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SUSITNA-WATANA HYDRO

Technical Paper No. 385

The Harvest and Use of Wild Resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012

by
Davin Holen,
Sarah M. Hazell,
James M. Van Lanen,
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Bronwyn Jones,
and
Garrett Zimpelman

February 2014

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

Symbols and Abbreviations

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

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

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

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

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

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

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

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

Technical Paper No. 385

The Harvest and Use of Wild Resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012

by

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Alaska Department of Fish and Game
Division of Subsistence
Anchorage, Alaska

February 2014

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

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

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ABSTRACT

This report provides updated information about the harvest of fish, wildlife, and wild plant resources by the communities of Cantwell, Chase, Trapper Creek, Talkeetna, Skwentna, and Alexander (also called Susitna). This report details the results of a household survey administered in these communities between January and March 2013 and population estimates for the 2012 study year. These communities are located in the Susitna River Basin of Southcentral Alaska. During the 2012 study year, many residents of the study communities relied on hunting, fishing, and wild food gathering for nutrition and to support their way of life. They utilized a variety of resources, including salmon and other fish, large land mammals, small land mammals, migratory waterfowl and upland game birds, and wild plants and berries. This study is part of the effort of the State of Alaska to assess the feasibility of constructing the Susitna-Watana Hydroelectric Project. This information was collected by research staff of the Division of Subsistence, Alaska Department of Fish and Game.

Key words: Subsistence, Susitna River Basin, Susitna-Watana Hydroelectric Project, Watana, Cantwell, Chase, Trapper Creek, Talkeetna, Skwentna, Susitna, Alexander

INTRODUCTION

This report provides updated information about the harvest of fish, wildlife, and wild plant resources by the communities of Cantwell (pop. 196), Chase (pop. 35), Trapper Creek (pop. 335), Talkeetna (pop. 788), Skwentna (pop. 62), and Alexander/Susitna (pop. 24). This report details the results of a household survey administered in these communities between January and March 2013 for the 2012 study year. Population estimates shown above are estimates for the 2012 study year. Table 1-1 shows the population estimates of the study year compared to estimates from the 2010 U.S. Census Bureau survey and 2012 estimates from the Alaska Department of Labor and Workforce Development (ADLWD). U.S. census boundaries were followed in this 2012 survey.

The study communities are located in the Susitna River Basin of Southcentral Alaska (Figure 1-1). The Susitna River is one of the largest rivers in the state of Alaska. This river supports important salmon stocks that are harvested in the Tyonek Subdistrict and Yentna River subsistence fisheries and also harvested by sport anglers, including residents of the study communities. The basin also harbors abundant wildlife. In the 2012 study year, many residents of the study communities participated in hunting, fishing, and gathering for nutrition and to support their way of life. They utilized a variety of resources, including salmon and other fish, large land mammals (caribou, moose, black bears), small land mammals (small game and furbearers), migratory waterfowl and upland game birds, and wild plants and berries. Table 1-2 presents a list, including the Linnaean taxonomic names, of resources used by the study communities in 2012. Some of the communities are located on the Alaska highway system and residents traveled great distances to harvest some resources, such as hunting for caribou off the Denali Highway or fishing for marine fish in the waters of Prince William Sound.

Harvest information was collected by research staff of the Division of Subsistence, Alaska Department of Fish and Game (ADF&G). The Division of Subsistence scientifically quantifies harvests of wild resources by Alaska residents to assist the Alaska Board of Fisheries and Board of Game in finding the amount reasonably necessary for subsistence for each population or stock with a positive customary and traditional use finding. Since its inception, during the past 30 years the Division of Subsistence has conducted comprehensive harvest assessment surveys in 219 communities in Alaska. The information collected by the Division of Subsistence is also used in resource planning to understand the harvest of wild resources by communities throughout Alaska, especially the locations and timing of resource hunting, fishing, and gathering activities to understand the potential impacts of development on local harvesting patterns.

Table 1-1. – Population, study communities, 2010 and 2012.

	2010 census[a]				Study findings for 2012[b]				ADLWD 2012 estimate[c]
	Total population		Alaska Native population		Total population		Alaska Native population		
Community	Households	Population	People	Percentage of total	Households	Population	People	Percentage of total	Population
Cantwell	104	219	34	15.5%	83	196	35	17.7%	207
Chase	18	34	0	0.0%	18	35	0	0.0%	35
Skwentna	20	37	0	0.0%	35	62	2	3.8%	35
Talkeetna	449	876	32	3.7%	374	788	29	3.7%	894
Trapper Creek	225	481	31	6.4%	148	335	19	5.8%	475
Alexander/Susitna	10	18	0	0.0%	13	24	2	10.0%	16
All communities	**826**	**1,665**	**97**	**5.8%**	**671**	**1,439**	**88**	**6.1%**	**1,662**

a. *Source* U.S. Census Bureau.

b. *Source* ADF&G Division of Subsistence household surveys, 2013.

c. Alaska Department of Labor and Workforce Development, Research and Analysis Section. URL: http://labor.alaska.gov/research/pop/estimates/data/TotalPopulationPlace.xls (accessed Nov. 29, 2013).

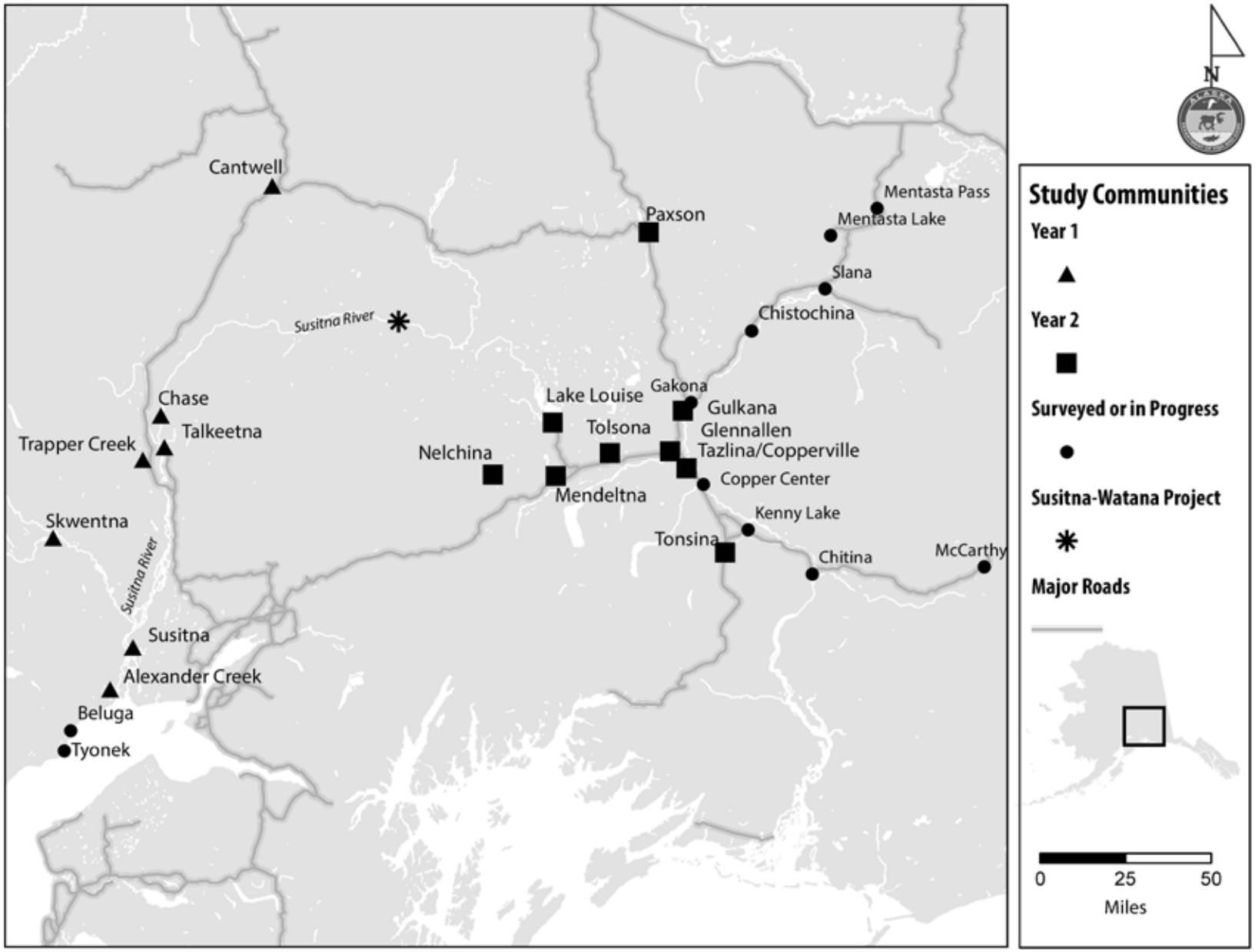

Figure 1-1. – Map of study communities, Susitna River Basin, Alaska.

Table 1-2. – Resources used by study communities, 2012.

Common name	Scientific name
Chum salmon	*Oncorhynchus keta*
Coho salmon	*Oncorhynchus kisutch*
Chinook salmon	*Oncorhynchus tshawytscha*
Pink salmon	*Oncorhynchus gorbuscha*
Sockeye salmon	*Oncorhynchus nerka*
Landlocked salmon	*Oncorhynchus* spp.
Unknown salmon	*Oncorhynchus* spp.
Pacific herring	*Clupea pallasi*
Pacific herring spawn on kelp	*Clupea pallasi*
Smelt	
Eulachon (hooligan, candlefish)	*Thaleichthys pacificus*
Pacific (gray) cod	*Gadus macrocephalus*
Pacific tomcod	*Microgadus proximus*
Unknown cod	
Lingcod	*Ophiodon elongatus*
Pacific halibut	*Hippoglossus stenolepis*
Rockfish	
Black rockfish	*Sebastes melanops*
Yelloweye rockfish	*Sebastes ruberrimus*
Unknown rockfish	
Sablefish (black cod)	*Anoplopoma fimbria*
Burbot	*Lota lota*
Dolly Varden	*Salvelinus malma*
Lake trout	*Salvelinus namaycush*
Arctic grayling	*Thymallus arcticus*
Northern pike	*Esox lucius*
Cutthroat trout	*Oncorhynchus clarkii*
Rainbow trout	*Oncorhynchus mykiss*
Unknown trout	
Humpback whitefish	*Coregonus pidschian*
Round whitefish	*Prosopium cylindraceum*
Unknown whitefishes	
Bison	*Bison bison*
Black bear	*Ursus americanus*
Brown bear	*Ursus arctos*
Caribou	*Rangifer tarandus*
Deer	*Odocoileus hemionus*
Elk	*Cervus canadensis*
Goat	*Oreamnos americanus*
Moose	*Alces alces*
Muskox	*Ovibos moschatus*
Dall sheep	*Ovis dalli*
Beaver	*Castor canadensis*
Coyote	*Canis latrans*
Red fox–cross phase	*Vulpes vulpes*
Red fox–red phase	*Vulpes vulpes*

-continued-

Table 1-2.–Page 2 of 3.

Snowshoe hare	*Lepus americanus*
River (land) otter	*Lontra canadensis*
Lynx	*Lynx canadensis*
Marten	*Martes* spp.
Mink	*Neovison vison*
Muskrat	*Ondatra zibethicus*
Porcupine	*Erethizon dorsatum*
Arctic ground (parka) squirrel	*Spermophilus parryii*
Red (tree) squirrel	*Tamiasciurus hudsonicus*
Northern flying squirrel	*Glaucomys volans Zaphaeus*
Weasel	*Mustela nivalis*
Wolf	*Canis lupus*
Wolverine	*Gulo gulo*
Bearded seal	*Erignathus barbatus*
Ringed seal	*Histriophoca fasciata*
Unknown seal	
Bowhead whale	*Balaena mysticetus*
Humpback whale	*Megaptera novaeangliae*
Goldeneye	*Bucephala* spp.
Mallard	*Anas platyrhynchos*
Merganser	*Mergus* spp.
Long-tailed duck	*Clangula hyemalis*
Northern pintail	*Anas acuta*
Scaup	*Aythya* spp.
Green-winged teal	*Anas crecca*
Unknown teal	*Anas* spp.
Wigeon	*Anas* spp.
Unknown ducks	
Cackling goose	*Branta hutchinsii minima*
Canada goose	*Branta canadensis parvipes*
Snow goose	*Chen caerulescens*
Unknown goose	
Tundra (whistling) swan	*Cygnus columbianus*
Sandhill crane	*Grus canadensis*
Spruce grouse	*Falcipennis canadensis*
Ruffed grouse	*Bonasa umbellus*
Unknown grouse	
Ptarmigan	*Lagopus* spp.
Unknown duck eggs	
Unknown gull eggs	
Unknown eggs	
Butter clam	*Saxidomus gigantea*
Freshwater clam	
Pinkneck clam	
Razor clam	*Siliqua* spp.
Unknown clams	
Dungeness crab	*Cancer magister*
King crab	

-continued-

Table 1-2.–Page 3 of 3.

Tanner crab	*Chionoecetes* spp.
Mussels	*Mytilus* spp.
Blue mussel	*Mytilus trossulus*
Unknown oysters	
Unknown sea urchins	
Shrimp	
Blueberry	*Vaccinium uliginosum alpinum*
Lowbush cranberry	*Vaccinum vitis-idaea minus*
Highbush cranberry	*Viburnum edule*
Crowberry	*Empetrum nigrum*
Gooseberry	*Ribes oxyacanthoides*
Currants	*Ribes* spp.
Huckleberry	*Vaccinium parvifolium*
Cloudberry	*Rubus chamaemorus*
Nagoonberry	*Rubus arcticus* spp.
Raspberry	*Rubus idaeus*
Salmonberry	*Rubus spectabilis*
Soapberry	*Shepherdia canadensis*
Strawberry	*Fragaria virginiana*
Twisted stalk berry (watermelon berry)	*Streptopus amplexifolius*
Serviceberry	
Other wild berries	
Eskimo potato	*Hedysarum alpinum*
Fiddlehead fern	
Nettle	*Urtica* spp.
Hudson's Bay (Labrador) tea	*Ledum palustre*
Mint	*Mentha* spp.
Dandelion greens	*Taraxacum L.*
Spruce tips	*Picea* spp.
Willow leaves	*Salix* spp.
Wild rose hip	*Rosa acicularis*
Yarrow	*Achillea* spp.
Other wild greens	
Unknown mushrooms	
Sorrel	*Rumex* spp.
Fireweed	*Epilobium angustifolium*
Plantain	*Plantago major*
Stinkweed	*Artemisia tilesii*
Birch	*Betula* spp.
Birch sap	*Betula* spp.
Firewood	

Source ADF&G Division of Subsistence household surveys, 2013.

Project Background

This study is part of the effort by the State of Alaska to assess the feasibility of constructing the Susitna-Watana Hydroelectric Project (Watana). The Alaska Energy Authority (AEA), as the project proponent, has obtained monies from the Railbelt Energy Fund to conduct a feasibility study. The feasibility study includes preliminary design work, a data gap analysis of studies conducted for a similar project proposed in the 1980s, and design and implementation of environmental baseline data studies to fill data gaps.

The preliminary project scope consists of construction of a 735-foot high dam at the Watana site and creation of a 42-mile long reservoir with a maximum width of 2 miles.[1] Two road corridors and a power transmission line are proposed. Facilities to support this project include, but are not limited to, material sites, disposals sites, camps, solid waste sites, and access roads. The project is anticipated to have a potential capacity of 600 megawatts of power.

The potential development of Watana necessitates updated baseline information about the full range of wild resource harvests, uses, and areas of harvest, as well as demographic and economic information to understand the role of these harvests in the economy and way of life of community residents in the project area. The communities included in this phase of the study are located within the Susitna River drainage. A second harvest and use study phase will include communities in the Copper River drainage (see Figure 1-1). The report *Watana Hydroelectric Project Subsistence Data Gap Analysis*, which was prepared for AEA by Northern Land Use Research, Inc., identified communities to be potentially affected by the construction of the dam (Simeone *et al.* 2011). This analysis identified potential gaps in existing data that would be used to inform the National Environmental Policy Act (NEPA) scoping activities conducted as part of the Federal Energy Regulatory Commission (FERC) licensing process for the proposed project. Based on this gap analysis, ADF&G prepared a study plan to update information about the harvests and uses of wild resources for communities closest to the areas that could be affected by the construction of the dam and communities located downriver from the project site. Copper River Basin communities were included because they access the area surrounding the potential dam site for hunting caribou, harvesting nonsalmon fish, and collecting berries and plants.

In order to complete the work in a timely manner the communities were broken down into a 2-year study plan (see Figure 1-1). As shown in Table 1-3, some communities in the Susitna River Basin had already been surveyed for another project in 2006 (Stanek *et al.* 2006). In addition some communities were surveyed as part of a joint Division of Subsistence/Wrangell-St. Elias National Park and Preserve study that is ongoing (Kukkonen and Zimpelman 2012; La Vine et al. 2013; La Vine et al. *In prep*). The list of potential study communities and the history of studies in those communities is shown in Table 1-3. Communities with updated or planned surveys at the time of the study design are shown at the top of the table, and those communities in need of updated harvest

1. Watana project description available at: http://www.susitna-watanahydro.org/project/project-description/.

Table 1-3. – Susitna River and Copper River drainage communities previously studied.

	Estimated number of households 2010[a]	1982	1983	1984	1985	1986	1987	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2012
Updated communities																				
Susitna River drainage																				
Beluga	10														All					
Tyonek	70		All							MM	MM	MM	MM	MM	All	MM	MM			
Copper River drainage																				
Chistochina	36	All					All		BMW									All		
Chitina	52	All					All		BMW											All
Copper Center/Silver Springs	167	All					All		BMW										All	
Gakona	86	All					All		BMW											All
Kenny Lake/Willow Creek	237	All					All													All
McCarthy	20	All					All													All
Mentasta Lake	46	All					All												All	
Slana/Nabesna Road	77	All					All												All	
Communities to update																				
Susitna River drainage																				
Chase	18					All														All
Cantwell	104	All						All	BMW											All
Skwentna	20			All																All
Alexander/Susitna	10																			All
Talkeetna	449				All															All
Trapper Creek	225				All															All
Copper River drainage																				
Glennallen	203	All					All													
Gulkana	36	All					All		BMW											
Lake Louise	25	All					All													
Mendeltna	19																			
Nelchina	30	All					All													
Paxson	22	All					All													
Tazlina/Copperville	111	All					All		BMW											
Tolsona	18	All					All													
Tonsina	39	All					All													

Note The key for the table is:
All = "comprehensive" baseline survey of all resources used for subsistence purposes.
BMW = birds and migratory waterfowl.
MM = marine mammals.
a. *Source* U.S. Census Bureau (2011)

assessments are shown at the bottom of the table. As noted above, Figure 1-1 shows the study's survey plan.

This study was a partnership between ADF&G, Stephen R. Braund and Associates (SRB&A), Newfields, LLC, and HDR Alaska, Inc. (HDR). SRB&A provided assistance with surveying the larger communities of Talkeetna and Trapper Creek and also the community of Chase. Although Chase has few households, an evening meeting was dedicated to completing the survey with available households that were able to travel to Talkeetna to be surveyed since the community is remote and spread over a large area. Newfields conducted the health impact assessment (HIA) for the Watana study and participated in administering household surveys in Cantwell, Talkeetna, and Trapper Creek. HDR provided organizational support for the social science component of the Watana study as well as geographic information system (GIS) support. HDR built an Apple iPad[2] application to gather harvest mapping information.

Regulatory Context

As noted above, the Susitna River Basin is located in Southcentral Alaska. The Anchorage-MatSu-Kenai Nonsubsistence Area (5 AAC 99.015(a)(3)) covers much of Southcentral Alaska, including part of the study area (Figure 1-2). The study communities of Skwentna, Cantwell, and Chase are located outside this area, as well as part of the Susitna census designated place (CDP). A subsistence salmon fish wheel fishery is available on the lower Yentna River where 2 fish wheels are shared by local and nonlocal residents. Most other fishing opportunities available locally in the study area are rod and reel sport fishing opportunities.

During the study year residents of the study communities hunted mainly in game management units (GMUs) 13, 14, and 16. GMUs 16A and 14B are within the nonsubsistence area (Figure 1-2). Most of the hunting occurred on state-owned land. Residents of Cantwell and Chase have additional hunting opportunities because they live in what are considered resident zone communities of surrounding federal lands and thus they are eligible for additional hunting opportunities on specific federal lands. For example, residents of Cantwell have access to hunt under federal subsistence regulations on land that was added to Denali National Park on December 2, 1980, and also on land in the Denali National Preserve as part of the Alaska National Interest Lands Conservation Act. Chase residents are eligible to hunt for caribou under federal subsistence regulations on Bureau of Land Management lands by the Denali Highway.

Although the communities of Talkeetna, Trapper Creek, and Susitna are located within the nonsubsistence area, as shown in Figure 1-2, they were included in this study because they are close to the boundary.

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

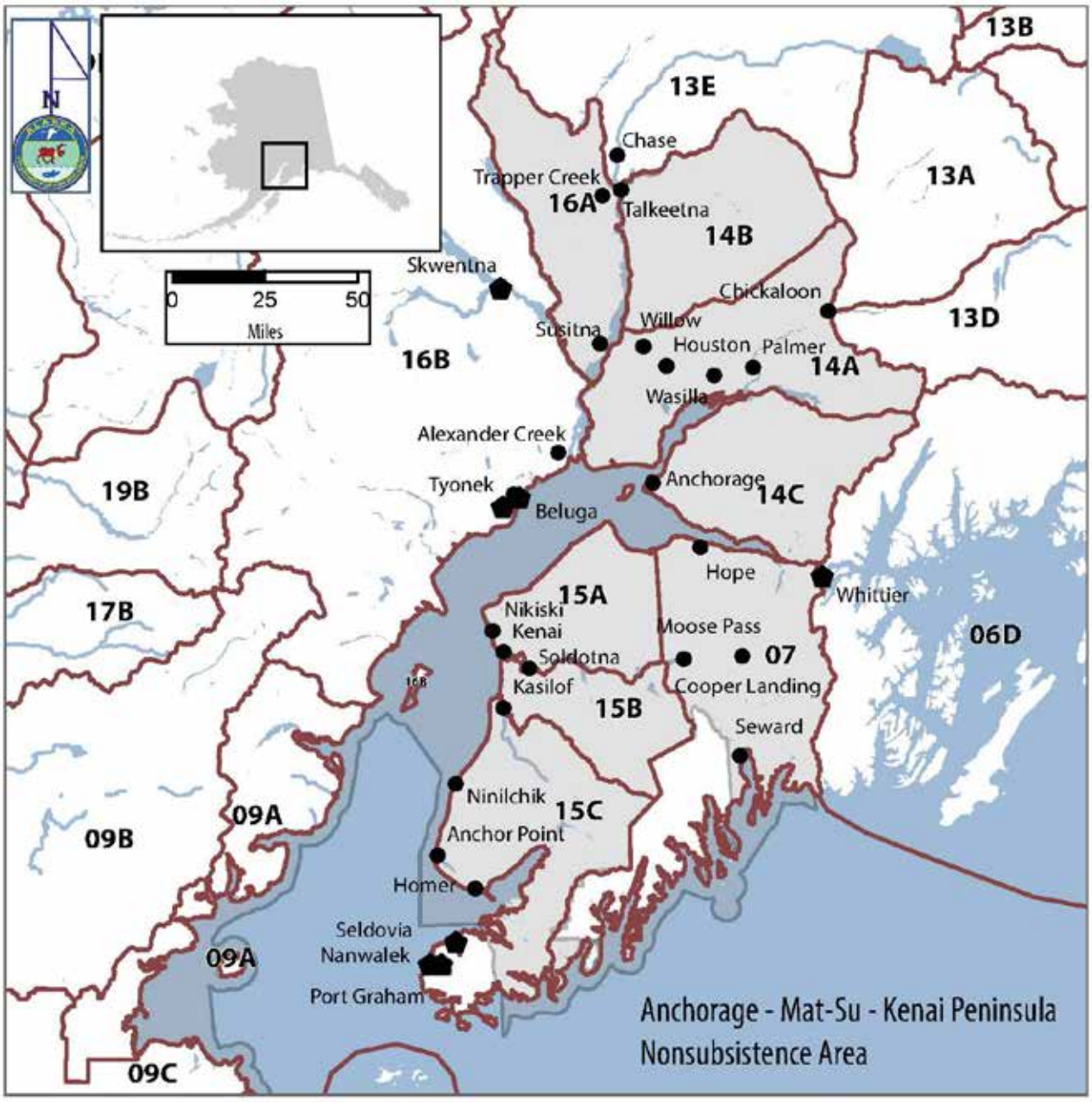

Figure 1-2.– Map of Anchorage–Mat-Su–Kenai Peninsula Nonsubsistence Area.

For this report, when discussing harvest patterns, authors refer to fisheries and hunts as they exist within the regulatory context. However, while conducting harvest surveys and key respondent interviews in Talkeetna, Trapper Creek, and Alexander/Susitna, as well as in the other study communities, some residents referred to their harvesting patterns, regardless of the hunt or fishery, as subsistence. Some residents characterized their participation in general moose hunts or rod and reel sport fisheries, for example, as subsistence, and these comments have been incorporated into the discussion in each chapter in the respondents' own words.

Study Objectives

The project had the following objectives:

A. Design a survey instrument to produce updated comprehensive baseline information about hunting, fishing, and gathering and other topics that is compatible with information collected in past household interviews for the study communities.

B. Conduct community scoping meetings.

C. Train local research assistants (LRAs) in administration of the systematic household survey.

D. Conduct household surveys to record the following information:

1. Demographic information.
2. Involvement in use, harvest, and sharing of fish, wildlife, and wild plants in the study year.
3. Estimates of amount of resources harvested in the study year.
4. Information about employment and cash income.
5. Assessments of changes in wild resource harvest and use patterns in the past 5 years.
6. Location of fishing, hunting, and gathering activities in the study year.

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 Guidelines for Research* (Alaska Native Knowledge Network 1993) 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

As noted above, AEA funded the Susitna-Watana project, which includes a component called "subsistence resources." The purpose of the subsistence component of the overall environmental study is to "document traditional and contemporary subsistence harvest and use and to collect baseline data to facilitate the assessment of potential impacts of the Project construction and operation on subsistence harvest and use in the Project area" (Alaska Energy Authority 2012, pp.12–1). The subsistence component research of the overall Watana study was done through a partnership between ADF&G and HDR, Newfields, and SRB&A (Table 1-4). Davin Holen attended several meetings sponsored by AEA in the spring and summer of 2012 to describe the survey to the planning team. These meetings were open to agencies, contractors, Alaska Native tribal organizations, and community representatives. Holen prepared a study design for AEA that was approved and funded in the fall of 2012. In order to not duplicate effort for the HIA component of the Watana project, ADF&G included a page of HIA questions in the survey (see Appendix A). Because this project was on a fast timeline, AEA provided funding to HDR to develop a digital data collection application for mapping search and harvest areas. This reduced the time necessary to enter the map data into a GIS program. Mapping will be discussed in more detail below.

A community scoping meeting was held in Talkeetna on October 12, 2012 (Table 1-5). This meeting was held at the Sheldon Theater in downtown Talkeetna and was open to the general public for the communities of Chase, Talkeetna, and Trapper Creek. Fliers were posted throughout the area during the week prior. Holen and Sarah Hazell of ADF&G presented at the community scoping meeting with assistance from Paul Lawrence of SRB&A. Approximately 25 individuals attended; they mainly asked questions about the impact of the proposed Watana project. Attendees were told the survey would take place January 20–27, 2013. At that time, inquiries were made about possible LRAs and places to lodge staff during the survey. Holen was interviewed by the local public radio station, KTNA, following the meeting and the interview aired throughout the following week to help inform residents of the upcoming study. In addition to this meeting, Holen and Joshua Ream of ADF&G traveled to Sunshine, the area located at the junction of the Parks Highway and the Talkeetna Spur Road, to present the project to the Susitna North community council on January 3, 2013. This area is located between Talkeetna and Trapper Creek and ADF&G wanted to inform area residents of what was going on locally in neighboring communities, although the Susitna North CDP was not included in this study.

Table 1-4. – Project staff.

Task	Name	Organization
Project design and management	Davin Holen	ADF&G Division of Subsistence
Gap analysis	Davin Holen	ADF&G Division of Subsistence
Project lead	Davin Holen	ADF&G Division of Subsistence
SRB&A lead		Stephen R. Braund & Associates
HDR Alaska, Inc., lead	Tracie Krauthoefer	HDR Alaska, Inc.
Data management lead	David Koster	ADF&G Division of Subsistence
Cantwell research lead	Sarah Hazell	ADF&G Division of Subsistence
Chase research lead	Davin Holen	ADF&G Division of Subsistence
Trapper Creek research lead	Theodore Krieg	ADF&G Division of Subsistence
Talkeetna research lead	Sarah Hazell	ADF&G Division of Subsistence
Skwentna research lead	James Van Lanen	ADF&G Division of Subsistence
Alexander/Susitna research lead	James Van Lanen	ADF&G Division of Subsistence
Administrative support	Jennifer Bond	ADF&G Division of Subsistence
	Maegan Smith	ADF&G Division of Subsistence
Programmer	Garrett Zimpelman	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	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	Davin Holen	ADF&G Division of Subsistence
	Brownwyn Jones	ADF&G Division of Subsistence
	Joshua Ream	ADF&G Division of Subsistence
Mapping application development	Bridget Brown	HDR Alaska, Inc.
	Mathew Cooper	HDR Alaska, Inc.
	Michael Davis	HDR Alaska, Inc.
Editorial review lead	Mary Lamb	ADF&G Division of Subsistence
Field research staff	Margaret Cunningham	ADF&G Division of Subsistence
	Sarah Evans	ADF&G Division of Subsistence
	Rosalie Grant	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
	Hannah Johnson	ADF&G Division of Subsistence
	Brownwyn Jones	ADF&G Division of Subsistence
	Theodore Krieg	ADF&G Division of Subsistence
	Yoko Kugo	ADF&G Division of Subsistence
	Meredith Marchioni	ADF&G Division of Subsistence
	Joshua Ream	ADF&G Division of Subsistence
	James Van Lanen	ADF&G Division of Subsistence
	Derek Moss	Newfields, LLC
	Emily Benz	Stephen R. Braund & Associates
	Paul Lawrence	Stephen R. Braund & Associates
	Susan Lukowski	Stephen R. Braund & Associates
	Ethan McGaffrey	Stephen R. Braund & Associates
	Elizabeth Sears	Stephen R. Braund & Associates

-continued-

Table 1-4.–Page 2 of 2.

Field research staff, continued	Raena Schraer	Stephen R. Braund & Associates
	Emily Wood	Stephen R. Braund & Associates
Local research assistants	Melanie Bakker	Trapper Creek
	George Blanchard	Cantwell
	Paula Glenka	Trapper Creek
	Mark Gutman	Talkeetna
	Renae Holum	Cantwell
	Kimberly Hutchings	Talkeetna
	Emily La Porte	Talkeetna
	Mike Mason	Alexander/Susitna
	Nancy Conklin	Alexander/Susitna
	Rebekah Mathiesen	Talkeetna
	Dave Mchoes	Skwentna
	Patricia Nicholas	Cantwell
	Geoffrey Pfeiffer	Talkeetna
	Darlene Rick	Trapper Creek
	Iris Vandenham	Talkeetna
	Jason Vogel	Trapper Creek
	David Ward	Talkeetna
	Debra Wessler	Talkeetna
	Carol Winkler	Cantwell

Table 1-5. – Community scoping meeting dates, study communities, 2012–2013.

		Attendance	
Community	Date	Community residents	Staff
Cantwell[a]			
Chase	1/17/2013	15	13[b]
Talkeetna	10/12/2012	25	3[c]
Trapper Creek	2/21/2013	10	1
Alexander/Susitna[d]			
Skwentna[d]			

a. Due to a death in the community the community scoping meeting was cancelled. Sarah Hazell met with the tribal administrator on January 28, 2013 and received a letter of support from the community on January 30, 2013.

b. Meeting attendees included 7 ADF&G staff and 6 SRB&A staff. ADF&G staff conducted the surveys immediately following the meeting.

c. Davin Holen and Sarah Hazell from ADF&G presented survey information along with Paul Lawrence from SRB&A.

d. Due to the geographic disconnection of residences in the Skwentna and Susitna census designated places, and a lack of a centralized community, a formal community consultation meeting was not organized prior to beginning the research.

The Chase Community Council met on January 17, 2013. Chase is located off the road system and is spread out over a large area so local residents recommended that ADF&G be prepared to interview residents who came to the community council meeting. On January 17, Holen presented the project information to the Chase Community Council at the Roadhouse Lodge in Talkeetna. Following the meeting ADF&G and SRB&A staff surveyed 12 Chase households.

The Trapper Creek Community Council met on February 21, 2013, at the Trapper Creek Community Building. Holen presented the project to the community council. Although the survey was already ongoing at this point several residents asked to participate in the key respondent interviews.

As noted in Table 1-5, a community meeting was scheduled in Cantwell for December 2012; however, due to the death of the tribal council president this meeting was postponed and eventually cancelled. Hazell met with the tribal council administrator on January 28, 2013, and received a letter of support on January 30, 2013. Cantwell was the only study community with a tribal council and the only community where a letter of support was sought.

Pre-project consultations with Alexander/Susitna residents occurred in November 2012 and with Skwentna community residents in December 2012. Due to the geographic disconnection of residences in both the Susitna and Skwentna CDPs, and a lack of centralized community, a formal community consultation meeting was not organized prior to beginning the research. Community approval for the project was given by the local Mt. Yenlo ADF&G Fish and Game Advisory Committee.

SYSTEMATIC HOUSEHOLD SURVEYS

The primary method for collecting wild resource harvest and use information in this project was a systematic household survey. Following receipt of comments from the AEA-sponsored meetings and review by ADF&G research and Information Management staff at a researchers' workshop in December 2012, the survey instrument was ready for use in January 2013. A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and other economic data that are comparable to information collected in other household surveys in the study communities and with data in the ADF&G Community Subsistence Information System (CSIS[3]). Appendix A is an example of the survey instrument used in this project.

Table 1-6 shows the sampling strategy employed in each of the study communities. For the smaller communities of Cantwell, Chase, Skwentna, and Alexander/Susitna, researchers attempted a survey census of households in each community. Surveys in Cantwell were conducted in February 2013. Of the 83 identified households, researchers were able to interview 55 (66%). For Chase, researchers and local residents identified 18 households, of which researchers interviewed 16 (89%). As noted above, 12 of these households were interviewed at the community council meeting in January 2013 with the rest interviewed while researchers were working in Talkeetna. For Skwentna the survey

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

Table 1-6. – Sample achievement, study communities, 2012.

	Cantwell	Chase	Skwentna	Talkeetna	Trapper Creek	Alexander/ Susitna
Interview goal	83	18	35	159	158	13
Households interviewed	55	16	30	102	69	11
Households failed to contact	19	2	2	106	40	1
Households declined to be interviewed	9	0	3	29	27	1
Households moved or nonresident	34	0	1	35	93	0
Total households attempted to interview	98	16	34	166	189	12
Refusal rate	14.1%	0.0%	9.1%	22.1%	28.1%	8.3%
Final estimate of permanent households	**83**	**18**	**35**	**374**	**148**	**13**
Percentage of total households interviewed	**66.3%**	**88.9%**	**85.7%**	**27.3%**	**46.6%**	**84.6%**
Interview weighting factor	1.51	1.13	1.17	3.67	2.14	1.18
Sampled population	130	31	53	215	156	20
Estimated population	196	35	62	788	335	24

Source ADF&G Division of Subsistence household surveys, 2013.

goal was 35 households, of which researchers were able to interview 30 households (86%) in March 2013. The community of Alexander/Susitna was surveyed in February 2013. Researchers were able to interview 11 of the 13 households (85%). Surveys for the off-road communities of Skwentna and Alexander/Susitna were planned for earlier in the field season, but the rivers in the area froze late and researchers had to wait until rivers were passable by snowmachine, so fieldwork was delayed until February and March.

The sampling strategy employed in the larger communities of Talkeetna and Trapper Creek required a great deal of planning. In December 2012, Ream of ADF&G was able to download GIS data from the Matanuska-Susitna (Mat-Su) Borough that showed addresses, property locations along roads, and the location of structures on the property. The household database originated as an attribute table within ArcGIS software 10.1.[4] Two layer files obtained from the GIS Division of the Mat-Su Borough were joined, including taxable structures (2010) and parcel ownership polygons (2010). These were then clipped in order to represent only those that fell within the boundaries of the 2010 CDPs for Talkeetna and Trapper Creek.

The resulting database was then sorted by ownership; residential structures (as determined by building use codes provided in the Mat-Su *GIS Data Dictionary* [2013]) on privately owned parcels were included on the community household list while parcels of other ownership categories (state, federal, borough, etc.) were excluded, except for those parcels with residential structure codes and those structures that appeared to be private residences on public land as identified during household groundtruthing activity. The remaining residential structures were then groundtruthed opportunistically based on: 1) proximity to main road arteries, and 2) accessibility given road conditions and road access. Structures on private land were excluded if they were either entirely

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.

commercial (no associated residence) or there was no apparent structure on the parcel. In cases where the "no apparent structure" determination was questionable, satellite imagery and local knowledge were used for verification. Five structures on private parcels that were not present in the 2010 GIS data for Trapper Creek were added to the sample after being identified through groundtruthing and verified using satellite imagery.

The total number of parcels included on the household list was 635 and 394for Talkeetna and Trapper Creek, respectively. The same household identification methods were used to identify 13 households in Chase in order to understand the number and location of year-round resident households because there are numerous recreational cabins in the area. For Talkeetna and Trapper Creek, a random sample of households was then provided by ADF&G Information Management. The random sample was uploaded into ArcGIS online so that a projected map of the sample could be available to researchers in the field using a cellular-connected iPad. This became especially important in Trapper Creek for identifying households to be surveyed because some streets lacked signs and most houses were not marked with an address. The actual location of the house to be surveyed could be pinpointed using ArcGIS online. For Talkeetna and Trapper Creek the sample goal was 25% and 40%, respectively (Table 1-6). For each residence that researchers attempted to contact a disposition was applied during the survey process; the disposition categories included:

- Contains residents that are eligible to participate in the survey (survey attempted).
- Non-resident—occupants or owners not domiciled in CDP (for example, a weekend cabin) (no survey attempted).
- Vacant (no survey attempted).
- Not a dwelling (commercial building or no dwelling exists) (no survey attempted).

For households that were selected for a survey, staff contacted the household and a survey was attempted on 3 occasions until the survey was completed. If a reasonable effort was made to survey the household and no contact could be made after 3 attempts the household was coded a "no contact" and staff attempted to survey the next household on the list. An initial list of 100 households was provided by the Information Management lead David Koster to the research team. When that list was exhausted, 20 more names were added in turn. A disposition needed to be made for each household before 20 more residences could be provided. As shown in Table 1-6, the final sampling fraction for Talkeetna was 27% and for Trapper Creek 47%. The attempted sample was exceeded because a disposition had to be made for the entire list of names that became part of the target sample before the survey could be deemed complete. The sampling universe became all year-round households identified, including those that could not be contacted after 3 attempts.

To conduct the survey, an LRA worked with a staff member from ADF&G in Cantwell, Skwentna, and Alexander/Susitna. In Chase, Talkeetna, and Trapper Creek an LRA worked with a researcher

Table 1-7. – Survey length, study communities, 2012.

Community	Survey length (in minutes)		
	Average	Minimum	Maximum
All communities	**48**	**8**	**180**
Cantwell	38	10	124
Chase	54	35	80
Skwentna	49	18	180
Talkeetna	44	10	105
Trapper Creek	56	8	148
Alexander/Susitna	71	31	138

Source ADF&G Division of Subsistence household surveys, 2013.

from ADF&G, SRB&A, or Newfields. Research staff from SRB&A and Newfields were familiar with the survey form and research methodology from previous joint projects (Holen *et al.* 2012, Evans *et al.* 2013). Table 1-7 shows the length of interviews. On average surveys in Alexander/ Susitna were the longest and in Cantwell the shortest. The longest interview was in Skwentna at exactly 3 hours. On average, though, surveys lasted around 48 minutes, which included the standard survey form and a mapping component that will be discussed next.

MAPPING LOCATIONS OF SUBSISTENCE HUNTING, FISHING, AND GATHERING

During household interviews, the researchers asked respondents to indicate the locations of their hunting, fishing, and gathering activities during the study year. In addition, interviewers asked the respondents to mark on the maps the sites of each harvest, the species harvested, the amounts harvested, and the months of harvest. ADF&G staff established a standard mapping method. Points were used 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.

Harvest locations and hunting and gathering areas were documented using an application designed on the ArcGIS Runtime SDK for iOS platform; basically a mapping data collection application for the iPad. The point, polygon, or line was drawn on a U.S. Geological Survey topographic relief map downloaded on the iPad. The iPad allowed the user to zoom in and out to the appropriate scale, and the ability to document harvesting activities wherever they occurred in Alaska. Once a feature was accepted, an attribute box was filled out by the researcher that noted the species harvested, amount, method of access to the resource, and month(s) of harvest. The data were uploaded via Wi-Fi to a server. Once data collection was complete the data were downloaded into an ArcGIS file geodatabase. The application was developed by HDR. Paper maps were also available to be used as a reference for respondents as well as by an LRA when an ADF&G researcher was not available

for the interview. These maps were 11x17 inches at a scale of 1:250,000 and 1:500:000 and only documented the survey area. Very few paper maps were used and research staff digitized markings on the paper maps using the iPad once back in the office.

Once a survey was complete researchers conducted a quality control exercise by matching the map data to the survey form to ensure all map data had been documented. This was completed in the field before the surveys were submitted to the community lead researcher. Once the data had been uploaded, researchers also verified that the household data were logged into the server. In a few isolated cases the data did not upload. Researchers noted which households surveyed did not have data uploaded and the data were manually uploaded at HDR by transferring the data when the iPad was connected to the server. This was done at the end of the field season to ensure nothing was missed.

At the end of the field season the geodatabase was turned over to ADF&G. A few remaining paper maps were digitized and then map production began. The data were first sorted by community, and then resource. Maps were then produced at the species-specific level for each community. This was the first year of using this new digital data collection. Over the course of the season ADF&G and SRB&A provided HDR with feedback that will help develop a version 2.0 for the iPad application.

KEY RESPONDENT INTERVIEWS

While researchers were in the study communities they consulted with tribal governments, community councils, and LRAs to identify key respondents to interview. The purpose of the key respondent interviews was to provide additional context for the quantitative data and also to provide information for the community background section at the beginning of each chapter, the seasonal round sections, harvest over time analysis, and the community comments and concerns section at the end of each chapter. The number of key respondent interviews varied among communities. Key respondent interviews were semi-structured and directed by a key respondent interview protocol designed by ADF&G 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 staff took notes during interviews to provide additional context for this report. Researchers analyzed key respondent interviews and interview notes in preparation for this report. Key respondents were informed that, to maintain anonymity, their names would not be included in this report.

HOUSEHOLD SURVEY IMPLEMENTATION

Cantwell

The survey effort in Cantwell began on February 10 and lasted until February 17, 2013. Staff included Hazell, Theodore Krieg, Lisa Hutchison-Scarbrough, Sarah Evans, Bronwyn Jones, and Margaret Cunningham, ADF&G interns Yoko Kugo and Hannah Johnson, and Derek Moss from Newfields. This work was supported by LRAs Patricia Nicholas, Renae Holum, Carol Winkler, and George Blanchard (see Table 1-4).

While visiting the community in January, Hazell and Jones made contact with staff in the Alaska Department of Transportation who provided them with maps of the Cantwell CDP, including the locale of physical structures. With the assistance of the LRAs, a list of occupied households (83) in 2012 was created. The goal was to survey all of the resident households; however, a significant number leave the community for periods during the winter which resulted in a total of 55 harvest surveys administered, or 66% of resident households (Table 1-6). While the surveying was ongoing in the community ADF&G researchers completed 4 key respondent interviews.

Chase

As noted above, the Chase Community Council met on January 17, 2013. Because Chase is located off the road system and is spread out over a large area local residents recommended that ADF&G be prepared to interview residents who attended the community council meeting. On January 17, Holen presented the project to the Chase Community Council at the Roadhouse Lodge in Talkeetna. Following the meeting ADF&G and SRB&A staff surveyed 12 Chase households. While ADF&G was in Talkeetna and Trapper Creek surveying those communities January 20–27, 3 additional surveys were completed. For all 3 communities surveys were left with LRAs to complete for a period of 2 weeks. During that time a final Chase survey was completed by a Talkeetna LRA. No LRAs were hired in Chase; however, several residents were very helpful in arranging meetings and facilitating surveys. For Chase, 3 key respondent interviews were completed in August 2013.

Talkeetna and Trapper Creek

The major survey effort in Talkeetna and Trapper Creek was held from January 20–27, 2013. The survey team consisted of one team that divided its efforts between the 2 communities of Talkeetna and Trapper Creek. Training was held on January 20, 2013, for all field research staff and LRAs in Talkeetna. Following the training, ADF&G, SRB&A, and LRAs paired up and the team was split between Talkeetna and Trapper Creek. Additional Chase surveys were conducted opportunistically by a Talkeetna LRA. Holen led the overall effort. For the Talkeetna surveys, the team consisted of ADF&G staff lead Hazell, along with Evans, Cunningham, and Jones, and SRB&A staff Elizabeth

Sears, Lawrence, Raena Schraer, Emily Wood, and Ethan McGaffrey, and Newfields staff Moss. LRAs Emily La Porte, Geoffrey Pfeiffer, Mark Gutman, Rebekah Mathiesen, Kimberly Hutchings, Iris Vandenham, and David Ward were hired to facilitate community participation of the harvest survey. The Trapper Creek team consisted of ADF&G staff lead Krieg, along with Holen, Ream, and Rosalie Grant, and SRB&A staff Susan Lukowski and Emily Benz. The LRAs for Trapper Creek included Melanie Bakker, Paula Glenka, Darlene Rick, and Jason Vogel (Table 1-4).

The complex sampling strategy for Talkeetna and Trapper Creek is explained above in the section "Systematic Household Surveys." As noted above, a great deal of work went into preparing the sample for Talkeetna and Trapper Creek in November and December 2012 so that researchers were ready to begin surveying on January 20, 2013. A follow-up meeting occurred in Talkeetna with LRAs on February 15, 2013 to pick up final surveys. At that time surveys for Talkeetna and Chase were complete. A 25% sample achievement was exceeded in Talkeetna with 102 households interviewed—equal to 27% of the community households (Table 1-6). The Trapper Creek survey effort continued until February 21, 2013. At that time the entire sample had an assigned disposition. A 47% sample was achieved with 69 households interviewed. To supplement harvest surveys, which only provide a single year's information about wild resources harvested, 4 key respondent interviews were conducted August 6–7, 2013, in Talkeetna; the interviews aimed to gather a broader temporal context of resource use for the study. Four key respondent interviews were completed August 28–29, 2013, in Trapper Creek.

Skwentnta

From March 2–8, 2013, household surveys and key respondent interviews were completed in the Skwentna CDP. James Van Lanen and Ream of ADF&G completed the surveys and interviews with the assistance of LRA Dave Mchoes. One additional key respondent interview was conducted with a Skwentna resident in Wasilla on March 26, 2013. Three key respondent interviews were conducted in Skwentna. Two community review meetings were held in separate locations to allow for increased participation on September 3–4, 2013.

Alexander/Susitna

From February 4–8, 2013, household surveys and key respondent interviews were completed in the Susitna CDP (this area is also referred to as Alexander). Three key respondent interviews were conducted in Alexander/Susitna. Due to the geographic disconnection of residences, no community review meeting could be organized. Van Lanen of ADF&G sent copies of the data to several community members for comments.

Data Analysis and Review

SURVEY DATA ENTRY AND ANALYSIS

All data were coded for data entry by Division of Subsistence staff in Anchorage. 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 internal network. Daily incremental backups of the database occurred, and transaction logs were backed up hourly. Full backups of the database occurred twice weekly. This ensured that no more than 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 20. 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

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

where:

$\bar{h}_i = \frac{h_i}{n_i}$ (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 for very small populations is dependent upon the size of that population. This value is provided using the IDF.T function in SPSS, which provides the appropriate value from an internal lookup table, using n–1 degrees of freedom. 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%):

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

where:

s = sample standard deviation,

n = sample size,

N = population size

$\bar{x}$ = mean household harvest, 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 estimated demographic information for year-round households in each study community. For this study, "year-round" was defined as being domiciled in the community when the surveys took place and for at least 3 months during the study year 2012 with the intention of remaining a year-round resident. Because not all households were interviewed, population estimates for each community were calculated by multiplying the average household size of interviewed households by the total number of year-round households, as identified by Division of Subsistence researchers in consultation with community officials and other knowledgeable respondents. There may be several reasons for the differences among the population estimates for each community and other demographic data that are generated from the division's household survey (as of December 31, 2012), and estimates developed by the 2010 federal census (U.S. Census Bureau 2011), and 2012 estimates by the ADLWD.

As shown in Table 1-1, estimates differ between the 2010 census, which counts residents present in April 2010, and this survey, which shows residents who were present in the community for more than 3 months during the study period between January 1 and December 31, 2012, and considered the study community to be their community of residence. The federal census reported the population in the study communities in 2010 was 1,665 residents (826 households), the ADLWD (2013) estimated that the population for the study communities in 2012 was 1,662 (no household estimates are available), and this study's survey indicated a 2012 estimated population of 1,439 residents (671 households). The difference in population estimates between this study and the census, as well as the ADLWD, is 14%.

One of the major population differences identified when evaluating the census and this study's data was the percentage of Alaska Native residents in the communities—especially in the communities of Cantwell and Alexander/Susitna. In Cantwell, residents related to researchers that many households move out for the coldest months of the year and they are not present during January and February when this survey took place. As noted above, the U.S. Census Bureau surveys took place in April. Therefore, the percentage of Alaska Native residents is lower for this study compared to the U.S. census. However, for both communities the percentage of Alaska Native residents is low and there is little statistical difference between the 2 studies.

MAP DATA ENTRY AND ANALYSIS

As discussed above, maps were generated based on data collected using an iPad or on 11x17-inch paper maps. All data were entered on the iPad, whether in the field during interviews or by ADF&G research staff while coding survey data. Map features were matched to the survey form to ensure that all harvest data were recorded accurately. Once all data were entered, an ArcGIS file geodatabase

was downloaded by ADF&G researchers from the server and maps showing harvest locations for each species were created in ArcGIS 10.2 using a standard template for reports. Maps show harvest locations for fish species, harvest areas for plants, berries, wood, and birds, and hunting areas for large land mammals. To ensure confidentiality harvest locations for large land mammals are not produced for the report. Maps were reviewed at a community review meeting to ensure accuracy as well as identify any data the community would like to keep confidential.

COMMUNITY REVIEW MEETINGS

ADF&G staff presented preliminary survey findings and associated search area and harvest maps at a meeting in each community. Table 1-8 shows when a community review meeting occurred in each study community and how many community residents attended. Hazell and Division of Subsistence visiting scholar Sean Desjardins returned to Cantwell on August 8, 2013, to present to the community a review of the 2012 findings. The review meeting was coordinated with the Native Village of Cantwell. Only 2 residents were present even though fliers were posted several weeks in advance and refreshments were served.

In Skwentna the community review meetings were held in 2 separate locations on September 3–5: the Bentalit Lodge and the Skwentna Roadhouse. The meeting at the Bentalit Lodge had 12 residents in attendance. Lodge staff were very helpful in getting the word out to residents about the meeting. An additional meeting was held at the Skwentna Roadhouse where 2 residents attended. The meeting was facilitated and presented by Van Lanen and Ream of ADF&G. For Alexander/ Susitna no review meeting was held because no central meeting locations could be identified. Van Lanen sent residents draft study findings to review in September 2013.

Holen conducted the community review meeting for Trapper Creek on September 19, 2013. The review was held at the Trapper Creek Community Council meeting at the community hall. In total 8 members of the council were present as well as 4 members of the community. Residents provided comments on some of the data, which has been incorporated into Chapter 5. Ream and Holen conducted a community review meeting in Talkeetna on October 17, 2013, for the community of Chase just prior to a scheduled community council meeting. There were 9 residents of the community present at the meeting and their comments and concerns have been incorporated into Chapter 3. Hazell and Desjardins conducted a meeting in Talkeetna on October 30, 2013, where 11 community members were present. Residents provided some comments regarding harvest patterns shown on maps and some community comments and concerns, which have been incorporated into Chapter 4.

Table 1-8. – Community review meetings, study communities, 2013.

		Attendance	
Community	Date	Community residents	Staff
Cantwell	8/9/2013	2	2[a]
Chase	10/17/2013	9	2[b]
Talkeetna	10/30/2013	11	1[c]
Trapper Creek	9/19/2013	12	1[d]
Alexander/Susitna[e]			
Skwentna	9/3/2013, 9/5/2013	14[f]	2[f]

a. Sarah Hazell and ADF&G volunteer Sean Desjardins presented study findings at the community meeting in Cantwell.
b. Joshua Ream from ADF&G presented study findings at the community meeting.
c. Sarah Hazell from ADF&G presented study findings at the community meeting.
d. Davin Holen of ADF&G gave the community review presentation at the Trapper Creek Community Council meeting.
e. Due to the geographic disconnection of residences in the Susitna census designated place, and a lack of a centralized community, a formal community review meeting could not be organized.
f. There were 2 meetings; 2 residents came to the meeting at the Skwentna Roadhouse and 12 residents came to the meeting at the Bentalit Lodge. James Van Lanen and Joshua Ream from ADF&G presented the study findings.

Final Report Organization

ADF&G staff prepared this final report. This report summarizes the results of systematic household surveys and mapping interviews conducted by staff from ADF&G, SRB&A, and Newfields, as well as LRAs. Additionally the report provides qualitative data from key respondent interviews and additional questions asked during surveys, and summarizes resident feedback provided at community review meetings. The findings are organized by study community. Each community chapter will include a historical overview of that community in addition to sections 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 also harvest and use trends over time. The section discussing characteristics of resource harvest and use is divided by resource category and the basic organization follows how the survey instrument is organized (see Appendix A).

Tables with data for all study communities are placed at the end of this chapter and are referenced in subsequent chapters. This allows for comparisons to be made between communities. These tables include findings on demographic characteristics (Table 1-9), place of birth of household heads (Table 1-10), employment characteristics (Table 1-11), job site locations (Table 1-12), individual participation in harvesting and processing of wild resources (Table 1-13), and characteristics of resource harvests and uses (Table 1-14). Figure 1-3 shows estimated harvests of wild resources, in pounds usable weight per capita by study community, for years when comprehensive household surveys were conducted. While conducting surveys

Table 1-9. – Demographic and sample characteristics, study communities, 2012.

Characteristics	Cantwell	Chase	Skwentna	Talkeetna	Trapper Creek	Alexander/ Susitna
Sampled households	55.0	16.0	30.0	102.0	69.0	11.0
Eligible households	83.0	18.0	35.0	374.0	148.0	13.0
Percentage sampled	66.3%	88.9%	85.7%	27.3%	46.6%	84.6%
Household size						
Mean	2.4	1.9	1.8	2.1	2.3	1.8
Minimum	1.0	1.0	1.0	1.0	1.0	1.0
Maximum	10.0	6.0	4.0	6.0	7.0	2.0
Sample population	130.0	31.0	53.0	215.0	156.0	20.0
Estimated community population	196.2	34.9	61.8	788.3	334.6	23.6
Age						
Mean	41.4	40.0	54.6	44.7	45.9	62.7
Minimum[a]	0.0	2.0	7.0	0.0	0.0	49.0
Maximum	84.0	66.0	74.0	89.0	84.0	83.0
Median	46.0	44.0	57.0	50.0	52.0	61.0
Length of residency						
Total population						
Mean	18.1	13.1	15.9	17.5	15.6	27.7
Minimum	0.0	1.0	1.0	0.0	0.0	11.0
Maximum	74.0	43.0	38.0	55.0	55.0	48.0
Heads of household						
Mean	22.2	15.9	17.0	19.3	19.1	27.7
Minimum	2.0	1.0	1.0	0.0	0.0	11.0
Maximum	74.0	43.0	38.0	55.0	55.0	48.0
Sex						
Estimated male						
Number	113.2	19.1	35.0	399.7	178.0	13.0
Percentage	57.7%	54.8%	56.6%	50.7%	53.2%	55.0%
Estimated female						
Number	83.0	15.8	26.8	388.7	156.6	10.6
Percentage	42.3%	45.2%	43.4%	49.3%	46.8%	45.0%
Alaska Native						
Estimated households[b]						
Number	18.1	0.0	1.2	14.7	8.6	2.4
Percentage	21.8%	0.0%	3.3%	3.9%	5.8%	18.2%
Estimated population						
Number	34.7	0.0	2.3	29.3	19.4	2.4
Percentage	17.7%	0.0%	3.8%	3.7%	5.8%	10.0%

Source ADF&G Division of Subsistence household surveys, 2013.

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.

Table 1-10. – Birthplaces of household heads, study communities, 2012.

	Community of residence					
Place of birth	Cantwell	Chase	Skwentna	Alexander/ Susitna	Talkeetna	Trapper Creek
Adak	0.0%	0.0%	0.0%	5.0%	0.6%	0.0%
Anchorage	2.2%	0.0%	6.1%	5.0%	1.8%	1.8%
Aniak	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Cantwell	6.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Chignik Lake	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Chugiak	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Copper Center	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Fairbanks	0.0%	0.0%	0.0%	0.0%	1.2%	0.9%
Homer	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Juneau	0.0%	0.0%	2.0%	0.0%	0.6%	0.0%
Kotzebue	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Nome	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%
Palmer	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Platinum	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Point Hope	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Skwentna	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%
Alexander/Susitna	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%
Sutton	0.0%	0.0%	0.0%	5.0%	0.0%	0.0%
Talkeetna	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%
Tanana	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Tenakee Springs	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Valdez	1.1%	0.0%	0.0%	0.0%	0.6%	0.0%
Valdez Creek	5.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Alaska	0.0%	0.0%	0.0%	0.0%	0.6%	8.3%
Other U.S.	70.3%	91.7%	87.8%	75.0%	82.6%	82.6%
Foreign	4.4%	8.3%	0.0%	0.0%	5.4%	2.8%
Missing	3.3%	0.0%	0.0%	0.0%	0.0%	1.8%

Source ADF&G Division of Subsistence household surveys, 2013.

in Talkeetna and Trapper Creek, researchers noted the number of households that reported receiving moose through Alaska's Moose Salvage Program, which also includes caribou in some areas. Researchers noted on surveys if the household received moose or caribou that was salvaged from a road kill. This practice continued in Cantwell as well, which is also a road-connected community. These data have been included in Table 1-15, which is unique to this report. Table 1-16 is a summary of study findings for this project that includes demography, cash economy, and resource harvest and use data.

Because of the large number of maps of hunting, fishing, and gathering areas used by each community in 2012, selected maps are included in 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 the harvests and uses of wild resources in the study communities.

Table 1-11. – Employment characteristics, study communities, 2012.

Characteristic	Cantwell	Chase	Skwentna	Talkeetna	Trapper Creek	Alexander/ Susitna
All adults						
Number	156.9	28.1	56.0	667.3	268.1	23.6
Mean weeks employed	30.3	24.6	18.2	32.0	23.7	9.1
Employed adults						
Number	134.5	26.5	44.9	593.1	224.7	16.9
Percentage	85.7%	94.1%	80.1%	88.9%	83.8%	71.4%
Jobs						
Number	167.7	28.1	65.1	852.8	257.2	16.9
Mean	1.2	1.1	1.5	1.4	1.1	1.0
Minimum	1.0	1.0	1.0	1.0	1.0	1.0
Maximum	3.0	2.0	4.0	4.0	4.0	1.0
Months employed						
Mean	8.2	6.0	5.3	8.3	6.5	2.9
Minimum	1.0	4.0	4.0	1.0	0.0	2.0
Maximum	12.0	12.0	12.0	12.0	12.0	12.0
Percentage employed year-round	52.7%	34.0%	31.2%	53.2%	43.9%	14.0%
Mean weeks employed	35.3	26.2	22.8	36.0	28.3	12.7
Households						
Number	83.0	18.0	35.0	374.0	148.0	13.0
Employed						
Number	67.9	13.5	20.0	311.7	108.7	5.8
Percentage	81.8%	75.0%	57.1%	83.3%	73.4%	44.4%
Jobs per employed household						
Mean	2.5	2.1	3.3	2.7	2.4	2.9
Minimum	1.0	1.0	1.0	1.0	1.0	1.0
Maximum	7.0	3.0	4.0	7.0	6.0	2.0
Employed adults						
Mean						
Employed households	2.0	2.0	2.2	1.9	2.1	2.9
Total households	1.6	1.5	1.3	1.6	1.5	1.3
Minimum	1.0	1.0	1.0	1.0	1.0	1.0
Maximum	7.0	2.0	2.0	4.0	3.0	2.0
Mean person-weeks of employment	50.0	39.0	40.7	45.0	42.0	30.1

Source ADF&G Division of Subsistence household surveys, 2013.

Table 1-12. – Location of jobs as a percentage of total jobs, by community of residence, study communities, 2012.

	Community of residence					
Job location	Cantwell	Chase	Skwentna	Alexander/ Susitna	Talkeetna	Trapper Creek
Anchorage	0%	0%	3%	40%	2%	5%
Aniak	0%	0%	0%	0%	1%	0%
Big Lake	0%	0%	0%	0%	0%	1%
Bristol Bay	0%	0%	0%	0%	1%	0%
Cantwell	77%	0%	0%	0%	0%	0%
Cape Newenham CDP	0%	0%	0%	0%	1%	0%
Chase	0%	24%	0%	0%	0%	0%
Chignik Lake	0%	0%	0%	0%	1%	0%
Cinder River	0%	0%	0%	0%	0%	1%
Denali Park	13%	0%	3%	0%	0%	1%
Dillingham	0%	0%	3%	0%	0%	0%
Diomede	0%	0%	0%	0%	0%	1%
Eagle River	0%	0%	0%	0%	1%	0%
Fairbanks	2%	0%	0%	0%	0%	0%
Girdwood	0%	0%	0%	0%	2%	0%
Healy	3%	0%	0%	0%	1%	0%
Juneau	0%	0%	3%	0%	0%	0%
Kasilof	0%	0%	0%	0%	0%	1%
Kenai	0%	0%	0%	0%	0%	2%
Kodiak City	0%	0%	0%	0%	1%	0%
Kotzebue	0%	0%	0%	0%	1%	0%
Naknek	0%	0%	0%	20%	0%	0%
North Slope	1%	6%	0%	0%	2%	4%
Palmer	0%	0%	0%	0%	2%	0%
Petersville	0%	0%	0%	0%	0%	1%
Prudhoe Bay	0%	12%	0%	0%	1%	1%
Skwentna	0%	0%	79%	0%	0%	0%
Alexander/Susitna	0%	6%	0%	40%	0%	0%
Talkeetna	0%	47%	0%	0%	78%	15%
Trapper Creek	0%	0%	0%	0%	2%	58%
Unalakleet	0%	0%	0%	0%	0%	1%
Wasilla	0%	6%	0%	0%	2%	1%
Willow	0%	0%	0%	0%	1%	0%
Other Alaska	3%	0%	0%	0%	4%	4%
Other U.S.	0%	0%	7%	0%	2%	0%
Foreign	0%	0%	0%	0%	1%	0%
Missing	0%	0%	0%	0%	1%	1%

Source ADF&G Division of Subsistence household surveys, 2013.

Table 1-13. – Participation in wild resource harvesting and processing activities by residents, study communities, 2012.

	Cantwell	Chase	Skwentna	Talkeetna	Trapper Creek	Alexander/ Susitna
Total number of people	**196.2**	**34.9**	**61.8**	**788.3**	**334.6**	**23.6**
Birds and eggs						
Hunt						
Number	38.3	16.9	30.3	115.8	71.7	10.6
Percentage	19.5%	48.4%	49.1%	14.7%	21.4%	45.0%
Process						
Number	33.7	20.3	30.3	97.1	65.2	11.8
Percentage	17.2%	58.1%	49.1%	12.3%	19.5%	50.0%
Fish						
Fish						
Number	98.1	23.6	50.2	388.6	152.1	16.5
Percentage	50.0%	67.7%	81.1%	49.3%	45.5%	70.0%
Process						
Number	102.7	25.9	51.3	429.7	132.5	21.3
Percentage	52.3%	74.2%	83.0%	54.5%	39.6%	90.0%
Large land mammals						
Hunt						
Number	81.2	14.6	33.8	149.4	91.3	14.2
Percentage	41.4%	41.9%	54.7%	19.0%	27.3%	60.0%
Process						
Number	130.3	25.9	31.5	209.2	82.6	21.3
Percentage	66.4%	74.2%	50.9%	26.5%	24.7%	90.0%
Small land mammals or furbearers						
Hunt or trap						
Number	38.3	5.6	9.3	37.4	39.1	3.5
Percentage	19.5%	16.1%	15.1%	4.7%	11.7%	15.0%
Process						
Number	41.4	10.1	9.3	29.9	23.9	5.9
Percentage	21.1%	29.0%	15.1%	3.8%	7.1%	25.0%
Vegetation						
Gather						
Number	154.8	31.5	59.5	635.2	254.2	23.6
Percentage	78.9%	90.3%	96.2%	80.6%	76.0%	100.0%
Process						
Number	156.3	29.3	59.5	620.2	253.7	23.6
Percentage	79.7%	83.9%	96.2%	78.7%	75.8%	100.0%
Any resource						
Attempt						
Number	169.0	31.5	60.7	649.0	263.8	23.6
Percentage	86.2%	90.3%	98.1%	82.3%	78.8%	100.0%
Process						
Number	173.5	31.5	61.8	641.7	255.2	23.6
Percentage	88.5%	90.3%	100.0%	81.4%	76.3%	100.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Table 1-14. – Resource harvest and use characteristics, study communities, 2012.

Characteristic	Cantwell	Chase	Skwentna	Talkeetna	Trapper Creek	Alexander/ Susitna
Mean number of resources used per household	6.9	12.9	11.9	8.5	9.0	11.3
Minimum	0.0	3.0	1.0	0.0	0.0	7.0
Maximum	35.0	26.0	36.0	36.0	36.0	16.0
95% confidence limit (±)	12.7%	8.2%	10.3%	11.0%	12.7%	7.3%
Median	6.0	11.0	11.5	8.0	8.0	11.0
Mean number of resources attempted to harvest per household	5.7	12.3	10.4	6.2	7.2	8.6
Minimum	0.0	1.0	1.0	0.0	0.0	1.0
Maximum	30.0	31.0	33.0	19.0	31.0	14.0
95% confidence limit (±)	16.5%	11.2%	10.9%	13.1%	15.2%	12.7%
Median	4.0	12.0	9.0	5.0	6.0	9.0
Mean number of resources harvested per household	4.7	10.9	9.8	5.5	6.2	8.5
Minimum	0.0	1.0	1.0	0.0	0.0	1.0
Maximum	30.0	26.0	33.0	19.0	30.0	14.0
95% confidence limit (±)	16.9%	10.6%	11.3%	13.3%	15.1%	13.3%
Median	4.0	9.5	8.5	5.0	5.0	9.0
Mean number of resources received per household	2.5	3.2	3.3	3.8	3.2	3.6
Minimum	0.0	1.0	0.0	0.0	0.0	1.0
Maximum	8.0	9.0	16.0	24.0	11.0	6.0
95% confidence limit (±)	14.6%	14.1%	15.8%	15.4%	15.5%	13.9%
Median	2.0	2.0	2.0	3.0	2.0	4.0
Mean number of resources given away per household	1.8	2.5	2.6	2.2	1.6	3.3
Minimum	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	14.0	8.0	14.0	12.0	12.0	12.0
95% confidence limit (±)	24.9%	21.1%	20.0%	20.0%	27.1%	27.9%
Median	1.0	1.0	1.0	1.0	1.0	2.0
Household harvest (lb)						
Minimum	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	2,705.2	1,238.1	819.5	935.9	1,151.9	902.5
Mean	238.3	379.7	285.3	112.4	139.9	398.1
Median	69.5	218.0	210.9	37.4	43.6	562.0
Total harvest weight (lb)	19,778.6	6,834.7	9,985.0	42,020.0	20,406.5	5,175.3
Community per capita harvest (lb)	100.8	196.0	161.5	53.3	61.0	219.0
Percentage using any resource	94.5%	100.0%	100.0%	96.1%	98.5%	100.0%
Percentage attempting to harvest any resource	85.5%	100.0%	100.0%	90.2%	95.6%	100.0%
Percentage harvesting any resource	85.5%	100.0%	100.0%	90.2%	95.6%	100.0%
Percentage receiving any resource	76.4%	100.0%	76.7%	90.2%	83.8%	100.0%
Percentage giving away any resource	50.9%	50.0%	63.3%	64.7%	52.9%	90.9%
Number of households in sample	55	16	30	102	69	11
Number of resources available	119	120	129	133	130	120

Source ADF&G Division of Subsistence household surveys, 2013.

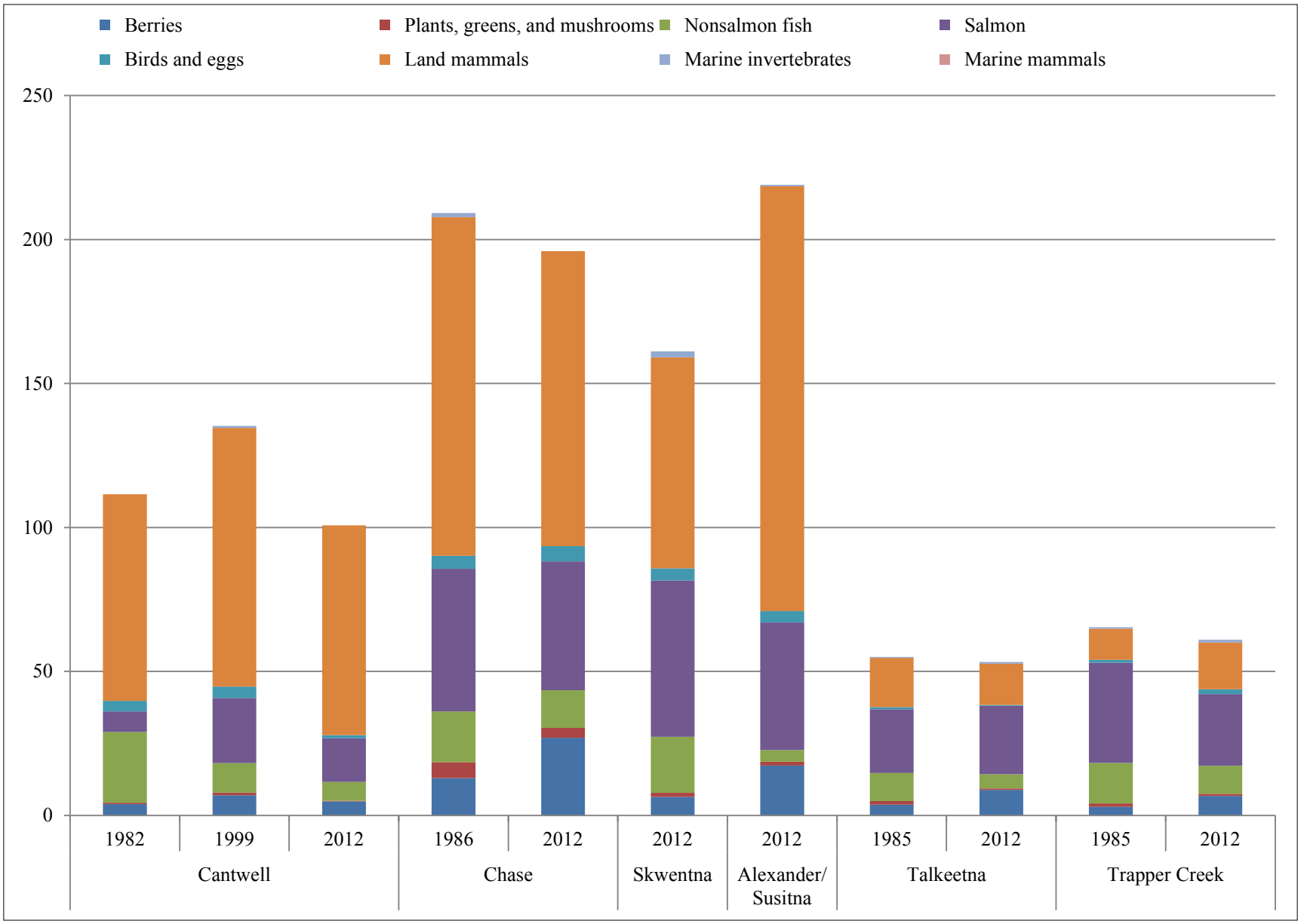

Figure 1-3. – Historical per capita harvests by resource category, study communities.

Table 1-15. – Percentage of households that received (and, by extension, used) resources from the Moose Salvage Program, study communities, 2012.

	Cantwell		Talkeetna		Trapper Creek	
Name	Used	Received from roadkill program	Used	Received from roadkill program	Used	Received from roadkill program
Large land mammals	81.8%	9.1%	72.5%	14.7%	66.2%	13.2%
Caribou	40.0%	3.6%	27.5%	1.0%	27.9%	0.0%
Moose	72.7%	5.5%	66.7%	13.7%	58.8%	13.2%

Source ADF&G Division of Subsistence household surveys, 2013.

Note The question regarding participation in the roadkill program was not asked in the communities of Chase, Skwentna, and Alexander/Susitna.

Table 1-16. – Comparison of selected findings, study communities, 2012.

Category	Cantwell	Chase	Skwentna	Talkeetna	Trapper Creek	Alexander/ Susitna
Demography						
Population	196.2	34.9	61.8	788.3	334.6	23.6
Percentage of population that is Alaska Native	17.7%	0.0%	3.8%	3.7%	5.8%	10.0%
Percentage of household heads born in Alaska	25.3%	0.0%	12.2%	12.0%	14.7%	25.0%
Average length of residency of household heads (yr)	22.2	15.9	17.0	19.3	19.1	27.7
Cash economy						
Percentage of jobs located in community	77.2%	23.5%	79.3%	78.4%	58.0%	40.0%
Average number of months employed	8.2	6.0	5.3	8.3	6.5	2.9
Percentage of employed adults working year-round	52.7%	34.0%	31.2%	53.2%	43.9%	14.0%
Percentage of income from sources other than employment	19.5%	15.5%	23.1%	25.1%	24.0%	72.7%
Average household income[a]	54,946.9	54,457.4	36,452.2	48,349.0	42,232.4	24,464.1
Per capita income[a]	23,246.8	28,107.0	20,633.3	22,937.7	18,679.7	13,455.3
Resource harvest and use						
Per capita harvest, pounds usable weight	100.8	196.0	161.5	53.3	61.0	219.0
Average household harvest, pounds usable weight	238.3	379.7	285.3	112.4	137.9	398.1
Number of resources used by 50% or more households	4.0	10.0	8.0	5.0	5.0	7.0
Average number of resources used per household	6.9	12.9	11.9	8.5	9.0	11.3
Average number of resources attempted to harvest per household	5.7	12.3	10.4	6.2	7.2	8.6
Average number of resources harvested per household	4.7	10.9	9.8	5.5	6.2	8.5
Average number of resources received per household	2.5	3.2	3.3	3.8	3.2	3.6
Average number of resources given away per household	1.8	2.5	2.6	2.2	1.6	3.3
Percentage of total harvest harvested by top 25% of households	74.7%	61.7%	55.3%	76.5%	78.3%	39.4%
Percentage of households harvesting 70% of harvest	21.8%	31.3%	33.3%	20.6%	18.8%	36.4%
Per capita harvest of lowest 50% of households	2.2	27.0	26.3	1.9	2.7	41.6
Percentage of total harvest harvested by lowest 50% of households	2.2%	13.8%	16.3%	3.5%	4.5%	19.0%
Average number of resources used by lowest 50% of households	4.1	9.9	8.4	5.7	5.7	10.7
Average number of resources used by top 25% of households	10.8	19.5	21.9	13.7	12.6	13.0

Source ADF&G Division of Subsistence household surveys, 2013.

a. Includes income from sources other than employment.

The content in terms of 2012 harvest data is consistent in each chapter because it is based on the survey instrument, as noted above. In addition, the final section of each chapter includes community comments and concerns. Because not all communities have the same comments and concerns these sections are organized around themes that are the outcome of analysis of comments presented to researchers during the surveys, key respondent interviews, and community meetings.

ADF&G provided a draft report to AEA and project partners HDR, SRB&A, and Newfields, and to the study communities for their review and comment. After receipt of comments, the report was finalized. ADF&G mailed a short (2-page) summary of the study findings to every household in the 6 study communities (Appendix E).

CANTWELL

COMMUNITY BACKGROUND

The community of Cantwell is located in the Alaska Range at the junction of the Parks and Denali highways, which is just north of Broad Pass and 28 miles south of Denali National Park. North of Cantwell is the Nenana River canyon, a passageway that allows for both train and automobile traffic on the Alaska Railroad and the Parks Highway. Anchorage is located 211 miles to the south, and Fairbanks 150 miles to the north. The area is characterized by a continental climate with warm summers and cold, dark winters with an annual average snowfall of 78 inches and 15 inches of precipitation.

Traditional Ahtna territory centers on the Copper River Basin but also covers a vast area that includes parts of the Susitna and upper Tanana drainages. Originally, Ahtna Athabascans seasonally occupied areas to the east of the current village of Cantwell at Valdez Creek, which is also referred to as Denali (Reckord 1983). Ahtna were drawn each year to the area, known as "*C'ilaan Na,*" which means "a lot of game is present place," by the abundance of wildlife (Reckord 1983, 171). In this area, caribou, moose, porcupines (a traditional delicacy), migratory birds, whitefishes, and berries could be found aplenty (Reckord 1983). The seasonal pattern of the Ahtna was disrupted with the discovery of gold at Valdez Creek in 1903 (Reckord 1983). The introduction of mining in the area led to the sedentarization of a number of eastern Ahtna families who built and lived in log houses. Ahtna and miners lived in relative proximity to one another but maintained separate communities.

The village of Cantwell was established originally as a construction camp in 1916 to support the expansion of the Alaska Railroad that was designed to connect Seward with Fairbanks. Over time, the camp drew Ahtna from Valdez Creek and surrounding areas to be railroad construction workhands; Ahtna migrated especially once fur trading ceased to be lucrative and the Valdez Creek mine closed in 1935. Eventually the town comprised a store, a roadhouse, and a landing field, which was important to the community since the Denali Highway was not completed until 1957 to provide road access to Cantwell and Denali National Park.

More direct access to Cantwell and Denali National Park became available with the opening of the Parks Highway in 1971. Since then, the community has physically moved its focus from the original site along the railroad (Old Cantwell) to the highway and now spreads out from the intersection of the Parks and Denali highways.

Today, Cantwell thrives during the summer from employment created by tourism industries

associated with nearby Denali National Park, including guiding, fishing, sightseeing, rafting, and other recreational activities. The annual influx of people into the area is seasonal, however, and partially contributes to the observed diffusion of households out of Cantwell during portions of the winter.

Cantwell has several federal and state offices and facilities, including the post office, Alaska State Troopers, and Alaska Department of Transportation. The local school has approximately 35 students and teaches kindergarten through grade 12.[1] Cantwell is in the Denali Borough and education is provided by this borough. Local businesses included a gas station (an additional one opened in the summer of 2013), several places to lodge, and 2 eateries. The Native Village of Cantwell has a community center that acts as a social and cultural hub, and also houses the itinerant clinic.

DEMOGRAPHY

During 2012, the estimated population of Cantwell was 196 residents (Table 1-1); this is slightly lower than the 2010 federal census of 219 residents. The ADLWD (2013) estimated 207 residents in 2012. It is likely this variation stems from seasonal differences in the timing of survey administration (i.e., winter versus summer). Local residents said many households leave Cantwell for periods of time during the winter, which is a time of year when employment opportunities are reduced and the weather is less amenable. The population has been fairly stable for the last decade with census and population estimates hovering around 200 since the year 2000 (Figure 2-1).

A total of 55 households were surveyed, which represents 66% of the total estimated community residences (Table 1-6). The mean household size was 2 persons and the average age of residents was 41 (Table 1-9). While the mean population length of residency was 18 years, the maximum length of residency was 74 years. The Alaska Native population of Cantwell was estimated to be 18% of the community.

In Cantwell there is a higher population of males (113) than females (83) (Table 2-1). Approximately 25% of the population is younger than 20 years of age. There are relatively few people between the ages of 20–34; this age cohort makes up less than 10% of the population. By far the largest cohort is between 35–64 years of age, which accounts for almost 50% of the population and adults 65 years of age and older account for 15% of the population (Figure 2-2). The relatively low population of young adults may be attributed to outmigration related to greater employment opportunities in urban centers.

A high number of household heads (70%) were born outside of Alaska in other parts of the United States and 4% were born outside of the United States. Areas that are part of traditional Ahtna territory where household heads were born include Cantwell (7%), Valdez Creek (6%), and Copper Center (2%) (Table 1-10).

1. School enrollment information available at: http://www.dbsd.org/Domain/9.

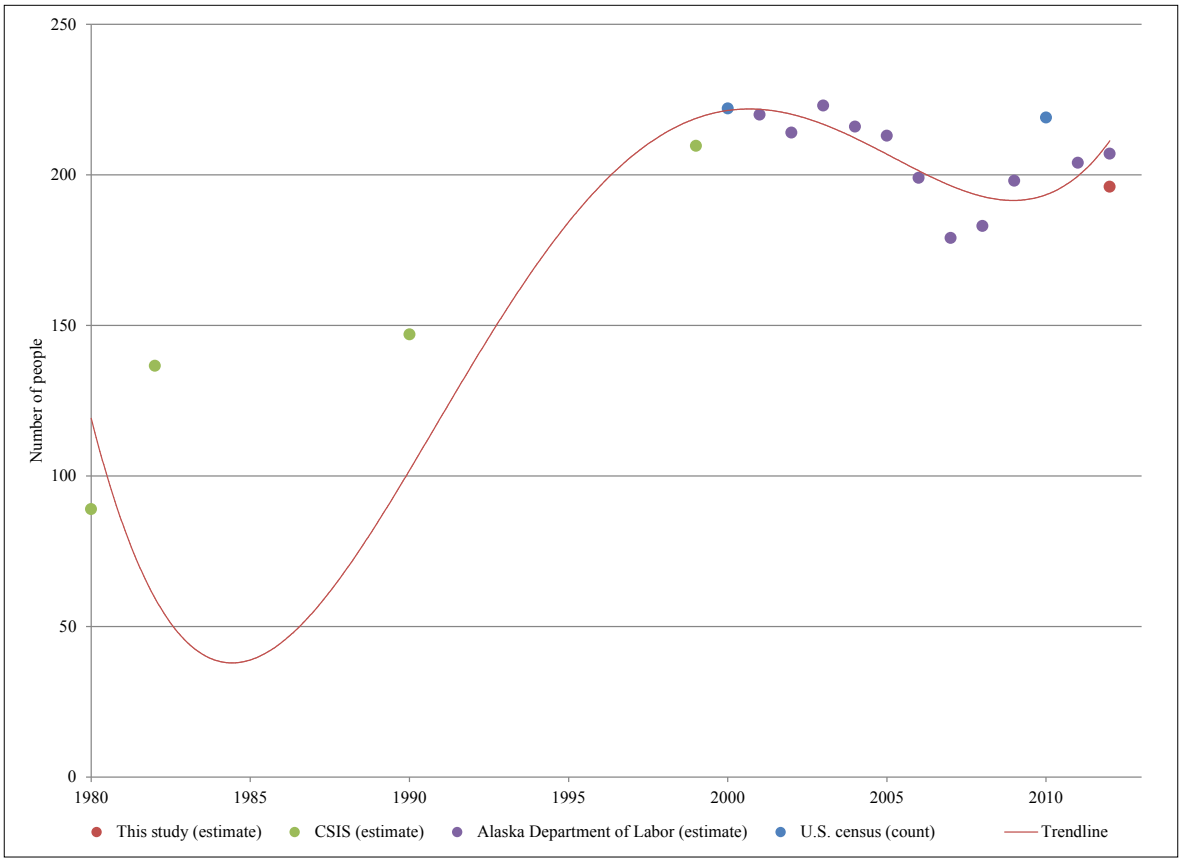

Figure 2-1. – Population history, Cantwell, 1980–2012.

Table 2-1. – Population profile, Cantwell, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	4.5	4.0%	4.0%	1.5	1.8%	1.8%	6.0	3.1%	3.1%
5–9	4.5	4.0%	8.0%	3.0	3.6%	5.5%	7.5	3.8%	6.9%
10–14	12.1	10.7%	18.7%	7.5	9.1%	14.5%	19.6	10.0%	16.9%
15–19	9.1	8.0%	26.7%	7.5	9.1%	23.6%	16.6	8.5%	25.4%
20–24	3.0	2.7%	29.3%	1.5	1.8%	25.5%	4.5	2.3%	27.7%
25–29	3.0	2.7%	32.0%	3.0	3.6%	29.1%	6.0	3.1%	30.8%
30–34	3.0	2.7%	34.7%	4.5	5.5%	34.5%	7.5	3.8%	34.6%
35–39	9.1	8.0%	42.7%	7.5	9.1%	43.6%	16.6	8.5%	43.1%
40–44	6.0	5.3%	48.0%	3.0	3.6%	47.3%	9.1	4.6%	47.7%
45–49	10.6	9.3%	57.3%	9.1	10.9%	58.2%	19.6	10.0%	57.7%
50–54	9.1	8.0%	65.3%	10.6	12.7%	70.9%	19.6	10.0%	67.7%
55–59	10.6	9.3%	74.7%	6.0	7.3%	78.2%	16.6	8.5%	76.2%
60–64	9.1	8.0%	82.7%	4.5	5.5%	83.6%	13.6	6.9%	83.1%
65–69	6.0	5.3%	88.0%	3.0	3.6%	87.3%	9.1	4.6%	87.7%
70–74	7.5	6.7%	94.7%	3.0	3.6%	90.9%	10.6	5.4%	93.1%
75–79	3.0	2.7%	97.3%	4.5	5.5%	96.4%	7.5	3.8%	96.9%
80–84	1.5	1.3%	98.7%	1.5	1.8%	98.2%	3.0	1.5%	98.5%
85–89	0.0	0.0%	98.7%	0.0	0.0%	98.2%	0.0	0.0%	98.5%
90–94	0.0	0.0%	98.7%	0.0	0.0%	98.2%	0.0	0.0%	98.5%
95–99	0.0	0.0%	98.7%	0.0	0.0%	98.2%	0.0	0.0%	98.5%
100–104	0.0	0.0%	98.7%	0.0	0.0%	98.2%	0.0	0.0%	98.5%
Missing	1.5	1.3%	100.0%	1.5	1.8%	100.0%	3.0	1.5%	100.0%
Total	**113.2**	**100.0%**	**100.0%**	**83.0**	**100.0%**	**100.0%**	**196.2**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

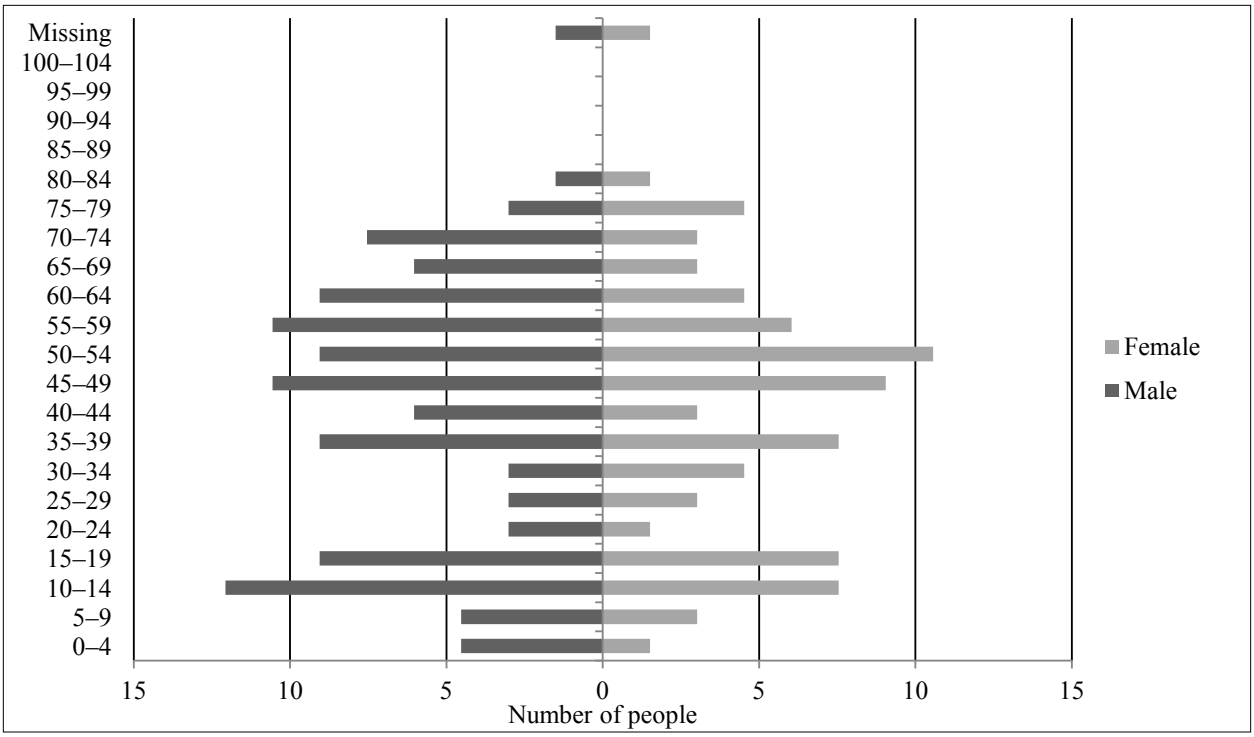

Figure 2-2. – Population profile, Cantwell, 2012.

CASH EMPLOYMENT AND MONETARY INCOME

The total earned income for Cantwell in 2012 was $3,671,818, while income generated from other sources amounted to $888,777; the community income totaled $4,560,595 (Table 2-2). Cantwell's population profile suggests a large portion of the residents are adults under retirement age, which would account for the higher proportion of income (80%) produced from employment. The proportion of Cantwell's community income earned from other sources totaled 20%, which is comparable to the 17% of other income sources observed in Copper Center—a road-accessible community with a similar-sized population (La Vine et al. 2013, 24).

The average household income in Cantwell was $54,947 (Table 2-2). Economist Neal Fried (2012, 14) suggests median household income "is considered a better representation because potential extremes on either side of the spectrum have less influence" compared to mean household income. According to Fried (2012), for the span of 2006–2010, the median household income in Alaska was $66,521 and within the Denali Borough the median household income was $72,500. Regardless of which amount is compared to Cantwell, it is clear that this community's average household income is rather low, which, as previously mentioned, may be due in part to lack of winter employment opportunities.

The largest source of earned income came from state government jobs (24% of earned income, or $866,645) followed by the services sector (21% of earned income, or $759,141) (Table 2-3; Table 2-2). The highest source of other income in Cantwell was derived from pension and/or retirement

Table 2-2. – Estimated earned and other income, Cantwell, 2012.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
State government	20.3	16.6	$866,645	$10,442	19.0%
Services	44.2	30.2	$759,141	$9,146	16.6%
Local government	27.6	21.1	$707,006	$8,518	15.5%
Retail trade	20.3	7.5	$347,982	$4,193	7.6%
Construction	18.4	13.6	$339,786	$4,094	7.5%
Federal government	11.1	7.5	$267,314	$3,221	5.9%
Mining	3.7	3.0	$221,892	$2,673	4.9%
Transportation, communication, and utilities	3.7	3.0	$116,327	$1,402	2.6%
Manufacturing	9.2	7.5	$22,947	$276	0.5%
Other employment	1.8	1.5	$19,735	$238	0.4%
Agriculture, forestry, and fishing	1.8	1.5	$3,042	$37	0.1%
Earned income subtotal	**134.5**	**67.9**	**$3,671,818**	**$44,239**	**80.5%**
Other income					
Pension/retirement		19.6	$449,553	$5,416	9.9%
Social Security		21.1	$196,231	$2,364	4.3%
Alaska Permanent Fund dividend		80.0	$152,373	$1,836	3.3%
Unemployment		13.6	$63,107	$760	1.4%
Energy assistance		18.1	$12,818	$154	0.3%
Native corporation dividend		15.1	$7,584	$91	0.2%
Longevity bonus		4.5	$3,128	$38	0.1%
Meeting honoraria		3.0	$1,844	$22	0.0%
Citgo fuel voucher		4.5	$922	$11	0.0%
Adult public assistance		3.0	$615	$7	0.0%
Dividend/interest		1.5	$604	$7	0.0%
Supplemental Security income		0.0	$0	$0	0.0%
Food stamps		0.0	$0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0	0.0%
Disability		0.0	$0	$0	0.0%
Veterans assistance		0.0	$0	$0	0.0%
Child support		0.0	$0	$0	0.0%
Other		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Other income subtotal		**80.0**	**$888,777**	**$10,708**	**19.5%**
Community income total			**$4,560,595**	**$54,947**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

a. The mean is calculated using the *total* number of households in the community, not the number of households for this income category.

b. Income by category as a percentage of the total community income from all sources (wage-based income *and* non-wage-based income).

plans at $449,553, which was expected given the documented population information that 15% of the population is 65 or older.

Employed adults were on average employed 35 weeks a year and 86% of Cantwell's adults were employed in 2012 (Table 1-11). Eighty-two percent of the community's households included an employed household member and on average each household retained 3 jobs. Most Cantwell residents work in the vicinity of the community (77%) or close by at Denali Park (13%) (Table 1-12).

Table 2-3. – Employment by industry, Cantwell, 2012.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**167.7**	**67.9**	**134.5**	
Federal government	**6.5%**	**11.1%**	**8.2%**	**7.3%**
Teachers, librarians, and counselors	1.1%	2.2%	1.4%	0.1%
Administrative support occupations, including clerical	2.2%	4.4%	2.7%	1.3%
Mechanics and repairers	1.1%	2.2%	1.4%	2.9%
Transportation and material moving occupations	2.2%	4.4%	2.7%	3.0%
State government	**12.0%**	**24.4%**	**15.1%**	**23.6%**
Service occupations	1.1%	2.2%	1.4%	4.0%
Mechanics and repairers	2.2%	4.4%	2.7%	4.3%
Transportation and material moving occupations	7.6%	15.6%	9.6%	14.0%
Handlers, equipment cleaners, helpers, and laborers	1.1%	2.2%	1.4%	1.3%
Local government, including tribal	**16.3%**	**31.1%**	**20.5%**	**19.3%**
Executive, administrative, and managerial	3.3%	4.4%	4.1%	7.4%
Teachers, librarians, and counselors	8.7%	17.8%	11.0%	10.1%
Technologists and technicians, except health	1.1%	2.2%	1.4%	0.6%
Administrative support occupations, including clerical	2.2%	4.4%	2.7%	0.9%
Service occupations	1.1%	2.2%	1.4%	0.2%
Agriculture, forestry, and fishing	**1.1%**	**2.2%**	**1.4%**	**0.1%**
Agricultural, forestry, and fishing occupations	1.1%	2.2%	1.4%	0.1%
Mining	**2.2%**	**4.4%**	**2.7%**	**6.0%**
Technologists and technicians, except health	1.1%	2.2%	1.4%	5.0%
Construction and extractive occupations	1.1%	2.2%	1.4%	1.1%
Construction	**12.0%**	**20.0%**	**13.7%**	**9.3%**
Executive, administrative, and managerial	4.3%	6.7%	5.5%	4.2%
Construction and extractive occupations	4.3%	8.9%	5.5%	3.6%
Transportation and material moving occupations	1.1%	2.2%	1.4%	0.6%
Handlers, equipment cleaners, helpers, and laborers	2.2%	4.4%	2.7%	0.8%
Manufacturing	**5.4%**	**11.1%**	**6.8%**	**0.6%**
Writers, artists, entertainers, and athletes	5.4%	11.1%	6.8%	0.6%
Transportation, communication, and utilities	**2.2%**	**4.4%**	**2.7%**	**3.2%**
Technologists and technicians, except health	1.1%	2.2%	1.4%	2.9%
Transportation and material moving occupations	1.1%	2.2%	1.4%	0.3%
Retail trade	**12.0%**	**11.1%**	**15.1%**	**9.5%**
Executive, administrative, and managerial	1.1%	2.2%	1.4%	1.3%
Marketing and sales occupations	1.1%	2.2%	1.4%	1.4%
Service occupations	9.8%	8.9%	12.3%	6.8%
Services	**28.3%**	**44.4%**	**32.9%**	**20.7%**
Executive, administrative, and managerial	8.7%	13.3%	11.0%	9.0%
Social scientists, social workers, religious workers, and lawyers	1.1%	2.2%	1.4%	1.7%
Health diagnosing and treating practitioners	1.1%	2.2%	1.4%	1.0%
Writers, artists, entertainers, and athletes	2.2%	4.4%	2.7%	1.4%
Health technologists and technicians	1.1%	2.2%	1.4%	0.0%
Administrative support occupations, including clerical	1.1%	2.2%	1.4%	1.8%

-continued-

Table 2-3.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Service occupations	8.7%	17.8%	11.0%	4.0%
Mechanics and repairers	2.2%	4.4%	2.7%	0.7%
Construction and extractive occupations	2.2%	4.4%	2.7%	1.1%
Industry not indicated	**2.2%**	**2.2%**	**1.4%**	**0.5%**
Occupation not indicated	2.2%	2.2%	1.4%	0.5%

Source ADF&G Division of Subsistence household surveys, 2013.
a. Income by category as a percentage of the total *wage-based* community income.

LEVELS OF INDIVIDUAL PARTICIPATION IN THE HARVESTING AND PROCESSING OF WILD RESOURCES

Table 1-13 reports the expanded levels of individual participation in the harvesting and processing of wild resources by all Cantwell residents in 2012. Cantwell residents participated in the harvest of resources according to the following distribution: vegetation (79%), fish (50%), large land mammals (41%), small land mammals/furbearers (20%), and birds and eggs (20%).The proportion of households participating in the harvest of any resources was 86%. In terms of participating in processing wild resources, most households were equally involved in processing as harvesting. Regarding large land mammals, however, 25% more residents were engaged in processing (i.e., 66%) than harvesting, indicating a greater group effort was involved.

HOUSEHOLD RESOURCE HARVEST AND USE PATTERNS AND SHARING OF WILD RESOURCES

Table 1-14 summarizes resource harvest and use characteristics for Cantwell in 2012 at the household level. Most households (95%) used wild resources in 2012, while 86% attempted to harvest or harvested resources. The average harvest was 238 lb usable weight per household, or 101 lb per capita. During the study year, households harvested an average of 5 kinds of resources and used an average of 7 kinds of resources. The maximum number of resources used by any household was 35. In addition, households gave away an average of 2 kinds of resources and 51% of households reported sharing resources with other households. In general, 70% of wild resources were harvested by 22% of Cantwell households (Figure 2-3).

HARVEST QUANTITIES AND COMPOSITION

Table 2-4 reports estimated wild resource harvests and uses by Cantwell residents in 2012 and is organized first by general category and then by species. All edible resources are reported in

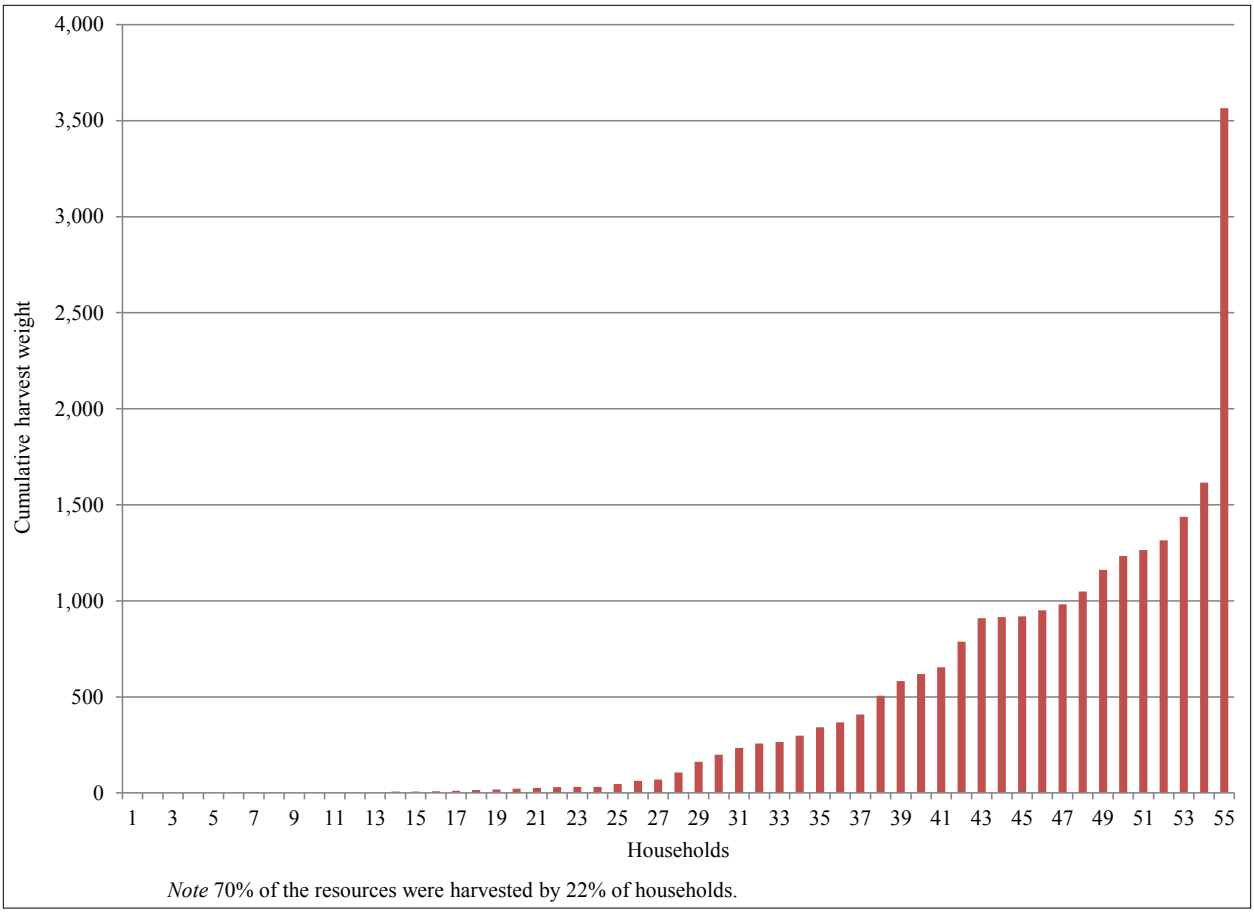

Figure 2-3. – Household specialization, Cantwell, 2012.

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 local way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total community harvest of wild resources in pounds edible weight was 19,760 lb. The Cantwell harvest composition was dominated by land mammals, which represents 72%, or 14,294 lb, of the total harvest (73 lb per capita). Second in importance was salmon making up 15%, or 2,978 lb of the community harvest (15 lb per capita) followed by nonsalmon fish composing 6%, or 1,275 lb of the community harvest (7 lb per capita), vegetation composing 5%, or 1,011 lb of the community harvest (5 lb per capita), and birds composing 1%, or 202 lb of the community harvest

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 2-4. – Estimated harvests and uses of fish, game, and vegetation resources, Cantwell, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±)
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	% of harvest
All resources	**94.5**	**85.5**	**85.5**	**76.4**	**50.9**	**19,759.7**	**238.1**	**100.7**	**2,987.4**		**36.0**	**27.5**
Fish	**78.2**	**52.7**	**50.9**	**52.7**	**25.5**	**4,252.9**	**51.2**	**21.7**	**2,111.2**		**25.4**	**32.7**
Salmon	**70.9**	**27.3**	**27.3**	**47.3**	**18.2**	**2,978.3**	**35.9**	**15.2**	**671.5**		**8.1**	**39.2**
Chum salmon	1.8	1.8	1.8	0.0	0.0	232.3	2.8	1.2	37.7	ind	0.5	116.4
Coho salmon	16.4	7.3	7.3	9.1	7.3	303.0	3.7	1.5	63.4	ind	0.8	74.1
Chinook salmon	16.4	5.5	5.5	12.7	5.5	115.2	1.4	0.6	12.1	ind	0.1	89.2
Pink salmon	3.6	3.6	3.6	0.0	1.8	223.9	2.7	1.1	84.5	ind	1.0	104.5
Sockeye salmon	61.8	25.5	25.5	40.0	14.5	2,103.9	25.3	10.7	473.9	ind	5.7	39.2
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown salmon	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Nonsalmon fish	**60.0**	**47.3**	**43.6**	**27.3**	**18.2**	**1,274.6**	**15.4**	**6.5**	**1,439.7**		**17.3**	**37.3**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific (gray) cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific tomcod	0.0	0.0	0.0	0.0	0.0	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	0.0		0.0	0.0
Starry flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Greenling	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Lingcod	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	27.3	7.3	7.3	21.8	5.5	516.1	6.2	2.6	516.1	lb	6.2	59.8
Rockfish	1.8	1.8	1.8	0.0	0.0	11.3	0.1	0.1	7.5	ind	0.1	116.4
Black rockfish	1.8	1.8	1.8	0.0	0.0	9.1	0.1	0.0	6.0	ind	0.1	116.4
Yelloweye rockfish	1.8	1.8	1.8	0.0	0.0	2.3	0.0	0.0	1.5	ind	0.0	116.4
Unknown rockfishes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sablefish (black cod)	1.8	0.0	0.0	1.8	1.8	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	0.0	0.0	0.0	ind	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Char	14.5	12.7	12.7	1.8	3.6	144.9	1.7	0.7	72.4		0.9	46.2
Dolly Varden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lake trout	14.5	12.7	12.7	1.8	3.6	144.9	1.7	0.7	72.4	ind	0.9	46.2
Arctic grayling	41.8	38.2	34.5	5.5	10.9	571.5	6.9	2.9	816.4	ind	9.8	40.8

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Table 2-4.–Page 2 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Nonsalmon fish, continued												
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trout	7.3	7.3	5.5	1.8	1.8	12.7	0.2	0.1	9.1		0.1	71.6
Cutthroat trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Rainbow trout	7.3	7.3	5.5	1.8	1.8	12.7	0.2	0.1	9.1	ind	0.1	71.6
Unknown trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whitefishes	3.6	3.6	1.8	1.8	1.8	18.1	0.2	0.1	18.1		0.2	116.4
Broad whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cisco	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	1.8	1.8	1.8	0.0	1.8	18.1	0.2	0.1	18.1	ind	0.2	116.4
Unknown whitefishes	1.8	1.8	0.0	1.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Land mammals	**81.8**	**50.9**	**43.6**	**67.3**	**36.4**	**14,294.4**	**172.2**	**72.9**	**146.4**		**1.8**	**31.5**
Large land mammals	**81.8**	**49.1**	**36.4**	**65.5**	**34.5**	**14,131.1**	**170.3**	**72.0**	**54.3**		**0.7**	**31.8**
Black bear	9.1	5.5	3.6	5.5	3.6	262.6	3.2	1.3	4.5	ind	0.1	86.1
Brown bear	7.3	7.3	7.3	0.0	3.6	1,131.8	13.6	5.8	7.5	ind	0.1	60.1
Caribou	40.0	30.9	20.0	25.5	14.5	2,550.4	30.7	13.0	19.6	ind	0.2	36.1
Deer	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	72.7	43.6	23.6	50.9	30.9	10,186.4	122.7	51.9	22.6	ind	0.3	32.2
Dall sheep	7.3	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals[b]	**21.8**	**20.0**	**18.2**	**1.8**	**9.1**	**163.3**	**2.0**	**0.8**	**92.1**		**1.1**	**98.2**
Beaver	5.5	7.3	5.5	0.0	0.0	113.2	1.4	0.6	33.2	ind	0.4	116.4
Coyote	3.6	5.5	3.6	0.0	1.8	0.0	0.0	0.0	4.5	ind	0.1	86.1
Fox	7.3	9.1	7.3	0.0	3.6	0.0	0.0	0.0	10.6		0.1	63.1
Red fox	7.3	9.1	7.3	0.0	3.6	0.0	0.0	0.0	10.6		0.1	63.1
Red fox–cross phase	1.8	5.5	1.8	0.0	0.0	0.0	0.0	0.0	1.5	ind	0.0	116.4
Red fox–red phase	7.3	9.1	7.3	0.0	3.6	0.0	0.0	0.0	9.1	ind	0.1	59.9
Hare	7.3	3.6	3.6	1.8	1.8	15.1	0.2	0.1	7.5		0.1	83.3
Snowshoe hare	7.3	3.6	3.6	1.8	1.8	15.1	0.2	0.1	7.5	ind	0.1	83.3
River (land) otter	3.6	3.6	3.6	0.0	0.0	0.0	0.0	0.0	6.0	ind	0.1	91.5
Lynx	7.3	9.1	7.3	0.0	0.0	24.1	0.3	0.1	10.6	ind	0.1	116.4
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	3.6	3.6	3.6	0.0	1.8	0.0	0.0	0.0	9.1	ind	0.1	86.1
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 2-4.–Page 3 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Small land mammals[b], continued												
Muskrat	1.8	1.8	1.8	0.0	1.8	10.9	0.1	0.1	6.0	ind	0.1	116.4
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Squirrel	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Weasel	1.8	1.8	1.8	0.0	0.0	0.0	0.0	0.0	1.5	ind	0.0	116.4
Wolf	1.8	5.5	1.8	0.0	0.0	0.0	0.0	0.0	1.5	ind	0.0	116.4
Wolverine	1.8	3.6	1.8	0.0	0.0	0.0	0.0	0.0	1.5	ind	0.0	116.4
Marine mammals	**1.8**	**0.0**	**0.0**	**1.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whales	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Humpback whale	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**30.9**	**30.9**	**21.8**	**10.9**	**5.5**	**201.5**	**2.4**	**1.0**	**209.8**		**2.5**	**64.5**
Migratory birds	**7.3**	**5.5**	**3.6**	**3.6**	**1.8**	**102.7**	**1.2**	**0.5**	**45.3**		**0.5**	**114.7**
Ducks	5.5	5.5	3.6	1.8	1.8	26.9	0.3	0.1	34.7		0.4	110.0
Canvasback	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Eider	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Spectacled eider	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	1.8	3.6	1.8	0.0	0.0	3.6	0.0	0.0	4.5	ind	0.1	116.4
Mallard	3.6	5.5	3.6	0.0	1.8	10.6	0.1	0.1	10.6	ind	0.1	100.9
Northern pintail	1.8	3.6	1.8	0.0	0.0	1.2	0.0	0.0	1.5	ind	0.0	116.4
Scoter	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Black scoter	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Teal	1.8	3.6	1.8	0.0	0.0	1.8	0.0	0.0	6.0		0.1	116.4
Green-winged teal	1.8	3.6	1.8	0.0	0.0	1.8	0.0	0.0	6.0	ind	0.1	116.4
Unknown ducks	3.6	3.6	1.8	1.8	0.0	9.7	0.1	0.0	12.1	ind	0.1	116.4
Geese	1.8	5.5	1.8	0.0	0.0	8.1	0.1	0.0	4.5		0.1	116.4
Brant	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	1.8	5.5	1.8	0.0	0.0	3.6	0.0	0.0	3.0		0.0	116.4
Cackling goose	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 2-4.–Page 4 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Migratory birds, continued												
Canada goose	1.8	3.6	1.8	0.0	0.0	3.6	0.0	0.0	3.0	ind	0.0	116.4
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	1.8	3.6	1.8	0.0	0.0	4.5	0.1	0.0	1.5	ind	0.0	116.4
White-fronted goose	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown goose	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Swans	3.6	3.6	1.8	1.8	0.0	67.7	0.8	0.3	6.0		0.1	116.4
Tundra (whistling) swan	3.6	3.6	1.8	1.8	0.0	67.7	0.8	0.3	6.0	ind	0.1	116.4
Cranes	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Other birds	**29.1**	**29.1**	**21.8**	**9.1**	**3.6**	**98.8**	**1.2**	**0.5**	**164.5**		**2.0**	**36.9**
Upland game birds	29.1	29.1	21.8	9.1	3.6	98.8	1.2	0.5	164.5		2.0	36.9
Grouse	16.4	21.8	14.5	0.0	0.0	58.1	0.7	0.3	83.0		1.0	44.4
Spruce grouse	14.5	21.8	14.5	0.0	0.0	49.6	0.6	0.3	70.9	ind	0.9	43.5
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ruffed grouse	1.8	1.8	1.8	0.0	0.0	8.5	0.1	0.0	12.1	ind	0.1	116.4
Unknown grouse	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	21.8	18.2	14.5	9.1	3.6	40.7	0.5	0.2	81.5	ind	1.0	43.8
Bird eggs	**0.0**	**0.0**	**0.0**	**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	0.0	0.0	0.0		0.0	0.0
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Seabird and loon eggs	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	**3.6**	**0.0**	**0.0**	**3.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Clams	3.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Butter clam	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Freshwater clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clam	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crabs	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
King crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 2-4.–Page 5 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Marine invertebrates, continued												
Octopus	0.0	0.0	0.0	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	0.0	0.0	0.0	lb	0.0	0.0
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**85.5**	**80.0**	**80.0**	**25.5**	**27.3**	**1,010.9**	**12.2**	**5.2**	**520.1**		**6.3**	**24.7**
Berries	**76.4**	**72.7**	**69.1**	**21.8**	**23.6**	**953.9**	**11.5**	**4.9**	**238.5**		**2.9**	**25.5**
Blueberry	74.5	72.7	69.1	18.2	21.8	704.0	8.5	3.6	176.0	gal	2.1	24.6
Lowbush cranberry	40.0	40.0	38.2	3.6	7.3	162.4	2.0	0.8	40.6	gal	0.5	36.0
Highbush cranberry	7.3	5.5	5.5	0.0	1.8	30.9	0.4	0.2	7.7	gal	0.1	93.3
Crowberry	12.7	10.9	10.9	0.0	0.0	21.1	0.3	0.1	5.3	gal	0.1	74.0
Currants	1.8	1.8	1.8	0.0	0.0	1.5	0.0	0.0	0.4	gal	0.0	116.4
Cloudberry	5.5	5.5	5.5	0.0	0.0	2.6	0.0	0.0	0.7	gal	0.0	75.3
Raspberry	10.9	9.1	9.1	3.6	3.6	19.2	0.2	0.1	4.8	gal	0.1	77.6
Salmonberry	3.6	3.6	3.6	0.0	1.8	12.1	0.1	0.1	3.0	gal	0.0	81.6
Other wild berries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Plants, greens, and mushrooms	**12.7**	**12.7**	**12.7**	**1.8**	**3.6**	**57.0**	**0.7**	**0.3**	**56.4**		**0.7**	**87.5**
Eskimo potato	1.8	1.8	1.8	0.0	0.0	0.8	0.0	0.0	0.2	gal	0.0	116.4
Fiddlehead fern	1.8	1.8	1.8	0.0	1.8	7.5	0.1	0.0	7.5	gal	0.1	116.4
Hudson's Bay (Labrador) tea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Other wild greens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown mushrooms	7.3	7.3	7.3	1.8	1.8	46.8	0.6	0.2	46.8	gal	0.6	88.2
Fireweed	3.6	3.6	3.6	0.0	0.0	1.9	0.0	0.0	1.9	gal	0.0	95.6
Wood	**54.5**	**50.9**	**50.9**	**5.5**	**12.7**	**0.0**	**0.0**	**0.0**	**225.2**		**2.7**	**24.7**
Firewood	54.5	50.9	50.9	5.5	12.7	0.0	0.0	0.0	225.2	cord	2.7	24.7

Source ADF&G Division of Subsistence household surveys, 2013.

Note Resources where the percentage of households using is greater than the sum of the percentage received and percentage harvested indicate use of resources obtained during a previous year.

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.

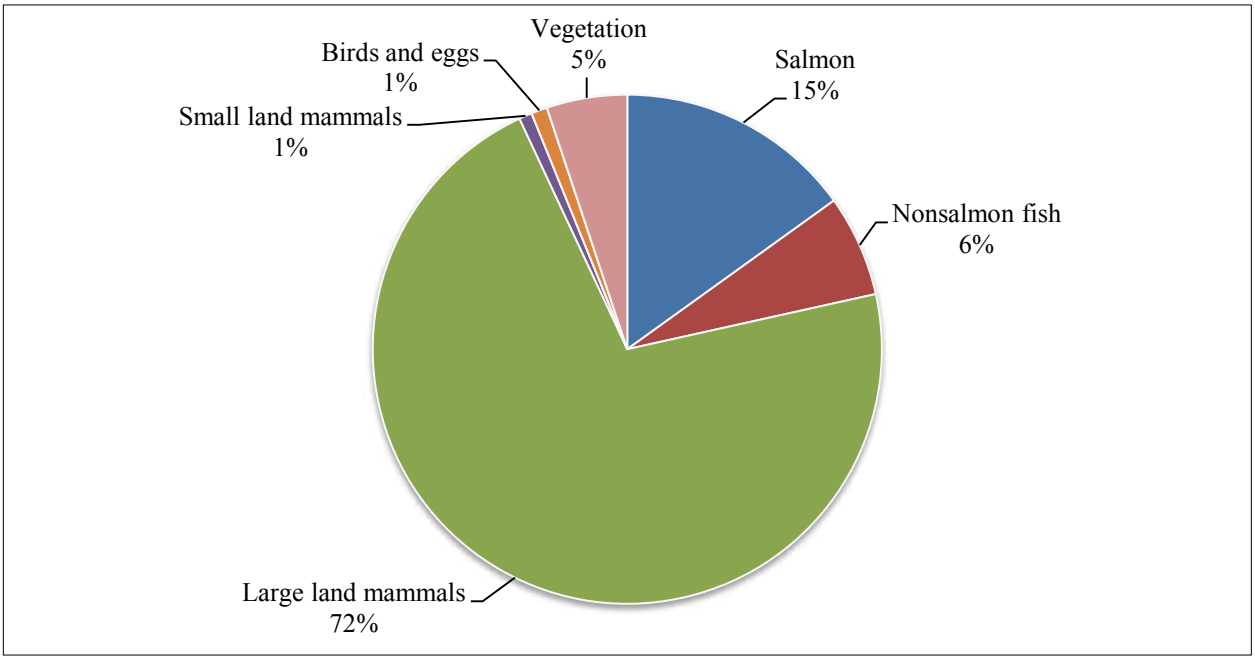

Figure 2-4. – Composition of wild resource harvest, by category, Cantwell, 2012.

(1 lb per capita) (Figure 2-4; Table 2-4). Small land mammal harvests contributed the least harvest weight by representing 1% of the total harvest, or 163 lb harvested (1 lb per capita) (Figure 2-4; Table 2-4).

SEASONAL ROUND

Based on the calendar year, winter and early new-year wild resource harvest activities are characterized by trapping small game and hunting upland game birds and the occasional caribou. In early spring, Cantwell residents ice fish for lake trout and Arctic grayling in the vicinity of the community. Cantwell residents tend to harvest bears in all seasons because the flavor of bear meat is not affected by the bear's consumption of salmon, like in many places in Alaska (i.e., fishy-tasting meat). In the summer—June and July—Cantwell residents try to harvest salmon in nearby rivers but most travel to the Copper River Basin (minimum of 220 miles) and Kenai Peninsula (minimum of 360 miles) to salmon fish. Households also fish for nonsalmon fish in the direct vicinity during the summer and may travel to obtain Pacific halibut. As summer wanes, hunting season begins and moose are generally harvested during this time. Blueberries and cranberries are popular and in the late summer are often picked during participation in other wild resource harvesting activities, like hunting. After the rut, caribou continue to be hunted into the winter and the annual cycle begins again.

Table 2-5. – Top 10 resources harvested and used, Cantwell, 2012.

Harvested			Used		
Rank	Resource	Pounds per capita	Rank	Resource	Percentage of households using
1.	Moose	51.9	1.	Blueberry	74.5%
2.	Caribou	13.0	2.	Moose	72.7%
3.	Sockeye salmon	10.7	3.	Sockeye salmon	61.8%
4.	Brown bear	5.8	4.	Arctic grayling	41.8%
5.	Blueberry	3.6	5.	Caribou	40.0%
6.	Arctic grayling	2.9	5.	Lowbush cranberry	40.0%
7.	Pacific halibut	2.6	7.	Pacific halibut	27.3%
8.	Coho salmon	1.5	8.	Ptarmigan	21.8%
9.	Black bear	1.3	9.	Coho salmon	16.4%
10.	Chum salmon	1.2	9.	Chinook salmon	16.4%

Source ADF&G Division of Subsistence household surveys, 2013.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Table 2-4 reports estimated wild resource harvests and uses by Cantwell residents in 2012 and includes information about sharing (e.g., receiving and giving) of wild resources. Most Cantwell households shared resources with 76% of the households receiving and 51% giving away wild resources. Land mammals, in particular, were widely shared, with 67% of households receiving and 36% giving land mammals away. Salmon were also frequently shared, with 47% of households receiving and 18% giving salmon to other households.

Table 2-5 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Cantwell households during the 2012 study year. Reflecting the widespread sharing of land mammals, moose and caribou were the resources harvested in the largest quantities, at 52 lb and 13 lb per capita, respectively, followed by sockeye salmon at 11 lb per capita. Moose was also widely used throughout the community (73% of households), but blueberry use dominated, with 75% of the Cantwell households using the resource despite reports that it was a bad year for berries. Although Arctic grayling were not shared extensively throughout the community, this species ranked sixth on the list of most harvested resources and was the fourth most used resource in Cantwell.

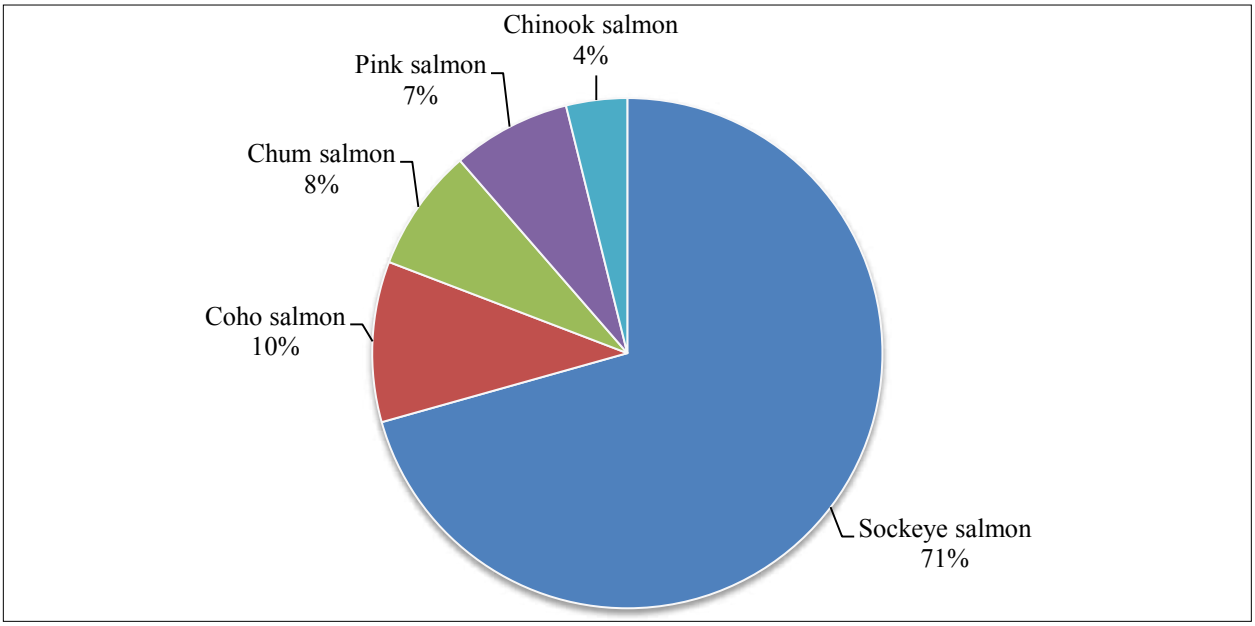

Figure 2-5. – Composition of salmon harvest, Cantwell, 2012.

SALMON

Cantwell is not well-suited geographically for salmon fishing because the surrounding rivers and drainages do not contain large quantities of spawning salmon. This is reflected by the relatively low total community harvest of salmon at 2,978 lb. Salmon that were harvested by community members—in order of harvest weight—were sockeye salmon, which made up 71% of the salmon harvest, followed by coho (10%), chum (8%), pink (7%), and Chinook salmon (4%) (Figure 2-5).

Regarding gear types used, sockeye salmon was the only salmon species caught using a subsistence method (fish wheel) but sockeye were also harvested with dip nets (personal use) and rod and reel (sport fishing). All other salmon were caught using a combination of dip nets and rod and reel (Table 2-6).

Some sockeye salmon were harvested south of Cantwell from the Chulitna River (Figure 2-6). Otherwise, sockeye were harvested on the Chitina and Copper rivers and from the Kasilof and Kenai rivers on the Kenai Peninsula. Coho salmon, on the other hand, were obtained mostly in the vicinity of Talkeetna and Trapper Creek on the Chulitna River. Some pink salmon were harvested south of Cantwell on the Chulitna River and Chinook salmon were harvested near Ninilchik on the Kenai Peninsula.

Table 2-6. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Cantwell, 2012.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Other method		Subsistence gear, any method		Dip net[a]		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%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**13.5%**	**13.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**13.5%**	**13.5%**	**37.8%**	**38.2%**	**48.8%**	**48.3%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**13.5%**	**13.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**13.5%**	**13.5%**	**37.8%**	**38.2%**	**48.8%**	**48.3%**	**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%	11.5%	16.1%	5.6%	7.8%
	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%	5.6%	7.8%	5.6%	7.8%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	5.1%	15.7%	17.0%	9.4%	10.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	19.0%	81.0%	81.0%	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%	1.8%	1.9%	7.6%	8.2%	9.4%	10.2%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.3%	3.2%	7.0%	1.8%	3.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	12.5%	87.5%	87.5%	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%	0.2%	0.5%	1.6%	3.4%	1.8%	3.9%
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%	25.8%	15.6%	12.6%	7.5%
	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%	12.6%	7.5%	12.6%	7.5%
Sockeye salmon	Gear type	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	94.6%	93.7%	43.8%	44.2%	70.6%	70.6%
	Resource	0.0%	0.0%	19.1%	19.1%	0.0%	0.0%	0.0%	0.0%	19.1%	19.1%	50.6%	50.6%	30.3%	30.3%	100.0%	100.0%
	Total	0.0%	0.0%	13.5%	13.5%	0.0%	0.0%	0.0%	0.0%	13.5%	13.5%	35.7%	35.8%	21.3%	21.4%	70.6%	70.6%
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, 2013.

a. Harvests using dip net gear are typically included with subsistence harvests. However, in this case dip nets are primarily used to harvest fish under personal use regulations and are therefore placed in a separate category.

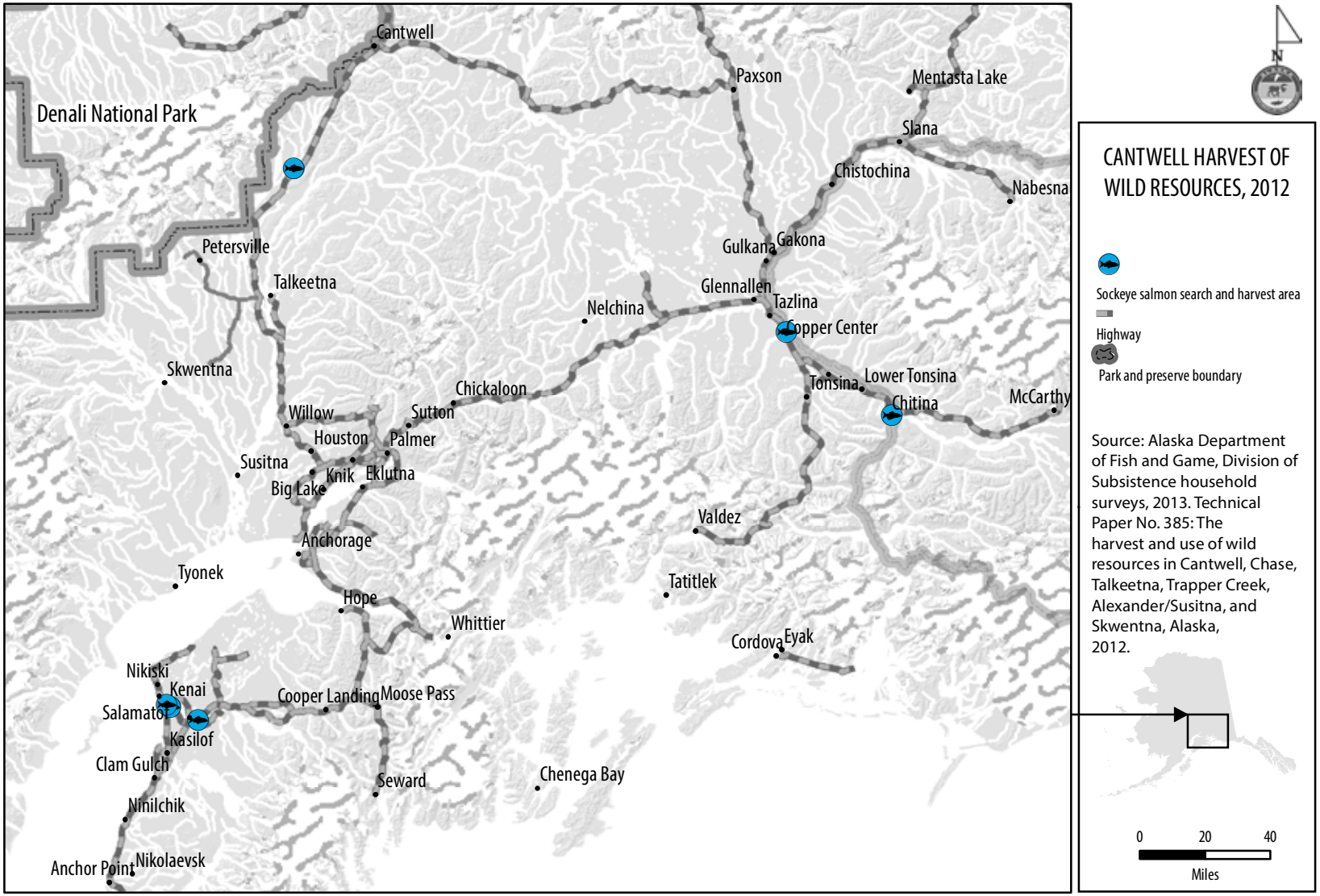

Figure 2-6. – Sockeye salmon search and harvest areas, Cantwell, 2012.

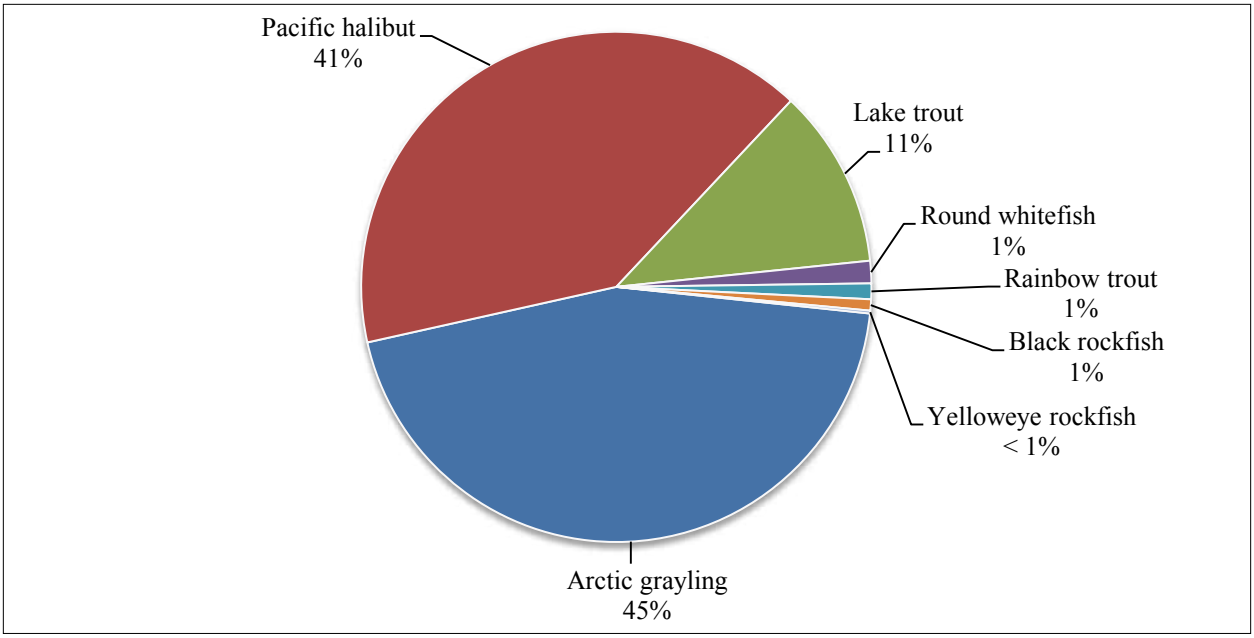

Figure 2-7. – Composition of nonsalmon fish harvest, Cantwell, 2012.

NONSALMON FISH

The composition of the nonsalmon harvest in Cantwell is characterized by Arctic grayling (45%), Pacific halibut (40%), and lake trout (11%). In much smaller quantities—at 1% or less each—round whitefish, rainbow trout, black rockfish, and yelloweye rockfish were also harvested (Figure 2-7). The total nonsalmon fish harvest was 1,275 lb, which is equal to a per capita harvest of 7 lb (Table 2-4). All nonsalmon fish were harvested with rod and reel during the open water season, although lake trout and Arctic grayling were additionally pursued through ice fishing (Table 2-7). Some community members received halibut, but, in general, nonsalmon fish were not widely exchanged.

In 2012, Cantwell residents were fishing for Arctic grayling on the Jack River (Figure 2-8) and lake trout were harvested from the Middle Fork Chulitna River and at Butte Lake. Halibut were harvested while fishing on charters operating from Homer and Seward.

LARGE LAND MAMMALS

Second only to vegetation, large land mammals were used by 82% of Cantwell households. The harvest was composed of moose (72%), caribou (18%), brown bears (8%), and black bears (2%) (Figure 2-9). The total harvest of large land mammals was 14,131 lb and the harvest for moose and caribou was 10,186 lb and 2,550 lb, respectively (Table 2-4). At the individual level, however, virtually the same number of moose (23) and caribou (20) were harvested. Regarding bear harvests, brown bears were harvested by a higher number of households (7%) than black bears (4%), but black bears were used by a slightly higher proportion of households (9%) than brown bears (7%).

Table 2-7. – Estimated percentages of fish other than salmon harvested by gear type, resource, and total nonsalmon fish harvest, Cantwell, 2012.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel[a]		Ice fishing		Any method	
				Gillnet or seine		Other		Subsistence gear, any method							
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**96.1%**	**92.8%**	**3.9%**	**7.2%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**96.1%**	**92.8%**	**4.3%**	**7.2%**	**100.0%**	**100.0%**
Smelt	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%
	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%
	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%
Eulachon (hooligan, candlefish)	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%
	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%
	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%
Pacific (gray) cod	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%
	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%
	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%
Pacific tomcod	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%
	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%
	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%
Unknown cod	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%
	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%
	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%
Lingcod	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%
	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%
	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%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	37.1%	43.2%	0.0%	0.0%	35.7%	40.1%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	35.7%	40.1%	0.0%	0.0%	35.7%	40.1%
Rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.9%	0.0%	0.0%	0.5%	0.9%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.9%	0.0%	0.0%	0.5%	0.9%
Black rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.8%	0.0%	0.0%	0.4%	0.7%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.7%	0.0%	0.0%	0.4%	0.7%
Yelloweye rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	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%	0.0%	0.0%	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%	0.0%	0.0%	0.1%	0.2%
Unknown rockfishes	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%
	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%
	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%
Sablefish (black cod)	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%
	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%
	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%
Burbot	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%
	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%
	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%

-continued-

Table 2-7.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or Seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Dolly Varden	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%
	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%
	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%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	5.3%	73.0%	88.5%	5.0%	11.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	43.8%	43.8%	56.3%	56.3%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	4.9%	3.2%	6.3%	5.0%	11.3%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.6%	47.0%	27.0%	11.5%	56.4%	44.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.2%	98.2%	1.8%	1.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	55.4%	43.6%	1.2%	0.8%	56.4%	44.4%
Northern pike	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%
	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%
	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%
Cutthroat trout	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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.1%	0.0%	0.0%	0.6%	1.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.0%	0.0%	0.0%	0.6%	1.0%
Unknown trout	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%
	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%
	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%
Humpback whitefish	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%
	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%
	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%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	1.5%	0.0%	0.0%	1.3%	1.4%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	1.4%	0.0%	0.0%	1.3%	1.4%
Unknown whitefishes	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%
	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%
	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%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Rod and reel gear used during open water season.

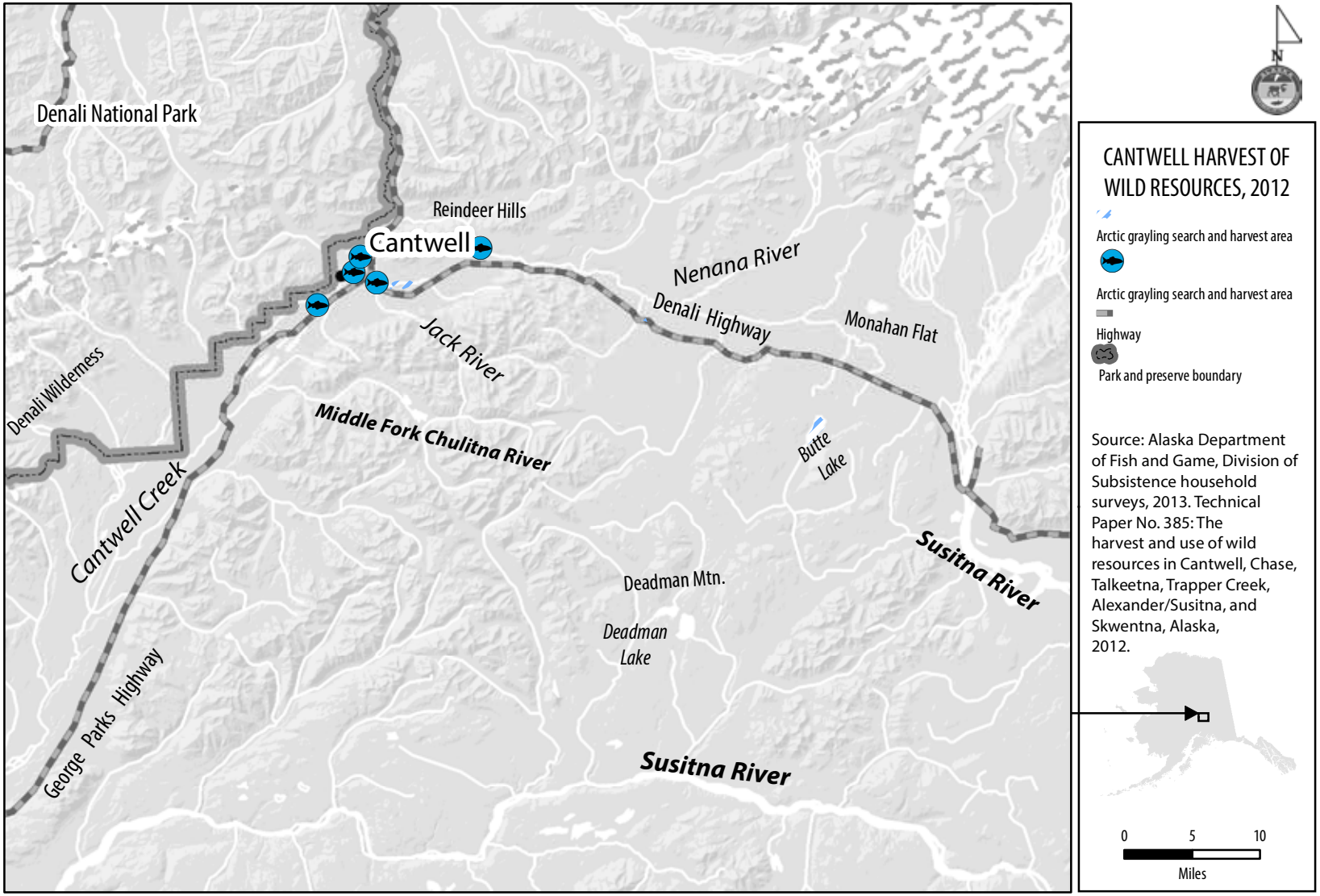

Figure 2-8. – Arctic grayling search and harvest areas, Cantwell, 2012.

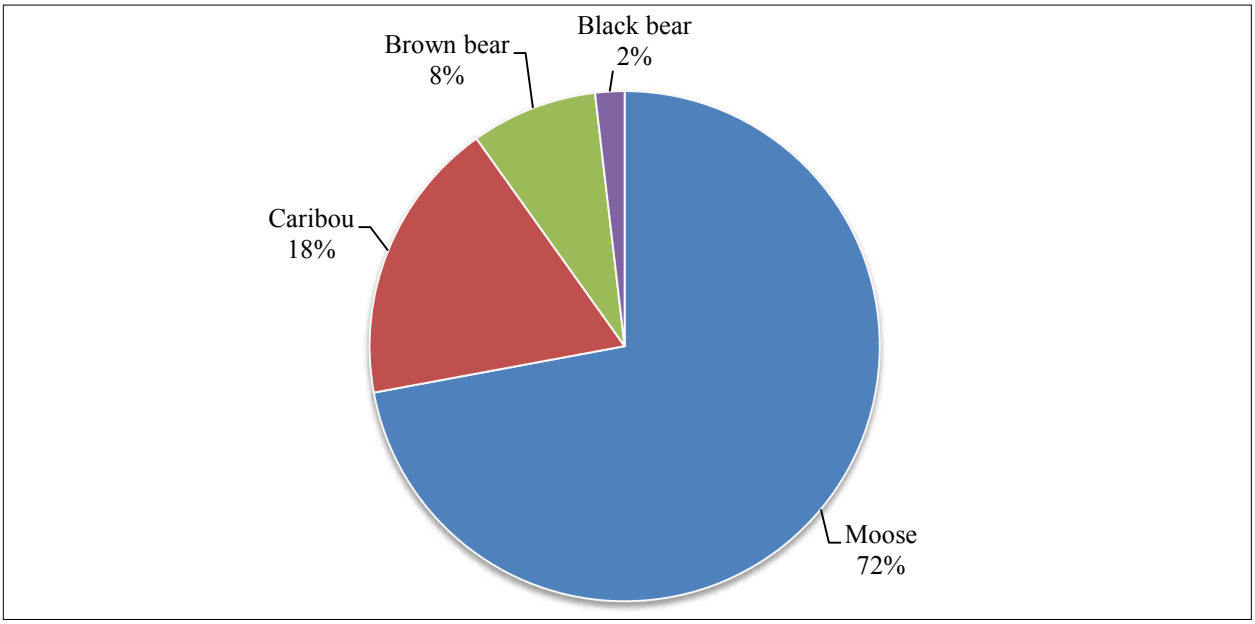

Figure 2-9. – Composition of large land mammals harvest, Cantwell, 2012.

Only male moose and caribou were harvested. Because of regulations, moose hunting occurred within a restricted time frame, during August and September, compared to caribou, which were harvested between August and February (Table 2-8). Black bear harvests happened between July and October and brown bears were harvested between April and August.

Large land mammals were widely shared. More than half of the households reported receiving moose (51%) and 31% reported giving it away (Table 2-4). Caribou likewise were shared within the community, with 26% reportedly receiving and 15% giving away caribou. While Dall sheep were not harvested by Cantwell residents, 7% of households received and used it in 2012.

Within Denali National Park, Cantwell hunters searched for and harvested moose on the southeast boundary just outside of the designated Denali Wilderness (Figure 2-10). This area, where subsistence hunting is permitted under the federal program, is referred to by local residents as the "soft" part of the park (compared to land inside the Denali Wilderness boundary where federal subsistence hunting of moose, along with all other hunting, is prohibited). Moose search areas encompassed locations south of Cantwell on the Middle Fork Chulitna River and east along the Denali Highway. Caribou, on the other hand, were sought primarily in the vicinity of Cantwell, along the Denali Highway and Monahan Flat, and farther to the east on the Susitna River and Butte Creek (Figure 2-11). Bears were hunted near Cantwell and north of Deadman Mountain.

SMALL LAND MAMMALS/FURBEARERS

The harvest of edible small land mammals in Cantwell consisted of the following species: beavers (69%), lynx (15%), snowshoe hares (9%), and muskrats (7%) (Figure 2-12). The total edible weight harvested of small mammals was 163 lb and the per capita harvest was less than 1 lb (Table 2-4).

Table 2-8. – Estimated harvests of large land mammals by month and caribou and moose harvests by sex, Cantwell, 2012.

			Caribou					Moose				
Harvest month	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Dall sheep	Wolf
January	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	1.5	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	1.5
April	0.0	1.5	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	3.0	3.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0
September	1.5	0.0	9.1	0.0	0.0	0.0	0.0	18.1	0.0	0.0	0.0	0.0
October	1.5	0.0	3.0	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	1.5	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	**4.5**	**7.5**	**19.6**	**0.0**	**0.0**	**0.0**	**0.0**	**22.6**	**0.0**	**0.0**	**0.0**	**1.5**

Source ADF&G Division of Subsistence household surveys, 2013.

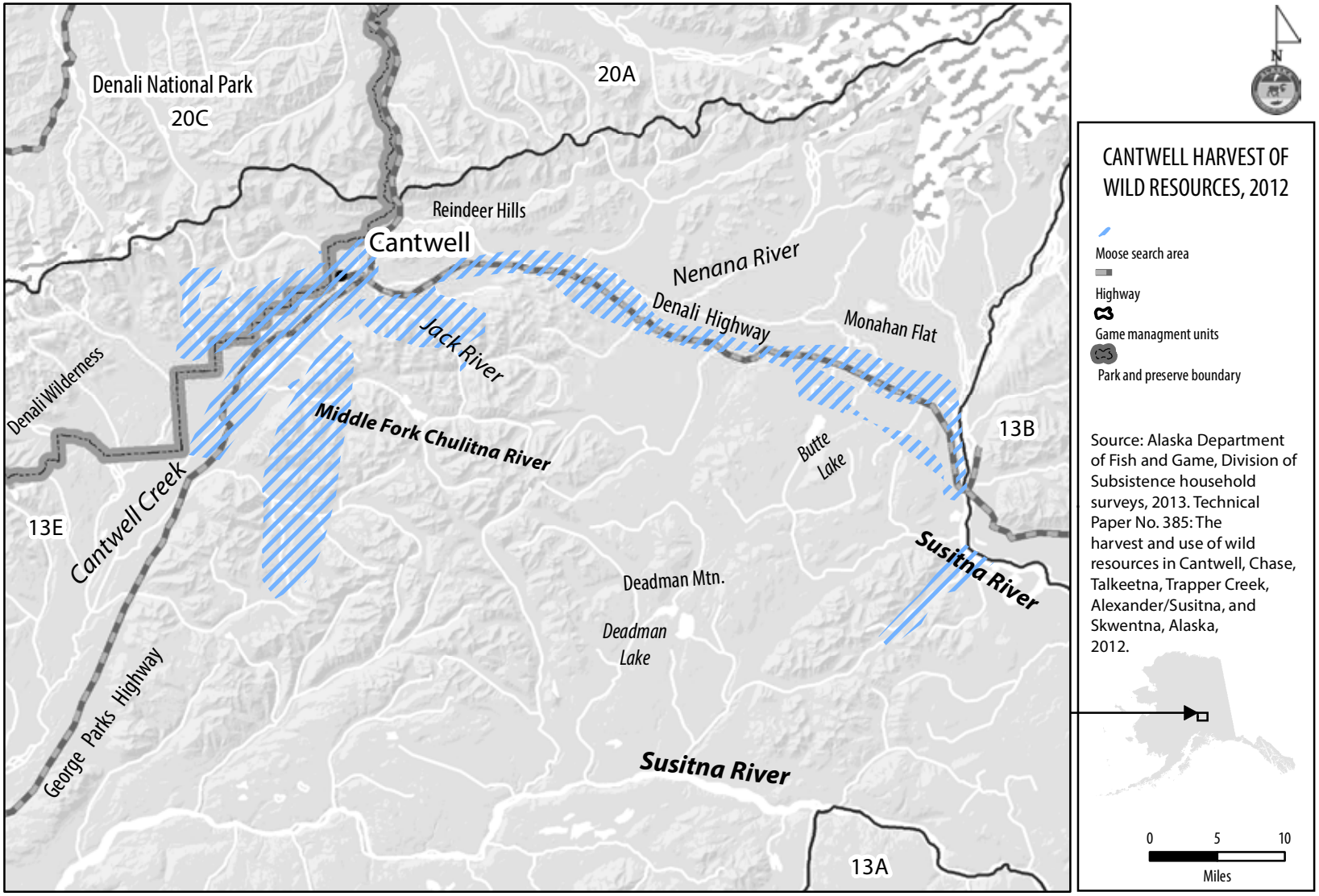

Figure 2-10. – Moose search areas, Cantwell, 2012.

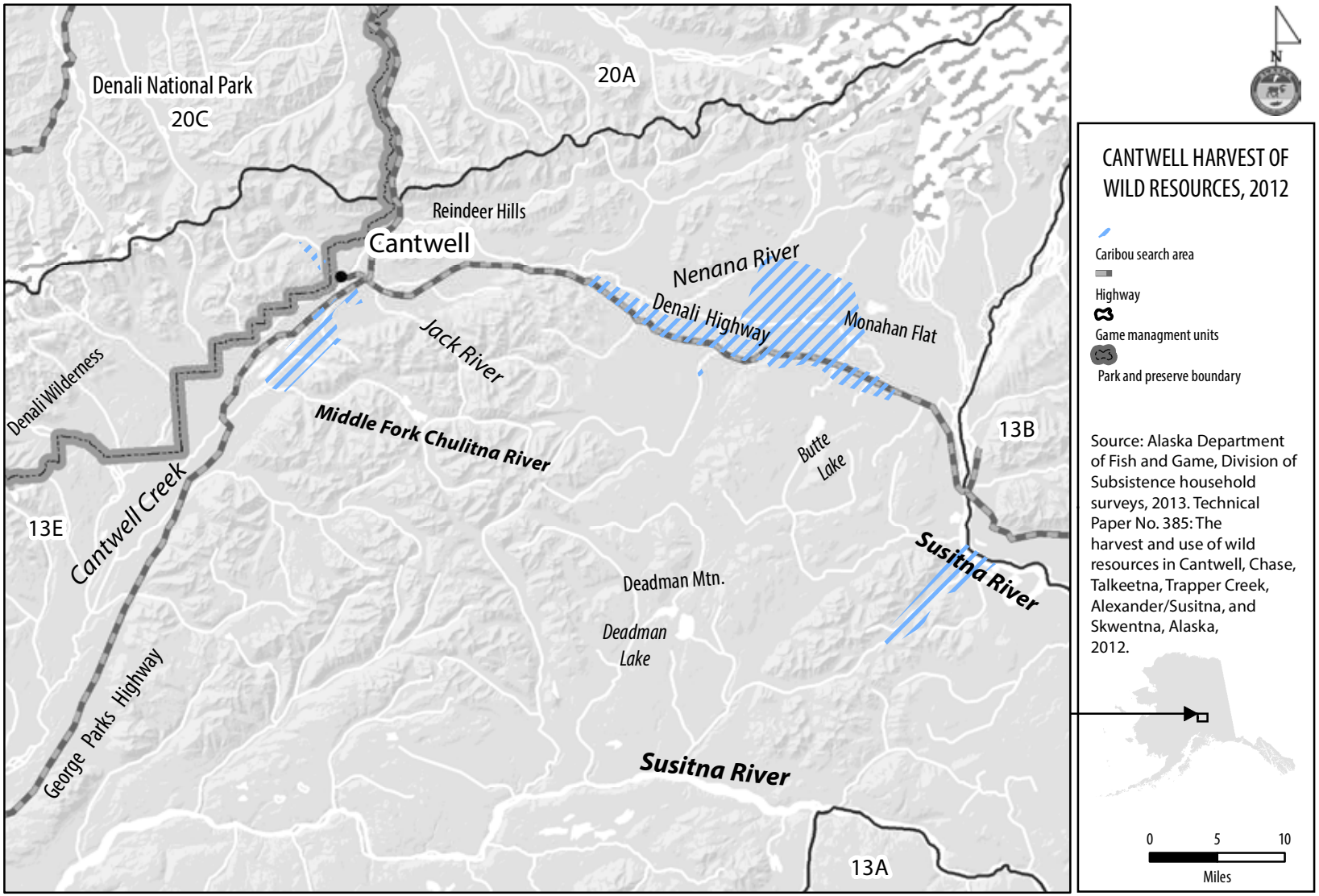

Figure 2-11. – Caribou search areas, Cantwell, 2012.

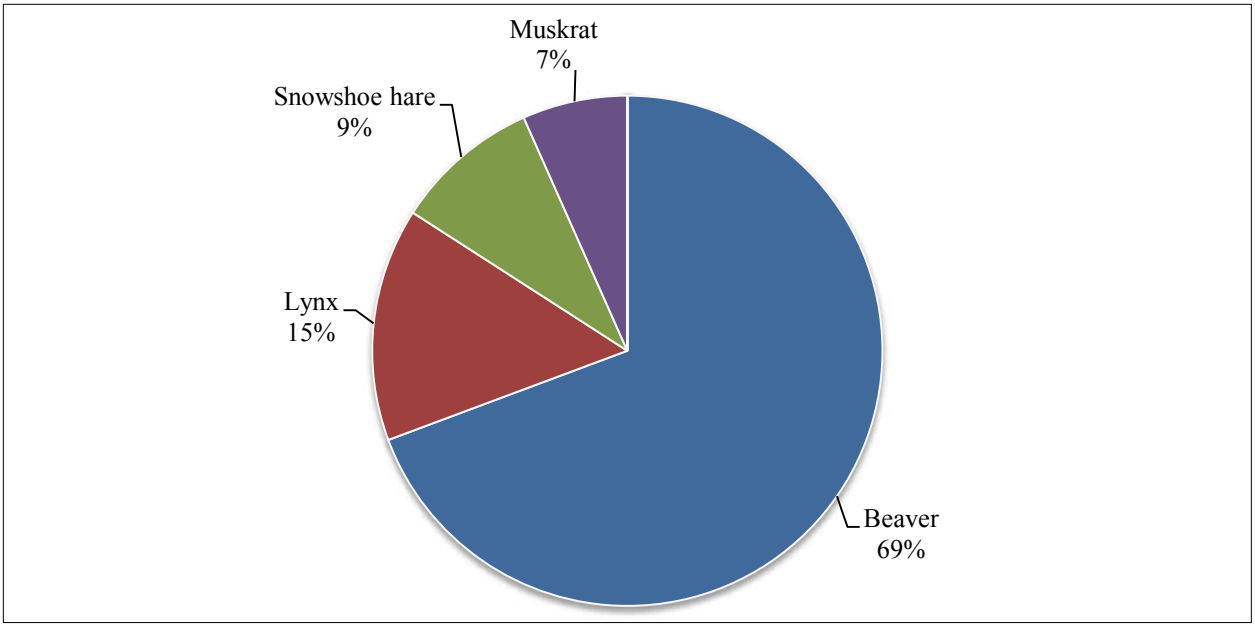

Figure 2-12. – Composition of small land mammals harvest, Cantwell, 2012.

All small land mammals were obtained between September and April (Table 2-9). Small mammals harvested only for their furs, by individual, include coyotes (5), red foxes (11), river (land) otters (6), martens (9), weasels (2), wolves (2), and wolverines (2) (Figure 2-13). All small land mammals were harvested in the vicinity of Cantwell and from the Denali Highway (see map in Appendix D).

BIRDS AND EGGS

The Cantwell bird harvest was mostly composed of upland game birds (49%) and other migratory birds (34%). To a lesser extent, ducks (13%) and geese (4%) were also harvested (Figure 2-14). The total harvest of birds equaled 202 lb, which is equal to 1 lb per capita (Table 2-4). Upland game birds harvested were mainly spruce grouse (50 lb) and ptarmigan (41 lb). The use of upland game birds was relatively high (29%) when compared to overall bird use (31%). The harvest of several tundra swans (6 birds) contributed to the high amount of "other" migratory birds harvested. All waterfowl were harvested in the spring (Table 2-10). Upland game birds were harvested in the fall and winter.

The harvests of migratory waterfowl occurred in the vicinity of Cantwell and along the Parks Highway. Upland game birds were harvested in areas surrounding Cantwell and a strip parallel to the Denali Highway as incidental to other hunting activities (Figure 2-15).

Table 2-9. – Estimated harvests of small land mammals by month, Cantwell, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
Beaver	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	4.5	24.1	0.0	0.0	0.0	**33.2**
Coyote	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	**4.5**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	**1.5**
Red fox–red phase	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	**9.1**
Snowshoe hare	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	3.0	**7.5**
River (land) otter	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	**6.0**
Lynx	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	3.0	0.0	**10.6**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	**9.1**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Muskrat	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**6.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	**1.5**
Wolf	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**1.5**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	**1.5**
Total	**13.6**	**1.5**	**1.5**	**13.6**	**0.0**	**0.0**	**0.0**	**0.0**	**6.0**	**24.1**	**9.1**	**19.6**	**3.0**	**92.1**

Source ADF&G Division of Subsistence household surveys, 2013.

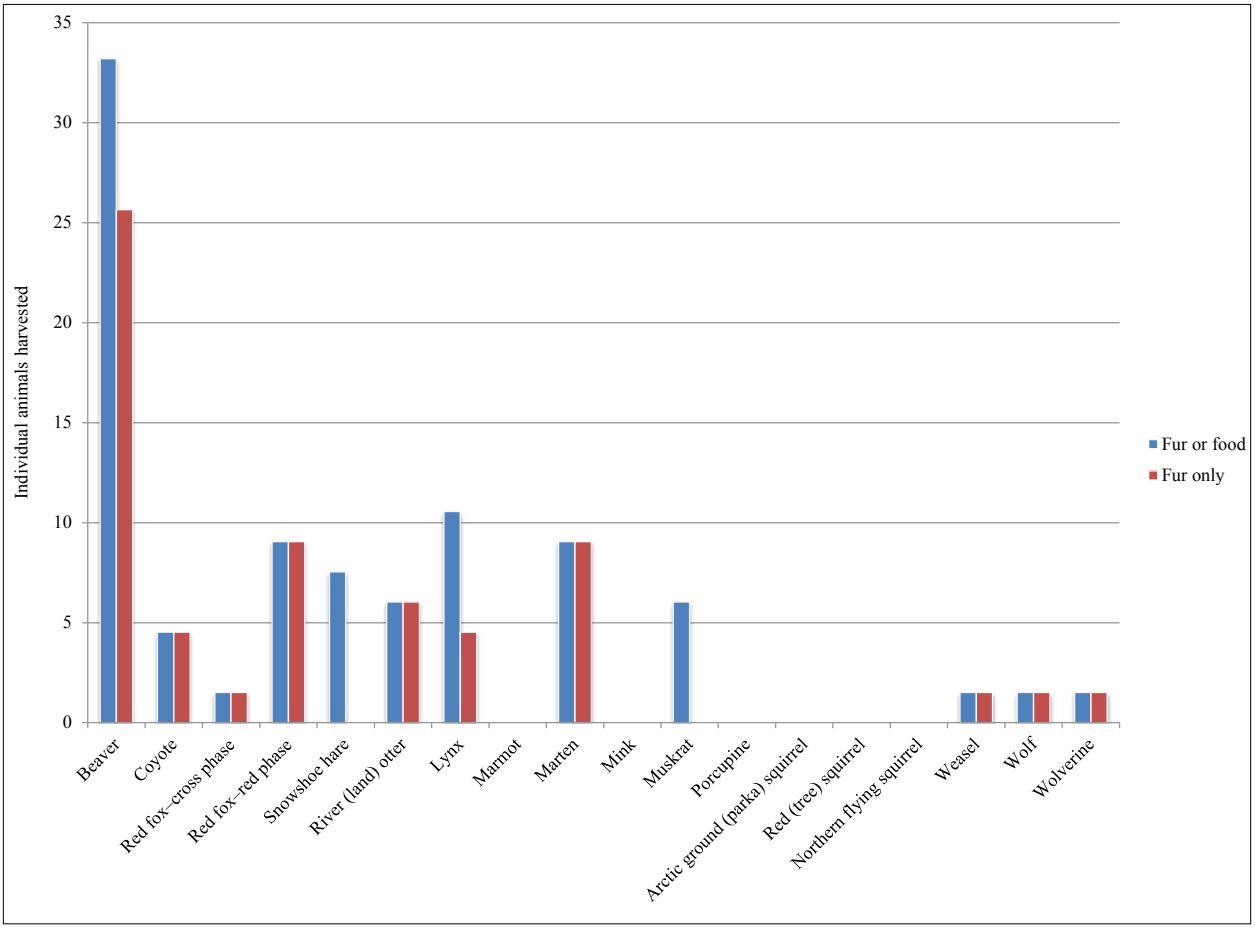

Figure 2-13. – Estimated harvests of small land mammals for food and fur only, Cantwell, 2012.

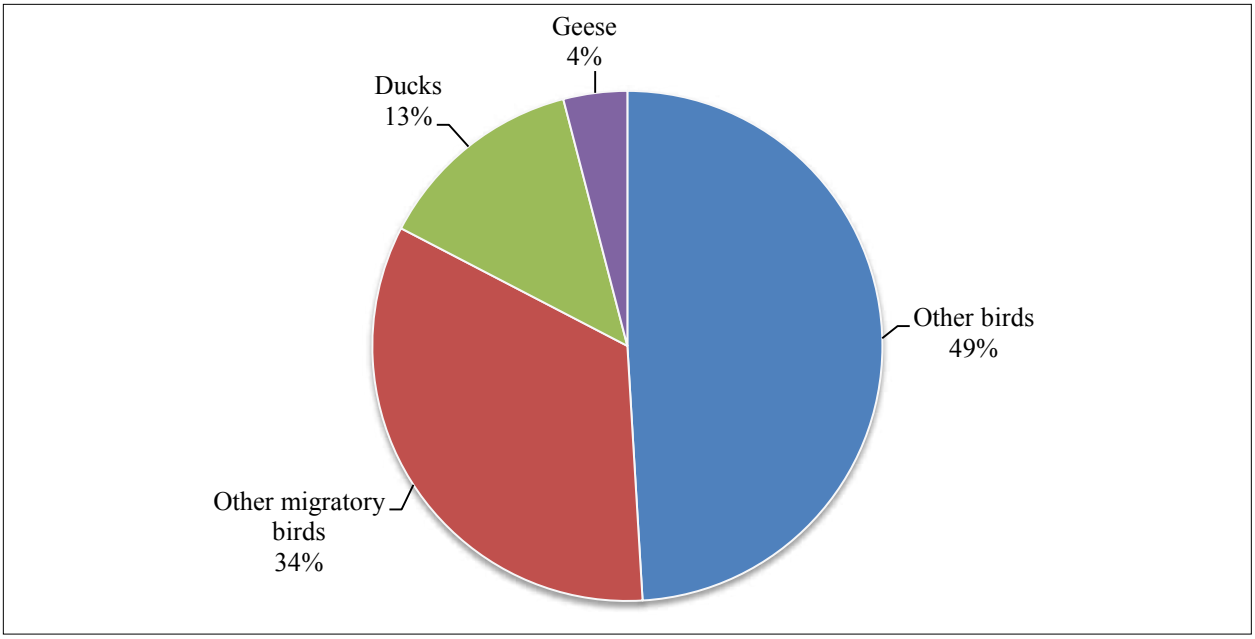

Figure 2-14. – Composition of bird harvest, Cantwell, 2012.

Table 2-10. – Estimated bird and bird egg harvest by season, Cantwell, 2012.

	Estimated harvest by season					
Resource	Winter	Summer	Spring	Fall	Season unknown	**Total**
Canvasback	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**
Goldeneye	0.0	0.0	4.5	0.0	0.0	**4.5**
Mallard	0.0	0.0	10.6	0.0	0.0	**10.6**
Northern pintail	0.0	0.0	1.5	0.0	0.0	**1.5**
Black scoter	0.0	0.0	0.0	0.0	0.0	**0.0**
Green-winged teal	0.0	0.0	6.0	0.0	0.0	**6.0**
Unknown ducks	0.0	0.0	12.1	0.0	0.0	**12.1**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Canada goose	0.0	0.0	3.0	0.0	0.0	**3.0**
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	1.5	0.0	0.0	**1.5**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Tundra (whistling) swan	0.0	0.0	6.0	0.0	0.0	**6.0**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Spruce grouse	0.0	0.0	0.0	70.9	0.0	**70.9**
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ruffed grouse	0.0	0.0	0.0	12.1	0.0	**12.1**
Unknown grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigan	36.2	0.0	0.0	42.3	3.0	**81.5**
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown eggs	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

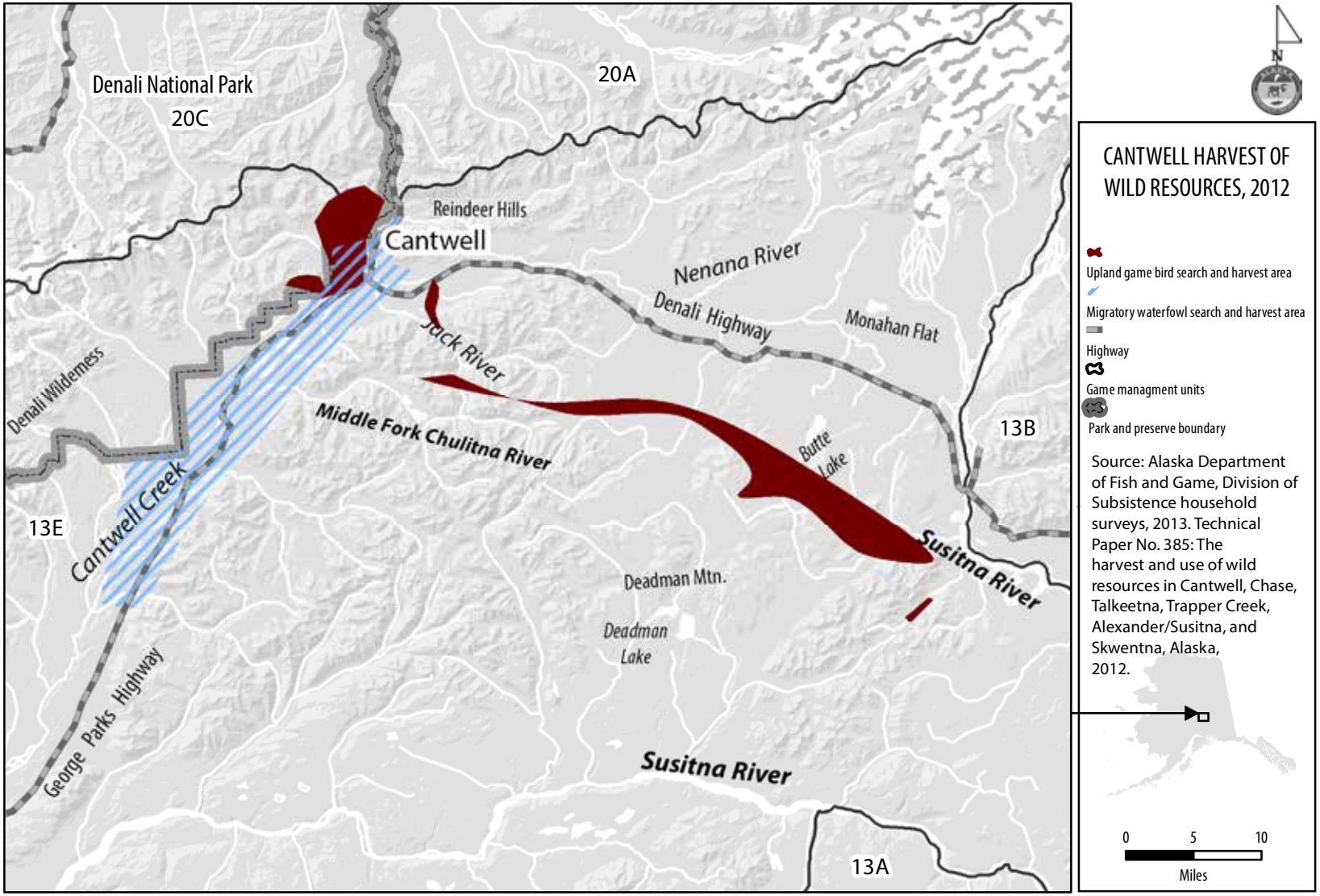

Figure 2-15. – Upland game birds and migratory waterfowl search and harvest areas, Cantwell, 2012.

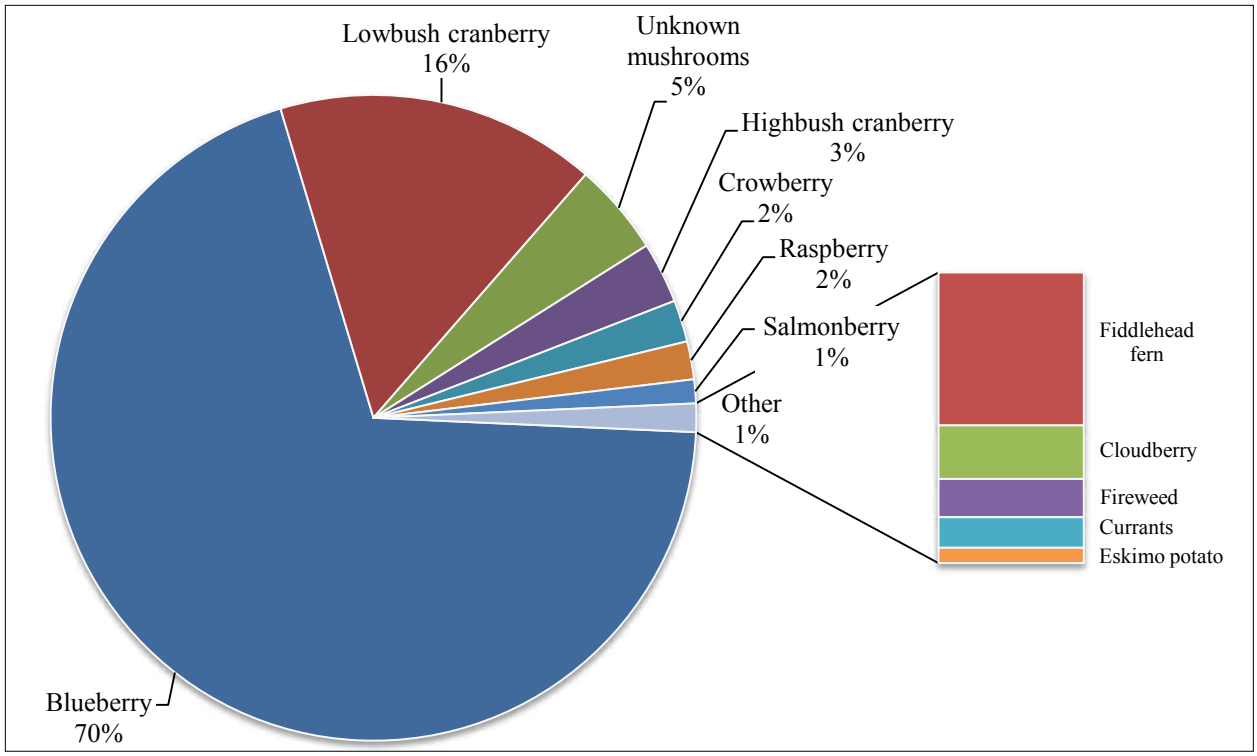

Figure 2-16. – Composition of vegetation harvest, Cantwell, 2012.

MARINE INVERTEBRATES

Marine invertebrates, which are not available locally, were used by 4% of the community households (Table 2-4). Specifically, in 2012 residents were using and receiving butter clams (2%), razor clams, and unknown clams (2%).

VEGETATION

While wild plants only made up 5% of the total composition of wild resources, 86% of households reported using wild resources of this category (Figure 2-4; Table 2-4). The total harvest of vegetation amounted to 1,011 lb. The composition of the vegetation harvest was characterized by blueberries (70%), lowbush cranberries (16%), mushrooms (5%), and highbush cranberries (3%). The following vegetation contributed 2% or less, per species, to the vegetation composition: crowberries, raspberries, salmonberries, fiddlehead ferns, cloudberries, fireweed, currants, and Eskimo potatoes (Figure 2-16). The harvest of blueberries was equal to 4 lb per capita compared to all other vegetation resources harvested at less than 1 lb per capita (Table 2-4). Vegetation was not a widely shared resource, although some households did give (22%) and receive (18%) blueberries. Firewood was used by more than half of the households (55%) and the total harvest was documented at 225 cords of wood.

Berries were harvested along the Parks Highway, in the vicinity of Cantwell, and in Denali National

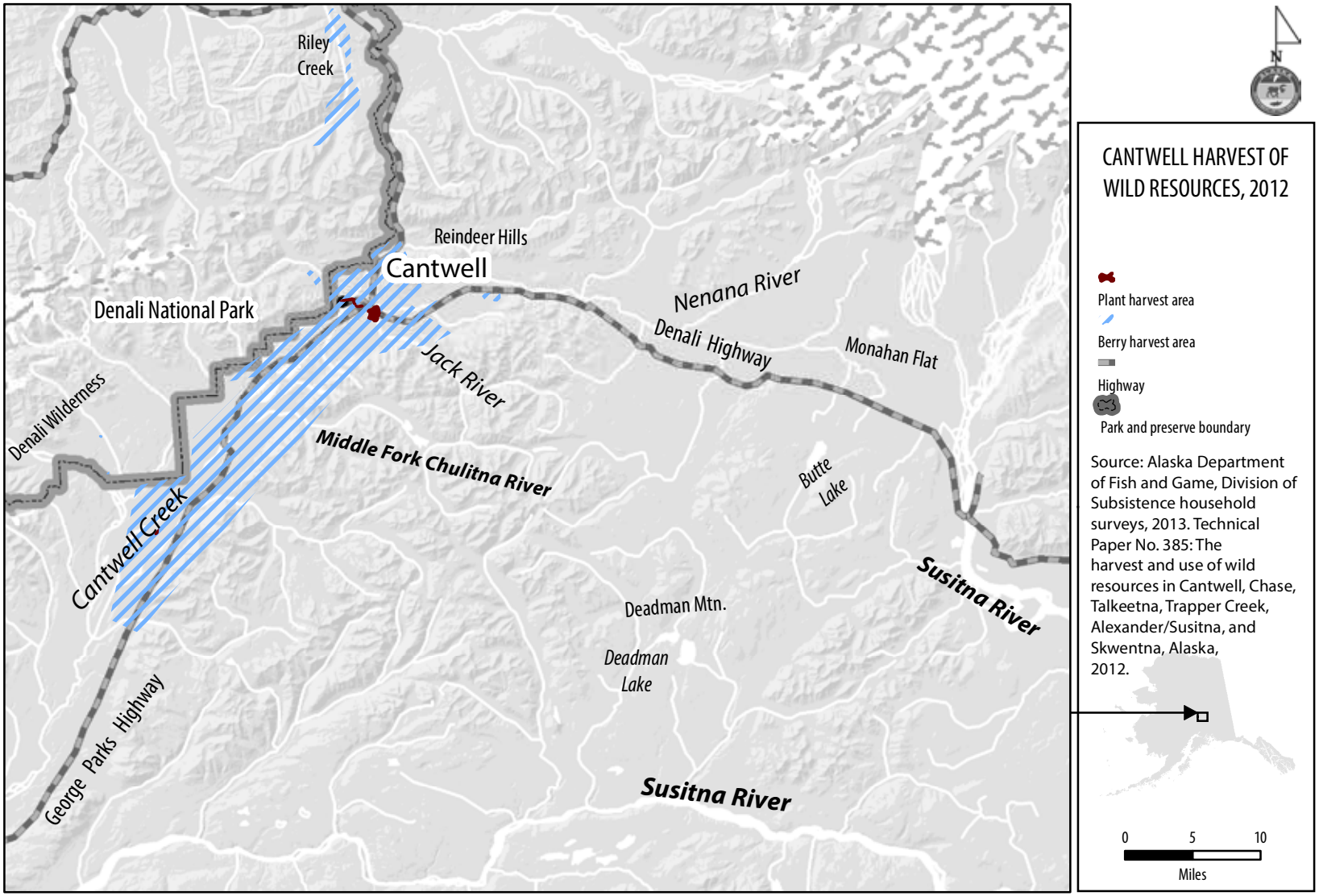

Figure 2-17. – Berries and plants, greens, and mushrooms search and harvest areas, Cantwell, 2012.

Table 2-11. – Changes in household uses of resources compared to recent years, Cantwell, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	55	54	45	83.3%	38	70.4%	21	38.9%
All resources	55	54	26	48.1%	22	40.7%	6	11.1%
Salmon	55	42	15	35.7%	15	35.7%	12	28.6%
Nonsalmon fish	55	38	16	42.1%	18	47.4%	4	10.5%
Large land mammals	55	45	19	42.2%	22	48.9%	4	8.9%
Small land mammals	55	18	12	66.7%	3	16.7%	3	16.7%
Marine mammals	55	1	0	0.0%	1	100.0%	0	0.0%
Migratory birds	55	7	3	42.9%	3	42.9%	1	14.3%
Other birds	55	26	15	57.7%	11	42.3%	0	0.0%
Bird eggs	55	0	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	55	3	1	33.3%	2	66.7%	0	0.0%
Vegetation	55	49	25	51.0%	19	38.8%	5	10.2%

Source ADF&G Division of Subsistence household surveys, 2013.

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

b. Percentages based on valid responses only.

c. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

Park on Riley Creek (Figure 2-17). Other plants were harvested in Cantwell and a few miles down the Denali Highway. Most firewood was obtained around Cantwell and off of the Parks Highway.

COMPARING HARVESTS AND USES IN 2012 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2012 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 2-11 reports the number of valid responses for each category, the number of households that did not respond, and the number of households that did not use a resource category or all resources combined. In Table 2-11, 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 2-18 depicts responses to the “less, same, more” assessment question. Households that said they did not ordinarily “use” something are not included within the results. This results in fewer responses for less commonly used categories such as bird eggs or marine mammals, and manifests in the chart as a very short bar compared to categories such as salmon or plants, greens, and mushrooms which are ordinarily used by most households. Some households did not respond to the question.

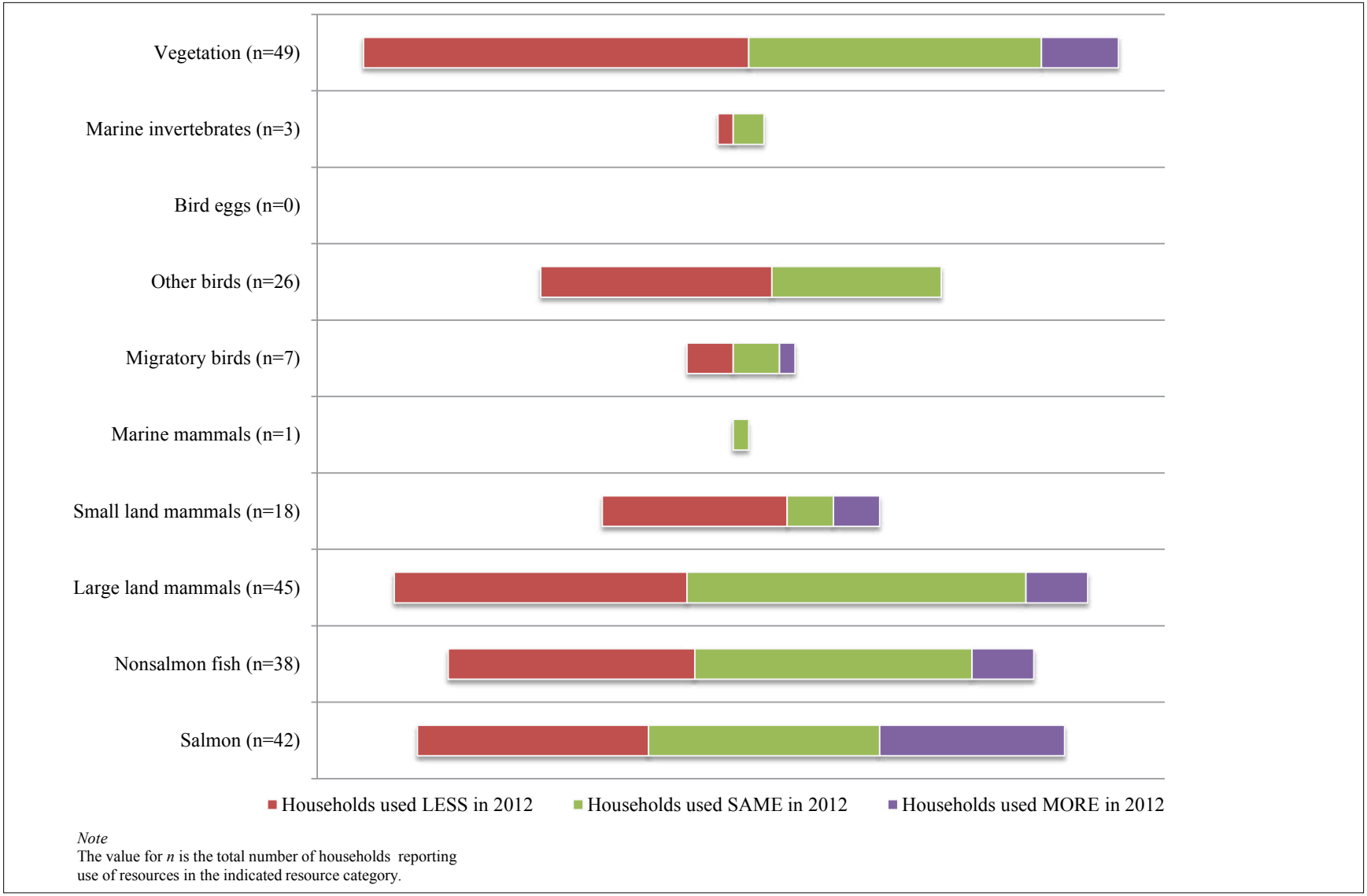

Figure 2-18. – Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Cantwell, 2012.

Taking all the resource categories into consideration, most households, 48%, said they used less wild resources in general over the previous 12 months compared to recent years (Table 2-11). A smaller number, 41% of all households, said they used about the same amount, and only 11% said they used more. When households were asked about their harvest of resources in general (i.e., "all resources"), the main reason respondents said for why they used less was that resources were less available (Table 2-12). Conversely, the reason given for more use of resources generally was increased effort (Table 2-13).

Regarding reasons given for less use of individual resources, vegetation concerned respondents and households reported less use of vegetation because of the weather/environment and said that it was less available (Table 2-12). In contrast, the resource that had the highest amount of households indicating they had obtained more than in recent years was salmon, of which the top reason was increased effort followed by receiving more, needing more, and having more success (Figure 2-18; Table 2-13).

In terms of how the lack of abundance or availability of resources impacted households, not getting enough large game seemed to have the greatest impact. Table 2-14 shows the responses households gave regarding the impact of not getting enough resources in terms of the impact being a minor impact, major impact, or severe impact. Of the 54 valid responses to this question, 17 households said they did not get enough resources. Of these, 11 households noted a minor impact and 6 said it had a major impact, with no households noting a severe impact to their food security for all resources overall. Of the resource categories, the most responses given regarding not getting enough resources were for the categories of salmon (14 responses) and vegetation (17 responses). Of these responses 2 respondents said that the impact of not getting enough salmon was major, and 3 said that the impact of not getting enough vegetation was major with 2 respondents saying it was severe. The other category with several responses (11) and more responses relating major impacts was large land mammals. Of the responses for large land mammals, 7 respondents said the impact was minor, 3 said it was major, and 1 said the impact was severe (Table 2-14).

HARVEST DATA

Changes in the harvest of resources by Cantwell residents can also be discerned through comparisons with findings from other study years. Comprehensive harvest surveys were conducted in Cantwell in 1983 and 2000 (Stratton and Georgette 1984; Simeone 2002). These studies represent harvests that straddle calendar years 1982/1983 and 1999/2000, respectively.

In Cantwell, the per capita harvest fluctuated slightly during the past 30 years with a high of 135 lb in 1999/2000 and a low in 2012 of 101 lb (Figure 2-19). The Cantwell low is slightly higher than the average per capita estimate for the harvest of fish and wildlife resources by all Alaska residents, which is 73 lb (Fall and Wolfe 2012). Cantwell historical harvests are consistent with

Table 2-12. – Reasons for less household uses of resources compared to recent years, Cantwell, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	54	45	4	8.9%	22	48.9%	1	2.2%	0	0.0%	6	13.3%	9	20.0%	5	11.1%	13	28.9%
All resources	54	25	3	12.0%	13	52.0%	1	4.0%	0	0.0%	1	4.0%	0	0.0%	1	4.0%	4	16.0%
Salmon	42	14	2	14.3%	5	35.7%	0	0.0%	0	0.0%	2	14.3%	2	14.3%	0	0.0%	0	0.0%
Nonsalmon fish	38	16	3	18.8%	2	12.5%	0	0.0%	0	0.0%	2	12.5%	3	18.8%	1	6.3%	2	12.5%
Large land mammals	45	18	2	11.1%	0	0.0%	1	5.6%	0	0.0%	3	16.7%	1	5.6%	3	16.7%	0	0.0%
Small land mammals	18	12	1	8.3%	4	33.3%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	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 birds	7	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%
Other birds	26	15	0	0.0%	8	53.3%	0	0.0%	0	0.0%	0	0.0%	2	13.3%	0	0.0%	2	13.3%
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	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%
Vegetation	49	24	1	4.2%	16	66.7%	0	0.0%	0	0.0%	0	0.0%	3	12.5%	0	0.0%	10	41.7%

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Table 2-12.–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	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	54	45	2	4.4%	16	35.6%	3	6.7%	1	2.2%	5	11.1%	6	13.3%	7	15.6%	0	0.0%
All resources	54	25	1	4.0%	9	36.0%	0	0.0%	0	0.0%	1	4.0%	2	8.0%	2	8.0%	0	0.0%
Salmon	42	14	0	0.0%	3	21.4%	2	14.3%	0	0.0%	1	7.1%	1	7.1%	2	14.3%	0	0.0%
Nonsalmon fish	38	16	1	6.3%	5	31.3%	0	0.0%	1	6.3%	0	0.0%	1	6.3%	2	12.5%	0	0.0%
Large land mammals	45	18	1	5.6%	4	22.2%	1	5.6%	0	0.0%	1	5.6%	4	22.2%	2	11.1%	0	0.0%
Small land mammals	18	12	0	0.0%	3	25.0%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	2	16.7%	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 birds	7	3	0	0.0%	1	33.3%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
Other birds	26	15	0	0.0%	1	6.7%	0	0.0%	0	0.0%	1	6.7%	1	6.7%	2	13.3%	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	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%
Vegetation	49	24	0	0.0%	3	12.5%	0	0.0%	0	0.0%	0	0.0%	1	4.2%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting less use as a base.

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

b. The number of households that gave a valid response in at least one of the categories. Households are counted only once even though they may give more than one valid response.

Table 2-13. – Reasons for more household uses of resources compared to recent years, Cantwell, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help		Other	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	54	21	0	0.0%	0	0.0%	1	4.8%	6	28.6%	6	28.6%	8	38.1%	2	9.5%	0	0.0%
All resources	54	6	0	0.0%	0	0.0%	0	0.0%	2	33.3%	2	33.3%	3	50.0%	1	16.7%	0	0.0%
Salmon	42	12	0	0.0%	0	0.0%	0	0.0%	3	25.0%	3	25.0%	4	33.3%	1	8.3%	0	0.0%
Nonsalmon fish	38	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	2	50.0%	0	0.0%	0	0.0%
Large land mammals	45	4	0	0.0%	0	0.0%	0	0.0%	3	75.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	18	3	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	2	66.7%	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 birds	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%
Other birds	26	0	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	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%
Vegetation	49	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	3	60.0%	1	20.0%	0	0.0%

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Table 2-13.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	54	21	0	0.0%	0	0.0%	6	28.6%	0	0.0%	0	0.0%	0	0.0%
All resources	54	6	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
Salmon	42	12	0	0.0%	0	0.0%	3	25.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	38	4	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	45	4	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	18	3	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%
Migratory birds	7	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	26	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%
Marine invertebrates	3	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	49	5	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, 2013.

Note Percentages are calculated using the number of households reporting more use as a base.

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

b. The number of households that gave a valid response in at least one of the categories. Households are counted only once even though they may give more than one valid response.

Table 2-14. – Reported impact to households responding that they did not get enough of a type of resource, Cantwell, 2012.

		Households getting enough _____ .				Impact to those not getting enough _____ .									
	Sample	Valid responses		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Salmon	55	42	76.4%	14	33.3%	0	0.0%	0	0.0%	12	85.7%	2	14.3%	0	0.0%
Nonsalmon fish	55	38	69.1%	12	31.6%	0	0.0%	0	0.0%	11	91.7%	1	8.3%	0	0.0%
Marine invertebrates	55	3	5.5%	1	33.3%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Large land mammals	55	45	81.8%	11	24.4%	0	0.0%	0	0.0%	7	63.6%	3	27.3%	1	9.1%
Marine mammals	55	1	1.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	55	18	32.7%	6	33.3%	0	0.0%	0	0.0%	5	83.3%	1	16.7%	0	0.0%
Migratory birds	55	7	12.7%	3	42.9%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%
Other birds	55	25	45.5%	9	36.0%	0	0.0%	0	0.0%	9	100.0%	0	0.0%	0	0.0%
Bird eggs	55	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	55	48	87.3%	16	33.3%	0	0.0%	0	0.0%	11	68.8%	3	18.8%	2	12.5%
All resources	55	54	98.2%	17	31.5%	0	0.0%	0	0.0%	11	64.7%	6	35.3%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

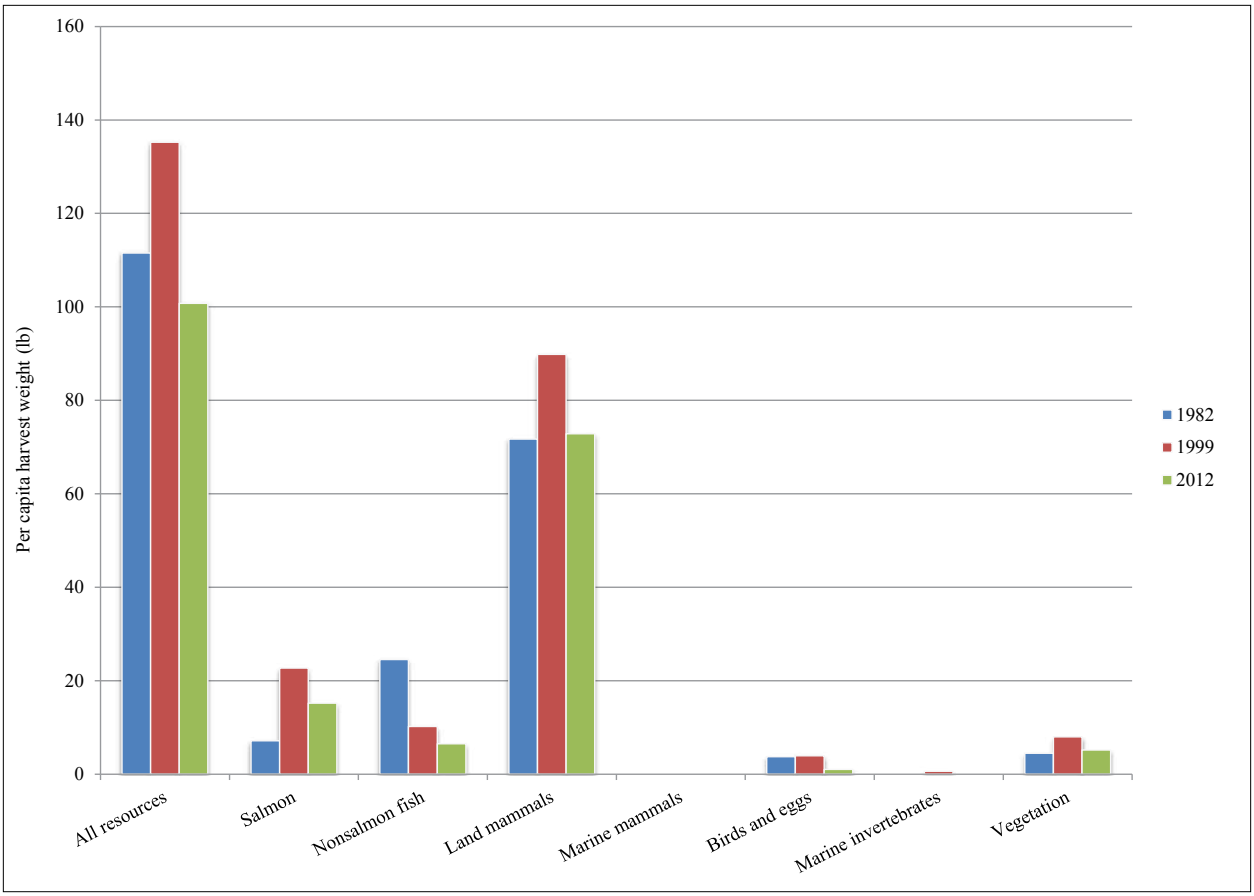

Figure 2-19. – Estimated harvest in per capita harvest weight, by category, Cantwell, 1982, 1999, and 2012.

estimates generated for communities that are road-connected to urban centers (Wolfe and Walker 1987; Simeone 2002).

The higher per capita harvest increase in 1999/2000 appears to have been the result of a combination of more land mammals and salmon harvests that year (Figure 2-19). It is not clear what contributed to the increase given that residents reported for the 1999/2000 study that large land mammal populations, and moose populations in particular, have been declining and hunting opportunities had decreased because of non-local competition (Simeone 2002, 13). High salmon harvests in 1999/2000, however, could be attributed to Chinook salmon availability. At the time of report development, the abundance and health of Chinook salmon is a significant fisheries management concern. This has impacted opportunity for harvests for home use, which is reflected by the small contribution Chinook salmon made to Cantwell households (l lb per household). In 2000, however, Chinook salmon stocks were more abundant and contributed an estimated 11 lb per household to the wild resources harvested by Cantwell residents (CSIS). In both studies, sockeye salmon, by individual fish, was the highest harvested of the salmon family (CSIS).

In comparison to survey year 1983, the current study had a lot of similarities in terms of the per capita harvests of all resources, land mammals, birds, and vegetation (Figure 2-19). Regarding salmon, Chinook and sockeye were not the most frequently harvested by Cantwell residents in 1983; rather, it was coho (or silver) salmon, which is in direct contrast to subsequent study years (Stratton and Georgette 1984). In 1983, nonsalmon fish was important in the diet of Cantwell residents but nonsalmon fish harvests have declined steadily since then (Figure 2-19). The species of use have remained the same, however, which are lake trout and Arctic grayling. One person commented that there have always been a lot of Arctic grayling in the local rivers, creeks, and lakes and so of the reason for the nonsalmon fish harvest decline is not clear. In fact, one household indicated that the size of Arctic grayling have increased dramatically, which was attributed to fewer people fishing in the area.

Changes over time in Chinook salmon populations have been witnessed by local residents. On the Middle Fork Chulitna River, approximately 40 years ago, a resident remembered observing a person catching 100 Chinook salmon and drying them on a rack. However, in the 1980s, the respondent said, the Chinook salmon started to disappear and restrictions on their harvest were implemented. Other residents commented on the decline of Chinook salmon abundance and suggested Chinook salmon suffered a further decline 4 years ago.

Some Cantwell residents commented on an ADF&G intensive management program for wolves and suggested that it is effective because the moose population seems to be recovering from observed declines in the late 1990s. The caribou population, on the other hand, appears to have diminished in the area over time, according to informants. Residents reported annual migrations of caribou in the past numbering in the hundreds of animals. The greater harvest of moose compared to caribou in Cantwell in this study may be indicative of the local availability of these large land mammals (Figure 2-9).

CURRENT AND HISTORICAL HARVEST AREAS

Mapping occurred for the 1999/2000 study conducted by Simeone (2002). A comparison of the 1999/2000 data with the 2012 study year shows that salmon are not harvested in the vicinity of Cantwell as they were in the past on the Chulitna River. Nonsalmon fishing areas have also diminished over the years. In 1999/2000, respondents were harvesting nonsalmon fish in all of the rivers and creeks around Cantwell and along the Denali Highway. Now, nonsalmon fish were only harvested in the direct vicinity of Cantwell and on Butte Lake and from the Middle Fork Chulitna River.

Regarding land mammals, moose harvest and search areas have remained relatively stable along the Parks and Denali highways. Caribou search areas have changed dramatically, however, and cover a much reduced territory, which corresponds with local knowledge about caribou scarcity. Bear hunting and harvest areas, and areas for bear hunting effort, have been reduced over the past few

years according to local residents. Trapping activities have also diminished since 1999/2000 and a smaller area is now being used. Currently, small mammals, according to a resident of Cantwell, are only harvested locally. Vegetation, including berries, was harvested in areas similar to the 1999/2000 study but focused more on zones surrounding the Parks Highway rather than the Denali Highway.

Information has been mapped about the search and harvest areas of wild resources by Cantwell residents which captured a 20-year period between 1964 and 1984. The methodology used is described in Copper Basin Resource Use Map Index and Methodology (Stratton and Georgette 1985) and the maps are available in Alaska Habitat Management Guide (Alaska Department of Fish and Game 1986). Comparing this information to the current study year, fish harvests were dramatically different and fish were obtained from a much wider area and array of creeks and lakes than in 2012. A constant, however, was the harvest of salmon at Chitina in the Copper River Basin.

Moose harvest and search areas between 1964 and 1984 were also much larger and extended down to the Susitna and Oshetna rivers and into GMUs 13A and 13B and into 20A, in addition to the residential Cantwell unit of 13E. Caribou hunting areas mirror moose search areas and are consistent with locations documented in 1999/2000. The furbearer trapping areas over the 20-year period resemble the other land mammals but with additional territory farther north encompassing the Yanert River. Residents also journeyed much farther for Dall sheep in the past, venturing up mountains to the south, southeast, north, and northeast of Cantwell.

Before 1984, Cantwell residents harvested vegetation in similar areas as what the 1999/2000 and 2012 studies show, focusing on the area immediately in the vicinity of the community. The harvest of birds was also similar but with additional locations along the Susitna and Oshetna rivers.

LOCAL COMMENTS AND CONCERNS

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.

Cantwell respondents expressed to researchers that hunting and fishing is extremely important in their community. Some community members indicated that access to fish and game resources makes it possible to live in Cantwell and is the reason some residents choose to live there. In general, respondents indicated that the high price of gas was impeding their ability to obtain wild resources.

LARGE LAND MAMMALS

Respondents believed moose and caribou availability have decreased. These resources were variously described as "scarce" and "rare" by local residents. The principal reasons for their scarcity, as described by Cantwell respondents, were hunting pressure/competition for resources by Alaska residents and non-Alaska or non-local residents, lenient regulations, and predation by bears, wolves, and coyotes. In order to be informed about moose population declines, respondents would like to see more studies regarding their welfare.

Some respondents thought moose hunting regulations were making it difficult to acquire legal harvests and suggested that the regulations should be expanded to include a moose of any size for the first 20 days of the hunting season. Respondents suggested potential hunters should have to take a course to receive a hunting license, which would teach people how to properly butcher an animal and take care of the meat. Respondents were concerned that trophy hunters were taking the antlers but leaving the meat as wanton waste.

Respondents expressed concern that the caribou population could not support a winter hunt and that the length of the hunt should be truncated. Respondents also mentioned that they did not think caribou hunting by Cantwell residents should be provided by regulations addressing the Nelchina herd (i.e., hunts in GMU 13E) because resident or migratory caribou in their area are not part of that herd.[3]

ADDITIONAL RESOURCES

Cantwell respondents indicated that ptarmigan are rare in the area due to overharvesting.

Respondents believed the Arctic grayling population is in decline due to low waters, which have prevented fish from reaching former habitats. Households also expressed concern over Chinook salmon abundance, which has decreased. Previously, respondents said, community members could catch Chinook salmon on the Middle Fork Chulitna River, but not in recent times.

Cantwell respondents reported that small mammal populations have decreased because of the coyote population. Respondents also indicated that hunters of small land mammals who hunt along the road are taking too many animals.

Many respondents reported that 2012 was an uncommonly poor year for berries, which they said are typically a significant local subsistence resource.

3. According to ADF&G game management reports, the herd occupying the Alaska Range is likely the Delta herd, which is known to use the Nenana and Susitna drainages and cross the Denali Highway (Harper 2011).

REGULATIONS

Cantwell respondents indicated that they desire a rural preference in state regulations to conduct subsistence activities. Respondents believed that regulations are too complicated and they wanted easier and local access to regulations and permitting. Some respondents indicated that there are too many regulations to hunt on National Park Service land. Other households believed they should be allowed to use motorized vehicles to transport game outside of the designated Denali Wilderness in Denali National Park on the southeast boundary. Other respondents, however, believed that ATVs were making it too easy for non-locals to abuse resources.

DEVELOPMENT

While a few respondents supported development of the proposed Susitna-Watana hydroelectric dam, many expressed concern over the impact of its construction. Respondents were concerned about the potential environmental impact and destruction of land and animal resources in comparison with the hypothetical benefits locals would receive. If the hydroelectric project were approved, respondents hoped that construction planning and execution would take into consideration subsistence activities and find a compromise that is respectful to community members and wildlife.

ACKNOWLEDGEMENTS

Thanks are extended to the community of Cantwell for members' participation and support of the project. In particular, the Native Village of Cantwell was very supportive and allowed the division's use of its community facility to conduct the harvest survey and interviews. Researcher staff would also like to thank the exceptional local research assistants: Patricia Nicholas, Renae Holum, George Blanchard, and Carol Winkler. Appreciation goes to key respondent interview participants who provided significant temporal context to fish and wildlife resource changes over time.

CHASE

COMMUNITY BACKGROUND

The community of Chase is located on the east bank of the Susitna River. It is located within the Matanuska-Susitna Borough 9 miles north of Talkeetna and 125 miles from Anchorage. The community is west of the Talkeetna Mountains, north of the Talkeetna River, and South of Denali National Park. A walking/ATV trail that runs alongside of the railroad tracks connects the community with Talkeetna. There is otherwise no road access to this community, but it can be reached at Mile 236 of the Alaska Railroad.[1]

In 1919, a railroad station was established at Mile 236.2 of the Alaska Railroad and named Nanchase after Nancy Chase, whose father represented the Alaska Engineering Commission in Anchorage. By 1927, a creamery was established nearby and butter was sold to hotels operated by the Alaska Railroad. The equipment from the creamery was transferred to the Matanuska Experimental Station in Palmer in 1933. Settlers arrived in the area in the 1970s and 1980s when the state began to dispose land locally.[2]

The residents of Chase are relatively self-reliant and depend on hunting, fishing, and gathering, and also small-scale agriculture, which is described further in the section "Local Comments and Concerns." There is no local school and children are either home-schooled or attend school in the Talkeetna area. No federal or state agencies are present in the community. There is a community council for Chase that meets regularly. There are no services available and many residents travel regularly via ATV to Talkeetna for goods and services.[3]

DEMOGRAPHY

The estimated population of Chase in 2012 was 35, represented by 18 households (Table 1-1). In 2010, the U. S. Census Bureau estimated the community population at 34, represented by 18 households (U.S. Census Bureau 2011). The ADLWD (2013) estimated a population of 35, the

1. Alaska Department of Commerce, Community, and Economic Development (ADCCED) Division of Community and Regional Affairs, Juneau: "Alaska Community Database Online: Community Information." Accessed August 2013. http://commerce.alaska.gov/cra/DCRAExternal/community.
2. Alaska Department of Commerce, Community, and Economic Development (ADCCED) Division of Community and Regional Affairs, Juneau: "Alaska Community Database Online: Community Information." Accessed August 2013. http://commerce.alaska.gov/cra/DCRAExternal/community.
3. Alaska Department of Commerce, Community, and Economic Development (ADCCED) Division of Community and Regional Affairs, Juneau: "Alaska Community Database Online: Community Information." Accessed August 2013. http://commerce.alaska.gov/cra/DCRAExternal/community.

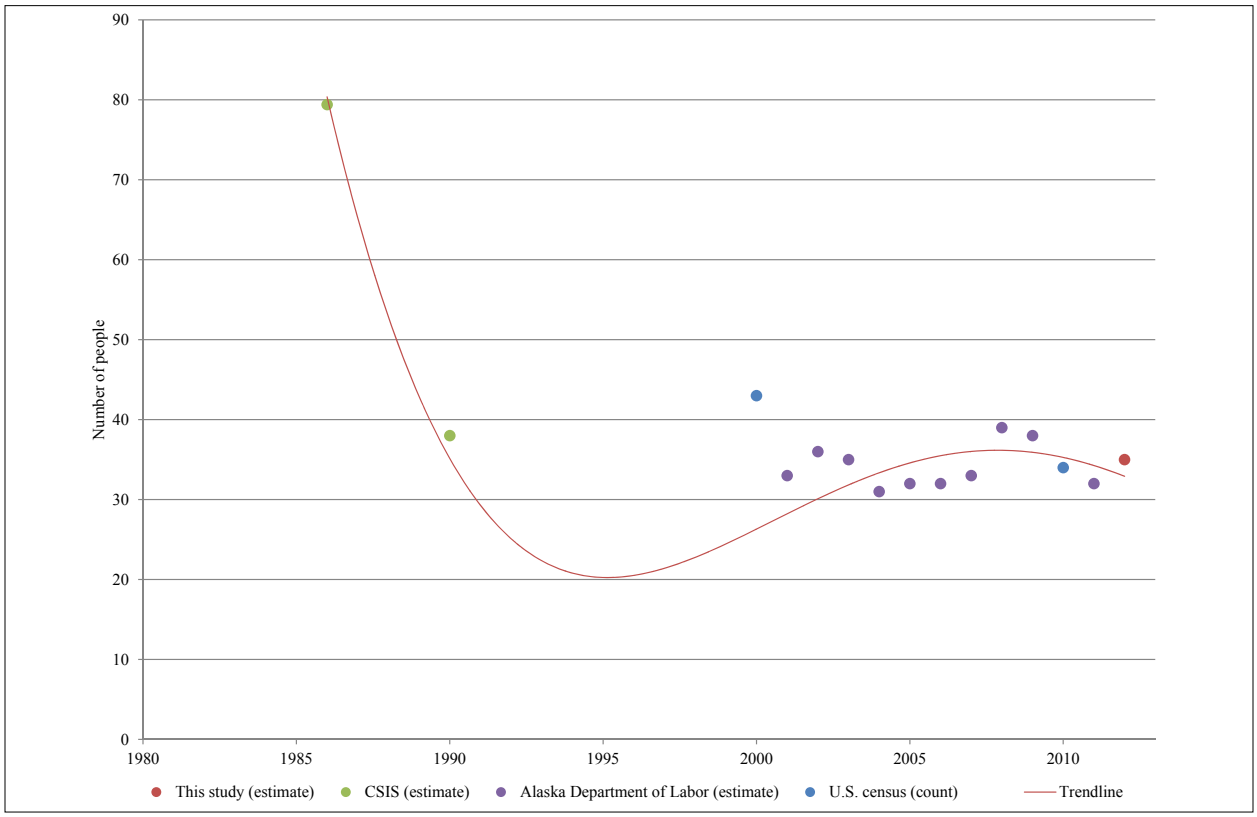

Figure 3-1. – Population history, Chase, 1980–2012.

same estimate as this survey. These numbers indicate a population in decline since 1986, when the estimated community population was 79; however there has been a relatively stable population from the mid-1990s onward (Figure 3-1).

A total of 16 of 18 eligible households were sampled in this community (Table 1-6). The mean size of the households was 2 individuals, the minimum was 1 individual, and the maximum was 6 individuals (Table 1-9). The mean age of residents was 40 years, the minimum was 2 years, and the maximum was 66 years. The mean length of residency was 13 years, the minimum was 1 year, and the maximum was 43 years.

Approximately 55% (19 individuals) of the population of Chase in 2012 were male and 45% (16 individuals) were female (Table 3-1). The largest age cohorts were 35–39, 55–59, and 60–64, each being represented by 5 individuals. No individuals were represented in either the 20–24 age class, or the 25–29 age class, and no one was older than 69 in the community (Figure 3-2). No household heads reported being born in Chase; 92% of household heads reported their birthplace was a state other than Alaska, and 8% reported their birthplace was a foreign location (Table 1-10).

Table 3-1. – Population profile, Chase, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	1.1	5.9%	5.9%	1.1	7.1%	7.1%	2.3	6.5%	6.5%
5–9	0.0	0.0%	5.9%	2.3	14.3%	21.4%	2.3	6.5%	12.9%
10–14	2.3	11.8%	17.6%	0.0	0.0%	21.4%	2.3	6.5%	19.4%
15–19	0.0	0.0%	17.6%	1.1	7.1%	28.6%	1.1	3.2%	22.6%
20–24	0.0	0.0%	17.6%	0.0	0.0%	28.6%	0.0	0.0%	22.6%
25–29	0.0	0.0%	17.6%	0.0	0.0%	28.6%	0.0	0.0%	22.6%
30–34	0.0	0.0%	17.6%	3.4	21.4%	50.0%	3.4	9.7%	32.3%
35–39	2.3	11.8%	29.4%	2.3	14.3%	64.3%	4.5	12.9%	45.2%
40–44	2.3	11.8%	41.2%	1.1	7.1%	71.4%	3.4	9.7%	54.8%
45–49	1.1	5.9%	47.1%	0.0	0.0%	71.4%	1.1	3.2%	58.1%
50–54	1.1	5.9%	52.9%	2.3	14.3%	85.7%	3.4	9.7%	67.7%
55–59	4.5	23.5%	76.5%	0.0	0.0%	85.7%	4.5	12.9%	80.6%
60–64	3.4	17.6%	94.1%	1.1	7.1%	92.9%	4.5	12.9%	93.5%
65–69	1.1	5.9%	100.0%	1.1	7.1%	100.0%	2.3	6.5%	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	**19.1**	**100.0%**	**100.0%**	**15.8**	**100.0%**	**100.0%**	**34.9**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

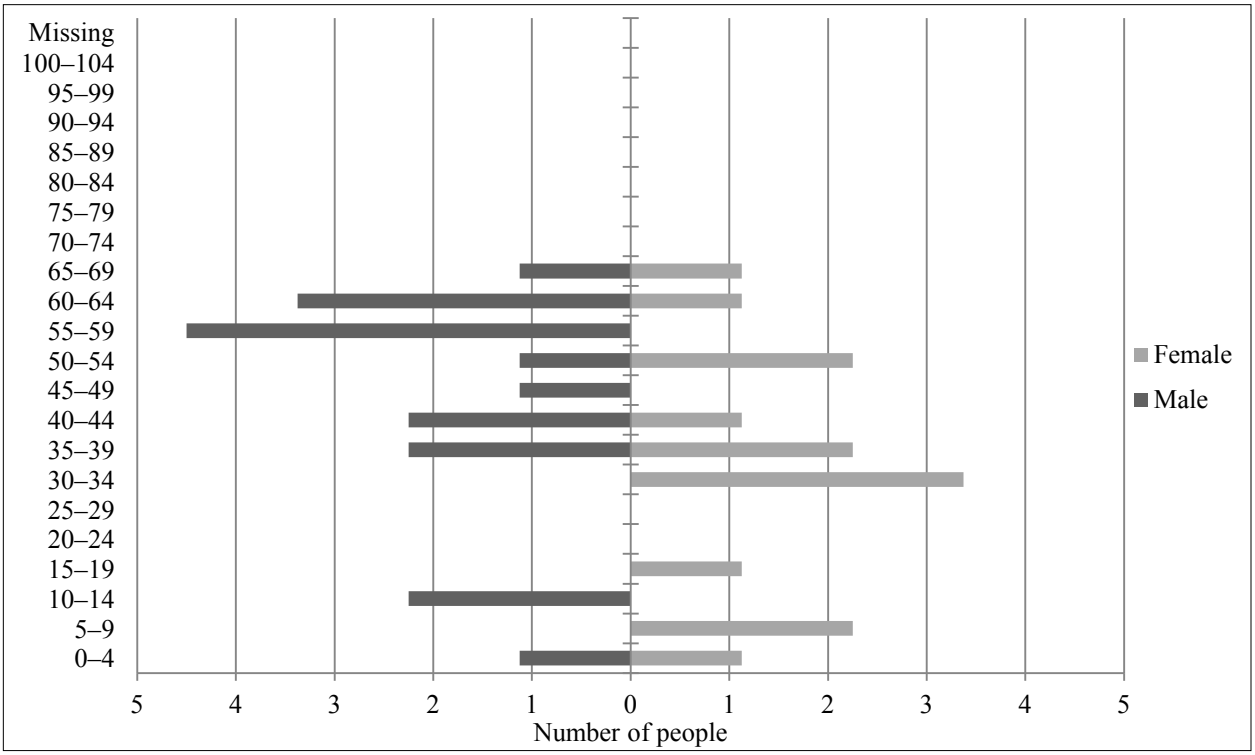

Figure 3-2. – Population profile, Chase, 2012.

Table 3-2. – Estimated earned and other income, Chase, 2012.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Services	11.6	6.8	$415,086	$23,060	42.3%
Mining	5.0	2.3	$210,844	$11,714	21.5%
Construction	6.6	4.5	$106,443	$5,914	10.9%
Local government	1.7	1.1	$43,579	$2,421	4.4%
Manufacturing	1.7	1.1	$38,131	$2,118	3.9%
Retail trade	1.7	1.1	$14,163	$787	1.4%
Earned income subtotal	**26.5**	**13.5**	**$828,246**	**$46,014**	**84.5%**
Other income					
Social Security		3.4	$33,165	$1,843	3.4%
Pension/retirement		1.1	$28,125	$1,563	2.9%
Alaska Permanent Fund dividend		16.9	$26,669	$1,482	2.7%
Disability		2.3	$25,819	$1,434	2.6%
Food stamps		3.4	$19,533	$1,085	2.0%
Unemployment		2.3	$15,300	$850	1.6%
Longevity bonus		2.3	$2,498	$139	0.3%
Energy assistance		2.3	$878	$49	0.1%
Adult public assistance		0.0	$0	$0	0.0%
Supplemental Security income		0.0	$0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0	0.0%
Veterans assistance		0.0	$0	$0	0.0%
Native corporation dividend		0.0	$0	$0	0.0%
Child support		0.0	$0	$0	0.0%
Other		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Citgo fuel voucher		0.0	$0	$0	0.0%
Other income subtotal		**16.9**	**$151,986**	**$8,444**	**15.5%**
Community income total			**$980,233**	**$54,457**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

a. The mean is calculated using the *total* number of households in the community, not the number of households for this income category.

b. Income by category as a percentage of the total community income from all sources (wage-based income *and* non-wage-based income.)

CASH EMPLOYMENT AND MONETARY INCOME

The community of Chase reported a total income of $980,223 in 2012, including $151,986 (16% of total) from other sources such as retirement, state and federal assistance programs, and the Alaska Permanent Fund dividend (Table 3-2). The largest source of other income was Social Security, representing 3% ($33,165) of the total income. Earned income represented 85% ($828,246) of the total community income in 2012, with a mean earned household income of $46,013 and a mean total household income of $54,457. The per capita income of Chase was $28,107, the highest of the 6 study communities (Table 1-16).

The employment industry that contributed most to the community's earned income was services (50%) followed by mining (26%), construction (13%), local government (5%), manufacturing

Table 3-3. – Employment by industry, Chase, 2012.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**28.1**	**13.5**	**26.5**	
Local government, including tribal	**5.9%**	**8.3%**	**6.3%**	**5.3%**
Service occupations	5.9%	8.3%	6.3%	5.3%
Mining	**17.6%**	**16.7%**	**18.8%**	**25.5%**
Engineers, surveyors, and architects	5.9%	8.3%	6.3%	2.9%
Construction and extractive occupations	11.8%	16.7%	12.5%	22.6%
Construction	**23.5%**	**33.3%**	**25.0%**	**12.9%**
Construction and extractive occupations	17.6%	25.0%	18.8%	11.8%
Handlers, equipment cleaners, helpers, and laborers	5.9%	8.3%	6.3%	1.1%
Manufacturing	**5.9%**	**8.3%**	**6.3%**	**4.6%**
Precision production occupations	5.9%	8.3%	6.3%	4.6%
Retail trade	**5.9%**	**8.3%**	**6.3%**	**1.7%**
Service occupations	5.9%	8.3%	6.3%	1.7%
Services	**41.2%**	**50.0%**	**43.8%**	**50.1%**
Executive, administrative, and managerial	11.8%	16.7%	12.5%	18.4%
Social scientists, social workers, religious workers, and lawyers	5.9%	8.3%	6.3%	23.7%
Writers, artists, entertainers, and athletes	5.9%	8.3%	6.3%	2.0%
Technologists and technicians, except health	11.8%	16.7%	12.5%	5.9%
Mechanics and repairers	5.9%	8.3%	6.3%	0.1%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Income by category as a percentage of the total *wage-based* community income.

(5%), and retail trade (2%) (Table 3-3). Among the 6 communities included in this report, Chase's average total household income ($54,457) was the second greatest, exceeded only by Cantwell (Table 1-16). Interestingly, Chase had the lowest percentage of jobs located within the community (24%) (Table 1-16), although it also had the highest percentage of employed adults among the communities (94%) (Table 1-11).

Employed adults in Chase in 2012 worked an average of 6 months, with only 34% employed year-round (Table 1-11). Fourteen of the 18 households in the community were employed (75%), and each household had an average of approximately 2 jobs. Of the jobs held by members of Chase households, only 24% were located in Chase, with the greatest percentage (47%) located in Talkeetna and the rest located elsewhere across the state (Table 1-12).

LEVELS OF INDIVIDUAL PARTICIPATION IN THE HARVESTING AND PROCESSING OF WILD RESOURCES

Table 1-13 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Chase residents in 2012. A total of 90% of residents hunted, fished, trapped, or gathered some resource in the study year. This is represented by residents gathering vegetation (90%), fishing (68%), hunting for birds (48%) and large land mammals (42%), and hunting/trapping small mammals (16%). Participation in the processing of resources by category was 84% for vegetation, 74% for fish and large land mammals, 58% for birds, and 29% for small land mammals. Each resource category had greater participation in processing than resource acquisition, except for vegetation. For example, 74% of individuals participated in processing large land mammals while only 42% participated in hunting, indicating a group effort to process meat once a successful hunter returns home.

HOUSEHOLD RESOURCE HARVEST AND USE PATTERNS AND SHARING OF WILD RESOURCES

Table 1-14 summarizes resource harvest and use characteristics for Chase in 2012 at the household level. All households (100%) used wild resources in 2012, while 100% attempted to harvest and harvested resources. The average harvest was 380 lb usable weight per household, or 196 lb per capita. During the study year, households harvested an average of 11 kinds of resources and used an average of 13 kinds of resources. The maximum number of resources used by any household was 26. In addition, households gave away an average of 3 kinds of resources and 50% of households reported sharing resources with other households. Resources were received by 100% of households. Because more households received resources than reported giving resources away, household specialization in harvesting resources was demonstrated by Chase residents. Figure 3-3 shows household specialization. This figure shows that 31% of households harvested 70% of resources.

HARVEST QUANTITIES AND COMPOSITION

Table 3-4 reports estimated wild resource harvests and uses by Chase residents in 2012 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors[4]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given

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

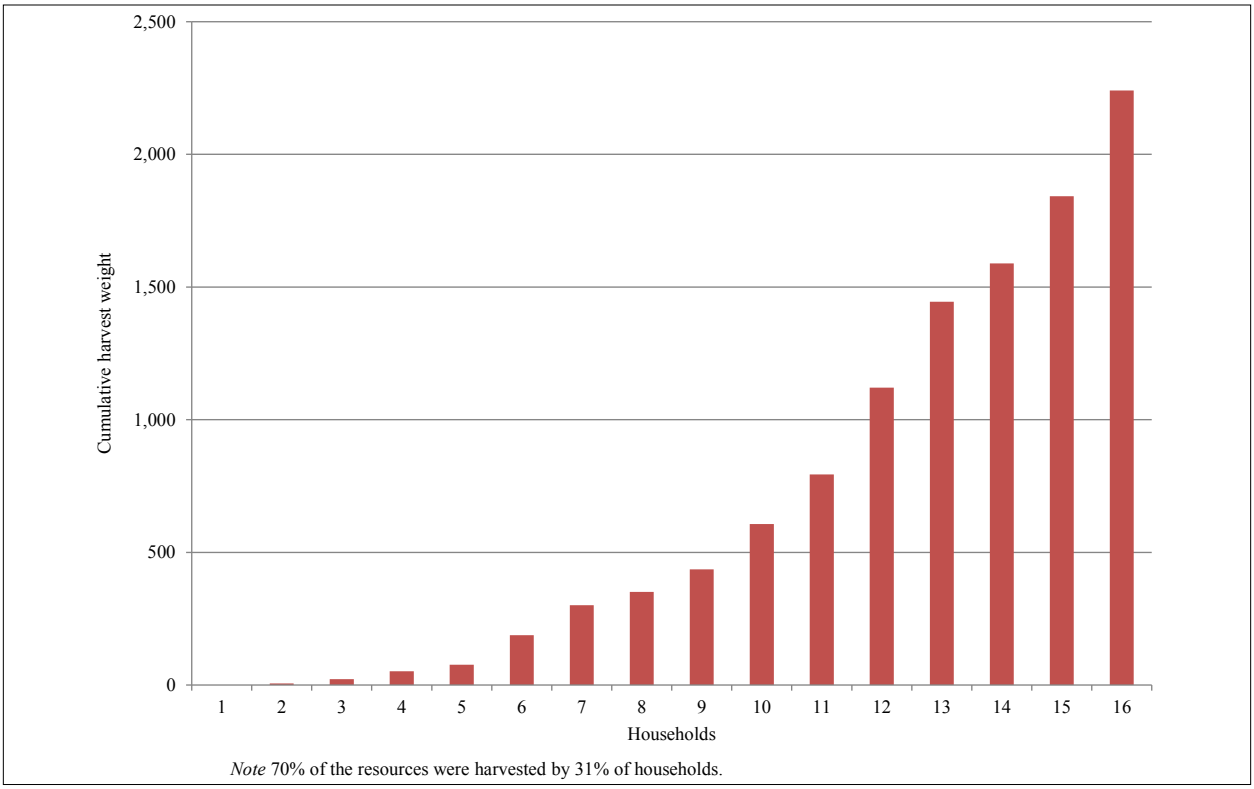

Figure 3-3. – Household specialization, Chase, 2012.

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 local way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total community harvest in pounds edible weight for all resources combined was 6,835 lb. The composition of this harvest was, in order of the most to the least proportion of the total, 50% (3,404 lb) large land mammals, 23% (1,561 lb) salmon, 15% (1,061 lb) vegetation, 7% (457 lb) nonsalmon fish, 3% (182 lb) birds and eggs, and 2% small land mammals (169 lb) (Figure 3-4; Table 3-4). The per capita edible weight harvested by category was 98 lb of large land mammals, 45 lb of salmon, 30 lb of vegetation, 13 lb of nonsalmon fish, 5 lb of birds and eggs, and 5 lb of small land mammals (Table 3-4).

Table 3-4. – Estimated harvests and uses of fish, game, and vegetation resources, Chase, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±)
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	% of harvest
All resources	**100.0**	**100.0**	**100.0**	**100.0**	**50.0**	**6,834.7**	**379.7**	**196.0**	**1,591.4**		**88.4**	**17.1**
Fish	**93.8**	**68.8**	**68.8**	**81.3**	**37.5**	**2,017.8**	**112.1**	**57.9**	**689.6**		**38.3**	**21.4**
Salmon	**93.8**	**68.8**	**68.8**	**75.0**	**31.3**	**1,561.2**	**86.7**	**44.8**	**324.0**		**18.0**	**26.0**
Chum salmon	12.5	18.8	12.5	0.0	0.0	159.3	8.9	4.6	25.9	ind	1.4	61.9
Coho salmon	81.3	56.3	56.3	37.5	12.5	672.2	37.3	19.3	140.6	ind	7.8	29.4
Chinook salmon	31.3	25.0	18.8	18.8	6.3	64.4	3.6	1.8	6.8	ind	0.4	48.5
Pink salmon	6.3	6.3	6.3	0.0	0.0	6.0	0.3	0.2	2.3	ind	0.1	71.0
Sockeye salmon	56.3	37.5	37.5	37.5	18.8	659.3	36.6	18.9	148.5	ind	8.3	36.9
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown salmon	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Nonsalmon fish	**68.8**	**56.3**	**56.3**	**37.5**	**31.3**	**456.5**	**25.4**	**13.1**	**365.6**		**20.3**	**25.9**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cod	6.3	6.3	6.3	6.3	0.0	13.5	0.8	0.4	3.4		0.2	71.0
Pacific (gray) cod	6.3	6.3	6.3	6.3	0.0	13.5	0.8	0.4	3.4	ind	0.2	71.0
Pacific tomcod	0.0	0.0	0.0	0.0	0.0	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	0.0		0.0	0.0
Starry flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Greenling	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	43.8	25.0	25.0	31.3	18.8	196.9	10.9	5.6	196.9	lb	10.9	36.6
Rockfish	6.3	6.3	6.3	0.0	0.0	45.0	2.5	1.3	11.3	ind	0.6	71.0
Sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Burbot	18.8	18.8	18.8	0.0	6.3	59.4	3.3	1.7	24.8	ind	1.4	52.3
Char	31.3	37.5	31.3	0.0	12.5	64.6	3.6	1.9	48.4		2.7	37.1
Dolly Varden	18.8	25.0	18.8	0.0	6.3	26.3	1.5	0.8	29.3	ind	1.6	54.9
Lake trout	12.5	12.5	12.5	0.0	6.3	38.3	2.1	1.1	19.1	ind	1.1	53.0
Arctic grayling	18.8	25.0	18.8	0.0	0.0	36.2	2.0	1.0	51.8	ind	2.9	54.2
Northern pike	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trout	37.5	37.5	37.5	0.0	12.5	41.0	2.3	1.2	29.3		1.6	27.0

-continued-

Table 3-4.–Page 2 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Nonsalmon fish, continued												
Cutthroat trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Rainbow trout	37.5	37.5	37.5	0.0	12.5	41.0	2.3	1.2	29.3	ind	1.6	27.0
Unknown trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whitefishes	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Cisco	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whitefishes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Land mammals	**87.5**	**75.0**	**62.5**	**68.8**	**37.5**	**3,573.1**	**198.5**	**102.5**	**97.9**		**5.4**	**50.0**
Large land mammals	**87.5**	**68.8**	**56.3**	**68.8**	**37.5**	**3,404.3**	**189.1**	**97.6**	**19.1**		**1.1**	**21.6**
Black bear	12.5	25.0	12.5	0.0	12.5	130.5	7.3	3.7	2.3	ind	0.1	48.5
Brown bear	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Caribou	68.8	50.0	43.8	37.5	31.3	1,755.0	97.5	50.3	13.5	ind	0.8	26.7
Deer	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	68.8	62.5	18.8	56.3	12.5	1,518.8	84.4	43.5	3.4	ind	0.2	38.2
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals[b]	**25.0**	**31.3**	**25.0**	**6.3**	**6.3**	**168.9**	**9.4**	**4.8**	**78.8**		**4.4**	**59.8**
Beaver	12.5	18.8	12.5	6.3	6.3	135.0	7.5	3.9	10.1	ind	0.6	63.1
Coyote	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fox	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	2.3		0.1	0.0
Red fox	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	2.3		0.1	0.0
Red fox–cross phase	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	2.3	ind	0.1	0.0
Hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
River (land) otter	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	11.3	ind	0.6	0.0
Lynx	6.3	6.3	6.3	0.0	0.0	4.5	0.3	0.1	1.1	ind	0.1	71.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	12.5	12.5	12.5	0.0	0.0	0.0	0.0	0.0	16.9	ind	0.9	0.0
Mink	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	5.6	ind	0.3	0.0
Muskrat	12.5	12.5	12.5	0.0	0.0	24.3	1.4	0.7	15.8	ind	0.9	61.1

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Table 3-4.–Page 3 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Small land mammals[b], continued												
Porcupine	6.3	6.3	6.3	0.0	0.0	5.1	0.3	0.1	1.1	ind	0.1	71.0
Squirrel	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Weasel	12.5	12.5	12.5	0.0	0.0	0.0	0.0	0.0	13.5	ind	0.8	0.0
Wolf	6.3	12.5	6.3	0.0	0.0	0.0	0.0	0.0	1.1	ind	0.1	0.0
Wolverine	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**6.3**	**0.0**	**0.0**	**6.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seals	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Bearded seal	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whales	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Bowhead whale	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**68.8**	**68.8**	**68.8**	**6.3**	**18.8**	**182.4**	**10.1**	**5.2**	**276.8**		**15.4**	**18.0**
Migratory birds	**6.3**	**12.5**	**6.3**	**0.0**	**6.3**	**5.6**	**0.3**	**0.2**	**5.6**		**0.3**	**71.0**
Ducks	6.3	12.5	6.3	0.0	6.3	5.6	0.3	0.2	5.6		0.3	71.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Eider	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	6.3	12.5	6.3	0.0	6.3	5.6	0.3	0.2	5.6	ind	0.3	71.0
Northern pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Scoter	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Teal	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Unknown ducks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Geese	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0

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Table 3-4.–Page 4 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Migratory birds, continued												
Cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown Canada/cackling goose	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Other birds	**68.8**	**68.8**	**68.8**	**6.3**	**18.8**	**176.7**	**9.8**	**5.1**	**271.1**		**15.1**	**18.1**
Upland game birds	68.8	68.8	68.8	6.3	18.8	176.7	9.8	5.1	271.1		15.1	18.1
Grouse	62.5	62.5	62.5	6.3	18.8	144.1	8.0	4.1	205.9		11.4	22.8
Spruce grouse	50.0	50.0	50.0	6.3	18.8	128.4	7.1	3.7	183.4	ind	10.2	24.0
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ruffed grouse	31.3	31.3	31.3	0.0	0.0	15.8	0.9	0.5	22.5	ind	1.3	34.6
Unknown grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	43.8	43.8	43.8	6.3	6.3	32.6	1.8	0.9	65.3	ind	3.6	25.3
Bird eggs	**0.0**	**0.0**	**0.0**	**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	0.0	0.0	0.0		0.0	0.0
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Seabird and loon eggs	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	**12.5**	**0.0**	**0.0**	**12.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Clams	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Butter clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Freshwater clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clam	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crabs	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0

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Table 3-4.–Page 5 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Marine invertebrates, continued												
King crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Octopus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Shrimp	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	lb	0.0	0.0
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**100.0**	**100.0**	**100.0**	**25.0**	**37.5**	**1,061.4**	**59.0**	**30.4**	**527.1**		**29.3**	**22.4**
Berries	**93.8**	**93.8**	**93.8**	**25.0**	**37.5**	**939.9**	**52.2**	**27.0**	**235.0**		**13.1**	**25.8**
Blueberry	87.5	87.5	87.5	6.3	25.0	508.5	28.3	14.6	127.1	gal	7.1	26.1
Lowbush cranberry	25.0	25.0	25.0	0.0	6.3	32.6	1.8	0.9	8.2	gal	0.5	51.4
Highbush cranberry	68.8	68.8	68.8	12.5	18.8	194.6	10.8	5.6	48.7	gal	2.7	24.6
Crowberry	6.3	6.3	6.3	0.0	0.0	0.6	0.0	0.0	0.1	gal	0.0	71.0
Currants	50.0	43.8	43.8	12.5	6.3	75.4	4.2	2.2	18.8	gal	1.0	29.0
Huckleberry	6.3	6.3	6.3	0.0	0.0	0.6	0.0	0.0	0.1	gal	0.0	71.0
Cloudberry	6.3	6.3	6.3	0.0	0.0	2.3	0.1	0.1	0.6	gal	0.0	71.0
Raspberry	50.0	50.0	50.0	0.0	0.0	23.1	1.3	0.7	5.8	gal	0.3	41.0
Salmonberry	6.3	6.3	6.3	0.0	0.0	1.1	0.1	0.0	0.3	gal	0.0	71.0
Strawberry	12.5	12.5	12.5	0.0	0.0	4.5	0.3	0.1	1.1	gal	0.1	55.0
Twisted stalk berry (watermelon berry)	18.8	18.8	18.8	0.0	6.3	96.8	5.4	2.8	24.2	gal	1.3	65.9
Other wild berries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Plants, greens, and mushrooms	**43.8**	**43.8**	**43.8**	**0.0**	**6.3**	**121.5**	**6.8**	**3.5**	**118.1**		**6.6**	**44.8**
Fiddlehead fern	37.5	37.5	37.5	0.0	0.0	34.3	1.9	1.0	34.3	gal	1.9	30.4
Hudson's Bay (Labrador) tea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild rose hip	6.3	6.3	6.3	0.0	0.0	4.5	0.3	0.1	1.1	gal	0.1	71.0
Other wild greens	12.5	12.5	12.5	0.0	6.3	56.8	3.2	1.6	56.8	gal	3.2	70.3
Unknown mushrooms	18.8	18.8	18.8	0.0	0.0	23.6	1.3	0.7	23.6	gal	1.3	43.0
Fireweed	12.5	12.5	12.5	0.0	0.0	2.3	0.1	0.1	2.3	gal	0.1	55.0
Wood	**100.0**	**100.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**174.0**		**9.7**	**0.0**
Firewood	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	174.0	cord	9.7	0.0

Source ADF&G Division of Subsistence household surveys, 2013.

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

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.

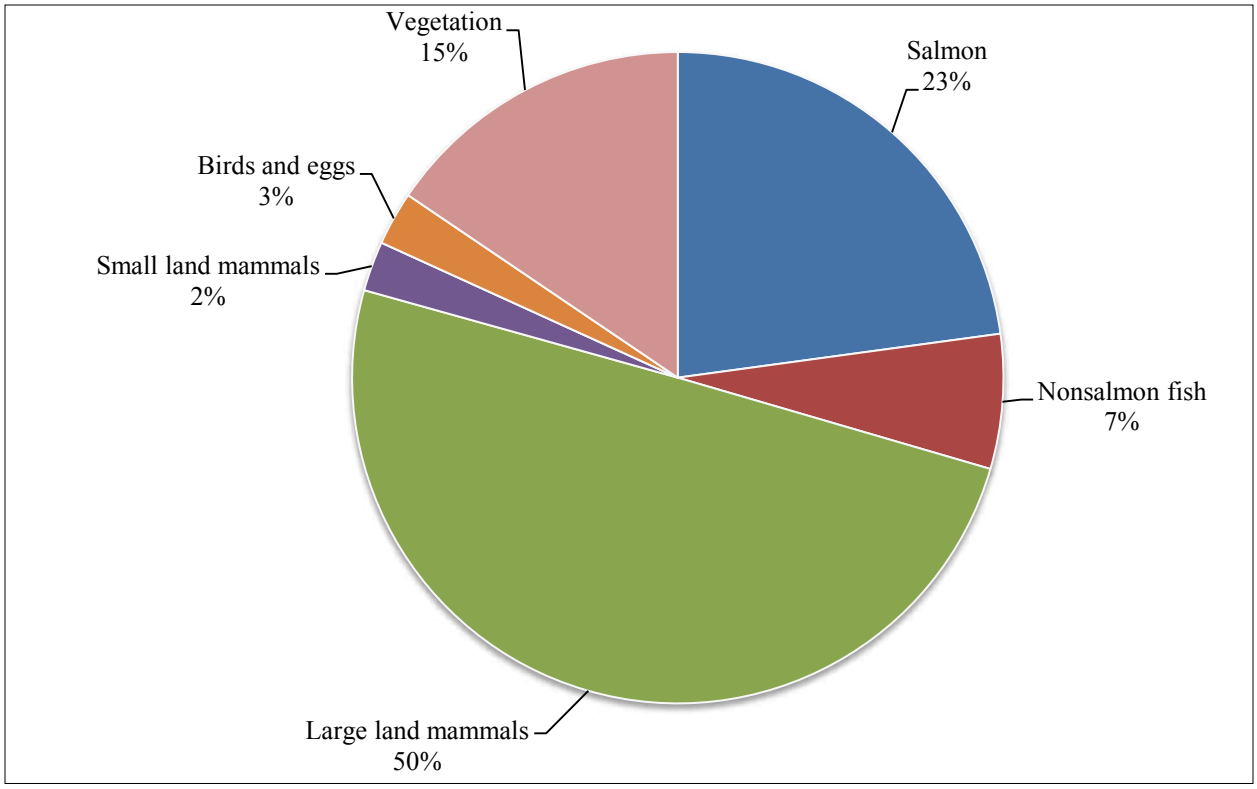

Figure 3-4. – Composition of wild resource harvest, by category, Chase, 2012.

SEASONAL ROUND

Harvest survey data and key respondent interview information describe a seasonal round of hunting, fishing, and gathering activities followed by Chase residents where a variety of species are harvested throughout the year. In spring, summer, fall, and winter, Chase residents travel along the Susitna and Talkeetna rivers and the surrounding areas to harvest resources. Residents use motorized boats suitable for travel on waterways, ATVs, snowmachines, and road vehicles to reach their hunting, fishing, and gathering areas.

During winter, spring, and summer, some Chase residents catch nonsalmon fish by rod and reel and ice fishing in the Chase area. During May and June, Chinook salmon are caught by rod and reel by some residents in the Susitna River, Talkeetna River, and Clear Creek. During June and July, some residents travel to these same locations and more distant watersheds on the Kenai Peninsula to fish for sockeye salmon, which are caught by rod and reel and dip net. Throughout summer some residents fish for Pacific halibut, cod, and rockfish in Cook Inlet and Prince William Sound. Coho salmon arrive in the Chase area toward the end of August and continue to return into the early part of October. Coho salmon are caught by rod and reel throughout the Chase area as well as in Prince William Sound.

Chase residents often participate in the fall moose hunt but have reported significant declines

in the moose population in recent years and limited harvest success. Many residents participate in late-summer/fall caribou hunting for which Chase residents qualify under federal regulations for subsistence hunting on federal land. The Nelchina caribou herd is targeted in areas adjacent to the Denali Highway, which is reached by road vehicles that are stored in Talkeetna. At this same time, many residents harvest berries and other types of vegetation.

Chase residents harvest plants, mushrooms, and berries during spring, summer, and fall. For example, fiddlehead fern shoots are sought during spring; wild greens, such as Hudson's Bay (Labrador) tea, are sought during summer; blueberries, currants, and raspberries are gathered during late summer; and highbush cranberries and lowbush cranberries are gathered during fall. Harvesting firewood for home heating is an important activity for Chase residents year-round, though many residents take advantage of snowmachines for hauling this resource in the winter. In addition, some Chase residents trap and hunt small game in the winter months.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Table 3-4 lists the estimated harvests and uses of fish, game and plant resources of Chase in 2012. This table also identifies the percentage of households that either received or gave away resources. All households reported receiving resources while 50% of households reported giving away resources. By percentage of households, the resource category most frequently received was salmon at 75%, followed by large land mammals at 69%, nonsalmon fish at 38%, vegetation at 25%, marine invertebrates at 13%, and small land mammals, marine mammals, and birds and eggs at 6%. By percentage of households, the resource categories most frequently given away were large land mammals and vegetation, both at 38%, followed by salmon and nonsalmon fish, both at 31%, birds and eggs at 19%, and small land mammals at 6%. No households gave away marine mammals or marine invertebrates (Table 3-4).

Table 3-5 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Chase households during the 2012 study year. Caribou and moose had the highest per capita harvest (50 lb and 44 lb, respectively). When these large game are available and harvested in a community, they often make up a large portion of the per capita resource harvest due to the typically large weight of individual animals. Coho salmon and sockeye salmon were the third and fourth species harvested by pounds per capita (both at 19 lb).

The ranking of harvested resources is somewhat different when comparing the percentage of households using the resources. Blueberries were used by 88% of households followed by coho salmon used by 81% of households. Interestingly, vegetation, including berries, is represented 4 times in this community's top 10 resources used ranking.

The differences in resource rankings between pounds per capita and percentage of households

Table 3-5. – Top 10 resources harvested and used, Chase, 2012.

Harvested			Used		
Rank	Resource	Pounds per capita	Rank	Resource	Percentage of households using
1.	Caribou	50.3	1.	Blueberry	87.5%
2.	Moose	43.5	2.	Coho salmon	81.3%
3.	Coho salmon	19.3	3.	Caribou	68.8%
4.	Sockeye salmon	18.9	3.	Moose	68.8%
5.	Blueberry	14.6	3.	Highbush cranberry	68.8%
6.	Pacific halibut	5.6	6.	Sockeye salmon	56.3%
6.	Highbush cranberry	5.6	7.	Spruce grouse	50.0%
8.	Chum salmon	4.6	7.	Currants	50.0%
9.	Beaver	3.9	7.	Raspberry	50.0%
10.	Black bear	3.7	8.	Pacific halibut	43.8%
			8.	Ptarmigan	43.8%

Source ADF&G Division of Subsistence household surveys, 2013.

using is likely due to ease of access to a resource rather than resource preference. While caribou and moose are large and represent a high per capita harvest, their local abundance and harvest success is likely lower than that of blueberries and salmon, which are ranked higher by percentage of households using. The "using" determination also includes those resources that may have been received by a household, but may not have been necessarily harvested by that same household. Also noteworthy is the use of halibut (ranked eighth in a tie) by 44% of households, despite the fact that this resource is not available locally (Table 3-5).

SALMON

In 2012, residents of Chase reported harvesting 1,561 total pounds of salmon equaling 45 lb per capita. A vast majority of households reported using salmon (94%) and 69% of households attempted to harvest salmon. Overall all households that attempted to harvest salmon were successful, though not for all species. Of the households targeting Chinook salmon specifically, for example, which was 25% of households, only 19% of community households were successful at harvesting the resource (Table 3-4).

Three salmon species were within the top 10 resources harvested by pounds per capita by Chase households in 2012. Coho salmon was ranked third, sockeye salmon was ranked fourth, and chum salmon was ranked eighth. The per capita harvest of salmon species was composed of 19 lb of coho salmon (43%), 19 lb of sockeye salmon (42%), 5 lb of chum salmon (10%), 2 lb of Chinook salmon (4%), and less than 1 lb of pink salmon (1%) (Table 3-4; Figure 3-5). The Chinook salmon harvest was particularly low, especially compared to the estimated harvest in 1986 of 13 lb per capita, which

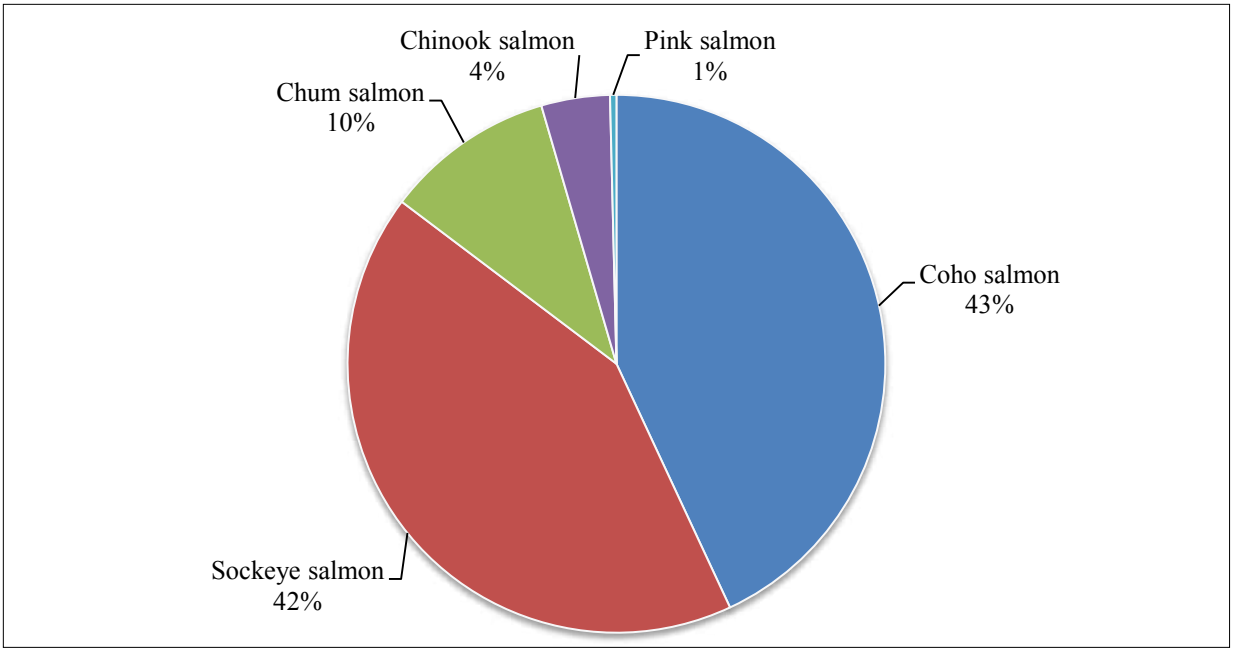

Figure 3-5. – Composition of salmon harvest, Chase, 2012.

was 26% of the salmon harvest in that year (Stanek, Foster, and Fall 1988). The reduced Chinook salmon harvest in 2012 was likely due, at least in part, to ADF&G Emergency Order No. 2-KS-2-20-12, which closed the Susitna River drainage to sport fishing for Chinook salmon on June 22, 2012. Considering all species of harvested salmon combined, the methods used for harvest included dip net (18% of individual fish) and rod and reel (82% of individual fish) (Table 3-6). Only sockeye salmon were harvested with dip nets (Table 3-6).

Sharing of salmon in Chase in 2012 was important considering that 75% of households received salmon and 31% of households gave salmon away. Sockeye salmon and coho salmon were received by the greatest percentage of households—38% for both species. These 2 species were also given away by the greatest percentage of households (19% for sockeye salmon and 13% for coho salmon). Neither pink salmon nor chum salmon were shared in Chase (Table 3-4).

Salmon fishing by Chase residents took place throughout the Susitna River Basin, on the Kenai Peninsula, and in Prince William Sound. Coho salmon were harvested in the Susitna and Chulitna rivers, in Clear Creek, and in Prince William Sound (Figure 3-6). Sockeye salmon and Chinook salmon were harvested in the Susitna and Talkeetna rivers as well as in Clear Creek, though sockeye salmon were also harvested near the mouth of the Kenai River in the personal use dip net fishery. Chum salmon were harvested from Clear Creek only.

Table 3-6. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Chase, 2012.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Other method		Subsistence gear, any method		Dip net[a]		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%**	**100.0%**	**100.0%**	**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%**	**18.1%**	**16.6%**	**81.9%**	**83.4%**	**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%**	**18.1%**	**16.6%**	**81.9%**	**83.4%**	**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%	9.7%	12.2%	8.0%	10.2%
	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%	8.0%	10.2%	8.0%	10.2%
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%	53.0%	51.7%	43.4%	43.1%
	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%	43.4%	43.1%	43.4%	43.1%
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%	2.5%	4.9%	2.1%	4.1%
	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%	2.1%	4.1%	2.1%	4.1%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.5%	0.7%	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%	0.7%	0.4%	0.7%	0.4%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	33.9%	30.7%	45.8%	42.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	39.4%	39.4%	60.6%	60.6%	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%	18.1%	16.6%	27.8%	25.6%	45.8%	42.2%
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, 2013.

a. Harvests using dip net gear are typically included with subsistence harvests. However, in this case dip nets are primarily used to harvest fish under personal use regulations and are therefore placed in a separate category.

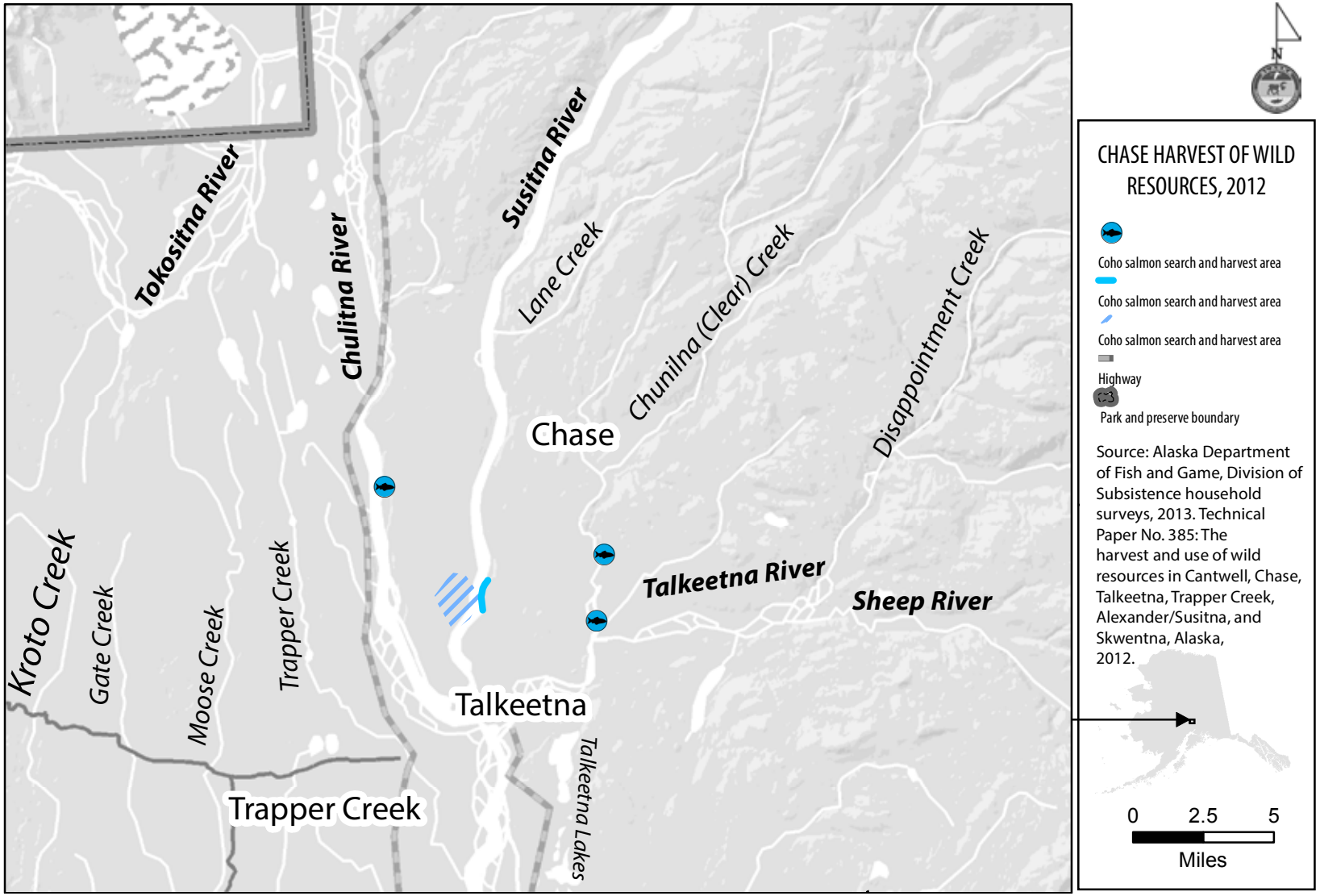

Figure 3-6. – Coho salmon search and harvest areas, Chase, 2012.

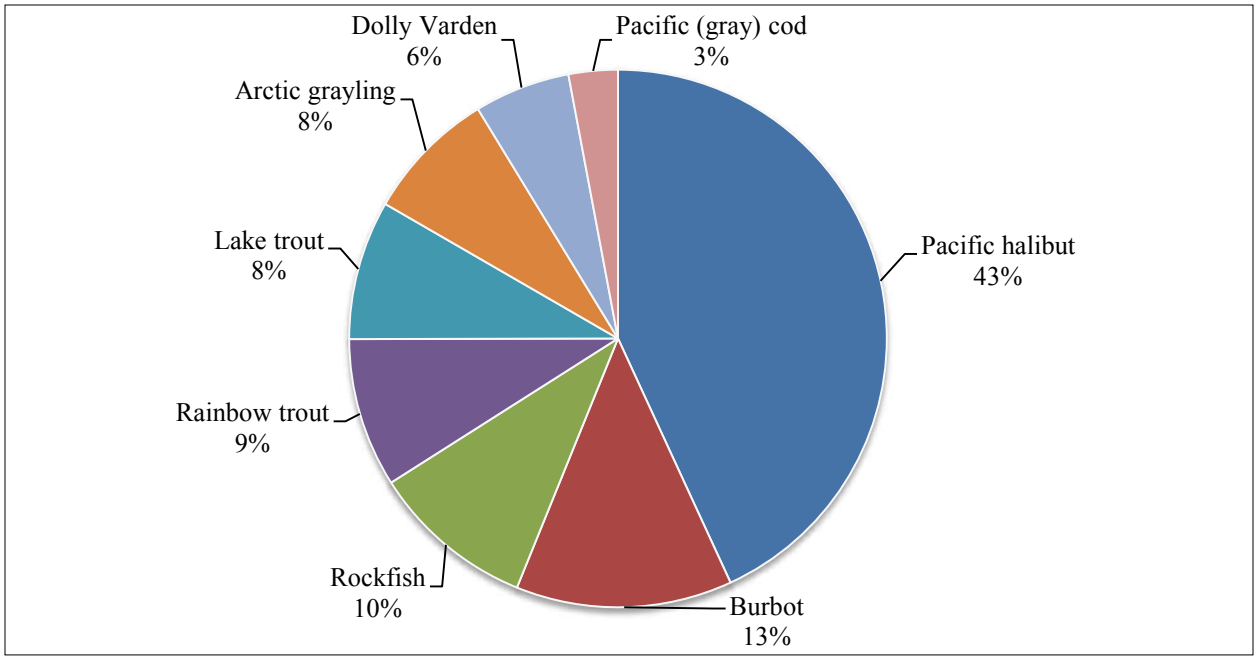

Figure 3-7. – Composition of nonsalmon fish harvest, Chase, 2012.

NONSALMON FISH

In 2012, residents of Chase reported harvesting 457 total pounds of nonsalmon fish, equaling 13 lb per capita and representing 23% of the total fish harvest. A total of 69% of households used nonsalmon fish, and of the 56% that attempted to harvest, all were successful. Halibut was the most frequently used nonsalmon fish species, with 44% of households using the resource, and, of the 25% of households attempting to harvest this species, all were successful. Considering all resources combined, halibut ranked sixth for pounds per capita harvested in Chase in 2012 (Table 3-5). The second and third most used nonsalmon species by percentage of households were rainbow trout (38%) and Arctic char (31%; represented by both Dolly Varden [19%] and lake trout [13%]) (Table 3-4). Of the nonsalmon species harvested by Chase residents, halibut made up 43% of the total harvest, followed by burbot (13%) and rockfish (10%) (Figure 3-7). Despite their ranking in the composition of the nonsalmon fish harvest, burbot and rockfish were used by a relatively low percentage of households, 19% and 6%, respectively (Table 3-4). Most nonsalmon fish were harvested with rod and reel (99%) though a few were harvested via ice fishing using hook and line gear (1%). Burbot was the only species harvested via ice fishing, but only 18% of the burbot harvest was by this method (Table 3-7).

While the same percentage of households (31%) gave away nonsalmon fish in 2012 as gave away salmon, a much lower percentage of households received nonsalmon fish (38%) than received salmon (75%). This may be due in part to the relatively low percentage of the total fish harvest that

Table 3-7. – Estimated percentages of fish other than salmon harvested by gear type, resource, and total nonsalmon fish harvest, Chase, 2012.

				Subsistence methods											
		Removed from commercial catch		Gillnet or seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**98.8%**	**97.8%**	**1.2%**	**2.2%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**98.8%**	**97.8%**	**0.9%**	**2.2%**	**100.0%**	**100.0%**
Smelt	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%
	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%
	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%
Eulachon (hooligan, candlefish)	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%
	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%
	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%
Pacific (gray) cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	2.8%	0.0%	0.0%	0.9%	2.7%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	2.7%	0.0%	0.0%	0.9%	2.7%
Pacific tomcod	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%
	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%
	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%
Unknown cod	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%
	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%
	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%
Lingcod	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%
	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%
	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%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	52.9%	40.3%	0.0%	0.0%	52.2%	39.4%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	52.2%	39.4%	0.0%	0.0%	52.2%	39.4%
Rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	9.0%	0.0%	0.0%	3.0%	8.8%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	8.8%	0.0%	0.0%	3.0%	8.8%
Black rockfish	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%
	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%
	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%
Yelloweye rockfish	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%
	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%
	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%
Unknown rockfishes	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	9.0%	0.0%	0.0%	3.0%	8.8%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	8.8%	0.0%	0.0%	3.0%	8.8%
Sablefish (black cod)	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%
	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%
	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%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.4%	10.0%	100.0%	100.0%	6.6%	11.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	81.8%	81.8%	18.2%	18.2%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.4%	9.7%	0.9%	2.2%	6.6%	11.9%

-continued-

Table 3-7.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.9%	5.4%	0.0%	0.0%	7.8%	5.3%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	5.3%	0.0%	0.0%	7.8%	5.3%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	7.8%	0.0%	0.0%	5.1%	7.7%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	7.7%	0.0%	0.0%	5.1%	7.7%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.9%	7.4%	0.0%	0.0%	13.7%	7.3%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.7%	7.3%	0.0%	0.0%	13.7%	7.3%
Northern pike	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%
	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%
	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%
Cutthroat trout	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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.9%	8.4%	0.0%	0.0%	7.8%	8.2%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	8.2%	0.0%	0.0%	7.8%	8.2%
Unknown trout	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%
	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%
	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%
Humpback whitefish	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%
	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%
	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%
Round whitefish	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%
	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%
	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%
Unknown whitefishes	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%
	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%
	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%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Rod and reel gear used during open water season.

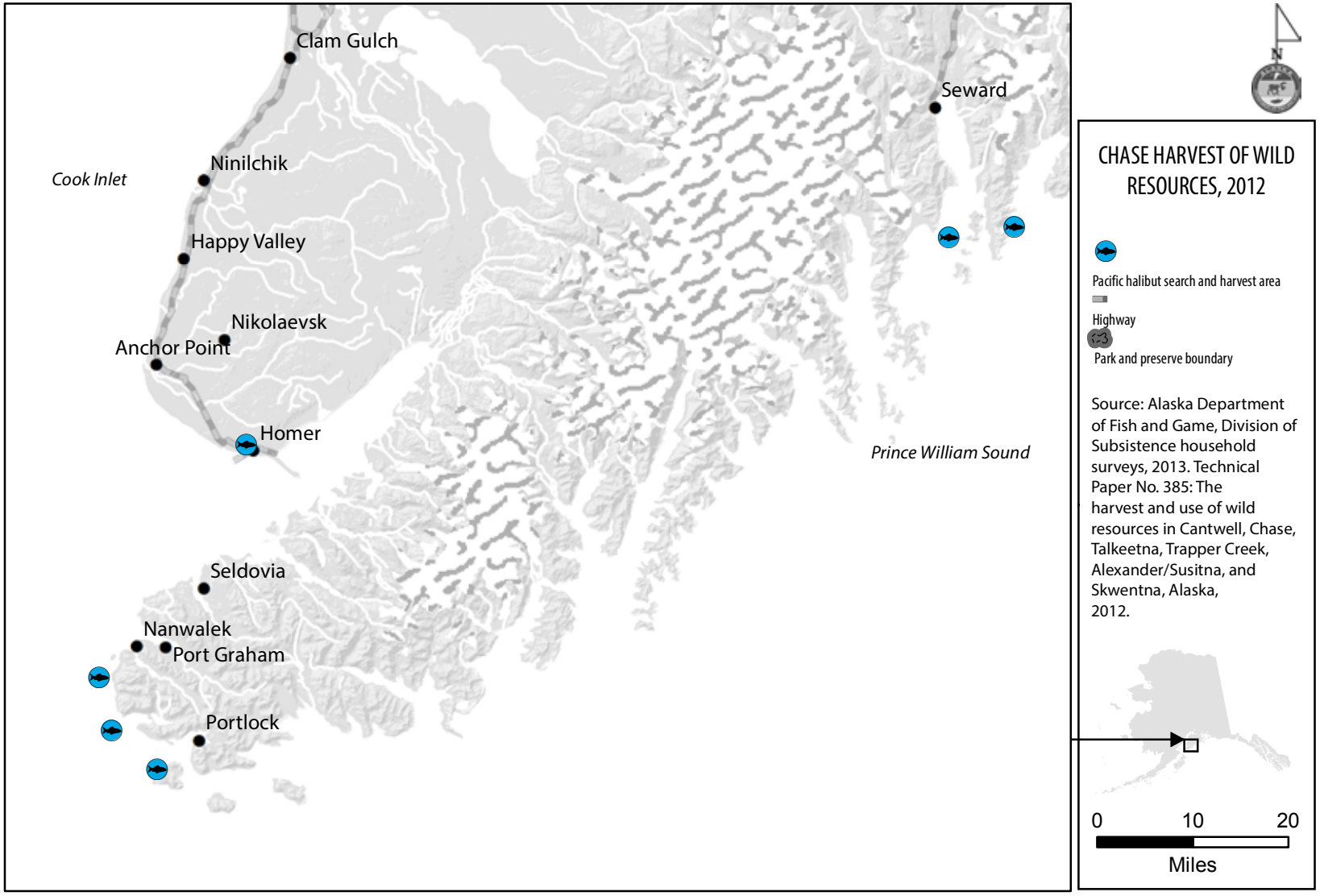

Figure 3-8. – Pacific halibut search and harvest areas, Chase, 2012.

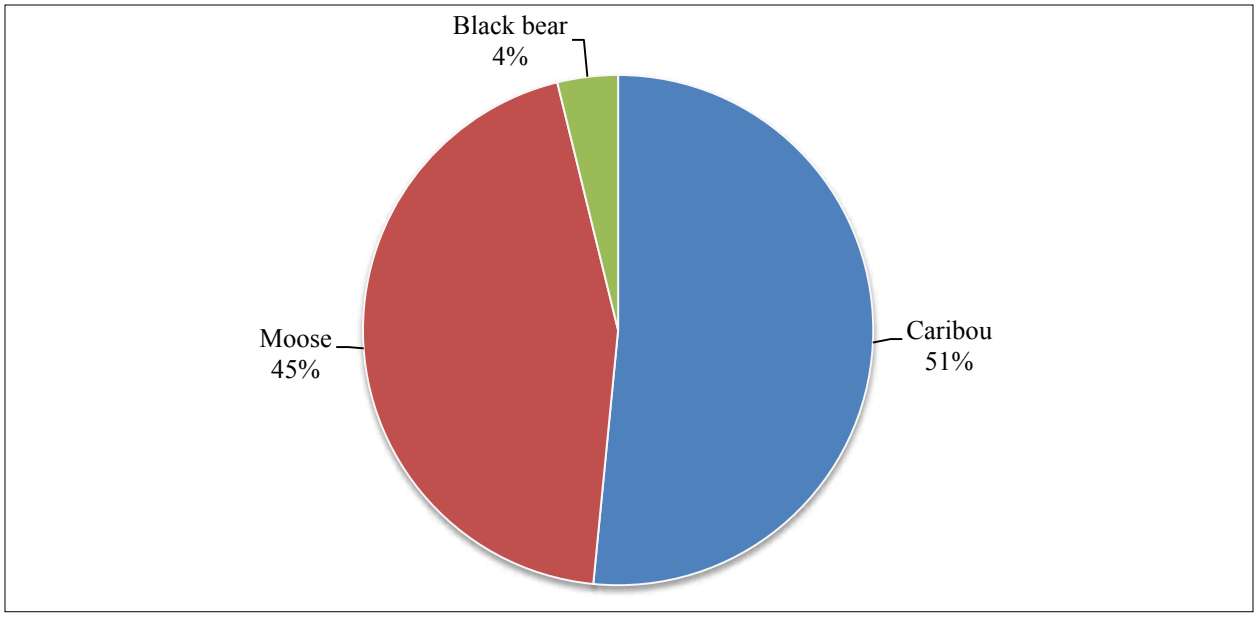

Figure 3-9. – Composition of large land mammals harvest, Chase, 2012.

was made up of nonsalmon fish. Halibut were harvested by Chase residents in lower Cook Inlet and Prince William Sound (Figure 3-8), while Pacific cod were harvested only in Prince William Sound.

LARGE LAND MAMMALS

In 2012, residents of Chase harvested an estimated 3,404 total pounds of large land mammals, equaling 98 lb per capita and representing 50% of total harvest (Table 3-4). A total of 88% of households used large land mammals and 69% attempted to harvest those species, while 56% of households were successful. Caribou and moose were the most frequently used large land mammals, with 69% of households using each of these resources. Considering all resources, caribou ranked first by pounds per capita harvested in Chase in 2012, followed closely by moose (Table 3-5). Two black bears were also harvested, but these totaled only 131 lb, or 4% of the large land mammal harvest (Figure 3-9).

The community harvested a total of 1,755 lb of caribou (14 individuals) and 1,519 lb (3 individuals) of moose. Of the 50% of households that attempted to harvest caribou, 88% were successful (or 44% of community households) and animals were harvested August through November (Table 3-4; Table 3-8). Chase residents had access to an extended winter hunt of caribou on federal lands (GMU 13) during the study year due to federal subsistence regulations that provide a rural priority. Of the 63% of households that attempted to harvest moose, only 30% were successful (or 19% of community households) and the animals were harvested in February, September, and November. While fewer households harvested moose in 2012 than did caribou, moose was received by 56%

Table 3-8. – Estimated harvests of large land mammals by month and caribou and moose harvests by sex, Chase, 2012.

			Caribou					Moose				
Harvest month	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Dall sheep	Wolf
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	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	1.1	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	1.1	0.0	3.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	3.4	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
October	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	1.1	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	**2.3**	**0.0**	**11.3**	**2.3**	**0.0**	**0.0**	**0.0**	**2.3**	**1.1**	**0.0**	**0.0**	**1.1**

Source ADF&G Division of Subsistence household surveys, 2013.

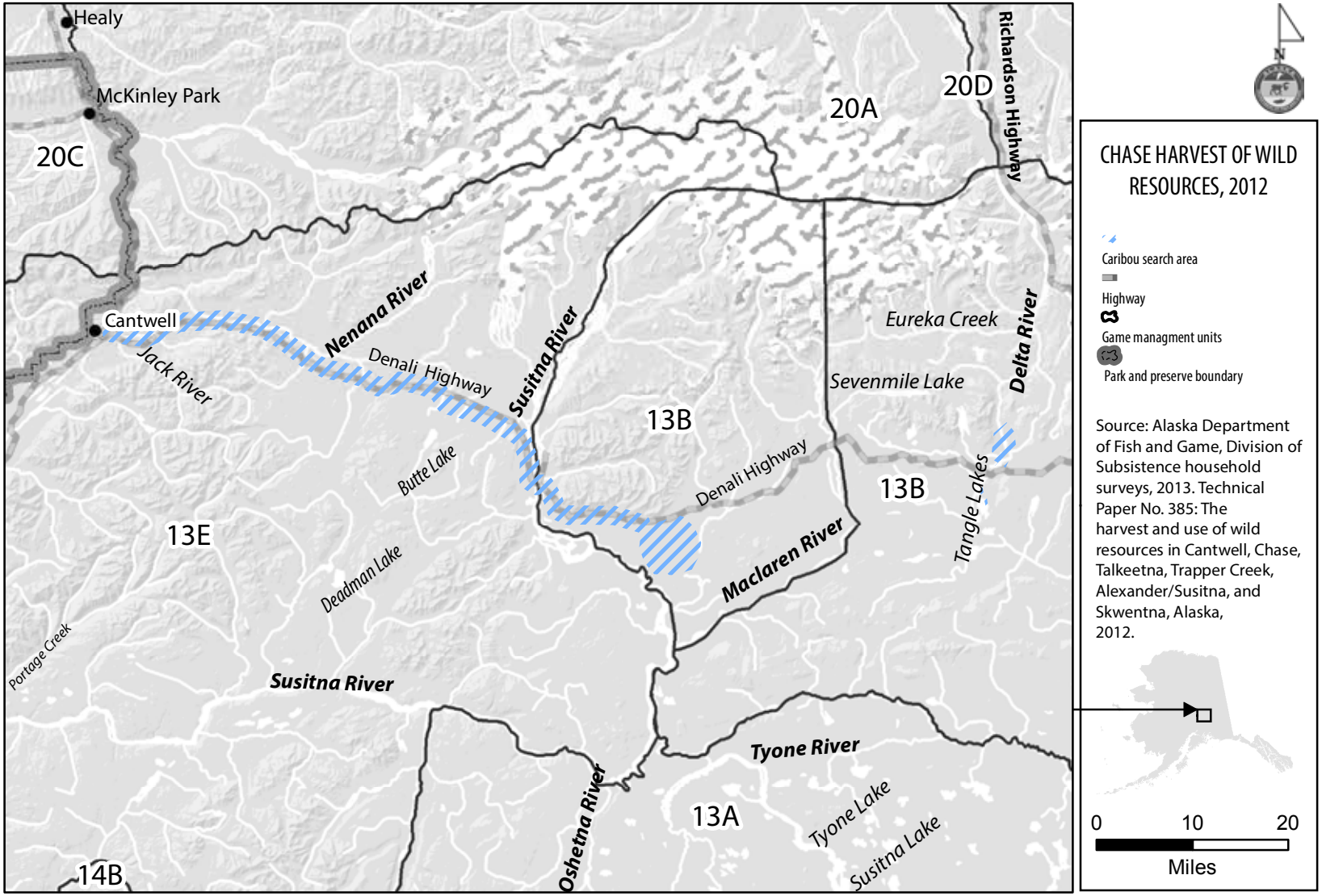

Figure 3-10. – Caribou search areas, Chase, 2012.

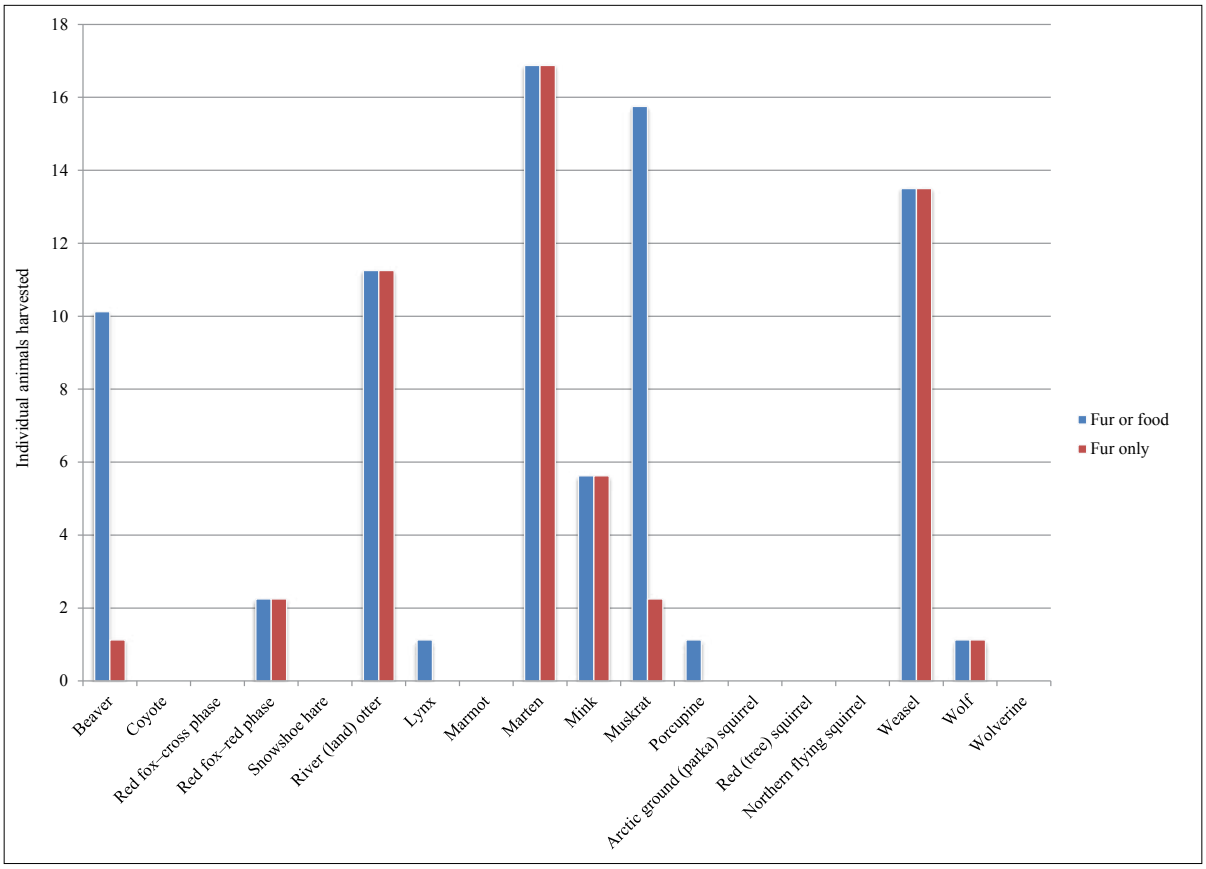

Figure 3-11. – Estimated harvests of small land mammals for food and fur only, Chase, 2012.

of households and given away by 13%. Caribou was received by 38% of households and given away by 31% (Table 3-4).

Several locations for the hunting and harvesting of large mammals in Chase in 2012 were reported. Moose were primarily hunted and harvested near the community, and there was no effort reported occurring in other parts of the state. Conversely, caribou were hunted and harvested along the Denali Highway from Cantwell to the Tangle lakes (Figure 3-10).

SMALL LAND MAMMALS/FURBEARERS

In 2012, the community of Chase harvested a total of 169 lb of small land mammals for food, including 135 lb of beavers, 5 lb of lynx, 5 lb of porcupines, and 24 lb of muskrats. Also harvested for fur only were foxes, martens, weasels, land (river) otters, minks, and wolves, but their weights are not included in the harvest table (Figure 3-11). Beavers made up the largest proportion of consumed small mammals—80% of the total composition by edible weight (Figure 3-12)—while martens represented the species most frequently harvested by individual animals (n=17) (Table 3-4). Considering all resources combined, beavers ranked ninth by pounds per capita harvested in Chase

in 2012 (Table 3-5). Most small mammals were harvested during the winter months of November through April, with only a single porcupine harvested in July (Table 3-9).

Only 25% of households in Chase reported use of small land mammals in 2012. Beavers, martens, muskrats, and weasels were each used by 13% of households. All households that attempted to harvest each small mammal species were successful, except households that hunted for coyotes, red foxes–cross phase, and wolverines were not successful; furthermore, 34% of the households that attempted to harvest beavers and 50% of the households that attempted to harvest wolves were not successful. The only small land mammal shared in the community were beavers, with 6% of households giving beavers away, and 6% of households receiving beavers (Table 3-4).

Hunting and trapping of small land mammals occurred primarily near the community of Chase, especially near Clear and Lane creeks and the Susitna River (Figure 3-13).

BIRDS AND EGGS

Residents of Chase harvested 182 lb of birds in 2012, equating to 10 lb per household and 5 lb per capita (Table 3-4). Migratory birds made up only 3% of the bird harvest while upland game birds composed the other 97%. The composition by species included mallards (3%), ruffed grouse (9%), ptarmigan (18%), and spruce grouse (70%). The spruce grouse harvest included 183 individual birds weighing a total of 128 lb and equating to 7 lb per household and 4 lb per capita. Upland game birds were harvested throughout the year, with most ptarmigan being harvested in the winter and most grouse being harvested in the fall (Table 3-10). Mallards were only harvested in the fall. No bird eggs were harvested (Table 3-4).

Birds were used by 69% of households. All 69% of households that attempted to harvest birds were successful. While only 6% of households received birds, 19% of households gave them away. Spruce grouse were used, attempted to be harvested, and successfully harvested by more households (50%) compared to all other bird species (Table 3-4).

Upland game birds were harvested over a large area near the community of Chase, stretching from the Talkeetna area north to Lane Creek. Mallards were only harvested near the Susitna River in proximity to the community (Figure 3-14).

MARINE INVERTEBRATES

Marine invertebrates, which are not available in the local area, were infrequently used by residents of Chase in 2012 and no households attempted to harvest these resources. Clams and shrimp were each used by 6% of households, all of which received these resources and none of which gave these away. No other species were harvested or shared (Table 3-4).

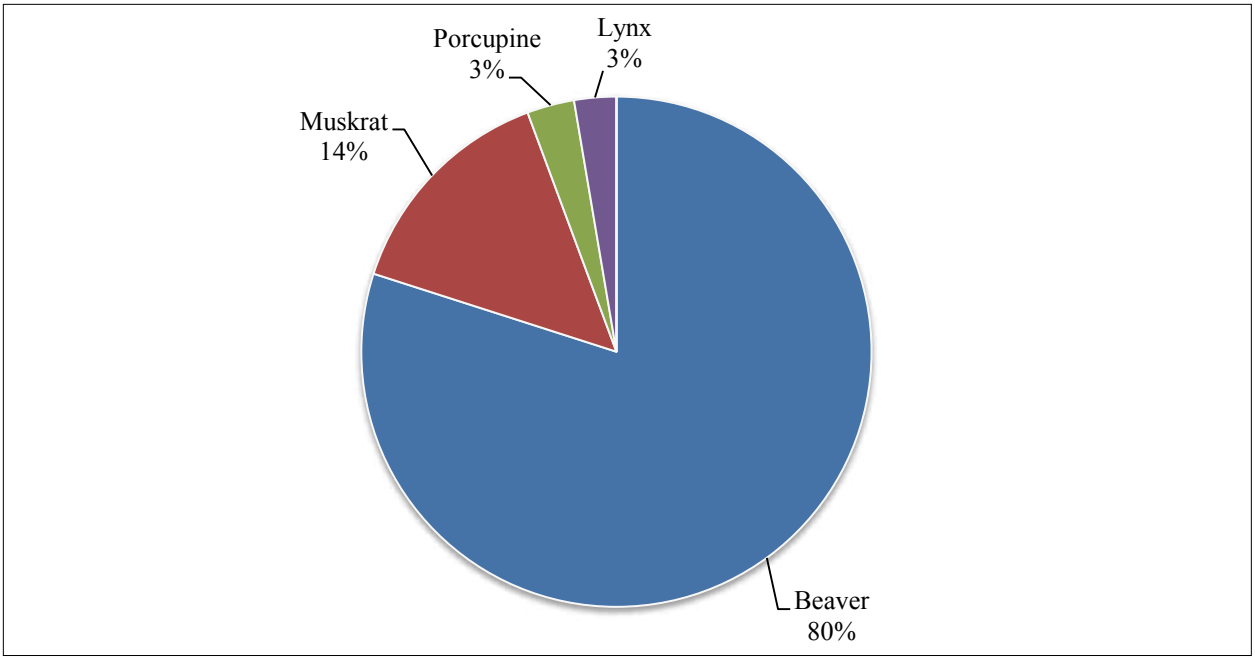

Figure 3-12. – Composition of small land mammals harvest, Chase, 2012.

Table 3-9. – Estimated harvests of small land mammals by month, Chase, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
Beaver	0.0	0.0	4.5	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**10.1**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–red phase	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**2.3**
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
River (land) otter	0.0	5.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**11.3**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	**1.1**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	4.5	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	3.4	0.0	**16.9**
Mink	1.1	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0	**5.6**
Muskrat	0.0	0.0	9.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**15.8**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	**1.1**
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Weasel	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.6	0.0	**13.5**
Wolf	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	**1.1**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Total	**9.0**	**16.9**	**19.1**	**12.4**	**0.0**	**0.0**	**1.1**	**0.0**	**0.0**	**0.0**	**10.1**	**10.1**	**0.0**	**78.8**

Source ADF&G Division of Subsistence household surveys, 2013.

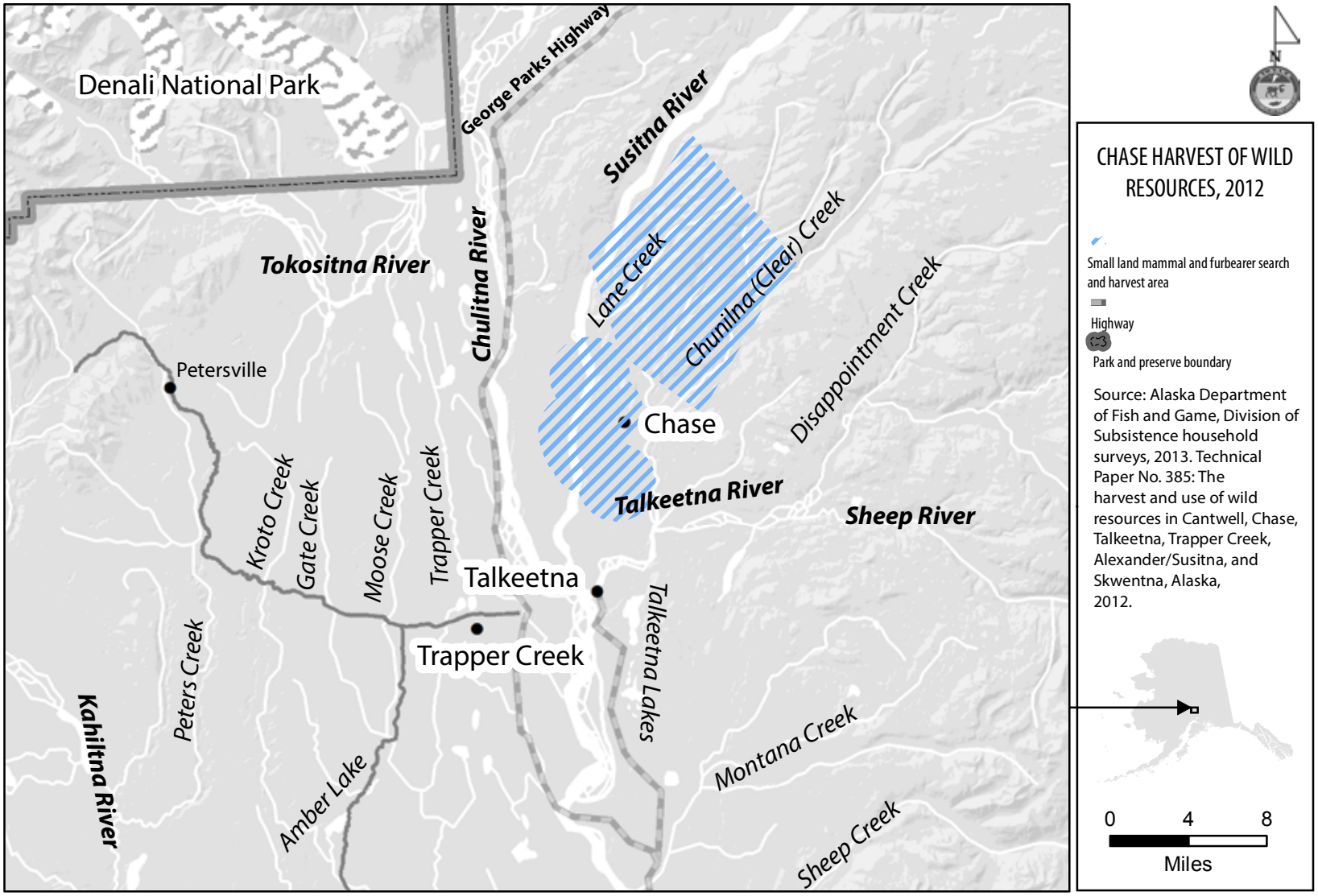

Figure 3-13. – Small land mammals and furbearers search and harvest areas, Chase, 2012.

Table 3-10. – Estimated bird and bird egg harvest by season, Chase, 2012.

	Estimated harvest by season					
Resource	Winter	Summer	Spring	Fall	Season unknown	**Total**
Canvasback	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**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	0.0	0.0	0.0	5.6	0.0	**5.6**
Northern pintail	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**
Green-winged teal	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown ducks	0.0	0.0	0.0	0.0	0.0	**0.0**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Canada goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose	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**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Spruce grouse	6.8	54.0	11.3	111.4	0.0	**183.4**
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ruffed grouse	0.0	7.9	0.0	14.6	0.0	**22.5**
Unknown grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigan	48.4	0.0	13.5	3.4	0.0	**65.3**
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown eggs	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

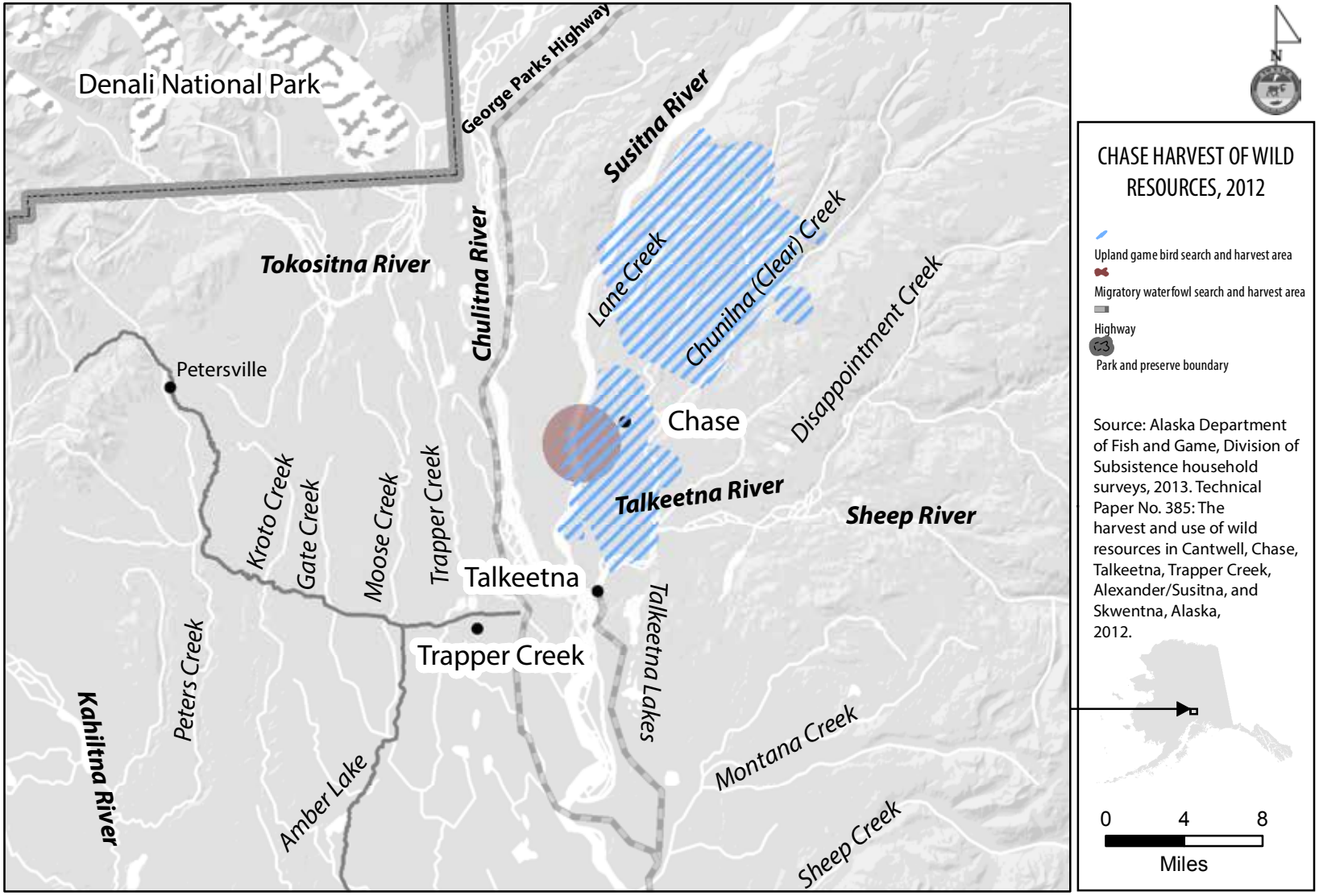

Figure 3-14. – Upland game birds and migratory waterfowl search and harvest areas, Chase, 2012.

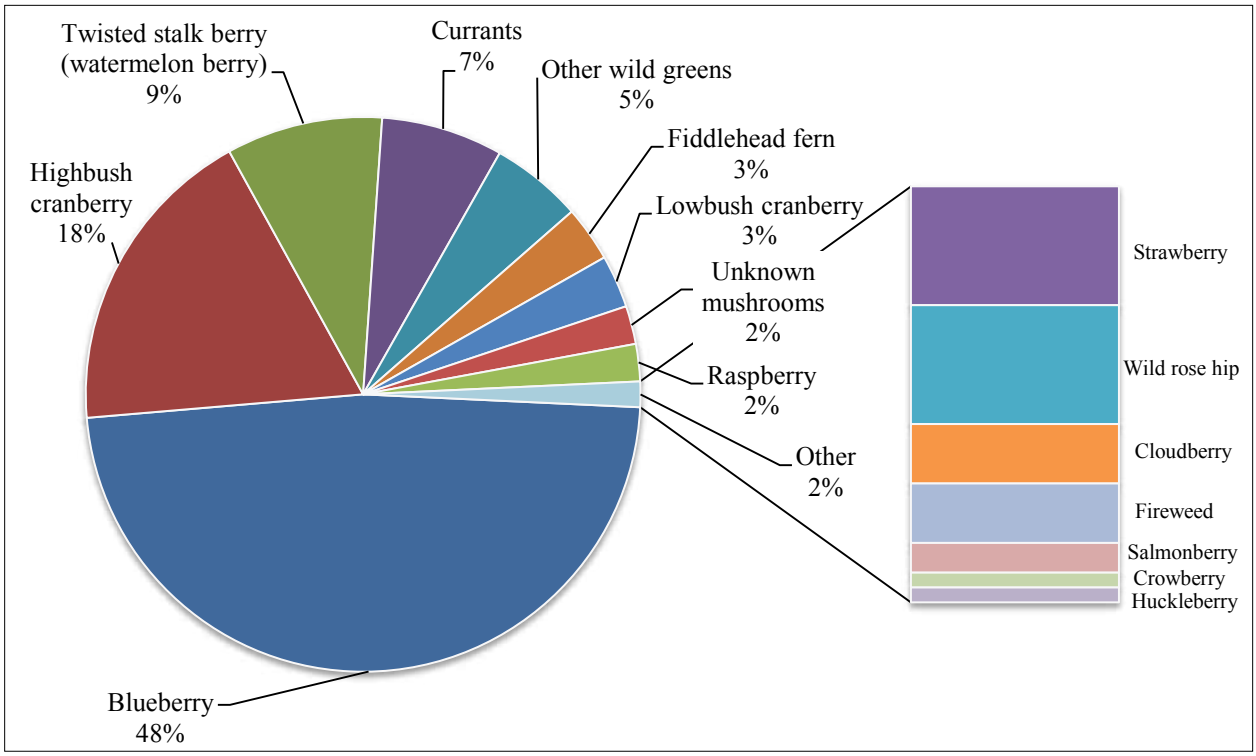

Figure 3-15. – Composition of vegetation harvest, Chase, 2012.

VEGETATION

Wild plants were used by 100% of households in Chase in 2012 and all households were successful in harvesting vegetation. The community harvested a total of 1,061 lb of vegetation, equating to 59 lb per household and 30 lb per capita. The composition of this harvest was 89% (940 lb) berries and 11% (122 lb) plants/greens/mushrooms. Figure 3-15 identifies the composition of the vegetation harvest by species. Only 25% of households received vegetation while 38% of households gave vegetation away (Table 3-4).

Berries, specifically, were used and harvested by 94% of the community households. Every household that attempted to harvest berries was successful. Blueberries and highbush cranberries made up 66% of the vegetation harvest (509 lb and 195 lb, respectively) and ranked fifth and sixth for overall resources harvested in pounds per capita (Figure 3-15; Table 3-5). Considering all resources combined, blueberries ranked first overall by percentage of households using the resource (88%), and were shared by more households than highbush cranberries, which ranked third overall for percentage of households using the resource (69%).

Plants/greens/mushrooms were used and harvested by 44% of the community. Every household that attempted to harvest plants/greens/mushrooms was successful. Plants/greens/mushrooms were rarely shared with none of the households receiving other vegetation and only 6% of households giving them away. “Other wild greens,” a category including several species, made up the highest

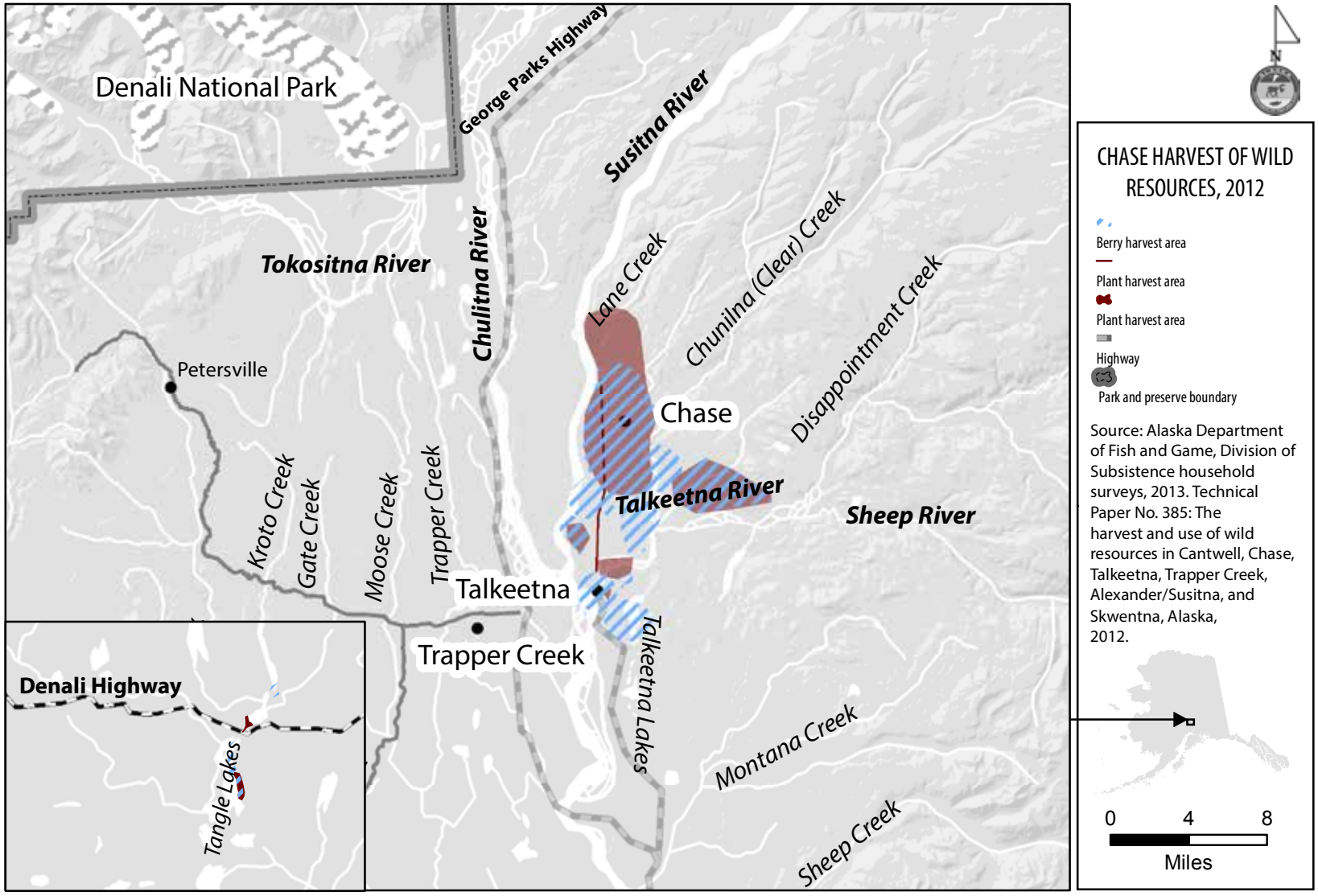

Figure 3-16. – Berries and plants, greens, and mushrooms search and harvest areas, Chase, 2012.

percentage (47%) of the plants/greens/mushrooms harvest by weight, though only 13% of households used these. Fiddlehead ferns, in contrast, were used by 38% of households and composed 28% (34 lb) of the total plants/greens/mushrooms harvest. Unknown mushrooms composed 19% (24 lb) of the total plants/greens/mushrooms harvest.

Wood was used and harvested by 100% of households in Chase in 2012. It is an abundant resource in the area and it is considered critical for heating homes in the winter. The weight of the wood was not included in the overall vegetation weight, but a total of 174 cords were reported harvested. Wood was not shared within the community.

Vegetation was gathered by community members throughout the area adjacent to Chase, as well as in the Tangle lakes area along the Denali Highway (Figure 3-16). All wood was harvested in the vicinity of Chase.

COMPARING HARVESTS AND USES IN 2012 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2012 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 3-11 reports the number of valid responses for each category, the number of households that did not respond, and the number of households that did not use a resource category or all resources combined. In Table 3-11, 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 responses to the "less, same, more" assessment question. Households that said they did not ordinarily "use" something are not included within the results. This results in fewer responses for less commonly used categories, such as marine mammals and marine invertebrates, and manifests in the chart as a very short bar compared to categories such as salmon or vegetation, which are ordinarily used by most households. Some households did not respond to the question.

Taking all the resource categories into consideration, many households, 50%, said they used less wild resources in general over the previous 12 months compared to recent years (Table 3-11). A smaller number, 25% of all households, said they used about the same amount, and 25% said they used more. Of the households that reported less wild resource use, "working/no time" was the primary reason given, followed by "family/personal," "resources less available," and "weather/environment" (Table 3-12). Of the households that reported more wild resource use, "increased availability" was the primary reason given, followed by "needed more," and "other" (Table 3-13).

Both salmon and nonsalmon fish received the highest number of household responses indicating

Table 3-11. – Changes in household uses of resources compared to recent years, Chase, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	16	16	14	87.5%	15	93.8%	6	37.5%
All resources	16	16	8	50.0%	4	25.0%	4	25.0%
Salmon	16	16	9	56.3%	6	37.5%	1	6.3%
Nonsalmon fish	16	13	7	53.8%	6	46.2%	0	0.0%
Large land mammals	16	16	6	37.5%	7	43.8%	3	18.8%
Small land mammals	16	7	5	71.4%	2	28.6%	0	0.0%
Marine mammals	16	2	2	100.0%	0	0.0%	0	0.0%
Migratory birds	16	5	1	20.0%	4	80.0%	0	0.0%
Other birds	16	12	5	41.7%	6	50.0%	1	8.3%
Bird eggs	16	0	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	16	3	2	66.7%	1	33.3%	0	0.0%
Vegetation	16	15	2	13.3%	9	60.0%	4	26.7%

Source ADF&G Division of Subsistence household surveys, 2013.

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

b. Percentages based on valid responses only.

c. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

that "less" of these locally available resources were used in 2012 than in recent years (Table 3-11). Several reasons were reported for less use from both categories, but each reason was cited by only 1 or 2 households. For salmon, the reason that received the most household responses was "working / no time" followed by "regulations" (Table 3-12). No other reason for harvesting "less" or "more" of the 10 resource categories was reported by more than 2 households for any other resource category (Table 3-12; Table 3-13).

In terms of how the lack of abundance or availability of resources impacted households, not getting enough large game seemed to have the greatest impact. Table 3-14 shows the responses households gave regarding the impact of not getting enough resources in terms of it being a minor impact, major impact, or severe impact. Of the 16 valid responses to this question, 9 households reported that they did not get enough resources. Of these 9 responses, 3 households noted a minor impact, 3 said it had a major impact, and only 2 noted a severe impact on their food security overall. Of the resource categories, the most noticeable impact were for salmon, nonsalmon fish, and large game. For salmon 13 respondents noted they did not get enough with 7 saying it was a minor impact, 4 a major impact, and 2 a severe impact. For nonsalmon fish 9 respondents said they did not get enough with 5 saying the impact was minor, 3 that it was major, and 1 a severe impact. For the large land mammals category, 8 households noted that they did not get enough with 1 saying that the impact was minor, 3 a major impact, and 3 a severe impact. The large game that has usually been preferred for household consumption in the area is moose, and, as noted above, a flood event particularly impacted the ability to harvest moose locally in the Chase area in 2012.

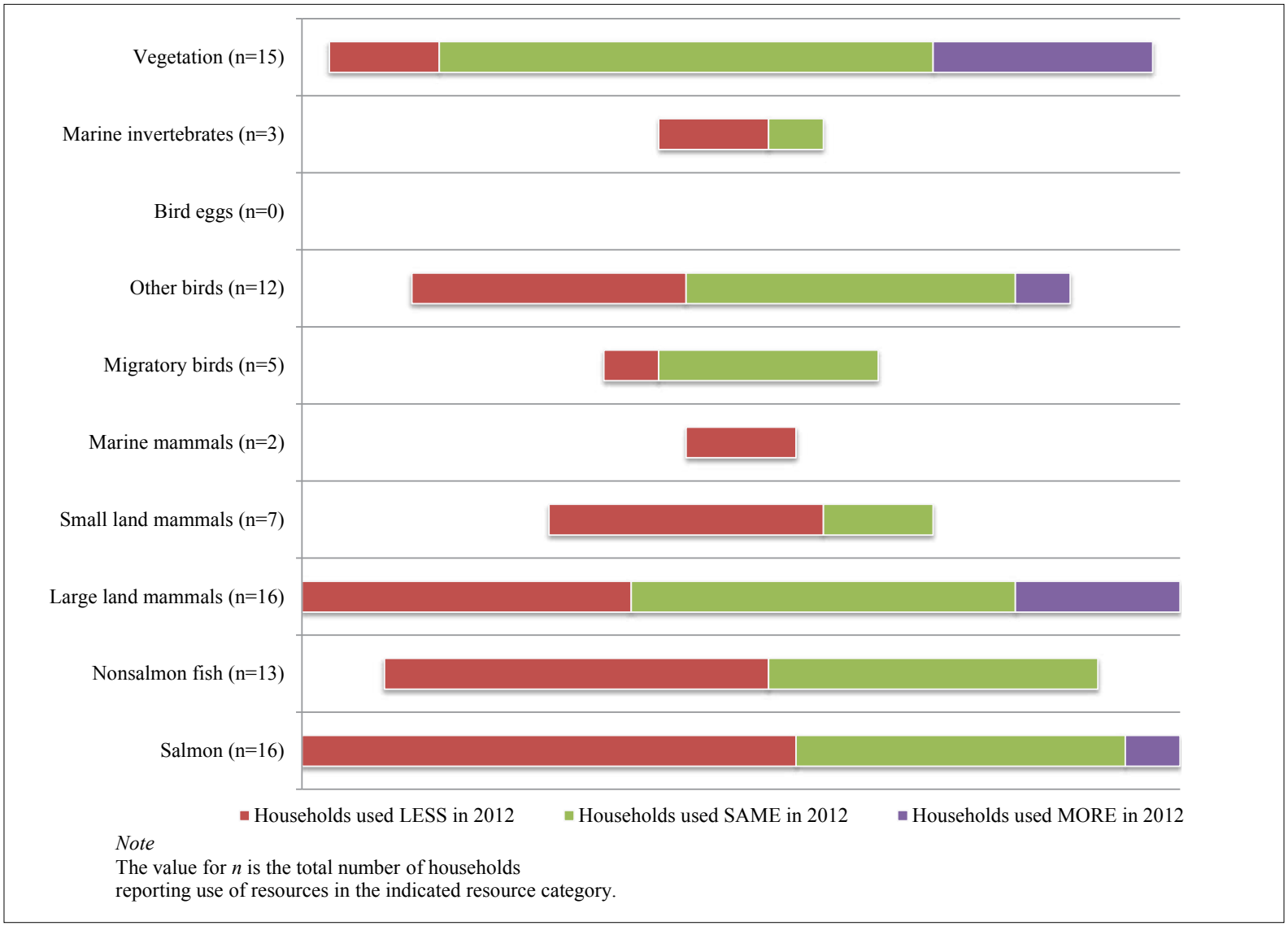

Figure 3-17. – Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Chase, 2012.

Table 3-12. – Reasons for less household uses of resources compared to recent years, Chase, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	16	14	3	21.4%	4	28.6%	0	0.0%	3	21.4%	3	21.4%	1	7.1%	3	21.4%	5	35.7%
All resources	16	8	2	25.0%	2	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	12.5%	2	25.0%
Salmon	16	9	2	22.2%	2	22.2%	0	0.0%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	2	22.2%
Nonsalmon fish	13	7	1	14.3%	0	0.0%	0	0.0%	0	0.0%	2	28.6%	1	14.3%	0	0.0%	1	14.3%
Large land mammals	16	6	2	33.3%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	1	16.7%	1	16.7%
Small land mammals	7	5	2	40.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%
Marine mammals	2	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	5	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	12	5	2	40.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	1	20.0%	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	3	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	15	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%

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Table 3-12.–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	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	16	14	0	0.0%	8	57.1%	3	21.4%	1	7.1%	1	7.1%	0	0.0%	1	7.1%	0	0.0%
All resources	16	8	0	0.0%	3	37.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	16	9	0	0.0%	4	44.4%	3	33.3%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%
Nonsalmon fish	13	7	0	0.0%	1	14.3%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	16	6	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	7	5	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	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%
Migratory birds	5	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	12	5	0	0.0%	2	40.0%	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	3	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	15	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%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting less use as a base.

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

b. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

Table 3-13. – Reasons for more household uses of resources compared to recent years, Chase, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help		Other	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	16	5	3	60.0%	0	0.0%	0	0.0%	1	20.0%	2	40.0%	0	0.0%	0	0.0%	1	20.0%
All resources	16	4	3	75.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	1	25.0%
Salmon	16	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%
Nonsalmon fish	13	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	16	3	1	33.3%	0	0.0%	0	0.0%	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	7	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	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%
Migratory 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%
Other birds	12	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%
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	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%
Vegetation	15	3	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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Table 3-13.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	16	5	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All resources	16	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	16	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	13	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	16	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	7	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	2	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	5	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	12	1	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%
Marine invertebrates	3	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	15	3	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting more use as a base.

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

b. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

Table 3-14. – Reported impact to households responding that they did not get enough of a type of resource, Chase, 2012.

		Households getting enough _____ .				Impact to those not getting enough _____ .									
	Sample	Valid responses		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Salmon	16	16	100.0%	13	81.3%	0	0.0%	0	0.0%	7	53.8%	4	30.8%	2	15.4%
Nonsalmon fish	16	13	81.3%	9	69.2%	0	0.0%	0	0.0%	5	55.6%	3	33.3%	1	11.1%
Marine invertebrates	16	3	18.8%	3	100.0%	1	33.3%	0	0.0%	0	0.0%	2	66.7%	0	0.0%
Large land mammals	16	16	100.0%	8	50.0%	1	12.5%	0	0.0%	1	12.5%	3	37.5%	3	37.5%
Marine mammals	16	2	12.5%	2	100.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Small land mammals	16	5	31.3%	3	60.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%
Migratory birds	16	5	31.3%	2	40.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Other birds	16	12	75.0%	5	41.7%	0	0.0%	0	0.0%	3	60.0%	2	40.0%	0	0.0%
Bird eggs	16	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	16	15	93.8%	6	40.0%	1	16.7%	0	0.0%	2	33.3%	3	50.0%	0	0.0%
All resources	16	16	100.0%	9	56.3%	1	11.1%	0	0.0%	3	33.3%	3	33.3%	2	22.2%

Source ADF&G Division of Subsistence household surveys, 2013.

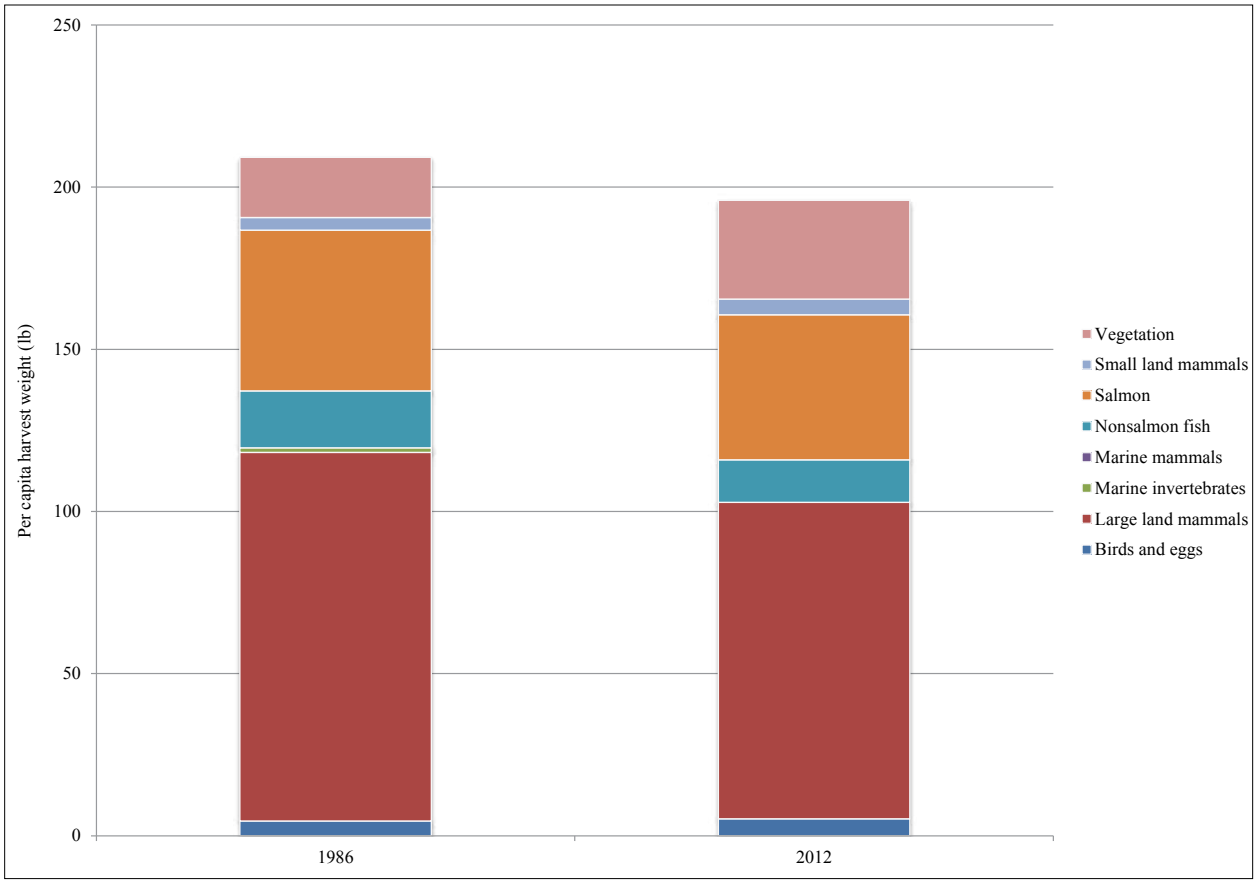

Figure 3-18. – Composition of total per capita harvest, by category, Chase, 1986 and 2012.

HARVEST DATA

Changes in the harvest of resources by Chase residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Chase in 1987 for the study year 1986 (Stanek, Foster, and Fall 1988).

In 1986, the per capita harvest of Chase residents for all resources combined was 209 lb, similar to the 196 lb per person reported for 2012. The per capita harvests of salmon, nonsalmon fish, large game and marine invertebrates were down slightly in 2012 compared to 1986, though harvests of small game, birds and eggs, and vegetation were up slightly. The greatest differences occurred in per capita harvest of large game between the study years (a decline of 16 lb per capita), and of vegetation (an increase of 12 lb per capita) (Figure 3-18).

CURRENT AND HISTORICAL HARVEST AREAS

The 1987 report (Stanek, Foster, and Fall 1988) includes several harvest maps, each of which span the years 1968–1986, which is an 18-year period. Several interesting observations can be made

in comparing this historical land use with that which was reported in 2012. For several resource categories, historical harvests were reported along the Susitna River from the Talkeetna area north to the mouths of Portage and Indian creeks. Harvests in 2012 only appear to have occurred along the Susitna River extensively as far north as the Lane Creek area, with small pockets of use farther north. While the Susitna River channel appears to be less extensively used in recent years, the Denali Highway appears to have had greater use by Chase residents. In 2012, caribou, nonsalmon fish, and vegetation were harvested along the length of the Denali Highway from Cantwell to Paxson.

One of these historical harvest maps combines salmon and nonsalmon fish harvest areas near the Chase community, making it impossible to distinguish between species. Many of these same areas were used by Chase residents in 2012, although it appears as though fewer locations along the Susitna River were used compared to the historical data. The historical maps also show fish harvests in Lane Creek and Blair Lake, though these do not appear to have been used in 2012. Some nonsalmon fishing took place in the Tangle lakes area along the Denali Highway in 2012, but this area was apparently not used historically.

The historical maps of moose and caribou harvests also allow insight on changing harvest locations over time. It appears as though moose were sought over a much smaller area in 2012, with little effort occurring along the banks of the Susitna River compared to historical data. While the harvest area was restricted primarily to the immediate vicinity of Chase in 2012, moose were sought historically over a broader local area, including the banks of the Susitna River as far north as Sherman. The historical caribou harvest area was much closer to the community of Chase, extending from Lane Creek north to Sherman. While the Nelchina caribou herd was targeted then, as it is today, the historical report suggests that the herd seldom ventured far southward and was frequently at too great of a distance for Chase residents to travel. In 2012, all of Chase's caribou harvest occurred along the Denali Highway from Cantwell to Tangle lakes.

The historical and contemporary furbearer harvest locations are remarkably similar, though historical maps show a slightly greater harvest area to the east of Clear Creek stretching to Disappointment Creek. Black bear harvest areas historically covered a much greater area, especially along the Susitna River north to Portage Creek. In 2012, black bears were only sought and/or harvested in several small pockets at Lane Creek, the mouth of Clear Creek, and on the western side of the Susitna River. Historical vegetation harvest also occurred along the banks of the Susitna River as far north as Sherman, an area that was not reported for this harvest in 2012.

LOCAL COMMENTS AND CONCERNS

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.

FISH

Fish, especially salmon, are considered by many residents of Chase to be among their most important local wild resources. Several residents, including 2 key respondents, indicated the importance of salmon to not just people, but to all local flora and fauna. Salmon are taken from nearby waterways, but some households participated in dip net fisheries in the Kenai River to obtain sockeye salmon.

Several respondents expressed concern for diminishing salmon runs in recent years, especially in the Talkeetna River, Susitna River, and Clear Creek (also known as the Chunilna Creek). A key respondent noted that "king [Chinook] salmon are almost non-existent in the Chase area these days." One respondent indicated that fewer sockeye salmon have been spawning in Sockeye Creek and Sockeye Lake in the last 5 years and another indicated that a fishing hole that typically should have 20 or more salmon had but 3 when it was visited in 2012. A key respondent noted that Fish Creek used to be an important fishery for sockeye salmon but that few fish have returned to this creek in the last 10 years. He described the creek as "dead."

Clear Creek has long been an important salmon spawning stream in the Chase area and several respondents expressed concern regarding overharvest and minimal management attention of this waterway. One key respondent was alarmed that Clear Creak remained open to Chinook salmon fishing in 2012 despite closures elsewhere and despite the fact that he requested closing this area several times. In contrast to Chinook salmon declines witnessed in the immediate vicinity of Chase, the same key respondent noted that thousands of individuals could still be seen farther north in the Indian River and Portage Creek in 2012. He indicated that Devil's Canyon and the Indian River are major sources of fish and that, despite doubt by some biologists, fish are spawning at these locations.

Some Chase respondents believed that recent flooding events have had a major impact on salmon and the species that depend on them. They believed that these events affected eggs and spawning habitat, and also washed fish carcasses from the area. One key respondent suggested that the 2006 flood caused many local river channels to change, and said regarding the fall flood of 2012:

> There wasn't a dead fish to be found for 100 miles. This has a large impact on bears and gulls in the spring, on wolverine, otter and fox. Everything looking for a meal in the winter and spring.

Some respondents who live in Chase expressed concern that the intensity and quantity of research

programs that are currently taking place near the community as a result of the Susitna-Watana Hydroelectric Project are negatively impacting salmon. A key respondent stated that contributing factors include "daily surveys with 60 or more people walking up the river beds, constant shocking of the water, and continual collecting of samples, especially when reds [sockeye salmon] are spawning in the creeks." He explained that there appears to be little coordination between the various groups of scientists. While this individual typically harvests Chinook, sockeye, and coho salmon directly in front of his house, privacy and solitude are now absent because of research crews and he has changed his harvest locations for this reason.

While they play a less important role in terms of per capita harvest, nonsalmon fish are also valued by many Chase respondents. One key respondent identified what he claims as the "holy trinity of Dollys, rainbows, and grayling." This individual also harvests eulachon (hooligan) from the mouth of the Yentna River, which he used for bait and dries for human consumption. He noted that that it is important to mention not just the fish that are present, but also those that are not, like northern pike. Local floods are said by respondents to have washed out many nonsalmon fish species from local wetlands.

LARGE LAND MAMMALS

Moose and caribou have long been important wild resources for residents of Chase. Moose in particular are important because of their size and their presence near the community, though many respondents were concerned about substantial declines in moose populations over the past 40 years. A key respondent and long-time resident noted that his household used to harvest 1 moose annually in the 1980s but today his family does not hunt them because they are rarely seen.

Among the most frequently cited reasons for moose declines in recent years was an increasing population of brown bears. Many respondents noted an increase in brown bears locally and suggest that while black bears used to be predominant in the area, they have recently been replaced with brown bears. One key respondent found it interesting that she had been noticing brown bear sows with triplets for at least 3 generations and that she thought many of these cubs were surviving to adulthood. Respondents reported many moose calves being killed by bears annually and that several adult moose killed by brown bears were seen each year along the Chase trail. Some respondents have given up attempts to raise livestock in the area due to these animals serving as bear attractants.

Wolves are not considered to be a major source of moose predation by Chase respondents and one key respondent indicated that "wolves are a non-issue." Many respondents have noted declines in local wolf populations as a result of recent intensive management programs. They noted that the populations have crashed in the last 6 years and while packs could still be seen 2–3 years ago, a single wolf track is impossible to find today. Some residents, including at least one key respondent, were disappointed with the loss of local wolf populations and would like to see them return to the

area. Many believed that wolves were replaced with other predators on moose, such as coyotes and more bears. One key respondent, a prominent local trapper, believed that aerial wolf hunting has been detrimental to both wolves and other species. He has found several wolverines in his traps with bullet wounds which he attributed to aerial hunting.

Deep snow and the Alaska Railroad were also cited by Chase respondents as significant causes of local moose mortality. A key respondent indicated that the railroad, in particular, kills many more moose than are reported each year. While few Chase residents participate in the road-kill moose program in the Talkeetna /Trapper Creek area due to "the distance that must be traveled to obtain the meat," in 2012, some households received moose meat from animals killed by the railroad. As many as 47% of households were provided moose killed on the railroad in the 1980s, and Chase residents reported that 1986 was an unusually low year for meat obtained in this manner—4 lb per household (Stanek, Foster, and Fall 1988). While the quantity of moose meat derived in this manner in 2012 is unknown, a local respondent suggested that this program is still sometimes used. Unfortunately, much of the meat from train-killed moose in recent years has been deemed "unsalvageable."

The federal subsistence hunting season for moose in Unit 13 occurs between August 1 and September 20. Many of Chase's respondents suggested that the timing of the fall moose hunt needs to be later in the season to alleviate issues related to meat spoilage in warm weather. Some believed that the current regulatory timing of the hunt is based on the schedules of non-local hunters and considers ease of access to hunting areas for non-local hunters, but not the harvest needs of the community. A key respondent suggested that trophy hunters have been coming into the Chase area during the moose rut to try to harvest bulls with large antlers, yet "subsistence hunters could care less about antlers because no matter how long you boil them, they're still not good enough to eat." This respondent also disliked the smell and taste of bull moose meat harvested during the rut.

Though individual caribou tend to provide far less meat than an individual moose, more caribou (14) were harvested in 2012 than moose (3) (Table 3-4). This situation was reversed in 1986 when respondents reported harvesting 5 caribou and 16 moose (Stanek, Foster, and Fall 1988). Two reasons may help to explain this change, including the recent decline in moose populations and accessibility of the Denali Highway corridor for caribou hunting. Though the Nelchina caribou herd is often located much farther north of Chase, in areas that are difficult to access without road travel, one local respondent did indicate that caribou were recently observed closer to Curry than they have been in many years. Many residents of Chase appear to appreciate their ability to qualify for federal caribou subsistence permits due to the community's rural status. The federal subsistence hunting season for caribou in Unit 13 occurs between August 1 and September 30, and between October 21 and March 31.

SMALL LAND MAMMALS/FURBEARERS

Only 3 households in Chase reported harvesting small mammals and furbearers and though these animals appear to be important to those households, harvest of these species is uncommon among Chase residents. Local trappers who responded to the survey did indicate an influx of out-of-town "weekend trappers" and some reported changing trapping locations based on this intrusion.

One key respondent who self-identified as being one of the community's preeminent trappers noted a recent decline in marten populations due to overharvest. Conversely, another key respondent indicated that marten populations are healthy locally and that the animals are often seen in nearby forests. The trapper however, did suggest that the marten season should be shortened or closed for several years, and noted that the recommendation was a hard one for him to make due to his reliance on this resource. Several respondents noted that rodent prey populations appear healthy. It was also noted that North American river otters have been abundant in the area for many years and that some people really enjoy seeing them on local landscapes.

Red foxes are an additional species that is reportedly seen frequently in the Chase area and enjoyed by local residents. According to one key respondent, the local population of red foxes was established largely as a result of a fur farm that was in operation from 1990 to 1995. The farm reportedly attracted wild foxes but also had a substantial number of escaped animals.

An attendee of the Chase data review meeting noted that the 2012 harvest numbers for beavers appeared very low. He suggested that individuals probably failed to report their beaver harvest during the survey and that he likely reported fewer than he actually harvested in 2012.

BIRDS AND EGGS

Migratory birds are not a significant wild food resource for Chase residents and only mallards were successfully taken in 2012. Despite the lack of harvest, Chase respondents were very interested in ornithology and amateur bird watching. According to one key respondent, "Chase is full of bird nerds." The community holds a birding event each May and the resident that records the greatest number of birds or most unique bird gets to wear a "trophy hat" for the subsequent year. A great blue heron is championed as one of the most unique sightings in recent years. A key respondent noted that Arctic terns appear to have been negatively impacted by recent floods, perhaps because their nesting areas had been destroyed or prey species are less abundant.

Upland game birds are utilized much more for food than migratory birds in Chase. Key respondents report that the ptarmigan and spruce grouse populations near the community are healthy and have not changed much in recent years. In the past 3 years, ruffed grouse have colonized the area and most respondents welcomed this species because the meat reportedly tastes better and is more

palatable later in the fall than spruce grouse. Respondents have been actively avoiding harvest of ruffed grouse in order to help the population become better established.

VEGETATION

Vegetation, especially berries, was considered important to Chase respondents. Key respondents failed to detect any real changes in local berry resources over time other than natural fluctuations from year to year.

Wood harvested for heating homes was considered by many respondents to be among the most important wild resources to the community of Chase. Key respondents indicated that all households utilize wood and have always done so. One respondent stated that "we often joke in the area about the necessity triangle that is made up of wood, meat, and water. We rely on all 3 every single day to survive." Some respondents used wood for construction purposes, too. At least one household intentionally harvested wood from the western edge of the Susitna River under state permits so as to officially document the harvest of this resource from the area. Several respondents reported that deadfalls caused by a series of windstorms in recent years have facilitated easier wood harvest.

NON-GAME RESOURCES

Amphibians are often considered excellent biological indicators of ecosystem health. A key respondent recognized this and reported that there are lots of wood frogs in the area and that he sees them frequently in the forest. He believed that frog populations are healthy and he enjoyed seeing them around. He was concerned that the railroad has implemented a pesticide program but has not noticed an impact on local amphibians, nor had he noticed malformations. The respondent listens to frogs chorusing each spring near his home, usually in April or May.

AGRICULTURE

A key respondent in Chase mentioned that everyone residing in Chase has a garden and that these provide a substantial amount of food for the community each year. She noted a variety of vegetables grown in Chase that appear to do well there—including broccoli, zucchini, summer squash, potatoes, cucumbers, peas, green beans, and lettuce. Apparently, strawberries also do quite well when cultivated in the area.

The same key respondent explained that parcels in Chase were some of the first agricultural parcels to be sold by the State of Alaska, and that 40-acre plots were available in the late 1970s. Her household owned a horse for 22 years and though they originally tried to grow their own hay, they quickly found that the soil was too poor and that it was cheaper to buy hay from elsewhere

than it was to buy large quantities of fertilizer. The household also attempted to grow barley for several years to attract sandhill cranes (for viewing purposes) but they were largely unsuccessful.

The key respondent touched on animal agriculture and noted several times that most attempts to raise livestock in the area have failed due to bear predation. Her household attempted to raise chickens in several different years but each time the operation failed due to the bears. She noted too that a neighbor endeavored to raise pigs for several years, but "it was the same thing, the bears picked them off one by one."

ENVIRONMENTAL CONDITIONS

As mentioned previously, many local respondents were concerned with the frequency and severity of recent local flooding events. Clean water is recognized as a valuable and critical resource in Chase. One key respondent reported that uses of water in the area are increasing and he believed that climate change was impacting river conditions and that water volumes were experiencing increasingly erratic fluctuations. Another respondent acknowledged that warming winters are apparent and that in the 1980s he experienced much colder temperatures in the area.

NON-LOCAL EXPLOITATION

A major topic of discussion at the Chase data review meeting was the influx of recreational weekenders from other parts of the state. Attendees noted that year-round households account for less than 25% of the structures located in Chase and that non-local use has been a major stressor on local resources. Such stressors were said to be relatively negligible during the 1986 survey and have subsequently increased exponentially. Attendees were concerned that the survey did not accurately capture the amount of fish and wildlife resource extraction by non-local residents.

TRANSPORTATION

Another frequently discussed topic at the Chase data review meeting was that of transportation in and out of the community. Arriving in Chase with a personal motor vehicle is hampered by limited methods available to cross the Talkeetna River. The Chase Trail Bridge is only 46 in wide and local residents purchase smaller vehicles specifically for the purpose of crossing this bridge. It is illegal for the public to utilize the wider adjacent railroad bridge. Winter conditions allowing snowmachine crossing of the river are variable from year to year, and the season for this is considered short. Meeting attendees appeared to agree that Chase residents like the difficulty of accessing the community because it helps to limit the pressure on resources by non-locals. Still, at least one attendee indicated that non-locals frequent the area and that "during salmon season, the banks of local rivers and streams are inundated with fishermen where you used to be able to travel without

seeing a soul." Many residents, according to attendees, fear that roads built to support construction and maintenance of the proposed Susitna-Watana dam will further exacerbate the situation by giving greater public access to the area.

Attendees also noted that advancements in motor vehicles and infrastructure since the 1980s have benefited local residents. Improvements in road conditions have allowed easier and safer access to the Denali Highway and the Kenai Peninsula. Ownership of ATVs by Chase residents has increased substantially during this same period while dog teams have declined. Access to ATVs and road vehicles has permitted residents to travel longer distances over shorter time periods in search of wild foods. One attendee noted, "Today it is nothing for someone to jump in their truck and drive down to Kenai for one day of dip net fishing. That would have been a major undertaking back in the '80s."

SUSITNA-WATANA DAM PROJECT

When asked if they had any additional comments or concerns regarding wild foods, many respondents offered concerns on the proposed Susitna-Watana dam. Researchers tallied the number of responses given in the community comments and concerns section of the survey. Chase residents' sentiments toward the dam were overwhelmingly negative, with more than 75%[5] of survey respondents and all key respondents reporting concerns for human and/or ecosystem health. Most individuals noted that the proposed dam would significantly impact their way of life and some suggested that they would be forced to move from the area.

Among the concerns listed were 1) ecological impact and human safety in the event of catastrophic dam failure, 2) changing water temperatures, water volumes, and flow patterns that would affect transportation and salmon spawning, 3) modified faunal migration patterns and loss of habitat suitability and connectivity, both in the inundation area and downriver as far as Talkeetna, 4) increased bank erosion, 5) decreased cleanliness of drinking water, and 6) changing patterns of human access to the area with the possibility of increased harvest pressure by non-locals.

All households in Chase utilize solar power and many respondents believed that increased use of alternative energy sources by all Alaskans would alleviate the need for a dam. Respondents were not convinced that the benefits of a dam outweigh the costs, though many respondents recognized that energy is not cheap and that demand is steadily increasing.

Some residents and at least one key respondent stated that they believed that the ongoing scientific studies related to the proposed dam are ill-informed. They were concerned that too much attention is being afforded to the impacts on the proposed inundation zone, and not enough on downriver ecosystems. In addition, some local residents reported concerns about uncoordinated scientific

5. This percentage is based on researchers noting the number of surveys that included concerns about the project in the "additional comments or concerns" section of the survey instrument. The question asked of the respondents was, "Do you have any comments or concerns?" Note, this survey was administered immediately following the community scoping meeting where the proposed Susitna-Watana Hydroelectric Project was discussed.

efforts that are negatively impacting the resources being researched, especially as they relate to disturbance in salmon spawning streams. Another cited concern was the impact of low-flying aircraft on wildlife populations. It was believed by some respondents that helicopters have been partly to blame for moose moving from the area.

A summarizing quote regarding local sentiments pertaining to the proposed dam was offered by a key respondent:

> There are no real benefits to the dam. If they go through with what they're proposing, the Susitna River will be dead. It will be like someone you know dying of cancer. It will slowly become something that is unrecognizable and it will be irreversible. It is the greatest threat to our way of life. If it is constructed, myself and others will have no choice but to move.

ACKNOWLEDGEMENTS

The ADF&G Division of Subsistence would like to thank Chase residents Peg Foster, Mike Wood, and Jonathon Durr for their help in facilitating this research.

TALKEETNA

COMMUNITY BACKGROUND

Situated approximately 77 miles north of Anchorage, Talkeetna is an unincorporated community within the Matanuska-Susitna Borough known widely in Alaska as a summer tourist destination for flightseeing, rafting, hiking, and sport fishing, and as a staging locale for attempts to summit Mt. McKinley (Denali), which is located roughly 55 miles to the west. To the community's east is the rough western boundary of the Talkeetna Mountains range. The community is located near the convergence of 3 major rivers: the Talkeetna, Susitna, and Chulitna rivers; salmon fishing has long contributed significantly to the local culture and economy. Indeed, the town's original Dena'ina name, *K'dalkitnu*, means "river of plenty" (Kari and Fall 2003, 235).

In the 1890s, a gold rush centered on claims in the lower Susitna River sparked an influx of new residents to the area. Although there were inhabitants in the area as a result of the gold rush the community of Talkeetna was not established until 1919, 3 years after having been selected as the headquarters for construction of the Seward-to-Fairbanks railroad. Several factors contributed to the decline of the area's population during the first few decades of the early twentieth century, including an influenza epidemic in 1918, the completion of the railroad in 1923 that led to people moving out of the area after the work was completed, and the decline of the area's mines in the 1940s.[1]

Talkeetna's population rebounded over the next 30 years through the arrival of a large number of homesteaders. Today, Talkeetna is a popular summer destination for tourists eager to experience the natural beauty of Alaska's Interior. In contrast somewhat to the community's tourist-supported economy, noncommercial hunting and fishing have a long history in the area and continue to be practiced by Talkeetna residents as a legacy of the area's homesteaders.

Basic amenities available to Talkeetna residents include a general store, a U.S. post office, an elementary and high school, a small public library, a community health clinic, a Baptist church, a Catholic church, and a non-profit community radio station—KTNA 88.9 FM—serving communities throughout the Susitna River valley. Due in part to the large number of seasonal visitors and tourists in the area, a higher number and greater variety of services and conveniences are available to permanent residents of Talkeetna than would be available in a less-visited community. These services include a number of restaurants; hotels and rental cabins; bars; book-and-gift stores; as well as boat, air, and ground transportation companies.

1. "Talkeetna. A little bit of history," by Talkeetna Historical Society: http://www.talkeetnahistoricalsociety.org/history.php.

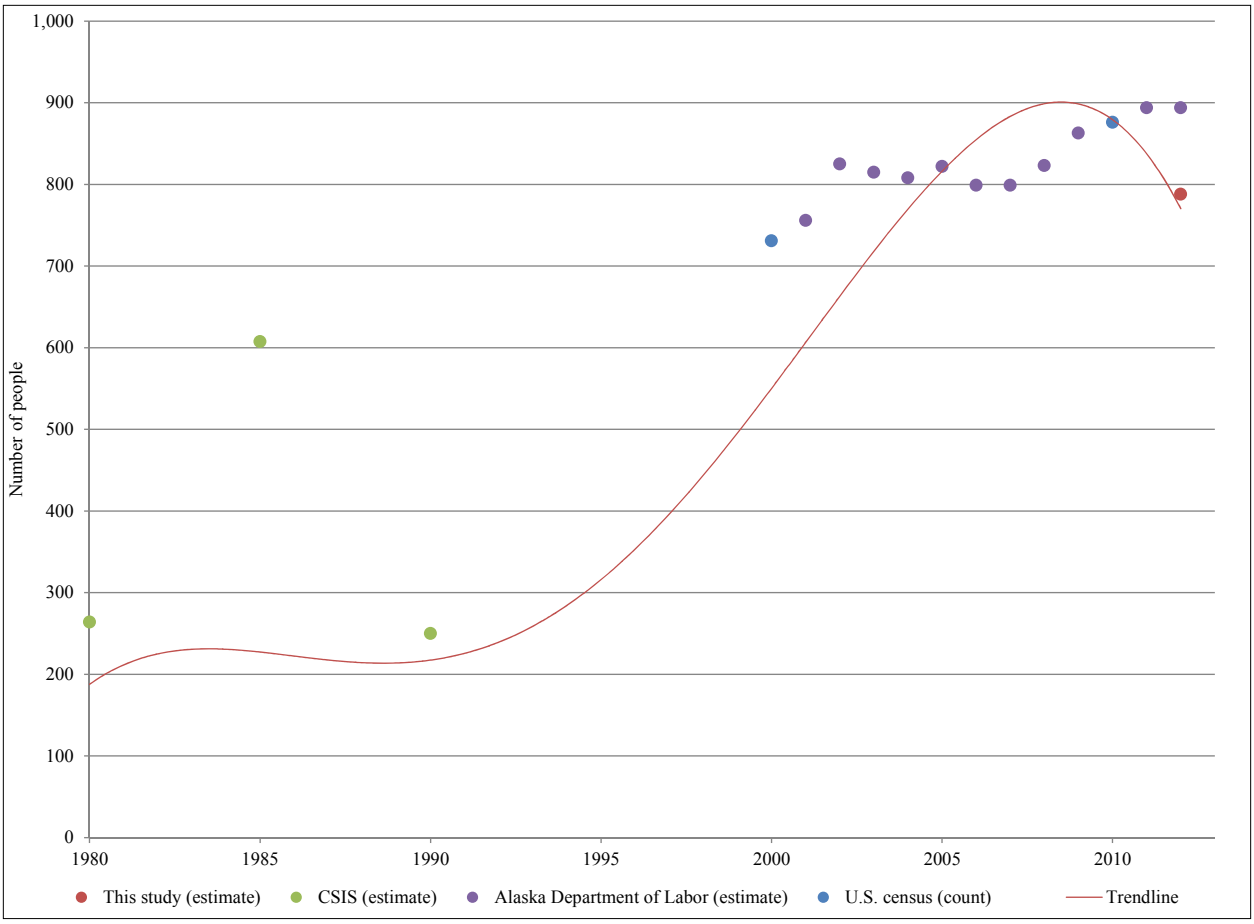

Figure 4-1. – Population history, Talkeetna, 1980–2012.

Talkeetna is connected to other Susitna River valley communities situated along the George Parks Highway via a 14-mile-long spur road. Nearby communities include Chase, located to the north and across the Talkeetna River, and Trapper Creek, which is situated northwest across the Parks Highway.

DEMOGRAPHY

During 2012, the estimated population of Talkeetna was 788 residents; this is slightly lower than that documented by the 2010 U.S. census of 876 residents (Table 1-1). The ADLWD estimated a slightly higher population of 894 in 2012. It is likely this variation stems from differences in survey methodology, seasonal differences in the timing of survey administration (i.e., winter versus summer), or both. The population of Talkeetna has experienced approximately 30% growth during the past 30 years (i.e., 607 in 1985) (Figure 4-1).

A total of 102 households were surveyed, which represents 27% percent of the total estimated community households (Table 1-6). The mean household size was 2 persons and the average age of

Table 4-1. – Population profile, Talkeetna, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	11.0	2.8%	2.8%	11.0	2.8%	2.8%	22.0	2.8%	2.8%
5–9	22.0	5.5%	8.3%	22.0	5.7%	8.5%	44.0	5.6%	8.4%
10–14	25.7	6.4%	14.7%	14.7	3.8%	12.3%	40.3	5.1%	13.5%
15–19	18.3	4.6%	19.3%	18.3	4.7%	17.0%	36.7	4.7%	18.1%
20–24	11.0	2.8%	22.0%	3.7	0.9%	17.9%	14.7	1.9%	20.0%
25–29	22.0	5.5%	27.5%	11.0	2.8%	20.8%	33.0	4.2%	24.2%
30–34	25.7	6.4%	33.9%	29.3	7.5%	28.3%	55.0	7.0%	31.2%
35–39	22.0	5.5%	39.4%	36.7	9.4%	37.7%	58.7	7.4%	38.6%
40–44	22.0	5.5%	45.0%	11.0	2.8%	40.6%	33.0	4.2%	42.8%
45–49	25.7	6.4%	51.4%	25.7	6.6%	47.2%	51.3	6.5%	49.3%
50–54	33.0	8.3%	59.6%	40.3	10.4%	57.5%	73.3	9.3%	58.6%
55–59	44.0	11.0%	70.6%	51.3	13.2%	70.8%	95.3	12.1%	70.7%
60–64	29.3	7.3%	78.0%	51.3	13.2%	84.0%	80.7	10.2%	80.9%
65–69	40.3	10.1%	88.1%	18.3	4.7%	88.7%	58.7	7.4%	88.4%
70–74	22.0	5.5%	93.6%	22.0	5.7%	94.3%	44.0	5.6%	94.0%
75–79	14.7	3.7%	97.2%	7.3	1.9%	96.2%	22.0	2.8%	96.7%
80–84	11.0	2.8%	100.0%	3.7	0.9%	97.2%	14.7	1.9%	98.6%
85–89	0.0	0.0%	100.0%	3.7	0.9%	98.1%	3.7	0.5%	99.1%
90–94	0.0	0.0%	100.0%	0.0	0.0%	98.1%	0.0	0.0%	99.1%
95–99	0.0	0.0%	100.0%	0.0	0.0%	98.1%	0.0	0.0%	99.1%
100–104	0.0	0.0%	100.0%	0.0	0.0%	98.1%	0.0	0.0%	99.1%
Missing	0.0	0.0%	100.0%	7.3	1.9%	100.0%	7.3	0.9%	100.0%
Total	**399.7**	**100.0%**	**100.0%**	**388.7**	**100.0%**	**100.0%**	**788.3**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

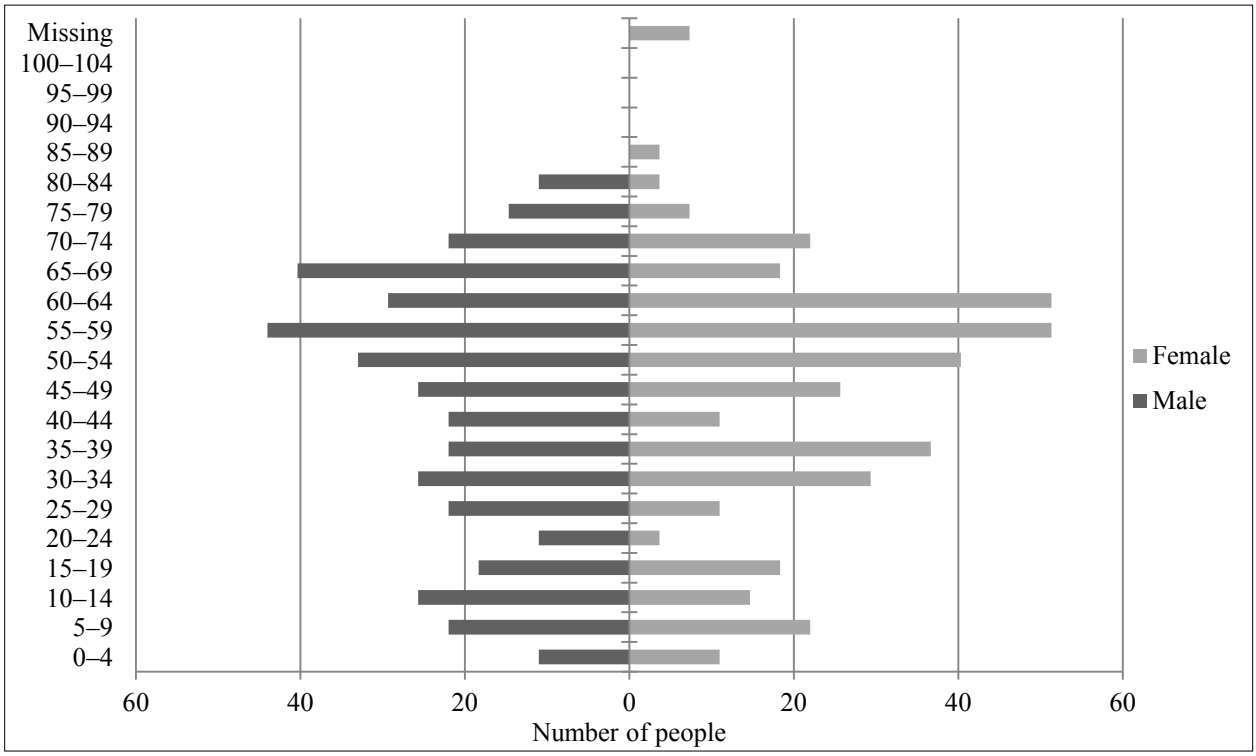

Figure 4-2. – Population profile, Talkeetna, 2012.

residents was 45 years (Table 1-9). While the mean length of residency was 18 years, the maximum length of residency was 55 years. The Alaska Native population of Talkeetna was estimated to be 4% of the community.

In Talkeetna, there is a slightly higher population of males (400) than females (389) (Table 4-1; Figure 4-2). Less than 20% of the population is younger than 20 years of age. Almost 50% of the population is 45 years old or older. The cohorts with the highest percentage of people are 55–59 and 60–64.

A high number of household heads (83%) were born outside of Alaska in another state (the same percentage as neighboring Trapper Creek) and 5% were born outside of the United States (Table 1-10). Only 4% of the community's household heads were originally from Talkeetna.

CASH EMPLOYMENT AND MONETARY INCOME

The total community earned income in 2012 was 75% of the total household income ($13,549,076) and income derived from other sources made up 25% ($4,533,433) (Table 4-2). For Talkeetna, pension/retirement income made up approximately 10% of the total income.

The average household income in Talkeetna was $48,349 and the per capita income was $22,938 (Table 1-16). Economist Neal Fried (Fried 2012, 14) suggests median household income "is considered a better representation because potential extremes on either side of the spectrum have less influence" compared to mean household income. According to Fried (2012), for the span of 2006–2010, the median household income in Alaska was $66,521 and within the Matanuska-Susitna Borough, where Talkeetna is located, it was $67,703. Regardless of which amount is compared to Talkeetna, it is clear that this community's average household income is below the statewide and Mat-Su Borough averages, which may be due in part to lack of winter employment opportunities associated with Talkeetna's summer tourism-oriented economy.

The largest source of earned income came from service-oriented jobs (28% of total community income, or $4,964,414), which is not surprising given Talkeetna's recreational and tourist attractions (Table 4-2). Many of these jobs are seasonal and although they only accounted for 28% of the total community income they accounted for 42% of the overall jobs in Talkeetna in 2012 (Table 4-2; Table 4-3). A similar employment opportunity was retail trade which accounted for 12% of jobs (Table 4-3).

Earned income from local government came in a distant second place for providing total community income at 13% ($2,360,786) of the total community income and accounted for 10% of jobs in the community in 2012 (Table 4-2; Table 4-3). Transportation, communication, and utilities was third in providing community income at 11% ($1,906,218).

The highest sources of other income in Talkeetna were derived from pension/retirement income

Table 4-2. – Estimated earned and other income, Talkeetna, 2012.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Services	290.0	190.7	$4,964,414	$13,274	27.5%
Local government	82.3	62.3	$2,360,786	$6,312	13.1%
Transportation, communication, and utilities	99.6	77.0	$1,906,218	$5,097	10.5%
Retail trade	99.6	73.3	$1,133,095	$3,030	6.3%
Agriculture, forestry, and fishing	43.3	36.7	$913,153	$2,442	5.0%
Federal government	26.0	22.0	$541,753	$1,449	3.0%
Construction	56.3	47.7	$540,492	$1,445	3.0%
Other employment	21.6	18.3	$403,477	$1,079	2.2%
Mining	4.3	3.7	$286,187	$765	1.6%
State government	13.0	11.0	$261,138	$698	1.4%
Manufacturing	21.6	18.3	$126,214	$337	0.7%
Finance, insurance, and real estate	8.7	7.3	$112,149	$300	0.6%
Earned income subtotal	**593.1**	**311.7**	**$13,549,076**	**$36,227**	**74.9%**
Other income					
Pension/retirement		91.7	$1,803,912	$4,823	10.0%
Social Security		102.7	$1,322,015	$3,535	7.3%
Alaska Permanent Fund dividend		352.0	$614,893	$1,644	3.4%
Rental income		14.7	$174,167	$466	1.0%
Dividend/interest		7.3	$169,033	$452	0.9%
Unemployment		55.0	$125,541	$336	0.7%
Veterans assistance		7.3	$82,198	$220	0.5%
Disability		11.0	$75,800	$203	0.4%
Weatherization		7.3	$51,333	$137	0.3%
Energy assistance		66.0	$41,517	$111	0.2%
Food stamps		18.3	$18,143	$49	0.1%
Longevity bonus		18.3	$15,273	$41	0.1%
Other		7.3	$12,440	$33	0.1%
Supplemental Security income		11.0	$11,216	$30	0.1%
Adult public assistance		7.3	$7,820	$21	0.0%
Child support		7.3	$4,443	$12	0.0%
Citgo fuel voucher		7.3	$3,332	$9	0.0%
Per diem/public meeting		3.7	$367	$1	0.0%
Workers' compensation/insurance		0.0	$0	$0	0.0%
Native corporation dividend		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Meeting honoraria		0.0	$0	$0	0.0%
Other income subtotal		**359.3**	**$4,533,443**	**$12,122**	**25.1%**
Community income total			**$18,082,519**	**$48,349**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

a. The mean is calculated using the *total* number of households in the community, not the number of households for this income category.

b. Income by category as a percentage of the total community income from all sources (wage-based income *and* non-wage-based income).

Table 4-3. – Employment by industry, Talkeetna, 2012.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**852.8**	**311.7**	**593.1**	
Federal government	**3.0%**	**7.1%**	**4.4%**	**4.0%**
Executive, administrative, and managerial	2.0%	4.7%	2.9%	2.1%
Service occupations	0.5%	1.2%	0.7%	1.8%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.2%	0.7%	0.2%
State government	**1.5%**	**3.5%**	**2.2%**	**1.9%**
Teachers, librarians, and counselors	1.0%	2.4%	1.5%	1.8%
Technologists and technicians, except health	0.5%	1.2%	0.7%	0.2%
Local government, including tribal	**10.1%**	**20.0%**	**13.9%**	**17.4%**
Teachers, librarians, and counselors	7.0%	14.1%	9.5%	13.0%
Health technologists and technicians	0.5%	1.2%	0.7%	0.5%
Technologists and technicians, except health	0.5%	1.2%	0.7%	1.8%
Administrative support occupations, including clerical	1.0%	2.4%	1.5%	2.1%
Service occupations	0.5%	1.2%	0.7%	0.1%
Occupation not indicated	0.5%	1.2%	0.7%	0.0%
Agriculture, forestry, and fishing	**6.0%**	**11.8%**	**7.3%**	**6.7%**
Agricultural, forestry, and fishing occupations	6.0%	11.8%	7.3%	6.7%
Mining	**0.5%**	**1.2%**	**0.7%**	**2.1%**
Construction and extractive occupations	0.5%	1.2%	0.7%	2.1%
Construction	**6.5%**	**15.3%**	**9.5%**	**4.0%**
Engineers, surveyors, and architects	0.5%	1.2%	0.7%	0.2%
Construction and extractive occupations	5.5%	12.9%	8.0%	3.8%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.2%	0.7%	0.0%
Manufacturing	**2.5%**	**5.9%**	**3.6%**	**0.9%**
Writers, artists, entertainers, and athletes	2.0%	4.7%	2.9%	0.9%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.2%	0.7%	0.0%
Transportation, communication, and utilities	**12.1%**	**24.7%**	**16.8%**	**14.1%**
Executive, administrative, and managerial	1.5%	2.4%	2.2%	2.1%
Engineers, surveyors, and architects	0.5%	1.2%	0.7%	1.2%
Writers, artists, entertainers, and athletes	1.0%	2.4%	1.5%	0.5%
Marketing and sales occupations	0.5%	1.2%	0.7%	0.2%
Administrative support occupations, including clerical	1.0%	2.4%	1.5%	1.0%
Mechanics and repairers	0.5%	1.2%	0.7%	0.6%
Transportation and material moving occupations	6.5%	14.1%	8.8%	7.1%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.2%	0.7%	1.5%
Retail trade	**12.1%**	**23.5%**	**16.8%**	**8.4%**
Executive, administrative, and managerial	2.5%	5.9%	3.6%	4.4%
Writers, artists, entertainers, and athletes	2.0%	4.7%	2.9%	0.3%
Service occupations	7.5%	14.1%	10.2%	3.7%

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Table 4-3.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Finance, insurance, and real estate	**1.0%**	**2.4%**	**1.5%**	**0.8%**
Marketing and sales occupations	0.5%	1.2%	0.7%	0.2%
Administrative support occupations, including clerical	0.5%	1.2%	0.7%	0.6%
Services	**42.2%**	**61.2%**	**48.9%**	**36.6%**
Executive, administrative, and managerial	9.5%	17.6%	13.1%	15.5%
Social scientists, social workers, religious workers, and lawyers	0.5%	1.2%	0.7%	0.6%
Teachers, librarians, and counselors	2.0%	4.7%	2.9%	1.2%
Health diagnosing and treating practitioners	2.0%	4.7%	2.9%	5.5%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	0.5%	1.2%	0.7%	1.3%
Writers, artists, entertainers, and athletes	2.5%	5.9%	3.6%	0.7%
Health technologists and technicians	1.0%	2.4%	1.5%	0.8%
Technologists and technicians, except health	0.5%	1.2%	0.7%	1.5%
Marketing and sales occupations	2.0%	3.5%	2.9%	0.5%
Administrative support occupations, including clerical	3.0%	5.9%	3.6%	1.6%
Service occupations	9.5%	16.5%	12.4%	3.6%
Agricultural, forestry, and fishing occupations	1.0%	2.4%	1.5%	0.3%
Mechanics and repairers	2.5%	4.7%	2.9%	1.8%
Construction and extractive occupations	0.5%	1.2%	0.7%	0.0%
Transportation and material moving occupations	1.0%	2.4%	1.5%	0.0%
Handlers, equipment cleaners, helpers, and laborers	3.0%	4.7%	2.9%	0.9%
Occupation not indicated	1.0%	1.2%	1.5%	0.8%
Industry not indicated	**2.5%**	**5.9%**	**3.6%**	**3.0%**
Executive, administrative, and managerial	1.5%	3.5%	2.2%	2.3%
Teachers, librarians, and counselors	0.5%	1.2%	0.7%	0.1%
Occupation not indicated	0.5%	1.2%	0.7%	0.6%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Income by category as a percentage of the total *wage-based* community income.

($1,803,912) and Social Security ($1,322,015) (Table 4-2), which is expected given the documented population information that shows nearly 20% of the community's residents were 60 or older.

Employed adults were on average employed 36 weeks a year and 89% of Talkeetna's adults were employed in 2012 (Table 1-11). Eighty-three percent of Talkeetna's households included an employed household member and on average each household retained 3 jobs. Most people worked in Talkeetna (78%) (Table 1-12).

LEVELS OF INDIVIDUAL PARTICIPATION IN THE HARVESTING AND PROCESSING OF WILD RESOURCES

Table 1-13 reports the estimated levels of individual participation in the harvest and processing of wild resources by all Talkeetna residents in 2012. Talkeetna residents participated in the harvest of resources according to the following distribution: vegetation (81%), fish (49%), large land mammals

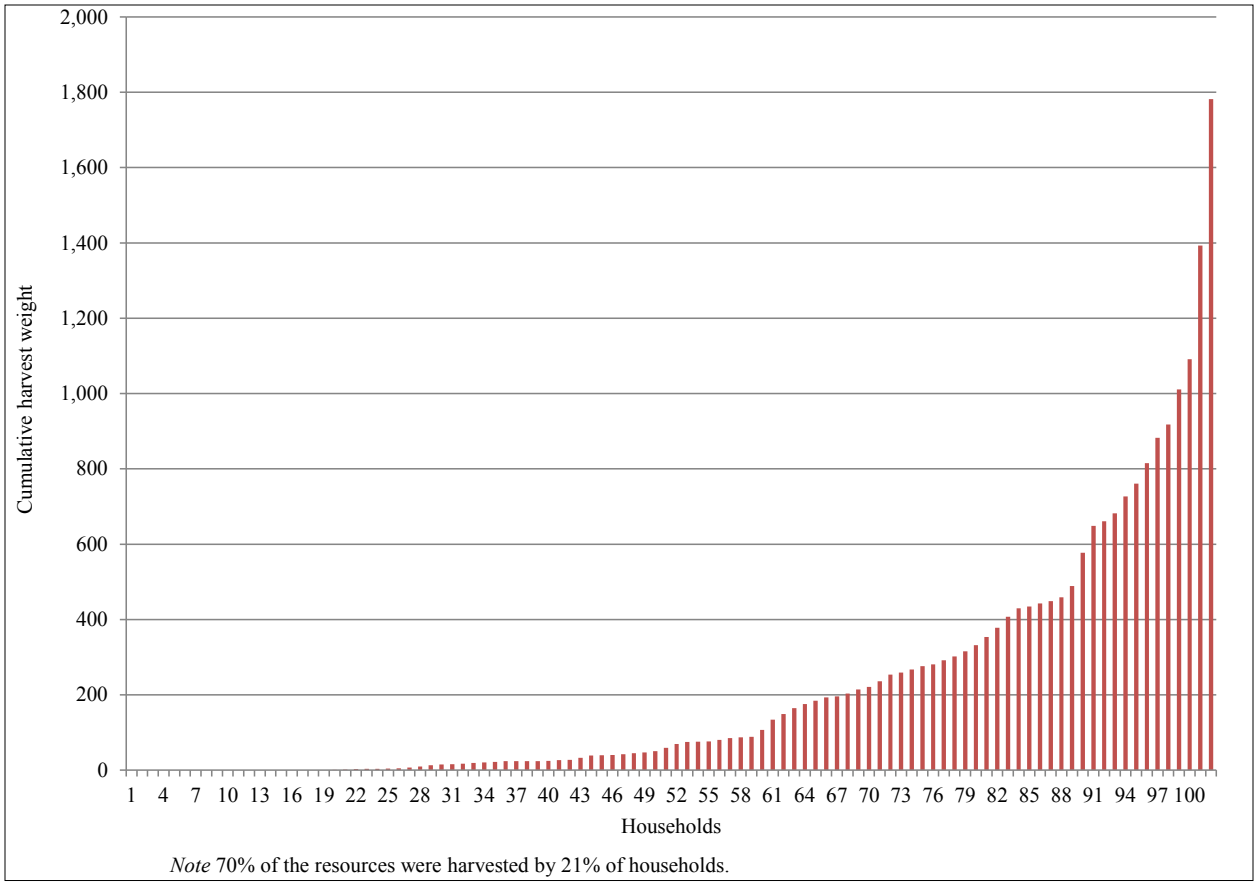

Figure 4-3. – Household specialization, Talkeetna, 2012.

(19%), small land mammals/furbearers (5%), and birds and eggs (15%). The proportion of households participating in the harvest of any resources is 82%. In terms of participation in the processing of wild resources, most households were as equally involved in processing as in harvesting. Regarding large land mammals, however, 8% more households were engaged in processing (i.e., 27%) than harvesting, which indicates a greater group effort was involved.

HOUSEHOLD RESOURCE HARVEST AND USE PATTERNS AND SHARING OF WILD RESOURCES

Table 1-14 summarizes resource harvest and use characteristics for Talkeetna in 2012 at the household level. Most households (96%) used wild resources in 2012, while 90% attempted to harvest or harvested resources. The average harvest was 112 lb usable weight per household, or 53 lb per capita. During the study year, households harvested an average of 6 kinds of resources and used an average of 9 kinds of resources. The maximum number of resources used by any household was 36. In addition, households gave away an average of 2 kinds of resources and 65% of households

reported sharing resources with other households. In general, 70% of wild resources were harvested by 21% of Talkeetna households (Figure 4-3).

HARVEST QUANTITIES AND COMPOSITION

Table 4-4 reports estimated wild resource harvests and uses by Talkeetna residents in 2012 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 local way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total community harvest of wild resources in pounds edible weight was 42,020 lb (Table 4-4). The Talkeetna harvest composition is dominated by salmon, which represented 45% (18,710 lb, or 24 lb per capita) of the total harvest (Figure 4-4; Table 4-4). Second in importance are large land mammals composing 21% (11,275 lb) of the community harvest, followed by vegetation (7,395 lb), nonsalmon fish (3,891 lb), small land mammals (2,255 lb) and birds (272 lb).

SEASONAL ROUND

Based on the calendar year, early new-year and winter are characterized by trapping beavers and small game and hunting upland game birds. In late winter and early spring, Talkeetna residents ice fish for rainbow and lake trout in the vicinity of the community. In May, fiddlehead ferns are collected by foot around Talkeetna. In early summer, June and July, Talkeetna residents fish for all types of salmon in the Susitna, Chulitna, and Talkeetna rivers. Households will fish for nonsalmon fish, like Dolly Varden and burbot, in the direct vicinity during the summer. During this time, households travel south to the Kenai Peninsula to obtain Pacific halibut and rockfish. In the fall the hunting season begins and moose are generally harvested during this time, at the same time as berries. Blueberries and cranberries are popular in the late summer and early fall and are often picked while harvesting other resources. Caribou hunting also begins in August but continues into November. Upland game birds and small mammals are harvested and the seasonal cycle begins anew.

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 4-4. – Estimated harvests and uses of fish, game, and vegetation resources, Talkeetna, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) % of harvest
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	
All resources	**96.1**	**90.2**	**90.2**	**90.2**	**64.7**	**42,020.0**	**112.4**	**53.3**	**11,227.6**		**30.0**	**25.7**
Fish	**84.3**	**52.0**	**49.0**	**72.5**	**40.2**	**22,600.7**	**60.4**	**28.7**	**6,820.0**		**18.2**	**27.4**
Salmon	**81.4**	**50.0**	**46.1**	**63.7**	**35.3**	**18,709.6**	**50.0**	**23.7**	**3,971.0**		**10.6**	**27.9**
Chum salmon	10.8	10.8	9.8	4.9	2.9	1,151.3	3.1	1.5	187.0	ind	0.5	78.6
Coho salmon	57.8	35.3	31.4	32.4	15.7	6,169.9	16.5	7.8	1,290.7	ind	3.5	33.2
Chinook salmon	38.2	29.4	14.7	25.5	9.8	1,189.3	3.2	1.5	124.7	ind	0.3	60.6
Pink salmon	10.8	9.8	9.8	1.0	2.0	417.8	1.1	0.5	157.7	ind	0.4	75.9
Sockeye salmon	65.7	40.2	38.2	42.2	28.4	9,719.2	26.0	12.3	2,189.0	ind	5.9	31.9
Landlocked salmon	1.0	2.9	1.0	0.0	0.0	11.0	0.0	0.0	11.0	ind	0.0	169.2
Unknown salmon	4.9	2.0	1.0	4.9	1.0	51.0	0.1	0.1	11.0	ind	0.0	169.2
Nonsalmon fish	**57.8**	**28.4**	**23.5**	**43.1**	**14.7**	**3,891.1**	**10.4**	**4.9**	**2,849.0**		**7.6**	**53.9**
Pacific herring	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cod	3.9	2.0	2.0	2.9	0.0	73.3	0.2	0.1	18.3		0.0	139.2
Pacific (gray) cod	3.9	2.0	2.0	2.9	0.0	73.3	0.2	0.1	18.3	ind	0.0	139.2
Pacific tomcod	0.0	0.0	0.0	0.0	0.0	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	0.0		0.0	0.0
Starry flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Greenling	6.9	2.9	2.9	4.9	2.0	88.0	0.2	0.1	36.7		0.1	114.1
Lingcod	6.9	2.9	2.9	4.9	2.0	88.0	0.2	0.1	36.7	ind	0.1	114.1
Pacific halibut	48.0	7.8	7.8	41.2	7.8	1,433.7	3.8	1.8	1,433.7	lb	3.8	89.9
Rockfish	8.8	3.9	3.9	4.9	1.0	616.0	1.6	0.8	154.0	ind	0.4	107.5
Yelloweye rockfish	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sablefish (black cod)	1.0	1.0	1.0	1.0	0.0	45.5	0.1	0.1	14.7	ind	0.0	169.2
Sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Burbot	8.8	6.9	5.9	2.9	2.0	369.6	1.0	0.5	154.0	ind	0.4	123.2
Char	9.8	13.7	8.8	2.0	3.9	523.3	1.4	0.7	469.4		1.3	87.1
Dolly Varden	6.9	10.8	5.9	2.0	2.9	339.9	0.9	0.4	377.7	ind	1.0	125.7
Lake trout	4.9	3.9	3.9	1.0	1.0	183.3	0.5	0.2	91.7	ind	0.2	84.6
Arctic grayling	2.9	2.9	2.0	1.0	1.0	84.7	0.2	0.1	121.0	ind	0.3	154.4
Northern pike	2.9	1.0	1.0	2.0	0.0	61.6	0.2	0.1	22.0	ind	0.1	169.2

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Table 4-4.–Page 2 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Nonsalmon fish, continued												
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trout	15.7	17.6	11.8	3.9	4.9	595.5	1.6	0.8	425.3		1.1	62.4
Cutthroat trout	1.0	1.0	1.0	0.0	0.0	123.2	0.3	0.2	88.0	ind	0.2	169.2
Rainbow trout	13.7	13.7	11.8	2.0	3.9	472.3	1.3	0.6	337.3	ind	0.9	58.4
Unknown trout	2.0	3.9	0.0	2.0	1.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whitefishes	0.0	1.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Cisco	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whitefishes	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Land mammals	**73.5**	**27.5**	**13.7**	**69.6**	**22.5**	**11,275.0**	**30.1**	**14.3**	**414.3**		**1.1**	**56.8**
Large land mammals	**72.5**	**22.5**	**8.8**	**69.6**	**21.6**	**9,020.0**	**24.1**	**11.4**	**51.3**		**0.1**	**65.6**
Bison	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black bear	8.8	3.9	0.0	7.8	2.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Brown bear	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Caribou	27.5	10.8	7.8	20.6	9.8	5,720.0	15.3	7.3	44.0	ind	0.1	70.3
Deer	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goat	2.9	1.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	66.7	12.7	2.0	62.7	16.7	3,300.0	8.8	4.2	7.3	ind	0.0	119.0
Muskox	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dall sheep	3.9	1.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals[b]	**9.8**	**7.8**	**7.8**	**3.9**	**2.0**	**2,255.0**	**6.0**	**2.9**	**363.0**		**1.0**	**112.6**
Beaver	4.9	2.9	2.9	3.9	1.0	2,200.0	5.9	2.8	146.7	ind	0.4	115.5
Coyote	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	3.7	ind	0.0	169.2
Fox	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	18.3		0.0	121.4
Red fox	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	18.3		0.0	121.4
Red fox–cross phase	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	7.3	ind	0.0	169.2
Red fox–red phase	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	11.0	ind	0.0	169.2
Hare	2.9	2.9	2.9	0.0	0.0	51.3	0.1	0.1	25.7		0.1	125.1
Snowshoe hare	2.9	2.9	2.9	0.0	0.0	51.3	0.1	0.1	25.7	ind	0.1	125.1
River (land) otter	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	11.0	ind	0.0	125.6
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 4-4.–Page 3 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Small land mammals[b], continued												
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	80.7	ind	0.2	119.5
Mink	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	7.3	ind	0.0	169.2
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Squirrel	2.9	2.9	2.9	0.0	2.0	3.7	0.0	0.0	58.7		0.2	169.2
Arctic ground (parka) squirrel	1.0	1.0	1.0	0.0	0.0	3.7	0.0	0.0	7.3	ind	0.0	169.2
Red (tree) squirrel	2.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	51.3	ind	0.1	146.8
Weasel	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	11.0	ind	0.0	169.2
Wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**2.9**	**0.0**	**0.0**	**2.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seals	2.9	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ringed seal	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seals	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whales	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Bowhead whale	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**24.5**	**21.6**	**17.6**	**8.8**	**2.9**	**272.4**	**0.7**	**0.3**	**432.7**		**1.2**	**46.6**
Migratory birds	**2.9**	**1.0**	**1.0**	**2.0**	**0.0**	**11.4**	**0.0**	**0.0**	**29.3**		**0.1**	**169.2**
Ducks	2.0	1.0	1.0	1.0	0.0	11.4	0.0	0.0	29.3		0.1	169.2
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Eider	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	1.0	1.0	1.0	0.0	0.0	3.7	0.0	0.0	3.7	ind	0.0	169.2
Northern pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Scoter	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Teal	1.0	1.0	1.0	0.0	0.0	7.7	0.0	0.0	25.7		0.1	169.2
Green-winged teal	1.0	1.0	1.0	0.0	0.0	7.7	0.0	0.0	25.7	ind	0.1	169.2

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Table 4-4.–Page 4 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Migratory birds, continued												
Unknown ducks	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Geese	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Other birds	**22.5**	**21.6**	**17.6**	**6.9**	**2.9**	**261.1**	**0.7**	**0.3**	**403.3**		**1.1**	**46.9**
Upland game birds	22.5	21.6	17.6	6.9	2.9	261.1	0.7	0.3	403.3		1.1	46.9
Grouse	20.6	20.6	16.7	3.9	2.9	207.9	0.6	0.3	297.0		0.8	49.6
Spruce grouse	19.6	20.6	16.7	2.9	2.9	202.8	0.5	0.3	289.7	ind	0.8	50.4
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ruffed grouse	2.0	2.0	2.0	0.0	0.0	5.1	0.0	0.0	7.3	ind	0.0	119.0
Unknown grouse	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	8.8	8.8	6.9	2.9	0.0	53.2	0.1	0.1	106.3	ind	0.3	83.1
Bird eggs	**2.0**	**0.0**	**0.0**	**2.0**	**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	0.0	0.0	0.0		0.0	0.0
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Seabird and loon eggs	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Gull eggs	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown gull eggs	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown eggs	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	**15.7**	**8.8**	**7.8**	**9.8**	**2.9**	**476.5**	**1.3**	**0.6**	**248.2**		**0.7**	**68.0**
Clams	9.8	5.9	5.9	4.9	2.9	364.8	1.0	0.5	121.6		0.3	79.6
Butter clam	2.9	1.0	1.0	2.0	0.0	11.0	0.0	0.0	3.7	gal	0.0	169.2
Freshwater clam	1.0	1.0	1.0	0.0	1.0	22.0	0.1	0.0	7.3	gal	0.0	169.2

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Table 4-4.–Page 5 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Marine invertebrates, continued												
Razor clam	6.9	4.9	4.9	2.9	2.0	331.8	0.9	0.4	110.6	gal	0.3	85.7
Unknown clams	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crabs	3.9	2.0	1.0	2.9	0.0	64.2	0.2	0.1	91.7		0.2	169.2
Dungeness crab	1.0	2.0	1.0	0.0	0.0	64.2	0.2	0.1	91.7	ind	0.2	169.2
King crab	2.9	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mussels	2.9	2.0	2.0	1.0	0.0	37.6	0.1	0.0	25.1	gal	0.1	119.1
Blue mussels	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Octopus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Oysters	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown oysters	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea urchins	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown sea urchins	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Shrimp	2.9	1.0	1.0	2.0	0.0	9.9	0.0	0.0	9.9	lb	0.0	169.2
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**90.2**	**87.3**	**87.3**	**33.3**	**43.1**	**7,395.4**	**19.8**	**9.4**	**3,312.3**		**8.9**	**27.0**
Berries	**77.5**	**73.5**	**73.5**	**24.5**	**35.3**	**6,994.0**	**18.7**	**8.9**	**1,748.5**		**4.7**	**27.7**
Blueberry	72.5	67.6	66.7	19.6	26.5	3,643.7	9.7	4.6	910.9	gal	2.4	40.0
Lowbush cranberry	26.5	26.5	25.5	4.9	9.8	500.8	1.3	0.6	125.2	gal	0.3	46.5
Highbush cranberry	42.2	38.2	38.2	11.9	12.9	1,029.4	2.8	1.3	257.4	gal	0.7	35.6
Crowberry	5.9	3.9	3.9	2.9	2.0	88.0	0.2	0.1	22.0	gal	0.1	102.7
Currants	23.5	22.5	22.5	2.0	8.8	801.6	2.1	1.0	200.4	gal	0.5	60.6
Cloudberry	2.0	2.0	2.0	0.0	2.0	5.5	0.0	0.0	1.4	gal	0.0	125.6
Nagoonberry	1.0	1.0	1.0	0.0	0.0	3.7	0.0	0.0	0.9	gal	0.0	169.2
Raspberry	22.5	20.6	20.6	3.9	5.9	560.1	1.5	0.7	140.0	gal	0.4	48.4
Salmonberry	4.9	4.9	4.9	2.0	2.0	97.2	0.3	0.1	24.3	gal	0.1	130.4
Soapberry	1.0	1.0	1.0	0.0	0.0	7.3	0.0	0.0	1.8	gal	0.0	169.2
Strawberry	6.9	6.9	6.9	0.0	1.0	158.6	0.4	0.2	39.6	gal	0.1	82.0
Twisted stalk berry (watermelon berry)	5.9	5.9	5.9	1.0	0.0	49.5	0.1	0.1	12.4	gal	0.0	106.1
Other wild berries	5.9	5.9	5.9	2.0	3.0	48.6	0.1	0.1	12.1	gal	0.0	88.3
Plants, greens, and mushrooms	**38.2**	**38.2**	**38.2**	**4.9**	**15.7**	**396.9**	**1.1**	**0.5**	**336.4**		**0.9**	**33.7**
Fiddlehead fern	22.5	22.5	22.5	4.0	8.9	124.4	0.3	0.2	124.4	gal	0.3	44.7
Hudson's Bay (Labrador) tea	1.0	1.0	1.0	0.0	0.0	0.5	0.0	0.0	0.5	gal	0.0	169.2
Mint	1.0	1.0	1.0	0.0	0.0	1.8	0.0	0.0	1.8	gal	0.0	169.2

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Table 4-4.–Page 6 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Plants, greens, and mushrooms, continued												
Spruce tips	1.0	1.0	1.0	0.0	0.0	0.9	0.0	0.0	0.9	gal	0.0	169.2
Wild rose hip	7.8	7.8	7.8	0.0	2.0	80.7	0.2	0.1	20.2	gal	0.1	77.6
Other wild greens	3.9	3.9	3.9	1.0	1.0	47.7	0.1	0.1	47.7	gal	0.1	131.7
Unknown mushrooms	13.7	13.7	12.7	1.0	5.9	85.7	0.2	0.1	85.7	gal	0.2	60.5
Fireweed	3.9	3.9	3.9	0.0	0.0	55.2	0.1	0.1	55.2	gal	0.1	97.6
Wood	**71.6**	**70.6**	**70.6**	**7.8**	**9.8**	**4.6**	**0.0**	**0.0**	**1,227.4**		**3.3**	**139.6**
Birch	1.0	1.0	1.0	0.0	0.0	3.7	0.0	0.0	3.7	lb	0.0	169.2
Birch sap	1.0	1.0	1.0	0.0	0.0	0.9	0.0	0.0	7.3	gal	0.0	169.2
Firewood	70.6	69.6	69.6	7.9	9.9	0.0	0.0	0.0	1,216.4	cord.	3.3	18.0

Source ADF&G Division of Subsistence household surveys, 2013.

Note With regard to birch sap, the estimated harvest weight presented in the table is that of the syrup that results from the processing of birch sap. However, the harvest amount (the quantity of sap in gallons) given in the table is the estimated harvest of the sap (not the syrup) prior to being processed. The harvest amount, if converted to gallons of syrup, would be 0.081 gallons (approximately 1.3 cups).

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

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.

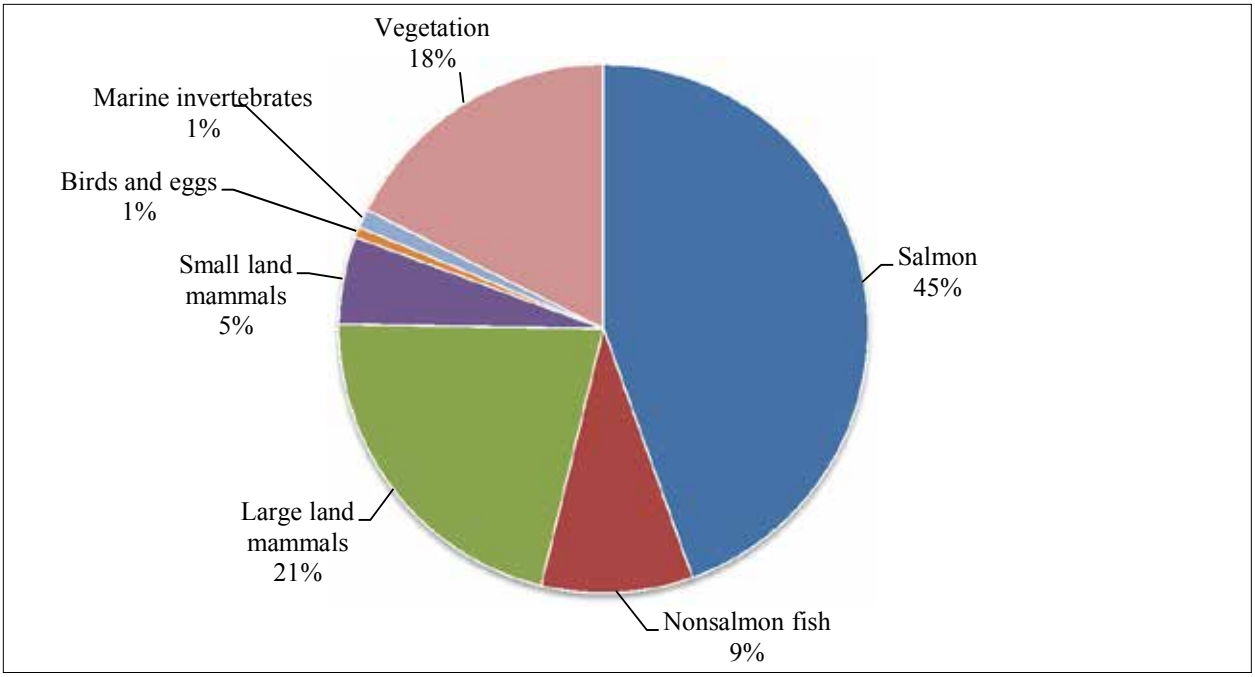

Figure 4-4. – Composition of wild resource harvest, by category, Talkeetna, 2012.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Table 4-4 reports estimated wild resource harvests and uses by Talkeetna residents in 2012 and includes information about sharing (e.g., receiving and giving) of wild resources. In general, Talkeetna households tended to participate in sharing of resources, with 90% of the households receiving and 65% giving away wild resources in 2012. Large land mammals, in particular, were frequently shared, with 70% of households receiving and 22% giving large land mammals away. Salmon were also highly shared, with 64% of households receiving and 35% giving salmon to other households.

Table 4-5. – Top 10 resources harvested and used, Talkeetna, 2012.

Harvested			Used		
Rank	Resource	Pounds per capita	Rank	Resource	Percentage of households using
1.	Sockeye salmon	12.3	1.	Blueberry	72.5%
2.	Coho salmon	7.8	2.	Moose	66.7%
3.	Caribou	7.3	3.	Sockeye salmon	65.7%
4.	Blueberry	4.6	4.	Coho salmon	57.8%
5.	Moose	4.2	5.	Pacific halibut	48.0%
6.	Beaver	2.8	6.	Highbush cranberry	42.2%
7.	Pacific halibut	1.8	7.	Chinook salmon	38.2%
8.	Chinook salmon	1.5	8.	Caribou	27.5%
8.	Chum salmon	1.5	9.	Lowbush cranberry	26.5%
10.	Highbush cranberry	1.3	10.	Currants	23.5%

Source ADF&G Division of Subsistence household surveys, 2013.

Table 4-5 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Talkeetna households during the 2012 study year. The top harvested resources were sockeye and coho salmon with a harvest of 12 lb and 8 lb per capita, respectively. Caribou ranked third with 7 lb per capita harvested. In terms of use, blueberries ranked highest, with 73% of households using the resource, followed by moose (67%) and sockeye salmon (66%). Surprisingly, Chinook salmon ranked eighth in terms of harvest (2 lb per capita) and seventh in terms of use (38% of households using), in spite of the fact that Chinook salmon were not documented as extensively shared and escapements have been a statewide concern.

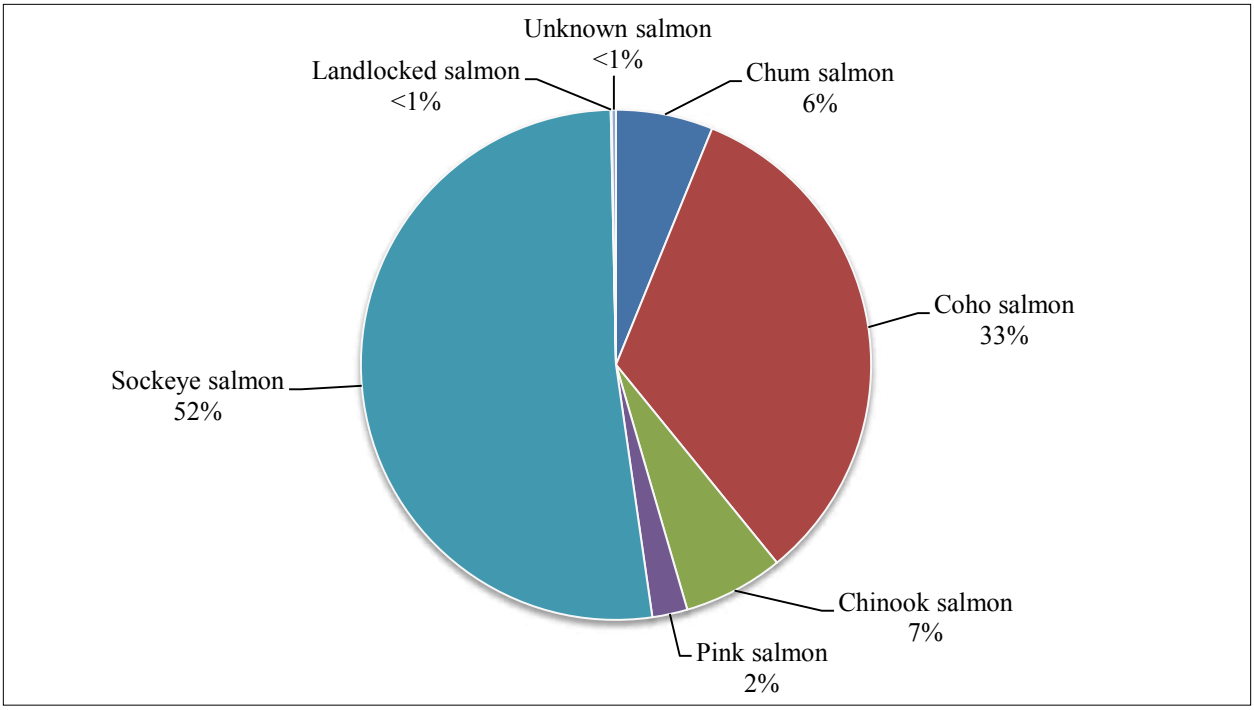

Figure 4-5. – Composition of salmon harvest, Talkeetna, 2012.

SALMON

A total of 18,710 lb of salmon were harvested by Talkeetna households (Table 4-4). By far the most important salmon species was sockeye, which was fished for by 40% of households. In descending order of resource composition, harvested salmon species included sockeye salmon (52%), coho salmon (33%), Chinook salmon (7%), chum salmon (6%), and pink salmon (2%) (Figure 4-5).

An estimated 14,146 lb of salmon (76% of the total harvest) were caught with rod and reel (Table 4-6). An additional 2,956 lb (16% of the total) were harvested with dipnets in the Kenai and Kasilof personal use dip net fisheries. To a lesser extent 130 lb of salmon were caught with fish wheels in other areas of the state.

A total of 35% of households shared salmon they harvested, while 64% were given salmon harvested by others (Table 4-4). Of the species received by households, 42% received sockeye salmon, 32% received coho salmon, and 26% received Chinook salmon. No other salmon species accounted for more than 5% of shared resources, either given or received.

Generally, Talkeetna residents fished for all types of salmon at road access points along the Susitna River and at locations along the Talkeetna River. Coho salmon were also harvested on Peterson Creek (Figure 4-6). Farther from Talkeetna, sockeye salmon were harvested at Kenai and Kasilof river locations and Chinook salmon were harvested in Seward, Alaska (Figure 4-7; Figure 4-8). Pink salmon were also harvested in the vicinity of Portage, Alaska.

Table 4-6. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Talkeetna, 2012.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Other method		Subsistence gear, any method		Dip net[a]		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%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**5.1%**	**5.1%**	**0.7%**	**0.7%**	**2.9%**	**2.8%**	**0.0%**	**0.0%**	**3.6%**	**3.5%**	**16.8%**	**15.8%**	**74.5%**	**75.6%**	**100.0%**	**100.0%**
	Total	**5.1%**	**5.1%**	**0.7%**	**0.7%**	**2.9%**	**2.8%**	**0.0%**	**0.0%**	**3.6%**	**3.5%**	**16.8%**	**15.8%**	**74.5%**	**75.6%**	**100.0%**	**100.0%**
Chum salmon	Gear type	10.9%	14.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	7.2%	4.7%	6.2%
	Resource	11.8%	11.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	88.2%	88.2%	100.0%	100.0%
	Total	0.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	5.4%	4.7%	6.2%
Coho salmon	Gear type	29.1%	29.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	41.6%	41.6%	32.5%	33.0%
	Resource	4.5%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.5%	95.5%	100.0%	100.0%
	Total	1.5%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.0%	31.5%	32.5%	33.0%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	3.2%	6.7%	0.0%	0.0%	2.6%	5.4%	0.0%	0.0%	4.1%	8.2%	3.1%	6.4%
	Resource	0.0%	0.0%	0.0%	0.0%	2.9%	2.9%	0.0%	0.0%	2.9%	2.9%	0.0%	0.0%	97.1%	97.1%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	3.0%	6.2%	3.1%	6.4%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.3%	5.2%	2.9%	4.0%	2.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	2.3%	97.7%	97.7%	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%	0.1%	0.1%	3.9%	2.2%	4.0%	2.2%
Sockeye salmon	Gear type	60.0%	56.4%	100.0%	100.0%	96.8%	93.3%	0.0%	0.0%	97.4%	94.6%	99.5%	99.7%	42.8%	39.7%	55.1%	51.9%
	Resource	5.5%	5.5%	1.3%	1.3%	5.0%	5.0%	0.0%	0.0%	6.4%	6.4%	30.3%	30.3%	57.8%	57.8%	100.0%	100.0%
	Total	3.0%	2.9%	0.7%	0.7%	2.8%	2.6%	0.0%	0.0%	3.5%	3.3%	16.7%	15.7%	31.9%	30.0%	55.1%	51.9%
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%	0.4%	0.1%	0.3%	0.1%
	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%	0.3%	0.1%	0.3%	0.1%
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%	0.4%	0.4%	0.3%	0.3%
	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%	0.3%	0.3%	0.3%	0.3%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Harvests using dip net gear are typically included with subsistence harvests. However, in this case dip nets are primarily used to harvest fish under personal use regulations and are therefore placed in a separate category.

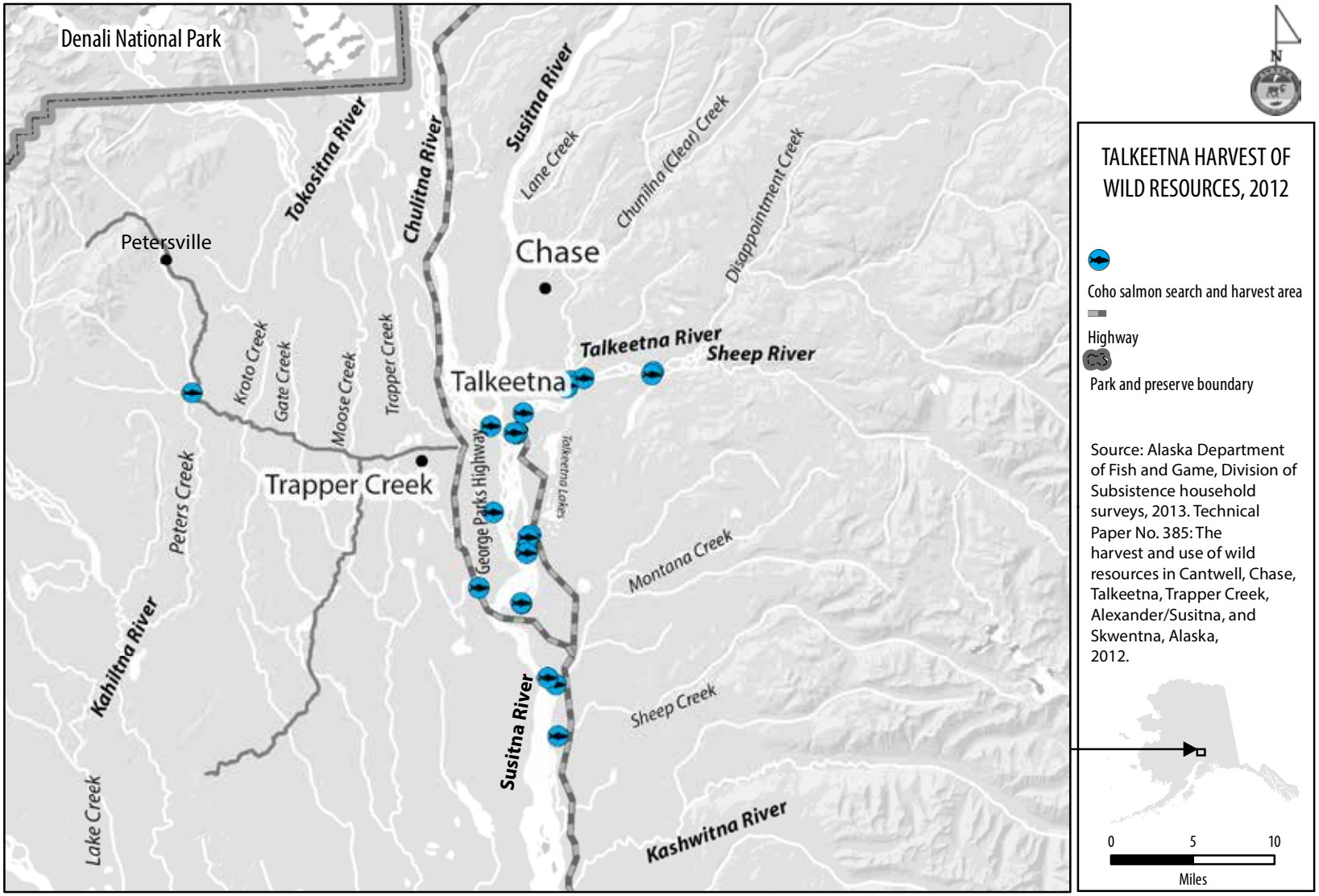

Figure 4-6. – Coho salmon search and harvest areas, Talkeetna, 2012.

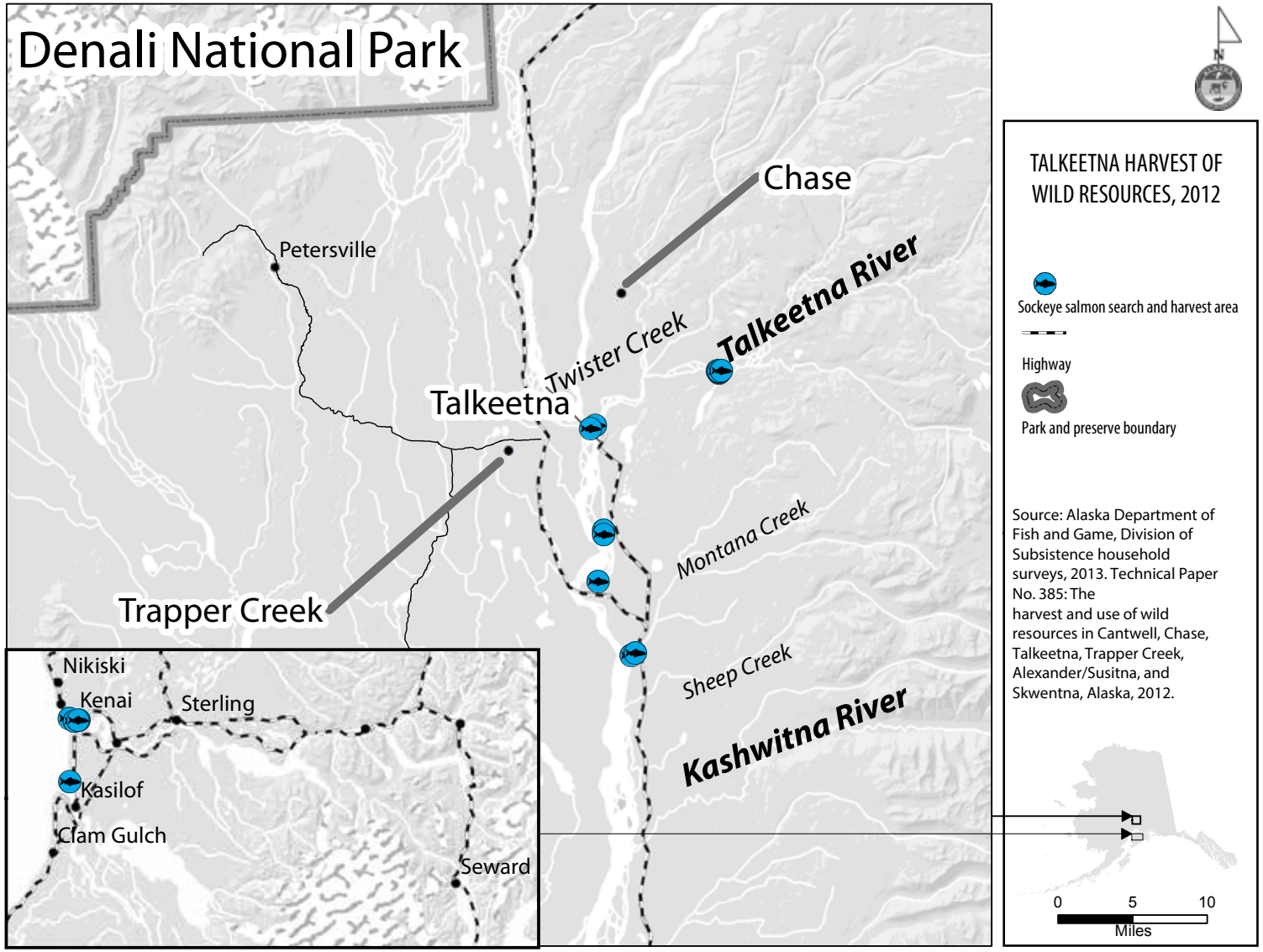

Figure 4-7. – Sockeye salmon search and harvest areas, Talkeetna, 2012.

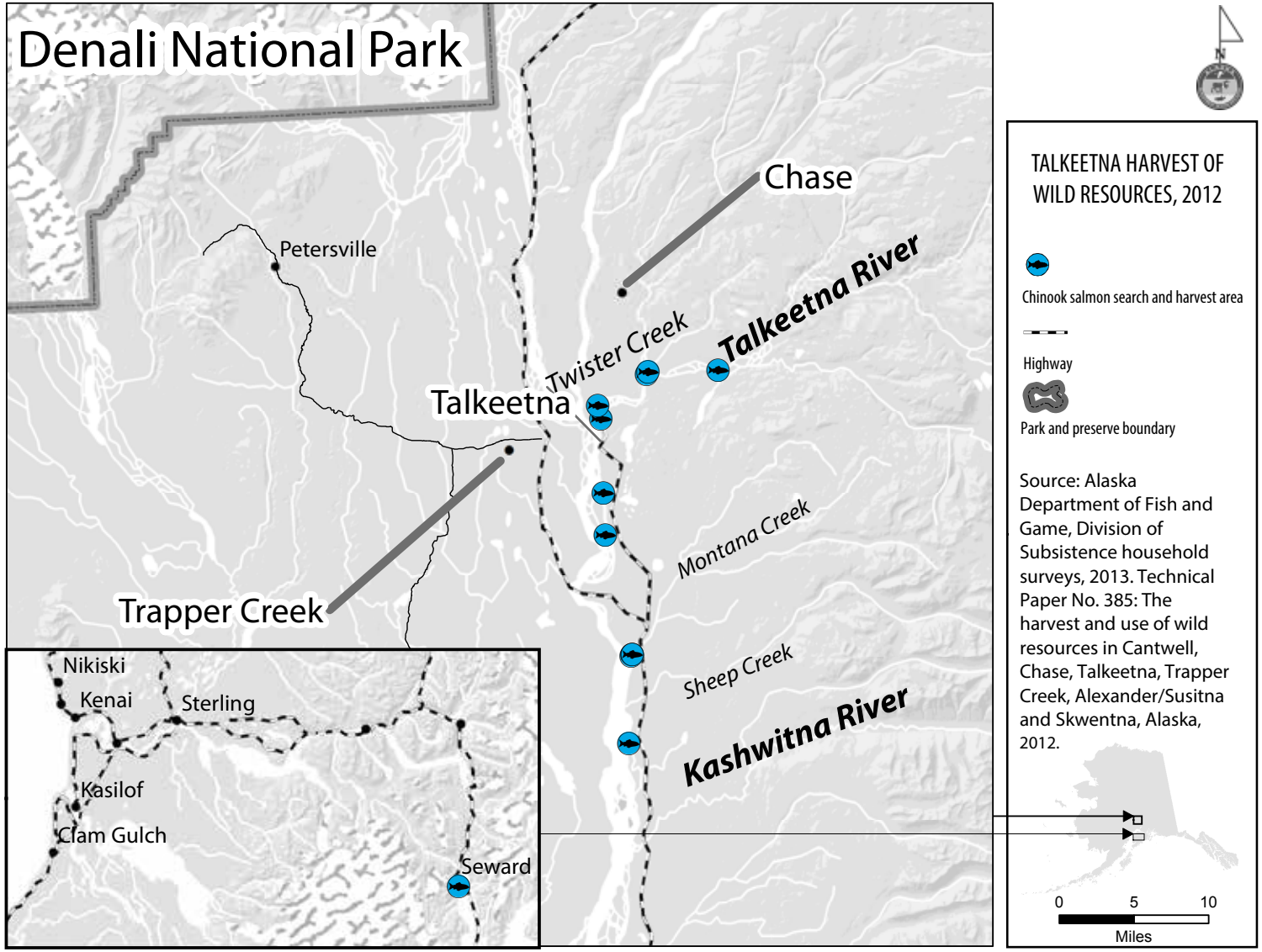

Figure 4-8. – Chinook salmon search and harvest areas, Talkeetna, 2012.

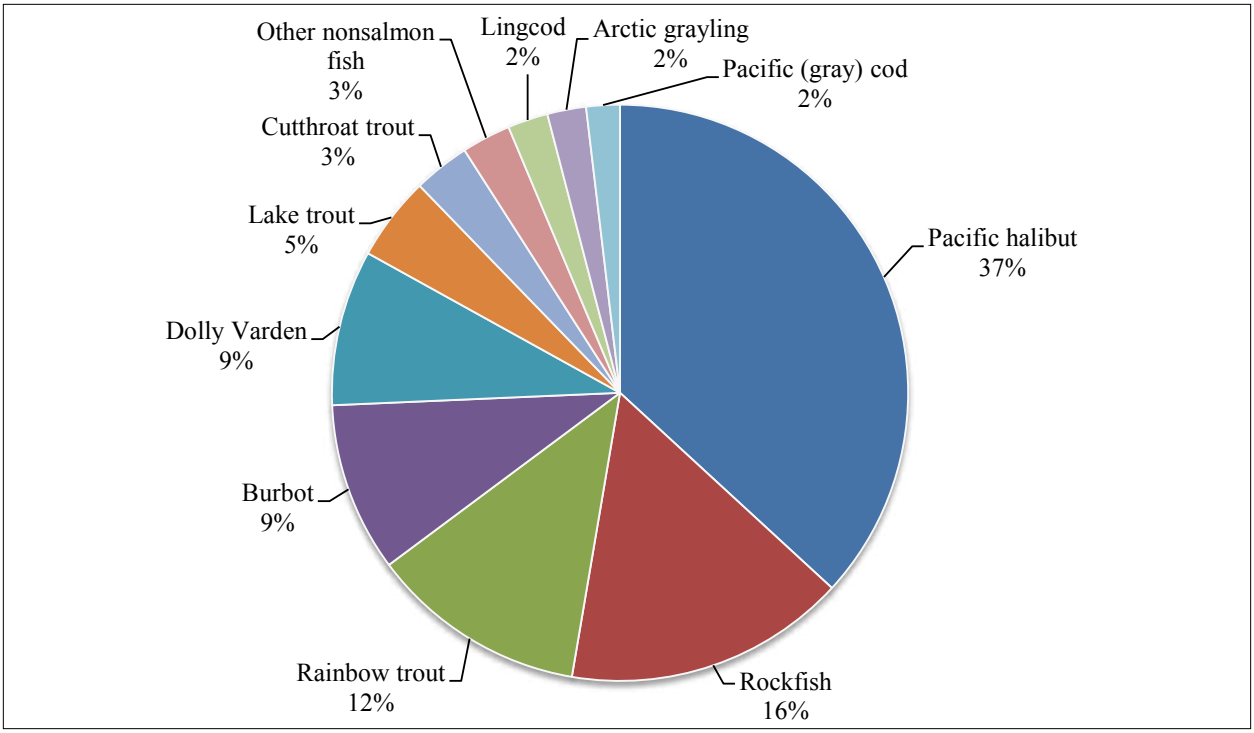

Figure 4-9. – Composition of nonsalmon fish harvest, Talkeetna, 2012.

NONSALMON FISH

A total of 3,891 lb of nonsalmon fish were harvested by Talkeetna, which is equal to 5 lb per capita (Table 4-4). Pacific halibut composed 37% of the total harvest by weight, followed by rockfish (16%), rainbow trout (12%), burbot (9%), and Dolly Varden (9%) (Figure 4-9). No other nonsalmon fish species composed more than 5% of the total harvest. Approximately 15% of households shared their harvested nonsalmon fish resources, while 43% received fish from others (Table 4-4). Most of this received fish (by 41% of households) was Pacific halibut.

All nonsalmon fish were harvested with rod and reel except for rainbow and lake trout, which were also obtained by ice fishing with hook and line gear (Table 4-7). Halibut, which represented the highest harvest of nonsalmon fish, were harvested in Cook Inlet near Homer and near Seldovia (Figure 4-10). Rockfish were harvested in the waters off of Portlock and Ninilchik on the Kenai Peninsula. Dolly Varden and burbot were harvested from the Susitna River (Figure 4-11). Rainbow trout were harvested from the Susitna, Chulitna, Talkeetna, and Matanuska rivers and the Talkeetna lakes (Figure 4-12). Lake trout were harvested from the Susitna and Chulitna rivers and Larson Lake.

Table 4-7. – Estimated percentages of fish other than salmon harvested by gear type, resource, and total nonsalmon fish harvest, Talkeetna, 2012.

				Subsistence methods											
		Removed from commercial catch		Gillnet or seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
Resource	Percentage base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**91.1%**	**91.0%**	**8.9%**	**9.0%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**91.1%**	**91.0%**	**6.0%**	**9.0%**	**100.0%**	**100.0%**
Smelt	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%
	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%
	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%
Eulachon (hooligan, candlefish)	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%
	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%
	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%
Pacific (gray) cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.8%	0.0%	0.0%	0.6%	1.6%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.6%	0.0%	0.0%	0.6%	1.6%
Pacific tomcod	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%
	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%
	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%
Unknown cod	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%
	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%
	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%
Lingcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	2.2%	0.0%	0.0%	1.2%	2.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	2.0%	0.0%	0.0%	1.2%	2.0%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	52.4%	35.2%	0.0%	0.0%	47.7%	32.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	47.7%	32.0%	0.0%	0.0%	47.7%	32.0%
Rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	14.7%	0.0%	0.0%	5.1%	13.4%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	13.4%	0.0%	0.0%	5.1%	13.4%
Black rockfish	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%
	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%
	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%
Yelloweye rockfish	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%
	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%
	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%
Unknown rockfishes	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	14.7%	0.0%	0.0%	5.1%	13.4%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	13.4%	0.0%	0.0%	5.1%	13.4%
Sablefish (black cod)	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1.1%	0.0%	0.0%	0.5%	1.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1.0%	0.0%	0.0%	0.5%	1.0%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	9.1%	0.0%	0.0%	5.1%	8.3%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%	8.3%	0.0%	0.0%	5.1%	8.3%

-continued-

Table 4-7.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.8%	8.4%	0.0%	0.0%	12.6%	7.6%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.6%	7.6%	0.0%	0.0%	12.6%	7.6%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	2.2%	17.8%	23.6%	3.1%	4.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	48.0%	48.0%	52.0%	52.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	2.0%	1.1%	2.1%	3.1%	4.1%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.4%	2.1%	0.0%	0.0%	4.0%	1.9%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	1.9%	0.0%	0.0%	4.0%	1.9%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	1.5%	0.0%	0.0%	0.7%	1.4%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.4%	0.0%	0.0%	0.7%	1.4%
Cutthroat trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	3.0%	0.0%	0.0%	2.9%	2.8%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	2.8%	0.0%	0.0%	2.9%	2.8%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	4.0%	82.2%	76.4%	11.2%	10.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.8%	34.8%	65.2%	65.2%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	3.7%	4.9%	6.9%	11.2%	10.6%
Unknown trout	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%
	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%
	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%
Humpback whitefish	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%
	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%
	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%
Round whitefish	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%
	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%
	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%
Unknown whitefishes	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%
	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%
	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%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Rod and reel gear used during open water season.

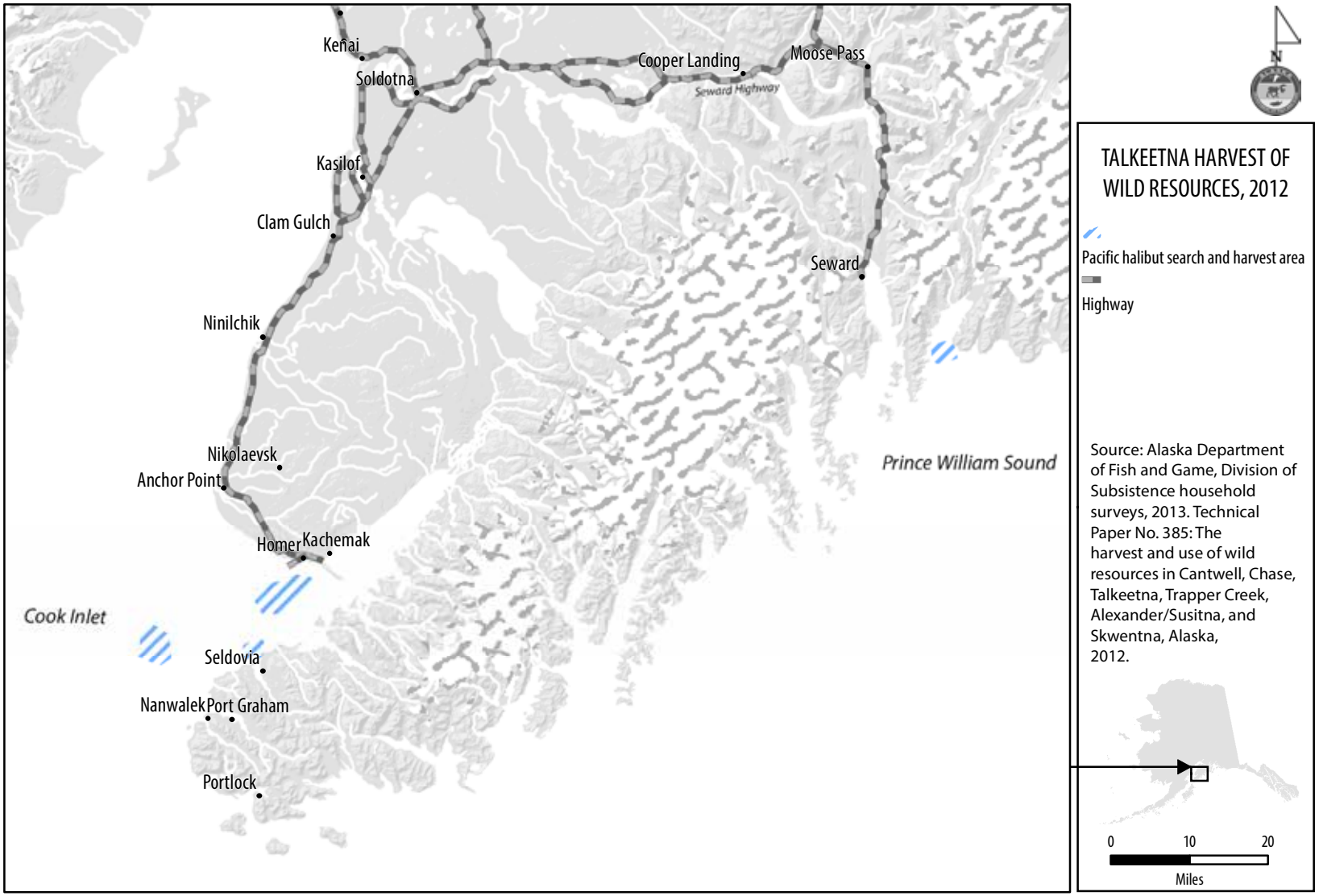

Figure 4-10. – Pacific halibut search and harvest areas, Talkeetna, 2012.

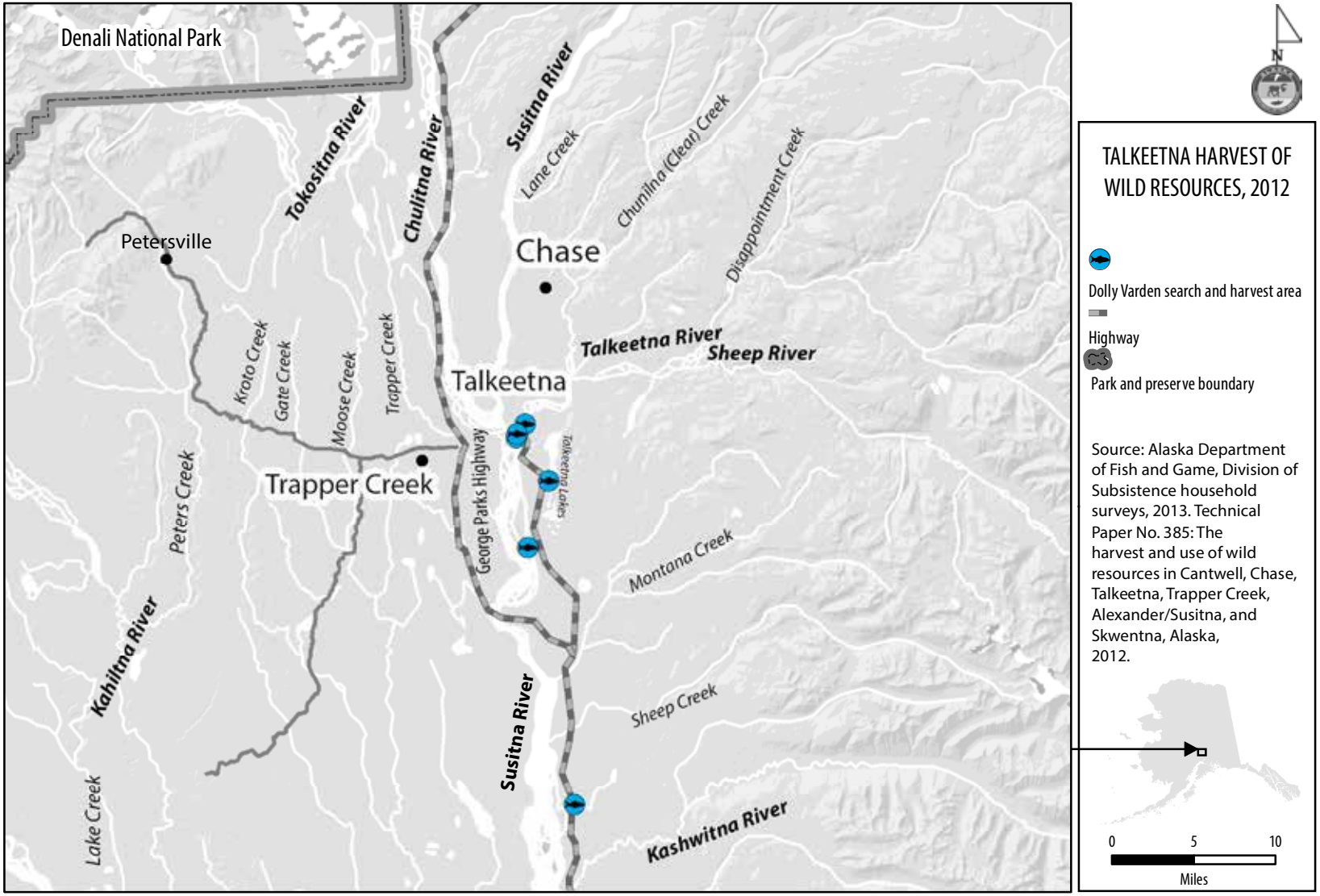

Figure 4-11. – Dolly Varden search and harvest areas, Talkeetna, 2012.

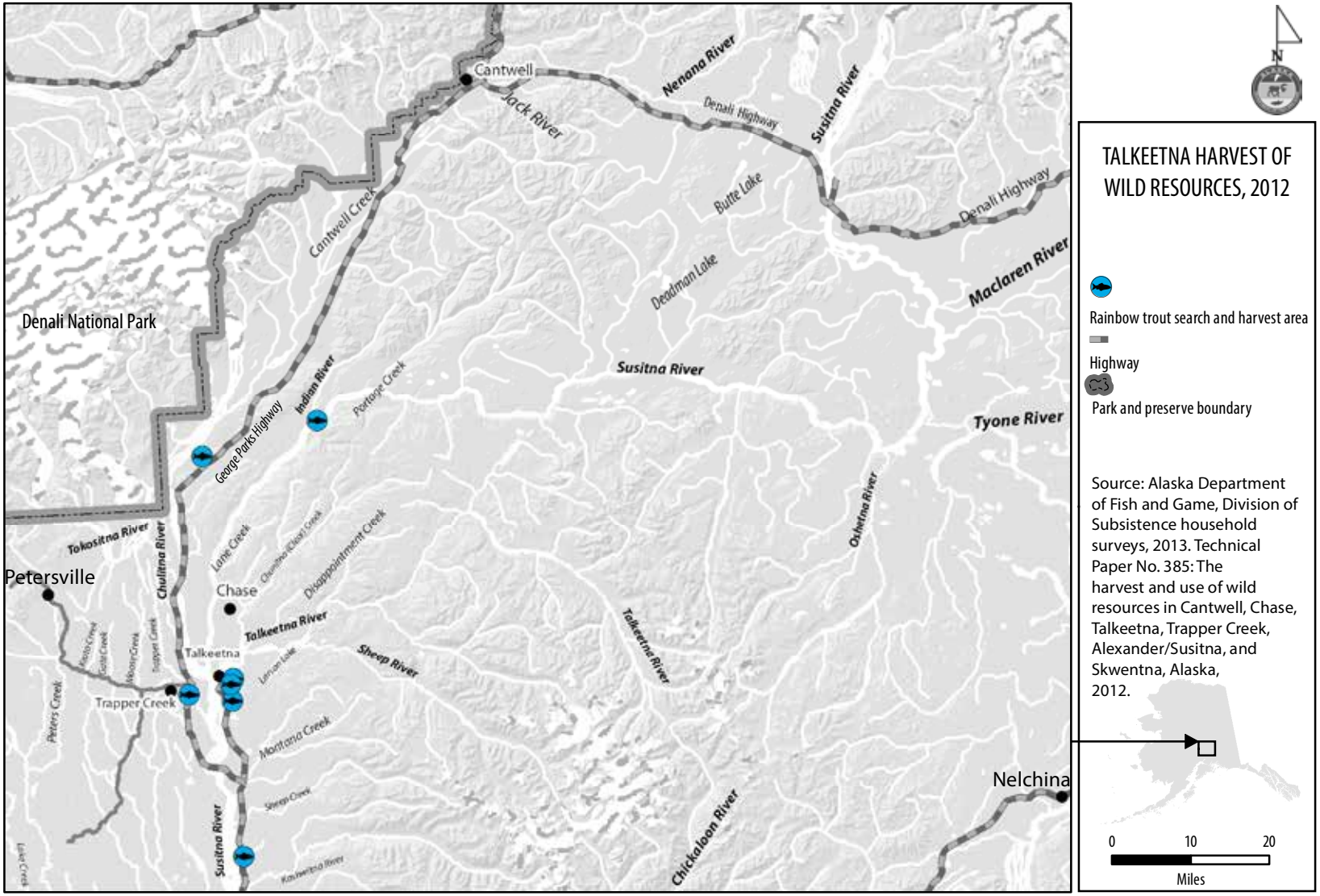

Figure 4-12. – Rainbow trout search and harvest areas, Talkeetna, 2012.

LARGE LAND MAMMALS

Two species contributed to the entirety of the large land mammal harvest in Talkeetna: moose (3,300 lb) and caribou (5,720 lb) (Table 4-4). Approximately 17% of households shared their moose meat, while 10% shared caribou. More households received moose (63%) and caribou (21%). Furthermore, households in the survey area received meat of a variety of other species, including black bear (8%), Dall sheep (4%), mountain goat (3%), bison (1%), muskox (1%), and deer (1%).

Bull moose were harvested in September (Table 4-8). Both bull and cow caribou were harvested between August and November. Residents mostly hunted moose from the Parks Highway within 20 miles of Talkeetna and within 50 miles south of Cantwell. Moose search areas were also documented around the Talkeetna lakes (Figure 4-13). Caribou were generally hunted along the Denali Highway with the exception of a few fly-in only areas in the Talkteetna Mountains and the Alaska Range at Deadman Lake (Figure 4-14).

A significant portion of the households in Talkeetna (14%) received moose from the roadkill program, which is managed by the Alaska Wildlife Troopers (Table 1-15). To be eligible for this program, applications are submitted by non-profit organization groups of no less than 3 adults older than the age of 18. The roadkill program requires no fewer than 3 adults per organization because moose salvage conditions (i.e., large animal, weather, timing) are such that several people are necessary for butchering and transportation. These charity groups are notified in the event that an edible moose becomes available through accidental roadkill occurrences, defense of life and property events, and illegal kills, among others. Roadkill allocation is determined typically by proximity to the moose and/or an eligibility list that is developed based on time of program enrollment.

Table 4-8. – Estimated harvests of large land mammals by month and caribou and moose harvests by sex, Talkeetna, 2012.

				Caribou					Moose					
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Muskox	Dall sheep	Wolf
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	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	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	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	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	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
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	0.0	0.0
August	0.0	0.0	0.0	14.7	7.3	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	7.3	3.7	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0
October	0.0	0.0	0.0	7.3	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	3.7	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	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
Total harvest	**0.0**	**0.0**	**0.0**	**33.0**	**11.0**	**0.0**	**0.0**	**0.0**	**7.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

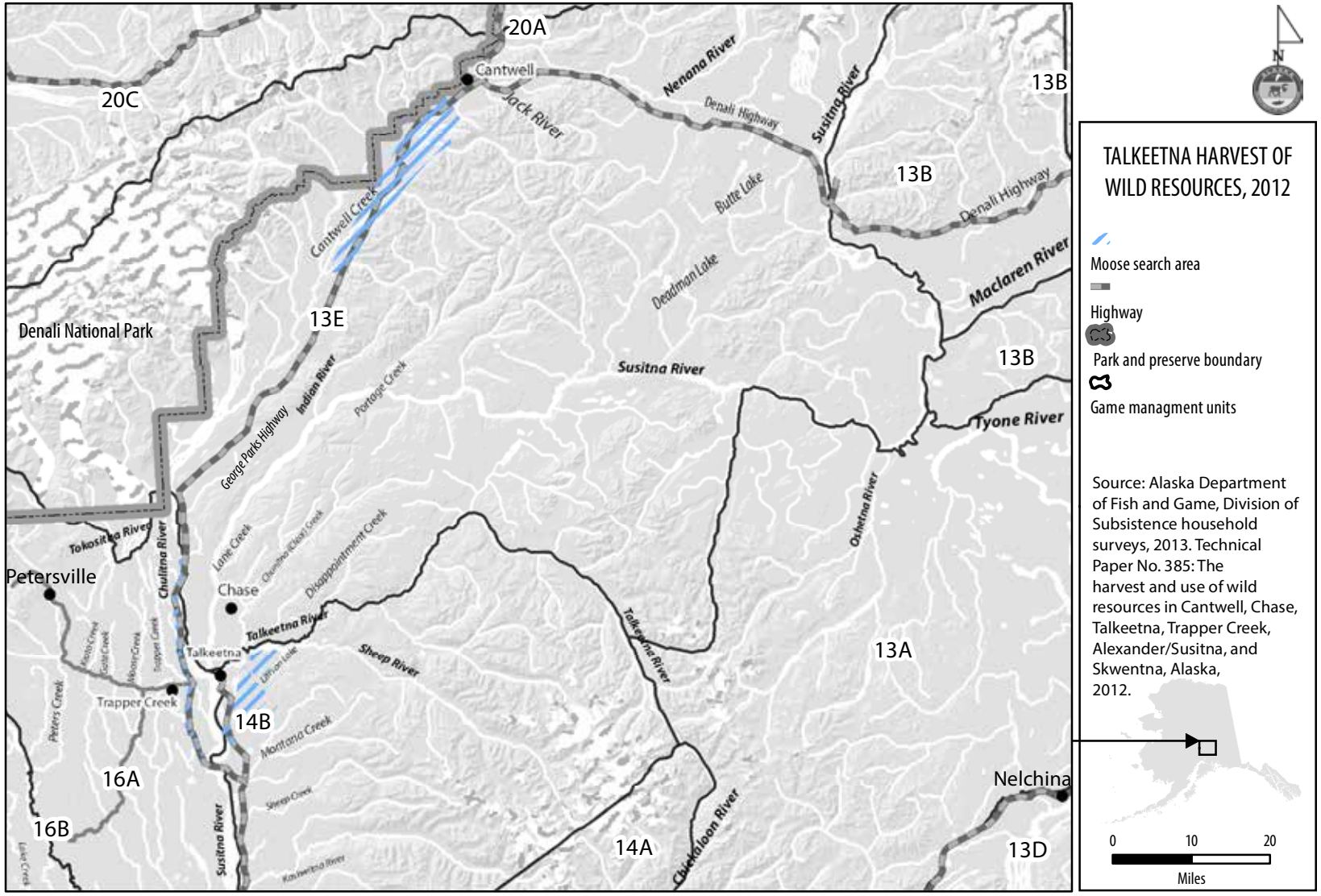

Figure 4-13. – Moose search areas, Talkeetna, 2012.

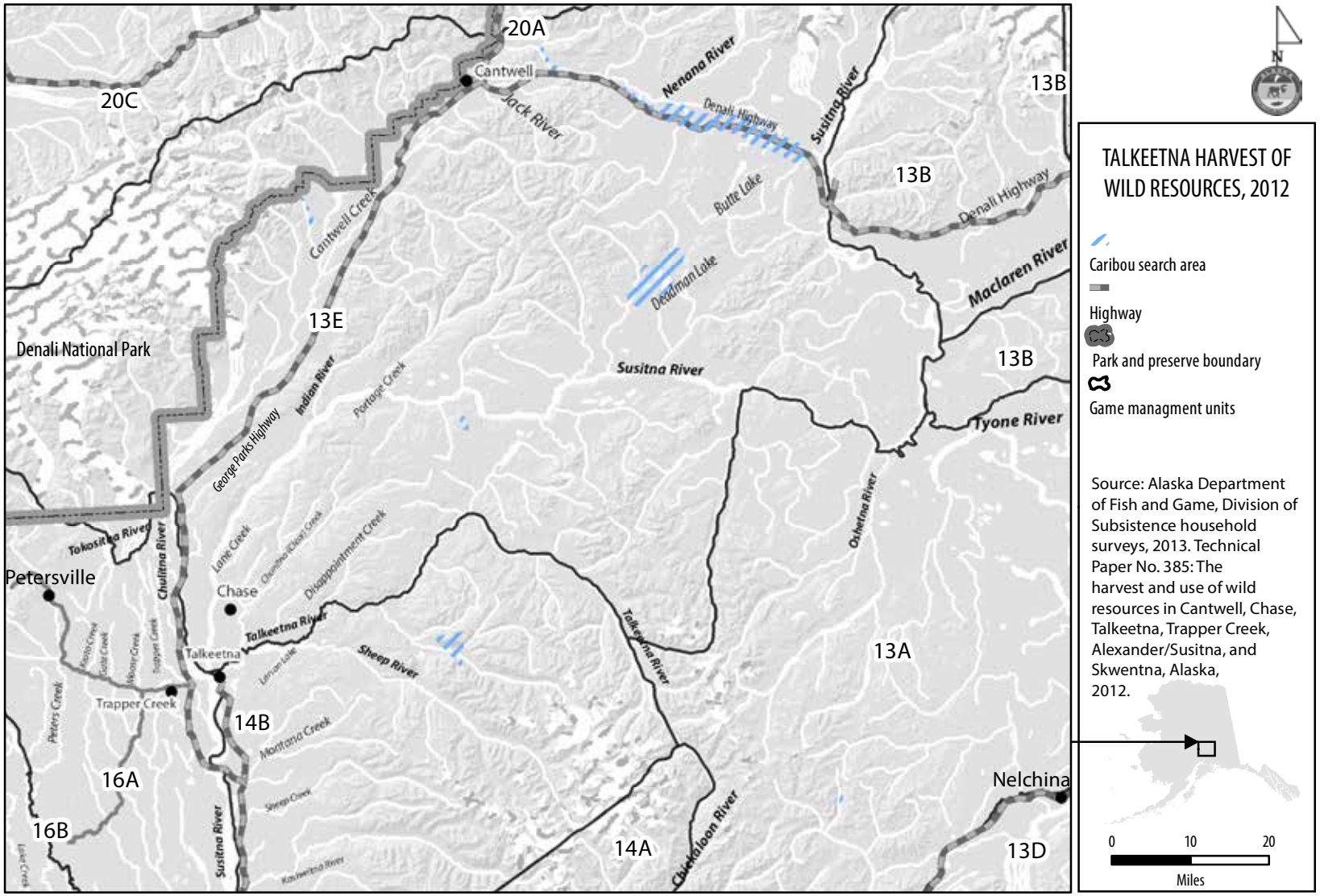

Figure 4-14. – Caribou search areas, Talkeetna, 2012.

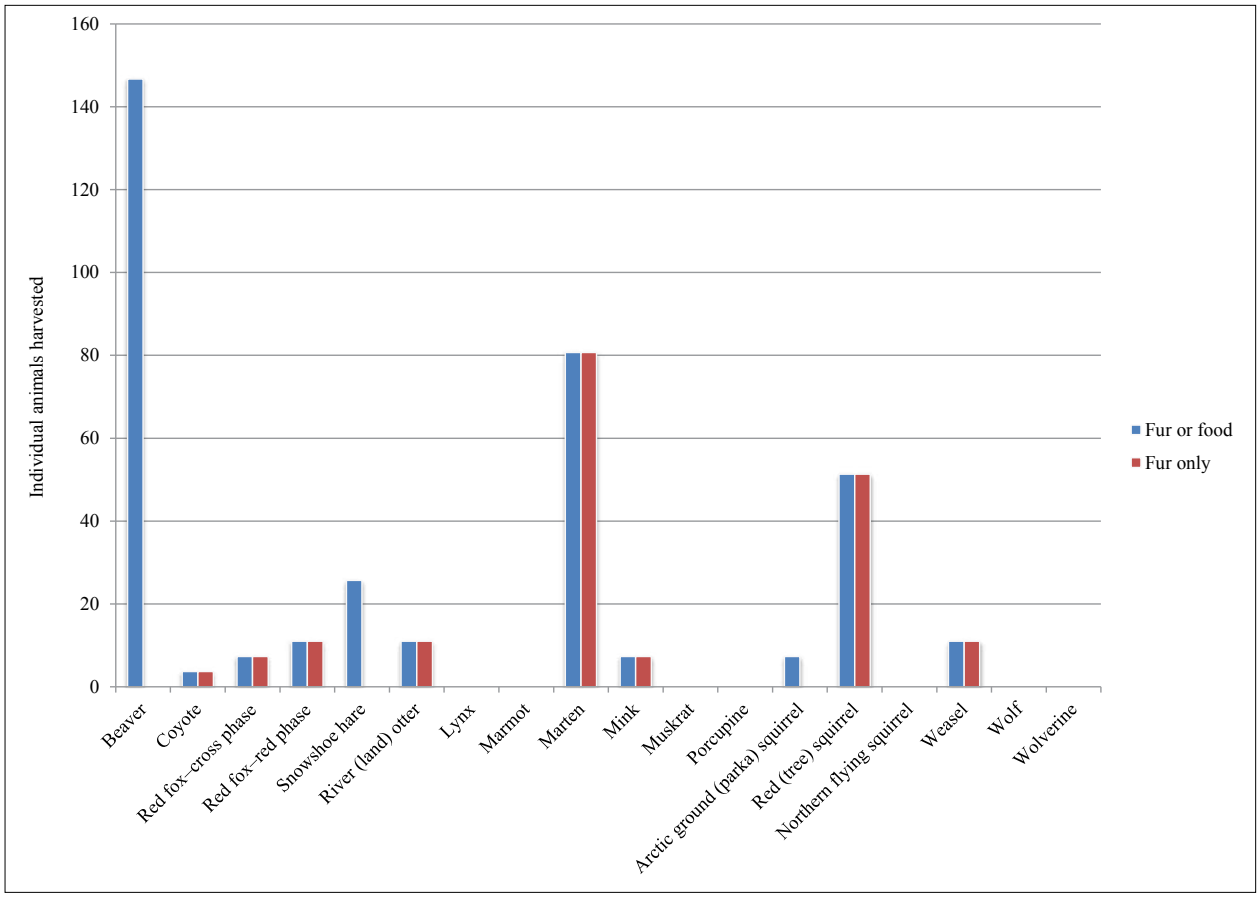

Figure 4-15. – Estimated harvests of small land mammals for food and fur only, Talkeetna, 2012.

SMALL LAND MAMMALS/FURBEARERS

A total of 2,255 lb of small land mammals were harvested; of this amount, an overwhelming 2,200 lb consisted of beavers, all of which was harvested by a very small percentage (3%) of households (Table 4-4). Although a variety of small mammal species were used for fur or other purposes, only beavers, snowshoe hares (51 lb) and Arctic ground (parka) squirrels (4 lb) contributed to the wild foods of local households (Figure 4-15; Table 4-4). For species that contributed to wild food harvests, beavers made up 98% of the harvest in terms of pounds per capita, snowshoe hares 2%, and Arctic ground (parka) squirrels less than 1% (Figure 4-16). Shared resources among households included beavers (1% gave away; 4% received) and red (tree) squirrels (2% gave away) (Table 4-4).

Beavers were harvested between September and January (Table 4-9). In smaller quantities, all other small mammals were obtained between August and March. Trapping of small land mammals occurred on either side of the Parks Highway north of Talkeetna and Trapper Creek and along the Talkeetna River (Figure 4-17).

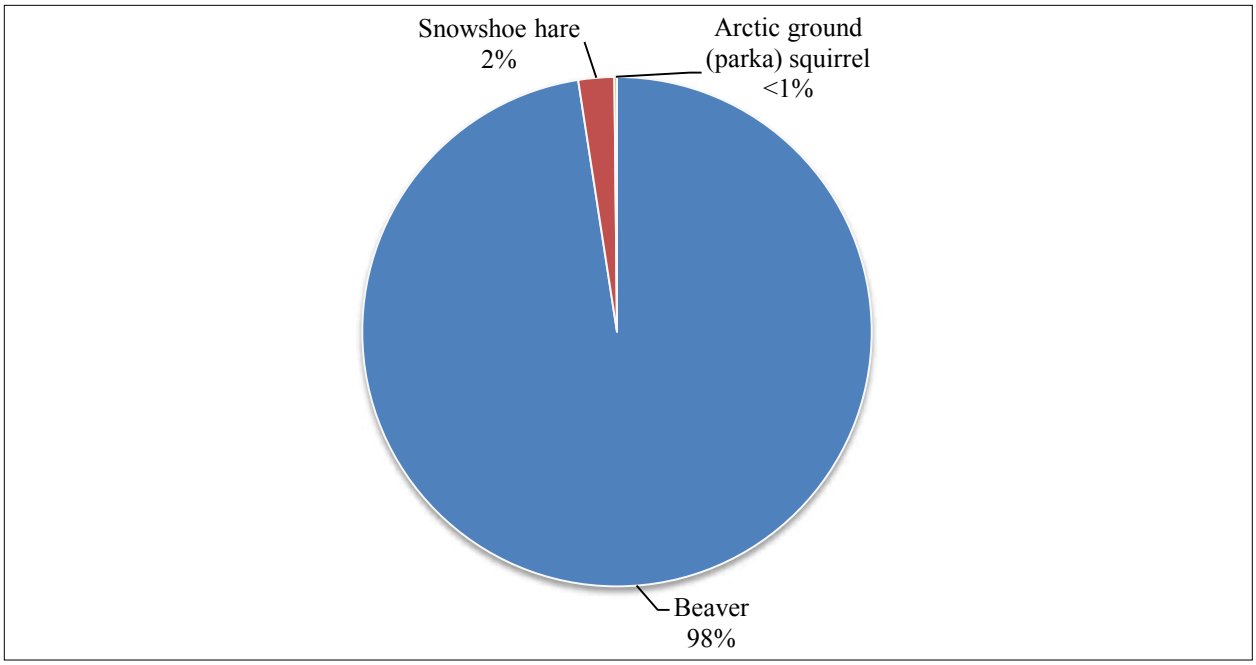

Figure 4-16. – Composition of small land mammals harvest, Talkeetna, 2012.

Table 4-9. – Estimated harvests of small land mammals by month, Talkeetna, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
Beaver	25.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	22.0	44.0	33.0	0.0	**146.7**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	**3.7**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	**7.3**
Red fox–red phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	**11.0**
Snowshoe hare	11.0	7.3	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	**25.7**
River (land) otter	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	**11.0**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	18.3	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	0.0	**80.7**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	**7.3**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Arctic ground (parka squirrel)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	**7.3**
Red (tree) squirrel	22.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	**51.3**
Weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	7.3	0.0	**11.0**
Wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Total	**77.0**	**47.7**	**7.3**	**0.0**	**0.0**	**0.0**	**0.0**	**7.3**	**22.0**	**25.7**	**62.3**	**113.7**	**0.0**	**363.0**

Source ADF&G Division of Subsistence household surveys, 2013.

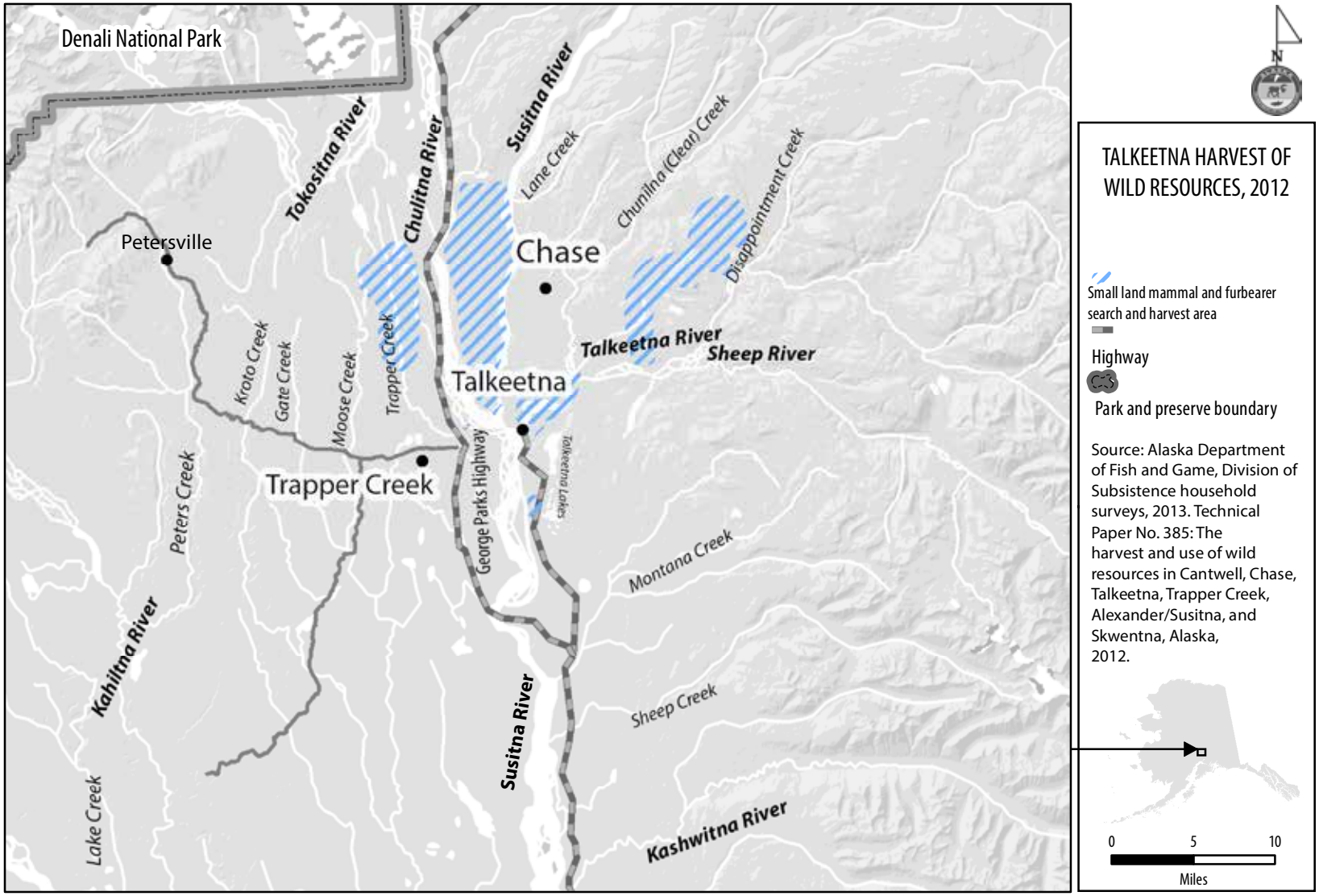

Figure 4-17. – Small land mammals and furbearer search and harvest areas, Talkeetna, 2012.

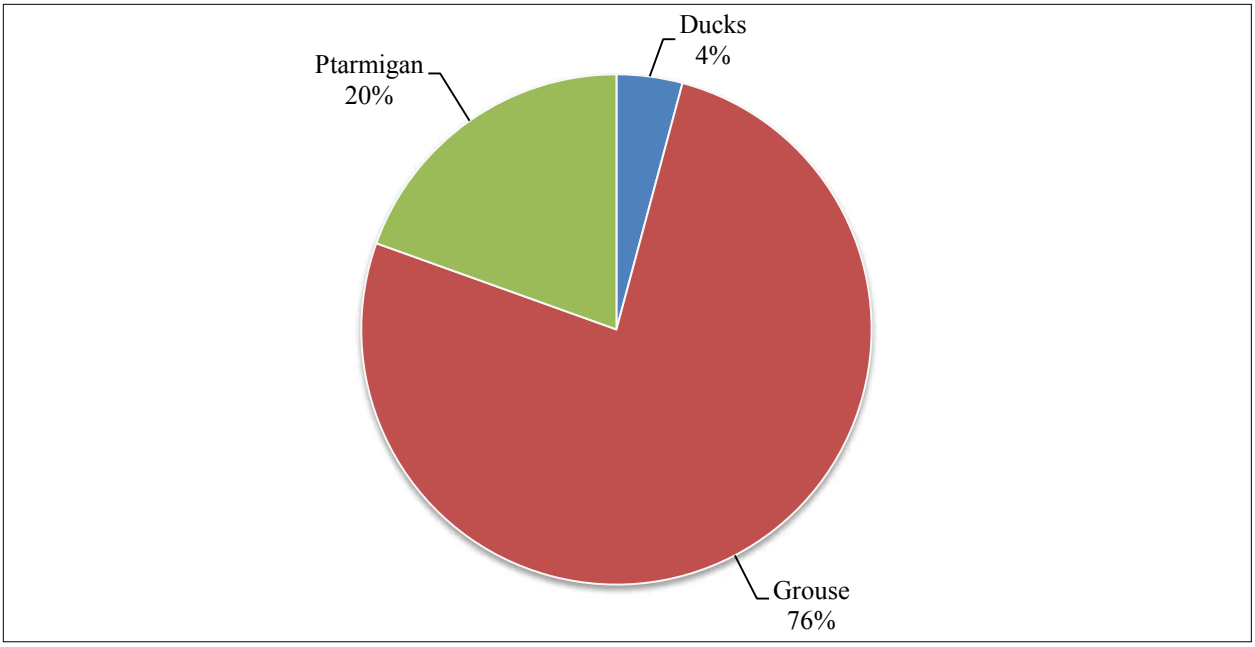

Figure 4-18. – Composition of bird harvest, Talkeetna, 2012.

MARINE MAMMALS

Because marine mammal resources cannot be acquired within the survey area, the sea mammals used by Talkeetna households consisted solely of shared resources, with 3% of households receiving seal, and 1% receiving bowhead whale products (Table 4-4).

BIRDS AND EGGS

At 272 lb harvested, birds and bird eggs did not contribute significantly to the overall harvest in the Talkeetna area (Table 4-4). As a percentage of all harvested birds, grouses composed 76% of the bird harvest, ptarmigan 20%, and various ducks contributed 4% (Figure 4-18). Bird eggs were not harvested in the study area, though a small number of households (1%) received seabird or loon eggs as shared resources (Table 4-4). Sharing of bird resources did not occur on a large scale within the survey area. A total of 3% of households shared grouses with neighbors, while 7% received upland game birds. Geese were received as shared resources by 2% of households. Spruce grouse and ptarmigan were hunted all year round and for the most part hunted from the Parks Highway and in the vicinity of Talkeetna (Table 4-10; Figure 4-19).

MARINE INVERTEBRATES

A total of 477 lb of shellfish were harvested by Talkeetna households, with 8% of households harvesting these resources (Table 4-4). By far, the most important species harvested was razor clams,

Table 4-10. – Estimated bird and bird egg harvest by season, Talkeetna, 2012.

	Estimated harvest by season					
Resource	Winter	Summer	Spring	Fall	Season unknown	**Total**
Canvasback	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**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	0.0	0.0	0.0	3.7	0.0	**3.7**
Northern pintail	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**
Green-winged teal	0.0	0.0	0.0	25.7	0.0	**25.7**
Unknown ducks	0.0	0.0	0.0	0.0	0.0	**0.0**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Canada goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknwon Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose	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**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Spruce grouse	33.0	18.3	18.3	220.0	0.0	**289.7**
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ruffed grouse	0.0	0.0	3.7	3.7	0.0	**7.3**
Unknown grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigan	47.7	11.0	0.0	47.7	0.0	**106.3**
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown eggs	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

which composed 70% of the total marine invertebrate harvest. Mussels were harvested by 2% of households, while Dungeness crab and shrimp were harvested by only 1%. Marine invertebrates were harvested near Ninilchik (Figure 4-20).

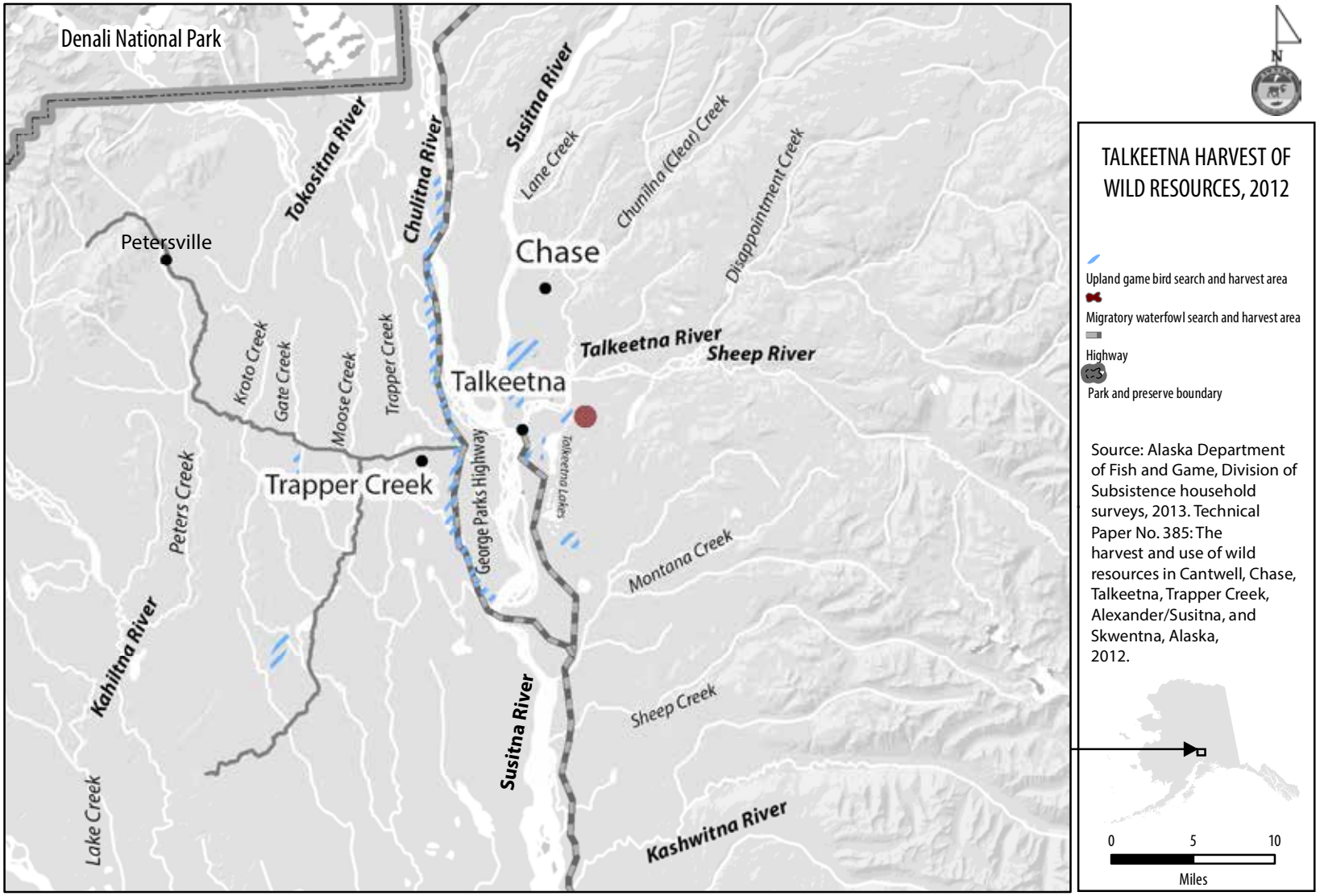

Figure 4-19. – Migratory waterfowl and upland game birds search and harvest areas, Talkeetna, 2012.

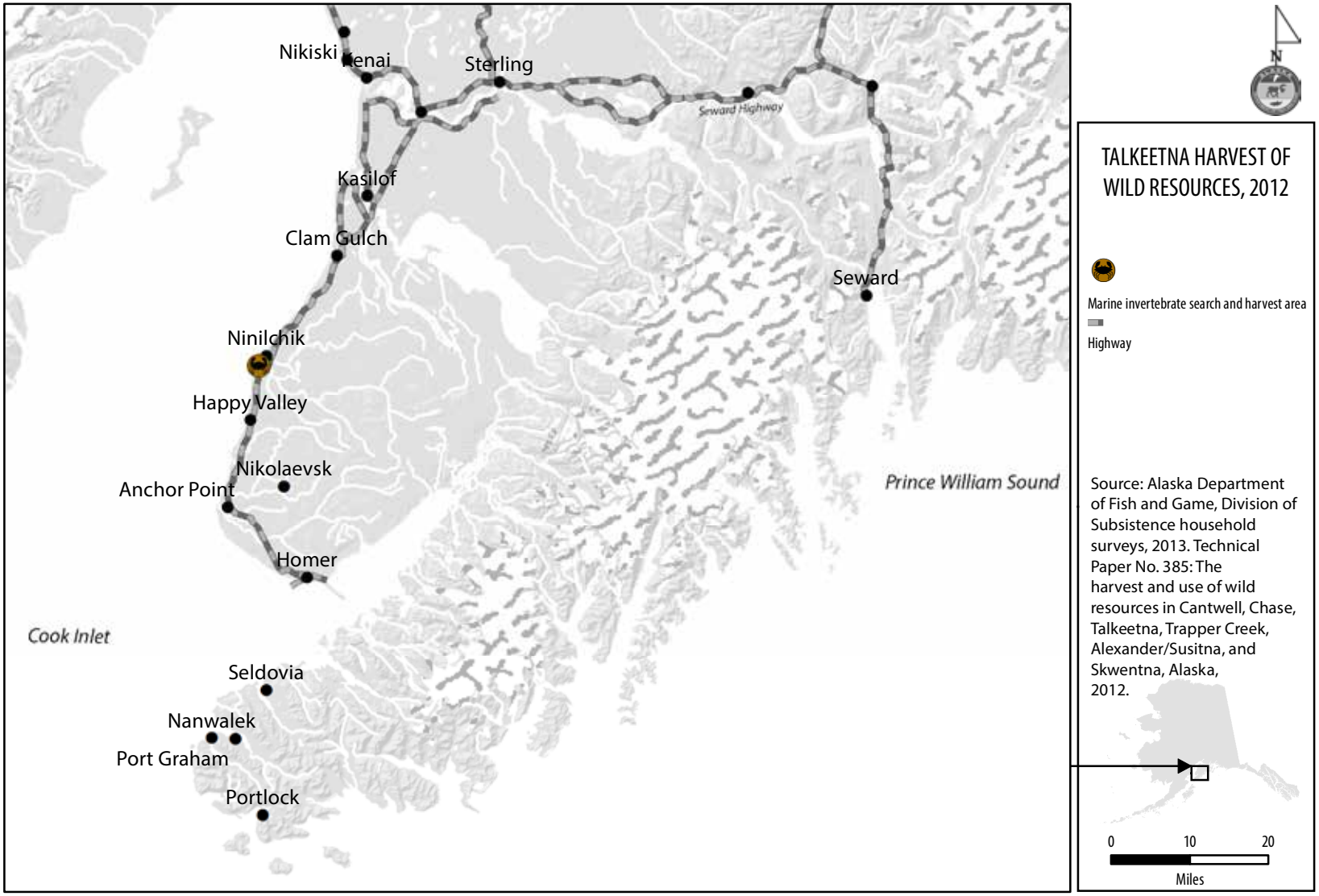

Figure 4-20. – Marine invertebrates search and harvest areas, Talkeetna, 2012.

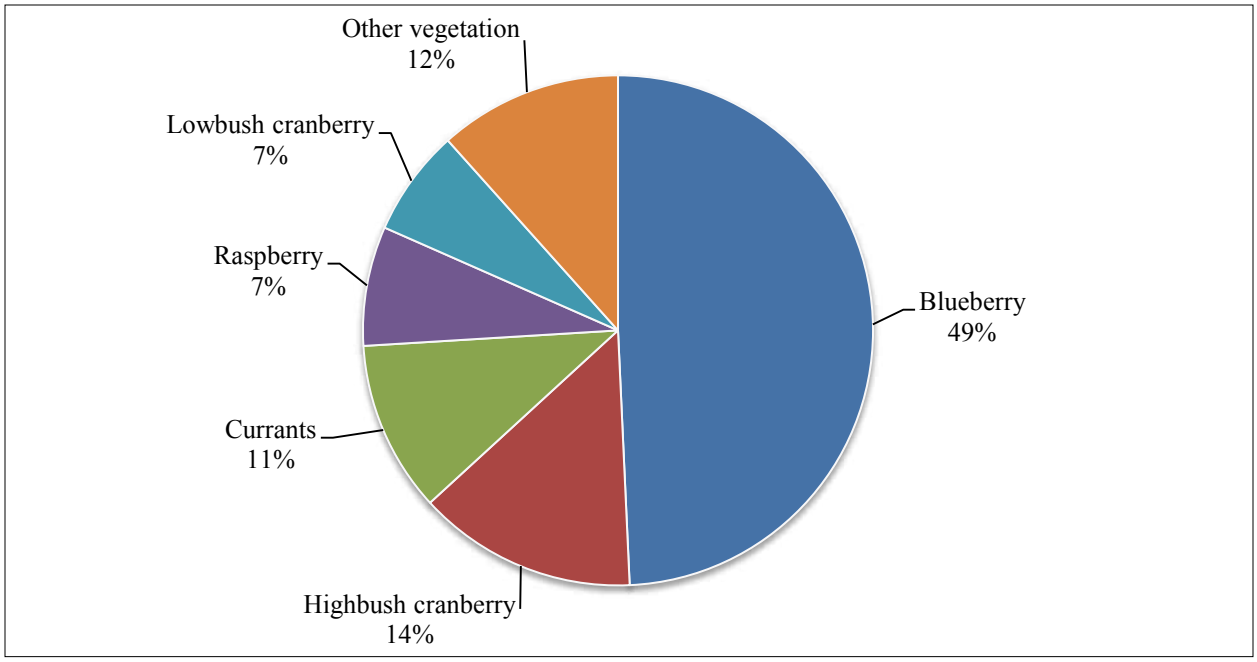

Figure 4-21. – Composition of vegetation harvest, Talkeetna, 2012.

VEGETATION

Vegetation accounted for 7,395 lb of the harvest of wild resources in Talkeetna. Wild berries, totaling 6,994 lb, were collected by 74% of households in the Talkeetna area (Table 4-4). Figure 4-21 shows the composition of the edible vegetation harvest. Blueberries composed the highest percentage at 49% (3,644 lb); highbush cranberries were at 14% (1,029 lb), and currants were at 11% (802 lb). The berries most commonly harvested by households include blueberries which were harvested by 67% of households; highbush cranberries by 38%; lowbush cranberries by 26%; currants by 23%; and raspberries by 21% (Table 4-4). Other harvested plants included fiddlehead ferns, which were collected by 23% of households; wild mushrooms by 13%; and wild rose hips by 8%. A large percentage of households—70%—collected firewood. Sharing of vegetable resources—primarily berries—was widely practiced by area residents; 25% of community households received and 35% shared harvested berries. Firewood was received by 8% of households and shared by 10%. An estimated 1,216 cords were harvested for firewood.

Firewood and plants were mainly cut and collected from areas along the Talkeetna Spur Road. Berries were gathered from much more diverse areas including along the Parks and Denali highways, the Talkeetna Spur Road, and remote areas north of the Talkeetna Mountains (Figure 4-22). Plants, including fiddlehead ferns, were harvested in the vicinity of Talkeetna.

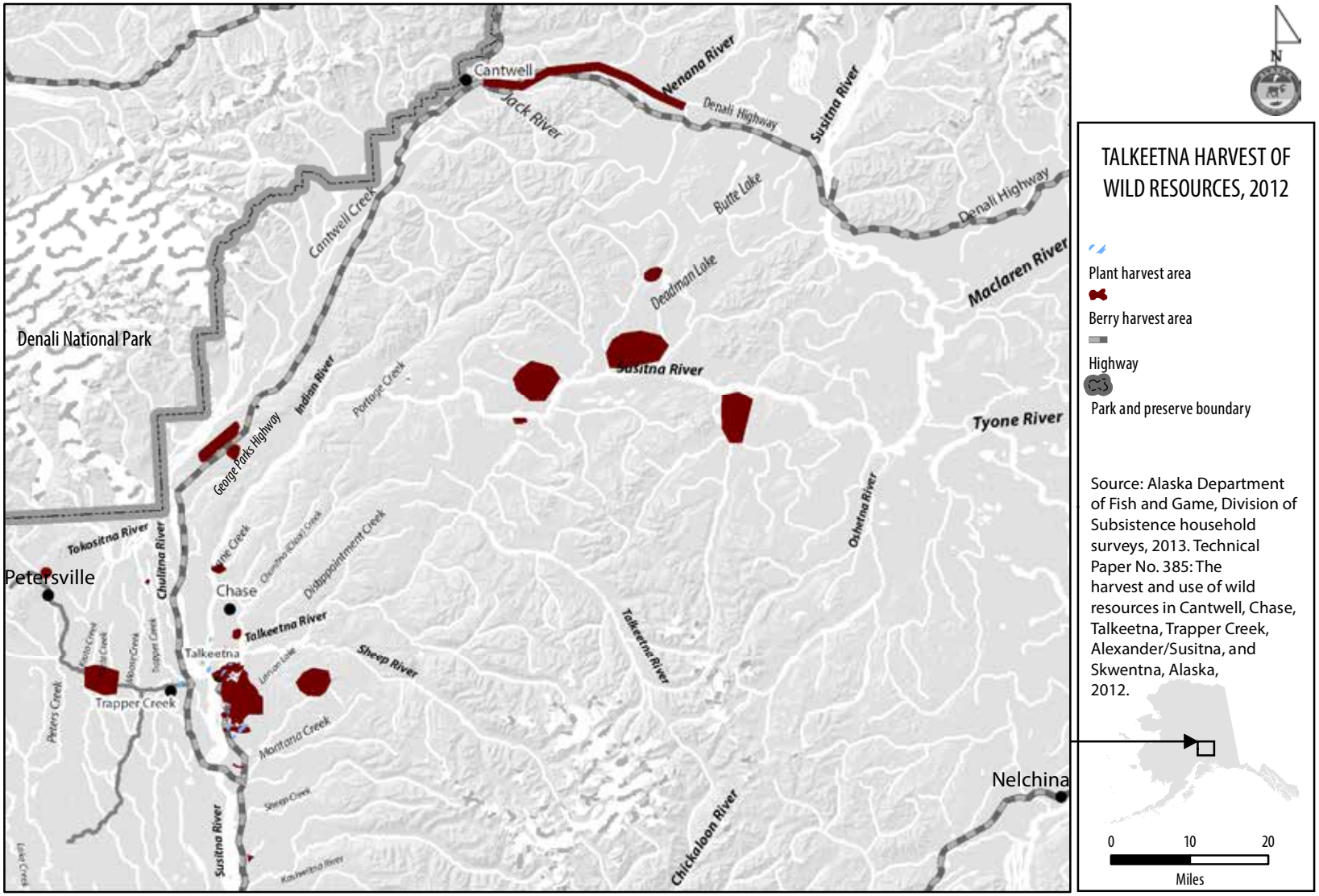

Figure 4-22. – Berries and plants, greens, and mushrooms search and harvest areas, Talkeetna, 2012.

Table 4-11. – Changes in household uses of resources compared to recent years, Talkeetna, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	102	101	83	82.2%	85	84.2%	41	40.6%
All resources	102	101	51	50.5%	37	36.6%	13	12.9%
Salmon	102	95	48	50.5%	34	35.8%	13	13.7%
Nonsalmon fish	102	69	31	44.9%	29	42.0%	9	13.0%
Large land mammals	102	78	27	34.6%	38	48.7%	13	16.7%
Small land mammals	102	14	10	71.4%	2	14.3%	2	14.3%
Marine mammals	102	3	1	33.3%	1	33.3%	1	33.3%
Migratory birds	102	5	3	60.0%	0	0.0%	2	40.0%
Other birds	102	41	24	58.5%	15	36.6%	2	4.9%
Bird eggs	102	2	1	50.0%	0	0.0%	1	50.0%
Marine invertebrates	102	25	13	52.0%	10	40.0%	2	8.0%
Vegetation	102	95	23	24.2%	54	56.8%	18	18.9%

Source ADF&G Division of Subsistence household surveys, 2013.

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

b. Percentages based on valid responses only.

c. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

COMPARING HARVESTS AND USES IN 2012 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2012 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 4-11 reports the number of valid responses for each category, the number of households that did not respond, and the number of households that did not use a resource category or all resources combined. In Table 4-11, 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 4-23 depicts responses to the “less, same, more” assessment question. Households that said they did not ordinarily “use” something are not included within the results. This results in fewer responses for less commonly used categories such as bird eggs or marine mammals, and manifests in the chart as a very short bar compared to categories such as salmon or plants, greens, and mushrooms which are ordinarily used by most households. Some households did not respond to the question.

Taking all the resource categories into consideration, most Talkeetna households, 51%, said they used less wild resources in general over the previous 12 months compared to recent years (Table

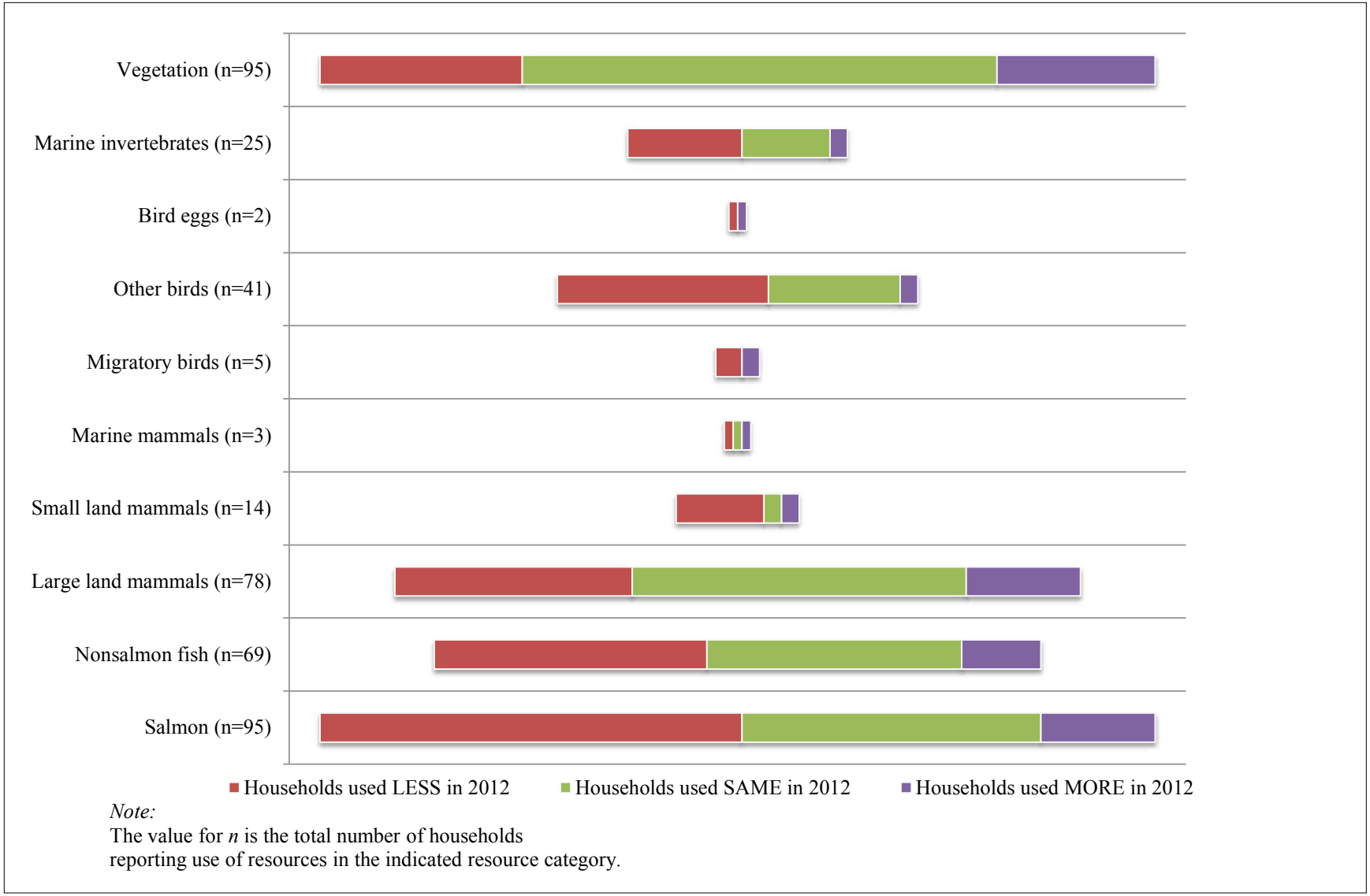

Figure 4-23. – Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Talkeetna, 2012.

4-11). A smaller number, 37% of all households, said they used about the same amount, and only 13% said they used more. When households were asked about their harvest of resources in general (i.e., all resources), the main reason respondents said they used less was that resources were less available (Table 4-12). Conversely, the reason given for more use of resources generally was "needed more" and "more success" (Table 4-13).

Regarding reasons given for less use of individual resources, salmon was the biggest concern for respondents and households reported less use of salmon mainly because they said this resource was less available (Figure 4-23; Table 4-12). In contrast, the resource that had the highest amount of participants indicating they had obtained more than in recent years was vegetation (Figure 4-23). The top reason was increased availability of wild plant life (Table 4-13).

In terms of how the lack of abundance or availability of resources impacted households, not getting enough large game seemed to have the greatest impact. Table 4-14 shows the responses households gave regarding the impact of not getting enough resources in terms of it being a minor impact, major impact, or severe impact. Of the 97 valid responses to this question, 43 households said they did not get enough resources. Of these, 22 households noted a minor impact, 15 said it had a major impact, and 4 noted a severe impact on their food security in terms of all resources overall. Of the resource categories, the most noticeable impact was for salmon. Ninety households noted that they did not get enough salmon, and of these 24 respondents said the impact was minor, 12 major, and 3 severe. Large game was also noted by 73 households saying they did not get enough with 16 respondents saying the impact was minor, 8 major, and 4 severe. The large land mammal that has usually been preferred for household consumption in the area is moose. As discussed above, moose provided through the Alaska Moose Salvage Program were made available to households in all the study communities.

Table 4-12. – Reasons for less household uses of resources compared to recent years, Talkeetna, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	101	79	14	17.7%	32	40.5%	0	0.0%	3	3.8%	22	27.8%	20	25.3%	5	6.3%	14	17.7%
All resources	101	43	8	18.6%	17	39.5%	0	0.0%	1	2.3%	6	14.0%	2	4.7%	1	2.3%	6	14.0%
Salmon	95	47	6	12.8%	14	29.8%	0	0.0%	1	2.1%	5	10.6%	7	14.9%	0	0.0%	2	4.3%
Nonsalmon fish	69	30	3	10.0%	6	20.0%	0	0.0%	1	3.3%	6	20.0%	2	6.7%	1	3.3%	3	10.0%
Large land mammals	78	25	3	12.0%	3	12.0%	0	0.0%	0	0.0%	9	36.0%	5	20.0%	2	8.0%	1	4.0%
Small land mammals	14	10	1	10.0%	1	10.0%	0	0.0%	0	0.0%	1	10.0%	2	20.0%	0	0.0%	0	0.0%
Marine mammals	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%
Migratory birds	5	3	1	33.3%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
Other birds	41	22	3	13.6%	2	9.1%	0	0.0%	0	0.0%	1	4.5%	7	31.8%	0	0.0%	1	4.5%
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	25	12	0	0.0%	3	25.0%	0	0.0%	0	0.0%	2	16.7%	0	0.0%	1	8.3%	0	0.0%
Vegetation	95	23	4	17.4%	2	8.7%	0	0.0%	0	0.0%	2	8.7%	3	13.0%	0	0.0%	9	39.1%

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Table 4-12.–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	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	101	79	5	6.3%	33	41.8%	13	16.5%	1	1.3%	3	3.8%	9	11.4%	4	5.1%	0	0.0%
All resources	101	43	2	4.7%	14	32.6%	0	0.0%	0	0.0%	1	2.3%	5	11.6%	2	4.7%	0	0.0%
Salmon	95	47	2	4.3%	8	17.0%	12	25.5%	0	0.0%	0	0.0%	3	6.4%	0	0.0%	0	0.0%
Nonsalmon fish	69	30	1	3.3%	10	33.3%	2	6.7%	1	3.3%	0	0.0%	0	0.0%	3	10.0%	0	0.0%
Large land mammals	78	25	1	4.0%	4	16.0%	0	0.0%	0	0.0%	1	4.0%	2	8.0%	0	0.0%	0	0.0%
Small land mammals	14	10	0	0.0%	5	50.0%	0	0.0%	0	0.0%	0	0.0%	1	10.0%	1	10.0%	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 birds	5	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%
Other birds	41	22	0	0.0%	11	50.0%	0	0.0%	0	0.0%	1	4.5%	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	25	12	1	8.3%	5	41.7%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	1	8.3%	0	0.0%
Vegetation	95	23	1	4.3%	11	47.8%	0	0.0%	0	0.0%	0	0.0%	2	8.7%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting less use as a base.

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

b. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

Table 4-13. – Reasons for more household uses of resources compared to recent years, Talkeetna, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help		Other	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	101	41	10	24.4%	0	0.0%	3	7.3%	19	46.3%	5	12.2%	13	31.7%	5	12.2%	7	17.1%
All resources	101	13	0	0.0%	0	0.0%	0	0.0%	2	15.4%	3	23.1%	1	7.7%	1	7.7%	2	15.4%
Salmon	95	13	1	7.7%	0	0.0%	0	0.0%	5	38.5%	1	7.7%	3	23.1%	2	15.4%	2	15.4%
Nonsalmon fish	69	9	1	11.1%	0	0.0%	0	0.0%	3	33.3%	0	0.0%	3	33.3%	2	22.2%	0	0.0%
Large land mammals	78	13	0	0.0%	0	0.0%	0	0.0%	10	76.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	14	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%
Marine mammals	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%
Migratory birds	5	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Other birds	41	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Bird eggs	2	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%
Marine invertebrates	25	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%
Vegetation	95	17	8	47.1%	0	0.0%	3	17.6%	0	0.0%	1	5.9%	4	23.5%	2	11.8%	3	17.6%

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Table 4-13.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	101	41	1	2.4%	1	2.4%	6	14.6%	0	0.0%	0	0.0%	0	0.0%
All resources	101	13	0	0.0%	1	7.7%	3	23.1%	0	0.0%	0	0.0%	0	0.0%
Salmon	95	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	69	9	0	0.0%	0	0.0%	1	11.1%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	78	13	0	0.0%	0	0.0%	3	23.1%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	14	2	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%	0	0.0%	0	0.0%
Migratory birds	5	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	41	2	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%
Marine invertebrates	25	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	95	17	1	5.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting more use as a base.

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

b. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

Table 4-14. – Reported impact to households responding that they did not get enough of a type of resource, Talkeetna, 2012.

		Households getting enough _____ .				Impact to those not getting enough _____ .									
	Sample	Valid responses		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Salmon	102	90	88.2%	40	44.4%	1	2.5%	0	0.0%	24	60.0%	12	30.0%	3	7.5%
Nonsalmon fish	102	63	61.8%	26	41.3%	1	3.8%	0	0.0%	19	73.1%	5	19.2%	1	3.8%
Marine invertebrates	102	22	21.6%	16	72.7%	0	0.0%	0	0.0%	13	81.3%	2	12.5%	1	6.3%
Large land mammals	102	73	71.6%	28	38.4%	0	0.0%	0	0.0%	16	57.1%	8	28.6%	4	14.3%
Marine mammals	102	3	2.9%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%
Small land mammals	102	14	13.7%	4	28.6%	0	0.0%	0	0.0%	3	75.0%	0	0.0%	1	25.0%
Migratory birds	102	5	4.9%	4	80.0%	0	0.0%	0	0.0%	3	75.0%	1	25.0%	0	0.0%
Other birds	102	38	37.3%	18	47.4%	0	0.0%	0	0.0%	15	83.3%	2	11.1%	1	5.6%
Bird eggs	102	2	2.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%
Vegetation	102	90	88.2%	33	36.7%	1	3.0%	0	0.0%	25	75.8%	5	15.2%	2	6.1%
All resources	102	97	95.1%	43	44.3%	0	0.0%	2	4.7%	22	51.2%	15	34.9%	4	9.3%

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

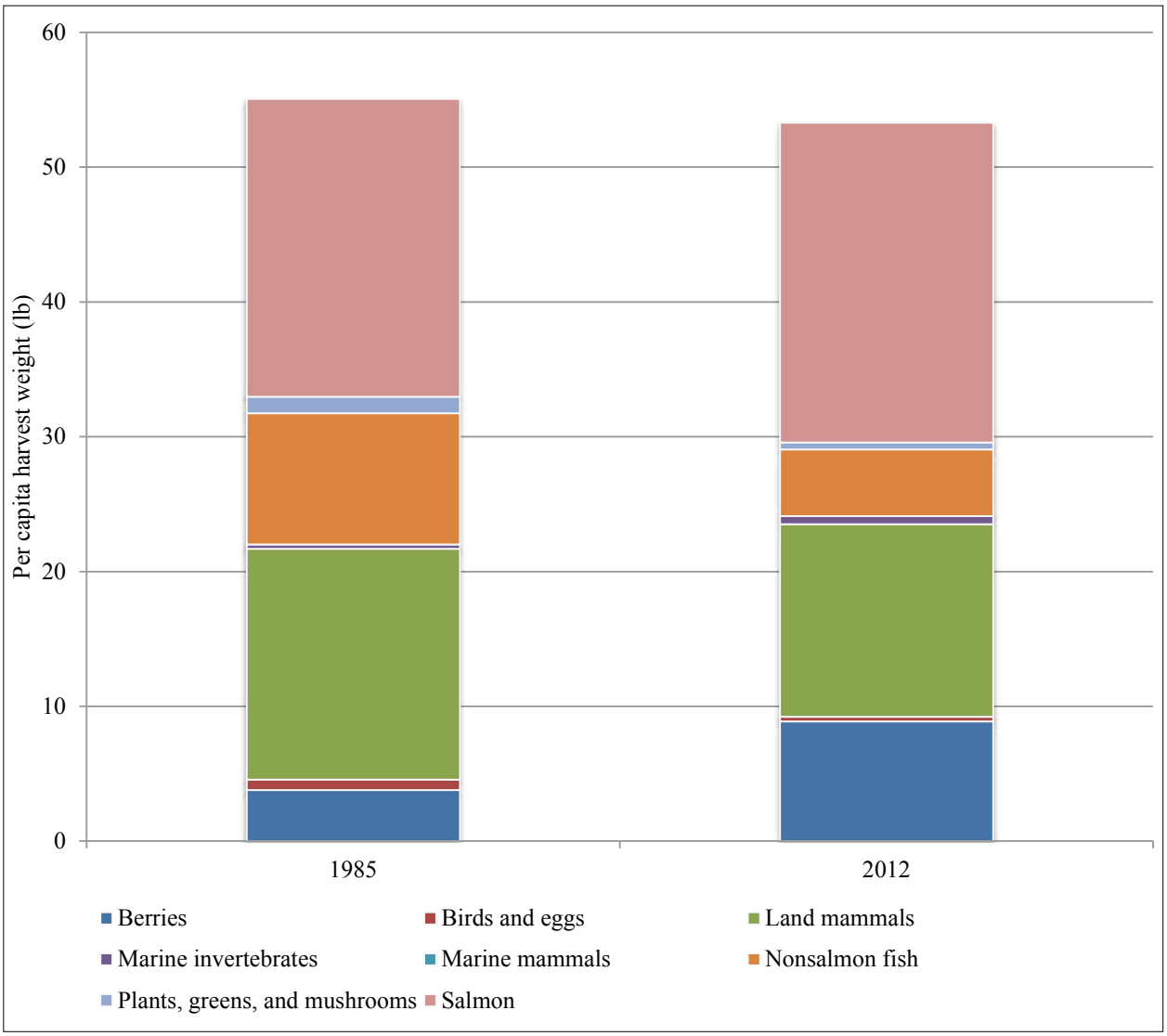

Figure 4-24. – Composition of total per capita harvest, by category, Talkeetna, 1985 and 2012.

HARVEST DATA

Changes in the harvest of resources by Talkeetna residents can also be discerned through comparisons with findings from other study years. A comprehensive subsistence harvest survey was conducted in Talkeetna in 1986 (Fall and Foster 1987). This study represents harvests that straddle the calendar years 1985/1986. Harvest and use data were collected but harvest and search areas were not documented (i.e., mapping of resource harvest locations).

The per capita harvest of Talkeetna households changed very little between the 1985/1986 and 2012 study years, with a harvest of 55 lb and 53 lb, respectively (Figure 4-24). Harvest of wild resources was lower in 2012 than the average per capita estimate by all Alaska residents, which was 73 lb for 2010, but higher than the estimated harvest of fish and wildlife resources by residents of

the Matanuska-Susitna Borough in 2010 (27 lb), within which Talkeetna is a CDP (Fall and Wolfe 2012). Talkeetna historical harvests were consistent with estimates generated for communities that are road-connected and located near urban centers (Wolfe and Walker 1986; Simeone 2002).

Slight per capita harvest changes have occurred for some resource categories. For instance, land mammal and nonsalmon fish harvests decreased since 1985/1986 by 3 lb and 5 lb per capita, respectively, but berry harvests increased 5 lb per capita.

Important changes are observed when looking at intra-resource category harvest over time; for instance, when considering salmon harvests. In 1986, and in order of importance, salmon harvests comprised coho salmon, Chinook salmon, sockeye salmon, pink salmon, and chum salmon. In contrast, the 2012 harvest of salmon was dominated by sockeye salmon (52% of salmon harvest) and coho salmon (33% of salmon harvest) (Fall and Foster 1987). Only 6% of the salmon harvest was Chinook salmon in 2012 (Figure 4-5). These changes undoubtedly reflect the widespread decline of Chinook salmon in Alaska

The harvest of nonsalmon fish also changed over time. In 1986, Pacific halibut and rainbow trout composed the greatest proportion of the nonsalmon fish harvest compared to 2012, which was dominated by halibut and rockfish. In both study years, rainbow trout, burbot, Dolly Varden, and lake trout contributed to the overall composition of nonsalmon resources.

CURRENT AND HISTORICAL HARVEST AREAS

As mentioned previously, the historical survey conducted in Talkeetna for 1985/1986 did not include information about wild resource search and harvest locations, therefore historical harvest locations will not be covered in this chapter.

LOCAL COMMENTS AND CONCERNS

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Talkeetna. 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.

GENERAL CONCERNS

Fish

Several Talkeetna community members indicated that they considered salmon to be a vital resource for home use in the area, as well as an important source of income for a number of area

residents who work as guides. Many respondents were concerned with the health of the salmon fishery in the river system, and were troubled by the relatively poor harvests of salmon over the past several years—particularly Chinook salmon harvests. Respondents indicated that the reduced harvest extends back at least 4 or 5 years, while one respondent indicated the runs from the previous year (2011) were the lowest he had seen personally in more than 30 years. This long-term decline was attributed to poor management of the fisheries. Many respondents noted that they desired to harvest more salmon for household consumption. Some had foregone pursuing fish in favor of big game. One respondent, a fishing guide, indicated that his/her business was negatively impacted by a closure for sport fishing for Chinook salmon. This survey participant also indicated that fishing guides are attempting to help build up the trout fishery, and are therefore not actively guiding harvesting activity for trout in the Susitna River.

Several respondents speculated on the reasons for the decline in the salmon fishery. One suggested that the lack of fish may be due to northern pike preying on the fish in the river system. It was also suggested that recent flooding may be responsible for the decline. Several respondents believed the commercial fishery in Cook Inlet to be primarily responsible. They argued that commercial fishing harvests in Cook Inlet were probably unsustainable and were negatively affecting fishing in the Susitna River. One respondent believed ADF&G mismanaged the commercial harvest of the record run of sockeye salmon in Cook Inlet, leading to reduced fishing opportunity in the Susitna River drainage.

There were also concerns that the increased fishing in the local river systems by non-local residents, including for both sport and commercial purposes, was affecting and will continue to affect the fishing opportunities for local residents. One respondent supported closing fisheries with poor seasonal runs in addition to calling on ADF&G to conduct further research on the health of the Chinook fishery in the area. Respondents also suggested: 1) limiting foreign fishing fleets' access to Alaska waters; 2) further limits to the number of fish that can be legally harvested by dip net; and 3) changes in mesh size for commercial fishing to allow more fish to get upriver.

Moose

There was general concern among key respondents that the moose population in the area was not healthy; it was noted that sightings were down significantly during the past year. This was attributed in part to increased road and railroad traffic in the area over the past several years. It was suggested that the moose season be closed during years of heavy snowfall to allow the population to rebound; furthermore, one respondent mused about imposing a 5-year moratorium on moose

hunting to achieve the same effect. Some Talkeetna respondents expressed concerns about increased bear and wolf populations and suggested that an intensive management program be implemented.

General Fish and Wildlife Resources

Several key respondents noted that there are generally fewer wild resources available in the study area than there were in previous years. One respondent proposed a formula whereby subsistence resources decrease when human populations increase, indicating that increased numbers of visitors and residents in the area are limiting access to wild resources for area hunters, trappers, and fishers.

Regulations

Talkeetna respondents reported a number of complaints and concerns regarding regulation of hunting and permitting. Generally, these concerns included: 1) the number of caribou permits issued annually for the Nelchina caribou hunt; 2) the rules and regulations for hunting, trapping, and fishing; 3) commercial interests on the Board of Fisheries and Board of Game (BOF and BOG); and 4) the structure of the roadkill harvest program. First, there are perceptions that permits for caribou hunting for the Nelchina caribou herd were difficult to obtain because there were so few available each year. One respondent argued that one permit per "hunting family" was a reasonable number. Second, many respondents argued that the rules and regulations for fishing, in particular, were complex for the Susitna River drainage and difficult to interpret and arguably not based on "real-world" conditions of the fisheries.

It was argued that the composition of the BOG and BOF was extreme, beholden partly to commercial interests, and not representative of the interests of all Alaskans. Finally, respondents called for a fairer and more equitable roadkill salvaging protocol, arguing that little distinction is made between whole or nearly-whole kills and those obliterated by trains or road vehicles. When a hunter on the list is called, he is given the carcass—whatever the condition—and moved to the bottom of the list.

SUSITNA-WATANA HYDROELECTRIC DAM

Salmon

Talkeetna respondents expressed concerns about the potential impact the proposed hydroelectric dam would have on salmon populations. They voiced concerns over the long-term health of the river system and tributaries. Furthermore, some respondents said it was a mistake to engage in projects that will affect Chinook salmon habitats when so little is known about what is causing Chinook salmon declines and poor fish availability in the Susitna River in general. Residents have raised issues about spawning grounds that are located upriver of the proposed dam site and how this will

affect future salmon populations. Talkeetna community members who responded to the survey suggested focusing on preserving wetlands and fish habitats to promote fish sustainability instead of exploiting or damaging important salmon breeding grounds.

Land Mammals

Talkeetna respondents expressed particular concerns about the Nelchina caribou herd. They indicated that the proposed site for the hydroelectric water reservoir will directly block contemporary migration routes. Furthermore, they said, the shell ice on the reservoir bank will trap caribou. Respondents were concerned in general about the potential impact of the dam and its construction on wildlife, especially mammal, resources.

General Fish and Wildlife Resources

Talkeetna respondents expressed extreme concerns about the impact the proposed hydroelectric dam could have on their harvesting wild resources. Many respondents mentioned that they moved to Alaska specifically to have access to wild resources and that they were very worried that the dam would affect both fish and wildlife resource populations and their access to those resources. Respondents mentioned that subsistence resources are organic and healthier than store-bought resources, which is why they are so important to local people.

Respondents worried that the dam would interfere with the natural sustainability of the Susitna River and its drainages, wildlife, and plants. Respondents suggested that money used for the construction of the dam should be repurposed to preserve wild resources and land in the Susitna River drainage, which is sustainable. Also, respondents were worried about the damage in general to the local ecosystems.

Talkeetna respondents worried that infrastructure associated with the proposed dam, like roads, would provide greater accessibility to wild resources and increase hunting and gathering pressure on wild resources. Furthermore, respondents indicated that it would be more difficult to harvest fish resources in the river once the dam was built. Some respondents suggested that construction of the dam would directly infringe on their ability to engage in harvesting activities in the Susitna River drainage.

Alternative Sources of Energy

Many Talkeetna respondents indicated that the potential Susitna-Watana hydroelectric dam was explored in the past and it was rejected because it was unviable. Most community members who were contacted did not want the dam built and suggested that instead of spending money to pay for feasibility studies that the study money should be used to explore alternative energy sources, especially energy sources that are less potentially harmful to the environment (e.g., natural gas,

wind, tidal, geothermal). Many respondents believed natural gas should be exploited rather than building a hydroelectric dam.

Some respondents used dam projects in the Lower 48 to illustrate the damage to lands and wildlife that happen as the result of dam construction and structures. Survey participants indicated there are better alternatives such as the coal power plant outside Healy.

Economy

Respondents are concerned that the money used to conduct feasibility studies and dam construction undermine the importance of and reduce funding for small capital projects for municipalities. Respondents did not feel that the potential jobs associated with dam construction would offset the potential environmental damage. Respondents did not feel they would be able to afford the electricity the dam would provide.

Talkeetna respondents were concerned about the potential loss of income by local businesses from dam-induced destructive habitat changes (i.e., tourism, recreational activities, photography).

Environment

Talkeetna respondents believed there are a lot of unanswered questions about how the proposed hydroelectric dam will affect water temperature, erosion, thawing, flooding, and freezing of the Susitna River. Respondents indicated that river ecosystems should be controlled or influenced by nature, not by a dam. Some respondents suggested the biggest impact of the dam would be to the environment from its construction, not its daily operation.

Survey participants were concerned about how the dam will affect wildlife and fish through habitat changes. For instance, they said changes in water temperature will affect river ice production, which could interrupt important large land mammal migrations. Also, they wondered how changes in water temperature would affect the eggs of spawning salmon.

Tourism/Recreation

Some households indicated that the hydroelectric dam would negatively impact the local economy, which is based on tourism (e.g., sport fishing, guiding, wildlife watching tours, rafting, boating, flightseeing, hiking, etc.). Talkeetna respondents were concerned about how a dam will impact recreational activities in the summer and winter along the Susitna River, including in the area of the proposed site, which, they said, experiences more activity than most people know about.

These activities are being documented as part of the overall Susitna-Watana Project (Alaska Energy Authority 2012).

Property

Respondents were concerned about how construction of the dam may impact their properties that are located near access roads and other construction- and development-related activities.

Safety

Respondents expressed serious concerns about the potential dangers of the proposed hydroelectric dam construction and edifice. Respondents drew attention to earthquakes in Alaska and wondered how the dam could withstand such omnipresent natural seismic activities. Furthermore, some respondents indicated that it is simply too dangerous to construct a dam along geologic fault lines. Potential earthquakes could affect the dam and cause a massive flood and destroy everything in its wake, they said—including humans, wildlife, fish, and vegetation. For instance, an earthquake measuring 7.9 magnitude on the Richter scale was recorded just north of the proposed dam site in 2002, according to one of the survey respondents. Other respondents have suggested that no dam can sustain constant earthquake activity.

ACKNOWLEDGEMENTS

We would like to thank the residents of Talkeetna for their participation and support of the project. We would also like to thank our exceptional local research assistants: Mark Gutman, Kimberly Hutchings, Emily La Porte, Rebekah Mathiesen, Geoffrey Pfeiffer, Iris Vandenham, David Ward, and Debra Wessler. We are also very appreciative to our key respondents who provided significant temporal context to fish and wildlife resource changes over time.

TRAPPER CREEK

COMMUNITY BACKGROUND

The community of Trapper Creek is located in a boreal forest environment along the flood plain of the Susitna River. The area has been occupied since the middle to late Holocene epoch, which spans from 10,000–5,000 years ago. Recent finds at the Trapper Creek Overlook site provide 3 separate archaeological tool assemblages, leading researchers to place occupation of the middle Susitna Basin at 11,000–9,000 years ago (Wygal and Goebel 2012, 64). Obsidian in these assemblages originates from a site located 400 km to the northwest in the Koyukuk River Valley, which demonstrates long-distance trade of goods into the area. Other artifacts originated from locally available materials (Wygal and Goebel 2012, 63). Researchers believe that occupation of the area originated from the northeast. Few other sites have been found in the middle Susitna Valley.

At the time of contact with Euro-Americans the Susitna Basin was seasonally occupied by the Dena'ina Athabascan. The upper reaches of Kroto Creek, *Tuqentnu* ("Clearwater Creek"), extends north into the area; however, most Dena'ina sites are located downriver near the confluence of the Susitna River (Kari and Fall 2003, 176). The Kroto Creek band traveled through the area to hunt caribou in the Talkeetna Mountains (Kari and Fall 2003, 178).

Gold was discovered at Cache Creek in 1906 and in 1920 the Alaska Road Commission started construction on a wagon road to Talkeetna, which had rail service.[1] During this time and until the Trapper Creek community was founded only a few trappers and gold miners lived in the area. Prior to the wagon road and Parks Highway, which reached Trapper Creek in 1967, there were only trails in the area, some of which were traveling routes established by Dena'ina who traveled through to seasonal hunting camps and to trade with other Athabascan groups in Interior Alaska. At the same time as the building of the Parks Highway the State of Alaska disposed of land in the area by allowing people to stake out parcels. The new residents then traveled into Anchorage to record their property; they eventually had to make improvements to the property and pay a fee for the land. According to local residents, 15–20 of these households got together near the current town site on the highway in 1971 to name the new community. One resident said that everyone suggested their own name, of course, and eventually they agreed upon naming the community Trapper Creek after the creek that ran nearby. Since that time the community has grown, which will be discussed in the

1. Alaska Department of Commerce, Community, and Economic Development (ADCCED) Division of Community and Regional Affairs, Juneau: "Alaska Community Database Online: Community Information." Accessed August 2013. http://commerce.alaska.gov/cra/DCRAExternal/community.

next section "Demography." For Euro-American homesteaders this area provided fertile ground for growing vegetables; since settling in this area many residents have grown vegetables and grain and have raised animals.

Today a community council represents the unincorporated community. Trapper Creek, located at Mile 115 of the Parks Highway, includes residents that live along the highway approximately 6 miles north of the intersection with Petersville Road, the main community center, and 10 miles south along the highway. Petersville Road is paved and runs west of the community and the census designated place (CDP) includes residences the first 12 miles of this road. Other gravel roads leading to parcels in the area have been built over time and are maintained by the Matanuska-Susitna Borough. One major road is Oilwell Road located at mile 6 of the Petersville Road, which includes residents in the CDP approximately 14 miles south from the intersection of Petersville Road. This is a popular area for seasonal cabins. There is a fire station in Trapper Creek, a gas station with food for sale, an elementary school, library, and a community center. Junior high and high school students travel 16 miles south to the area near the Talkeetna Spur Road on the Parks Highway to attend school in an area called Sunshine. Sunshine has a grocery store, gas station, hardware store, bank, Alaska State Trooper station, and several local businesses.

DEMOGRAPHY

This survey, which occurred in January and February 2013 for the 2012 study year, estimated a population of 335 residents in 148 households (Table 1-1). Of this population, 6% were Alaska Native. The 2010 census documented 481 residents in 225 households, with a similar percentage of Alaska Native residents (6%). The census survey in 2010 occurred in April and may have documented residents who were not present in the winter months or who may have sent their responses to the census surveyors even though they were not present during the entirety of the winter. A study in 1985 estimated a population of 190 residents (Fall and Foster 1987). Figure 5-1 shows the population over time based on estimates from ADF&G studies, the U.S. census, and the Alaska Department of Labor and Workforce Development. The figure shows a gradual increase in the population over time. Although this study estimated a population of 335 residents in January and February 2013, the overall trend is a fairly stable population since 2000 (Figure 5-1).

Researchers interviewed 69 households (47%) for this survey, out of a total of 148 estimated households (Table 1-6). Researchers attempted to interview 40 households whose residents were known to reside in the community most of the winter, but they could not be contacted after repeated attempts, and 27 households declined to be surveyed.

The estimated mean household size was 2 residents with a minimum size of 1 resident and a maximum of 7 (Table 1-9). The length of residency in the community was an average of 16 years,

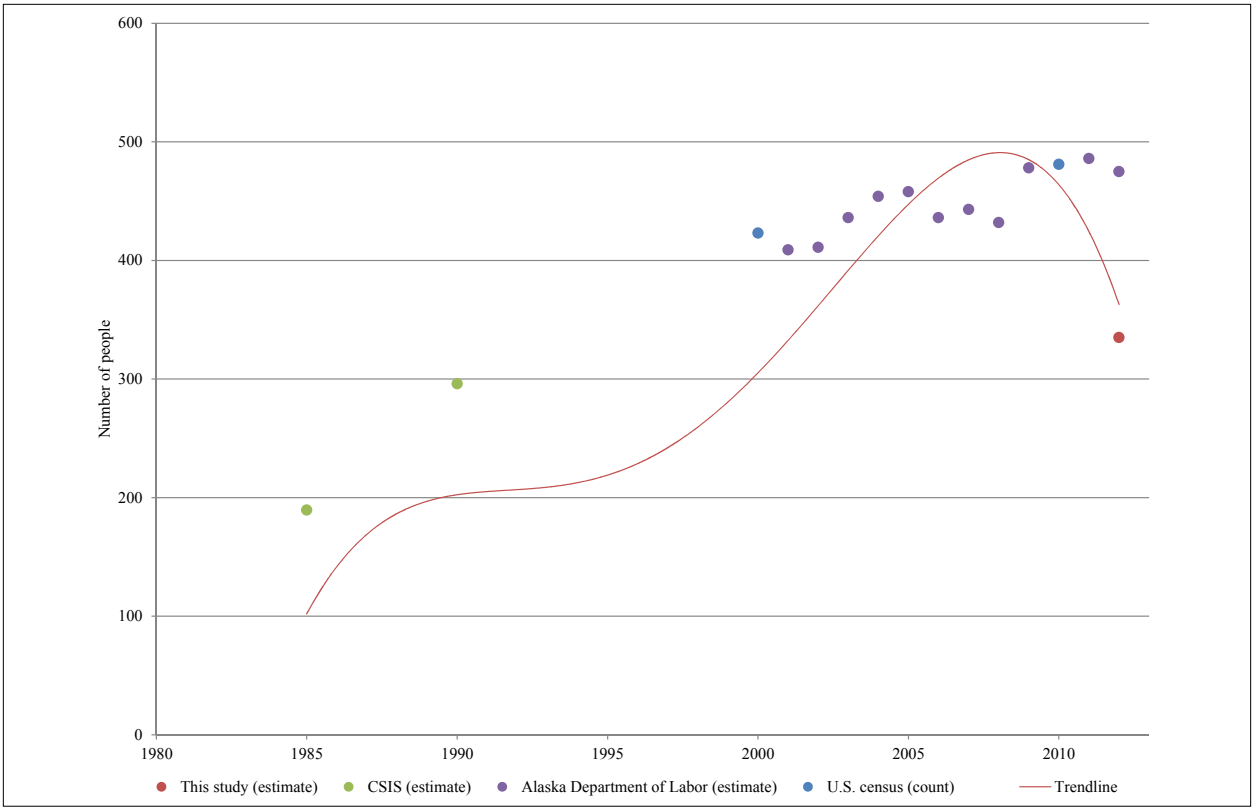

Figure 5-1. – Population history, Trapper Creek, 1980–2012.

with a maximum residency of 55 years, which is prior to the homesteading that formed Trapper Creek as a community.

Table 5-1 and Figure 5-2 show the demographics of the community by age and sex. The majority of Trapper Creek residents were between the ages of 40 and 70; most residents were between the ages of 50 and 54 for both males and females. There are many school-aged children between the ages of 5 and 19 and, as noted above, there is an elementary school in the community and a middle and high school 16 miles away. Few household heads were born in Alaska and no respondents had parents living in the community when they were born (Table 1-10). Most (83%) of household heads were born in a state outside of Alaska. During surveys and key respondent interviews residents related that the area is a good place to retire because you can live fairly modestly. Most have either built or remodeled smaller homes and residents spend a great deal of time gardening in the fertile Susitna Valley soil and storing garden food for the winter in addition to the harvested wild resources.

CASH EMPLOYMENT AND MONETARY INCOME

Although some residents of Trapper Creek are retired in the community and received pensions and Social Security, a majority (76%) of the income of Trapper Creek residents was earned income, as shown in Table 5-2. Most earned income was in the services sector (28% of total community

Table 5-1. – Population profile, Trapper Creek, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	4.3	2.4%	2.4%	8.6	5.5%	5.5%	12.9	3.8%	3.8%
5–9	8.6	4.8%	7.2%	6.4	4.1%	9.6%	15.0	4.5%	8.3%
10–14	6.4	3.6%	10.8%	6.4	4.1%	13.7%	12.9	3.8%	12.2%
15–19	8.6	4.8%	15.7%	10.7	6.8%	20.5%	19.3	5.8%	17.9%
20–24	4.3	2.4%	18.1%	4.3	2.7%	23.3%	8.6	2.6%	20.5%
25–29	4.3	2.4%	20.5%	4.3	2.7%	26.0%	8.6	2.6%	23.1%
30–34	2.1	1.2%	21.7%	8.6	5.5%	31.5%	10.7	3.2%	26.3%
35–39	4.3	2.4%	24.1%	6.4	4.1%	35.6%	10.7	3.2%	29.5%
40–44	8.6	4.8%	28.9%	6.4	4.1%	39.7%	15.0	4.5%	34.0%
45–49	17.2	9.6%	38.6%	10.7	6.8%	46.6%	27.9	8.3%	42.3%
50–54	25.7	14.5%	53.0%	27.9	17.8%	64.4%	53.6	16.0%	58.3%
55–59	21.4	12.0%	65.1%	10.7	6.8%	71.2%	32.2	9.6%	67.9%
60–64	19.3	10.8%	75.9%	15.0	9.6%	80.8%	34.3	10.3%	78.2%
65–69	8.6	4.8%	80.7%	12.9	8.2%	89.0%	21.4	6.4%	84.6%
70–74	8.6	4.8%	85.5%	4.3	2.7%	91.8%	12.9	3.8%	88.5%
75–79	10.7	6.0%	91.6%	0.0	0.0%	91.8%	10.7	3.2%	91.7%
80–84	8.6	4.8%	96.4%	2.1	1.4%	93.2%	10.7	3.2%	94.9%
85–89	0.0	0.0%	96.4%	0.0	0.0%	93.2%	0.0	0.0%	94.9%
90–94	0.0	0.0%	96.4%	0.0	0.0%	93.2%	0.0	0.0%	94.9%
95–99	0.0	0.0%	96.4%	0.0	0.0%	93.2%	0.0	0.0%	94.9%
100–104	0.0	0.0%	96.4%	0.0	0.0%	93.2%	0.0	0.0%	94.9%
Missing	6.4	3.6%	100.0%	10.7	6.8%	100.0%	17.2	5.1%	100.0%
Total	**178.0**	**100.0%**	**100.0%**	**156.6**	**100.0%**	**100.0%**	**334.6**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

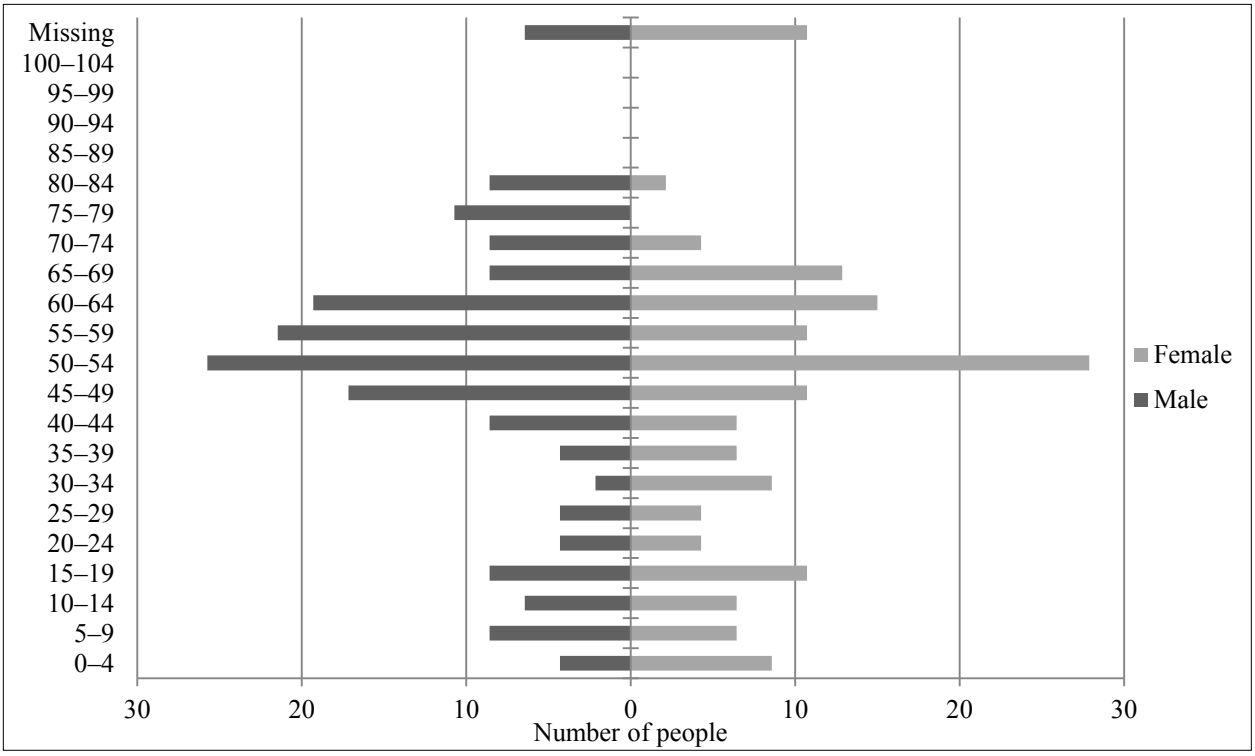

Figure 5-2. – Population profile, Trapper Creek, 2012.

Table 5-2. – Estimated earned and other income, Trapper Creek, 2012.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Services	78.1	43.9	$1,752,940	$11,844	28.0%
Transportation, communication, and utilities	19.5	11.6	$589,724	$3,985	9.4%
Construction	35.8	23.1	$552,648	$3,734	8.8%
Local government	29.3	18.5	$499,561	$3,375	8.0%
Mining	13.0	9.3	$468,119	$3,163	7.5%
Finance, insurance, and real estate	6.5	2.3	$277,067	$1,872	4.4%
Retail trade	26.0	18.5	$250,306	$1,691	4.0%
State government	9.8	6.9	$217,564	$1,470	3.5%
Agriculture, forestry, and fishing	22.8	13.9	$57,235	$387	0.9%
Other employment	3.3	2.3	$51,270	$346	0.8%
Manufacturing	6.5	4.6	$19,064	$129	0.3%
Wholesale trade	3.3	2.3	$17,833	$120	0.3%
Earned income subtotal	**224.7**	**108.7**	**$4,753,333**	**$32,117**	**76.0%**
Other income					
Social Security		60.1	$595,235	$4,022	9.5%
Alaska Permanent Fund dividend		133.0	$252,810	$1,708	4.0%
Pension/retirement		38.6	$184,226	$1,245	2.9%
Inheritance		2.1	$171,594	$1,159	2.7%
Disability		10.7	$43,151	$292	0.7%
Veterans assistance		12.9	$39,971	$270	0.6%
Unemployment		25.7	$38,356	$259	0.6%
Native corporation dividend		17.2	$35,479	$240	0.6%
Food stamps		15.0	$29,951	$202	0.5%
Veteran disability		2.1	$27,884	$188	0.4%
Rental income		2.1	$25,739	$174	0.4%
Dividend/interest		2.1	$17,159	$116	0.3%
Energy assistance		27.9	$14,520	$98	0.2%
Sale of personal property		2.1	$8,580	$58	0.1%
Longevity bonus		12.9	$4,836	$33	0.1%
Child support		10.7	$4,769	$32	0.1%
Supplemental Security income		10.7	$2,725	$18	0.0%
Citgo fuel voucher		12.9	$69	$0	0.0%
Adult public assistance		0.0	$0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0	0.0%
Other		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Other income subtotal		**143.7**	**$1,497,057**	**$10,115**	**24.0%**
Community income total			**$6,250,390**	**$42,232**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

a. The mean is calculated using the *total* number of households in the community, not the number of households for this income category.

b. Income by category as a percentage of the total community income from all sources (wage-based income *and* non-wage-based income).

income) followed by working in the transportation, communication, and utilities sector (9%), construction (9%), and local government (8%). Of all income, Social Security accounts for 10%; other significant sources of income in the "other income" category are the Alaska Permanent Fund (4%), and pensions or retirement (3%), which demonstrates that some residents chose to retire in the area. The total mean household income of the community is $42,232; this is lower than the average for communities in more urban areas of Southcentral Alaska. However, as noted, respondents related how they were able to offset lower income by growing food during the summer and storing it for the winter, in addition to harvesting wild resources.

Table 5-3 breaks down employment by industry further and shows the percentage of total earned income by industry, excluding other income. For example, 37% of earned income came from the services sector, while 12% was earned in the transportation, communication, and utilities sector, as well as construction industry, and 11% was earned in local government.

Of 268 adults in Trapper Creek, 225 were employed (84%) (Table 1-11). There were 257 jobs worked by residents, or approximately 1 job per employed adult. The mean number of months employed during the 2012 study year was 7. Of all households, 74% had at least 1 adult employed during the study year, with an average of 2 adults employed per household. Most jobs held by community residents were located locally either in Trapper Creek (58%) or Talkeetna (15%), with some residents working in Anchorage (5%), or on the North Slope (4%) (Table 1-12).

Table 5-3. – Employment by industry, Trapper Creek, 2012.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**257.2**	**108.7**	**224.7**	
State government	**3.7%**	**6.4%**	**4.3%**	**4.6%**
Teachers, librarians, and counselors	1.2%	2.1%	1.4%	0.3%
Transportation and material moving occupations	2.5%	4.3%	2.9%	4.3%
Local government, including tribal	**12.3%**	**17.0%**	**13.0%**	**10.5%**
Executive, administrative, and managerial	1.2%	2.1%	1.4%	3.4%
Teachers, librarians, and counselors	3.7%	6.4%	4.3%	2.8%
Health technologists and technicians	3.7%	4.3%	4.3%	2.2%
Administrative support occupations, including clerical	2.5%	4.3%	2.9%	1.1%
Occupation not indicated	1.2%	2.1%	1.4%	1.1%
Agriculture, forestry, and fishing	**9.9%**	**12.8%**	**10.1%**	**1.2%**
Agricultural, forestry, and fishing occupations	9.9%	12.8%	10.1%	1.2%
Mining	**4.9%**	**8.5%**	**5.8%**	**9.8%**
Construction and extractive occupations	4.9%	8.5%	5.8%	9.8%
Construction	**13.6%**	**21.3%**	**15.9%**	**11.6%**
Executive, administrative, and managerial	1.2%	2.1%	1.4%	1.6%
Construction and extractive occupations	9.9%	14.9%	11.6%	7.3%
Precision production occupations	1.2%	2.1%	1.4%	2.7%
Handlers, equipment cleaners, helpers, and laborers	1.2%	2.1%	1.4%	0.0%
Manufacturing	**2.5%**	**4.3%**	**2.9%**	**0.4%**
Precision production occupations	1.2%	2.1%	1.4%	0.1%
Production working occupations	1.2%	2.1%	1.4%	0.3%
Transportation, communication, and utilities	**7.4%**	**10.6%**	**8.7%**	**12.4%**
Executive, administrative, and managerial	2.5%	2.1%	2.9%	1.1%
Mechanics and repairers	1.2%	2.1%	1.4%	5.1%
Transportation and material moving occupations	3.7%	6.4%	4.3%	6.2%
Wholesale trade	**1.2%**	**2.1%**	**1.4%**	**0.4%**
Marketing and sales occupations	1.2%	2.1%	1.4%	0.4%
Retail trade	**9.9%**	**17.0%**	**11.6%**	**5.3%**
Marketing and sales occupations	2.5%	4.3%	2.9%	1.3%
Service occupations	6.2%	10.6%	7.2%	3.7%
Production working occupations	1.2%	2.1%	1.4%	0.3%
Finance, insurance, and real estate	**2.5%**	**2.1%**	**2.9%**	**5.8%**
Executive, administrative, and managerial	2.5%	2.1%	2.9%	5.8%
Services	**30.9%**	**40.4%**	**34.8%**	**36.9%**
Executive, administrative, and managerial	8.6%	10.6%	10.1%	24.4%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	1.2%	2.1%	1.4%	1.4%
Health technologists and technicians	1.2%	2.1%	1.4%	0.1%
Technologists and technicians, except health	1.2%	2.1%	1.4%	1.1%

-continued-

Table 5-3.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Marketing and sales occupations	1.2%	2.1%	1.4%	0.1%
Service occupations	14.8%	21.3%	17.4%	9.3%
Mechanics and repairers	1.2%	2.1%	1.4%	0.4%
Handlers, equipment cleaners, helpers, and laborers	1.2%	2.1%	1.4%	0.1%
Industry not indicated	**1.2%**	**2.1%**	**1.4%**	**1.1%**
Occupation not indicated	1.2%	2.1%	1.4%	1.1%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Income by category as a percentage of the total *wage-based* community income.

LEVELS OF INDIVIDUAL PARTICIPATION IN THE HARVESTING AND PROCESSING OF WILD RESOURCES

Table 1-13 reports the expanded levels of individual participation in the harvesting and processing of wild resources by all of the study communities in 2012. During the study year 79% of residents of Trapper Creek attempted to harvest resources and 76% processed a resource. Out of all resource categories the highest individual participation rates were in harvesting and processing wild plants: 76% of residents both attempted to harvest and harvested plants. Almost half of residents (46%) fished and 40% processed fish; 28% hunted large land mammals and 25% processed large land mammals; and 21% hunted birds, especially upland game birds, and 20% processed the birds. Finally, 12% of residents attempted to harvest small land mammals or furbearers and 7% processed those land mammals.

HOUSEHOLD RESOURCE HARVEST AND USE PATTERNS AND SHARING OF WILD RESOURCES

Table 1-14 summarizes resource harvest and use characteristics for Trapper Creek in 2012 at the household level. Most households (99%) used a wild resource in 2012 and 96% attempted to harvest a resource during the study year. The average harvest was 140 lb usable weight per household, or 61 lb per capita. During the study year, households harvested an average of 6 kinds of resources and used an average of 9 kinds of resources. The maximum number of resources used by any household was 36 distinct kinds of resources. In addition, households gave away an average of 2 kinds of resources and households reported receiving 3 kinds of resources. Sharing of resources is demonstrated here not only by the number of resources given and received but also in the percentage of households giving (53%) and receiving (84%). This study shows more households receiving resources than giving, which demonstrates household specialization in harvesting resources. Figure 5-3 shows household specialization. This figure shows that 19% of households harvested 70% of resources.

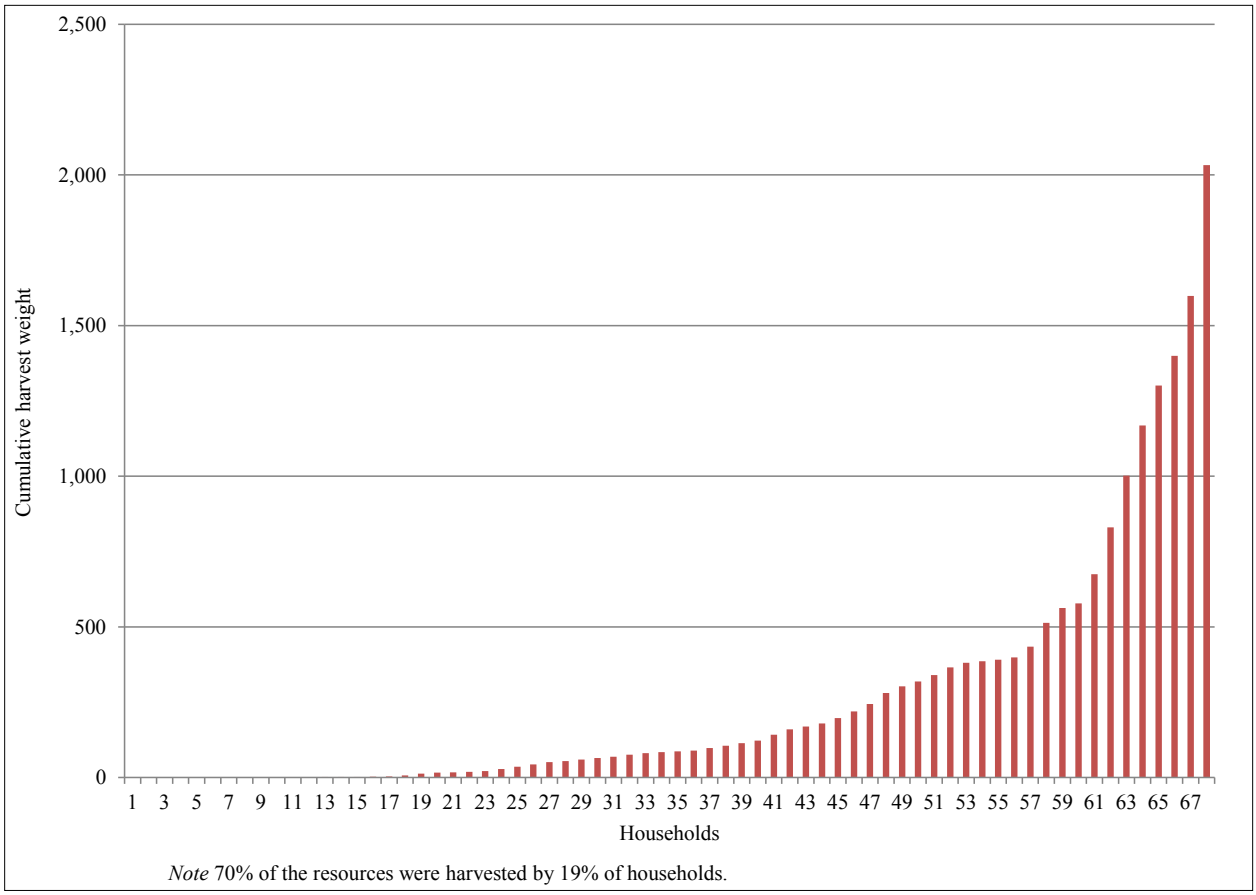

Figure 5-3. – Household specialization, Trapper Creek, 2012.

HARVEST QUANTITIES AND COMPOSITION

Table 5-4 reports estimated wild resource harvests and uses by Trapper Creek residents in 2012 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 way of life in the area. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

As noted above, the per capita harvest of wild resources by residents of Trapper Creek was 61 lb, or 140 lb per household (Table 5-4). The total harvest of wild resources in 2012 by the community of Trapper Creek was 20,407 lb. The highest per capita harvest was fish at 35 lb per capita (11,593

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 5-4. – Estimated harvests and uses of fish, game, and vegetation resources, Trapper Creek, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) % of harvest
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	
All resources	**98.5**	**95.6**	**95.6**	**83.8**	**52.9**	**20,406.5**	**139.9**	**61.0**	**7,150.4**		**49.0**	**28.3**
Fish	**88.2**	**58.8**	**54.4**	**72.1**	**29.4**	**11,592.6**	**79.5**	**34.6**	**4,238.9**		**29.1**	**33.2**
Salmon	**82.4**	**51.5**	**45.6**	**60.3**	**25.0**	**8,351.5**	**57.3**	**25.0**	**1,938.0**		**13.3**	**32.3**
Chum salmon	4.4	2.9	2.9	1.5	0.0	303.7	2.1	0.9	49.3	ind	0.3	132.6
Coho salmon	47.1	29.4	26.5	26.5	11.8	1,998.1	13.7	6.0	418.0	ind	2.9	36.8
Chinook salmon	25.0	19.1	11.8	17.6	8.8	245.9	1.7	0.7	25.8	ind	0.2	56.8
Pink salmon	8.8	7.4	5.9	1.5	1.5	142.1	1.0	0.4	53.6	ind	0.4	97.6
Sockeye salmon	64.7	32.4	27.9	44.1	17.6	5,491.6	37.7	16.4	1,236.9	ind	8.5	37.7
Landlocked salmon	2.9	2.9	2.9	0.0	0.0	150.1	1.0	0.4	150.1	ind	1.0	110.8
Unknown salmon	7.4	1.5	1.5	4.4	0.0	19.9	0.1	0.1	4.3	ind	0.0	144.7
Nonsalmon fish	**67.6**	**42.6**	**35.3**	**52.9**	**14.7**	**3,241.1**	**22.2**	**9.7**	**2,300.9**		**15.8**	**53.1**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cod	11.8	2.9	2.9	8.8	2.9	83.7	0.6	0.3	77.2		0.5	104.3
Pacific (gray) cod	7.4	1.5	1.5	5.9	1.5	51.5	0.4	0.2	12.9	ind	0.1	144.7
Pacific tomcod	2.9	0.0	0.0	2.9	1.5	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown cod	2.9	1.5	1.5	1.5	1.5	32.2	0.2	0.1	64.3	ind	0.4	144.7
Flounder	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Greenling	2.9	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Lingcod	2.9	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	54.4	8.8	8.8	45.6	5.9	918.0	6.3	2.7	918.0	lb	6.3	65.2
Rockfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sablefish (black cod)	1.5	0.0	0.0	1.5	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	0.0	0.0	0.0	ind	0.0	0.0
Burbot	10.3	8.8	5.9	4.4	4.4	355.2	2.4	1.1	148.0	ind	1.0	89.0
Char	8.8	10.3	8.8	0.0	1.5	281.4	1.9	0.8	197.3		1.4	83.6
Dolly Varden	7.4	8.8	7.4	0.0	1.5	92.7	0.6	0.3	103.0	ind	0.7	85.9
Lake trout	4.4	5.9	4.4	0.0	0.0	188.8	1.3	0.6	94.4	ind	0.6	105.8
Arctic grayling	17.6	22.1	14.7	2.9	4.4	274.8	1.9	0.8	392.5	ind	2.7	54.3
Northern pike	14.7	14.7	11.8	4.4	2.9	1,066.3	7.3	3.2	380.8	ind	2.6	68.1

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Table 5-4.–Page 2 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Nonsalmon fish, continued												
Longnose sucker	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trout	19.1	23.5	19.1	2.9	4.4	261.7	1.8	0.8	187.0		1.3	44.1
Cutthroat trout	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Rainbow trout	16.2	20.6	16.2	1.5	2.9	228.2	1.6	0.7	163.0	ind	1.1	48.0
Unknown trout	4.4	5.9	4.4	1.5	1.5	33.5	0.2	0.1	23.9	ind	0.2	120.0
Whitefishes	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Broad whitefish	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cisco	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Least cisco	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whitefishes	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Land mammals	**67.6**	**44.1**	**20.6**	**57.4**	**19.1**	**5,442.8**	**37.3**	**16.3**	**220.9**		**1.5**	**54.1**
Large land mammals	**66.2**	**42.6**	**11.8**	**57.4**	**19.1**	**4,946.2**	**33.9**	**14.8**	**19.3**		**0.1**	**56.4**
Bison	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black bear	16.2	7.4	1.5	11.8	2.9	248.8	1.7	0.7	4.3	ind	0.0	144.7
Brown bear	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Caribou	27.9	7.4	4.4	23.5	4.4	836.5	5.7	2.5	6.4	ind	0.0	82.3
Deer	2.9	0.0	0.0	2.9	1.5	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goat	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	58.8	36.8	5.9	47.1	16.2	3,860.9	26.5	11.5	8.6	ind	0.1	70.7
Muskox	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dall sheep	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals[b]	**13.2**	**14.7**	**13.2**	**1.5**	**1.5**	**496.6**	**3.4**	**1.5**	**201.6**		**1.4**	**76.2**
Beaver	2.9	1.5	1.5	1.5	1.5	193.0	1.3	0.6	12.9	ind	0.1	144.7
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fox	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	6.4		0.0	107.2
Red fox	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	6.4		0.0	107.2
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	6.4	ind	0.0	107.2
Hare	5.9	5.9	5.9	0.0	0.0	137.3	0.9	0.4	68.6		0.5	103.2
Snowshoe hare	5.9	5.9	5.9	0.0	0.0	137.3	0.9	0.4	68.6	ind	0.5	103.2
River (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 5-4.–Page 3 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Small land mammals[b], continued												
Marten	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	32.2	ind	0.2	101.8
Mink	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	2.1	ind	0.0	144.7
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	1.5	1.5	1.5	0.0	0.0	154.4	1.1	0.5	34.3	ind	0.2	144.7
Squirrel	2.9	2.9	2.9	0.0	0.0	11.8	0.1	0.0	23.6		0.2	102.0
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	2.9	2.9	2.9	0.0	0.0	11.8	0.1	0.0	23.6	ind	0.2	102.0
Weasel	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	21.4	ind	0.1	144.7
Wolf	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**4.4**	**0.0**	**0.0**	**4.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seals	4.4	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seals	4.4	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whales	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Bowhead whale	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**38.2**	**36.8**	**32.4**	**5.9**	**5.9**	**561.7**	**3.9**	**1.7**	**860.1**		**5.9**	**45.2**
Migratory birds	**2.9**	**4.4**	**2.9**	**0.0**	**1.5**	**16.4**	**0.1**	**0.0**	**19.3**		**0.1**	**101.6**
Ducks	2.9	4.4	2.9	0.0	1.5	16.4	0.1	0.0	19.3		0.1	101.6
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Eider	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	2.9	2.9	2.9	0.0	1.5	10.7	0.1	0.0	10.7	ind	0.1	103.6
Merganser	1.5	1.5	1.5	0.0	0.0	3.8	0.0	0.0	2.1	ind	0.0	144.7
Northern pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Scoter	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Teal	1.5	1.5	1.5	0.0	0.0	1.9	0.0	0.0	6.4		0.0	144.7
Green-winged teal	1.5	1.5	1.5	0.0	0.0	1.9	0.0	0.0	6.4	ind	0.0	144.7
Unknown ducks	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 5-4.–Page 4 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Migratory birds, continued												
Geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Other birds	**38.2**	**36.8**	**32.4**	**5.9**	**4.4**	**545.2**	**3.7**	**1.6**	**840.8**		**5.8**	**44.7**
Upland game birds	38.2	36.8	32.4	5.9	4.4	545.2	3.7	1.6	840.8		5.8	44.7
Grouse	36.8	35.3	32.4	4.4	4.4	436.9	3.0	1.3	624.2		4.3	48.5
Spruce grouse	36.8	35.3	32.4	4.4	4.4	415.9	2.9	1.2	594.1	ind	4.1	47.7
Sharp-tailed grouse	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ruffed grouse	7.4	8.8	7.4	0.0	0.0	21.0	0.1	0.1	30.0	ind	0.2	77.3
Unknown grouse	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	16.2	17.6	14.7	1.5	1.5	108.3	0.7	0.3	216.6	ind	1.5	67.0
Bird eggs	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Seabird and loon eggs	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	**7.4**	**4.4**	**4.4**	**2.9**	**1.5**	**282.1**	**1.9**	**0.8**	**94.0**		**0.6**	**87.7**
Clams	5.9	4.4	4.4	1.5	1.5	282.1	1.9	0.8	94.0		0.6	87.7
Butter clam	1.5	1.5	1.5	0.0	0.0	38.6	0.3	0.1	12.9	gal	0.1	144.7
Freshwater clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clam	5.9	4.4	4.4	1.5	1.5	243.4	1.7	0.7	81.1	gal	0.6	97.6

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Table 5-4.–Page 5 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Marine invertebrates, continued												
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crabs	1.5	0.0	0.0	1.5	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	0.0	0.0	0.0	ind	0.0	0.0
King crab	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Octopus	0.0	0.0	0.0	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	0.0	0.0	0.0	lb	0.0	0.0
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**94.1**	**92.6**	**92.6**	**29.4**	**35.3**	**2,527.4**	**17.3**	**7.6**	**1,736.4**		**11.9**	**20.5**
Berries	**80.9**	**79.4**	**79.4**	**22.1**	**20.6**	**2,266.1**	**15.5**	**6.8**	**566.5**		**3.9**	**20.7**
Blueberry	75.0	75.0	73.5	10.4	14.9	1,065.2	7.3	3.2	266.3	gal	1.8	22.5
Lowbush cranberry	17.6	17.6	17.6	1.5	1.5	146.9	1.0	0.4	36.7	gal	0.3	55.3
Highbush cranberry	30.9	27.9	27.9	4.4	4.4	416.3	2.9	1.2	104.1	gal	0.7	40.5
Crowberry	4.4	4.4	4.4	0.0	0.0	15.0	0.1	0.0	3.8	gal	0.0	93.8
Gooseberry	4.4	4.4	4.4	0.0	0.0	18.8	0.1	0.1	4.7	gal	0.0	132.5
Currants	14.7	14.7	14.7	0.0	0.0	133.0	0.9	0.4	33.2	gal	0.2	57.4
Huckleberry	1.5	1.5	1.5	1.5	0.0	21.4	0.1	0.1	5.4	gal	0.0	144.7
Cloudberry	2.9	2.9	2.9	0.0	0.0	9.1	0.1	0.0	2.3	gal	0.0	136.4
Raspberry	33.8	30.9	30.9	5.9	4.4	112.1	0.8	0.3	28.0	gal	0.2	42.1
Salmonberry	5.9	4.4	4.4	1.5	0.0	10.2	0.1	0.0	2.5	gal	0.0	122.7
Strawberry	2.9	2.9	2.9	1.5	0.0	103.0	0.7	0.3	25.7	gal	0.2	103.0
Twisted stalk berry (watermelon berry)	27.9	27.9	27.9	0.0	0.0	129.2	0.9	0.4	32.3	gal	0.2	64.0
Serviceberry	2.9	2.9	2.9	1.5	1.5	77.2	0.5	0.2	19.3	gal	0.1	129.4
Other wild berries	1.5	1.5	1.5	0.0	0.0	8.6	0.1	0.0	2.1	gal	0.0	144.7
Plants, greens, and mushrooms	**44.1**	**44.1**	**44.1**	**4.4**	**8.8**	**258.7**	**1.8**	**0.8**	**235.8**		**1.6**	**40.4**
Fiddlehead fern	32.4	30.9	30.9	4.4	4.4	141.6	1.0	0.4	141.6	gal	1.0	61.1
Hudson's Bay (Labrador) tea	2.9	2.9	2.9	0.0	1.5	4.3	0.0	0.0	4.3	gal	0.0	101.6
Spruce tips	1.5	1.5	1.5	0.0	1.5	1.1	0.0	0.0	1.1	gal	0.0	144.7
Wild rose hip	7.4	7.4	7.4	0.0	2.9	30.6	0.2	0.1	7.6	gal	0.1	88.7
Yarrow	1.5	1.5	1.5	0.0	1.5	2.1	0.0	0.0	2.1	gal	0.0	144.7
Other wild greens	5.9	5.9	5.9	0.0	1.5	36.5	0.3	0.1	36.5	gal	0.3	91.1
Unknown mushrooms	11.8	11.8	11.8	1.5	1.5	34.0	0.2	0.1	34.0	gal	0.2	70.3
Fireweed	2.9	2.9	2.9	0.0	0.0	7.5	0.1	0.0	7.5	gal	0.1	125.5
Plantain	1.5	1.5	1.5	0.0	1.5	1.1	0.0	0.0	1.1	gal	0.0	144.7

-continued-

Table 5-4.–Page 6 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Wood	**77.9**	**76.5**	**76.5**	**10.3**	**14.7**	**2.6**	**0.0**	**0.0**	**934.1**		**6.4**	**144.7**
Birch sap	1.5	1.5	1.5	1.5	0.0	2.6	0.0	0.0	21.4	gal	0.1	144.7
Firewood	77.9	76.5	76.5	10.3	14.7	0.0	0.0	0.0	912.7	cord	6.3	34.9

Source ADF&G Division of Subsistence household surveys, 2013.

Note With regard to birch sap, the estimated harvest weight presented in the table is that of the syrup that results from the processing of birch sap. However, the harvest amount (the quantity of sap in gallons) given in the table is the estimated harvest of the sap (not the syrup) prior to being processed. The harvest amount, if converted to gallons of syrup, would be 0.081 gallons (approximately 1.3 cups).

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

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.

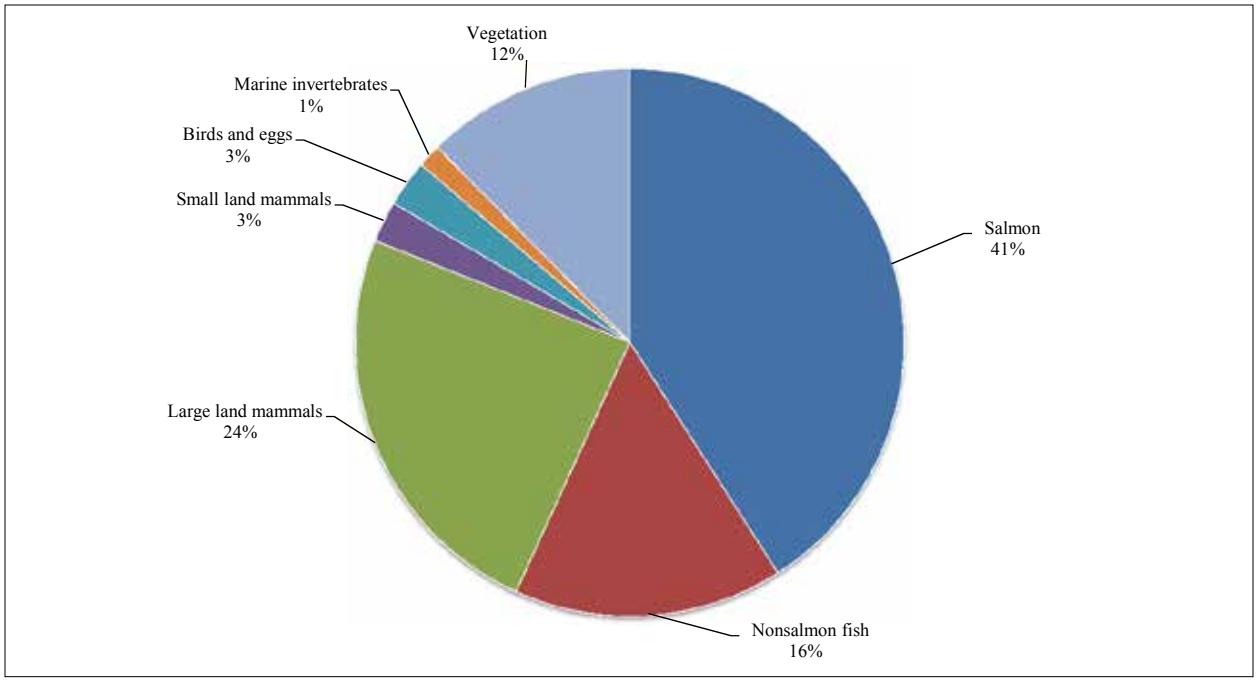

Figure 5-4. – Composition of wild resource harvest, by category, Trapper Creek, 2012.

lb total); specifically, salmon were harvested at 25 lb per capita (8,352 lb total). Salmon composed 41% of the overall harvest in terms of pounds harvested per capita in 2012; land mammals composed 27% of the per capita harvest (16 lb, or 4,946 lb total); nonsalmon fish 16%, (10 lb per capita or 3,421 lb total); vegetation—such as edible plants and berries—12% (8 lb per capita or 2,527 total); upland game birds—such as spruce grouse and ptarmigan—3% (2 lb per capita or 545 lb total); and marine invertebrates 1% (1 lb per capita or 282 total) of the per capita harvest (Figure 5-4; Table 5-4).

SEASONAL ROUND

In the past, Chinook salmon were an important part of the harvest for residents of Trapper Creek. With the decline of the resource, respondents related that they did not spend as much effort harvesting Chinook salmon as they had in the past. Respondents waited until later in the summer and focused on returning sockeye salmon in the Susitna River and its tributaries for noncommercial harvests. This run is followed by coho salmon and some residents harvest pink salmon as well, which are abundant in the area. Salmon in the area are harvested using rod and reel gear under sport fishing regulations.

In the fall, hunting moose is especially important. Respondents hunted locally as well as in other areas outside the community area. During a 2012 flood event that occurred during the hunting season, some residents could not get out to harvest moose locally. Moose were shared widely, though, and many respondents noted that they share moose between households each year because household

Table 5-5. – Top 10 resources harvested and used, Trapper Creek, 2012.

Harvested			Used		
Rank	Resource	Pounds per capita	Rank	Resource	Percentage of households using
1.	Sockeye salmon	16.4	1.	Blueberry	73.9%
2.	Moose	11.5	2.	Sockeye salmon	63.8%
3.	Coho salmon	6.0	3.	Moose	58.0%
4.	Northern pike	3.2	4.	Pacific halibut	53.6%
4.	Blueberry	3.2	5.	Coho salmon	46.4%
6.	Pacific halibut	2.7	6.	Spruce grouse	36.2%
7.	Caribou	2.5	7.	Raspberry	33.3%
8.	Highbush cranberry	1.2	8.	Fiddlehead fern	31.9%
8.	Spruce grouse	1.2	9.	Highbush cranberry	30.4%
10.	Burbot	1.1	10.	Caribou	27.5%
			10.	Twisted stalk berry	27.5%

Source ADF&G Division of Subsistence household surveys, 2013.

sizes are small and a moose will feed more than 1 household. For many respondents who have lived in the area for several years, caribou were also important. In recent years caribou were harvested off the Denali Highway, which is located to the north. This area was also important for harvesting berries, especially lowbush blueberries, which are abundant in the area. Berries were also harvested locally in Trapper Creek, especially on the west side of the highway where respondents noted that berries are more plentiful. In the fall, harvesting spruce grouse and ptarmigan was an important activity for respondents. This coincides with harvesting gardens, which was a major activity for many respondents, which, they said, enabled them to meet their food needs during the winter months. As noted earlier, the Susitna River Basin has fertile soils in the Trapper Creek area.

Winter was a time when respondents harvested furbearers. There are a few trappers in the area and respondents harvested small furbearers on area trails and along the Susitna River. Respondents also harvested nonsalmon fish through the ice on streams and rivers in the area near the Parks Highway and off the Petersville Road. Harvesting wood was also an important activity that could be done during the winter or at any time during the year. Because there is no natural gas available locally, residents rely on electricity or oil to heat their homes; many use a wood stove to offset the price of fuel. The area has abundant wood resources, especially birch, which respondents preferred for burning because it is a dense hardwood.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Table 5-5 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Trapper Creek households during the 2012 study year. As noted above, salmon

composed 41% of the overall harvest in terms of edible weight (Figure 5-4). Of primary importance were sockeye salmon, which ranked first in terms of per capita harvest (16 lb) and second in terms of percentage of households that used the resource (64%) in 2012. Considering the overall harvest, land mammals were of secondary importance. As shown in Table 5-5, moose ranked second in terms of per capita harvest (12 lb) and was the third most used resource by Trapper Creek households (58%). Nonsalmon fish were the third most harvested resource type, and, as shown in Table 5-5, northern pike (3 lb per capita), Pacific halibut (3 lb per capita), and burbot (1 lb per capita) were among the top 10 resources harvested, although only halibut made it onto the list of top 10 resources used by households (54%). Plants, including blueberries and highbush cranberries, are also ranked in the top 10 list in terms of harvest and use.

In terms of sharing, 84% of households received resources from other households and 53% shared resources. Fish was the most shared resource, with 72% of households receiving fish and 53% giving fish away; especially salmon, with 60% receiving salmon and 25% giving salmon. Halibut were also highly shared by a small percentage of households; 6% of households shared halibut and 46% received halibut. Another highly shared category of resources was large land mammals, with 58% receiving large land mammals and 19% giving large land mammals. Vegetation was also shared by approximately a quarter of households: 35% gave vegetation to other households and an estimated 29% reported receiving vegetation.

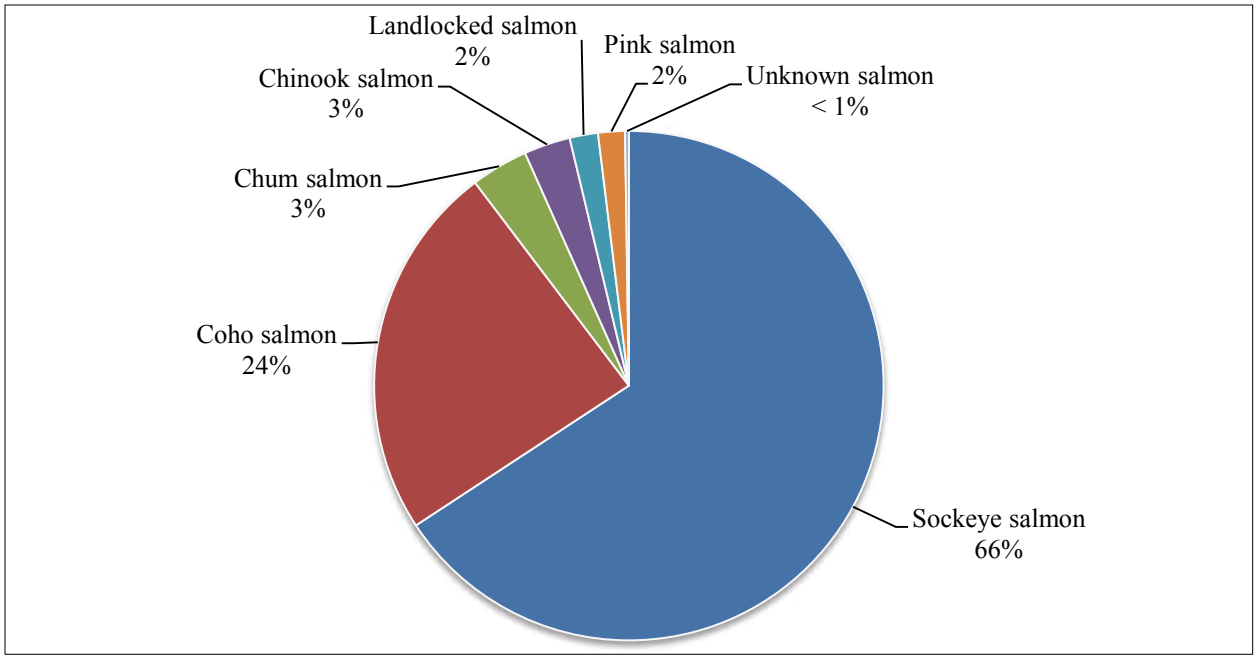

Figure 5-5. – Composition of salmon harvest, Trapper Creek, 2012.

SALMON

As noted above salmon composed the largest component of the harvest of wild resources in terms of edible weight (Figure 5-4; Table 5-4). Figure 5-5 shows the harvest of salmon by species in terms of edible weight per capita. Overall, sockeye salmon make up 66%, or a per capita harvest of 16 lb, of the overall salmon harvest, followed by coho salmon (24%; 6 lb per capita), chum salmon (3%; 1 lb), Chinook salmon (3%; less than 1 lb), landlocked salmon (2%; less than 1 lb), and pink salmon (2%; less than 1 lb). Table 5-6 shows the gear type used to harvest salmon in terms of number of salmon harvested and pounds of salmon harvested. Although salmon in the local area are harvested by rod and reel, overall, 24% of salmon were harvested using other gear, mainly a gillnet or seine (16%), 35% were harvested using a dip net, and 42% were harvested using a rod and reel. Sockeye salmon were harvested by using a gillnet or seine (21%), dip net (55%), and rod and reel (24%).

Figure 5-6 shows the various locations of sockeye salmon harvests in 2012. Dip nets were used in the Kenai and Kasilof river personal use fisheries as well as in the Copper River personal use fishery. Gillnets are also a legal gear type used in the Kasilof River personal use fishery and gillnets and seines are legal gear for the Bristol Bay subsistence fisheries near Nondalton and Port Alsworth. Fishing in the Trapper Creek area was by rod and reel under sport fishing regulations. Coho salmon, another important species, were harvested in the area immediately around Trapper Creek, especially in small streams on the east side of the highway (Figure 5-7). Montana Creek, located 5 miles south of the Talkeetna Spur, is also an important location for the harvest of coho salmon.

Table 5-6. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Trapper Creek, 2012.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Other method		Subsistence gear, any method		Dip net[a]		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%**	**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%**	**15.7%**	**16.5%**	**7.7%**	**1.8%**	**23.5%**	**18.3%**	**35.0%**	**36.2%**	**41.5%**	**45.4%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**15.7%**	**16.5%**	**7.7%**	**1.8%**	**23.5%**	**18.3%**	**35.0%**	**36.2%**	**41.5%**	**45.4%**	**100.0%**	**100.0%**
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	1.4%	1.9%	0.0%	0.0%	0.9%	1.7%	0.0%	0.0%	5.6%	7.3%	2.5%	3.6%
	Resource	0.0%	0.0%	0.0%	0.0%	8.7%	8.7%	0.0%	0.0%	8.7%	8.7%	0.0%	0.0%	91.3%	91.3%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	2.3%	3.3%	2.5%	3.6%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	7.1%	7.5%	0.0%	0.0%	4.8%	6.8%	0.0%	0.0%	49.3%	49.9%	21.6%	23.9%
	Resource	0.0%	0.0%	0.0%	0.0%	5.2%	5.2%	0.0%	0.0%	5.2%	5.2%	0.0%	0.0%	94.8%	94.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.1%	1.2%	0.0%	0.0%	1.1%	1.2%	0.0%	0.0%	20.4%	22.7%	21.6%	23.9%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	2.1%	4.4%	0.0%	0.0%	1.4%	4.0%	0.3%	0.7%	2.1%	4.3%	1.3%	2.9%
	Resource	0.0%	0.0%	0.0%	0.0%	25.0%	25.0%	0.0%	0.0%	25.0%	25.0%	8.4%	8.4%	66.6%	66.6%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.3%	0.7%	0.0%	0.0%	0.3%	0.7%	0.1%	0.2%	0.9%	2.0%	1.3%	2.9%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	3.5%	2.1%	0.0%	0.0%	2.4%	1.9%	0.0%	0.0%	5.3%	3.0%	2.8%	1.7%
	Resource	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	0.0%	0.0%	20.0%	20.0%	0.0%	0.0%	80.0%	80.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.6%	0.3%	0.0%	0.0%	0.6%	0.3%	0.0%	0.0%	2.2%	1.4%	2.8%	1.7%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	85.8%	84.1%	0.0%	0.0%	57.5%	75.8%	99.7%	99.3%	37.1%	34.9%	63.8%	65.8%
	Resource	0.0%	0.0%	0.0%	0.0%	21.2%	21.2%	0.0%	0.0%	21.2%	21.2%	54.7%	54.7%	24.1%	24.1%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	13.5%	13.9%	0.0%	0.0%	13.5%	13.9%	34.9%	36.0%	15.4%	15.9%	63.8%	65.8%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	33.0%	9.8%	0.0%	0.0%	0.0%	0.0%	7.7%	1.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	1.8%	7.7%	1.8%	0.0%	0.0%	0.0%	0.0%	7.7%	1.8%
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%	0.5%	0.5%	0.2%	0.2%
	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%	0.2%	0.2%	0.2%	0.2%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Harvests using dip net gear are typically included with subsistence harvests. However, in this case dip nets are primarily used to harvest fish under personal use regulations and are therefore placed in a separate category.

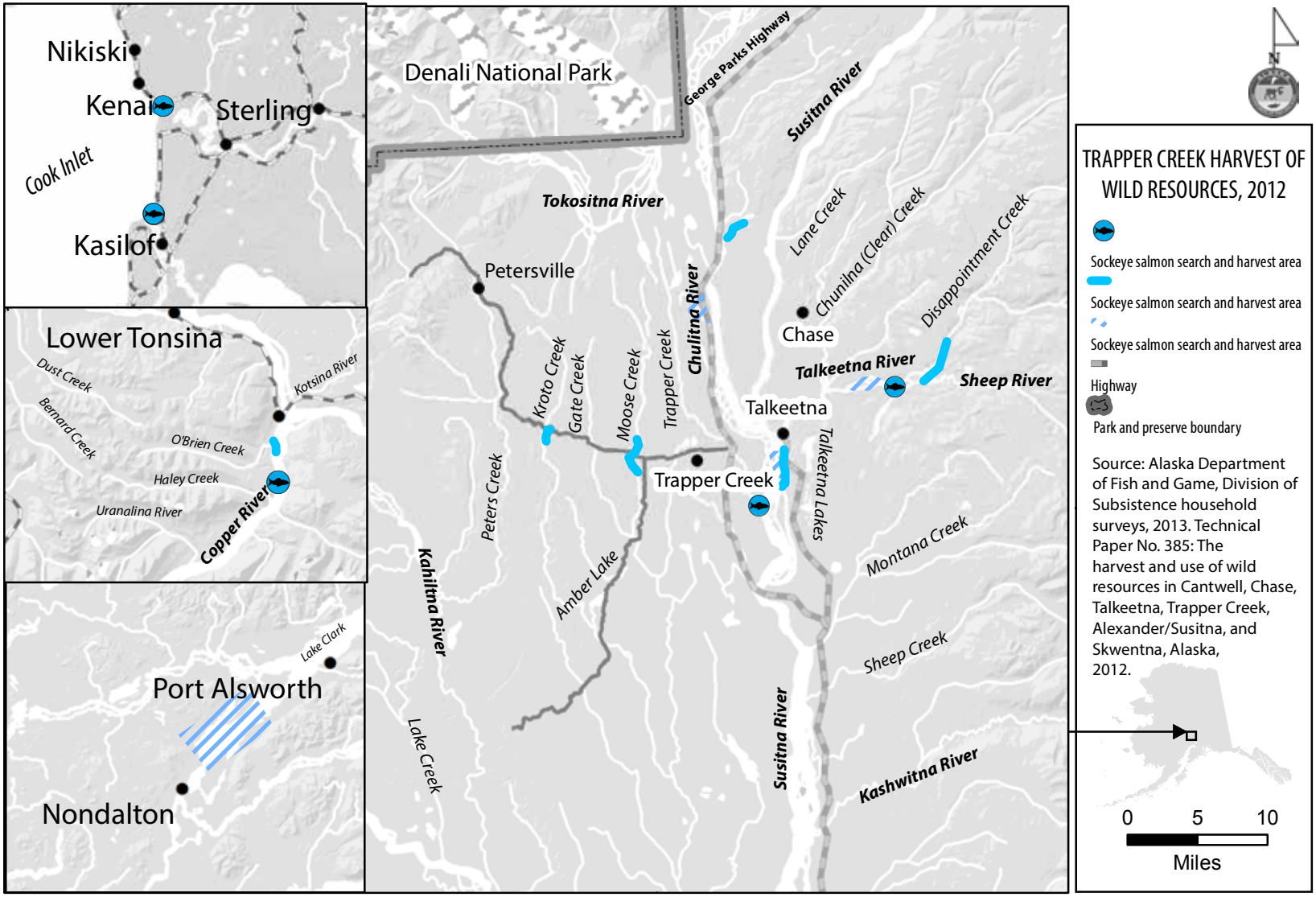

Figure 5-6. – Sockeye salmon search and harvest areas, Trapper Creek, 2012.

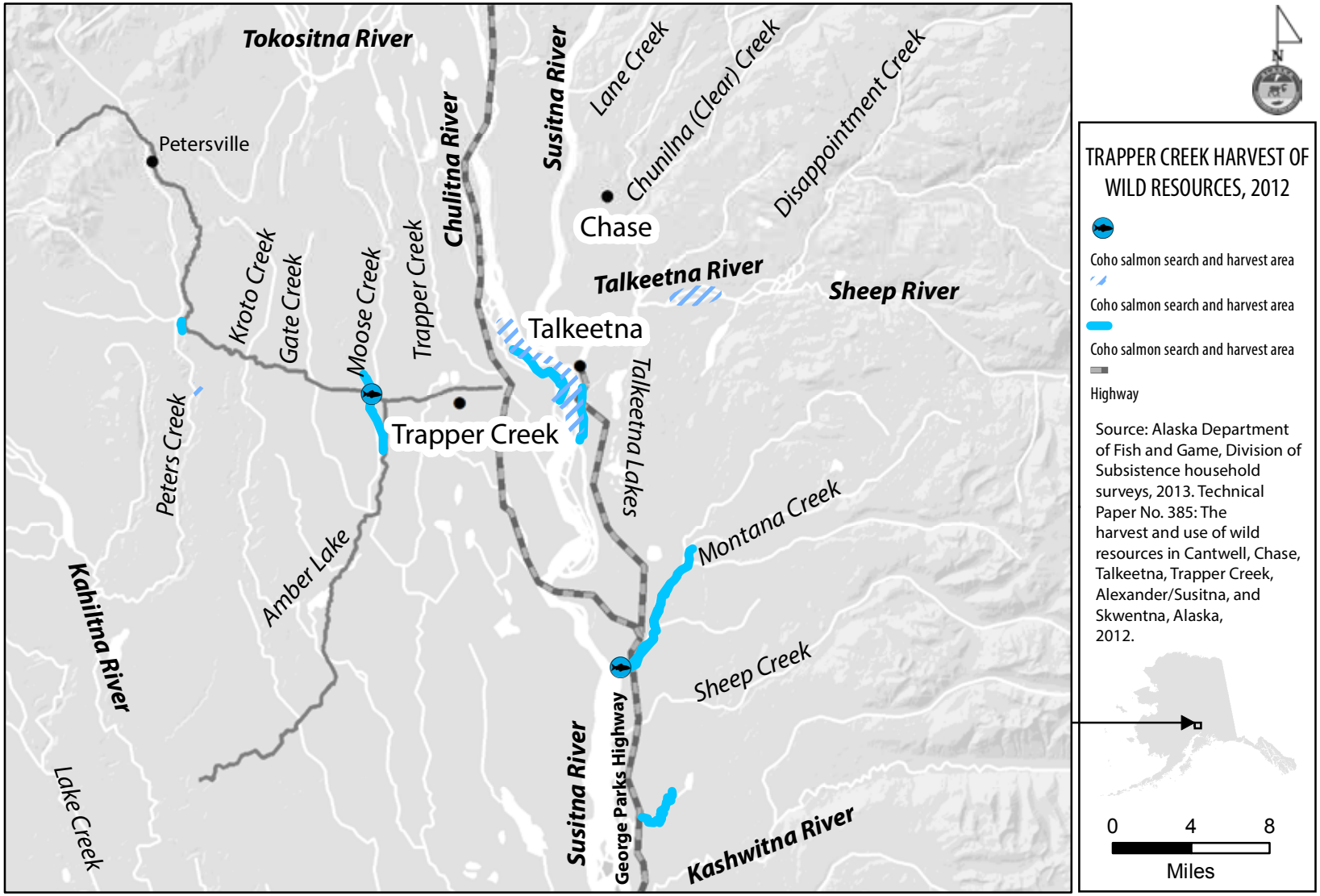

Figure 5-7. – Coho salmon search and harvest areas, Trapper Creek, 2012.

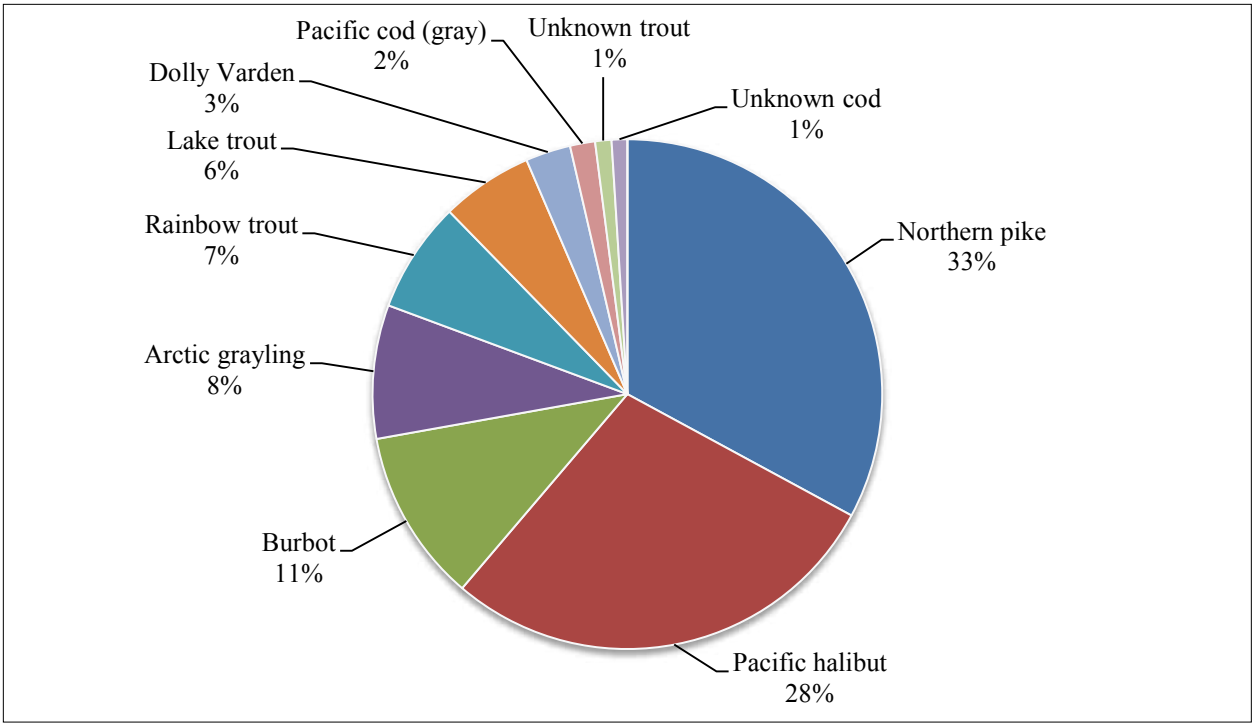

Figure 5-8. – Composition of nonsalmon fish harvest, Talkeetna, 2012.

NONSALMON FISH

Figure 5-8 shows the percentage of harvest of nonsalmon fish by species in terms of per capita harvest. Northern pike made up 33% of the harvest and ranked fourth in terms of per capita harvest (Table 5-5), with an estimated 381 northern pike harvested by Trapper Creek residents in 2012 (Table 5-4). Most of the harvest was by ice fishing with hook and line gear with 79% harvested through the ice in winter and another 21% harvested by rod and reel in open water (Table 5-7).

Figure 5-9 shows the location of harvest of northern pike. Amber Lake was noted as the best location for harvesting northern pike in the area. Respondents noted that the lakes east of Amber Lake and west of the highway were abundant pike locations. The northern pike population has been growing during the past 20 years and some respondents described 3-foot long northern pike that have been harvested from Amber Lake.

Although not as abundant in term of pounds of harvest, Arctic grayling were notable in terms of number of fish harvested. In 2012, residents harvested an estimated 393 Arctic grayling at locations as diverse as the Trapper Creek area, Denali Highway, and Lake Clark (Table 5-4; Figure 5-10). Most of the harvest (89%) was harvested by rod and reel and 11% by ice fishing (Table 5-7).

Nonsalmon fish harvests were diverse and, in terms of the per capita harvest in pounds, Pacific halibut accounted for 28% of the harvest, burbot 11%, rainbow trout 7%, lake trout 6%, Dolly Varden 3%, and Pacific cod 2% (Figure 5-8).

Table 5-7. – Estimated percentages of fish other than salmon harvested by gear type, resource, and total nonsalmon fish harvest, Trapper Creek, 2012.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**83.1%**	**71.5%**	**16.9%**	**28.5%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**83.1%**	**71.5%**	**12.0%**	**28.5%**	**100.0%**	**100.0%**
Smelt	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%
	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%
	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%
Eulachon (hooligan, candlefish)	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%
	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%
	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%
Pacific (gray) cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	2.2%	0.0%	0.0%	0.6%	1.6%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.6%	0.0%	0.0%	0.6%	1.6%
Pacific tomcod	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%
	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%
	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%
Unknown cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	1.4%	0.0%	0.0%	2.8%	1.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	1.0%	0.0%	0.0%	2.8%	1.0%
Lingcod	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%
	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%
	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%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	48.0%	39.6%	0.0%	0.0%	39.9%	28.3%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	39.9%	28.3%	0.0%	0.0%	39.9%	28.3%
Rockfish	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%
	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%
	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%
Black rockfish	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%
	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%
	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%
Yelloweye rockfish	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%
	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%
	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%
Unknown rockfishes	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%
	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%
	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%
Sablefish (black cod)	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%
	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%
	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%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	15.3%	0.0%	0.0%	6.4%	11.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.4%	11.0%	0.0%	0.0%	6.4%	11.0%

-continued-

Table 5-7.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	3.3%	4.4%	1.7%	4.5%	2.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	83.3%	83.3%	16.7%	16.7%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%	2.4%	0.5%	0.5%	4.5%	2.9%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%	8.2%	0.0%	0.0%	4.1%	5.8%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.1%	5.8%	0.0%	0.0%	4.1%	5.8%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.3%	10.6%	11.0%	3.2%	17.1%	8.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	89.1%	89.1%	10.9%	10.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.2%	7.6%	1.3%	0.9%	17.1%	8.5%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	9.7%	77.3%	90.9%	16.6%	32.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.1%	21.1%	78.9%	78.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	7.0%	9.3%	25.9%	16.6%	32.9%
Cutthroat trout	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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.1%	8.2%	7.2%	4.2%	7.1%	7.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	82.9%	82.9%	17.1%	17.1%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	5.8%	0.9%	1.2%	7.1%	7.0%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	1.4%	0.0%	0.0%	1.0%	1.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	0.0%	0.0%	1.0%	1.0%
Humpback whitefish	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%
	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%
	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%
Round whitefish	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%
	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%
	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%
Unknown whitefishes	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%
	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%
	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%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Rod and reel gear used during open water season.

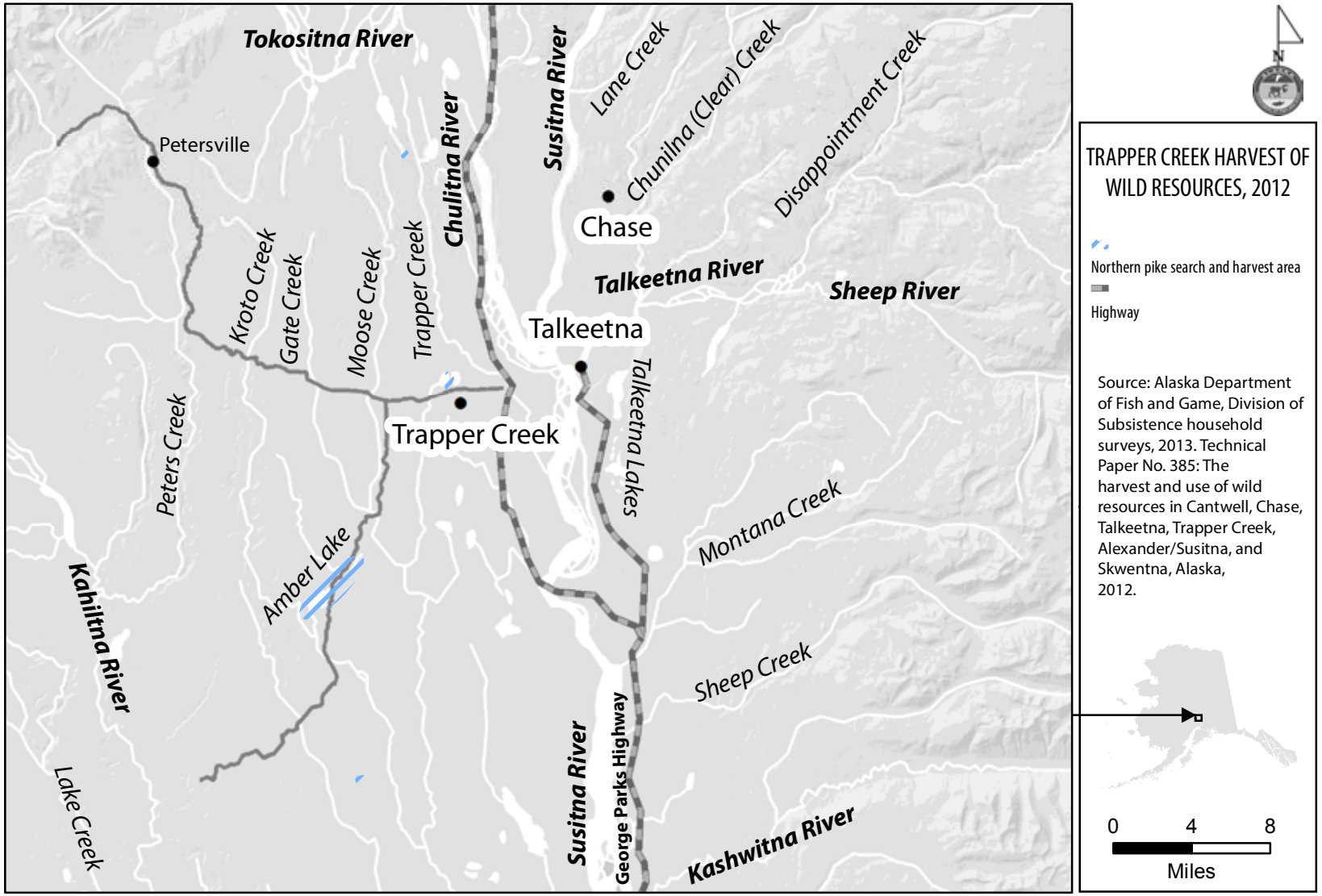

Figure 5-9. – Northern pike search and harvest areas, Trapper Creek, 2012.

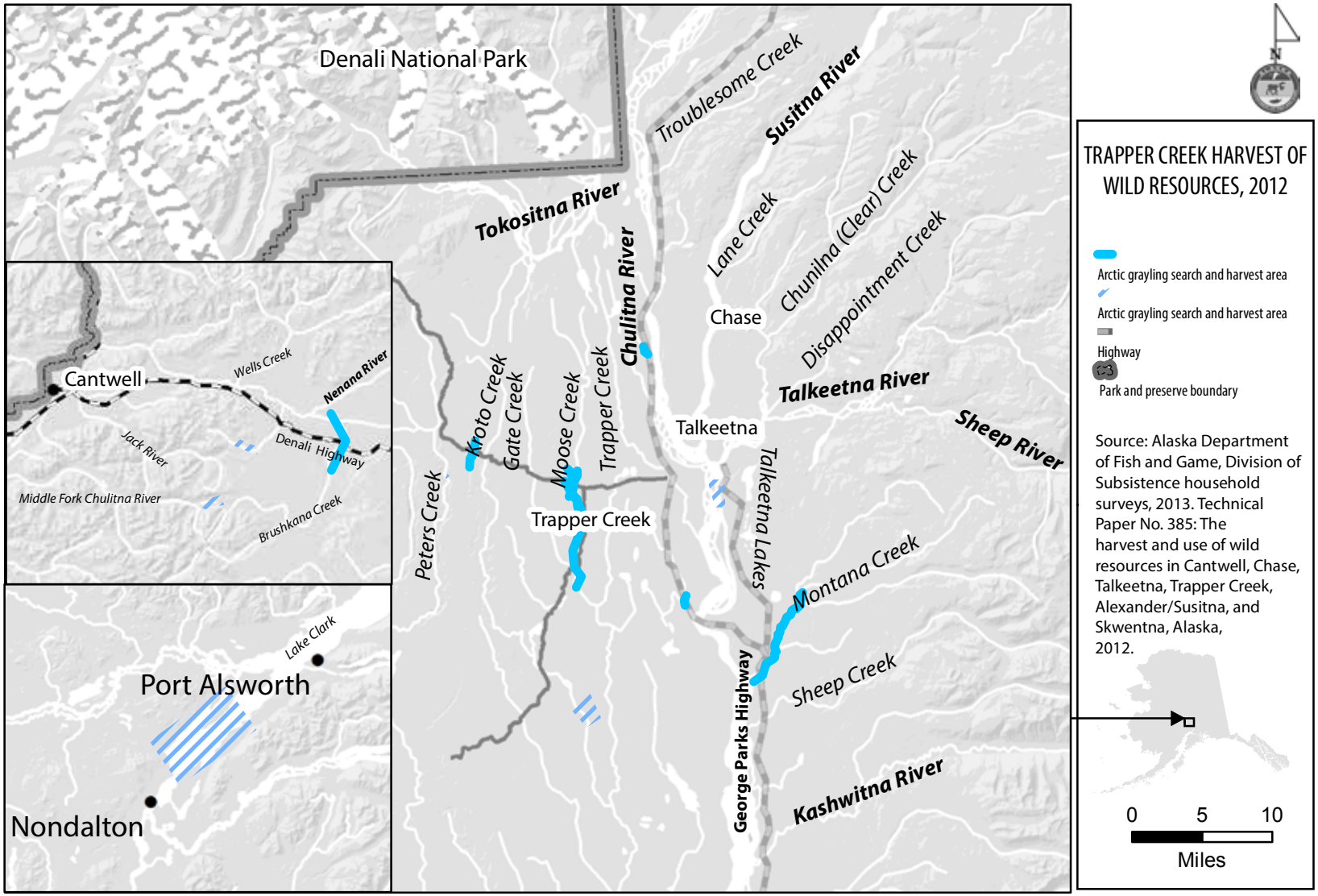

Figure 5-10. – Arctic grayling search and harvest areas, Trapper Creek, 2012.

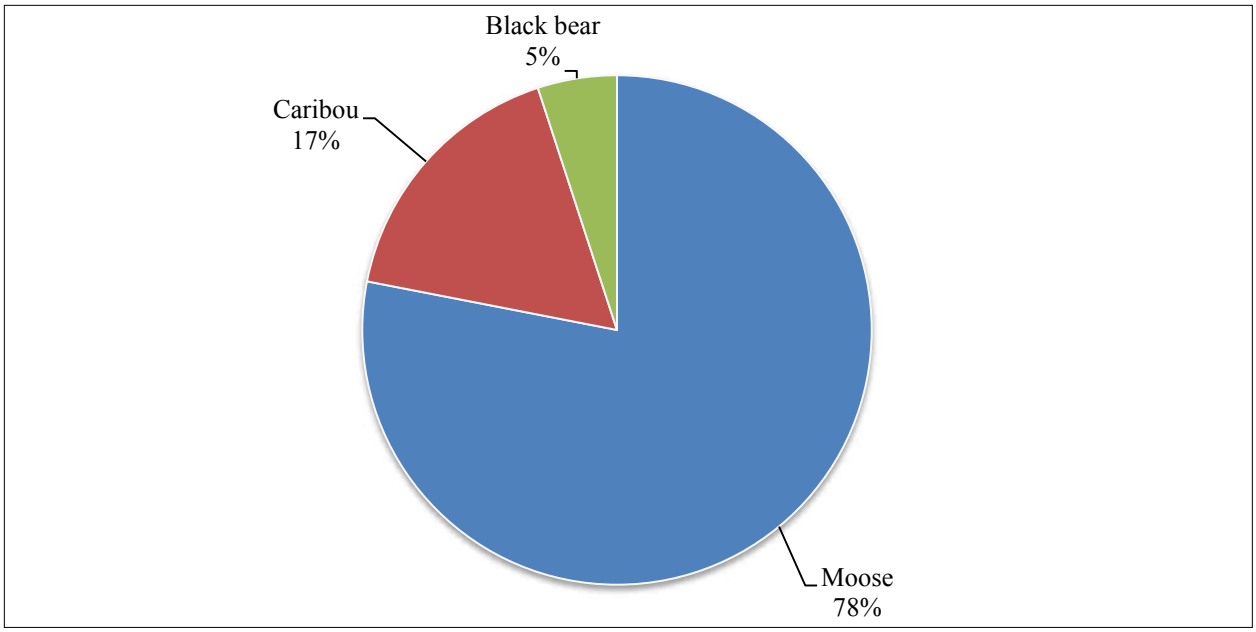

Figure 5-11. – Composition of large land mammals harvest, Trapper Creek, 2012.

LARGE LAND MAMMALS

In many communities in Southcentral Alaska, moose are an important species for household consumption and are also highly shared. This was the case in Trapper Creek in 2012 and moose ranked second in terms of per capita harvest (12 lb) (Table 5-5). One issue that emerged during interviews about moose hunting was the flood event that occurred in September 2012 because it coincided with the moose hunting season. For several weeks rain hampered efforts by residents to travel both by ATV and boat to hunt moose. Although this event impacted residents' hunting efforts, residents were still able to harvest an estimated 9 moose (Table 5-4). All of these were harvested during the fall hunt in September (Table 5-8); however, some residents chose to hunt in areas outside of Trapper Creek to meet their harvesting goals. These included areas near Mendeltna off the Glenn Highway, the upper Susitna River in the Copper River Basin, and near Fairbanks (Figure 5-11).

Figure 5-12 shows the harvest of all large land mammal species in terms of pounds per capita harvest. Moose made up 78% of the harvest, caribou 17%, and black bears 5%. Caribou were harvested both in the fall hunt in September (2 animals) and early winter in November (4 animals) (Table 5-8). All harvests occurred along the Denali Highway near the upper Susitna River. Black bears were harvested locally in the Trapper Creek area along the Petersville Road and near Peters Creek (Figure 5-13). Four black bears were harvested by Trapper Creek residents in 2012 in the spring between May and June (Table 5-8).

Table 5-8. – Estimated harvests of large land mammals by month and caribou and moose harvests by sex, Trapper Creek, 2012.

				Caribou					Moose					
Harvest month	Bison	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Muskox	Dall sheep	Wolf
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	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	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	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	0.0	0.0
May	0.0	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
June	0.0	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
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	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	0.0	0.0
September	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	8.6	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	0.0	0.0
November	0.0	0.0	0.0	2.1	2.1	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	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
Total harvest	**0.0**	**4.3**	**0.0**	**4.3**	**2.1**	**0.0**	**0.0**	**0.0**	**8.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

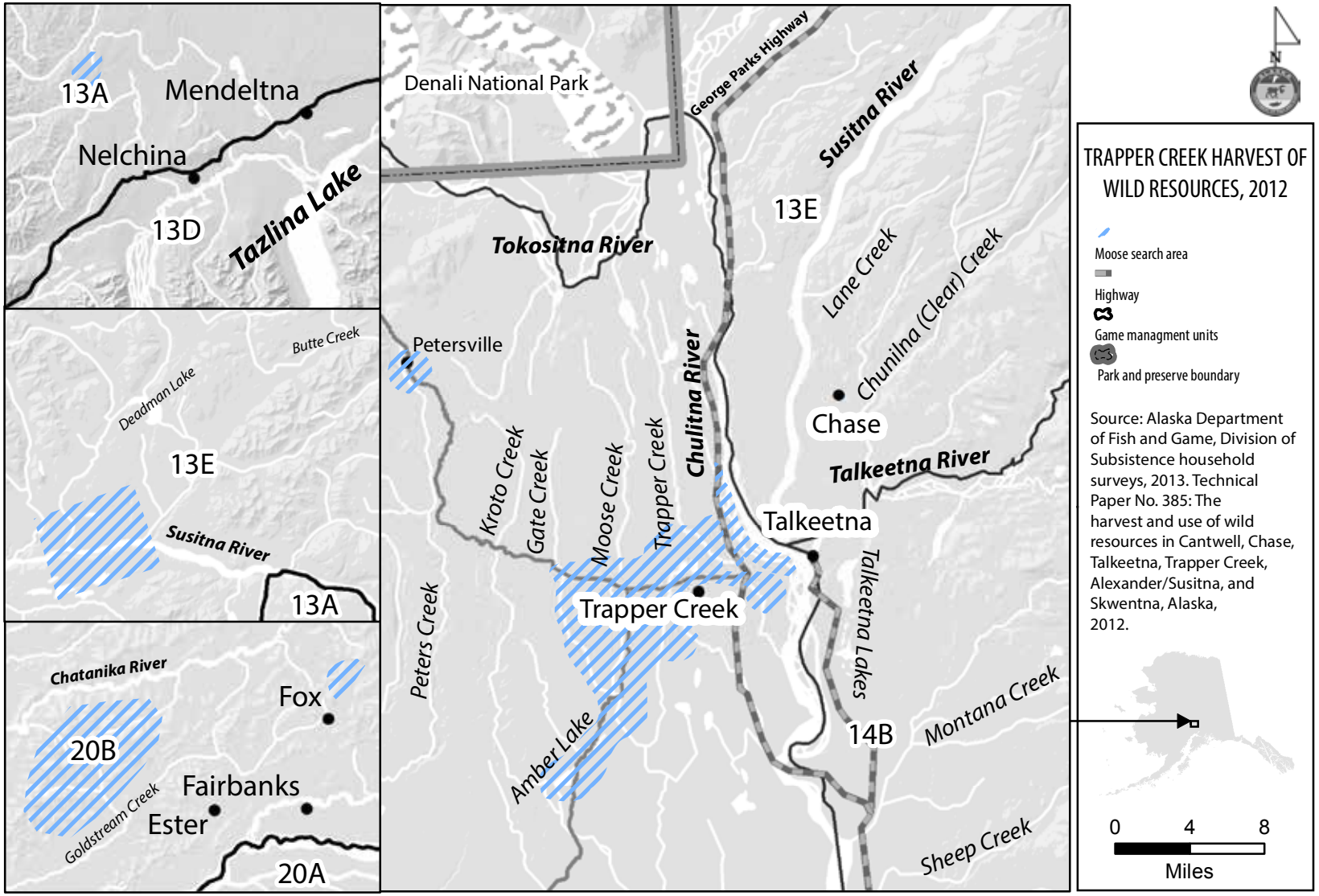

Figure 5-12. – Moose search areas, Trapper Creek, 2012.

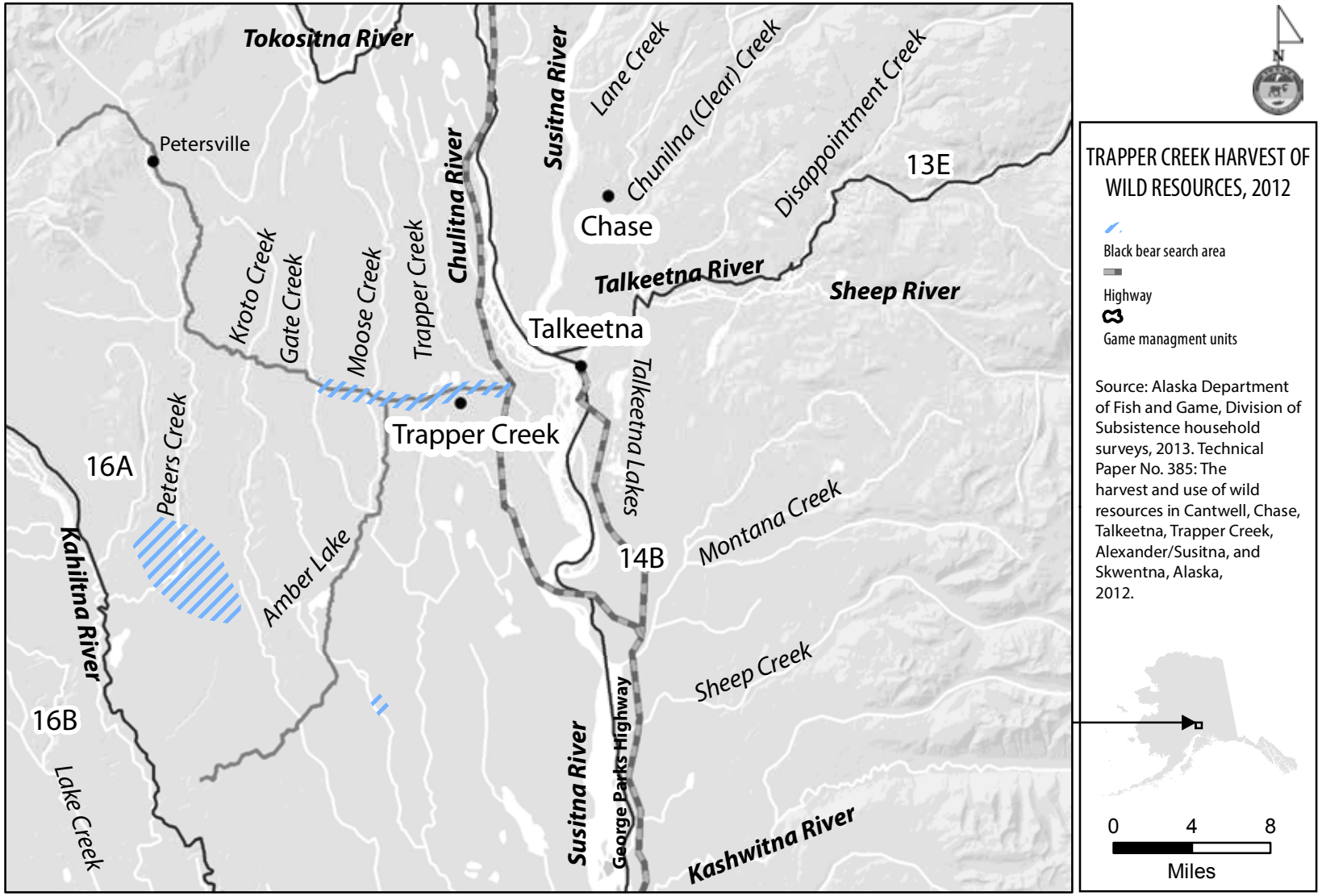

Figure 5-13. – Black bear search areas, Trapper Creek, 2012.

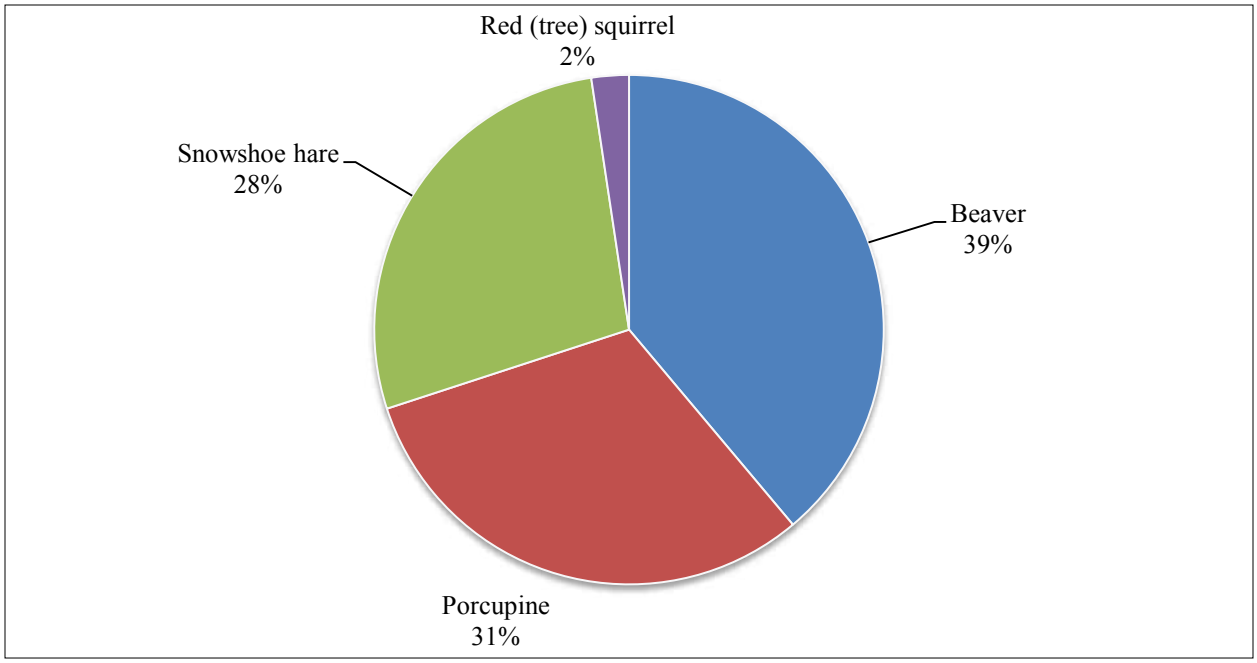

Figure 5-14. – Composition of small land mammals harvest, Talkeetna, 2012.

SMALL LAND MAMMALS/FURBEARERS

As noted above, small land mammals composed 3% of the overall harvest in terms of pounds per capita (Figure 5-4). Only those noted as eaten were included in this calculation. Figure 5-14 shows the harvest of small land mammals in terms of edible weight for those species that were reported as being eaten. Beavers consisted of 39%, porcupines 31%, snowshoe hares 28%, and red (tree) squirrels 2% of the edible small land mammal harvest.

Table 5-9 shows the estimated number of small land mammals harvested by species and month. By far the most numerous species harvested was snowshoe hare, with a total harvest of 69 animals, of which most were harvested in the winter months. Frequently harvested small land mammal species were porcupines (34 animals), martens (32 animals), red (tree) squirrels (24 animals), weasels (22 animals), and beavers (13 animals) (Table 5-4). All hares were eaten, as well as all porcupines, red (tree) squirrels, and some martens[3] (Figure 5-15). Most furbearers were harvested in the immediate vicinity of the community (Figure 5-16).

3. Marten were excluded from the harvest estimate of pounds edible weight. Through further questioning of local residents researchers learned that occasionally a marten is eaten but for the most part they are not consumed.

Table 5-9. – Estimated harvests of small land mammals by month, Trapper Creek, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	Total
Beaver	0.0	0.0	0.0	2.1	4.3	0.0	0.0	2.1	4.3	0.0	0.0	0.0	0.0	**12.9**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–red phase	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	**6.4**
Snowshoe hare	21.4	25.7	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.2	0.0	**68.6**
River (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	**32.2**
Mink	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	**2.1**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	8.6	8.6	8.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0	**34.3**
Arctic parka (ground) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	12.9	**23.6**
Weasel	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**21.4**
Wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Total	**64.3**	**25.7**	**0.0**	**15.0**	**12.9**	**8.6**	**19.3**	**2.1**	**4.3**	**0.0**	**15.0**	**21.4**	**12.9**	**201.6**

Source ADF&G Division of Subsistence household surveys, 2013.

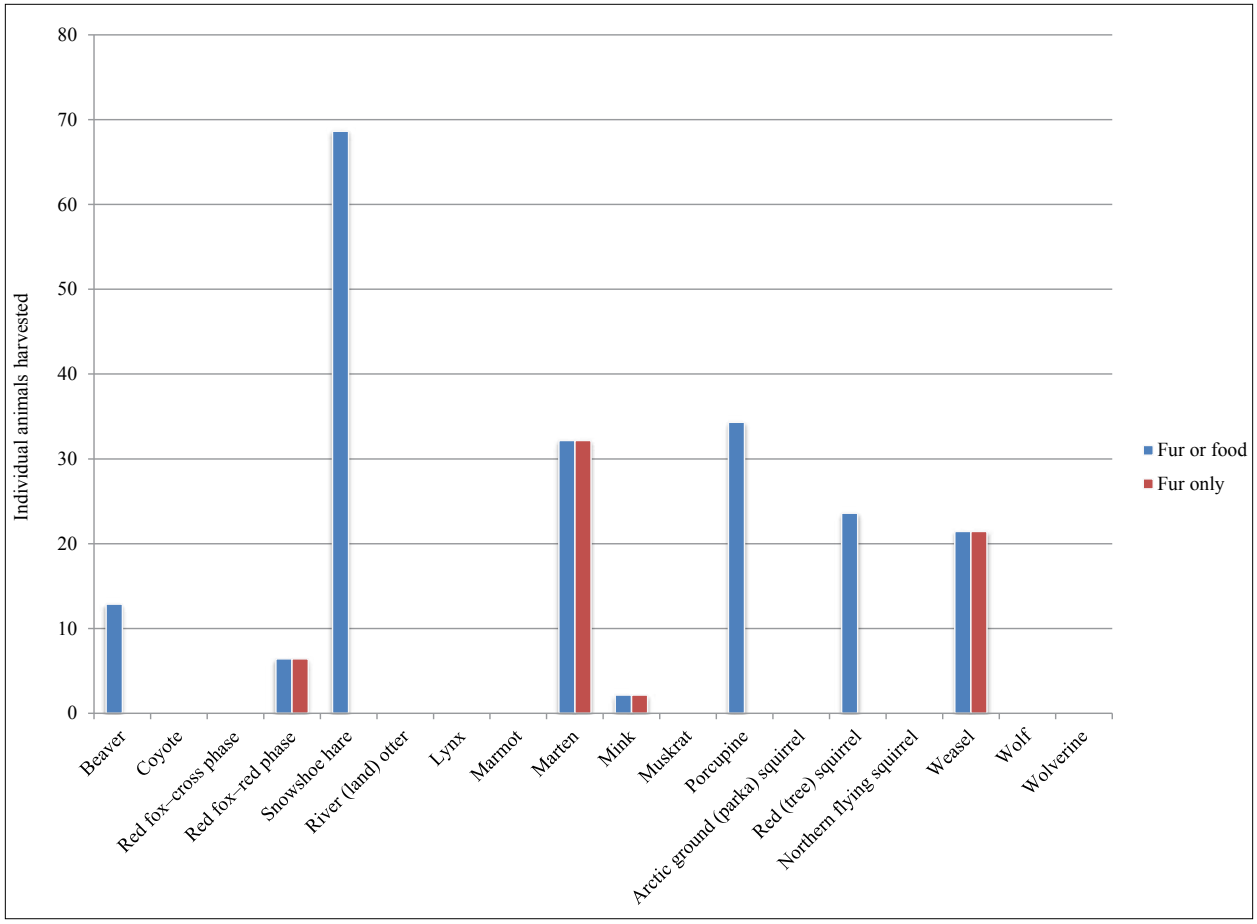

Figure 5-15. – Estimated harvests of small land mammals for food and fur only, Trapper Creek, 2012.

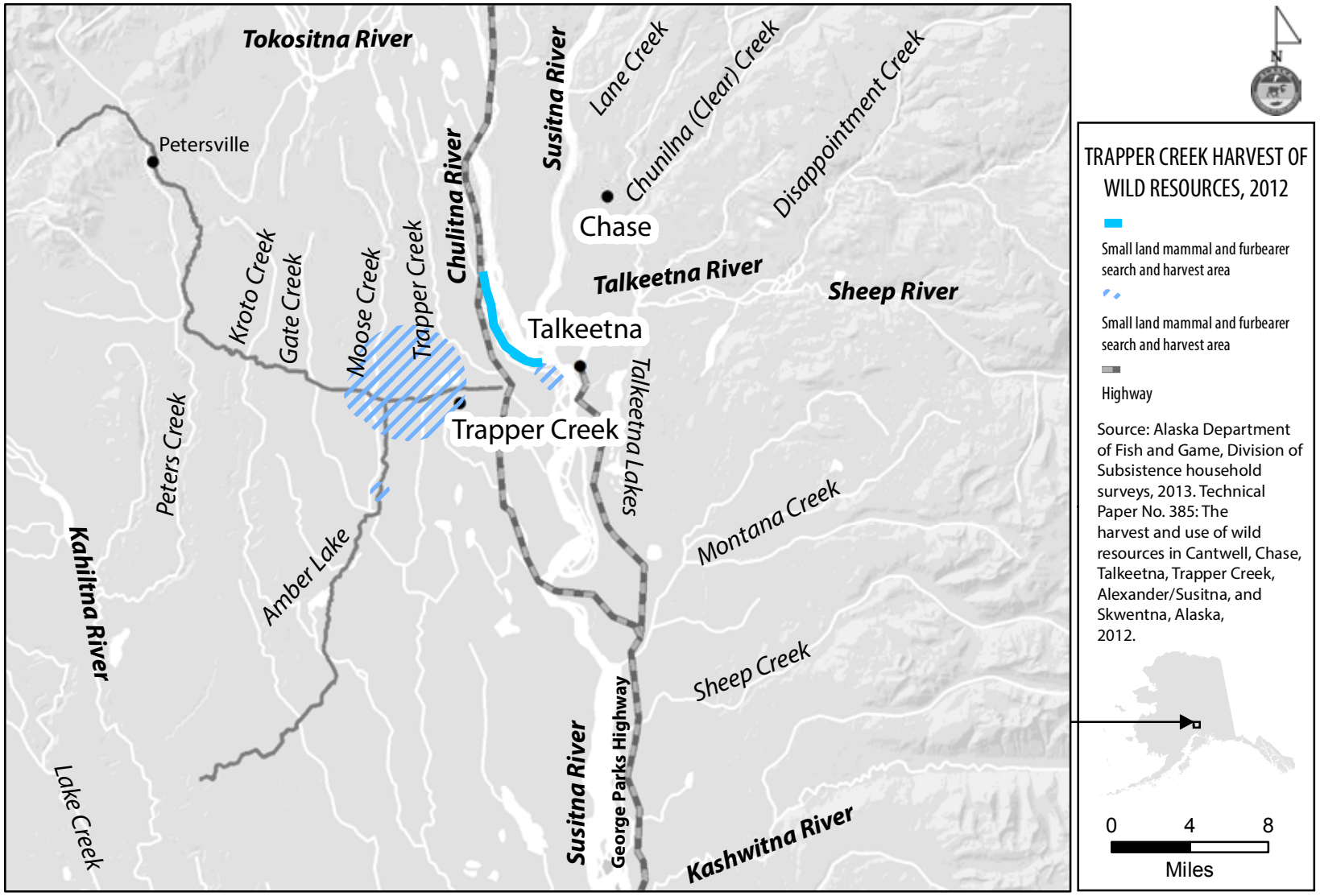

Figure 5-16. – Small land mammals and furbearers search and harvest areas, Trapper Creek, 2012.

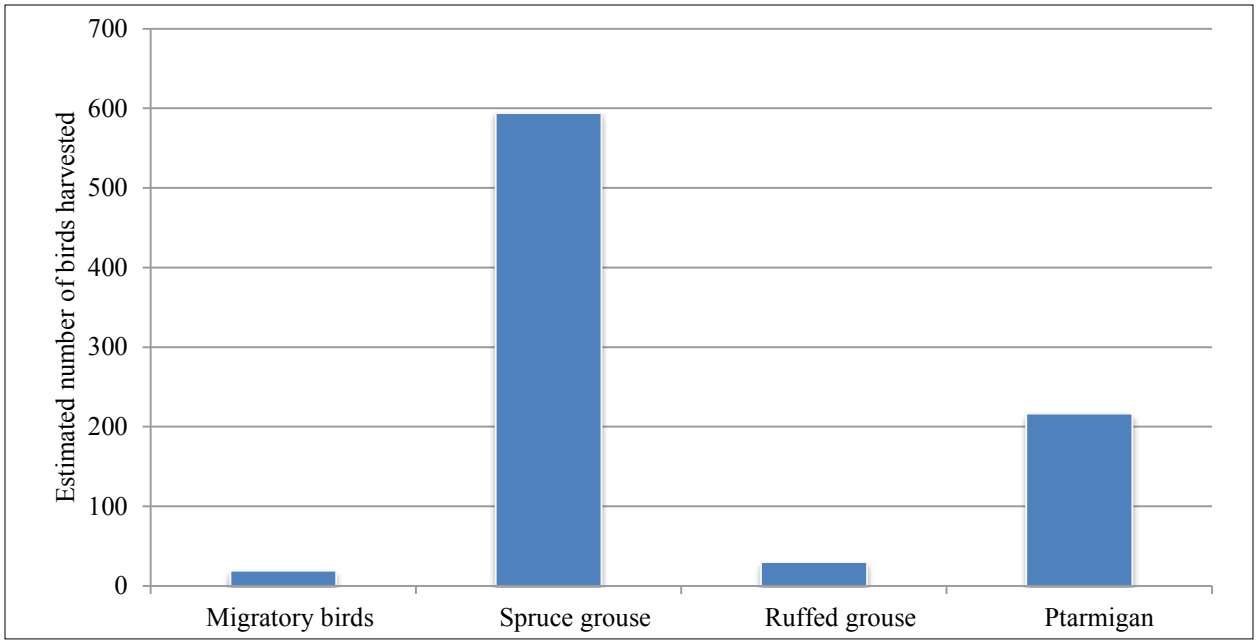

Figure 5-17. – Bird harvest, individual bird count,Talkeetna, 2012.

BIRDS AND EGGS

As noted in Table 5-4 most of the harvest of birds in 2012 by Trapper Creek residents was upland game birds. No bird eggs were harvested. Migratory waterfowl made up an estimated 3% of the bird harvest in terms of the total bird harvest weight (19 birds), while upland game bird harvests included spruce grouse (74%, or 594 birds), ruffed grouse (4%, or 30 birds), and ptarmigan (19%, or 217 birds) (Table 5-4; Figure 5-17). Spruce grouse were used by an estimated 37% of households in the community during 2012. They were also on the top 10 list and ranked sixth in terms of species used as well as eighth in terms of pounds per capita harvested (Table 5-5). Respondents noted that upland game birds were easy to find along the trails in the area and were harvested from the Susitna River to Petersville (Figure 5-18). An estimated 19 ducks were harvested by residents, including 11 mallards, 2 mergansers, and 6 green-winged teals (Table 5-4).

MARINE INVERTEBRATES

Because Trapper Creek is on the road system, residents could travel south to harvest marine invertebrates along the Kenai Peninsula. Residents of Trapper Creek harvested an estimated 13 gallons of butter clams and 81 gallons of razor clams near Clam Gulch on the Kenai Peninsula (Table 5-4). An estimated 6% of households used clams and 4% harvested them.

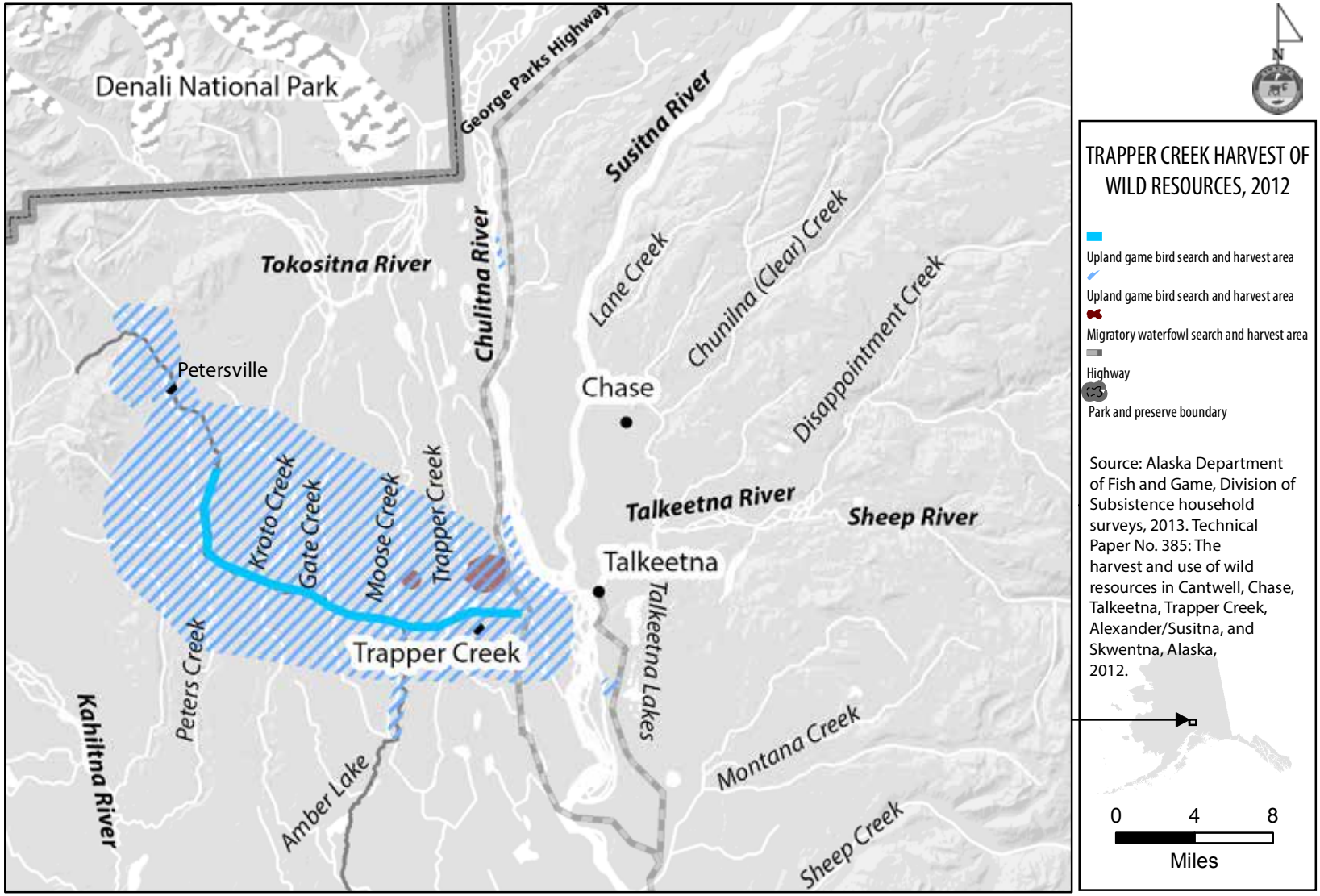

Figure 5-18. – Upland game birds and migratory waterfowl search and harvest areas, Trapper Creek, 2012.

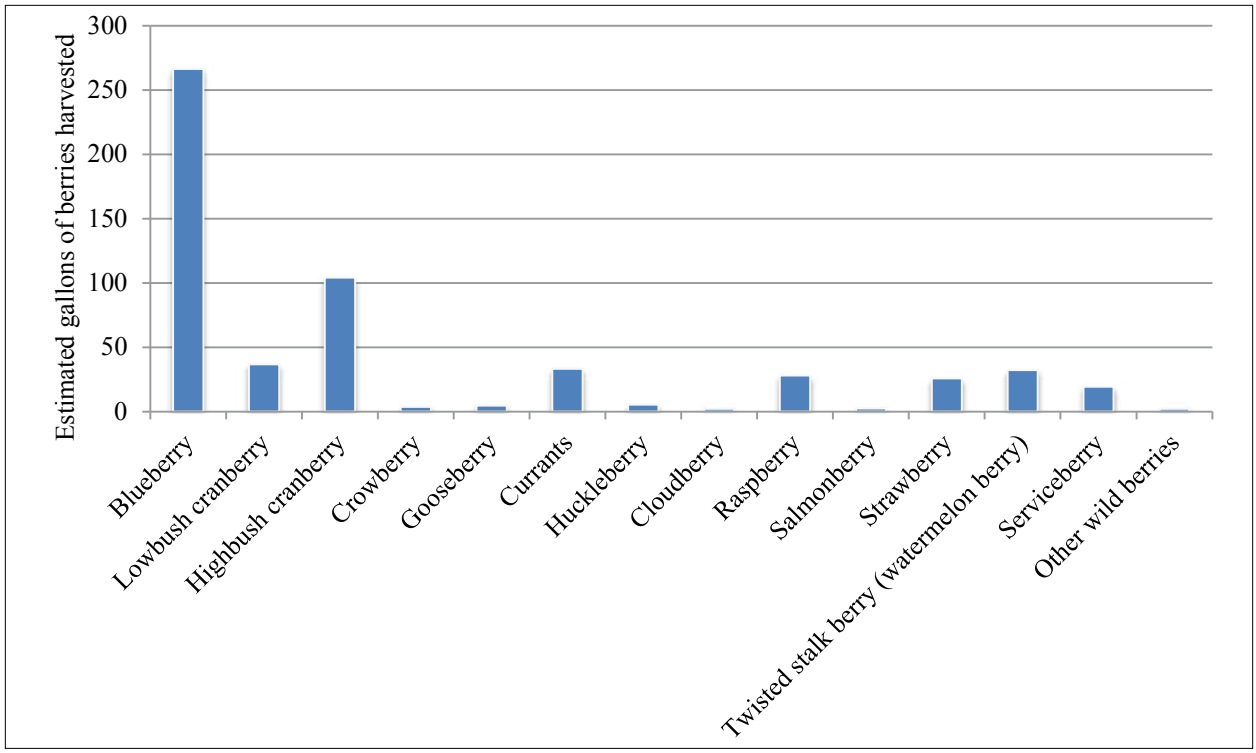

Figure 5-19. – Plants, greens, and mushrooms harvest, by gallon, Trapper Creek, 2012.

VEGETATION

Figure 5-19 shows the estimated gallons of berries harvested by Trapper Creek residents in 2012. Blueberries ranked fourth in terms of per capita harvest and first in terms of households using a resource (Table 5-5). An estimated 266 gal of blueberries were harvested, or 1,065 lb, in 2012 (Table 5-4). Other important species mentioned by respondents are highbush cranberries (104 gal, or 416 lb), raspberries (28 gal, or 112 lb), and strawberries (26 gal, or 103 lb) (Table 5-4). In addition to harvesting wild versions of raspberries and strawberries, residents noted that they harvested many gallons of domestic versions of raspberries and strawberries from their gardens as well. Residents mainly harvested berries in the immediate vicinity of the community as well as along the Parks Highway both north and south of the community and along the Petersville and Oilwell roads (Figure 5-20). However, some residents traveled to the Denali Highway near Cantwell, and into the Copper River Basin to harvest berries. The Denali Highway is well known for being a good location for harvesting blueberries in the late summer. A harvest location near Sitka was also documented. Similar areas around Trapper Creek were noted for harvesting plants, greens, and mushrooms as well. Figure 5-21 shows the harvest of these resources in terms of gallons of plants harvested. Fiddlehead ferns are abundant in the area and residents take advantage of harvesting this resource in the spring. In Trapper Creek in 2012, 31% of households harvested an estimated 142 gal of fiddlehead ferns

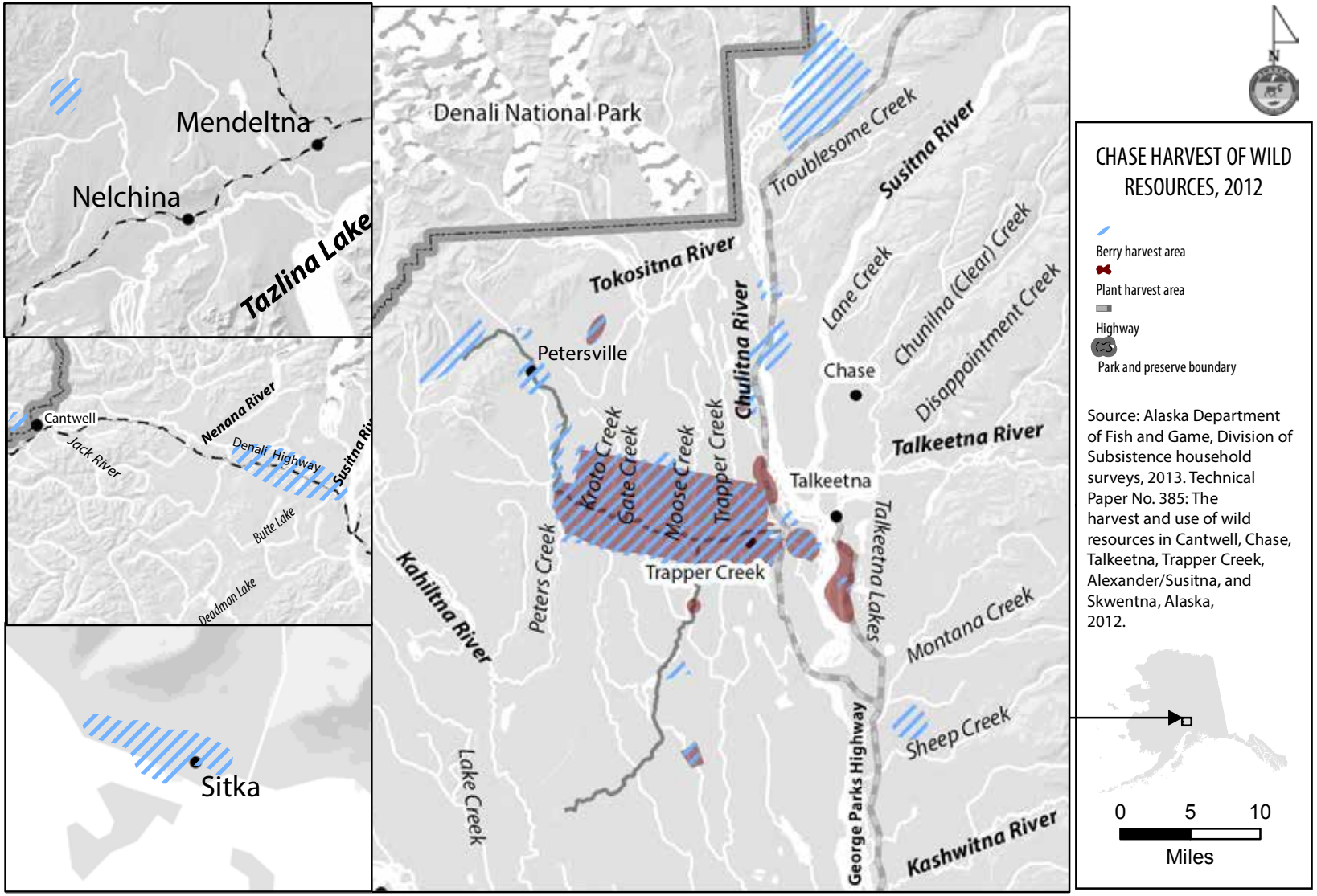

Figure 5-20. – Berries and plants, greens, and mushrooms search and harvest areas, Trapper Creek, 2012.

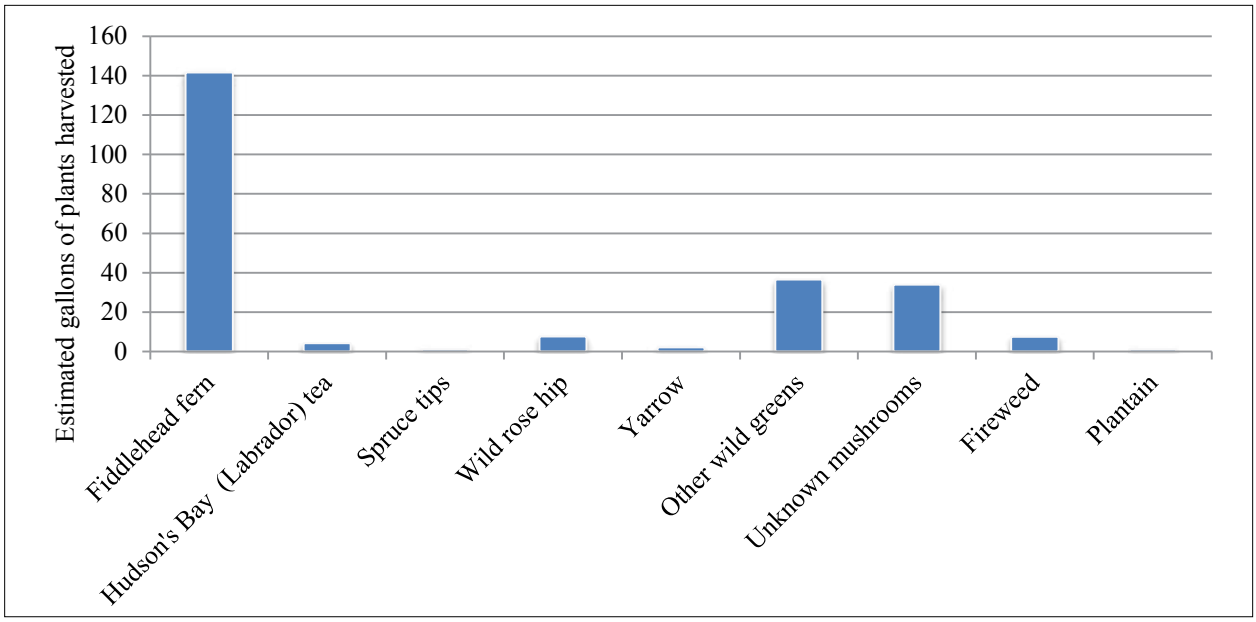

Figure 5-21. – Berry harvest, by gallon, Trapper Creek, 2012.

(Table 5-4; Figure 5-21). Mushrooms were also noted by respondents as important with 34 gallons harvested by an estimated 12% of households.

Because there is no natural gas located in the community and fuel oil has become more expensive, most residents are increasing their wood harvest to heat their homes during the winter. An estimated 913 cords of wood were harvested by 77% of Trapper Creek households during the study year (Table 5-4). A local resource that is becoming more popular to harvest in the area is birch sap. An estimated 21 gal of birch sap was harvested; this was boiled down to about 3 lb of syrup when completely processed.

COMPARING HARVESTS AND USES IN 2012 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For the 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2012 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 5-10 reports the number of valid responses for each category, the number of households that did not respond, and the number of households that did not use a resource category or all resources combined. In Table 5-10, response percentages are based on the number of valid responses for each category to

Table 5-10. – Changes in household uses of resources compared to recent years, Trapper Creek, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	69	68	57	83.8%	55	80.9%	19	27.9%
All resources	69	68	44	64.7%	17	25.0%	7	10.3%
Salmon	69	60	30	50.0%	24	40.0%	6	10.0%
Nonsalmon fish	69	53	27	50.9%	23	43.4%	3	5.7%
Large land mammals	69	52	35	67.3%	10	19.2%	7	13.5%
Small land mammals	69	17	12	70.6%	3	17.6%	2	11.8%
Marine mammals	69	3	1	33.3%	1	33.3%	1	33.3%
Migratory birds	69	5	3	60.0%	2	40.0%	0	0.0%
Other birds	69	36	21	58.3%	12	33.3%	3	8.3%
Bird eggs	69	0	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	69	10	6	60.0%	4	40.0%	0	0.0%
Vegetation	69	66	19	28.8%	35	53.0%	12	18.2%

Source ADF&G Division of Subsistence household surveys, 2013.

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

b. Percentages based on valid responses only.

c. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

contextualize these assessments within the set of community households that typically use each category.

Figure 5-22 depicts responses to the "less, same, more" assessment question. Households that said they did not ordinarily "use" something are not included within the results. This results in fewer responses for less commonly used categories, such as migratory waterfowl and marine mammals, and manifests in the chart as a very short bar compared to categories such as salmon or plants, greens, and mushrooms, which are ordinarily used by most households. Some households did not respond to the question.

Taking all the resource categories into consideration, 44 households said they used less (65%), 17 used about the same (25%), and only 7 households (or 10%) said they used more resources in the 2012 study year (Table 5-10). As shown in Figure 5-22 the greatest number of responses about using fewer resources were in the large game category: 67% said they used less, compared to 20% saying they used the same and only 14% saying they used more (Table 5-10). Table 5-11 shows the stated reasons for less use of a resource category than in recent years. For large game, of the 52 valid responses, 10 said it was because they were unsuccessful and 9 said there were fewer animals available. Other responses included less sharing (7) and households that were too busy working during hunting season (4).

Similar responses were given for salmon as well, with 50% saying they used less, 40% saying they used about the same, and 10% saying they used more. Of the 60 valid responses, 11 said the salmon

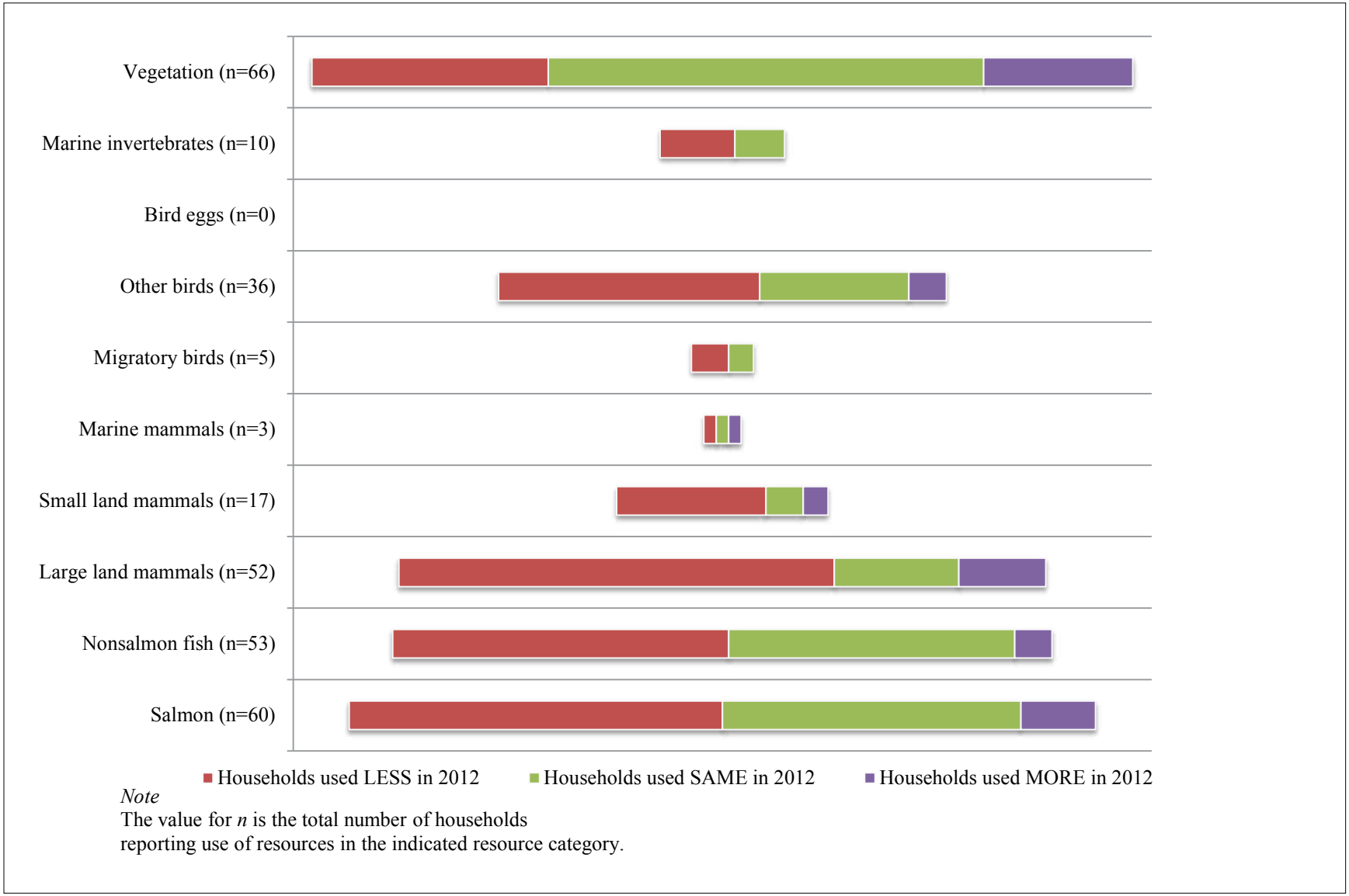

Figure 5-22. – Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Trapper Creek, 2012.

Table 5-11. – Reasons for less household uses of resources compared to recent years, Trapper Creek, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	68	56	11	19.6%	28	50.0%	3	5.4%	1	1.8%	8	14.3%	20	35.7%	13	23.2%	10	17.9%
All resources	68	44	8	18.2%	8	18.2%	2	4.5%	1	2.3%	2	4.5%	3	6.8%	6	13.6%	4	9.1%
Salmon	60	30	4	13.3%	11	36.7%	0	0.0%	0	0.0%	1	3.3%	3	10.0%	2	6.7%	2	6.7%
Nonsalmon fish	53	27	1	3.7%	7	25.9%	0	0.0%	0	0.0%	0	0.0%	8	29.6%	1	3.7%	2	7.4%
Large land mammals	52	35	5	14.3%	9	25.7%	1	2.9%	1	2.9%	7	20.0%	3	8.6%	10	28.6%	2	5.7%
Small land mammals	17	12	3	25.0%	3	25.0%	0	0.0%	0	0.0%	0	0.0%	4	33.3%	0	0.0%	1	8.3%
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 birds	5	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	1	33.3%
Other birds	36	21	2	9.5%	10	47.6%	0	0.0%	0	0.0%	0	0.0%	5	23.8%	1	4.8%	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	10	6	1	16.7%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	1	16.7%
Vegetation	66	18	3	16.7%	3	16.7%	0	0.0%	0	0.0%	0	0.0%	3	16.7%	0	0.0%	3	16.7%

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Table 5-11.–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	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	68	56	5	8.9%	22	39.3%	9	16.1%	2	3.6%	5	8.9%	5	8.9%	5	8.9%	1	1.8%
All resources	68	44	1	2.3%	13	29.5%	2	4.5%	0	0.0%	2	4.5%	3	6.8%	2	4.5%	0	0.0%
Salmon	60	30	2	6.7%	4	13.3%	6	20.0%	0	0.0%	0	0.0%	2	6.7%	0	0.0%	0	0.0%
Nonsalmon fish	53	27	1	3.7%	8	29.6%	3	11.1%	0	0.0%	1	3.7%	0	0.0%	3	11.1%	0	0.0%
Large land mammals	52	35	1	2.9%	4	11.4%	0	0.0%	0	0.0%	1	2.9%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	17	12	0	0.0%	2	16.7%	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%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	5	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%
Other birds	36	21	0	0.0%	3	14.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.8%
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	10	6	0	0.0%	1	16.7%	0	0.0%	2	33.3%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
Vegetation	66	18	0	0.0%	6	33.3%	0	0.0%	0	0.0%	1	5.6%	2	11.1%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting less use as a base.

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

b. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

Table 5-12. – Reported impact to households responding that they did not get enough of a type of resource, Trapper Creek, 2012.

		Households getting enough _____ .				Impact to those not getting enough _____ .									
	Sample	Valid responses		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Salmon	69	60	87.0%	29	48.3%	0	0.0%	0	0.0%	19	65.5%	9	31.0%	1	3.4%
Nonsalmon fish	69	52	75.4%	29	55.8%	0	0.0%	0	0.0%	23	79.3%	5	17.2%	1	3.4%
Marine invertebrates	69	10	14.5%	7	70.0%	0	0.0%	0	0.0%	5	71.4%	2	28.6%	0	0.0%
Large land mammals	69	51	73.9%	32	62.7%	0	0.0%	0	0.0%	13	40.6%	17	53.1%	2	6.3%
Marine mammals	69	3	4.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	69	17	24.6%	8	47.1%	0	0.0%	0	0.0%	8	100.0%	0	0.0%	0	0.0%
Migratory birds	69	5	7.2%	4	80.0%	0	0.0%	0	0.0%	4	100.0%	0	0.0%	0	0.0%
Other birds	69	36	52.2%	20	55.6%	0	0.0%	0	0.0%	17	85.0%	3	15.0%	0	0.0%
Bird eggs	69	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	69	66	95.7%	24	36.4%	1	4.2%	0	0.0%	20	83.3%	2	8.3%	1	4.2%
All resources	69	67	97.1%	42	62.7%	0	0.0%	3	7.1%	21	50.0%	17	40.5%	1	2.4%

Source ADF&G Division of Subsistence household surveys, 2013.

Table 5-13. – Reasons for more household uses of resources compared to recent years, Trapper Creek, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help		Other	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	68	19	5	26.3%	0	0.0%	0	0.0%	5	26.3%	3	15.8%	6	31.6%	1	5.3%	2	10.5%
All resources	68	6	2	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	33.3%	0	0.0%	0	0.0%
Salmon	60	6	0	0.0%	0	0.0%	0	0.0%	2	33.3%	1	16.7%	1	16.7%	0	0.0%	0	0.0%
Nonsalmon fish	53	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
Large land mammals	52	7	0	0.0%	0	0.0%	0	0.0%	2	28.6%	1	14.3%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	17	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%
Marine mammals	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%
Migratory 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%
Other birds	36	3	1	33.3%	0	0.0%	0	0.0%	2	66.7%	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	10	0	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	66	12	4	33.3%	0	0.0%	0	0.0%	0	0.0%	2	16.7%	5	41.7%	1	8.3%	1	8.3%

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Table 5-13.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	68	19	0	0.0%	0	0.0%	3	15.8%	1	5.3%	1	5.3%	0	0.0%
All resources	68	6	0	0.0%	0	0.0%	1	16.7%	0	0.0%	1	16.7%	0	0.0%
Salmon	60	6	0	0.0%	0	0.0%	0	0.0%	1	16.7%	1	16.7%	0	0.0%
Nonsalmon fish	53	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
Large land mammals	52	7	0	0.0%	0	0.0%	3	42.9%	1	14.3%	0	0.0%	0	0.0%
Small land mammals	17	2	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%	0	0.0%	0	0.0%
Migratory birds	5	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	36	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%
Marine invertebrates	10	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	66	12	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, 2013.

Note Percentages are calculated using the number of households reporting more use as a base.

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

b. The number of households that gave a valid response in at least one of the categories. Households are counted only once even though they may give more than one valid response.

were less abundant and 6 cited regulations caused less use. During the study year, sport fishing for Chinook salmon was closed in the area due to lower abundance of the resource. Many respondents cited this as a concern and said this was responsible for their lower harvest of the resource overall. As noted above, only 3% of the harvest of salmon, in terms of pounds harvested, were Chinook salmon (Figure 5-5). In the past, residents participated in harvesting Chinook salmon locally, especially in the Susitna River. Residents also noted fewer bird harvests, particularly spruce grouse. Of the 36 valid responses given for the "other birds" category, 10 said they harvested fewer birds due to the lack of abundance of birds locally. Many respondents said they had stopped hunting birds because they were concerned about the population due to overhunting by non-local hunters, which will be discussed below in the "Community Comments and Concerns" section.

In terms of how the lack of abundance or availability of resources impacted households, not getting enough large game seemed to have the greatest impact. Table 5-12 shows the responses households gave regarding the impact of not getting enough resources in terms of it being a minor impact, major impact, or severe impact. Of the 67 valid responses to this question, 42 households said they did not get enough resources. Of these, 21 households noted a minor impact, 17 said it had a major impact, and only 1 noted a severe impact on their food security. Of the resource categories, the most noticeable impact was for large game. Seventeen households noted a major impact in not getting enough large game and 2 noted a severe impact. The large game that has usually been preferred for household consumption in the area is moose, and, as noted above, a flood event particularly impacted the ability to harvest moose locally in the Trapper Creek area in 2012. As will be discussed in the conclusion, moose provided through the State's roadkill program were made available to households in all the study communities. The Trapper Creek community, along with neighboring Talkeetna, benefited the most from this program compared to other study communities.

Table 5-13 shows the reasons given for harvesting more resources during the study year than in recent years in terms of any resource and by resource category. Of the 68 valid responses given, only 19 households reported reasons for harvesting more of any resource. These included increased availability (5 responses), increased effort (6), received more (5), needed more (3), and more success (3). Much of the increase was in vegetation: 5 households reported increasing their harvesting effort and 4 said that there was more vegetation available. Respondents noted during interviews that this was a particularly good year for berries as well as fiddlehead ferns locally.

HARVEST DATA

Changes in the harvest of resources by Trapper Creek residents can also be discerned through comparisons with findings from other study years. A comprehensive subsistence harvest survey was administered in Trapper Creek for the 1985 study year (Fall and Foster 1987). Harvests of individual resources for 1985 are reported at the mean household level instead of per capita. These

Table 5-14. – Harvest of wild resources in pounds per capita, Trapper Creek, 1985 and 2012.

	Per capita harvest	
	1985	2012
Berries	3.0	6.8
Plants, greens, and mushrooms	1.2	0.8
Nonsalmon fish	14.1	9.7
Salmon	34.7	25.0
Birds	1.1	1.7
Land mammals	10.8	16.3
Marine invertebrates	0.6	0.8
Total	**65.4**	**61.0**

Sources CSIS for 1985; ADF&G Division of Subsistence household surveys, 2013, for 2012.

values have been recalculated based on the sample size and per capita harvests are available in the CSIS[4]; data from the CSIS has been used here to report per capita harvests from the 1985 study year (Fall and Foster 1987). To provide a better context for certain species, both mean household harvest, the original calculation for 1985, and per capita harvest are used below.

The harvest of 61 lb per capita in 2012 was slightly lower than the harvest of 65 lb per capita in 1985. Due to the fact both studies included samples of the population this difference of 4 pounds is not statistically significant. However, there are some significant differences between study years for specific resources. Figure 1-3 shows the composition of the harvests and Table 5-14 shows the per capita harvest by resource category in 1985 and 2012. During the 2012 study year, salmon made up slightly less of the composition of the harvest than in 1985; 35 lb per capita in 1985 compared to 25 lb in 2012. Most of this had to do with the lower harvest of Chinook salmon. The mean household harvest of Chinook salmon in 1985 was 38 lb (Fall and Foster 1987, 42), whereas in 2012 it was 2 lb (Table 5-4). Residents have made up for this slightly by harvesting other salmon resources. For example, the mean household harvest of sockeye salmon in 1985 was 7 lb (Fall and Foster 1987, 42) and in 2012 it was 38 lb (Table 5-4).

There was a higher harvest of land mammals in 2012 (16 lb per capita) than in 1985 (11 lb per capita) (Table 5-14). In 1985, the mean household harvest of moose was 26 lb (Fall and Foster 1987, 42), almost exactly the same as in 2012 (27 lb) (Table 5-4). Caribou harvests were also the same, with a mean household harvest of 7 lb in 1985 (Fall and Foster 1987, 42–43), and 6 lb in 2012 (Table 5-4). However, there were no bear harvests in 1985 while in 2012 there was a mean household harvest of 2 lb (Table 5-4). In addition, there was no documented harvest of small land mammals in 1985 (Fall and Foster 1987, 43), whereas in 2012 there was a mean household harvest

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

of 3 lb, or 2 lb per capita (Table 5-4). Nonsalmon fish declined slightly from 14 lb per capita (45 lb per household) to 10 lb (22 lb per household) in 2012 (Table 5-14). Of noticeable increase was the harvest of berries, with a per capita harvest of 7 lb (16 lb per household) in 2012 compared to 3 lb (9 lb per household) in 1985 (Table 5-4) (Fall and Foster 1987). Plants, greens, and mushrooms, as well as birds and marine invertebrates, were at about the same per capita and household mean quantity between the study years (Table 5-14).

CURRENT AND HISTORICAL HARVEST AREAS

The 1985 study did not include a mapping component so no harvest area comparisons can be made.

LOCAL COMMENTS AND CONCERNS

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys as well as articulated during 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 during the community review meeting of preliminary data. These concerns have been included in the summary.

SALMON

Salmon fishing in the Trapper Creek area has changed during the past 50 years. As one respondent noted, in 1959, a resident used to run a fish wheel on the Susitna River. Today, residents harvest salmon using rod and reel under sport fishing regulations. For most respondents, salmon are the most important fish resource for their family. As one respondent said, in the past they easily fished their limit of sockeye ("reds") and coho ("silver") salmon (or pinks and chums), but now have difficulty finding them. As one respondent said, "They used to be so thick you could walk on them, but now like everything else it's getting thinner and thinner."

Respondents said they once acquired sockeye salmon from Troublesome and Horseshoe creeks. Due in part to heavy rain and flood conditions, respondents felt they were not acquiring enough salmon. They recalled scooping trapped salmon out of the dry river bed and depositing them back in the water. In terms of natural changes, respondents believed that something non-local, perhaps heat, and certainly flooding, had reduced the number of fish available to them. They noted that the edges of the rivers have changed, and access to fishing locales.

Trapper Creek has been an important location locally for salmon. Several respondents noted that they go to Trapper Creek to fish for coho salmon in the late summer. But one respondent articulated the changes he was seeing:

> There was once rainbow and grayling in this creek [Trapper Creek]. It once held a pretty decent king [Chinook salmon] run, but things change for various reasons. But the king run fell apart about 5 years ago. Climate change has changed this creek. The water has been less consistent; the beavers have changed some things. There have been recent years where the kings would be at the mouth but it was plugged and they couldn't get up. I went to farm [harvest] some silvers [coho salmon] from the creek this year and my good fishing hole was full of kings! So I was excited about that, maybe a dozen spawning in that hole. This is in the sloughs of Trapper Creek, at the mouth. It's hard to get to them so nobody else fishes there. So it's good for me because I fish alone.

Respondents were concerned about the Chinook salmon run. Many respondents abided by the local closure of Chinook salmon sport fishing in 2012.

Another issue brought up by several respondents was the amount of northern pike they were seeing locally. They noted that there used to be no northern pike in the area 20 years ago, but today the lakes, from Amber Lake eastward to the Parks Highway, are full of northern pike. One respondent noted that he pulled a 3-ft northern pike from Amber Lake. Respondents believe that the introduction of northern pike—although they fish for them for food—has "messed up" the local ecosystem.

LARGE LAND MAMMALS

According to one longtime resident there did not used to be moose in the Trapper Creek area. Respondents who have talked with early settlers in the area learned that moose came into the area after the railroad and the clearing of land. Since the railroad was built around 1917, they said, moose have become more numerous in the area.

Respondents who have lived in the area since the 1970s said that they used to see a lot of moose along the highway while traveling into Anchorage. Usually moose were seen in groups of 5–6. One resident couple interviewed said they remembered one trip where they counted 78 moose along the highway during a single trip 40 years ago. Today, they said, it is rare to see 1 moose.

One respondent noted that he once prided himself on sustaining his family almost entirely with hunted game. Several respondents noted that each household used to get 1 moose a year a generation ago. Today, with the pressure of more hunters and general population growth in the area, many respondents hunted only occasionally. Several respondents noted that they stopped hunting moose about 15 years ago when the population started to decline. Areas where moose used to congregate now have no moose, they said. One respondent noted he usually had 4–5 moose congregate in his yard each year, but he has not seen one in 2 years. He related that many residents have stopped hunting moose because "there just aren't enough moose to hunt."

One respondent articulated that she had not hunted moose for the past 15 years because she

believes the moose population is not healthy. She believes that bears, more so than wolves, are responsible for moose predation. She noted that in years past there were far more wolves in the area and recalls that a wolf cull several years ago reduced local populations. She believes this is a good thing, because it has allowed the moose population to rebound. She noted that wolves must be hungry because she recently saw wolves trying to catch fish.

Although most respondents who hunted caribou traveled to the Denali Highway to hunt, they noted that in the past they saw caribou in the area. At one time, they said, caribou used to cross Montana Creek and Cache Creek. About 10 or 15 years prior, respondents said, several caribou were seen on the Petersville Road but that was the last time anyone saw caribou in the area. Respondents said that they still see caribou in the Talkeetna Mountains.

Because of the decline of moose in the area, several respondents have shifted their effort from hunting moose to hunting caribou, mainly the Nelchina caribou herd, by hunting off the Denali Highway. This, they said, has changed over time and now they occasionally harvest caribou from the Nelchina herd, but they do not hunt moose.

Residents interviewed during key respondent interviews noted that there are fewer bears in the area. As one respondent noted, he usually fishes alongside brown bears in Trapper Creek, but he has not seen a bear in 3 years, and no tracks from bears either. This was due to a bad winter, he said. As one respondent explained, "Three years ago we had a summer that was really wet, the creeks were really high and they couldn't get any fish. There weren't any berries because we had had a bad spring. And I think a lot of them went into the dens too hungry and I think they died in their dens." However, several respondents noted that in some areas brown bear populations are abundant. A respondent who also provides guiding services for bear hunters said that he baited his first bear nearly 50 years ago. Today, he guides 6 or so hunters on moose and bear hunts. He believes there are far more brown bears in the area than there once were; he was not sure why the numbers are now so high. The high number of bears certainly does not help the moose population, he related.

SMALL LAND MAMMALS

There are about 6–7 households that run traplines in Trapper Creek. One of the main species hunted by local respondents is snowshoe hare, but several respondents noted that there are far fewer in the area than there once were around 20 years ago. There were also more foxes in the area in previous years, which are one of the main predators of the hares. One respondent related that as snowmachine traffic increased in the area he noticed that the abundance of small game decreased, especially martens. Martens at one time were one of the main furbearers harvested in the area and a local trapper would harvest 80 a year. He said he was careful in his strategy of harvesting and in many ways was "farming" the martens, by which he meant he was employing a strategy to maintain

the population. Respondents were concerned that too much non-local weekend snowmachine traffic is negatively impacting small land mammals.

UPLAND GAME BIRDS

During surveys and key respondent interviews, residents noted a serious concern for the overhunting of upland game birds. One couple said they once ate grouse once or twice per week; they now eat it only a couple times per winter. Many respondents voiced that they do not hunt them anymore because they feel that non-local hunters are taking too many. This has also led to safety concerns because some respondents have had birds shot in their yards by non-local hunters. One respondent said he was sitting on his porch and a truck pulled up and someone got out and shot his turkey, threw it in the back of the truck, and drove off before he knew what happened. He related that this was just an example of what is going on locally. Much of the concentration of hunting by non-local residents, according to respondents, is occurring on Oilwell Road.

Birds are still abundant locally, though, and residents harvest spruce hens and ptarmigan in abundance. Residents harvest spruce grouse, especially, in the fall and "the ptarmigan come through in the wintertime, but that's the only time we get ptarmigan."

IMPORTANCE OF LOCAL AGRICULTURE

Although this report is about the harvest of wild foods, respondents related the importance of the land and the soil in the area for sustaining their way of life. Most residents have large gardens and the rich soils of the Susitna River Basin provide for growing an abundance of vegetables and grain, including barley and quinoa, and raising animals. This has led to sharing, and residents share the wild foods they harvest along with the foods they grow in their garden or raise on their farms. As one respondent couple noted, they maintain a large garden and grow a variety of plants to eat. They grow onions, peas, beans, potatoes, various kinds of squash, and tomatoes. They also pick wild berries, including highbush cranberries, highbush blueberries, and currants. Areas that had been logged and cleared have greater concentrations of berries. This is due, they believe, to increased sunshine and natural fertilizer. They now pick berries along the Denali Highway.

Potatoes especially grow well and there are several commercial seed potato farms in the area. For home use, one respondent noted that he/she grows at least 8 different kinds of potatoes, which yields around 400–500 lb of potatoes, as well as 5 different kind of carrots, and different kinds of beets. Apple trees have also been planted by this respondent, but the colder temperatures in the Susitna Basin caused them to die off. Respondents also raise cattle, chickens, ducks, and sheep. Agriculture, according to one respondent, in addition to harvesting wild foods, "fills the freezer." This leads to lots of sharing between neighbors.

CONCERNS

One respondent summed up several interviews by saying that she does not want to see a dam "destroy" the Susitna Basin. She and her husband believe that, in addition to earthquake and associated safety concerns, the dam and flooding would damage or destroy the local caribou herds. She questioned the need for hydroelectric energy when Alaska is an "energy state," with other energy resources, such as gas, to be mined. Her husband commented that the dam would also damage moose populations and disrupt salmon runs, which dams have done along the West Coast of the contiguous United States. They, along with several other respondents interviewed for this project, believe that the Susitna and Chulitna river corridors are special places to them, in addition to the Denali Highway area. The building of a dam in the area would change the local ecology and way of life in the area that is special to them, they said.

Respondents related that the number of people and technological changes have changed access to the area, as well as how people use the land and resources. As one respondent noted:

> I think the biggest thing to come here was the newer snowmachines. They kept getting better and better and now you can get anywhere with them. People in Anchorage and Eagle River got a lot of money from oil for toys and such, and they all started coming back in here. Lot of people would go up by Peters Creek, and I think they like the road house and the big open area, but we used to run dog teams up there and it got to the point where you didn't dare run your dogs up there. Snowmachines and a lot of alcohol mixed with it just took over up there. And changed the game up there. Now the state is planning 2 big subdivisions up there off the road system. And we don't get much say because the people that make the rules live down in Palmer or in the [Matanuska-Susitna] Valley. And new people maybe don't appreciate it how it used to be.

However, there is an understanding that change is inevitable. "You can't go backwards, it's impossible. People get angry about more people getting here, but you can't just shut the door behind you because you want to be the last person through."

ACKNOWLEDGEMENTS

Researchers would like to thank the local residents of Trapper Creek for sharing their observations and concerns about their way of life. Residents provided many cups of coffee over long interviews, fresh food, and tours of their gardens. A special thanks to Paula Glenka for assisting with setting up so many interviews and arranging for researchers to present to the community council.

SKWENTNA

COMMUNITY BACKGROUND

At 61˚ latitude, the Skwentna census designated place (CDP) is approximately 450 square miles in size. The CDP is located in the riverine lowlands within the Susitna River watershed in an area surrounding the confluence of the Skwentna and Yentna rivers. The climate is in the transitional zone between coastal and subarctic Interior Alaska. The plant community is boreal forest composed of birch, spruce, and poplar trees. The understory is dominated by alders, willows, and highbush cranberries. Moose, black bears, brown bears, ptarmigan, grouse, salmon, trout, Arctic grayling, and a number of small land mammals are common in this area.

Most of the 35 year-round permanent households identified within the CDP during this study are diffusely spread out amongst 6 distinct locations: Skwentna proper, Lake Creek, Fish Lake Creek, Hewitt Lake, Shell Lake, and One Stone Lake. A few residences occur along the riverbanks of the Yentna River north and south of its confluence with Lake Creek. Aside from the year-round permanent households identified during this study, the Skwentna CDP contains numerous seasonal-use homes.[1]

Skwentna proper, defined by the airstrip and the Old Skwentna Roadhouse lodge, is located on the northwest bank of the Skwentna River at its junction with Eightmile Creek, slightly upriver from its confluence with the Yentna River, and is approximately 65 miles northwest of Anchorage. The Skwentna post office is located on the southeast bank of the river. Fish Lake Creek and Lake Creek are located on the northeast bank of the Yentna River. The mouth of Fish Lake Creek is approximately 8 miles southeast of the confluence of the Skwentna and Yentna rivers and the mouth of Lake Creek is approximately 11 miles from the confluence. Hewitt Lake is approximately 6 miles west of the confluence of the Skwentna and Yentna rivers. Shell Lake and One Stone Lake are located approximately 14 miles west of the confluence.

The area surrounding the confluence of the Skwentna River, or, in Dena'ina, *Shqitnu* ("sloping ridge river"), and the Yentna River, or *Yentnu* ("backbone river"), was formerly the locale of numerous Upper Cook Inlet Dena'ina settlements and fish camps (Kari and Fall 2003). Denai'na refer to Shell Lake as *Nusdatl'na Nichila Bena* ("ghost house lake") and refer to Hewitt Lake as

1. Skwentna community members believe that the CDP should also include the Donkey Creek and Donkey Lake areas, which contain approximately 5 additional households that local residents consider part of the Skwentna community. Because the Donkey Creek area is not part of the CDP it was not included in the 2012 household survey.

Tiq'atl'ena ("timbered area notch"). Archaeological investigations at Hewitt Lake have revealed indigenous use of the lake since at least 3,600 years before the present and at least 3 separate permanent Upper Cook Inlet Dena'ina villages were located on the shores of Hewitt Lake up until the late 19th century (Kari and Fall 2003). Up to 6 Dena'ina villages were once present along Fish Lake Creek, or *Bentalitnu* ("creek of flowing lake water"). According to the esteemed Dena'ina elder Shem Pete, Fish Lake Creek was an important fishing site for the traditional Dena'ina people:

> … They got lots of smokehouses all over, way far up [Fish Lake Creek]. Big Native village used to be. They catch fish early there. A big bunch of Natives, they moved there in the springtime. Right after the ice pulled out. It was the one spot where they catch fish early. Lake after lake, all lined up a long ways. They fish the whole summer and fall. A lot of fish … . (Kari and Fall 2003, 123)

The modern Skwentna community was established following the arrival of Euro-Americans in Alaska when in 1908 the Alaska Road Commission built the 1,150-mile Iditarod Trail from Seward to Nome, which passed through Skwentna on its way to Rainy Pass. Many roadhouses were later constructed along the trail, including the Old Skwentna Roadhouse. Prospectors, trappers, and Dena'ina people often used sled dogs to transport goods over the trail. The Skwentna post office was opened in 1937. After World War II, an airstrip was built and in 1950 the U.S. Army established a radar station at Skwentna and a recreation camp at Shell Lake. In the 1960s, state land disposals increased settlement by homesteaders.

Today the historical Skwentna post office remains in operation and residents of the CDP travel there by motorboat and snowmachine to obtain mail. The Skwentna school closed in 1993. There are no other government agency offices or stores located in the CDP, although the Old Skwentna Roadhouse sells fuel. To obtain other basic supplies and services, residents of the CDP travel to Anchorage by air, or to Willow by boat to Deshka Landing and then by automobile to Anchorage, or to Wasilla in the winter by snowmachine and then automobile. A handful of recreational lodges operate in the CDP, the most famous being the historical Old Skwentna Roadhouse. The lodges cater mostly to sport fishing clients during the summers and to snowmachiners and fans of the Iditarod sled dog race and the Iron Dog snowmachine race during the winter. Some of the lodges operate restaurants where local residents occasionally purchase meals and beverages.

DEMOGRAPHY

According to the federal census, Skwentna had 37 residents in 2010; the ADLWD (2013) estimated 35 residents in 2012 (Table 1-1). Available demographic information shows a population decline in the Skwentna CDP since the year 2000 (Figure 6-1). The household survey conducted for this

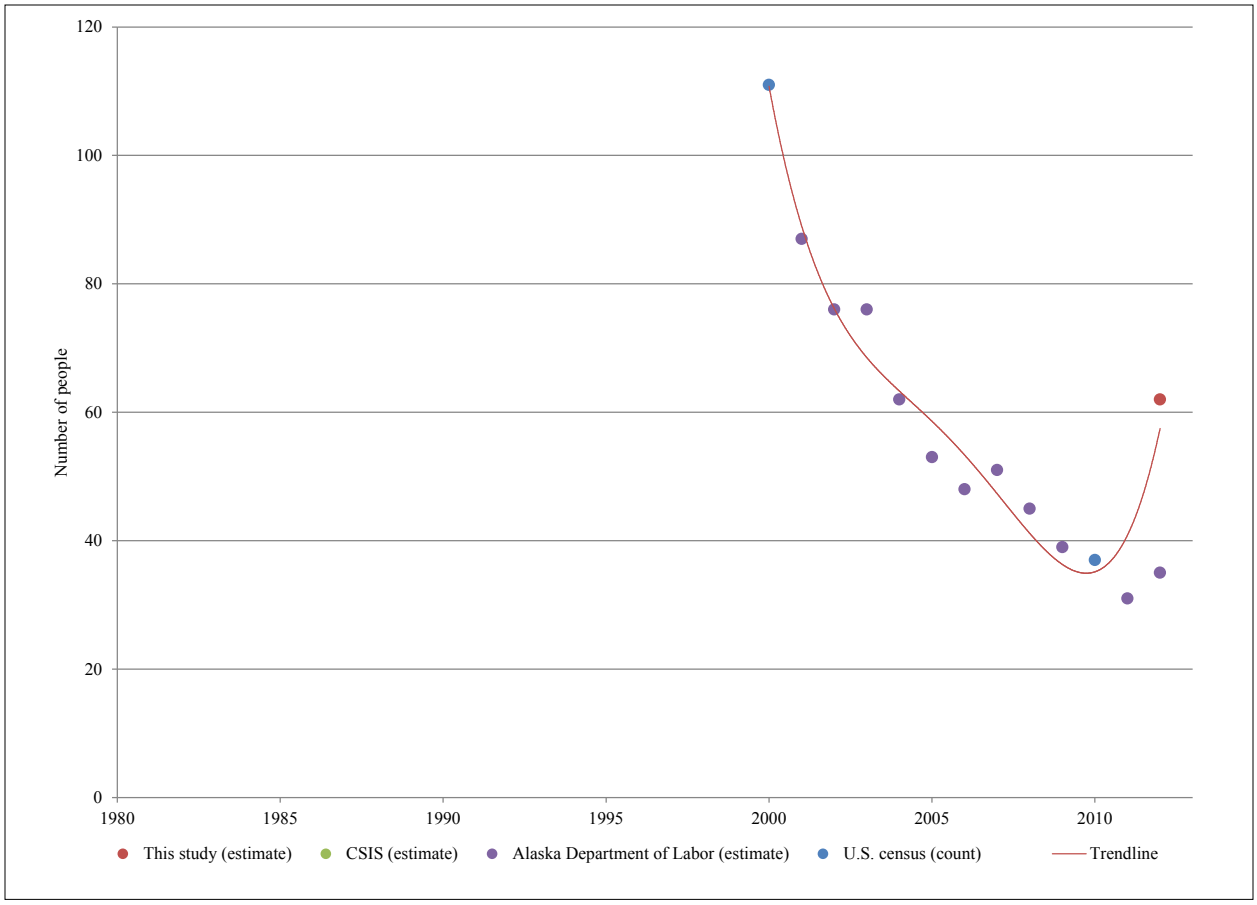

Figure 6-1. – Population history, Skwentna, 1980–2012.

study in 2012 estimated the population was 62 residents, of which 4% were Alaska Native (Table 1-1). Prior to the study, Division of Subsistence researchers consulted with community members to obtain an estimate of the number of year-round households within the Skwentna CDP. Community members reported that the 2010 U.S. census had likely underestimated the population and estimated that 35 year-round households would be found within the boundaries of the Skwentna CDP; the survey confirmed this (Table 1-1). Of these, 30 households (86%) were interviewed (Table 1-6). The mean number of years of residency in Skwentna was 16 years, with the maximum length of residence being 38 years (Table 1-9). The largest age cohort for males was a tie between the 55–59 and 60–64 age ranges, and for females it was the 55–59 age range (Table 6-1; Figure 6-2). Only females were represented in the 5–9, 30–34, and 35–39 age ranges. There were no male residents younger than 10 years of age. There were no residents of either sex older than 74 years of age.

Of the Skwentna household heads interviewed, 12% were born in Alaska (Table 1-10). Most (88%) of the household heads were born in other U.S. states. Of those born in Alaska, 2% were born in Skwentna.

Table 6-1. – Population profile, Skwentna, 2012.

	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%	1.2	4.3%	4.3%	1.2	1.9%	1.9%
10–14	1.2	3.3%	3.3%	1.2	4.3%	8.7%	2.3	3.8%	5.7%
15–19	0.0	0.0%	3.3%	0.0	0.0%	8.7%	0.0	0.0%	5.7%
20–24	1.2	3.3%	6.7%	0.0	0.0%	8.7%	1.2	1.9%	7.5%
25–29	0.0	0.0%	6.7%	0.0	0.0%	8.7%	0.0	0.0%	7.5%
30–34	0.0	0.0%	6.7%	1.2	4.3%	13.0%	1.2	1.9%	9.4%
35–39	0.0	0.0%	6.7%	1.2	4.3%	17.4%	1.2	1.9%	11.3%
40–44	0.0	0.0%	6.7%	0.0	0.0%	17.4%	0.0	0.0%	11.3%
45–49	2.3	6.7%	13.3%	2.3	8.7%	26.1%	4.7	7.5%	18.9%
50–54	5.8	16.7%	30.0%	3.5	13.0%	39.1%	9.3	15.1%	34.0%
55–59	8.2	23.3%	53.3%	5.8	21.7%	60.9%	14.0	22.6%	56.6%
60–64	8.2	23.3%	76.7%	3.5	13.0%	73.9%	11.7	18.9%	75.5%
65–69	5.8	16.7%	93.3%	2.3	8.7%	82.6%	8.2	13.2%	88.7%
70–74	1.2	3.3%	96.7%	3.5	13.0%	95.7%	4.7	7.5%	96.2%
75–79	0.0	0.0%	96.7%	0.0	0.0%	95.7%	0.0	0.0%	96.2%
80–84	0.0	0.0%	96.7%	0.0	0.0%	95.7%	0.0	0.0%	96.2%
85–89	0.0	0.0%	96.7%	0.0	0.0%	95.7%	0.0	0.0%	96.2%
90–94	0.0	0.0%	96.7%	0.0	0.0%	95.7%	0.0	0.0%	96.2%
95–99	0.0	0.0%	96.7%	0.0	0.0%	95.7%	0.0	0.0%	96.2%
100–104	0.0	0.0%	96.7%	0.0	0.0%	95.7%	0.0	0.0%	96.2%
Missing	1.2	3.3%	100.0%	1.2	4.3%	100.0%	2.3	3.8%	100.0%
Total	**35.0**	**100.0%**	**100.0%**	**26.8**	**100.0%**	**100.0%**	**61.8**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

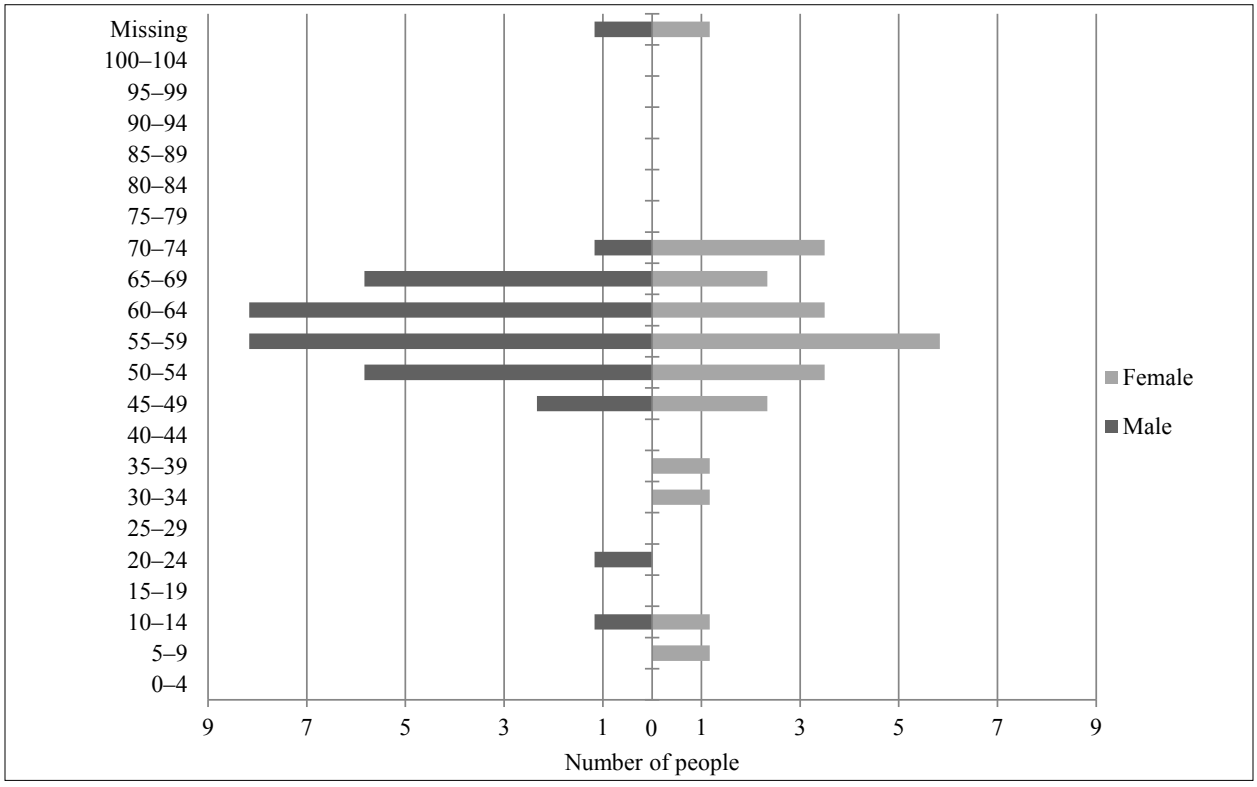

Figure 6-2. – Population profile, Skwentna, 2012.

Table 6-2. – Estimated earned and other income, Skwentna, 2012.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Services	31.4	13.8	$728,830	$20,824	57.1%
Construction	6.7	3.8	$92,436	$2,641	7.2%
Agriculture, forestry, and fishing	4.5	2.5	$68,845	$1,967	5.4%
Transportation, communication, and utilities	6.7	3.8	$51,871	$1,482	4.1%
Federal government	4.5	2.5	$22,601	$646	1.8%
Manufacturing	2.2	1.3	$16,226	$464	1.3%
Earned income subtotal	**44.9**	**20.0**	**$980,809**	**$28,023**	**76.9%**
Other income					
Pension/retirement		7.0	$82,292	$2,351	6.5%
Social Security		7.0	$68,556	$1,959	5.4%
Alaska Permanent Fund dividend		32.7	$49,748	$1,421	3.9%
Disability		5.8	$37,022	$1,058	2.9%
Rental income		1.2	$35,000	$1,000	2.7%
Supplemental Security income		3.5	$22,400	$640	1.8%
Adult public assistance		0.0	$0	$0	0.0%
Food stamps		0.0	$0	$0	0.0%
Longevity bonus		0.0	$0	$0	0.0%
Energy assistance		0.0	$0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0	0.0%
Unemployment		0.0	$0	$0	0.0%
Veterans assistance		0.0	$0	$0	0.0%
Native corporation dividend		0.0	$0	$0	0.0%
Child support		0.0	$0	$0	0.0%
Other		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Citgo fuel voucher		0.0	$0	$0	0.0%
Meeting honoraria		0.0	$0	$0	0.0%
Other income subtotal		**32.7**	**$295,019**	**$8,429**	**23.1%**
Community income total			**$1,275,828**	**$36,452**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

a. The mean is calculated using the *total* number of households in the community, not the number of households for this income category.

b. Income by category as a percentage of the total community income from all sources (wage-based income *and* non-wage-based income.)

CASH EMPLOYMENT AND MONETARY INCOME

Table 6-2 is a summary of the estimated earned income as well as other sources of income for residents of Skwentna in 2012. This table shows that in 2012 earned income accounted for an average of $28,023 per household, or 77% of the total community income, compared to other income sources that accounted for an average of $8,429 per household, or 23% of the total community income. The largest source of other income was pension/retirement funds, which accounted for 7% of the total community income in 2012, followed by Social Security, which accounted for 5% of the total community income in 2012.

In 2012, most (52%) of the jobs in Skwentna were in the services sector (Table 6-3). Other important employment sectors during the study year were construction (14% of jobs); agriculture, forestry, and fishing (14% of jobs); transportation, communication, and utilities (10% of jobs); federal government (7% of jobs); and manufacturing (3% of jobs) (Table 6-3).

In 2012, 80% of the adults of working age (16 and older) at Skwentna were employed at some

Table 6-3. – Employment by industry, Skwentna, 2012.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**65.1**	**20.0**	**44.9**	
Federal government	**6.9%**	**12.5%**	**10.0%**	**2.3%**
Executive, administrative, and managerial	3.4%	6.3%	5.0%	2.1%
Technologists and technicians, except health	3.4%	6.3%	5.0%	0.2%
Agriculture, forestry, and fishing	**13.8%**	**12.5%**	**10.0%**	**7.0%**
Agricultural, forestry, and fishing occupations	13.8%	12.5%	10.0%	7.0%
Construction	**13.8%**	**18.8%**	**15.0%**	**9.4%**
Executive, administrative, and managerial	3.4%	6.3%	5.0%	4.7%
Construction and extractive occupations	6.9%	6.3%	5.0%	1.0%
Transportation and material moving occupations	3.4%	6.3%	5.0%	3.7%
Manufacturing	**3.4%**	**6.3%**	**5.0%**	**1.7%**
Writers, artists, entertainers, and athletes	3.4%	6.3%	5.0%	1.7%
Transportation, communication, and utilities	**10.3%**	**18.8%**	**15.0%**	**5.3%**
Transportation and material moving occupations	3.4%	6.3%	5.0%	1.2%
Handlers, equipment cleaners, helpers, and laborers	6.9%	12.5%	10.0%	4.1%
Services	**51.7%**	**68.8%**	**70.0%**	**74.3%**
Executive, administrative, and managerial	27.6%	31.3%	40.0%	60.8%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	3.4%	6.3%	5.0%	3.7%
Writers, artists, entertainers, and athletes	3.4%	6.3%	5.0%	1.4%
Service occupations	10.3%	12.5%	10.0%	4.5%
Construction and extractive occupations	6.9%	12.5%	10.0%	3.9%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Income by category as a percentage of the total *wage-based* community income.

point during the study year. Of these employed adults, 31% were employed year-round (Table 1-11). On average in 2012, 57% of households contained at least 1 adult who was employed. The mean number of jobs per employed household was 3. While some Skwentna residents travel for work to other locations within Alaska (12% of jobs), or to locations outside of Alaska (7% of jobs), the majority of Skwentna jobs (79%) occur locally (Table 1-12).

LEVELS OF INDIVIDUAL PARTICIPATION IN THE HARVESTING AND PROCESSING OF WILD RESOURCES

Table 1-13 reports the expanded levels of individual participation in the harvesting and processing of wild resources by Skwentna residents in 2012. Approximately 98% of residents attempted to harvest resources in 2011. With reference to specific resource categories, 96% of all residents gathered plants and berries, 81% fished, 49% hunted for birds, and 55% hunted for large land mammals. Fewer residents (15%) were involved in furbearer hunting or trapping. In comparison, 100% of all Skwentna residents processed some resources in 2012. Participation in processing plants and berries was 96%. Most residents (83%) participated in processing fish. Large land mammals were processed

by 51% of Skwentna residents, indicating that a group effort is made by residents to process the meat once a successful hunter returns to camp or home. Additionally, 49% of residents participated in processing birds. However, only 15% of residents participated in furbearer processing.

HOUSEHOLD RESOURCE HARVEST AND USE PATTERNS AND SHARING OF WILD RESOURCES

Table 1-14 summarizes resource harvest and use characteristics for Skwentna in 2012 at the household level. All households (100%) used wild resources in 2012 and all households (100%) attempted to harvest and harvested resources. The average harvest was 285 lb usable weight per household, or 162 lb per capita. During the study year, households harvested an average of 10 kinds of resources and used an average of 12 kinds of resources. The maximum number of resources used by any household was 36. In addition, households gave away an average of 3 kinds of resources and 63% of households reported sharing resources with other households. Resources were received by 78% of households. Because more households received resources than reported giving resources away, household specialization in harvesting resources was demonstrated by Skwentna residents. Figure 6-3 shows household specialization. This figure shows that 31% of households harvested 70% of resources.

HARVEST QUANTITIES AND COMPOSITION

Table 6-4 reports estimated wild resource harvests and uses by Skwentna residents in 2012 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 way of life in the area. 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 fish, wildlife, and wild plant resources during 2012 for Skwentna was 9,966 lb, or 161 lb per capita (Table 6-4). Fish provided the majority (46%) (4,559 lb, or 74 lb per capita) of the total pounds of wild resources harvested by Skwentna households (Table 6-4; Figure

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.

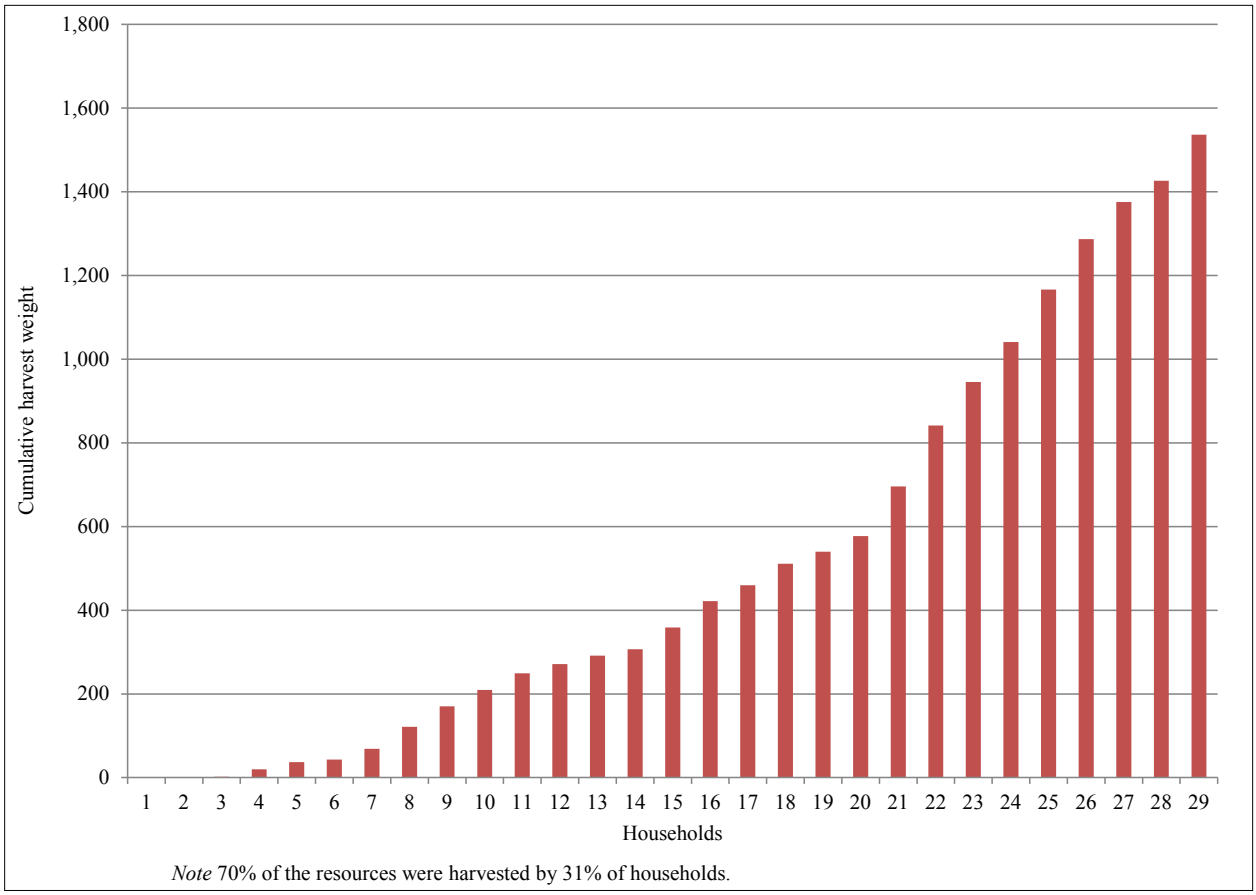

Figure 6-3. – Household specialization, Skwentna, 2012.

6-4). Land mammals provided 45% of the total harvest (4,528 lb, or 73 lb per capita). Vegetation, birds, and marine invertebrates also contributed to the total harvest of wild resources by Skwentna residents. Vegetation provided 5% (487 lb, or 8 lb per capita), birds provided 3% (260 lb, or 4 lb per capita), and marine invertebrates provided 1% (131 lb, or 2 lb per capita) of the total harvest.

SEASONAL ROUND

Harvest survey data and key respondent interview information tell the story of a seasonal round of fishing, hunting, and gathering activities followed by Skwentna residents where a variety of species are harvested throughout the year. In spring, summer, fall, and winter, Skwentna residents harvest resources along the Yentna and Skwentna rivers, their tributaries—including Lake Creek, Fish Lake Creek, and the Talachulitna River—and within adjacent forests and lakes. Residents use motorized boats suitable for travel on waterways, all-terrain vehicles (ATVs), and snowmachines to reach their hunting, fishing, and gathering areas.

During spring and summer salmon are caught in the Susitna, Skwentna, Yentna, and Talachulitna rivers, and Lake Creek. During May and June Chinook salmon are caught by rod and reel under

Table 6-4. – Estimated harvests and uses of fish, game, and vegetation resources, Skwentna, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±)
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	% of harvest
All resources	**100.0**	**100.0**	**100.0**	**76.7**	**63.3**	**9,966.0**	**284.7**	**161.2**	**2,462.3**		**70.4**	**12.7**
Fish	**90.0**	**86.7**	**86.7**	**63.3**	**50.0**	**4,559.4**	**130.3**	**73.7**	**1,334.2**		**38.1**	**12.1**
Salmon	**90.0**	**76.7**	**76.7**	**50.0**	**36.7**	**3,356.0**	**95.9**	**54.3**	**703.5**		**20.1**	**14.8**
Chum salmon	13.3	13.3	13.3	3.3	3.3	136.5	3.9	2.2	22.2	ind	0.6	39.0
Coho salmon	73.3	63.3	63.3	23.3	23.3	1,561.6	44.6	25.3	326.7	ind	9.3	16.9
Chinook salmon	60.0	50.0	43.3	26.7	16.7	233.7	6.7	3.8	24.5	ind	0.7	17.7
Pink salmon	13.3	13.3	13.3	3.3	3.3	61.8	1.8	1.0	23.3	ind	0.7	37.8
Sockeye salmon	66.7	53.3	53.3	33.3	33.3	1,362.3	38.9	22.0	306.8	ind	8.8	18.5
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Nonsalmon fish	**80.0**	**66.7**	**66.7**	**50.0**	**26.7**	**1,203.4**	**34.4**	**19.5**	**630.7**		**18.0**	**17.5**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	3.3	3.3	3.3	0.0	3.3	19.0	0.5	0.3	75.8	gal	2.2	77.3
Eulachon (hooligan, candlefish)	3.3	3.3	3.3	0.0	3.3	19.0	0.5	0.3	75.8	ind	2.2	77.3
Cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific (gray) cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific tomcod	0.0	0.0	0.0	0.0	0.0	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	0.0		0.0	0.0
Starry flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Greenling	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	46.7	10.0	10.0	46.7	10.0	62.5	1.8	1.0	62.5	lb	1.8	72.1
Rockfish	6.7	0.0	0.0	6.7	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	0.0	0.0	0.0	ind	0.0	0.0
Burbot	20.0	20.0	20.0	6.7	0.0	109.2	3.1	1.8	45.5	ind	1.3	36.7
Char	16.7	16.7	16.7	3.3	3.3	86.7	2.5	1.4	73.5		2.1	58.9
Dolly Varden	13.3	13.3	13.3	3.3	3.3	49.4	1.4	0.8	54.8	ind	1.6	59.6
Lake trout	6.7	6.7	6.7	3.3	3.3	37.3	1.1	0.6	18.7	ind	0.5	60.5
Arctic grayling	3.3	3.3	3.3	0.0	0.0	1.6	0.0	0.0	2.3	ind	0.1	77.3
Northern pike	60.0	50.0	50.0	23.3	20.0	803.6	23.0	13.0	287.0	ind	8.2	20.1
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 6-4.–Page 2 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Nonsalmon fish, continued												
Trout	23.3	23.3	23.3	3.3	0.0	101.3	2.9	1.6	72.3		2.1	36.3
Cutthroat trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Rainbow trout	20.0	20.0	20.0	3.3	0.0	91.5	2.6	1.5	65.3	ind	1.9	39.9
Unknown trout	3.3	3.3	3.3	0.0	0.0	9.8	0.3	0.2	7.0	ind	0.2	77.3
Whitefishes	13.3	13.3	13.3	0.0	3.3	19.5	0.6	0.3	11.7		0.3	50.8
Broad whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cisco	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	6.7	6.7	6.7	0.0	3.3	14.3	0.4	0.2	8.2	ind	0.2	66.8
Round whitefish	3.3	3.3	3.3	0.0	0.0	1.2	0.0	0.0	1.2	ind	0.0	77.3
Unknown whitefishes	3.3	3.3	3.3	0.0	0.0	4.1	0.1	0.1	2.3	ind	0.1	77.3
Land mammals	**80.0**	**70.0**	**46.7**	**53.3**	**23.3**	**4,528.4**	**129.4**	**73.2**	**231.0**		**6.6**	**21.7**
Large land mammals	**73.3**	**60.0**	**36.7**	**53.3**	**23.3**	**4,440.9**	**126.9**	**71.8**	**19.8**		**0.6**	**22.0**
Black bear	16.7	20.0	13.3	6.7	6.7	541.3	15.5	8.8	9.3	ind	0.3	43.8
Brown bear	3.3	3.3	3.3	0.0	0.0	175.0	5.0	2.8	1.2	ind	0.0	77.3
Caribou	6.7	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Deer	10.0	3.3	3.3	6.7	0.0	49.6	1.4	0.8	1.2	ind	0.0	77.3
Elk	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goat	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	70.0	53.3	23.3	46.7	20.0	3,675.0	105.0	59.4	8.2	ind	0.2	26.0
Dall sheep	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals[b]	**26.7**	**26.7**	**26.7**	**6.7**	**0.0**	**87.5**	**2.5**	**1.4**	**211.2**		**6.0**	**42.5**
Beaver	6.7	6.7	6.7	0.0	0.0	35.0	1.0	0.6	7.0	ind	0.2	77.3
Coyote	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	17.5	ind	0.5	53.8
Fox	6.7	6.7	6.7	0.0	0.0	0.0	0.0	0.0	9.3		0.3	60.5
Red fox	6.7	6.7	6.7	0.0	0.0	0.0	0.0	0.0	9.3		0.3	60.5
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	6.7	6.7	6.7	0.0	0.0	0.0	0.0	0.0	9.3	ind	0.3	60.5
Hare	10.0	10.0	10.0	0.0	0.0	37.3	1.1	0.6	18.7		0.5	58.9
Snowshoe hare	10.0	10.0	10.0	0.0	0.0	37.3	1.1	0.6	18.7	ind	0.5	58.9
River (land) otter	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0	3.5	ind	0.1	77.3
Lynx	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0	4.7	ind	0.1	77.3
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	13.3	10.0	10.0	3.3	0.0	0.0	0.0	0.0	103.8	ind	3.0	50.9

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Table 6-4.–Page 3 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Small land mammals[b], continued												
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Squirrel	13.3	13.3	13.3	0.0	0.0	15.2	0.4	0.2	30.3		0.9	41.8
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	10.0	10.0	10.0	0.0	0.0	14.6	0.4	0.2	29.2	ind	0.8	43.6
Northern flying squirrel	3.3	3.3	3.3	0.0	0.0	0.6	0.0	0.0	1.2	ind	0.0	77.3
Weasel	10.0	10.0	10.0	3.3	0.0	0.0	0.0	0.0	14.0	ind	0.4	53.7
Wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0	2.3	ind	0.1	77.3
Marine mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**66.7**	**66.7**	**66.7**	**3.3**	**3.3**	**260.4**	**7.4**	**4.2**	**346.5**		**9.9**	**22.9**
Migratory birds	**23.3**	**23.3**	**23.3**	**3.3**	**0.0**	**87.9**	**2.5**	**1.4**	**85.2**		**2.4**	**41.8**
Ducks	23.3	23.3	23.3	3.3	0.0	66.9	1.9	1.1	81.7		2.3	36.4
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Eider	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	3.3	3.3	3.3	0.0	0.0	0.9	0.0	0.0	1.2	ind	0.0	77.3
Mallard	16.7	16.7	16.7	3.3	0.0	43.2	1.2	0.7	43.2	ind	1.2	40.7
Merganser	3.3	3.3	3.3	0.0	0.0	6.2	0.2	0.1	3.5	ind	0.1	77.3
Long-tailed duck	3.3	3.3	3.3	0.0	0.0	0.9	0.0	0.0	1.2	ind	0.0	77.3
Northern pintail	3.3	3.3	3.3	0.0	0.0	1.9	0.1	0.0	2.3	ind	0.1	77.3
Scaup	3.3	3.3	3.3	0.0	0.0	2.1	0.1	0.0	2.3	ind	0.1	77.3
Scoter	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Teal	13.3	13.3	13.3	3.3	0.0	6.0	0.2	0.1	19.8		0.6	40.2

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Table 6-4.–Page 4 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Migratory birds, continued												
Green-winged teal	10.0	10.0	10.0	3.3	0.0	3.9	0.1	0.1	12.8	ind	0.4	47.9
Unknown teal	3.3	3.3	3.3	0.0	0.0	2.1	0.1	0.0	7.0	ind	0.2	77.3
Wigeon	3.3	3.3	3.3	0.0	0.0	4.9	0.1	0.1	7.0	ind	0.2	77.3
Unknown ducks	3.3	3.3	3.3	0.0	0.0	0.9	0.0	0.0	1.2	ind	0.0	77.3
Geese	3.3	3.3	3.3	0.0	0.0	1.4	0.0	0.0	1.2		0.0	77.3
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	3.3	3.3	3.3	0.0	0.0	1.4	0.0	0.0	1.2		0.0	77.3
Cackling goose	3.3	3.3	3.3	0.0	0.0	1.4	0.0	0.0	1.2	ind	0.0	77.3
Canada goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cranes	3.3	3.3	3.3	0.0	0.0	19.6	0.6	0.3	2.3		0.1	77.3
Sandhill crane	3.3	3.3	3.3	0.0	0.0	19.6	0.6	0.3	2.3	ind	0.1	77.3
Other birds	**63.3**	**63.3**	**63.3**	**3.3**	**3.3**	**172.4**	**4.9**	**2.8**	**261.3**		**7.5**	**21.8**
Upland game birds	63.3	63.3	63.3	3.3	3.3	172.4	4.9	2.8	261.3		7.5	21.8
Grouse	63.3	63.3	63.3	0.0	3.3	146.2	4.2	2.4	208.8		6.0	21.3
Spruce grouse	63.3	63.3	63.3	0.0	3.3	136.4	3.9	2.2	194.8	ind	5.6	22.0
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ruffed grouse	13.3	13.3	13.3	0.0	0.0	9.8	0.3	0.2	14.0	ind	0.4	43.1
Unknown grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	16.7	23.3	13.3	3.3	0.0	26.3	0.8	0.4	52.5	ind	1.5	52.7
Bird eggs	**0.0**	**0.0**	**0.0**	**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	0.0	0.0	0.0		0.0	0.0
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Seabird and loon eggs	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 6-4.–Page 5 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Marine invertebrates	**16.7**	**6.7**	**6.7**	**13.3**	**3.3**	**131.3**	**3.8**	**2.1**	**43.8**		**1.3**	**72.2**
Unknown eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Clams	10.0	6.7	6.7	6.7	3.3	131.3	3.8	2.1	43.8		1.3	72.2
Butter clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Freshwater clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pinkneck clam	3.3	3.3	3.3	0.0	3.3	35.0	1.0	0.6	11.7	gal	0.3	77.3
Razor clam	10.0	6.7	6.7	6.7	3.3	96.3	2.8	1.6	32.1	gal	0.9	70.4
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crabs	6.7	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Dungeness crab	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
King crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Octopus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Shrimp	6.7	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	lb	0.0	0.0
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**96.7**	**96.7**	**96.7**	**20.0**	**33.3**	**486.6**	**13.9**	**7.9**	**506.8**		**14.5**	**21.8**
Berries	**70.0**	**66.7**	**66.7**	**10.0**	**26.7**	**401.0**	**11.5**	**6.5**	**100.3**		**2.9**	**19.9**
Blueberry	50.0	50.0	50.0	0.0	16.7	130.7	3.7	2.1	32.7	gal	0.9	23.0
Lowbush cranberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Highbush cranberry	36.7	33.3	33.3	6.7	10.0	105.0	3.0	1.7	26.3	gal	0.8	27.3
Crowberry	3.3	3.3	3.3	0.0	3.3	2.3	0.1	0.0	0.6	gal	0.0	77.3
Gooseberry	3.3	3.3	3.3	0.0	0.0	2.3	0.1	0.0	0.6	gal	0.0	77.3
Currants	20.0	20.0	20.0	3.3	13.3	63.0	1.8	1.0	15.8	gal	0.5	39.1
Huckleberry	3.3	3.3	3.3	0.0	3.3	4.7	0.1	0.1	1.2	gal	0.0	77.3
Raspberry	36.7	40.0	36.7	0.0	10.0	69.4	2.0	1.1	17.4	gal	0.5	31.0
Salmonberry	3.3	3.3	3.3	0.0	3.3	2.3	0.1	0.0	0.6	gal	0.0	77.3
Twisted stalk berry (watermelon berry)	23.3	23.3	23.3	0.0	0.0	7.3	0.2	0.1	1.8	gal	0.1	35.0
Serviceberry	3.3	3.3	3.3	3.3	3.3	14.0	0.4	0.2	3.5	gal	0.1	77.3
Other wild berries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Plants, greens, and mushrooms	**46.7**	**50.0**	**46.7**	**3.3**	**10.0**	**85.6**	**2.4**	**1.4**	**79.9**		**2.3**	**33.5**
Fiddlehead fern	30.0	30.0	30.0	3.3	6.7	52.5	1.5	0.8	52.5	gal	1.5	44.2
Nettle	3.3	3.3	3.3	0.0	0.0	11.7	0.3	0.2	11.7	gal	0.3	77.3
Hudson's Bay (Labrador) tea	6.7	6.7	6.7	0.0	3.3	0.4	0.0	0.0	0.4	gal	0.0	56.8
Dandelion greens	3.3	3.3	3.3	0.0	0.0	0.6	0.0	0.0	0.6	gal	0.0	77.3

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Table 6-4.–Page 6 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±)
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	% of harvest
Plants, greens, and mushrooms, continued												
Wild rose hip	6.7	6.7	6.7	0.0	0.0	7.6	0.2	0.1	1.9	gal	0.1	55.2
Yarrow	3.3	3.3	3.3	0.0	0.0	1.2	0.0	0.0	1.2	gal	0.0	77.3
Other wild greens	6.7	6.7	6.7	0.0	0.0	1.3	0.0	0.0	1.3	gal	0.0	69.0
Unknown mushrooms	23.3	26.7	23.3	0.0	0.0	5.0	0.1	0.1	5.0	gal	0.1	38.9
Fireweed	10.0	10.0	10.0	0.0	3.3	5.4	0.2	0.1	5.4	gal	0.2	67.0
Wood	**93.3**	**93.3**	**93.3**	**6.7**	**16.7**	**0.0**	**0.0**	**0.0**	**326.7**		**9.3**	**9.2**
Firewood	93.3	93.3	93.3	6.7	16.7	0.0	0.0	0.0	326.7	cord	9.3	9.2

Source ADF&G Division of Subsistence household surveys, 2013.

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

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.

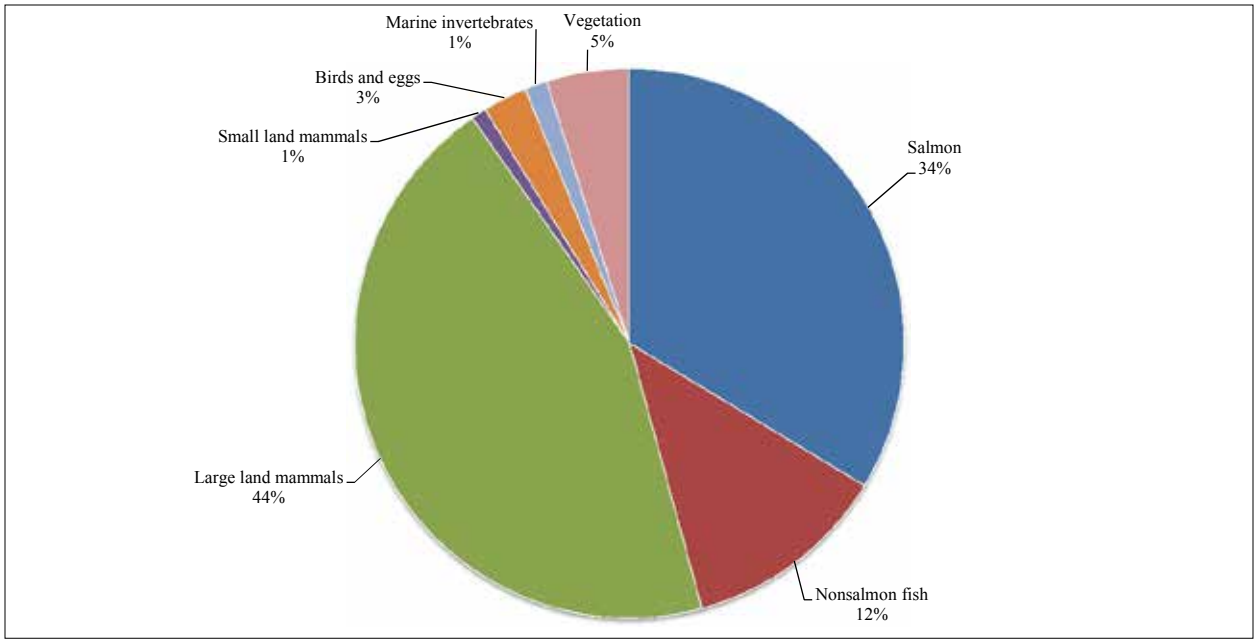

Figure 6-4. – Composition of wild resource harvest, by category, Skwentna, 2012.

sport fishing regulations. During June and July, Yentna River sockeye salmon, chum salmon, and pink salmon are caught by rod and reel under sport fishing regulations and by fish wheel under subsistence fishing regulations, and by rod and reel at Lake Creek and Shell Lake. Coho salmon arrive in the area in August and continue to return into mid-September. Coho salmon are caught by rod and reel along the Yentna, Skwentna, and the Talachulitna rivers, and Lake Creek.

Black bears and brown bears are sometimes harvested during spring and summer. Grouses and ptarmigan are harvested during summer and fall. Ducks and geese are harvested during fall. Some Skwentna residents participate in fall moose hunting (August 20–September 25); however, winter moose hunting is a more popular traditional activity for Skwentna residents. State Tier II[3] regulations allow for winter subsistence moose hunting in Game Management Unit (GMU) 16B from December 15–March 31. Moose hunting takes place during September, December, January, and February along the Yentna, Skwentna, Hayes, and Talachulitna rivers, Eightmile Creek, Lake Creek, and in adjacent sloughs and meadows that are accessible by snowmachine. Snowshoe hares and furbearers are also harvested during winter. Furbearer trapping occurs along the Yentna River, Skwentna River, Hayes River, and the Talachulitna River, and in adjacent sloughs and forests.

Skwentna residents harvest plants, mushrooms, and berries during spring, summer, and fall. For example, fiddlehead fern shoots and fireweed shoots are sought during spring; wild greens, such as nettles, dandelion greens, yarrow, and Hudson's Bay (Labrador) tea are sought during summer;

3. State Tier II hunts are held when there is not enough of a game population with a positive customary and traditional use finding to provide a reasonable opportunity for subsistence uses. Hunters must answer questions on an application concerning their dependence on the game for their livelihood and availability of alternative resources. Applications are scored based on responses to the questionnaire and permits are issued to those with the highest scores.

Table 6-5. – Top 10 resources harvested and used, Skwentna, 2012.

Harvested			Used		
Rank	Resource	Pounds per capita	Rank	Resource	Percentage of households using
1.	Moose	59.4	1.	Coho salmon	73.3%
2.	Coho salmon	25.3	2.	Moose	70.0%
3.	Sockeye salmon	22.0	3.	Sockeye salmon	66.7%
4.	Northern pike	13.0	4.	Spruce grouse	63.3%
5.	Black bear	8.8	5.	Chinook salmon	60.0%
6.	Chinook salmon	3.8	5.	Northern pike	60.0%
7.	Brown bear	2.8	7.	Blueberry	50.0%
8.	Chum salmon	2.2	8.	Pacific halibut	46.7%
8.	Spruce grouse	2.2	9.	Highbush cranberry	36.7%
10.	Blueberry	2.1	9.	Raspberry	36.7%

Source ADF&G Division of Subsistence household surveys, 2013.

blueberries, crowberries, currants, raspberries, twisted stalk berries (known as watermelon berries), serviceberries, and salmonberries are gathered during late summer; and highbush cranberries are gathered during fall. Harvesting firewood for home heating is an important year-round activity for Skwentna residents.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Estimates of sharing indicated that 77% of Skwentna households received wild resources from other households and 63% of households gave resources away (Table 6-4). Fish, large land mammals, and vegetation were the most commonly shared resources. Fish were used by 90% of households, were given away by 50% of households, and were received by 63% of households. Large land mammals were used by 73% of households, were given away by 23% of households, and were received by 53% of households. Vegetation was used by 97% of households, was given away by 33% of households, and was received by 20% of households.

Table 6-5 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Skwentna households during the 2012 study year. Moose made the largest contribution to Skwentna's 2012 wild resource harvest (59 lb per capita), followed by coho salmon (25 lb per capita), sockeye salmon (22 lb per capita), northern pike (13 lb per capita), and black bears (9 lb per capita). Of all the available resources, coho salmon was the most used by Skwentna residents (used by 73% of households), followed by moose (70%), sockeye salmon (67%), and spruce grouse (63%).

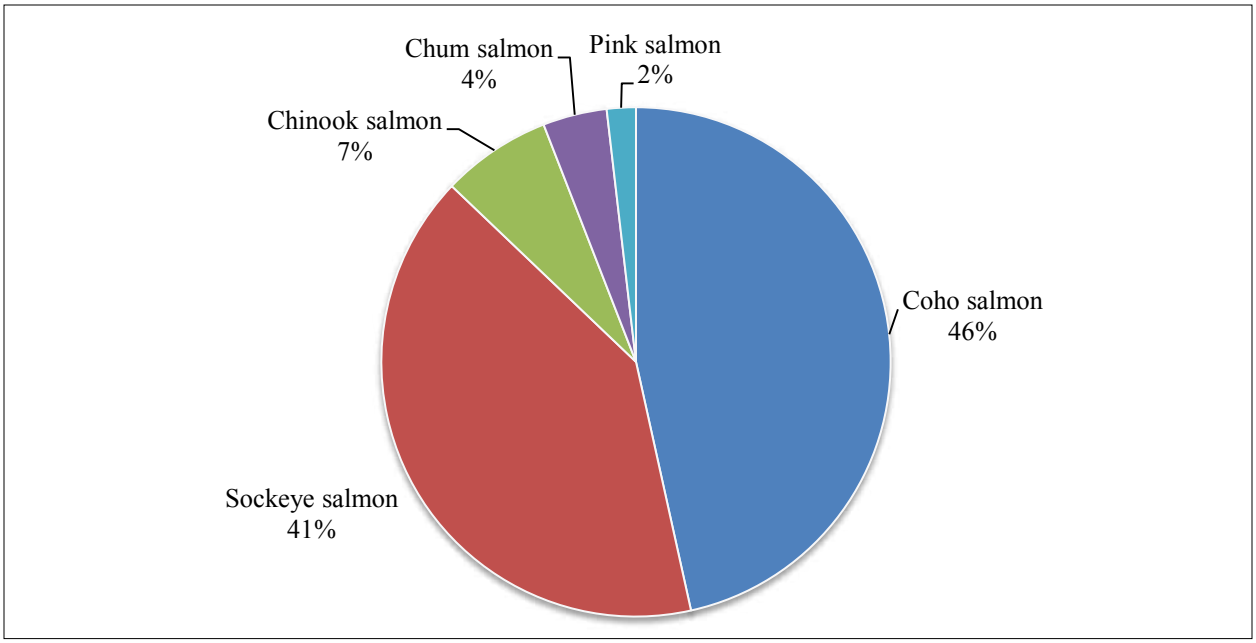

Figure 6-5. – Composition of salmon harvest, Skwentna, 2012.

SALMON

For Skwentna residents, salmon composed 34% of the wild resource harvest in pounds usable weight in 2012 (Figure 6-4). The composition of the salmon harvest was as follows: 47% coho salmon (1,562 lb, or 25 lb per capita); 41% sockeye salmon (1,362 lb, or 22 lb per capita); 7% Chinook salmon (234 lb, or 4 lb per capita); 4% chum salmon (137 lb, or 2 lb per capita); and 2% pink salmon (62 lb, or 1 lb per capita) (Figure 6-5; Table 6-4).

In 2012, rod and reel gear was used to harvest an estimated 70% of the salmon harvest weight, fish wheels were used to harvest about 28% of the salmon harvest weight, and gillnets were used to harvest about 2% of the salmon harvest weight during the study year (Table 6-6). During 2012, 90% of Skwentna households used salmon, 77% harvested salmon, 37% shared salmon, and 50% reported receiving salmon (Table 6-4). Coho salmon, sockeye salmon, and Chinook salmon were the primary salmon species used by Skwentna residents. During 2012, 73% of households reported using coho salmon, 67% of households reported using sockeye salmon, and 60% of households reported using Chinook salmon. Only 13% of households reported using either chum salmon or pink salmon.

During the 2012 study year, Skwentna respondents reported harvesting coho salmon in the Yentna River, Skwentna River and tributaries, the Talachulitna River, Eightmile Creek, and Lake Creek. Sockeye salmon were harvested in the Yentna River, Lake Creek, and Shell Lake (Figure 6-6). Chinook salmon were harvested in the Susitna River, Yentna and Skwentna rivers and the

Table 6-6. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Skwentna, 2012.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Other method		Subsistence gear, any method		Dip net[a]		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%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**29.7%**	**27.9%**	**2.0%**	**1.9%**	**0.0%**	**0.0%**	**31.7%**	**29.7%**	**0.0%**	**0.0%**	**68.3%**	**70.3%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**29.7%**	**27.9%**	**2.0%**	**1.9%**	**0.0%**	**0.0%**	**31.7%**	**29.7%**	**0.0%**	**0.0%**	**68.3%**	**70.3%**	**100.0%**	**100.0%**
Chum salmon	Gear type	0.0%	0.0%	7.8%	10.8%	0.0%	0.0%	0.0%	0.0%	7.3%	10.1%	0.0%	0.0%	1.2%	1.5%	3.2%	4.1%
	Resource	0.0%	0.0%	73.7%	73.7%	0.0%	0.0%	0.0%	0.0%	73.7%	73.7%	0.0%	0.0%	26.3%	26.3%	100.0%	100.0%
	Total	0.0%	0.0%	2.3%	3.0%	0.0%	0.0%	0.0%	0.0%	2.3%	3.0%	0.0%	0.0%	0.8%	1.1%	3.2%	4.1%
Coho salmon	Gear type	0.0%	0.0%	15.1%	16.1%	0.0%	0.0%	0.0%	0.0%	14.1%	15.1%	0.0%	0.0%	61.4%	59.8%	46.4%	46.5%
	Resource	0.0%	0.0%	9.6%	9.6%	0.0%	0.0%	0.0%	0.0%	9.6%	9.6%	0.0%	0.0%	90.4%	90.4%	100.0%	100.0%
	Total	0.0%	0.0%	4.5%	4.5%	0.0%	0.0%	0.0%	0.0%	4.5%	4.5%	0.0%	0.0%	42.0%	42.0%	46.4%	46.5%
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%	5.1%	9.9%	3.5%	7.0%
	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%	3.5%	7.0%	3.5%	7.0%
Pink salmon	Gear type	0.0%	0.0%	8.4%	5.0%	0.0%	0.0%	0.0%	0.0%	7.9%	4.7%	0.0%	0.0%	1.2%	0.7%	3.3%	1.8%
	Resource	0.0%	0.0%	75.0%	75.0%	0.0%	0.0%	0.0%	0.0%	75.0%	75.0%	0.0%	0.0%	25.0%	25.0%	100.0%	100.0%
	Total	0.0%	0.0%	2.5%	1.4%	0.0%	0.0%	0.0%	0.0%	2.5%	1.4%	0.0%	0.0%	0.8%	0.5%	3.3%	1.8%
Sockeye salmon	Gear type	0.0%	0.0%	68.7%	68.2%	100.0%	100.0%	0.0%	0.0%	70.7%	70.2%	0.0%	0.0%	31.1%	28.1%	43.6%	40.6%
	Resource	0.0%	0.0%	46.8%	46.8%	4.6%	4.6%	0.0%	0.0%	51.3%	51.3%	0.0%	0.0%	48.7%	48.7%	100.0%	100.0%
	Total	0.0%	0.0%	20.4%	19.0%	2.0%	1.9%	0.0%	0.0%	22.4%	20.8%	0.0%	0.0%	21.2%	19.8%	43.6%	40.6%
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, 2013.

a. Harvests using dip net gear are typically included with subsistence harvests. However, in this case dip nets are primarily used to harvest fish under personal use regulations and are therefore placed in a separate category.

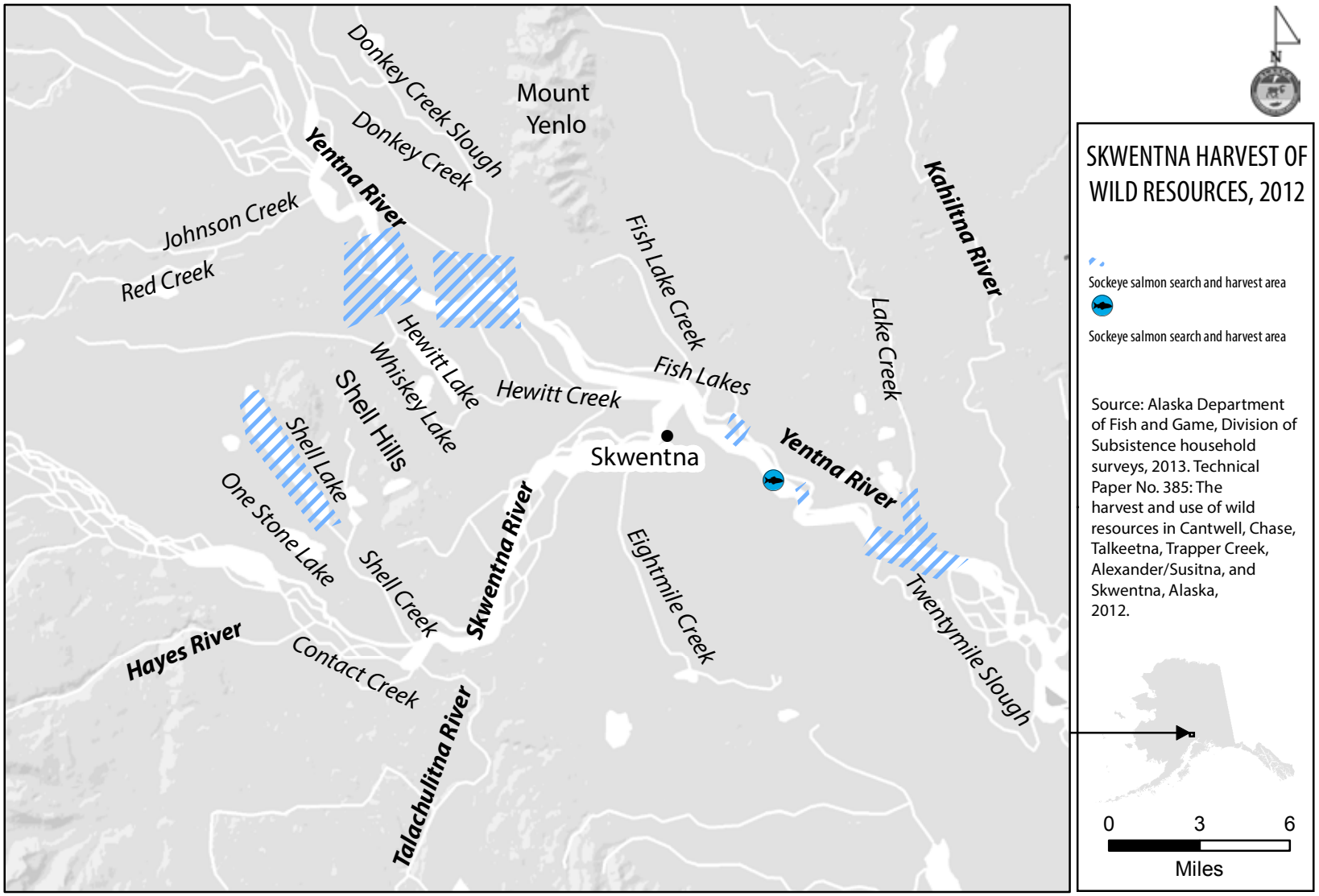

Figure 6-6. – Sockeye salmon search and harvest areas, Skwentna, 2012.

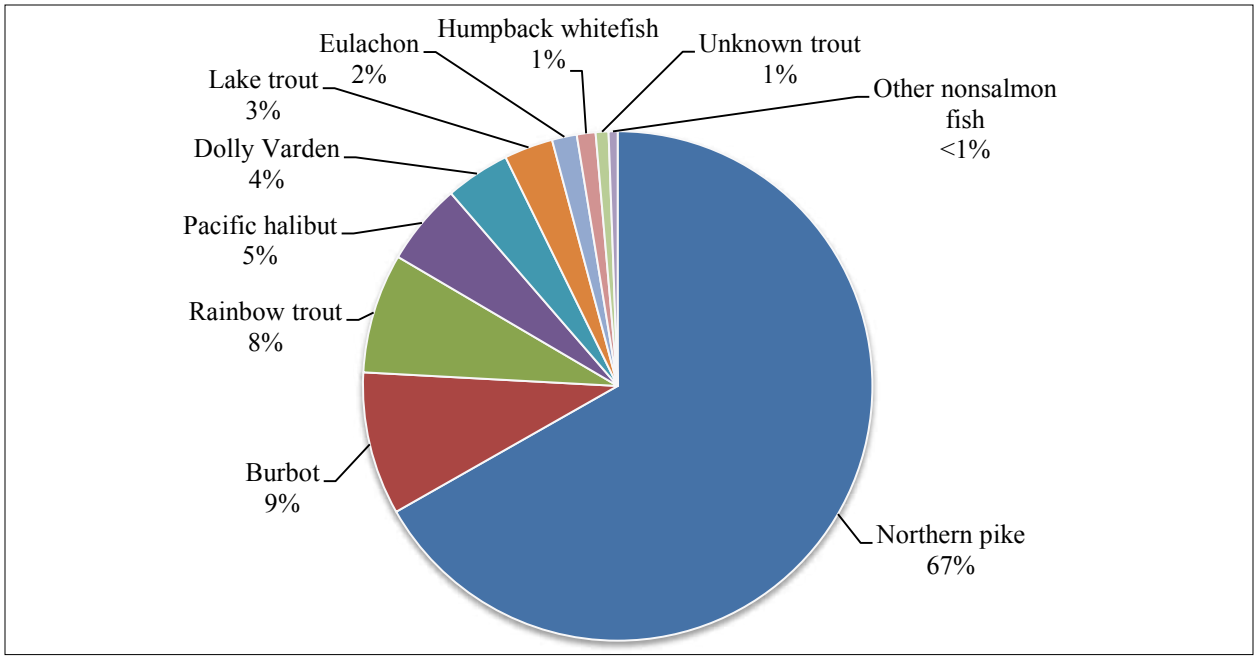

Figure 6-7. – Composition of nonsalmon fish harvest, Skwentna, 2012.

tributaries of Hayes River and Lake Creek. Chum salmon and pink salmon were harvested by fish wheels on the Yentna River.

The majority of the salmon harvest effort by Skwentna households was directed toward coho salmon, sockeye salmon, and Chinook salmon. Of the 63% of households that attempted to harvest coho salmon and the 53% of households that attempted to harvest sockeye salmon, all were successful. However, out of the 50% of households that attempted to harvest Chinook salmon, only 43% were successful. Many of the households that harvested salmon shared their catch with other Skwentna households (33% of households reported receiving sockeye salmon, 27% of households reported receiving Chinook salmon, and 23% of households reported receiving coho salmon).

NONSALMON FISH

In 2012, Skwentna residents harvested an estimated total of 1,203 lb, or 20 lb per capita, of nonsalmon fish (Table 6-4). Nonsalmon fish composed 12% of the wild resource harvest in pounds in 2012 (Figure 6-4). In terms of total pounds and percentages harvested, most of the harvest was northern pike (804 lb, or 13 lb per capita), followed by burbot (109 lb, or 2 lb per capita), rainbow trout (92 lb, or 2 lb per capita), Pacific halibut (63 lb, or 1 lb per capita), and Dolly Varden (49 lb, or 1 lb per capita); combined, these species composed 93% of the nonsalmon fish harvest (Table 6-4; Figure 6-7). Skwentna residents also harvested lake trout, humpback whitefish, round whitefish, eulachon, and Arctic grayling.

Table 6-7 lists the number and pounds of each nonsalmon fish species harvested by Skwentna

Table 6-7. – Estimated percentages of fish other than salmon harvested by gear type, resource, and total nonsalmon fish harvest, Skwentna, 2012.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	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%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**24.1%**	**7.0%**	**24.1%**	**7.0%**	**66.8%**	**78.6%**	**9.1%**	**14.4%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**24.1%**	**7.0%**	**24.1%**	**7.0%**	**66.8%**	**78.6%**	**5.2%**	**14.4%**	**100.0%**	**100.0%**
Smelt	Gear type	0.0%	0.0%	0.0%	0.0%	44.5%	22.2%	44.5%	22.2%	0.0%	0.0%	0.0%	0.0%	10.7%	1.6%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	10.7%	1.6%	10.7%	1.6%	0.0%	0.0%	0.0%	0.0%	10.7%	1.6%
Eulachon (hooligan, candlefish)	Gear type	0.0%	0.0%	0.0%	0.0%	44.5%	22.2%	44.5%	22.2%	0.0%	0.0%	0.0%	0.0%	10.7%	1.6%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	10.7%	1.6%	10.7%	1.6%	0.0%	0.0%	0.0%	0.0%	10.7%	1.6%
Pacific (gray) cod	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%
	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%
	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%
Pacific tomcod	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%
	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%
	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%
Unknown cod	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%
	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%
	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%
Lingcod	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%
	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%
	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%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.2%	6.5%	0.0%	0.0%	8.8%	5.1%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	5.1%	0.0%	0.0%	8.8%	5.1%
Rockfish	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%
	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%
	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%
Black rockfish	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%
	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%
	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%
Yelloweye rockfish	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%
	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%
	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%
Unknown rockfishes	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%
	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%
	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%
Sablefish (black cod)	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%
	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%
	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%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	6.8%	32.7%	6.8%	32.7%	6.7%	7.9%	3.6%	3.2%	6.4%	8.9%
	Resource	0.0%	0.0%	0.0%	0.0%	25.6%	25.6%	25.6%	25.6%	69.2%	69.2%	5.1%	5.1%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.7%	2.3%	1.7%	2.3%	4.5%	6.2%	0.2%	0.5%	6.4%	8.9%

-continued-

Table 6-7.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.6%	5.1%	0.0%	0.0%	7.8%	4.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	4.0%	0.0%	0.0%	7.8%	4.0%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	3.9%	0.0%	0.0%	2.6%	3.1%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	3.1%	0.0%	0.0%	2.6%	3.1%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.2%	0.0%	0.0%	0.3%	0.1%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.3%	0.1%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	4.1%	22.9%	4.1%	22.9%	46.7%	64.3%	92.7%	94.5%	40.6%	65.7%
	Resource	0.0%	0.0%	0.0%	0.0%	2.4%	2.4%	2.4%	2.4%	76.8%	76.8%	20.7%	20.7%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.0%	1.6%	1.0%	1.6%	31.2%	50.5%	4.9%	13.6%	40.6%	65.7%
Cutthroat trout	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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.8%	9.5%	0.0%	0.0%	9.2%	7.5%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.2%	7.5%	0.0%	0.0%	9.2%	7.5%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	1.0%	0.0%	0.0%	1.0%	0.8%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.8%	0.0%	0.0%	1.0%	0.8%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	1.5%	0.0%	0.0%	1.2%	1.2%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	1.2%	0.0%	0.0%	1.2%	1.2%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.1%
Unknown whitefishes	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	2.3%	0.3%	0.3%
	Resource	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%	0.2%	0.3%	0.3%	0.3%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Rod and reel gear used during open water season.

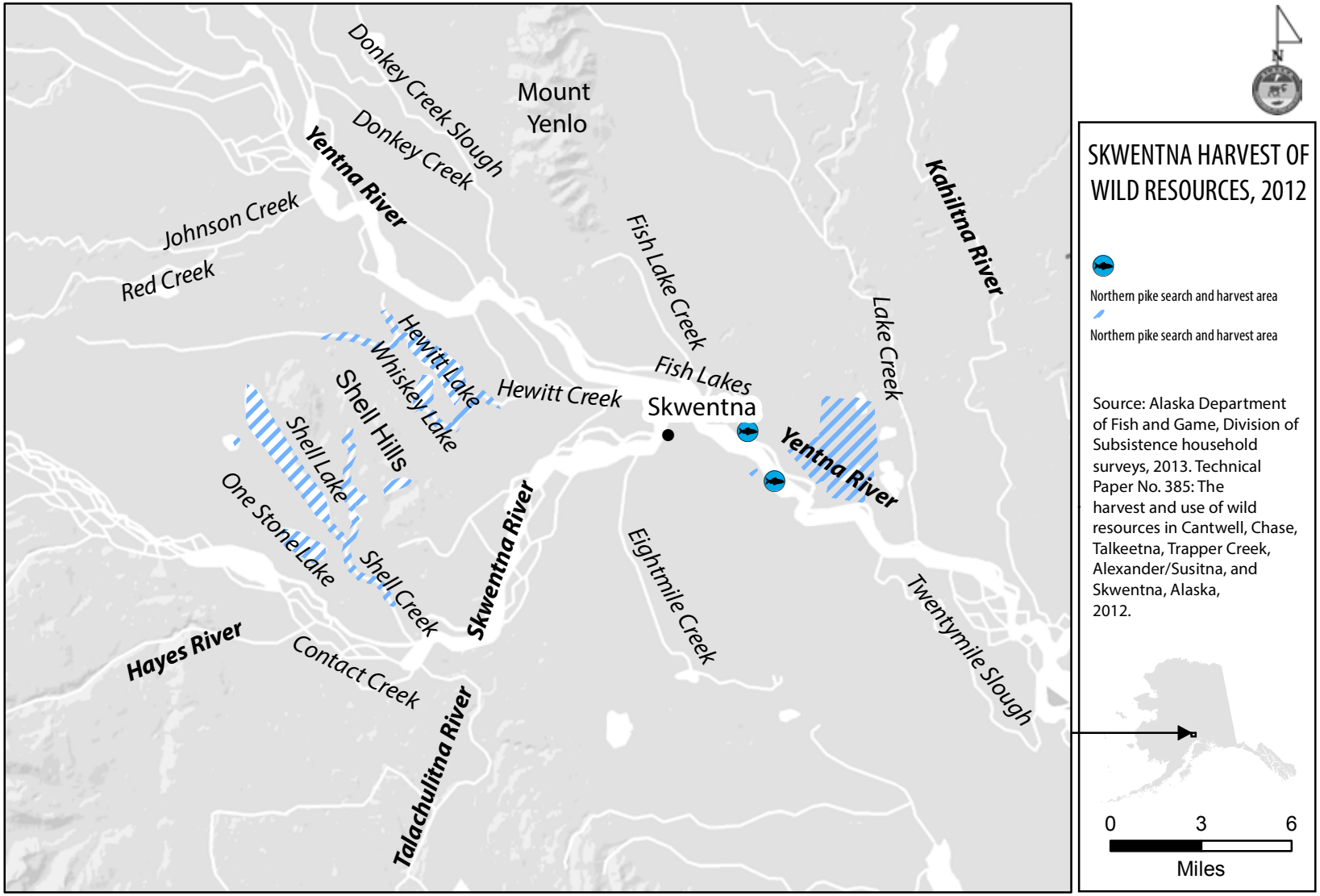

Figure 6-8. – Northern pike search and harvest areas, Skwentna, 2012.

residents in 2012 in percentages by gear type. Skwentna residents harvested most of their nonsalmon fish with rod and reel (67% of fish). Some of the harvest of species, such as northern pike, eulachon, and burbot, was accomplished by jigging through the ice, by baited setlines, and with fish spears.

During 2012, 80% of Skwentna households used nonsalmon fish, 67% harvested nonsalmon fish, 27% shared nonsalmon fish, and 50% reported receiving nonsalmon fish. Halibut, harvested non-locally, was the primary nonsalmon fish shared, with 47% of Skwentna households reporting having received halibut from other households.

During the 2012 study year, Skwentna respondents reported harvesting northern pike in Hewitt Lake, Whiskey Lake, Shell Lake, One Stone Lake, at Fish Lakes, and Fish Lake Creek (Figure 6-8). Rainbow trout were harvested in the Yentna River, Shell Lake, and Lake Creek. Dolly Varden were harvested in the Yentna and Skwentna rivers and Shell Creek. Lake trout were harvested in Shell Lake; burbot were harvested in the Yentna River, at the mouth of Eightmile Creek, and in Shell Lake; Arctic grayling were harvested in Lake Creek; whitefishes were harvested in the Yentna River, Hewitt Creek, and Lake Creek; and eulachon were harvested in the Yentna River near the mouth of the Kahiltna River. Skwentna residents traveled to Anchor Point on the Kenai Peninsula to harvest halibut in Cook Inlet.

LARGE LAND MAMMALS

In 2012, large land mammals, predominantly moose, made up 45% of the total Skwentna wild resource harvest by weight (Figure 6-3). Moose, black bears, brown bears, and deer made up the composition of large land mammal harvest for the community (Figure 6-9). Moose provided 83% of the usable pounds of large land mammals harvested by Skwentna households. Moose was used by 70% of Skwentna households (53% hunted moose and 23% of households were successful harvesters) (Table 6-4). According to the study, the majority of the successful moose hunting took place during winter. In February 2012, 4 moose were harvested; in January 2012, 2 moose were harvested; and in December 2012, 1 moose was harvested (Table 6-8). An additional moose was harvested in September 2012. Respondents reported that the Tier II winter moose hunting opportunity provided in GMU 16B is a very important subsistence hunting activity for the community and said that the community has traditionally relied on winter moose hunting to meet their large land mammal needs. Moose was shared among Skwentna households (20% of households gave moose away and 48% of households received moose from other households).

In 2012, Skwentna residents harvested 9 black bears and 1 brown bear (Table 6-8). Black bears were used by 17% of households and the brown bear was used by 3% of households (Table 6-4). Black bears were harvested in May, June, and July; the single brown bear was harvested in May (Table 6-8). During October of 2012 one Skwentna hunter traveled to Kodiak Island and harvested a deer.

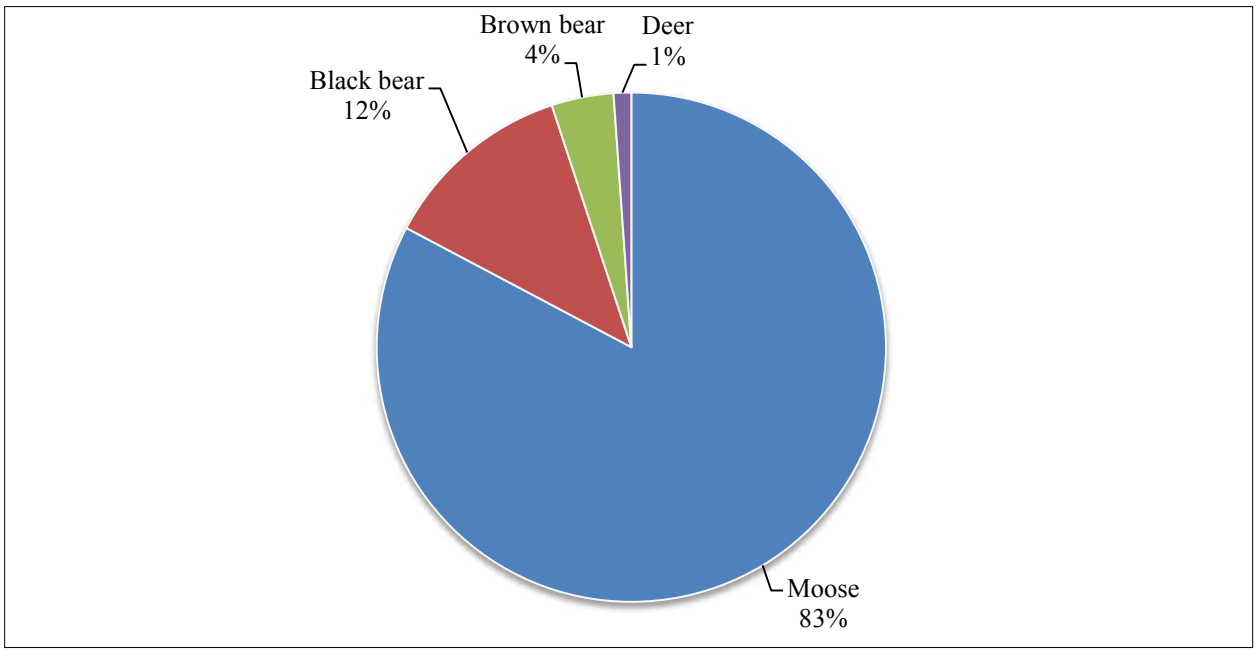

Figure 6-9. – Composition of large land mammals harvest, Skwentna, 2012.

During the 2012 study year, Skwentna households reported searching for moose within the drainages for the Yentna, Skwentna, Hayes, and Kahiltna rivers, and Shell Creek, Hewitt Creek, Eightmile Creek, Fish Lake Creek, and Lake Creek. Additional moose hunting areas stretched along the main waterways, along smaller creeks and sloughs, in adjacent meadows, and around lakes such as Hewitt Lake, Whiskey Lake, Shell Lake, and One Stone Lake (Figure 6-10). Black bears were hunted along the Yentna and Skwentna rivers and Twentymile Slough. Both black and brown bears were hunted at Shell Lake (Figure 6-11).

Table 6-8. – Estimated harvests of large land mammals by month and caribou and moose harvests by sex, Skwentna, 2012.

			Caribou						Moose				
Harvest month	Black bear	Brown bear	Male	Female	Unknown	Deer	Elk	Goat	Male	Female	Unknown	Dall sheep	Wolf
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	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	3.5	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	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	0.0
May	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	5.8	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	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.0
September	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0	1.2	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	0.0
December	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	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	**9.3**	**1.2**	**0.0**	**0.0**	**0.0**	**1.2**	**0.0**	**0.0**	**8.2**	**0.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

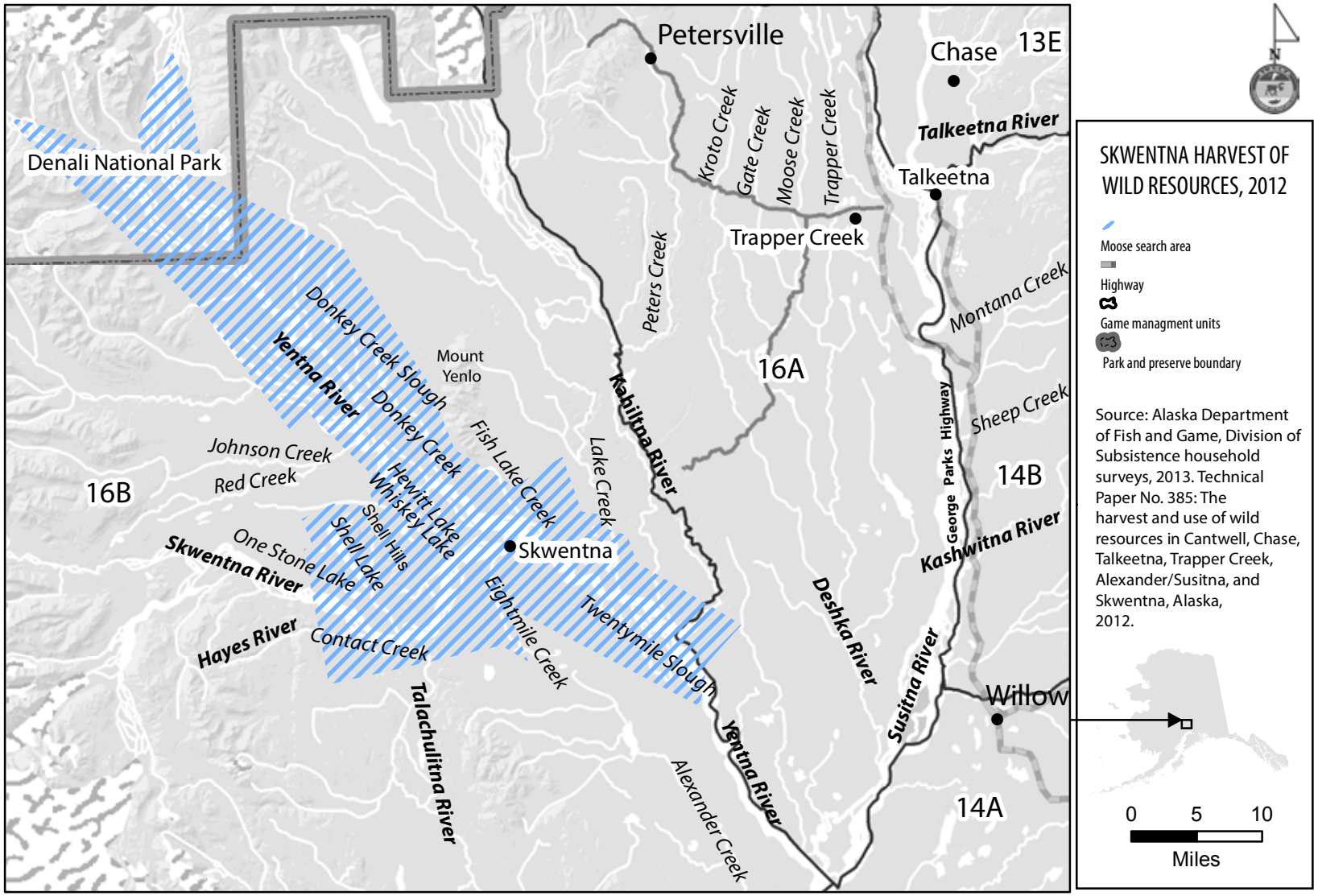

Figure 6-10. – Moose search areas, Skwentna, 2012.

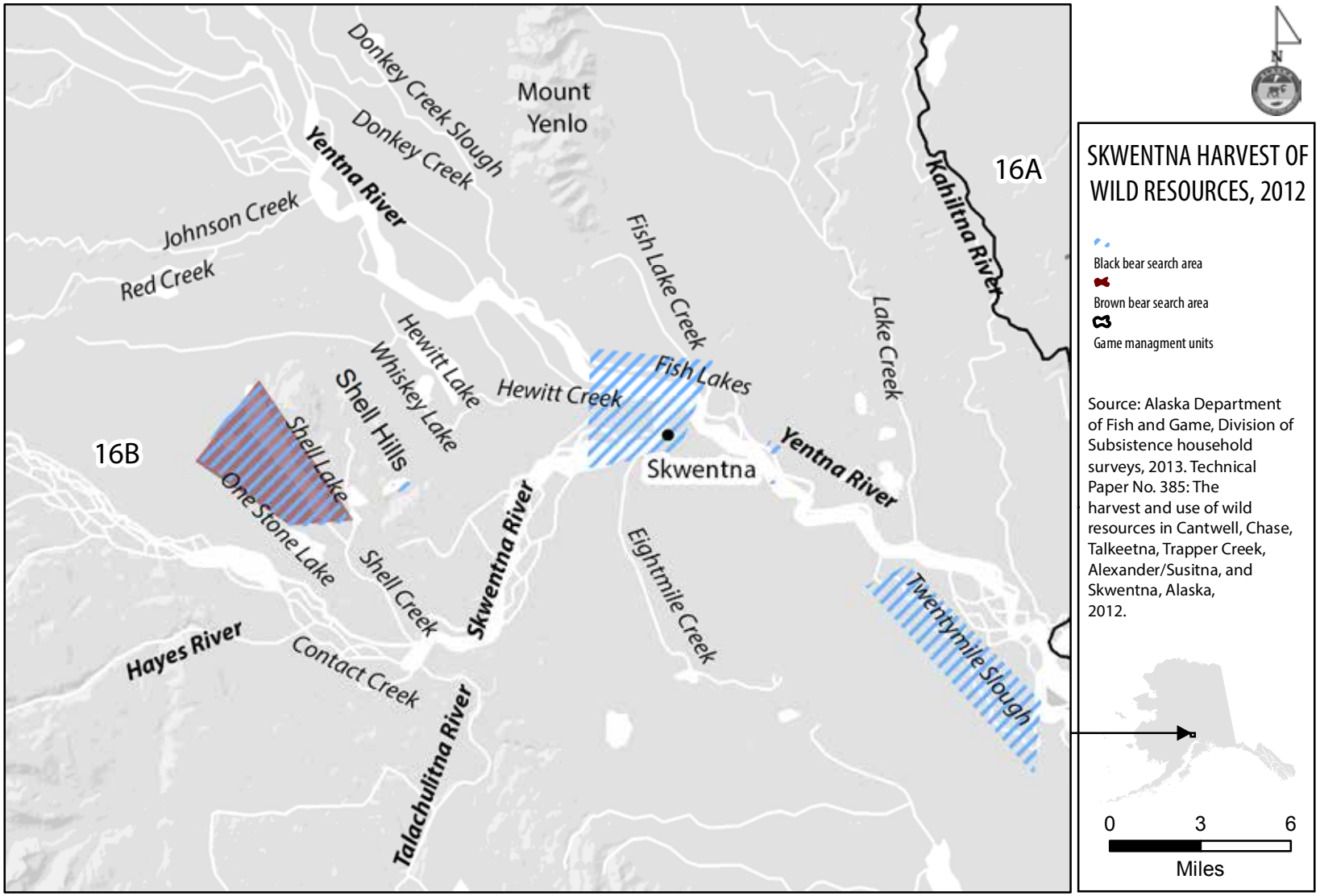

Figure 6-11. – Black bear and brown bear search areas, Skwentna, 2012.

Table 6-9. – Estimated harvests of small land mammals by month, Skwentna, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	4.7	0.0	**7.0**
Coyote	7.0	3.5	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	**17.5**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–red phase	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	**9.3**
Snowshoe hare	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	2.3	7.0	0.0	**18.7**
River (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	**3.5**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	**4.7**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	51.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.8	32.7	0.0	**103.8**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2	8.2	2.3	5.8	5.8	0.0	**29.2**
Northern flying squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	**1.2**
Weasel	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	4.7	0.0	**14.0**
Wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**2.3**
Total	**74.7**	**7.0**	**5.8**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	**10.5**	**4.7**	**39.7**	**63.0**	**0.0**	**211.2**

Source ADF&G Division of Subsistence household surveys, 2013.

SMALL LAND MAMMALS/FURBEARERS

The harvest and use of small land mammals is a traditional activity for Skwentna residents, both for food and for furbearer trapping as a source of income. There are a handful of active trappers among Skwentna residents today and some households actively pursue small land mammals for food, particularly snowshoe hares and beavers.

As listed in Table 6-4, the total harvest of small land mammals by Skwentna residents in 2012 for food was 88 lb (1 lb per capita). The harvest of small land mammals composed approximately 1% of Skwentna's total harvest of wild food resources in 2012. The majority of Skwentna's small land mammal food harvest came from snowshoe hares (37 lb) and beavers (35 lb); these species were harvested in colder months, including January and September through December (Table 6-9). Furbearers such as coyotes, foxes, land (river) otters, lynx, martens, weasels, and wolverines were also harvested— mostly for sale in the fur market (Figure 6-12). During the 2012 household survey, some Skwentna residents reported harvesting red (tree) squirrels and flying squirrels, but it is unclear if all or some of these reported harvests were used for human consumption or for dog food.

The search and harvest areas for furbearers in 2012 included the corridors of the Yentna and Skwentna rivers; the Hayes and Talachulitna rivers; Johnson, Red, Donkey, Contact, and Shell creeks; and adjacent hillsides, meadows, sloughs, and lakes (Figure 6-13).

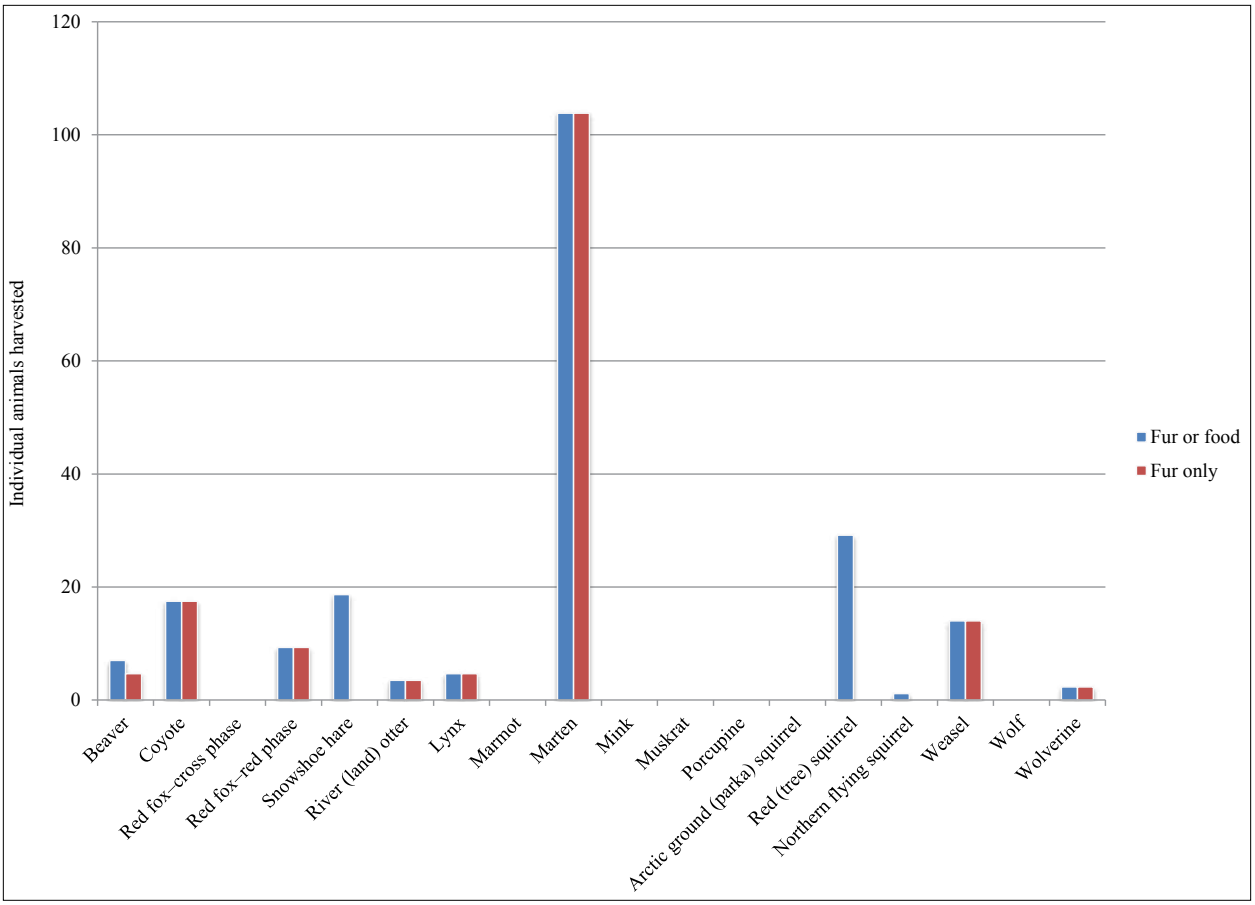

Figure 6-12. – Estimated harvests of small land mammals for food and fur only, Skwentna, 2012.

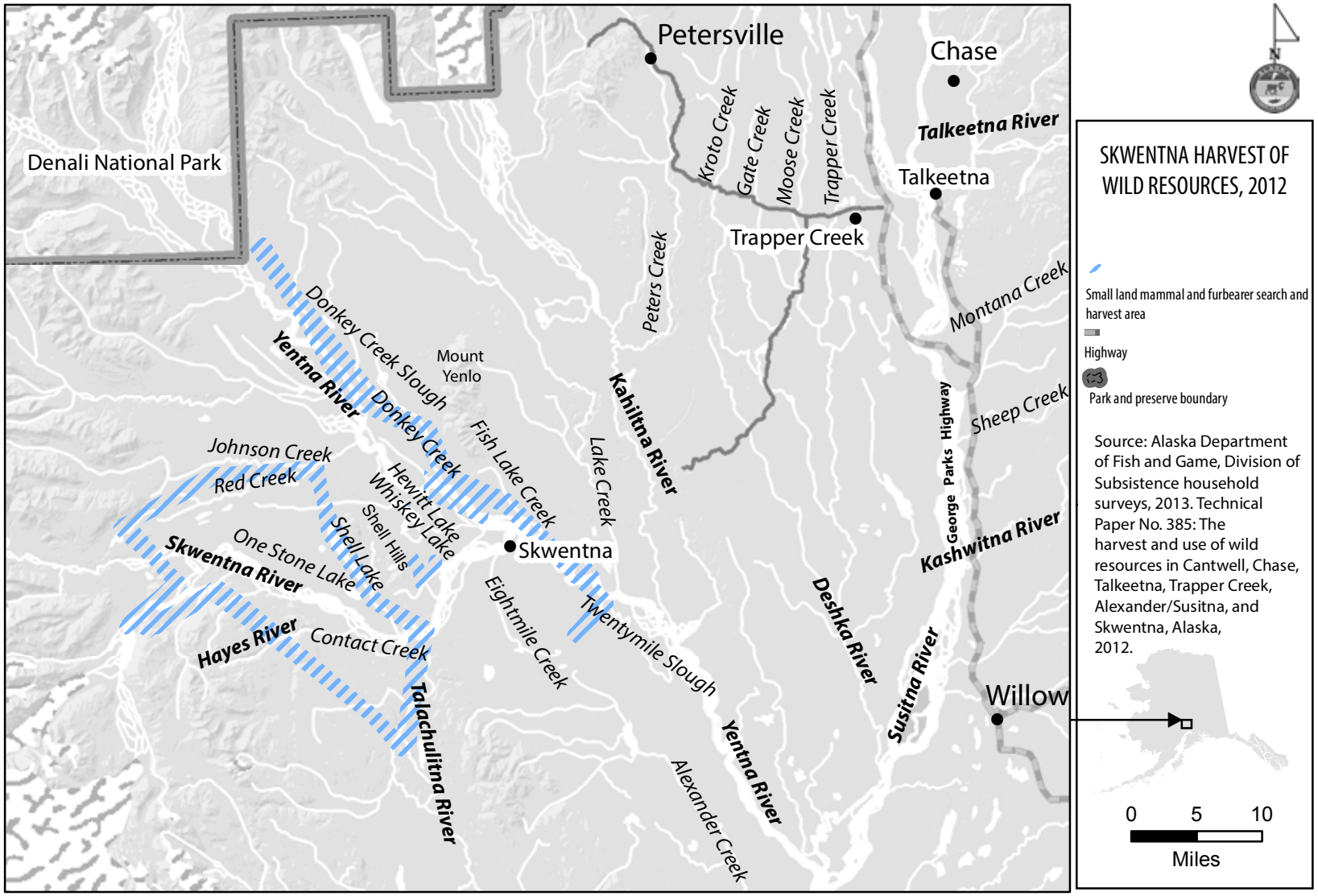

Figure 6-13. – Small land mammals and furbearers search and harvest areas, Skwentna, 2012.

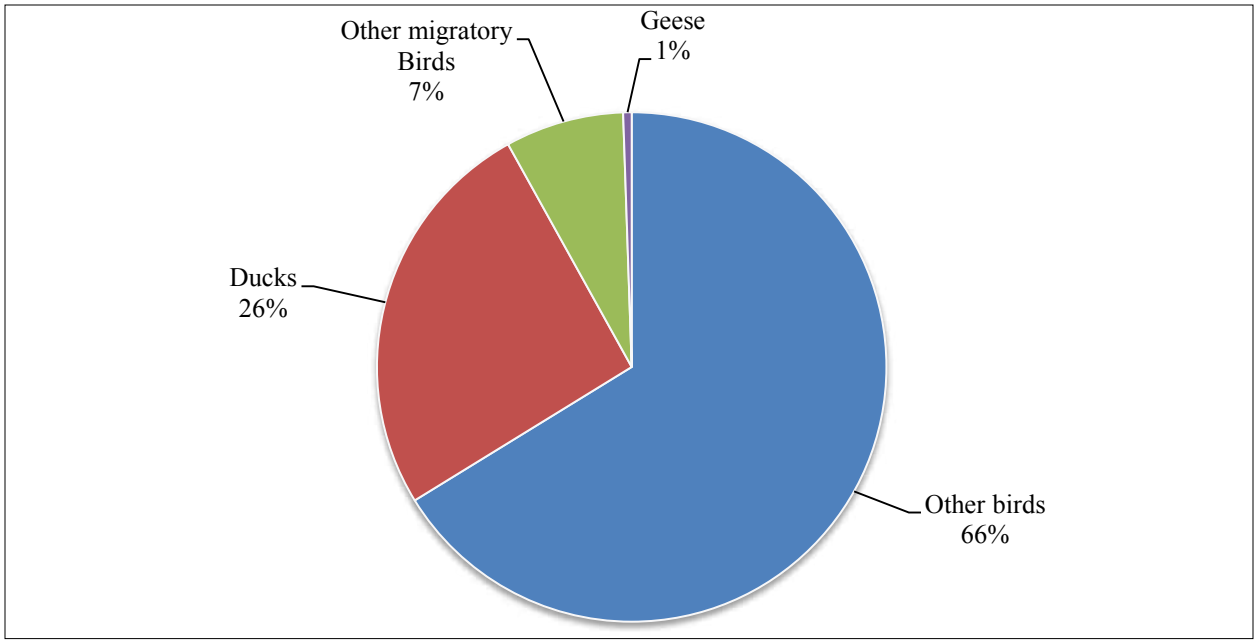

Figure 6-14. – Composition of bird harvest, Skwentna, 2012.

BIRDS AND EGGS

Birds were harvested and used by 67% of Skwentna households (Table 6-4). The total harvest of upland game birds, which includes grouses and ptarmigan, was 172 lb, or a little less than 3 lb per capita. Non-migratory birds composed 66% of the total bird harvest (Figure 6-14). The total harvest of migratory birds was an estimated 88 lb, or a little more than 1 lb per capita.

Spruce grouse accounted for most of the bird harvest by the community (136 lb, or slightly more than 2 lb per capita), followed by mallard ducks, which provided 43 lb, or less than 1 lb per capita. Ptarmigan provided an additional 26 lb of wild food for the community and 14 individual ruffed grouse were harvested. Aside from mallard ducks, the other duck species harvested included goldeneyes, mergansers, long-tailed ducks, northern pintails, scaups, teals, and wigeons. Additionally, 1 Canada goose and 2 sandhill cranes were harvested by Skwentna residents in 2012 (Table 6-4). Most bird harvests by Skwentna residents occur during fall. Ptarmigan are hunted primarily during winter (Table 6-10).

In 2012, Skwentna residents harvested upland birds in the corridors of the Yentna River, Skwentna River, Eightmile Creek, Fish Lake Creek, and Shell Creek, around Shell and One Stone lakes, and on roads and ATV trails in the vicinity of Skwentna proper. Migratory birds were hunted on the Yentna and Skwentna rivers, at Hewitt Lake, and at One Stone Lake (Figure 6-15).

Table 6-10. – Estimated bird and bird egg harvest by season, Skwentna, 2012.

	Estimated harvest by season					
Resource	Winter	Summer	Spring	Fall	Season unknown	**Total**
Canvasback	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**
Goldeneye	0.0	0.0	0.0	1.2	0.0	**1.2**
Mallard	0.0	0.0	0.0	43.2	0.0	**43.2**
Merganser	0.0	0.0	0.0	3.5	0.0	**3.5**
Long-tailed duck	0.0	0.0	0.0	1.2	0.0	**1.2**
Northern pintail	0.0	0.0	0.0	2.3	0.0	**2.3**
Scaup	0.0	0.0	0.0	2.3	0.0	**2.3**
Black scoter	0.0	0.0	0.0	0.0	0.0	**0.0**
Green-winged teal	0.0	0.0	0.0	12.8	0.0	**12.8**
Unknown teal	0.0	0.0	0.0	7.0	0.0	**7.0**
Wigeon	0.0	0.0	0.0	7.0	0.0	**7.0**
Unknown ducks	0.0	0.0	0.0	1.2	0.0	**1.2**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Cackling goose	0.0	0.0	0.0	1.2	0.0	**1.2**
Canada goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose	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**
Sandhill crane	0.0	0.0	0.0	2.3	0.0	**2.3**
Spruce grouse	8.2	26.8	3.5	156.3	0.0	**194.8**
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ruffed grouse	7.0	0.0	0.0	7.0	0.0	**14.0**
Unknown grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigan	42.0	0.0	5.8	4.7	0.0	**52.5**
Unknown duck eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown gull eggs	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

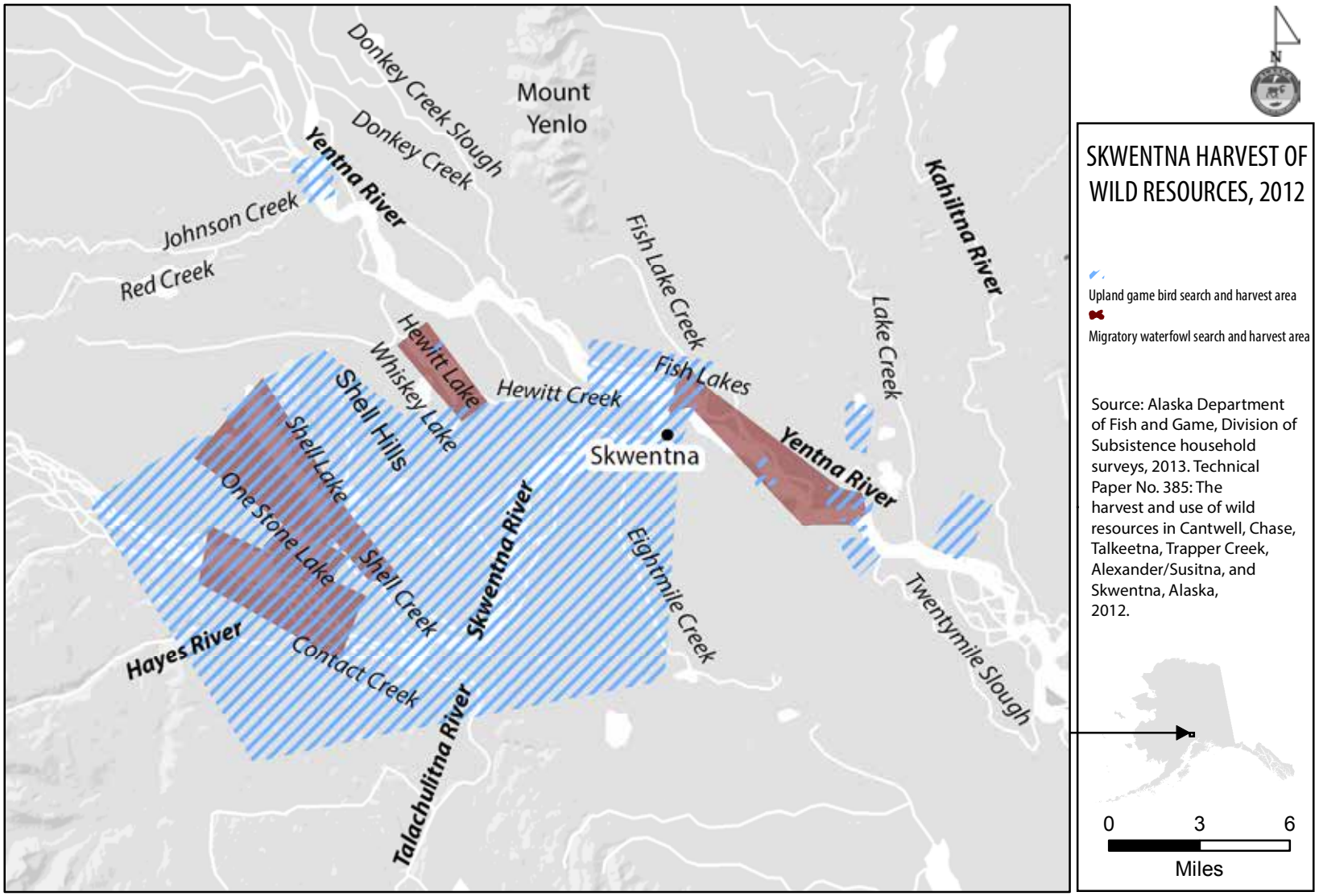

Figure 6-15. – Upland game birds and migratory waterfowl search and harvest areas, Skwentna, 2012.

MARINE INVERTEBRATES

As listed in Table 6-4, the total harvest of marine invertebrates by Skwentna residents in 2012 was made up of an estimated 44 gallons of clams (73% razor clams and 27% pinkneck clams). The harvest of marine invertebrates totaled approximately 1% of the total wild food harvest in 2012 (Figure 6-3). Marine invertebrates were used by 17% of households and were harvested on the Kenai Peninsula near Clam Gulch.

VEGETATION

The majority (97%) of households in Skwentna harvested and used vegetation during the 2012 study year (Table 6-4). Firewood was used by 93% households to heat homes, and most of the households rely on firewood for all of their heat.

In 2012, Skwentna residents harvested 487 lb, or 8 lb per capita, of edible vegetation. Edible vegetation consisted of blueberries, highbush cranberries, crowberries, gooseberries, currants, huckleberries, raspberries, salmonberries, watermelon berries, serviceberries, fiddlehead ferns, nettle, Hudson's Bay (Labrador) tea, dandelion greens, wild rose hips, yarrow, fireweed, and mushrooms. Berries were used by 70% of households and were harvested by 67% of households. Plants, greens, and mushrooms were harvested and used by 47% percent of households (Table 6-4).

Berries were harvested around Skwentna proper, on the north bank of the Yentna River between Lake Creek and Fish Lake Creek, around Hewitt Creek, at Shell and One Stone lakes, and around the Big Lake area on the road system (Figure 6-16). Firewood was harvested along the Yentna and Skwentna rivers, Hewitt Creek, and around Shell and One Stone lakes.

COMPARING HARVESTS AND USES IN 2012 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2012 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 6-11 reports the number of valid responses for each category, the number of households that did not respond, and the number of households that did not use a resource category or all resources combined. In Table 6-11, 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 responses to the "less, same, more" assessment question. Households that said they did not ordinarily "use" something are not included within the results. This results in

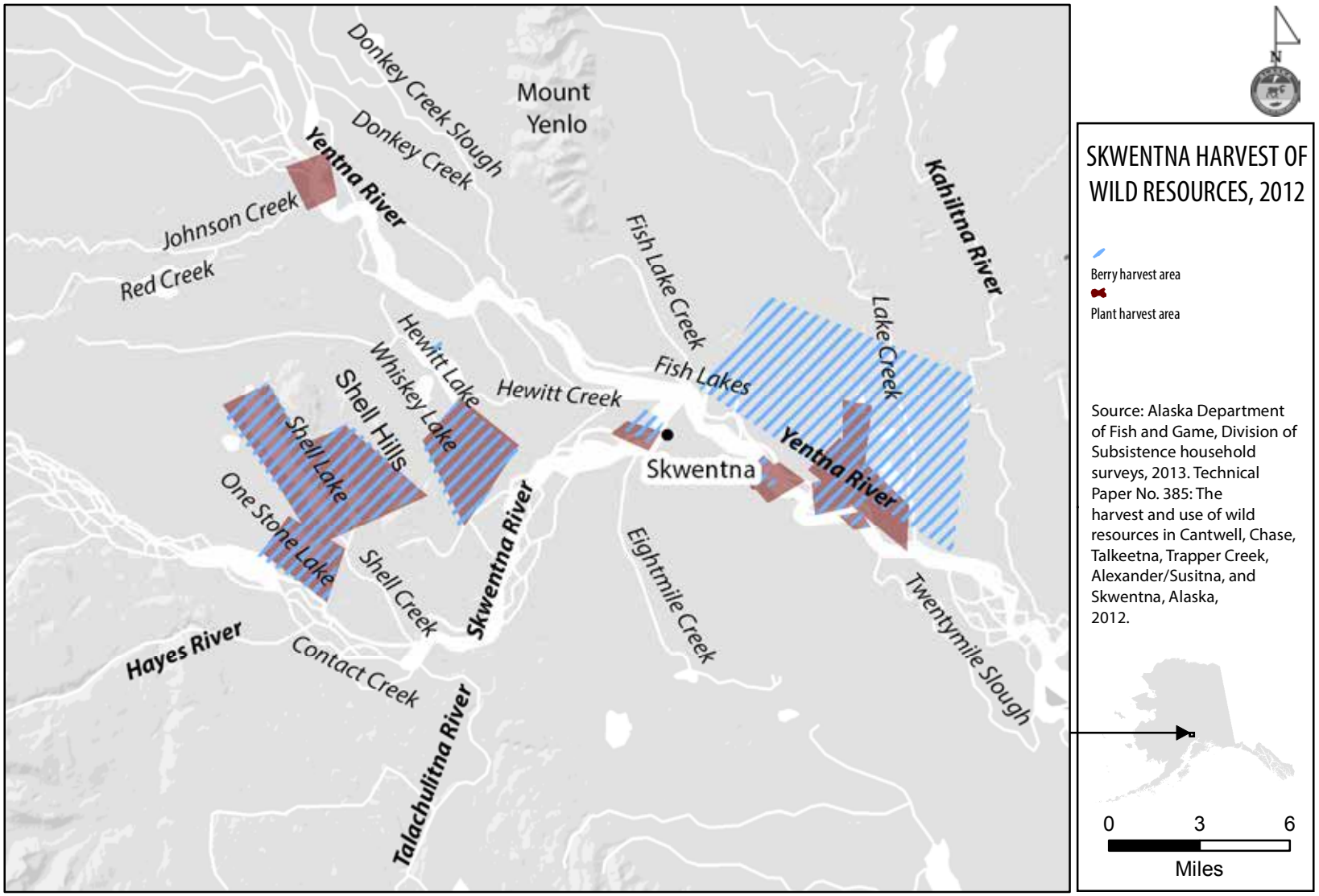

Figure 6-16. – Berries and plants, greens, and mushrooms search and harvest areas, Skwentna, 2012.

Table 6-11. – Changes in household uses of resources compared to recent years, Skwentna, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	30	30	25	83.3%	29	96.7%	12	40.0%
All resources	30	30	14	46.7%	13	43.3%	3	10.0%
Salmon	30	29	17	58.6%	9	31.0%	3	10.3%
Nonsalmon fish	30	26	6	23.1%	18	69.2%	2	7.7%
Large land mammals	30	27	12	44.4%	13	48.1%	2	7.4%
Small land mammals	30	9	3	33.3%	4	44.4%	2	22.2%
Marine mammals	30	0	0	0.0%	0	0.0%	0	0.0%
Migratory birds	30	8	1	12.5%	6	75.0%	1	12.5%
Other birds	30	21	7	33.3%	14	66.7%	0	0.0%
Bird eggs	30	0	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	30	5	0	0.0%	5	100.0%	0	0.0%
Vegetation	30	28	8	28.6%	15	53.6%	5	17.9%

Source ADF&G Division of Subsistence household surveys, 2013.

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

b. Percentages based on valid responses only.

c. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

fewer responses for less commonly used categories, such as small mammals or marine mammals, and manifests in the chart as a very short bar compared to categories such as salmon or vegetation, which are ordinarily used by most households. Some households did not respond to the question.

Taking all the resource categories into consideration, 47% Skwentna households said they used less amounts of wild resources in general over the previous 12 months compared to recent years. A slightly smaller number, 43% of all households, said they used about the same amount of wild resources in 2012 compared to recent years. Only 10% said they used more (Table 6-11). Skwentna households reported that use levels of salmon had changed more than any other resource category (Figure 6-17). A majority of households (59%) reported using less salmon during the previous 12 months compared to recent years (Table 6-11). Meanwhile, 48% of household said they used about the same amount of large game during 2012 and 44% said they used less.

Table 6-12 depicts the reasons Skwentna 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 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 hunting, fishing, and gathering activities.

Of the surveyed households that provided assessments in the 2012 survey, the reasons most cited

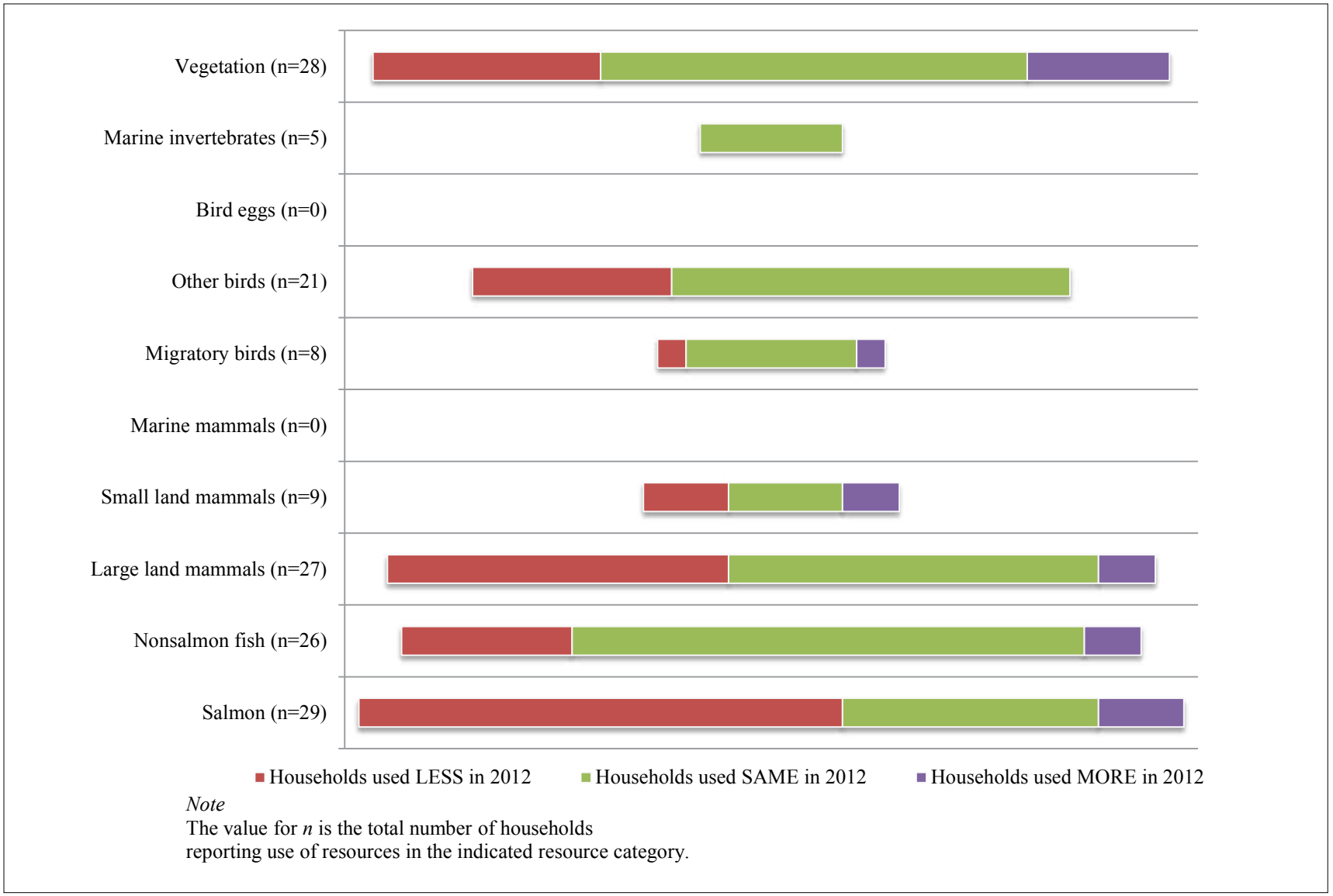

Figure 6-17. – Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Skwentna, 2012.

Table 6-12. – Reasons for less household uses of resources compared to recent years, Skwentna, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	30	25	4	16.0%	14	56.0%	0	0.0%	1	4.0%	3	12.0%	8	32.0%	2	8.0%	6	24.0%
All resources	30	14	2	14.3%	6	42.9%	0	0.0%	0	0.0%	1	7.1%	2	14.3%	1	7.1%	4	28.6%
Salmon	29	17	3	17.6%	7	41.2%	0	0.0%	1	5.9%	1	5.9%	6	35.3%	0	0.0%	2	11.8%
Nonsalmon fish	26	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	3	50.0%
Large land mammals	27	12	2	16.7%	5	41.7%	0	0.0%	0	0.0%	2	16.7%	1	8.3%	1	8.3%	1	8.3%
Small land mammals	9	3	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	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 birds	8	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Other birds	21	6	1	16.7%	2	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	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%
Vegetation	28	8	1	12.5%	3	37.5%	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	4	50.0%

-continued-

Table 6-12.–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	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	30	25	0	0.0%	6	24.0%	2	8.0%	1	4.0%	0	0.0%	2	8.0%	0	0.0%	1	4.0%
All resources	30	14	0	0.0%	3	21.4%	0	0.0%	0	0.0%	0	0.0%	1	7.1%	0	0.0%	0	0.0%
Salmon	29	17	0	0.0%	2	11.8%	1	5.9%	1	5.9%	0	0.0%	1	5.9%	0	0.0%	1	5.9%
Nonsalmon fish	26	6	0	0.0%	4	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%
Large land mammals	27	12	0	0.0%	2	16.7%	1	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	9	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%
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 birds	8	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	21	6	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	2	33.3%	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	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%
Vegetation	28	8	0	0.0%	3	37.5%	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting less use as a base.

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

b. The number of households that gave a valid response in at least one of the categories. Households are counted only once even though they may give more than one valid response.

Table 6-13. – Reasons for more household uses of resources compared to recent years, Skwentna, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help		Other	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	30	12	3	25.0%	1	8.3%	1	8.3%	1	8.3%	3	25.0%	3	25.0%	0	0.0%	1	8.3%
All resources	30	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
Salmon	29	3	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	26	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%
Large land mammals	27	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	9	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%
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 birds	8	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	21	0	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	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%
Vegetation	28	5	1	20.0%	0	0.0%	0	0.0%	0	0.0%	3	60.0%	1	20.0%	0	0.0%	0	0.0%

-continued-

Table 6-13.– Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	30	12	0	0.0%	0	0.0%	4	33.3%	0	0.0%	0	0.0%	1	8.3%
All resources	30	3	0	0.0%	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%
Salmon	29	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%
Nonsalmon fish	26	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	27	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	9	2	0	0.0%	0	0.0%	1	50.0%	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%
Migratory birds	8	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	21	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%
Marine invertebrates	5	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	28	5	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, 2013.

Note Percentages are calculated using the number of households reporting more use as a base.

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

b. The number of households that gave a valid response in at least one of the categories. Households are counted only once even though they may give more than one valid response.

Table 6-14. – Reported impact to households responding that they did not get enough of a type of resource, Skwentna, 2012.

		Households getting enough _____.				Impact to those not getting enough _____.									
	Sample	Valid responses		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Salmon	30	29	96.7%	12	41.4%	0	0.0%	0	0.0%	5	41.7%	5	41.7%	2	16.7%
Nonsalmon fish	30	26	86.7%	8	30.8%	0	0.0%	0	0.0%	7	87.5%	0	0.0%	1	12.5%
Marine invertebrates	30	5	16.7%	3	60.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%
Large land mammals	30	27	90.0%	14	51.9%	0	0.0%	0	0.0%	6	42.9%	7	50.0%	1	7.1%
Marine mammals	30	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	30	9	30.0%	6	66.7%	0	0.0%	0	0.0%	3	50.0%	2	33.3%	1	16.7%
Migratory birds	30	8	26.7%	2	25.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Other birds	30	22	73.3%	8	36.4%	0	0.0%	0	0.0%	7	87.5%	1	12.5%	0	0.0%
Bird eggs	30	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	30	29	96.7%	9	31.0%	0	0.0%	0	0.0%	7	77.8%	2	22.2%	0	0.0%
All resources	30	30	100.0%	15	50.0%	0	0.0%	0	0.0%	5	33.3%	8	53.3%	2	13.3%

Source ADF&G Division of Subsistence household surveys, 2013.

for less use of wild resources overall were resources less available (43%), weather and environmental conditions (29%), working/no time (21%), and lack of effort or family/personal reasons (14% each). Resource availability and lack of effort were the main reasons cited for less use of salmon and resource availability was the primary reason given for less use of large land mammals. More success, increased availability, and increased effort were the main reasons cited for more use of any resource (Table 6-13).

In terms of how the lack of abundance or availability of resources impacted households, not getting enough large game seemed to have the greatest impact. Table 6-14 shows the responses households gave regarding the impact of not getting enough resources in terms of it being a minor impact, major impact, or severe impact. Of the 30 valid responses to this question, 15 households said they did not get enough resources overall. Of these, 5 households said the impact was minor, 8 said it had a major impact, and 2 noted a severe impact on their food security. Of the resource categories, the most noticeable impact was for large game. Overall 14 households said they did not get enough large game and of those 6 said the impact was minor, 7 said it was a major impact, and 1 said the impact was severe. Another notable response was for salmon; 12 households said they did not get enough salmon. Of those households, 5 said the impact was minor, 5 major, and 2 severe.

HARVEST DATA

Changes in the harvest of resources by Skwentna residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Skwentna in 1986 (Stanek, Foster, and Fall 1988).[4] A comparison of the 1986 and 2012 harvest years for Skwentna shows a slight decline in overall subsistence resource use by community residents in the 26-year period. For instance, in 1986, Skwentna residents harvested 178 lb of wild resources per capita but in 2012 harvested 161 lb of wild resources per capita; this represents a decline of 17 lb per capita (Stanek, Foster, and Fall 1988). The composition of harvests by resource category also shifted somewhat. Figure 6-18 summarizes what percentage of the harvest each major resource category contributed to the total annual harvest for the 2 comprehensive study years of 1986 and 2012.

In 1986, salmon made up 25% of Skwentna's total subsistence harvest, and in 2012, salmon made up 34% of the total harvest. Nonsalmon fish harvests also increased from 5% of the total in 1986 to 12% of the total in 2012. Likewise, vegetation harvests increased from 2% of the total harvest in 1986 to 5% of the total harvest in 2012. However, land mammal harvests decreased from 59% of the total harvest in 1986 to 45% of the total harvest in 2012 (Stanek, Foster, and Fall 1988) (Figure 6-18).

According to ethnographic information obtained during the 2012 study, the change in resource

4. Stanek, Foster, and Fall (1988, 115) notes that although the per capita harvest between Skwentna and Alexander Creek are different, the composition of the harvest (percentage of each category) for both communities have been combined.

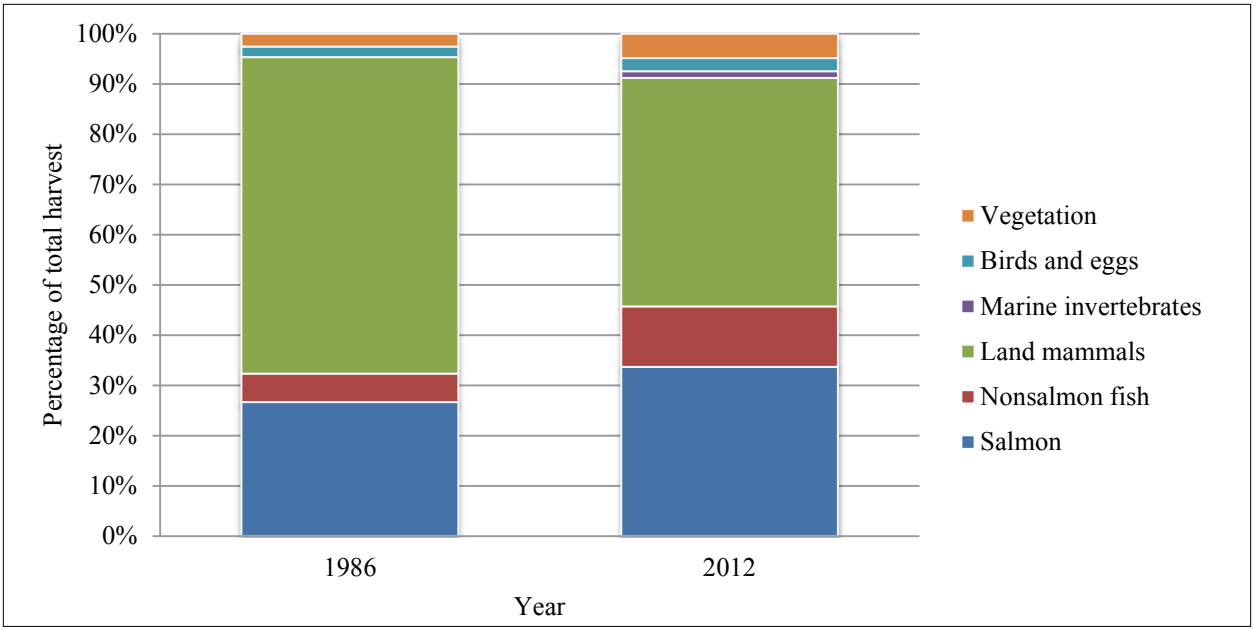

Figure 6-18. – Composition of total harvest as a percentage of usable weight, Skwentna, 1986 and 2012.

composition to more fish harvests and less land mammal harvests from 1986 to 2012 is a reflection of local adaptations to shifting resource availability. Skwentna households explained that moose were once much more populous in the local area and that moose hunting success was greater in previous decades than today. While salmon returns were reported to be less abundant than in the past, Skwentna residents said that they still rely heavily on salmon for food. "Salmon is just as important as the traditional subsistence moose in Skwentna, if not more. Everyone gets some salmon but if moose populations are down, maybe not everyone gets moose. Everyone gets some salmon," explained a Skwentna respondent.

Additionally, Skwentna residents explained that the introduction of invasive and predatory northern pike to the Susitna Basin watershed has led to a decline in the returns of some salmon stocks to local rivers and that they have adapted to this change by increasing their harvest and use of now abundant northern pike as a food source, a practice which is likely reflected by the increase in the harvests of nonsalmon fish from 1986 to 2012 (Figure 6-18).

CURRENT AND HISTORICAL HARVEST AREAS

The 2012 research provides the first known subsistence harvest mapping data available for the Skwentna community for a single year. An earlier report documents limited mapping data (Stanek, Foster, and Fall 1988); however, the maps depict lifetime use areas and therefore are not comparable to the maps shown in this report that documents 1 year of harvesting effort.

LOCAL COMMENTS AND CONCERNS

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.

SALMON

Salmon are one of the most important traditional wild resources used by Skwentna residents for subsistence, especially sockeye salmon, coho salmon, and Chinook salmon. Some chum and pink salmon are also used by residents, but not extensively. Community residents reported that beginning in the mid-1990s they began to observe declines in salmon returns in local rivers and streams, especially Chinook salmon.

Today, sockeye salmon and coho salmon are the primary species sought by the community. Coho salmon populations are considered generally healthy by respondents and most community members reported that in recent years sockeye salmon harvests have remained adequate to meet local needs. However several respondents also expressed concern about observed sockeye salmon declines. For instance, respondents living at Shell Lake reported that healthy sockeye salmon returns have not occurred in Shell Creek for half a decade or more. These respondents cited beaver dams as the primary cause of the Shell Creek decline, and noted that substantial efforts were made in previous years to destroy these dams, but that most efforts have since ceased. Some respondents reported observations that Chinook salmon runs remain healthy in the Talachulitna River and the Skwentna River, but that numbers have dropped off severely in many other tributaries of the Yentna and Skwentna rivers.

Skwentna respondents believed that the primary cause of salmon declines in the area is historical overharvesting by both the commercial and sport fisheries, including the fisheries that target Chinook and sockeye salmon as well as the commercial fisheries that target other ocean species, such as pollock. Skwentna respondents believed that ocean-based commercial fisheries tend to catch excessive amounts of salmon inadvertently as bycatch. Community members also believed that commercial salmon fisheries in Cook Inlet have had a negative impact on annual salmon returns to the Susitna Basin watershed and respondents reported observations of more abundant runs during commercial closures. Additionally, respondents believed that demand for Chinook salmon in the Susitna Basin sport fishery has become unsustainable in recent years and many respondents said that they have chosen not to participate in the fishery any longer because of excessive crowding by non-local sport fishermen in pursuit of Chinook salmon. Respondents also expressed concern

that a future sport fishery demand for coho salmon may negatively impact coho salmon returns in the near future. Skwentna respondents consider salmon egg and smolt predation in local rivers and lakes by northern pike a secondary, but nevertheless significant, cause of salmon run declines which will be discussed below.

NONSALMON FISH

Skwentna residents have traditionally relied on rainbow trout, burbot, Arctic grayling, and whitefishes for subsistence. Community members reported observations of significant decline of rainbow trout in the area and said that, compared to the past, very few rainbow trout are caught by residents. Community members believed that declining rainbow trout abundance has been caused by overharvesting in the local sport fishery and by northern pike predation on rainbow trout eggs and juveniles. Some respondents reported observations that northern pike have severely impacted many other nonsalmon fish species native to the area. "We have lost five species of fish since the pike. Rainbows [trout], whitefish, suckers, [Arctic] grayling, and kokanee [sockeye salmon] have disappeared from Shell Lake," said one respondent.

Although native to some Alaska waters north and west of the Alaska Range, northern pike are not native to the Susitna Basin watershed and are considered an aquatic nuisance species by state managers (Southcentral Alaska Northern Pike Control Committee n.d.). Northern pike were illegally introduced into the area during the 1950s. The population expanded and became a primary predator of juvenile salmon and trout in the region. Negative impacts to these populations in the Susitna Basin watershed led ADF&G to implement ongoing northern pike eradication efforts in the area (Southcentral Alaska Northern Pike Control Committee n.d.). Skwentna residents participate in local northern pike eradication efforts by harvesting numerous northern pike and utilizing them as an alternative food resource. However, community members expressed a view that, once established, northern pike populations are impossible to eradicate entirely and cited examples of other fisheries in Alaska where salmon remain populous despite their sharing of habitat with northern pike. For this reason, respondents believed that northern pike are only one part of the problem and that commercial fishing and sport fishing for Susitna Basin salmon stocks needs to be more heavily regulated by managers if annual salmon returns are to ever recover to past levels.

While expressing frustration that they are observing populations of these nonsalmon fish species decline, Skwentna community members reported they have adapted by putting forth a large effort to harvest northern pike and utilize them as a subsistence food. In fact, because northern pike are easy to catch and abundant in the area, they have recently become a favorite food for Skwentna respondents: "I consider pike a very important part of the subsistence lifestyle here, especially living next to a lake that has them. It is better [eating] than halibut if prepared correctly," explained one respondent. Nevertheless, most respondents said they would like to see the northern pike population

decline to a level that would not severely impact salmon and trout. Respondents said that northern pike have also become a popular target of the local sport fishery and many guides have come to rely on providing northern pike fishing opportunities to their clients. State regulation makes it illegal to release a northern pike back into the water and some respondents complained that sport fishers often waste northern pike meat by leaving carcasses on the lake banks to rot.

MOOSE

Alongside salmon, moose is the most important wild resource for Skwentna residents. To obtain moose, most Skwentna residents rely on obtaining the state Tier II permit. This hunt allows permittees to hunt for any bull moose from December 15–March 31 in GMU 16B. Respondents explained that winter is the traditional time for Skwentna hunters to pursue moose and said that few Skwentna hunters make any serious effort to harvest moose during the general moose hunting season occurring August 20–September 25.

Respondents said that winter moose hunting is preferred because travel is easier when the thick summer vegetation thins out and the ground freezes. Harvesting a moose in the winter also makes meat care and preservation easier: "We need to be able to store our foods without refrigeration, winter is when we need to take a moose for that reason," said a Skwentna hunter. Respondents also explained that harvesting a moose in winter is easier because many of the moose that spend winters in the uplands tend to migrate to the flatter river basin country close to the community at the onset of winter: "Moose don't come down here in the summertime. This is their winter country primarily," explained a Skwentna hunter. Thus, the winter hunt allows Skwentna hunters the opportunity to harvest a moose close to home and in so doing avoid excessive expenses for fuel and the more lengthy amounts of time required to be successful during the late summer–fall hunt. Respondents said that the Tier II winter hunt is also important to residents because it provides an opportunity for a hunter to harvest an "any bull" moose rather than the spike fork 50-in antler restriction imposed during the state general season moose hunt in GMU 16B.

Tier II permits are scored according to local specific criteria, yet all Alaska residents are eligible to apply for a Tier II permit and Skwentna community members expressed concern that hunters with no ties to the area are untruthful on their Tier II applications and are thus unjustly awarded a Tier II permit. Respondents expressed concern that the state has been lax in enforcement of Tier II eligibility and believe that hunters from outside the area being awarded the Tier II permit have made moose hunting opportunities increasingly difficult for residents of the area. Some community members reported applying for Tier II moose permits and then not being awarded one. Skwentna respondents believed that the State should give preference to local residents when issuing Tier II moose permits.[5] For example, a Skwentna hunter said: "If 60 people live here and they give 100 Tier

5. In December 1989, the Alaska Supreme Court ruled that the rural residency provision in Alaska's subsistence law

II permits, and I hear time and time again that people locally aren't getting them, what is wrong? It should go to us first."

Skwentna community members also explained that the local moose population has declined significantly over the last 2 decades and that as a result most hunters cannot rely on harvesting a moose every year. Respondents explained that the major cause of population decline was a large increase in GMU 16B moose mortality resulting from heavy bear and wolf predation during the 1990s. Because of the decline, the harvestable surplus of bull moose in GMU 16B was reduced and the State initiated the limited Tier II program for winter moose hunting in GMU 16B. Respondents observed that recent State efforts to control bear populations and increase bear harvests in GMU 16B have been successful at increasing the moose population in the Skwentna area, but they also believed that the moose population remains several years away from recovery to past levels. One hunter observed that moose presence has increased in the lower Yentna River watershed but remained sparse in the upper Yentna River and upper Skwentna River areas.

While moose mortality from predation is an ongoing concern for residents of Skwentna, several community members reported observations that moose hunters participating in the Tier II winter hunt are also having a detrimental impact on moose in the area. These respondents said that non-local hunters using modern snowmachine technology are putting unprecedented levels of pressure on overwintering moose. For example, according to a Skwentna hunter:

> Modern snowmachines are chasing moose hardcore through the snow in places that older machines could never get into. They are chasing the moose ragged and stressing them out. Non-locals come to Skwentna on these huge, expensive super-wide snowmachines that can get anywhere. They run the moose down and exhaust them without even seeing if they have antlers until they are ready to kill them. The moose break their legs and pull muscles in the deep snow and the young ones become really stressed. This happens over and over to the same moose in the same season and it definitely has an impact on their health … . They separate mothers from calves and do a lot of harm. Pregnant cows often abort their calves or have stillborns because of this stress. If they do give birth, they often don't have the energy to put into milk production or their milk isn't as good. This is a major factor in moose survival out here because there are a lot of people from town coming out here on their expensive machines.

Additionally, some Skwentna respondents believed that a recent change in State regulation to begin the Tier II winter moose hunt in GMU 16B on December 15 rather than November 15 was implemented primarily to allow non-locals who are awarded the Tier II permit access to GMU 16B

violated the Alaska Constitution. Currently, there is no regulation or permit requirement that uses "proximity to the use's domicile" to determine eligibility for any subsistence fishery or hunt.

during a time when the rivers are frozen enough to allow safe snowmachine travel from the road system. A Skwentna hunter explained:

> November 15 was a good time to start the moose hunt. It should not have been changed to December 15 just because no one [from the road system] can get out here in November. That allows locals to get first dibs on the moose. Moving the moose hunt from the 15th of December to the 15th of November would really help since non-locals would have a hard time getting up here earlier. Some political big wigs moved [the hunt start date] back to give their buddies in town better access.

In summary, most Skwentna respondents were supportive of the intensive management programs implemented in GMU 16B and believed that these efforts should continue. Despite this, several respondents recognized that human pressure has increased as predator populations have declined. Skwentna respondents also believed that the activities of non-local hunters greatly interfered with local residents' ability to harvest moose for subsistence. "These people that haven't lived in the area for several generations are grandfathered in [and awarded a Tier II permit]. They pull up to Deshka Landing on $40,000 trucks with huge trailers and huge snowmachines then claim they need the moose for 'subsistence.' That's not subsistence," said a Skwentna respondent.

GENERAL FISH AND WILDLIFE RESOURCES

Residents who actively pursue beavers reported that beavers have been plentiful in the area over recent years, and even speculated that increasing numbers of beaver dams have negatively impacted salmon returns, especially to Shell Lake. However, several community residents reported that snowshoe hares are scarce. One household reported actively pursuing porcupines for household consumption in the past but said that porcupines have been difficult to find over the previous 5-year period.

Upland game birds, particularly spruce grouse, are an important wild food for Skwentna households. In recent years ruffed grouse have begun to appear in the area. Some households reported recently harvesting ruffed grouse but most Skwentna households reported voluntarily avoiding the harvest of ruffed grouse for conservation purposes. These households said that they would like to give ruffed grouse populations in the area more time to grow and become abundant before attempting to harvest and use them. Some Skwentna households actively hunted ducks but residents reported that goose hunting in the area is generally unproductive.

Vegetation was considered to be an important resource to many Skwentna respondents, which is reflected in the fact that 97% of households used and harvested these resources. Berries, in particular, are important to the community and several residents were surprised that the survey results did not reflect an even greater berry harvest per household. A key respondent pointed out his affinity for

highbush cranberries, noting that he believes this to be a significantly underutilized yet abundant resource in the area. He said that the problem with highbush cranberries is that most people do not know how to prepare them, but since he has been training neighbors to produce juice, cranberry use has been on the rise. Other community members stressed the importance of local blueberries.

PROPOSED SUSITNA-WATANA DAM

Skwentna respondents expressed concern about changes in water flow and changes in water temperature resulting from construction of the proposed Susitna-Watana dam. Respondents were concerned that changing water levels may create both boat travel problems in the summer and snowmachine travel problems on river ice in the winter. Respondents also speculated that faster rivers resulting from dam discharge will cause increased erosion in the area. Respondents were greatly concerned that changes in the river system resulting from construction of the dam would have a negative effect on an already jeopardized Susitna River salmon fishery.

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ALEXANDER/SUSITNA

COMMUNITY BACKGROUND

At 61˚ latitude, the Susitna census designated place (CDP) is approximately 160 square miles and contains 2 historical communities—Alexander and Susitna. The CDP is located in the riverine lowlands at the southern end of the Susitna River drainage. The climate is in the transitional zone between coastal and Interior Alaska. The plant community is boreal forest composed of birch, spruce, and poplar trees. The understory is dominated by alders, willows, and highbush cranberries. Moose, black bears, brown bears, ptarmigan, grouse, salmon, trout, Arctic grayling, and a number of small land mammals are common in this area. Within the CDP, the Susitna River and Alexander Creek run parallel in a southerly direction and drain into Cook Inlet. The mouth of Alexander Creek is just west of the Susitna River mouth.

Alexander is located on the west bank of Alexander Creek approximately 2 miles from its mouth draining into Cook Inlet and approximately 27 miles northwest of Anchorage. Susitna is located on the southeast bank of the Susitna River, near its confluence with the Yentna River, approximately 27 miles upriver from the mouth of the Susitna River at Cook Inlet and approximately 32 miles northwest of Anchorage.

The locations today referred to as Susitna and Alexander were formerly important village sites of the Upper Cook Inlet Dena'ina Athabascans. What was once called Susitna Station, or *Tsat'ukegh*, was once home to more than 600 Alaska Native people (Kari and Fall 2003). Russian fur traders operated in the area and Susitna Station was likely the site of a Russian Orthodox chapel as early as the 1870s. The early economic history of the area after the Russian sale of Alaska to the United States was tied mostly to mining. The 1880 U.S. census listed 150 persons at Susitna Station, most of whom were Dena'ina. After 1895, Susitna Station grew in size as a hub on the supply route for prospectors traveling to Nome on the Iditarod Trail. In 1910, the population had grown to 257 persons, 74 of whom were Dena'ina. In the first part of the 20th century, 3 disease epidemics drastically reduced the Dena'ina population; the epidemics included whooping cough, measles, and a 1918 outbreak of influenza. In 1920, the U.S. census listed 48 persons at Susitna Station and in the 1930s most of the remaining Dena'ina relocated to the Dena'ina settlement of Tyonek, which is on the western shore of Cook Inlet. By 1935 the last storekeeper and postmaster at Susitna Station had moved away. A few Dena'ina remained at Susitna Station into the 1960s, however, until 1965 when the last Dena'ina man living there died (Kari and Fall 2003).

The Alexander Creek village site, or *Tuqen Kaq'*, was an important salmon fishing location for the traditional Upper Cook Inlet Dena'ina. Occupation and use of *Tuqen Kaq'* by Dena'ina declined following Euro-American contact, likely also as a result of the disease epidemics of the early 20th century. The 1910 U.S. census listed 16 Dena'ina as residing at Alexander Creek. In 1920 only 2 persons were listed (Kari and Fall 2003). By the 1940s Alexander Creek became reoccupied by some Alaska Native and non-Native families. It became a popular sport fishing location for Chinook salmon throughout the 20th century and several fishing lodges were developed on the creek. In the 1970s, the Alaska Native corporation Alexander Creek, Inc., requested federal recognition as a Native village under the Alaska Native Claims Settlement Act (ANCSA). The court deemed that Alexander Creek's population of 22 persons did not meet the minimum population of 25 persons required to receive ANSCA village status and benefits. In 1976, Alexander Creek, Inc., received "group status" as a member of Cook Inlet Region, Inc. (CIRI), an Alaska Native corporation, and was conveyed 1,686 acres of land from the State of Alaska (Alexander Creek, Inc. 2002).

Today the majority of year-round inhabitants of the Susitna CDP reside at Alexander. In 2012 only 1 permanent year-round household was identified at the former Susitna Station site. Twelve permanent year-round households were identified at the Alexander site. There are no government agency offices, schools, or stores located in either of the 2 communities. To obtain basic supplies and services, residents of the Susitna CDP travel to Anchorage by air, to Willow by boat to Deshka Landing and then by automobile to urban areas, and to Wasilla in the winter by snowmachine and then automobile. During the summer months, sport fishing lodges operate in Alexander Creek.

DEMOGRAPHY

According to the federal census, Alexander/Susitna had 18 residents in 2010; the ADLWD (2013) listed 16 residents in 2012 (Table 1-1). Available demographic information shows a population decline in the Susitna CDP since the year 2000 (Figure 7-1). The household survey conducted for this study in 2012 estimated the population at 24 residents, of which 10% were Alaska Native (Table 1-1). Prior to the study, Division of Subsistence researchers, in consultation with community

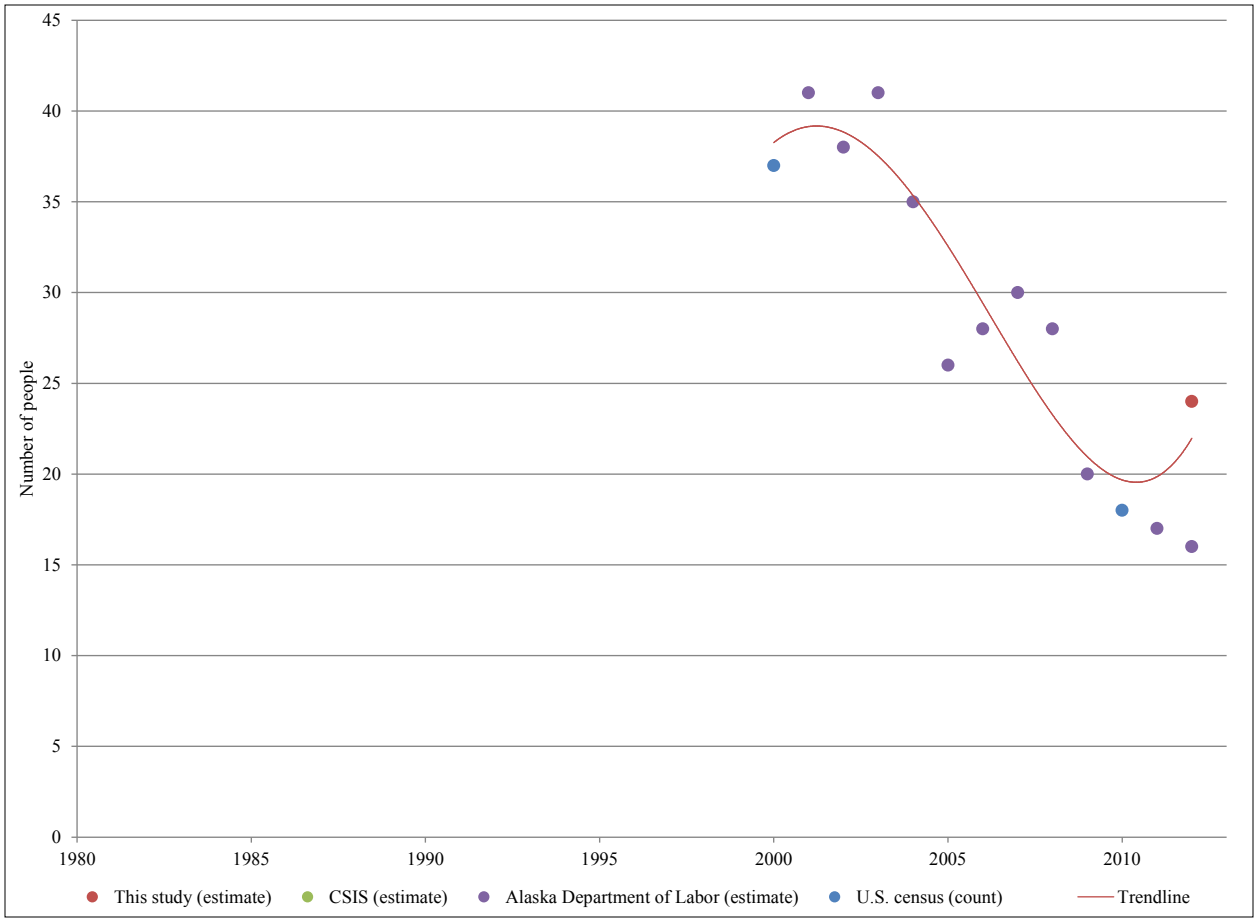

Figure 7-1. – Population history, Alexander/Susitna, 1980–2012.

officials and other knowledgeable respondents, estimated they would find 13 year-round households in Alexander/Susitna; the survey confirmed this. Of these, 11 households (85%) were interviewed (Table 1-6). The mean number of years of residency in Alexander/Susitna was 28 years, with the maximum length of residence being 48 years (Table 1-9). The largest age cohort for males was the 60–64 age range, and for females it was the 55–59 age range (Table 7-1; Figure 7-2). There were males and females represented in the same age cohorts with several exceptions; only males were represented in the 45–49, 50–54, and 80–84 age ranges. There were no residents younger than 45 years of age. Most (75%) of the household heads were born in other U.S. states (Table 1-10). Of those born in Alaska, 10% were born in Alexander/Susitna.

Table 7-1. – Population profile, Alexander/Susitna, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
5–9	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
10–14	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
15–19	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
20–24	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
25–29	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
30–34	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
35–39	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
40–44	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
45–49	1.2	9.1%	9.1%	0.0	0.0%	0.0%	1.2	5.0%	5.0%
50–54	1.2	9.1%	18.2%	0.0	0.0%	0.0%	1.2	5.0%	10.0%
55–59	1.2	9.1%	27.3%	4.7	44.4%	44.4%	5.9	25.0%	35.0%
60–64	3.5	27.3%	54.5%	3.5	33.3%	77.8%	7.1	30.0%	65.0%
65–69	2.4	18.2%	72.7%	1.2	11.1%	88.9%	3.5	15.0%	80.0%
70–74	2.4	18.2%	90.9%	1.2	11.1%	100.0%	3.5	15.0%	95.0%
75–79	0.0	0.0%	90.9%	0.0	0.0%	100.0%	0.0	0.0%	95.0%
80–84	1.2	9.1%	100.0%	0.0	0.0%	100.0%	1.2	5.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**13.0**	**100.0%**	**100.0%**	**10.6**	**100.0%**	**100.0%**	**23.6**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

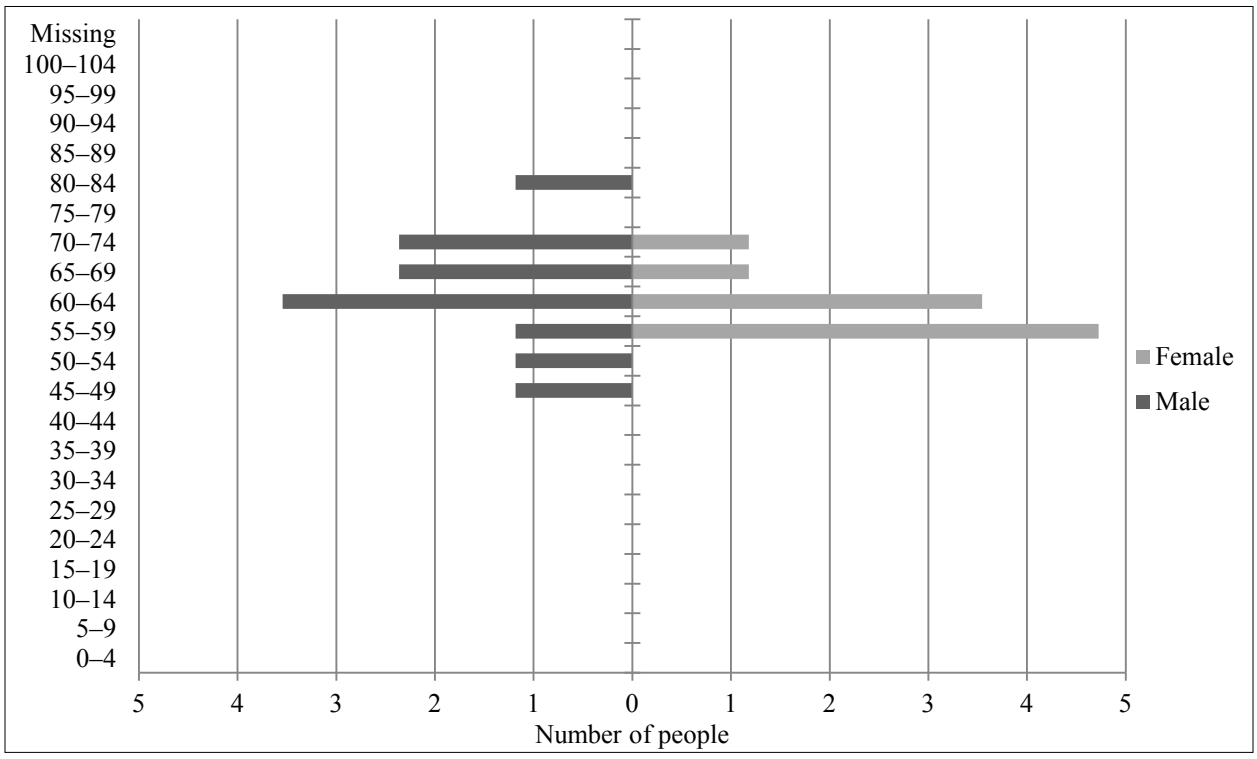

Figure 7-2. – Population profile, Alexander/Susitna, 2012.

Table 7-2. – Estimated earned and other income, Alexander/Susitna, 2012.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Services	12.0	2.9	$58,335	$4,487	18.3%
Retail trade	4.0	1.4	$17,500	$1,346	5.5%
Agriculture, forestry, and fishing	4.0	1.4	$10,938	$841	3.4%
Earned income subtotal	**16.9**	**5.8**	**$86,773**	**$6,675**	**27.3%**
Other income					
Pension/retirement		8.3	$109,587	$8,430	34.5%
Social Security		8.3	$77,012	$5,924	24.2%
Alaska Permanent Fund dividend		11.8	$18,111	$1,393	5.7%
Supplemental Security income		4.7	$12,526	$964	3.9%
Adult public assistance		4.7	$9,404	$723	3.0%
Food stamps		4.7	$2,816	$217	0.9%
Disability		4.7	$1,805	$139	0.6%
Longevity bonus		0.0	$0	$0	0.0%
Energy assistance		0.0	$0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0	0.0%
Unemployment		0.0	$0	$0	0.0%
Veterans assistance		0.0	$0	$0	0.0%
Native corporation dividend		0.0	$0	$0	0.0%
Child support		0.0	$0	$0	0.0%
Other		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Citgo fuel voucher		0.0	$0	$0	0.0%
Meeting honoraria		0.0	$0	$0	0.0%
Other income subtotal		**13.0**	**$231,261**	**$17,789**	**72.7%**
Community income total			**$318,033**	**$24,464**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2013.

a. The mean is calculated using the *total* number of households in the community, not the number of households for this income category.

b. Income by category as a percentage of the total community income from all sources (wage-based income *and* non-wage-based income).

CASH EMPLOYMENT AND MONETARY INCOME

Table 7-2 is a summary of the estimated earned income as well as other sources of income for residents of Alexander/Susitna in 2012. This table shows that in 2012 earned income accounted for an average of $6,675 per household, or 27% of the total community income, compared to other income sources that accounted for an average of $17,789 per household, or 73% of the total community income. The largest source of other income was pension/retirement income, which accounted for 35% of the total community income in 2012, followed by Social Security, which accounted for 24% of the total community income in 2012 (Table 7-2). In 2012, most (60%) of the jobs in Alexander/Susitna were in the services sector (Table 7-3). Other important employment sectors during the study year were retail trade (20% of jobs), and agriculture, forestry, and fishing (20% of jobs) (Table 7-3).

In 2012, 71% of the adults of working age (16 and over) at Alexander/Susitna were employed at some point during the study year (Table 1-11). Of these employed adults, only 14% were employed

Table 7-3. – Employment by industry, Alexander/Susitna, 2012.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**16.9**	**5.8**	**16.9**	
Agriculture, forestry, and fishing	**20.0%**	**25.0%**	**20.0%**	**12.6%**
Agricultural, forestry, and fishing occupations	20.0%	25.0%	20.0%	12.6%
Retail trade	**20.0%**	**25.0%**	**20.0%**	**20.2%**
Service occupations	20.0%	25.0%	20.0%	20.2%
Services	**60.0%**	**50.0%**	**60.0%**	**67.2%**
Executive, administrative, and managerial	20.0%	25.0%	20.0%	16.8%
Administrative support occupations, including clerical	20.0%	25.0%	20.0%	33.6%
Handlers, equipment cleaners, helpers, and laborers	20.0%	25.0%	20.0%	16.8%

Source ADF&G Division of Subsistence household surveys, 2013.
a. Income by category as a percentage of the total *wage-based* community income.

year-round. On average in 2012, 44% of employed households contained at least 1 adult who was employed. The mean number of jobs per employed household was approximately 3. Most jobs were located in Anchorage but some employment occurred directly in Alexander/Susitna (Table 1-12).

LEVELS OF INDIVIDUAL PARTICIPATION IN THE HARVESTING AND PROCESSING OF WILD RESOURCES

Table 1-13 reports the expanded levels of individual participation in the harvest and processing of wild resources by Alexander/Susitna residents in 2012. All residents (100%) attempted to harvest resources in 2011. With reference to specific resource categories, 100% of all residents gathered vegetation, 70% fished, 45% hunted for birds, and 60% hunted for large land mammals. Fewer residents (15%) were involved in furbearer hunting or trapping. Likewise, 100% of Alexander/Susitna residents processed some resources in 2012. In comparison, all residents participated in processing vegetation and most residents (90%) participated in processing both fish and large land mammals, indicating that a group effort was made by residents to process the meat once a successful hunter returned to camp or home. Fewer residents participated in bird processing (50%) and furbearer processing (25%).

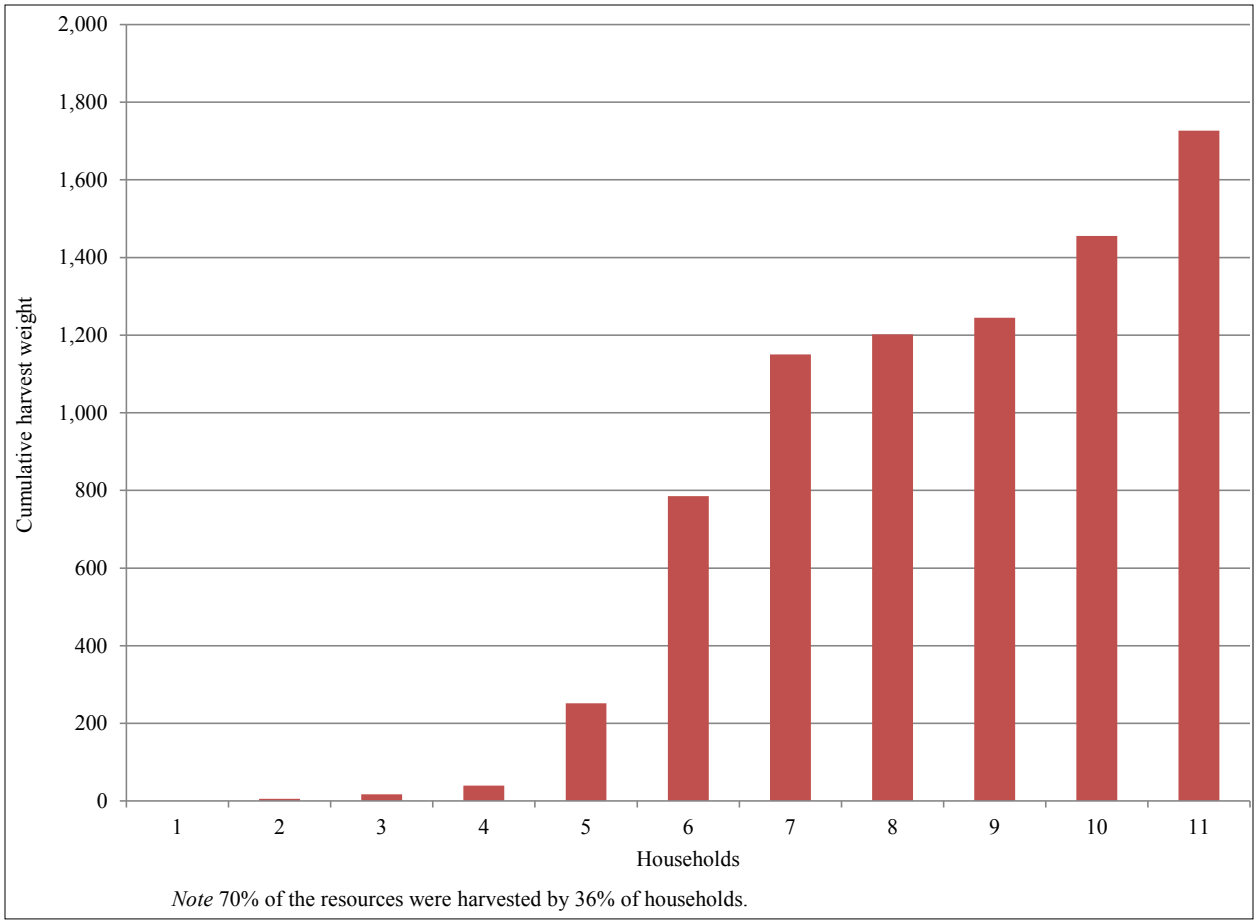

Figure 7-3. – Household specialization, Alexander/Susitna, 2012.

HOUSEHOLD RESOURCE HARVEST AND USE PATTERNS AND SHARING OF WILD RESOURCES

Table 1-14 summarizes resource harvest and use characteristics for Alexander/Susitna in 2012 at the household level. All households (100%) used wild resources in 2012 and all households (100%) attempted to harvest and harvested resources. The average harvest was 398 lb usable weight per household, or 219 lb per capita. During the study year, households harvested an average of 9 kinds of resources and used an average of 11 kinds of resources. The maximum number of resources used by any household was 16. In addition, households gave away an average of 3 kinds of resources and 91% of households reported sharing resources with other households. Resources were received by 100% of households. Because more households received resources than reported giving resources away, household specialization in harvesting resources was demonstrated by Alexander/Susitna residents. Figure 7-3 shows household specialization. This figure shows that 36% of households harvested 70% of resources.

HARVEST QUANTITIES AND COMPOSITION

Table 7-4 reports estimated wild resource harvests and uses by Alexander/Susitna residents in 2012 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 local 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 wild resources during 2012 for Alexander/Susitna was 5,175 lb, or 219 lb per capita (Table 7-4). Large land mammals provided the majority (67%) (3,482 lb, or 147 lb per capita) of the total pounds of wild resources harvested by Alexander/Susitna households. Salmon provided 20% of the total (1,048 lb, or 44 lb per capita) and was followed by vegetation with 9% of the total (442 lb, or 19 lb per capita) (Figure 7-4; Table 7-4). Birds and eggs, nonsalmon fish, small land mammals, and marine invertebrates also contributed to the total harvest of wild resources by Alexander/Susitna residents.

SEASONAL ROUND

Harvest survey data and key respondent interview information describe a seasonal round of hunting, fishing, and gathering activities followed by Alexander/Susitna residents, where a variety of species are harvested throughout the year. In spring, summer, fall, and winter, Alexander/Susitna residents travel along Alexander Creek and the surrounding Susitna Flats area to harvest resources. Residents use motorized boats suitable for travel on waterways, ATVs, and snowmachines to reach their hunting, fishing, and gathering areas.

During spring and summer some Alexander/Susitna residents catch rainbow trout and Arctic grayling by rod and reel in the McArthur River. During May and June, Chinook salmon are caught by rod and reel by some residents in the Susitna River at Deshka Landing and in the McArthur River south of Tyonek. During June and July some residents travel to the McArthur River and farther, to the distant Kenai Peninsula, to fish for sockeye salmon, which are caught by rod and reel, dip net, and gillnet. Throughout summer, some residents fish for Pacific halibut and Pacific cod in Cook Inlet and Prince William Sound. Coho salmon arrive in the Alexander Creek area toward the end

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.

Table 7-4. – Estimated harvests and uses of fish, game, and vegetation resources, Alexander/Susitna, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±)
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	% of harvest
All resources	**100.0**	**100.0**	**100.0**	**100.0**	**90.9**	**5,175.3**	**398.1**	**219.0**	**657.7**		**50.6**	**23.1**
Fish	**100.0**	**72.7**	**72.7**	**81.8**	**45.5**	**1,142.8**	**87.9**	**48.4**	**316.0**		**24.3**	**29.4**
Salmon	**100.0**	**72.7**	**72.7**	**81.8**	**45.5**	**1,047.5**	**80.6**	**44.3**	**219.3**		**16.9**	**29.7**
Chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Coho salmon	81.8	63.6	63.6	27.3	27.3	474.6	36.5	20.1	99.3	ind	7.6	25.7
Chinook salmon	45.5	27.3	27.3	27.3	9.1	74.4	5.7	3.1	7.8	ind	0.6	56.8
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sockeye salmon	81.8	36.4	36.4	72.7	36.4	498.5	38.3	21.1	112.3	ind	8.6	48.3
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Nonsalmon fish	**81.8**	**27.3**	**27.3**	**63.6**	**9.1**	**95.4**	**7.3**	**4.0**	**96.7**		**7.4**	**48.5**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cod	27.3	18.2	18.2	9.1	0.0	9.5	0.7	0.4	10.6		0.8	58.6
Pacific (gray) cod	18.2	9.1	9.1	9.1	0.0	4.7	0.4	0.2	1.2	ind	0.1	87.4
Pacific tomcod	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	9.5	ind	0.7	87.4
Flounder	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Greenling	18.2	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Lingcod	18.2	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	72.7	27.3	27.3	54.5	9.1	80.1	6.2	3.4	80.1	lb	6.2	50.3
Rockfish	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Char	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Lake trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic grayling	9.1	9.1	9.1	0.0	0.0	2.5	0.2	0.1	3.5	ind	0.3	87.4
Northern pike	9.1	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trout	9.1	9.1	9.1	0.0	0.0	3.3	0.3	0.1	2.4		0.2	87.4

-continued-

Table 7-4.–Page 2 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Nonsalmon fish, continued												
Cutthroat trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Rainbow trout	9.1	9.1	9.1	0.0	0.0	3.3	0.3	0.1	2.4	ind	0.2	87.4
Unknown trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whitefishes	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Cisco	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whitefishes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Land mammals	**100.0**	**72.7**	**63.6**	**81.8**	**72.7**	**3,486.4**	**268.2**	**147.5**	**13.0**		**1.0**	**23.6**
Large land mammals	**100.0**	**72.7**	**63.6**	**81.8**	**72.7**	**3,481.6**	**267.8**	**147.3**	**10.6**		**0.8**	**23.6**
Black bear	27.3	9.1	9.1	18.2	9.1	137.1	10.5	5.8	2.4	ind	0.2	87.4
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Caribou	45.5	9.1	9.1	36.4	9.1	153.6	11.8	6.5	1.2	ind	0.1	87.4
Deer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	100.0	72.7	54.5	54.5	63.6	3,190.9	245.5	135.0	7.1	ind	0.5	25.2
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals[b]	**9.1**	**9.1**	**9.1**	**0.0**	**0.0**	**4.7**	**0.4**	**0.2**	**2.4**		**0.2**	**87.4**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Hare	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	2.4		0.2	87.4
Snowshoe hare	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	2.4	ind	0.2	87.4
River (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 7-4.–Page 3 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±)
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	% of harvest
Small land mammals[b], continued												
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Squirrel	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**
Seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown whales	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**63.6**	**63.6**	**63.6**	**0.0**	**9.1**	**93.7**	**7.2**	**4.0**	**105.2**		**8.1**	**68.2**
Migratory birds	**9.1**	**9.1**	**9.1**	**0.0**	**0.0**	**7.1**	**0.5**	**0.3**	**7.1**		**0.5**	**87.4**
Ducks	9.1	9.1	9.1	0.0	0.0	7.1	0.5	0.3	7.1		0.5	87.4
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Eider	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	9.1	9.1	9.1	0.0	0.0	7.1	0.5	0.3	7.1	ind	0.5	87.4
Northern pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Scoter	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Teal	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
Unknown ducks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 7-4.–Page 4 of 5.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) % of harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	
Migratory birds, continued												
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Cranes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Other birds	**63.6**	**63.6**	**63.6**	**0.0**	**9.1**	**50.8**	**3.9**	**2.2**	**94.5**		**7.3**	**64.4**
Upland game birds	63.6	63.6	63.6	0.0	9.1	50.8	3.9	2.2	94.5		7.3	64.4
Grouse	54.5	54.5	54.5	0.0	0.0	12.4	1.0	0.5	17.7		1.4	34.9
Spruce grouse	45.5	45.5	45.5	0.0	0.0	10.8	0.8	0.5	15.4	ind	1.2	40.9
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ruffed grouse	9.1	9.1	9.1	0.0	0.0	1.7	0.1	0.1	2.4	ind	0.2	87.4
Unknown grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	9.1	9.1	9.1	0.0	9.1	38.4	3.0	1.6	76.8	ind	5.9	87.4
Bird eggs	**9.1**	**9.1**	**9.1**	**0.0**	**9.1**	**35.8**	**2.8**	**1.5**	**3.5**		**0.3**	**87.4**
Duck eggs	9.1	9.1	9.1	0.0	9.1	0.4	0.0	0.0	2.4		0.2	87.4
Unknown duck eggs	9.1	9.1	9.1	0.0	9.1	0.4	0.0	0.0	2.4	ind	0.2	87.4
Goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Seabird and loon eggs	9.1	9.1	9.1	0.0	9.1	35.5	2.7	1.5	1.2		0.1	87.4
Gull eggs	9.1	9.1	9.1	0.0	9.1	35.5	2.7	1.5	1.2		0.1	87.4
Unknown gull eggs	9.1	9.1	9.1	0.0	9.1	35.5	2.7	1.5	1.2	ind	0.1	87.4
Unknown eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine invertebrates	**9.1**	**9.1**	**9.1**	**9.1**	**9.1**	**10.6**	**0.8**	**0.5**	**3.5**		**0.3**	**87.4**
Clams	9.1	9.1	9.1	9.1	9.1	10.6	0.8	0.5	3.5		0.3	87.4
Butter clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Freshwater clam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clam	9.1	9.1	9.1	9.1	9.1	10.6	0.8	0.5	3.5	gal	0.3	87.4
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crabs	0.0	0.0	0.0	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	0.0	0.0	0.0	ind	0.0	0.0
King crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 7-4.–Page 5 of 5.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean household	Per capita	Harvest amount[a]: Total	Unit	Mean household	95% confidence limit (±) % of harvest
Marine invertebrates, continued												
Octopus	0.0	0.0	0.0	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	0.0	0.0	0.0	lb	0.0	0.0
Squid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**100.0**	**100.0**	**100.0**	**18.2**	**54.5**	**441.7**	**34.0**	**18.7**	**220.0**		**16.9**	**36.1**
Berries	**90.9**	**81.8**	**81.8**	**18.2**	**45.5**	**410.7**	**31.6**	**17.4**	**102.7**		**7.9**	**38.2**
Blueberry	72.7	63.6	63.6	9.1	27.3	128.2	9.9	5.4	32.1	gal	2.5	45.9
Lowbush cranberry	36.4	36.4	36.4	0.0	9.1	41.4	3.2	1.8	10.3	gal	0.8	50.9
Highbush cranberry	54.5	54.5	54.5	0.0	27.3	158.4	12.2	6.7	39.6	gal	3.0	61.5
Crowberry	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	1.2	gal	0.1	87.4
Currants	27.3	27.3	27.3	0.0	9.1	21.3	1.6	0.9	5.3	gal	0.4	51.6
Raspberry	9.1	9.1	9.1	9.1	0.0	4.7	0.4	0.2	1.2	gal	0.1	87.4
Salmonberry	9.1	9.1	9.1	0.0	9.1	28.4	2.2	1.2	7.1	gal	0.5	87.4
Twisted stalk berry (watermelon berry)	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	1.2	gal	0.1	87.4
Serviceberry	9.1	9.1	9.1	0.0	0.0	18.9	1.5	0.8	4.7	gal	0.4	87.4
Other wild berries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Plants, greens, and mushrooms	**63.6**	**54.5**	**54.5**	**9.1**	**9.1**	**31.0**	**2.4**	**1.3**	**27.5**		**2.1**	**46.7**
Fiddlehead fern	36.4	27.3	27.3	9.1	9.1	6.2	0.5	0.3	6.2	gal	0.5	66.6
Nettle	27.3	27.3	27.3	0.0	9.1	4.4	0.3	0.2	4.4	gal	0.3	69.3
Hudson's Bay (Labrador) tea	9.1	9.1	9.1	0.0	0.0	0.6	0.0	0.0	0.6	gal	0.0	87.4
Willow leaves	9.1	9.1	9.1	0.0	0.0	1.2	0.1	0.1	1.2	gal	0.1	87.4
Wild rose hip	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	1.2	gal	0.1	87.4
Other wild greens	9.1	9.1	9.1	0.0	0.0	3.0	0.2	0.1	3.0	gal	0.2	87.4
Unknown mushrooms	27.3	27.3	27.3	0.0	0.0	4.4	0.3	0.2	4.4	gal	0.3	50.6
Sorrel	9.1	9.1	9.1	0.0	9.1	1.2	0.1	0.1	1.2	gal	0.1	87.4
Fireweed	9.1	9.1	9.1	0.0	0.0	0.6	0.0	0.0	0.6	gal	0.0	87.4
Stinkweed	9.1	9.1	9.1	0.0	0.0	4.7	0.4	0.2	4.7	gal	0.4	87.4
Wood	**100.0**	**100.0**	**100.0**	**0.0**	**18.2**	**0.0**	**0.0**	**0.0**	**89.8**		**6.9**	**11.0**
Firewood	100.0	100.0	100.0	0.0	18.2	0.0	0.0	0.0	89.8	cord	6.9	11.0

Source ADF&G Division of Subsistence household surveys, 2013.

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

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.

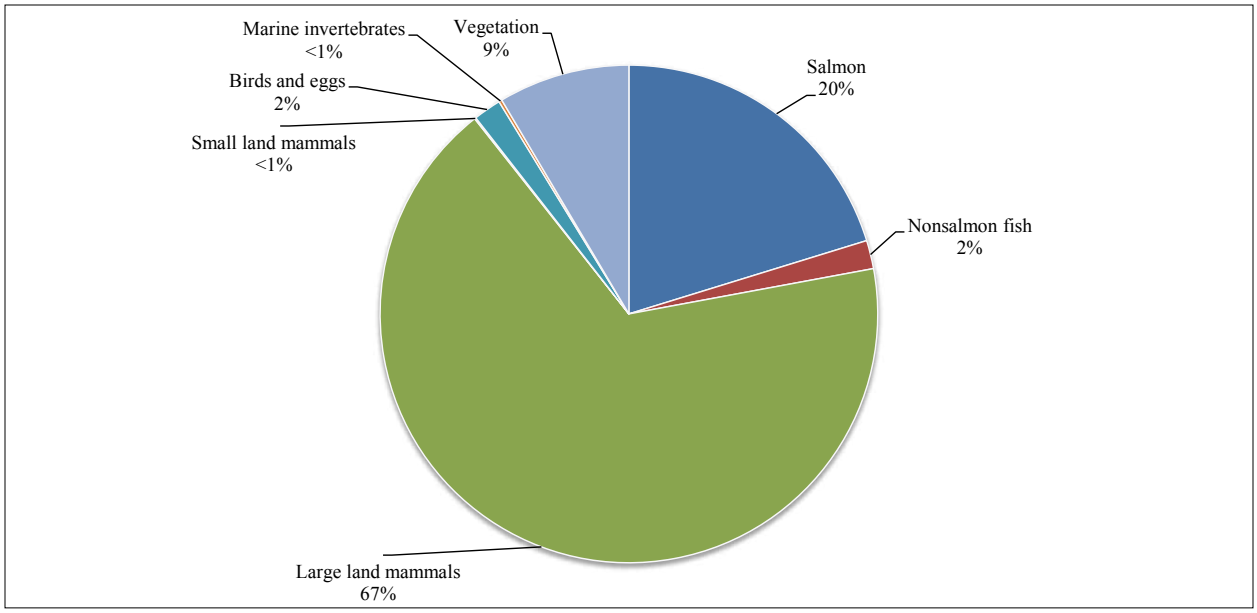

Figure 7-4. – Composition of wild resource harvest, by category, Alexander/Susitna, 2012.

of August and continue to return into the early part of October. Coho salmon are caught by rod and reel along Alexander Creek, at its mouth, and in the McArthur River.

Black bears are sometimes harvested during summer and fall and ducks and grouse are harvested during fall. Alexander/Susitna residents seldom participate in the fall moose hunt (August 20–September 25); however, winter moose hunting is an important traditional activity for Alexander/Susitna residents. State Tier II[2] regulations allow for winter moose hunting in game management unit (GMU) 16B from December 15–March 31. Most of the hunts take place during December along Alexander Creek, the Susitna River, and in adjacent sloughs and meadows that are accessible by snowmachine. Snowshoe hares and ptarmigan are also harvested during winter.

Alexander/Susitna residents harvest plants, mushrooms, and berries during spring, summer, and fall. For example, fiddlehead fern shoots are sought during spring; wild greens, such as nettles and Hudson's Bay (Labrador) tea are sought during summer; blueberries, crowberries, currants, raspberries, and salmonberries are gathered during late summer; and highbush cranberries and lowbush cranberries are gathered during fall. Harvesting firewood for home heating is an important activity for Alexander/Susitna residents on a year-round basis.

2. State Tier II hunts are held when there is not enough of a game population with customary and traditional uses to provide a reasonable opportunity for subsistence uses. Hunters must answer questions on an application concerning their dependence on the game for their livelihood and availability of alternative resources. Applications are scored based on responses to the questionnaire and permits are issued to those with the highest scores.

Table 7-5. – Top 10 resources harvested and used, Alexander/Susitna, 2012.

Harvested			Used		
Rank	Resource	Pounds per capita	Rank	Resource	Percentage of households using
1.	Moose	135.0	1.	Moose	100.0%
2.	Sockeye salmon	21.1	2.	Coho salmon	81.8%
3.	Coho salmon	20.1	2.	Sockeye salmon	81.8%
4.	Highbush cranberry	6.7	4.	Pacific halibut	72.7%
5.	Caribou	6.5	4.	Blueberry	72.7%
6.	Black bear	5.8	6.	Highbush cranberry	54.5%
7.	Blueberry	5.4	7.	Chinook salmon	45.5%
8.	Pacific halibut	3.4	7.	Caribou	45.5%
9.	Chinook salmon	3.1	7.	Spruce grouse	45.5%
10.	Lowbush cranberry	1.8	8.	Lowbush cranberry	36.4%
			8.	Fiddlehead fern	36.4%

Source ADF&G Division of Subsistence household surveys, 2013.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

Estimates of sharing indicated that 100% of Alexander/Susitna households received wild resources from other households and 91% of households gave resources away (Table 7-4). Fish, large land mammals, and vegetation were used by all (100%) households and were among the most commonly shared resources. Fish were given away by 46% of households and 82% of households received fish. Large land mammals were shared by 73% of households and received by 82%. Vegetation was given away by 55% and received by 18% of households.

Table 7-5 lists the top 10 resources harvested, in terms of pounds per capita, and the 10 most used resources by Alexander/Susitna households during the 2012 study year. Moose made the largest contribution to Alexander/Susitna's 2012 wild resource harvest (135 lb per capita), followed by sockeye salmon (21 lb per capita), and coho salmon (20 lb per capita). Of all the available resources, moose was the most used by Alexander/Susitna residents (used by 100% of households), followed by coho salmon and sockeye salmon (both used by 82% of households), and Pacific halibut and blueberries (both used by 73% of households). Moose provided 114 more pounds of resources per capita for Alexander/Susitna residents than the next most harvested resource (sockeye salmon, 21 lb). This large difference reveals the great importance Alexander/Susitna residents place on moose and successful moose hunting for home use. Local reliance on moose for food is also contrasted with the biological and regulatory limitations Alexander/Susitna residents face in obtaining salmon, which is discussed below.

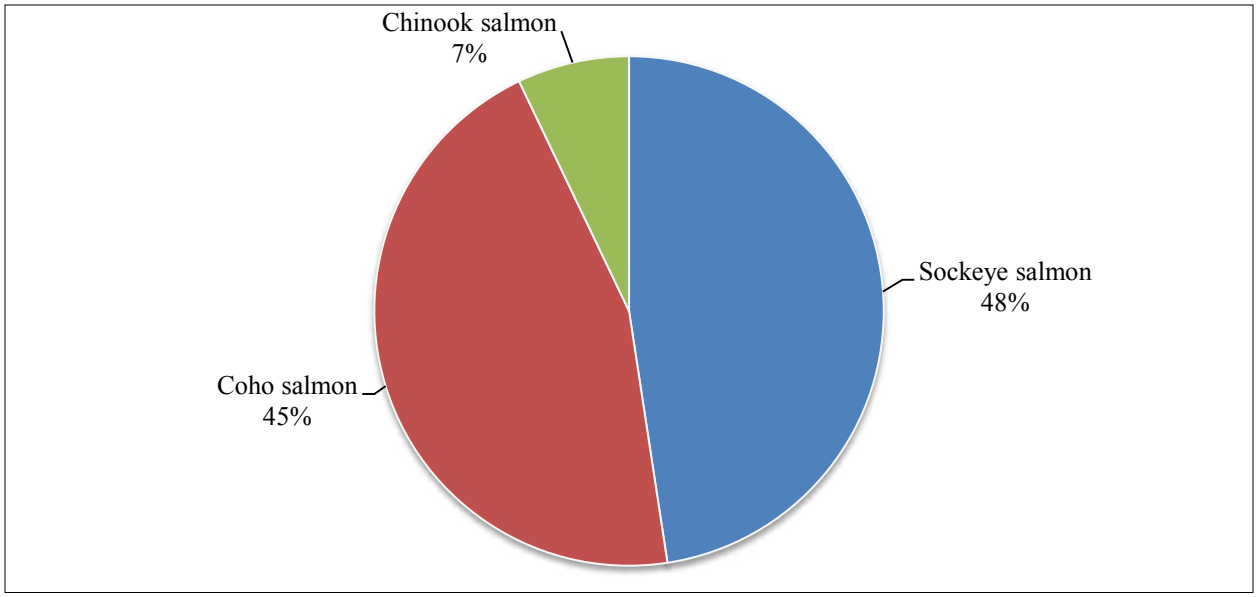

Figure 7-5. – Composition of salmon harvest, Alexander/Susitna, 2012.

SALMON

For Alexander/Susitna residents, salmon composed 20% of the wild resource harvest in pounds in 2012 (Figure 7-4). The composition of the salmon harvest is as follows: 48% sockeye salmon (499 lb or 21 lb per capita); 45% coho salmon (475 lb or 20 lb per capita); and 7% Chinook salmon (74 lb or 3 lb per capita) (Figure 7-5; Table 7-4). In 2012, rod and reel gear was used to harvest an estimated 84% of the salmon harvest, noncommercial gillnets were used to harvest about 10% of the salmon harvest, and dip nets were used to harvest about 6% of the salmon harvest during the study year (Table 7-6). During 2012, 100% of Alexander/Susitna households used salmon, 73% harvested salmon, 46% shared salmon, and 82% reported receiving salmon (Table 7-4). Sockeye salmon and coho salmon were the primary salmon species harvested and used by Alexander/Susitna residents. During 2012, 81% of households reported using both coho and sockeye salmon and only 46% of households reported using Chinook salmon.

During the 2012 study year, Alexander/Susitna respondents reported harvesting coho salmon in Alexander Creek and the McArthur River. Sockeye salmon were harvested in the McArthur River and on the Kenai Peninsula in the Russian, Kenai, and Kasilof rivers. Chinook salmon were harvested at Deshka Landing on the Susitna River and in the McArthur River. The McArthur River is accessed by small airplane from Alexander/Susitna (Figure 7-6). Under state sport fishing regulations, Alexander Creek and all waters within a one-half mile radius of the stream's confluence with the Susitna River are closed year-round to fishing for Chinook salmon.

Because coho salmon are the only salmon species available for harvest near the community, meaning within Alexander proper, the majority of harvest effort by households for salmon was

Table 7-6. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Alexander/Susitna, 2012.

				Subsistence methods													
		Removed from commercial catch		Fish wheel		Gillnet or seine		Other method		Subsistence gear, any method		Dip net[a]		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%**	**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%**	**10.8%**	**10.0%**	**0.0%**	**0.0%**	**10.8%**	**10.0%**	**6.5%**	**6.0%**	**82.8%**	**84.0%**	**100.0%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**10.8%**	**10.0%**	**0.0%**	**0.0%**	**10.8%**	**10.0%**	**6.5%**	**6.0%**	**82.8%**	**84.0%**	**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%	54.7%	54.0%	45.3%	45.3%
	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%	45.3%	45.3%	45.3%	45.3%
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%	4.3%	8.5%	3.6%	7.1%
	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%	3.6%	7.1%	3.6%	7.1%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	41.0%	37.6%	51.2%	47.6%
	Resource	0.0%	0.0%	0.0%	0.0%	21.1%	21.1%	0.0%	0.0%	21.1%	21.1%	12.6%	12.6%	66.3%	66.3%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	10.8%	10.0%	0.0%	0.0%	10.8%	10.0%	6.5%	6.0%	33.9%	31.6%	51.2%	47.6%
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, 2013.

a. Harvests using dip net gear are typically included with subsistence harvests. However, in this case dip nets are primarily used to harvest fish under personal use regulations and are therefore placed in a separate category.

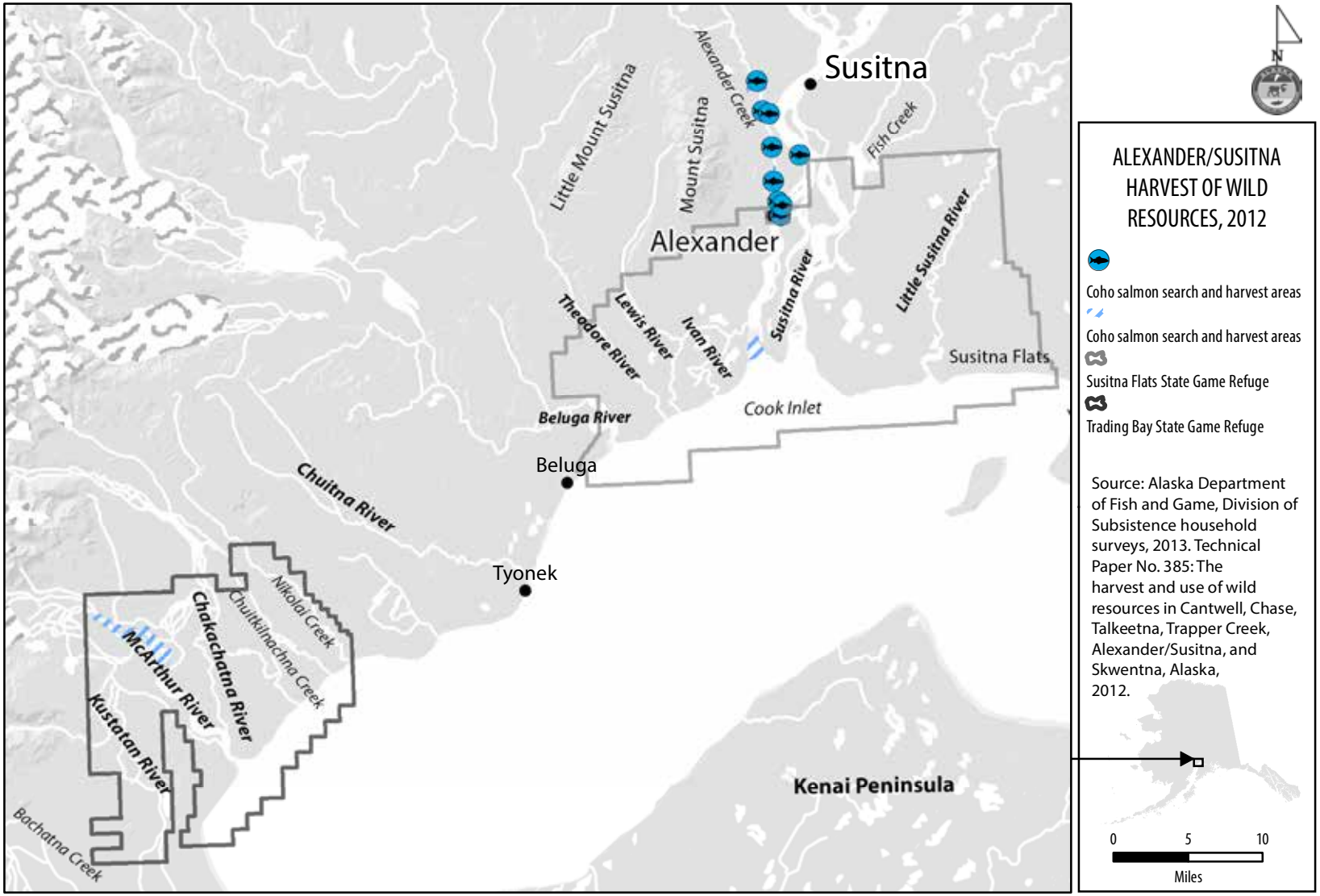

Figure 7-6. – Coho salmon search and harvest areas, Alexander/Susitna, 2012.

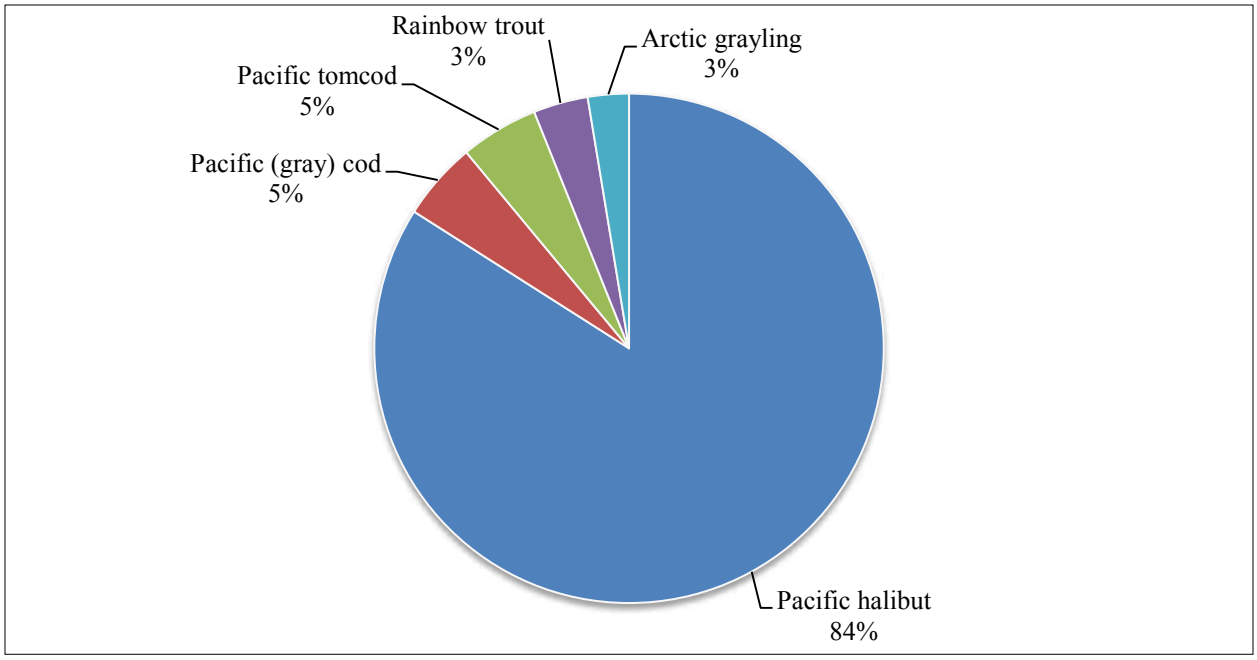

Figure 7-7. – Composition of nonsalmon fish harvest, Alexander/Susitna, 2012.

directed toward coho salmon and more households harvested coho salmon than any other salmon species (63% of households attempting to harvest and harvesting coho salmon compared to 36% of households attempting to harvest and harvesting sockeye salmon and 27% of households attempting to harvest and harvesting Chinook salmon) (Table 7-4). Nevertheless, many of the households that harvested salmon, such as sockeye and Chinook salmon, from rivers outside the local area, shared their catch with other Alexander/Susitna households (73% of households reported receiving sockeye salmon, 27% of households reported receiving Chinook salmon, and 9% of households reported sharing both sockeye salmon and Chinook salmon).

NONSALMON FISH

In 2012, Alexander/Susitna residents harvested an estimated total of 95 lb, or 4 lb per capita, of nonsalmon fish (Table 7-4). Nonsalmon fish composed only 2% of the wild resource harvest in pounds in 2012 (Figure 7-4). In terms of total pounds and percentages, most of the harvest was Pacific halibut (84%), followed by Pacific cod, rainbow trout, and Arctic grayling (Figure 7-7). Table 7-7 lists the number and pounds of each nonsalmon fish species harvested by Alexander/Susitna residents in 2012 in percentages by gear type. Alexander/Susitna residents harvested all of their nonsalmon fish with rod and reel (100%).

During 2012, 82% of Alexander/Susitna Creek households used nonsalmon fish, 27% harvested nonsalmon fish, 9% shared nonsalmon fish, and 64% reported receiving nonsalmon fish (Table

Table 7-7. – Estimated percentages of fish other than salmon harvested by gear type, resource, and total nonsalmon fish harvest, Alexander/ Susitna, 2012.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any method		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**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%**	**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%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**
Smelt	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%
	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%
	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%
Eulachon (hooligan, candlefish)	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%
	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%
	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%
Pacific (gray) cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	5.0%	0.0%	0.0%	1.2%	5.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	5.0%	0.0%	0.0%	1.2%	5.0%
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.8%	5.0%	0.0%	0.0%	9.8%	5.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.8%	5.0%	0.0%	0.0%	9.8%	5.0%
Unknown cod	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%
	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%
	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%
Lingcod	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%
	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%
	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%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	82.9%	84.0%	0.0%	0.0%	82.9%	84.0%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	82.9%	84.0%	0.0%	0.0%	82.9%	84.0%
Rockfish	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%
	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%
	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%
Black rockfish	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%
	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%
	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%
Yelloweye rockfish	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%
	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%
	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%
Unknown rockfishes	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%
	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%
	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%
Sablefish (black cod)	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%
	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%
	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%
Burbot	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%
	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%
	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%

-continued-

Table 7-7.–Page 2 of 2.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel[a]		Ice fishing		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Dolly Varden	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%
	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%
	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%
Lake trout	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%
	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%
	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%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%	2.6%	0.0%	0.0%	3.7%	2.6%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%	2.6%	0.0%	0.0%	3.7%	2.6%
Northern pike	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%
	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%
	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%
Cutthroat trout	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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	3.5%	0.0%	0.0%	2.4%	3.5%
	Resource	0.0%	0.0%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	3.5%	0.0%	0.0%	2.4%	3.5%
Unknown trout	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%
	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%
	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%
Humpback whitefish	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%
	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%
	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%
Round whitefish	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%
	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%
	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%
Unknown whitefishes	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%
	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%
	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%

Source ADF&G Division of Subsistence household surveys, 2013.

a. Rod and reel gear used during open water season.

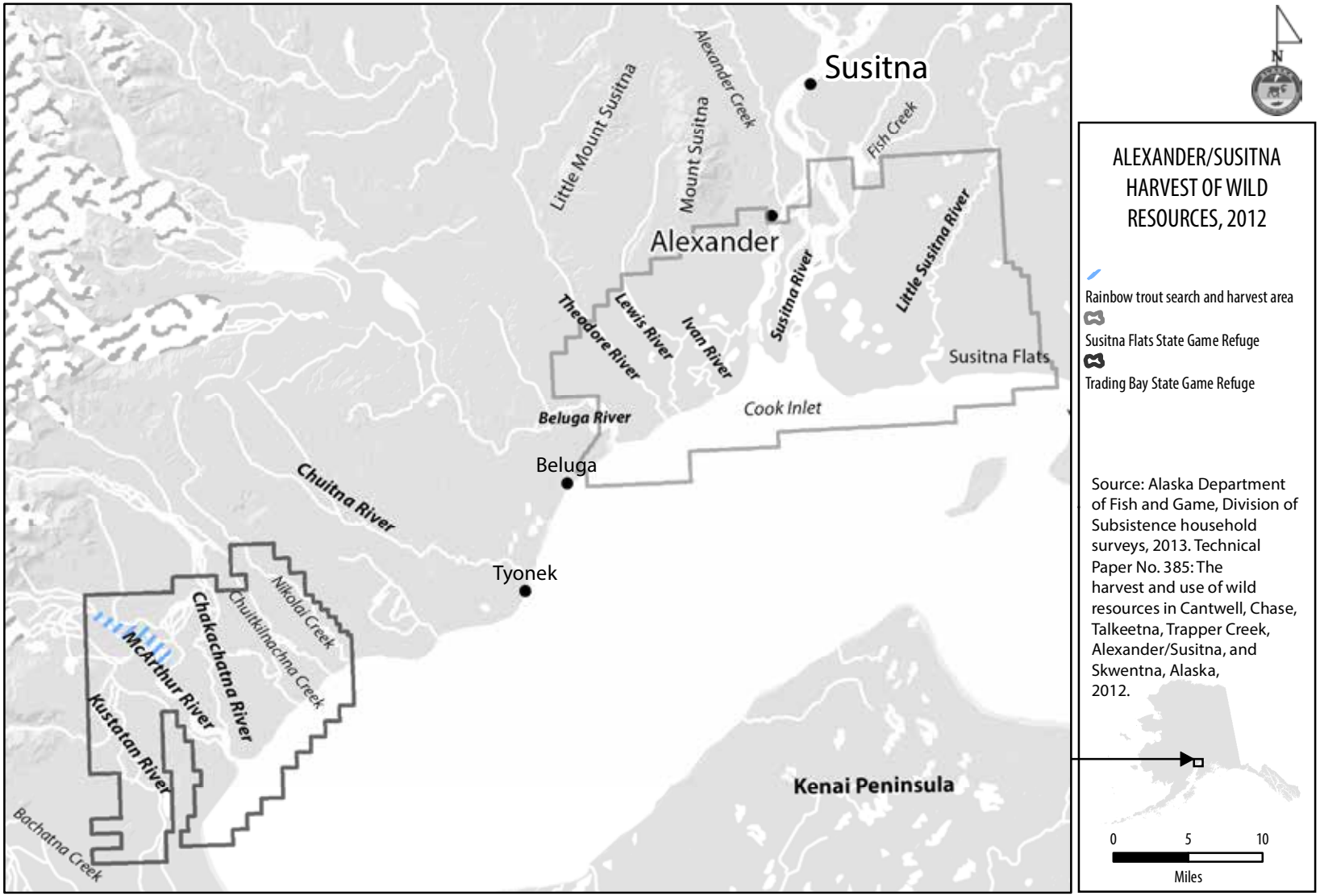

Figure 7-8. – Rainbow trout search and harvest areas, Alexander/Susitna, 2012.

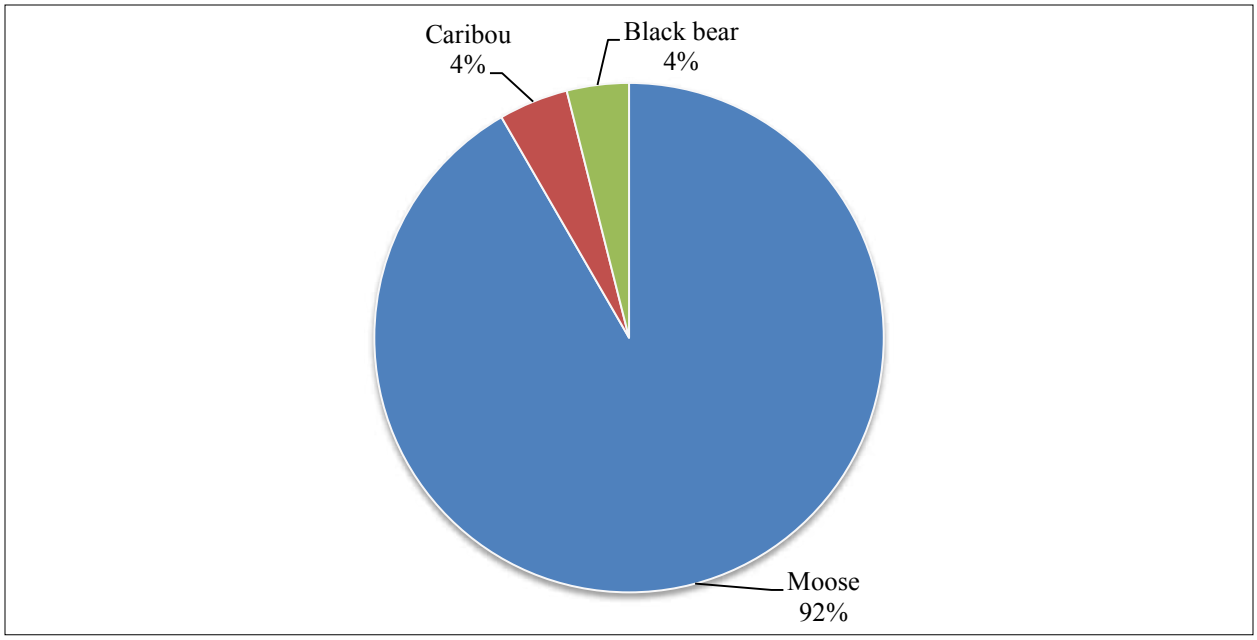

Figure 7-9. – Composition of large land mammals harvest, Alexander/Susitna, 2012.

7-4). Halibut was the primary nonsalmon fish shared with 55% of Alexander/Susitna households reporting having received halibut from other households.

During the 2012 study year, Alexander/Susitna respondents reported harvesting halibut and cod in Cook Inlet and Prince William Sound. Arctic grayling and rainbow trout were harvested in the McArthur River (Figure 7-8). Under state sport fishing regulations, no retention of rainbow trout, Dolly Varden, or Arctic grayling is allowed in Alexander Creek. During the study year there were no attempts or reported harvests of northern pike by residents of Alexander/Susitna.

LARGE LAND MAMMALS

In 2012, large land mammals, predominantly moose, made up 67% of the total Alexander/Susitna harvest by weight (Figure 7-4). Moose, black bears, and caribou made up the composition of the large land mammal harvest for the community (Figure 7-9). Moose provided 92% (3,191 lb, or 135 lb per capita) of the usable pounds of large land mammals harvested by Alexander/Susitna households. All households (100%) used moose, 73% hunted moose, and 55% of households were successful harvesters (Table 7-4). According to the study, the majority of the successful moose hunting took place in December 2012 with 6 moose harvested (Table 7-8). One moose was harvested in September. Respondents reported that the Tier II winter moose hunting opportunity provided in GMU 16B is the single most important subsistence hunting activity for the community and said that the community has traditionally relied on winter moose hunting to meet their subsistence needs. Moose was shared

Table 7-8. – Estimated harvests of large land mammals by month and caribou and moose harvests by sex, Alexander/Susitna, 2012.

			Caribou					Moose				
Harvest month	Black bear	Brown bear	Male	Female	Unknown	Deer	Goat	Male	Female	Unknown	Dall sheep	Wolf
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	2.4	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	1.2	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	1.2	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	5.9	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	**2.4**	**0.0**	**1.2**	**0.0**	**0.0**	**0.0**	**0.0**	**7.1**	**0.0**	**0.0**	**0.0**	**0.0**

Source ADF&G Division of Subsistence household surveys, 2013.

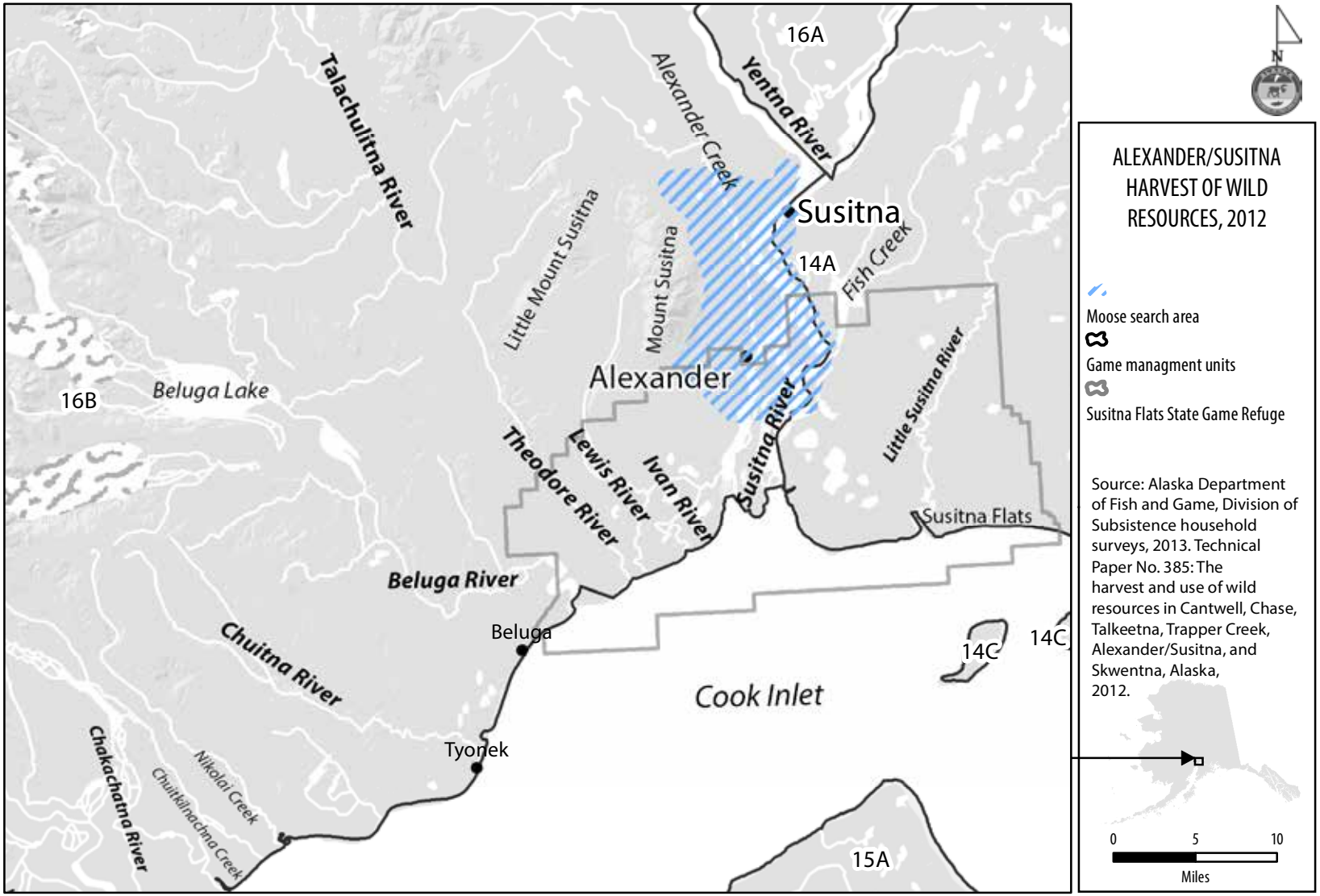

Figure 7-10. – Moose search areas, Alexander/Susitna, 2012.

extensively among Alexander/Susitna households (64% of households gave moose away and 55% of households received moose from other households) (Table 7-4).

In 2012, Alexander/Susitna residents also harvested 2 black bears and 1 caribou. Black bears were used by 27% of households and caribou were used by 46% of households (Table 7-4). Black bears were harvested in June and the caribou was harvested in August (Table 7-8). Households that harvested black bears and caribou shared with other households (18% of households received black bears and 36% of households received caribou) (Table 7-4).

During the 2012 study year, Alexander/Susitna households reported searching for moose and harvesting moose within the Alexander Creek and Susitna River drainages along the main waterways, along smaller creeks and sloughs, in adjacent meadows, and along local snowmachine trails (Figure 7-10). Black bears were harvested west of Alexander Creek near the community. Caribou were hunted on the Denali Highway by highway vehicle and ATV.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 7-4, the total harvest of small land mammals by Alexander/Susitna residents in 2012 for food was made up of an estimated 2 snowshoe hares (5 lb total, or less than 1 lb per capita). The search and harvest areas for small land mammals in 2012 included the Alexander Creek corridor near the community.

BIRDS AND EGGS

Birds and eggs were harvested and used by 64% of Alexander/Susitna households (Table 7-4). The total harvest of upland game birds, which includes grouse and ptarmigan, was 51 lb, or a little more than 2 lb per capita. The total harvest of migratory birds was an estimated 7 lb, or less than 1 lb per capita. Mallard ducks provided the entire migratory bird harvest. Ptarmigan accounted for most of the bird harvest by the community (38 lb, or slightly less than 2 lb per capita), followed by bird eggs, which provided 36 lb, or almost 2 lb per capita. Spruce grouse provided an additional 11 lb of wild food for the community. Mallard ducks were harvested during fall, grouse were harvested during summer and fall, and ptarmigan were harvested during winter (Table 7-9).

In 2012, Alexander/Susitna residents harvested birds and eggs mainly along Alexander Creek and at its mouth. Some ptarmigan were harvested on the southeast flank of Mount Susitna (Figure 7-11). Bird eggs, mostly from sea gulls, were harvested on islands and sandbars near the mouth of Alexander Creek in Cook Inlet.

Table 7-9. – Estimated bird harvest by season, Alexander/Susitna, 2012.

	Estimated harvest by season					
Resource	Winter	Summer	Spring	Fall	Season unknown	**Total**
Canvasback	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**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	0.0	0.0	0.0	7.1	0.0	**7.1**
Northern pintail	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**
Green-winged teal	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown ducks	0.0	0.0	0.0	0.0	0.0	**0.0**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Canada goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown Canada/cackling goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown goose	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**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Spruce grouse	0.0	4.7	0.0	10.6	0.0	**15.4**
Sharp-tailed grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ruffed grouse	0.0	0.0	0.0	2.4	0.0	**2.4**
Unknown grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigan	76.8	0.0	0.0	0.0	0.0	**76.8**

Source ADF&G Division of Subsistence household surveys, 2013.

MARINE INVERTEBRATES

As listed in Table 7-4, the total harvest of marine invertebrates by Alexander/Susitna residents in 2012 was made up of an estimated 4 gallons of clams (11 lb, or less than 1 lb per capita). The harvest of marine invertebrates totaled less than 1% of the total wild food harvest in 2012 (Figure 7-4). Marine invertebrates were used by 9% of households and were harvested on the Kenai Peninsula (Table 7-4).

VEGETATION

All (100%) households in Alexander/Susitna used vegetation during the 2012 study year, and 100% of households harvested vegetation (Table 7-4). The high percentage of use and harvest in this category was due to the harvest of firewood, which is used by all households in Alexander/Susitna to heat their homes: most of the households rely on firewood for all of their heat. All of the firewood was harvested within about 8 miles of Alexander/Susitna.

In 2012, Alexander/Susitna residents harvested 442 lb, or almost 19 lb per capita, of edible vegetation. Edible vegetation consisted of blueberries, lowbush cranberries, highbush cranberries, crowberries, currants, raspberries, salmonberries, twisted stalk berries (watermelon berries),

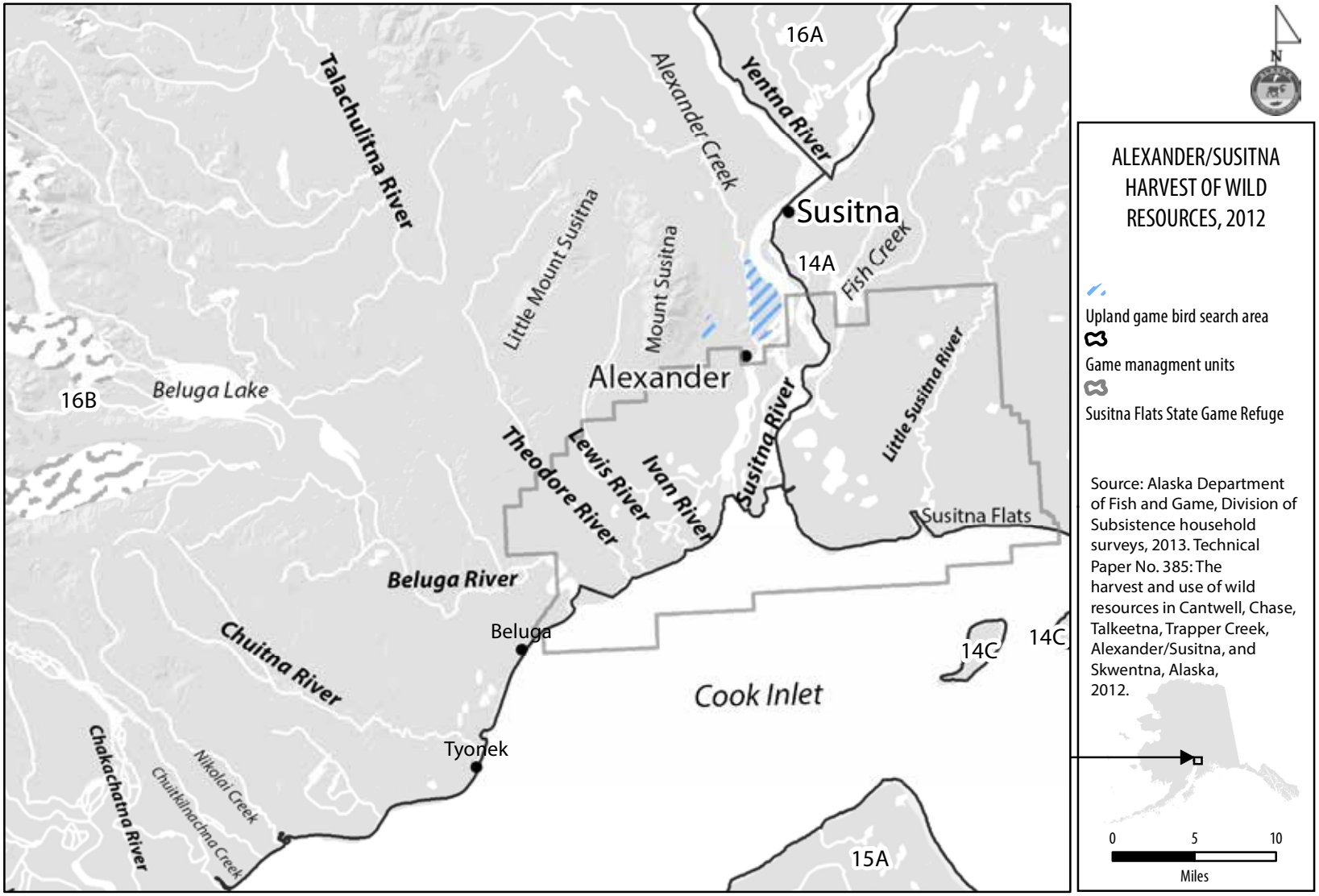

Figure 7-11. – Upland game birds search and harvest areas, Alexander/Susitna, 2012.

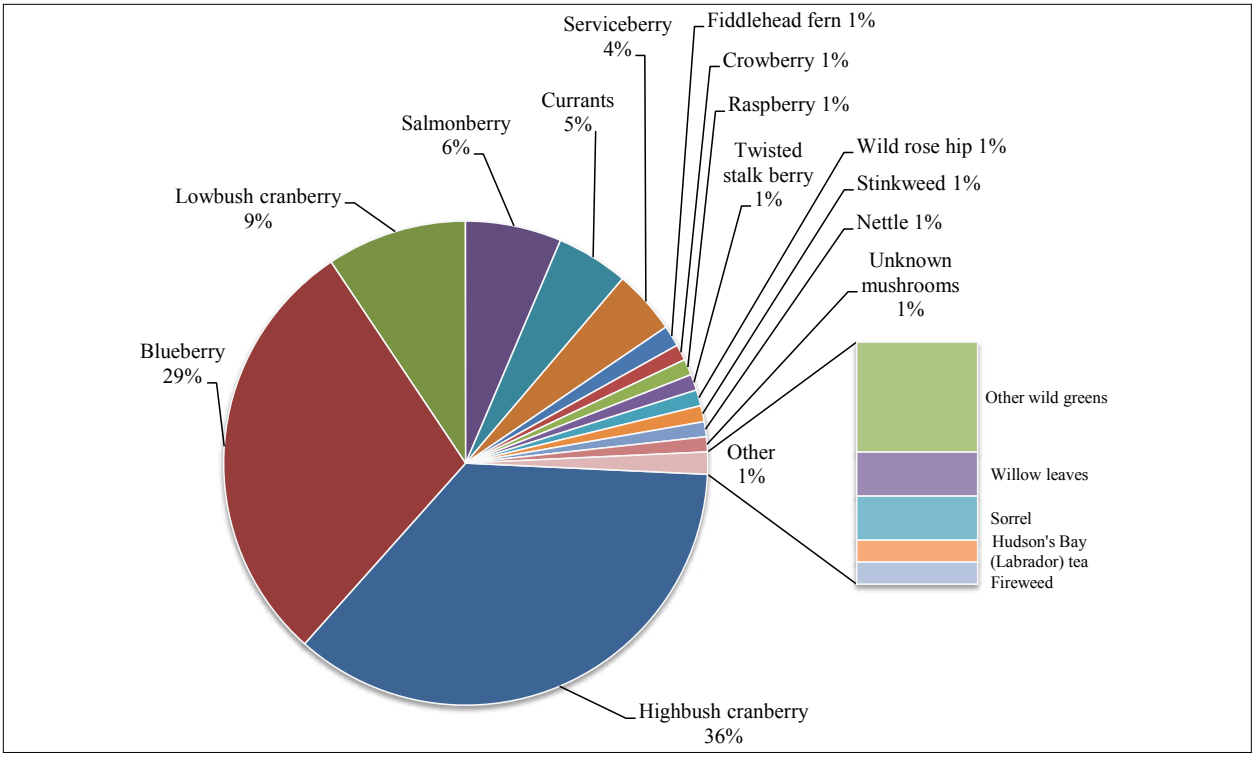

Figure 7-12. – Composition of vegetation harvest, Alexander/Susitna, 2012.

serviceberries, fiddlehead ferns, nettles, Hudson's Bay (Labrador) tea, willow leaves, wild rose hips, (sheep[3]) sorrel, fireweed, stinkweed (wormwood[4]), and mushrooms (Figure 7-12). Berries were used by 91% of households and were harvested by 82% of households (Table 7-4). Plants, greens, and mushrooms were used by 64% percent of households and were harvested by 55% of households. Plants and berries were harvested along the west bank of Alexander Creek north of the community and within about 10 miles (Figure 7-13).

3. Residents were very specific that the species harvested was sheep sorrel.
4. Wormwood is the local name for stinkweed.

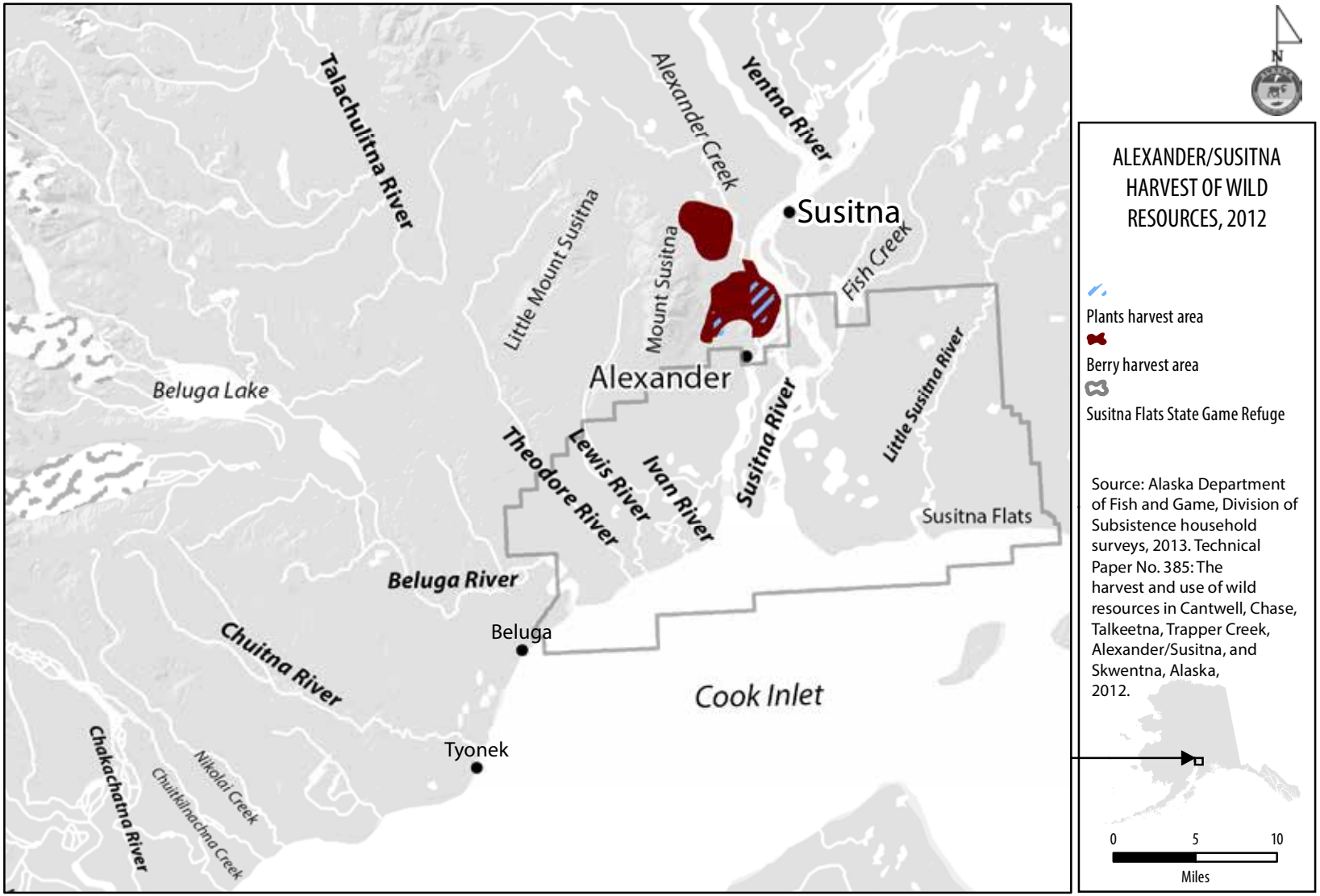

Figure 7-13. – Berries and plants, greens, and mushrooms search and harvest areas, Alexander/Susitna, 2012.

Table 7-10. – Changes in household uses of resources compared to recent years, Alexander/ Susitna, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	11	11	10	90.9%	11	100.0%	1	8.3%
All resources	11	11	3	27.3%	7	63.6%	1	9.1%
Salmon	11	11	4	36.4%	7	63.6%	0	0.0%
Nonsalmon fish	11	9	2	22.2%	7	77.8%	0	0.0%
Large land mammals	11	11	2	18.2%	9	81.8%	0	0.0%
Small land mammals	11	1	0	0.0%	1	100.0%	0	0.0%
Marine mammals	11	0	0	0.0%	0	0.0%	0	0.0%
Migratory birds	11	1	1	100.0%	0	0.0%	0	0.0%
Other birds	11	7	0	0.0%	7	100.0%	0	0.0%
Bird eggs	11	1	1	100.0%	0	0.0%	0	0.0%
Marine invertebrates	11	2	1	50.0%	1	50.0%	0	0.0%
Vegetation	11	11	1	9.1%	10	90.9%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

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

b. Percentages based on valid responses only.

c. The number of households that gave a valid response in at least one of the resource categories. Households are counted only once even though they may give more than one valid response.

COMPARING HARVESTS AND USES IN 2012 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 10 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2012 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 7-10 reports the number of valid responses for each category, the number of households that did not respond, and the number of households that did not use a resource category or all resources combined. In Table 7-10, 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 7-14 depicts responses to the “less, same, more” assessment question. Households that said they did not ordinarily “use” something are not included within the results. This results in fewer responses for less commonly used categories, such as small mammals or migratory birds, and manifests in the chart as a very short bar compared to categories such as salmon or plants, greens, and mushrooms, which are ordinarily used by most households. Some households did not respond to the question.

Taking all the resource categories into consideration, most Alexander/Susitna households, 64%,

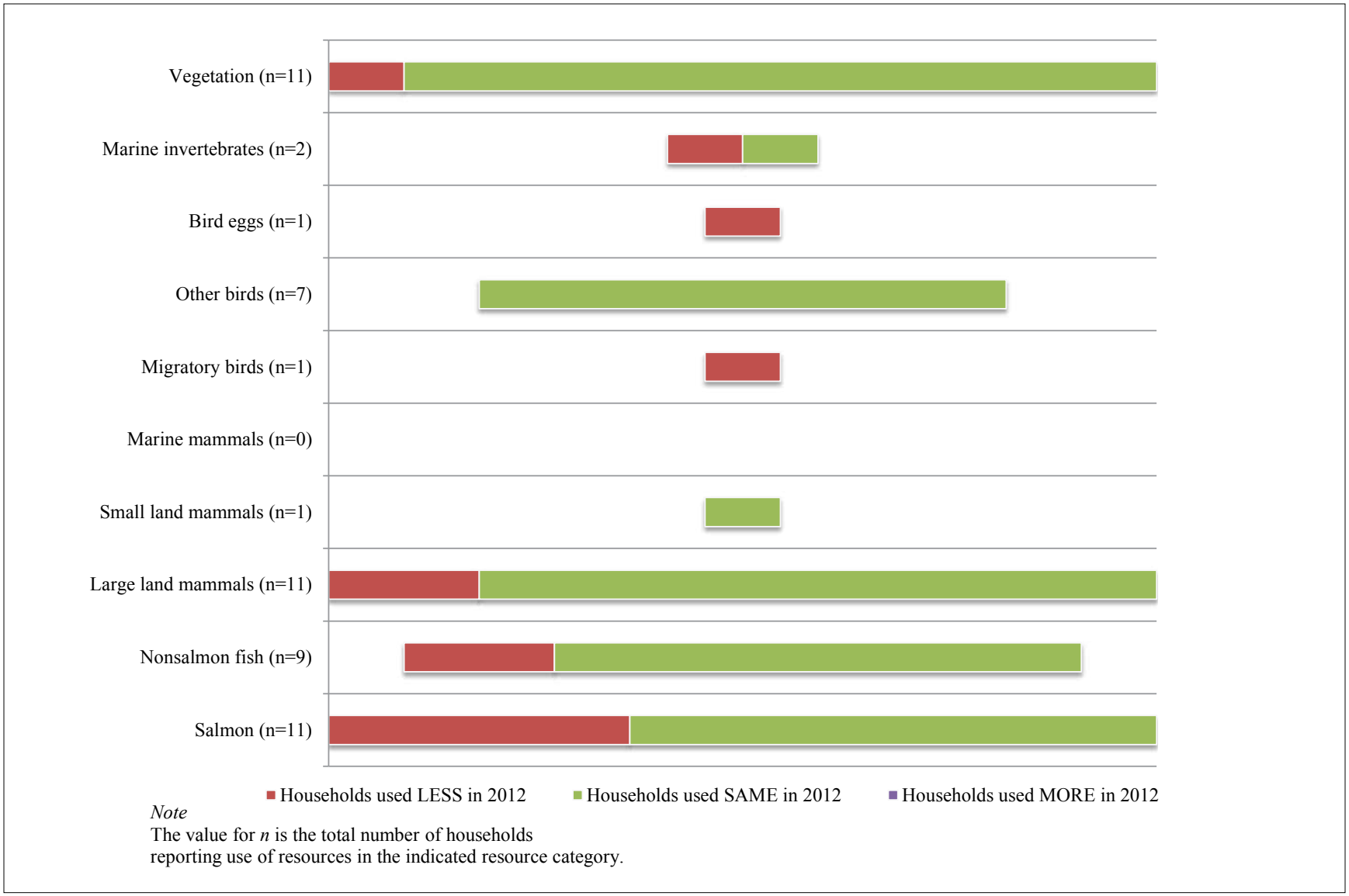

Figure 7-14. – Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Alexander/Susitna, 2012.

said they used about the same amount of wild resources in general over the previous 12 months compared to recent years (Table 7-10). A smaller number, 27% of all households, said they used less, and only 9% said they used more.

Table 7-11 depicts the reasons Alexander/Susitna 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 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 fishing, hunting, and gathering activities.

Of the surveyed households that provided assessments in the 2012 survey, the reasons most cited for less use of wild resources overall were family/personal reasons (33%), attempts at harvesting unsuccessful (33%), and working/no time (33%) (Table 7-11). Resource availability, the weather/environment, regulations, and not getting enough were the main reasons cited for less use of salmon, and family/personal reasons and less sharing were the reasons given for less use of large land mammals.

In terms of how the lack of abundance or availability of resources impacted households, not getting enough large game seemed to have the greatest impact. Table 7-12 shows the responses households gave regarding the impact of not getting enough resources in terms of it being a minor impact, major impact, or severe impact. Of the 11 valid responses to this question, 4 households said they did not get enough resources overall. Of these, 2 households noted a minor impact, 1 said it had a major impact, and none noted a severe impact on their food security. Of the resource categories, the most noticeable impact was for large land mammals and salmon. The resource category with the most response to not getting enough resources was for nonsalmon fish with 5 households noting that they did not get enough. Of these households, 4 said the impact was minor and 1 said the impact was major. Somewhat similar responses were also given for salmon and large game with 4 respondents saying they did not get enough salmon and large game. For both resource categories, 3 respondents said the impact was minor and 1 said the impact was severe.

Table 7-11. – Reasons for less household uses of resources compared to recent years, Alexander/Susitna, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	11	10	1	10.0%	3	30.0%	0	0.0%	1	10.0%	1	10.0%	2	20.0%	1	10.0%	1	10.0%
All resources	11	3	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
Salmon	11	4	0	0.0%	2	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%
Nonsalmon fish	9	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Large land mammals	11	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Small land 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%
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 birds	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%
Other birds	7	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	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%
Marine invertebrates	2	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%
Vegetation	11	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%

-continued-

Table 7-11.–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	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	11	10	0	0.0%	2	20.0%	1	10.0%	0	0.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%
All resources	11	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%
Salmon	11	4	0	0.0%	0	0.0%	1	25.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	9	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 land mammals	11	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 land 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%
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 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%
Other birds	7	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	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%
Marine invertebrates	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%
Vegetation	11	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.

Note Percentages are calculated using the number of households reporting less use as a base.

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

b. The number of households that gave a valid response in at least one of the categories. Households are counted only once even though they may give more than one valid response.

Table 7-12. – Reported impact to households responding that they did not get enough of a type of resource, Alexander/Susitna, 2012.

		Households getting enough _____.				Impact to those not getting enough _____.									
	Sample	Valid responses		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Salmon	11	11	100.0%	4	36.4%	0	0.0%	0	0.0%	3	75.0%	1	25.0%	0	0.0%
Nonsalmon fish	11	9	81.8%	5	55.6%	0	0.0%	0	0.0%	4	80.0%	1	20.0%	0	0.0%
Marine invertebrates	11	2	18.2%	1	50.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Large land mammals	11	11	100.0%	4	36.4%	0	0.0%	0	0.0%	3	75.0%	1	25.0%	0	0.0%
Marine mammals	11	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	11	1	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	11	1	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	11	7	63.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	11	1	9.1%	1	100.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Vegetation	11	11	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All resources	11	11	100.0%	4	36.4%	0	0.0%	1	25.0%	2	50.0%	1	25.0%	0	0.0%

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

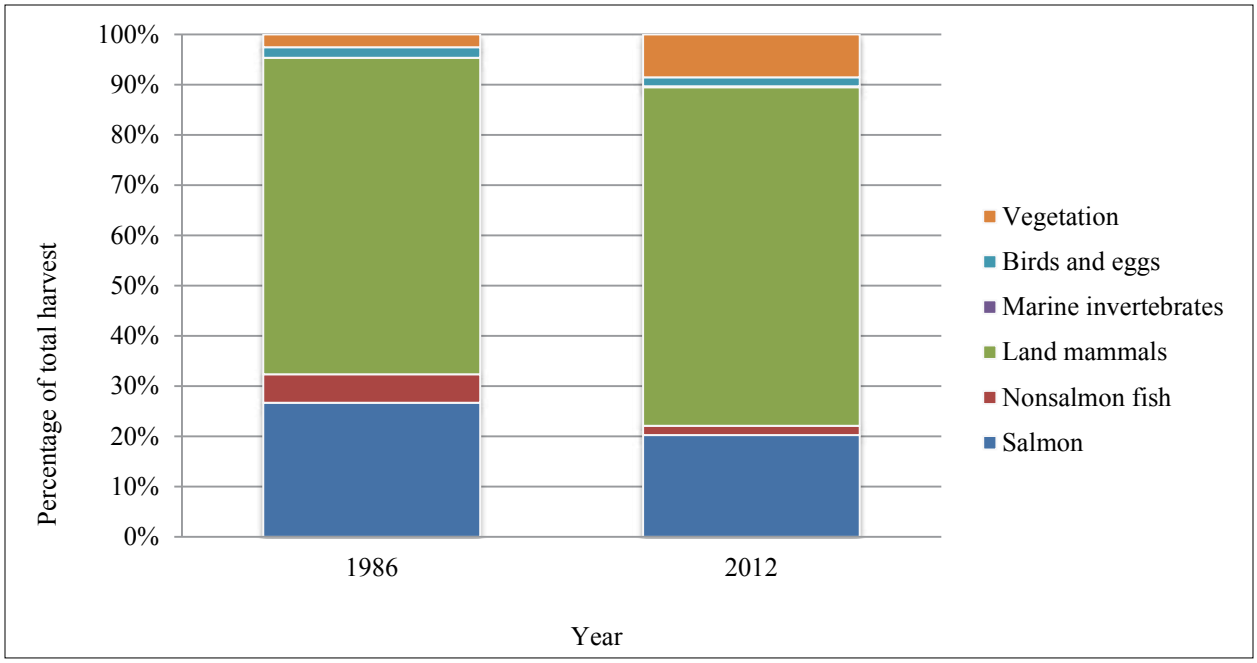

Figure 7-15. – Composition of total harvest as a percentage of usable weight, Alexander/Susitna, 1987 and 2012.

HARVEST DATA

Changes in the harvest of resources by Alexander/Susitna residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Alexander/Susitna in 1986 (Stanek, Foster, and Fall 1988). A comparison of the 1986 and 2012 harvest years for Alexander/Susitna presents a picture of a decline in overall wild resource use by the community within the 26-year period. For instance, in 1986, Alexander/Susitna residents harvested 313 lb of wild resources per capita, but in 2012 harvested 219 lb of wild resources per capita, representing a decline of 93 lb per capita (Stanek, Foster, and Fall 1988; CSIS).

The composition of harvests by resource category also shifted somewhat over the 26-year period, but not significantly.[5] Figure 7-15 summarizes the percentage of the annual harvest for each major resource category from the 2 comprehensive studies from 1986 and 2012. In 1986, salmon made up 25% of Alexander/Susitna's total wild resource harvest, and in 2012 salmon made up 20% of the total harvest. Nonsalmon fish harvests slightly declined from 5% of the total in 1986 to 2% of the total in 2012. Land mammal harvests increased from 59% of the total harvest in 1986 to 67% of the total harvest in 2012. Likewise, vegetation harvests increased from 2% of the total harvest in 1986 to 9% of the total harvest in 2012.

According to ethnographic information obtained during the 2012 study, the shifts to less salmon

5. Stanek, Foster, and Fall (1988, 115) notes that although the per capita harvest between Skwentna and Alexander are different, the composition of the harvest (percentage of each category) for both communities have been combined.

harvests and more land mammal harvests in 2012 are a reflection of a historical decline in local salmon populations and resulting regulatory restrictions on salmon fishing in Alexander Creek, and an increase in local moose populations resulting in expanded moose hunting opportunities for community residents.

CURRENT AND HISTORICAL HARVEST AREAS

The 2012 research provides the first known subsistence harvest mapping data available for the Alexander/Susitna community for a single year. An earlier report documents limited mapping data (Stanek, Foster, and Fall 1988); however, the maps depict lifetime use areas and therefore are not comparable to the maps shown in this report that documents 1 year of harvesting effort.

LOCAL COMMENTS AND CONCERNS

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.

SALMON

Salmon, particularly Chinook salmon and sockeye salmon, once played a much larger role in the wild resource harvests of Alexander/Susitna households than it has in recent years. Respondents explained that throughout the latter half of the 20th century Alexander Creek was known to have a very productive Chinook salmon fishery, and, at least through the 1960s, a productive sockeye salmon run also occurred in Alexander Creek. Respondents formerly relied on each of these fisheries for home use, yet both of these salmon runs have experienced severe declines.

Respondents explained that, while today an occasional sockeye salmon can be found near the mouth of Alexander Creek, up until the 1970s many sockeye salmon traveled up Alexander Creek to spawn in Alexander Lake. Respondents believed that invasive northern pike are mostly responsible for the near extinction of the sockeye salmon run in Alexander Creek. Respondents explained that northern pike are not native to Alexander Lake but were transplanted there. Once transplanted, the pike population grew and eradicated the sockeye salmon smolt found in the lake. Respondents also said that over the last 2 decades the water flow of Alexander Creek has become slower and the temperature warmer and more conducive as northern pike habitat. Respondents believed that

northern pike populations in the watershed have thus continued to increase and have had a negative impact on many of the other salmon and nonsalmon fish that also live in Alexander Creek.

Respondents believed that in recent years northern pike populations also greatly hindered the recovery of Chinook salmon in Alexander Creek. Respondents attributed overfishing, not northern pike predation, as the cause of the Chinook salmon crash that occurred during the early years of the 21st century.

Through the last decades of the 20th century, Alexander Creek supported a very productive and popular Chinook salmon sport fishery. Anchorage residents often used aircraft to travel to Alexander Creek to fish for Chinook salmon during the spring, and several sport fishing lodges catering to tourists operated on the river. Respondents believed that both overfishing in the sport fishery and commercial fishing in Cook Inlet led to a massive decline in annual Chinook returns to Alexander Creek. Respondents said that local residents began to notice the decline in Chinook returns beginning in 2003 and then watched the situation worsen through 2007 when, under state regulation, Alexander Creek and all waters within a one-half mile radius of the stream's confluence with the Susitna River were closed year-round to fishing for Chinook salmon. "I can remember when just about every cast you could catch a king [Chinook salmon]. It just seemed like a couple of years and they were gone. It [the Chinook salmon decline] happened so fast," explained an Alexander resident.

Respondents explained that prior to the crash of Alexander Creek's Chinook salmon fishery there were 9 sport fishing lodges operating on the river. Respondents believed that not only were Chinook salmon severely (and illegally) overharvested by patrons of these lodges and other visitors, but also that over the years some of the lodge guests engaged in illegal commercial sale of Chinook salmon harvested in Alexander Creek. Whatever the reason for the decline, they said, when the fishery collapsed, the majority of the lodges closed and the local economy based on Chinook salmon sport fishing also collapsed.

Prior to these events, respondents said, not only were Chinook salmon important to the local cash economy, they were also an important food source for residents. Today, Alexander/Susitna residents must travel to Deshka Landing—25 miles up the Susitna River—to harvest Chinook salmon in the sport fishery (although one resident who owns an airplane travels to the McArthur River to harvest Chinook salmon). Respondents explained that these trips are rarely done, however, because the fuel expense is not worth the return to be gained from the trip, since the daily bag limit for Chinook salmon 20 in or longer at Deshka Landing is 1 fish.

Respondents explained that the limited Chinook salmon fishery is a result of a very fragile situation for the existence of Chinook salmon in the Susitna Basin and stated that for conservation reasons they choose to no longer harvest Chinook salmon. Now that regulations severely restrict Chinook salmon fishing in Susitna Basin waters, stopping northern pike predation on recovering salmon smolt populations has become residents' primary concern, respondents said. Alexander/Susitna

respondents believed that the State of Alaska's northern pike eradication program in the area is warranted and that the program has been effective. Respondents reported observations of increasing Chinook salmon presence in Alexander Creek during spring, and observations of declines in the local northern pike population. "The pike eradication program has knocked 'em down [northern pike numbers] to a noticeable difference," said an Alexander resident. Respondents hoped that one day the Chinook salmon fishery in Alexander Creek will open again but cautioned that harvests would need to be carefully managed if an opening becomes warranted.

Today, coho salmon are the primary species of salmon used by Alexander/Susitna residents as a food source. Respondents explained that during late summer and fall, when they put a few days' effort toward rod and reel coho salmon fishing, they can normally put away up to 4 coho salmon per person, per household, for their winter supply (state sport fishing regulations allow 2 coho salmon 16 in or longer per day and 4 in possession from Alexander Creek waters). However, respondents reported observations of recent declines in coho salmon returns to Alexander Creek and also expressed concern about the future sustainability of the coho salmon fishery in the area.

MOOSE

Respondents explained that moose is the most important wild resource for Alexander/Susitna residents. The majority of Alexander residents rely on the state Tier II subsistence permit hunting opportunity for "any bull" moose from December 15–March 31 normally available in GMU 16B. Respondents explained that winter has been the traditional time for Alexander/Susitna residents to hunt moose since at the least the 1960s.

Respondents told of the existence of a separate "mountain population" of moose, which spends summers at higher elevations in the Mount Susitna area and then goes down to the lowlands after the first heavy snows. Respondents explained that it has been a long-time traditional practice for Alexander/Susitna residents to hunt this distinct population of moose, which summers around Mount Susitna and winters on the Susitna Flats. The hunt traditionally took place during November and December.

Respondents explained that moose are normally sparse in the Alexander area prior to winter before the "mountain population" begins to migrate to the lowlands and that moose hunting during the state general season (August 20–September 25) has been historically unproductive for Alexander/Susitna residents when compared to the winter hunt. Respondents also explained that dense vegetation and low waters, which make boat travel difficult, also limit success during fall moose hunting. "This is a really hard area to hunt. It is really thick. It is not an easy area to hunt on foot or on a boat and you can't get a 4-wheeler into these areas either," explained an Alexander hunter. Respondents said that during winter residents are often able to easily harvest a moose close to home and avoid excessive expenses for fuel and long amounts of time required to be successful

during the general season hunt. Respondents also prefer to hunt moose during winter because of the better meat-handling and preservation conditions available. "You get a moose during winter you can cool it down and take care of your meat a lot better than you can in the fall hunt, so we prefer the winter hunt," said an Alexander hunter. Respondents said that the winter hunt is also important to residents because it provides an opportunity for a hunter to harvest any bull moose rather than one with the spike-fork/50-in antler restriction imposed during the state general season moose hunt in GMU 16B. Respondents explained that to them the "any bull" opportunity is a true subsistence hunting opportunity because they prefer the meat from a young bull moose for food rather than the trophy antlers obtained from a moose with a 50-in or larger antler spread. "Winter is the best time for a subsistence hunter to gather meat," said another Alexander hunter.

Overall, Alexander/Susitna residents greatly appreciate the opportunity to hunt moose during the traditional wintertime period. "Tier II is a great benefit to the people who live here," said an Alexander hunter. However, even while Tier II permits are scored according to local specific criteria, all Alaska residents are eligible to apply for and be awarded a Tier II permit and Alexander/Susitna respondents expressed concern that hunters with no ties to the area are untruthful on their Tier II applications and are thus unjustly awarded a Tier II permit. Respondents expressed concern that the State of Alaska has been lax in enforcement of Tier II eligibility.

Respondents explained that prior to the 1990s it was normal for all local hunters to receive a GMU 16B winter moose hunting permit from the state.[6] Respondents also said that during the winter of 1989–1990, the moose population in the area crashed heavily as a result of very heavy snowfall. During the 1990s, moose mortality also increased as a result of bear predation. Respondents observed that recent state efforts to intensively manage bear populations and increase bear harvests in GMU 16B have proven highly successful at increasing moose populations in the Alexander area. In recent years, hunters have found more and more moose in the area and the hunting has become easier. Nevertheless, Alexander/Susitna respondents remained concerned that more hunters from outside the area will be awarded the Tier II permit and thereby make moose hunting opportunities increasingly difficult for residents of the area.

BEARS

Respondents explained that since initiation of the state intensive management program in GMU 16B both black and brown bears are rarely seen in the Alexander area. While some respondents have harvested bears by baiting them in the past, today bears are mostly only hunted opportunistically by

6. In December 1989, the Alaska Supreme Court ruled that the rural residency provision in Alaska's subsistence law violated the Alaska Constitution. Currently, there is no regulation or permit requirement that uses "proximity to the use's domicile" to determine eligibility for any subsistence fishery or hunt.

residents. Respondents said that some people harvest bears for subsistence uses and others pursue them more so for predator control purposes.

BIRDS AND EGGS

Bird hunting by Alexander/Susitna residents, both for ducks and spruce grouse, has declined from past levels, respondents said. The ruffed grouse population in the area has been increasing over the last several years, they said. For the most part, respondents said, residents are not hunting the ruffed grouse because they would like the population to grow.

PROPOSED SUSITNA-WATANA DAM PROJECT

Alexander/Susitna respondents expressed concern about reduced water flow and changes in water temperature resulting from construction of the proposed Susitna-Watana dam. Respondents were concerned that changing water levels and reduced flow will create boat travel problems and possibly impede river transportation. Respondents were also concerned that changes in the river system will have a negative effect on an already jeopardized Susitna River salmon fishery. Respondents discussed knowledge of Chinook salmon runs that occur in some tributaries above the proposed dam site and felt that if the dam were built these Chinook salmon populations would likely go extinct. For this reason, most interview and survey respondents were opposed to construction of the dam.

ACKNOWLEDGEMENTS

ADF&G Division of Subsistence would like to thank local research assistants Mike Mason and Nancy Conklin for their help in facilitating the Alexander/Susitna portion of this research.

DISCUSSION AND CONCLUSIONS

OVERVIEW OF FINDINGS FOR THE STUDY COMMUNITIES, 2012

This report documents the harvests and uses of wild resources by 6 communities in the Susitna River Basin of Southcentral Alaska. These communities are diverse in terms of location within the Susitna Basin and resident mobility. Cantwell, Talkeetna, and Trapper Creek are road-connected communities on the Parks Highway, a major highway running through Interior Alaska. Cantwell is approximately a 4-hour drive to Anchorage and a 3-hour drive to Fairbanks. Talkeetna and Trapper Creek are a 1-hour drive to services in Wasilla or 2 hours from Anchorage. Chase is located 10 miles off the Talkeetna Spur Road and Talkeetna is accessible via ATV trail or boat, and Alexander/Susitna and Skwentna are remote communities available by air or water. The relatively more rural communities of Chase, Skwentna, and Alexander/Susitna had higher per capita and household harvests, and a wider range of diversity of resource harvests (Table 1-16). Although there is some diversity in terms of resident mobility and harvesting patterns, the study communities share some commonalities which will be the focus of this discussion.

In the study year of 2012, most residents of all the study communities participated in wild resource hunting, fishing, and gathering for nutrition and to support their way of life. Virtually every household (95% or more) used wild resources in Cantwell, Talkeetna, and Trapper Creek, and 100% in Chase, Skwentna, and Alexander/Susitna (Table 1-14; Figure 8-1). About 85% or more of the households in every community engaged in harvesting activities (Figure 8-1). Sharing of resources was also common in all of the study communities and 75% or more of households in the 6 study communities reported receiving resources and 50% or more reported giving resources. 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.

Table 1-16 shows a comparison between communities of some of the key findings, including demography, the cash economy, and resource harvest and use. As estimated in pounds usable weight per person, harvests of wild foods from 53 lb per person in Talkeetna to 219 lb per person in Alexander/Susitna (Table 1-16; Figure 8-2). Figure 8-2 shows a comparison of the composition of the harvest between communities. For Cantwell, Chase, Skwentna, and Alexander/Susitna, land mammals made up a majority of the harvest in terms of pounds per capita. In Talkeetna and Trapper Creek, salmon made up more of the harvest. At the individual level of participation anywhere from

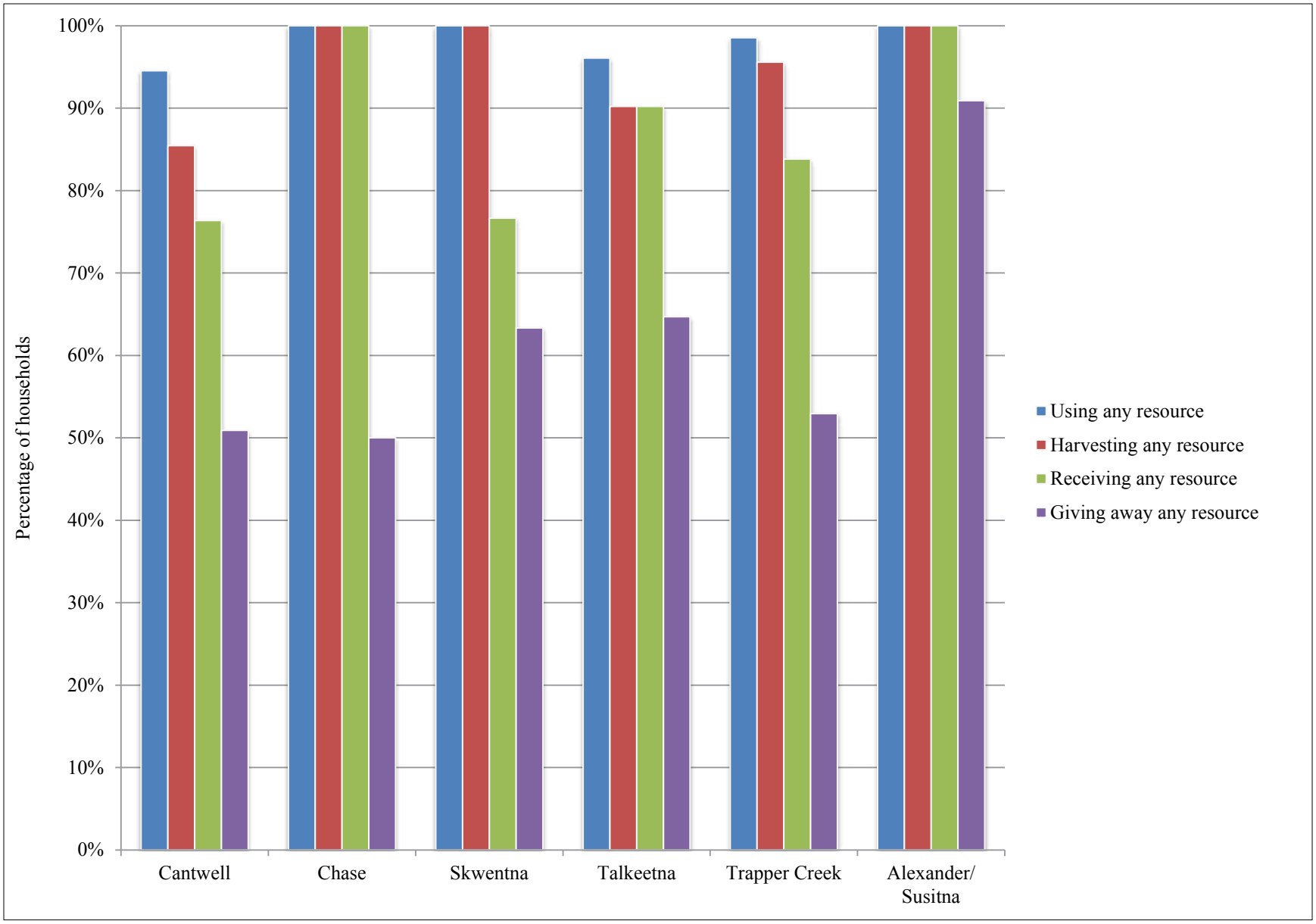

Figure 8-1. – Harvests and uses of wild resources, study communities, 2012.

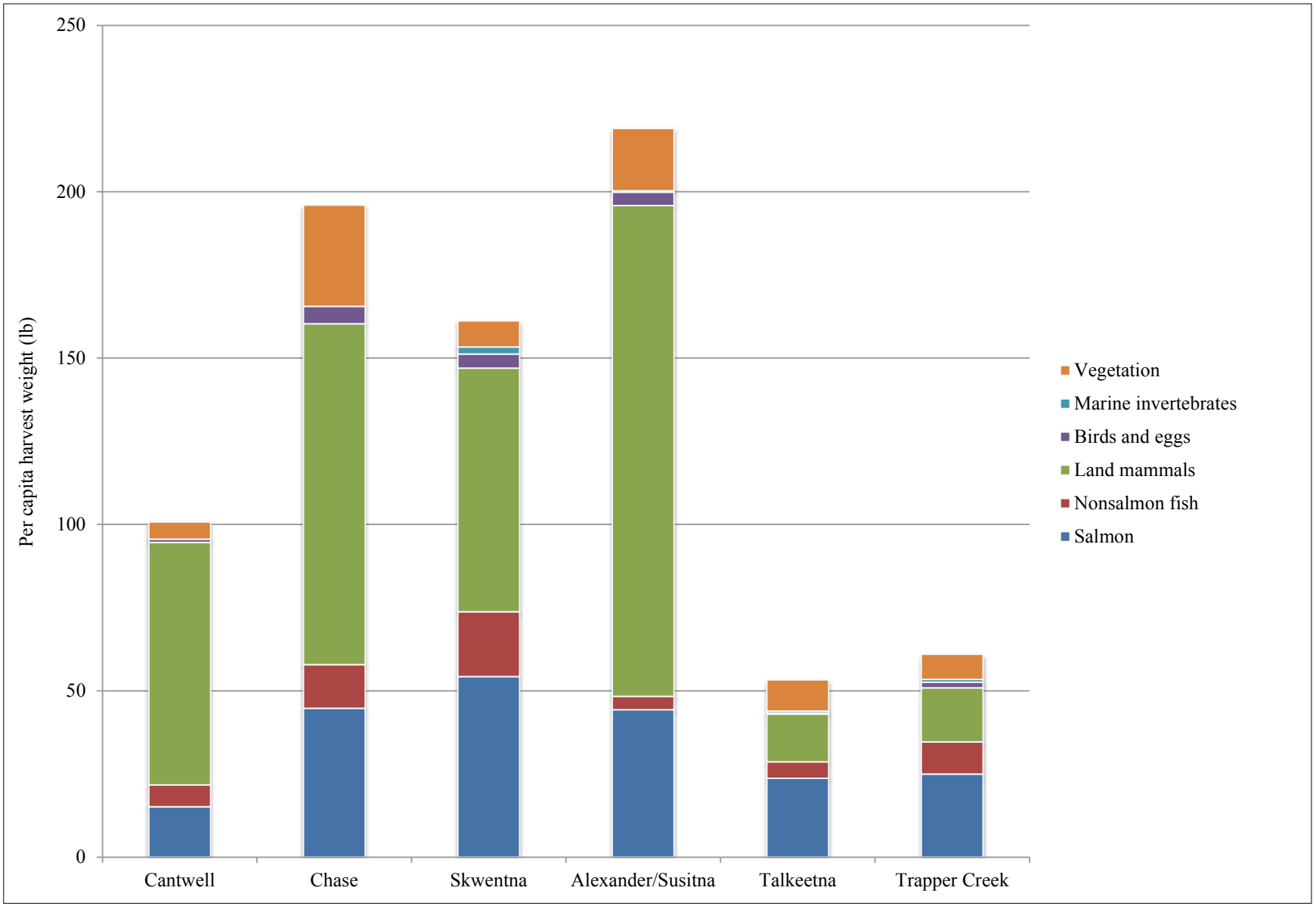

Figure 8-2. – Composition of harvest by resource category in pounds per capita, study communities, 2012..

46% of residents to 81% participated in harvesting fish and 19% to 60% participated in harvesting large land mammals (Table 1-13).

The Susitna River Basin provides salmon harvesting opportunities locally for 5 of the 6 communities. With Cantwell being farther to the north, residents traveled to other locations to fish for salmon, including the Susitna River about halfway between Trapper Creek and Cantwell alongside the Parks Highway, the Copper River Basin, or to the Kenai and Kasilof rivers (Figure 2-6). Cantwell residents therefore harvested around 15 lb per capita of salmon compared to 24 lb per capita in Talkeetna and 54 lb per capita in Skwentna. Other road-connected communities traveled to the Kenai Peninsula to harvest salmon as well, especially sockeye salmon, including Talkeetna, Trapper Creek, and Chase, which, as noted above, is located just a few miles off the Talkeetna Spur Road (Appendix D; Figure 4-7; Figure 5-6).

Nonsalmon species made up a small component of the harvest in the 6 studies communities (Figure 8-2). One common species that seems to be growing in importance in the lower Susitna Basin is northern pike, as shown by the fishing effort in Skwentna: 13 lb per capita of the estimated 20 lb per capita of nonsalmon fish was northern pike (67% of the harvest of nonsalmon fish) (Table 6-4; Figure 6-7). This trend of increasing harvest of northern pike is seen in Trapper Creek as well, where 33% of the harvest of nonsalmon fish in terms of per capita harvest was northern pike (3 lb per capita of northern pike of a per capita harvest of 10 lb for nonsalmon fish) (Figure 5-8; Table 5-4). Other local nonsalmon fish harvests are important as well, including trout, Dolly Varden, and Arctic grayling. Being on the road system, or a quick flight or ATV ride from the highway system, residents are able to travel to marine environments to harvest Pacific halibut as well. However, road accessibility does not limit mobility and 84% of the nonsalmon fish harvest in Alexander/Susitna was Pacific halibut (Figure 7-7).

As noted above land mammals were a higher percentage of the harvest overall in 4 of the 6 communities. Moose were harvested by all 6 communities and caribou in 5 of the 6 communities (Figure 8-3; Figure 8-4). Harvests are shown as estimates in each of the chapters. Figures 8-3 and 8-4 show the actual reported harvest as well as the estimated harvest. Cantwell had the highest reported moose harvest—15—with an estimated harvest of 23 moose (Figure 8-3). Talkeetna showed the lowest reported harvest and Chase the lowest estimated harvest. Talkeetna and neighboring Trapper Creek, however, are large communities with an estimated 2012 population of 788 and 335, respectively, compared to Chase, which had an estimated population of 35 (Table 1-1). Chase, Talkeetna, and Trapper Creek had difficulty hunting moose in 2012 due to a flood event that was mentioned earlier in this report. This event lasted for several weeks during the fall hunting season and disrupted residents' ability to hunt, as well as focused the efforts of some on saving their homes and communities from flooding. Because Talkeetna and Trapper Creek are located along the road system in GMUs 16A and 14B, only a fall moose hunt is available due to high demand and ease

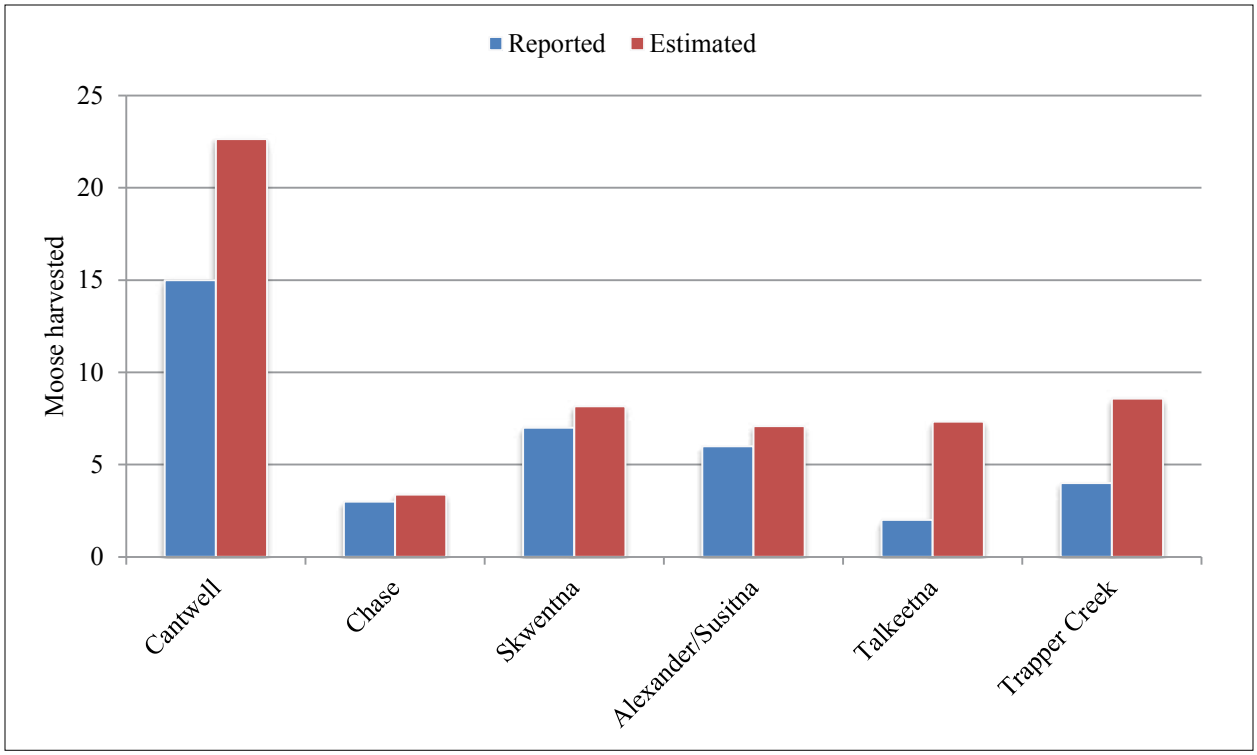

Figure 8-3. – Reported and estimated moose harvest, study communities, 2012.

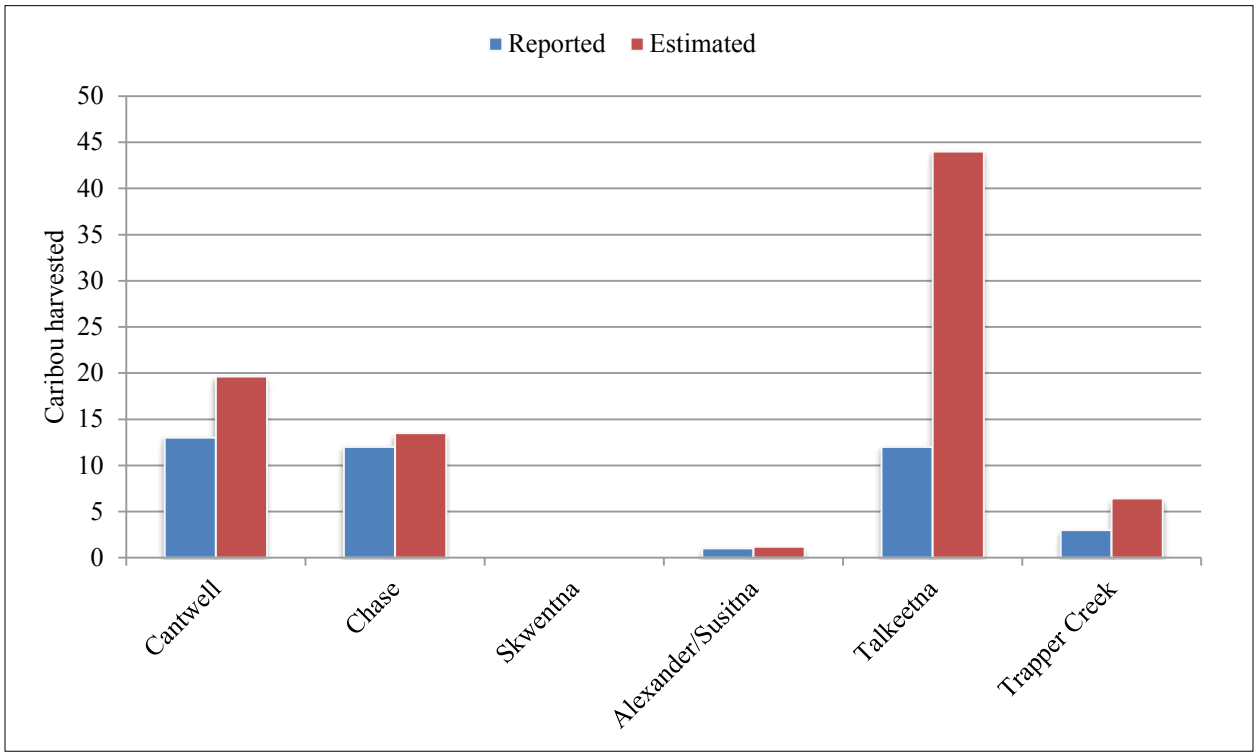

Figure 8-4. – Reported and estimated caribou harvest, study communities, 2012.

of access. Skwentna and Alexander/Susitna, however, are in or close to GMU 16B, and off the road system. In GMU 16B, the Board of Game has found that moose have positive customary and traditional uses and have provided for reasonable opportunity for subsistence through both a fall and a winter moose hunt. Residents of Cantwell and Chase have priority on federal lands where winter hunting seasons are available as well.

Although Talkeetna and Trapper Creek did not harvest many moose in 2012, moose were provided in the community via the Alaska Moose Salvage Program. The division obtained a copy of records for roadkill and sub-legal harvests in the Talkeetna and Trapper Creek area. Seventy-three moose were clearly identified as being killed and distributed to residents and charitable organizations in these communities. Of those 73 moose, 13 were identified as cows, and 10 as calves. The remaining 50 animals were not clearly identified, and are presumed to have been average-sized antlerless moose, including bulls. To assign an estimated harvest weight for salvaged moose, analysts assumed an average maximum yield of no more than 100 lb for a calf. For all other animals, a maximum usable weight of no more than 500 lb per moose was applied. This results in an estimate of as much as 32,000 lb, or approximately 24 lb per capita, of meat being distributed in the Talkeetna and Trapper Creek area. However, since the condition, size, and potential yield of each individual moose is unknown, the actual usable pounds may be significantly less. As shown in Table 1-15, 14% of households in Talkeetna and 13% of households in Trapper Creek received moose from the roadkill Salvage Program. Road-killed moose were also delivered to the senior center and high school in Sunshine, which is the area located on the Parks Highway at Mile 99 where the Talkeetna Spur Road starts. In Cantwell, 5% of households received moose from the roadkill program and 4% received caribou.

Of the 5 of 6 communities that harvested caribou, estimated caribou harvests ranged from 1 in Alexander/Susitna to 13 in Cantwell to 44 in Talkeetna (Figure 8-4). Most caribou were harvested along the Denali Highway or along the Parks Highway in the northern Susitna Basin, as shown in Figure 2-11, although Talkeetna residents reported hunting caribou in the Talkeetna Mountains (Figure 4-14). As noted above, residents of Cantwell and Chase have access to resident-only seasons on federal lands in the northern Susitna Basin and along the Denali Highway.

Black bears were also an important species harvested for food in 2012 in 5 of the 6 study communities (Figure 8-5). Chase, Alexander/Susitna, and Trapper Creek all reported a harvest of 2 bears while Cantwell reported a harvest of 3 and Skwentna reported a harvest of 8 black bears. In all 5 of the communities the bears were harvested locally.

Other resources such as spruce grouse; small land mammals, including snowshoe hares; and especially berries were important for household harvests. A diversity of small land mammals were harvested, as shown in Figure 8-6. Snowshoe hares, martens, and red (tree) squirrels were harvested

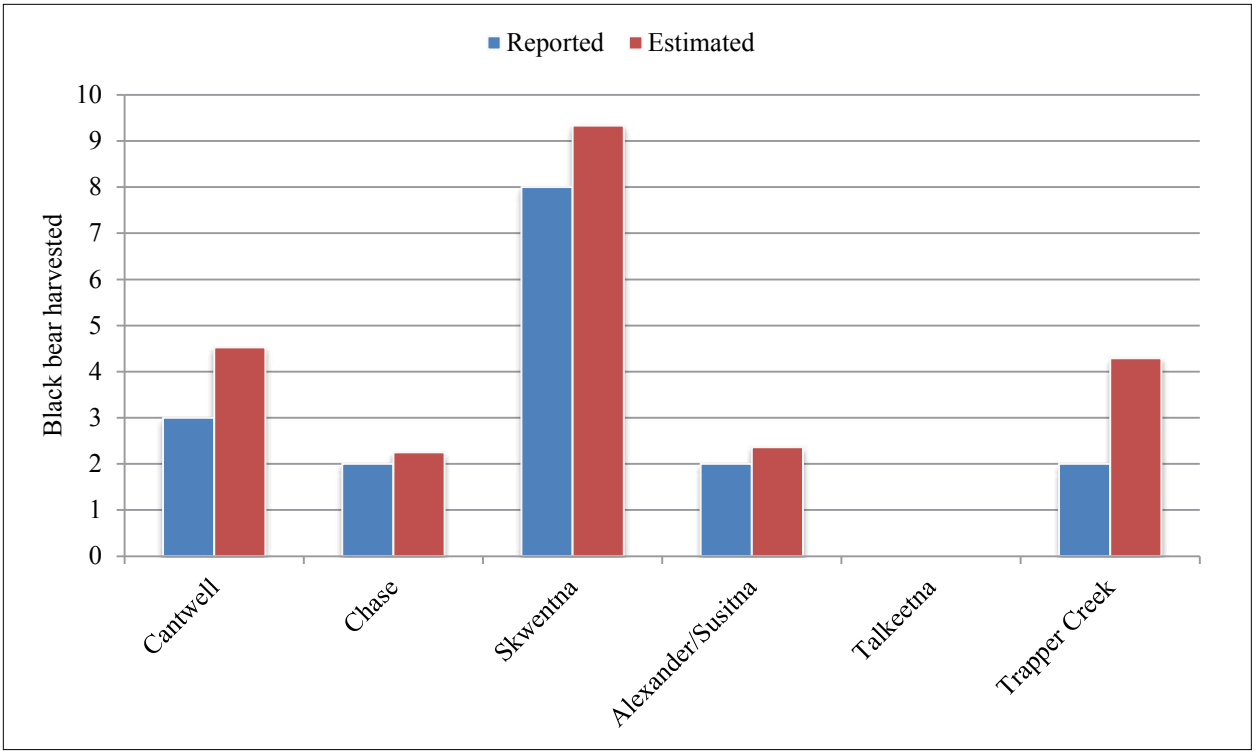

Figure 8-5. – Reported and estimated black bear harvest, study communities, 2012.

by a majority of communities in abundant numbers. Overall though there was a great diversity in the number and species harvested between all 6 study communities as shown in Figure 8-6.

Vegetation, which includes berries along with plants, greens, and mushrooms, accounted for 5 lb per capita in Cantwell to an estimated 30 lb per capita in Chase (Figure 8-2). A great deal of effort was expended locally in all 6 communities to harvest berries in and around each community as well as other locations. The Denali Highway especially was noted as an important location for harvesting blueberries in the fall for several communities.

Use of the Susitna River as a transportation corridor was of special interest for this project. Access was added as a field for mapping harvesting activities. The hydroelectric project could mean open water on the Susitna River during winter as water is being released from the dam thus affecting the ability of residents to utilize the river during the winter for harvesting activities. Figures 8-7 and 8-8 show use of the river corridor and nearby waters on the tributaries in open water and on ice respectively. Analysis also included the banks of the river. Analysis of access during open water season shows mainly access by boat on the river and foot traffic along the river corridor and immediate waters of the tributaries to harvest salmon, freshwater fish (including Dolly Varden, Arctic grayling, and trout), and gathering ferns and berries. ATVs are also used along the river corridor to hunt moose and spruce grouse. During winter access is by foot and snowmachine. Snowmachines

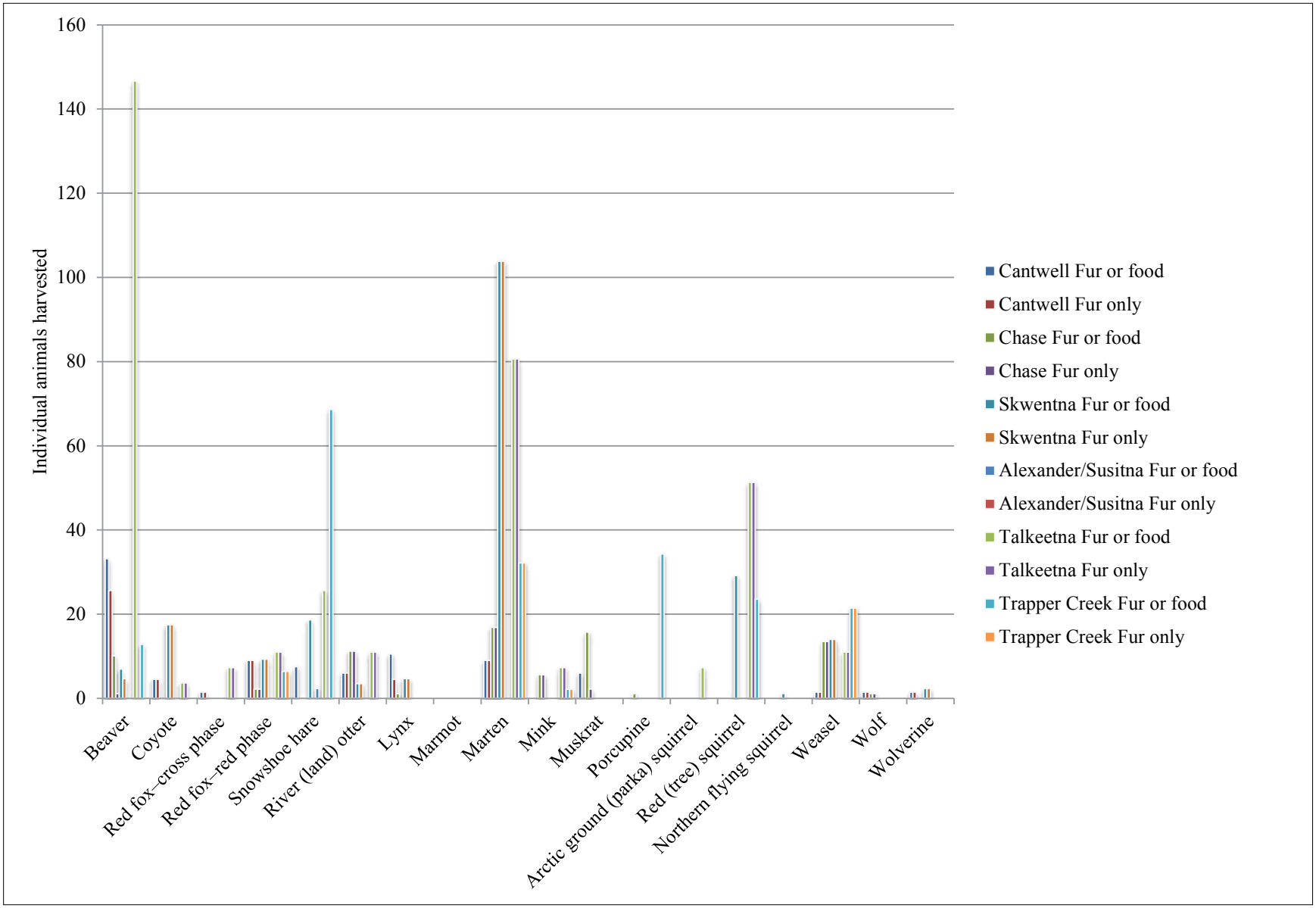

Figure 8-6. – Estimated harvests of small land mammals for food and fur only, study communities, 2012.

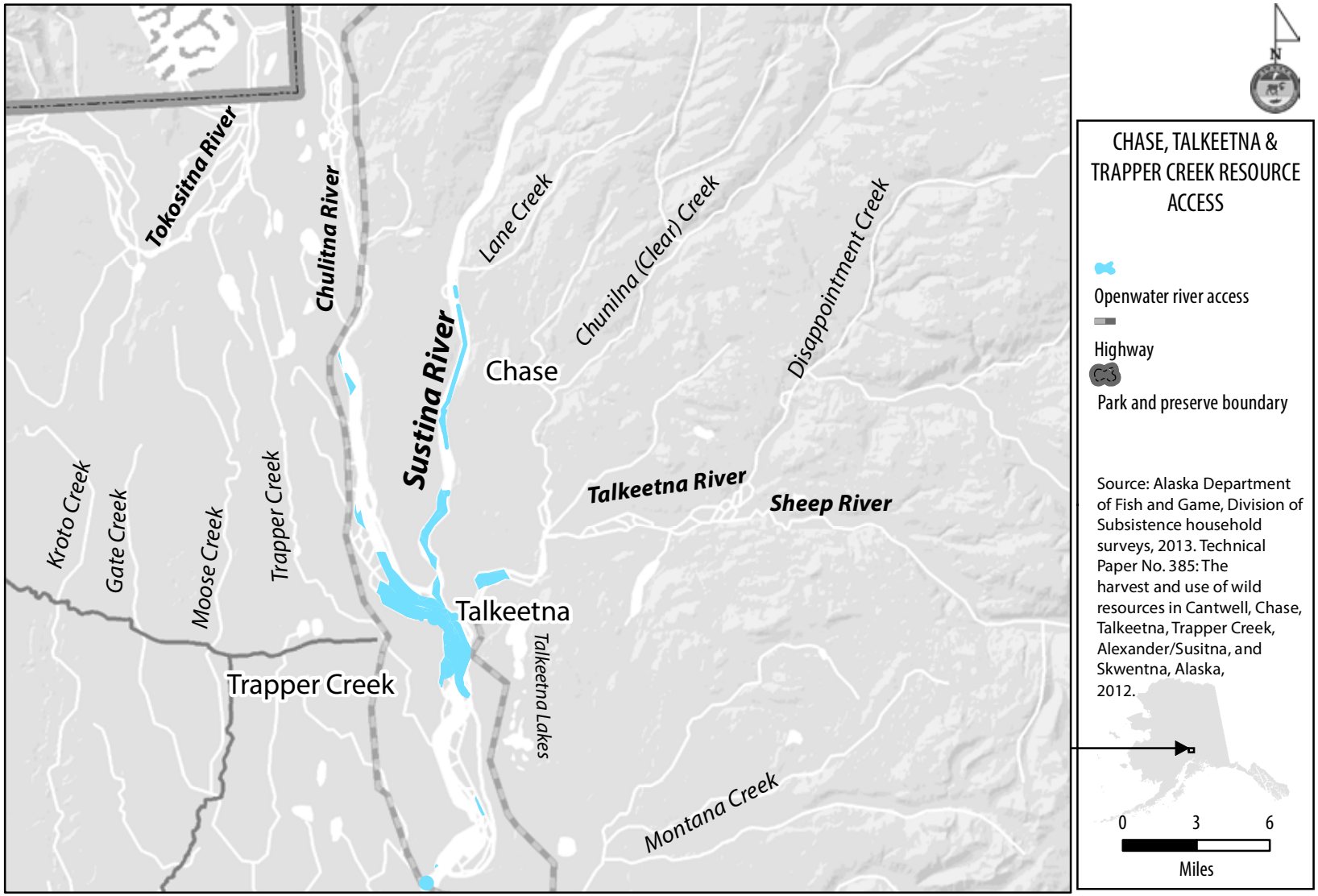

Figure 8-7. – Open water river access, 2012.

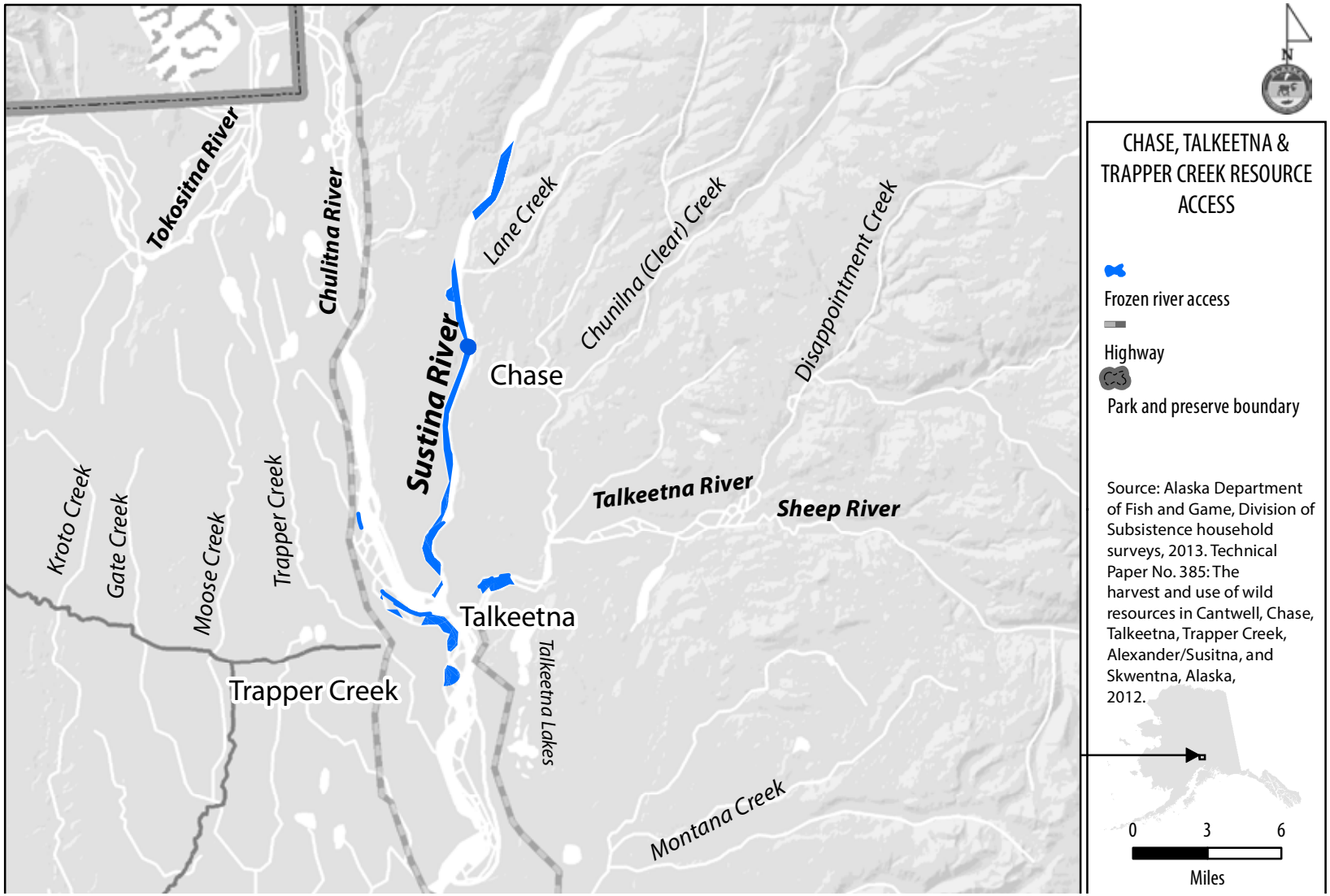

Figure 8-8. – Frozen river access, 2012.

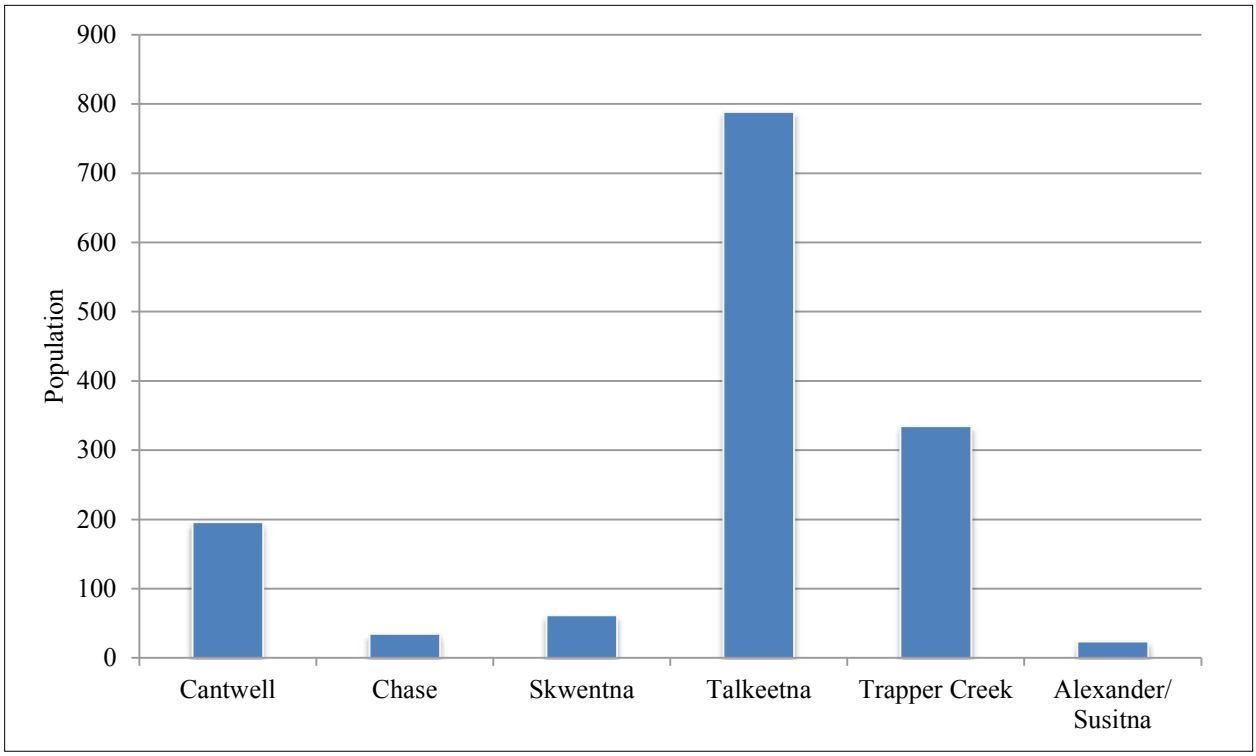

Figure 8-9. – Estimated population, study communities, 2012.

are used mainly to harvest wood and hunt small land mammals such as beavers, coyotes, martens, hares, and wolves. Ptarmigan and grouse are also harvested via snowmachine in the winter.

In 2012, the average number of resources used and harvested by households was highest in Chase, Skwentna, and Alexander/Susitna (Table 1-16). The percentage of households harvesting 70% of resources was highest in Chase, Skwentna, and Alexander/Susitna as well as the total harvest harvested by the top 25% of harvesters. However, although the per capita harvests were lower and less diverse in Cantwell, Talkeetna, and Trapper Creek, the degree of sharing was similar to Chase, Skwentna, and Alexander/Susitna, with similar numbers of resources given and received by households (Table 1-16).

Four of the 6 communities, as noted above, are on the road system or close to the road system. They are also diverse in terms of population and 2 of them, Trapper Creek and Talkeetna, have larger populations (335 and 788, respectively) and are located within an hour's drive of a major population center (Table 1-1; Figure 1-1). Figure 8-9 shows the differences in population. Figure 8-10 shows the number of jobs located in the communities that residents held. In Chase 24% of jobs were located in the residents' community with 47% of jobs located in nearby Talkeetna (Figure 8-10; Table 1-12). Skwentna and Talkeetna residents had almost 80% of jobs located in their own community (Table 1-12). Talkeetna is a major tourist destination in the summer months when trains and buses bring visitors to the community and there are also jobs catering to mountain climbers.

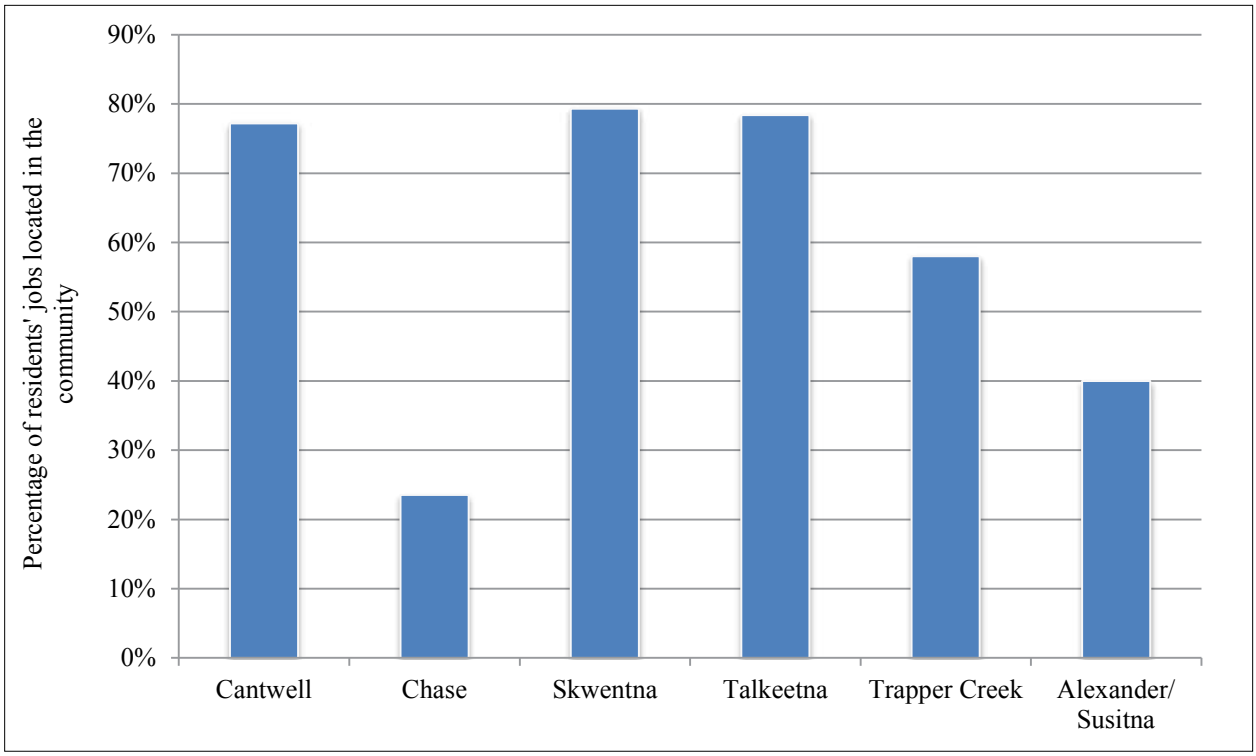

Figure 8-10. – Percentage of jobs held in community of residence, study communities, 2012.

Table 1-12 shows the locations of jobs for each of the study communities. Cantwell, for example, had 77% of jobs located in the community. Being close to Denali National Park and Preserve there are jobs available catering to visitors in the summer, and 13% of jobs were located in Denali Park. Three percent of jobs were located in Healy where a major Alaska coal mine is located.

Being on the road system and within a 1- to 2-hour drive from Wasilla, Palmer, and Anchorage, one would expect more jobs would have been located in those communities for residents of Trapper Creek and Talkeetna. However, most jobs held by Talkeetna residents (78%) were located in the community and more than half in Trapper Creek (58%) were located in the community with few jobs being located in these neighboring population centers (Table 1-12).

According to the U.S. Census the recent median household income (as averaged for the years 2008–2012) in Alaska was $69,917 and the in the United States was $53,046 (U.S. Census Bureau 2014). Figure 8-11 shows the average household income for each of the study communities. These ranged from around $24,000 in Alexander/Susitna to around $54,000 in Cantwell and Chase. Talkeetna was close to higher average household income of Cantwell and Chase with an average household income of $48,000. All communities had a high percentage of employed adults, with the lowest in Alexander/Susitna (71%) and the highest in Chase (94%) (Table 1-11). However, when looking at the percentage of adults employed year-round, Cantwell, Talkeetna, and Trapper Creek

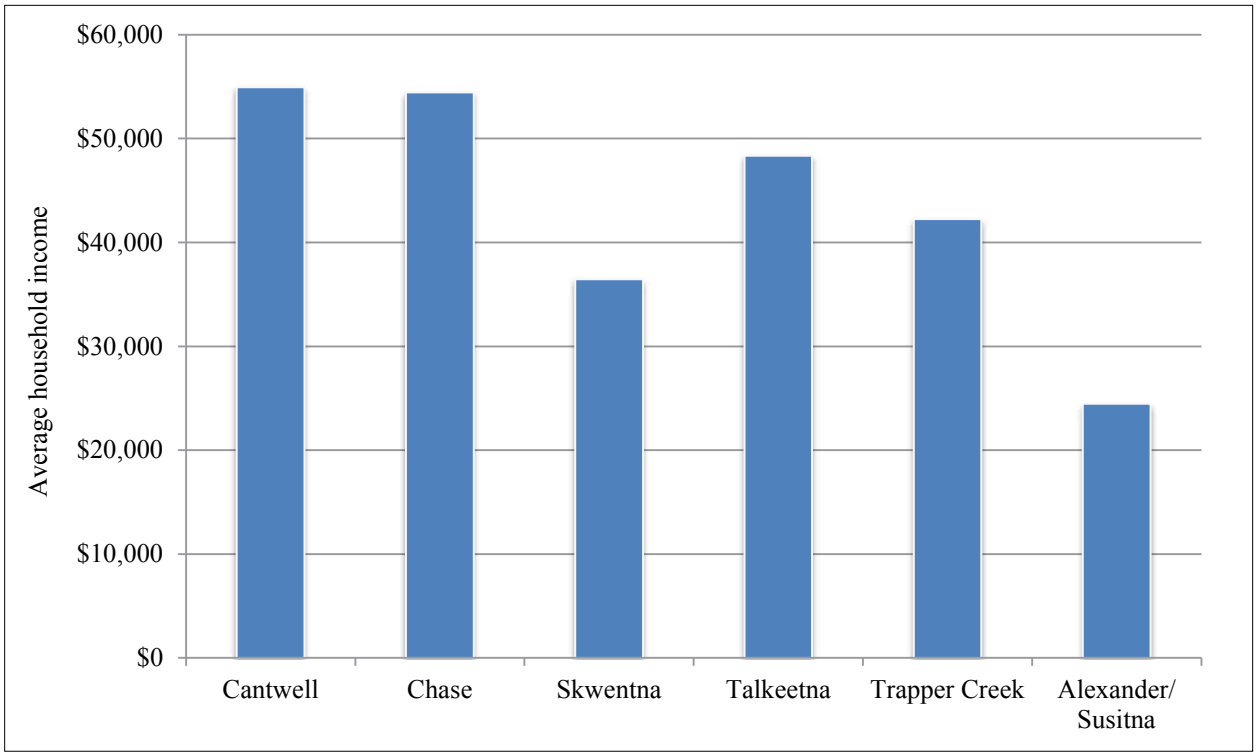

Figure 8-11. – Estimated average household income, study communities, 2012.

had 44% to 53% employed year-round while Chase, Skwentna, and Alexander/Susitna had 14% to 34% employed year-round (Table 1-11).

Something that residents noted in all of the study communities was the lower cost of living. Through the synthesis of harvesting wild food and growing food, residents in these study communities related to researchers on several occasions in each of the study communities that they could live off less income. However, the findings suggest no correlation between household production of harvesting wild foods and household income. For example, Chase had one of the highest per capita harvests (a little less than 200 lb) yet also showed almost the highest average household income (Figure 8-2; Figure 8-11). Alexander/Susitna had the highest per capita harvest yet the lowest average household income. A recent study found that the average per capita harvest of wild foods in rural Alaska is 316 lb per person (Fall and Wolfe 2012). All of these study communities were below this average. However, all 6 communities harvested a higher amount than the Mat-Su area average of 27 lb per capita and slightly higher than the nearby Kenai Peninsula area's average of 45 lb per capita (Fall and Wolfe 2012). Only Chase (196 lb per capita), Skwentna (162 lb), and Alexander/Susitna (219 lb) were close to the rural Southcentral Alaska average of 180 lb per capita (Fall and Wolfe 2012).

Only limited comparisons can be made between the 2012 harvest data and earlier study years. Past comprehensive surveys were conducted in Cantwell for study years 1982 and 1999, in Chase for

study year 1986, and in Talkeetna and Trapper Creek for study year 1985 (Figure 1-3). Overall the differences between study years for all 4 of these communities where comparisons can be made show only limited discernible differences between the historical and 2012 per capita harvest estimates. There are differences, however, in harvest composition between study years, which were discussed in each community chapter. Overall, Cantwell shows a slight difference between the 3 study years of 1982, 1999, and 2012 (Figure 1-3). Land mammals continue to be important to local residents overall. In Chase there is only a slight decrease in harvest over time. The harvest of berries doubled in 2012 from 1986 with about the same level of harvest of salmon and land mammals. Talkeetna showed higher harvests of salmon and Talkeetna and Trapper Creek both showed similar harvests of land mammals between the 1985 and 2012 study years (Figure 1-3). Land mammals overall are a higher component of the harvest in Cantwell, Chase, Skwentna, and Alexander/Susitna and salmon are a higher component of the harvest in Talkeetna and Trapper Creek (Figure 1-3).

CONCLUSIONS

This study documented the importance of the harvest of wild resources to the residents of the Susitna Basin communities of Cantwell, Chase, Skwentna, Alexander/Susitna, Talkeetna, and Trapper Creek. Harvest levels, as estimated in pounds usable weight per person, differed among communities, with the highest harvests recorded for the 3 communities that are off the road system: Skwentna, Alexander/Susitna, and Chase. There were relatively high participation rates at both the individual and household level in all 6 communities. In all communities, wild resource harvests were generally diverse in 2012. Again, the widest range of resource uses occurred among households living off the road system. For all communities combined, caribou, moose, salmon, upland game birds, and berries were the primary wild foods harvested as measured in usable pounds. However, as noted above, some residents used a wider diversity of wild foods, such as northern pike, hares, and other wild plants and mushrooms. In addition to their own harvests, most households also received wild resources from other households in their communities as shown by the number of resources given and received. Survey participants and key respondents described sharing their knowledge of wild resources and harvest areas while engaged in hunting, fishing, and gathering activities.

Although the study found evidence of a long-term pattern of harvest and use of wild resources, many participants reported that their wild resource uses and harvests have changed over their lifetimes and in the last 5 years. This is especially true of salmon harvests with the decline of Chinook salmon abundance in the Susitna River Basin. Residents continue to harvest wild resources locally while also taking advantage of opportunities to travel to other areas in Alaska to harvest wild foods. Many residents expressed the desire to continue to harvest wild resources locally, regardless of changes in abundance of resources and the increase in the population of Southcentral Alaska over time.

ACKNOWLEDGEMENTS

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REFERENCES

Alaska Department of Fish and Game. 1986. Alaska habitat management guide, Southcentral region: historical access to fish and wildlife, maps to volume 2. Alaska Department of Fish and Game, Division of Habitat, Juneau. Available at http://www.arlis.org/docs/vol1/C/AHMG/51268959v2maps.pdf.

Alaska Department of Labor and Workforce Development. 2013. Alaska population estimates by borough, census area, city and census designated place (CDP), 2010–2012. Available at http://laborstats.alaska.gov/pop/popest.htm.

Alaska Energy Authority. 2012. Proposed study plan: Susitna-Watana hydroelectric project, FERC No. 14241. Alaska Energy Authority, Anchorage.

Alaska Native Knowledge Network. 1993. Alaska Federation of Natives guidelines for research. Available at http://www.ankn.uaf.edu/IKS/afnguide.html.

Alexander Creek, Inc. 2002. These voices should be heard: the story of Alexander Creek. Alexander Creek, Inc., Anchorage.

Cochran, W. G. 1977. Sampling techniques 3rd ed. John Wiley & Sons, New York.

Evans, S., M. Kukkonen, D. Holen, and D. S. Koster. 2013. Harvests and uses of wild resources in Dillingham, Alaska, 2010. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 375, Anchorage.

Fall, J. A., and D. J. Foster. 1987. Fish and game harvest and use in the middle Susitna Basin: The results of a survey of residents of the road-connected areas of Game Management Units 14B and 16A, 1986. Alaska Department of Fish and Game, Division of Subsistence, Anchorage. Available at http://www.adfg.alaska.gov/techpap/tp143.pdf [Accessed 10 December 2012].

Fall, J. A., and R. J. Wolfe. 2012. Subsistence in Alaska: a year 2010 update. Alaska Department of Fish and Game, Division of Subsistence, Anchorage.

Fried, N. 2012. Household and personal income: recent release covers range of rural areas. Alaska Economic Trends 32: 14–15.

Harper, P. 2011. Caribou management report of survey-inventory activities: 1 July 2008–30 June 2010. Alaska Department of Fish and Game, Division of Wildlife Conservation, Juneau. Available at http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/mgt_rpts/11_caribou.pdf.

Holen, D., S. M. Hazell, and D. S. Koster. 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.

Kari, J., and J. A. Fall. 2003. Shem Pete's Alaska: the territory of the upper Cook Inlet Dena'ina. University of Alaska Press, Fairbanks.

Kukkonen, M., and G. Zimpelman. 2012. Subsistence harvests and uses of wild resources in Chistochina, Alaska, 2009. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 370, Anchorage.

Matanuska-Susitna Borough Information Technology Department, Geographic Information Systems Division. 2013. GIS data dictionary. Matanuska-Susitna Borough Information Technology Department, Geographic Information Systems Division, Palmer.

National Science Foundation Interagency Social Science Task Force. 2012. Principles for the conduct of research in the Arctic. Available at http://www.nsf.gov/od/opp/arctic/conduct.jsp.

Reckord, H. 1983. Where raven stood: cultural resources of the Ahtna region. Occasional paper no. 35, Anthropology and Historic Preservation of the Alaska Cooperative Park Studies Unit, University of Alaska, Fairbanks.

Simeone, W. E. 2002. Wild resource harvests and uses by residents of Cantwell, Alaska, 2000. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 272, Juneau.

Simeone, W. E., A. Russell, and R. O. Stern. 2011. Watana hydroelectric project subsistence data gap analysis. Report prepared by Northern Land Use Research, Inc., for Alaska Energy Authority, Fairbanks.

Southcentral Alaska Northern Pike Control Committee. n.d. Management plan for invasive northern pike in Alaska. Alaska Department of Fish and Game, Anchorage. Available at http://www.adfg.alaska.gov/static/species/nonnative/invasive/pike/pdfs/invasive_pike_management_plan.pdf.

Stanek, R. T., J. A. Fall, and D. L. Holen. 2006. West Cook Inlet ethnographic overview and assessment for Lake Clark National Park and Preserve. Lake Clark National Park and Preserve, Anchorage, and the Alaska Department of Fish and Game Division of Subsistence, Juneau.

Stanek, R. T., D. J. Foster, and J. A. Fall. 1988. The harvest and use of fish, game, and plant resources by the residents of Chase, Gold Creek-Chulitna, and Hurricane-Broad Pass, Southcentral Alaska. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 161, Anchorage.

Stratton, L., and S. Georgette. 1985. Copper Basin resource use map index and methodology. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 124, Anchorage. Available at http://www.adfg.alaska.gov/techpap/tp124.pdf [Accessed 10 December 2012].

Stratton, L., and S. Georgette. 1984. Use of fish and game by communities in the Copper River Basin, Alaska: A report on a 1983 household survey. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 107, Anchorage.

U.S. Census Bureau. 2011. 2010 census. U.S. Census Bureau, Washington, D.C. Available at http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

U.S. Census Bureau. 2014. State and county quickfacts: Alaska. U.S. Census Bureau, Washington, D.C. Available at http://quickfacts.census.gov/qfd/states/02000.html.

La Vine, R. M., M. Kukkonen, B. Jones, and G. Zimpelman. 2013. Subsistence harvests and uses of wild resources in Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, Alaska, 2010. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 380, Anchorage.

La Vine, R. M., M. Kukkonen, B. Jones, and G. Zimpelman. In prep. Subsistence harvests and uses of wild resources in Kenny Lake and Willow Creek, Gakona, McCarthy, and Chitina, Alaska, 2012. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. NNN, Anchorage.

Wolfe, R. J., and R. J. Walker. 1986. Subsistence and income in rural Alaska. Alaska Department of Fish and Game, Special Publication No. SP1986-001, Juneau.

Wolfe, R. J., and R. J. Walker. 1987. Subsistence economies in Alaska: productivity, geography, and development impacts. Arctic Anthropology 24: 56–81.

Wygal, B. T., and T. Goebel. 2012. Early prehistoric archaeology of the middle Susitna Valley, Alaska. Arctic Anthropology 49: 45–67.

Appendix A–Survey Instrument

SURVEY FORM FOR CHASE

COMPREHENSIVE SUBSISTENCE SURVEY

CHASE, ALASKA

January to December, 2012

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:	CHASE	78
RESPONDENT ID:		
INTERVIEWER:		
INTERVIEW DATE:		
START TIME:		
STOP TIME:		
DATA CODED BY:		
DATA ENTERED BY:		
SUPERVISOR:		

COOPERATING ORGANIZATIONS

STEPHEN R. BRAUND
AND ASSOCIATES
PO BOX 1480
ANCHORAGE, AK 99510

907-276-8222

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

HDR
2525 C STREET, SUITE 305
ANCHORAGE, AK 99503

907-644-2117

HOUSEHOLD MEMBERS

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2012…
…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 CHASE? (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 **CHASE: 78**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2012…
…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 **CHASE: 78**

HARVESTS: COMMERCIAL SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH…		IN 2012, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2012, 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, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH…		IN 2012, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2012, 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							
LINGCOD	Y N	Y N	IND	IND	IND		
121606000							
	Y N	Y N	IND	IND	IND		

COMMERCIAL NON-SALMON FISHING: 03 **CHASE: 78**

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, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH…		IN 2012, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2012, 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	IND	IND	IND		
5Q1Q12000							
DUNGENESS CRAB	Y N	Y N	IND	IND	IND		
501004000							
SHRIMP	Y N	Y N	GAL	GAL	GAL		
5Q3400000							
SQUID	Y N	Y N	GAL	GAL	GAL		
503800000							
OCTOPUS	Y N	Y N	IND	IND	IND		
502200000							
KING CRAB	Y N	Y N	IND	IND	IND		
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 **CHASE: 78**

HARVESTS: SALMON (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest SALMON ?..... Y N

Between JANUARY and DECEMBER, 2012…

…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 2012, 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD…					
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…HARVEST WITH A FISH WHEEL?	…HARVEST WITH A GILL NET OR SEINE?	…HARVEST WITH A DIPNET?	…HARVEST WITH ROD AND REEL?	…HARVEST WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*					*(ind, lbs)*
CHINOOK (KING) SALMON 113000000	Y N	Y N	Y N	Y N	Y N						IND
SOCKEYE (RED) SALMON 115000000	Y N	Y N	Y N	Y N	Y N						IND
COHO (SILVER) SALMON 112000000	Y N	Y N	Y N	Y N	Y N						IND
CHUM (DOG) SALMON 111000000	Y N	Y N	Y N	Y N	Y N						IND
PINK (HUMPIES) SALMON 114000000	Y N	Y N	Y N	Y N	Y N						IND
LANDLOCKED SALMON *Kokanee* 116000000	Y N	Y N	Y N	Y N	Y N						IND
UNKNOWN SALMON 119000000	Y N	Y N	Y N	Y N	Y N						IND

These columns should include all the harvests: salmon HARVESTED by members of this household in 2012.

ASSESSMENTS: SALMON

Between JANUARY and DECEMBER, 2012…

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)

SALMON :04 **CHASE: 78**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest OTHER FISH ?.....Y N

Between JANUARY and DECEMBER, 2012…
…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 2012, 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD…				
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…HARVEST WITH GILL NET OR SEINE?	…HARVEST WITH ROD AND REEL?	…HARVEST ICE FISHING?	…HARVEST 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 2012.

OTHER FISH: 06 **CHASE: 78**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

…continued

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012 , 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, 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 ICE FISHING?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*				*(ind, lbs)*
HALIBUT 121800000	Y N	Y N	Y N	Y N	Y N					LBS
HERRING 120200000	Y N	Y N	Y N	Y N	Y N					GAL
PACIFIC COD (GRAY) 121004000	Y N	Y N	Y N	Y N	Y N					IND
PACIFIC TOM COD 121008000	Y N	Y N	Y N	Y N	Y N					IND
STARRY FLOUNDER 121406000	Y N	Y N	Y N	Y N	Y N					IND
SMELT 120400000	Y N	Y N	Y N	Y N	Y N					GAL
ROCKFISH 122600000	Y N	Y N	Y N	Y N	Y N					IND
EULACHON (HOOLIGAN, CANDLEFISH) 120404000	Y N	Y N	Y N	Y N	Y N					IND
LINGCOD 121606000	Y N	Y N	Y N	Y N	Y N					IND
	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 2012.

OTHER FISH

Between JANUARY and DECEMBER, 2012…

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

X = do not use

If LESS or MORE…

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)

OTHER FISH: 06 **CHASE: 78**

HARVESTS: MARINE INVERTEBRATES/SHELLFISH

HOUSEHOLD ID

Do members of your household USUALLY harvest MARINE INVERTEBRATES/SHELLFISH ?.....Y N

Between JANUARY and DECEMBER, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST?	UNITS
	(circle)					*(number taken)*	*(ind, lbs,gal)*
DUNGENESS CRAB	Y N	Y N	Y N	Y N	Y N		IND
·501004000							
KING CRAB	Y N	Y N	Y N	Y N	Y N		IND
·501008000							
TANNER CRAB	Y N	Y N	Y N	Y N	Y N		IND
·501012000							
RAZOR CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
·500612000							
FRESHWATER CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
·500604000							
BUTTER CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
·500602000							
CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
·500600000							
	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 2012.

MARINE INVERTEBRATES/SHELLFISH

Between JANUARY and DECEMBER, 2012…

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)

MARINE INVERTEBRATES/SHELLFISH: 08 **CHASE: 78**

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for LARGE LAND MAMMALS?.....Y N

Between JANUARY and DECEMBER, 2012…

…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 2012. 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 2012 DID MEMBERS OF YOUR HH…						IN 2012, 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 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																				
	Y N	Y N	Y N	Y N	Y N															IND

LARGE LAND MAMMALS

Between JANUARY and DECEMBER, 2012…

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)

LARGE LAND MAMMALS: 10 **CHASE: 78**

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, 2012…

…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 2012. 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												HOW MANY _____ WERE USED FOR FUR ONLY?	UNITS
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN		
	(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

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 2012. 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												HOW MANY _____ WERE USED FOR FUR ONLY?	UNITS
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	
	(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, 2012…

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)

SMALL LAND MAMMALS: 14 **CHASE: 78**

HARVESTS: MARINE MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for MARINE MAMMALS for subsistence?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST marine mammals?..... Y N

IF NO, 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?														
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS	WERE LESS, SAME, OR MORE _____ AVAILABLE IN 2012, THAN IN RECENT YEARS?
	(circle)					*(enter number by sex and month of take)*													*(ind)*	*(circle)*
HARBOR SEAL	Y N	Y N	Y N	Y N	M														IND	L S M ?
300806000					F															
300806001					?															
300806002					M															
300806009					F															
STELLER SEA LION	Y N	Y N	Y N	Y N	?															
301200000					M														IND	L S M ?
301200001					F															
301200002					?															
301200009					M															
SEA OTTER	Y N	Y N	Y N	Y N	F															
301000000					?														IND	L S M ?
FUR SEAL	Y N	Y N	Y N	Y N																
300804000																			IND	L S M ?
300804001					M															
300804002					F															
300804009					?															
WHALE (SPECIFY)	Y N	Y N	Y N	Y N															IND	L S M ?
301600000																				
UNKNOWN SEAL *(Seal Oil)*	Y N	Y N	Y N	Y N															IND	L S M ?
300899000																				
	Y N	Y N	Y N	Y N															IND	L S M ?
																				" ? " means "I don't know"

MARINE MAMMALS

Between JANUARY and DECEMBER, 2012…

To conclude our marine mammals section, I am going to ask a few general questions about .
Last year…
…did your household use LESS, SAME, or MORE marine mammals than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... 1
2

Last year…
…did your household GET ENOUGH marine mammals?..... Y N
If NO…
What KIND of marine mammals did you need?.....

How would you describe the impact to your household
of not getting enough steller sea lion, female last year?..... ...minor? (1) ...major? (2) ...severe? (3)

MARINE MAMMALS: 12 **CHASE: 78**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

Do members of your household USUALLY hunt for MIGRATORY WATERFOWL?.....Y N

Between JANUARY and DECEMBER, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, 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)												
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													
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								
410499000													
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													
	Y N	Y N	Y N	Y N	Y N								

Continue on next page.

HARVESTS: MIGRATORY WATERFOWL

...continued

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, 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, 2012…

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)

MIGRATORY WATERFOWL: 15 **CHASE: 78**

HARVESTS: OTHER BIRDS

HOUSEHOLD ID

Do members of your household USUALLY hunt for OTHER BIRDS?.....Y N

Between JANUARY and DECEMBER, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH…					IN 2012, 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																		
GROUSE (UNKNOWN)	Y N	Y N	Y N	Y N	Y N													
421802990																		
	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, 2012…

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)

OTHER BIRDS: 15 **CHASE: 78**

HARVESTS: BIRD EGGS

HOUSEHOLD ID

Do members of your household USUALLY look for BIRD EGGS?.....Y N

Between JANUARY and DECEMBER, 2012…
…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 2012. 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 2012 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, 2012…

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)

BIRD EGGS: 15 **CHASE: 78**

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, 2012…
…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 2012. 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 2012 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2012, 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		
	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, 2012…

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

X = do not use

If LESS or MORE…
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)

PLANTS AND BERRIES: 17 **CHASE: 78**

ASSESMENTS

HOUSEHOLD ID

SUBSISTENCE ASSESSMENTS: ALL RESOURCES

To conclude our harvest section, I am going to ask a few general questions about ALL WILD RESOURCES. Think about your entire harvest last year.

Last year…

…overall did your household use LESS, SAME, or MORE wild resources than in recent years?..... X L S M

X = do not use

If LESS or MORE…

WHY was your use different?..... 1

2

Last year…

…did your household GET ENOUGH wild resources?..... Y N

If NO…

What KIND of wild did you need?.....

Overall why do you think you did not get enough wild resources?..... 1

2

How would you describe the impact to your household of not getting enough wild resources last year?..... ...not noticable? (0) ...minor? (1) ...major? (2) severe? (3)

HEALTH IMPACT ASSESSMENTS

(circle ONE response)

In a normal week, how many times a day on average are wild foods such as salmon, non-salmon fish, moose, caribou, birds, etc. served in your household?	NONE Don't use (0)	LESS than once a day (1)	About ONCE a day (2)	2 OR 3 times a day (3)	3 OR MORE times a day (4)

If this household does NOT USEwild foods, go to the next page.

Otherwise, continue below…

Please list the TOP FIVE WILD FOODS members of your household eat on a regular basis. Include wild foods that may not be available now, but are important at other times of the year. Please list most important foods first.

(Not necessary to fill out every line)

	Subsistence Food 1	*Subsistence Food 2*	*Subsistence Food 3*	*Subsistence Food 4*	*Subsistence Food 5*
TOP FIVE SUBSISTENCE FOODS					

If your household CANNOT GET WILD 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.

(Not necessary to fill out every line)

	Other Food	*Other Food*	*Other Food*	*Other Food*	*Other Food*
OTHER FOODS (1 TO 5)					
OTHER FOODS (6 TO 10)					

ASSESSMENTS: 66 **CHASE: 78**

JOBS **FOR EACH PERSON IN THE HOUSEHOLD, 16 YEARS OLD AND OLDER** **HOUSEHOLD ID**

Between JANUARY and DECEMBER, 2012…

…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 1997, please list EACH JOB held between JANUARY and DECEMBER, 2012.
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 1997.

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 AND ANY HANDICRAFTS IF APPLICABLE.

WORK SCHEDULE…

	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 2012, WHAT MONTHS DID HE OR SHE WORK IN THIS JOB?	FULL TIME	PART TIME	SHIFT - FULL TIME	ON-CALL, VARIES	SHIFT - PART TIME	IN 2012, 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.)
4 - Irregular, on call

GROSS INCOME is the same as TAXABLE INCOME on a W-2 form.

EMPLOYMENT: 23 **CHASE: 78**

OTHER INCOME

THIS PAGE IS ONLY FOR INCOME THAT IS NOT EARNED FROM WORKING **HOUSEHOLD ID**

Between JANUARY and DECEMBER, 2012…
…Did any members of your household receive a dividend from the Permanent Fund or a Native Corporation?..... Y N

IF NO, go to the next section on this page.
If YES, continue below…

		Did anyone in your household receive income from _____ in 2012?	TOTAL amount all members of your household received from _____ in 2012.
		circle one	*dollars*
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND	Y N	$ /YR
	32		
	NATIVE CORPORATION DIVIDENDS	Y N	$ /YR
	13		

Alaska PFD IN 2012	*Regional Corporations*	*Dividend*
1 PFD = $878		
2 PFDs = $1,756		
3 PFDs = $2,634		
4 PFDs = $3,512		
5 PFDs = $4,390		
6 PFDs = $5,268	*Village Corporation(s)*	*Dividend*
7 PFDs = $6,146		$ -
8 PFDs = $7,024		
9 PFDs = $7,902		
10 PFDs = $8,780		
11 PFDs = $9,658		
12 PFDs = $10,536		

Between JANUARY and DECEMBER, 2012…
…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? *circle one*	Total Amount? *dollars*
EMPLOYMENT RELATED	UNEMPLOYMENT	Y N	$ /YR
	12		
	WORKERS' COMP	Y N	$ /YR
	8		
	SOCIAL SECURITY	Y N	$ /YR
	7		
	PENSION & RETIREMENT	Y N	$ /YR
	5		
	DISABILITY	Y N	$ /YR
	31		
	VETERANS ASSISTANCE	Y N	$ /YR
	35		
ENTITLEMENTS	FOOD STAMPS (QUEST CARD)	Y N	$ /YR
	11		
	ADULT PUBLIC ASSISTANCE	Y N	$ /YR
	3		
	SUPPLEMENTAL SECURITY INCOME (SSI)	Y N	$ /YR
	10		
STATE BENEFI	ENERGY ASSISTANCE	Y N	$ /YR
	9		
	ALASKA SENIOR BENEFITS (LONGEVITY)	Y N	$ /YR
	6		

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

** per diem covers travel expenses, and is not counted as income.*

Scratch paper for calculations

for _____ weeks =
for _____ months =

for _____ weeks =
for _____ months =

Senior benefits of $125 per month for 12 months = $1,500 per elder
Senior benefits of $175 per month for 12 months = $2,100 per elder
Senior benefits of $250 per month for 12 months = $3,000 per elder

OTHER INCOME: 24 **CHASE: 78**

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 **CHASE: 78**

Appendix B–Key Respondent Interview Protocol

EXAMPLE OF KEY RESPONDENT INTERVIEW PROTOCOL FROM SUSITNA RIVER BASIN STUDY BY ALASKA DEPARTMENT OF FISH AND GAME DIVISON OF SUBSISTENCE

KEY INFORMANT INTERVIEW PROTOCOL

SUSITNA BASIN 2013

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/NON-SALMON) – 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

POUND CONVERSION FACTORS FOR SELECTED SUSITNA RIVER BASIN COMMUNITIES, ALASKA, 2012

Resource	Initital units	Conversion to pounds
Chum salmon	1	6.2
Chum salmon [CF retention]	1	6.2
Coho salmon	1	4.8
Coho salmon [CF retention]	1	4.8
Chinook salmon	1	9.5
Chinook salmon [CF retention]	1	9.5
Pink salmon	1	2.7
Pink salmon [CF retention]	1	2.7
Sockeye salmon	1	4.4
Sockeye salmon [CF retention]	1	4.4
Landlocked salmon	1	1.0
Unknown salmon	1	4.6
Unknown salmon [CF retention]	1	4.6
Pacific herring	4	6.0
Pacific herring [CF retention]	4	6.0
Pacific herring sac roe [CF retention]	4	7.0
Pacific herring spawn on kelp	4	7.0
Pacific herring spawn on kelp [CF retention]	4	7.0
Smelt	1	0.3
Smelt	4	3.3
Smelt [CF retention]	4	3.3
Eulachon (hooligan, candlefish)	1	0.3
Eulachon (hooligan, candlefish)	4	3.3
Sea bass	1	1.0
Pacific (gray) cod	1	4.0
Pacific (gray) cod [CF retention]	1	4.0
Pacific tomcod	1	0.5
Pacific tomcod [CF retention]	1	0.5
Unknown cod	1	0.5
Starry flounder	1	3.0
Starry flounder [CF retention]	1	3.0
Lingcod	1	2.4
Lingcod [CF retention]	1	2.4
Pacific halibut	1	16.4
Pacific halibut	2	1.0
Pacific halibut [CF retention]	2	1.0
Rockfish	1	4.0
Rockfish [CF retention]	1	4.0
Yelloweye rockfish	1	8.0
Sablefish (black cod)	1	3.1
Sculpin [CF retention]	1	0.5
Burbot	1	2.4
Dolly Varden	1	0.9
Lake trout	1	2.0
Arctic grayling	1	0.7
Northern pike	1	2.8
Longnose sucker	1	0.7
Cutthroat trout	1	1.4

-continued-

Resource	Initital units	Conversion to pounds
Rainbow trout	1	1.4
Unknown trout	1	1.4
Broad whitefish	1	4.0
Least cisco	1	0.4
Humpback whitefish	1	1.8
Round whitefish	1	1.0
Unknown whitefishes	1	1.8
Bison	1	450.0
Black bear	1	58.0
Brown bear	1	150.0
Caribou	1	130.0
Deer	1	42.5
Goat	1	72.5
Moose	1	450.0
Muskox	1	593.0
Dall sheep	1	65.0
Beaver	1	15.0
Coyote	1	0.0
Red fox–cross phase	1	0.0
Red fox–red phase	1	0.0
Snowshoe hare	1	2.0
River (land) otter	1	3.0
Lynx	1	4.0
Marmot	1	8.0
Marten	1	0.0
Mink	1	2.0
Muskrat	1	1.8
Porcupine	1	4.5
Arctic ground (parka) squirrel	1	0.5
Red (tree) squirrel	1	0.5
Northern flying squirrel	1	0.5
Weasel	1	0.0
Wolf	1	0.0
Wolverine	1	0.0
Fur seal	1	0.0
Harbor seal	1	56.0
Ringed seal	1	56.0
Unknown seal	1	56.0
Sea otter	1	19.5
Steller sea lion	1	200.0
Bowhead	1	28,677.0
Unknown whale	1	
Canvasback	1	1.1
Spectacled eider	1	2.4
Goldeneye	1	0.8
Mallard	1	1.0
Merganser	1	1.8
Long-tailed duck	1	0.8
Northern pintail	1	0.8
Scaup	1	0.9
Black scoter	1	0.9
Green-winged teal	1	0.3

-continued-

Resource	Initital units	Conversion to pounds
Unknown teal	1	0.3
Wigeon	1	0.7
Wigeon–spring	1	0.7
Wigeon–summer	1	0.7
Wigeon–fall	1	0.7
Wigeon–winter	1	0.7
Wigeon–season unknown	1	0.7
Unknown ducks	1	0.8
Brant	1	1.2
Cackling goose	1	1.2
Canada goose	1	1.2
Canada/cackling goose	1	1.2
Snow goose	1	3.0
White-fronted goose	1	2.4
Unknown goose	1	5.0
Tundra (whistling) swan	1	11.2
Sandhill crane	1	8.4
Spruce grouse	1	0.7
Sharp-tailed grouse	1	0.7
Ruffed grouse	1	0.7
Unknown grouse	1	0.7
Ptarmigan	1	0.5
Unknown duck eggs	1	0.2
Unknown goose eggs	1	0.3
Unknown gull eggs	1	0.3
Unknown gull eggs	3	30.0
Unknown eggs	1	0.2
Butter clams	4	3.0
Freshwater clams	4	3.0
Pinkneck clams	4	3.0
Razor clams	1	0.3
Razor clams	4	3.0
Unknown clams	4	3.0
Dungeness crab	1	0.7
Dungeness crab [CF retention]	1	0.7
King crab	1	2.3
King crab [CF retention]	1	2.3
Tanner crab	1	1.6
Tanner crab [CF retention]	1	1.6
Mussels	2	1.0
Mussels	4	1.5
Blue mussels	2	1.0
Octopus [CF retention]	1	4.0
Unknown oyster	4	3.0
Sea urchin	4	0.5
Shrimp	1	0.01
Shrimp	4	2.0
Shrimp [CF retention]	4	2.0
Squid [CF retention]	4	8.0
Blueberry	2	1.0
Blueberry	4	4.0
Blueberry	5	1.0

-continued-

Resource	Initital units	Conversion to pounds
Blueberry	11	0.5
Blueberry	12	0.3
Lowbush cranberry	4	4.0
Lowbush cranberry	5	1.0
Lowbush cranberry	11	0.5
Lowbush cranberry	12	0.3
Highbush cranberry	2	1.0
Highbush cranberry	4	4.0
Highbush cranberry	5	1.0
Highbush cranberry	11	0.5
Highbush cranberry	12	0.3
Crowberry	4	4.0
Crowberry	5	1.0
Crowberry	11	0.5
Crowberry	12	0.3
Gooseberry	4	4.0
Gooseberry	12	0.3
Currants	2	4.0
Currants	4	4.0
Currants	5	1.0
Currants	11	0.5
Huckleberry	4	4.0
Huckleberry	5	1.0
Huckleberry	12	0.3
Cloudberry	4	4.0
Cloudberry	5	1.0
Cloudberry	11	0.5
Cloudberry	12	0.3
Nagoonberry	5	1.0
Raspberry	2	1.0
Raspberry	4	4.0
Raspberry	5	1.0
Raspberry	11	0.5
Raspberry	12	0.3
Salmonberry	4	4.0
Salmonberry	5	1.0
Salmonberry	12	0.3
Soapberry	4	4.0
Strawberry	4	4.0
Strawberry	5	1.0
Strawberry	12	0.3
Twisted stalk berry (watermelon berry)	2	1.0
Twisted stalk berry (watermelon berry)	4	4.0
Twisted stalk berry (watermelon berry)	5	1.0
Twisted stalk berry (watermelon berry)	11	0.5
Twisted stalk berry (watermelon berry)	12	0.3
Serviceberry	4	4.0
Other wild berry	2	1.0
Other wild berry	4	4.0
Other wild berry	5	1.0
Other wild berry	11	0.5
Other wild berry	12	0.3

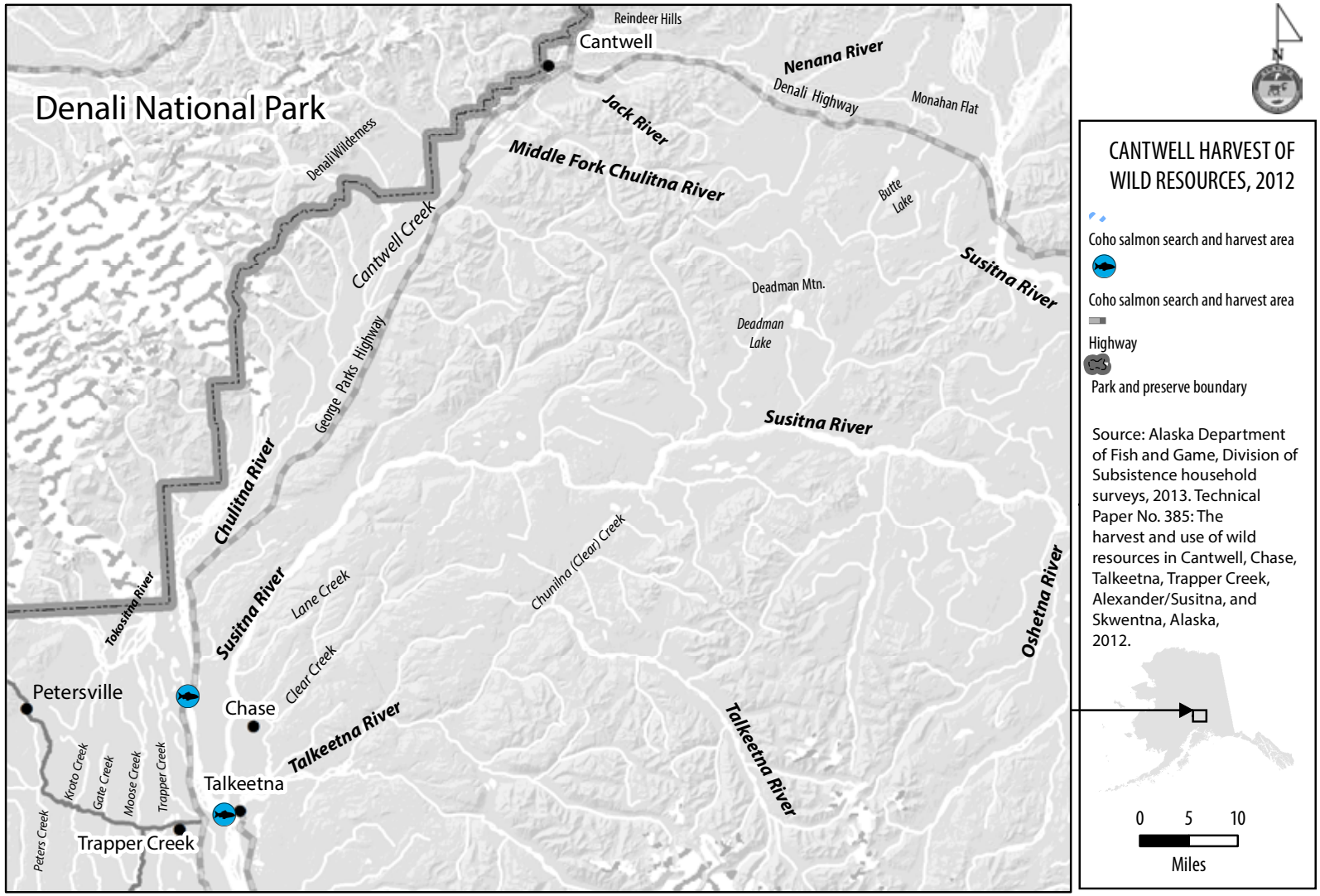
-continued-

Resource	Initital units	Conversion to pounds
Eskimo potato	2	1.0
Eskimo potato	4	4.0
Fiddlehead ferns	2	1.0
Fiddlehead ferns	4	1.0
Fiddlehead ferns	5	0.3
Fiddlehead ferns	11	0.1
Fiddlehead ferns	12	0.1
Nettle	4	1.0
Nettle	5	0.3
Hudson's Bay (Labrador) tea	4	1.0
Hudson's Bay (Labrador) tea	5	0.3
Hudson's Bay (Labrador) tea	11	0.1
Hudson's Bay (Labrador) tea	12	0.1
Mint	2	1.0
Mint	4	1.0
Dandelion greens	4	1.0
Spruce tips	4	1.0
Spruce tips	5	0.3
Willow leaves	4	1.0
Willow leaves	5	0.3
Wild rose hips	5	1.0
Wild rose hips	11	0.5
Wild rose hips	12	0.3
Yarrow	4	1.0
Other wild greens	2	1.0
Other wild greens	4	1.0
Other wild greens	5	0.3
Other wild greens	11	0.1
Other wild greens	12	0.1
Unknown mushrooms	2	1.0
Unknown mushrooms	4	1.0
Unknown mushrooms	5	0.3
Unknown mushrooms	11	0.1
Unknown mushrooms	12	0.1
Sorrel	2	1.0
Sorrel	4	1.0
Sorrel	5	0.3
Sorrel	11	0.1
Sorrel	12	0.1
Fireweed	2	1.0
Fireweed	3	5.0
Fireweed	4	1.0
Fireweed	5	0.3
Fireweed	11	0.1
Fireweed	12	0.1
Plantain	4	1.0
Stinkweed	4	1.0
Wood	6	0.0
Birch	2	1.0
Birch sap	4	0.1
Firewood	5	0.0
Firewood	6	0.0

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

Appendix D–Harvest Use Area Maps by Community

SUPPLEMENTAL HARVEST USE AREA MAPS


Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Monahan Flat
Jack River
Middle Fork Chulitna River
Denali Wilderness
Cantwell Creek
Butte Lake
Susitna River
Deadman Mtn.
Deadman Lake
George Parks Highway
Susitna River
Chulitna River
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Oshetna River
Clear Creek
Petersville
Chase
Talkeetna River
Talkeetna River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Peters Creek
Trapper Creek
CANTWELL HARVEST OF WILD RESOURCES, 2012
Coho salmon search and harvest area
Coho salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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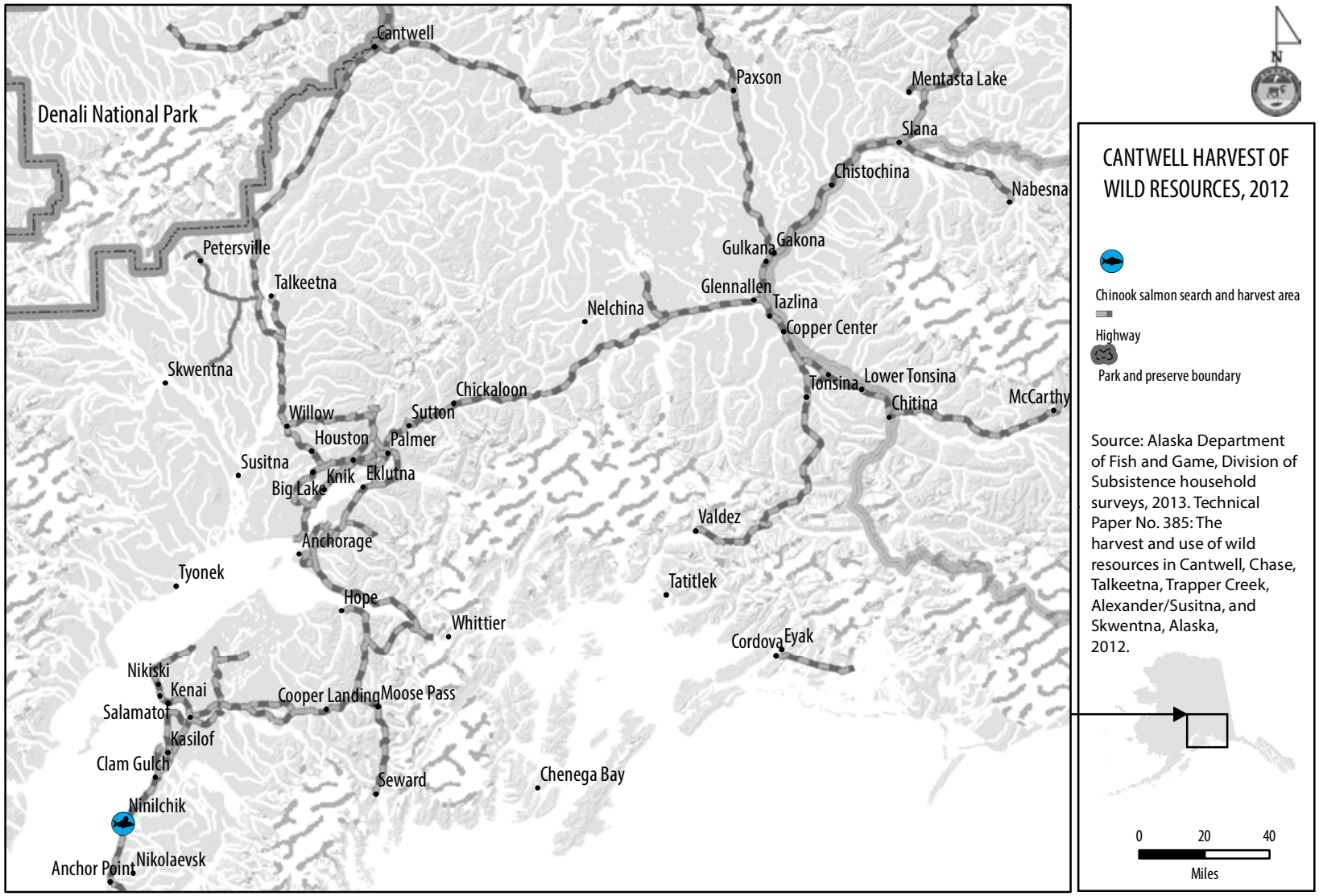
Cantwell
Denali National Park
Paxson
Mentasta Lake
Slana
Chistochina
Nabesna
Petersville
Talkeetna
Gulkana
Gakona
Glennallen
Tazlina
Nelchina
Copper Center
Skwentna
Tonsina
Lower Tonsina
Chickaloon
Chitina
McCarthy
Willow
Sutton
Houston
Palmer
Susitna
Knik
Eklutna
Big Lake
Valdez
Anchorage
Tyonek
Tatitlek
Hope
Whittier
Cordova
Eyak
Nikiski
Kenai
Cooper Landing
Moose Pass
Salamatof
Kasilof
Clam Gulch
Seward
Chenega Bay
Nimilchik
Anchor Point
Nikolaevsk
CANTWELL HARVEST OF WILD RESOURCES, 2012
Chinook salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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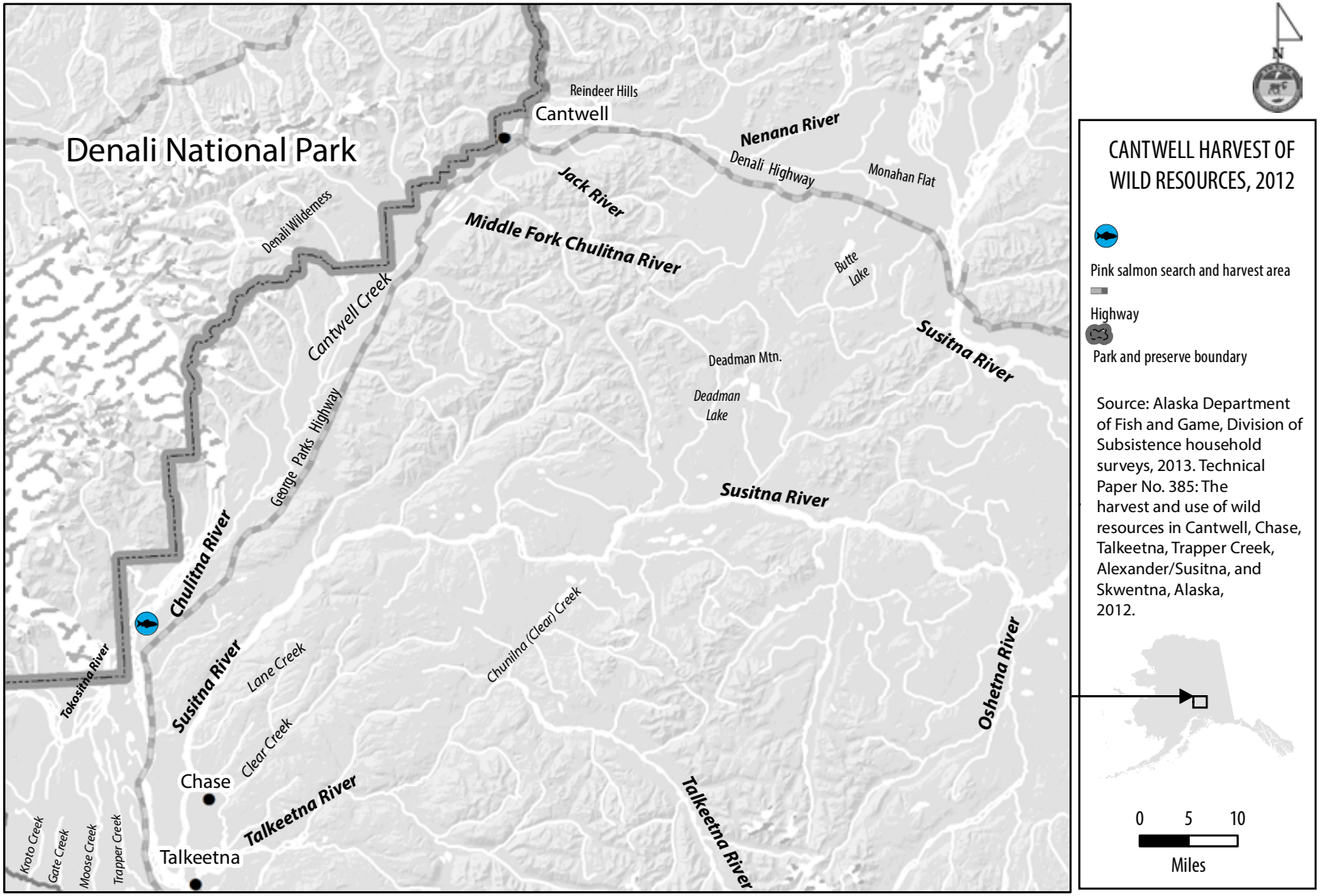
Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Monahan Flat
Jack River
Middle Fork Chulitna River
Denali Wilderness
Cantwell Creek
Butte Lake
Susitna River
Deadman Mtn.
Deadman Lake
George Parks Highway
Susitna River
Chulitna River
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Oshetna River
Clear Creek
Chase
Talkeetna River
Talkeetna River
Talkeetna
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
CANTWELL HARVEST OF WILD RESOURCES, 2012
Pink salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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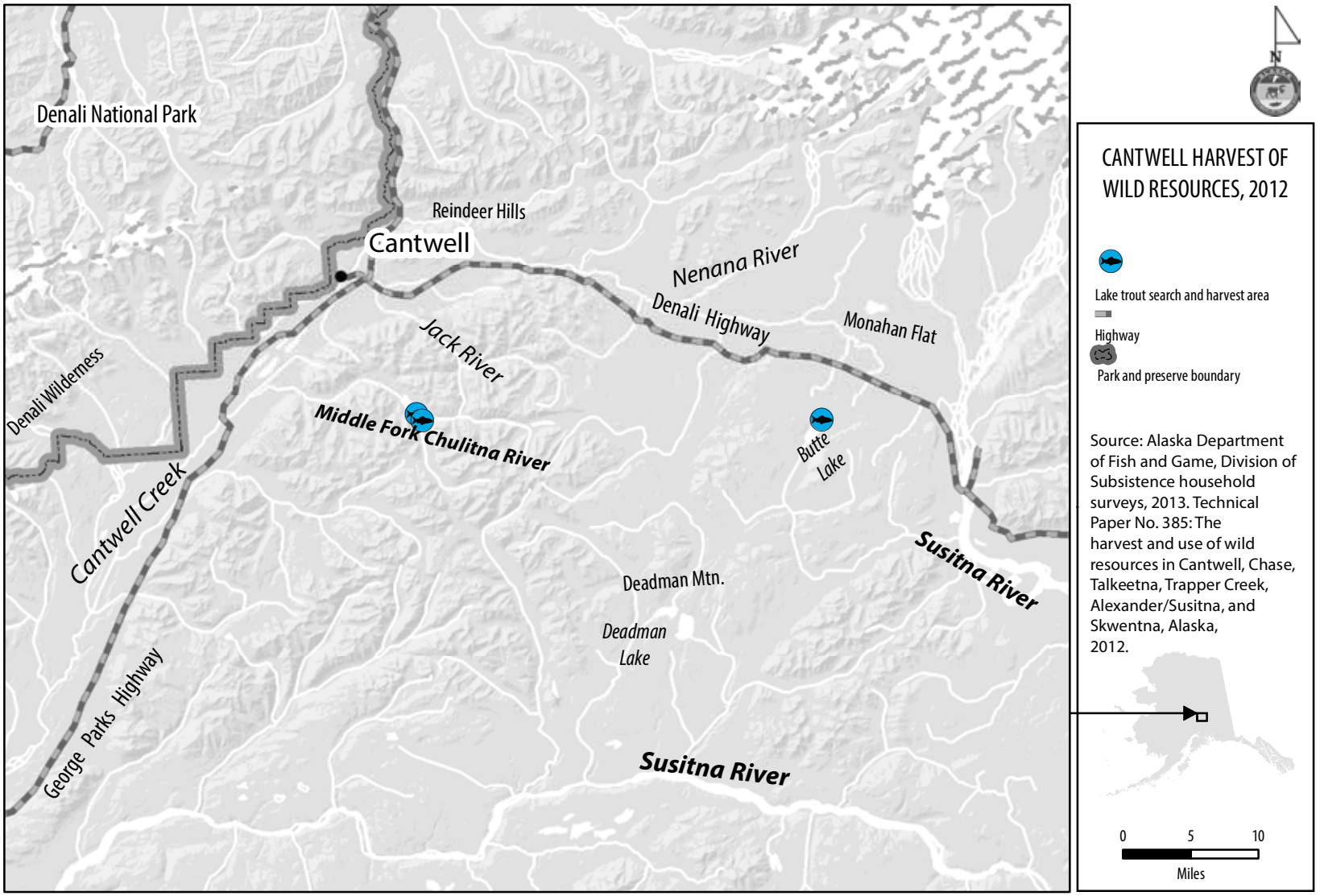
Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Monahan Flat
Jack River
Denali Wilderness
Middle Fork Chulitna River
Butte Lake
Cantwell Creek
Susitna River
Deadman Mtn.
Deadman Lake
George Parks Highway
Susitna River
CANTWELL HARVEST OF WILD RESOURCES, 2012
Lake trout search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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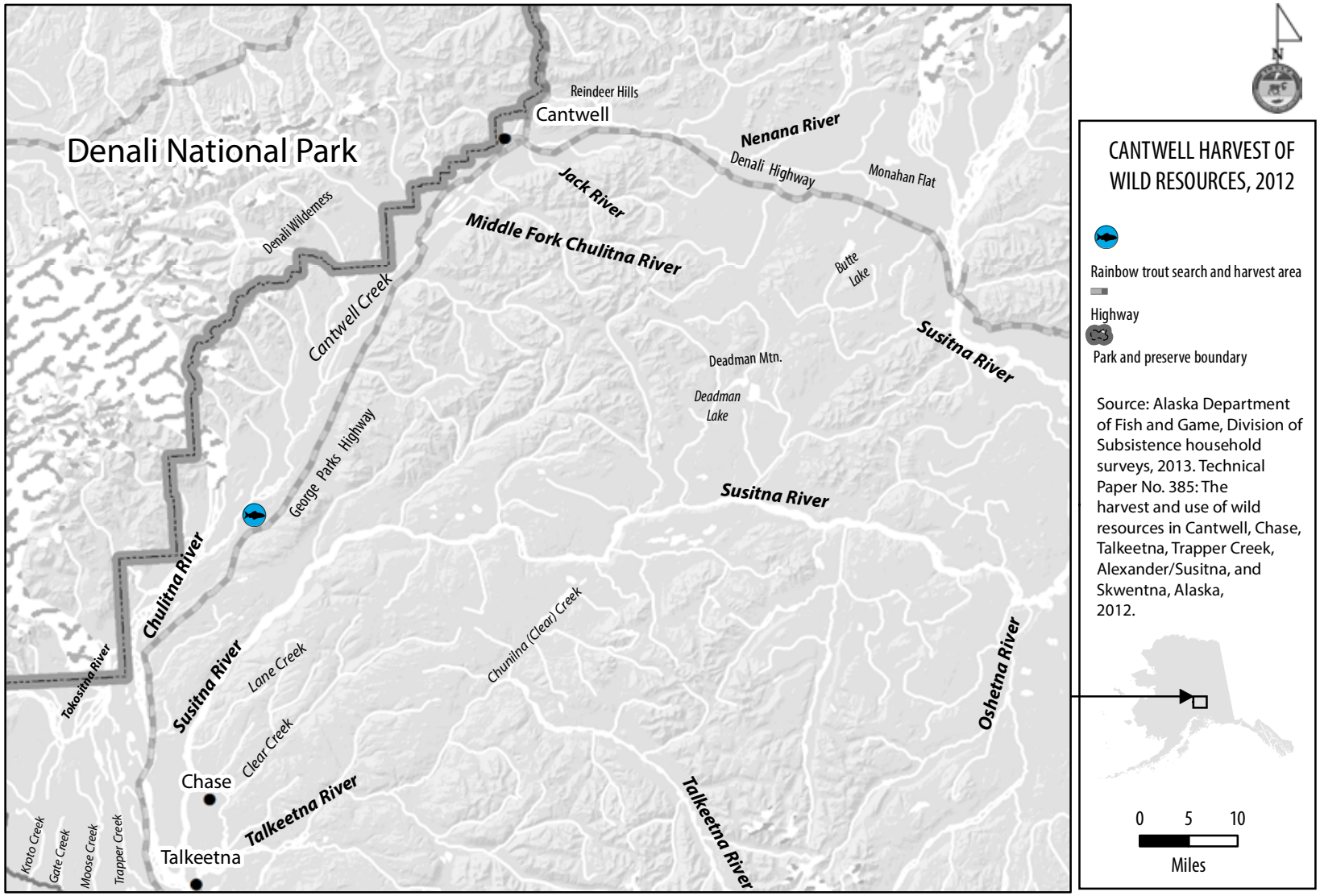
Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Monahan Flat
Jack River
Middle Fork Chulitna River
Denali Wilderness
Cantwell Creek
Butte Lake
Susitna River
Deadman Mtn.
Deadman Lake
George Parks Highway
Susitna River
Chulitna River
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Oshetna River
Clear Creek
Chase
Talkeetna River
Talkeetna River
Talkeetna
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
CANTWELL HARVEST OF WILD RESOURCES, 2012
Rainbow trout search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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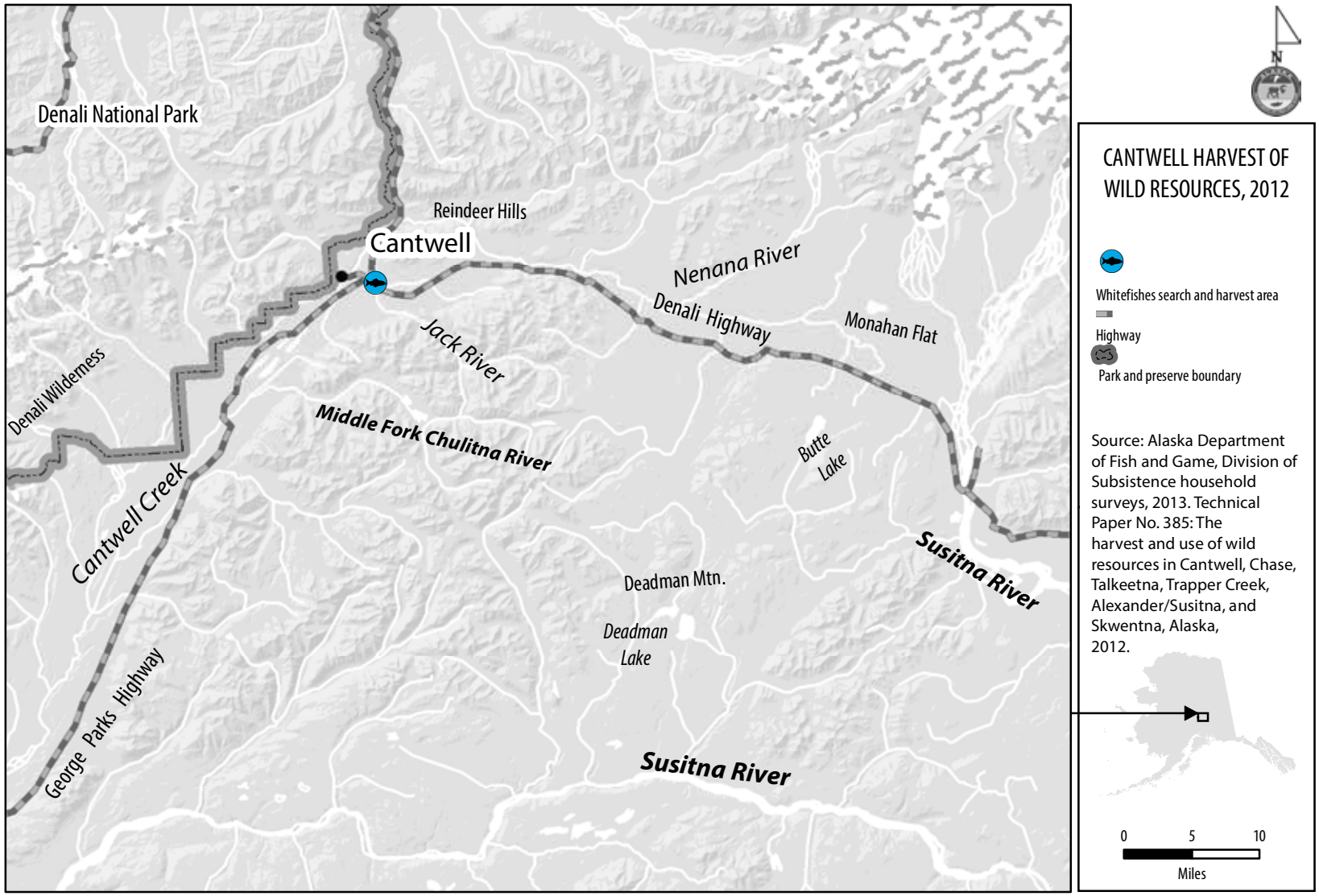
Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Monahan Flat
Jack River
Denali Wilderness
Middle Fork Chulitna River
Butte Lake
Cantwell Creek
Susitna River
Deadman Mtn.
Deadman Lake
George Parks Highway
Susitna River
CANTWELL HARVEST OF WILD RESOURCES, 2012
Whitefishes search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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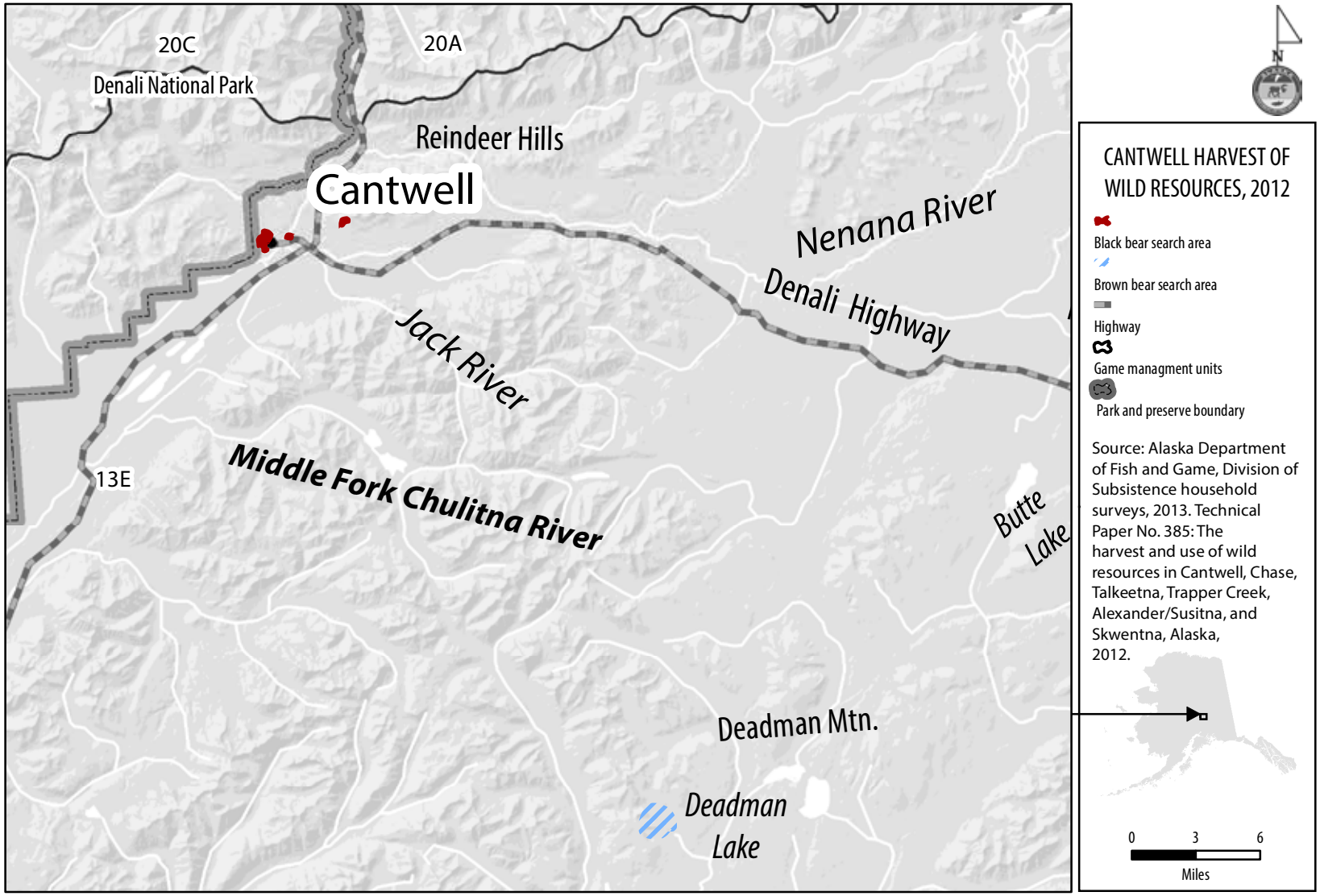
20C
20A
Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Jack River
13E
Middle Fork Chulitna River
Butte Lake
Deadman Mtn.
Deadman Lake
CANTWELL HARVEST OF WILD RESOURCES, 2012
Black bear search area
Brown bear search area
Highway
Game managment units
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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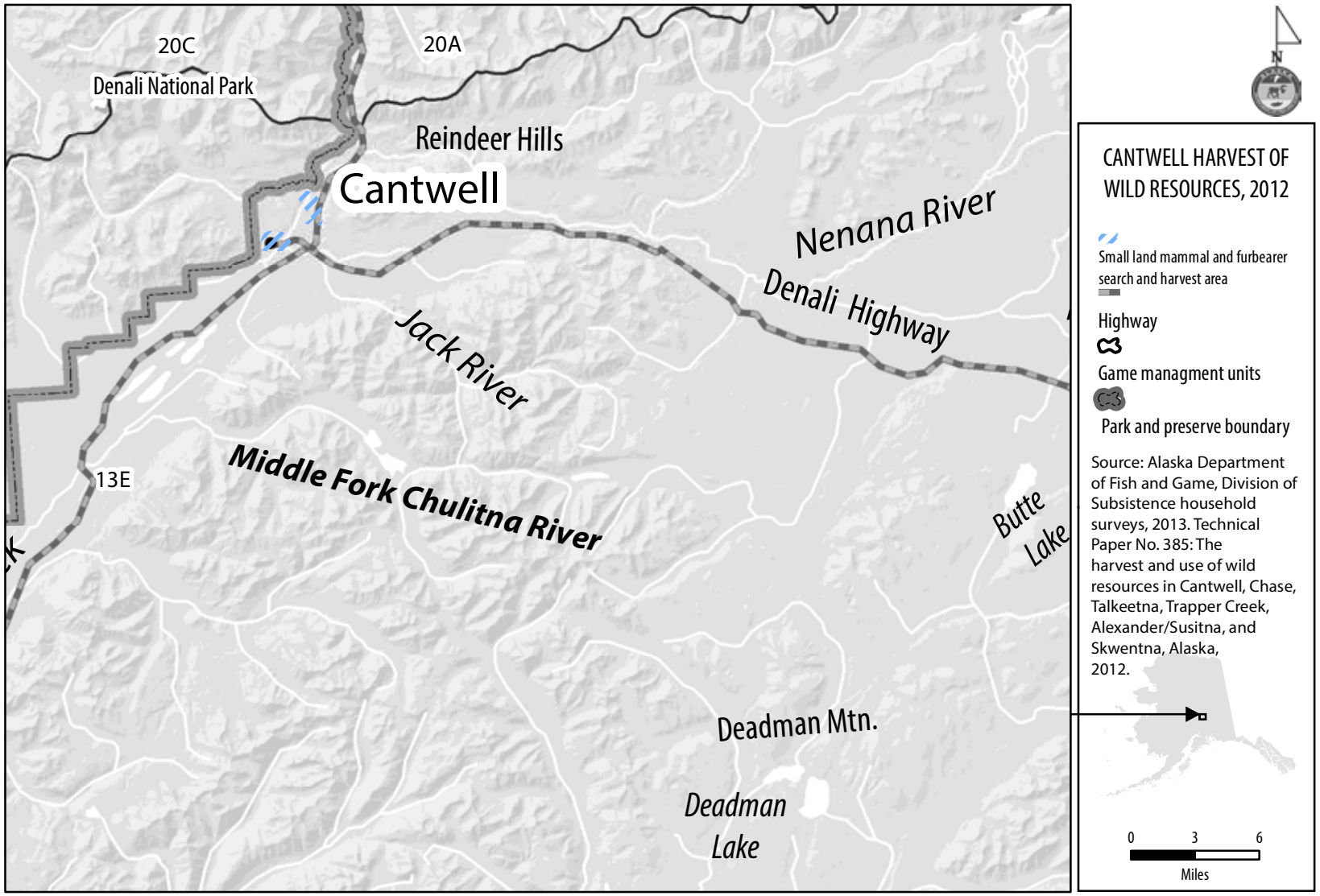
20C
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Denali National Park
Reindeer Hills
Cantwell
Nenana River
Denali Highway
Jack River
13E
Middle Fork Chulitna River
Butte Lake
Deadman Mtn.
Deadman Lake
CANTWELL HARVEST OF WILD RESOURCES, 2012
Small land mammal and furbearer search and harvest area
Highway
Game managment units
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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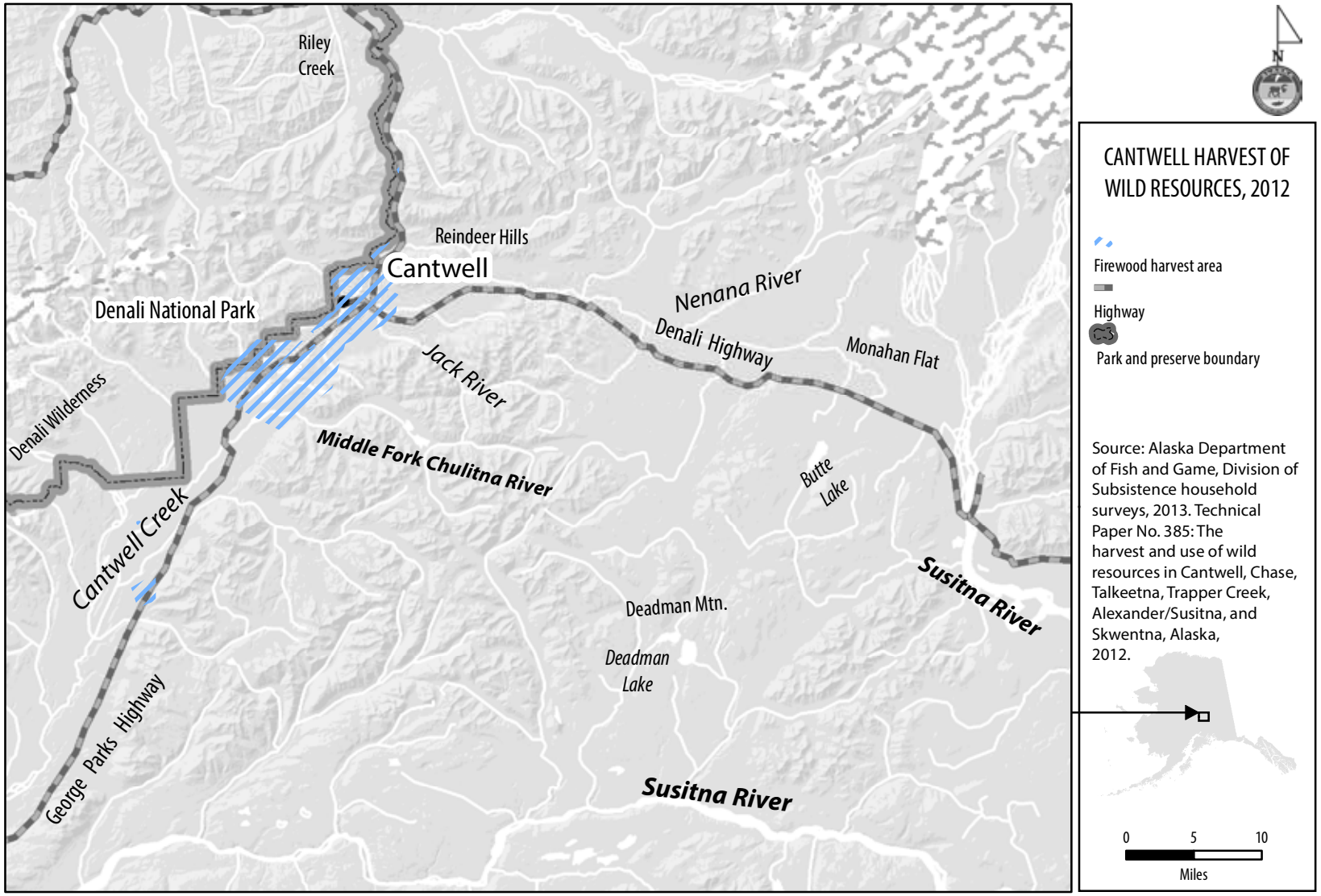
Riley Creek
Reindeer Hills
Cantwell
Denali National Park
Nenana River
Denali Highway
Monahan Flat
Jack River
Denali Wilderness
Middle Fork Chulitna River
Butte Lake
Cantwell Creek
Susitna River
Deadman Mtn.
Deadman Lake
George Parks Highway
Susitna River
CANTWELL HARVEST OF WILD RESOURCES, 2012
Firewood harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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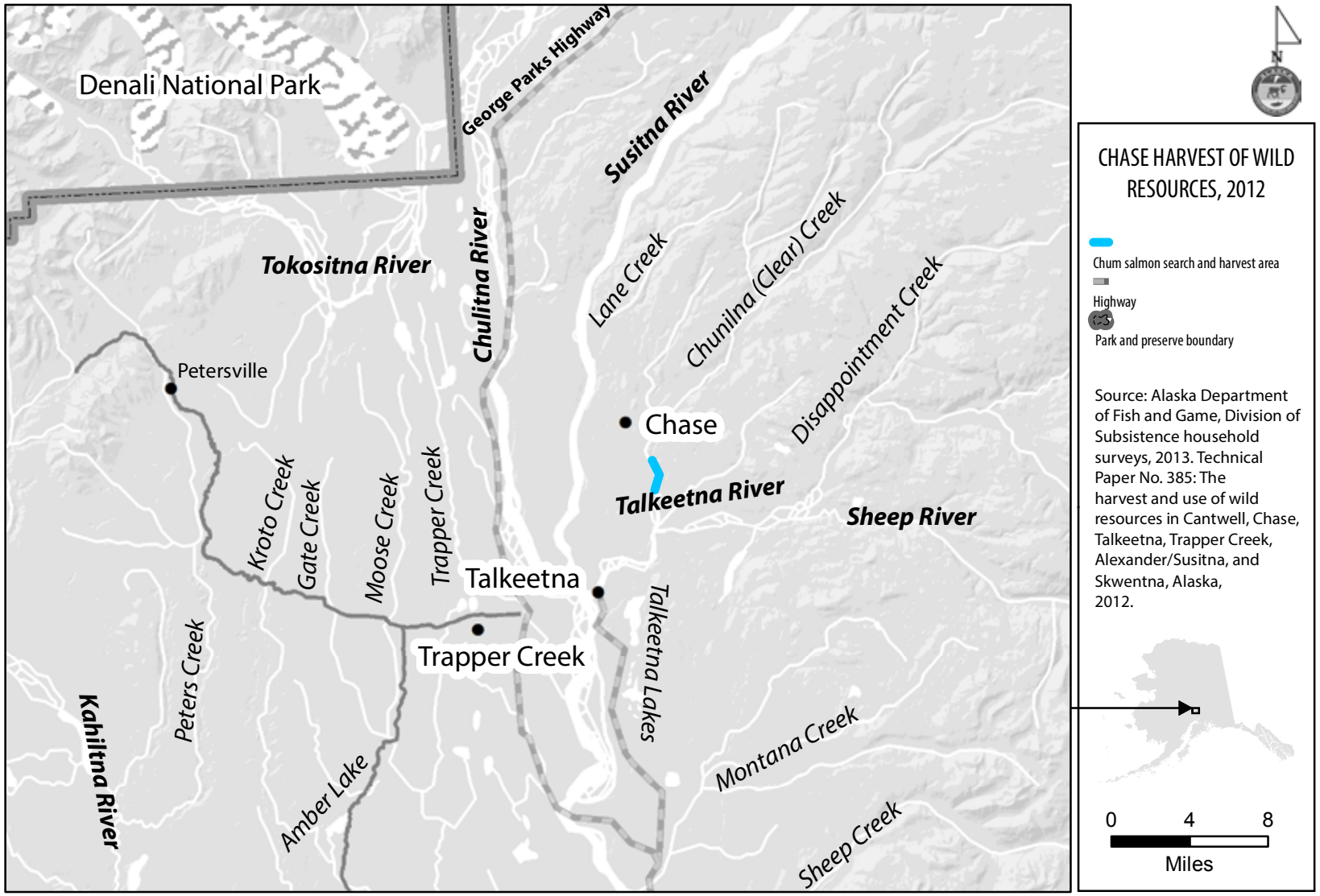
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
Amber Lake
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Chum salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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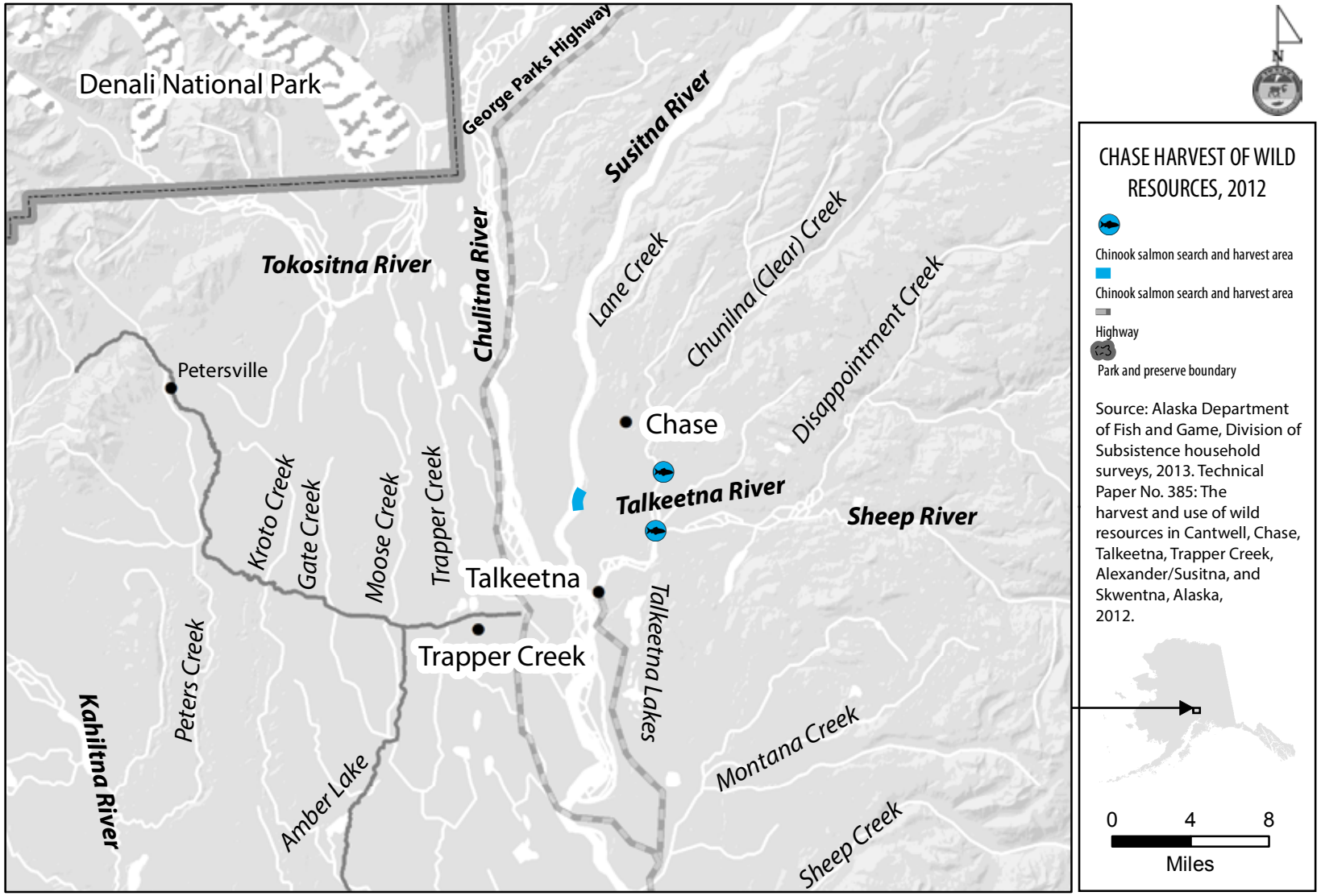
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
Amber Lake
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Chinook salmon search and harvest area
Chinook salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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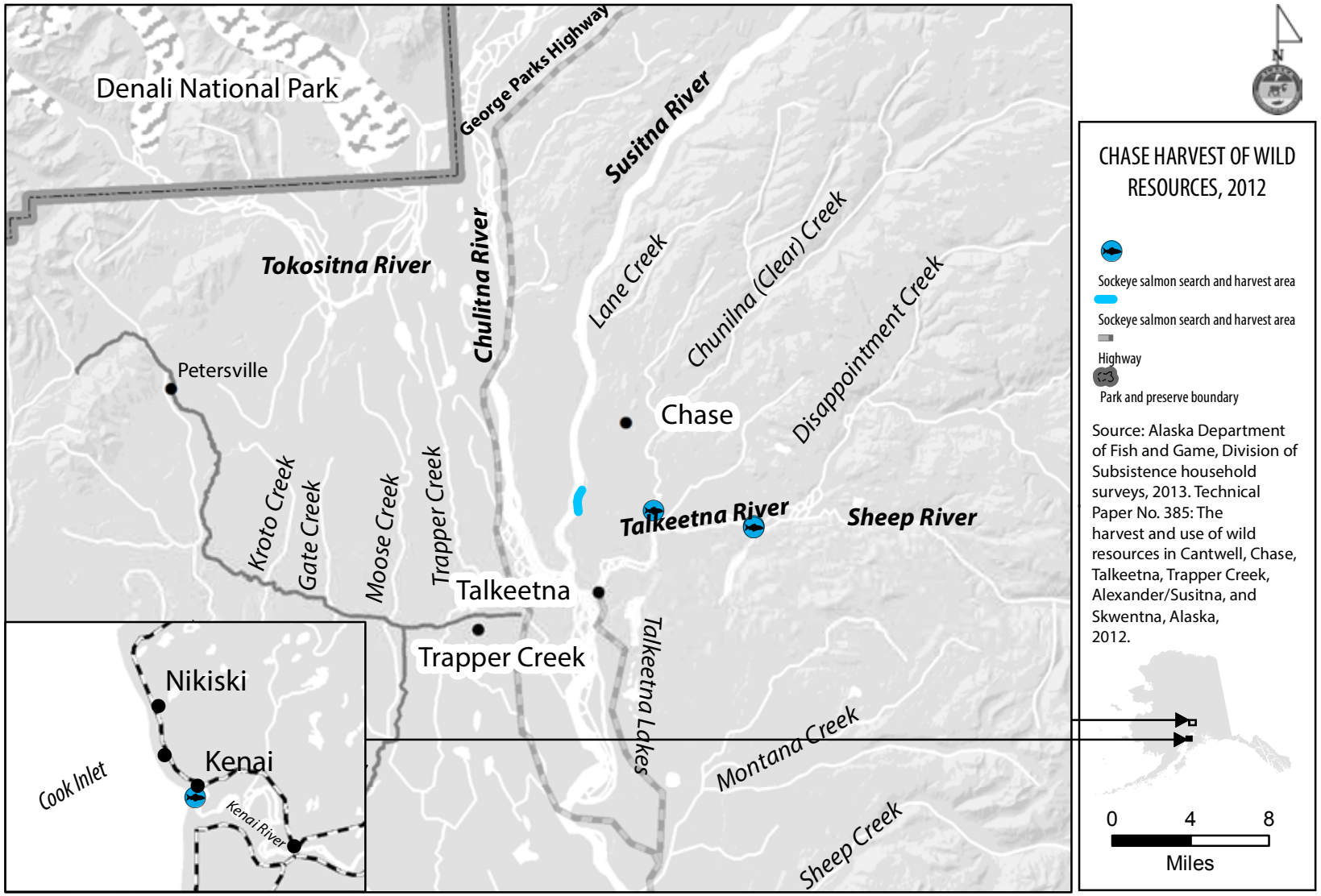
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Trapper Creek
Nikiski
Kenai
Cook Inlet
Kenai River
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Sockeye salmon search and harvest area
Sockeye salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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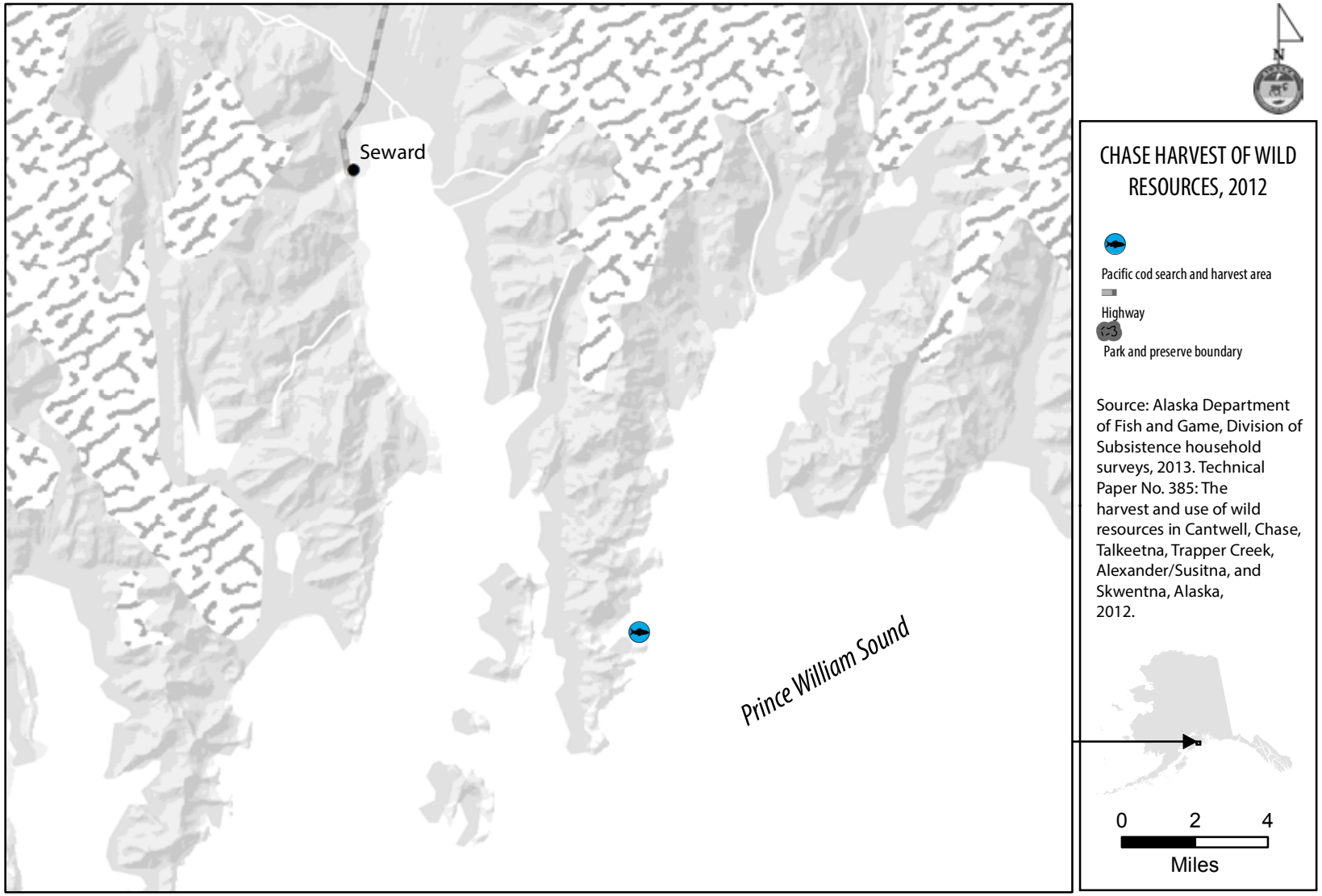
Seward
Prince William Sound
CHASE HARVEST OF WILD RESOURCES, 2012
Pacific cod search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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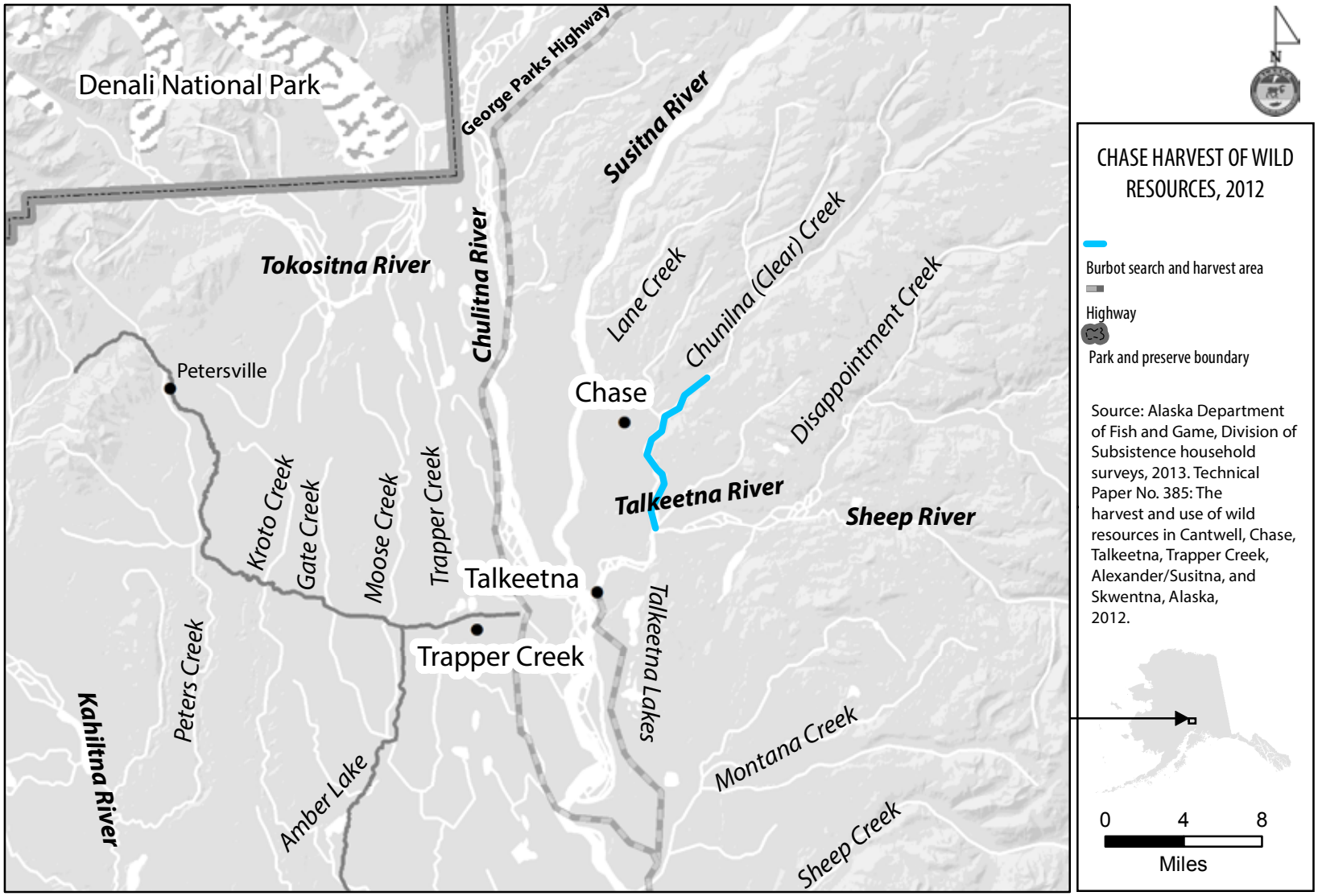
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
Amber Lake
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Burbot search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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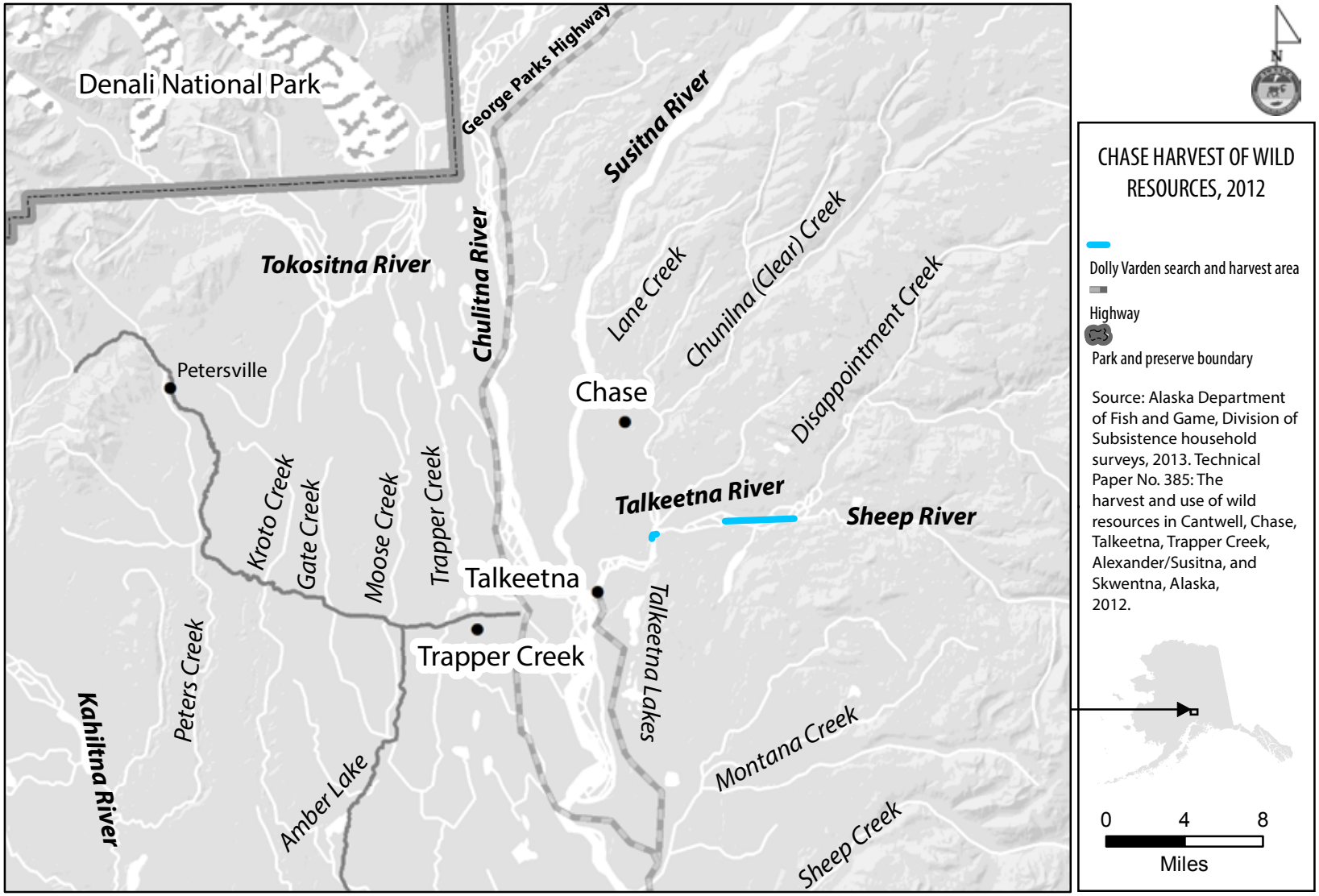
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
Amber Lake
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Dolly Varden search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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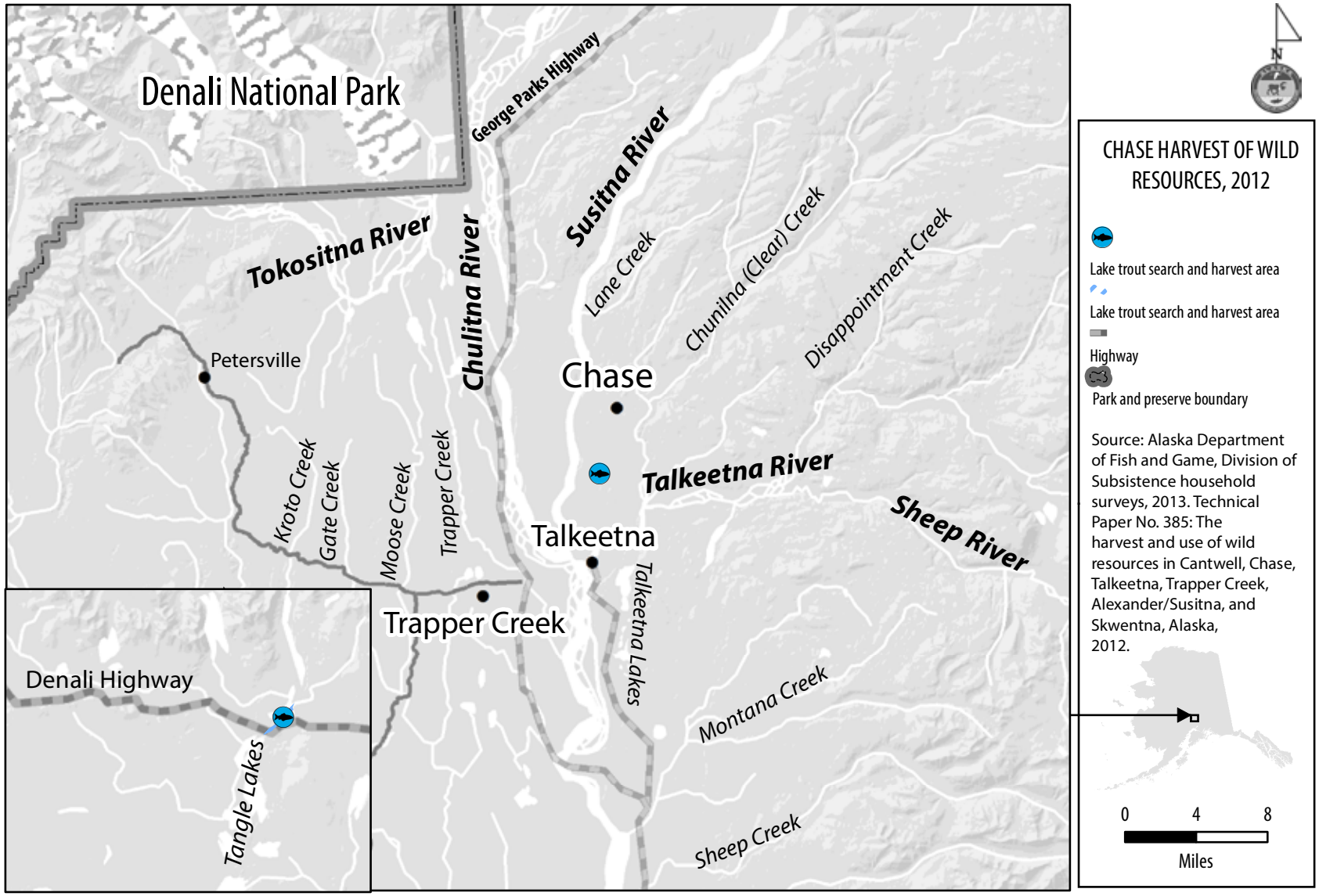
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Trapper Creek
Denali Highway
Tangle Lakes
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Lake trout search and harvest area
Lake trout search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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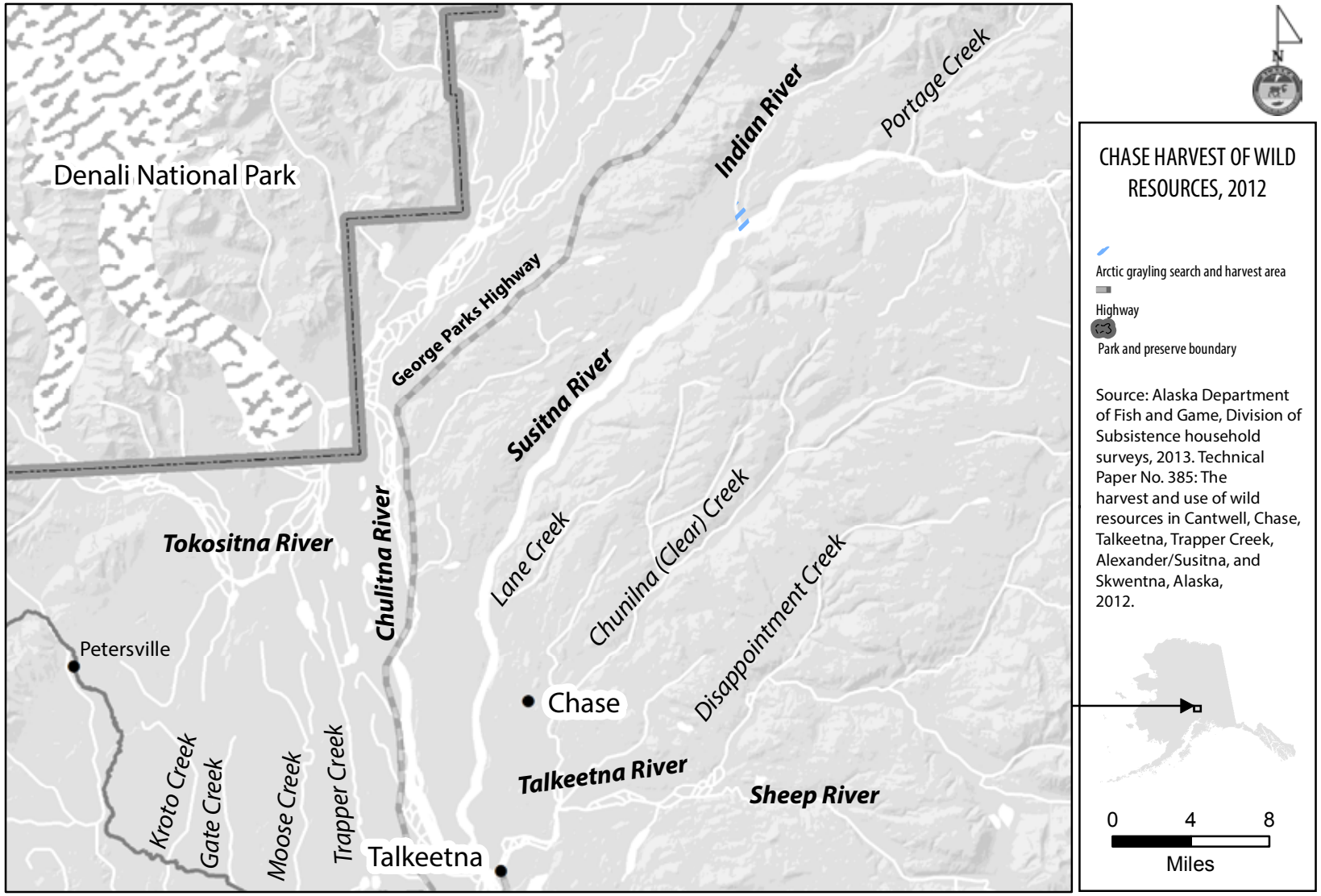
Denali National Park
George Parks Highway
Indian River
Portage Creek
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
CHASE HARVEST OF WILD RESOURCES, 2012
Arctic grayling search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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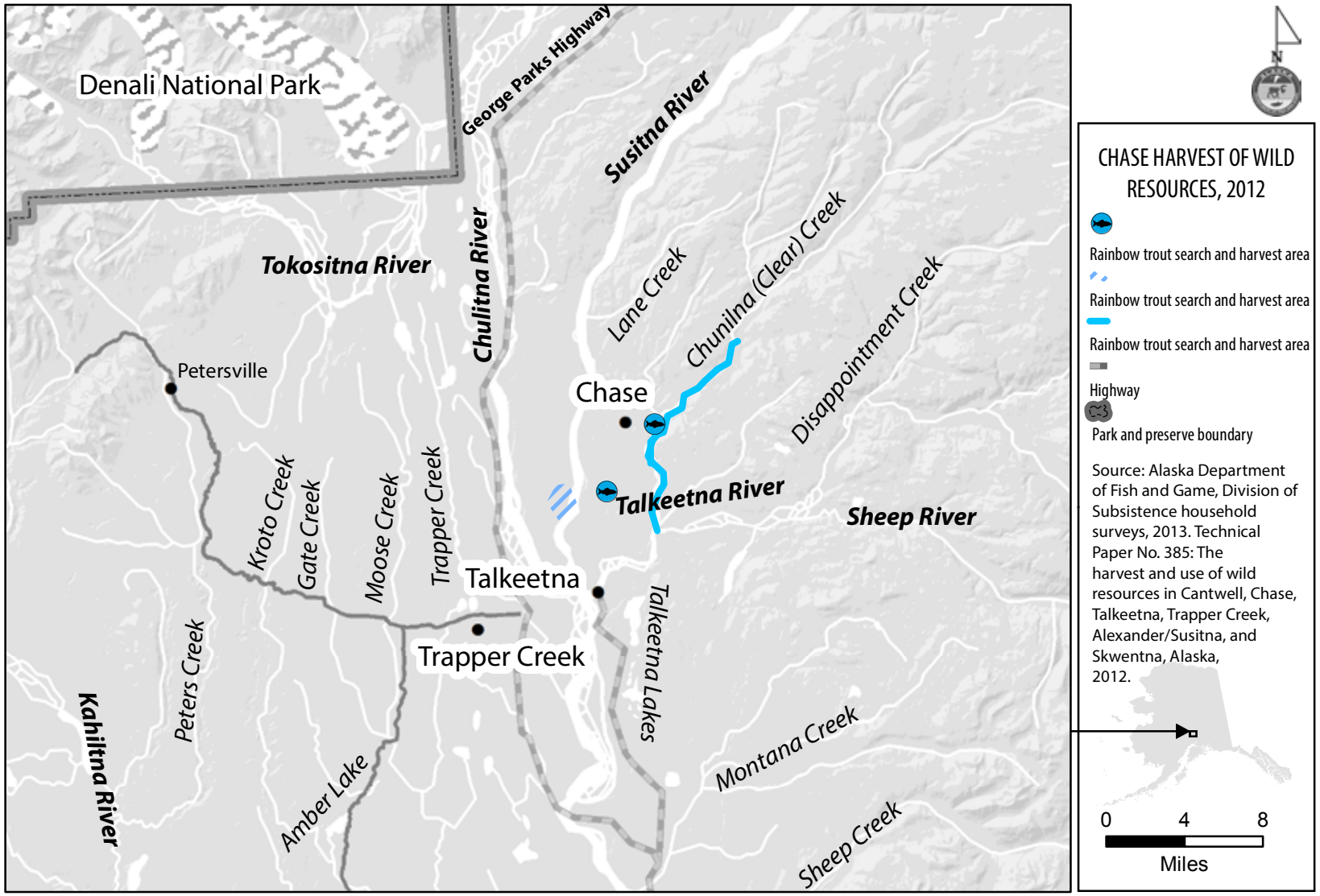
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
Amber Lake
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Rainbow trout search and harvest area
Rainbow trout search and harvest area
Rainbow trout search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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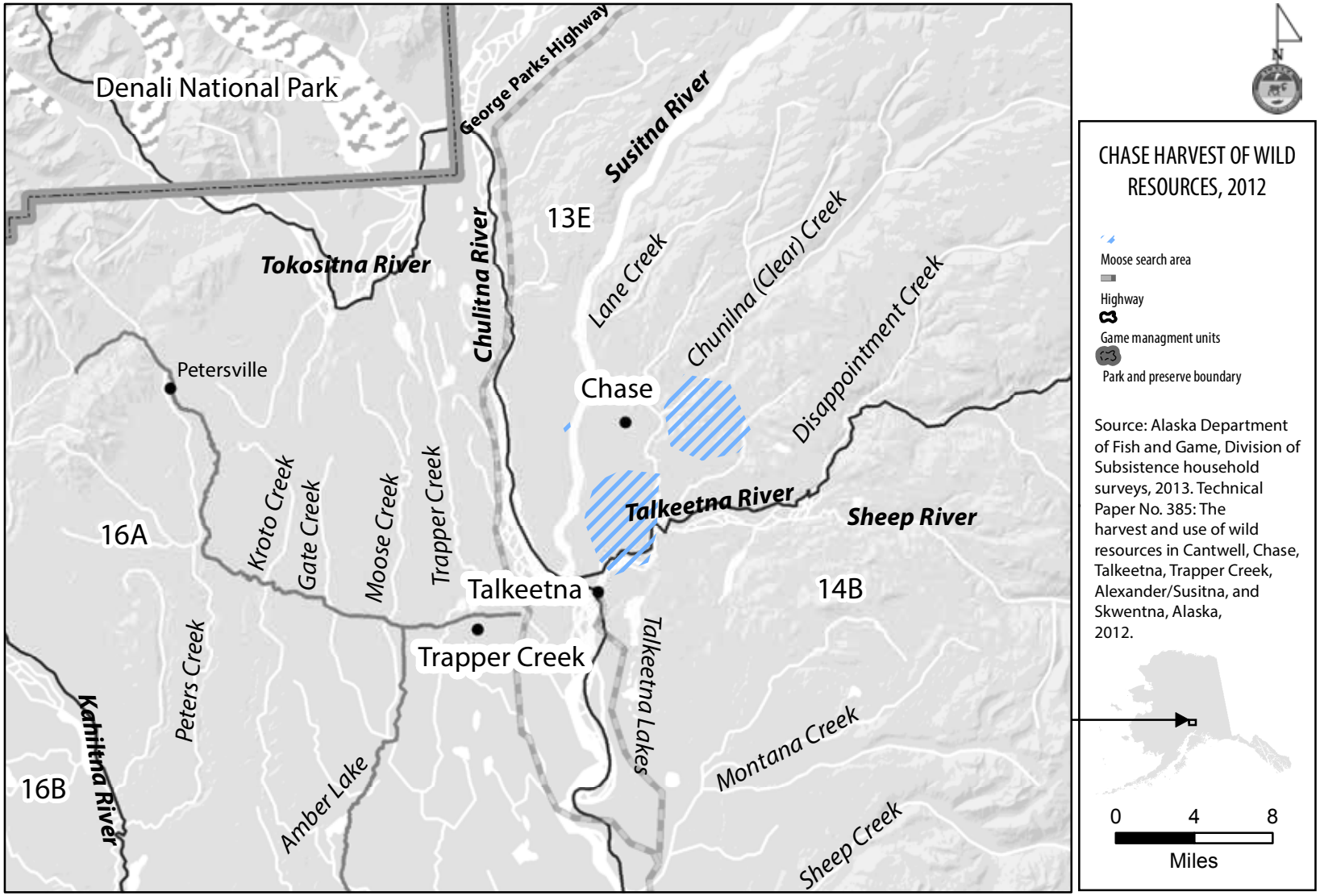
Miles


Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
13E
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
16A
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
14B
Trapper Creek
Peters Creek
Talkeetna Lakes
Kahiltna River
Montana Creek
16B
Amber Lake
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Moose search area
Highway
Game managment units
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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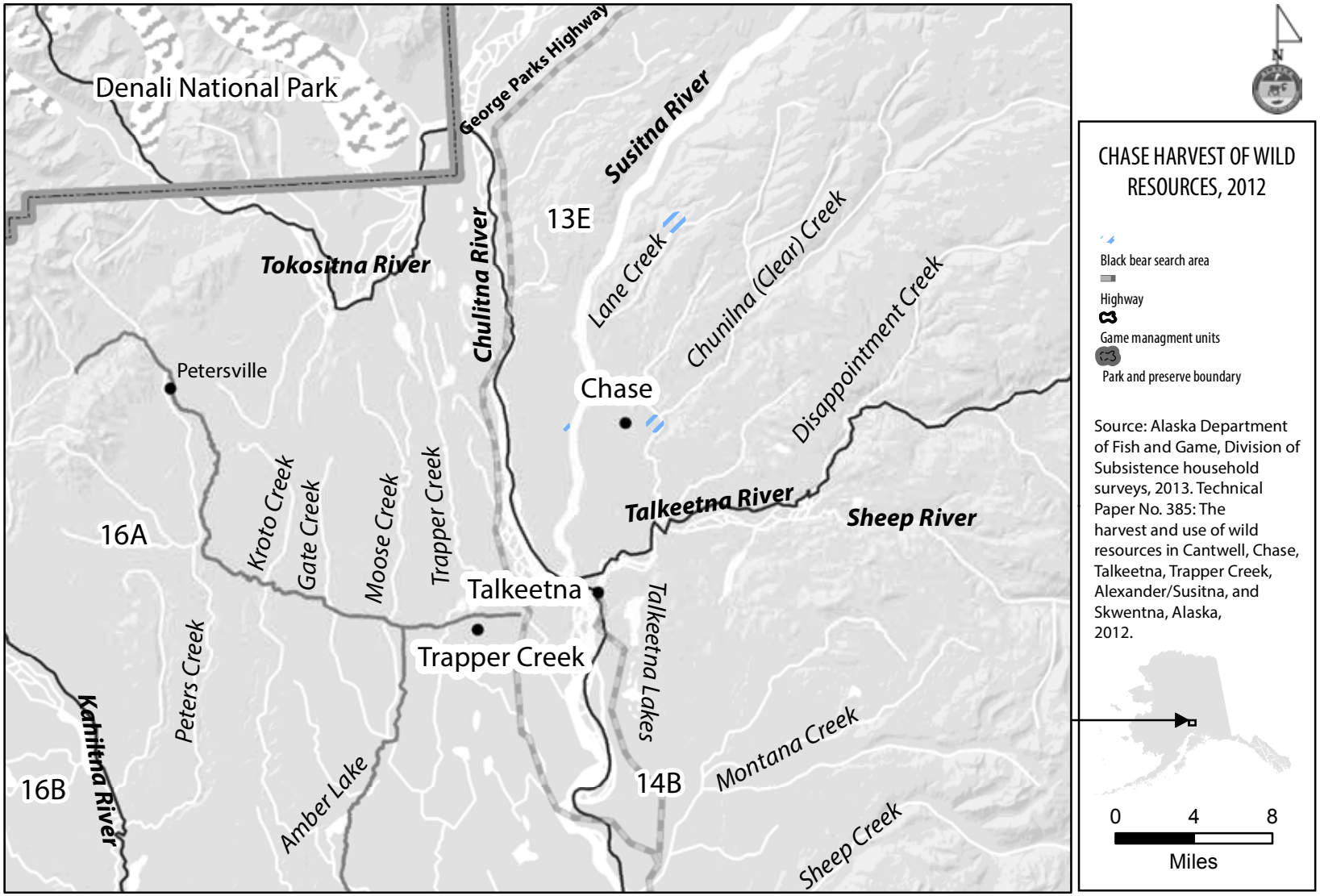
Miles


Denali National Park
George Parks Highway
Susitna River
13E
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
16A
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
16B
Amber Lake
14B
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Black bear search area
Highway
Game managment units
13
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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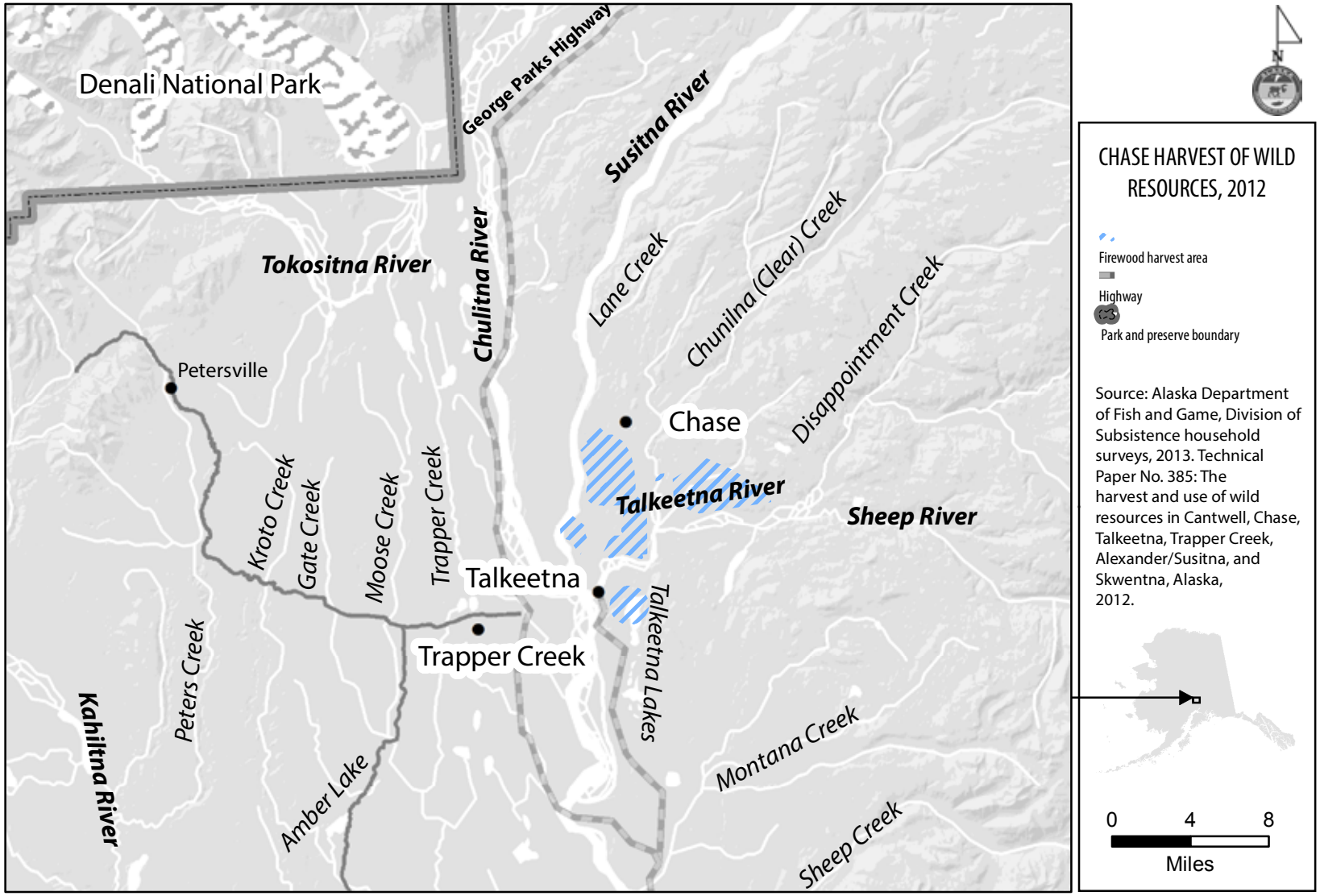
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Kahiltna River
Amber Lake
Montana Creek
Sheep Creek
CHASE HARVEST OF WILD RESOURCES, 2012
Firewood harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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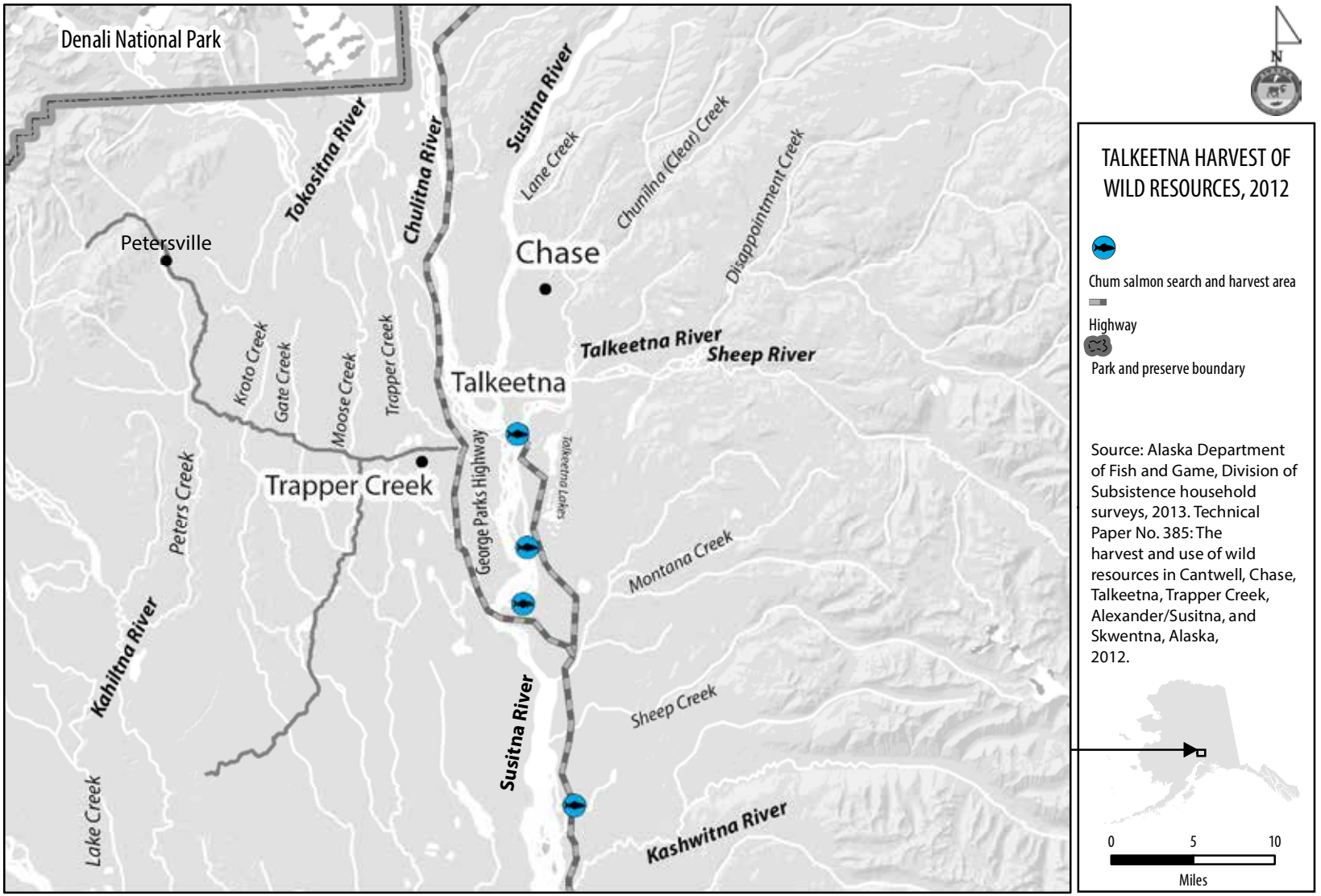
Denali National Park
Tokositna River
Chulitna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Trapper Creek
Peters Creek
George Parks Highway
Talkeetna Lakes
Montana Creek
Kahiltna River
Susitna River
Sheep Creek
Lake Creek
Kashwitna River
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Chum salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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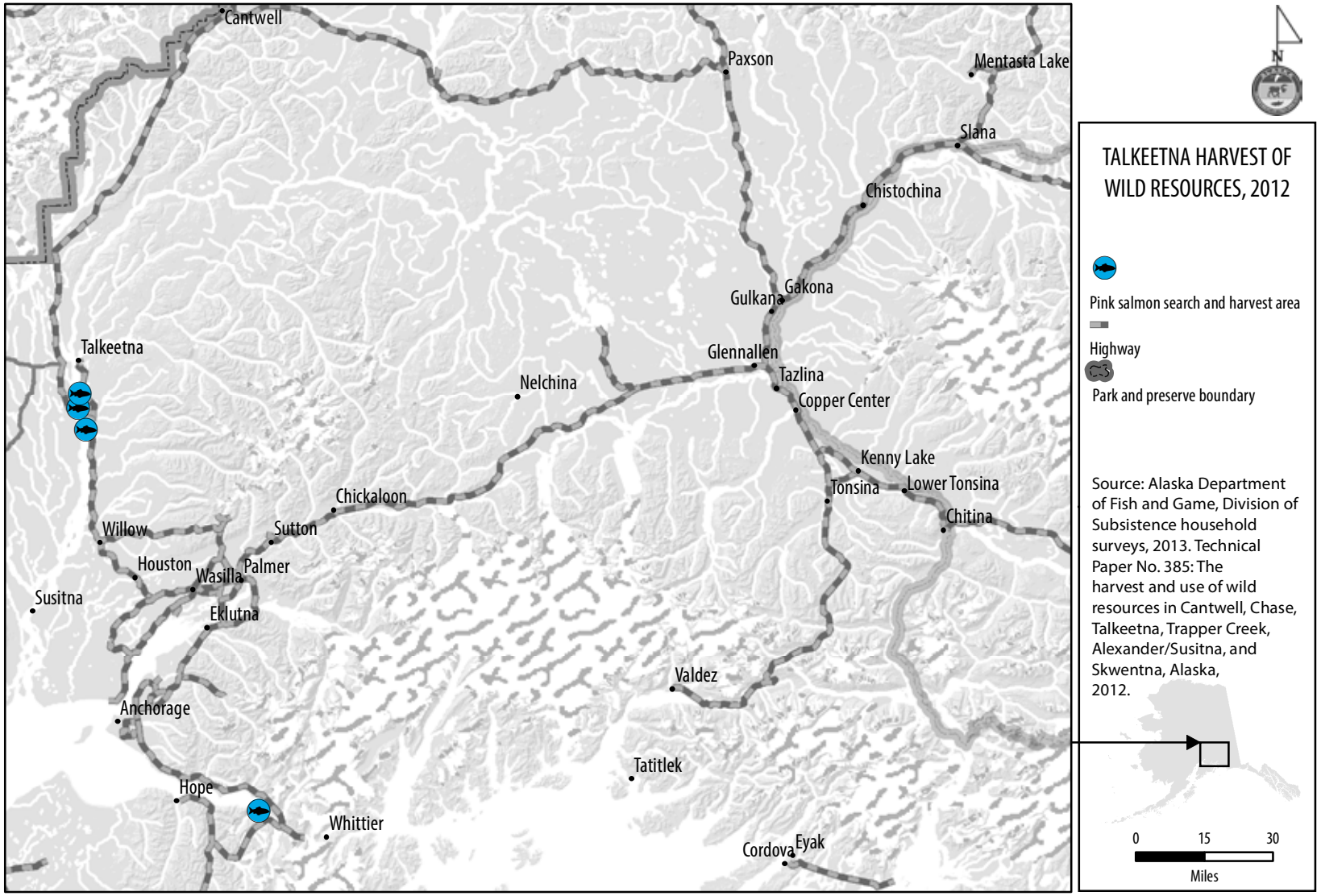
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Paxson
Mentasta Lake
Slana
Chistochina
Gulkana
Gakona
Talkeetna
Glennallen
Tazlina
Nelchina
Copper Center
Kenny Lake
Tonsina
Lower Tonsina
Chickaloon
Chitina
Willow
Sutton
Houston
Wasilla
Palmer
Susitna
Eklutna
Valdez
Anchorage
Tatitlek
Hope
Whittier
Cordova
Eyak
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Pink salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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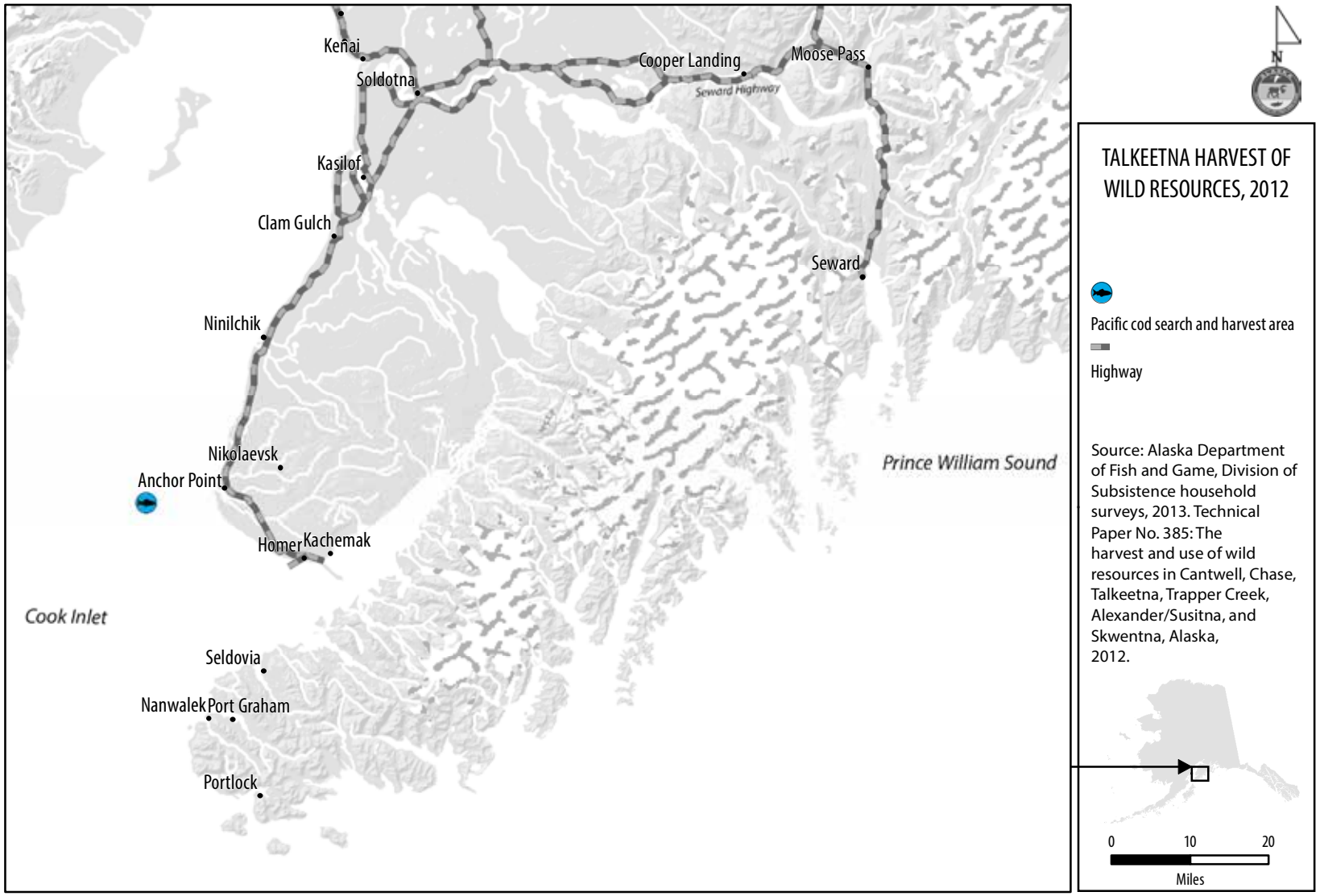
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Soldotna
Cooper Landing
Moose Pass
Seward Highway
Kasilof
Clam Gulch
Seward
Ninilchik
Nikolaevsk
Anchor Point
Prince William Sound
Homer
Kachemak
Cook Inlet
Seldovia
Nanwalek
Port Graham
Portlock
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Pacific cod search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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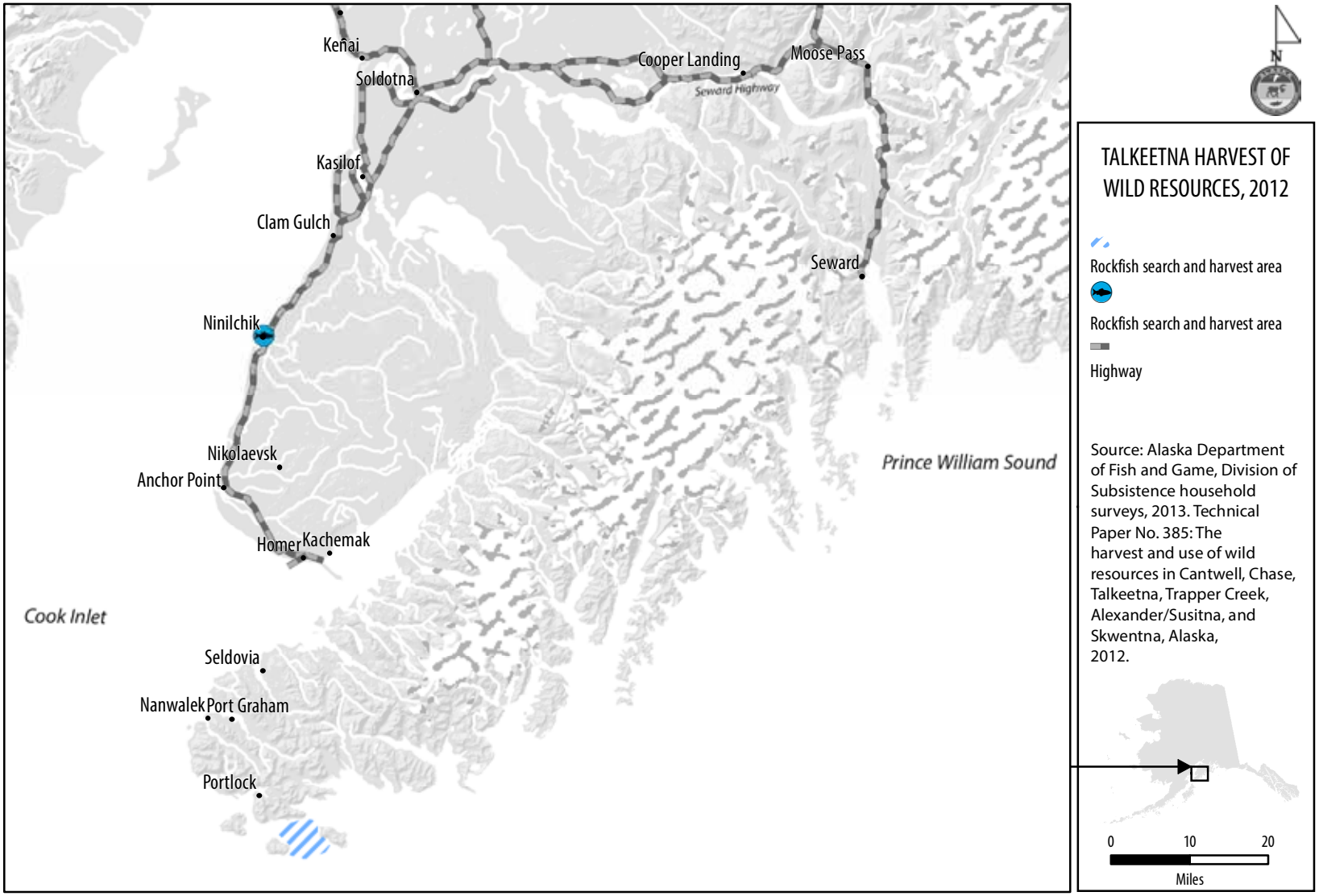
Kenai
Soldotna
Cooper Landing
Moose Pass
Seward Highway
Kasilof
Clam Gulch
Seward
Ninilchik
Nikolaevsk
Anchor Point
Prince William Sound
Homer
Kachemak
Cook Inlet
Seldovia
Nanwalek
Port Graham
Portlock
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Rockfish search and harvest area
Rockfish search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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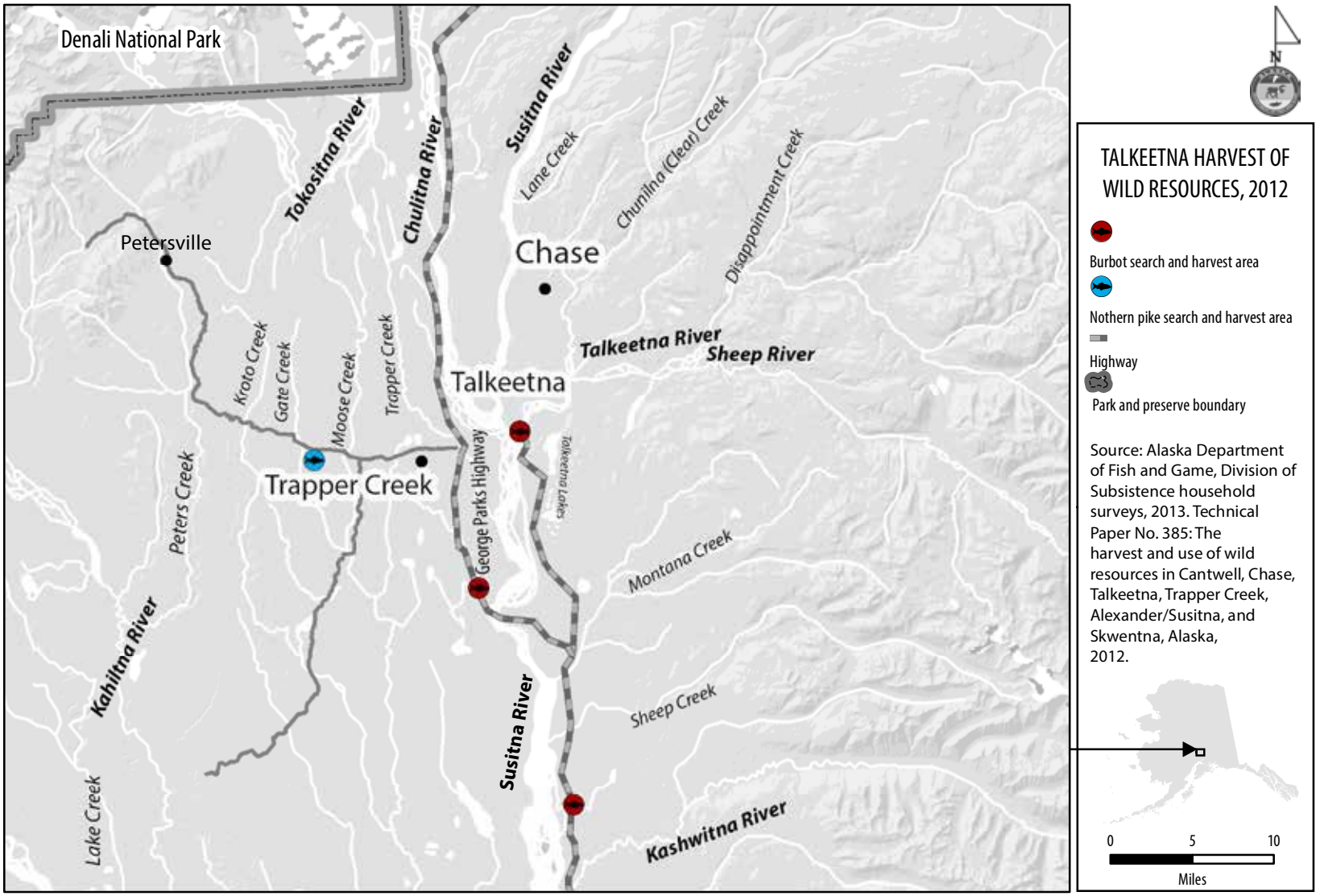
Denali National Park
Tokositna River
Chulitna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Talkeetna
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Trapper Creek
Peters Creek
George Parks Highway
Talkeetna Lakes
Montana Creek
Kahiltna River
Susitna River
Sheep Creek
Lake Creek
Kashwitna River
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Burbot search and harvest area
Nothern pike search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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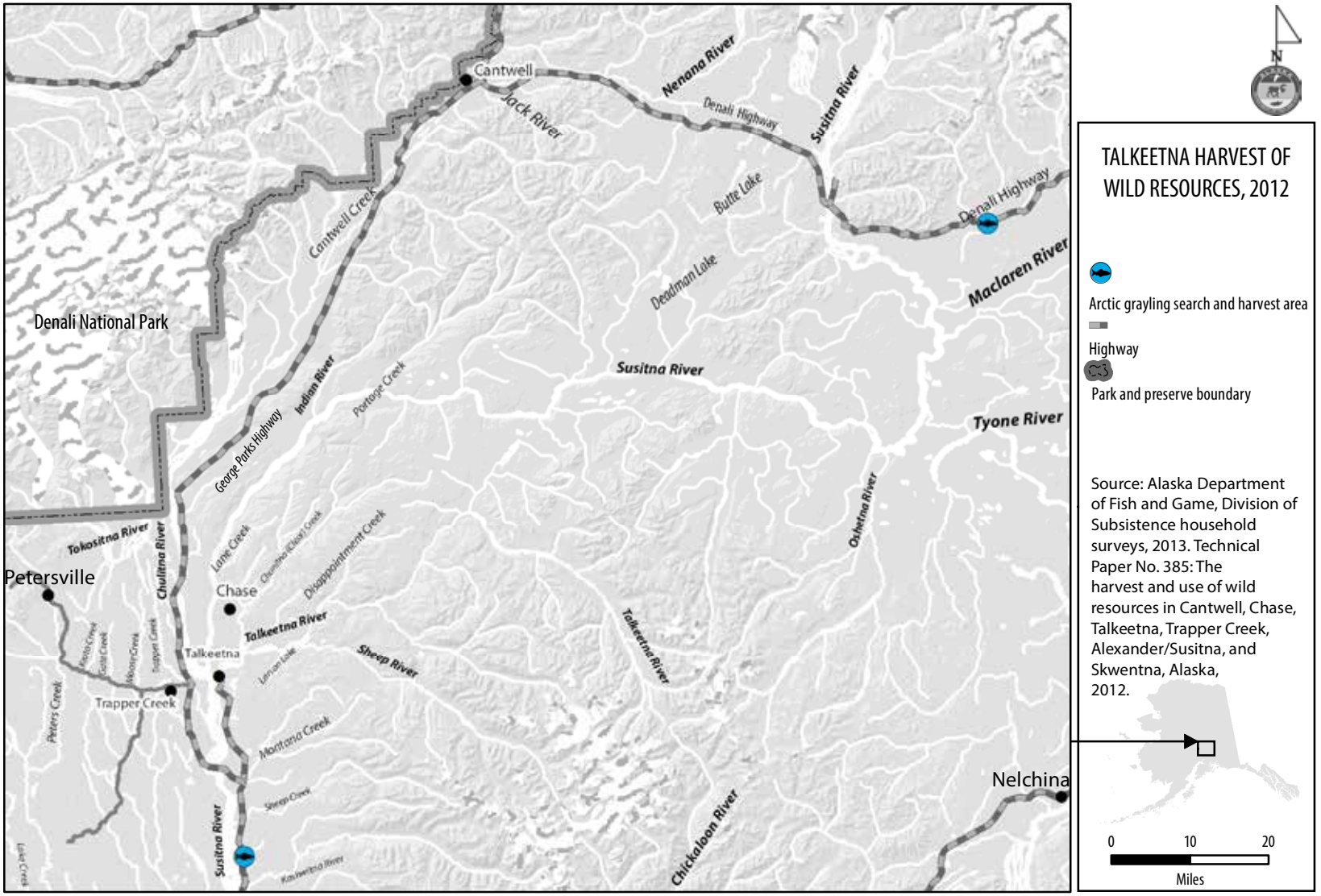
Cantwell
Nenana River
Jack River
Denali Highway
Susitna River
Butte Lake
Denali Highway
Maclaren River
Cantwell Creek
Denali National Park
Deadman Lake
Susitna River
Indian River
Portage Creek
George Parks Highway
Tyone River
Oshetna River
Tokositna River
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Talkeetna
Sheep River
Lemon Lake
Talkeetna River
Trapper Creek
Peters Creek
Montana Creek
Sheep Creek
Susitna River
Kashwitna River
Chickaloon River
Nelchina
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Arctic grayling search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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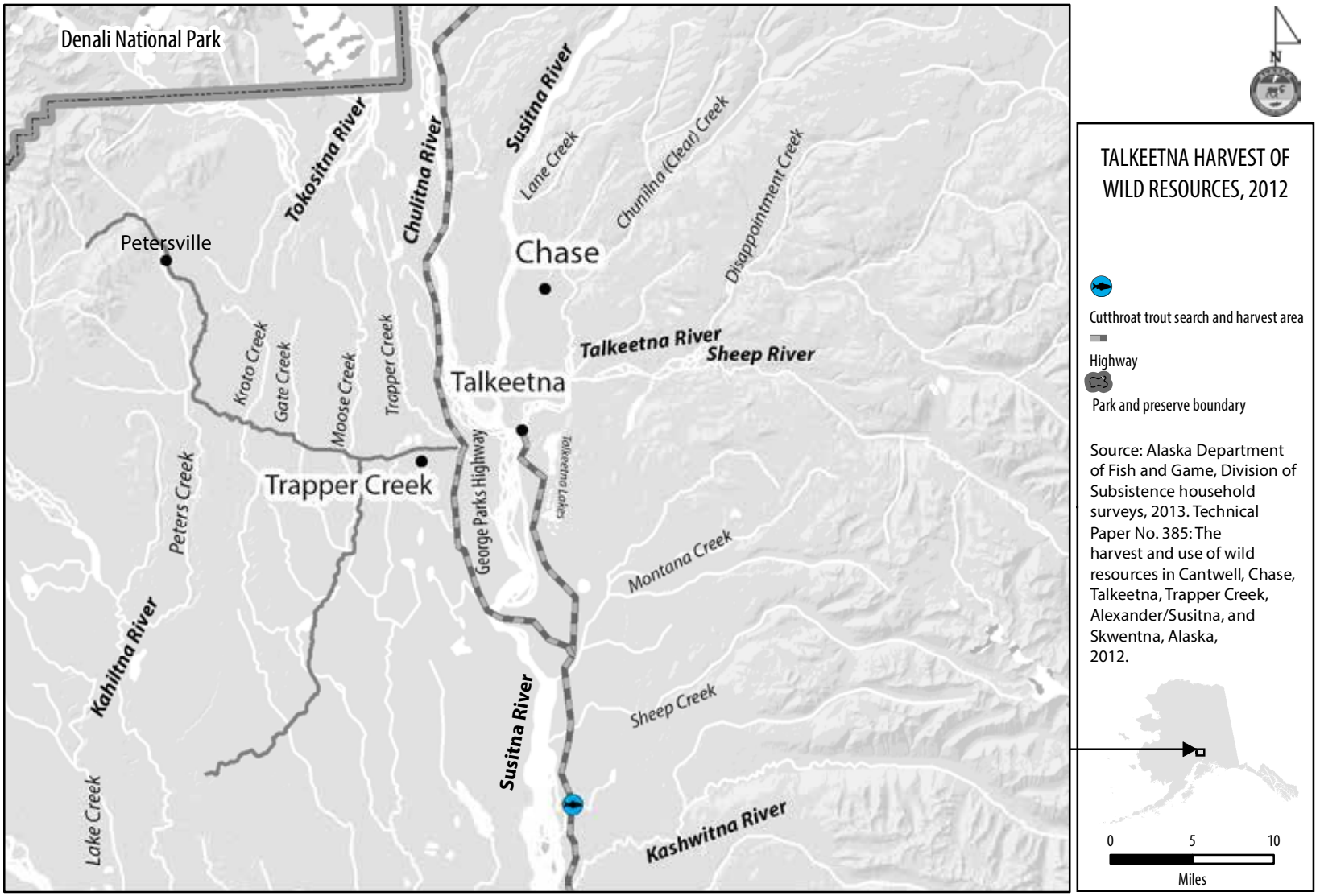
Denali National Park
Tokositna River
Chulitna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna
Trapper Creek
Peters Creek
George Parks Highway
Talkeetna Lakes
Montana Creek
Kahiltna River
Susitna River
Sheep Creek
Lake Creek
Kashwitna River
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Cutthroat trout search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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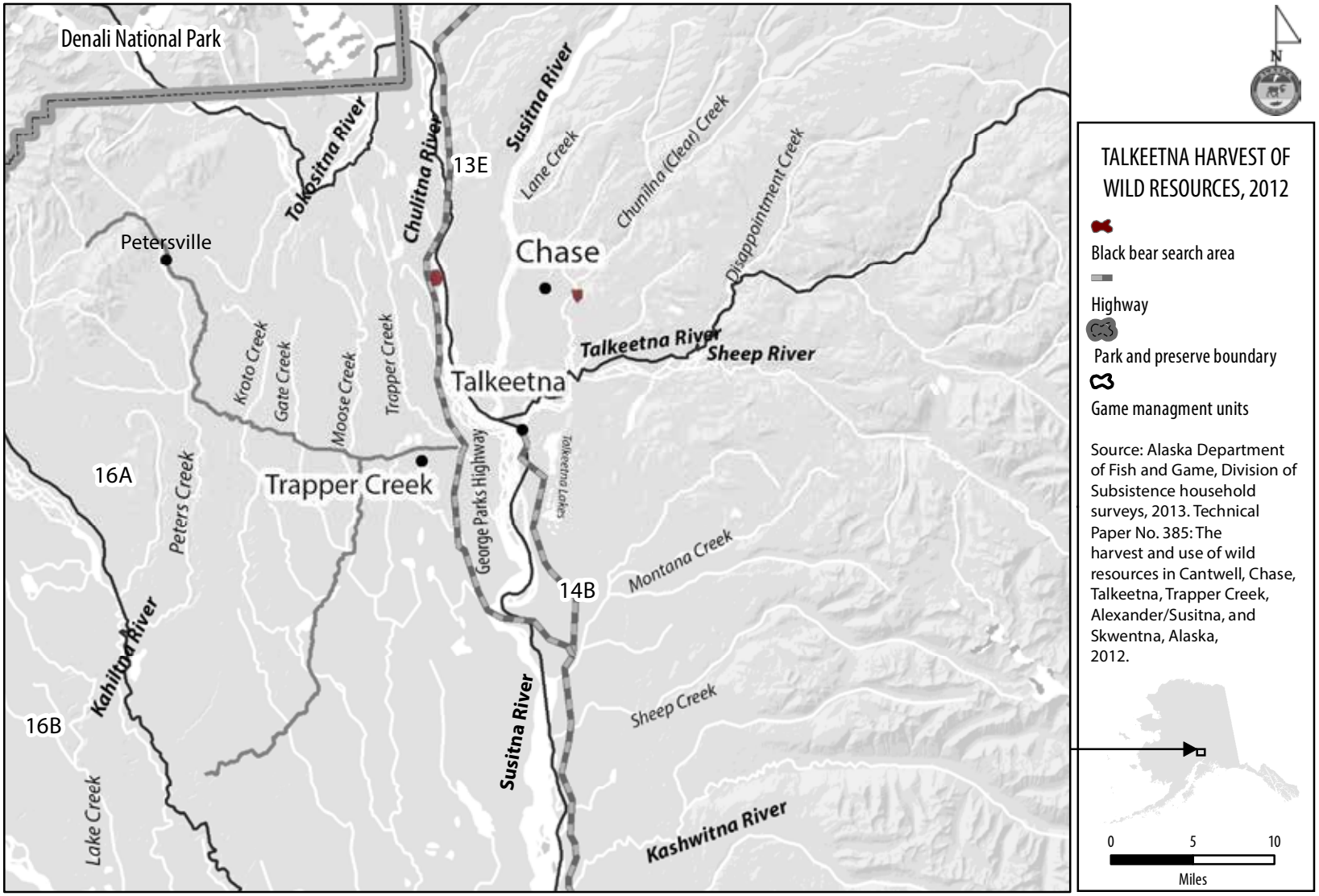
Denali National Park
Tokositna River
Chulitna River
Susitna River
13E
Lane Creek
Churnilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
Sheep River
Talkeetna
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
16A
Trapper Creek
Peters Creek
George Parks Highway
Talkeetna Lakes
Montana Creek
14B
Kahiltna River
16B
Sheep Creek
Susitna River
Lake Creek
Kashwitna River
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Black bear search area
Highway
Park and preserve boundary
Game managment units
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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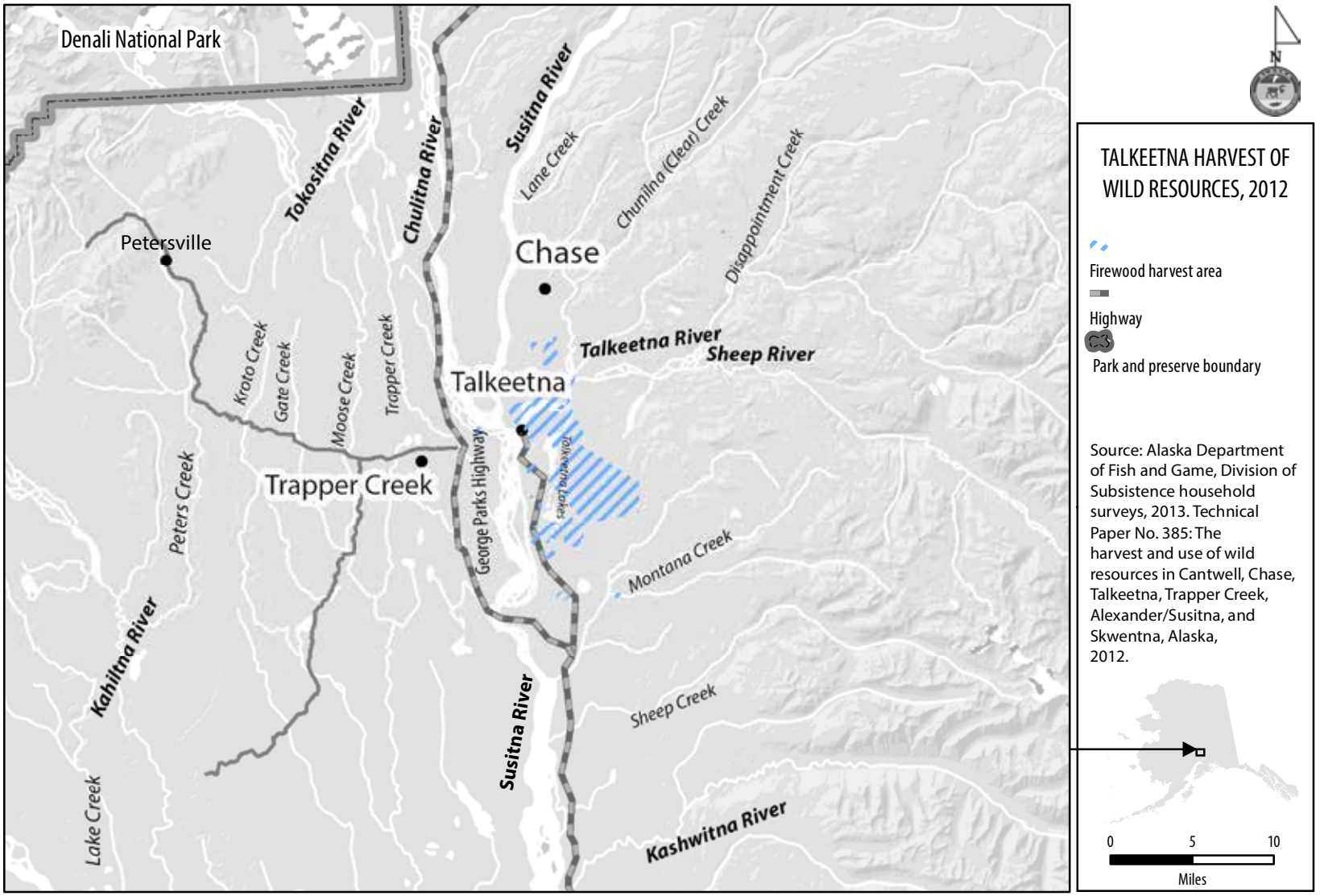
Denali National Park
Tokositna River
Chulitna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chase
Talkeetna River
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Talkeetna
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Trapper Creek
George Parks Highway
Talkeetna Lakes
Peters Creek
Montana Creek
Kahiltna River
Susitna River
Sheep Creek
Lake Creek
Kashwitna River
TALKEETNA HARVEST OF WILD RESOURCES, 2012
Firewood harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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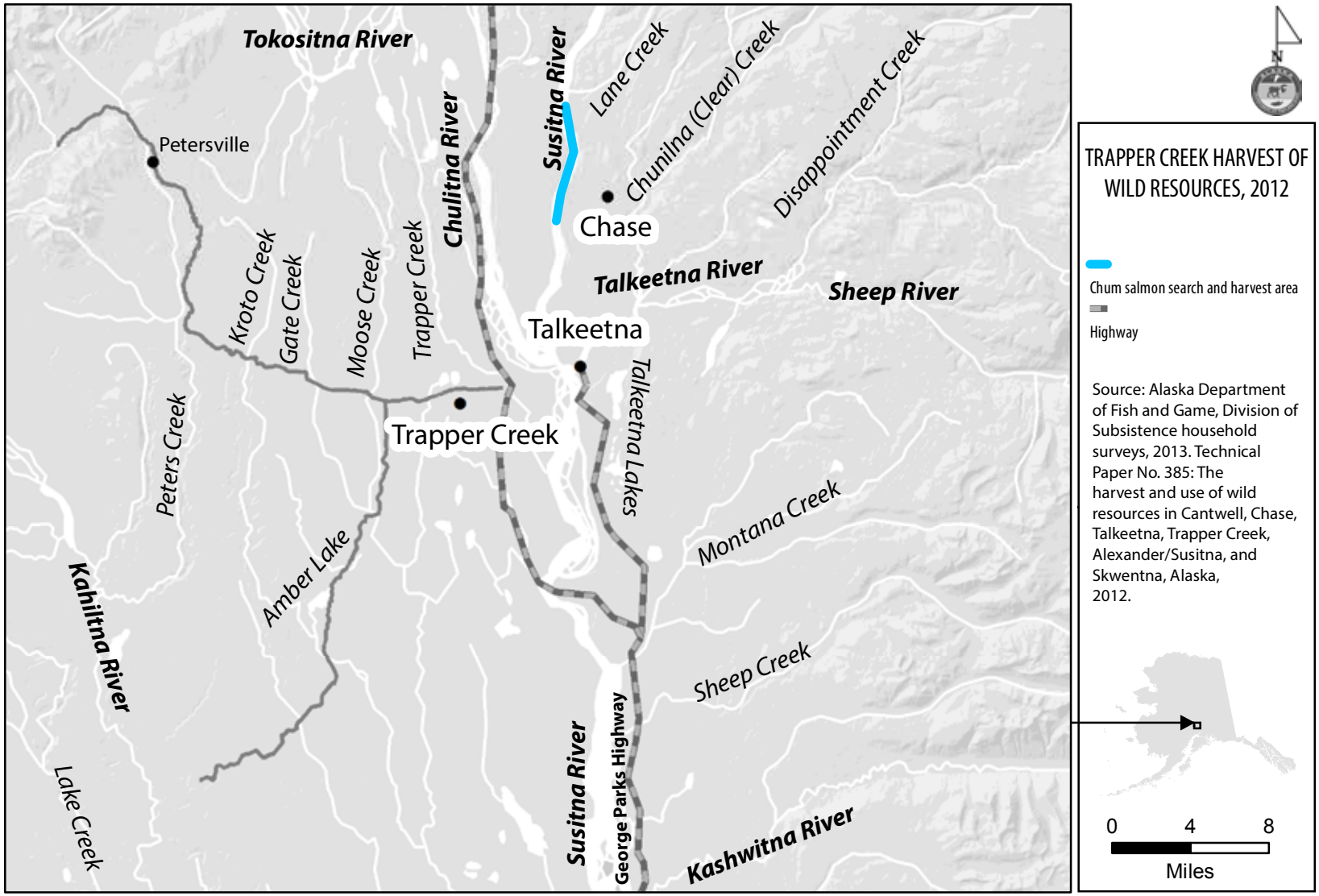
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chulitna River
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Trapper Creek
Talkeetna Lakes
Peters Creek
Montana Creek
Amber Lake
Kahiltna River
Sheep Creek
Lake Creek
Susitna River
George Parks Highway
Kashwitna River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Chum salmon search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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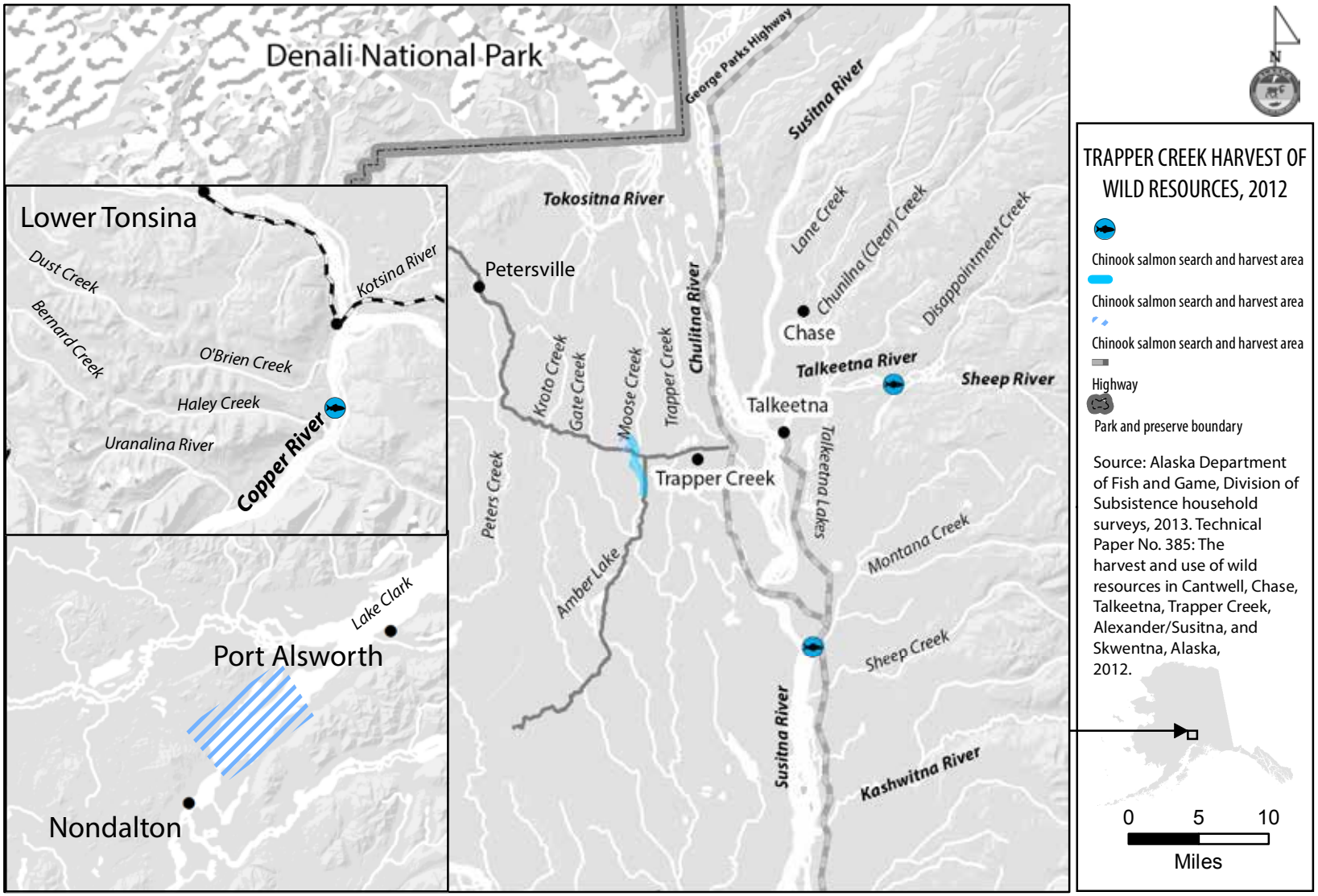
Denali National Park
George Parks Highway
Susitna River
Tokositna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Lower Tonsina
Dust Creek
Bernard Creek
Kotsina River
O'Brien Creek
Haley Creek
Uranalina River
Copper River
Petersville
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Chulitna River
Chase
Talkeetna River
Sheep River
Talkeetna
Trapper Creek
Peters Creek
Talkeetna Lakes
Amber Lake
Montana Creek
Sheep Creek
Susitna River
Kashwitna River
Lake Clark
Port Alsworth
Nondalton
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Chinook salmon search and harvest area
Chinook salmon search and harvest area
Chinook salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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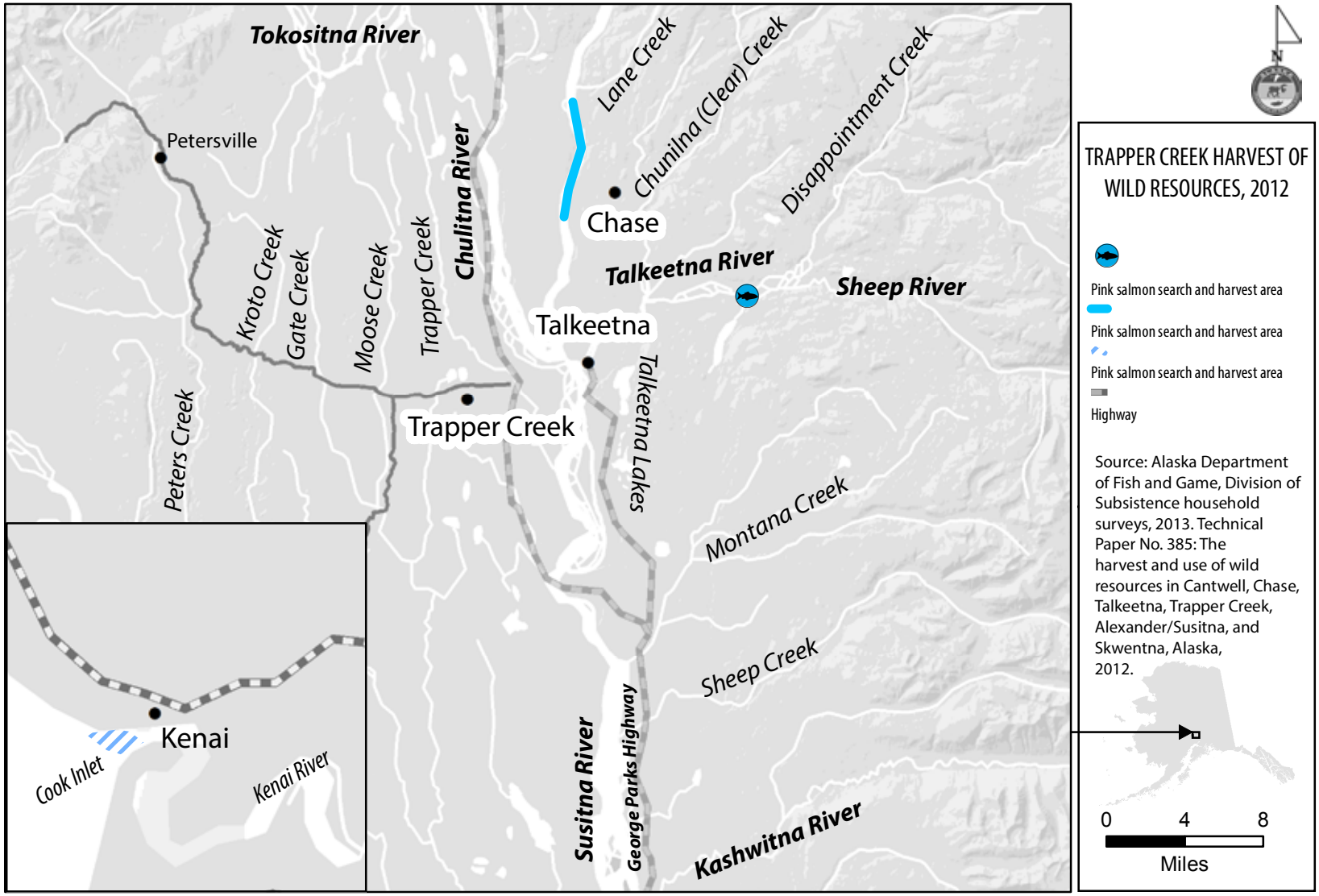
Tokositna River
Petersville
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Chase
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Montana Creek
Sheep Creek
Susitna River
George Parks Highway
Kashwitna River
Kenai
Cook Inlet
Kenai River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Pink salmon search and harvest area
Pink salmon search and harvest area
Pink salmon search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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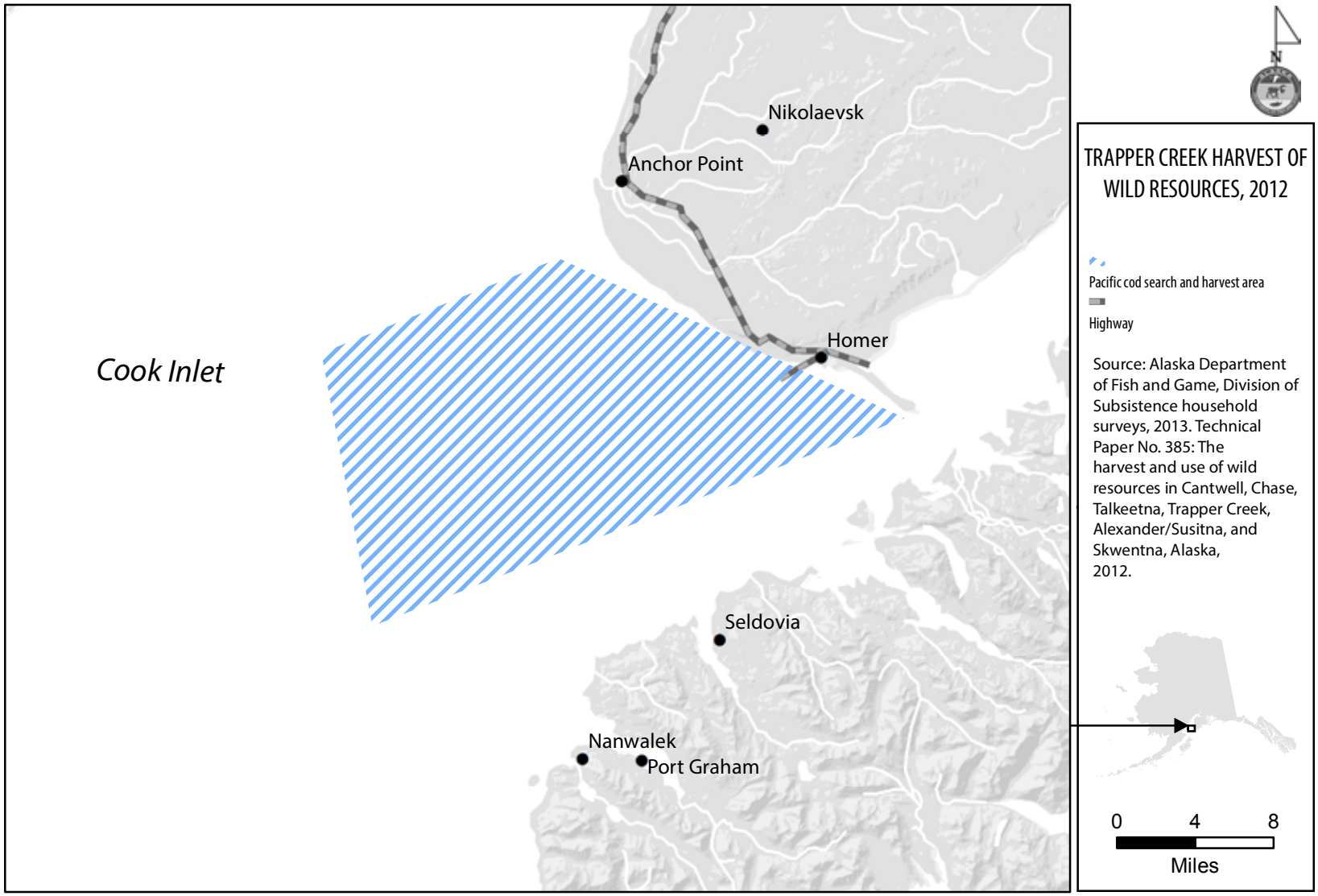
Nikolaevsk
Anchor Point
Homer
Cook Inlet
Seldovia
Nanwalek
Port Graham
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Pacific cod search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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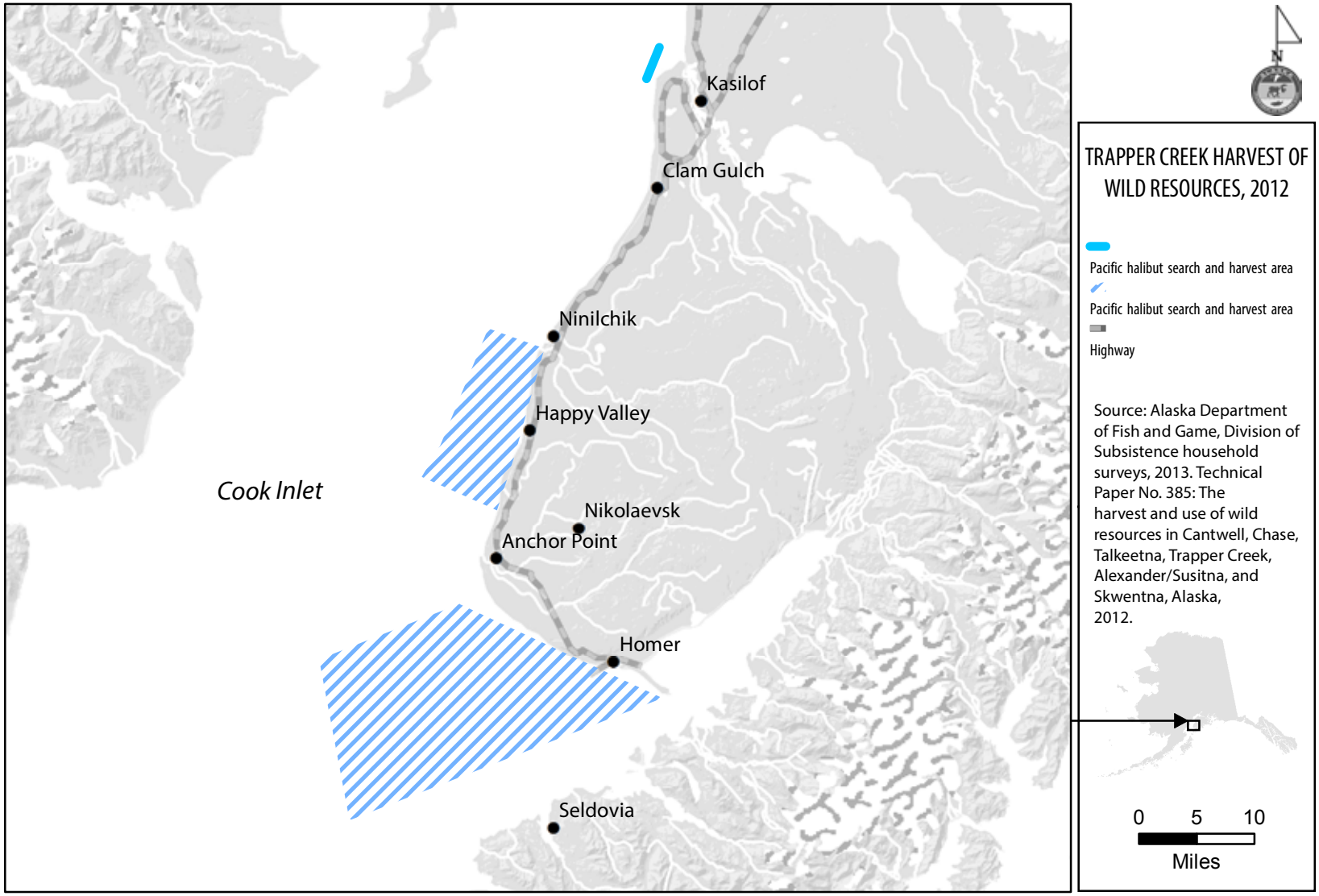
Kasilof
Clam Gulch
Ninilchik
Happy Valley
Cook Inlet
Nikolaevsk
Anchor Point
Homer
Seldovia
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Pacific halibut search and harvest area
Pacific halibut search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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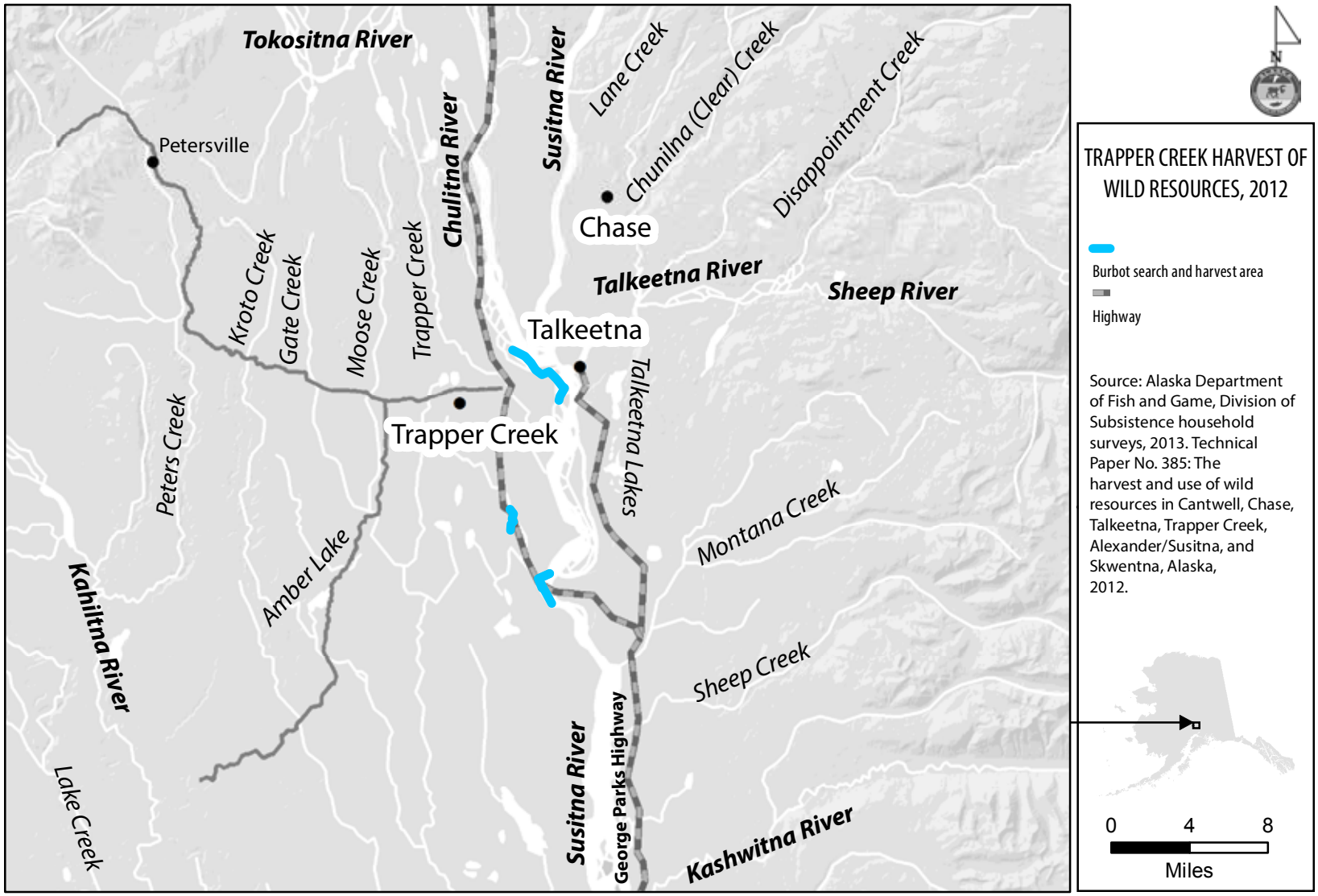
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chulitna River
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Montana Creek
Amber Lake
Kahiltna River
Sheep Creek
Lake Creek
Susitna River
George Parks Highway
Kashwitna River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Burbot search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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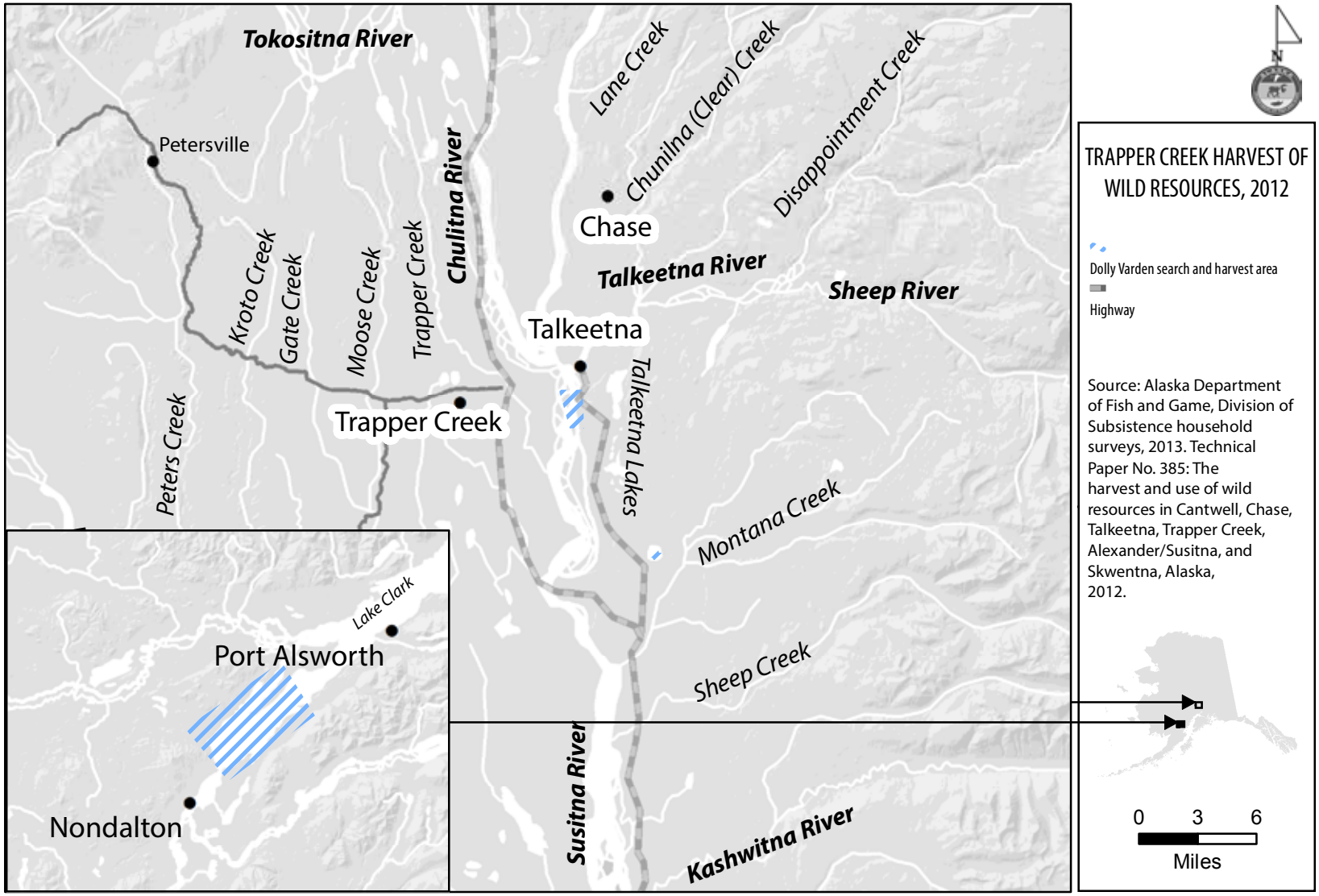
Tokositna River
Petersville
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Chulitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Chase
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Trapper Creek
Peters Creek
Montana Creek
Lake Clark
Port Alsworth
Sheep Creek
Nondalton
Susitna River
Kashwitna River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Dolly Varden search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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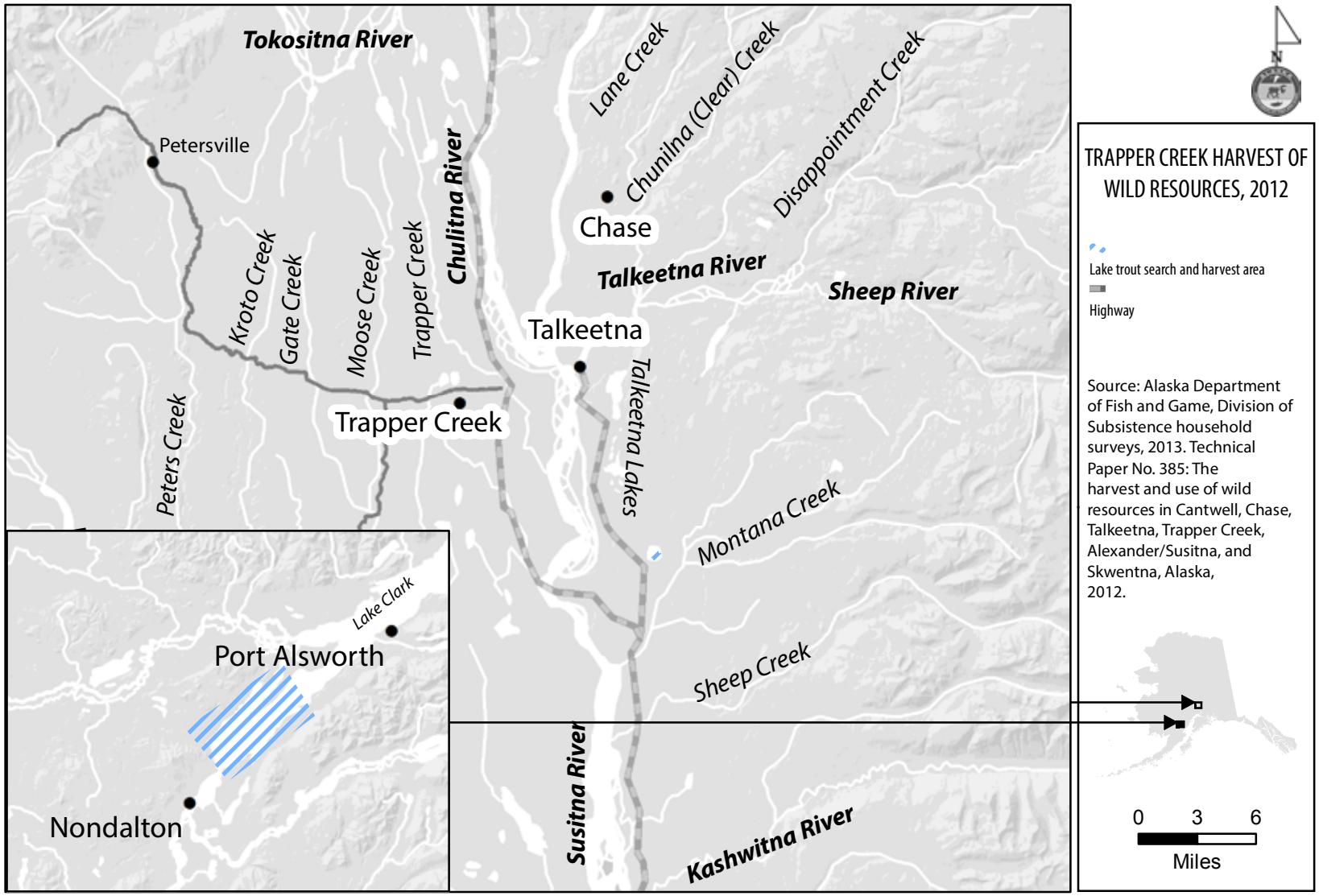
Tokositna River
Petersville
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Chulitna River
Peters Creek
Trapper Creek
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Chase
Talkeetna River
Sheep River
Talkeetna
Talkeetna Lakes
Montana Creek
Sheep Creek
Lake Clark
Port Alsworth
Nondalton
Susitna River
Kashwitna River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Lake trout search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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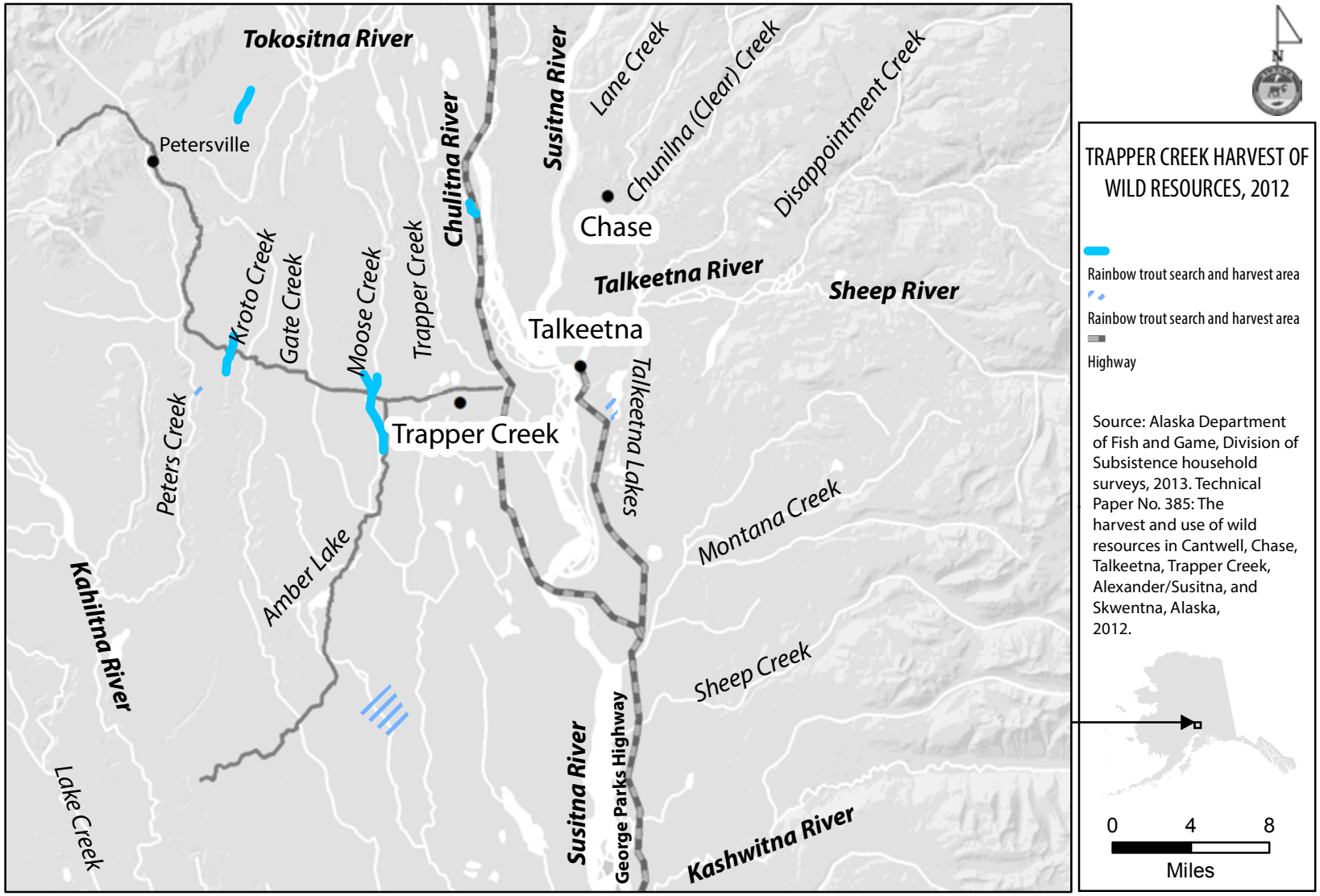
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chulitna River
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Trapper Creek
Talkeetna Lakes
Peters Creek
Montana Creek
Amber Lake
Kahiltna River
Sheep Creek
Lake Creek
Susitna River
George Parks Highway
Kashwitna River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Rainbow trout search and harvest area
Rainbow trout search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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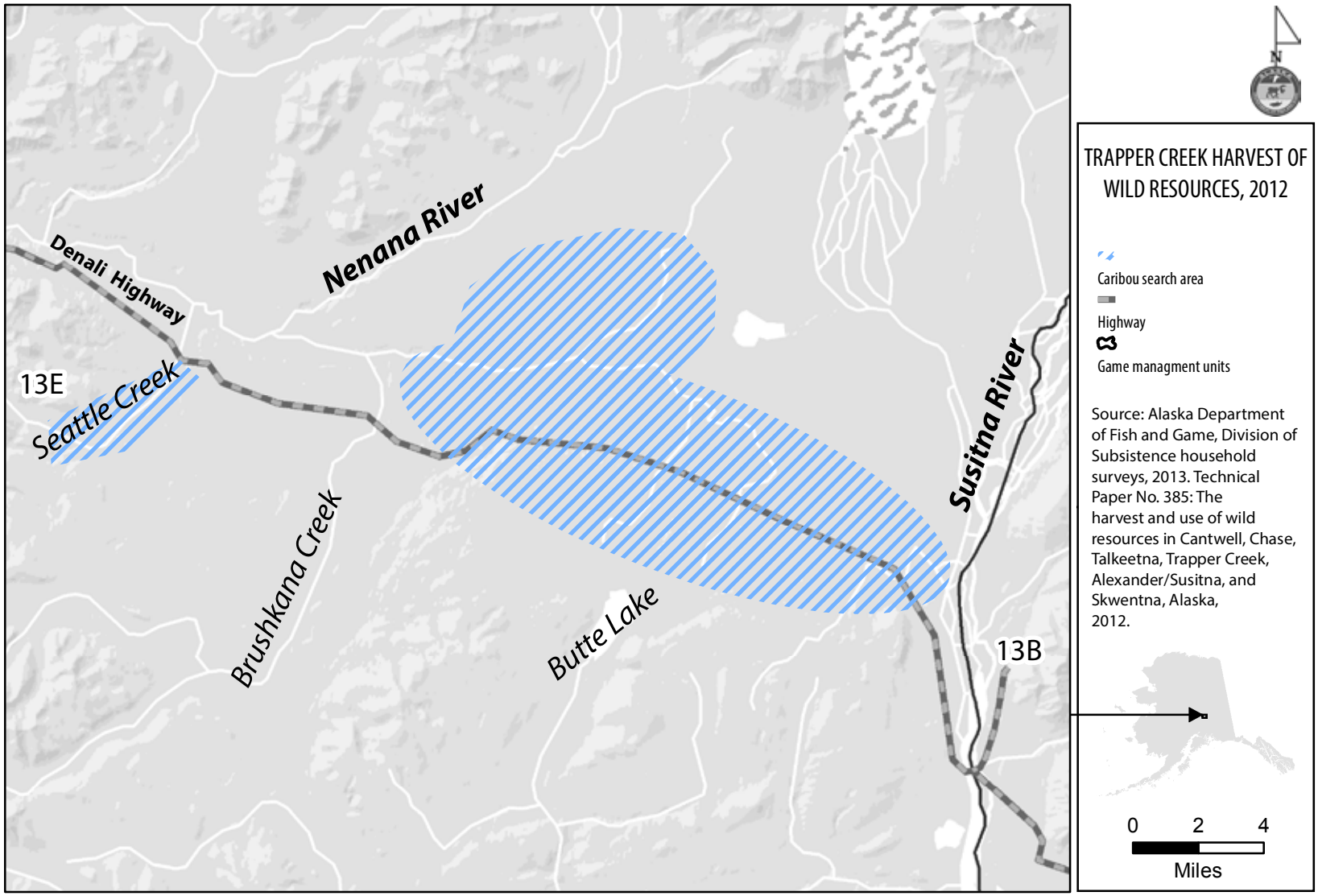
Denali Highway
Nenana River
13E
Seattle Creek
Brushkana Creek
Butte Lake
Susitna River
13B
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Caribou search area
Highway
Game managment units
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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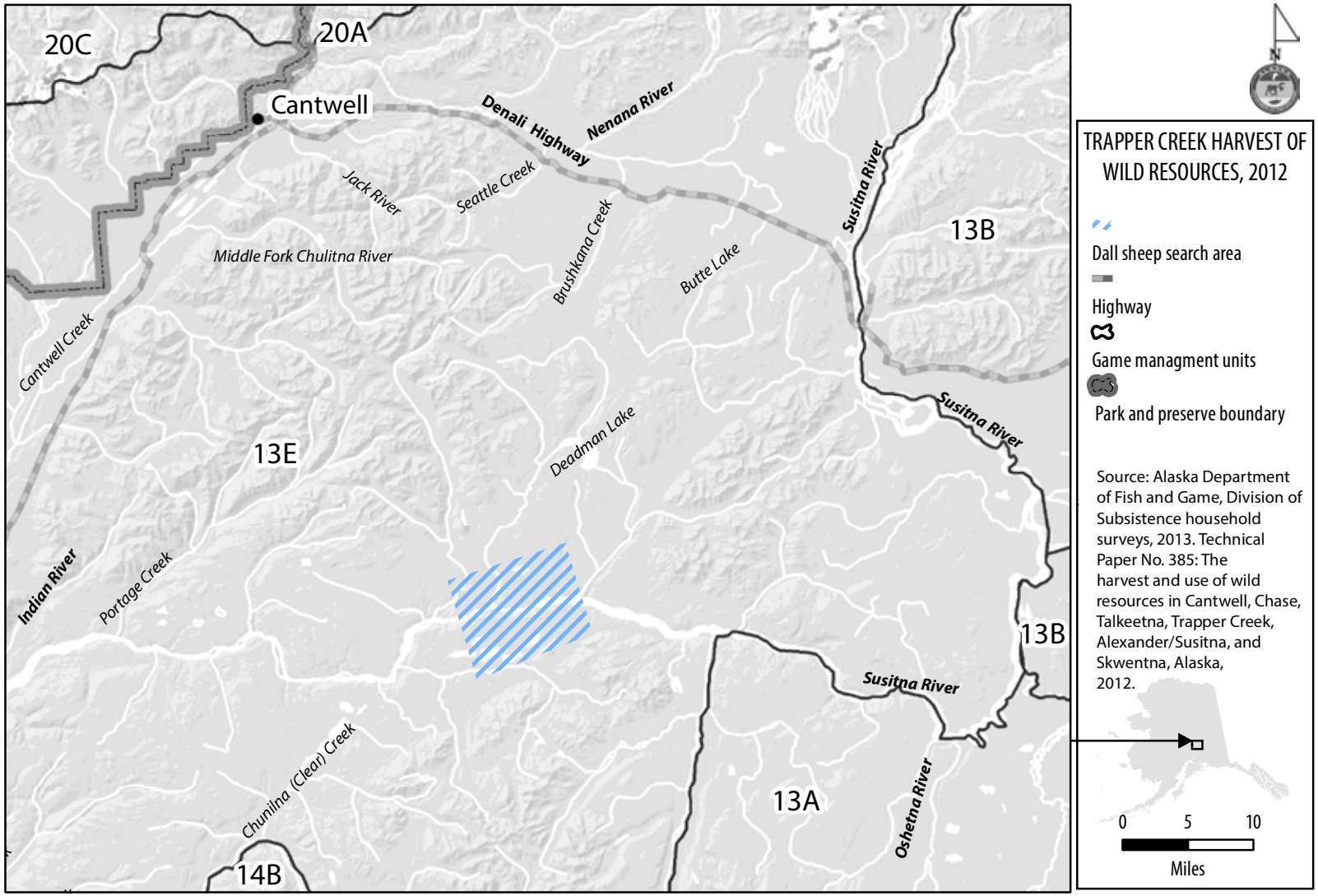
20C
20A
Cantwell
Denali Highway
Nenana River
Jack River
Seattle Creek
Brushkana Creek
Middle Fork Chulitna River
Butte Lake
Susitna River
13B
Cantwell Creek
13E
Deadman Lake
Susitna River
Indian River
Portage Creek
13B
Susitna River
Chunilna (Clear) Creek
13A
Oshetna River
14B
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Dall sheep search area
Highway
Game managment units
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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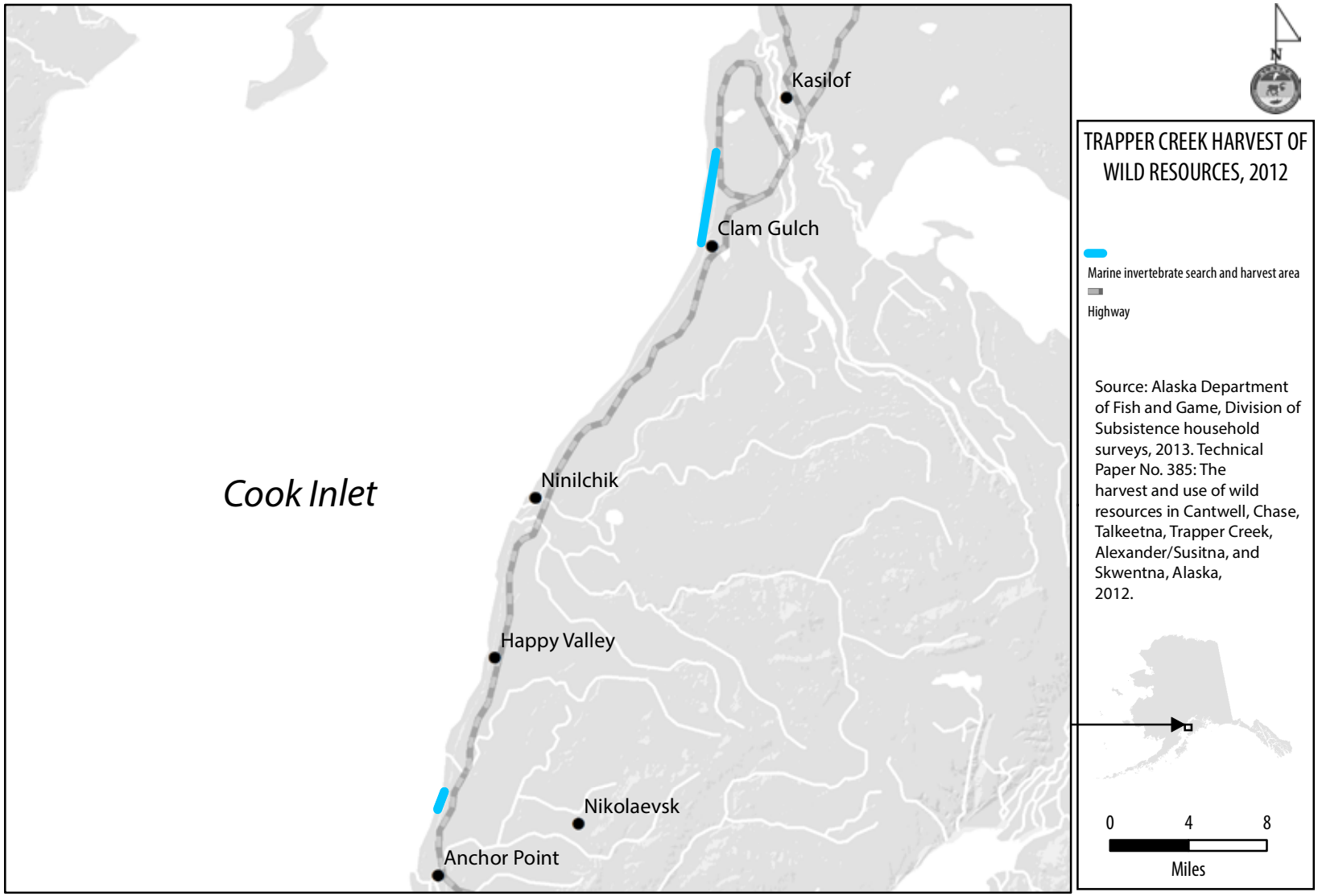
Kasilof
Clam Gulch
Cook Inlet
Ninilchik
Happy Valley
Nikolaevsk
Anchor Point
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Marine invertebrate search and harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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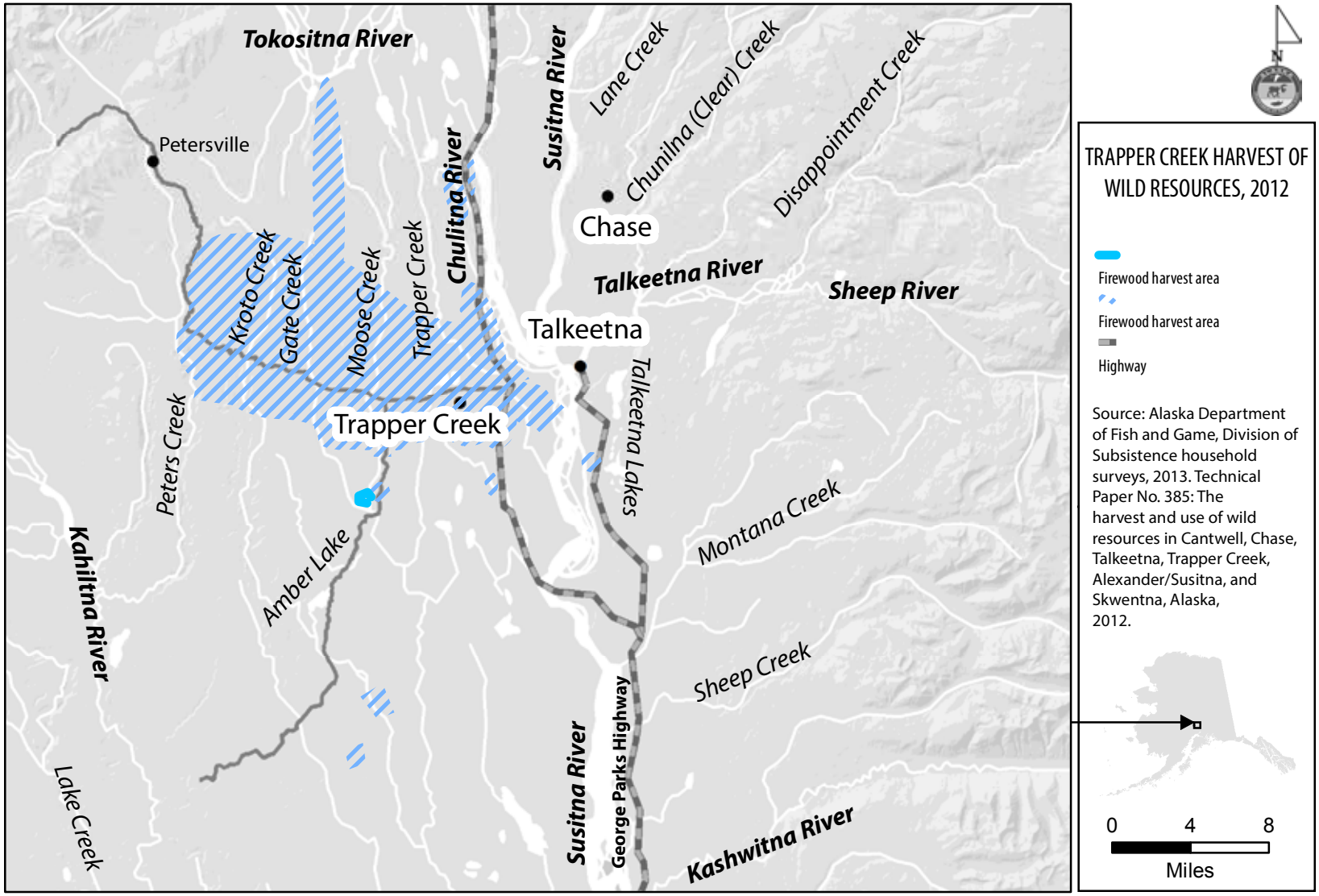
Tokositna River
Susitna River
Lane Creek
Chunilna (Clear) Creek
Disappointment Creek
Petersville
Chulitna River
Chase
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Talkeetna River
Sheep River
Talkeetna
Trapper Creek
Talkeetna Lakes
Peters Creek
Montana Creek
Kahiltna River
Amber Lake
Sheep Creek
Susitna River
George Parks Highway
Lake Creek
Kashwitna River
TRAPPER CREEK HARVEST OF WILD RESOURCES, 2012
Firewood harvest area
Firewood harvest area
Highway
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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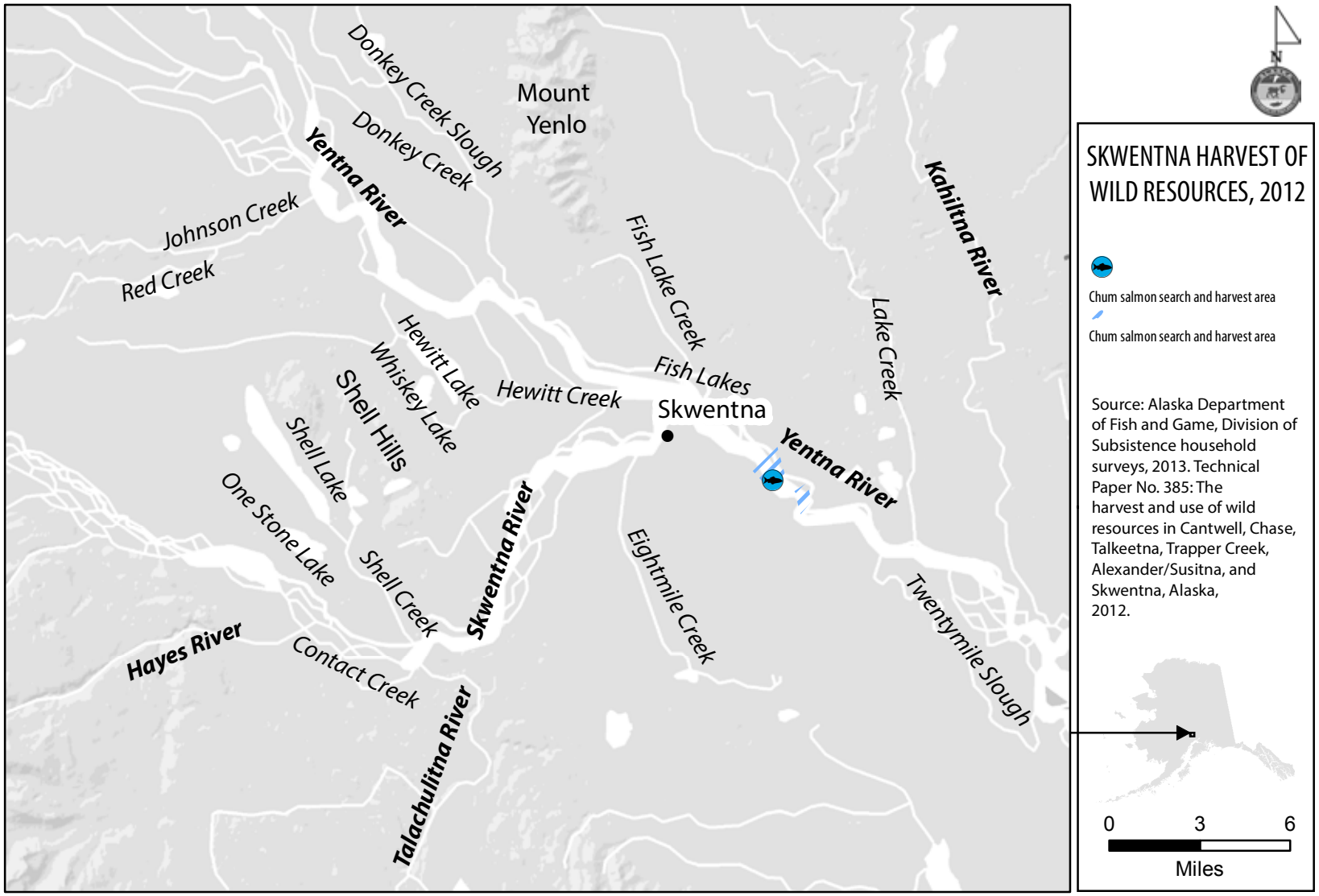
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Yentna River
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Red Creek
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Hewitt Creek
Fish Lakes
Skwentna
Shell Hills
Shell Lake
Yentna River
One Stone Lake
Skwentna River
Eightmile Creek
Shell Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Chum salmon search and harvest area
Chum salmon search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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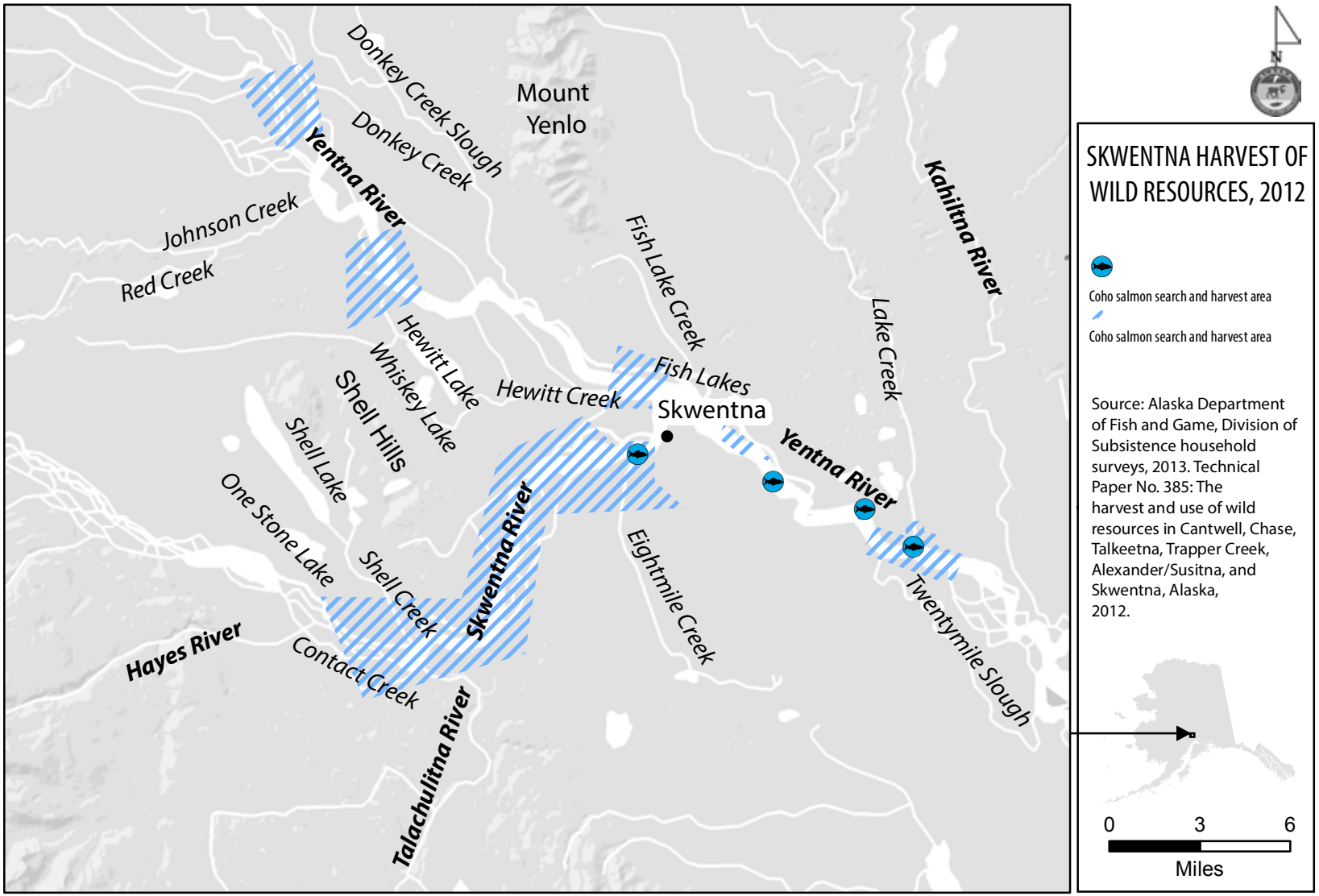
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Hewitt Creek
Fish Lakes
Skwentna
Yentna River
Shell Lake
One Stone Lake
Skwentna River
Eightmile Creek
Twentymile Slough
Shell Creek
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Coho salmon search and harvest area
Coho salmon search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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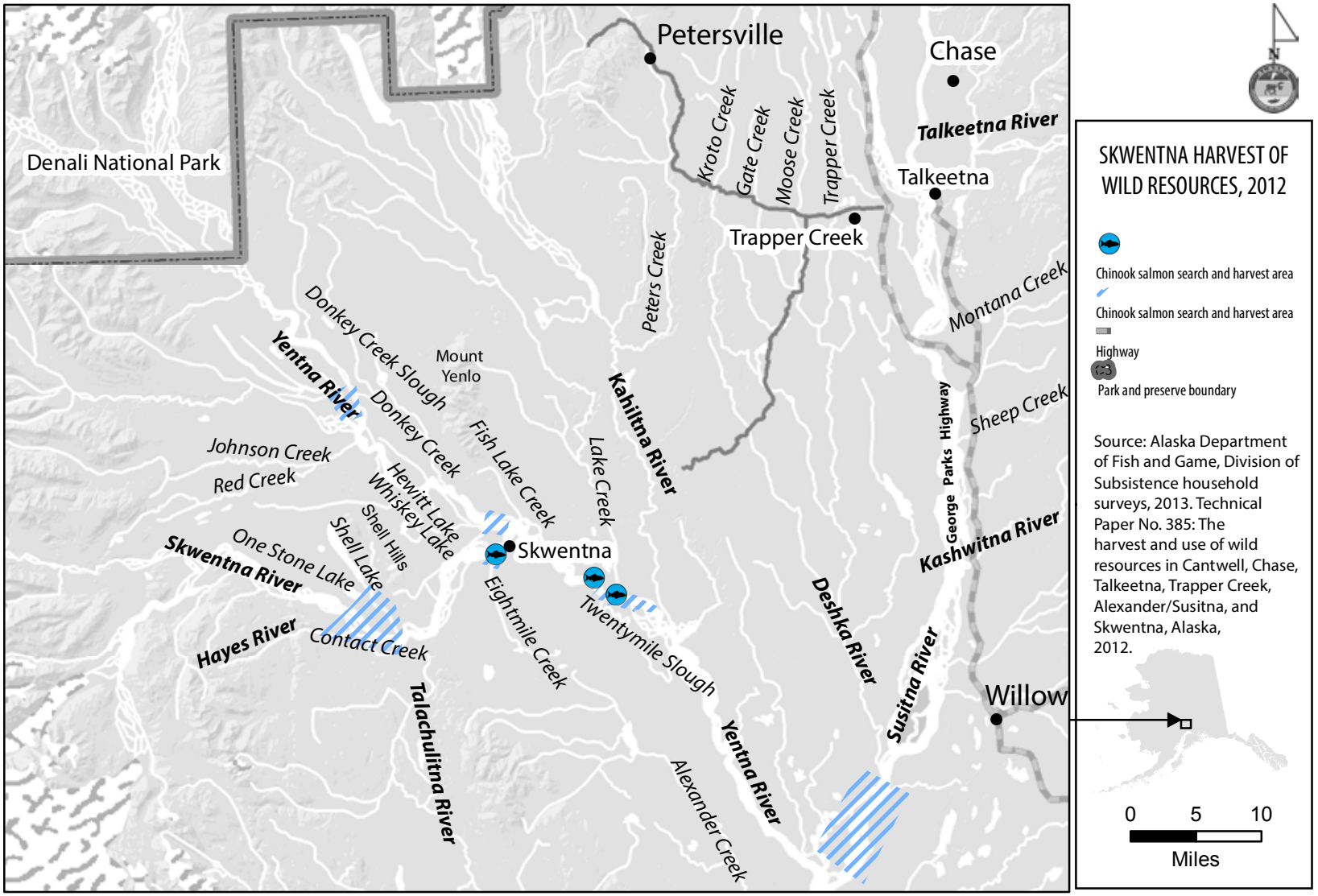
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Chase
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Talkeetna
Trapper Creek
Kroto Creek
Gate Creek
Moose Creek
Trapper Creek
Denali National Park
Peters Creek
Montana Creek
Sheep Creek
George Parks Highway
Kashwitna River
Donkey Creek Slough
Yentna River
Mount Yenlo
Donkey Creek
Fish Lake Creek
Kahiltna River
Lake Creek
Johnson Creek
Red Creek
Hewitt Lake
Whiskey Lake
Shell Hills
Shell Lake
One Stone Lake
Skwentna River
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Eightmile Creek
Twentymile Slough
Deshka River
Susitna River
Hayes River
Contact Creek
Talachulitna River
Yentna River
Alexander Creek
Willow
N
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Chinook salmon search and harvest area
Chinook salmon search and harvest area
Highway
Park and preserve boundary
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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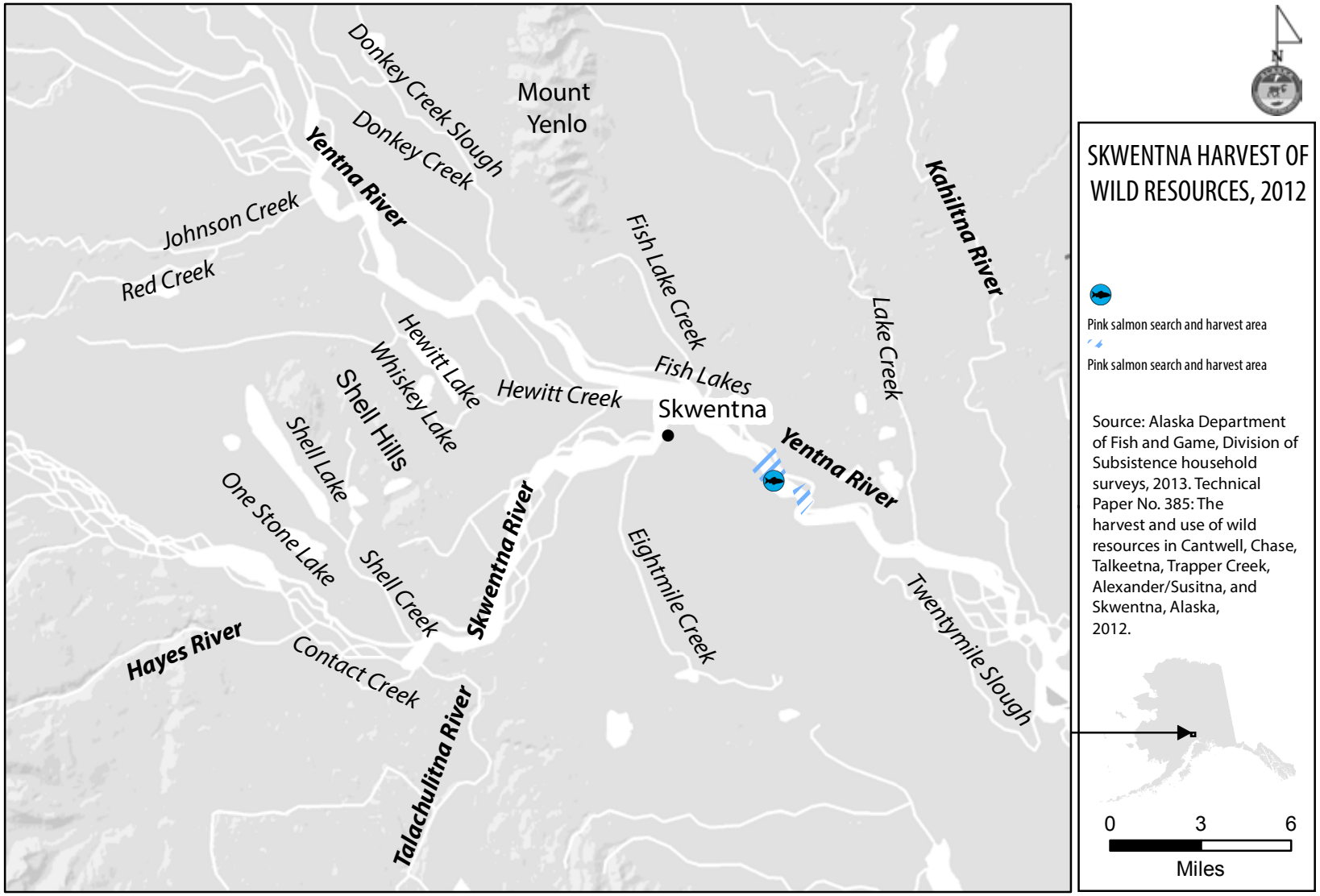
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Skwentna
Shell Hills
Shell Lake
Yentna River
One Stone Lake
Skwentna River
Eightmile Creek
Shell Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Pink salmon search and harvest area
Pink salmon search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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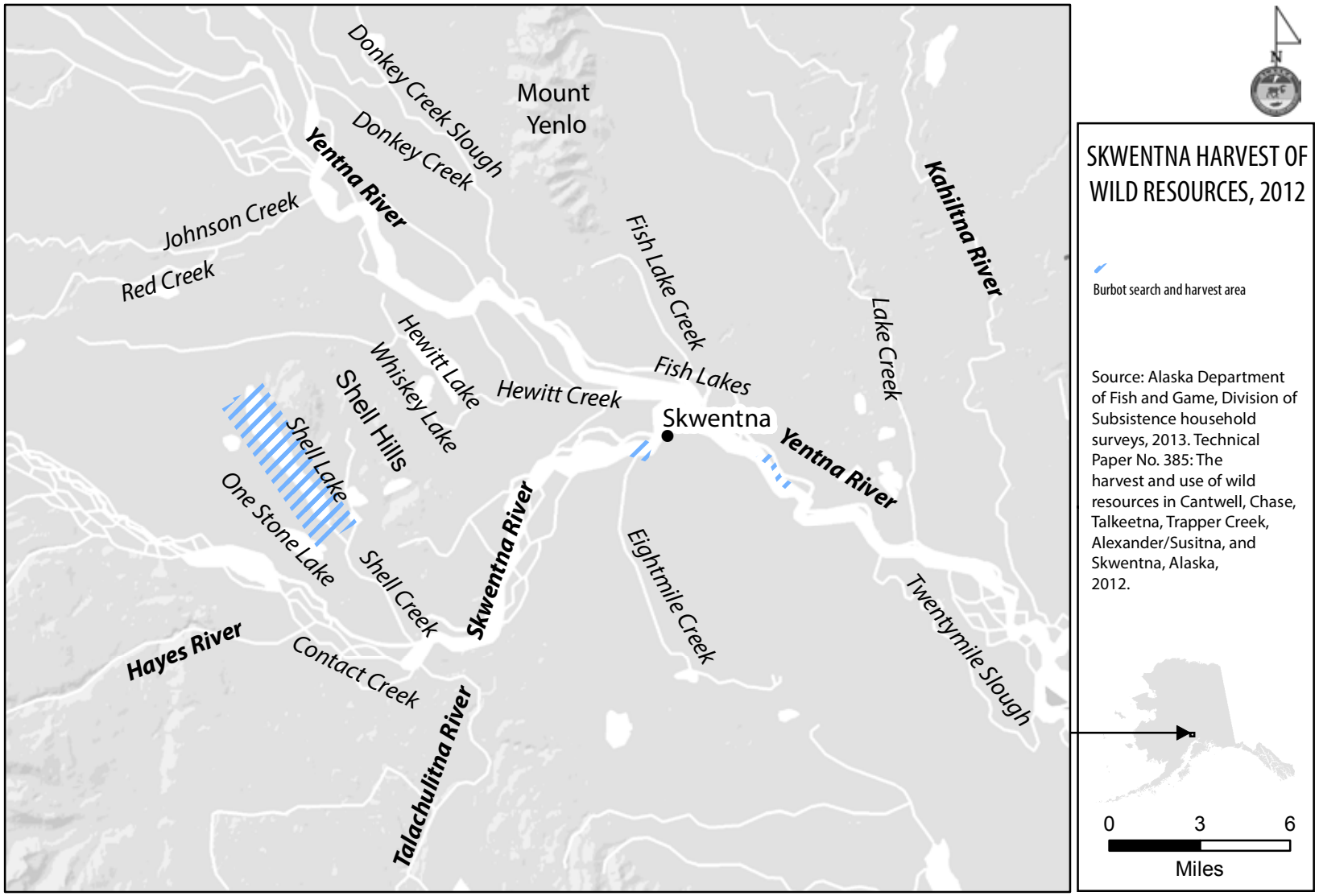
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Fish Lakes
Shell Hills
Shell Lake
Skwentna
Yentna River
One Stone Lake
Skwentna River
Eightmile Creek
Shell Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Burbot search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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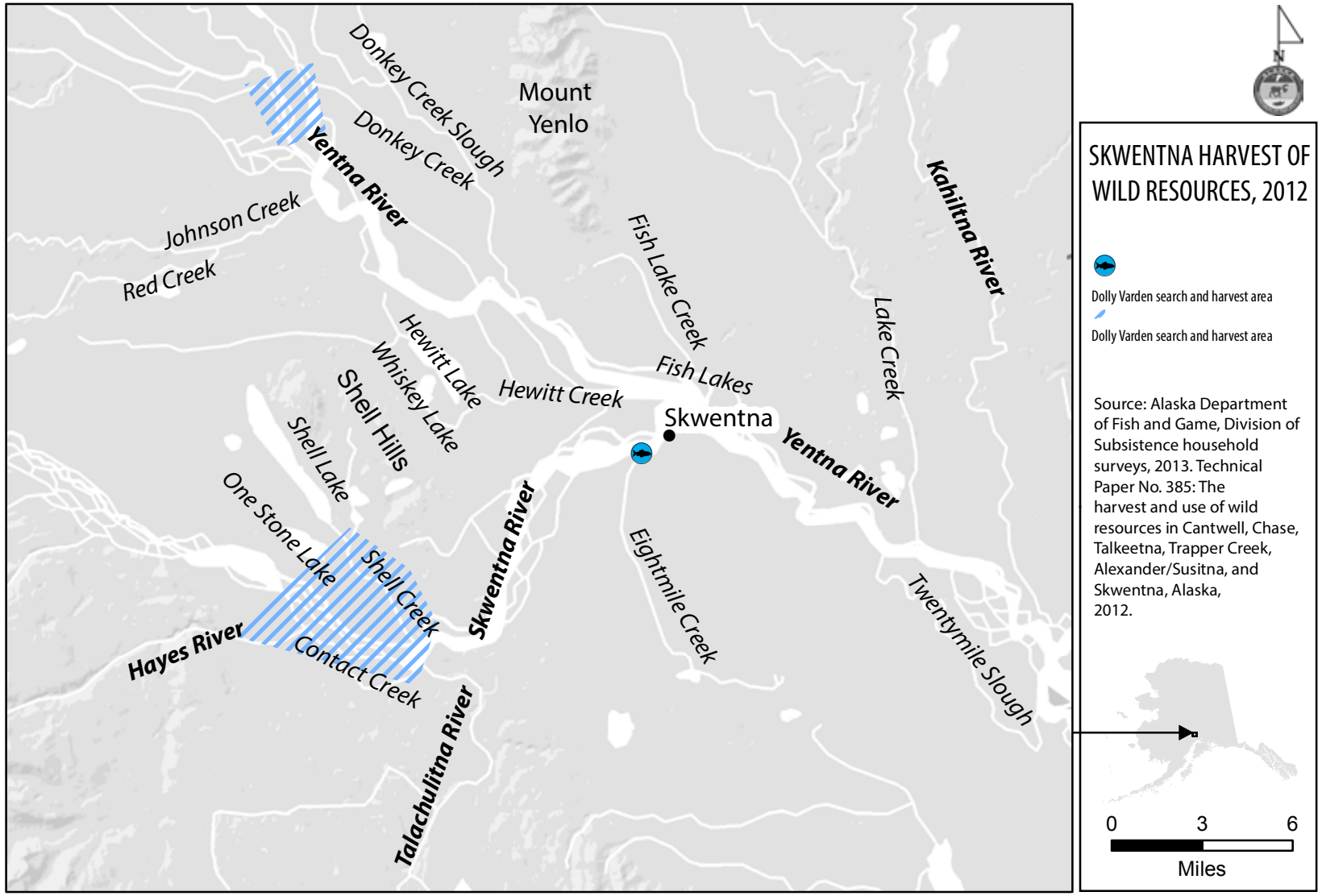
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Fish Lakes
Shell Hills
Skwentna
Shell Lake
Yentna River
One Stone Lake
Shell Creek
Skwentna River
Eightmile Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Dolly Varden search and harvest area
Dolly Varden search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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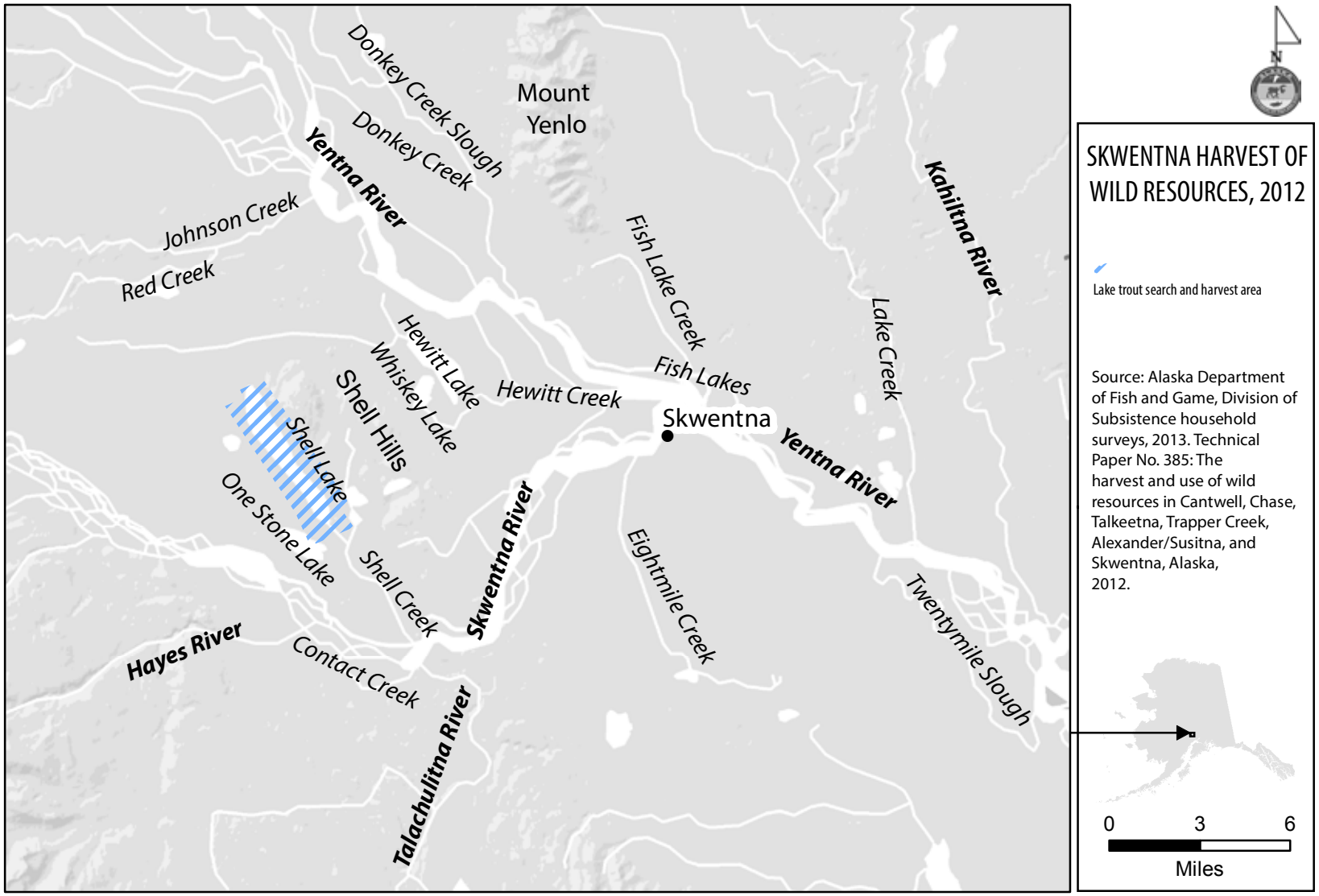
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Fish Lakes
Shell Hills
Shell Lake
Skwentna
Yentna River
One Stone Lake
Shell Creek
Skwentna River
Eightmile Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Lake trout search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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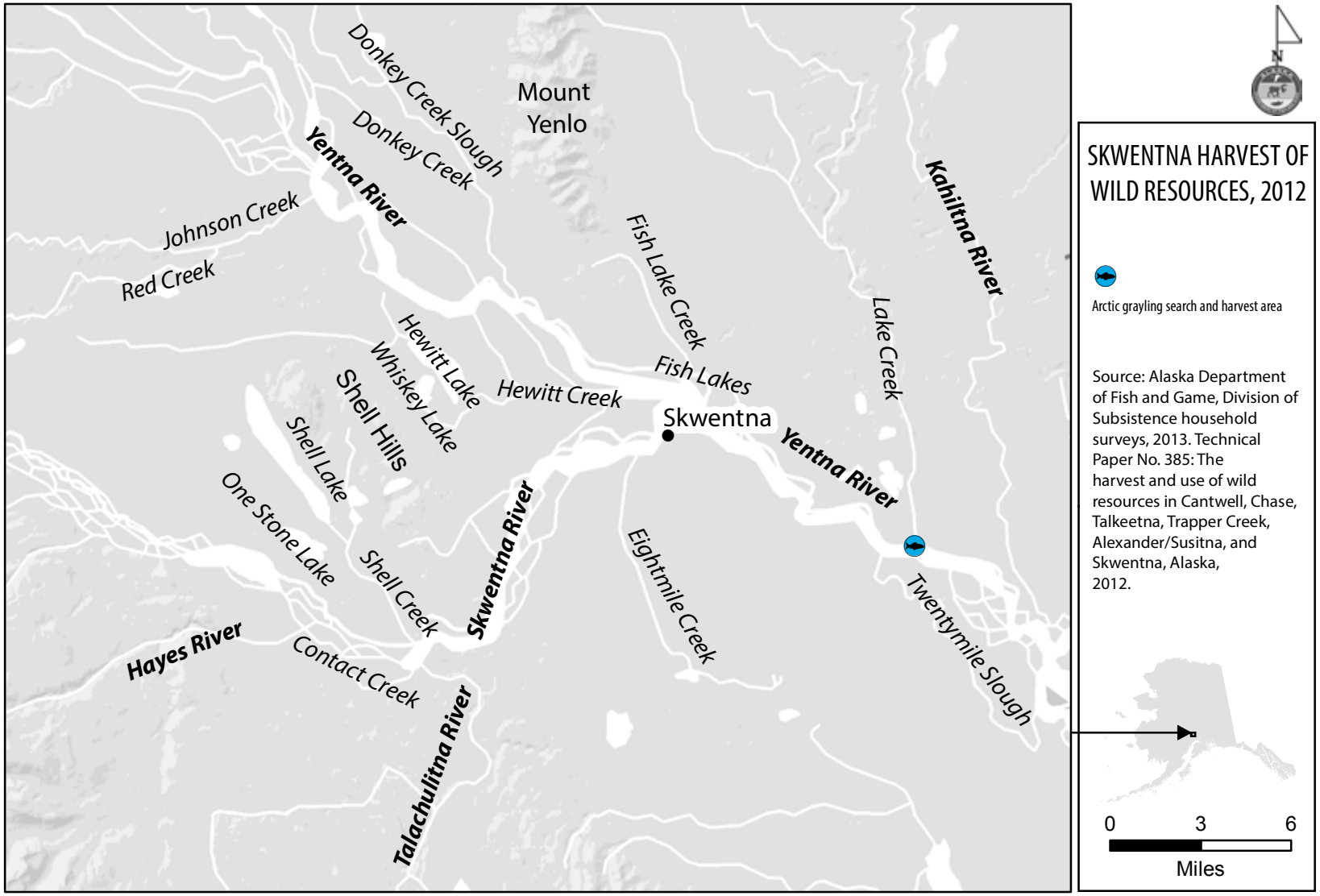
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Fish Lakes
Shell Hills
Skwentna
Shell Lake
Yentna River
One Stone Lake
Skwentna River
Eightmile Creek
Shell Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Arctic grayling search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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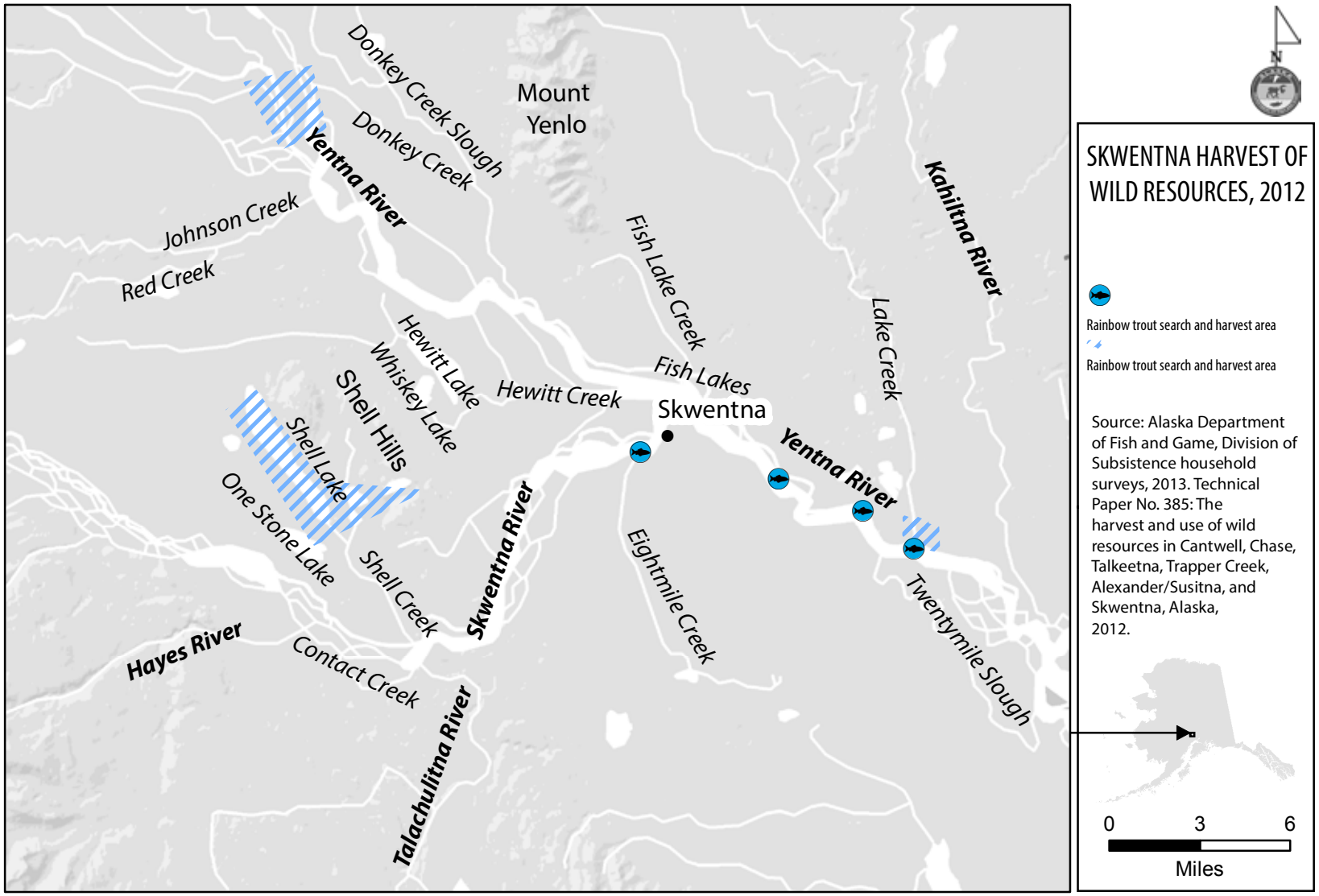
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Johnson Creek
Red Creek
Fish Lake Creek
Kahiltna River
Lake Creek
Hewitt Lake
Whiskey Lake
Hewitt Creek
Fish Lakes
Skwentna
Shell Hills
Shell Lake
Yentna River
One Stone Lake
Skwentna River
Eightmile Creek
Shell Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Rainbow trout search and harvest area
Rainbow trout search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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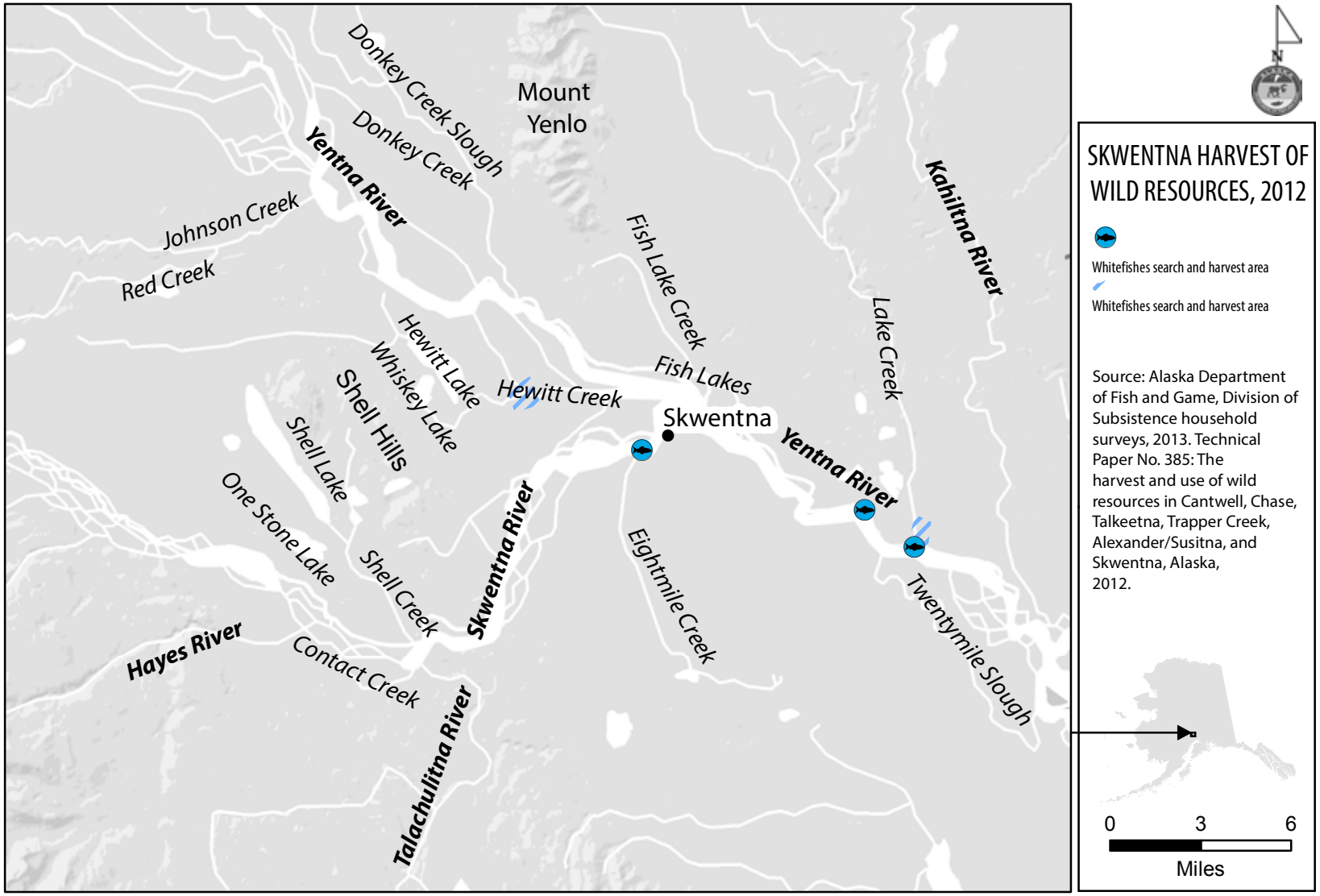
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Fish Lakes
Shell Hills
Skwentna
Shell Lake
Yentna River
One Stone Lake
Skwentna River
Eightmile Creek
Shell Creek
Twentymile Slough
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Whitefishes search and harvest area
Whitefishes search and harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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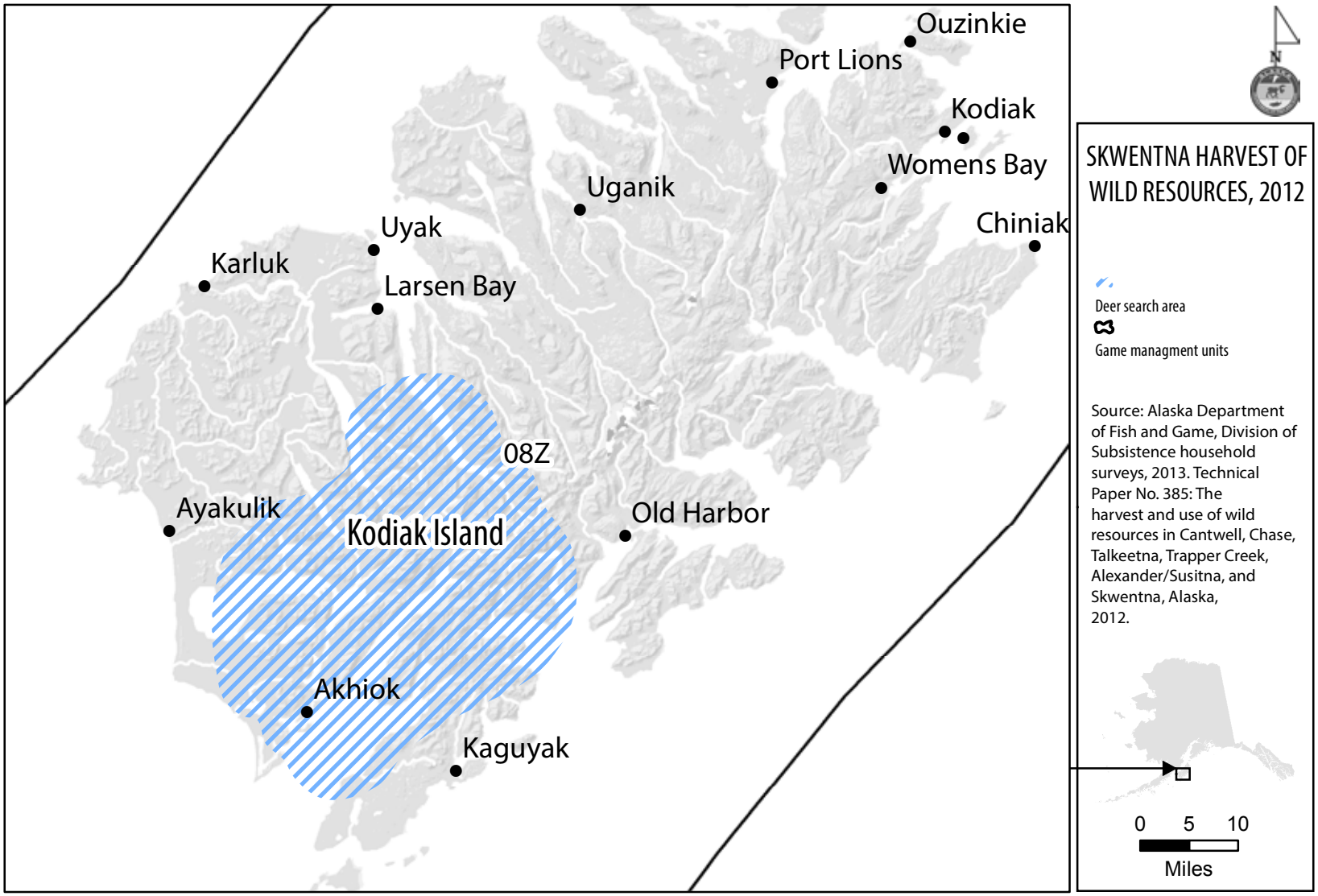
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Port Lions
Kodiak
Womens Bay
Uganik
Chiniak
Uyak
Karluk
Larsen Bay
08Z
Ayakulik
Kodiak Island
Old Harbor
Akhiok
Kaguyak
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Deer search area
Game managment units
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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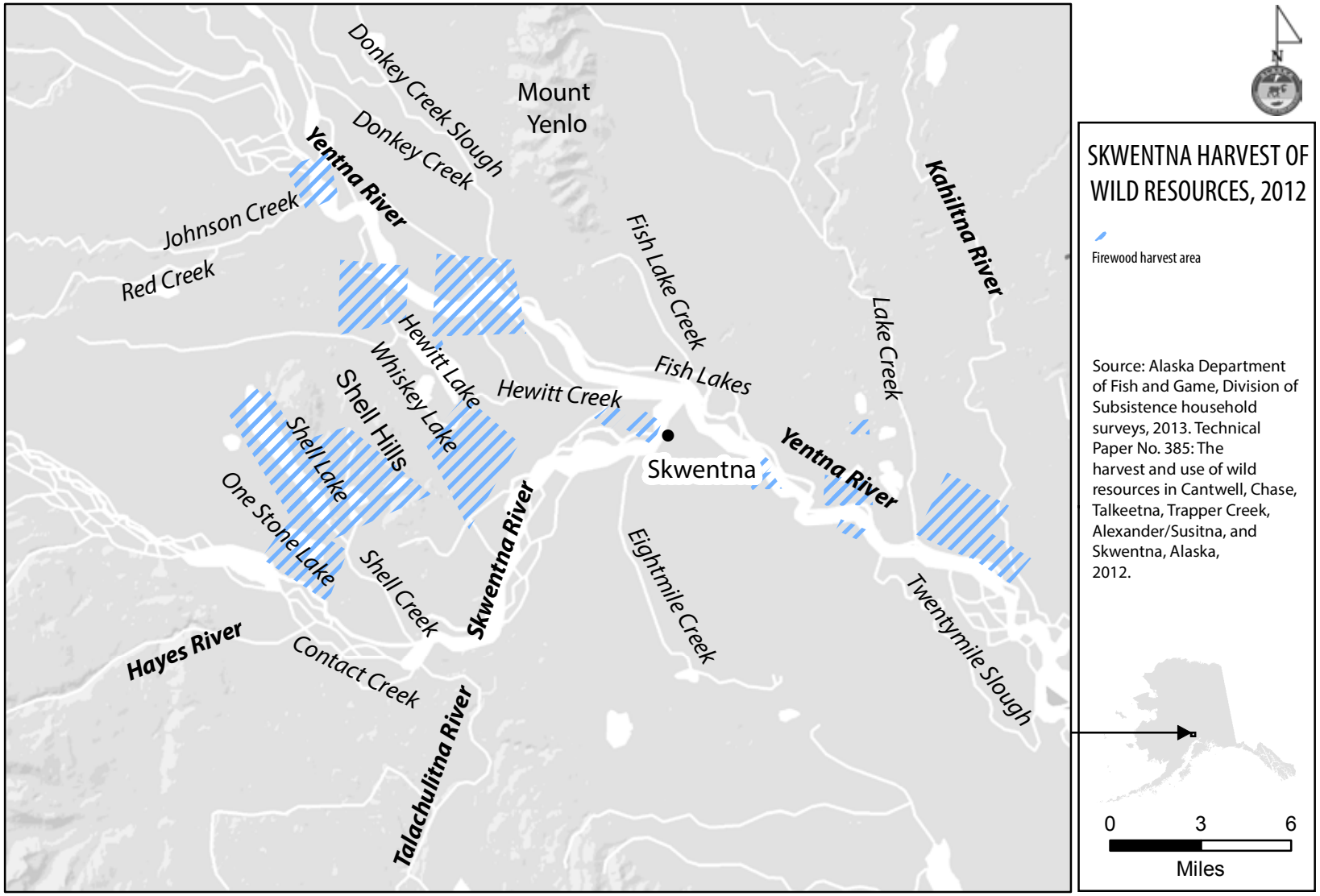
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Mount Yenlo
Yentna River
Johnson Creek
Red Creek
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Hewitt Creek
Fish Lakes
Shell Hills
Shell Lake
One Stone Lake
Skwentna
Yentna River
Skwentna River
Eightmile Creek
Twentymile Slough
Shell Creek
Hayes River
Contact Creek
Talachulitna River
SKWENTNA HARVEST OF WILD RESOURCES, 2012
Firewood harvest area
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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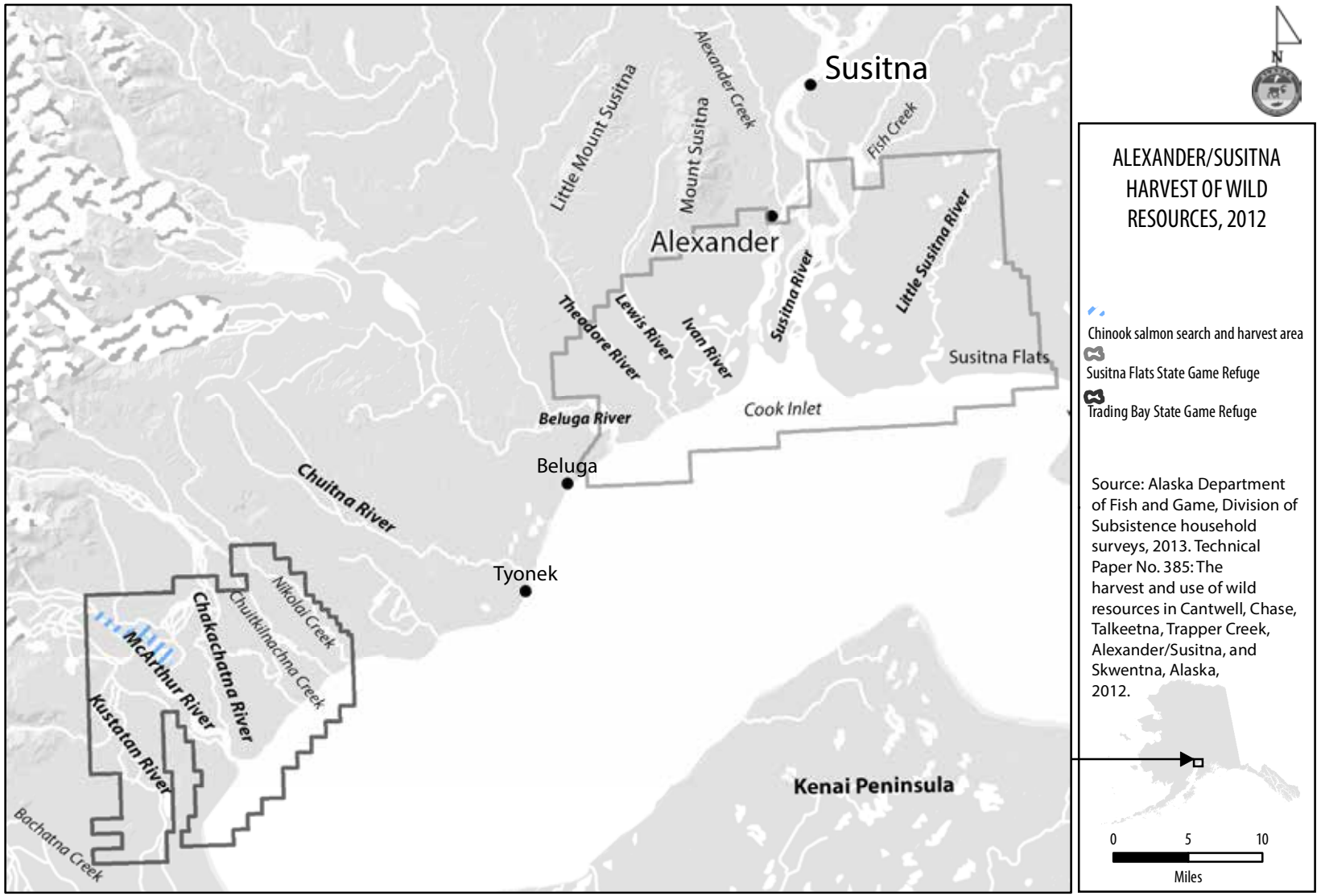
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Alexander
Beluga
Tyonek
Little Mount Susitna
Mount Susitna
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Fish Creek
Little Susitna River
Susitna River
Lewis River
Theodore River
Ivan River
Susitna Flats
Cook Inlet
Beluga River
Chuitna River
Chakachatna River
McArthur River
Kustatan River
Chuitkitnachna Creek
Nikolai Creek
Bachatna Creek
Kenai Peninsula
ALEXANDER/SUSITNA HARVEST OF WILD RESOURCES, 2012
Chinook salmon search and harvest area
Susitna Flats State Game Refuge
Trading Bay State Game Refuge
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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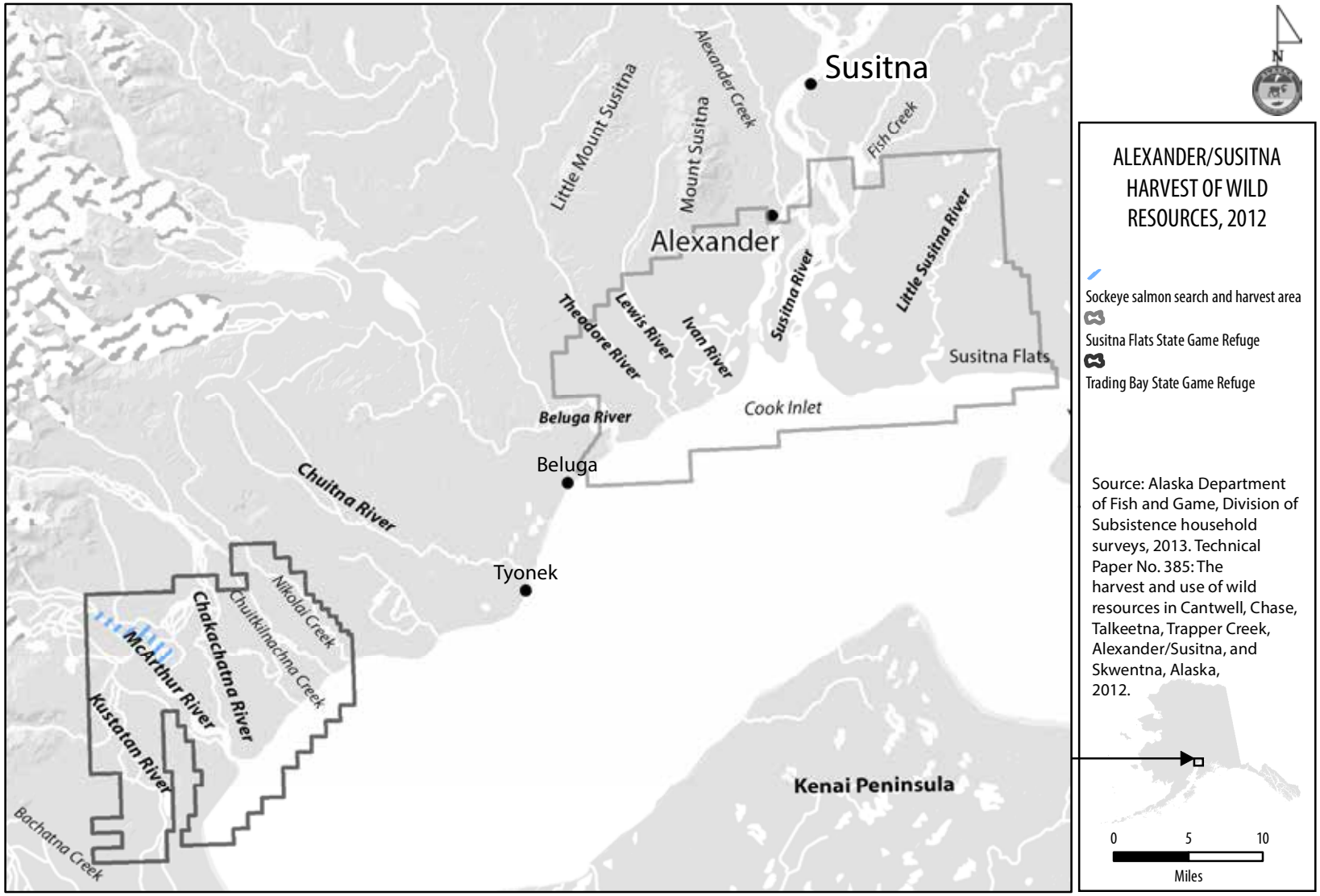
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Little Mount Susitna
Mount Susitna
Fish Creek
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Little Susitna River
Susitna River
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Lewis River
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Cook Inlet
Beluga River
Beluga
Chuitna River
Tyonek
Nikolai Creek
Chakachatna River
Chuitkilnachna Creek
McArthur River
Kustatan River
Bachatna Creek
Kenai Peninsula
ALEXANDER/SUSITNA HARVEST OF WILD RESOURCES, 2012
Sockeye salmon search and harvest area
Susitna Flats State Game Refuge
Trading Bay State Game Refuge
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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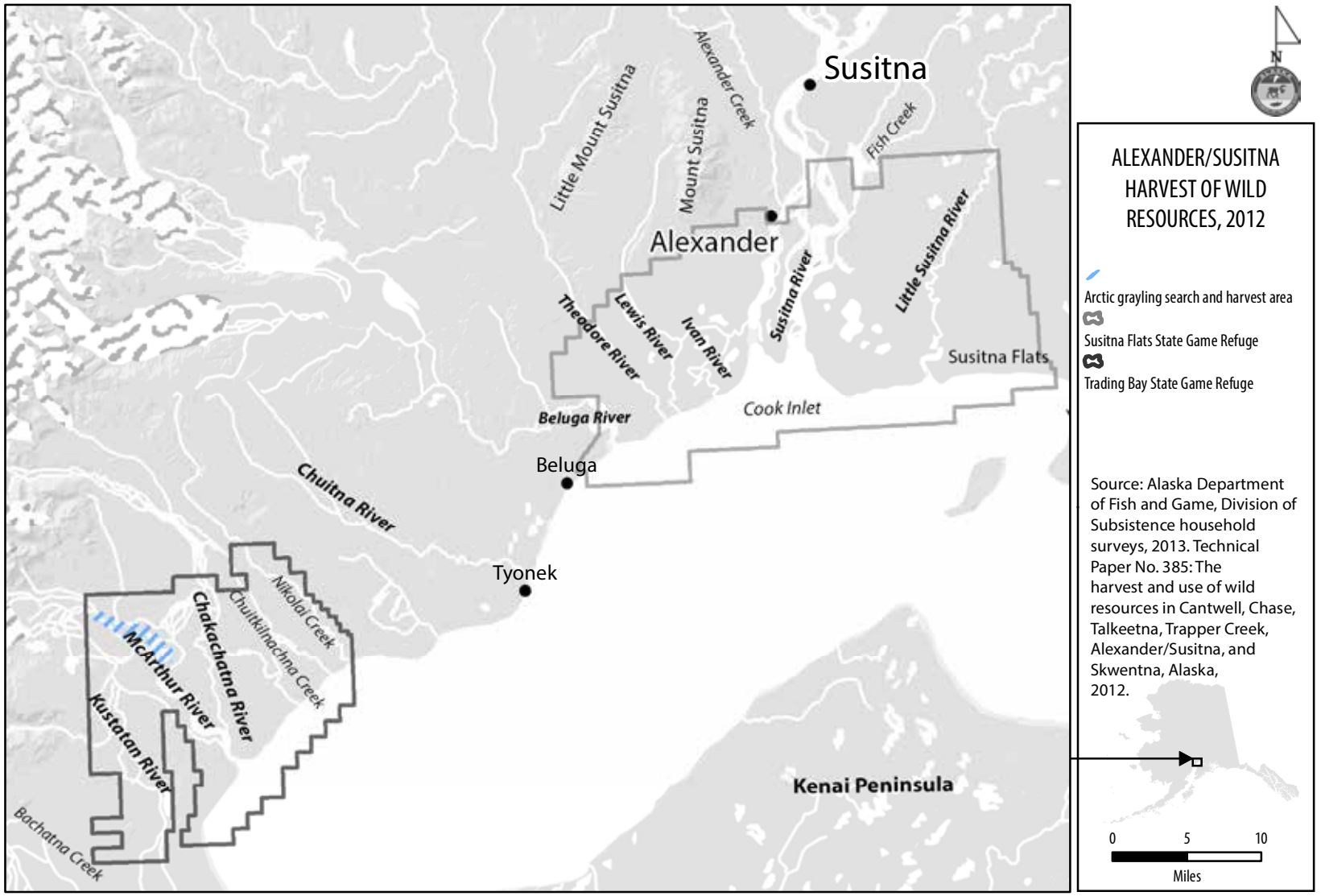
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Ivan River
Susitna Flats
Cook Inlet
Beluga River
Chuitna River
Chuitkitnachna Creek
Nikolai Creek
Chakachatna River
McArthur River
Kustatan River
Bachatna Creek
Kenai Peninsula
N
ALEXANDER/SUSITNA HARVEST OF WILD RESOURCES, 2012
Arctic grayling search and harvest area
Susitna Flats State Game Refuge
Trading Bay State Game Refuge
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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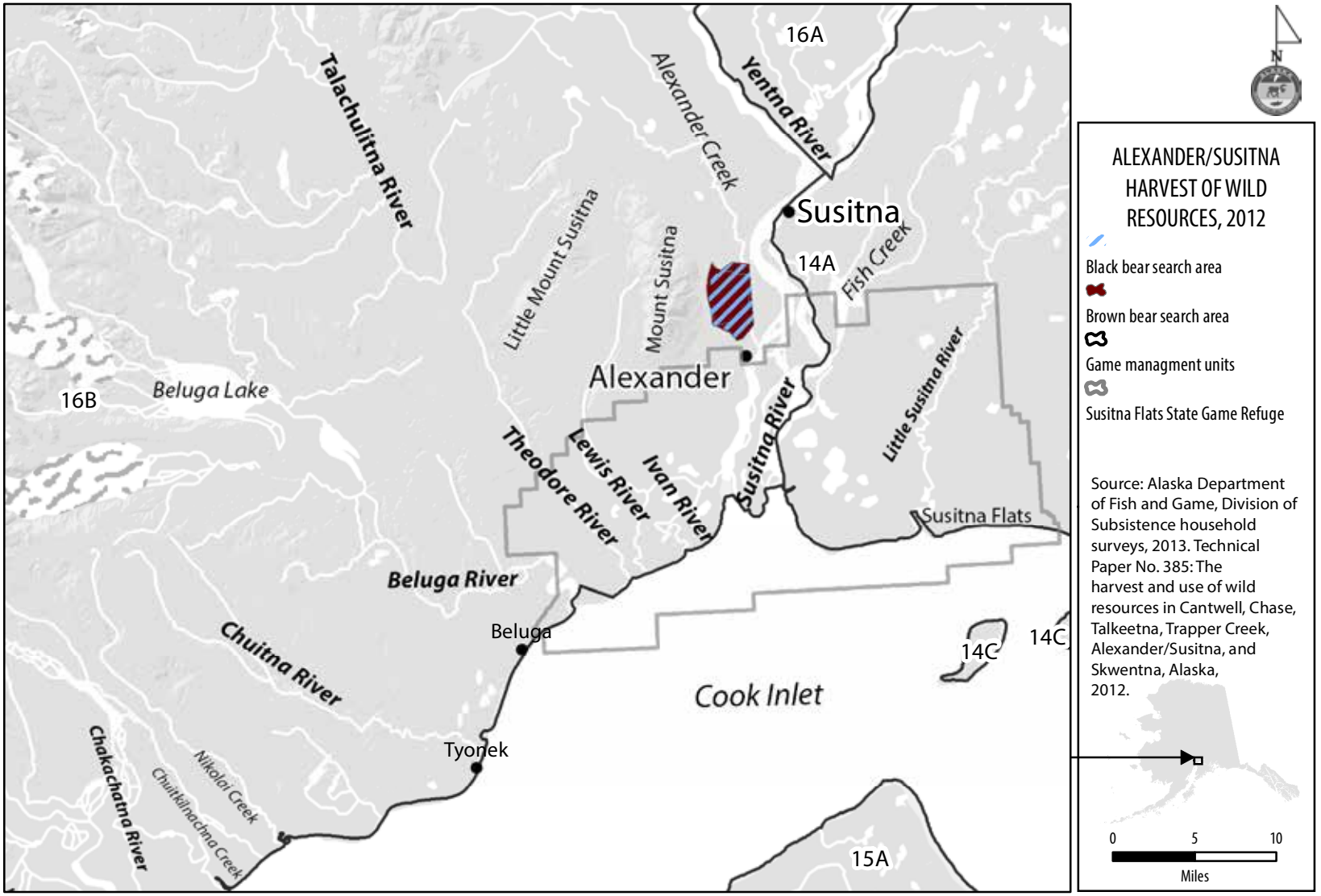
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Yentna River
Susitna
14A
Fish Creek
Little Mount Susitna
Mount Susitna
Alexander
16B
Beluga Lake
Theodore River
Lewis River
Ivan River
Susitna River
Little Susitna River
Susitna Flats
Beluga River
Beluga
Chuitna River
14C
14C
Cook Inlet
Tyonek
Chakachatna River
Nikoloi Creek
Chuitkilnachna Creek
15A
ALEXANDER/SUSITNA HARVEST OF WILD RESOURCES, 2012
Black bear search area
Brown bear search area
Game managment units
Susitna Flats State Game Refuge
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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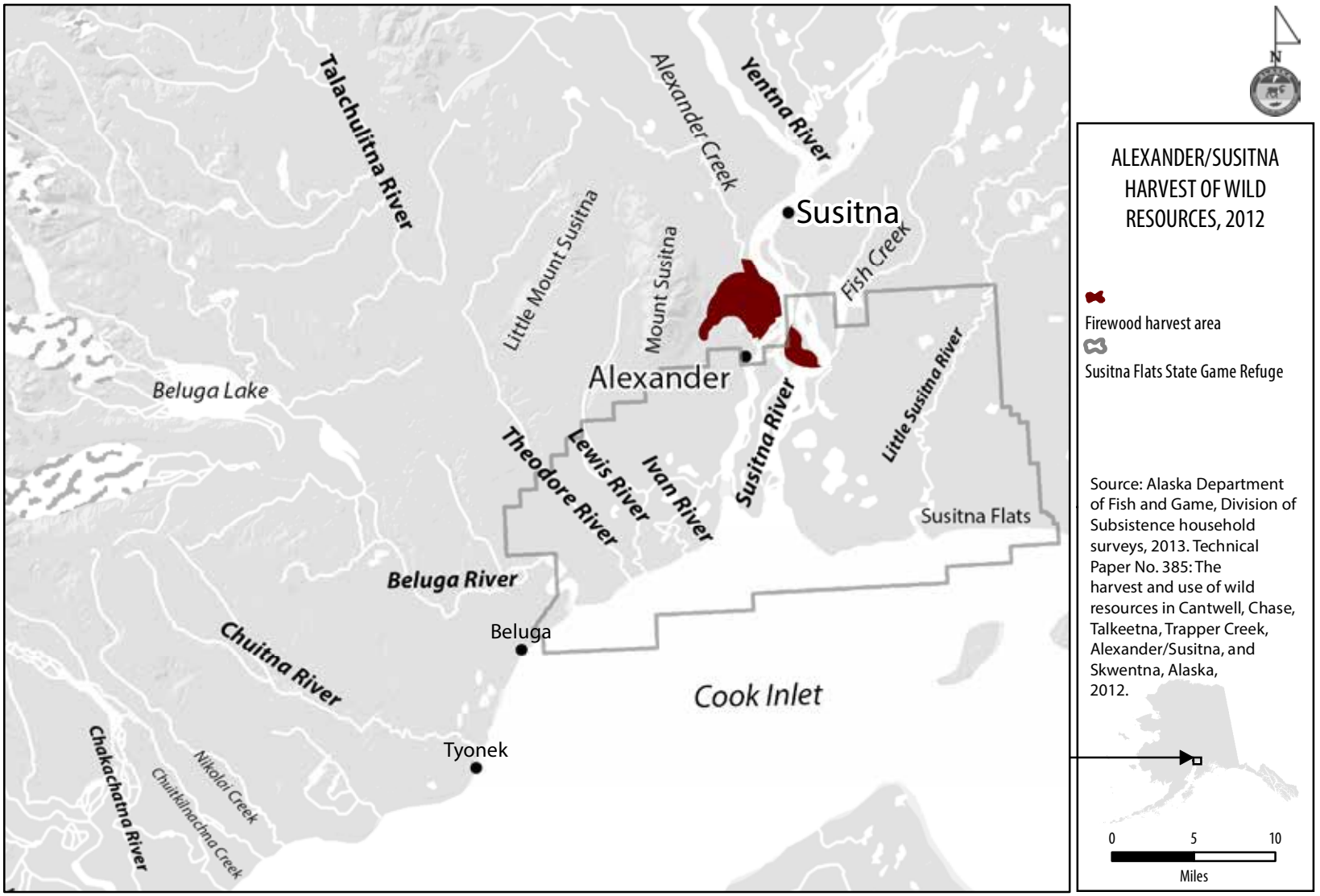
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Yentna River
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Little Mount Susitna
Mount Susitna
Fish Creek
Alexander
Beluga Lake
Theodore River
Lewis River
Ivan River
Susitna River
Little Susitna River
Susitna Flats
Beluga River
Beluga
Chuitna River
Cook Inlet
Tyonek
Chakachatna River
Nikolai Creek
Chuitkilnachna Creek
N
ALEXANDER/SUSITNA HARVEST OF WILD RESOURCES, 2012
Firewood harvest area
Susitna Flats State Game Refuge
Source: Alaska Department of Fish and Game, Division of Subsistence household surveys, 2013. Technical Paper No. 385: The harvest and use of wild resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012.
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Appendix E–Project Summary

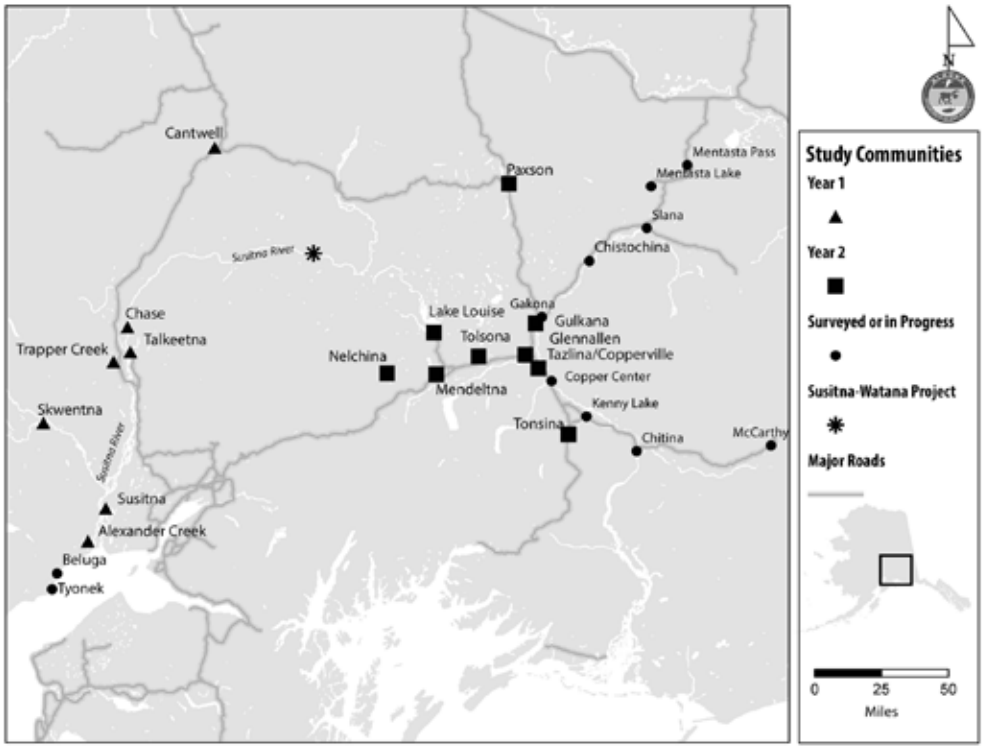
Summary Findings: Susitna River Basin Comprehensive Harvest Update

Project to update wild resource harvest and use information for communities in the Susitna River Basin

Project The following is a brief overview of research conducted by the Alaska Department of Fish and Game (ADF&G) to provide comprehensive harvest and use data for fish, wildlife, and wild plant resources in the local economy and way of life of residents in Cantwell, Chase, Trapper Creek, Talkeetna, Skwentna, and Alexander/Susitna (see Figure 1). The study period covered January 1 to December 31, 2012. Funding for this project was provided by the Alaska Energy Authority. The project was a partnership between ADF&G, Stephen R. Braund & Associates, Newfields, LLC, and HDR Alaska, Inc. The purpose of the project was to provide updated harvest and use data of wild resources for a feasibility study for the potential Susitna-Watana Hydroelectric Project. The potential development necessitated updated baseline information about the full range of wild resource harvests, uses, and areas of harvest, as well as demographic and economic information to understand the role of these harvests in the economy and way of life of community residents in the project area. As shown on the map, this study was the first of a 2-year study. Year 1 was conducted in Susitna River Basin communities and Year 2 will be conducted in Copper River Basin communities.

Methods The primary data-gathering method was a systematic household survey. 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 communities where a random sample method was employed (goal of 25% in Talkeetna and 40% in Trapper Creek). In total 283 households in the 6 study communities were interviewed with the assistance of local researchers. Harvest mapping was also conducted for each household to document search areas and harvest locations of wild resources, including harvest amount, month of harvest, and how harvesters accessed the resource. Additionally, to understand long-term trends in the area and local knowledge

Figure 1



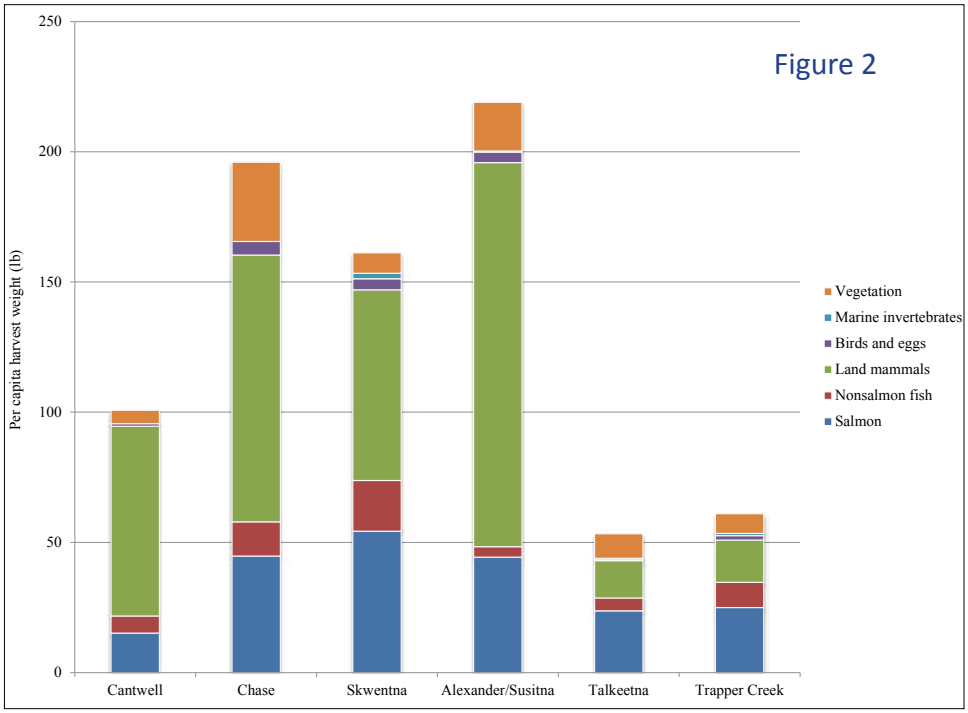
of resources, 3–5 key respondent interviews were conducted in each of the study communities.

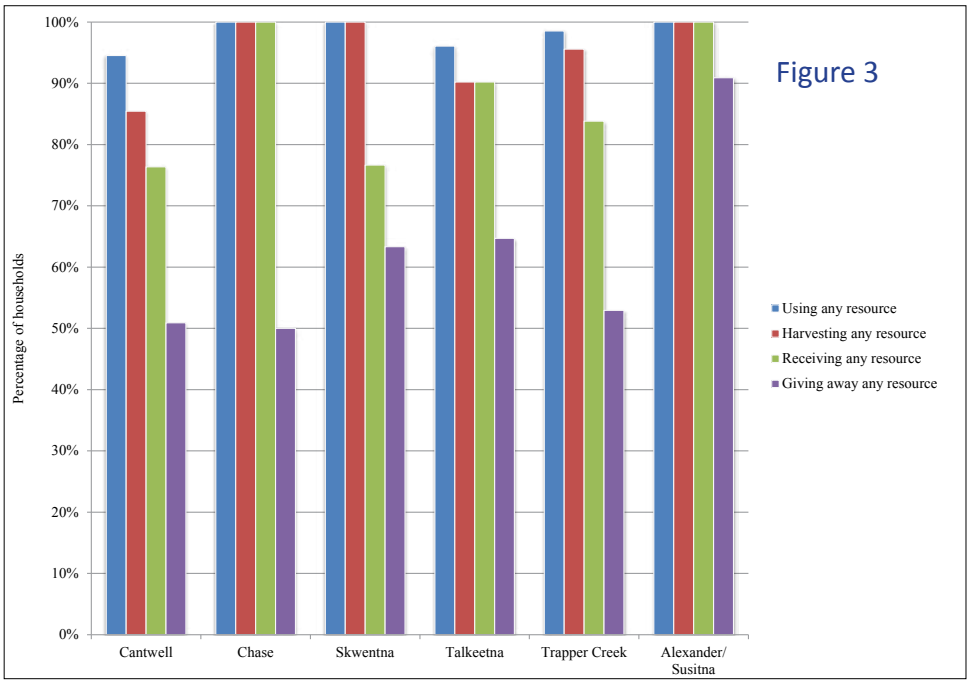
Findings

Figure 2 shows the harvest of wild resources as estimated in pounds usable weight per person. Harvests of wild foods ranged from 53 lb per person in Talkeetna to 219 lb per person in Alexander/Susitna. For Cantwell, Chase, Skwentna, and Alexander/Susitna, land mammals made up a majority of the harvest in terms of pounds per capita. In Talkeetna and Trapper Creek, salmon made up more of the harvest.

Figure 3 illustrates the percentage of households in each community that were using, attempting to harvest, harvesting, receiving, and giving away wild resources in 2012. In all 6 communities, more than 90% of households used wild resources, 85% or more harvested wild resources, and many households received or gave away resources, thus demonstrating sharing of resources between households.

For the complete study findings see Technical Paper No. 385 available online.





Holen, D., S. M. Hazell, J. M. Van Lanen, J. T. Ream, S. P. A. Desjardins, B. Jones, and G. Zimpelman. 2014. The Harvest and Use of Wild Resources in Cantwell, Chase, Talkeetna, Trapper Creek, Alexander/Susitna, and Skwentna, Alaska, 2012. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 385. Anchorage.
Available at: http://www.adfg.alaska.gov/sf/publications/