishing (total)	**6.4%**	**11.2%**	**7.3%**	**2.9%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	1.0%
Agricultural, forestry, and fishing Occupations	5.4%	10.2%	6.7%	1.7%
Transportation and material moving occupations	0.5%	1.0%	0.6%	0.2%
Mining (total)	**1.0%**	**2.0%**	**1.2%**	**3.1%**
Technologists and technicians, except health	0.5%	1.0%	0.6%	1.4%
Construction and extractive occupations	0.5%	1.0%	0.6%	1.6%
Construction (total)	**10.9%**	**20.4%**	**12.8%**	**19.2%**
Engineers, surveyors and architects	0.5%	1.0%	0.6%	0.4%
Agricultural, forestry, and fishing occupations	1.0%	1.0%	0.6%	1.0%
Mechanics and repairers	0.5%	1.0%	0.6%	0.9%
Construction and extractive occupations	8.4%	16.3%	10.4%	16.3%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.7%
Manufacturing (total)	**2.5%**	**4.1%**	**2.4%**	**2.2%**
Precision production occupations	1.0%	2.0%	1.2%	0.2%
Production working occupations	1.0%	2.0%	1.2%	1.4%
Transportation and material moving occupations	0.5%	1.0%	0.6%	0.7%
Transportation, communication, and utilities (total)	**5.9%**	**11.2%**	**6.7%**	**4.5%**
Executive, administrative, and managerial	1.0%	1.0%	0.6%	1.2%
Writers, artists, entertainers, and athletes	0.5%	1.0%	0.6%	0.1%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.5%
Service occupations	0.5%	1.0%	0.6%	0.9%
Transportation and material moving occupations	3.0%	6.1%	3.7%	1.2%
Occupation not indicated	0.5%	1.0%	0.6%	0.5%

-continued-

Table 13-14.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of earned income
Retail trade (total)	**12.9%**	**21.4%**	**15.2%**	**4.7%**
Writers, artists, entertainers, and athletes	1.0%	2.0%	1.2%	0.4%
Marketing and sales occupations	6.9%	11.2%	7.9%	2.8%
Administrative support occupations, including clerical	1.0%	2.0%	1.2%	0.1%
Service occupations	2.5%	5.1%	3.0%	1.2%
Agricultural, forestry, and fishing occupations	1.0%	2.0%	1.2%	0.1%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.2%
Finance, insurance, and real estate (total)	**2.0%**	**4.1%**	**2.4%**	**1.1%**
Marketing and sales occupations	1.0%	2.0%	1.2%	0.4%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.5%
Service occupations	0.5%	1.0%	0.6%	0.2%
Services (total)	**26.7%**	**41.8%**	**31.1%**	**22.3%**
Executive, administrative, and managerial	3.0%	6.1%	3.7%	5.4%
Social scientists, social workers, religious workers, and lawyers	1.5%	3.1%	1.8%	2.6%
Teachers, librarians, and counselors	0.5%	1.0%	0.6%	0.2%
Registered Nurses, pharmacists, dietitians, therapists, and physician assistants	0.5%	1.0%	0.6%	0.7%
Health technologists, and technicians	4.0%	6.1%	4.3%	2.5%
Marketing and sales occupations	1.5%	3.1%	1.8%	1.1%
Administrative support occupations, including clerical	4.0%	8.2%	4.9%	3.2%
Service occupations	8.4%	16.3%	10.4%	4.6%
Mechanics and repairers	2.5%	5.1%	3.0%	1.3%
Construction and extractive occupations	0.5%	1.0%	0.6%	0.0%
Occupation not indicated	0.5%	1.0%	0.6%	0.5%
Industry not indicated (total)	**4.0%**	**8.2%**	**4.9%**	**2.9%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	0.3%
Occupation not indicated	3.5%	7.1%	4.3%	2.6%

Source ADF&G Division of Subsistence household surveys, 2012.

Table 13-15. – Employment characteristics, Tok, 2011.

Characteristic	Community Tok
All adults	
Number	1,016.9
Mean weeks employed	27.1
Employed adults	
Number	643.8
Percentage	63.3%
Jobs	
Number	793.0
Mean	1.2
Minimum	1.0
Maximum	4.0
Months employed	
Mean	9.9
Minimum	0.0
Maximum	12.0
Percentage employed year-round	62.7%
Mean weeks employed	42.8
Households	
Number	555.0
Employed	
Number	399.9
Percentage	72.1%
Jobs per employed household	
Mean	1.4
Minimum	1.0
Maximum	6.0
Employed adults	
Mean	
Employed households	1.6
Total households	1.2
Minimum	1.0
Maximum	4.0
Mean person-weeks of employment	44.4

Source ADF&G Division of Subsistence household surveys, 2012.

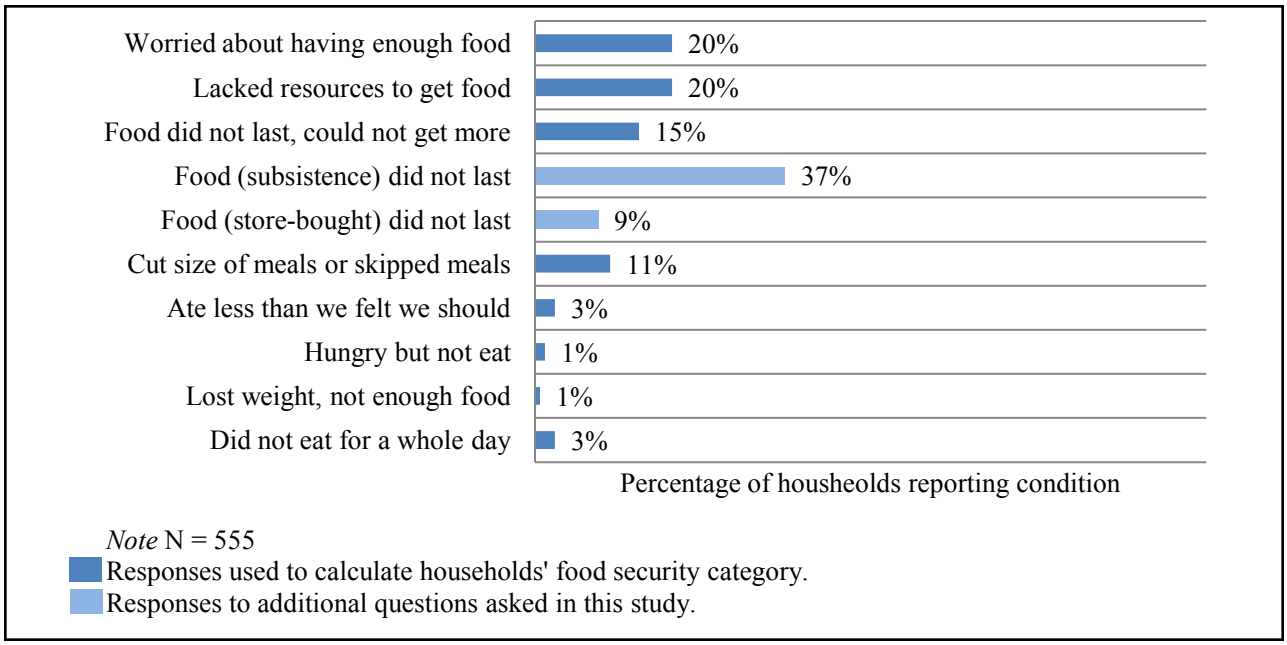


Figure 13-11.– Food insecure conditions, Tok, 2011.

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" (Nord et al. 2009:2). 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. Core questions and responses from Tok residents are summarized in Figure 13-11. In Tok, a lack of subsistence foods was the most frequently reported source of food insecurity, followed by worrying about having enough food and lacking resources to get food; 37% of Tok households said their subsistence foods did not last, 20% said that they worried about having enough food, and 20% stated they lacked resources to get food (Figure 13-11).

Based on responses to questions, households were categorized as having high, marginal, low, or very low food security following a USDA protocol (Bickel et al. 2000). Households with high food security did not report any food access problems or limitations. Households with marginal food security reported 1 or 2 instances of food access problems or limitations, typically anxiety over food sufficiency or a shortage of food 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 (USDA 2011).

Food security results for surveys for Tok, the state of Alaska, and the United States are summarized in Figure 13-12. In Tok in 2011, 88% of the surveyed households were categorized as having high or

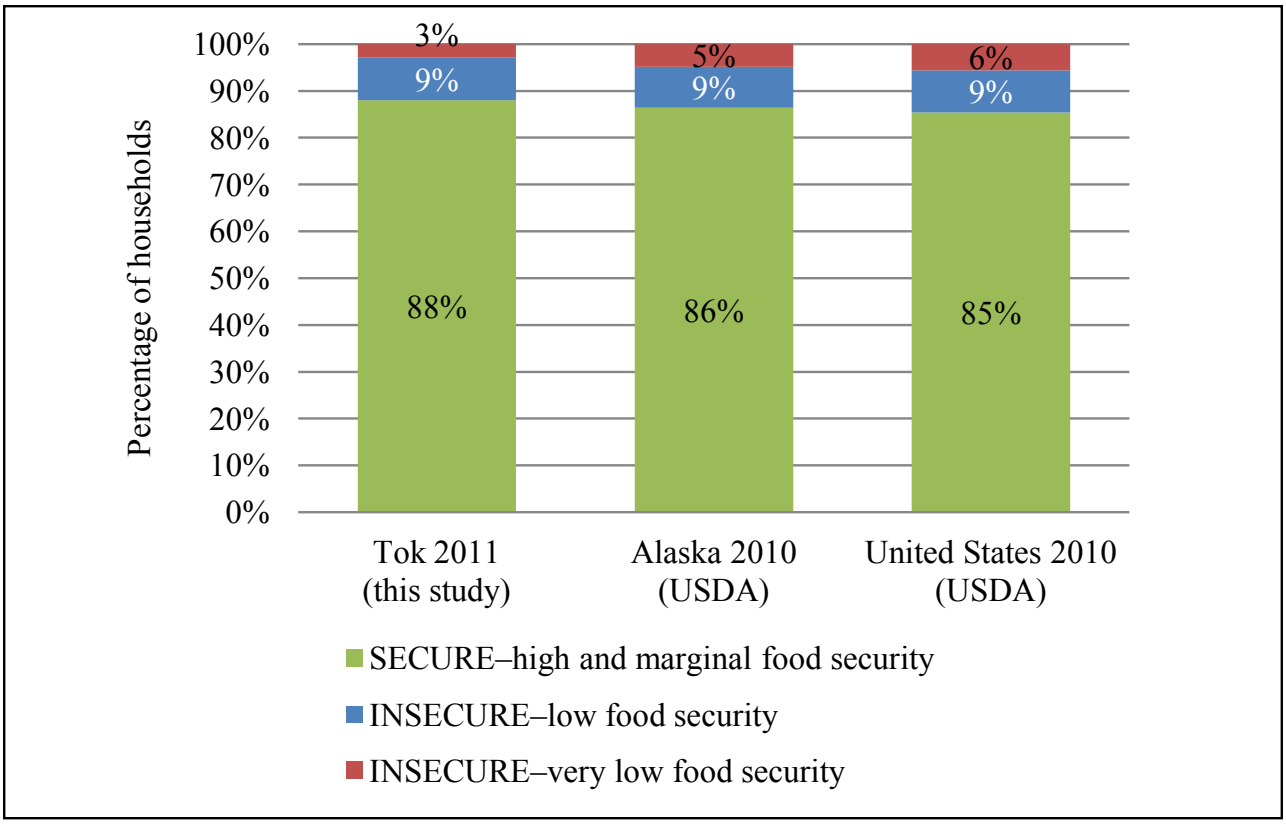


Figure 13-12.– Food insecure categories, Tok, 2011.

marginal food security; USDA considers households in both categories to be "food secure." Of the remaining households, 9% had low food security and 3% had very low food security. Figure 13-13 portrays the mean number of food insecure conditions per household by food security category by month. For households with very low food security, food insecurity conditions peaked in November and December. Figure 13-14 shows that depending upon the month, between 6% and 20% of households reported subsistence foods did not last. Every month of the year Tok residents reported "any food" not lasting; reports of food not lasting increased during the winter months and peaked in February with a modest increase during June and July as well (Figure 13-14).

Late winter and early spring in the interior is often a time of food insecurity. This is a period of time when few subsistence foods are available locally. As shown in Figure 13-13, the highest number of food insecurity conditions occurred for very low food secure households in Tok between November and February. According to respondents in the same category, March through September was a period of relative stability in part due to the availability of large game, nonsalmon fish, birds, and vegetation.

COMPARING HARVESTS AND USES IN 2011 WITH PREVIOUS YEARS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2011 study year were less, more, or about the same as other recent

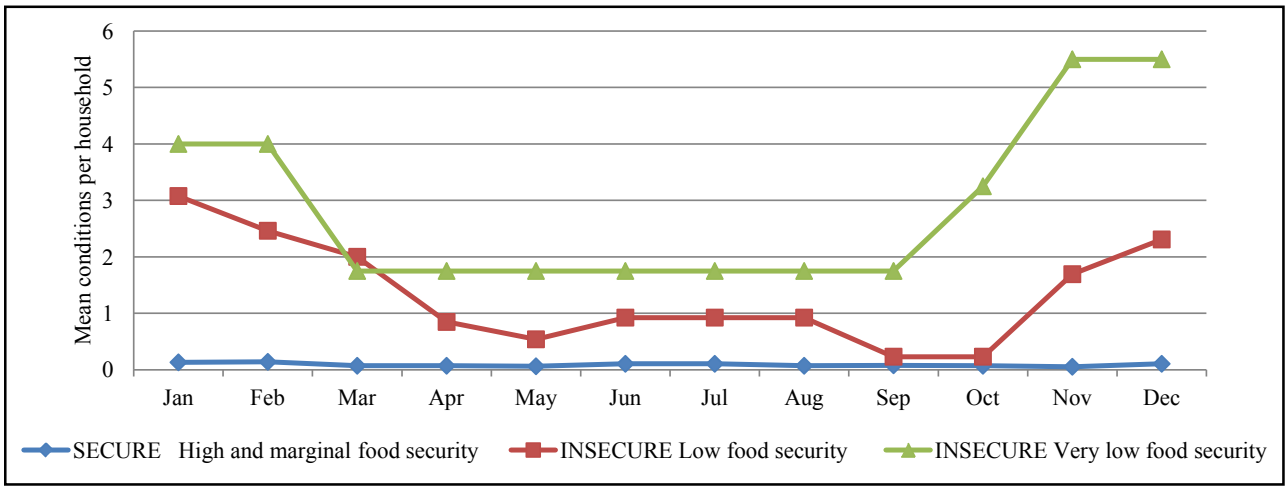


Figure 13-13.– Mean number of food insecure conditions for each month food was reported not to have lasted, Tok, 2011.

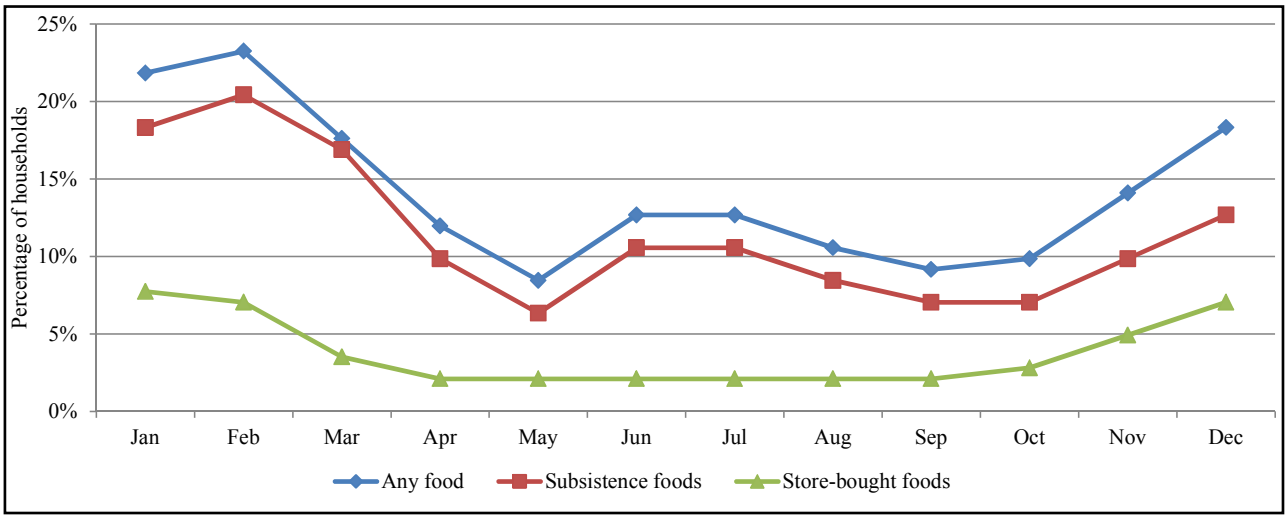


Figure 13-14.– Comparison of months where foods did not last, Tok, 2011.

Table 13-16. – Changes in household uses of resources compared to recent years, Tok, 2011.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage
Any resource	143	139	102	73%	116	83%	50	36%
All resources	143	137	52	38%	68	50%	17	12%
Salmon	143	105	47	45%	40	38%	18	17%
Nonsalmon fish	143	96	40	42%	41	43%	15	16%
Large game	143	112	32	29%	58	52%	22	20%
Small game	143	48	25	52%	20	42%	3	6%
Migratory waterfowl	143	32	18	56%	12	38%	2	6%
Other birds	143	67	34	51%	27	40%	6	9%
Bird eggs	143	1	0	0%	1	100%	0	0%
Marine invertebrates	143	16	5	31%	8	50%	3	19%
Vegetation	143	119	36	30%	65	55%	18	15%

Source ADF&G Division of Subsistence household surveys, 2011.

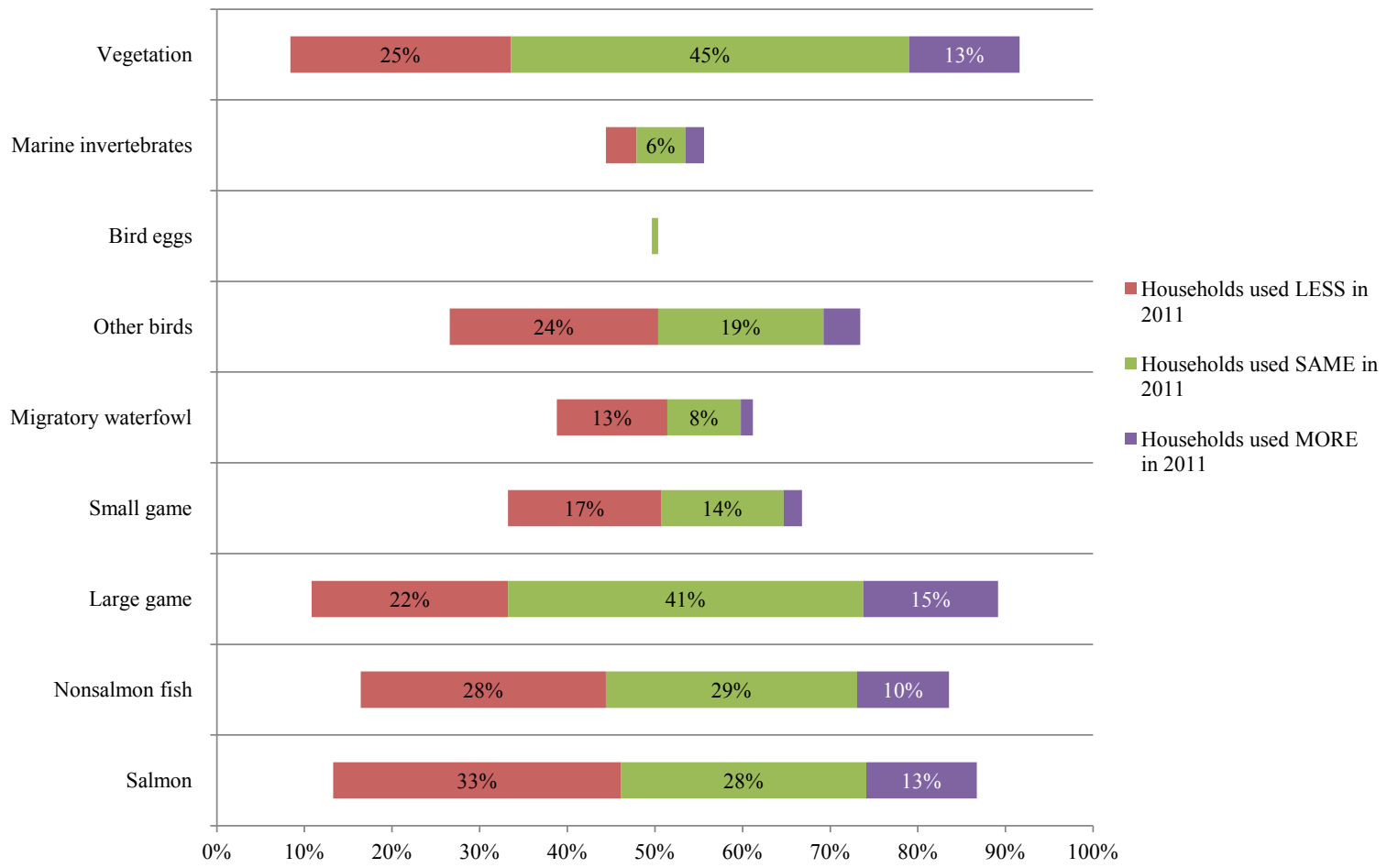
a. Valid responses do not include households that did not provide any response and households reporting never use.

years. "Other recent years" was defined as about the last 5 years. Table 13-16 reports the number of valid responses for each category, which may differ from the total number of interviewed households if households reported that they do not use any resources in the category or otherwise declined to provide an assessment. In Table 13-16, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category. Figure 13-15 depicts the number of households that provided assessments of each category so as to show the size of the set of responding households relative to the total community sample. The percentages reported in this figure are based on the total sample (143 households), and therefore differ from those reported in Table 13-16.

Thirty-eight percent of the Tok respondents reported that their harvests and uses of wild resources overall in 2011 were less than in the recent past (the last 5 years); about 50% said that, overall, their harvests and uses of wild resources were about the same as the recent past; and about 12% said their overall harvests and uses were higher (Table 13-16). As depicted in Figure 13-15, for all resource categories, harvests and uses were lower or about the same for the majority of interviewed households.

For example, for salmon, 33% of all interviewed households (Figure 13-15), and 45% or all those who provided an assessment (Table 13-16), indicated less use, while 28% of all households and 38% of those providing assessments indicated the same levels of use in 2011 than in previous years. Tok households indicated that they also used less of the following resource categories (of all households/ of those providing assessment): nonsalmon fish (28%/42%), vegetation (25%/30%), other birds (24%/51%), large game (22%/29%), small game (17%/52%), and migratory waterfowl (13%/53%). In comparison, 41% of all households and 52% of those providing assessment indicated the same level of use for large game and 45% of all households and 55% of those providing assessment indicated the same level of use for vegetation.

Table 3-17 depicts the reasons Tok respondents gave for lower harvests and uses by resource



Note Percentages are based on the total number of households in the community (N = 143 households). Unlabeled percentages are less than 5%.

Figure 13-15.– Changes in household uses of resources compared to recent years, Tok, 2011.

Table 13-17. – Reasons for less household uses of resources compared to recent years, Tok, 2011.

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	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	139	99	18	18.2%	40	40.4%	0	0.0%	4	4.0%	9	9.1%	33	33.3%	11	11.1%	17	17.2%
All resources	137	49	12	24.5%	8	16.3%	0	0.0%	0	0.0%	3	6.1%	7	14.3%	3	6.1%	7	14.3%
Salmon	105	45	8	17.8%	4	8.9%	0	0.0%	1	2.2%	3	6.7%	8	17.8%	2	4.4%	3	6.7%
Nonsalmon fish	96	38	4	10.5%	5	13.2%	0	0.0%	0	0.0%	2	5.3%	7	18.4%	3	7.9%	2	5.3%
Large game	112	32	4	12.5%	5	15.6%	0	0.0%	0	0.0%	4	12.5%	4	12.5%	8	25.0%	1	3.1%
Small game	48	25	4	16.0%	10	40.0%	0	0.0%	0	0.0%	0	0.0%	4	16.0%	1	4.0%	0	0.0%
Migratory waterfowl	32	17	1	5.9%	0	0.0%	0	0.0%	2	11.8%	0	0.0%	7	41.2%	0	0.0%	2	11.8%
Other birds	67	33	5	15.2%	19	57.6%	0	0.0%	0	0.0%	0	0.0%	3	9.1%	1	3.0%	1	3.0%
Bird eggs	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	16	5	0	0.0%	0	0.0%	0	0.0%	1	20.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	119	33	10	30.3%	4	12.1%	0	0.0%	0	0.0%	0	0.0%	3	9.1%	0	0.0%	6	18.2%

Source ADF&G Division of Subsistence household surveys, 2011.

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

Table 13-17.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Any resource	139	99	11	11.1%	39	39.4%	5	5.1%	0	0.0%	3	3.0%	8	8.1%	7	7.1%	2	2.0%
All resources	137	49	3	6.1%	17	34.7%	2	4.1%	0	0.0%	2	4.1%	1	2.0%	1	2.0%	0	0.0%
Salmon	105	45	5	11.1%	12	26.7%	1	2.2%	0	0.0%	0	0.0%	1	2.2%	1	2.2%	1	2.2%
Nonsalmon fish	96	38	3	7.9%	15	39.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	5.3%	0	0.0%
Large game	112	32	1	3.1%	5	15.6%	0	0.0%	0	0.0%	2	6.3%	2	6.3%	1	3.1%	0	0.0%
Small game	48	25	0	0.0%	7	28.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	16.0%	0	0.0%
Migratory waterfowl	32	17	0	0.0%	4	23.5%	0	0.0%	0	0.0%	0	0.0%	2	11.8%	0	0.0%	0	0.0%
Other birds	67	33	1	3.0%	5	15.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.0%	1	3.0%
Bird eggs	1	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	16	5	0	0.0%	2	40.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	2	40.0%	0	0.0%
Vegetation	119	33	2	6.1%	10	30.3%	1	3.0%	0	0.0%	0	0.0%	3	9.1%	1	3.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2011.

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

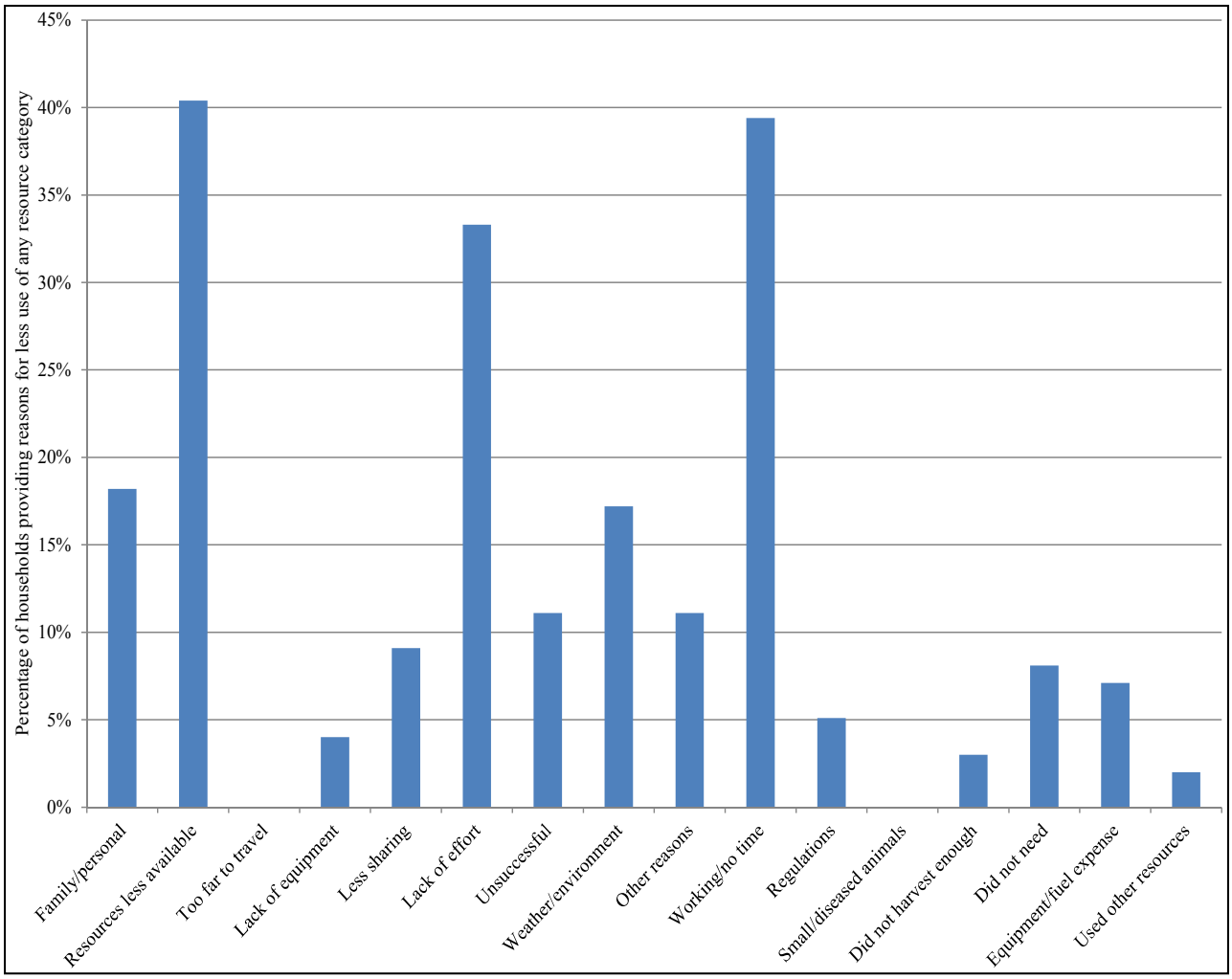


Figure 13-16.– Reasons for less household uses of any resource compared to recent years, Tok, 2011.

category. This was an open-ended question, and respondents could provide more than one reason for each resource category. Project staff grouped the responses into categories, such as competition for resources, regulations hindering residents from harvesting resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work and health, and other outside effects on residents' opportunities to engage in subsistence activities.

Of the surveyed households that provided assessments in the 2011 survey, the reasons most cited for less use of wild resources overall were working/no time (35%), family/personal (25%), resources being less available (16%), lack of effort (14%) and weather/environment (14%). Family/personal circumstances was cited as a reason for less use of salmon, nonsalmon fish, large game, small game, migratory waterfowl, other birds, and vegetation. Working/no time was another reason cited for less use of those same resources, plus marine invertebrates. Resources being less available was cited as the main reason for less use of small game and other birds.

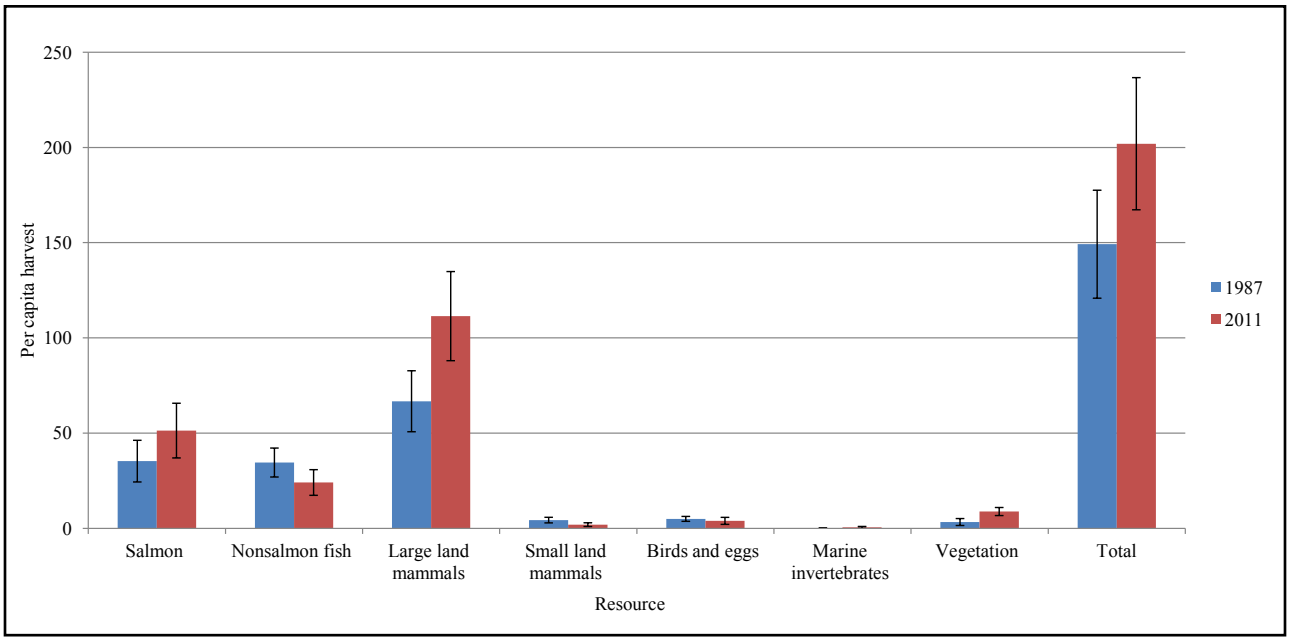


Figure 13-17.– Per capita harvest by resource category, Tok, 1987 and 2011.

Overall, 73% of Tok's households reported that their uses of at least one category of wild resource had declined in 2011 compared to other recent years; 36% said that their uses of at least one category had increased (Table 13-16). Resources being less available was the most frequently cited reason for lower use of any resource category in 2011 (40% of all Tok households that reported a reason for less use), followed by no time due to working (40%), lack of effort (33%), family/personal obligations (18%), and weather/environment conditions (17%) (Figure 13-16). Additional reasons were provided for lower use of any resource category, but at much lower percentages.

Changes in the resource harvest by Tok residents can also be discerned through comparisons with findings from other study years. For Tok, comprehensive subsistence household harvest data have been collected for 2 study years: 1987 and 2011 (Figure 13-17). Household surveys conducted in 2004 documented harvests of large land mammals, small land mammals, and nonsalmon fish; summary results are published online in the CSIS (Figure 13-18). In terms of per capita harvests, the harvests of nonsalmon fish were higher in 1987 and 2011 than in 2004 (Figure 13-18). The 2011 study found the per capita harvests of nonsalmon fish, birds and eggs, and small land mammals to be less than the harvests of those resources in 1987 (Figure 13-17). In 2011, the per capita harvests of salmon, vegetation, marine invertebrates, and large land mammals were higher than in the previous study year 1987 (Figure 13-17). The 2011 per capita harvest for all resources was 202 lb, which is 53 lb more than the 1987 per capita harvest (149 lb), due primarily to larger large land mammal harvests in 2011 (Figure 13-17).

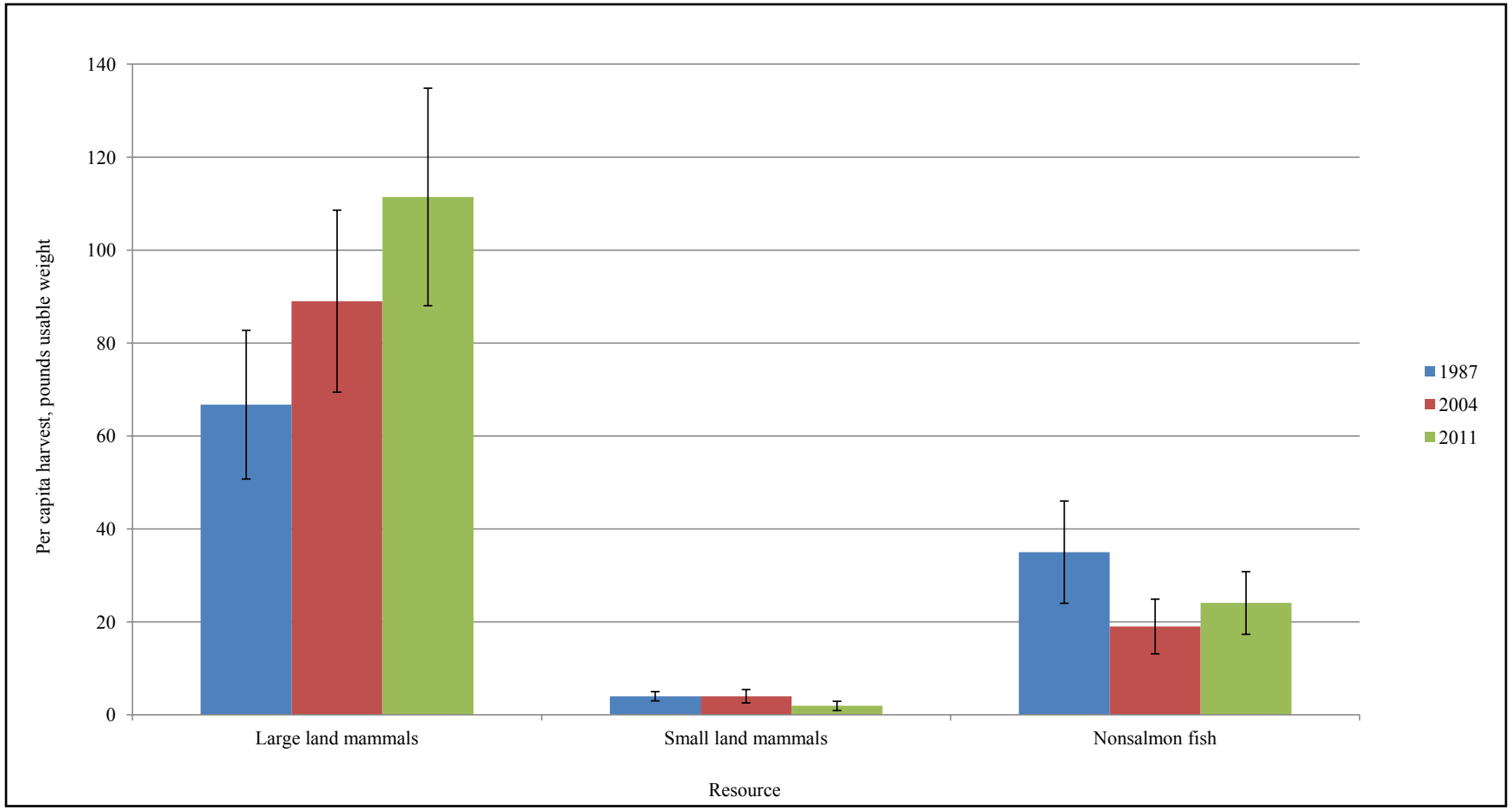


Figure 13-18.–Per capita harvest, pounds usable weight, Tok, 1987, 2004, and 2011.

LOCAL CONCERNS REGARDING RESOURCES

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

FISH

Residents of Tok reported salmon were often spawned out and in poor condition by the time they reached the vicinity of Tok. Most residents traveled south to the Copper River to harvest salmon for subsistence. Residents expressed concern that it is difficult to harvest in this area because much of the land is privately owned, and in order to fish, one must know someone who will allow you to harvest fish from his/her land and/or allow access to his/her fish wheel. Because access to Copper River is so limited, residents of Tok tended to comment that they did not have enough salmon for subsistence uses.

LARGE LAND MAMMALS

Many respondents from Tok expressed the same concern about the number of non-local hunters coming to the Tok area to hunt for moose and caribou. Residents believed that non-local hunters were not interested in hunting the animals for meat and allowed a lot of the meat to go to waste. Other comments indicate concern about people who live in large cities, like Fairbanks or Anchorage, who travel to the Tok area during the hunting seasons because of the easy road access to hunting grounds, and thereby compete with local hunters.

Another concern from multiple respondents was that the hunting season for moose should be extended for the entire month of September. The current regulation allows for hunting from the third week of August until September 17. Residents feel the weather is too warm in August and this is a problem because the moose are usually hiding in thick wooded areas to be in the shade, which makes it difficult for hunters to spot them. Another issue concerning residents is that if a hunter does shoot a moose in the warm weather, it makes it hard to get the moose meat out of the field and into a freezer before it starts to spoil.

SMALL LAND MAMMALS/FURBEARERS

Some respondents commented about how access to historical trapping grounds has been become limited over the years, mainly on Native corporation lands that surround Tok. Trappers from Tok have changed their traplines to abide by state-regulated boundaries. This has affected the amount of small

mammals Tok trappers can harvest. Respondents reported that they want the hunting and trapping corridors widened.

VEGETATION

Vegetation was the most used resource category in Tok in 2011, especially blueberries and firewood. Some respondents expressed concern about inadequate firewood resources in the vicinity. Recently, Tok School began using firewood to heat the building, which local residents believe is putting further pressure on local wood resources.

ALASKA PIPELINE PROJECT

Some respondents who commented on the APP were in favor of the project, but had a lot of questions about when or if it would ever happen. Another respondent commented that it would be a great benefit to the community to have gas at a reduced rate.

Respondents who opposed APP would be happier if the pipeline followed the path of the trans-Alaska Pipeline System instead of making up a new route, or, if an underground pipeline was constructed, to avoid blocking access to subsistence harvesting grounds.

SUMMARY

The household survey findings demonstrate that Tok community members harvested a wide variety of resources in 2011. Residents invested a great deal of time and effort in harvesting fish, land mammals, birds, and wild plants. In 2011, the per capita harvest of wild resources harvested by Tok residents increased by more than 50 lb per capita from the 1987 study (Marcotte 1991). There was a large increase in the per capita harvest of large land mammals and salmon by Tok residents since the last comprehensive subsistence study in 1987. According to survey results, moose were the most harvested wild resource in 2011, as estimated in usable pounds. Tok resident can access moose hunting areas along highways. Highways also provide access to the Copper River for salmon fishing and to Prince William Sound through Valdez for marine fishing. The study found that 63% of employed adults in Tok are employed year-round, and having inadequate time to hunt and fish due to work commitments was the most frequently cited reason for lower harvests overall of all resources. While the road system provides access to harvesting areas for Tok residents, it also brings non-local hunters into the area. According to respondents, increased traffic and hunting by non-local residents has an effect on local resource abundance.

ACKNOWLEDGEMENTS

We are very appreciative of the support and participation by Tok community members in the project. We are especially thankful to Maggie and Damon Brooks, who facilitated our study in a variety of ways, including their significant knowledge of the area and its residents and their familiarity with local wildlife and hunting and gathering practices. The success of our work in Tok was in large part due to their generous assistance and we are very grateful. We are also very appreciative of our extremely helpful and competent local research assistants. To Margit Brooks, Alicia Brooks, Douglas Harmon, Deanne James, James Milhard, and Jeanne Morris, we thank you for your assistance with the collection of survey data. On our return visit for the community review of our results, we were also fortunate enough to be included in a fishing trip by Wallace Hinckley and Benjamin Grzyb. Finally, much of the context of this study was obtained from in-depth interviews with local subsistence users and we are extremely appreciative to them for giving us their time and sharing information about their subsistence harvest and uses.

CHAPTER 14: DISCUSSION AND CONCLUSIONS

Prepared by Davin Holen and James A. Fall

OVERVIEW OF FINDINGS FOR THE STUDY COMMUNITIES, 2011

The 12 communities included in this study span the eastern interior of Alaska from the Brooks Range to the upper Koyukuk, middle Yukon, and Tanana river watersheds. These communities represent a diversity of environments, histories, and cultures. As this research has shown, they also exhibit a range of contemporary patterns of subsistence uses of wild resources. As noted in Chapter 1: Introduction, FERC prepared a list of 7 specific data requirements for the analysis of potential impacts of the APP on subsistence uses in the project area.[1] This concluding chapter briefly highlights some study findings that address the requirements set out by FERC.

In the study year of 2011, residents of all the study communities participated in subsistence hunting, fishing, and gathering for nutrition and to support their way of life. Virtually every household used wild resources: 100% in 10 study communities and more than 90% in the other 2. About 75% or more of the households in every community engaged in harvesting activities and also received shared wild foods (Figure 14-1). Each community summary chapter includes maps depicting where harvests occurred in the study year as well as a general description of the seasonal round of harvests.

As estimated in pounds usable weight per person, harvests of wild foods ranged from 520 lb per person in Allakaket to 38 lb per person in Coldfoot, with harvests in all but 2 communities exceeding 100 lb per person in the 2011 study year (Figure 14-2). These are substantial harvests: in 2008, the average American household purchased about 224 lb of meat, fish, and poultry per person (U.S. Census Bureau 2011b and 2011c). In 9 of the 12 study communities, fish and wildlife harvests produced 50% or more of this total (these comparisons exclude harvests of plants). Harvests in 10 of the 12 communities produced 50% or more of the daily recommended protein requirements of 51 g/day (Figure 14-3). Four of the 5 communities with the highest per capita harvests are located off the road system (Wiseman is the exception), perhaps reflecting in part more abundant and accessible resources, more liberal regulations, and fewer alternatives for purchasing food.

Harvests in the study communities were composed of a variety of resources, including salmon and other fish, large and small land mammals, birds, and wild plants (Figure 14-2). Large land mammals

1. Michael J. Boyle, Deputy Director, FERC, Office of Energy Projects, Division of Gas–Environment and Engineering, letter to TransCanada Alaska Company LLC, February 17, 2011.

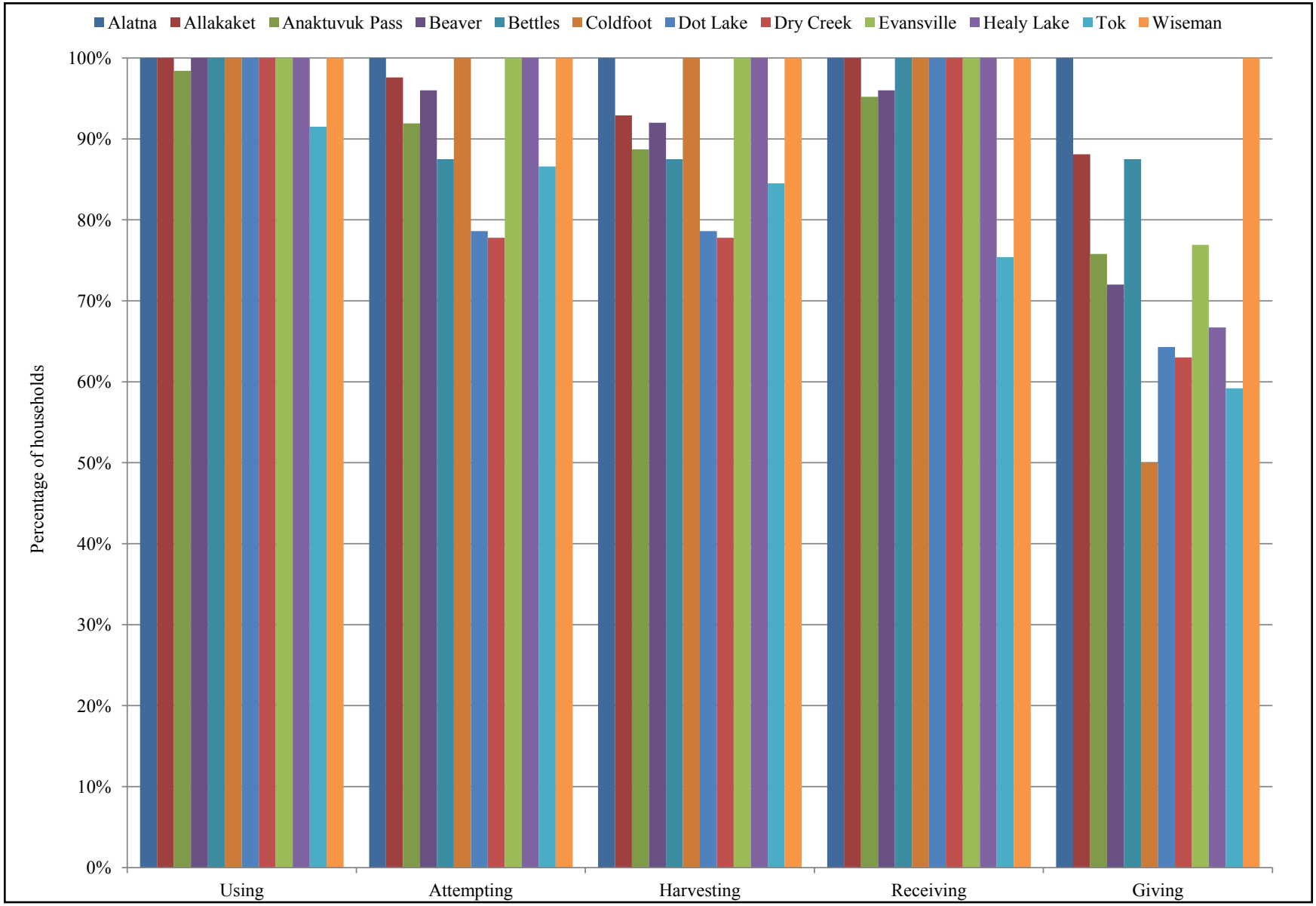


Figure 14-1.–Percentage of households using, attempting to harvest, receiving, and giving wild resources, 12 eastern interior Alaska communities, 2011.

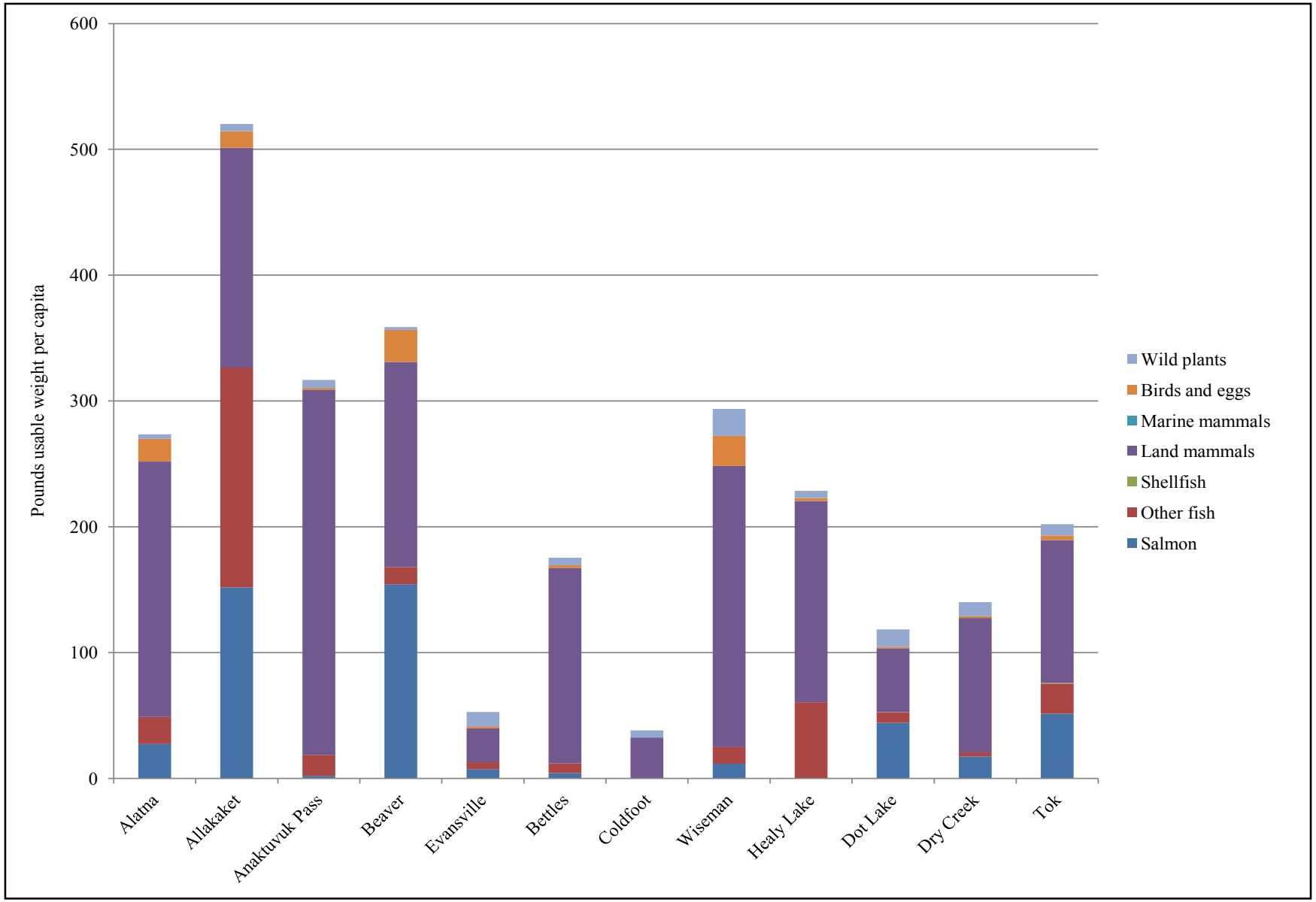


Figure 14-2.–Estimated harvests of wild resources by category, pounds usable weight per capita, 12 eastern interior Alaska communities, 2011.

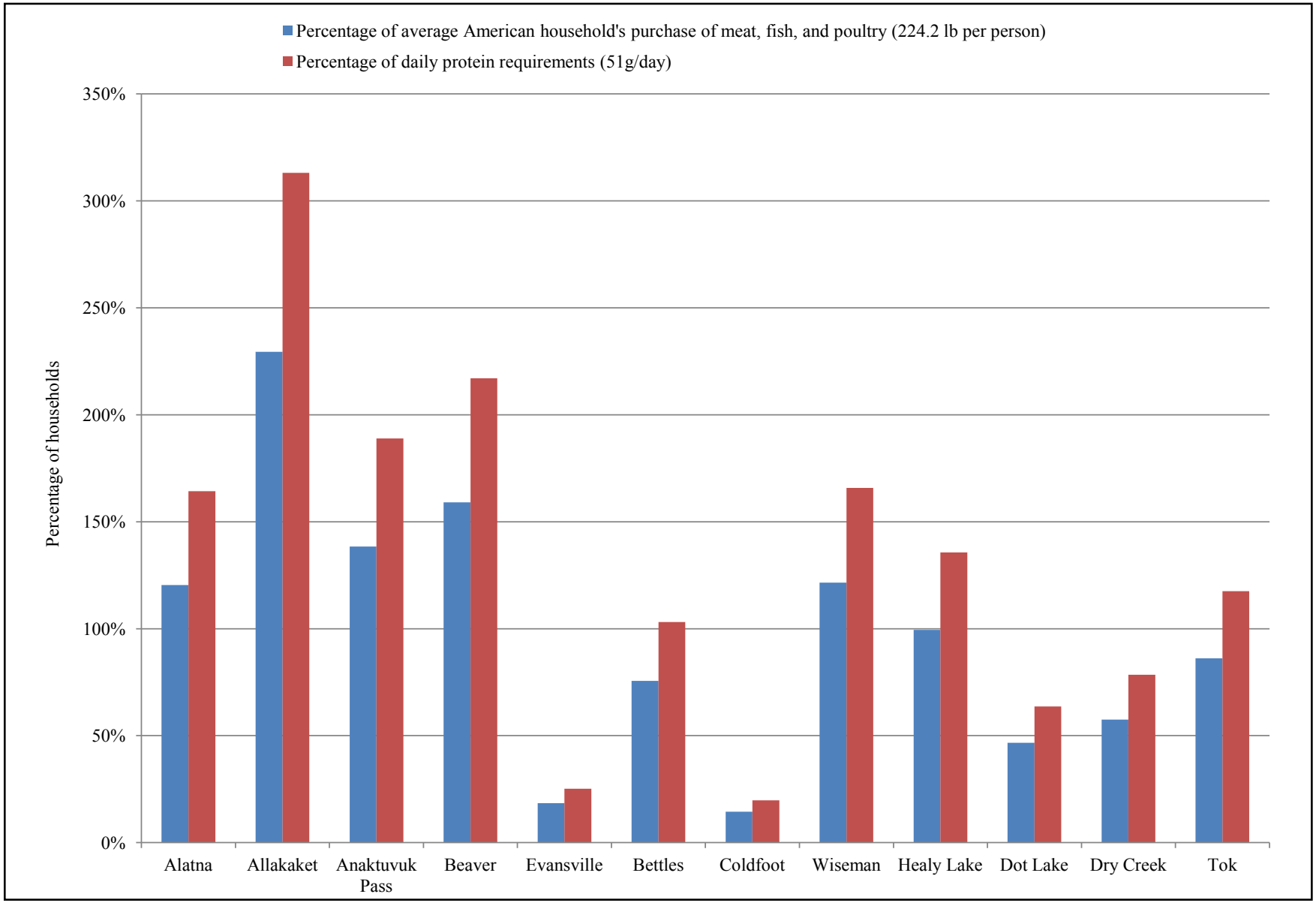


Figure 14-3.–Harvests of fish and wildlife compared to national averages for purchased food and to daily protein requirements, 12 eastern interior Alaska communities, 2011.

played a dominant role in 7 communities, contributing 70% or more of the total harvest; this resource category provided more than one-third of the harvest in every community. Caribou were especially important in Anaktuvuk Pass, Wiseman, and Bettles. Farther south, moose were the most commonly harvested large land mammal. As estimated in usable pounds, large land mammal harvests exceeded 100 lb per person in 9 of the 12 study communities in 2011 (Figure 14-4).

Salmon played a variable role in the overall harvest of wild resources in the study communities, generally reflecting their distribution and relative abundance (figures 14-2 and 14-5). Salmon exceeded harvests of 100 lb per person only in Allakaket and Beaver, which have access to the runs of the Yukon River drainage. Dot Lake, Dry Creek, and Tok have road access to the abundant runs of sockeye salmon of the Copper River. Also, most Dot Lake residents, and some Tok residents, have kinship ties with residents of Ahtna communities of the Copper River Basin, providing access to the Copper River salmon through direct harvest or sharing (see Chapter 11). In a number of other study communities (e.g., Anaktuvuk Pass, Bettles, Coldfoot, Evansville, Healy Lake, and Wiseman), salmon harvests were relatively low, most likely due to these communities' distance from productive salmon fishing locations.

Although various species of nonsalmon fish occur throughout the study area, only in Allakaket and Healy Lake did nonsalmon fish harvests exceed 50 lb per person and make up more than 25% of the total harvest (figures 14-2 and 14-6). As noted in Chapter 3, Allakaket residents reported that their reliance on nonsalmon fish has increased because of recent declines in Yukon River and Koyukuk River salmon runs.

Although harvested in every community but Coldfoot, birds provided a relatively small portion of the total harvests; only in Beaver, Wiseman, Alatna, and Allakaket did bird harvests exceed 10 lb per person in 2011 (Figure 14-2). Although generally a small component of the overall harvest, most survey respondents in all the study communities related that they invested considerable effort in harvesting berries and certain other wild plants. As estimated in usable pounds, wild plant harvests were highest at Wiseman, Dot Lake, Evansville, and Dry Creek (Figure 14-2).

In the study year, harvests were also diverse in terms of the average number of resources households in each community used, harvested, and shared for subsistence uses. In 11 of the 12 study communities, the average household used 10 or more kinds of wild resources in 2011. The range of resources used on average was widest in Alatna, Wiseman, Allakaket, and Healy Lake. Also, in 11 of the 12 study communities, the average household attempted to harvest at least 5 kinds of wild resources, and the average number of kinds of resources received exceeded 4 per household in 10 communities (Figure 14-7).

The cash sector of the local economy in most of the study communities was relatively undeveloped. Based on data from this researc, as well as from the American Community Survey (ACS) conducted by the U.S. Census Bureau, per capita income in 7 of 9 study communities was well below the state

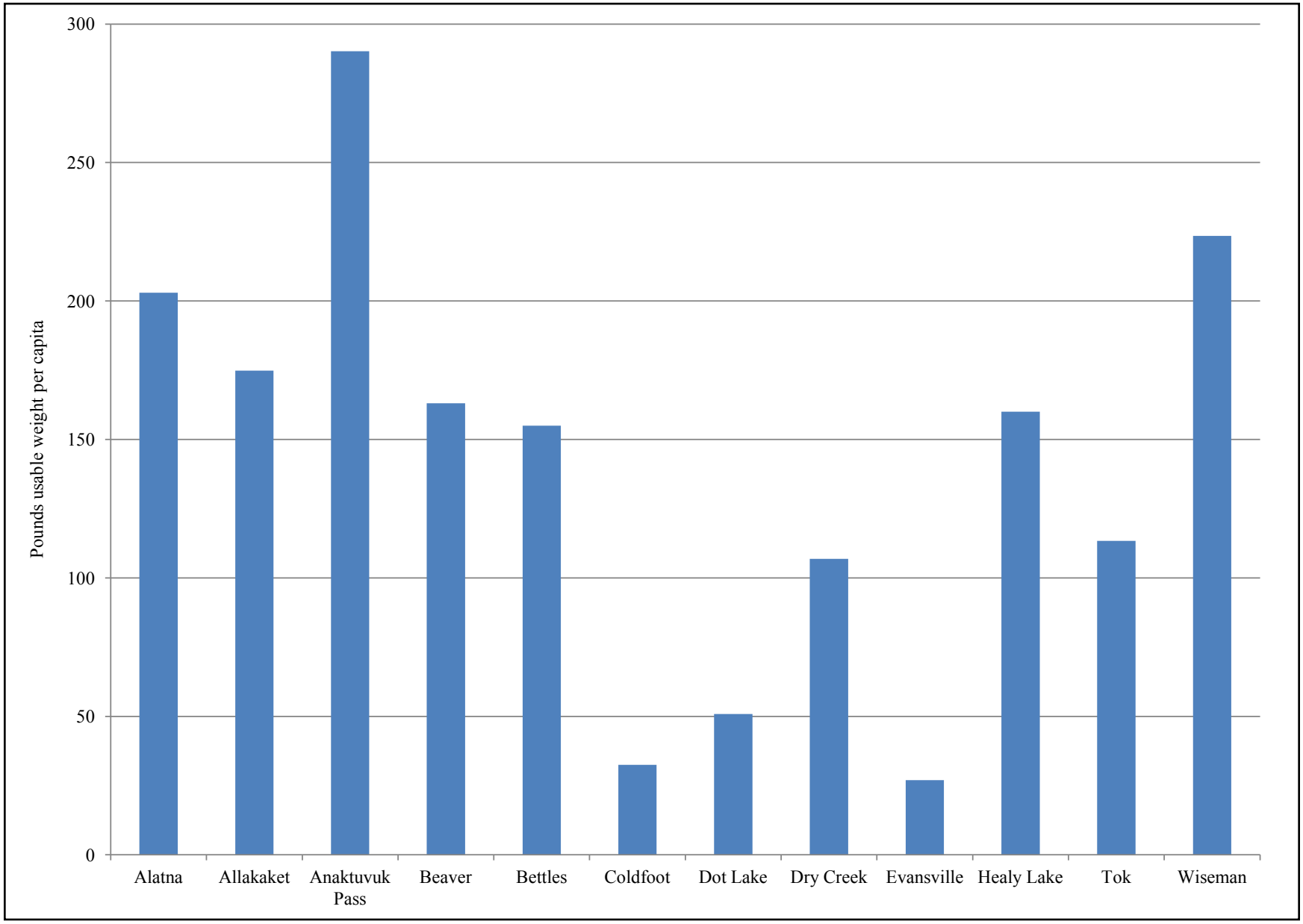


Figure 14-4.–Estimated harvests of land mammals, pounds usable weight per capita, 12 eastern interior Alaska communities, 2011.

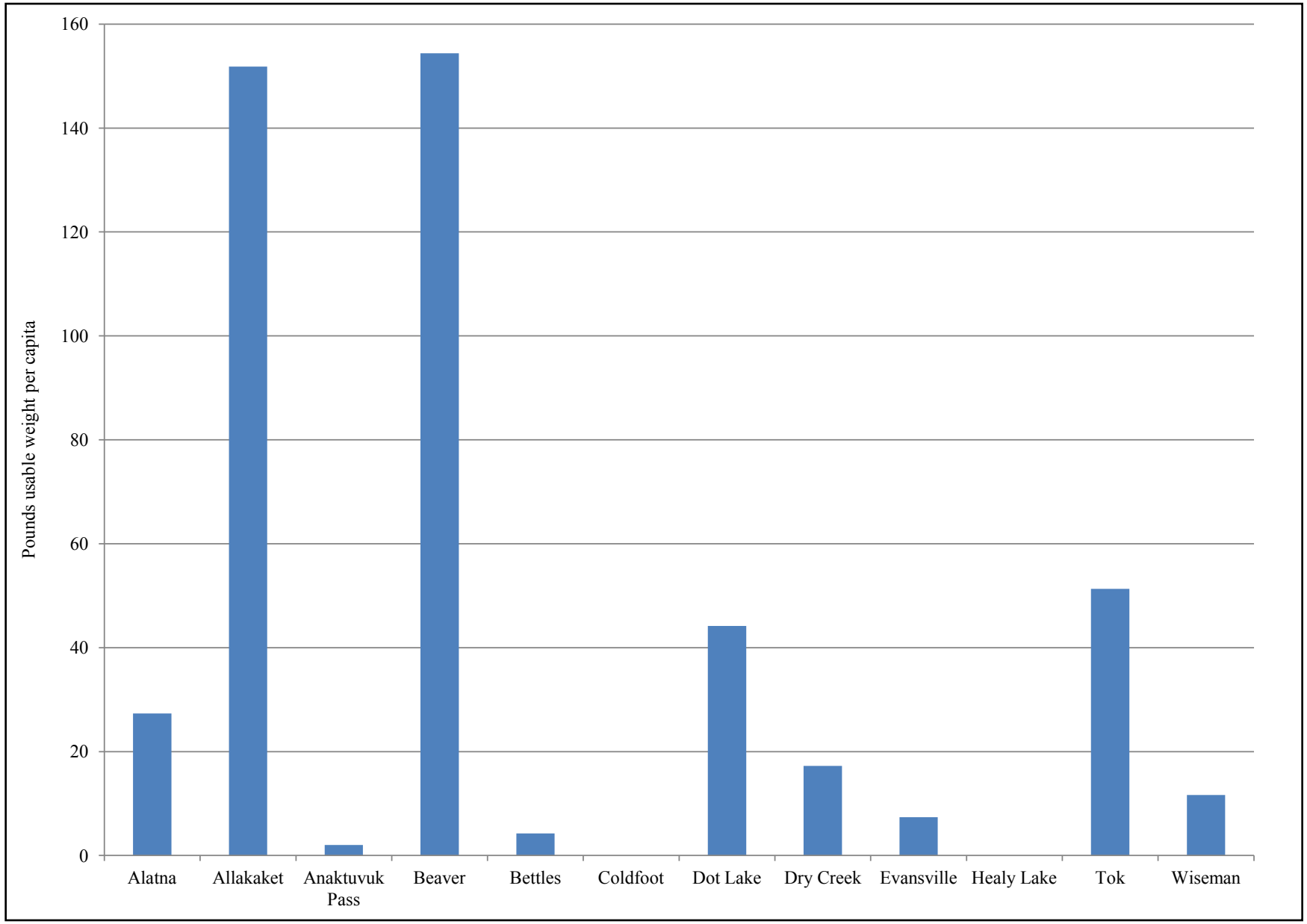


Figure 14-5.–Estimated harvests of salmon, pounds usable weight per capita, 12 eastern interior Alaska communities, 2011.

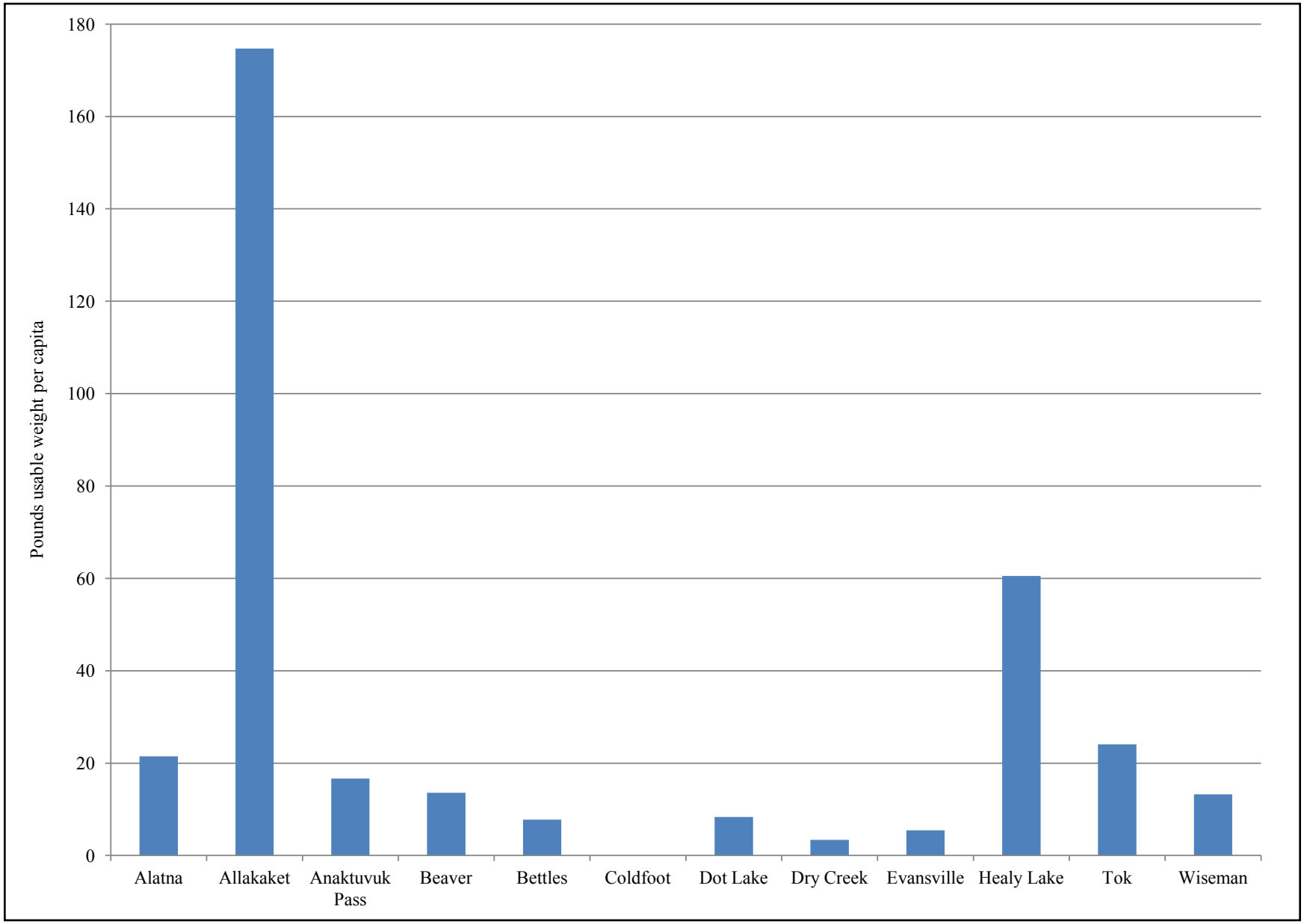


Figure 14-6.–Harvests of nonsalmon fish, pounds usable weight per capita, 12 eastern interior Alaska communities, 2011.

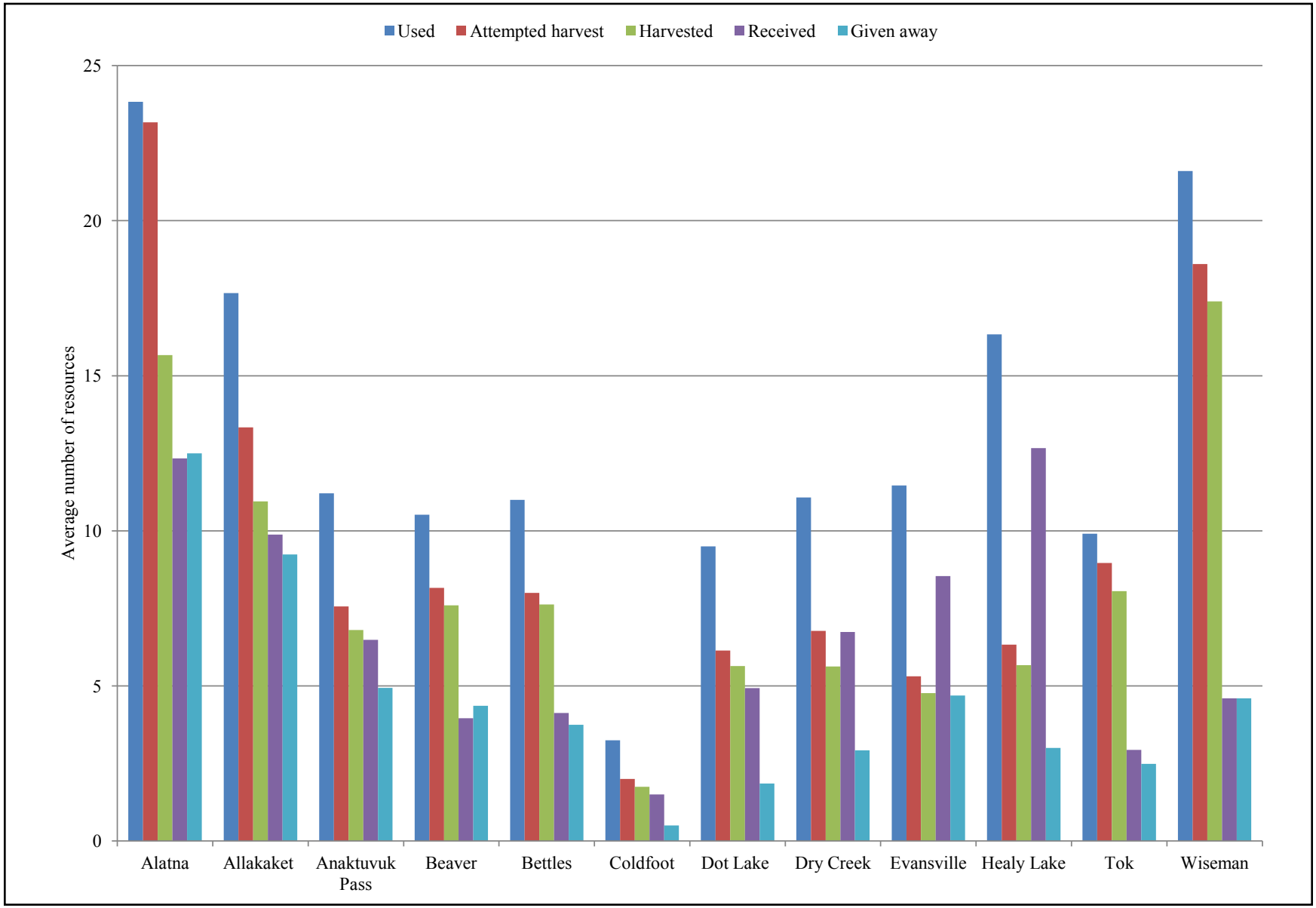
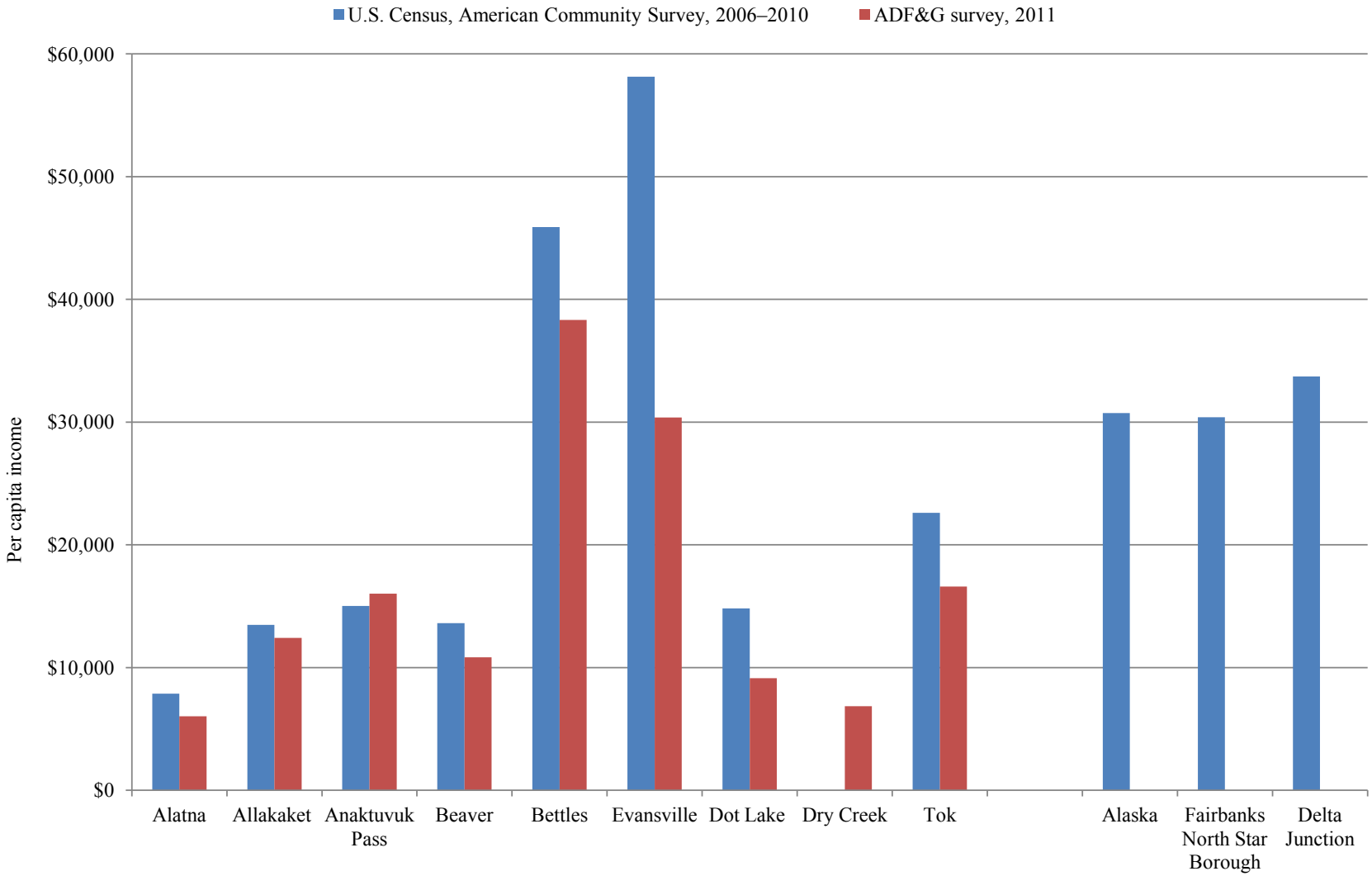


Figure 14-7.–Average number of resources per household used, attempted to be harvested, harvested, received, and given away, 12 eastern interior Alaska communities, 2011.

average of about $30,726 per year, as well as the larger interior Alaska communities of Fairbanks ($30,395) and Delta Junction ($33,716). (In this report, cash incomes and other employment data are not reported for Healy Lake, Coldfoot, and Wiseman because of their very small populations and consequent confidentiality concerns.) Incomes were higher than the state average in Bettles and Evansville, as estimated by both the ADF&G survey and the ACS (Figure 14-8). This likely reflects the availability of service sector jobs supporting tourism in both communities. Cash employment was generally seasonal in the study communities in 2011: only in the small community of Alatna did more than 70% of employed adults work year-round (Figure 14-9), and employed adults worked an average of fewer than 10 months in all the communities except Bettles and Evansville; the average in Tok, a subregional center providing services to travelers, was 10 months (Figure 14-10).

Only limited comparisons can be made between the 2011 harvest data and earlier study years. For 4 communities (Healy Lake, Coldfoot, Dry Creek, and Wiseman), this study was the first to collect comprehensive data for the full range of resources harvested for subsistence uses. For 3 communities (Beaver, Dot Lake, and Tok), comprehensive harvest data are available for just 1 previous year in the 1980s; comparisons of the 2 study years are informative, but cannot be used by themselves to discern trends. As estimated in pounds usable weight per person, total harvests at Dot Lake in 2011 (118 lb per person) were about the same as in 1987 (116 lb per person) (Table 11-18). At Tok, the 2011 estimate of 202 lb per person was higher than the estimate for 1987 of 149 lb per person, primarily because of a larger harvest of big game (Figure 13-17). The estimated harvest at Beaver in 1985 was 732 lb per person, but, of this, about 271 lb was harvested for dogs; the 1985 harvest for human consumption of 461 lb per person was not significantly different from the total 2011 harvest of 359 lb per person (Figure 5-19).

Multiple years of data are available for the remaining 5 study communities (Alatna, Allakaket, Bettles, Evansville, and Anakuvuk Pass). Harvest data for 1982, 1983, and 1984 for Alatna and Allakaket are only available for the 2 communities combined. Estimated harvests were 906 lb per person in 1982, 696 lb per person in 1983, and 658 lb per person in 1984, compared to 477 lb per person in 2011 (Figure 3-20). Notably lower harvests of salmon in 2011 compared to the early 1980s account for the difference in total harvests. Combined data for Bettles and Evansville are also available for 1982, 1983, and 1984; estimated harvests were 260 lb per person, 185 lb per person, and 123 lb per person, respectively, compared to 99 lb per person in 2011 (Figure 7-19). Harvests of fish were much lower in Bettles and Evansville in 2011 compared to the early 1980s, and harvests of land mammals had also declined. Comprehensive harvest data are available for 8 prior study years for Anaktuvuk Pass based on studies conducted by the North Slope Borough. Estimated total harvests ranged from 104 lb per person in 1996–1997 to 396 lb per person in 2000–2001 (Figure 4-22). The estimated harvest for 2011 of 317 lb per person is within the upper range of these previous estimates. In all study years, caribou comprised a very large percentage of the total subsistence harvest at Anaktuvuk Pass.



Note Allakaket includes 2 Census Designated Places (CDPs): Allakaket City and New Allakaket. American Community Survey (ACS) data are only available for Dot Lake Village CDP and not for Dot Lake CDP; ADF&G survey data include both CDPs. No ACS data are available for Dry Creek. Due to the small community size and related privacy concerns, no income data are presented for Coldfoot, Wiseman, and Healy Lake.

Figure 14-8.–Estimated per capita income, 12 eastern interior Alaska communities, 2006–2010 and 2011.

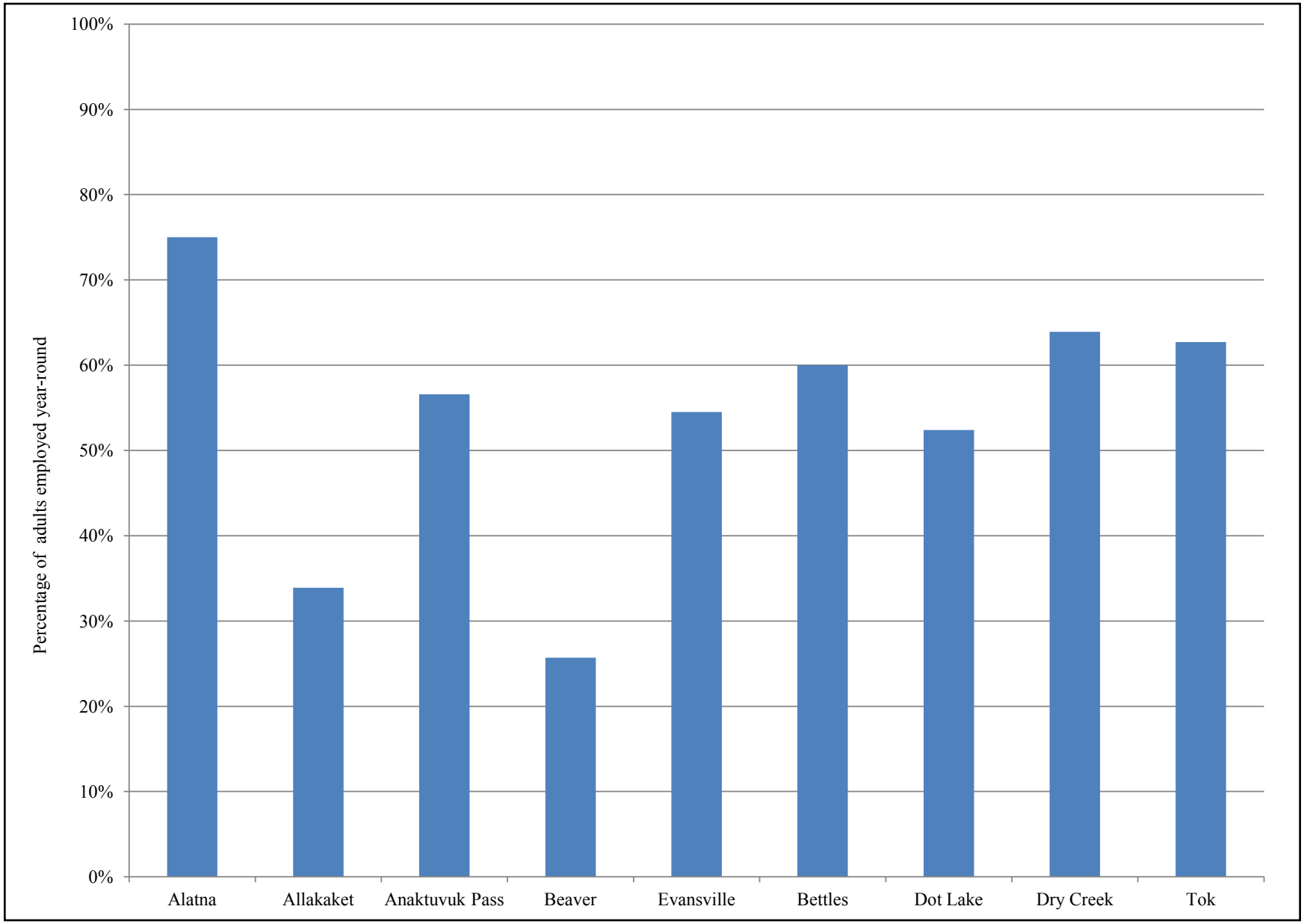


Figure 14-9.–Percentage of employed adults with year-round employment, 12 eastern interior Alaska communities, 2011.

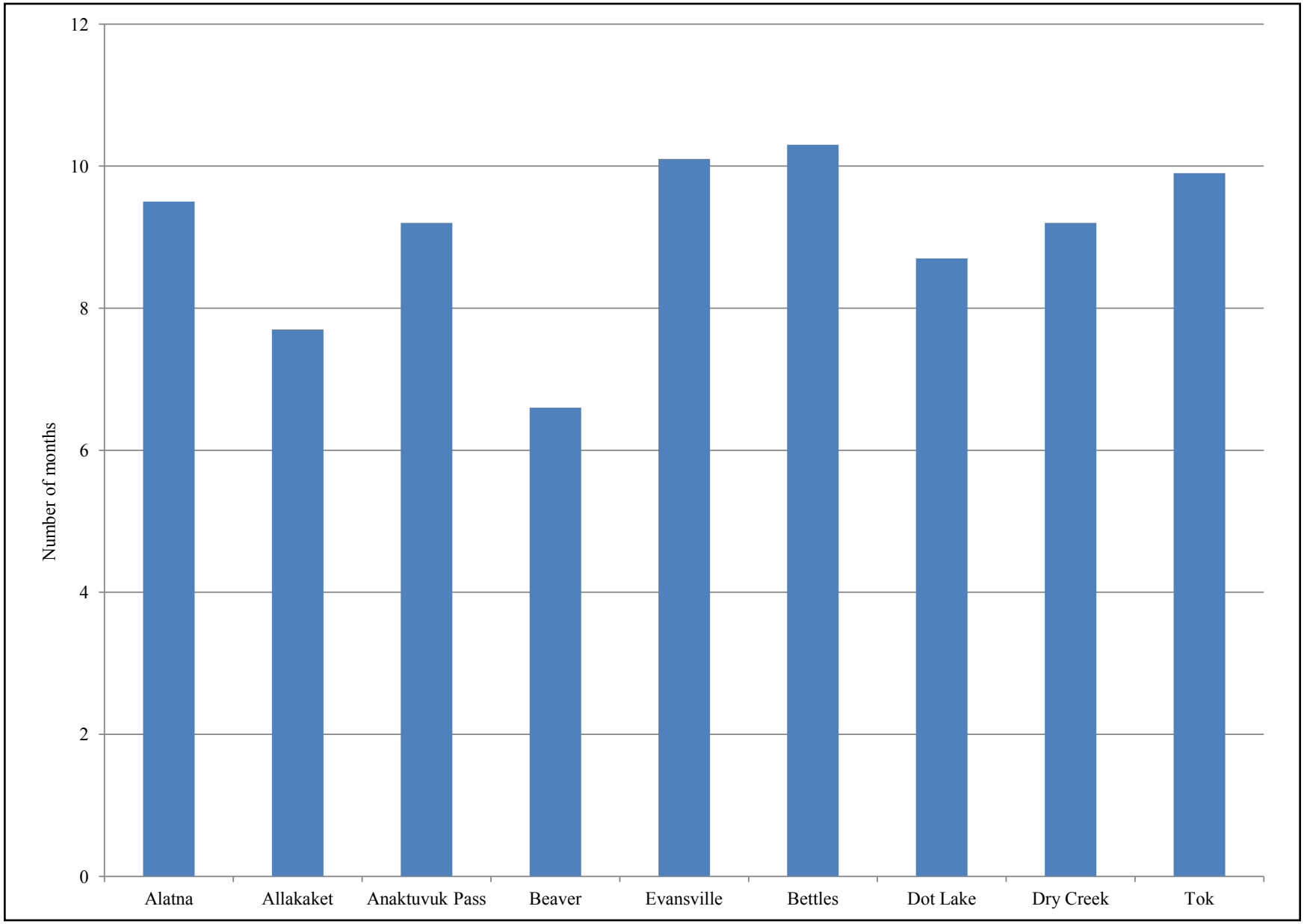


Figure 14-10.–Average number of months employed, employed adults, 12 eastern interior Alaska communities, 2011.

CONCLUSIONS

This study documented the continuing importance of subsistence hunting, fishing, and gathering to the residents of the communities of Alatna, Allakaket, Anaktuvuk Pass, Bettles, Beaver, Coldfoot, Dot Lake, Dry Creek, Evansville, Healy Lake, Tok, and Wiseman—communities located in the eastern interior of Alaska. As noted, this is a geographically and culturally diverse group of communities. Although the harvests of wild foods as estimated in pounds usable weight per person varied widely in the study communities, virtually every interviewed household in the 12 communities participated in subsistence activities and used wild resources. In most communities, wild resource harvests were relatively large and diverse in 2011, supplying a large portion of each community's food supply. Caribou, moose, fish, and wild plants, especially berries, were the primary subsistence foods as measured in usable pounds, but many households used small game and birds as well. In addition to their own harvests, most households also received subsistence resources through extensive sharing networks as shown by the number of resources given and received. Survey participants and key respondents described sharing their traditional knowledge of wild resources and harvest areas while engaged in subsistence activities.

Although the results of the household surveys show a long-term pattern of reliance on subsistence resources, many participants in this study reported that their subsistence uses and harvests have changed over their lifetimes and in the last 5 years. Comparisons with the limited harvest data available for previous years suggest changes as well. Given the importance of subsistence resources and these observations of changing harvest and use patterns, it is not surprising that study participants expressed concerns about their future opportunities to hunt, fish, and gather wild resources in a manner consistent with their traditions and at levels that meet their harvest goals. As demonstrated by the study findings, subsistence uses of healthy fish and wildlife populations meaningfully link people to their past, are vital to the present health of each community, and encourage optimism about the future. In addition, providing opportunities for subsistence hunting and fishing is a mandate of state and federal law. Local residents expressed the desire to continue subsistence activities, not only for themselves, but also for their children and future generations. The intent of this report has been to provide information that will help the communities work toward their goal of sustaining their way of life.

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Appendix A–Survey

PART 1: SURVEY FORM FOR COMMUNITIES LOCATED NORTH OF FAIRBANKS

COMPREHENSIVE SUBSISTENCE SURVEY

WISEMAN, ALASKA

January to December, 2011

This survey is used to estimate subsistence harvests and to describe community subsistence economies. We will publish a summary report, and send it to all households in your community. We share the community 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 subsistence, and to implement federal and state subsistence priorities.

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 stop at any time.

HOUSEHOLD ID:	
COMMUNITY ID:	371
RESPONDENT ID:	
INTERVIEWER:	
INTERVIEW DATE:	
START TIME:	
STOP TIME:	
DATA CODED BY:	
DATA ENTERED BY:	
SUPERVISOR:	

COOPERATING ORGANIZATIONS

DIVISION OF PUBLIC HEALTH
HEALTH AND SOCIAL SERVICES
3601 C STREET, SUITE 540
ANCHORAGE, AK 99503

907-269-8000

GATES OF THE ARCTIC
NATIONAL PARK AND PRESERVE
4175 GEIST ROAD
FAIRBANKS, AK 99709

907-455-0639

DIVISION OF SUBSISTENCE
ALASKA DEPT OF FISH & GAME
333 RASPBERRY ROAD
ANCHORAGE, AK 99518

907-267-2353

INSTITUTE OF SOCIAL
& ECONOMIC RESEARCH
UNIVERSITY OF ALASKA ANCHORAGE
ANCHORAGE, AK 99508

907-786-7710

HOUSEHOLD MEMBERS

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…who lived in your household?

ID#	IS THIS PERSON ANSWERING QUESTIONS *ON THIS SURVEY?* (circle)	MALE OR FEMALE? (circle)	ALASKA NATIVE? (circle)	IN WHAT YEAR WAS THIS PERSON BORN? (year)	WHERE WERE PARENTS LIVING WHEN THIS PERSON WAS BORN? (ak city or state)	HOW IS THIS PERSON RELATED TO HOUSEHOLD HEAD 1? (relation)	HOW MANY YEARS HAS THIS PERSON LIVED IN WISEMAN? (number)
HEAD 1	Y N	M F	Y N				YRS
01							
Enter spouse or partner next. If household has a SINGLE HEAD, leave HEAD 2 blank.							
HEAD 2	Y N	M F	Y N				YRS
02							
Enter children (oldest to youngest), grandchildren, grandparents, brothers, sisters, or anyone else living full-time in this household.							
03	Y N	M F	Y N				YRS
04	Y N	M F	Y N				YRS
05	Y N	M F	Y N				YRS
06	Y N	M F	Y N				YRS
07	Y N	M F	Y N				YRS
08	Y N	M F	Y N				YRS
09	Y N	M F	Y N				YRS
10	Y N	M F	Y N				YRS
11	Y N	M F	Y N				YRS
12	Y N	M F	Y N				YRS
13	Y N	M F	Y N				YRS
14	Y N	M F	Y N				YRS
15	Y N	M F	Y N				YRS

PERMANENT HH MEMBERS: 01 **WISEMAN: 371**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…did this person...

PERSON	Fish		Large Land Mammals		Small Land Mammals Furbearers		Birds & Eggs		Plants/Berries/Wood	
ID# FROM	Fish	Process	Hunt	Process	Hunt/Trap	Process	Hunt/Gather	Process	Gather	Process
Page 2	*(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
Head 2	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
03	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
04	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
05	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
06	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
07	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
08	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
09	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
10	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
11	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
12	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
13	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
14	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
15	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

PERMANENT HH MEMBERS: 01 **WISEMAN: 371**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…did this person...

PERSON ID# FROM Page 2	Build Fish Traps (circle)	Build Dog Sleds (circle)	Sew Skins/Cloth (circle)	Cook Wild Foods (circle)
Head 1	Y N	Y N	Y N	Y N
Head 2	Y N	Y N	Y N	Y N
03	Y N	Y N	Y N	Y N
04	Y N	Y N	Y N	Y N
05	Y N	Y N	Y N	Y N
06	Y N	Y N	Y N	Y N
07	Y N	Y N	Y N	Y N
08	Y N	Y N	Y N	Y N
09	Y N	Y N	Y N	Y N
10	Y N	Y N	Y N	Y N
11	Y N	Y N	Y N	Y N
12	Y N	Y N	Y N	Y N
13	Y N	Y N	Y N	Y N
14	Y N	Y N	Y N	Y N
15	Y N	Y N	Y N	Y N

PERMANENT HH MEMBERS: 01 **WISEMAN: 371**

HARVESTS: COMMERCIAL SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household participate in commercial salmon fishing?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate the number of salmon ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST FOR PERSONAL USE OR SHARING in 2011. INCLUDE the fish you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…		IN 2011, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2011, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
CHINOOK (KING) SALMON	Y N	Y N	IND	IND	IND		
113000000							
SOCKEYE (RED) SALMON	Y N	Y N	IND	IND	IND		
115000000							
COHO (SILVER) SALMON	Y N	Y N	IND	IND	IND		
112000000							
CHUM (DOG) SALMON	Y N	Y N	IND	IND	IND		
111000000							
PINK (HUMPIES) SALMON	Y N	Y N	IND	IND	IND		
114000000							
UNKNOWN SALMON	Y N	Y N	IND	IND	IND		
119000000							

HARVESTS: COMMERCIAL NON-SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL NON-SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household participate in commercial non-salmon fishing?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate the number of commercially harvested non-salmon fish ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST FOR PERSONAL USE OR SHARING in 2011. INCLUDE the fish you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…		IN 2011, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2011, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
HALIBUT	Y N	Y N	LBS	LBS	LBS		
121800000							
HERRING	Y N	Y N	GAL	GAL	GAL		
120200000							
HERRING SPAWN ON KELP	Y N	Y N	GAL	GAL	GAL		
120306000							
HERRING SAC ROE	Y N	Y N	GAL	GAL	GAL		
120304000							
PACIFIC COD (GRAY)	Y N	Y N	IND	IND	IND		
121004000							
PACIFIC TOM COD	Y N	Y N	IND	IND	IND		
121008000							
SCULPIN	Y N	Y N	IND	IND	IND		
123000000							
STARRY FLOUNDER	Y N	Y N	IND	IND	IND		
121406000							
SMELT	Y N	Y N	GAL	GAL	GAL		
120400000							
ROCKFISH	Y N	Y N	IND	IND	IND		
122600000							
LAMPREY	Y N	Y N	IND	IND	IND		
122000000							
LINGCOD	Y N	Y N	IND	IND	IND		
121606000							

COMMERCIAL NON-SALMON FISHING: 03 **WISEMAN: 371**

HARVESTS: COMMERCIAL MARINE INVERTEBRATE HARVEST

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL MARINE INVERTEBRATE HARVEST ?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household participate in commercial marine invertebrate harvest?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate the commercially harvested marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST in 2011. INCLUDE the marine invertebrates you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…		IN 2011, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2011, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
TANNER CRAB	Y N	Y N	LBS	LBS	LBS		
501012000							
DUNGENESS CRAB	Y N	Y N	LBS	LBS	LBS		
501004000							
SHRIMP	Y N	Y N	GAL	GAL	GAL		
503400000							
SQUID	Y N	Y N	GAL	GAL	GAL		
503800000							
OCTOPUS	Y N	Y N	IND	IND	IND		
502200000							
	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					

COMMERCIAL MARINE INVERTEBRATE HARVEST: 03 **WISEMAN: 371**

HARVESTS: SALMON (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest SALMON ?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST salmon?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many salmon ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011, including with a rod and reel. INCLUDE salmon you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD…					
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH A FISH WHEEL?	…CATCH WITH A GILL NET OR SEINE?	…CATCH WITH A DIPNET?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*					*(ind, lbs)*
CHINOOK (KING) SALMON	Y N	Y N	Y N	Y N	Y N						IND
113000000											
SOCKEYE (RED) SALMON	Y N	Y N	Y N	Y N	Y N						IND
115000000											
COHO (SILVER) SALMON	Y N	Y N	Y N	Y N	Y N						IND
112000000											
CHUM (DOG) SALMON	Y N	Y N	Y N	Y N	Y N						IND
111000000											
PINK (HUMPIES) SALMON	Y N	Y N	Y N	Y N	Y N						IND
114000000											
LANDLOCKED SALMON *Kokanee*	Y N	Y N	Y N	Y N	Y N						IND
116000000											
UNKNOWN SALMON	Y N	Y N	Y N	Y N	Y N						IND
119000000											

These columns should include all the harvests: salmon HARVESTED by members of this household in 2011.

ASSESSMENTS: SALMON

Between JANUARY and DECEMBER, 2011…

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

Last year…
…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?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough salmon?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

SALMON :04 **WISEMAN: 371**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest OTHER FISH ?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST other fish?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011, including with a rod and reel. INCLUDE other fish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH GILL NET OR SEINE?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					(number taken by each gear type)			(ind, lbs)
RAINBOW TROUT 126204000	Y N	Y N	Y N	Y N	Y N				IND
LAKE TROUT 125010000	Y N	Y N	Y N	Y N	Y N				IND
ARCTIC CHAR 125002000	Y N	Y N	Y N	Y N	Y N				IND
TROUT *Unknown* 126200000	Y N	Y N	Y N	Y N	Y N				IND
DOLLY VARDEN 125006000	Y N	Y N	Y N	Y N	Y N				IND
GRAYLING 125200000	Y N	Y N	Y N	Y N	Y N				IND
PIKE 125400000	Y N	Y N	Y N	Y N	Y N				IND
BURBOT *Ling Cod* 124800000	Y N	Y N	Y N	Y N	Y N				IND
ROUND WHITEFISH 126412000	Y N	Y N	Y N	Y N	Y N				IND
HUMPBACK WHITEFISH 126408000	Y N	Y N	Y N	Y N	Y N				IND
BROAD WHITEFISH 126404000	Y N	Y N	Y N	Y N	Y N				IND
LEAST CISCO 126406060	Y N	Y N	Y N	Y N	Y N				IND
UNKNOWN WHITEFISH 126400000	Y N	Y N	Y N	Y N	Y N				IND
SUCKER 126000000	Y N	Y N	Y N	Y N	Y N				IND

Continue on next page

These columns should include all the harvests: other fish HARVESTED by members of this household in 2011.

HARVESTS: OTHER FISH (NON-COMMERCIAL) HOUSEHOLD ID

…continued

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011 , including with a rod and reel. INCLUDE other fish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH GILL NET OR SEINE?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					(number taken by each gear type)			(ind, lbs)
HALIBUT	Y N	Y N	Y N	Y N	Y N				LBS
121800000									
HERRING	Y N	Y N	Y N	Y N	Y N				GAL
120200000									
PACIFIC COD (GRAY)	Y N	Y N	Y N	Y N	Y N				IND
121004000									
PACIFIC TOM COD	Y N	Y N	Y N	Y N	Y N				IND
121008000									
STARRY FLOUNDER	Y N	Y N	Y N	Y N	Y N				IND
121406000									
SMELT	Y N	Y N	Y N	Y N	Y N				GAL
120400000									
ROCKFISH	Y N	Y N	Y N	Y N	Y N				IND
122600000									
LAMPREY	Y N	Y N	Y N	Y N	Y N				IND
122000000									
LINGCOD	Y N	Y N	Y N	Y N	Y N				IND
121606000									
	Y N	Y N	Y N	Y N	Y N				
						These columns should include all the harvests: other fish HARVESTED by members of this household in 2011.			

OTHER FISH

Between JANUARY and DECEMBER, 2011…

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

Last year…

…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

Last year…

…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?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough other fish?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

OTHER FISH: 06 **WISEMAN: 371**

HARVESTS: MARINE INVERTEBRATES/SHELLFISH

HOUSEHOLD ID

Do members of your household USUALLY harvest MARINE INVERTEBRATES/SHELLFISH ?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST marine invertebrates/shellfish ?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many marine invertebrates/shellfish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE marine invertebrates/shellfish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST? (number taken)	UNITS (ind, lbs,gal)
	(circle)						
DUNGENESS CRAB 501004000	Y N	Y N	Y N	Y N	Y N		LBS
KING CRAB 501008000	Y N	Y N	Y N	Y N	Y N		LBS
TANNER CRAB 501012000	Y N	Y N	Y N	Y N	Y N		LBS
RAZOR CLAMS 500612000	Y N	Y N	Y N	Y N	Y N		GAL
FRESHWATER CLAMS 500604000	Y N	Y N	Y N	Y N	Y N		GAL
	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		

These columns should include all the harvests: marine invertebrates/shellfish HARVESTED by members of this household in 2011.

MARINE INVERTEBRATES/SHELLFISH

Between JANUARY and DECEMBER, 2011…

To conclude our marine invertebrates/shellfish section, I am going to ask a few general questions about marine invertebrates/shellfish.
Last year…
…did your household use LESS, SAME, or MORE marine invertebrates/shellfish than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH marine invertebrates/shellfish?..... Y N
If NO…
What KIND of marine invertebrates/shellfish did you need?..... _____

How would you describe the impact to your household
of not getting enough marine invertebrates/shellfish last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough marine invertebrates/shellfish?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

MARINE INVERTEBRATES/SHELLFISH: 08 **WISEMAN: 371**

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for LARGE LAND MAMMALS?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST large land mammals?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE large land mammals you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

CIRCLE THE HARVEST AMOUNT THAT IS A POTLATCH MOOSE.	IN 2011 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST? JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)						(enter number by sex and month of take)													(ind)
MOOSE	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
211800000						?														
211800001						M														
211800002						F														
211800009						?														
CARIBOU	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
211000000						?														
211000001						M														
211000002						F														
211000009						?														
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																				
DALL SHEEP	Y N	Y N	Y N	Y N	Y N															IND
212200000																				
GOAT	Y N	Y N	Y N	Y N	Y N															IND
211600000																				
BISON	Y N	Y N	Y N	Y N	Y N															IND
210400000																				
MUSKOX	Y N	Y N	Y N	Y N	Y N															IND
212000000																				

LARGE LAND MAMMALS

Between JANUARY and DECEMBER, 2011…

To conclude our large land mammals section, I am going to ask a few general questions about large land mammals.
Last year…
…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

Last year…
…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?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough large land mammals?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

LARGE LAND MAMMALS: 10 **WISEMAN: 371**

HARVESTS: MARINE MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for MARINE MAMMALS for subsistence?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST marine mammals including seal oil?..... Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many marine mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVEST for subsistence use this year. INCLUDE marine mammals you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…						IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?														WERE LESS, SAME, OR MORE _____ AVAILABLE IN 2011, THAN IN RECENT YEARS?
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS	
	(circle)						(enter number by sex and month of take)													(ind)	(circle)
HARBOR SEAL	Y N	Y N	Y N	Y N	Y N	M														IND	L S M ?
						F															
300806000						?															
300806001						M															
300806002						F															
300806009						?															
STELLER SEA LION	Y N	Y N	Y N	Y N	Y N	M														IND	L S M ?
						F															
301200000						?															
301200001						M															
301200002						F															
301200009						?															
SEA OTTER	Y N	Y N	Y N	Y N	Y N															IND	L S M ?
301000000																					
FUR SEAL	Y N	Y N	Y N	Y N	Y N															IND	L S M ?
300804000																					
300804001						M															
300804002						F															
300804009						?															
WHALE (SPECIFY)	Y N	Y N	Y N	Y N	Y N															IND	L S M ?
301600000																					
WALRUS	Y N	Y N	Y N	Y N	Y N															IND	L S M ?
301400000																					
	Y N	Y N	Y N	Y N	Y N															IND	L S M ?
																					" ? " means "I don't know"

MARINE MAMMALS

Between JANUARY and DECEMBER, 2011…

To conclude our section, I am going to ask a few general questions about .
Last year…
…did your household use LESS, SAME, or MORE than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH ?..... Y N
If NO…
What KIND of did you need?..... _____

How would you describe the impact to your household
of not getting enough marine mammals last year?..... ...minor? (1) ...major? (2) sev

Did your household do anything DIFFERENTLY because you did NOT get enough ?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

MARINE MAMMALS: 12 **WISEMAN: 371**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

Do members of your household USUALLY hunt or trap for SMALL LAND MAMMALS OR FURBEARERS for subsistence?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST small land mammals or furbearers?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE small land mammals or furbearers you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…						IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)						*(enter number by month of take)*													*(ind)*
BEAVER	Y N	Y N	Y N	Y N	Y N															IND
220200000																				
PORCUPINE	Y N	Y N	Y N	Y N	Y N															IND
222600000																				
SNOWSHOE HARE	Y N	Y N	Y N	Y N	Y N															IND
221004000																				
RED FOX	Y N	Y N	Y N	Y N	Y N															IND
220804000																				
CROSS FOX	Y N	Y N	Y N	Y N	Y N															IND
220804020																				
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																				
LAND OTTER	Y N	Y N	Y N	Y N	Y N															IND
221200000																				
MUSKRAT	Y N	Y N	Y N	Y N	Y N															IND
222400000																				
WEASEL	Y N	Y N	Y N	Y N	Y N															IND
223000000																				
LYNX	Y N	Y N	Y N	Y N	Y N															IND
221600000																				
	Y N	Y N	Y N	Y N	Y N															IND

Continue on next page

SMALL LAND MAMMALS: 14 **WISEMAN: 371**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

....continued

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE small land mammals or furbearers you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…						IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?													
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)						*(enter number by month of take)*													*(ind)*
MARTEN	Y N	Y N	Y N	Y N	Y N															IND
222000000																				
COYOTE	Y N	Y N	Y N	Y N	Y N															IND
220400000																				
MINK	Y N	Y N	Y N	Y N	Y N															IND
222200000																				
MARMOT	Y N	Y N	Y N	Y N	Y N															IND
221800000																				
GROUND SQUIRREL	Y N	Y N	Y N	Y N	Y N															IND
222800000																				
TREE SQUIRREL	Y N	Y N	Y N	Y N	Y N															IND
222804000																				
	Y N	Y N	Y N	Y N	Y N															IND
	Y N	Y N	Y N	Y N	Y N															IND

SMALL LAND MAMMALS OR FURBEARERS

Between JANUARY and DECEMBER, 2011…

To conclude our small land mammals or furbearers section, I am going to ask a few general questions about small land mammals or furbearers.

Last year…

…did your household use LESS, SAME, or MORE small land mammals or furbearers than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH small land mammals or furbearers?..... Y N

If NO…

What KIND of small land mammals or furbearers did you need?..... _____

How would you describe the impact to your household of not getting enough small land mammals or furbearers last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough small land mammals or furbearers?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

SMALL LAND MAMMALS: 14 **WISEMAN: 371**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

Do members of your household USUALLY hunt for MIGRATORY WATERFOWL?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST migratory waterfowl?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many migratory waterfowl ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE migratory waterfowl you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD ?							
						Spring			Summer		Fall		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBE	OCTOBER	UNKNOWN
	(circle)												
CANADA GEESE (CACKLERS) 410404040	Y N	Y N	Y N	Y N	Y N								
CANADA GEESE (BIG LESSER) 410404080	Y N	Y N	Y N	Y N	Y N								
CANADA GEESE (UNKNOWN) 410404990	Y N	Y N	Y N	Y N	Y N								
WHITE-FRONTED GEESE 410410000	Y N	Y N	Y N	Y N	Y N								
LESSER SNOW GOOSE 410408000	Y N	Y N	Y N	Y N	Y N								
GEESE (UNKNOWN) 410499000	Y N	Y N	Y N	Y N	Y N								
TUNDRA SWAN 410604000	Y N	Y N	Y N	Y N	Y N								
SANDHILL CRANE 410802000	Y N	Y N	Y N	Y N	Y N								
GOLDEN PLOVER 411006020	Y N	Y N	Y N	Y N	Y N								
RED-THROATED LOON 411216060	Y N	Y N	Y N	Y N	Y N								
YELLOW-BILLED LOON 411216080	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								

Continue on next page.

MIGRATORY WATERFOWL: 15 **WISEMAN: 371**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

...continued

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD ?							
						Spring			Summer		Fall		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	UNKNOWN
	(circle)												
MALLARD	Y N	Y N	Y N	Y N	Y N								
410214000													
NORTHERN PINTAIL	Y N	Y N	Y N	Y N	Y N								
410220000													
BLACK SCOTER (BLACK DUCK)	Y N	Y N	Y N	Y N	Y N								
410228020													
SPECTACLED EIDER	Y N	Y N	Y N	Y N	Y N								
410206060													
KING EIDER	Y N	Y N	Y N	Y N	Y N								
410206040													
COMMON EIDER	Y N	Y N	Y N	Y N	Y N								
410206020													
LONG-TAILED DUCK	Y N	Y N	Y N	Y N	Y N								
410218000													
DUCK (UNKNOWN)	Y N	Y N	Y N	Y N	Y N								
410299000													
	Y N	Y N	Y N	Y N	Y N								

MIGRATORY WATERFOWL

Between JANUARY and DECEMBER, 2011…

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

Last year…

…did your household use LESS, SAME, or MORE migratory waterfowl than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH migratory waterfowl?..... Y N

If NO…

What KIND of migratory waterfowl did you need?..... _____

How would you describe the impact to your household of not getting enough migratory waterfowl last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough migratory waterfowl?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

MIGRATORY WATERFOWL: 15 **WISEMAN: 371**

HARVESTS: OTHER BIRDS

HOUSEHOLD ID

Do members of your household USUALLY hunt for OTHER BIRDS?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST other birds?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many other birds ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE other birds you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?											
						Winter			Spring			Summer		Fall		Winter	
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
	(circle)																	
PTARMIGAN	Y N	Y N	Y N	Y N	Y N													
421804000																		
SPRUCE GROUSE	Y N	Y N	Y N	Y N	Y N													
421802020																		
RUFFED GROUSE	Y N	Y N	Y N	Y N	Y N													
421802060																		
SHARP-TAILED GROUSE	Y N	Y N	Y N	Y N	Y N													
421802040																		
SNOWY OWL	Y N	Y N	Y N	Y N	Y N													
422002000																		
	Y N	Y N	Y N	Y N	Y N													
	Y N	Y N	Y N	Y N	Y N													

OTHER BIRDS

Between JANUARY and DECEMBER, 2011…

To conclude our other birds section, I am going to ask a few general questions about other birds.
Last year…
…did your household use LESS, SAME, or MORE other birds than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH other birds?..... Y N
If NO…
What KIND of other birds did you need?..... _____
How would you describe the impact to your household
of not getting enough other birds last year?..... ...minor? (1) ...major? (2) severe? (3)
Did your household do anything DIFFERENTLY because you did NOT get enough other birds?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

OTHER BIRDS: 15 **WISEMAN: 371**

HARVESTS: BIRD EGGS

HOUSEHOLD ID

Do members of your household USUALLY look for BIRD EGGS?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO GATHER bird eggs?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD GATHERED in 2011. INCLUDE bird eggs you gave away, ate fresh, lost to spoilage, or got by helping others. If looking with others, report ONLY YOUR SHARE of the eggs.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number)*	*(each, gallons, buckets, etc.)*
GULL EGGS	Y N	Y N	Y N	Y N	Y N		
431212000							
GEESE EGGS	Y N	Y N	Y N	Y N	Y N		
430400000							
DUCK EGGS	Y N	Y N	Y N	Y N	Y N		
430200000							
EGGS (UNKNOWN)	Y N	Y N	Y N	Y N	Y N		
430000000							
	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		

EGGS

Between JANUARY and DECEMBER, 2011…

To conclude our eggs section, I am going to ask a few general questions about resource name.
Last year…
…did your household use LESS, SAME, or MORE eggs than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH eggs?..... Y N
If NO…
What KIND of eggs did you need?..... _____

How would you describe the impact to your household
of not getting enough eggs last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough eggs?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

BIRD EGGS: 15 **WISEMAN: 371**

HARVESTS: PLANTS AND BERRIES INCLUDING WOOD

HOUSEHOLD ID

Do members of your household USUALLY harvest PLANTS AND BERRIES INCLUDING WOOD?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST plants and berries including wood?..... Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many plants and berries including wood ALL MEMBERS OF YOUR HOUSEHOLD HARVESTING in 2011. INCLUDE plants and berries including wood you gave away, ate fresh, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	IN 2011 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	(circle)					(number)	(each, gallons, buckets, etc.)
BLUEBERRY 601002000	Y N	Y N	Y N	Y N	Y N		
LOW BUSH CRANBERRY 601004000	Y N	Y N	Y N	Y N	Y N		
HIGH BUSH CRANBERRY 601006000	Y N	Y N	Y N	Y N	Y N		
RASPBERRY 601020000	Y N	Y N	Y N	Y N	Y N		
OTHER BERRIES *(List)* 601000000	Y N	Y N	Y N	Y N	Y N		
HUDSON BAY TEA *Labrador Tea* 602018000	Y N	Y N	Y N	Y N	Y N		
MUSHROOMS 602040000	Y N	Y N	Y N	Y N	Y N		
OTHER PLANTS *(List)* 602000002	Y N	Y N	Y N	Y N	Y N		
WOOD *Firewood* 604000000	Y N	Y N	Y N	Y N	Y N		
WOOD *(Specify Use)* 604000002	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		

PLANTS AND BERRIES

Between JANUARY and DECEMBER, 2011…

To conclude our plants and berries section, I am going to ask a few general questions about plants and berries.
Last year…
…did your household use LESS, SAME, or MORE plants and berries than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH plants and berries?..... Y N
If NO…
What KIND of plants and berries did you need?..... _____

How would you describe the impact to your household
of not getting enough plants and berries last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough plants and berries?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

PLANTS AND BERRIES: 17 **WISEMAN: 371**

ASSESMENTS

HOUSEHOLD ID

SUBSISTENCE ASSESSMENTS:

To conclude our subsistence harvest section, I am going to ask a few general questions about ALL SUBSISTENCE RESOURCES.

Last year…

…did your household use LESS, SAME, or MORE subsistence resources than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... 1

2

Last year…

…did your household GET ENOUGH subsistence resources?..... Y N

If NO…

What KIND of subsistence resources did you need?.....

Overall why do you think you did not get enough subsistence foods? 1

2

How would you describe the impact to your household of not getting enough all resources last year?..... ...not noticable? (0) ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough all resources?..... Y N

IF YES…

What did your household do differently?..... 1

2

HEALTH IMPACT ASSESSMENTS

Now I am going to ask about the foods members of your household normally EAT. Our purposes are:

…to identify subsistence foods most commonly eaten, AND

…to identify other foods most commonly eaten IF people cannot get subsistence foods.

(circle ONE response)

In a normal week, how many times a day on average are subsistence foods such as salmon, non-salmon fish, moose, caribou, birds, etc. served in your household?	NONE Don't use (0)	LESS than once a day (?)	About ONCE a day (?)	2 OR 3 times a day (?)	3 OR MORE times a day (?)

If this household does NOT USE subsistence foods, go to the next page.

Otherwise, continue below…

Please list the TOP FIVE SUBSISTENCE FOODS members of your household eat on a regular basis. Include subsistence foods that may not be available now, but are important at other times of the year. Please list most important foods first.

	Subsistence Food 1	*Subsistence Food 2*	*Subsistence Food 3*	*Subsistence Food 4*	*Subsistence Food 5*
TOP FIVE SUBSISTENCE FOODS					

If your household CANNOT GET SUBSISTENCE FOODS, what do members of your household eat instead? Include alternate foods that may not be available now, but are important at other times of the year. Please list most important alternative foods first.

	Other Food	*Other Food*	*Other Food*	*Other Food*	*Other Food*
OTHER FOODS (1 TO 5)					
OTHER FOODS (6 TO 10)					

ASSESSMENTS: 66 **WISEMAN: 371**

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 am going to read you five statements.. Please tell me whether EACH statement was true for your household (HH) in the last 12 months.

Think about all your household's food, both subsistence and store-bought…

STATEMENT 1. We WORRIED that our household would not have ENOUGH FOOD.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... [1] Often True HH2
[2] Sometimes True
[3] Never True

STATEMENT 2. The food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... [1] Often True HH3
[2] Sometimes True
[3] Never True

STATEMENT 3. We could not get the foods we wanted to eat because of a LACK OF RESOURCES.

By "lack of resources," we mean your household did NOT have what you needed to hunt, fish, gather, or buy food.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... [1] Often True HH4
[2] Sometimes True
[3] Never True

Now, think just about your household's SUBSISTENCE food…

STATEMENT 4. The SUBSISTENCE 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?..... Y N ?

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 5. 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?..... Y N ?

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

If Statement 1, Statement 2, AND Statement 3 were NEVER TRUE, go to the next page.

If Statement 1, Statement 2, OR Statement 3 was SOMETIMES TRUE or OFTEN TRUE, continue on this page…

In the last 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?..... Y N ? AD1

If YES, how often did this happen?..... [1] Almost every month
[2] Some months…
[3] Only 1 or 2 months

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?..... Y N ? AD2

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

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

In the last 12 months, did you or other adults in your household ever NOT EAT FOR A WHOLE DAY because there was not enough food?..... Y N ? AD5

If YES, how often did this happen?..... [1] Almost every month
[2] Some months…
[3] Only 1 or 2 months

FOOD SECURITY: 201 **WISEMAN: 371**

ENERGY AND EQUIPMENT COSTS **HOUSEHOLD ID**

BETWEEN JANUARY and DECEMBER 2011 DID MEMBERS of your HOUSEHOLD use equipment like BOATS, SNOWMACHINES, OR ATV'S for subsistence activities? YES NO

If NO, skip this question
If YES, continue on this page …

	In 2011, DID YOUR HH USE A… (circle)		FOR THE EQUIPMENT YOU JUST IDENTIFIED YOU USED PLEASE ESTIMATE HOW MANY WEEKS EACH MONTH YOUR HOUSEHOLD USED EACH. (number of weeks ranging from 1 to 4 weeks per month)												ON AVERAGE HOW MANY GALLONS A WEEK DO YOU THINK YOU WENT THROUGH WHEN USING EACH?
			January	February	March	April	May	June	July	August	September	October	November	December	
BOAT	Y	N													
SNOWMACHINE	Y	N													
ATV	Y	N													
CAR OR TRUCK	Y	N													
GENERATOR AT A CAMP	Y	N													
CHAINSAW	Y	N													

IN 2011, FROM THE EQUPMENT YOU JUST IDENTIFIED THAT YOU USED FOR SUBSISTENCE ACTIVITIES, WHICH RESOURCES WERE YOU USING EACH TO HARVEST?

	FISH	MARINE MAMMALS	MOOSE	CARIBOU	SMALL LAND MAMMALS	BIRDS AND EGGS	PLANTS AND BERRIES	WOOD
BOAT								
SNOWMACHINE								
ATV								
CAR OR TRUCK								
GENERATOR (CAMP)								
CHAINSAW								

ENERGY AND EQUIPMENT COSTS: 109 **WISEMAN: 371**

ADDITIONAL ASSESSMENTS — HOUSEHOLD ID

Resource Health

During 2011, were there any resources that your household avoided harvesting due to poor resource health? If YES, which resources did you avoid and why?

Heating

What proportion of your household's heating comes from firewood? *circle*

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100%

In the past 5 years has your harvest area for firewood changed? *circle* Y N

If yes, please explain why?

How much do you spend annually to heat your home? $

Handicrafts

During 2011, did members of your household participate in the making of handicrafts using the following materials? *circle*

birchbark	Y N
horns	Y N
antlers	Y N
other natural material (specify)	Y N

ADDITIONAL ASSESSMENTS — WISEMAN: 371

JOBS **FOR EACH PERSON IN THE HOUSEHOLD, 16 YEARS OLD AND OLDER** **HOUSEHOLD ID**

Between JANUARY and DECEMBER, 2011…
…Did any members of your household earn money from a JOB or from SELF EMPLOYMENT?..... Y N

For each member of this household born before 1996, please list EACH JOB held between JANUARY and DECEMBER, 2011.
For household members who did not have a job, write: "RETIRED," "UNEMPLOYED," "STUDENT," "HOMEMAKER," etc.
There should be at least ONE ROW for each member of this household born BEFORE 1996.

We ask about jobs and income because we are trying to understand all parts of the community economy. Many people use wages from jobs to support subsistence activities. If one person has more than one job, list each job on a separate line. (One person may have several lines.)

REMEMBER COMMERCIAL FISHING & TRAPPING IF APPLICABLE.

	WHO HAD THIS JOB?	WHAT KIND OF WORK DID HE/SHE DO IN THIS JOB?	FOR WHOM DID HE/SHE WORK IN THIS JOB?	JOB LOCATION?	IN 2011, WHAT MONTHS DID HE OR SHE WORK IN THIS JOB?	WORK SCHEDULE… FULL TIME / PART TIME / SHIFT - FULL TIME / ON-CALL, VARIES / SHIFT - PART TIME	IN 2011, HOW MUCH DID HE/SHE EARN IN THIS JOB?
	person	*job title*	*employer, SIC*	*community*	*circle each month worked*	*circle one*	*gross income*
1ST JOB					J F M A M J J A S O N D	FT PT SF OC SP	$ / YR
1 6 910100000		SOC				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				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				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				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				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				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				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				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				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				SCHEDULE	
11TH JOB					J F M A M J J A S O N D	FT PT SF OC SP	$ / YR
11 6 910100000		SOC				SCHEDULE	
12TH JOB					J F M A M J J A S O N D	FT PT SF OC SP	$ / YR
12 6 910100000		SOC				SCHEDULE	

If a person is SELF-EMPLOYED (selling carvings, crafts, bread, etc), list that as a separate job. Enter "sewer," "carver," "baker," etc. as JOB TITLE. Work schedule usually will be "ON CALL." For gross income from self employment ("profit"), enter revenue MINUS expenses.

If a person is UNEMPLOYED, specify retired, unemployed, disabled, student, or homemaker as the JOB TITLE.

TRAPPING for barter or sale IS a job.
COMMERCIAL FISHING is recorded as "ON-CALL, VARIES" for work schedule.

WORK SCHEDULE
1 - Fulltime (35+ hours/week)
2 - Parttime (<35 hours/week)
3 - Shift (2 wks on/2 off, etc.)

GROSS INCOME is the same as TAXABLE INCOME on a W-2 form.

EMPLOYMENT: 23 **WISEMAN: 371**

OTHER INCOME

THIS PAGE IS ONLY FOR INCOME THAT IS NOT EARNED FROM WORKING

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…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 HH RECEIVE INCOME FROM _____ IN 2011? (circle one)	TOTAL AMOUNT ALL MEMBERS OF YOUR HH RECEIVED IN 2011? (dollars)
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND 32	Y N	$ /YR
DIVIDENDS	NATIVE CORPORATION DIVIDENDS 13	Y N	$ /YR

ALASKA PFD IN 2011
1 PFD = $1,174
2 PFDs = $2,348
3 PFDs = $3,522
4 PFDs = $4,696
5 PFDs = $5,870
6 PFDs = $7,044
7 PFDs = $8,218
8 PFDs = $9,392
9 PFDs = $10,566
10 PFDs = $11,740
11 PFDs = $12,914

Doyon DIVIDENDS IN 2011		
1	*share=*	*$3.88*
100	*shrs=*	*$388*
150	*shrs=*	*$582*
200	*shrs=*	*$776*

Between JANUARY and DECEMBER, 2011…
…Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next page.

If YES, continue below…

		RECEIVED IN 2011? (circle one)	TOTAL AMOUNT IN 2011? (dollars)	*scratch paper for calculations*
JOB BENEFITS	UNEMPLOYMENT 12	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
JOB BENEFITS	WORKERS' COMPENSATION 8	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ASSISTANCE	FOOD STAMPS (QUEST CARD) 11	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ASSISTANCE	ADULT PUBLIC ASSISTANCE 3	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ELDER BENEFITS	ALASKA SENIOR BENEFITS (LONGEVITY) 6	Y N	$ /YR	Depends on Income: $125 per month for 12 months = $1,500 per elder $175 per month for 12 months = $2,100 per elder $250 per month for 12 months = $3,000 per elder
ELDER BENEFITS	PENSION & RETIREMENT 5	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ELDER BENEFITS	SOCIAL SECURITY 7	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	SUPPLEMENTAL SECURITY 10	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	FOSTER CARE 41	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	CHILD SUPPORT 15	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
OTHER	ENERGY ASSISTANCE 9	Y N	$ /YR	
OTHER	OTHER *(describe)*	Y N	$ /YR	

OTHER INCOME: 24 **WISEMAN: 371**

COMMENTS

HOUSEHOLD ID

DO YOU HAVE ANY QUESTIONS, COMMENTS, OR CONCERNS?

INTERVIEW SUMMARY:

BE SURE TO FILL IN THE STOP TIME ON THE FIRST PAGE!!!!

COMMENTS: 30 **WISEMAN: 371**

DISCARD THIS PAGE
PRINT DUPLEX
BIND ON LEFT (LONG) EDGE

PART 2: SURVEY FORM FOR COMMUNITIES LOCATED SOUTHEAST OF FAIRBANKS

COMPREHENSIVE SUBSISTENCE SURVEY

TOK, ALASKA

January to December, 2011

This survey is used to estimate subsistence harvests and to describe community subsistence economies. We will publish a summary report, and send it to all households in your community. We share the community 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 subsistence, and to implement federal and state subsistence priorities.

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 stop at any time.

HOUSEHOLD ID:		
COMMUNITY ID:	TOK	346
RESPONDENT ID:		
INTERVIEWER:		
INTERVIEW DATE:		
START TIME:		
STOP TIME:		
DATA CODED BY:		
DATA ENTERED BY:		
SUPERVISOR:		

COOPERATING ORGANIZATIONS

DIVISION OF PUBLIC HEALTH
HEALTH AND SOCIAL SERVICES
3601 C STREET, SUITE 540
ANCHORAGE, AK 99503

907-269-8000

DIVISION OF SUBSISTENCE
ALASKA DEPT OF FISH & GAME
333 RASPBERRY ROAD
ANCHORAGE, AK 99518

907-267-2353

INSTITUTE OF SOCIAL
& ECONOMIC RESEARCH
UNIVERSITY OF ALASKA ANCHORAGE
ANCHORAGE, AK 99508

907-786-7710

HOUSEHOLD MEMBERS

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…who lived in your household?

ID#	IS THIS PERSON ANSWERING QUESTIONS *ON THIS SURVEY?* (circle)	MALE OR FEMALE? (circle)	ALASKA NATIVE? (circle)	IN WHAT YEAR WAS THIS PERSON BORN? (year)	WHERE WERE PARENTS LIVING WHEN THIS PERSON WAS BORN? (ak city or state)	HOW IS THIS PERSON RELATED TO HOUSEHOLD HEAD 1? (relation)	HOW MANY YEARS HAS THIS PERSON LIVED IN TOK? (number)
HEAD 1	Y N	M F	Y N				YRS
01							
Enter spouse or partner next. If household has a SINGLE HEAD, leave HEAD 2 blank.							
HEAD 2	Y N	M F	Y N				YRS
02							
Enter children (oldest to youngest), grandchildren, grandparents, brothers, sisters, or anyone else living full-time in this household.							
03	Y N	M F	Y N				YRS
04	Y N	M F	Y N				YRS
05	Y N	M F	Y N				YRS
06	Y N	M F	Y N				YRS
07	Y N	M F	Y N				YRS
08	Y N	M F	Y N				YRS
09	Y N	M F	Y N				YRS
10	Y N	M F	Y N				YRS
11	Y N	M F	Y N				YRS
12	Y N	M F	Y N				YRS
13	Y N	M F	Y N				YRS
14	Y N	M F	Y N				YRS
15	Y N	M F	Y N				YRS

PERMANENT HH MEMBERS: 01 **TOK: 346**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…did this person...

PERSON	Fish		Large Land Mammals		Small Land Mammals Furbearers		Birds & Eggs		Plants/Berries/Wood	
ID# FROM	Fish	Process	Hunt	Process	Hunt/Trap	Process	Hunt/Gather	Process	Gather	Process
Page 2	*(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
Head 2	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
03	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
04	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
05	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
06	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
07	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
08	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
09	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
10	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
11	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
12	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
13	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
14	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
15	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

PERMANENT HH MEMBERS: 01 **TOK: 346**

HARVESTS: COMMERCIAL SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household participate in commercial salmon fishing?..... Y N

IF NO, go to the next harvest page.

If YES, continue on this page…

Please estimate the number of salmon ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST FOR PERSONAL USE OR SHARING in 2011. INCLUDE the fish you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…		IN 2011, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2011, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
CHINOOK (KING) SALMON	Y N	Y N	IND	IND	IND		
113000000							
SOCKEYE (RED) SALMON	Y N	Y N	IND	IND	IND		
115000000							
COHO (SILVER) SALMON	Y N	Y N	IND	IND	IND		
112000000							
CHUM (DOG) SALMON	Y N	Y N	IND	IND	IND		
111000000							
PINK (HUMPIES) SALMON	Y N	Y N	IND	IND	IND		
114000000							
UNKNOWN SALMON	Y N	Y N	IND	IND	IND		
119000000							

COMMERCIAL SALMON FISHING: 03 **TOK: 346**

HARVESTS: COMMERCIAL NON-SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL NON-SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household participate in commercial non-salmon fishing?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate the number of commercially harvested non-salmon fish ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST FOR PERSONAL USE OR SHARING in 2011. INCLUDE the fish you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…		IN 2011, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2011, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
HALIBUT	Y N	Y N	LBS	LBS	LBS		
121800000							
HERRING	Y N	Y N	GAL	GAL	GAL		
120200000							
HERRING SPAWN ON KELP	Y N	Y N	GAL	GAL	GAL		
120306000							
HERRING SAC ROE	Y N	Y N	GAL	GAL	GAL		
120304000							
PACIFIC COD (GRAY)	Y N	Y N	IND	IND	IND		
121004000							
PACIFIC TOM COD	Y N	Y N	IND	IND	IND		
121008000							
SCULPIN	Y N	Y N	IND	IND	IND		
123000000							
STARRY FLOUNDER	Y N	Y N	IND	IND	IND		
121406000							
SMELT	Y N	Y N	GAL	GAL	GAL		
120400000							
ROCKFISH	Y N	Y N	IND	IND	IND		
122600000							
LAMPREY	Y N	Y N	IND	IND	IND		
122000000							
LINGCOD	Y N	Y N	IND	IND	IND		
121606000							

COMMERCIAL NON-SALMON FISHING: 03 **TOK: 346**

HARVESTS: COMMERCIAL MARINE INVERTEBRATE HARVEST

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL MARINE INVERTEBRATE HARVEST ?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household participate in commercial marine invertebrate harvest?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate the commercially harvested marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST in 2011. INCLUDE the marine invertebrates you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…		IN 2011, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2011, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
TANNER CRAB	Y N	Y N	LBS	LBS	LBS		
501012000							
DUNGENESS CRAB	Y N	Y N	LBS	LBS	LBS		
501004000							
SHRIMP	Y N	Y N	GAL	GAL	GAL		
503400000							
SQUID	Y N	Y N	GAL	GAL	GAL		
503800000							
OCTOPUS	Y N	Y N	IND	IND	IND		
502200000							
KING CRAB	Y N	Y N					
501008000							
	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					

COMMERCIAL MARINE INVERTEBRATE HARVEST: 03 **TOK: 346**

HARVESTS: SALMON (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest SALMON ?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST salmon?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many salmon ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011, including with a rod and reel. INCLUDE salmon you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD…					
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH A FISH WHEEL?	…CATCH WITH A GILL NET OR SEINE?	…CATCH WITH A DIPNET?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*					*(ind, lbs)*
CHINOOK (KING) SALMON	Y N	Y N	Y N	Y N	Y N						IND
113000000											
SOCKEYE (RED) SALMON	Y N	Y N	Y N	Y N	Y N						IND
115000000											
COHO (SILVER) SALMON	Y N	Y N	Y N	Y N	Y N						IND
112000000											
CHUM (DOG) SALMON	Y N	Y N	Y N	Y N	Y N						IND
111000000											
PINK (HUMPIES) SALMON	Y N	Y N	Y N	Y N	Y N						IND
114000000											
LANDLOCKED SALMON *Kokanee*	Y N	Y N	Y N	Y N	Y N						IND
116000000											
UNKNOWN SALMON	Y N	Y N	Y N	Y N	Y N						IND
119000000											

These columns should include all the harvests: salmon HARVESTED by members of this household in 2011.

ASSESSMENTS: SALMON

Between JANUARY and DECEMBER, 2011…

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

Last year…
…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?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough salmon?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

SALMON :04 **TOK: 346**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest OTHER FISH ?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST other fish?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011, including with a rod and reel. INCLUDE other fish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH GILL NET OR SEINE?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					(number taken by each gear type)			(ind, lbs)
RAINBOW TROUT 126204000	Y N	Y N	Y N	Y N	Y N				IND
LAKE TROUT 125010000	Y N	Y N	Y N	Y N	Y N				IND
CUTTHROAT TROUT 126202000	Y N	Y N	Y N	Y N	Y N				IND
TROUT *Unknown* 126200000	Y N	Y N	Y N	Y N	Y N				IND
DOLLY VARDEN 125006000	Y N	Y N	Y N	Y N	Y N				IND
GRAYLING 125200000	Y N	Y N	Y N	Y N	Y N				IND
PIKE 125400000	Y N	Y N	Y N	Y N	Y N				IND
BURBOT *Ling Cod* 124800000	Y N	Y N	Y N	Y N	Y N				IND
ROUND WHITEFISH 126412000	Y N	Y N	Y N	Y N	Y N				IND
HUMPBACK WHITEFISH 126408000	Y N	Y N	Y N	Y N	Y N				IND
BROAD WHITEFISH 126404000	Y N	Y N	Y N	Y N	Y N				IND
LEAST CISCO 126406060	Y N	Y N	Y N	Y N	Y N				IND
UNKNOWN WHITEFISH 126400000	Y N	Y N	Y N	Y N	Y N				IND
SUCKER 126000000	Y N	Y N	Y N	Y N	Y N				IND

Continue on next page

These columns should include all the harvests: other fish HARVESTED by members of this household in 2011.

OTHER FISH: 06 **TOK: 346**

HARVESTS: OTHER FISH (NON-COMMERCIAL) HOUSEHOLD ID

…continued

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011 , including with a rod and reel. INCLUDE other fish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH GILL NET OR SEINE?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*			*(ind, lbs)*
HALIBUT	Y N	Y N	Y N	Y N	Y N				LBS
121800000									
HERRING	Y N	Y N	Y N	Y N	Y N				GAL
120200000									
PACIFIC COD (GRAY)	Y N	Y N	Y N	Y N	Y N				IND
121004000									
PACIFIC TOM COD	Y N	Y N	Y N	Y N	Y N				IND
121008000									
STARRY FLOUNDER	Y N	Y N	Y N	Y N	Y N				IND
121406000									
SMELT	Y N	Y N	Y N	Y N	Y N				GAL
120400000									
ROCKFISH	Y N	Y N	Y N	Y N	Y N				IND
122600000									
LAMPREY	Y N	Y N	Y N	Y N	Y N				IND
122000000									
LINGCOD	Y N	Y N	Y N	Y N	Y N				IND
121606000									
	Y N	Y N	Y N	Y N	Y N				

These columns should include all the harvests: other fish HARVESTED by members of this household in 2011.

OTHER FISH

Between JANUARY and DECEMBER, 2011…

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

Last year…

…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

Last year…

…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?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough other fish?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

OTHER FISH: 06 **TOK: 346**

HARVESTS: MARINE INVERTEBRATES/SHELLFISH

HOUSEHOLD ID

Do members of your household USUALLY harvest MARINE INVERTEBRATES/SHELLFISH ?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST marine invertebrates/shellfish ?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many marine invertebrates/shellfish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE marine invertebrates/shellfish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2011, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST?	UNITS
	(circle)					(number taken)	(ind, lbs,gal)
DUNGENESS CRAB 501004000	Y N	Y N	Y N	Y N	Y N		LBS
KING CRAB 501008000	Y N	Y N	Y N	Y N	Y N		LBS
TANNER CRAB 501012000	Y N	Y N	Y N	Y N	Y N		LBS
RAZOR CLAMS 500612000	Y N	Y N	Y N	Y N	Y N		GAL
FRESHWATER CLAMS 500604000	Y N	Y N	Y N	Y N	Y N		GAL
	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		

These columns should include all the harvests: marine invertebrates/shellfish HARVESTED by members of this household in 2011.

MARINE INVERTEBRATES/SHELLFISH

Between JANUARY and DECEMBER, 2011…

To conclude our marine invertebrates/shellfish section, I am going to ask a few general questions about marine invertebrates/shellfish.
Last year…
…did your household use LESS, SAME, or MORE marine invertebrates/shellfish than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH marine invertebrates/shellfish?..... Y N
If NO…
What KIND of marine invertebrates/shellfish did you need?..... _____

How would you describe the impact to your household
of not getting enough marine invertebrates/shellfish last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough marine invertebrates/shellfish?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

MARINE INVERTEBRATES/SHELLFISH: 08 **TOK: 346**

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for LARGE LAND MAMMALS?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST large land mammals?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE large land mammals you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

CIRCLE THE HARVEST AMOUNT THAT IS A POTLATCH MOOSE.	IN 2011 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST? JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)						(enter number by sex and month of take)													(ind)
MOOSE	Y N	Y N	Y N	Y N	Y N	M														IND
211800000						F														
						?														
211800001						M														
211800002						F														
211800009						?														
CARIBOU	Y N	Y N	Y N	Y N	Y N	M														IND
211000000						F														
						?														
211000001						M														
211000002						F														
211000009						?														
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																				
DALL SHEEP	Y N	Y N	Y N	Y N	Y N															IND
212200000																				
GOAT	Y N	Y N	Y N	Y N	Y N															IND
211600000																				
DEER	Y N	Y N	Y N	Y N	Y N															IND
211200000																				
BISON	Y N	Y N	Y N	Y N	Y N															IND
210400000																				

LARGE LAND MAMMALS

Between JANUARY and DECEMBER, 2011…

To conclude our large land mammals section, I am going to ask a few general questions about large land mammals.
Last year…
…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

Last year…
…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?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough large land mammals?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

LARGE LAND MAMMALS: 10 **TOK: 346**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

Do members of your household USUALLY hunt or trap for SMALL LAND MAMMALS OR FURBEARERS for subsistence?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST small land mammals or furbearers?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE small land mammals or furbearers you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)					*(enter number by month of take)*													*(ind)*
BEAVER 220200000	Y N	Y N	Y N	Y N	Y N														IND
PORCUPINE 222600000	Y N	Y N	Y N	Y N	Y N														IND
SNOWSHOE HARE 221004000	Y N	Y N	Y N	Y N	Y N														IND
RED FOX 220804000	Y N	Y N	Y N	Y N	Y N														IND
CROSS FOX 220804020	Y N	Y N	Y N	Y N	Y N														IND
WOLF 223200000	Y N	Y N	Y N	Y N	Y N														IND
WOLVERINE 223400000	Y N	Y N	Y N	Y N	Y N														IND
LAND OTTER 221200000	Y N	Y N	Y N	Y N	Y N														IND
MUSKRAT 222400000	Y N	Y N	Y N	Y N	Y N														IND
WEASEL 223000000	Y N	Y N	Y N	Y N	Y N														IND
LYNX 221600000	Y N	Y N	Y N	Y N	Y N														IND
	Y N	Y N	Y N	Y N	Y N														IND

Continue on next page

SMALL LAND MAMMALS: 14 **TOK: 346**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

....continued

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE small land mammals or furbearers you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)					*(enter number by month of take)*													*(ind)*
MARTEN	Y N	Y N	Y N	Y N	Y N														IND
222000000																			
COYOTE	Y N	Y N	Y N	Y N	Y N														IND
220400000																			
MINK	Y N	Y N	Y N	Y N	Y N														IND
222200000																			
MARMOT	Y N	Y N	Y N	Y N	Y N														IND
221800000																			
GROUND SQUIRREL	Y N	Y N	Y N	Y N	Y N														IND
222800000																			
TREE SQUIRREL	Y N	Y N	Y N	Y N	Y N														IND
222804000																			
	Y N	Y N	Y N	Y N	Y N														IND
	Y N	Y N	Y N	Y N	Y N														IND

SMALL LAND MAMMALS OR FURBEARERS

Between JANUARY and DECEMBER, 2011…

To conclude our small land mammals or furbearers section, I am going to ask a few general questions about small land mammals or furbearers.

Last year…

…did your household use LESS, SAME, or MORE small land mammals or furbearers than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH small land mammals or furbearers?..... Y N

If NO…

What KIND of small land mammals or furbearers did you need?..... _____

How would you describe the impact to your household of not getting enough small land mammals or furbearers last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough small land mammals or furbearers?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

SMALL LAND MAMMALS: 14 **TOK: 346**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

Do members of your household USUALLY hunt for MIGRATORY WATERFOWL?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST migratory waterfowl?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many migratory waterfowl ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE migratory waterfowl you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD ?							
						Spring			Summer		Fall		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBE	OCTOBER	UNKNOWN
	(circle)												
CANADA GEESE (CACKLERS)	Y N	Y N	Y N	Y N	Y N								
410404040													
CANADA GEESE (BIG LESSER)	Y N	Y N	Y N	Y N	Y N								
410404080													
CANADA GEESE (UNKNOWN)	Y N	Y N	Y N	Y N	Y N								
410404000													
WHITE-FRONTED GEESE *Specklebelly*	Y N	Y N	Y N	Y N	Y N								
410410000													
SPECTACLED EIDER	Y N	Y N	Y N	Y N	Y N								
410206060													
BRANT (SEA GEESE)	Y N	Y N	Y N	Y N	Y N								
410402000													
EMPEROR GEESE	Y N	Y N	Y N	Y N	Y N								
410406000													
SNOW GEESE	Y N	Y N	Y N	Y N	Y N								
410408000													
GEESE (UNKNOWN)	Y N	Y N	Y N	Y N	Y N								
410400000													
TUNDRA SWAN (WHISTLING)	Y N	Y N	Y N	Y N	Y N								
410604000													
SANDHILL CRANE	Y N	Y N	Y N	Y N	Y N								
410802000													
MALLARD	Y N	Y N	Y N	Y N	Y N								
410214000													
NORTHERN PINTAIL	Y N	Y N	Y N	Y N	Y N								
410220000													

Continue on next page.

HARVESTS: MIGRATORY WATERFOWL

...continued

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD ?							
						Spring			Summer		Fall		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	UNKNOWN
	(circle)												
GOLDENEYE	Y N	Y N	Y N	Y N	Y N								
410210000													
GREEN WINGED TEAL	Y N	Y N	Y N	Y N	Y N								
410232060													
CANVASBACK	Y N	Y N	Y N	Y N	Y N								
410204000													
BLACK SCOTER (BLACK DUCK)	Y N	Y N	Y N	Y N	Y N								
410228020													
DUCKS (UNKNOWN)	Y N	Y N	Y N	Y N	Y N								
410200000													
	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								

MIGRATORY WATERFOWL

Between JANUARY and DECEMBER, 2011…

To conclude our migratory waterfowl section, I am going to ask a few general questions about migratory waterfowl.
Last year…
…did your household use LESS, SAME, or MORE migratory waterfowl than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH migratory waterfowl?..... Y N
If NO…
What KIND of migratory waterfowl did you need?..... _____

How would you describe the impact to your household
of not getting enough migratory waterfowl last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough migratory waterfowl?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

MIGRATORY WATERFOWL: 15 **TOK: 346**

HARVESTS: OTHER BIRDS

HOUSEHOLD ID

Do members of your household USUALLY hunt for OTHER BIRDS?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST other birds?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many other birds ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2011. INCLUDE other birds you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?											
						Winter			Spring			Summer		Fall		Winter		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
	(circle)																	
PTARMIGAN	Y N	Y N	Y N	Y N	Y N													
421804000																		
SPRUCE GROUSE	Y N	Y N	Y N	Y N	Y N													
421802020																		
RUFFED GROUSE	Y N	Y N	Y N	Y N	Y N													
421802060																		
SHARP-TAILED GROUSE	Y N	Y N	Y N	Y N	Y N													
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													

OTHER BIRDS

Between JANUARY and DECEMBER, 2011…

To conclude our other birds section, I am going to ask a few general questions about other birds.
Last year…
…did your household use LESS, SAME, or MORE other birds than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH other birds?..... Y N
If NO…
What KIND of other birds did you need?..... _____
How would you describe the impact to your household of not getting enough other birds last year?..... ...minor? (1) ...major? (2) severe? (3)
Did your household do anything DIFFERENTLY because you did NOT get enough other birds?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

OTHER BIRDS: 15 **TOK: 346**

HARVESTS: BIRD EGGS

HOUSEHOLD ID

Do members of your household USUALLY look for BIRD EGGS?.....Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO GATHER bird eggs?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD GATHERED in 2011. INCLUDE bird eggs you gave away, ate fresh, lost to spoilage, or got by helping others. If looking with others, report ONLY YOUR SHARE of the eggs.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					(number)	(each, gallons, buckets, etc.)
GULL EGGS	Y N	Y N	Y N	Y N	Y N		
431212000							
GEESE EGGS	Y N	Y N	Y N	Y N	Y N		
430400000							
DUCK EGGS	Y N	Y N	Y N	Y N	Y N		
430200000							
EGGS (UNKNOWN)	Y N	Y N	Y N	Y N	Y N		
430000000							
	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		

EGGS

Between JANUARY and DECEMBER, 2011…

To conclude our eggs section, I am going to ask a few general questions about resource name.
Last year…
…did your household use LESS, SAME, or MORE eggs than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH eggs?..... Y N
If NO…
What KIND of eggs did you need?..... _____

How would you describe the impact to your household
of not getting enough eggs last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough eggs?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

BIRD EGGS: 15 **TOK: 346**

HARVESTS: PLANTS AND BERRIES INCLUDING WOOD

HOUSEHOLD ID

Do members of your household USUALLY harvest PLANTS AND BERRIES INCLUDING WOOD?..... Y N

Between JANUARY and DECEMBER, 2011…
…Did members of your household USE or TRY TO HARVEST plants and berries including wood?..... Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many plants and berries including wood ALL MEMBERS OF YOUR HOUSEHOLD HARVESTING in 2011. INCLUDE plants and berries including wood you gave away, ate fresh, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	IN 2011 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					(number)	(each, gallons, buckets, etc.)
BLUEBERRY	Y N	Y N	Y N	Y N	Y N		
601002000							
LOW BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		
601004000							
HIGH BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		
601006000							
RASPBERRY	Y N	Y N	Y N	Y N	Y N		
601020000							
OTHER BERRIES *(List)*	Y N	Y N	Y N	Y N	Y N		
601000000							
HUDSON BAY TEA *Labrador Tea*	Y N	Y N	Y N	Y N	Y N		
602018000							
MUSHROOMS	Y N	Y N	Y N	Y N	Y N		
602040000							
OTHER PLANTS *(List)*	Y N	Y N	Y N	Y N	Y N		
602000002							
WOOD *Firewood*	Y N	Y N	Y N	Y N	Y N		
604000000							
WOOD *(Specify Use)*	Y N	Y N	Y N	Y N	Y N		
604000002							
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		

PLANTS AND BERRIES

Between JANUARY and DECEMBER, 2011…

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

Last year…
…did your household use LESS, SAME, or MORE plants and berries than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH plants and berries?..... Y N
If NO…
What KIND of plants and berries did you need?..... _____
How would you describe the impact to your household of not getting enough plants and berries last year?..... ...minor? (1) ...major? (2) severe? (3)
Did your household do anything DIFFERENTLY because you did NOT get enough plants and berries?..... Y N
IF YES…
What did your household do differently?..... _____ 1
_____ 2

PLANTS AND BERRIES: 17 **TOK: 346**

ASSESMENTS

HOUSEHOLD ID

SUBSISTENCE ASSESSMENTS: ALL RESOURCES

To conclude our subsistence harvest section, I am going to ask a few general questions about ALL SUBSISTENCE RESOURCES.

Last year…

…did your household use LESS, SAME, or MORE subsistence resources than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... 1 2

Last year…

…did your household GET ENOUGH subsistence resources?..... Y N

If NO…

What KIND of subsistence resources did you need?.....

Overall why do you think you did not get enough subsistence foods?..... 1 2

How would you describe the impact to your household of not getting enough all resources last year?..... ...not noticable? (0) ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough all resources?..... Y N

IF YES…

What did your household do differently?..... 1 2

HEALTH IMPACT ASSESSMENTS

Now I am going to ask about the foods members of your household normally EAT. Our purposes are:

…to identify subsistence foods most commonly eaten, AND

…to identify other foods most commonly eaten IF people cannot get subsistence foods.

(circle ONE response)

In a normal week, how many times a day on average are subsistence foods such as salmon, non-salmon fish, moose, caribou, birds, etc. served in your household?	NONE Don't use (0)	LESS than once a day (?)	About ONCE a day (?)	2 OR 3 times a day (?)	3 OR MORE times a day (?)

If this household does NOT USE subsistence foods, go to the next page.

Otherwise, continue below…

Please list the TOP FIVE SUBSISTENCE FOODS members of your household eat on a regular basis. Include subsistence foods that may not be available now, but are important at other times of the year. Please list most important foods first.

	Subsistence Food 1	*Subsistence Food 2*	*Subsistence Food 3*	*Subsistence Food 4*	*Subsistence Food 5*
TOP FIVE SUBSISTENCE FOODS					

If your household CANNOT GET SUBSISTENCE FOODS, what do members of your household eat instead? Include alternate foods that may not be available now, but are important at other times of the year. Please list most important alternative foods first.

	Other Food	*Other Food*	*Other Food*	*Other Food*	*Other Food*
OTHER FOODS (1 TO 5)					
OTHER FOODS (6 TO 10)					

ASSESSMENTS: 66 **TOK: 346**

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 village have enough to eat. I am going to read you five statements about different food situations. Please tell me whether EACH statement was true for your household (HH) in the last 12 months.

Think about all your household's food, both subsistence and store-bought…

STATEMENT 1. We WORRIED that our household would not have ENOUGH FOOD.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... [1] Often True HH2
[2] Sometimes True
[3] Never True

STATEMENT 2. The food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... [1] Often True HH3
[2] Sometimes True
[3] Never True

STATEMENT 3. We could not get the foods we wanted to eat because of a LACK OF RESOURCES.

By "lack of resources," we mean your household did NOT have what you needed to hunt, fish, gather, or buy food.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... [1] Often True HH4
[2] Sometimes True
[3] Never True

Now, think just about your household's SUBSISTENCE food…

STATEMENT 4. The SUBSISTENCE 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 5. 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 Statement 1, Statement 2, AND Statement 3 were NEVER TRUE, go to the next page.

If Statement 1, Statement 2, OR Statement 3 was SOMETIMES TRUE or OFTEN TRUE, continue on this page…

In the last 12 months, did you or other adults in your household ever CUT THE SIZE OF YOUR MEALS OR SKIP MEALS because the HH could not get the food that was needed?..... N Y ? AD1

If YES, how often did this happen?..... [1] Almost every month
[2] Some months…
[3] Only 1 or 2 months

In the last 12 months, did you or other adults in your household ever EAT LESS THAN YOU FELT YOU SHOULD because the HH could not get the food that was needed?..... N Y ? AD2

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

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

In the last 12 months, did you or other adults in your household ever NOT EAT FOR A WHOLE DAY because there was not enough food?..... N Y ? AD5

If YES, how often did this happen?..... [1] Almost every month
[2] Some months…
[3] Only 1 or 2 months

FOOD SECURITY: 201 **TOK: 346**

ENERGY AND EQUIPMENT COSTS **HOUSEHOLD ID**

BETWEEN JANUARY and DECEMBER 2011 DID MEMBERS of your HOUSEHOLD use equipment like BOATS, SNOWMACHINES, OR ATV'S for subsistence activities? YES NO

If NO, skip this question
If YES, continue on this page …

In 2011, DID YOUR HH USE A…	(circle)		FOR THE EQUIPMENT YOU JUST IDENTIFIED YOU USED PLEASE ESTIMATE HOW MANY WEEKS EACH MONTH YOUR HOUSEHOLD USED EACH. (number of weeks ranging from 1 to 4 weeks per month)												ON AVERAGE HOW MANY GALLONS A WEEK DO YOU THINK YOU WENT THROUGH WHEN USING EACH?
			January	February	March	April	May	June	July	August	September	October	November	December	
BOAT	Y	N													
SNOWMACHINE	Y	N													
ATV	Y	N													
CAR OR TRUCK	Y	N													
GENERATOR AT A CAMP	Y	N													
CHAINSAW	Y	N													

IN 2011, FROM THE EQUPMENT YOU JUST IDENTIFIED THAT YOU USED FOR SUBSISTENCE ACTIVITIES, WHICH RESOURCES WERE YOU USING EACH TO HARVEST?

	FISH	MARINE MAMMALS	MOOSE	CARIBOU	SMALL LAND MAMMALS	BIRDS AND EGGS	PLANTS AND BERRIES	WOOD
BOAT								
SNOWMACHINE								
ATV								
CAR OR TRUCK								
GENERATOR (CAMP)								
CHAINSAW								

ENERGY AND EQUIPMENT COSTS: 109 **TOK: 346**

JOBS **FOR EACH PERSON IN THE HOUSEHOLD, 16 YEARS OLD AND OLDER** **HOUSEHOLD ID**

Between JANUARY and DECEMBER, 2011…
…Did any members of your household earn money from a JOB or from SELF EMPLOYMENT?..... Y N

For each member of this household born before 1996, please list EACH JOB held between JANUARY and DECEMBER, 2011.
For household members who did not have a job, write: "RETIRED," "UNEMPLOYED," "STUDENT," "HOMEMAKER," etc.
There should be at least ONE ROW for each member of this household born BEFORE 1996.

We ask about jobs and income because we are trying to understand all parts of the community economy. Many people use wages from jobs to support subsistence activities. If one person has more than one job, list each job on a separate line. (One person may have several lines.)

REMEMBER COMMERCIAL FISHING & TRAPPING IF APPLICABLE.

	WHO HAD THIS JOB?	WHAT KIND OF WORK DID HE/SHE DO IN THIS JOB?	FOR WHOM DID HE/SHE WORK IN THIS JOB?	JOB LOCATION?	IN 2011, WHAT MONTHS DID HE OR SHE WORK IN THIS JOB?	WORK SCHEDULE… FULL TIME / PART TIME / SHIFT - FULL TIME / ON-CALL, VARIES / SHIFT - PART TIME	IN 2011, HOW MUCH DID HE/SHE EARN IN THIS JOB?
	person	*job title*	*employer, SIC*	*community*	*circle each month worked*	*circle one*	*gross income*
1ST JOB					J F M A M J J A S O N D	FT PT SF OC SP	$ / YR
1 6 910100000		SOC				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				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				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				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				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				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				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				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				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				SCHEDULE	
11TH JOB					J F M A M J J A S O N D	FT PT SF OC SP	$ / YR
11 6 910100000		SOC				SCHEDULE	
12TH JOB					J F M A M J J A S O N D	FT PT SF OC SP	$ / YR
12 6 910100000		SOC				SCHEDULE	

If a person is SELF-EMPLOYED (selling carvings, crafts, bread, etc), list that as a separate job. Enter "sewer," "carver," "baker," etc. as JOB TITLE. Work schedule usually will be "ON CALL." For gross income from self employment ("profit"), enter revenue MINUS expenses.

If a person is UNEMPLOYED, specify retired, unemployed, disabled, student, or homemaker as the JOB TITLE.

TRAPPING for barter or sale IS a job.
COMMERCIAL FISHING is recorded as "ON-CALL, VARIES" for work schedule.

WORK SCHEDULE
1 - Fulltime (35+ hours/week)
2 - Parttime (<35 hours/week)
3 - Shift (2 wks on/2 off, etc.)

GROSS INCOME is the same as TAXABLE INCOME on a W-2 form.

EMPLOYMENT: 23 **TOK: 346**

OTHER INCOME

THIS PAGE IS ONLY FOR INCOME THAT IS NOT EARNED FROM WORKING

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2011…
…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 HH RECEIVE INCOME FROM _____ IN 2011? (circle one)	TOTAL AMOUNT ALL MEMBERS OF YOUR HH RECEIVED IN 2011? (dollars)
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND (32)	Y N	$ /YR
DIVIDENDS	NATIVE CORPORATION DIVIDENDS (13)	Y N	$ /YR

ALASKA PFD IN 2011
1 PFD = $1,174
2 PFDs = $2,348
3 PFDs = $3,522
4 PFDs = $4,696
5 PFDs = $5,870
6 PFDs = $7,044
7 PFDs = $8,218
8 PFDs = $9,392
9 PFDs = $10,566
10 PFDs = $11,740
11 PFDs = $12,914

DOYON LIMITED DIVIDENDS IN 2011		
1	*share=*	*$15.89*
100	*shrs=*	*$1,589*
150	*shrs=*	*$2,384*
200	*shrs=*	*$3,178*

Between JANUARY and DECEMBER, 2011…
…Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next page.

If YES, continue below…

		RECEIVED IN 2011? (circle one)	TOTAL AMOUNT IN 2011? (dollars)	*scratch paper for calculations*
JOB BENEFITS	UNEMPLOYMENT (12)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
JOB BENEFITS	WORKERS' COMPENSATION (8)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ASSISTANCE	FOOD STAMPS (QUEST CARD) (11)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ASSISTANCE	ADULT PUBLIC ASSISTANCE (3)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ELDER BENEFITS	ALASKA SENIOR BENEFITS (LONGEVITY) (6)	Y N	$ /YR	Depends on Income: $125 per month for 12 months = $1,500 per elder $175 per month for 12 months = $2,100 per elder $250 per month for 12 months = $3,000 per elder
ELDER BENEFITS	PENSION & RETIREMENT (5)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ELDER BENEFITS	SOCIAL SECURITY (7)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	SUPPLEMENTAL SECURITY (10)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	FOSTER CARE (41)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	CHILD SUPPORT (15)	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
OTHER	ENERGY ASSISTANCE (9)	Y N	$ /YR	
OTHER	OTHER *(describe)* ( )	Y N	$ /YR	

OTHER INCOME: 24 **TOK: 346**

COMMENTS

HOUSEHOLD ID

DO YOU HAVE ANY QUESTIONS, COMMENTS, OR CONCERNS?

INTERVIEW SUMMARY:

BE SURE TO FILL IN THE STOP TIME ON THE FIRST PAGE!!!!

COMMENTS: 30 **TOK: 346**

DISCARD THIS PAGE
PRINT DUPLEX
BIND ON LEFT (LONG) EDGE

Appendix B–Key Informant Interview Protocol

EASTERN INTERIOR SUBSISTENCE UPDATE 2012

Name of community:
Date:
Name of interviewer:
Name of respondent:
Age of respondent:
How long have you lived in this community?
Would you like to have your name included in the report? Yes No
Notes:

PROJECT OVERVIEW

We are currently conducting a survey in your community to document the harvest and use of wild resources for the calendar year 2011. We understand that one year doesn't represent the long-term pattern of resource use. As part of this survey we ask questions about how the harvest and use of wild resources is different than in recent years, say the past five years. This interview is intended to understand long-term trends in harvest patterns over time, possibly over your lifetime. We appreciate you sharing this information with us as it will give us a much better understanding of the changes that have occurred in your area over time.

Note to interviewer. You do not have to ask all of these questions. You can simply ask the main questions and then use this protocol as a guide to understand the types of questions we are interested in.

WHERE, HOW, AND FROM WHO, DID YOU LEARN YOUR SUBSISTENCE WAY OF LIFE?

FISH (SALMON/NONSALMON) – What kinds of fish are important to your household and community? How has this changed over your lifetime?

- Difference between salmon and non-salmon fish for your community.
- Have your harvest locations for fish changed over time?

- Has harvest timing changed?
- What kind of gear/transportation did you use in the past? What about now?
- Has environmental changes affected harvest patterns over your lifetime?

LARGE LAND MAMMALS – What large animals are most important to your household and community? Has what you harvest and how you harvest changed over your lifetime?

- Has harvest timing changed? If so why?
- How have you changed the areas you harvest over your lifetime, and why do you think this has occurred?
- What kind of transportation did you use in the past and how has this changed over time?

SMALL LAND MAMMALS/FURBEARERS – What small game and furbearers are most important to your household and community? How has your harvesting effort changed over your lifetime?

- What small game do you harvest to eat and which game do you harvest for fur?
- Has harvest timing changed? What about harvest locations?
- Do you harvest small game opportunistically or do you target small game?
- What kind of gear/transportation did you use in the past? What about now?

BIRDS AND EGGS – What birds are most important to your household and community? How has your harvesting effort changed over your lifetime?

- Are eggs important to your household or community?
- Has harvest timing changed?
- Are the places you go to find birds and eggs different now than in the past?

PLANTS/BERRIES/WOOD – What plants and berries are most important to your household and community? Has what you harvest and how you harvest changed over your lifetime?

- Has harvest timing changed?
- Do you use more or less wood for heat than in the past? Is it more or less difficult to find wood?
- Are the places you go to find plants, berries, or wood different now than in the past?
- What kind of transportation did you use in the past? What about now?

- How has environmental change affected the areas you use to harvest berries? What about the abundance of berries?

RESOURCES PARTICULAR TO YOUR COMMUNITY

- Are there resources that you feel are unique to your community, or hold a special value to your community?
- Are there particular times of year that you harvest these resources? What about sharing these resources within your community and with other communities?

FINAL COMMENTS

What do you feel has been the biggest change in your subsistence way of life, from the time you can remember until now?

Do you recall a time before regulations were enforced? How has your harvest practice and patterns changed since that time?

Is there anything else you would like to share?

Appendix C–Conversion Factors

The following table presents conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 3 quarts of smelt, the quantity would be multiplied by the appropriate conversion factor (in this case 1.5) to show a harvest of 4.5 lb of smelt. Due to regional differences in the range of fish and wildlife resources, 2 survey instruments were developed; one for communities located north of Fairbanks and one for communities located southeast of Fairbanks. This appendix contains 2 tables of conversion factors; one for each survey instrument.

Pound conversion factors for selected Interior and Arctic communities located north of Fairbanks, Alaska, 2011.

	Initital units	Conversion to pounds
Chum salmon	Individual	5.08
Coho salmon	Individual	5.29
Chinook salmon	Individual	9.44
Pink salmon	Individual	2.34
Sockeye salmon	Individual	5.04
Landlocked salmon	Individual	1.00
Unknown salmon	Individual	7.00
Herring	Gallons	6.00
Herring sac roe	Gallons	7.00
Herring spawn on kelp	Gallons	7.00
Smelt	Individual	0.25
Smelt	Gallons	3.25
Pacific cod (gray)	Individual	4.00
Pacific tomcod	Individual	3.20
Starry flounder	Individual	3.00
Lingcod	Individual	4.00
Pacific halibut	Pounds	1.00
Arctic lamprey	Individual	0.60
Rockfish	Individual	4.00
Sculpin	Individual	1.00
Burbot	Individual	2.40
Arctic char	Individual	0.90
Dolly Varden	Individual	0.90
Lake trout	Individual	1.40
Arctic grayling	Individual	0.70
Northern pike	Individual	4.50
Sheefish	Individual	6.00
Longnose sucker	Individual	0.70

-continued-

	Initital units	Conversion to pounds
Trout	Individual	1.50
Cutthroat trout	Individual	1.40
Rainbow trout	Individual	1.40
Unknown trout	Individual	1.40
Whitefishes	Individual	3.00
Broad whitefish	Individual	1.40
Least cisco	Individual	1.00
Humpback whitefish	Individual	3.00
Round whitefish	Individual	0.50
Unknown whitefish	Individual	1.48
Bison	Individual	450.00
Black bear	Individual	100.00
Brown bear	Individual	141.00
Caribou	Individual	130.00
Goat	Individual	72.50
Moose	Individual	540.00
Muskox	Individual	295.00
Dall sheep	Individual	104.00
Beaver	Individual	15.00
Coyote	Individual	0.00
Red fox	Individual	0.00
Red fox—cross phase	Individual	0.00
Snowshoe hare	Individual	2.50
River (land) otter	Individual	0.00
Lynx	Individual	0.00
Marmot	Individual	0.00
Marten	Individual	0.00
Mink	Individual	0.00
Muskrat	Individual	0.00
Porcupine	Individual	4.00
Arctic ground (parka) squirrel	Individual	0.00
Red (tree) squirrel	Individual	0.00
Weasel	Individual	0.00
Wolf	Individual	0.00
Wolverine	Individual	0.00
Northern fur seal	Individual	0.00
Harbor seal	Individual	56.00
Sea otter	Individual	19.50
Steller sea lion	Individual	200.00
Walrus	Individual	1,100.00
Whale	Individual	0.00
Canvasback	Individual	1.99
Common eider	Individual	2.21
King eider	Individual	1.43
Spectacled eider	Individual	2.00
Goldeneye	Individual	1.54
Mallard	Individual	1.00
Long-tailed duck	Individual	0.80
Northern pintail	Individual	0.80
Black scoter	Individual	0.90
Teal	Individual	0.52
American wigeon	Individual	1.13

-continued-

	Initital units	Conversion to pounds
Unknown wigeon	Individual	1.31
Unknown ducks	Individual	1.40
Geese—spring	Individual	6.00
Cacklers	Individual	1.20
Lesser Canada geese	Individual	1.20
Unknown Canada geese	Individual	1.20
Snow geese	Individual	2.30
White-fronted geese	Individual	2.40
Unknown geese	Individual	2.40
Tundra (whistling) swan	Individual	10.00
Sandhill crane	Individual	8.40
Golden plover	Individual	0.13
Red-throated loon	Individual	3.00
Yellow-billed loon	Individual	9.00
Spruce grouse	Individual	0.70
Sharp-tailed grouse	Individual	0.70
Ruffed grouse	Individual	0.70
Unknown grouse	Individual	0.70
Ptarmigan	Individual	1.00
Snowy owl	Individual	3.00
Bird eggs	Individual	0.25
Duck eggs	Individual	0.15
Geese eggs	Individual	0.25
Gull eggs	Individual	0.30
Freshwater clams	Gallons	0.12
Razor clams	Gallons	0.25
Dungeness crab	Pounds	0.70
King crab	Pounds	2.30
Tanner crab	Pounds	1.00
Octopus	Individual	4.00
Shrimp	Gallons	2.00
Squid	Gallons	8.00
Berries	Gallons	4.00
Blueberry	Gallons	4.00
Blueberry	Quarts	1.00
Blueberry	Pints	0.50
Blueberry	Cups	0.25
Lowbush cranberry	Gallons	4.00
Lowbush cranberry	Pints	0.50
Lowbush cranberry	Cups	0.25
Lowbush cranberry	Quarts	1.00
Highbush cranberry	Gallons	4.00
Highbush cranberry	Quarts	1.00
Highbush cranberry	Pints	0.50
Highbush cranberry	Cups	0.25
Crowberry	Quarts	1.00
Crowberry	Cups	0.25
Crowberry	Pints	0.50
Cloudberry	Gallons	4.00
Cloud berry	Quarts	1.00
Cloud berry	Pints	0.50
Nagoonberry	Gallons	4.00

-continued-

	Initital units	Conversion to pounds
Raspberry	Gallons	4.00
Raspberry	Quarts	1.00
Raspberry	Pints	0.50
Raspberry	Cups	0.25
Salmonberry	Gallons	4.00
Salmonberry	Quarts	1.00
Strawberry	Quarts	1.00
Strawberry	Cups	0.25
Other wild berry	Gallons	4.00
Wild rhubarb	Pounds	1.00
Wild rhubarb	Gallons	1.00
Wild rhubarb	Pints	0.50
Eskimo potato	Gallons	1.00
Eskimo potato	Pints	0.13
Devil's club	Individual	0.25
Devil's club	Gallons	1.00
Devil's club	Quarts	0.25
Hudson's Bay tea	Gallons	1.00
Hudson's Bay tea	Cups	0.06
Wild rose hips	Gallons	4.00
Wild rose hips	Quarts	1.00
Wild rose hips	Pints	0.50
Other wild greens	Gallons	1.00
Other wild greens	Quarts	0.25
Other wild greens	Pints	0.13
Other wild greens	Cups	0.06
Unknown mushrooms	Individual	0.03
Unknown mushrooms	Gallons	1.00
Wood	Cords	0.00

Source ADF&G Division of Subsistence household surveys, 2012.

Pound conversion factors for selected Interior communities located southeast of Fairbanks, Alaska, 2011.

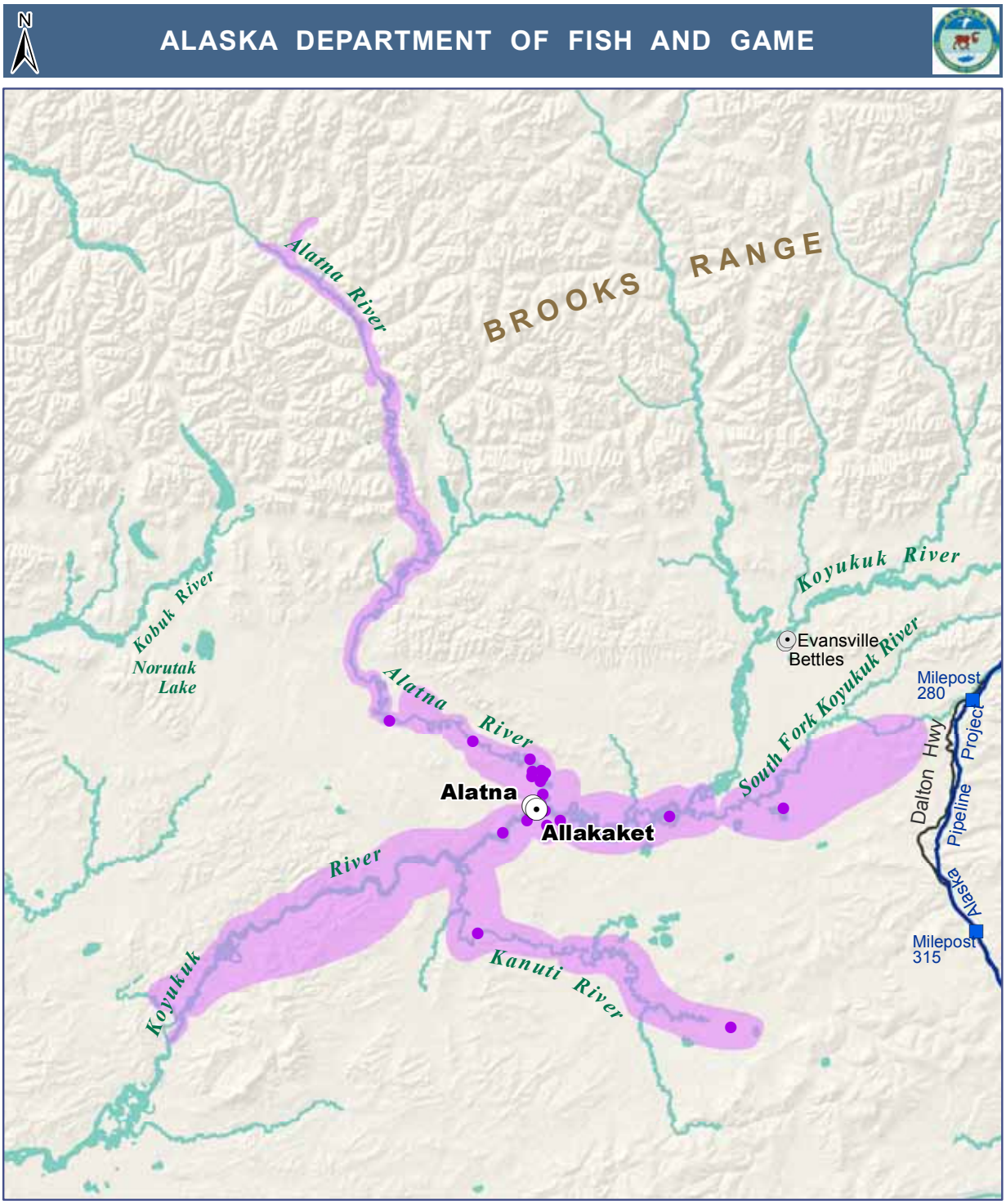
	Initital units	Conversion to pounds
Chum salmon	Individual	4.76
Coho salmon	Individual	6.38
Chinook salmon	Individual	14.21
Pink salmon	Individual	2.51
Sockeye salmon	Individual	4.33
Landlocked salmon	Individual	1.50
Unknown salmon	Individual	4.99
Herring	Individual	0.40
Herring	Gallons	6.00
Herring sac roe	Gallons	7.00
Herring spawn on kelp	Gallons	7.00
Smelt	Individual	0.25
Smelt	Gallons	3.25
Eulachon (hooligan, candlefish)	Gallons	3.25
Pacific cod (gray)	Individual	4.00
Pacific tomcod	Individual	3.20
Starry flounder	Individual	3.00
Lingcod	Individual	4.00
Pacific halibut	Individual	18.41
Pacific halibut	Pounds	1.00
Arctic lamprey	Individual	0.60
Black rockfish	Individual	1.50
Yellow eye rockfish	Individual	4.00
Rockfish	Individual	1.50
Sablefish (black cod)	Individual	3.10
Sculpin	Individual	1.00
Burbot	Individual	2.40
Arctic char	Individual	0.90
Dolly Varden	Individual	0.90
Lake trout	Individual	1.40
Arctic grayling	Individual	0.70
Northern pike	Individual	4.50
Sheefish	Individual	6.00
Longnose sucker	Individual	0.70
Trout	Individual	1.50
Cutthroat trout	Individual	1.40
Rainbow trout	Individual	1.40
Unknown trout	Individual	1.40
Broad whitefish	Individual	1.40
Least cisco	Individual	1.00
Humpback whitefish	Individual	3.00
Round whitefish	Individual	0.50
Unknown whitefish	Individual	1.60
Bison	Individual	450.00
Black bear	Individual	58.00
Brown bear	Individual	0.00
Caribou	Individual	130.00

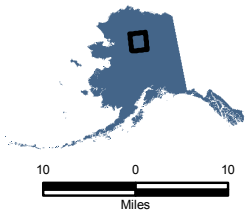
	Initital units	Conversion to pounds
Moose	Individual	540.00
Muskox	Individual	295.00
Dall sheep	Individual	104.00
Beaver	Individual	15.00
Coyote	Individual	0.00
Red fox	Individual	0.00
Red fox—cross phase	Individual	0.00
Red fox—red phase	Individual	0.00
Snowshoe hare	Individual	2.00
River (land) otter	Individual	3.00
Lynx	Individual	0.00
Marmot	Individual	0.00
Marten	Individual	0.00
Mink	Individual	0.00
Muskrat	Individual	0.00
Porcupine	Individual	4.00
Arctic ground (parka) squirrel	Individual	0.00
Red (tree) squirrel	Individual	0.00
Unknown squirrel	Individual	0.00
Weasel	Individual	0.00
Wolf	Individual	0.00
Wolverine	Individual	0.00
Northern fur seal	Individual	0.00
Harbor seal	Individual	56.00
Sea otter	Individual	19.50
Steller sea lion	Individual	200.00
Walrus	Individual	1,100.00
Whale	Individual	0.00
Bufflehead	Individual	0.40
Canvasback	Individual	1.99
Common eider	Individual	2.21
King eider	Individual	1.43
Spectacled eider	Individual	2.00
Unknown eider	Individual	2.00
Goldeneye	Individual	1.54
Mallard	Individual	1.00
Long-tailed duck	Individual	0.80
Northern pintail	Individual	0.80
Scaup	Individual	0.90
Black scoter	Individual	0.90
Northern shoveler	Individual	1.00
Green-winged teal	Individual	0.52
Unknown teal	Individual	0.52
American wigeon	Individual	1.13
Unknown wigeon	Individual	1.31
Unknown ducks	Individual	0.90
Brant	Individual	6.00
Cacklers	Individual	1.20
Lesser Canada geese	Individual	1.20

	Initital units	Conversion to pounds
White-fronted geese	Individual	2.40
Unknown geese	Individual	1.03
Tundra (whistling) swan	Individual	10.00
Sandhill crane	Individual	8.40
Golden plover	Individual	0.13
Red-throated loon	Individual	3.00
Yellow-billed loon	Individual	9.00
Spruce grouse	Individual	0.70
Sharp-tailed grouse	Individual	0.70
Ruffed grouse	Individual	0.70
Unknown grouse	Individual	0.70
Ptarmigan	Individual	1.00
Snowy owl	Individual	3.00
Duck eggs	Individual	0.15
Geese eggs	Individual	0.25
Swan eggs	Individual	0.60
Gull eggs	Individual	0.30
Unknown bird eggs	Individual	0.25
Freshwater clams	Gallons	0.12
Razor clams	Gallons	0.25
Dungeness crab	Individual	0.70
Dungeness crab	Pounds	0.70
King crab	Individual	2.30
King crab	Pounds	2.30
Tanner crab	Pounds	1.00
Octopus	Individual	4.00
Oyster	Gallons	3.00
Shrimp	Individual	0.01
Shrimp	Pounds	1.00
Shrimp	Gallons	2.00
Squid	Gallons	8.00
Berries	Gallons	4.00
Blueberry	Pounds	1.00
Blueberry	Gallons	4.00
Blueberry	Quarts	1.00
Blueberry	Pints	0.50
Blueberry	Cups	0.25
Lowbush cranberry	Pounds	1.00
Lowbush cranberry	Gallons	4.00
Lowbush cranberry	Quarts	1.00
Lowbush cranberry	Pints	0.50
Lowbush cranberry	Cups	0.25
Highbush cranberry	Gallons	4.00
Highbush cranberry	Quarts	1.00
Highbush cranberry	Pints	0.50
Highbush cranberry	Cups	0.25
Crowberry	Pounds	1.00
Crowberry	Quarts	1.00
Crowberry	Pints	0.50

	Initial units	Conversion to pounds
Currants	Gallons	4.00
Currants	Quarts	1.00
Currants	Pints	0.50
Cloud berry	Gallons	4.00
Cloud berry	Quarts	1.00
Cloud berry	Pints	0.50
Nagoonberry	Gallons	4.00
Raspberry	Pounds	1.00
Raspberry	Gallons	4.00
Raspberry	Quarts	1.00
Raspberry	Pints	0.50
Raspberry	Cups	0.25
Salmonberry	Gallons	4.00
Salmonberry	Quarts	1.00
Strawberry	Pounds	1.00
Strawberry	Gallons	4.00
Strawberry	Quarts	1.00
Strawberry	Cups	0.25
Other wild berry	Gallons	4.00
Other wild berry	Quarts	1.00
Wild rhubarb	Pounds	1.00
Wild rhubarb	Gallons	1.00
Wild rhubarb	Pints	0.50
Eskimo potato	Gallons	1.00
Eskimo potato	Pints	0.13
Devil's club	Individual	0.25
Devil's club	Gallons	1.00
Devil's club	Quarts	0.25
Hudson's Bay tea	Gallons	1.00
Hudso's Bay tea	Cups	0.06
Wild rose hips	Gallons	4.00
Wild rose hips	Quarts	1.00
Wild rose hips	Pints	0.50
Wild rose hips	Cups	0.06
Yarrow	Pounds	1.00
Yarrow	Pints	0.50
Other wild greens	Pounds	1.00
Other wild greens	Gallons	1.00
Other wild greens	Quarts	0.25
Other wild greens	Pints	0.13
Other wild greens	Cups	0.06
Unknown mushrooms	Individual	0.03
Unknown mushrooms	Pounds	1.00
Unknown mushrooms	Gallons	1.00
Unknown mushrooms	Gallons	1.00
Unknown mushrooms	Quarts	0.25
Unknown mushrooms	Pints	0.13
Unknown mushrooms	Cups	0.06

Appendix D–Harvest Use Area Maps by Community





Map Scale 1:1,250,000

Alatna - All Resources, 2011

All Resource Harvest Locations

All Resource Search Areas

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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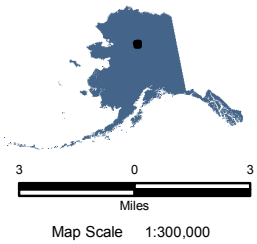

Map Scale 1:300,000

Alatna - Salmon, 2011

Salmon Harvest Location

Stephen R. Braund & Associates
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907-276-8222 srba@alaska.net

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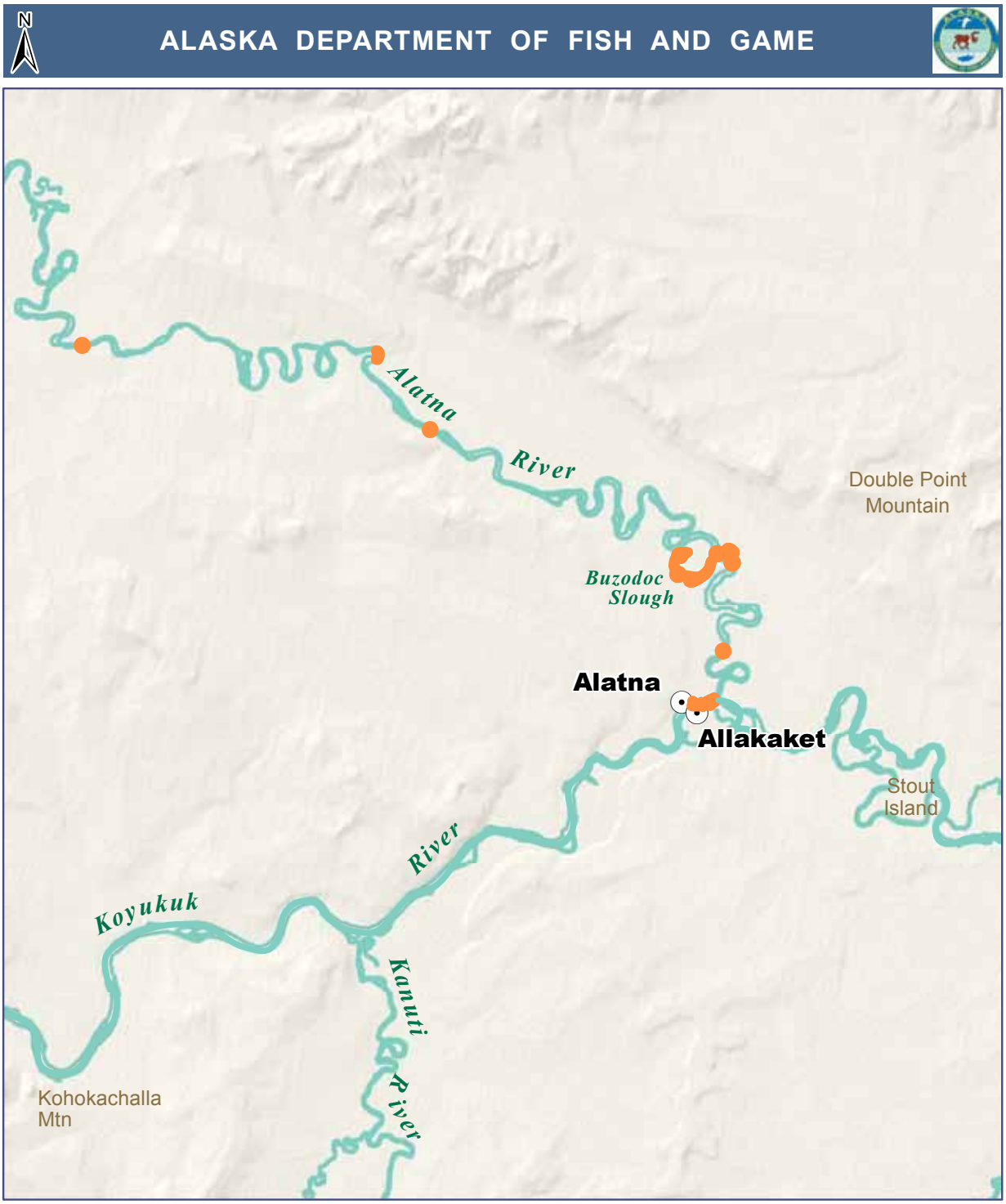

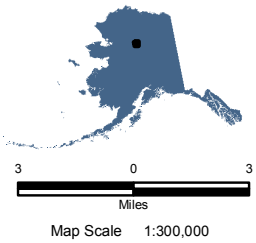

Alatna -

Nonsalmon Fish, 2011

Nonsalmon Fish
Harvest Locations

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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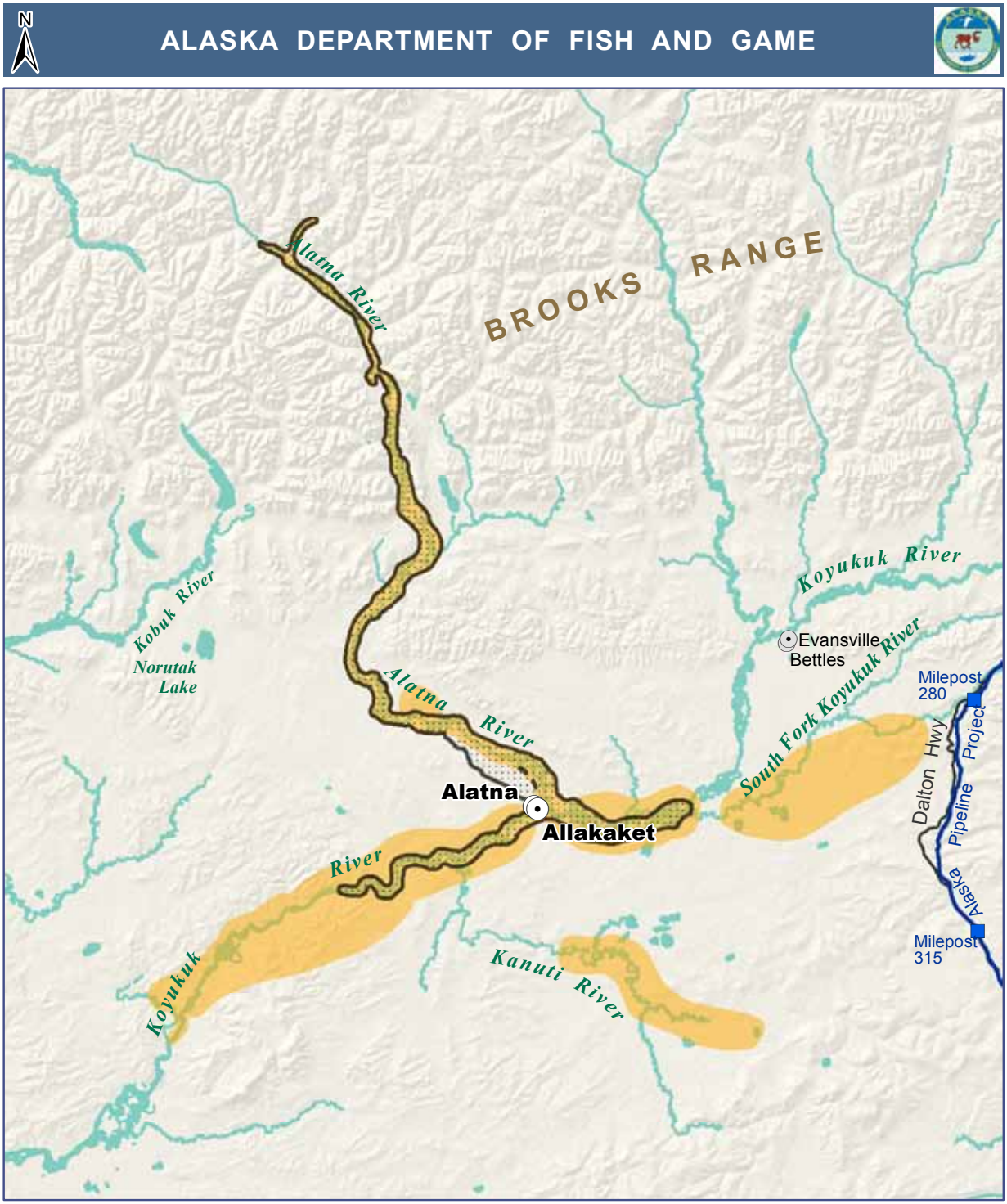

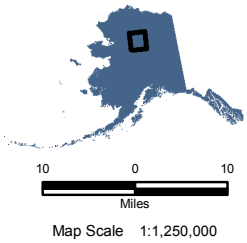

Alatna - Caribou and Moose, 2011

Caribou Search Area
Moose Search Area
Highway
Alaska Pipeline Project

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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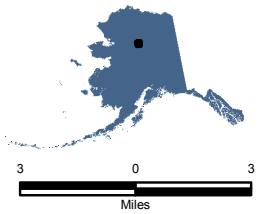

Map Scale 1:300,000

Alatna - Upland

Game Birds, 2011

Upland Game
Bird Search Area

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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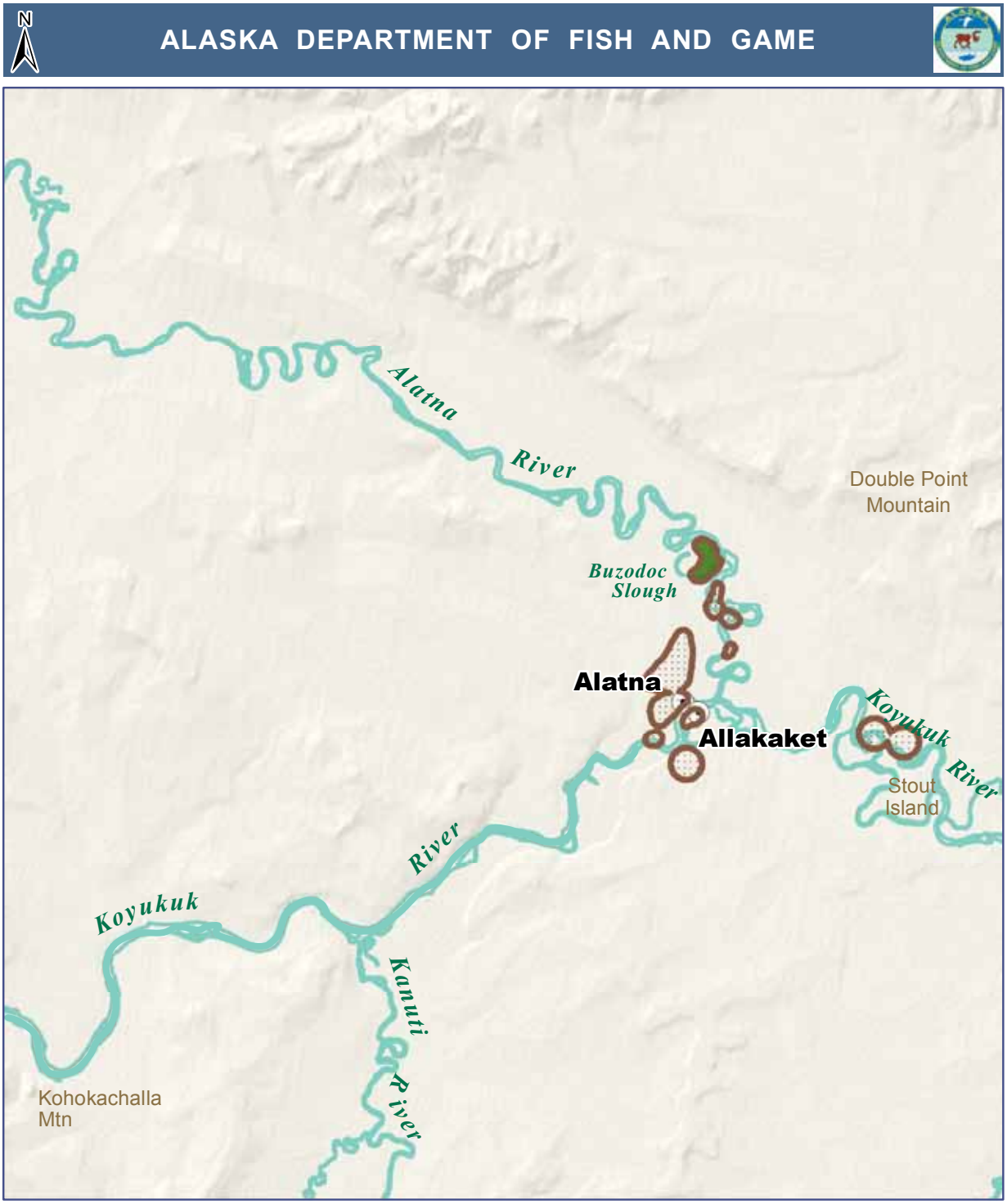

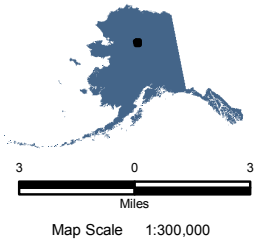

Map Scale 1:300,000

Alatna - Plants and Wood, 2011

Wood Harvest Areas

Plant Harvest Areas

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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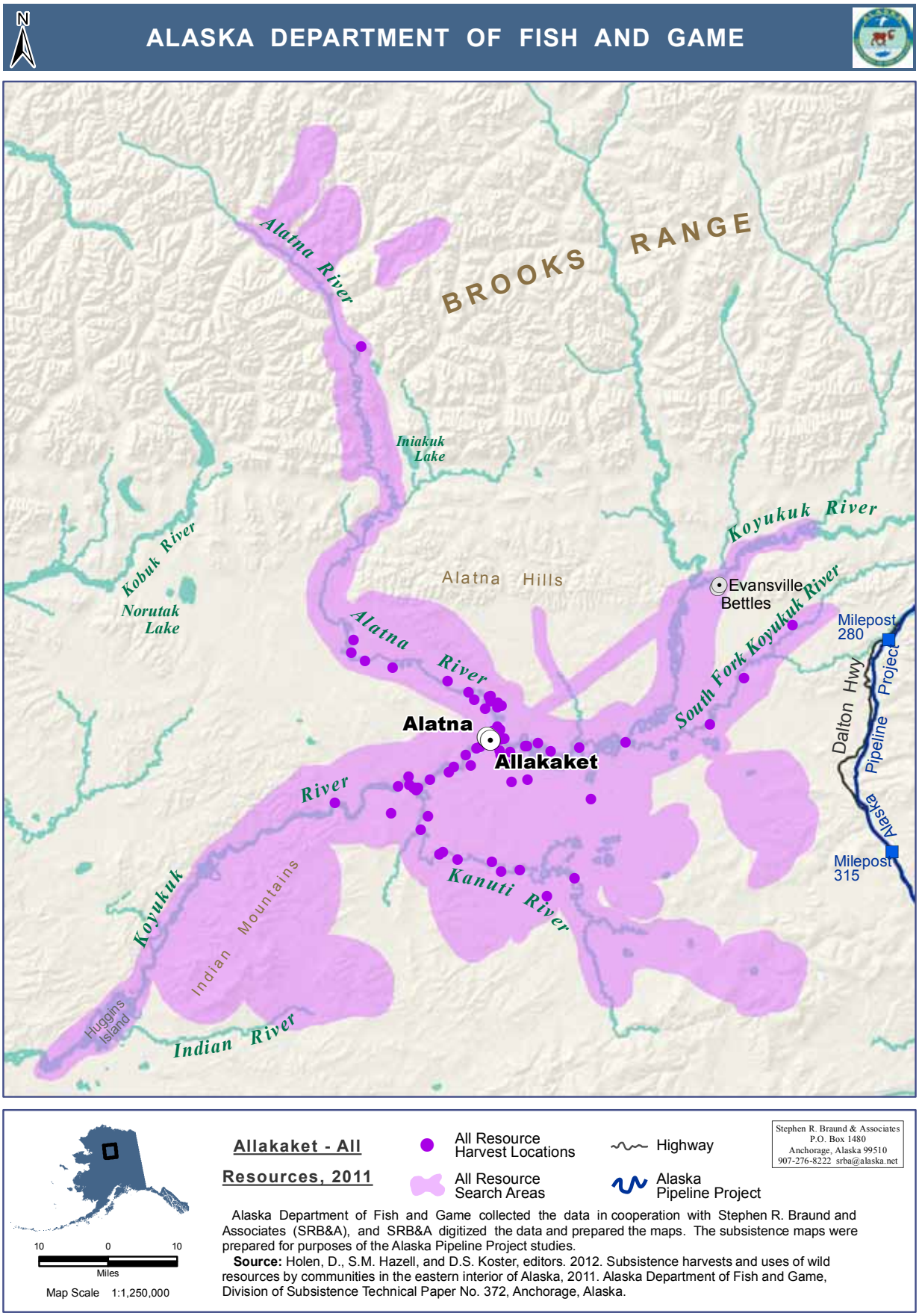
N
ALASKA DEPARTMENT OF FISH AND GAME
BROOKS RANGE
Alatna River
Iniakuk Lake
Koyukuk River
Kobuk River
Norutak Lake
Alatna Hills
Evansville
Bettles
Milepost 280
South Fork Koyukuk River
Alatna River
Alatna
Allakaket
Dalton Hwy
Alaska Pipeline Project
Milepost 315
River
Koyukuk
Indian Mountains
Kanuti River
Huggins Island
Indian River
10 0 10
Miles
Map Scale 1:1,250,000
Allakaket - All Resources, 2011
All Resource Harvest Locations
All Resource Search Areas
Highway
Alaska Pipeline Project
Stephen R. Braund & Associates
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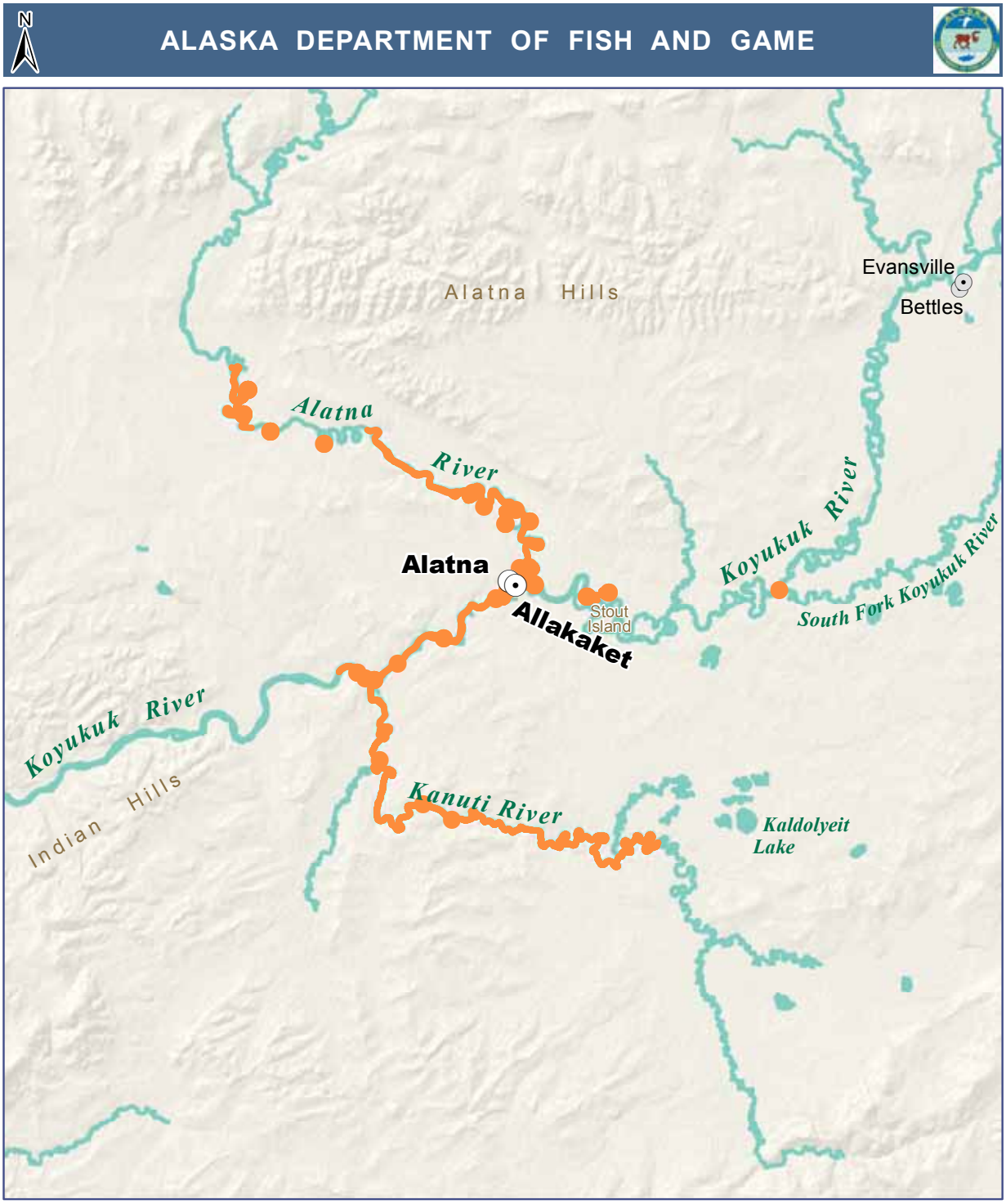

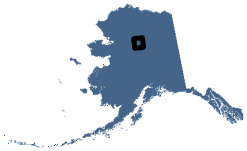

5 0 5
Miles
Map Scale 1:700,000

Allakaket -

Nonsalmon Fish, 2011

Nonsalmon Fish
Harvest Areas and Harvest Locations

Stephen R. Braund & Associates
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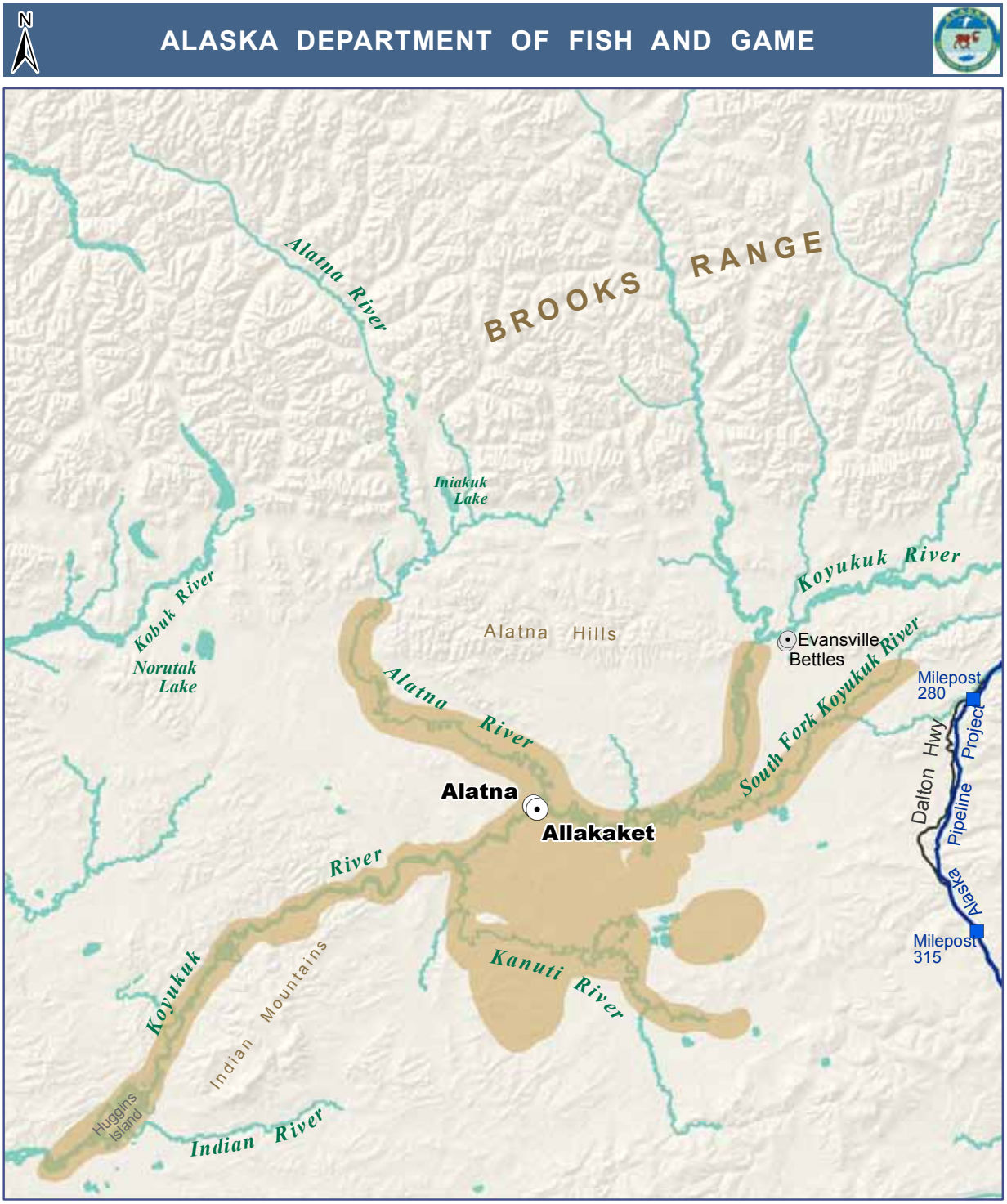

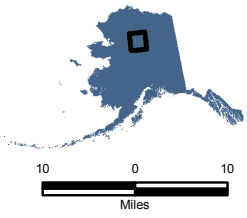

Map Scale 1:1,250,000

Allakaket - Bear, 2011

Bear Search Areas

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
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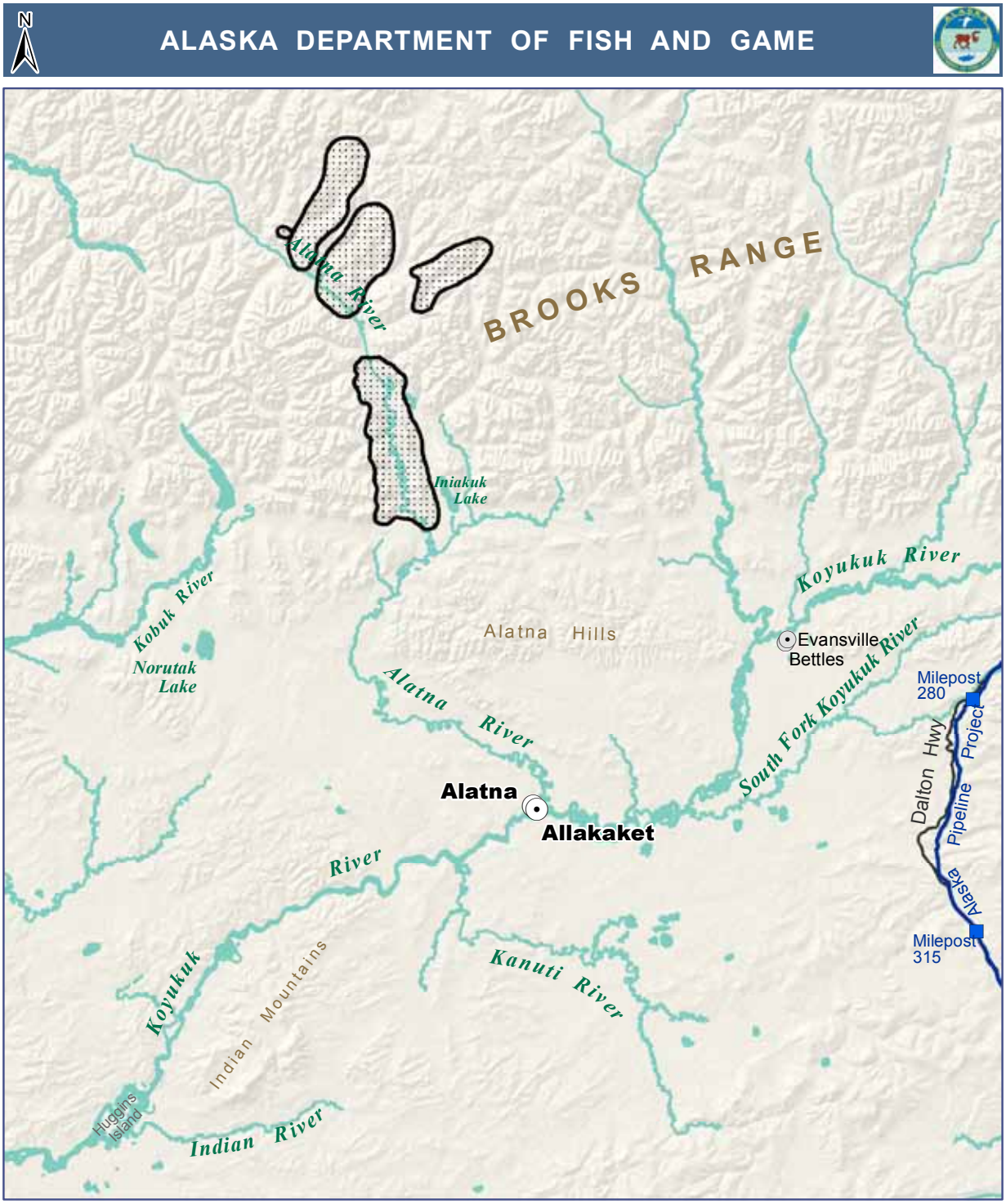

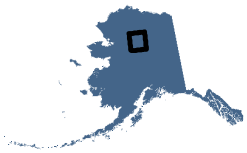

10 0 10
Miles
Map Scale 1:1,250,000

Allakaket - Dall Sheep, 2011

Dall Sheep Search Areas

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
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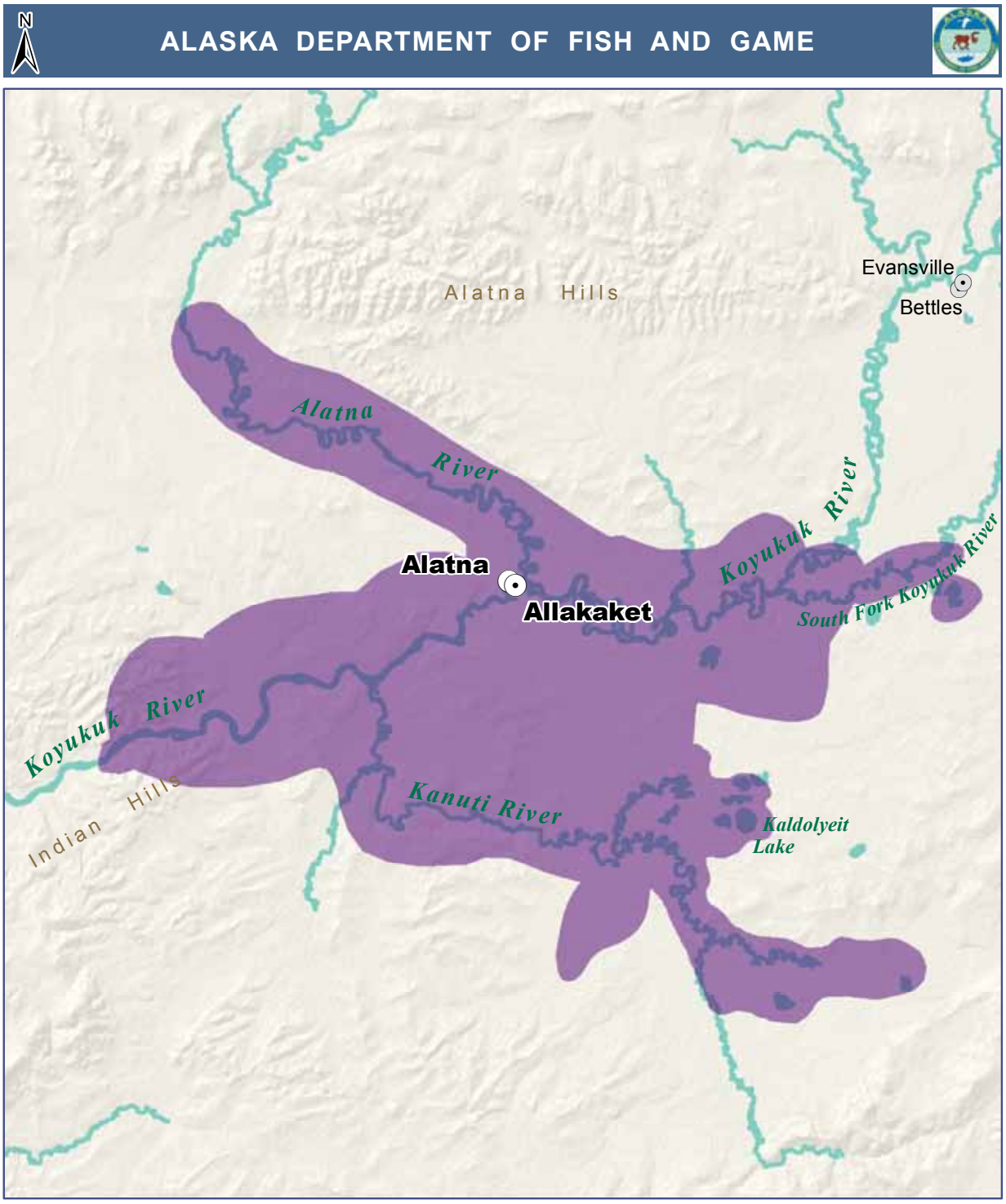

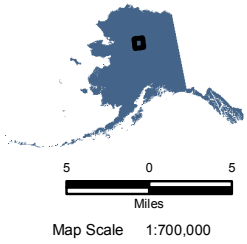

Allakaket - Migratory Birds, 2011

Migratory Bird Search Areas

Stephen R. Braund & Associates
P.O. Box 1480
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907-276-8222 srba@alaska.net

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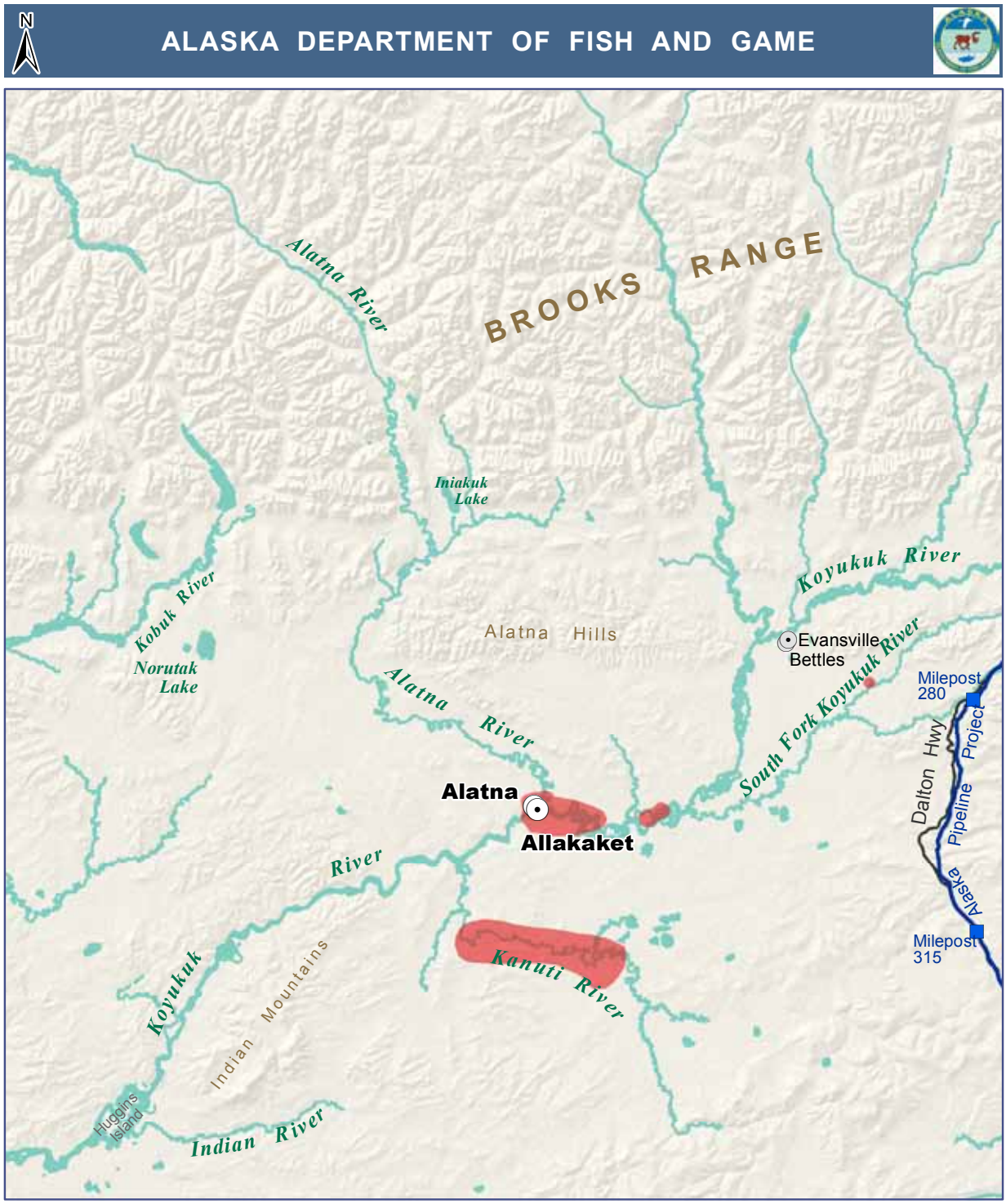

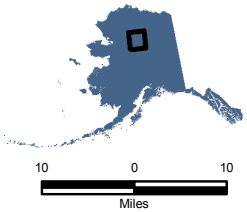

Map Scale 1:1,250,000

Allakaket - Upland Game Birds, 2011

Upland Game Bird Search Areas

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
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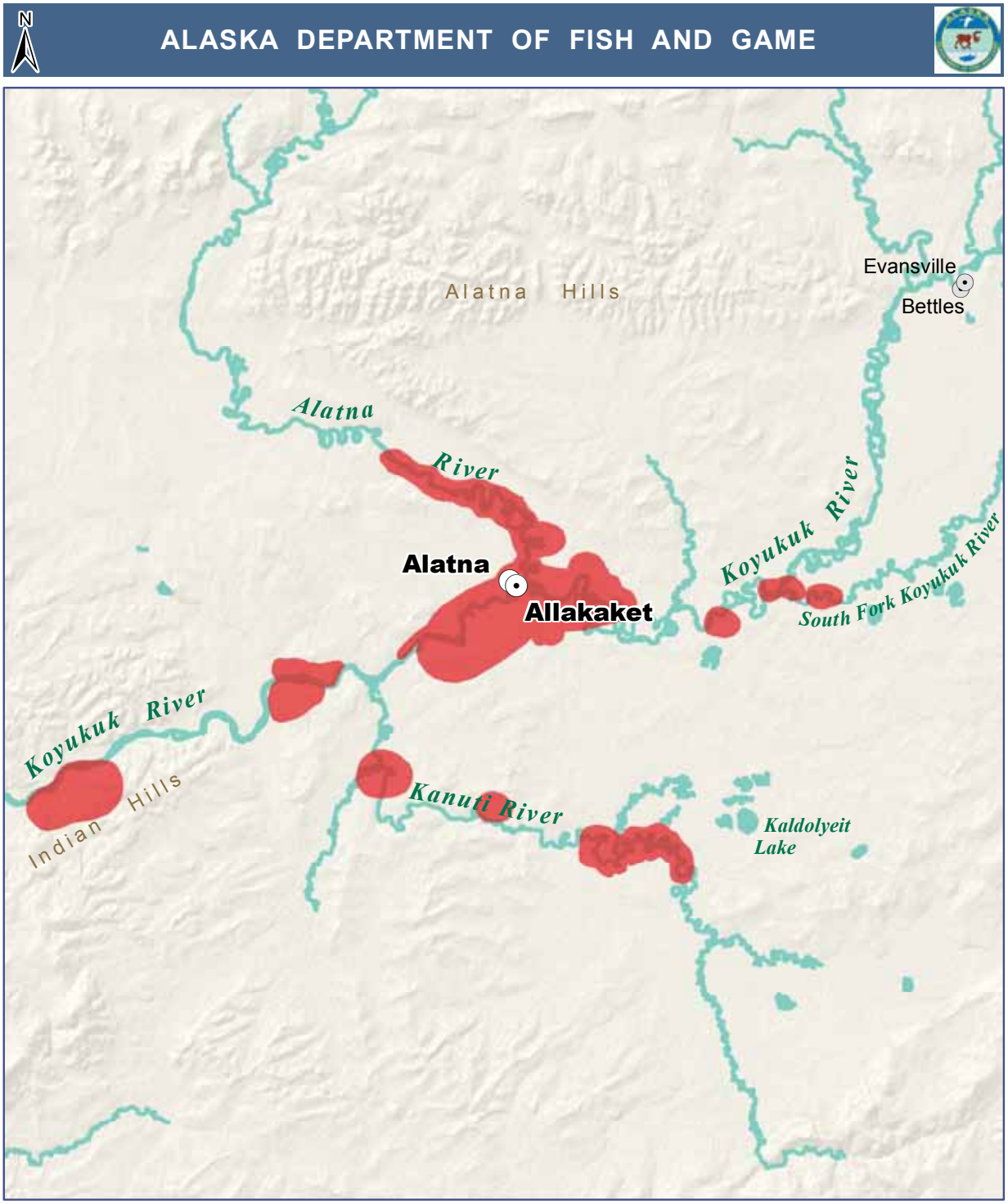

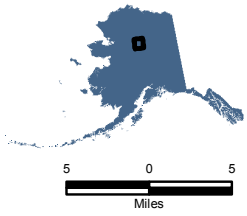

Map Scale 1:700,000

Allakaket - Berries, 2011

Berry Harvest Areas

Stephen R. Braund & Associates
P.O. Box 1480
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907-276-8222 srba@alaska.net

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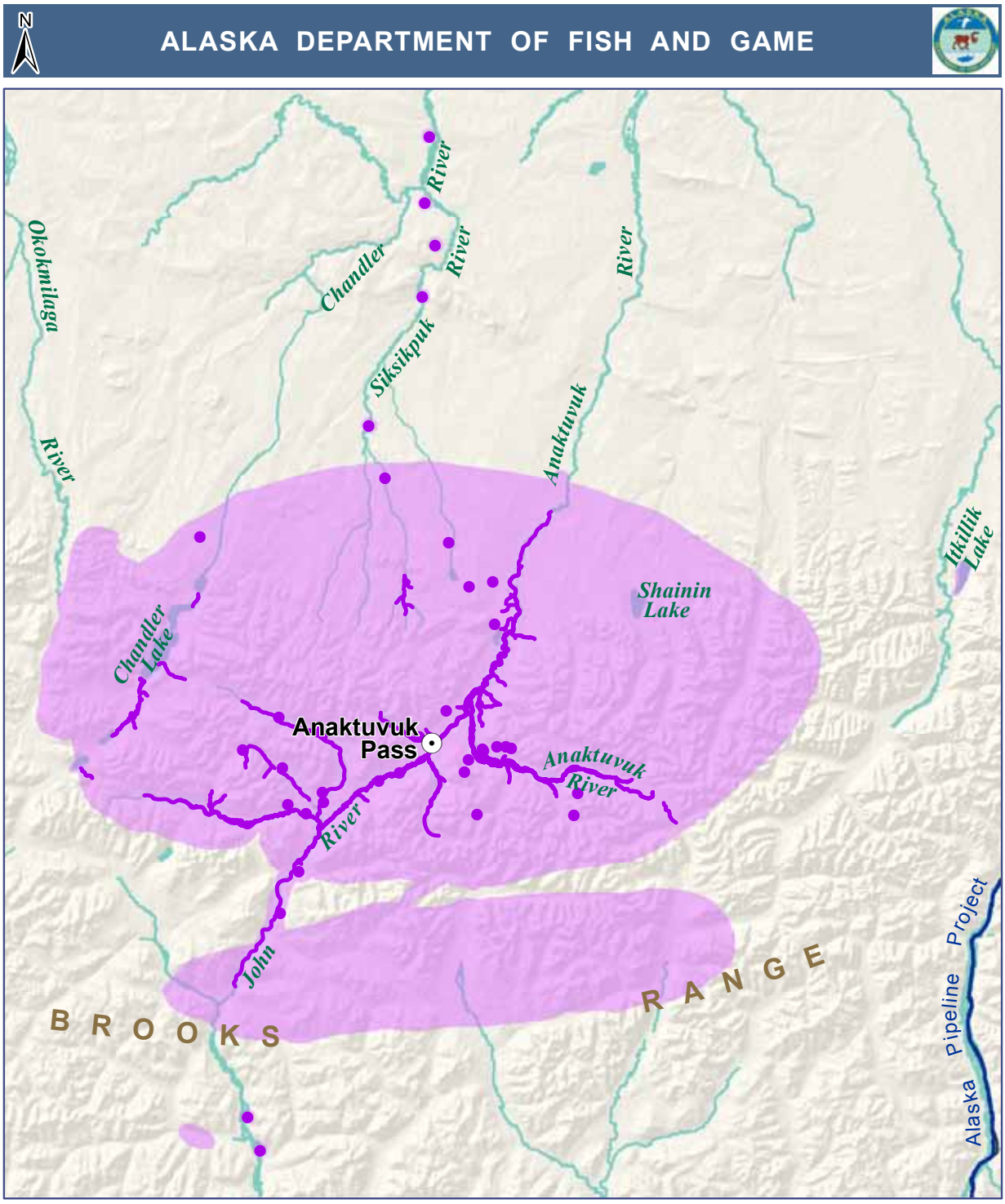

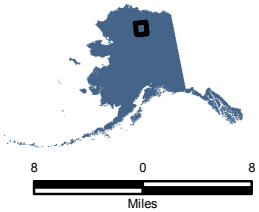

Map Scale 1:850,000

Anaktuvuk Pass - All Resources, 2011

All Resource Harvest Routes
All Resource Harvest Locations
All Resource Search Areas
Alaska Pipeline Project
Highway

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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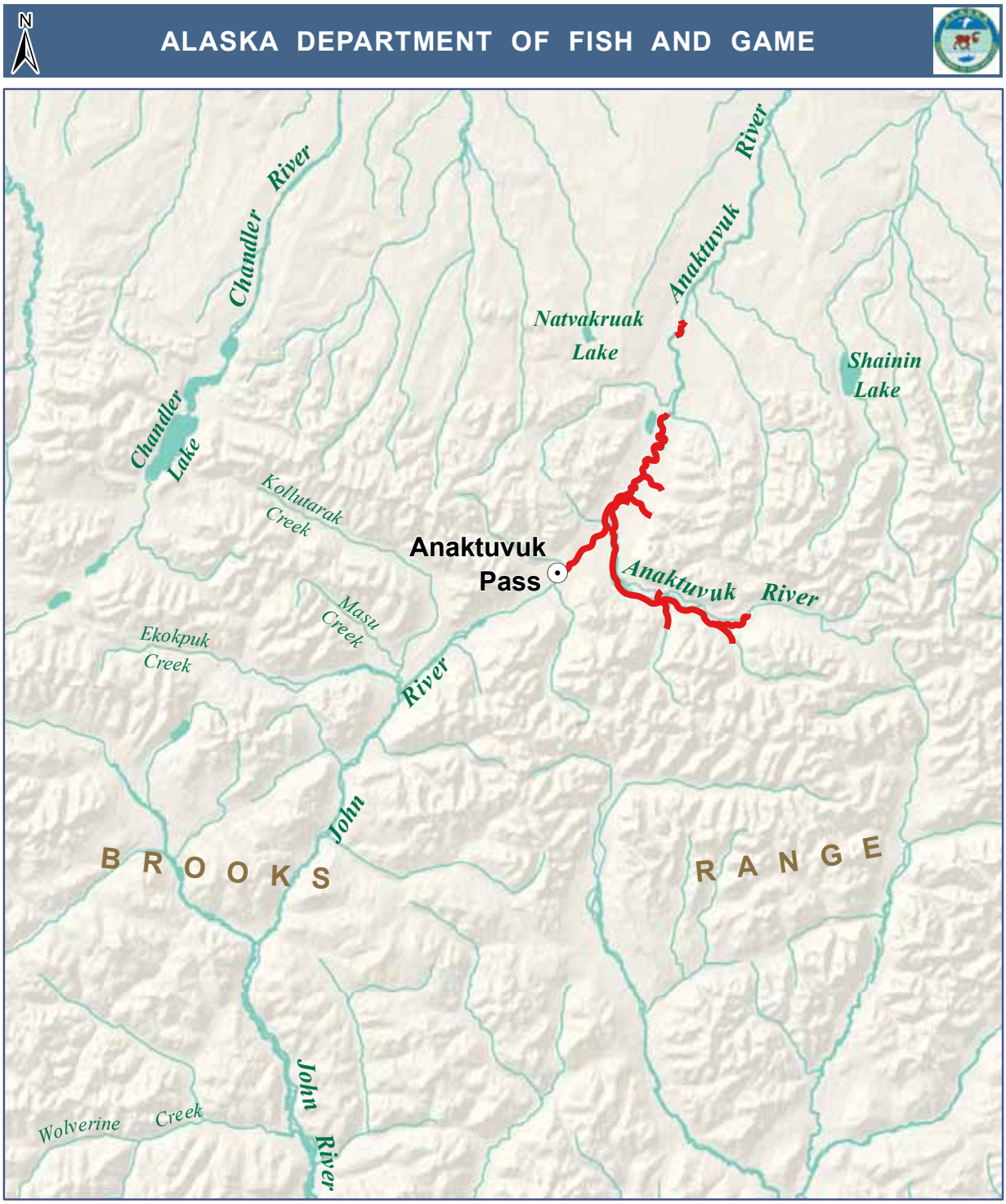

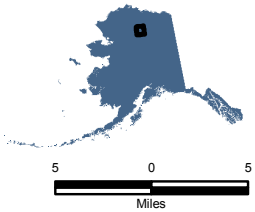

Map Scale 1:600,000

Anaktuvuk Pass - Salmon, 2011

Salmon Harvest Areas

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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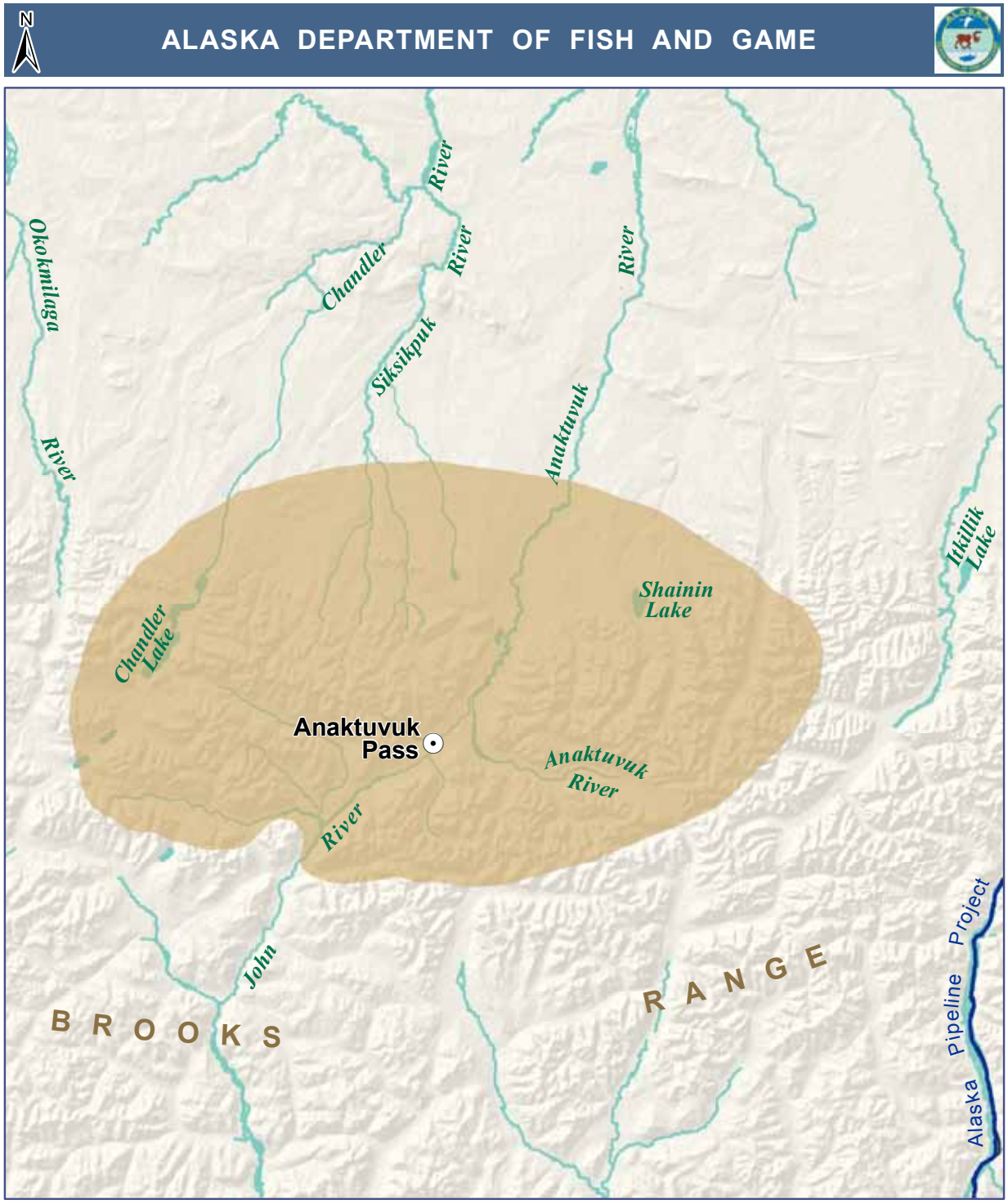

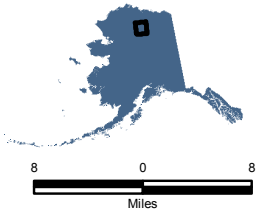

Map Scale 1:850,000

Anaktuvuk Pass - Brown Bear, 2011

Brown Bear Search Area

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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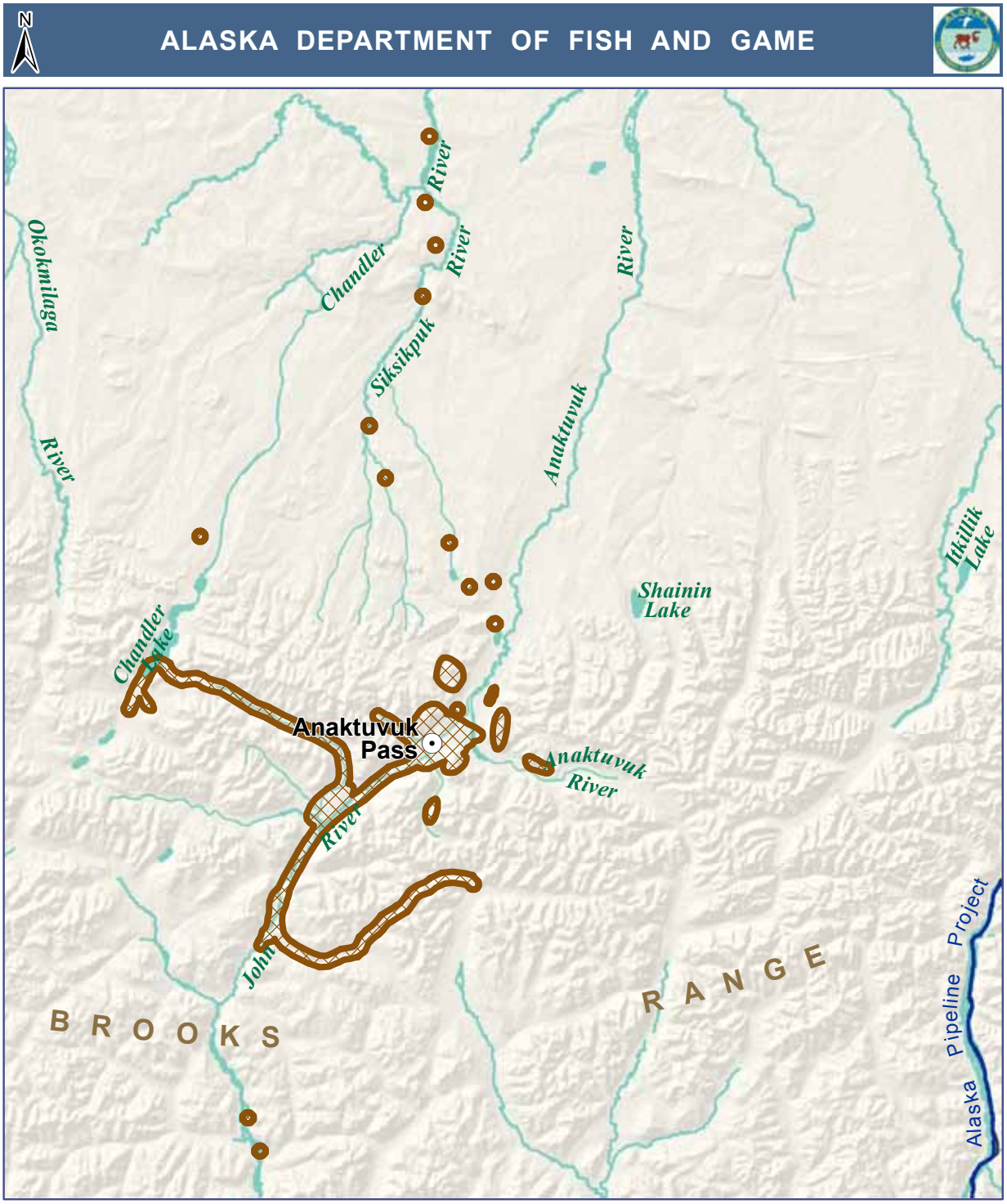

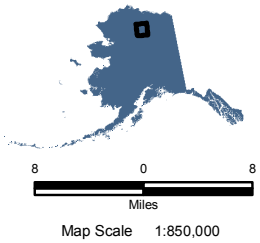

Anaktuvuk Pass - Small Land Mammals, 2011

Small Land Mammal Search Areas

Highway

Alaska Pipeline Project

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Anchorage, Alaska 99510
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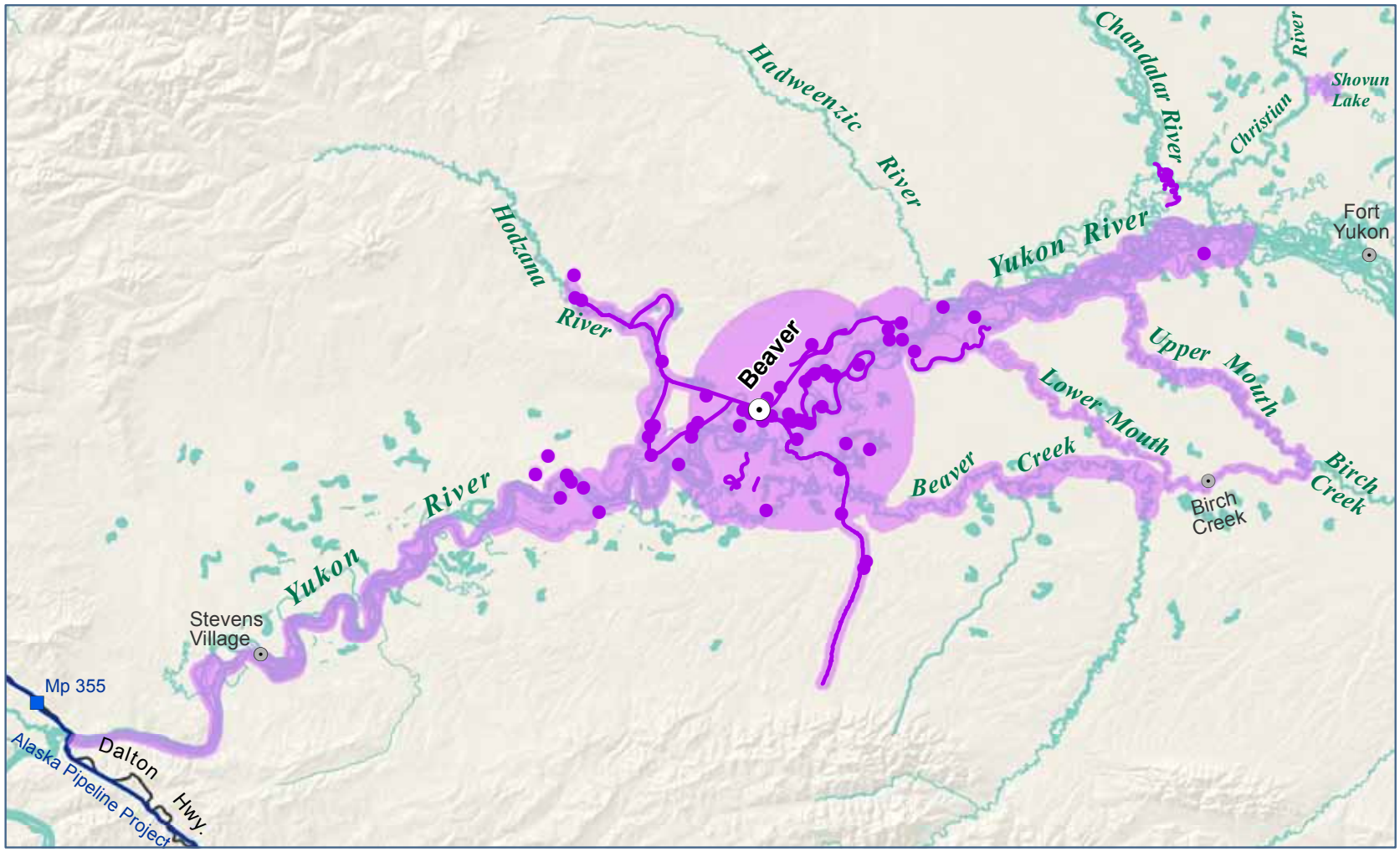

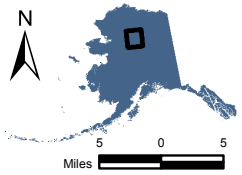

Beaver - All Resource Search and Harvest Areas, 2011

All Resource Harvest Locations
All Resource Harvest Routes
All Resource Search Areas
Highway
Alaska Pipeline Project

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
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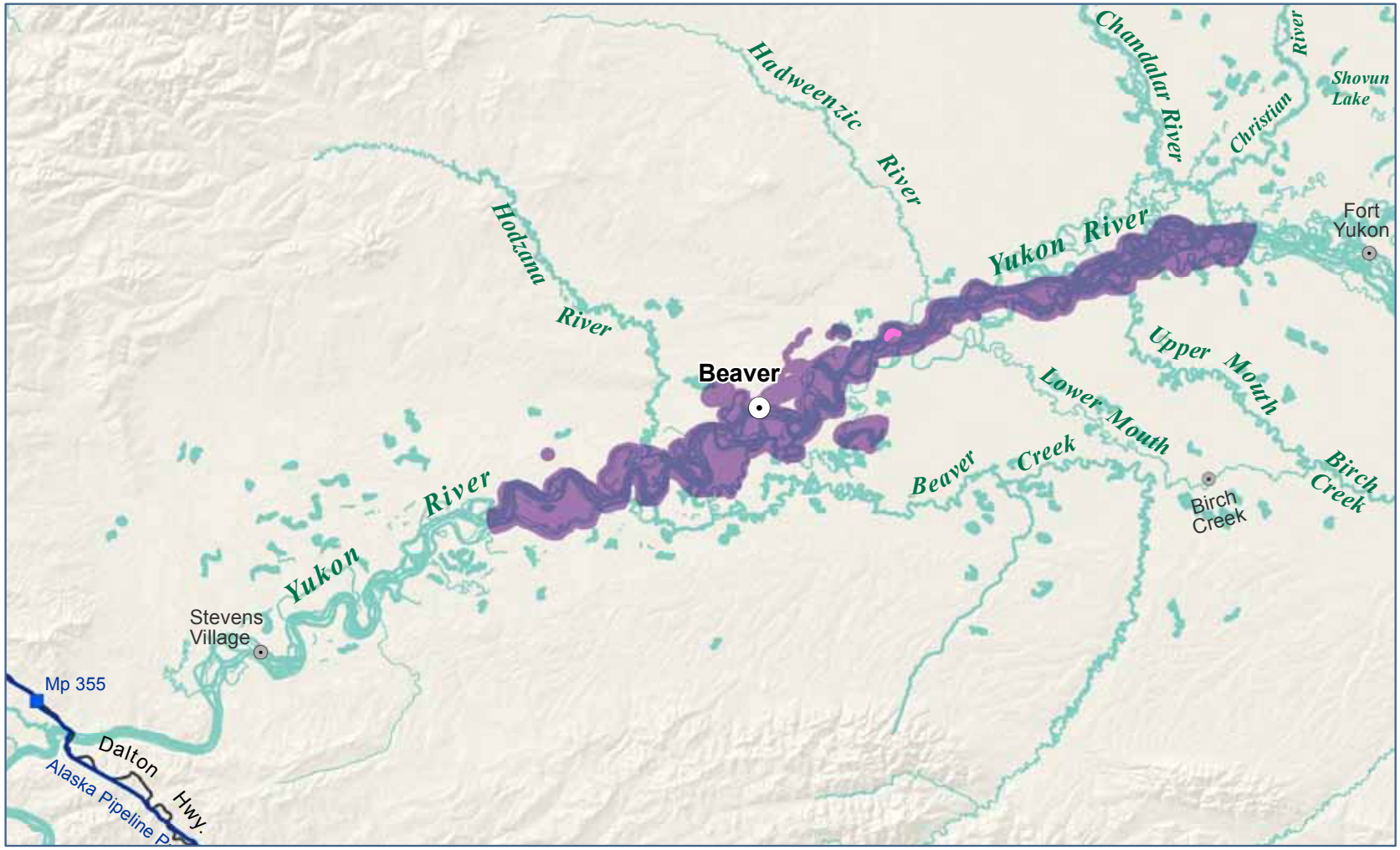

N

Miles 5 0 5

Map Scale 1:900,000

Beaver - Migratory Bird Search Areas and Egg Harvest Area, 2011

Migratory Bird Search Areas

Egg Harvest Area

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
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N

2 0 2
Miles
Map Scale 1:300,000

Beaver - Upland Game

Bird Search Areas, 2011

Upland Game Bird Search Areas

Stephen R. Braund & Associates
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907-276-8222 srba@alaska.net

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ALASKA DEPARTMENT OF FISH AND GAME

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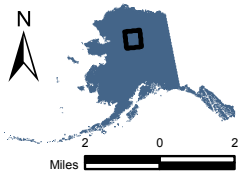

2 0 2
Miles
Map Scale 1:300,000

Beaver - Berry and Wood Harvest Areas, 2011

Berry Harvest Areas

Wood Harvest Areas

Stephen R. Braund & Associates
P.O. Box 1480
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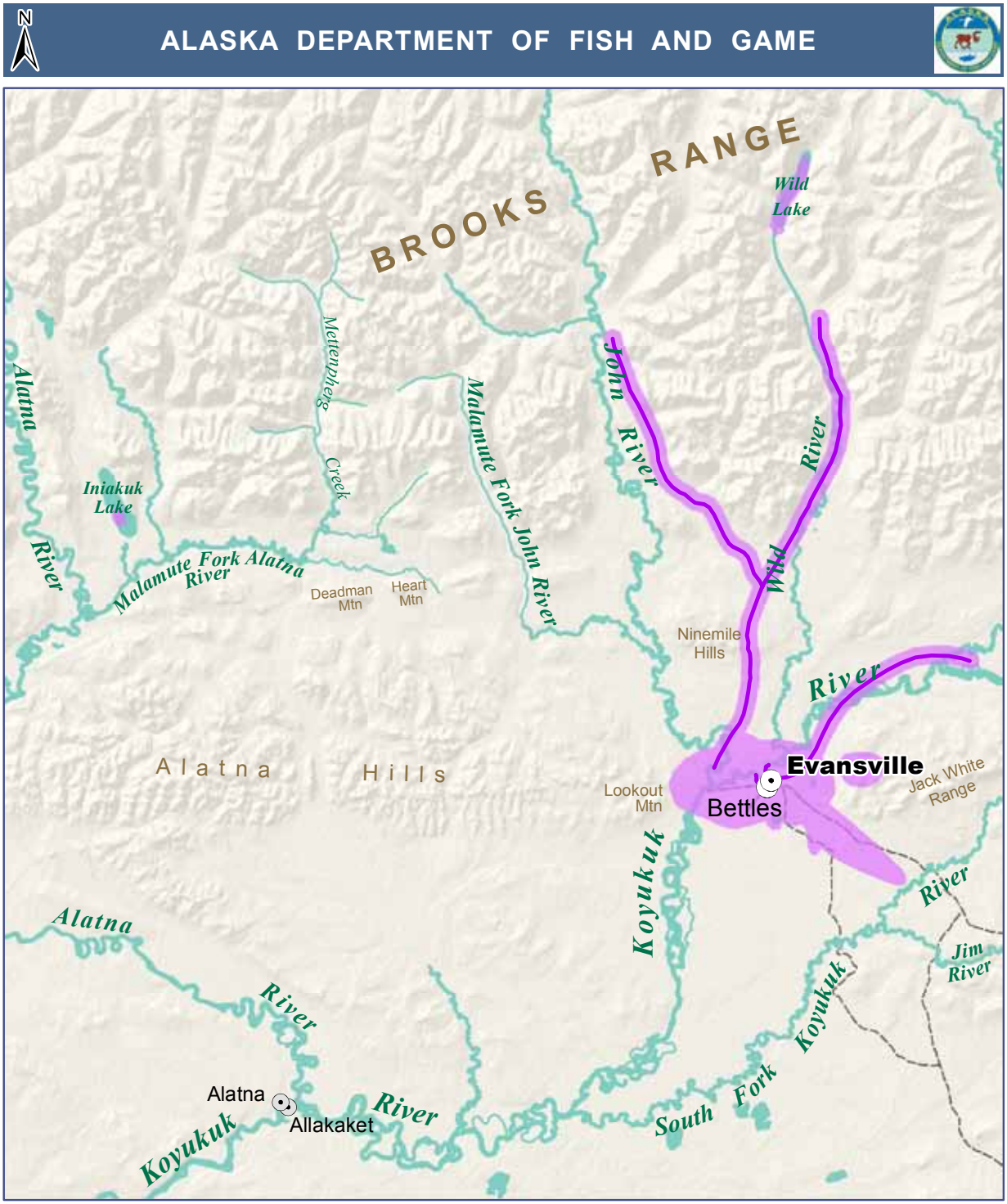

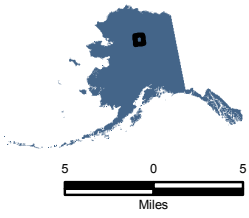

Map Scale 1:650,000

Evansville - All Resources, 2011

All Resource Harvest Routes
All Resource Search Areas
Road/Trail

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
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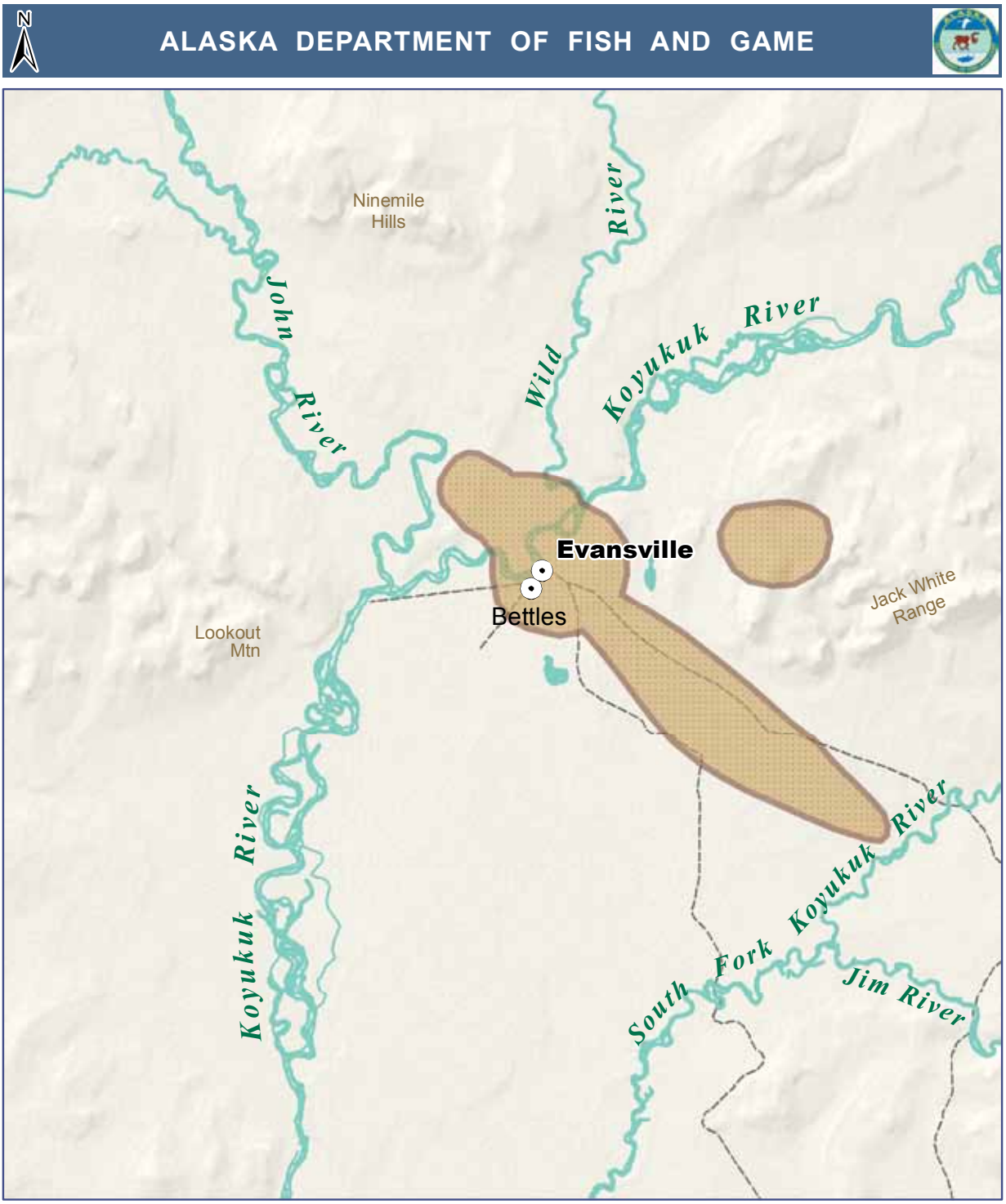

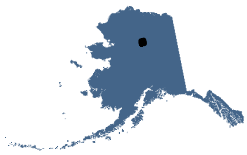

2 0 2
Miles
Map Scale 1:250,000

Evansville - Wood, 2011

Wood Harvest Areas

Road/Trail

Stephen R. Braund & Associates
P.O. Box 1480
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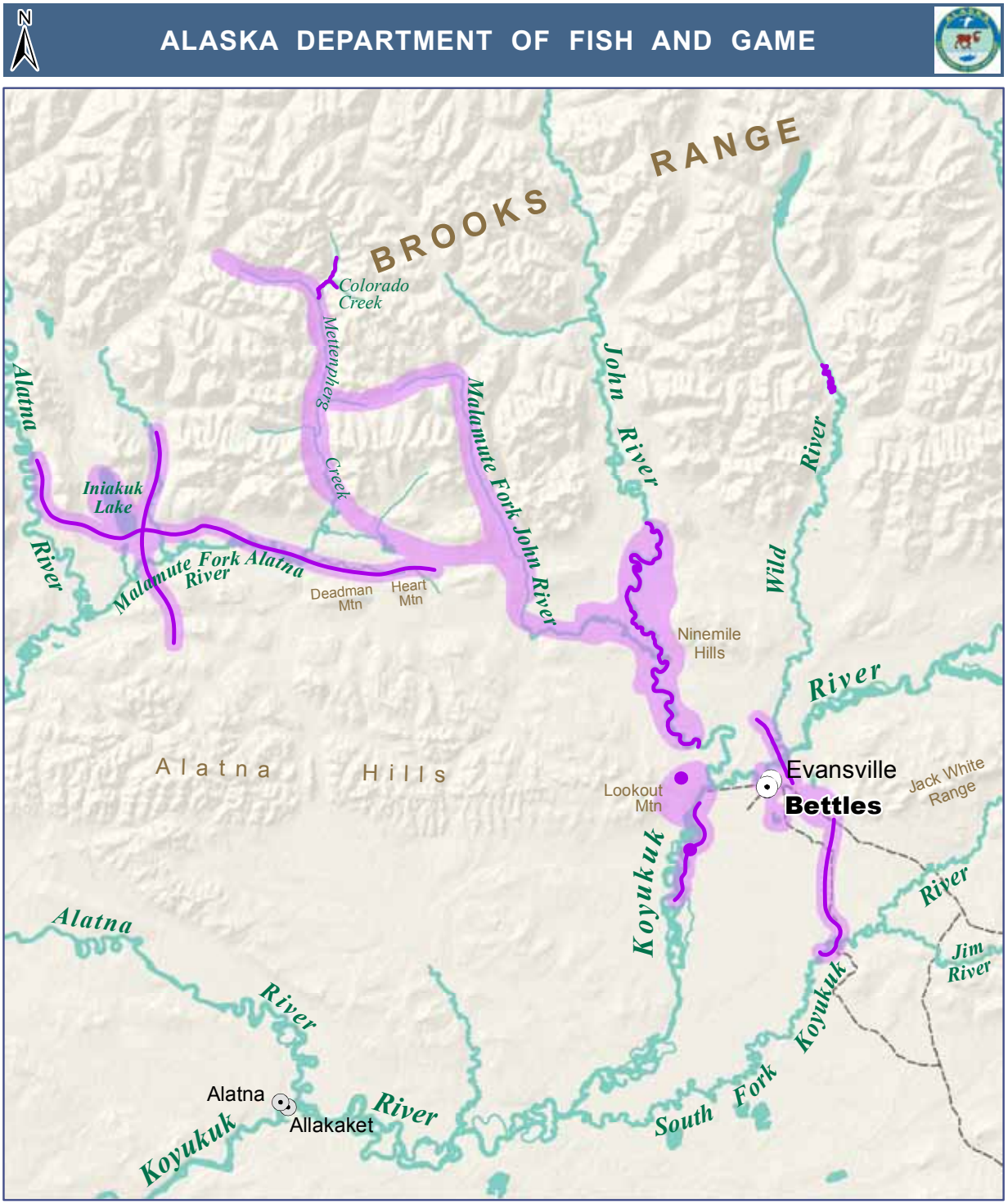

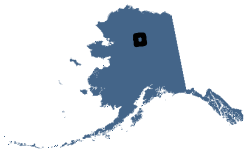

5 0 5
Miles
Map Scale 1:650,000

Bettles - All Resources, 2011

All Resource Harvest Locations
All Resource Search Areas
All Resource Harvest Routes
Road/Trail

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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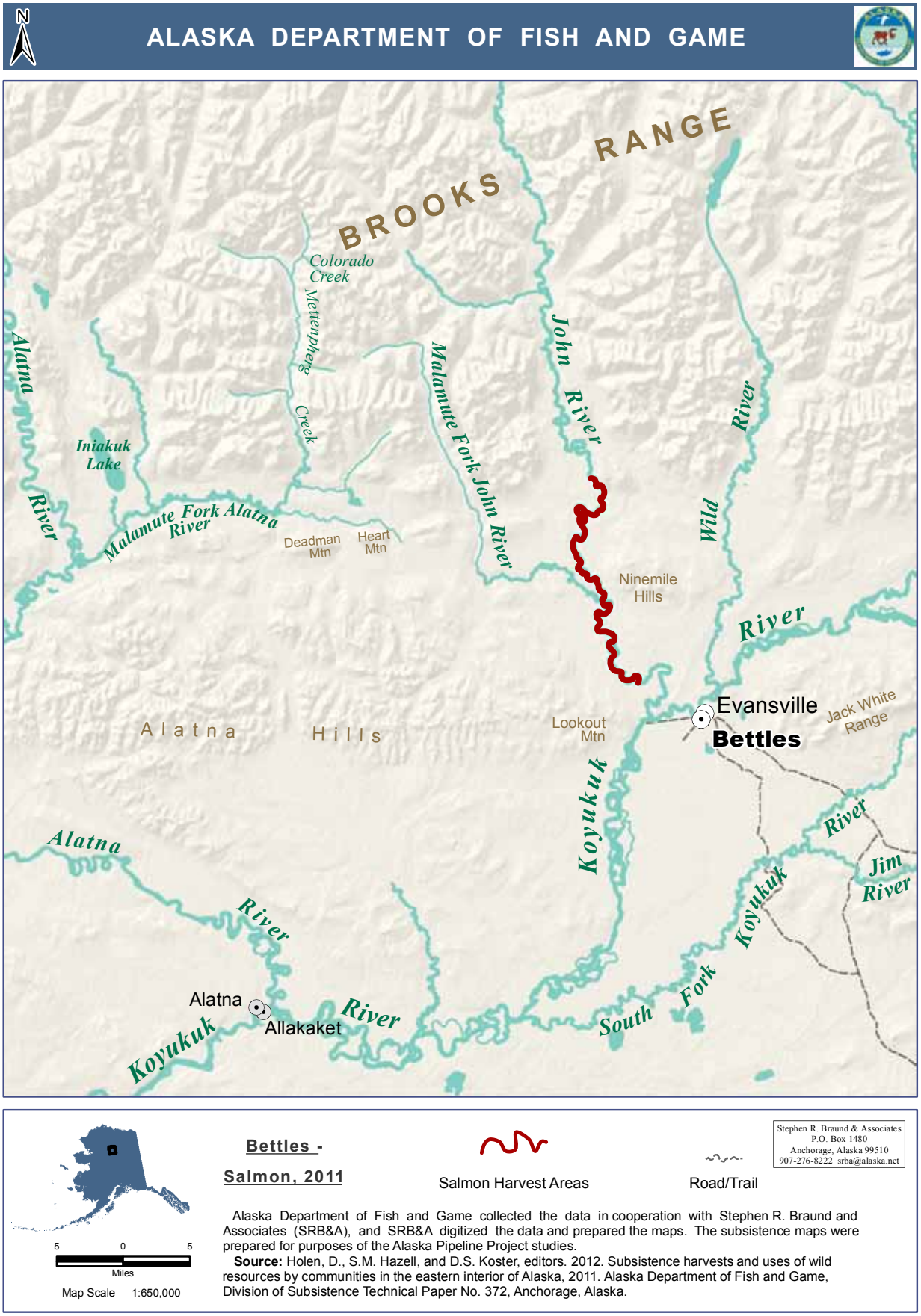

5 0 5
Miles
Map Scale 1:650,000

Bettles - Salmon, 2011

Salmon Harvest Areas

Road/Trail

Stephen R. Braund & Associates
P.O. Box 1480
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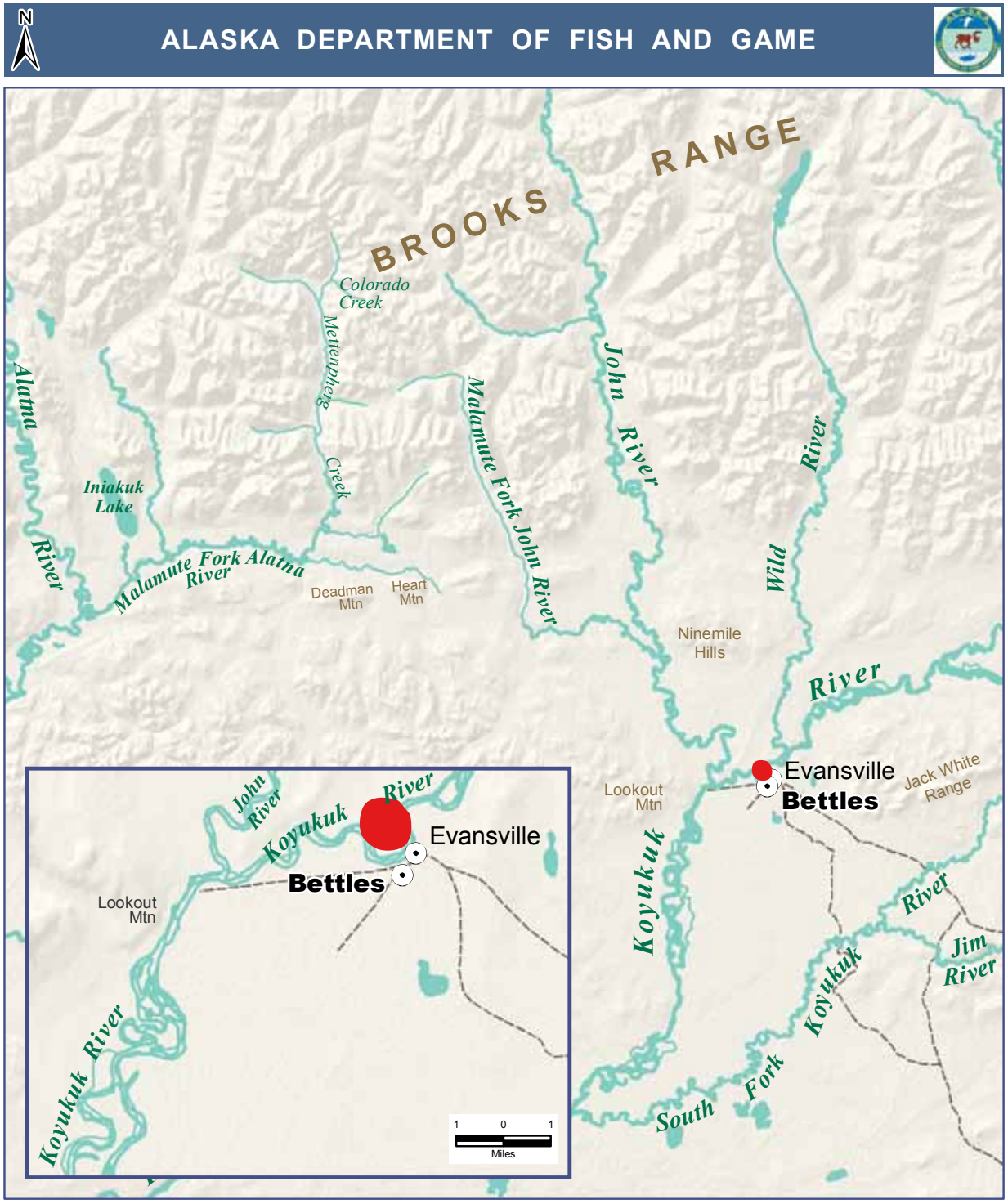

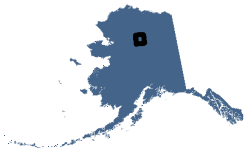

5 0 5
Miles
Map Scale 1:650,000

Bettles - Migratory Birds, 2011

Migratory Bird Search Area

Road/Trail

Stephen R. Braund & Associates
P.O. Box 1480
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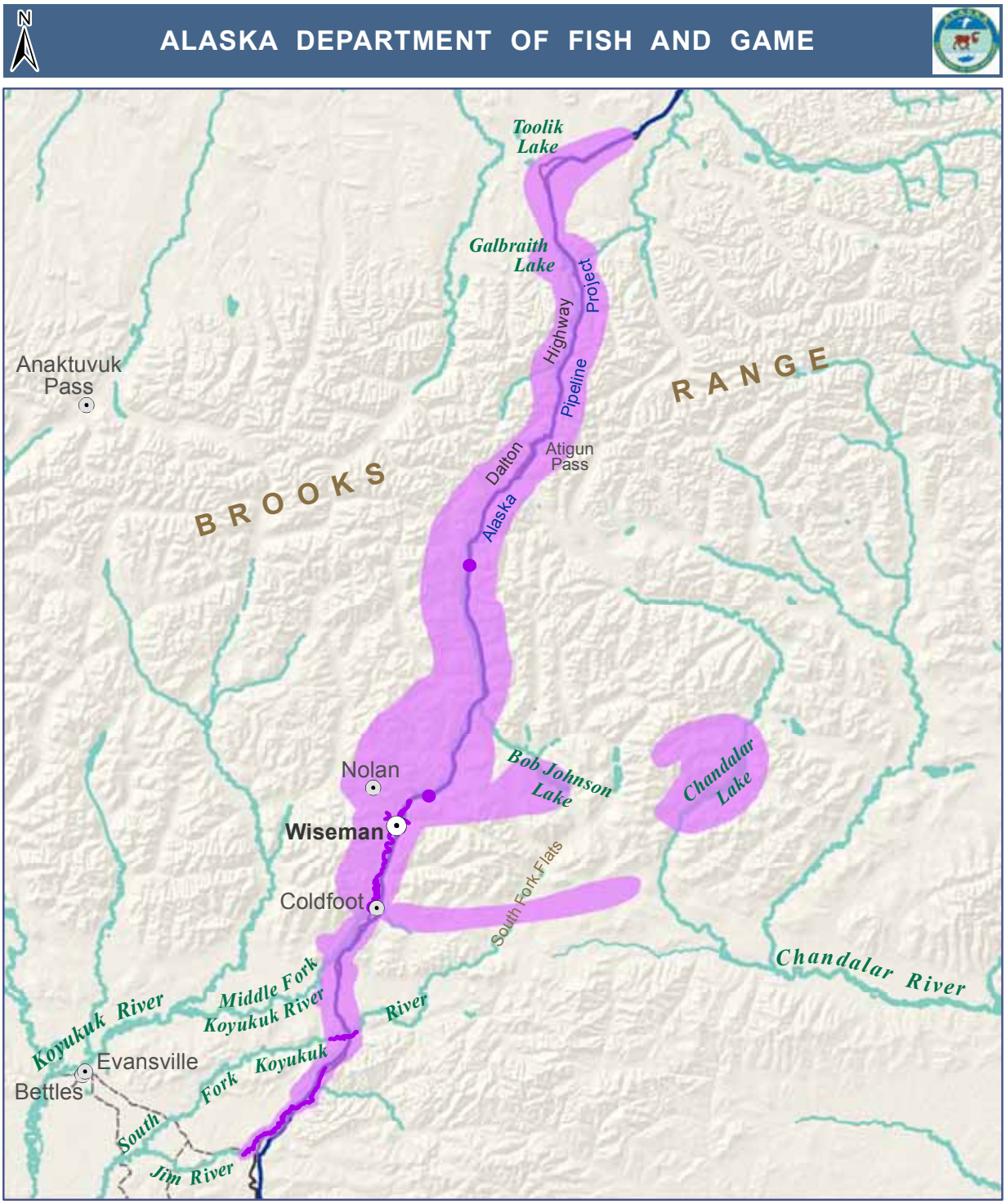

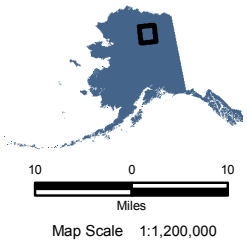

Wiseman - All Resources, 2011

All Resource Harvest Routes
All Resource Harvest Locations
All Resource Search Areas
Alaska Pipeline Project
Road or Trail

Stephen R. Braund & Associates
P.O. Box 1480
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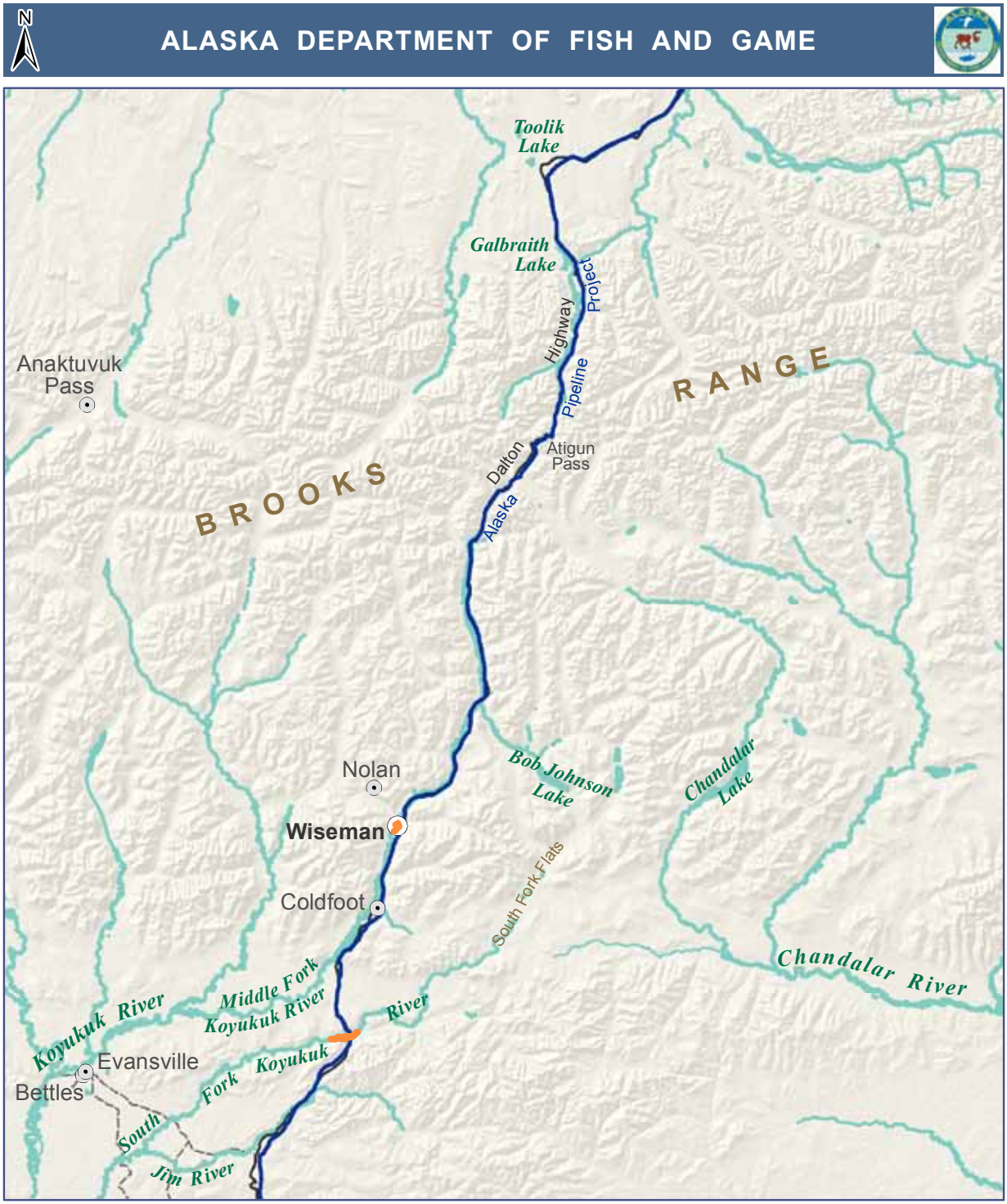

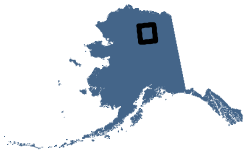

Map Scale 1:1,200,000

Wiseman - Round Whitefish, 2011

Round Whitefish Harvest Areas

Road or Trail

Alaska Pipeline Project

Stephen R. Braund & Associates
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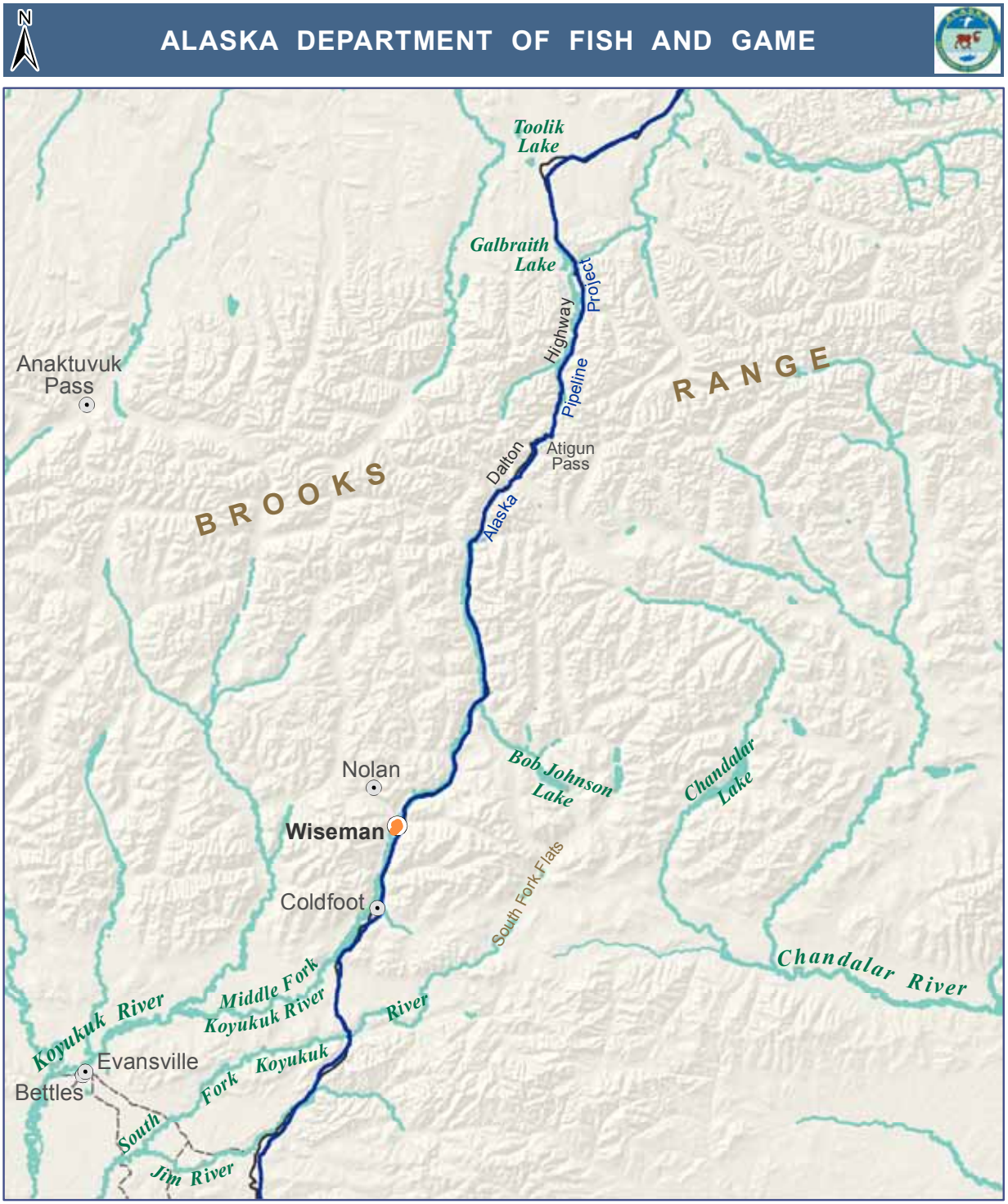

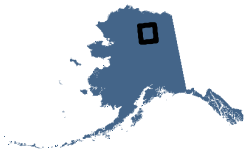

10 0 10
Miles
Map Scale 1:1,200,000

Wiseman - Dolly Varden, 2011

Dolly Varden Harvest Area

Road or Trail

Alaska Pipeline Project

Stephen R. Braund & Associates
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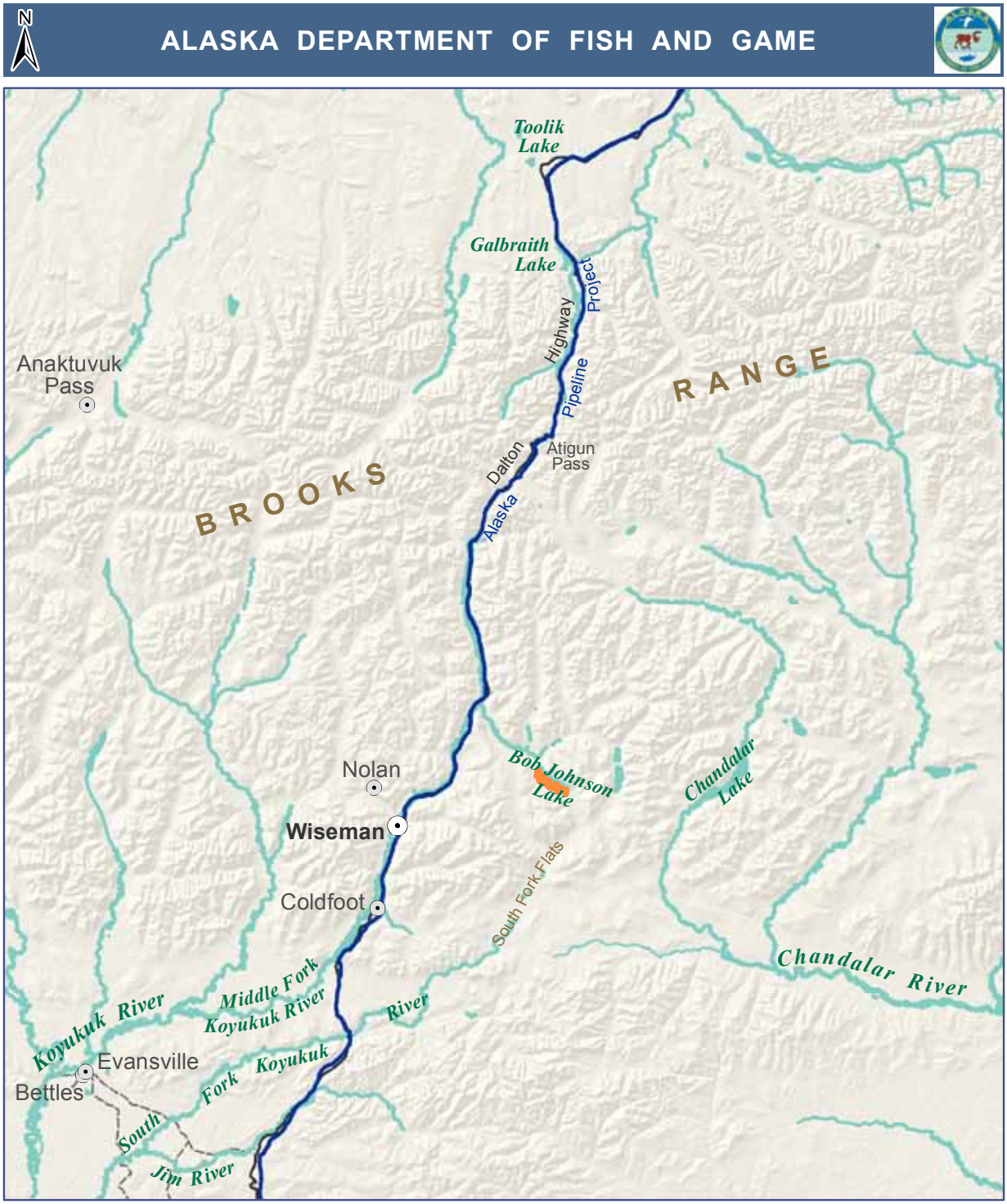

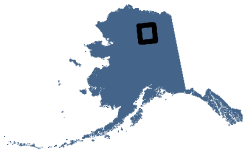

10 0 10
Miles
Map Scale 1:1,200,000

Wiseman - Lake Trout, 2011

Lake Trout Harvest Area

Road or Trail

Alaska Pipeline Project

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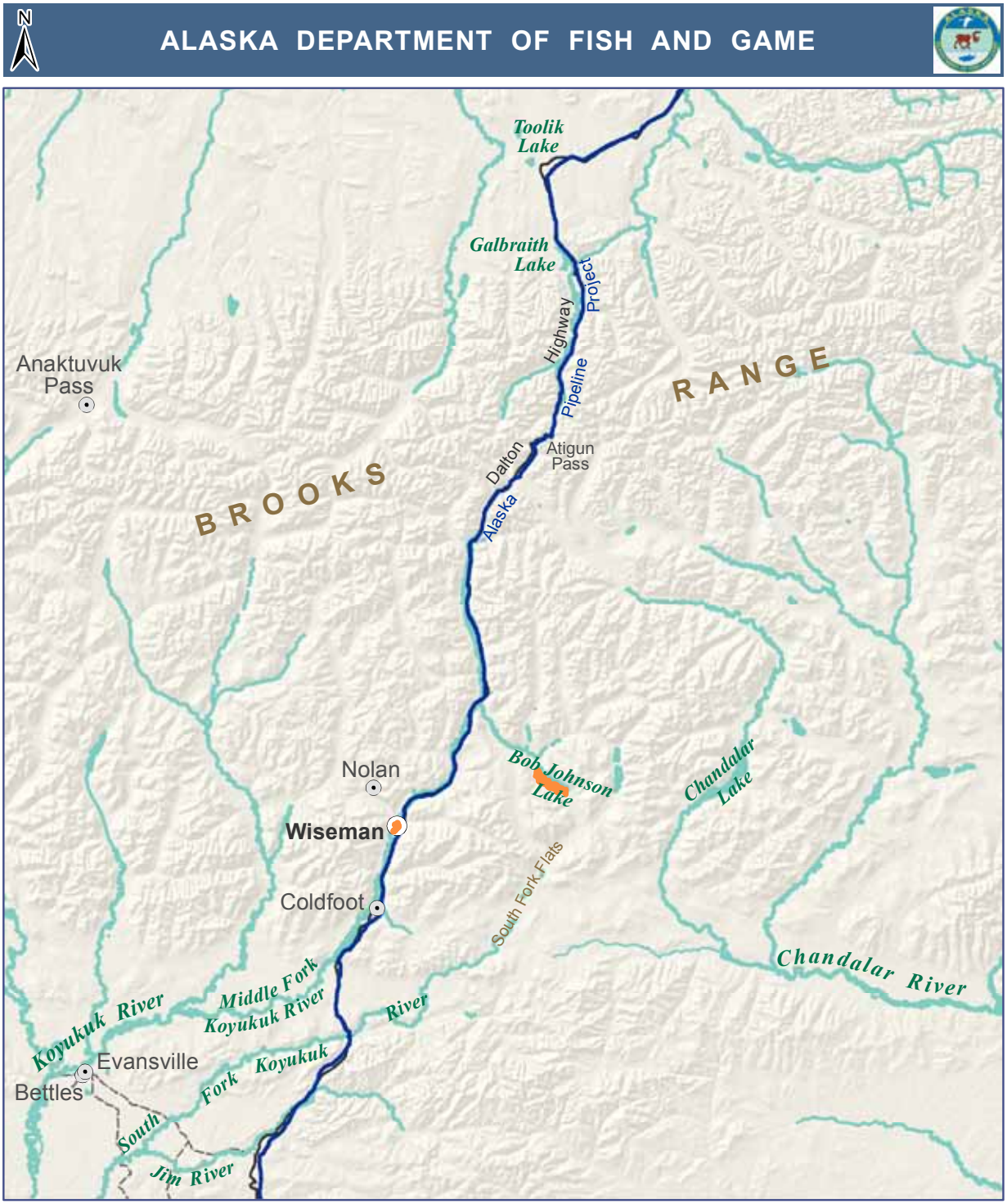

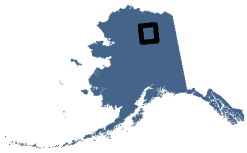

10 0 10
Miles
Map Scale 1:1,200,000

Wiseman - Northern Pike, 2011

Northern Pike Harvest Areas

Road or Trail

Alaska Pipeline Project

Stephen R. Braund & Associates
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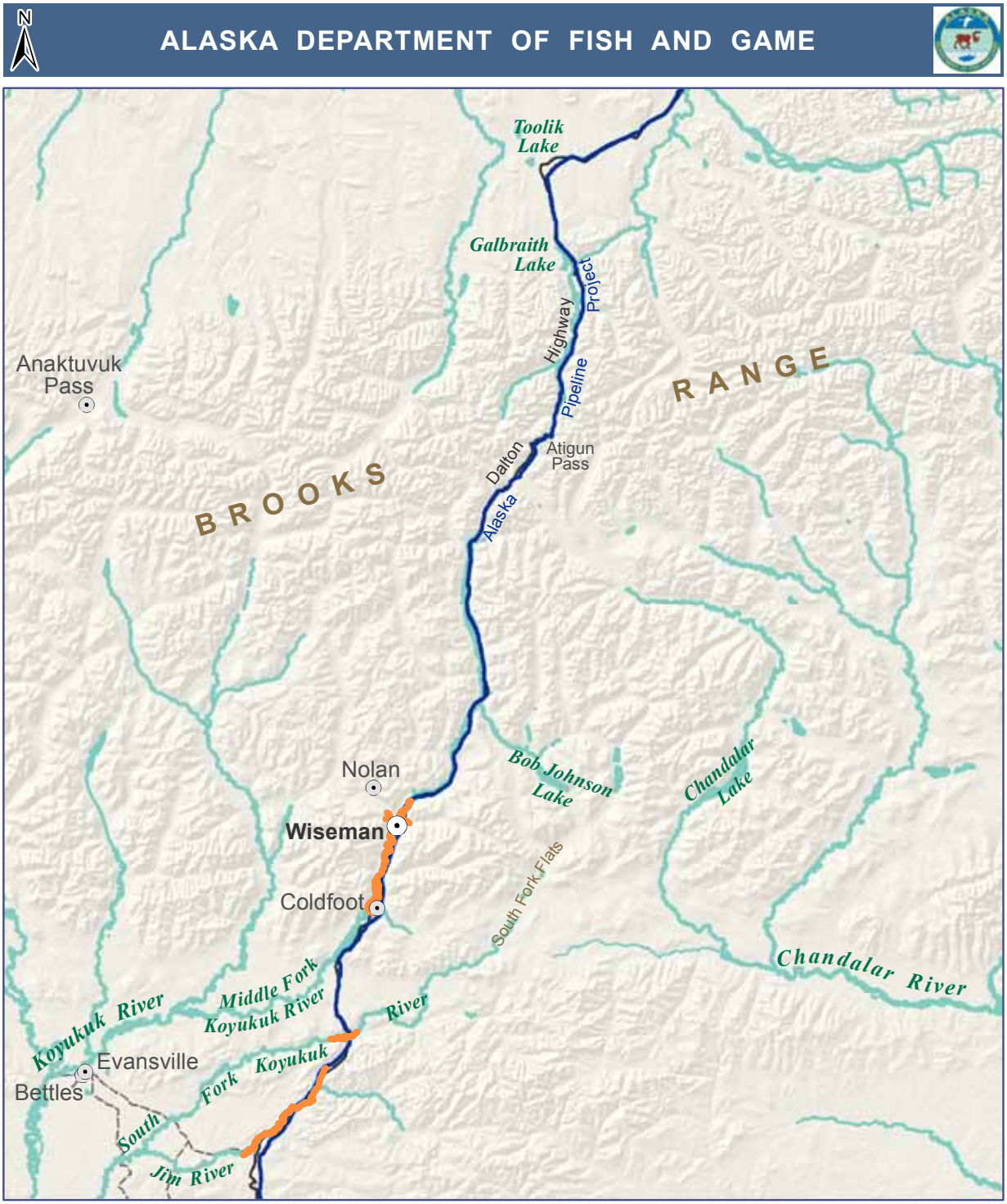

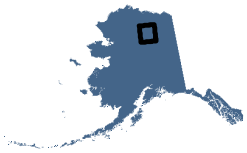

10 0 10
Miles
Map Scale 1:1,200,000

Wiseman - Arctic Grayling, 2011

Arctic Grayling Harvest Areas

Road or Trail

Alaska Pipeline Project

Stephen R. Braund & Associates
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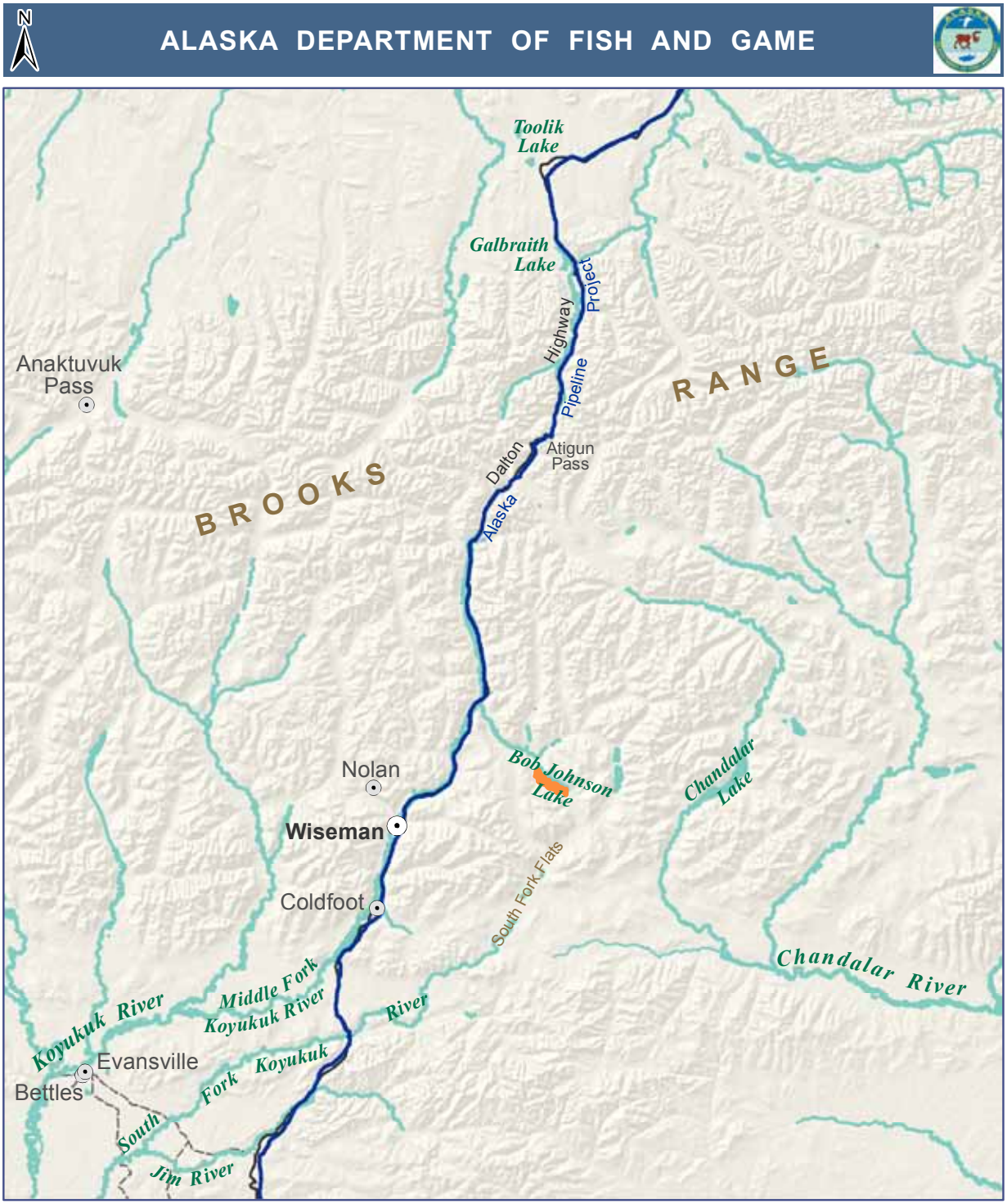

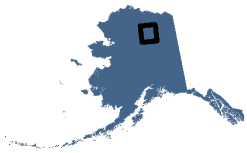

10 0 10
Miles
Map Scale 1:1,200,000

Wiseman

Burbot, 2011

Burbot Harvest Area

Road or Trail

Alaska Pipeline Project

Stephen R. Braund & Associates
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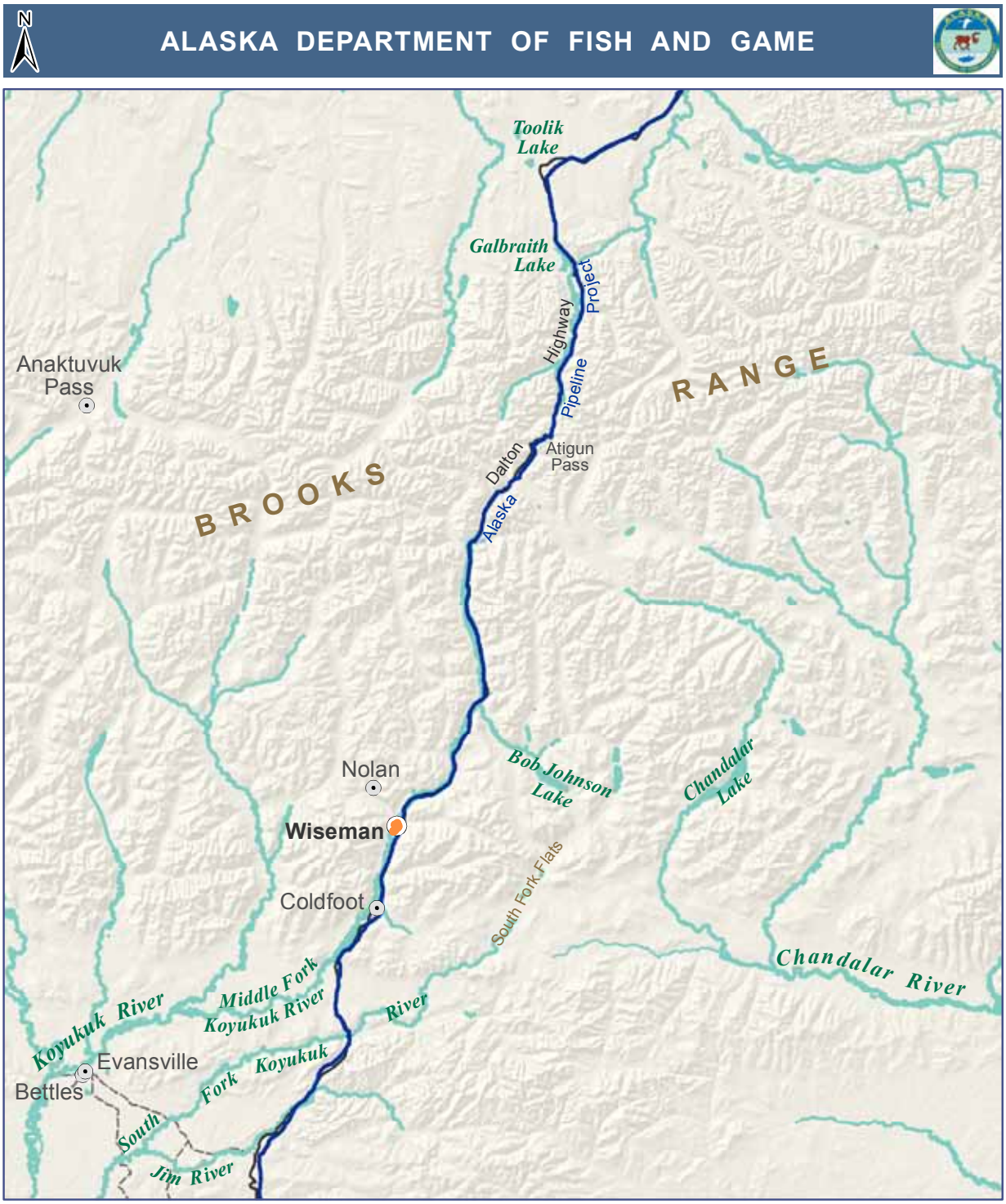

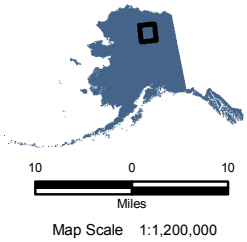

Wiseman - Longnose Sucker, 2011

Longnose Sucker Harvest Area

Road or Trail

Alaska Pipeline Project

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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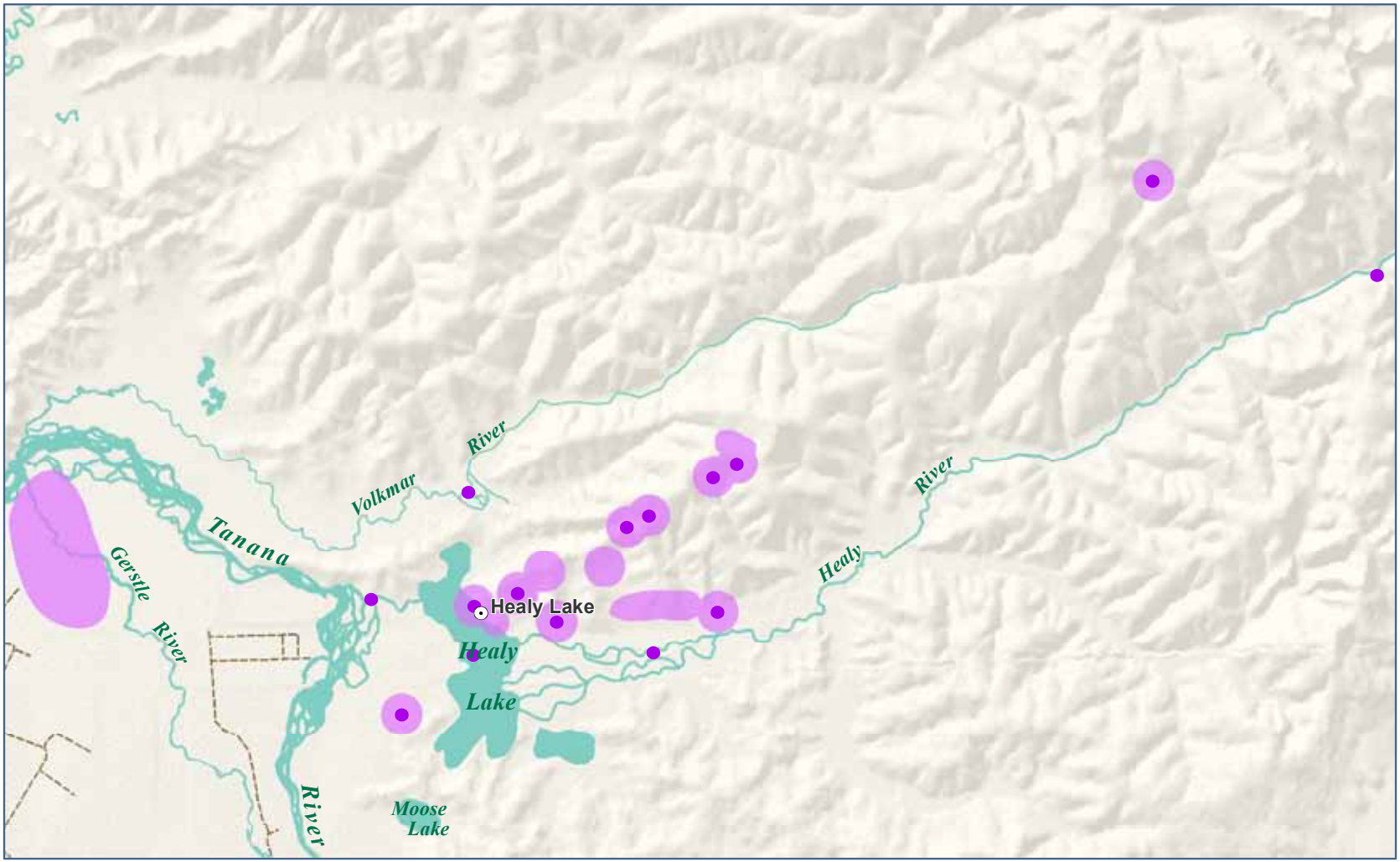
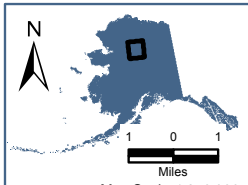
ALASKA DEPARTMENT OF FISH AND GAME





Healy Lake -

All Resources, 2011

All Resource Harvest Locations

All Resource Search Areas

Local Road

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
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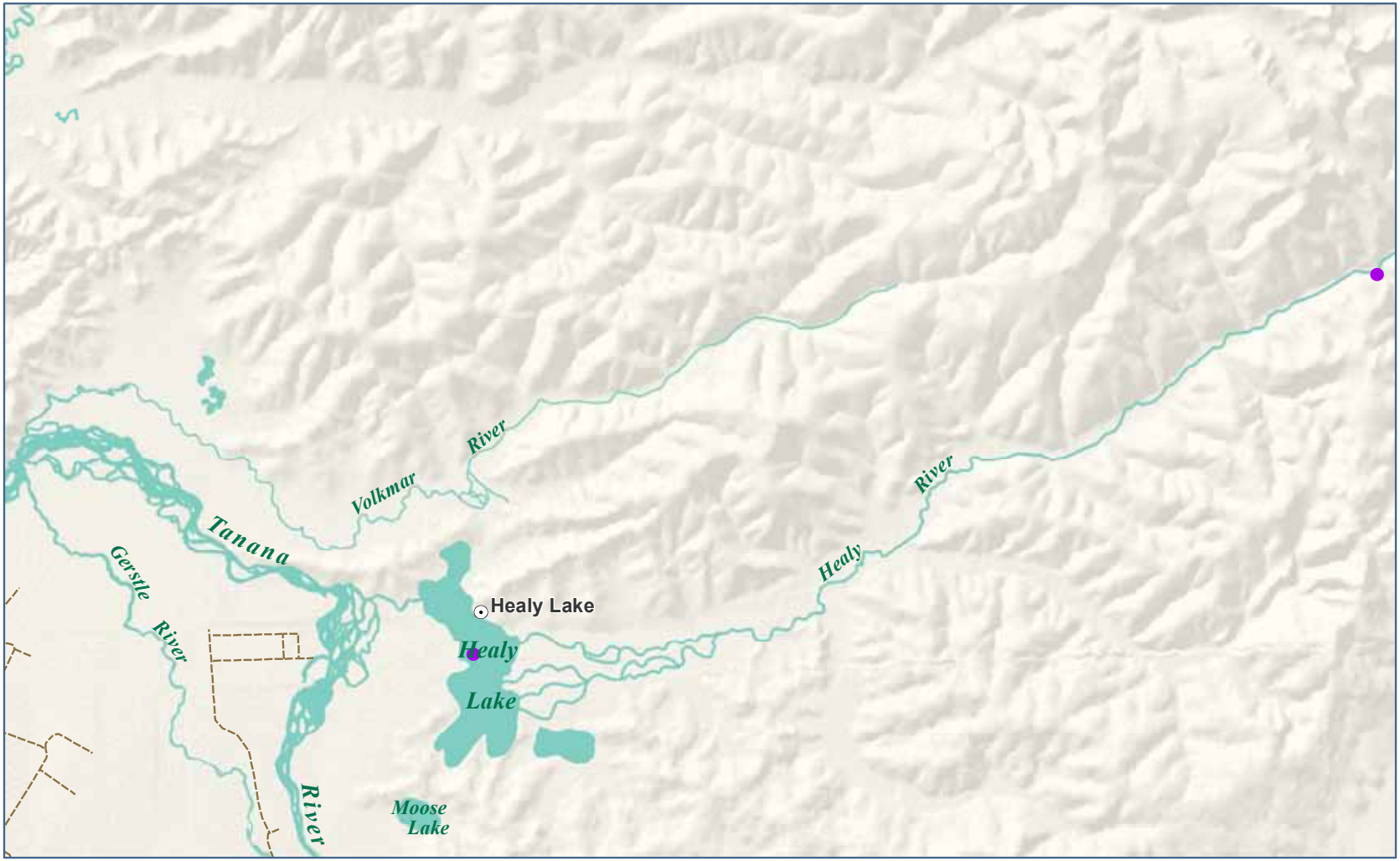
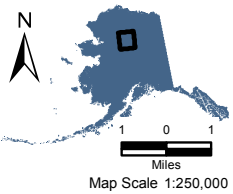
ALASKA DEPARTMENT OF FISH AND GAME





Healy Lake - Whitefish, 2011

Whitefish Harvest Locations

Local Road

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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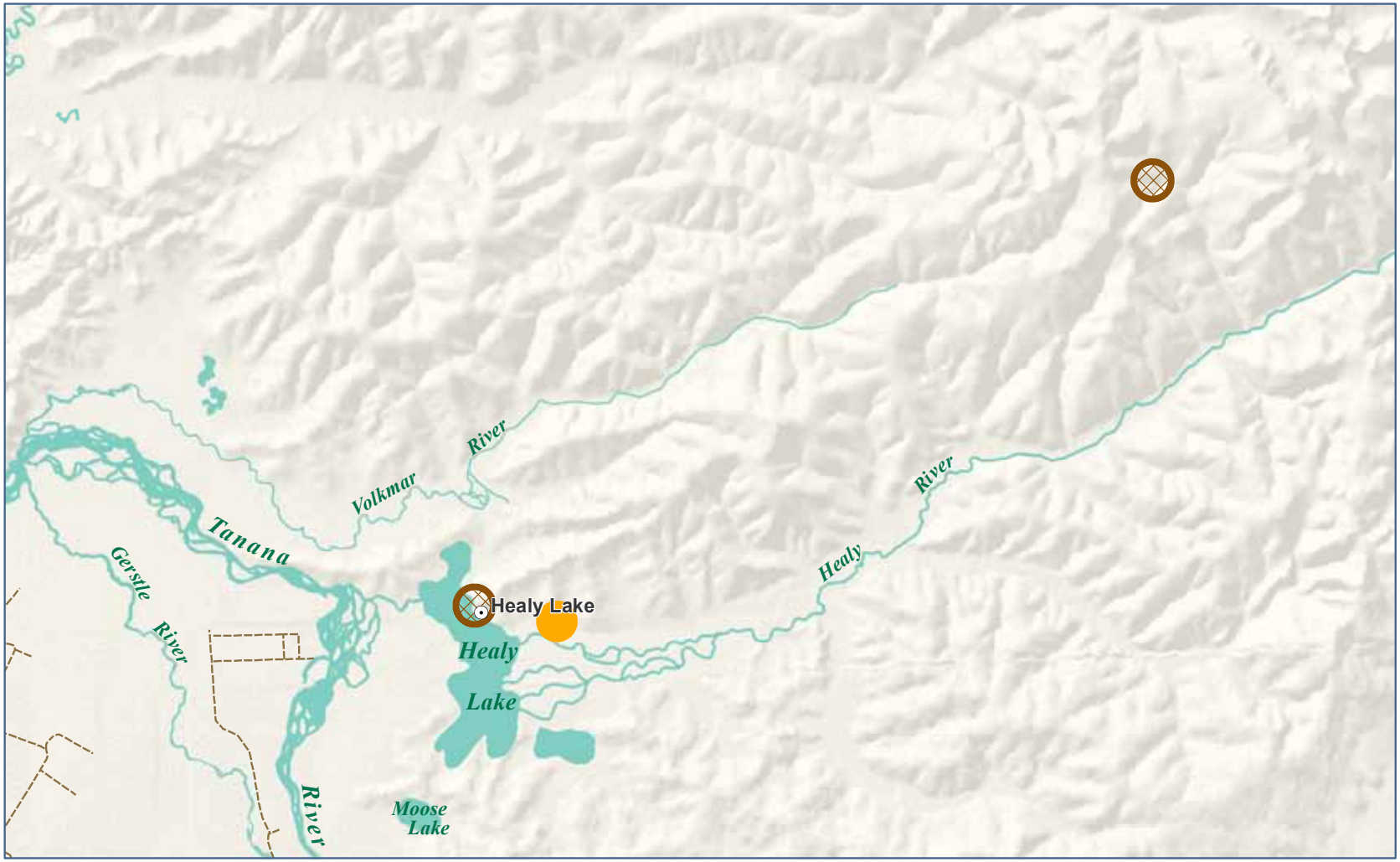

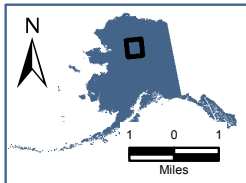

Map Scale 1:250,000

Healy Lake -

Caribou and Moose, 2011

Caribou Search Areas

Moose Search Area

Local Road

Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net

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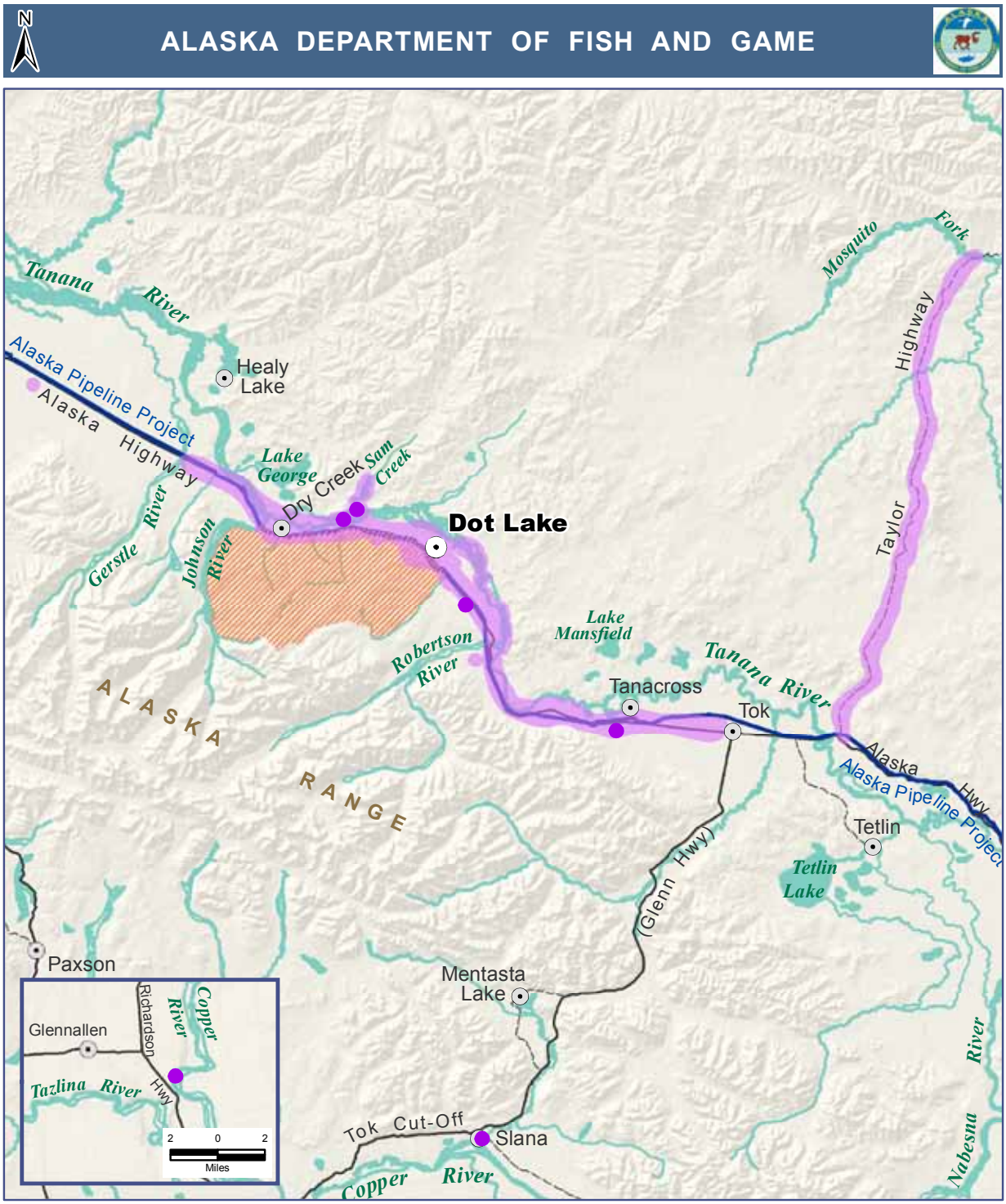

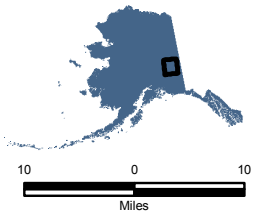

Map Scale 1:1,050,000

Dot Lake - All Resources, 2011

All Resource Harvest Locations

All Resource Search Areas

Highway

Macomb Plateau Controlled Use Area

Alaska Pipeline Project

Stephen R. Braund & Associates
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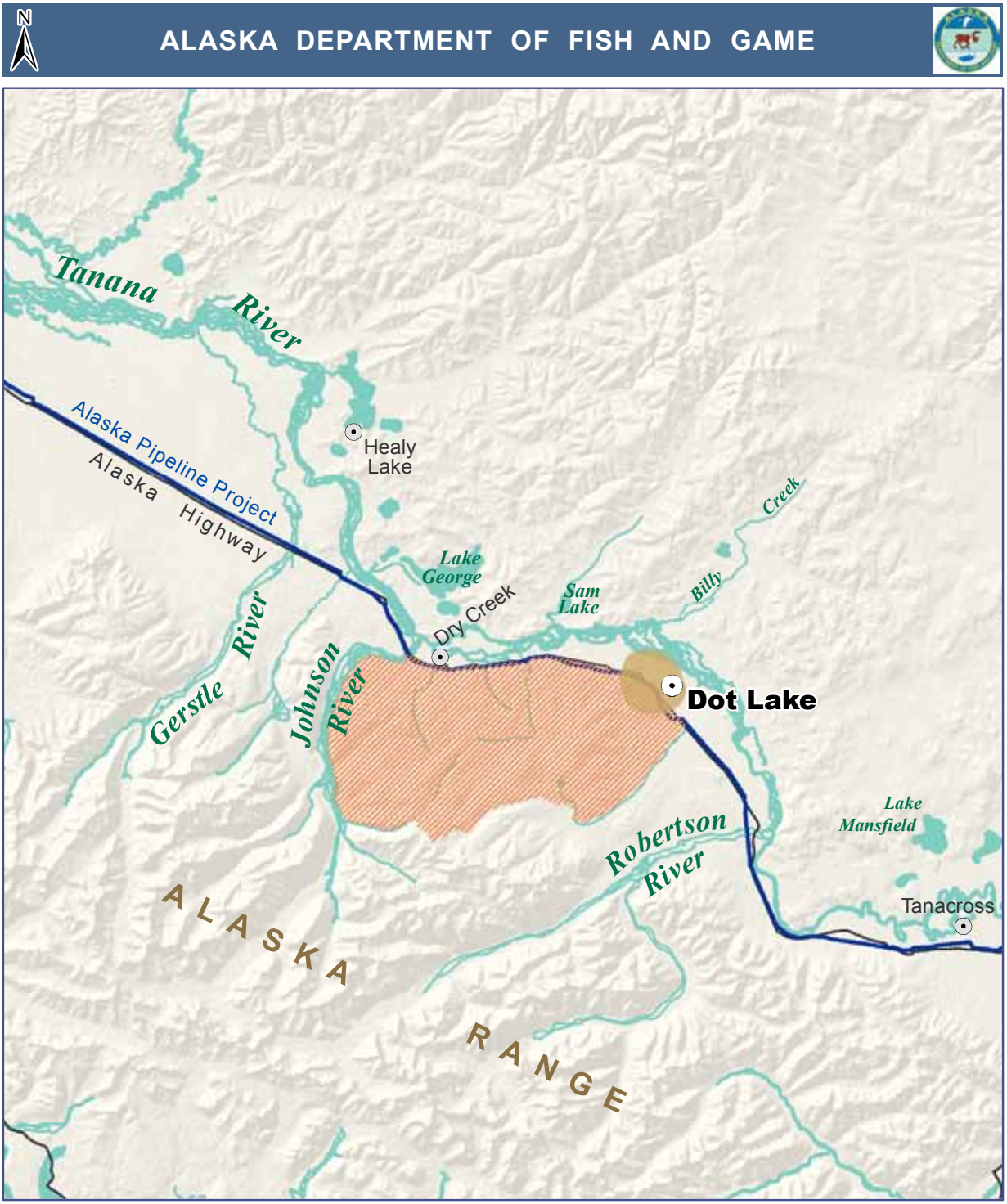

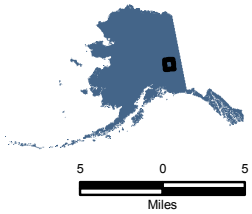

Map Scale 1:700,000

Dot Lake - Black Bear, 2011

Black Bear Search Area

Macomb Plateau Controlled Use Area

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
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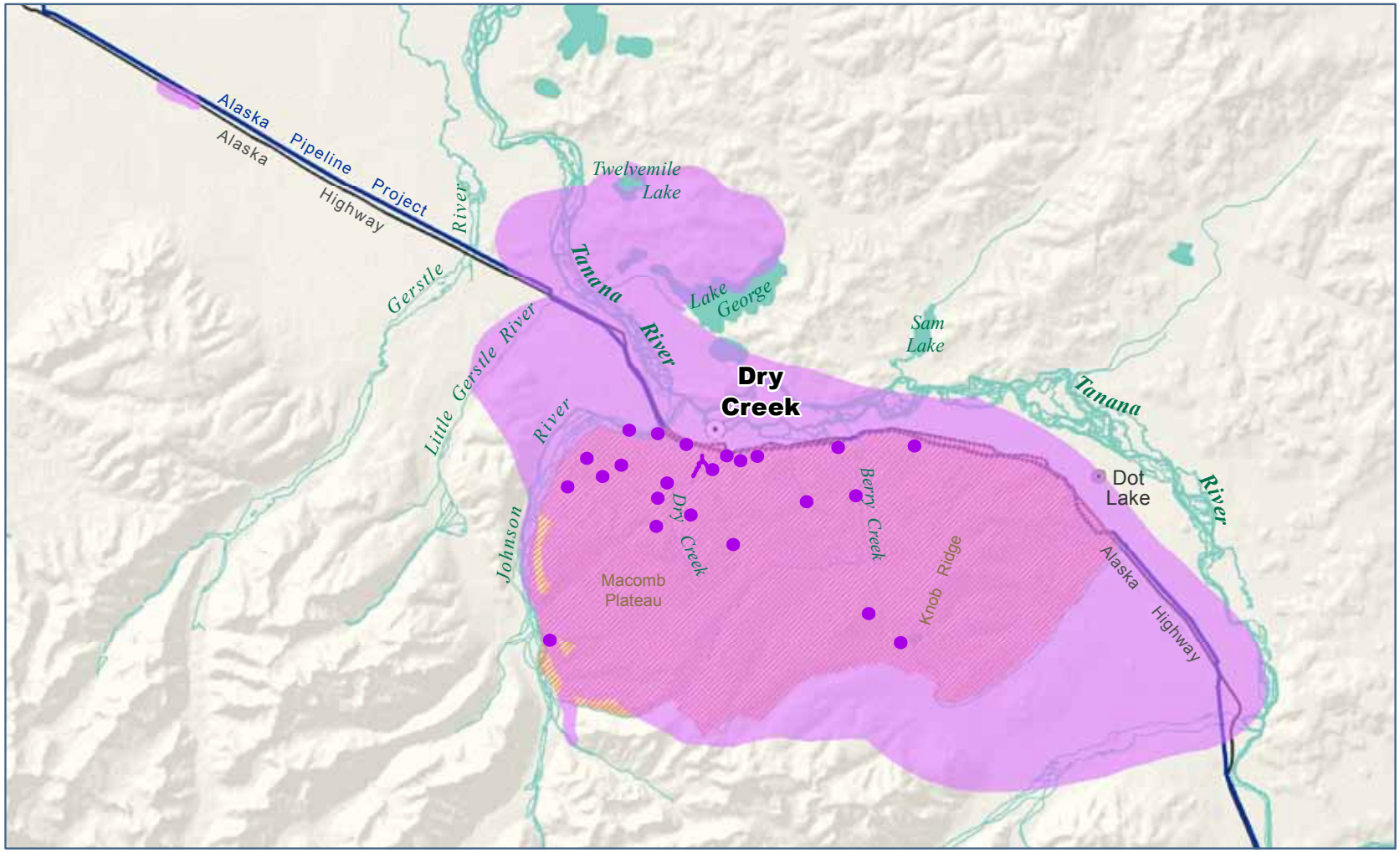

N

2 0 2
Miles
Map Scale 1:420,000

Dry Creek -

All Resources, 2011

All Resource Harvest Locations
All Resource Harvest Routes
All Resource Search Areas
Macomb Plateau Controlled Use Area
Highway
Alaska Pipeline Project

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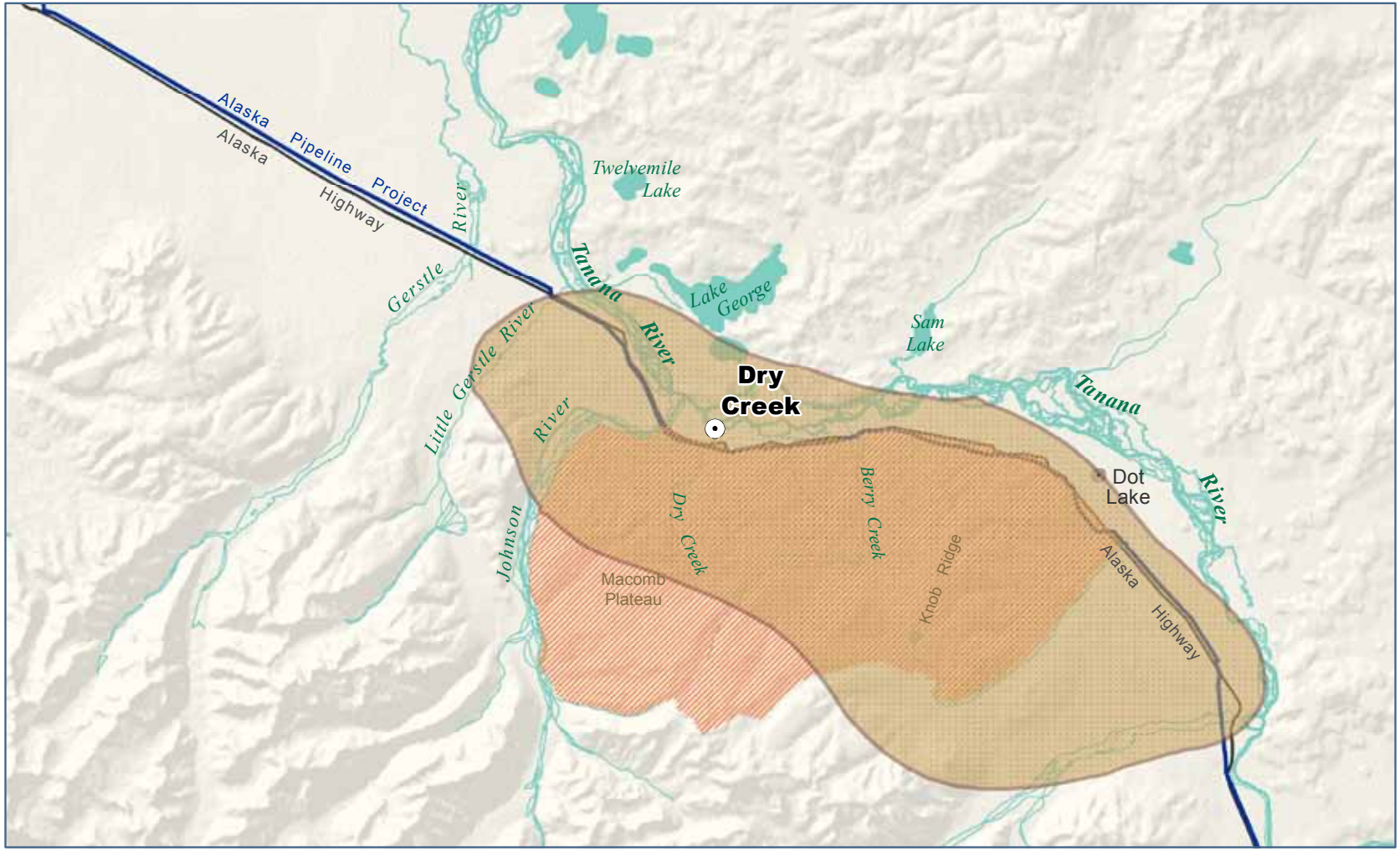

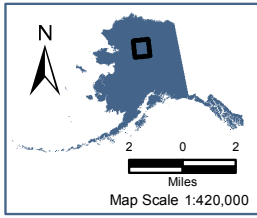

Dry Creek - Black and Brown Bear, 2011

Black and Brown Bear Search Area

Macomb Plateau Controlled Use Area

Highway

Alaska Pipeline Project

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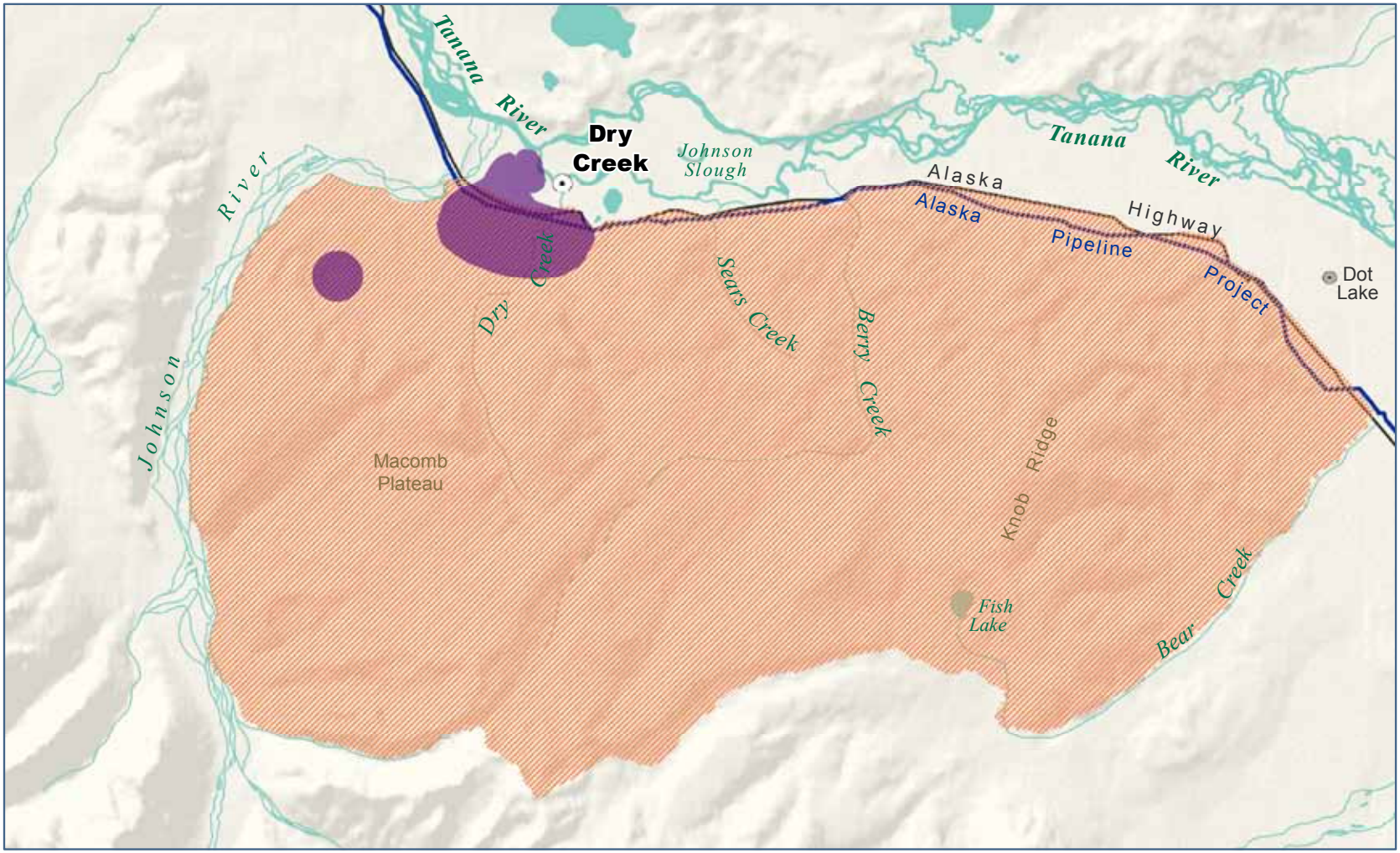

N

1 0 1
Miles
Map Scale 1:210,000

Dry Creek -

Migratory Birds, 2011

Migratory Bird Search Areas

Macomb Plateau Controlled Use Area

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
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Anchorage, Alaska 99510
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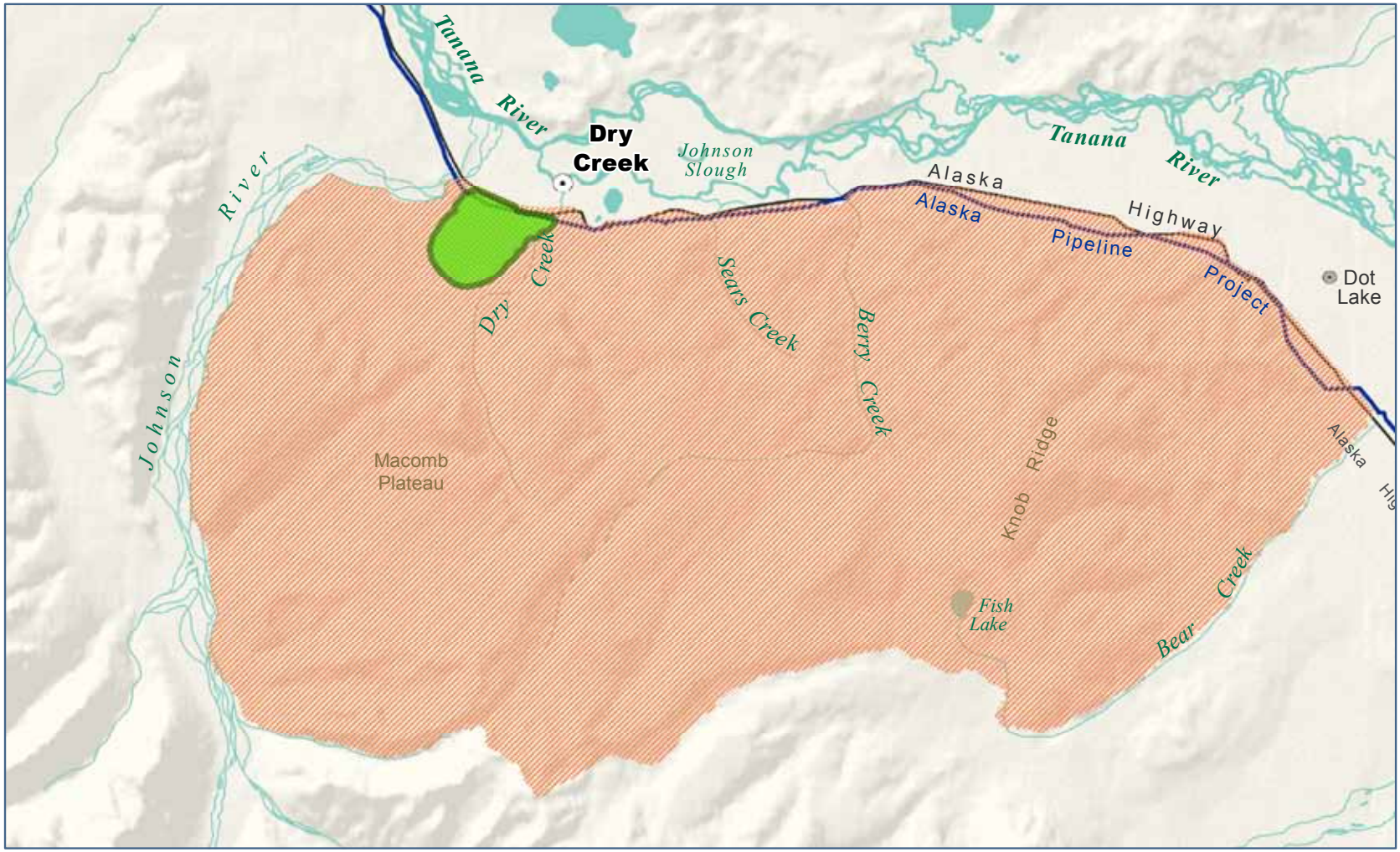

N

1 0 1
Miles
Map Scale 1:210,000

Dry Creek - Plants, 2011

Plant Harvest Area

Macomb Plateau Controlled Use Area

Highway

Alaska Pipeline Project

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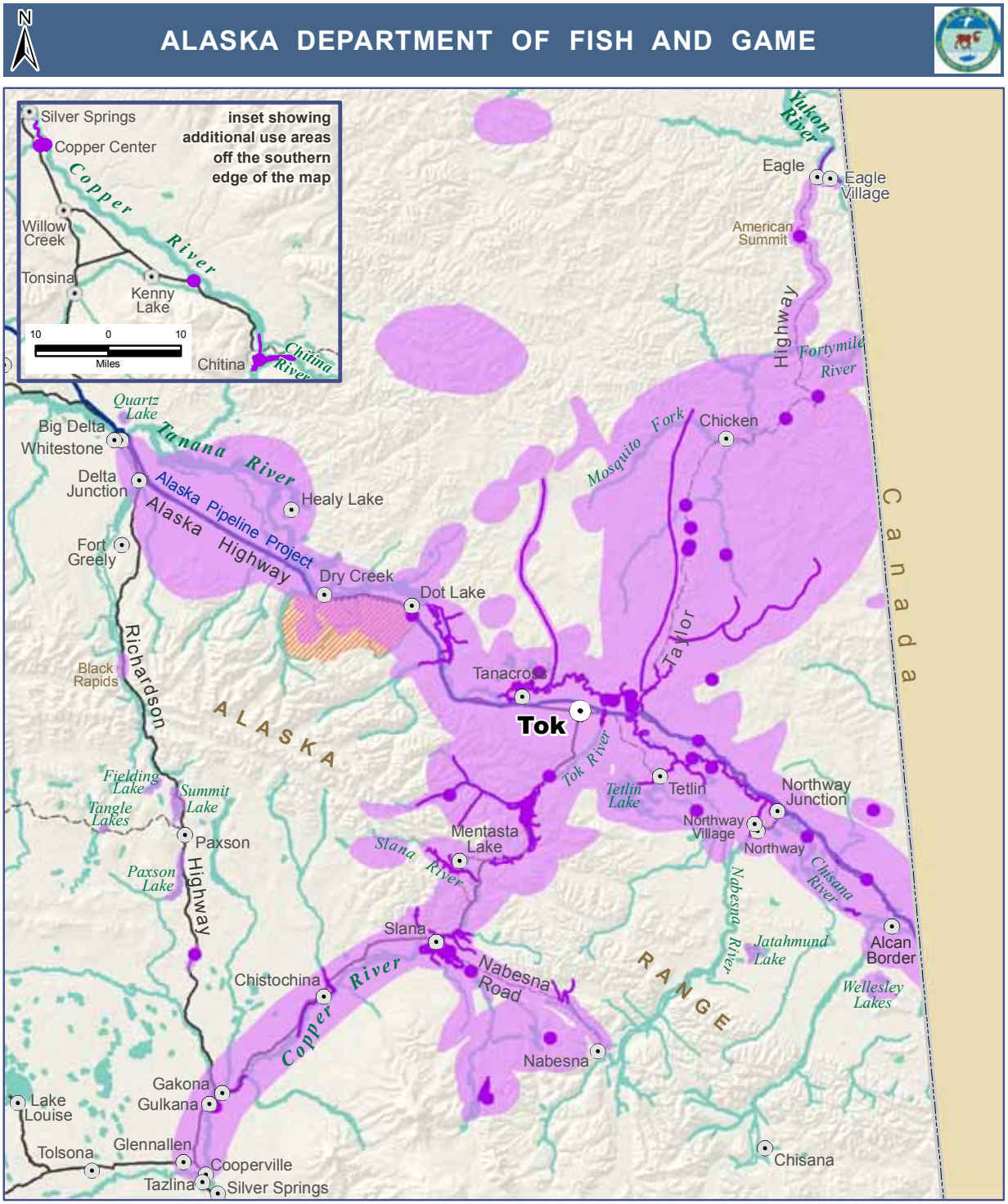
ALASKA DEPARTMENT OF FISH AND GAME
N
inset showing additional use areas off the southern edge of the map
Silver Springs
Copper Center
Copper River
Willow Creek
Tonsina
Kenny Lake
Chitina
Chitina River
10 0 10
Miles
Yukon River
Eagle
Eagle Village
American Summit
Highway
Fortymile River
Chicken
Mosquito Fork
Quartz Lake
Big Delta
Whitestone
Tanana River
Delta Junction
Alaska Pipeline Project
Alaska Highway
Healy Lake
Fort Greely
Dry Creek
Dot Lake
Richardson
Black Rapids
Tanacross
Tok
Taylor
ALASKA
Canada
Tok River
Tetlin Lake
Tetlin
Northway Junction
Northway Village
Northway
Fielding Lake
Summit Lake
Tangle Lakes
Paxson
Paxson Lake
Highway
Mentasta Lake
Slana River
Nabesna River
Chisana River
Slana
Jatahmund Lake
Alcan Border
Wellesley Lakes
Chistochina
Copper River
Nabesna Road
RANGE
Nabesna
Gakona
Gulkana
Lake Louise
Tolsona
Glennallen
Cooperville
Tazlina
Silver Springs
Chisana
Tok - All Resources, 2011
All Resource Harvest Routes
All Resource Harvest Locations
All Resource Search Areas
Highway
Macomb Plateau Controlled Use Area
Alaska Pipeline Project
Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net
15 0 15
Miles
Map Scale 1:1,850,000
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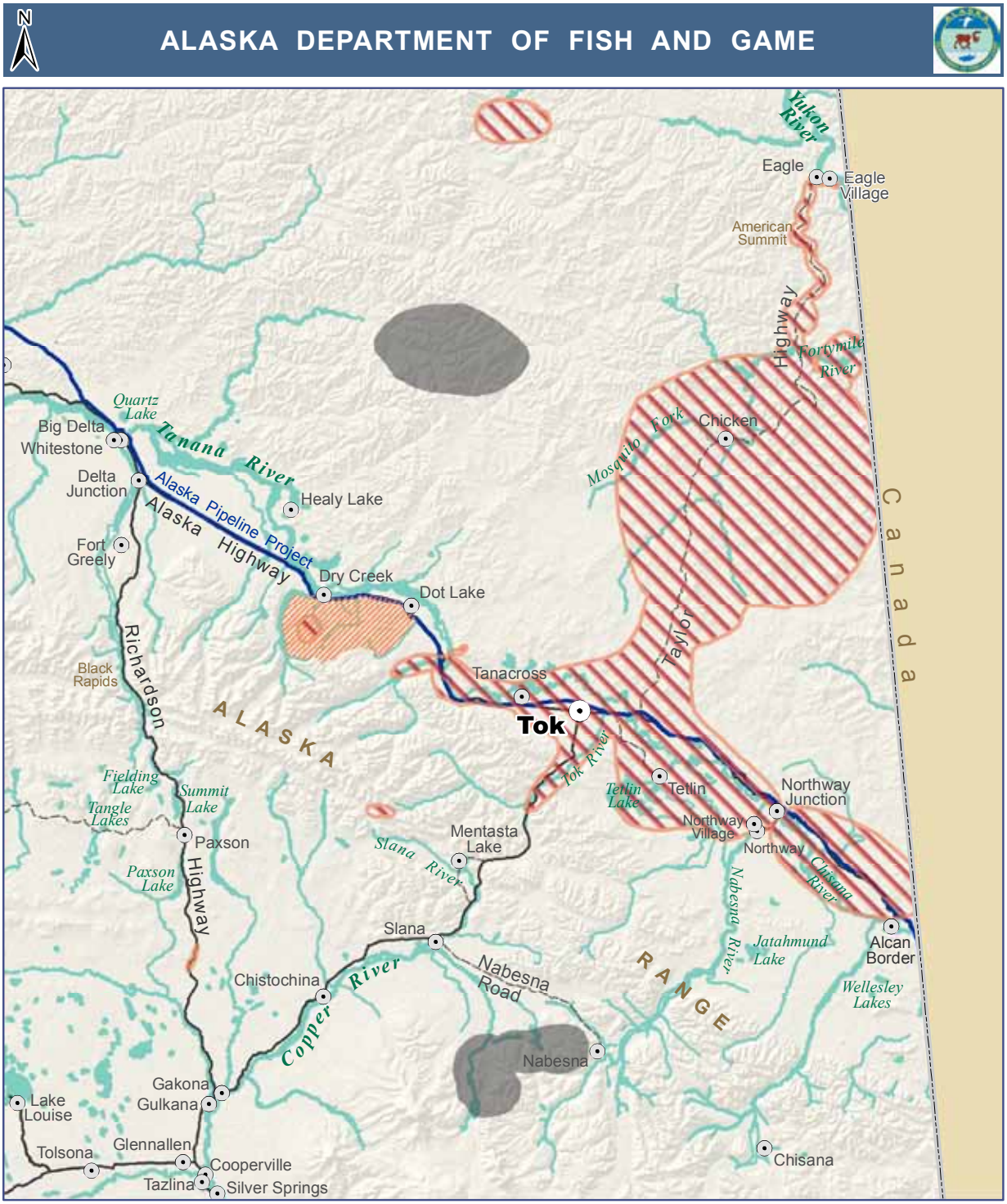
ALASKA DEPARTMENT OF FISH AND GAME
N
Yukon River
Eagle
Eagle Village
American Summit
Highway
Fortymile River
Quartz Lake
Big Delta
Whitestone
Tanana River
Delta Junction
Alaska Pipeline Project
Alaska Highway
Healy Lake
Fort Greely
Dry Creek
Dot Lake
Mosquito Fork
Chicken
Canada
Taylor
Richardson
Black Rapids
Tanacross
Tok
ALASKA
Tok River
Fielding Lake
Summit Lake
Tangle Lakes
Paxson
Paxson Lake
Highway
Mentasta Lake
Slana River
Tetlin Lake
Tetlin
Northway Junction
Northway Village
Northway
Chisana River
Nabesna River
Slana
Jatahmund Lake
Alcan Border
Wellesley Lakes
Nabesna Road
RANGE
Chistochina
Copper River
Nabesna
Gakona
Gulkana
Lake Louise
Glennallen
Tolsona
Cooperville
Tazlina
Silver Springs
Chisana
Tok - Caribou and Dall Sheep, 2011
Caribou Search Areas
Dall Sheep Search Areas
Macomb Plateau Controlled Use Area
Highway
Alaska Pipeline Project
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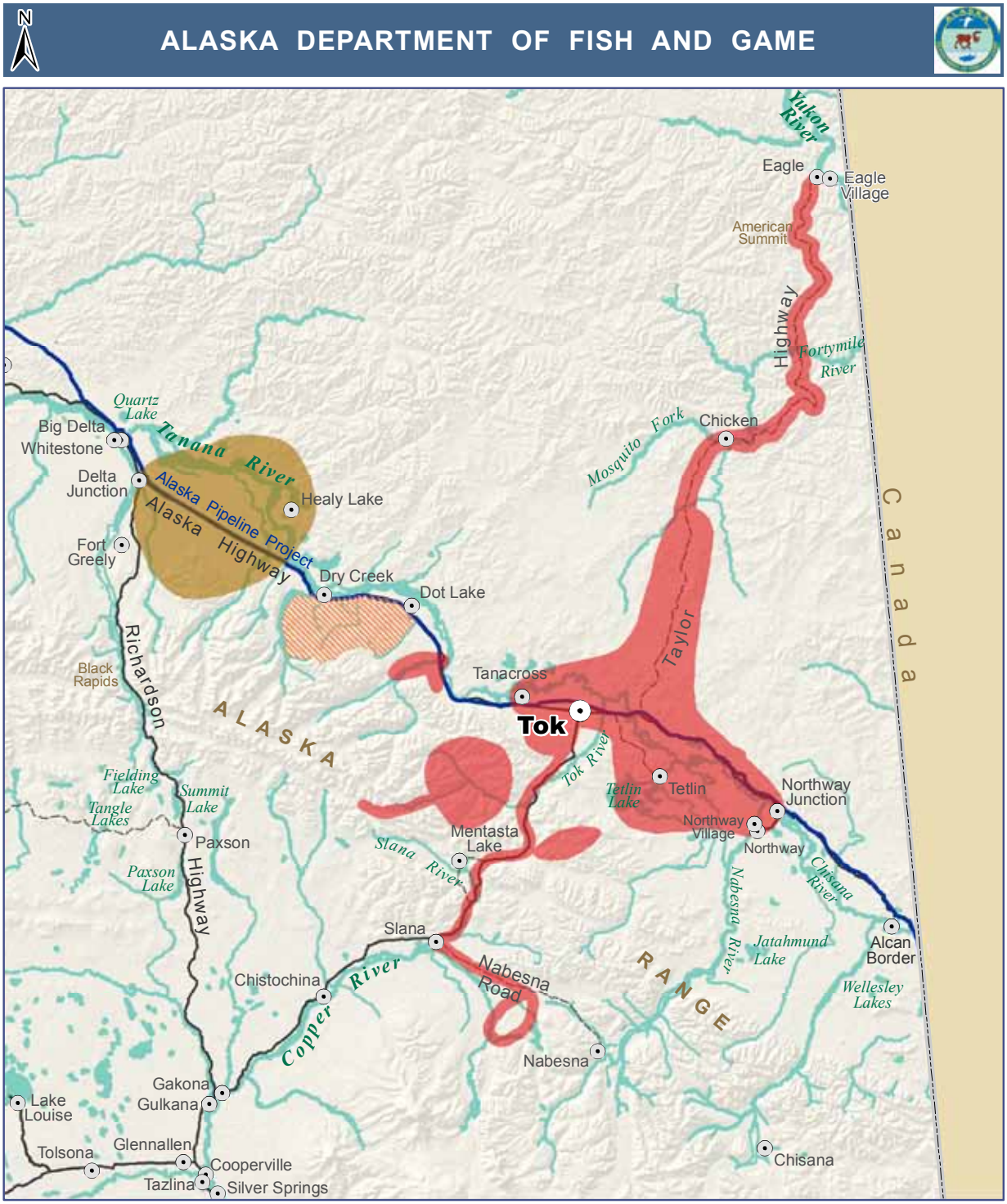
ALASKA DEPARTMENT OF FISH AND GAME
N
Yukon River
Eagle
Eagle Village
American Summit
Highway
Fortymile River
Chicken
Mosquito Fork
Quartz Lake
Big Delta
Whitestone
Tanana River
Delta Junction
Alaska Pipeline Project
Alaska Highway
Healy Lake
Fort Greely
Dry Creek
Dot Lake
Richardson
Black Rapids
Tanacross
Tok
Taylor
Canada
ALASKA
Tok River
Tetlin Lake
Tetlin
Northway Junction
Northway Village
Northway
Fielding Lake
Summit Lake
Tangle Lakes
Paxson
Mentasta Lake
Slana River
Paxson Lake
Highway
Nabesna River
Chisana River
Slana
Jatahmund Lake
Alcan Border
Chistochina
Copper River
Nabesna Road
RANGE
Wellesley Lakes
Nabesna
Gakona
Gulkana
Lake Louise
Glennallen
Tolsona
Cooperville
Tazlina
Silver Springs
Chisana
Tok - American Bison and Bear, 2011
American Bison Search Area
Bear Search Areas
Macomb Plateau Controlled Use Area
Highway
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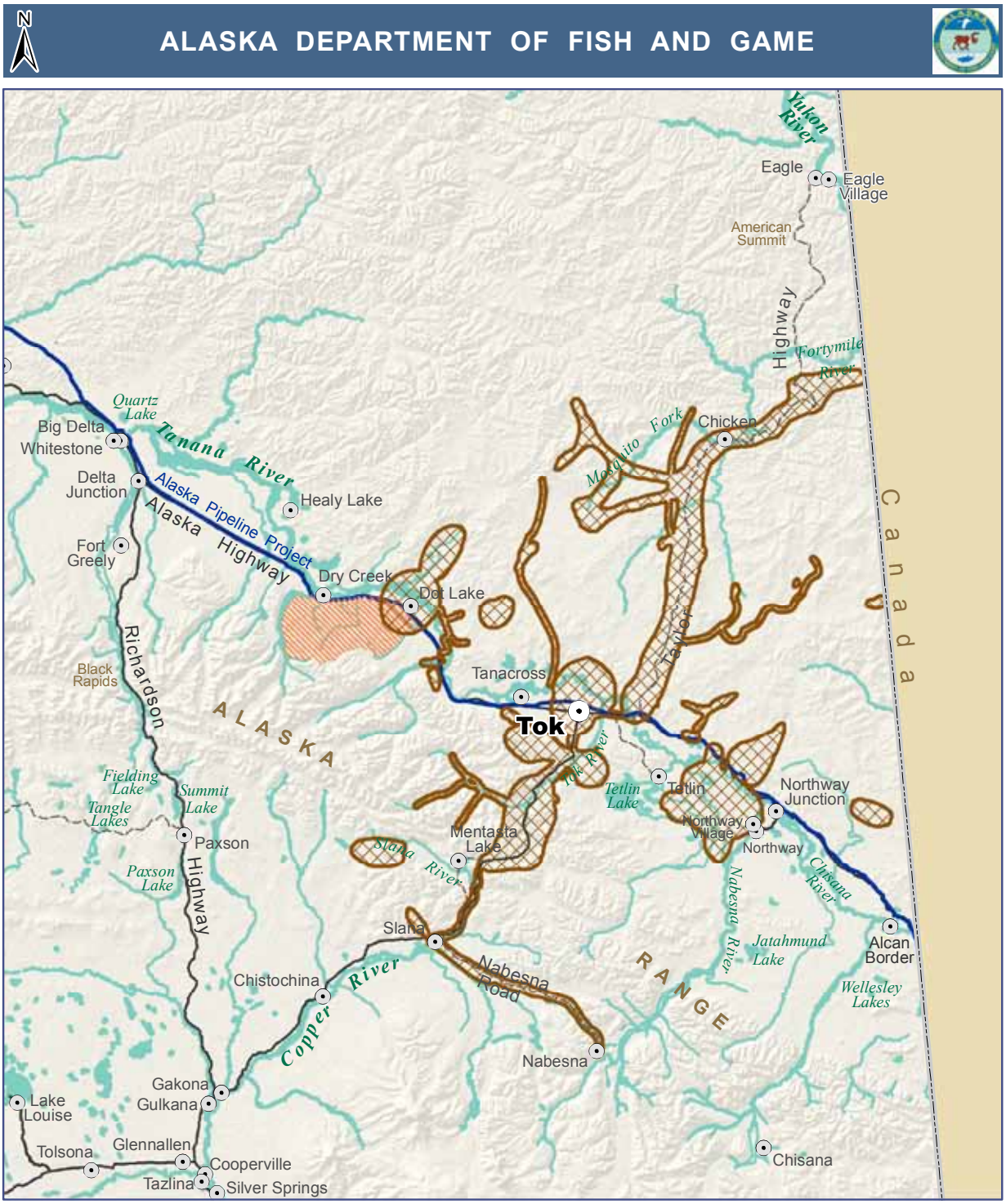

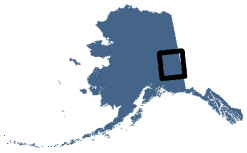

15 0 15
Miles
Map Scale 1:1,850,000

Tok - Small Land Mammals, 2011

Small Land Mammal Search Areas
Macomb Plateau Controlled Use Area
Highway
Alaska Pipeline Project

Stephen R. Braund & Associates
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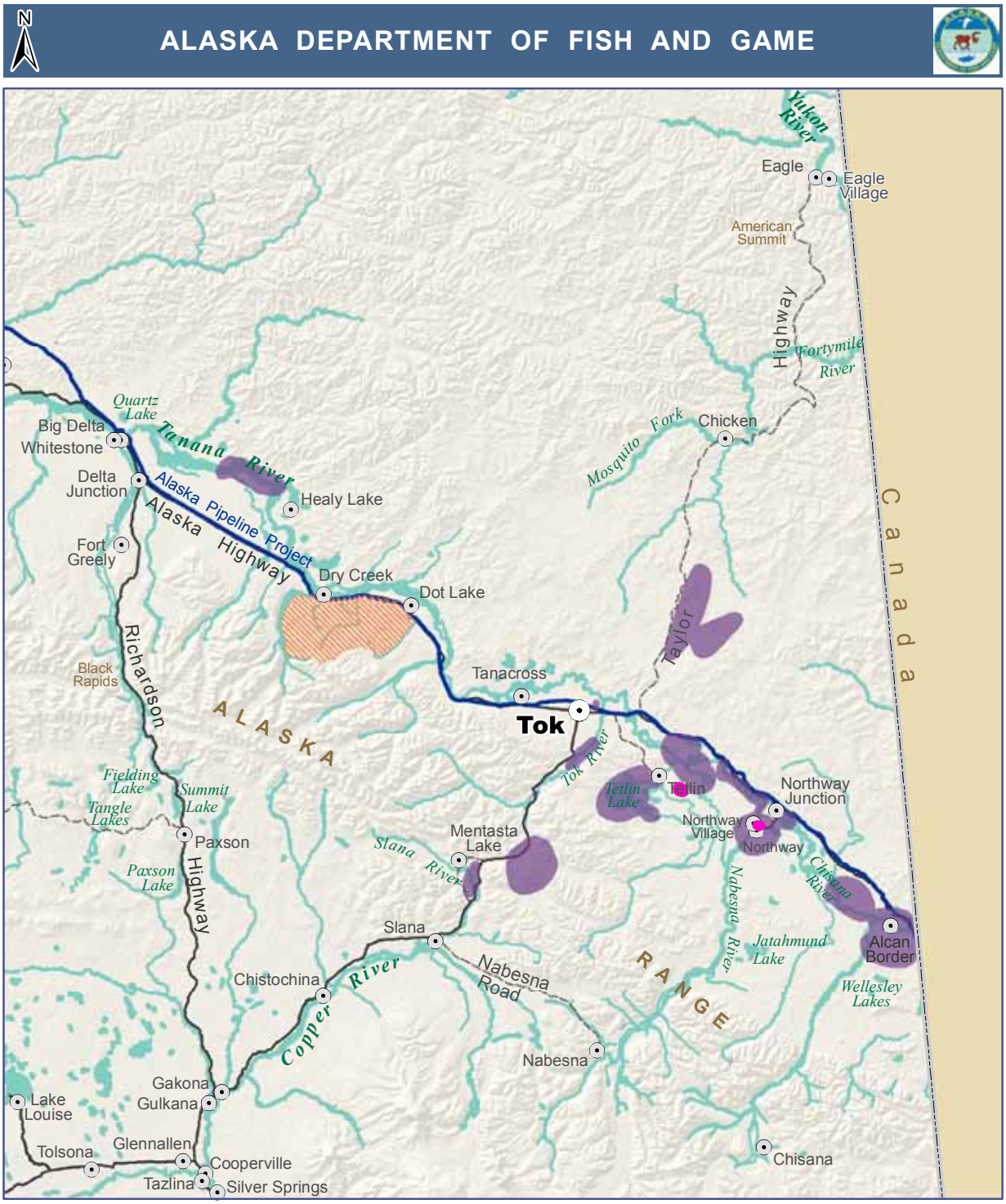

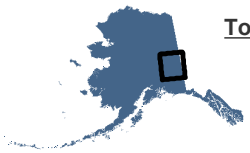

Tok - Eggs and Migratory Birds, 2011

Egg Harvest Areas

Migratory Bird Harvest Areas

Macomb Plateau Controlled Use Area

Highway

Alaska Pipeline Project

Stephen R. Braund & Associates
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15 0 15
Miles
Map Scale 1:1,850,000

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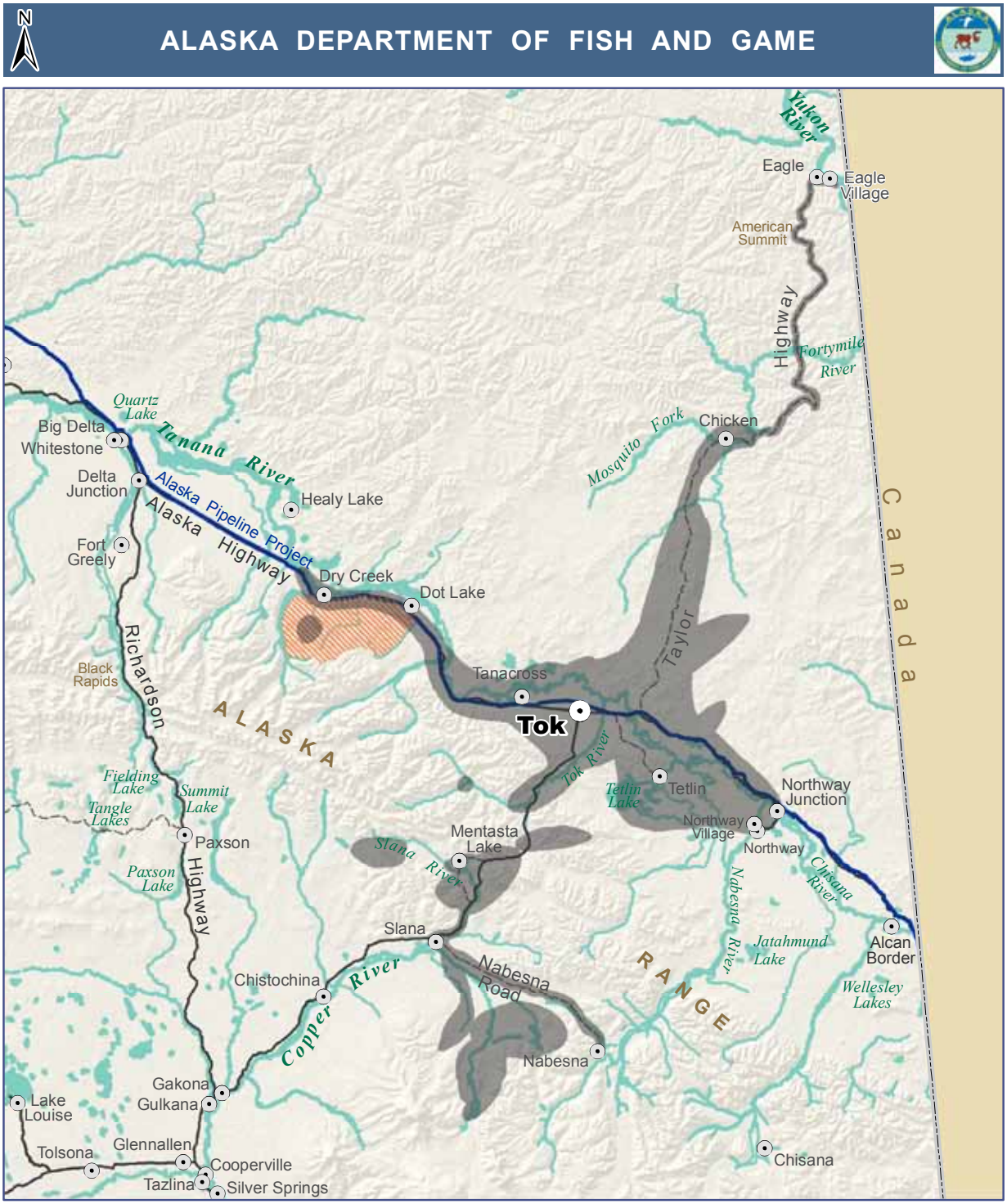
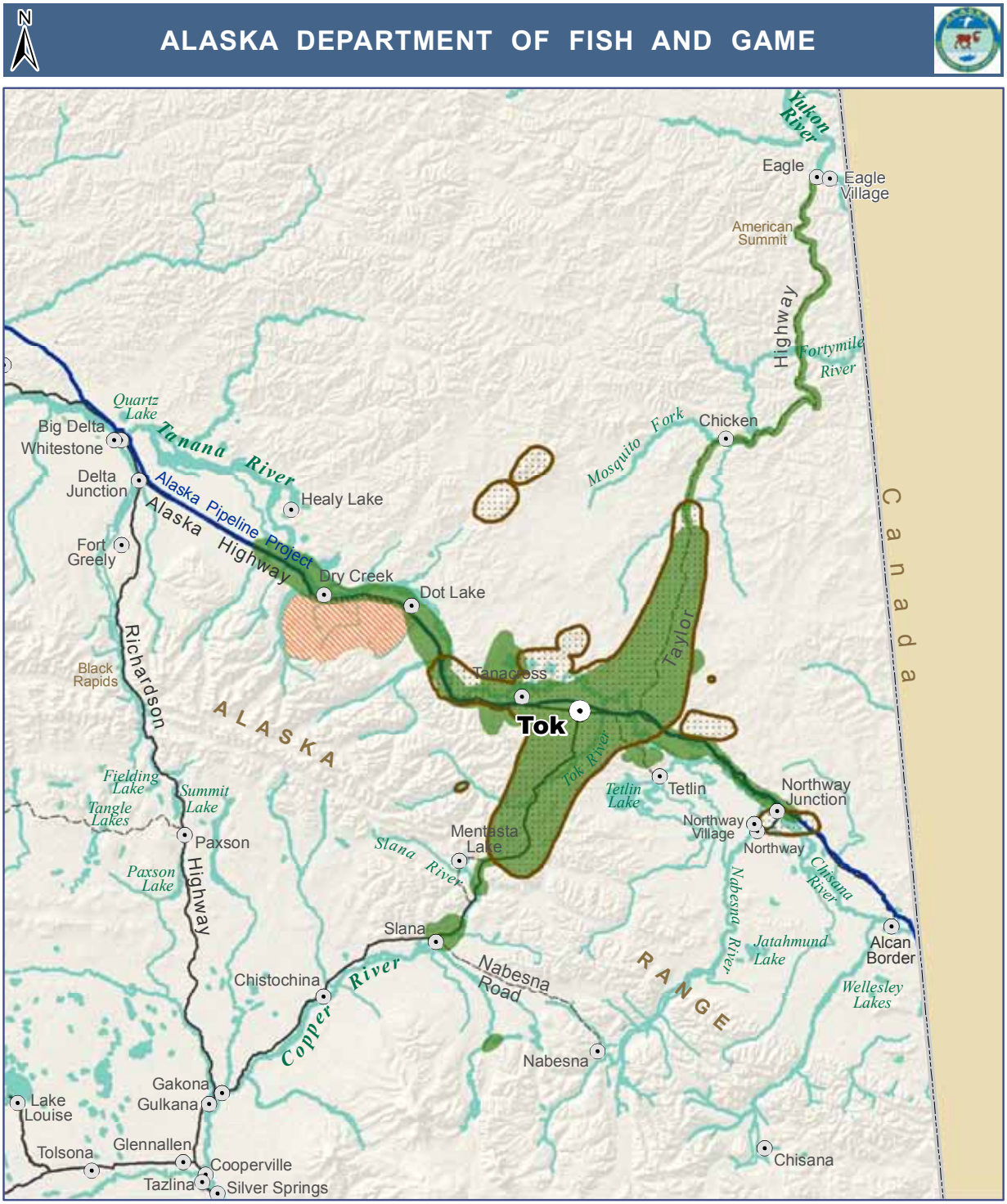

ALASKA DEPARTMENT OF FISH AND GAME
N
Yukon River
Eagle
Eagle Village
American Summit
Highway
Fortymile River
Chicken
Mosquito Fork
Quartz Lake
Big Delta
Whitestone
Tanana River
Delta Junction
Alaska Pipeline Project
Alaska Highway
Healy Lake
Fort Greely
Dry Creek
Dot Lake
Richardson
Black Rapids
Tanacross
Tok
Taylor
ALASKA
Canada
Tok River
Fielding Lake
Summit Lake
Tangle Lakes
Paxson
Tetlin Lake
Tetlin
Northway Junction
Northway Village
Northway
Mentasta Lake
Slana River
Paxson Lake
Highway
Nabesna River
Chisana River
Slana
Jatahmund Lake
Alcan Border
Chistochina
Copper River
Nabesna Road
RANGE
Wellesley Lakes
Nabesna
Gakona
Gulkana
Lake Louise
Glennallen
Tolsona
Cooperville
Tazlina
Silver Springs
Chisana
Tok - Upland
Game Birds, 2011
Upland Game Bird Search Areas
Macomb Plateau Controlled Use Area
Highway
Alaska Pipeline Project
Stephen R. Braund & Associates
P.O. Box 1480
Anchorage, Alaska 99510
907-276-8222 srba@alaska.net
15 0 15
Miles
Map Scale 1:1,850,000
Alaska Department of Fish and Game collected the data in cooperation with Stephen R. Braund and Associates (SRB&A), and SRB&A digitized the data and prepared the maps. The subsistence maps were prepared for purposes of the Alaska Pipeline Project studies.
Source: Holen, D., S.M. Hazell, and D.S. Koster, editors. 2012. Subsistence harvests and uses of wild resources by communities in the eastern interior of Alaska, 2011. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 372, Anchorage, Alaska.


ALASKA DEPARTMENT OF FISH AND GAME
N
Yukon River
Eagle
Eagle Village
American Summit
Highway
Fortymile River
Chicken
Mosquito Fork
Quartz Lake
Big Delta
Whitestone
Tanana River
Delta Junction
Alaska Pipeline Project
Alaska Highway
Healy Lake
Fort Greely
Dry Creek
Dot Lake
Richardson
Black Rapids
Taylor
Tanacross
Tok
ALASKA
Tok River
Fielding Lake
Summit Lake
Tangle Lakes
Paxson
Paxson Lake
Highway
Tetlin Lake
Tetlin
Northway Junction
Northway Village
Northway
Mentasta Lake
Slana River
Nabesna River
Chisana River
Slana
Jatahmund Lake
Alcan Border
Nabesna Road
RANGE
Wellesley Lakes
Chistochina
Copper River
Nabesna
Gakona
Gulkana
Lake Louise
Glennallen
Tolsona
Cooperville
Tazlina
Silver Springs
Chisana
Canada
Tok - Plants and Wood, 2011
Wood Harvest Areas
Plant Harvest Areas
Macomb Plateau Controlled Use Area
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Appendix E–Summary

Subsistence Harvests and Uses of Wild Resources by Communities in the Eastern Interior of Alaska, 2011

An Overview of Study Findings

Division of Subsistence
Alaska Department of Fish and Game

December 2012

Background

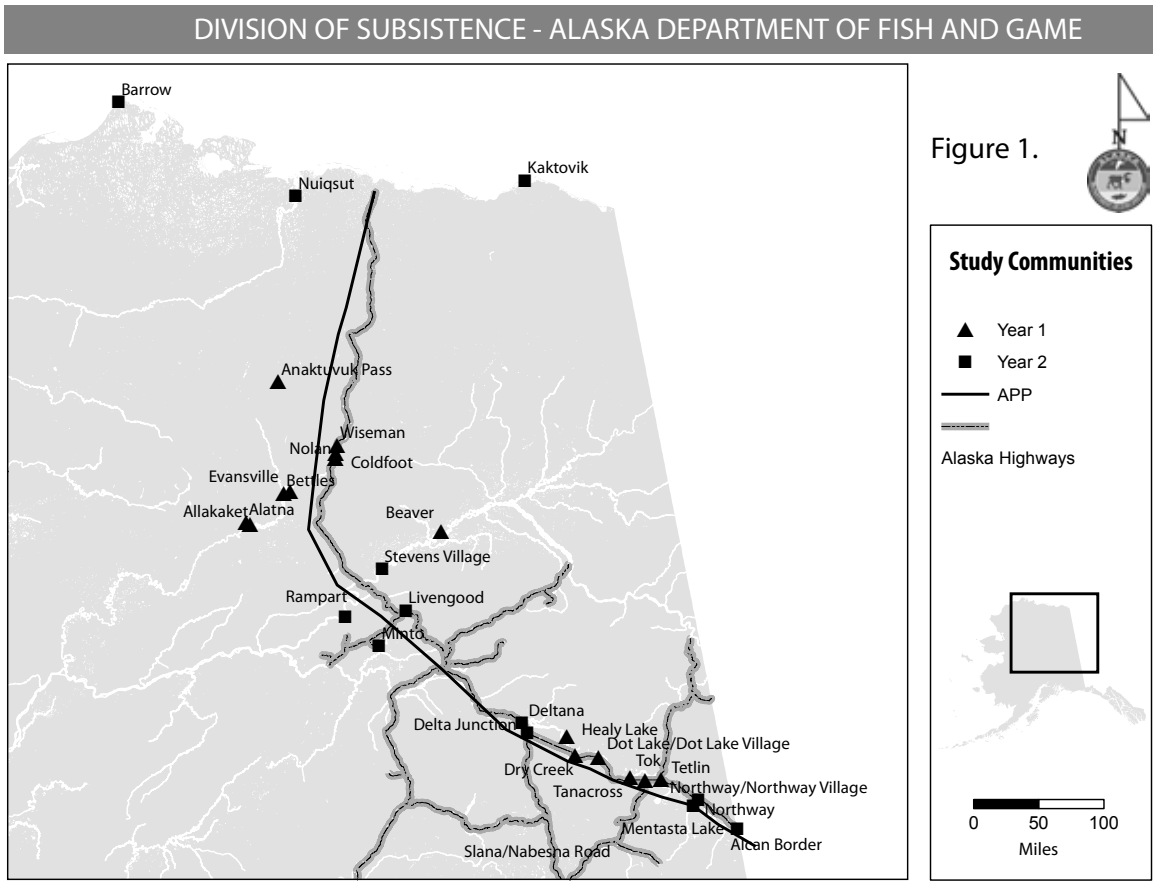
The following is a brief overview of research conducted by the Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) to provide baseline harvest and use data of fish, wildlife, and wild plant resources in the local economy and way of life by residents in the communities of Alatna, Allakaket, Anaktuvuk Pass, Bettles, Beaver, Coldfoot, Dot Lake, Dry Creek, Evansville, Healy Lake, Tok, and Wiseman (Figure 1). The study period covers January 1 to December 31, 2011. Funding for this project was provided by the Alaska Pipeline Project (APP), which was coordinated by the State Pipeline Coordinator's Office (SPCO) at the Alaska Department of Natural Resources (DNR) through a reimbursable services agreement (RSA) between DNR and ADF&G. This project was also coordinated with Stephen R. Braund & Associates (SRB&A) and the study communities. The Division of Subsistence designed and implemented this project in response to the need for updated community baseline information about the range of wild resource harvests, uses, and areas of harvest, as well as demographic and economic information within the area of the proposed APP, a gas pipeline to transport natural gas from Prudhoe Bay on Alaska's Arctic coast to Alberta, Canada. Originally, Year 2 research was to occur in early 2013 and focus on the 2012 study year, but due to uncertainties regarding the APP route, the Year 2 research was postponed in June 2012. When this report was prepared, it was anticipated that surveys in the remaining 14 communities (Figure 1) would be conducted in 2014; however, if the pipeline route changes, future research could take place in a different set of communities.

Methods

The primary data gathering method was systematic household surveys using the Division of Subsistence standard data-gathering instrument. The surveys were conducted face-to-face and mostly in residents' homes. The goal was to interview a representative of each year-round household in all study communities, except for the larger community of Tok where a 25% sample was employed. In total, 352 households in the 12 study communities were interviewed. With the help of community liaisons, household interviews were conducted to collect harvest and use information for all wild resources. Harvest mapping from each household for each resource defined search and/or harvest location, amount of harvest, and month of harvest. Additionally, in each community, 3–5 key respondents were given semi-structured interviews that aided in gathering qualitative data as well as providing additional context for this report.

Findings

Figure 2 illustrates estimated subsistence harvests by resource category in 2011 for each community in pounds (lb) usable weight per capita. The overall harvests between communities varied greatly. Allakaket had the highest harvest with 520 lb per capita, followed by Beaver (359 lb per capita), Anaktuvuk Pass (317 lb per capita), Wiseman (294 lb per capita), Alatna (274 lb per capita), Healy Lake (229 lb per capita), Tok (202 lb per capita), Bettles (175 lb per



capita), Dry Creek (140 lb per capita), Dot Lake (118 lb per capita), Evansville (53 lb per capita), and Coldfoot (38 lb per capita). Research findings indicated that residents in the study communities invested a great deal of time and effort in harvesting salmon and nonsalmon fish, large and small land mammals, birds, and wild plants. Figure 2 also shows the composition by resource category of each community's harvest in 2011. The composition of the harvest resources was varied among the communities. Land mammals were an important source of wild foods in all 12 communities in 2011. Figure 3 demonstrates a comparison between the average number of resources used, resources that residents attempted to harvest, resources harvested, resources received, and resources that were given away or shared with other households. Overall, the number of resources used spanned a wide range. In Alatna, households used an average of 24 wild resources, followed by: Wiseman (22), Allakaket (18), Healy Lake (16), Evansville (12), Anaktuvuk Pass, Beaver, Bettles, and Dry Creek (11 each), Dot Lake and Tok (10 each), and Coldfoot (3). Figure 4 illustrates the percentage of households in each community that were using, attempting to harvest, harvesting, receiving, and giving away wild resources in 2011. In 10 of the 12 communities, 100% of households used wild resources. Ninety-eight percent of the households in Anaktuvuk Pass used wild resources and 92% of households used wild resources in Tok. The percentage of households that reported receiving wild resources was also high in all 12 communities. In 9 of the 12 communities, 100% of households received wild resources. Ninety-five percent of households in Anaktuvuk Pass reported receiving wild resources, 96% in Beaver, and 75% in Tok. Sharing of these wild resources binds communities and families together in networks of mutual support and obligation. Furthermore, subsistence activities created settings for the collective sharing of local and traditional knowledge concerning harvest locations and fish and wildlife behavior and populations. In short, subsistence hunting, fishing, and gathering were vital components of the economy and way of life for residents of these communities in 2011.

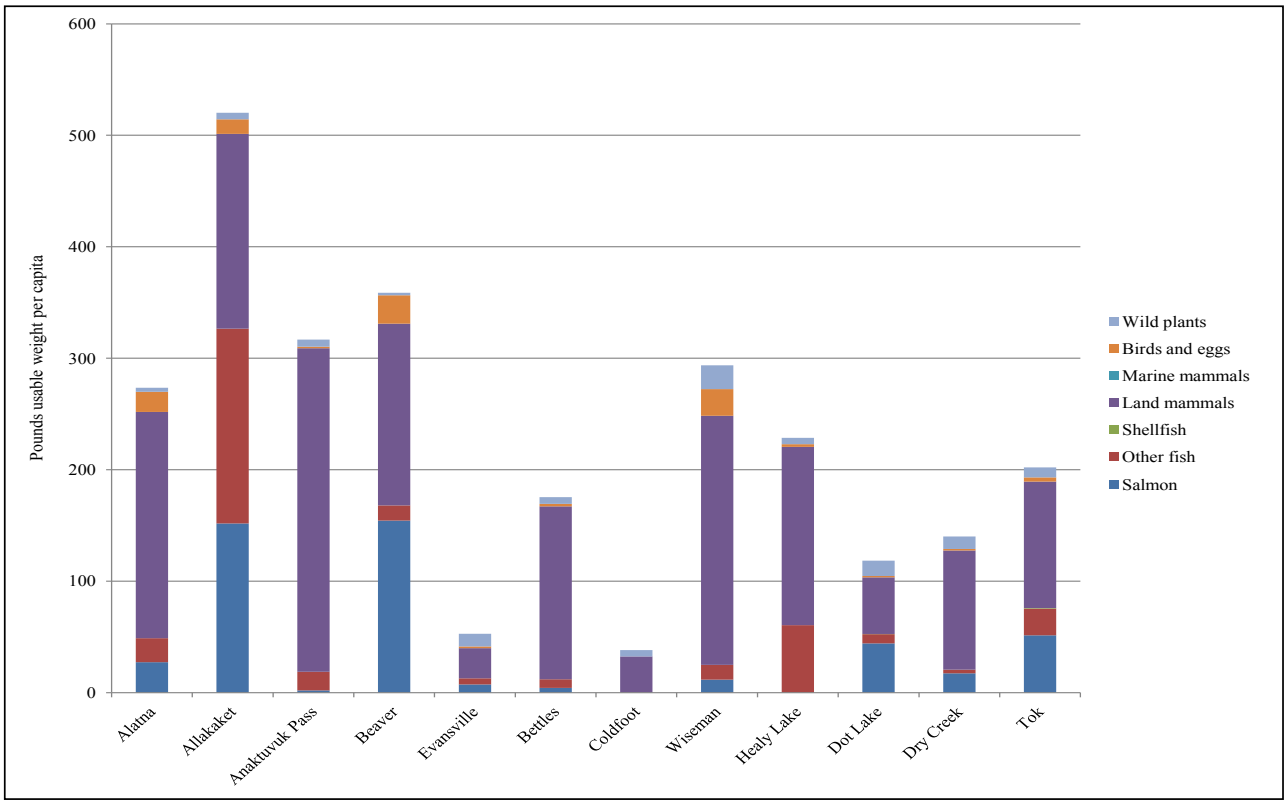


Figure 2.– Estimated harvests of wild resources by category, pounds usable weight per capita, 12 eastern interior Alaska communities, 2011.

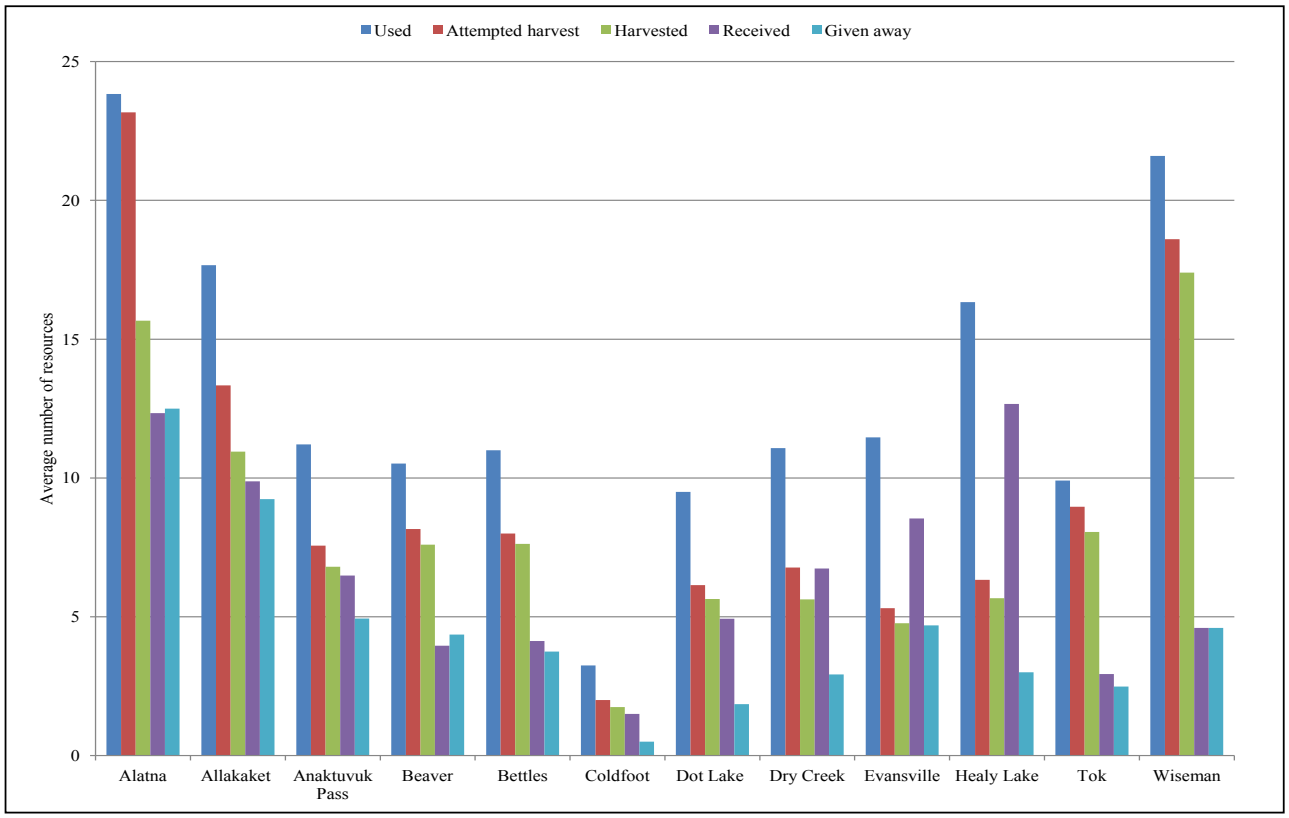


Figure 3.– Average number of resources per household used, attempted to be harvested, harvested, received, and given away, 12 eastern interior Alaska communities, 2011.

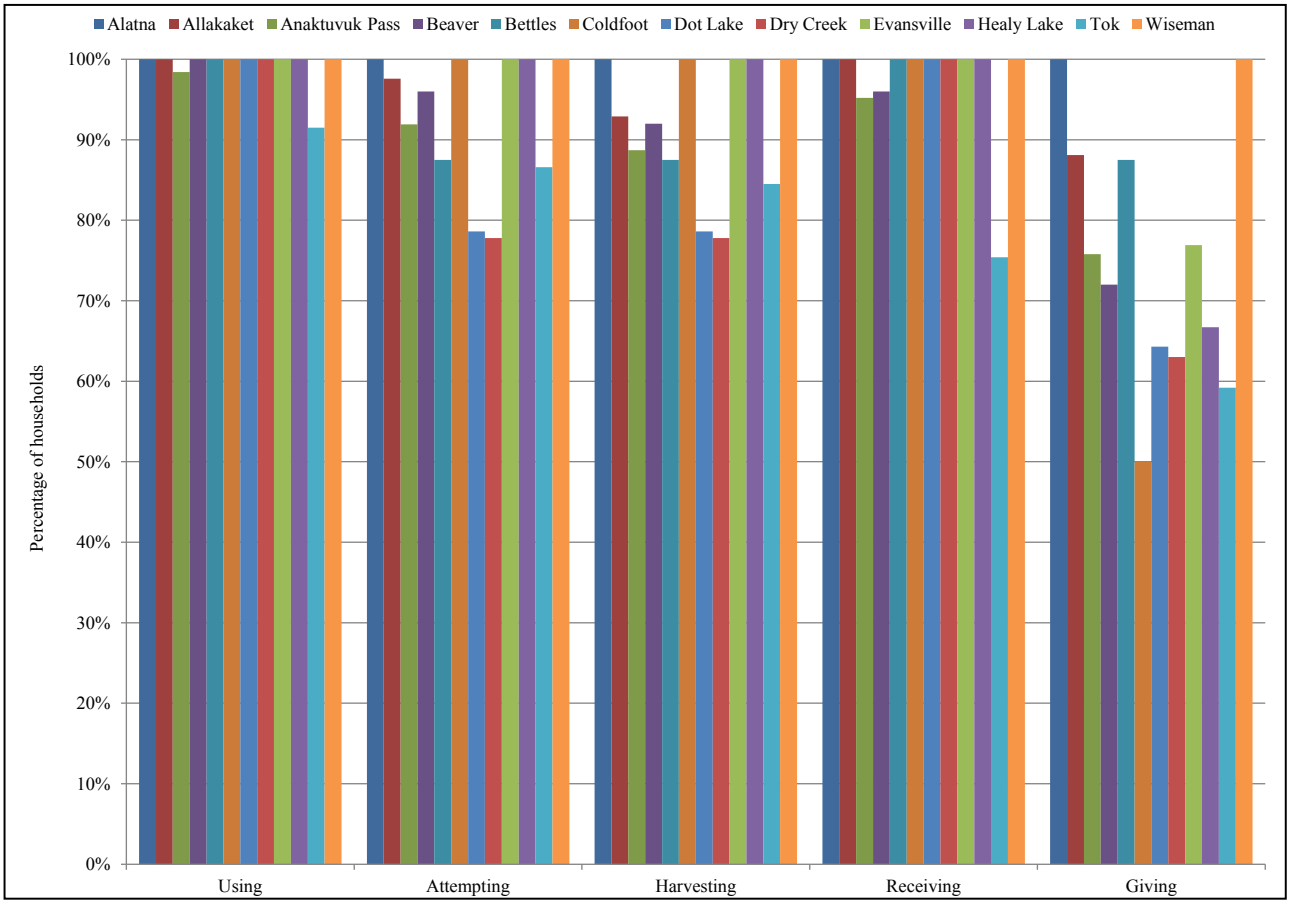


Figure 4.– Percentage of households using, attempting to harvest, receiving, and giving wild resources, 12 eastern interior Alaska communities, 2011.

For More Information:

Complete results for this project appear in: *Holen,D., S. Hazell, and D.S. Koster, editors. 2012. Subsistence harvests and uses of wild resources by communities in the eastern interior of Alaska. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 372. Anchorage, Alaska.* Technical Paper series reports are available through the Alaska State Library and on the Internet: *http://www.adfg.alaska.gov/sf/publications/.*

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