Technical Paper No. 380

Subsistence Harvests and Uses of Wild Resources in Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, Alaska, 2010

By
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Final report to the Wrangell-St. Elias National Park and Preserve, National Park Service to fulfill obligations under agreements H8W0706001 and J8W07090002. This study was funded by the National Park Service and conducted under a cooperative agreement with the National Park Service through the Pacific Northwest Cooperative Ecosystems Studies Unit.

SEPTEMBER 2013

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



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

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

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

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

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

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

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

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SEPTEMBER 2013

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This document should be cited as:
La Vine, R., 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, Alaska.

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ABSTRACT

This report presents information about subsistence uses of fish, wildlife, and plant resources in 4 communities of Southcentral Alaska: Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass. The previous comprehensive harvest assessment studies in these communities took place in 1982 and 1987. The Alaska Department of Fish and Game Division of Subsistence conducted this project in collaboration with Wrangell-St. Elias National Park and Preserve as part of a multi-year study to update subsistence harvest information for communities in the Copper River Basin. In year 1 of this project, Chistochina was surveyed for the 2009 harvest year. This report documents research and data from year 2 of the project. Information on uses of wild resources was collected through systematic household surveys, which also included a mapping component. Surveys were conducted with the informed consent of the community and households. Also as a part of the informed consent process, researchers presented preliminary project findings to the community for review. In total, 174 households were interviewed in the 4 study communities combined. In 2010, 100% of Mentasta Lake and Mentasta Pass households, 98% of households in Slana/Nabesna Road, and 96% of households in Copper Center used wild resources. Estimated wild resource harvests were 220 lb per capita in Copper Center, 240 lb per capita in Slana/Nabesna Road, 169 lb per capita in Mentasta Lake, and 205 lb per capita in Mentasta Pass, documenting the continued importance of subsistence hunting, fishing, trapping, and gathering to the residents of the study communities.

Key words: Harvest survey, subsistence uses, subsistence fishing, subsistence hunting, Copper Center, Slana, Nabesna, Mentasta Lake, and Mentasta Pass, Wrangell-St. Elias National Park and Preserve.

CHAPTER 1: INTRODUCTION

PROJECT BACKGROUND

This report provides information about the role of subsistence uses of fish, wildlife, and wild plant resources in the local economy and way of life of the communities of Copper Center, Slana and the Nabesna Road, Mentasta Lake, and Mentasta Pass, Alaska (Figure 1-1). This is the third harvest assessment survey conducted by the Alaska Department of Fish and Game (ADF&G) Division of Subsistence in all 4 communities. Previous studies were conducted in 1982 (Stratton and Georgette 1984) and 1987 (McMillan and Cuccarese 1988). In addition, a harvest mapping study was conducted in 20 communities in the Copper River Basin area between 1983 and 1984 (Stratton and Georgette 1985).

The National Park Service (NPS), through Alaska Regional Natural Resource Projects funds, NPS Ethnography Program, NPS Alaska Subsistence Research Projects and Wrangell-St. Elias National Park and Preserve base funding, provided financial assistance to ADF&G to conduct a multi-year, multi-community harvest update project. The research was funded through a cooperative agreement with the Wrangell-St. Elias National Park and Preserve (WRST) and ADF&G, and was conducted as a collaboration between the 2 agencies. This report presents information from research that was conducted in 2011 for the 2010 study year, or project year 2. As a whole, when complete, this study will have broad applicability in resource management and land use planning, and will provide updated baseline information about demographics, economics, and subsistence activities in this area of Alaska. Figure 1-1 portrays the study area and participating communities, including those communities already surveyed in the first stage of this project, and those communities scheduled to be surveyed in future years. In 2010, research was conducted in Chistochina for the 2009 study year, or project year 1. The upcoming phase 3 of the project will include the communities of Chitina, Kenny Lake, Gakona, and McCarthy. Research in these communities was conducted in 2013 for the 2012 study year.

During the 2010 study year, most residents of the study communities engaged in subsistence hunting, fishing, and gathering for nutrition and to support their way of life. A variety of resources were used, including salmon and other fish, large land mammals (moose, caribou, black bears, and Dall sheep), small land mammals (small game and furbearers), birds and bird eggs, and wild plants. Table 1-1 presents a list, including the Linnaean taxonomic names, of resources used in the project communities.

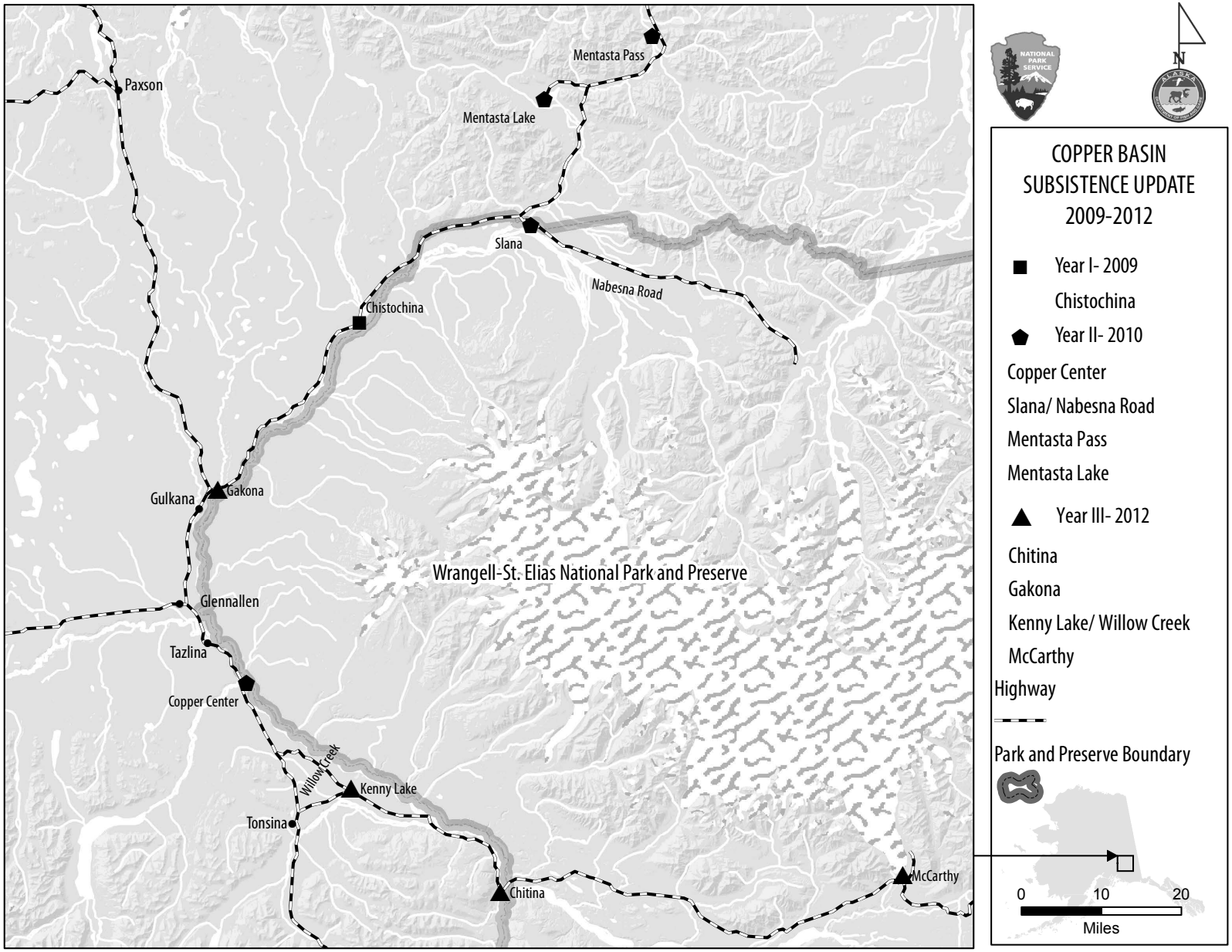


Figure 1-1.–Map of study communities, Copper River Basin, Alaska.

Table 1-1. – List of species used for subsistence in Copper River Basin study communities and their associated scientific names, 2010.

Common name	Scientific name
Alder	*Alnus* spp.
Arctic char	*Salvelinus alpinus*
Arctic grayling	*Thymallus arcticus*
Bark	*Betula* spp.
Beaver	*Castor canadensis*
Bark, Birch	*Betula* spp.
Bison	*Bison bison*
Black bear	*Ursus americanus*
Black scoter	*Melanitta nigra*
Blueberry	*Vaccinium uliginosum alpinum*
Bowhead	*Balaena mysticetus*
Brant	*Branta bernicla*
Broad whitefish	*Coregonus nasus*
Brown bear	*Ursus arctos*
Bufflehead	*Bucephala albeola*
Burbot	*Lota lota*
Butter clams	*Saxidomus gigantea*
Cackling goose	*Branta hutchinsii minima*
Canada/cackling goose	*Branta* spp.
Canvasback	*Aythya valisineria*
Caribou	*Rangifer tarandus*
Chinook salmon	*Oncorhynchus tshawytscha*
Chum salmon	*Oncorhynchus keta*
Cloudberry	*Rubus chamaemorus*
Cockles	*Clinocardium nuttallii* *Serripes groenlandicus* *Simomactra planulata*
Coho salmon	*Oncorhynchus kisutch*
Cottonwood	*Populus* spp.
Coyote	*Canis latrans*
Crowberry/Blackberry	*Empetrum nigrum*
Currants	*Ribes* spp.
Cutthroat trout	*Oncorhynchus clarkii*
Dall sheep	*Ovis dalli*
Deer	*Odocoileus hemionus*
Dolly Varden	*Salvelinus malma*
Duck eggs[a]	
Dungeness crab	*Cancer magister*
Emperor goose	*Chen canagica*
Eskimo potato	*Hedysarum alpinum*
Eulachon (hooligan, candlefish)	*Thaleichthys pacificus*
Fireweed	*Epilobium angustifolium*
Freshwater clams	*Anodonta* spp. *Margaritifera falcata*
Gadwall	*Anas strepera*
Goose eggs	*Anser* spp. *Branta* spp. *Chen* spp.
Goat	*Oreamnos americanus*

-continued-

Table 1-1.–Page 2 of 3.

Common name	Scientific name
Goldeneye	*Bucephala* spp.
Green-winged teal	*Anas crecca*
Gull eggs[a]	
Herring	*Clupea pallasi*
Herring roe/unspecified	*Clupea pallasi*
Herring sac roe	*Clupea pallasi*
Herring spawn on kelp	*Clupea pallasi*
Highbush cranberry	*Viburnum edule*
Hudson's Bay tea	*Ledum palustre*
Humpback whitefish	*Coregonus pidschian*
King crab	*Lithodes* spp. *Paralithodes* spp.
Lake trout	*Salvelinus namaycush*
Lampreys	*Lampetra* spp.
Land otter	*Lontra canadensis*
Landlocked salmon	*Oncorhynchus* spp.
Least cisco	*Coregonus sardinella*
Lesser Canada goose	*Branta canadensis parvipes*
Lingcod	*Ophiodon elongatus*
Longnose sucker	*Catostomus catostomus*
Long-tailed duck	*Clangula hyemalis*
Lowbush cranberry	*Vaccinum vitis-idaea minus*
Lynx	*Lynx canadensis*
Mallard	*Anas platyrhynchos*
Marmot	*Marmota* spp.
Marten	*Martes* spp.
Merganser	*Mergus* spp.
Mink	*Neovison vison*
Moose	*Alces alces*
Murre	*Uria* spp.
Muskox	*Ovibos moschatus*
Muskrat	*Ondatra zibethicus*
Nagoonberry	*Rubus arcticus* spp.
Northern pike	*Esox lucius*
Northern pintail	*Anas acuta*
Northern shoveler	*Anas clypeata*
Octopus	*Octopus vulgaris*
Oyster	*Crassostrea* spp.
Pacific cod (gray)	*Gadus macrocephalus*
Pacific halibut	*Hippoglossus stenolepis*
Pacific tomcod	*Microgadus proximus*
Pink salmon	*Oncorhynchus gorbuscha*
Porcupine	*Erethizon dorsatum*
Ptarmigan	*Lagopus* spp.
Rainbow trout/steelhead	*Oncorhynchus mykiss*
Raspberry	*Rubus idaeus*
Razor clams	*Siliqua* spp.

-continued-

Table 1-1.–Page 3 of 3.

Common name	Scientific name
Red fox	*Vulpes vulpes*
Rockfish	*Sebastes* spp.
Roots[a]	
Round whitefish	*Prosopium cylindraceum*
Ruffed grouse	*Bonasa umbellus*
Salmon shark	*Lamna ditropis*
Salmonberry	*Rubus spectabilis*
Sandhill crane	*Grus canadensis*
Scallops	*Crassadoma gigantean* *Chlamys rubida* *Patinopecten caurinus*
Scaup	*Aythya* spp.
Sharp-tailed grouse	*Tympanuchus phasianellus*
Shrimp	*Pandalus* spp. *Pandalopsis* spp.
Slimy sculpin	*Cottus cognatus*
Snow goose	*Chen caerulescens*
Snowshoe hare	*Lepus americanus*
Sockeye salmon	*Oncorhynchus nerka*
Spectacled eider	*Somateria fischeri*
Spruce	*Picea* spp.
Spruce grouse	*Falcipennis canadensis*
Squid	*Loligo opalescens*
Starry flounder	*Platichthys stellatus*
Stinkweed	*Artemisia tilesii*
Strawberry	*Fragaria virginiana*
Surf scoter	*Melanitta perspicillata*
Tanner crab	*Chionoecetes* spp.
Tree squirrel	*Tamiasciurus hudsonicus*
Tundra swan	*Cygnus columbianus*
Unknown salmon	*Oncorhynchus* spp.
Weasel	*Mustela nivalis*
White-fronted goose	*Anser albifrons*
White-winged scoter	*Melanitta fusca*
Wigeon	*Anas* spp.
Wild rhubarb	*Polygonum alaskanum*
Wild rose hips	*Rosa acicularis*
Willow	*Salix* spp.
Wolf	*Canis lupus*
Wolverine	*Gulo gulo*
Wood[a]	
Yarrow	*Achillea* spp.

a. The number of possible species is large enough to make listing all of them impractical; therefore, the entry for the scientific name is blank.

FINAL REPORT ORGANIZATION

This report summarizes the results of systematic household surveys and mapping interviews conducted by staff from ADF&G and WRST, as well as local research assistants (LRAs), and summarizes community meetings. It is comprised of 6 chapters, the first of which is the introduction and project overview. Community chapters begin with the second chapter, and are organized in a progression of middle to upper basin communities, rather than by alphabetical order or the order within which they were surveyed. Each community chapter contains a brief geographic and historical overview in addition to tables and figures that report findings on demographic characteristics, employment characteristics, individual participation in harvesting and processing of wild resources, and characteristics of resource harvests and uses including the sharing of wild foods, and trends over time. Because of the large number of maps of hunting, fishing, and gathering areas used by each community in 2010, selected maps have been included in the individual chapters and the remaining maps are published as Appendix C–Additional Harvest Maps. The final chapter of the report provides a short, general overview of patterns of harvests and uses of wild resources in all the 2010 study year communities.

ADF&G provided a draft report to the NPS, the Native Village of Kluti Kaah in Copper Center, the Mentasta Traditional Council, Ahtna Incorporated, ADF&G area biologists, and other community representatives for their review and comment. After receipt of comments, the report was finalized and a short (4-page) summary of the study findings was made available to participating communities (Appendix D).

STUDY OBJECTIVES

The project had the following objectives:

1. Design a survey instrument to collect updated baseline information about subsistence hunting, fishing, gathering, and other topics in a way that is compatible with information collected in previous rounds of household interviews.
2. Conduct community scoping meetings.
3. Train LRAs in administration of the systematic household survey.
4. Conduct household surveys to record the following information:
    a) Demographic information.
    b) Involvement in use, harvest, and sharing of fish, wildlife, and wild plants in 2010.
    c) Estimates of amount of resources harvested in the study year.
    d) Information about cash employment and other sources of cash income in 2010.

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

f) Location of fishing, hunting, and gathering activities in 2010.

5. Collaboratively review and interpret study findings.
6. Communicate study findings to the communities.
7. Produce a final report.

RESEARCH METHODS

ETHICAL PRINCIPLES FOR THE CONDUCT OF RESEARCH

The project was guided by the research principles adopted by the Alaska Federation of Natives in its Guidelines for Research and by the National Science Foundation (see Miraglia 1998), Office of Polar Programs in its Principles for the Conduct of Research in the Arctic (Association of Canadian Universities for Northern Studies (ACUNS) 2003), 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

The task agreement under which this project was managed was modified and expanded to include multiple years and additional communities following the first project community of Chistochina that was surveyed in 2010 for the 2009 study year. Project objectives, methods, schedules, and responsibilities were developed and refined by project staff from both ADF&G and WRST during the initial phase of project start-up. To meet the information needs of the participating organizations and to coordinate research, several questions related to NPS management needs were added to the Division of Subsistence standard household harvest survey instrument for the first study year and maintained through the remaining study years. Spatial harvest and search area data are collected using the Division's standard method of collecting subsistence map data by recording on a paper map the locations where members of participating households hunted, fished, and gathered wild resources during the 2010 study year. WRST was responsible for meeting with federally recognized tribes in the study communities and seeking support for the project (the Native Village of Kluti Kaah and the Mentasta Traditional Council for this phase of the project), as well as providing personnel to assist ADF&G with fieldwork. WRST geographic information system (GIS) staff digitized the collected mapping data and ADF&G staff produced the harvest and use maps for the report. ADF&G appointed one researcher, Robbin La Vine,

as project lead in all communities for the 2010 study year, and provided a total of 4 additional staff to assist with administering surveys at the project communities.

NPS staff was in constant communication with all participating community representatives prior to the 2011 field season. While communities were kept abreast of project development, community meetings were not held until the beginning of the fieldwork phase in all 4 communities. This strategy assisted in implementation of the survey process because, in some cases, interview appointments were set with community members following the scoping meeting. In addition, NPS staff worked with community representatives to identify LRAs to work with ADF&G. The LRAs were paid directly by ADF&G. Field work took place in January–April of 2011.

Table 1-2 lists all project staff. The list includes those individuals involved in project management, field research, data entry, data analysis, map production, and report writing.

Systematic Household Surveys

The primary method for collecting subsistence harvest and use information in this project was a systematic household survey. The survey instrument for the 2010 study year was the same as that applied in 2009 and approved for use by the Office of Management and Budget (OMB). A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and other economic data that are comparable with information collected in other household surveys in the study communities and with data in the Community Subsistence Information System (CSIS).[1] In order to achieve this goal, survey area boundaries were defined by those from past surveys where possible (Copper Center and Silver Springs were one census designated place [CDP] in previous survey efforts) or by community self-identification when demographics within the CDP indicated that there might be a very different harvest and use pattern (Mentasta Lake and Mentasta Pass). Copper Center boundaries are defined by the Silver Springs and the Copper Center CDPs combined; Slana survey boundaries are defined by the Slana and Nabesna CDPs; Mentasta Lake is defined by that portion of the Mentasta CDP that encompasses village land and households up to the Tok Cutoff of the Glenn Highway; and Mentasta Pass includes those households that are within the remainder of the Mentasta CDP stretched from milepost 79 to milepost 110 along the Tok Cutoff. Appendix A is an example of the survey instrument used in this project. The goal was to interview a representative of each year-round household in all study communities except for the larger community of Copper Center, where a 50% sample was employed. Participation was voluntary and all individual- and household-level responses are confidential.

The study team interviewed a total of 174 households in the 4 study communities. The sample achieved in the 3 communities where a census was the goal was 64% in Mentasta Lake (23 households), 72% in Slana/Nabesna Road (62 households), and 75% in Mentasta Pass (9 households). In Copper

1. ADF&G CSIS: http://www.adfg.alaska.gov/sb/CSIS/. Hereinafter cited as CSIS.

Table 1-2. – Copper River Basin subsistence update project staff.

Task	Name	Organization/Affiliation
Project design and management	Davin Holen	ADF&G Division of Subsistence
	Robbin La Vine	ADF&G Division of Subsistence
	Barbara Cellarius	WRST National Park and Preserve
Data management lead	David Koster	ADF&G Division of Subsistence
Field research lead	Robbin La Vine	ADF&G Division of Subsistence
Programmer	Garrett Zimpelman	ADF&G Division of Subsistence
Survey design	Davin Holen	ADF&G Division of Subsistence
Editorial review lead	Mary Lamb	ADF&G Division of Subsistence
Data entry	Jennifer Bond	ADF&G Division of Subsistence
	Margaret L. Cunningham	ADF&G Division of Subsistence
Cartography	Joshua Scott	WRST National Park and Preserve
	Davin Holen	ADF&G Division of Subsistence
	Bronwyn Jones	ADF&G Division of Subsistence
Field research staff	Robbin La Vine	ADF&G Division of Subsistence
	Barbara Cellarius	WRST National Park and Preserve
	Davin Holen	ADF&G Division of Subsistence
	Jennifer Bond	ADF&G Division of Subsistence
	Garrett Zimpelman	ADF&G Division of Subsistence
	James Van Lanen	ADF&G Division of Subsistence
	Jori Stariwat	ADF&G Division of Subsistence
	Malla Kukkonen	ADF&G Division of Subsistence
	Bronwyn Jones	ADF&G Division of Subsistence
	Benjamin Balivet	ADF&G Division of Subsistence
	Rachel Mason	National Park Service
	Vicki Penwell	Slana/Nabesna Road
	Leah Dewitt	Slana/Nabesna Road
	Erin Lehman	Slana/Nabesna Road
	Melody Chickalusion	Mentasta Lake
	Smitty Chilligan	Mentasta Lake
	Charles David	Mentasta Lake
	Sue Entsminger	Mentasta Pass
	Lucille Lincoln	Copper Center
	Barb Sanders	Copper Center
	Rebecca Nelson	Copper Center
	Mary Ella Hicks	Copper Center

Table 1-3. – Sample of study communities.

	Copper Center	Slana	Mentasta Lake	Mentasta Pass
Number of households	158	86	36	12
Interview goal	80	86	36	12
Households interviewed	80	62	23	9
Households failed to contact	8	14	6	2
Households declined to be interviewed	7	10	7	1
Total households attempted to interview	87	72	30	10
Refusal rate	8.0%	13.9%	23.3%	10.0%
Percentage of total households interviewed	50.6%	72.1%	63.9%	75.0%
Interview weighting factor	2.0	1.4	1.6	1.3
Sampled population	218	127	68	26
Estimated population	430.6	176.2	106.4	34.7

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

Center a 51% sample was achieved (80 surveys) (Table 1-3). More detailed sampling information and associated tables are included in each community chapter.

Mapping of Locations of Subsistence Hunting, Fishing, and Gathering, 2010

In addition to harvest and use information collected on the survey form, researchers asked respondents to indicate the locations of their hunting, fishing, and gathering activities during the 2010 study year. Specifically, interviewers asked the respondents to mark on maps the locations of each harvest, species harvested, the amount harvested, and the month of harvest. To capture and analyze the data, ADF&G and WRST staff applied the mapping method standard to all ADF&G subsistence harvest update projects. Points were used for harvest locations, and polygons (circled areas) were used for search areas. Lines were used to indicate traplines. However, due to need for greater anonymity, these lines were changed to polygons indicating a generalized harvest pattern in the small land mammals and furbearers harvest area maps published in this report. Additionally, for reasons of confidentiality, large land mammal harvest points were documented but not made public.

These data update findings from a mapping study conducted the by Alaska Department of Fish and Game, Division of Habitat between 1983 and 1984 (Stratton and Georgette 1985), which was accomplished through individual interviews with more than 200 local hunters and fishers in 20 communities in the Copper River Basin area. The qualitative interviews collected information about resource harvest areas used and effort between 1964 and 1984. The 113 maps produced for the *Alaska Habitat Management Guide Southcentral Region: map atlas*[2] are available in digital format in the ADF&G archives (Alaska Department of Fish and Game Habitat Division 1985).

The maps used for this project were produced by Davin Holen from the Division of Subsistence using

2. Digital copies of the *Alaska Habitat Management Guide Southcentral Region* narrative documents and color atlases can be accessed at http://www.arlis.org/docs/vol1/C/AHMG/index.html.

ArcGIS 10 software[3] on 11″ x 17″ paper. They consisted of 3 sets of paper maps: 1 set of grayscale high resolution U.S. Geological Survey (USGS) topographic maps at 1:100,000, one set of similar grayscale maps set at 1:500,000, and one set of similar high resolution color maps set at 1:250,000. There were 2 different maps in each set: one for fishing (water based) activities, and one for hunting, trapping, and plant gathering (land based) activities. During each mapping session, researchers recorded the household's identification number, the date of the mapping interview, and the interviewer's initials on each map.

Participation in the mapping component of the survey was voluntary and was conducted by ADF&G and WRST researchers at the same time as the survey. All responses are confidential at the household level and only a community summary map for the various species searched and harvested is included in this report.

While researchers were in the community they consulted with tribal governments or community representatives to identify key respondents to interview. The purpose of the key respondent interviews was to provide additional context for the quantitative data, and to provide information for the community overview section at the beginning of each chapter, the seasonal round section, harvest over time analysis, and the community comments and concerns section at the end of each chapter. In each community 1–2 key respondents were interviewed. Key respondent interviews were semi-structured and expanded the discussion of household and community resource use as addressed in the survey instrument. In addition to gathering qualitative data through the key respondent interview protocol, ADF&G and WRST staff took notes during interviews to provide additional context for this report. Individual researchers analyzed key respondent interviews and notes taken while conducting the surveys. Following analysis, narratives were written between February and May so that they could be inserted into the draft report when the outline became available in May 2012. Key respondents were informed that their names would not be included in this report in order to maintain their anonymity.

Household Survey Implementation and Community Meetings

Slana and the Nabesna Road

Project partner Barbara Cellarius from WRST was responsible for community contacts and preliminary outreach for the scoping meetings. Working with an LRA, the Slana community hall was reserved for training, the community review, and as project headquarters from January 24 through February 1, 2011. Prior to the arrival of ADF&G project staff, Cellarius and La Vine worked closely with the LRA to produce a community household list and to secure additional LRAs to help administer the survey.

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

On January 23, Holen, La Vine, Jennifer Bond, and Garrett Zimpelman drove to Slana where they stayed at a local bed and breakfast. The following day they were joined by WRST staff Cellarius and Joshua Scott for the LRA training session led by Holen who returned to Anchorage once training was complete. A total of 3 LRAs were trained as part of the research team. The community scoping meeting was held that evening, led by La Vine and Cellarius, and had more than 20 residents in attendance.

A majority of the surveys were conducted through February 1, with clean-up of the remaining surveys led by the primary LRA through mid-March, 2011.

Mentasta Lake and Mentasta Pass

Cellarius contacted the Mentasta Traditional Council during project field work in Slana at the end of January. At that time, both Cellarius and La Vine visited with traditional council members in order to schedule dates for a community scoping meeting and project fieldwork. La Vine maintained contact with council staff to arrange meeting advertisements and identification of 3 LRAs. As the meeting date drew closer, La Vine was notified that another group (an out-of-state Bible camp group) would be in the village during the same week as the project and a combined community meeting was planned. In the weeks leading up to fieldwork implementation, Cellarius worked closely with a community member of Mentasta Pass to identify households as distinct from those located in Mentasta Lake Village.

On March 21, La Vine traveled to Mentasta to meet Cellarius for the LRA training session and community scoping meeting. The training was held in the community hall that afternoon, while the scoping meeting and potluck were held later that evening. Approximately 40 community members were present. Most attendants were adults, but some children came with their parents. Surveys were conducted simultaneously in both Mentasta Lake and Mentasta Pass, with the majority of surveys being completed by the end of the week (March 26). LRAs in each community were competent in both administering surveys and mapping harvest data. Completion of the remaining surveys was achieved by mid-April, 2011.

Copper Center

The Wrangell-St. Elias National Park and Preserve headquarters are located in Copper Center; LRA training and the community scoping meeting were both held at park headquarters and led by La Vine and Cellarius. Four LRAs were contracted and trained to administer the survey, and all helped with the preliminary identification and verification of Copper Center households from which the community sample was developed. Training and household verification took place on April 13 and 14, at which time the team was joined by ADF&G staff member James Van Lanen for the administration of the survey. Staff worked with Copper Center LRAs through to April 22. Completion of Copper Center surveys was accomplished July 7 through July 10 by ADF&G staff Jori Stariwat, Van Lanen, and La Vine.

Key Respondent Interviews

Key respondent interviews were conducted with representatives from each community when staff returned to communities to review the preliminary survey data. Interviews were conducted on patterns of resource use, harvest, and harvest locations over the course of the respondent's life in the area. Additionally, community history and comments and concerns were recorded during the survey sessions. The interviews were indexed for key themes and summary transcriptions were produced. The interviews helped to provide context to the survey data, background on community practice, and explore more deeply some of the issues of greatest concern to local residents. Results from key respondent interviews informed the sections on community background, seasonal round, and community comments and concerns.

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 lead 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. Daily incremental backups of the database occurred, and transaction logs were backed up hourly. Full backups of the database occurred twice weekly. This ensured that no more than 1 hour of data entry would be lost in the unlikely event of a catastrophic failure. All survey data were entered twice and each set compared in order to minimize data entry errors.

Once data were entered and confirmed, information was processed with the use of Statistical Package for the Social Sciences (SPSS) software, version 19. Initial processing included the performance of standardized logic checks of the data. Logic checks are often needed in complex data sets where rules, constraints, and referential integrity do not capture all of the possible inconsistencies that may appear. Harvest data collected as numbers of animals, or in gallons or buckets, were converted to pounds usable weight using standard factors (see Appendix B 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

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

where:

$$\bar{h}_i = \frac{h_i}{n_i} \text{ (mean harvest per returned survey)} \tag{2}$$

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

h_i = the total harvest reported in returned surveys,

n_i = the number of returned surveys, and

S_i = the number of households in a community.

As an interim step, the standard deviation (SD), or variance (V; which is the SD squared), was also calculated with the raw, unexpanded data. The standard error (SE), or SD, of the mean was also calculated for each community. This was used to estimate the relative precision of the mean, or the likelihood that an unknown value would fall within a certain distance from the mean. In this study, the relative precision of the mean is shown in the tables as a confidence limit (CL), expressed as a percentage. Once the standard error was calculated, the CL was determined by multiplying the SE by a constant that reflected the level of significance desired, based on a normal distribution. The constant for 95% confidence limits is 1.96. Though there are numerous ways to express the formula below, it contains the components of an SD, V, and SE.

Relative precision of the mean (CL%):

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

where:

s = sample standard deviation,

n = sample size,

N = population size, and

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

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

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

POPULATION ESTIMATES AND OTHER DEMOGRAPHIC INFORMATION

As noted above, a goal of the research was to collect demographic information for all year-round households in each study community, with the exception of Copper Center where a randomly selected sample was interviewed. For this study, "year-round" was defined as being domiciled in the community when the surveys took place and for at least 9 months during the 2010 study year. Because not all households were interviewed, population estimates for each community were calculated by multiplying the average household size of interviewed households by the total number of year-round households, as identified by Division of Subsistence researchers in consultation with community officials and other knowledgeable respondents. What emerged from this process were estimates close in number to the 2010 federal census, against which they were compared. Further discussion of community population numbers and demographics can be found in the following community chapters.

MAP DATA ENTRY AND ANALYSIS

ADF&G staff checked maps for consistency with data recorded on the survey forms. They also removed extraneous marks from the maps to make sure the digitizing process would go as smoothly as possible. Each map was registered by the geographic information system (GIS) software using these points and then a WRST GIS specialist digitized the polygons, points, and lines that field staff had hand-drawn on the paper maps during the interviews. Using a standard Division map template, ADF&G produced the maps for this report.

CHAPTER 2: COPPER CENTER

COMMUNITY BACKGROUND

The community of Copper Center is located on the west bank of the Copper River at the confluence of the Klutina River along the Richardson Highway between miles 101 and 105 in eastern Interior Alaska. Approximately 105 miles south lies the city of Valdez, and about 16 miles north is the community of Glennallen. The community of Copper Center is surrounded by mountains; to the east lie the Wrangell Mountains, looking southeast are the Chugach Mountains, and in the northwest are the Talkeetna Mountains. The Copper and Klutina rivers are accompanied by a multitude of smaller rivers and creeks that traverse the region. The vegetation on the river banks, hills, valleys, and lowlands varies from evergreens, such as black and white spruce, to paper birch, aspen, and various shrubs such as willow and alder.

THE COMMUNITY OF COPPER CENTER

The history of the present-day, predominantly non-Native settlement of Copper Center dates back to 1896 and the development of a small roadhouse and trading post at the confluence of the Copper and Klutina rivers (McConkey 1981 [updated]:50; ADCCED 2012a). The Copper River Roadhouse, originally operated in a set of wall tents, was the first roadhouse and store site in the Copper River Valley. Within just a few years, it quickly developed into an essential halfway point for hundreds of gold seekers on their way to the Klondike goldfields in Canada during 1898–99. Although many prospectors only wintered in the area, some stayed to explore the mineral potential of the mountains surrounding Copper Center and other parts of the Copper River Basin. (ADCCED 2012a; Reckord 1979:38; Phillips 1985:26).

During the height of the stampede, prospectors set up tents along both the Copper and Klutina rivers, and the first cabins in historical Copper Center were built on a west bank site of Copper River, less than a mile west of the Copper River and north of the Klutina.[1] A second settlement site developed at a location called Copper Ferry, where it was possible to cross the Copper River to Millard Trail.[2]

1. According to Hunt (1991:180), what is now identified as Old Copper Center is on the east bank of Copper River opposite to modern-day Copper Center, which lies on the west bank.

2. The Millard Trail, named after B.F Millard who pioneered the trail in 1898, was described in the United Stated Geological Survey Bulletin "The Geology and Mineral resources of A Portion of the Copper River District" in 1901 as follows: "The Millard Trail Follows An Old Native Route From A Point On the Copper Opposite the Mouth of Klutina Up Klaswasina River and Thence Along the Base of Mount Drum, And Crossing Sanford River, reaches Slana River By A Route Lying at Some Distance From the Copper. Throughout This Distance the Trail Is Said to be Well Marked and Comparatively Easy for Horses. The Millard Trail is the Shortest Route From Copper Center To Slana River at Mentasta Pass." (Hunt 1991:180; Alaska Department of Natural Resources, Division of

The east bank site of Old Copper Center was only settled by non-Native people for 1901–1902 when some prospectors stayed there with the intent to investigate mineral prospects on the east side of the Copper River. Gold rush-era sources do not indicate a presence of an Alaska Native village at the location of present-day Copper Center; instead notes reference a village 5 miles south (Hunt 1991:180). However, in contemporary Ahtna oral history, both west and east sides of the river were settled or at least seasonally occupied long before non-Native people arrived. The Native population continued to live in the location for some time after the prospectors had left (Hunt 1991:181).

Other than being a convenient mid-way resting point for the Klondike gold prospectors in the late 19th century, Copper Center at the time served as the primary supply center for miners who stayed in the Nelchina–Susitna region (ADCCED 2012a). With the construction of the Valdez Trail by the U.S. Army from Prince William Sound into Eagle City in the Yukon Basin between 1899 and 1901, Copper Center developed into a permanent settlement along the trail (Hunt 1991:181; Bleakley *n.d.*). As early as 1899 miners could get mail delivered to the Copper Center Roadhouse, and in 1901 a telegraph station and a post office were established in the settlement (ADCCED 2012a; Phillips 1985:26); a school followed in 1905. The school and opportunities for cash employment attracted many Native families to settle in the community. More governmental facilities were built in Copper Center in 1909 when an agricultural experiment station was established (ADCCED 2012a).

The first 2 decades of the 20th century were a time of rapid development in the Copper River Basin. The economic life of the Chitina River valley was transformed by the completion of road construction between Chitina and Fairbanks in 1909 and the connection of the Northwestern Railway between Kennicott copper mines, Chitina, and Cordova. Hundreds of new people arrived in the Copper River Basin; with the rapid development, trading posts and stores were built all over the area, especially in locations that had lodges (Reckord 1979:38, 42–43; Fall and Stratton 1984:9–10). For Copper Center, which boasted the distinction of hosting the oldest roadhouse in Interior Alaska and the first telegraph station with money transfer facilities out of Valdez, this was a period of stability and growth and the community continued to serve as a primary supply center for the Nelchina–Susitna region (Reckord 1979:37; McConkey 1981 [updated]:50; Phillips 1985:25b).

The first part of the 20th century was also a time when several small Native villages merged into larger ones. The Native village of Copper Center was formed when 3 late-19th century villages—one located 7 miles down the Copper River from contemporary Copper Center, one on the east bank, and one close to Klutina Lake—merged to form the present-day community (Reckord 1979:41). According to Reckord (1983:85), as time passed people from Dry Creek and Slana also settled in Copper Center. The Native village developed a small distance away from the trading post, and the modern-day community of Copper Center continues to have 2 distinct settlements, a Native village and a non-Native area. During the 1940s and the 1950s, the traditional season-driven subsistence

Mining, Land and Water, RST 139 Case file summary. http://dnr.alaska.gov/mlw//trails/rs2477/rst_legal.cfm?FILE_NUMBER=139 [Accessed 9/18/12]).

way of life continued to change because of increased government pressure on Native families to send their children to school. As in other parts of the state, this encouraged the development of the modern Native village, where families started to live year-round (Reckord 1979:49).

American involvement in World War II was the catalyst for the construction of the Glenn Highway in the early 1940s. The Richardson Highway, which had been completed earlier in the late 1930s, was linked with the new Alaska Highway, which traversed through Canada providing a new transportation corridor to the continental United States. The new transportation routes made the Copper River Basin more accessible and opened the region for more development and tourism (Fall and Stratton 1984:10; ADCCED 2012a; McConkey 1981 [updated]:50). The improved transportation routes also made it easier for Copper River Basin residents to migrate to other Alaska communities in pursuit of employment. In the face of limited employment options, many left not only Copper Center but also the Copper River Basin in the search for better prospects (Reckord 1979:49).

Present-day Copper Center is an amalgamation of its history; it consists of the historic settlement, now a minor hub of economic activity with supporting infrastructure for the local tourism industry, and there is the federally-recognized Ahtna Native Village of Kluti Kaah, although village stakeholders reside both on village land and in other locations around Copper Center and across the Basin. Additionally, other discrete neighborhoods and subdivisions worthy of mention include those scattered along the Richardson Highway or within the more densely populated Silver Springs subdivision; Silver Springs is its own census designated place (CDP) and the home to the Copper Center area school.[3] The community of Copper Center continues to be unincorporated and with the exception of the aforementioned Native Village of Kluti Kaah's Village Council, it does not have a local government. The Copper River Native Association provides health care, social, and supportive services for its Native members around the Ahtna region. While the number of services available to Copper Center residents in the community is limited, Glennallen, which is the regional service hub, is only 16 miles north of Copper Center. The old Copper Center Lodge and Trading Post, once on the National Register of Historic Places, was destroyed by fire in May of 2012. Although none of the old building survived the fire, the lodge was in the process of being rebuilt at the time this report was written.

DEMOGRAPHY, CASH EMPLOYMENT, AND MONETARY INCOME

DEMOGRAPHY

According to the federal census, in 2010 Copper Center CDP had 328 residents and Silver Springs CDP had 114 for a combined Copper Center area population of 442 (U. S. Census Bureau 2011). The household survey conducted for 2010 found an estimated Copper Center/Silver Springs combined

3. In May 2013, the Copper Center school closed due to a declining student population. Community children are now bused to the larger area school located 14 miles away in Glennallen.

population of 431 residents, of which 39% (170 residents) were Alaska Native (Table 2-1). Figure 2-1 shows the population of the community over time from U.S. Census data and Alaska Department of Labor estimates. The chart demonstrates some fluctuations in population since 1986 with a high of 572 in 2003 and a low of 442 in 2010.

Prior to the study, the Division of Subsistence researchers, in consultation with community officials and other knowledgeable respondents, estimated and confirmed 158 year-round households in Copper Center in 2010 (Table 2-2). Of these, 80 households (51%) were interviewed (Table 2-2). The following data are expanded to cover the remaining households not surveyed. The mean number of years of residency in Copper Center was 19, with the maximum length of residence at 91 years (Table 2-2). In general, 55% of the population was male, while the remaining 45% were female (Table 2-2). The largest age cohort of the entire population was women between the ages of 55 and 59 (14% of the female population) (Table 2-3; Figure 2-2). Significantly, 31% of the entire community population was between the ages of 45 and 69; 29% of the male population and 32% of the female population (Table 2-3). Segments of both sexes were somewhat evenly distributed among the age ranges of 0 to 14, 40 to 44, 65 to 69, and lastly from ages 75 to 84 (Figure 2-2).

In the Copper Center community, approximately 42% of the household heads were born in various communities across Alaska, with only 14% claiming Copper Center as their place of birth. Most household heads (approximately 56%) were born somewhere else in the United States (Table 2-4). Approximately just 2% of the data are missing.

Table 2-1. – Population of Copper Center, 2010.

2010 Census[a]				Study findings for 2010			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
167	442	168	48.4%	158	431	170	39.4%

Source ADF&G Division of Subsistence household surveys, 2011.
a. *Source* U.S. Census (2011). Numbers include Copper Center CDP and Silver Springs CDP.

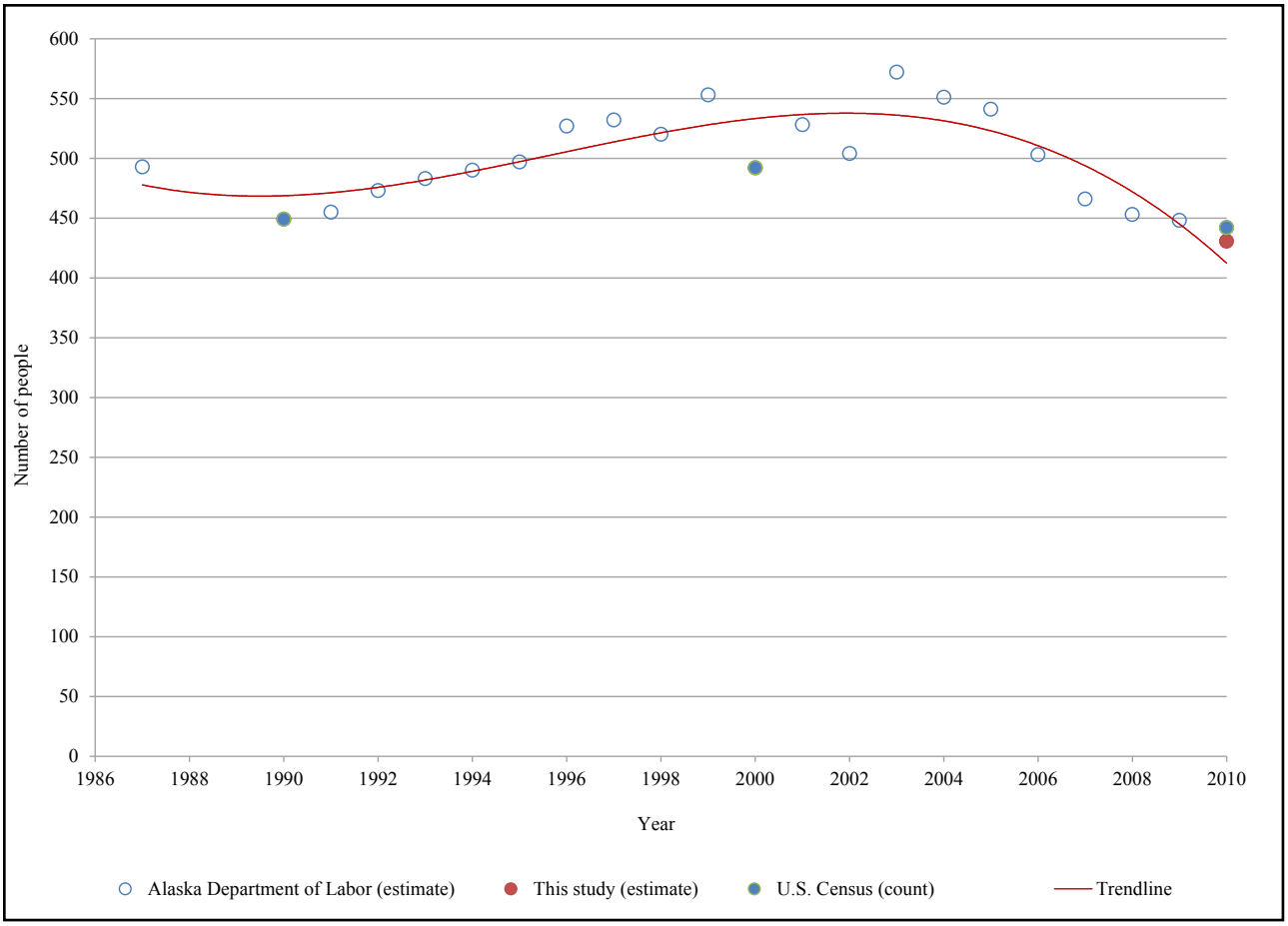


Figure 2-1.– Population history, Copper Center, 1986–2010.

Table 2-2. – Demographic and sample characteristics, Copper River Basin communities, 2010.

Characteristics	Copper Center	Mentasta Lake	Slana	Mentasta Pass
Sampled households	80	23	62	9
Eligible households	158	36	86	12
Percentage sampled	50.6%	63.9%	72.1%	75.0%
Household size				
Mean	2.7	3.0	2.0	2.9
Minimum	1	1	1	2
Maximum	7	10	6	6
Age				
Mean	37.2	28.4	46.3	38.8
Minimum[a]	2	2	3	0
Maximum	92	96	92	83
Median	41.0	26.0	54.0	41.0
Length of residency				
Total population				
Mean	18.8	18.1	17.6	16.1
Minimum[a]	0	0	1	0
Maximum	91	78	83	41
Heads of household				
Mean	23.2	31.4	20.6	22.6
Minimum[a]	1	1	2	3
Maximum	63	78	83	41
Sex				
Estimated male				
Number	235.0	68.9	98.5	18.7
Percentage	54.6%	64.7%	55.9%	53.8%
Estimated female				
Number	195.5	37.6	77.7	16.0
Percentage	45.4%	35.3%	44.1%	46.2%
Alaska Native				
Estimated households[b]				
Number	67.2	34.4	12.7	1.3
Percentage	42.5%	95.5%	14.8%	11.1%
Estimated population				
Number	169.9	98.0	29.1	8.0
Percentage	39.4%	92.1%	16.5%	23.1%

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

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 2-3. – Population profile, Copper Center, 2010.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	13.8	5.9%	5.9%	11.9	6.1%	6.1%	25.7	6.0%	6.0%
5–9	17.8	7.6%	13.4%	17.8	9.1%	15.2%	35.6	8.3%	14.2%
10–14	17.8	7.6%	21.0%	13.8	7.1%	22.2%	31.6	7.3%	21.6%
15–19	25.7	10.9%	31.9%	15.8	8.1%	30.3%	41.5	9.6%	31.2%
20–24	11.9	5.0%	37.0%	4.0	2.0%	32.3%	15.8	3.7%	34.9%
25–29	17.8	7.6%	44.5%	2.0	1.0%	33.3%	19.8	4.6%	39.4%
30–34	4.0	1.7%	46.2%	9.9	5.1%	38.4%	13.8	3.2%	42.7%
35–39	7.9	3.4%	49.6%	11.9	6.1%	44.4%	19.8	4.6%	47.2%
40–44	17.8	7.6%	57.1%	15.8	8.1%	52.5%	33.6	7.8%	55.0%
45–49	23.7	10.1%	67.2%	15.8	8.1%	60.6%	39.5	9.2%	64.2%
50–54	29.6	12.6%	79.8%	15.8	8.1%	68.7%	45.4	10.6%	74.8%
55–59	11.9	5.0%	84.9%	27.7	14.1%	82.8%	39.5	9.2%	83.9%
60–64	17.8	7.6%	92.4%	9.9	5.1%	87.9%	27.7	6.4%	90.4%
65–69	9.9	4.2%	96.6%	9.9	5.1%	92.9%	19.8	4.6%	95.0%
70–74	2.0	0.8%	97.5%	5.9	3.0%	96.0%	7.9	1.8%	96.8%
75–79	2.0	0.8%	98.3%	2.0	1.0%	97.0%	4.0	0.9%	97.7%
80–84	2.0	0.8%	99.2%	2.0	1.0%	98.0%	4.0	0.9%	98.6%
85–89	0.0	0.0%	99.2%	2.0	1.0%	99.0%	2.0	0.5%	99.1%
90–94	0.0	0.0%	99.2%	2.0	1.0%	100.0%	2.0	0.5%	99.5%
95–99	0.0	0.0%	99.2%	0.0	0.0%	100.0%	0.0	0.0%	99.5%
100–104	0.0	0.0%	99.2%	0.0	0.0%	100.0%	0.0	0.0%	99.5%
Missing	2.0	0.8%	100.0%	0.0	0.0%	100.0%	2.0	0.5%	100.0%
Total	**235.0**	**100.0%**	**100.0%**	**195.5**	**100.0%**	**100.0%**	**430.6**	**100.0%**	**100.0%**

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

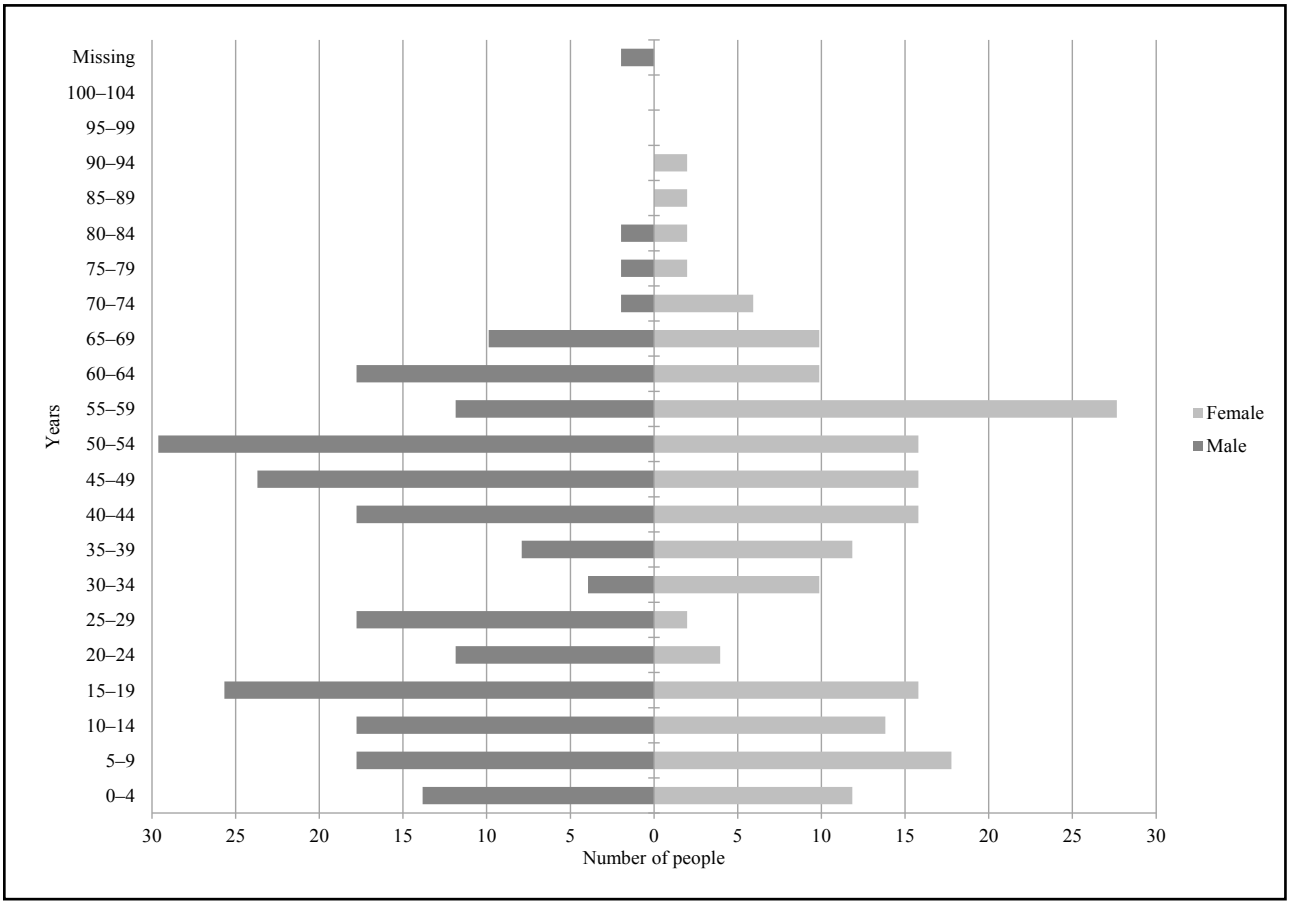


Figure 2-2.– Population profile, Copper Center, 2010.

Table 2-4. – Birthplaces of household heads, Copper Center, 2010.

Birthplace	Percentage
Anchorage	6.1%
Chistochina	0.8%
Copper Center	14.4%
Cordova	0.8%
Fairbanks	3.0%
Fort Yukon	0.8%
Glennallen	5.3%
Juneau	0.8%
Kenny Lake	0.8%
Ketchikan	0.8%
McGrath	0.8%
Mentasta Lake	1.5%
Nulato	0.8%
Paxson-Sourdough	0.8%
Point Hope	0.8%
Ruby	0.8%
Stevens Village	0.8%
Tanana	0.8%
Tazlina	0.8%
Tonsina	0.8%
Wrangell	0.8%
Other U.S.	56.1%
Missing	1.5%

Source ADF&G Division of Subsistence household surveys, 2011.
Note "birthplace" means the residence of the parents of the individual when the individual was born.

CASH EMPLOYMENT CHARACTERISTICS AND MONETARY INCOME

Copper Center is located approximately 15 miles from the nearest hub—Glennallen—and about 194 miles from Anchorage. The community is an in-state as well as out-of-state tourist destination that is often used as a scenic hub providing access to the largest national park in the United States (WRST), world-class fishing, and other recreational opportunities on the Klutina and Copper rivers. Seasonal employment in support of local tourism is provided by the Copper River Princess Wilderness Lodge, multiple guiding businesses, and a few local shops and restaurants; however, it should be noted that many of the lodge employees are brought in from out of state. Additionally, there are local, tribal, state, and federal agencies that provide consistent wage earning opportunities.

Table 2-5 is a summary of the estimated earned income as well as other sources of income for residents of Copper Center in 2010. This table shows that in 2010 earned income accounted for an average of $45,935 per household, or 83% of the total community income, compared to other income sources that accounted for an average of $9,194 per household, or 17% of the total community income. The greatest contributing sectors for earned income were local government and services. The largest

Table 2-5. – Estimated earned and other income, Copper Center, 2010.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Federal government	26.4	23.9	$786,366	$4,977	9.0%
State government	31.1	28.7	$1,219,440	$7,718	14.0%
Local government, including tribal	74.3	64.6	$1,883,088	$11,918	21.6%
Agriculture, forestry, and fishing	7.2	7.2	$256,824	$1,625	2.9%
Mining	4.8	4.8	$137,358	$869	1.6%
Construction	9.6	9.6	$170,499	$1,079	2.0%
Manufacturing	2.4	2.4	$15,134	$96	0.2%
Transportation, communication, and utilities	24.0	23.9	$866,643	$5,485	9.9%
Retail trade	26.4	23.9	$158,777	$1,005	1.8%
Services	93.4	76.6	$1,763,557	$11,162	20.2%
Earned income subtotal	**251.6**	**155.6**	**$7,257,685**	**$45,935**	**83.3%**
Other income					
Dividends		**154.1**	**$531,392**	**$3,363**	**6.1%**
Native corporation dividends		61.2	$37,003	$234	0.4%
Alaska Permanent Fund dividend		154.1	$494,389	$3,129	5.7%
Job benefits		**29.6**	**$210,967**	**$1,335**	**2.4%**
Workers' compensation/insurance		0.0	$0	$0	0.0%
Unemployment		29.6	$210,967	$1,335	2.4%
Assistance		**21.7**	**$95,826**	**$606**	**1.1%**
Adult public assistance		4.0	$734	$5	0.0%
Food stamps		17.8	$95,092	$602	1.1%
Elder benefits		**37.5**	**$553,908**	**$3,506**	**6.4%**
Retirement/pension		13.8	$337,147	$2,134	3.9%
Alaska senior benifits (longevity bonus)		5.9	$8,999	$57	0.1%
Social Security		27.7	$207,762	$1,315	2.4%
Child benefits		**13.8**	**$41,369**	**$262**	**0.5%**
Supplemental Security		5.9	$9,299	$59	0.1%
Child support		7.9	$16,073	$102	0.2%
Foster care		4.0	$15,998	$101	0.2%
Other income sources		**23.7**	**$19,157**	**$121**	**0.2%**
Energy assistance		23.7	$19,157	$121	0.2%
Other		0.0	$0	$0	0.0%
Other income subtotal		**156.0**	**$1,452,619**	**$9,194**	**16.7%**
Community income total			**$8,710,304**	**$55,129**	**100.0%**

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

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 2-6. – Employment by industry, Copper Center, 2010.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**318.7**	**155.6**	**251.6**	**$7,257,685.2**
Federal government (total)	**9.0%**	**15.4%**	**10.5%**	**10.8%**
Executive, administrative, and managerial	0.8%	1.5%	1.0%	2.2%
Natural scientists and mathematicians	0.8%	1.5%	1.0%	1.4%
Social scientists, social workers, religious workers, and lawyers	0.8%	1.5%	1.0%	1.7%
Teachers, librarians, and counselors	0.8%	1.5%	1.0%	1.2%
Technologists and technicians, except health	0.8%	1.5%	1.0%	0.2%
Administrative support occupations, including clerical	0.8%	1.5%	1.0%	0.8%
Service occupations	1.5%	3.1%	1.9%	1.2%
Construction and extractive occupations	0.8%	1.5%	1.0%	0.8%
Transportation and material moving occupations	0.8%	1.5%	1.0%	0.6%
Military occupations	1.5%	1.5%	1.9%	0.7%
State government (total)	**9.8%**	**18.5%**	**12.4%**	**16.8%**
Executive, administrative, and managerial	0.8%	1.5%	1.0%	1.2%
Engineers, surveyors, and architects	0.8%	1.5%	1.0%	0.1%
Natural scientists and mathematicians	0.8%	1.5%	1.0%	1.0%
Technologists and technicians, except health	0.8%	1.5%	1.0%	2.2%
Service occupations	0.8%	1.5%	1.0%	0.7%
Agricultural, forestry, and fishing occupations	0.8%	1.5%	1.0%	2.5%
Mechanics and repairers	0.8%	1.5%	1.0%	1.4%
Transportation and material moving occupations	3.8%	7.7%	4.8%	7.5%
Miscellaneous occupations	0.8%	1.5%	1.0%	0.3%
Local government, including tribal (total)	**23.3%**	**41.5%**	**29.5%**	**25.9%**
Executive, administrative, and managerial	1.5%	3.1%	1.9%	2.4%
Teachers, librarians, and counselors	4.5%	7.7%	5.7%	5.8%
Administrative support occupations, including clerical	6.8%	13.8%	8.6%	7.6%
Service occupations	3.8%	7.7%	4.8%	2.7%
Mechanics and repairers	2.3%	4.6%	2.9%	2.9%
Construction and extractive occupations	3.0%	6.2%	3.8%	2.7%
Transportation and material moving occupations	1.5%	3.1%	1.9%	1.8%
Agriculture, forestry, and fishing (total)	**2.3%**	**4.6%**	**2.9%**	**3.5%**
Service occupations	0.8%	1.5%	1.0%	0.4%
Agricultural, forestry, and fishing occupations	1.5%	3.1%	1.9%	3.1%
Mining (total)	**1.5%**	**3.1%**	**1.9%**	**1.9%**
Executive, administrative, and managerial	0.8%	1.5%	1.0%	1.2%
Construction and extractive occupations	0.8%	1.5%	1.0%	0.7%
Construction (total)	**3.0%**	**6.2%**	**3.8%**	**2.3%**
Construction and extractive occupations	3.0%	6.2%	3.8%	2.3%
Manufacturing (total)	**0.8%**	**1.5%**	**1.0%**	**0.2%**
Production working occupations	0.8%	1.5%	1.0%	0.2%
Transportation, communication, and utilities (total)	**7.5%**	**15.4%**	**9.5%**	**11.9%**
Executive, administrative, and managerial	1.5%	3.1%	1.9%	1.3%
Engineers, surveyors, and architects	0.8%	1.5%	1.0%	2.6%
Mechanics and repairers	0.8%	1.5%	1.0%	1.4%
Construction and extractive occupations	0.8%	1.5%	1.0%	0.8%
Precision production occupations	1.5%	3.1%	1.9%	2.4%

-continued-

Table 2-6.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Transportation and material moving occupations	2.3%	4.6%	2.9%	3.3%
Retail trade (total)	**8.3%**	**15.4%**	**10.5%**	**2.2%**
Writers, artists, entertainers, and athletes	2.3%	4.6%	2.9%	0.1%
Marketing and sales occupations	4.5%	7.7%	5.7%	1.8%
Service occupations	0.8%	1.5%	1.0%	0.1%
Handlers, equipment cleaners, helpers, and laborers	0.8%	1.5%	1.0%	0.1%
Services (total)	**34.6%**	**49.2%**	**37.1%**	**24.3%**
Executive, administrative, and managerial	2.3%	3.1%	1.9%	1.5%
Engineers, surveyors, and architects	1.5%	3.1%	1.9%	0.5%
Social scientists, social workers, religious workers, and lawyers	0.8%	1.5%	1.0%	1.7%
Teachers, librarians, and counselors	0.8%	1.5%	1.0%	0.2%
Health diagnosing and treating practitioners	0.8%	1.5%	1.0%	0.2%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	0.8%	1.5%	1.0%	0.8%
Technologists and technicians, except health	2.3%	3.1%	1.9%	3.4%
Marketing and sales occupations	3.8%	7.7%	4.8%	2.4%
Administrative support occupations, including clerical	2.3%	4.6%	2.9%	3.9%
Service occupations	14.3%	21.5%	15.2%	8.0%
Mechanics and repairers	2.3%	4.6%	2.9%	0.1%
Construction and extractive occupations	0.8%	1.5%	1.0%	0.7%
Production working occupations	0.8%	1.5%	1.0%	0.2%
Transportation and material moving occupations	0.8%	1.5%	1.0%	0.6%
Handlers, equipment cleaners, helpers, and laborers	0.8%	1.5%	1.0%	0.0%

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

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

source of other income was the Alaska Permanent Fund dividend, which accounted for 6% of the total community income in 2010 (Table 2-5).

In 2010, most (35%) of the jobs in Copper Center were with the services sector. Other important employment sectors during the study year were local and tribal governments (23%); state government (10%); federal government (9%); retail (8%); and transportation, communication, and utilities (8%) (Table 2-6). The income generated by local government provided the most income by industry category (26%). The income generated by services in Copper Center during 2010 was 24% of the income by industry. The remaining income by industry category was contributed by state government (17%); transportation, communication, and utilities (12%); federal government (11%); agriculture, forestry, and fishing (4%); and construction, retail trade, and mining (2% each) (Table 2-6).

The study found 327 adults over the age of 16 in Copper Center in 2010 and the calculated average length of employment for all Copper Center adults was 34 weeks or approximately 9 months (Table 2-7). Of the 327 adults in Copper Center, the study found 252, or 77%, were employed. For the employed adults, the mean length of employment was approximately 10 months; 67% of employed adults were employed year-round. On the household level, 156 of 158 households (99%) had an adult household member employed at some point during the study year. The average number of jobs

Table 2-7. – Employment characteristics, Copper River Basin communities, 2010.

Characteristic	Community			
	Copper Center	Mentasta Lake	Slana	Mentasta Pass
All adults				
Number	327.4	61.0	148.2	27.7
Mean weeks employed	34.2	29.6	35.6	41.1
Employed adults				
Number	251.6	48.4	131.9	24.9
Percentage	76.9%	79.3%	89.0%	89.7%
Jobs				
Number	318.7	67.4	177.3	48.0
Mean	1.27	1.39	1.34	1.93
Minimum	1.00	1.00	1.00	1.00
Maximum	3.00	3.00	6.00	5.00
Months employed				
Mean	10.3	8.6	9.2	10.6
Minimum	1.0	1.0	2.0	4.0
Maximum	12.0	12.0	12.0	12.0
Percentage employed year-round	66.7%	39.1%	57.4%	78.6%
Mean weeks employed	44.4	37.3	40.0	45.8
Households				
Number	158.0	36.0	86.0	12.0
Employed				
Number	155.6	36.0	86.0	10.5
Percentage	98.5%	100.0%	100.0%	87.5%
Jobs per employed household				
Mean	2.0	1.8	1.9	3.9
Minimum	1.0	1.0	1.0	2.0
Maximum	5.0	5.0	6.0	8.0
Employed adults				
Mean				
Employed households	1.62	1.34	1.53	2.37
Total households	1.59	1.34	1.53	2.07
Minimum	1.0	1.0	1.0	2.0
Maximum	4.0	2.0	4.0	2.0

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

during the study year per employed household was 2, and on average there were 2 employed adults per household (Table 2-7).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 2-8 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Copper Center residents in 2010. Approximately 76% of residents participated in the harvest of resources in 2010. With reference to specific resource categories, 72% of all residents gathered vegetation, 56% fished, 48% hunted for large land mammals, 20% hunted for birds, and 18% hunted or trapped for small land mammals and furbearers. More residents participated in processing any resource (78%) than harvested any resource. The same percentage of residents processed vegetation (72%) as harvested vegetation. Fewer residents participated in processing large land mammals (43%), birds (19%), and small land mammals (15%) than harvested these same resources. More residents processed fish (63%) than went fishing. Additionally, 16% of residents participated in building fish wheels, while 15% participated in sewing skins or cloth, and 73% cooked wild foods (Table 2-9).

RESOURCE HARVEST AND USE PATTERNS

Table 2-10 summarizes resource harvest and use characteristics for Copper Center in 2010 at the household level. Approximately 96% of households used wild resources in 2010, while 86% attempted to harvest a resource and 86% experienced success in harvesting a resource. The average total harvest was an estimated 599 lb usable weight per household, or 220 lb per capita. During the study year, there were 116 different resources available locally in Copper Center.[4] On average, households attempted to harvest approximately 9 kinds of resources, harvested 7 kinds of resources, and used an average of 10 kinds of resources. The maximum number of resources used by any household was 35. In addition, households gave away an average of 4 kinds of resources and received an average of 5 kinds of resources. While 69% of the households surveyed reported sharing resources with other households, 89% of surveyed households reported receiving a resource.

SPECIES USED AND SEASONAL ROUND

Residents of Copper Center harvest a wide variety of species throughout the year and like most rural Alaska communities they often target specific species during certain seasons of the year, following a cyclical harvest pattern that is in part defined by seasonal availability, and in part by laws, regulations, and land access. Many Copper Center subsistence harvest activities occur in the middle to upper

4. “Resources available” refers to the number of resources listed in the survey instrument amended upwards if the residents report harvesting additional items.

Table 2-8. – Participation in subsistence harvesting and processing activities, Copper Center, 2010.

Total number of people	**430.6**
Birds	
Hunt	
Number	81.0
Percentage	19.8%
Process	
Number	75.1
Percentage	18.5%
Fish	
Fish	
Number	229.1
Percentage	56.3%
Process	
Number	256.7
Percentage	62.8%
Large land mammals	
Hunt	
Number	195.5
Percentage	48.1%
Process	
Number	173.8
Percentage	42.7%
Small land mammals	
Hunt or trap	
Number	75.1
Percentage	18.4%
Process	
Number	59.3
Percentage	14.6%
Vegetation	
Gather	
Number	294.3
Percentage	72.0%
Process	
Number	292.3
Percentage	71.8%
Any resource	
Attempt	
Number	327.9
Percentage	76.1%
Process	
Number	337.7
Percentage	78.4%

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

Table 2-9. – Household member participation in additional processing activities, Copper Center, 2010.

Total number of people	**430.6**
Building fish wheels	
Number	63.2
Percentage	15.5%
Sewing skins or cloth	
Number	59.3
Percentage	14.5%
Cooking wild foods	
Number	300.2
Percentage	73.4%

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

Table 2-10. – Resource harvest and use characteristics, Copper Center, 2010.

Characteristic	
Mean number of resources used per household	10.4
Minimum	0.0
Maximum	35.0
Mean number of resources attempted to harvest per household	9.1
Minimum	0.0
Maximum	34.0
Mean number of resources harvested per household	7.2
Minimum	0.0
Maximum	27.0
Mean number of resources received per household	4.8
Minimum	0.0
Maximum	27.0
Mean number of resources given away per household	3.9
Minimum	0.0
Maximum	30.0
Mean household harvest, pounds	599.1
Minimum	0.0
Maximum	3,851.8
Total harvest weight, pounds	94,652.6
Community per capita harvest, pounds	219.8
Percentage using any resource	96.3%
Percentage attempting to harvest any resource	86.3%
Percentage harvesting any resource	86.3%
Percentage receiving any resource	88.8%
Percentage giving away any resource	68.8%
Number of households in sample	80.0
Number of resources available	116.0

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

Copper River drainage where most of the critical resources can be found, but residents also travel to the Mentasta Pass area for northern pike, and up to the Denali Highway or down the Richardson Highway toward Valdez in pursuit of moose, caribou, and black bear. Residents will travel even farther for deep sea fishing opportunities occurring primarily out of Valdez.

While harvest activities are ongoing throughout the year, we will begin our discussion with the most harvested resource in the community—salmon. In early June, Chinook salmon are the first salmon to arrive in the Copper River watershed, followed quickly by sockeye salmon. Fishing starts in earnest by mid-June and continues through the coho run into September. Most residents harvest their salmon by fish wheel or less often by rod and reel or dip net. Some residents may travel to Valdez for rod and reel fishing of coho and pink salmon later in the season.

Nonsalmon freshwater fish are harvested all throughout the year and across a very large area extending southeast of Chitina and as far north as Paxson. For some families, freshwater fish precedes salmon as the first resource harvested for the summer season. Once the ice clears from local lakes and streams residents may target freshwater fish as early as May using rod and reel. Hot spots for this type of fishing include Lake Louise, and Susitna, Klutina and Tyone lakes. Many kinds of nonsalmon fish are also harvested during the fall, winter, and spring months by jigging through the ice or participating in the fall whitefishes spear fishery of the Slana Slough.

Large land mammal hunting is an important fall activity that starts in August; depending on the resource and regulations, hunting effort can stretch through November with some opportunities existing for a spring harvest. During the study year most of the harvests took place between August and November with much of the effort taking place along the Glenn, Richardson, Edgerton, and Denali highways.

The majority of small land mammals are trapped for their fur during the winter months when snow is on the ground but others are harvested for their meat as well as their fur all throughout the year. An average trapping season most commonly extends from November through February depending on the snow conditions and the quality of the fur the trappers are harvesting. A high number of red (tree) squirrels were killed during the year from March through November, but residents reported harvesting the squirrels primarily as a means of pest control and did not often use these animals.

Migratory birds and upland game birds are both harvested at different times throughout the year. Waterfowl are hunted in the spring but are most often harvested in the fall, while upland game birds are harvested opportunistically throughout the year while hunting for other resources.

The harvest of vegetation (plants, berries, and wood) is mostly a summer and fall activity, with the exception of wood, which is mostly harvested in the early spring.

HARVEST QUANTITIES

Table 2-11 reports estimated wild resource harvests and uses by Copper Center residents in 2010 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix B for conversion factors[5]). 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 other wild harvested resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

Table 2-12 lists the top 10 ranked resources harvested in terms of pounds per capita and the 10 most used resources by Copper Center households during the study year. In 2010 residents of Copper Center harvested an estimated total of 94,653 lb, or 220 lb per capita, of wild resources (Table 2-11). Sockeye salmon, moose, caribou, and Chinook salmon were the top 4 most harvested resources in pounds per capita (Table 2-12). In comparison, sockeye salmon, blueberries, moose, and Chinook salmon were the top 4 most used resources by all households in the survey (Table 2-12).

In terms of pounds harvested, salmon constituted the biggest portion of the subsistence harvest, which totaled 59,414 lb, or 138 lb per capita (Table 2-11); salmon made up approximately 63% of the total wild resource harvest by Copper Center households in 2010 (Figure 2-3). The majority (82%) of this was sockeye salmon, with 48,862 lb harvested, or 114 lb per capita, making sockeye salmon the most harvested resource in the community and the most used (tables 2-11 and 2-12). Chinook salmon was the fourth most harvested resource (Table 2-12), constituting 7,401 lb of the total harvest, or 17 lb per capita.

Large land mammals as a category were second in contributing to the majority of the harvest composition in 2010, making up 24% of the total Copper Center harvest by weight (Figure 2-3). Copper Center harvested approximately 22,509 lb of large land mammals, or 52 lb per capita (most of which was moose) (Table 2-11). In terms of pounds harvested in 2010, moose ranked second on the list of top 10 resources harvested as well as third on the list of top 10 resources used (Table 2-12). Caribou also made the list of top 10 resources harvested; caribou is in third place.

Nonsalmon fish are another important wild resource for the community of Copper Center. The total harvest of nonsalmon fish in 2010 was 7,396 lb, or 17 lb per capita. According to the list of top 10 ranked resources harvested and used, Pacific halibut was ranked the sixth most harvested resource, rockfish was ranked the seventh, and lingcod and rainbow trout tied as the ninth and 10th most harvested

5. 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 2-11. – Estimated harvests and uses of fish, game, and vegetation resources, Copper Center, 2010.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**96.3%**	**86.3%**	**86.3%**	**88.8%**	**68.8%**	**94,652.6**	**599.1**	**219.8**				**19.3%**
Fish	**92.5%**	**73.8%**	**71.3%**	**77.5%**	**58.8%**	**66,809.6**	**422.8**	**155.2**				**22.0%**
Salmon	**90.0%**	**67.5%**	**63.8%**	**63.8%**	**51.3%**	**59,413.6**	**376.0**	**138.0**	**8,705.5**		**55.1**	**23.1%**
Chum salmon	1.3%	0.0%	0.0%	1.3%	1.3%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Coho salmon	32.5%	25.0%	20.0%	16.3%	11.3%	3,114.2	19.7	7.2	355.5	Ind.	2.3	40.8%
Chinook salmon	57.5%	51.3%	45.0%	27.5%	33.8%	7,401.2	46.8	17.2	377.2	Ind.	2.4	26.3%
Pink salmon	2.5%	1.3%	1.3%	1.3%	0.0%	36.1	0.2	0.1	9.9	Ind.	0.1	139.9%
Sockeye salmon	86.3%	65.0%	62.5%	55.0%	50.0%	48,862.1	309.3	113.5	7,962.9	Ind.	50.4	24.8%
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	2.5%	0.0%	0.0%	2.5%	2.5%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Nonsalmon fish	**65.0%**	**50.0%**	**43.8%**	**48.8%**	**28.8%**	**7,396.0**	**46.8**	**17.2**				**48.0%**
Herring	2.5%	0.0%	0.0%	2.5%	2.5%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Herring roe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
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%
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	2.5%	1.3%	1.3%	1.3%	0.0%	39.5	0.3	0.1				139.9%
Eulachon (hooligan, candlefish)	2.5%	1.3%	1.3%	1.3%	0.0%	39.5	0.3	0.1	39.5	Lb.	0.3	139.9%
Unknown smelt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Cod	1.3%	0.0%	0.0%	1.3%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Pacific cod (gray)	1.3%	0.0%	0.0%	1.3%	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	11.3%	6.3%	6.3%	7.5%	6.3%	725.2	4.6	1.7	302.2		1.9	82.3%
Lingcod	11.3%	6.3%	6.3%	7.5%	6.3%	725.2	4.6	1.7	302.2	Ind.	1.9	82.3%
Pacific halibut	47.5%	15.0%	11.3%	40.0%	16.3%	2,281.1	14.4	5.3	2,281.1	Lb.	14.4	52.4%
Arctic lampreys	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Rockfish	13.8%	8.8%	8.8%	6.3%	3.8%	1,406.2	8.9	3.3	351.6	Ind.	2.2	125.7%
Sculpin	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Shark	1.3%	0.0%	0.0%	1.3%	1.3%	0.0	0.0	0.0	0.0		0.0	0.0%
Salmon shark	1.3%	0.0%	0.0%	1.3%	1.3%	0.0	0.0	0.0	0.0		0.0	0.0%
Burbot	18.8%	17.5%	12.5%	6.3%	5.0%	445.6	2.8	1.0	185.7	Ind.	1.2	48.6%
Char	25.0%	25.0%	21.3%	6.3%	10.0%	800.1	5.1	1.9	501.7		3.2	71.4%
Arctic char	1.3%	1.3%	1.3%	0.0%	0.0%	4.1	0.0	0.0	5.9	Ind.	0.0	139.9%
Dolly Varden	11.3%	12.5%	10.0%	3.8%	5.0%	160.0	1.0	0.4	177.8	Ind.	1.1	59.2%
Lake trout	20.0%	20.0%	16.3%	6.3%	7.5%	636.0	4.0	1.5	318.0	Ind.	2.0	88.1%
Arctic grayling	32.5%	30.0%	26.3%	11.3%	11.3%	412.0	2.6	1.0	588.6	Ind.	3.7	52.4%
Northern pike	2.5%	1.3%	1.3%	1.3%	1.3%	110.6	0.7	0.3	39.5	Ind.	0.3	139.9%
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	25.0%	23.8%	22.5%	7.5%	8.8%	738.3	4.7	1.7	527.3		3.3	40.8%
Cutthroat throut	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%

-continued-

Table 2-11.–Page 2 of 4.

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 (±)
Nonsalmon fish, continued												
Rainbow trout	21.3%	22.5%	20.0%	5.1%	7.6%	724.4	4.6	1.7	517.5	Ind.	3.3	41.5%
Steelhead	1.3%	0.0%	0.0%	1.3%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Unknown trout	5.0%	3.8%	3.8%	1.3%	1.3%	13.8	0.1	0.0	9.9	Ind.	0.1	92.0%
Whitefishes	20.0%	13.8%	11.3%	11.3%	3.8%	437.5	2.8	1.0	280.5		1.8	55.5%
Broad whitefish	2.5%	1.3%	1.3%	1.3%	0.0%	47.4	0.3	0.1	11.9	Ind.	0.1	139.9%
Cisco	1.3%	1.3%	1.3%	1.3%	1.3%	19.8	0.1	0.0	49.4		0.3	139.9%
Least cisco	1.3%	1.3%	1.3%	1.3%	1.3%	19.8	0.1	0.0	49.4	Ind.	0.3	139.9%
Humpback whitefish	11.3%	10.0%	7.5%	5.0%	3.8%	318.0	2.0	0.7	181.7	Ind.	1.2	67.5%
Round whitefish	3.8%	2.5%	2.5%	1.3%	0.0%	17.8	0.1	0.0	17.8	Ind.	0.1	98.9%
Unknown whitefish	3.8%	1.3%	1.3%	3.8%	0.0%	34.6	0.2	0.1	19.8	Ind.	0.1	139.9%
Unknown non-salmon fish	1.3%	0.0%	0.0%	1.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Land mammals	**75.0%**	**68.8%**	**41.3%**	**63.8%**	**33.8%**	**23,574.4**	**149.2**	**54.8**	**614.2**		**3.9**	**28.8%**
Large land mammals	**73.8%**	**67.5%**	**31.3%**	**62.5%**	**33.8%**	**22,509.1**	**142.5**	**52.3**	**100.7**		**0.6**	**29.5%**
Bison	2.5%	0.0%	0.0%	2.5%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Black bear	10.0%	13.8%	3.8%	6.3%	6.3%	458.2	2.9	1.1	7.9	Ind.	0.1	84.7%
Brown bear	0.0%	5.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Caribou	47.5%	48.8%	23.8%	28.8%	21.3%	7,702.5	48.8	17.9	59.3	Ind.	0.4	31.4%
Deer	5.0%	1.3%	0.0%	5.0%	1.3%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Goat	1.3%	1.3%	0.0%	1.3%	1.3%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Moose	66.3%	61.3%	17.5%	55.0%	26.3%	14,220.0	90.0	33.0	31.6	Ind.	0.2	36.1%
Dall sheep	3.8%	3.8%	1.3%	2.5%	0.0%	128.4	0.8	0.3	2.0	Ind.	0.0	139.9%
Small land mammals[b]	**27.5%**	**26.3%**	**25.0%**	**15.0%**	**13.8%**	**1,065.3**	**6.7**	**2.5**	**513.5**		**3.3**	**38.3%**
Beaver	11.3%	5.0%	3.8%	10.0%	5.0%	177.8	1.1	0.4	11.9	Ind.	0.1	86.3%
Coyote	1.3%	3.8%	0.0%	1.3%	1.3%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Fox	2.5%	2.5%	1.3%	1.3%	0.0%	0.0	0.0	0.0	7.9		0.1	139.9%
Red fox	2.5%	2.5%	1.3%	1.3%	0.0%	0.0	0.0	0.0	7.9	Ind.	0.1	139.9%
Hare	18.8%	18.8%	16.3%	3.8%	8.8%	493.8	3.1	1.1	246.9		1.6	48.8%
Snowshow hare	18.8%	18.8%	16.3%	3.8%	8.8%	493.8	3.1	1.1	246.9	Ind.	1.6	48.8%
River otter	1.3%	0.0%	0.0%	1.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Lynx	5.0%	3.8%	3.8%	1.3%	2.5%	158.0	1.0	0.4	39.5	Ind.	0.3	81.2%
Marmot	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Marten	0.0%	3.8%	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	5.0%	1.3%	1.3%	3.8%	2.5%	10.7	0.1	0.0	5.9	Ind.	0.0	139.9%
Porcupine	11.3%	8.8%	7.5%	6.3%	7.5%	142.2	0.9	0.3	31.6	Ind.	0.2	70.8%
Squirrel	6.3%	8.8%	6.3%	0.0%	1.3%	83.0	0.5	0.2	165.9		1.1	70.7%
Tree squirrel	6.3%	8.8%	6.3%	0.0%	1.3%	83.0	0.5	0.2	165.9	Ind.	1.1	70.7%
Unknown 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%	2.5%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Wolf	1.3%	3.8%	1.3%	0.0%	0.0%	0.0	0.0	0.0	4.0	Ind.	0.0	139.9%

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Table 2-11.–Page 3 of 4.

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	
Small land mammals, continued												
Wolverine	0.0%	1.3%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Birds and eggs	**40.0%**	**35.0%**	**32.5%**	**13.8%**	**16.3%**	**552.3**	**3.5**	**1.3**	**639.9**		**4.1**	**43.8%**
Migratory birds	**17.5%**	**11.3%**	**7.5%**	**13.8%**	**10.0%**	**318.6**	**2.0**	**0.7**	**270.6**		**1.7**	**62.7%**
Ducks	12.5%	10.0%	6.3%	10.0%	8.8%	278.4	1.8	0.6	252.8		1.6	69.3%
Canvasback	0.0%	1.3%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Eider	2.5%	1.3%	1.3%	2.5%	1.3%	86.4	0.5	0.2	35.6		0.2	139.9%
Spectacled eider	2.5%	1.3%	1.3%	2.5%	1.3%	86.4	0.5	0.2	35.6	Ind.	0.2	139.9%
Goldeneye	1.3%	2.5%	1.3%	0.0%	0.0%	3.2	0.0	0.0	4.0	Ind.	0.0	139.9%
Mallard	10.0%	8.8%	5.0%	7.5%	7.5%	128.4	0.8	0.3	128.4	Ind.	0.8	73.1%
Northern pintail	2.5%	5.0%	2.5%	2.5%	2.5%	26.9	0.2	0.1	33.6	Ind.	0.2	106.5%
Scoter	2.5%	0.0%	0.0%	2.5%	1.3%	0.0	0.0	0.0	0.0		0.0	0.0%
Black scoter	2.5%	0.0%	0.0%	2.5%	1.3%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Northern shoveler	1.3%	1.3%	1.3%	0.0%	1.3%	4.7	0.0	0.0	7.9	Ind.	0.1	139.9%
Teal	1.3%	1.3%	1.3%	0.0%	0.0%	1.2	0.0	0.0	4.0		0.03	139.9%
Green-winged teal	1.3%	1.3%	1.3%	0.0%	0.0%	1.2	0.0	0.0	4.0	Ind.	0.03	139.9%
Wigeon	1.3%	1.3%	1.3%	1.3%	1.3%	27.7	0.2	0.1	39.5	Ind.	0.3	139.9%
Unknown ducks	2.5%	3.8%	0.0%	2.5%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Geese	8.8%	3.8%	1.3%	7.5%	2.5%	40.3	0.3	0.1	17.8		0.1	139.9%
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 goose	6.3%	2.5%	1.3%	5.0%	2.5%	7.1	0.0	0.0	5.9		0.04	139.9%
Cackling goose	1.3%	2.5%	1.3%	0.0%	1.3%	4.7	0.0	0.0	4.0	Ind.	0.03	139.9%
Lesser Canada goose	1.3%	1.3%	0.0%	1.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Canada/cackling goose	5.0%	2.5%	1.3%	3.8%	2.5%	2.4	0.0	0.0	2.0	Ind.	0.01	139.9%
Emperor 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	1.3%	1.3%	1.3%	0.0%	1.3%	23.7	0.2	0.1	7.9	Ind.	0.1	139.9%
White-fronted goose	2.5%	2.5%	1.3%	1.3%	0.0%	9.5	0.1	0.0	4.0	Ind.	0.0	139.9%
Unknown goose	1.3%	2.5%	0.0%	1.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Swan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Tundra swan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Crane	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	**35.0%**	**35.0%**	**31.3%**	**5.0%**	**10.0%**	**233.6**	**1.5**	**0.5**	**369.3**		**2.3**	**33.1%**
Upland game birds	35.0%	35.0%	31.3%	5.0%	10.0%	233.6	1.5	0.5	369.3		2.3	33.1%
Grouse	28.8%	30.0%	25.0%	5.0%	6.3%	171.4	1.1	0.4	244.9		1.6	39.3%
Spruce grouse	28.8%	30.0%	25.0%	5.0%	6.3%	171.4	1.1	0.4	244.9	Ind.	1.6	39.3%
Ptarmigan	18.8%	22.5%	15.0%	5.0%	6.3%	62.2	0.4	0.1	124.4	Ind.	0.8	41.3%
Bird eggs	**1.3%**	**1.3%**	**0.0%**	**1.3%**	**1.3%**	**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	Ind.	0.0	0.0%
Goose eggs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Seabird and loon eggs	1.3%	1.3%	0.0%	1.3%	1.3%	0.0	0.0	0.0	0.0		0.0	0.0%

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Table 2-11.–Page 4 of 4.

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	
Bird eggs, continued												
Gull eggs	1.3%	1.3%	0.0%	1.3%	1.3%	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	**13.8%**	**5.0%**	**3.8%**	**10.0%**	**2.5%**	**242.9**	**1.5**	**0.6**				**136.4%**
Clams	8.8%	3.8%	3.8%	5.0%	1.3%	242.9	1.5	0.6	278.5		1.8	136.4%
Freshwater clams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Razor clams	8.8%	3.8%	3.8%	5.0%	1.3%	242.9	1.6	0.6	278.5	Gal.	1.8	135.6%
Crabs	3.8%	0.0%	0.0%	3.8%	1.3%	0.0	0.0	0.0	0.0		0.0	0.0%
Dungeness crab	2.5%	0.0%	0.0%	2.5%	1.3%	0.0	0.0	0.0	0.0	Lb.	0.0	0.0%
King crab	2.5%	0.0%	0.0%	2.5%	1.3%	0.0	0.0	0.0	0.0	Lb.	0.0	0.0%
Tanner crab	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Lb.	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%	1.3%	0.0%	6.3%	1.3%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Squid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Vegetation	**85.0%**	**80.0%**	**80.0%**	**32.5%**	**33.8%**	**3,473.4**	**22.0**	**8.1**				**22.0%**
Berries	**76.3%**	**68.8%**	**68.8%**	**23.8%**	**25.0%**	**3,257.1**	**20.6**	**7.6**	**814.3**		**5.2**	**22.2%**
Blueberry	68.8%	63.8%	63.8%	16.3%	22.5%	1,387.6	8.8	3.2	346.9	Gal.	2.2	19.8%
Lowbush cranberry	45.0%	43.8%	43.8%	8.8%	15.0%	694.8	4.4	1.6	173.7	Gal.	1.1	26.4%
Highbush cranberry	25.0%	20.0%	20.0%	8.8%	5.0%	588.0	3.7	1.4	147.0	Gal.	0.9	62.4%
Crowberry	5.0%	6.3%	5.0%	1.3%	1.3%	47.4	0.3	0.1	11.9	Gal.	0.1	79.7%
Currants	3.8%	3.8%	3.8%	2.5%	2.5%	31.6	0.2	0.1	7.9	Gal.	0.1	81.0%
Raspberry	22.5%	21.3%	21.3%	5.0%	6.3%	418.7	2.7	1.0	104.7	Gal.	0.7	35.6%
Salmonberry	5.0%	3.8%	3.8%	2.5%	1.3%	21.1	0.1	0.0	5.3	Gal.	0.0	74.2%
Strawberry	0.0%	1.3%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Other wild berry	7.5%	7.5%	7.5%	3.8%	5.0%	68.0	0.4	0.2	17.0	Gal.	0.1	82.0%
Plants, greens, and mushrooms	**30.0%**	**28.8%**	**28.8%**	**3.8%**	**10.0%**	**216.3**	**1.4**	**0.5**	**128.9**		**0.8**	**48.9%**
Eskimo potato	1.3%	1.3%	1.3%	0.0%	1.3%	7.9	0.1	0.0	2.0	Gal.	0.0	139.9%
Hudson's Bay (Labrador) tea	2.5%	2.5%	2.5%	0.0%	0.0%	1.2	0.0	0.0	1.2	Gal.	0.0	115.0%
Wild rose hips	7.5%	7.5%	7.5%	1.3%	0.0%	110.6	0.7	0.3	27.7	Gal.	0.2	63.2%
Other wild greens	2.5%	2.5%	2.5%	0.0%	0.0%	6.2	0.0	0.0	6.2	Gal.	0.0	134.3%
Mushrooms	21.3%	21.3%	20.0%	3.8%	6.3%	75.5	0.5	0.2	77.0		0.5	75.0%
Fireweed	5.0%	5.0%	5.0%	0.0%	2.5%	14.8	0.1	0.0	14.8	Gal.	0.1	100.1%
Wood	**51.3%**	**50.0%**	**48.8%**	**13.8%**	**11.3%**	**0.0**	**0.0**	**0.0**				**0.0%**
Spruce	1.3%	1.3%	1.3%	1.3%	1.3%	0.0	0.0	0.0	23.7	Ind.	0.2	139.9%
Alder	3.8%	2.5%	2.5%	1.3%	1.3%	0.0	0.0	0.0	2.0	Cord	0.0	98.3%
Willow	2.5%	2.5%	2.5%	0.0%	0.0%	0.0	0.0	0.0	31.6	Ind.	0.2	101.4%
Other wood	50.0%	48.8%	47.5%	12.5%	10.0%	0.0	0.0	0.0	432.4	Cord	2.7	24.3%

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

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.

Table 2-12. – Top 10 ranked resources harvested and used, Copper Center, 2010.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Sockeye salmon	113.5	1	1.	Sockeye salmon	86.3%
2	2.	Moose	33.0	2	2.	Blueberry	68.8%
3	3.	Caribou	17.9	3	3.	Moose	66.3%
4	4.	Chinook salmon	17.2	4	4.	Chinook salmon	57.5%
5	5.	Coho salmon	7.2	5	5.	Wood	51.3%
6	6.	Pacific halibut	5.3	6	6.	Pacific halibut	47.5%
7	7.	Rockfish	3.3	7	6.	Caribou	47.5%
8	8.	Blueberry	3.2	8	8.	Lowbush cranberry	45.0%
9	9.	Lingcod	1.7	9	9.	Coho salmon	32.5%
10	9.	Rainbow trout	1.7	10	9.	Arctic grayling	32.5%

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

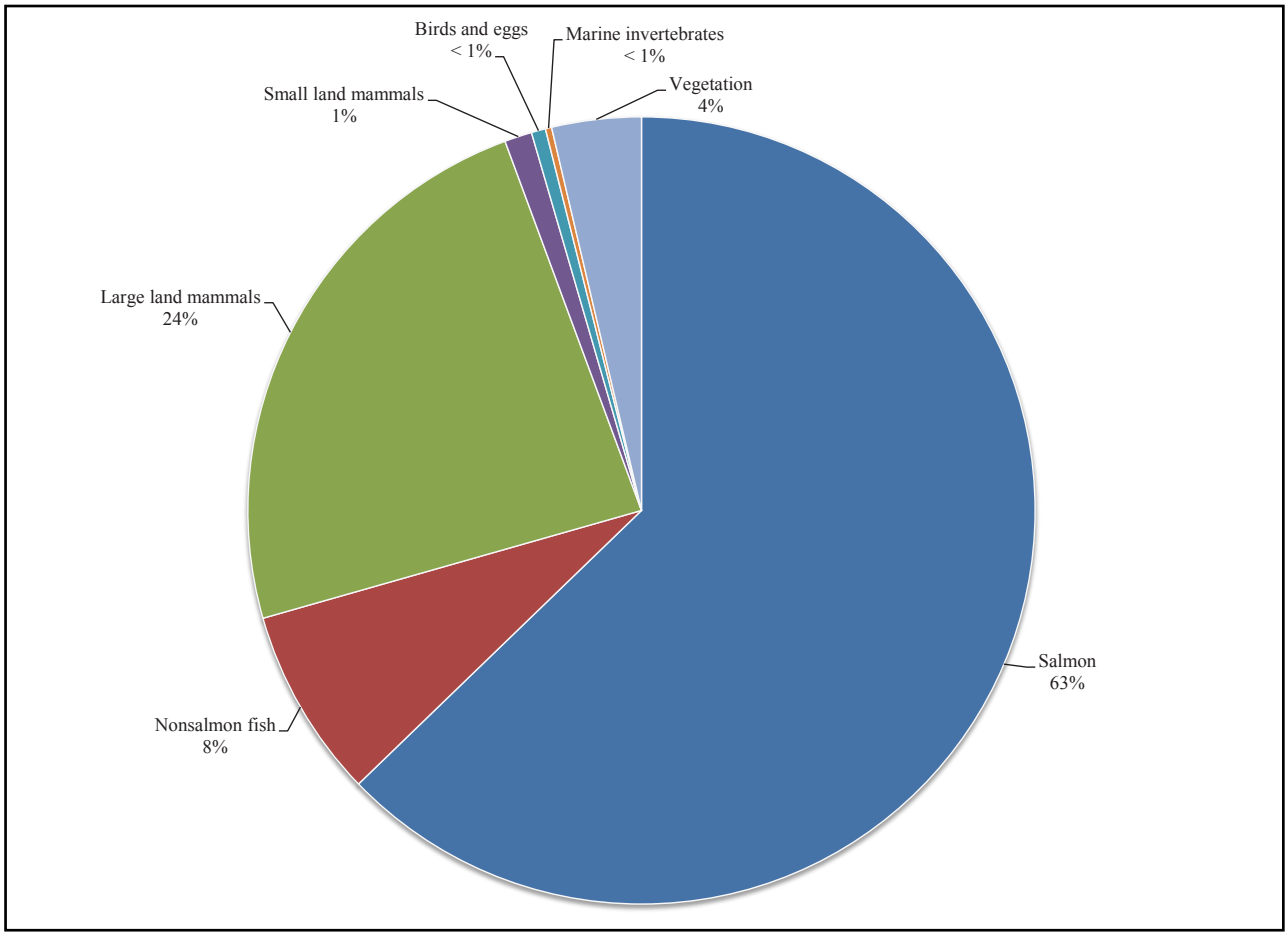


Figure 2-3.– Composition of wild resource harvest, Copper Center, 2010.

subsistence resources in terms of pounds useable weight for Copper Center in 2010. Pacific halibut was ranked as the sixth most used resource for 2010. Arctic grayling was the only other nonsalmon resource that made the most used list; it was tied with coho salmon for the ninth ranking (Table 2-12). Of interest, Arctic grayling was the most sought-after nonsalmon fish with 30% of Copper Center households reporting having attempted to harvest Arctic grayling and 33% of households reporting that they used the resource (Table 2-11). It is interesting that Arctic grayling tied in rank with coho salmon as the ninth most used resource because the Arctic grayling harvest was considerably smaller than the coho salmon harvest. Other nonsalmon fish species, such as rockfish, lingcod, and rainbow trout, were harvested in higher quantities yet used by fewer households (Table 2-11).

Vegetation made a smaller contribution to the community harvest, composing approximately 4% of the total wild foods harvested in 2010 (Figure 2-3). About 3,473 lb, or 8 lb per capita, were harvested; most of which was berries (Table 2-11). Despite the small contribution to the overall harvest, berries made the list of the top 10 ranked resources used with blueberries ranking second and lowbush cranberries ranking eighth (Table 2-12). Though not part of the community harvest of subsistence foods, wood collected either for heating or other uses was an important resource in 2010; wood ranked as the fifth most used resource on the top 10 list (Table 2-12).

The harvest of small land mammals for wild foods composed approximately 1% of the total pounds of wild resources harvested in 2010 (Figure 2-3). The majority of the animals were harvested for their meat, but some were taken for their furs (either for wholesale or to be further processed into different items for gifts or specialty sale).

Birds composed a small percentage (less than 1%) of the total harvest of wild resources during 2010 (Figure 2-3). The Copper Center household harvest of birds was 552 lb, or 1 lb per capita (Table 2-11). In terms of pounds harvested, the majority of the bird harvest (319 lb, or 1 lb per capita) was migratory waterfowl, although the greater number of birds harvested were upland game birds (369 upland game birds versus 270 waterfowl). According to the study, Copper Center residents attempted to but did not actually harvest any eggs in 2010. Instead, a small percentage of the households reported using wild harvested eggs that they were given.

In terms of total pounds harvested, marine invertebrates contributed the least edible weight to the total harvest of wild resources by the community of Copper Center in 2010 (Figure 2-3). The total harvest was 243 lb, or 1 lb per capita, and was composed of razor clams (Table 2-11). However, as discussed in the following section, Copper Center residents did use additional marine invertebrates that were shared by other households.

SHARING AND RECEIVING WILD RESOURCES

In Copper Center in 2010, the maximum number of resources used by any household was 35 and on average households harvested 7 types of resources (Table 2-10). Wild resources are shared widely

in the community; estimates of sharing indicate that 89% of Copper Center households received and 69% gave away wild resources during 2010 (Table 2-10). Fish and large land mammals were the most commonly received resource, with 78% of households receiving fish and 63% of households receiving large land mammals (Table 2-11). In comparison, 59% of households gave away fish and 34% gave away large land mammals and vegetation (Table 2-11). The most commonly shared individual fish resource was sockeye salmon; 55% of the households received and 50% gave away the resource. Moose was the most shared large land mammal resource with 26% of the households sharing moose meat and 55% receiving meat while 18% of households harvested the resource (Table 2-11). The circumstance in which a smaller percentage of households reported harvesting moose than reported using and sharing moose can be explained in a couple ways. For instance, when hunting partners go on a hunt, only the person who killed the moose may report the harvest but both partners can report use of moose meat when the trip's bounty is shared. Additionally, the percentages may indicate that some Copper Center households were sharing moose that was harvested prior to the study year or giving away meat that they themselves received. Only 4% of households harvested black bears and 6% shared and 6% received this resource (Table 2-11).

Vegetation, particularly berries, was also widely shared with 34% of the households reporting sharing and 33% reporting receiving the resource (Table 2-11). Since the number of Copper Center households receiving vegetation is smaller than the percentage that reported sharing vegetation, it is likely that some vegetation was shared to households in other communities, or that more than one household shared a resource with the same household (i.e., that of an elder).

Marine invertebrates were gathered by a very small percentage of households, but were more widely shared; 10% of community households received marine invertebrate resources while only 4% harvested these resources (Table 2-11). Because the percentage of households receiving marine invertebrates is larger than the percentage of households harvesting, it is possible that some Copper Center households received these resources from outside the community; additionally, it is likely that the 243 lb of razor clams harvested by Copper Center households were shared within the community of Copper Center.

Another resource harvested by few and shared by many was Pacific halibut; 40% of community households reported receiving and 48% of households reported using halibut while only 11% reported harvesting and 16% reported sharing the resource. Again, the substantially larger number of households using and receiving Pacific halibut indicates that the harvest by a relatively small percentage of the population (2,281 lb, or 5 per capita) was sufficient to share amongst many community members.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

Previous studies by the Division of Subsistence (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265

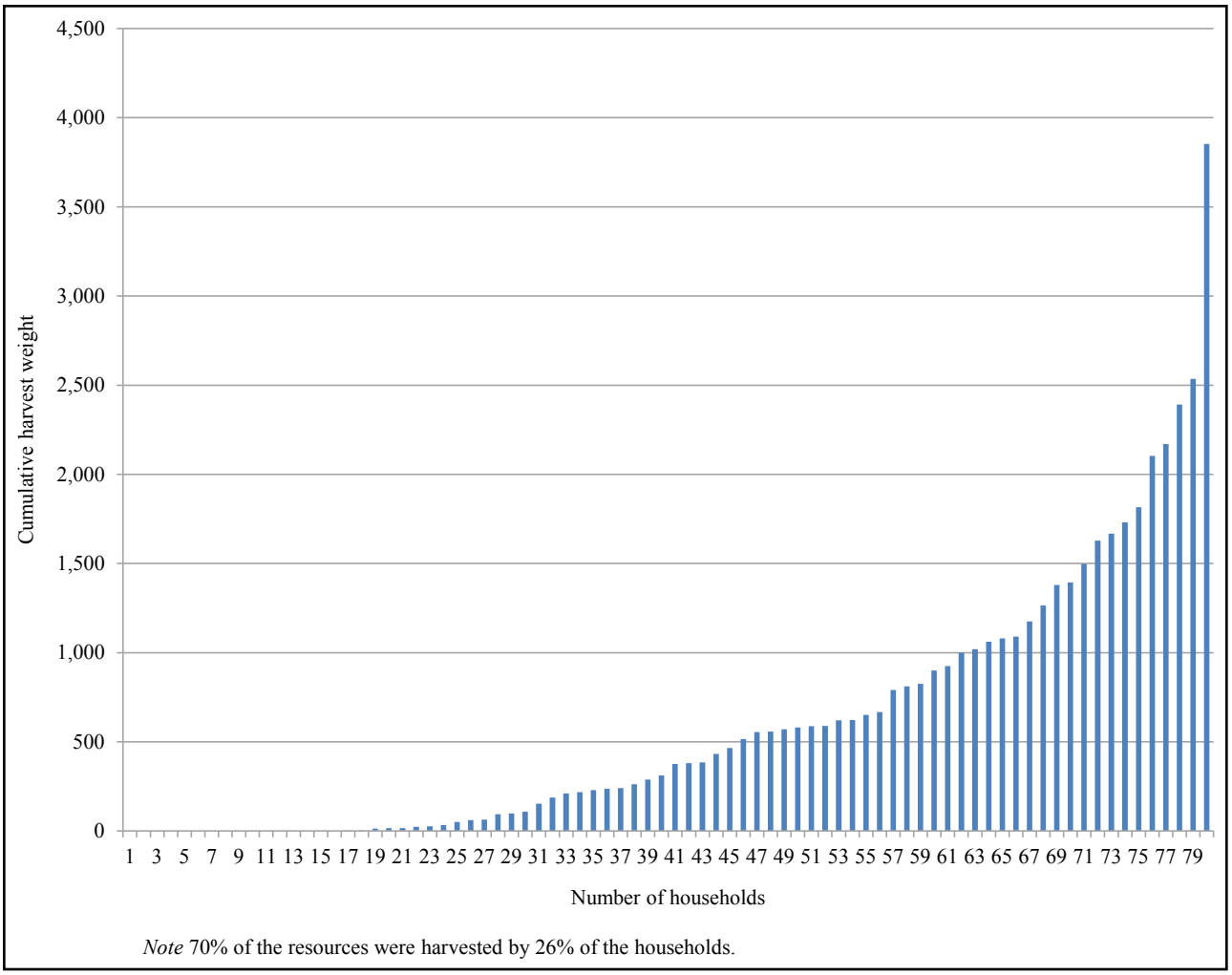


Figure 2-4.– Household specialization, Copper Center, 2010.

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

As shown in Figure 2-4, in the 2012 study year in Copper Center, about 70% of the harvests of wild resources as estimated in usable pounds was harvested by 26% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Copper Center and the other study communities.

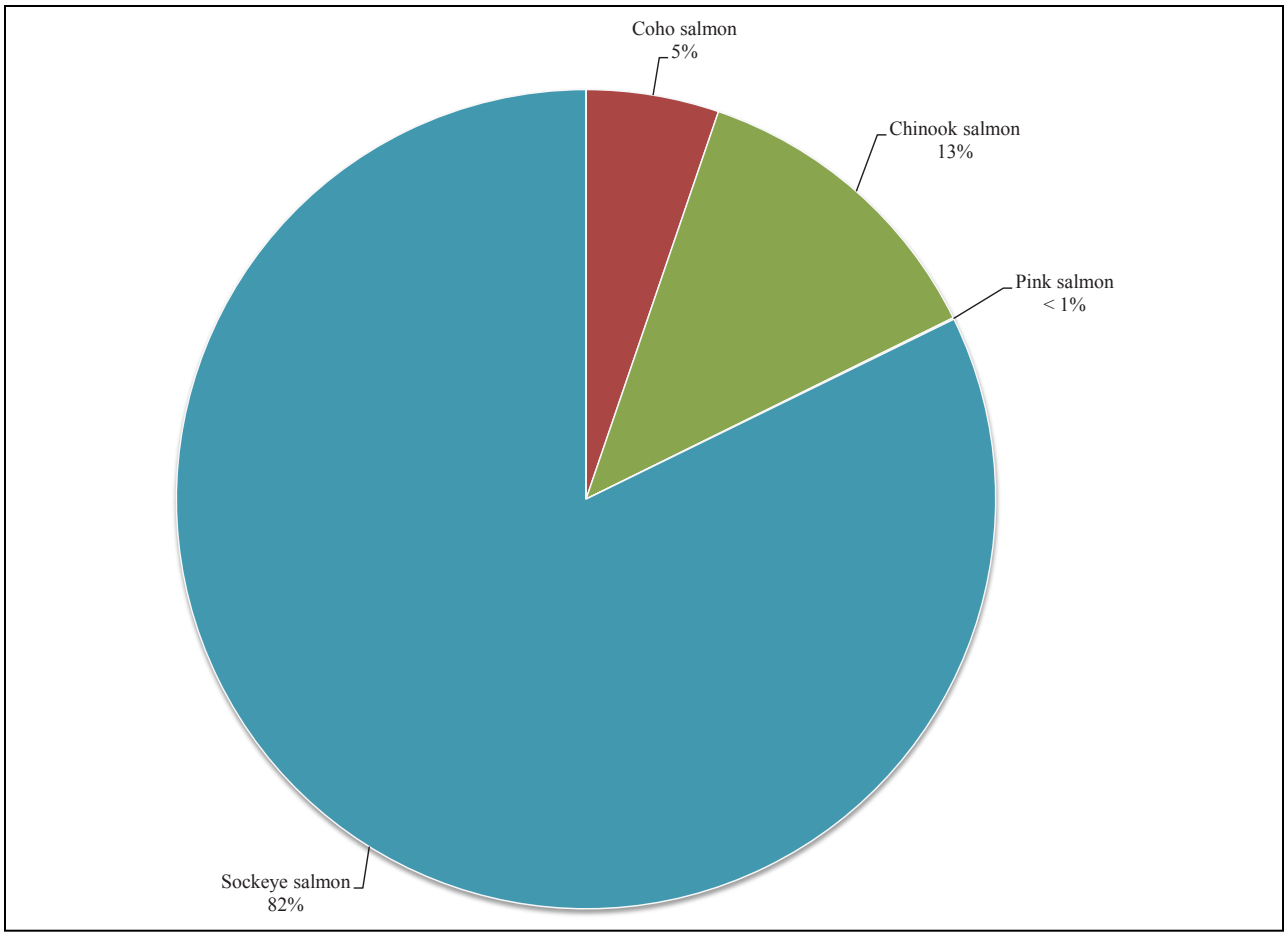


Figure 2-5.– Composition of salmon harvest, Copper Center, 2010.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For the community of Copper Center, salmon composed 63% of the wild resource harvest in pounds usable weight for 2010 totaling 59,414 lb, or 138 lb per capita (Figure 2-3; Table 2-11). Sockeye salmon was the primary salmon species targeted by Copper Center households and approximately 82% (48,862 lb) of the total salmon harvest was sockeye. Chinook salmon made up 13% (7,401 lb) of the salmon harvest, coho salmon made up 5% of the harvest (3,114 lb), and pink salmon comprised less than 1% (36 lb) of the salmon harvest (Figure 2-5; Table 2-11).

During the 2010 study year, Copper Center residents harvested the bulk of their salmon (87% of the total harvest in pounds) by fish wheel, with the remaining harvest taken mostly by rod and reel (13% of the harvest) (Table 2-13). A small fraction of the harvest included some salmon taken by dip net (Chinook and sockeye salmon) and some taken as fish removed from commercial harvests (sockeye salmon only) (Table 2-13). Sockeye, Chinook, and coho salmon were harvested locally from fish

Table 2-13. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Copper Center, 2010.

		Removed from commercial catch		Subsistence methods											
				Dip net		Fish wheel		Other method		Subsistence gear, any		Rod and reel		Any method	
Resource	Percentage base	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%
	Resource	0.2%	0.2%	0.2%	0.2%	86.6%	86.6%	0.0%	0.0%	86.7%	86.7%	13.0%	13.0%	100.0%	100.0%
	Total	0.2%	0.2%	0.2%	0.2%	86.6%	86.6%	0.0%	0.0%	86.7%	86.7%	13.0%	13.0%	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%
	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%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	2.0%	2.6%	0.0%	0.0%	2.0%	2.6%	18.1%	23.2%	4.1%	5.2%
	Resource	0.0%	0.0%	0.0%	0.0%	42.2%	42.2%	0.0%	0.0%	42.2%	42.2%	57.8%	57.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.7%	2.2%	0.0%	0.0%	1.7%	2.2%	2.4%	3.0%	4.1%	5.2%
Chinook salmon	Gear type	0.0%	0.0%	25.0%	71.9%	4.6%	13.1%	0.0%	0.0%	4.6%	13.2%	2.6%	7.5%	4.3%	12.5%
	Resource	0.0%	0.0%	1.0%	1.0%	91.1%	91.1%	0.0%	0.0%	92.1%	92.1%	7.9%	7.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.1%	3.9%	11.3%	0.0%	0.0%	4.0%	11.5%	0.3%	1.0%	4.3%	12.5%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.5%	0.1%	0.1%
	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%	0.1%	0.1%	0.1%	0.1%
Sockeye salmon	Gear type	100.0%	89.9%	75.0%	67.4%	93.4%	84.0%	0.0%	0.0%	93.4%	84.0%	78.4%	70.5%	91.5%	82.2%
	Resource	0.2%	0.2%	0.1%	0.1%	88.4%	88.4%	0.0%	0.0%	88.6%	88.6%	11.2%	11.2%	100.0%	100.0%
	Total	0.2%	0.2%	0.1%	0.1%	80.9%	72.7%	0.0%	0.0%	81.0%	72.9%	10.2%	9.2%	91.5%	82.2%
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%
	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 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%
	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, 2011.

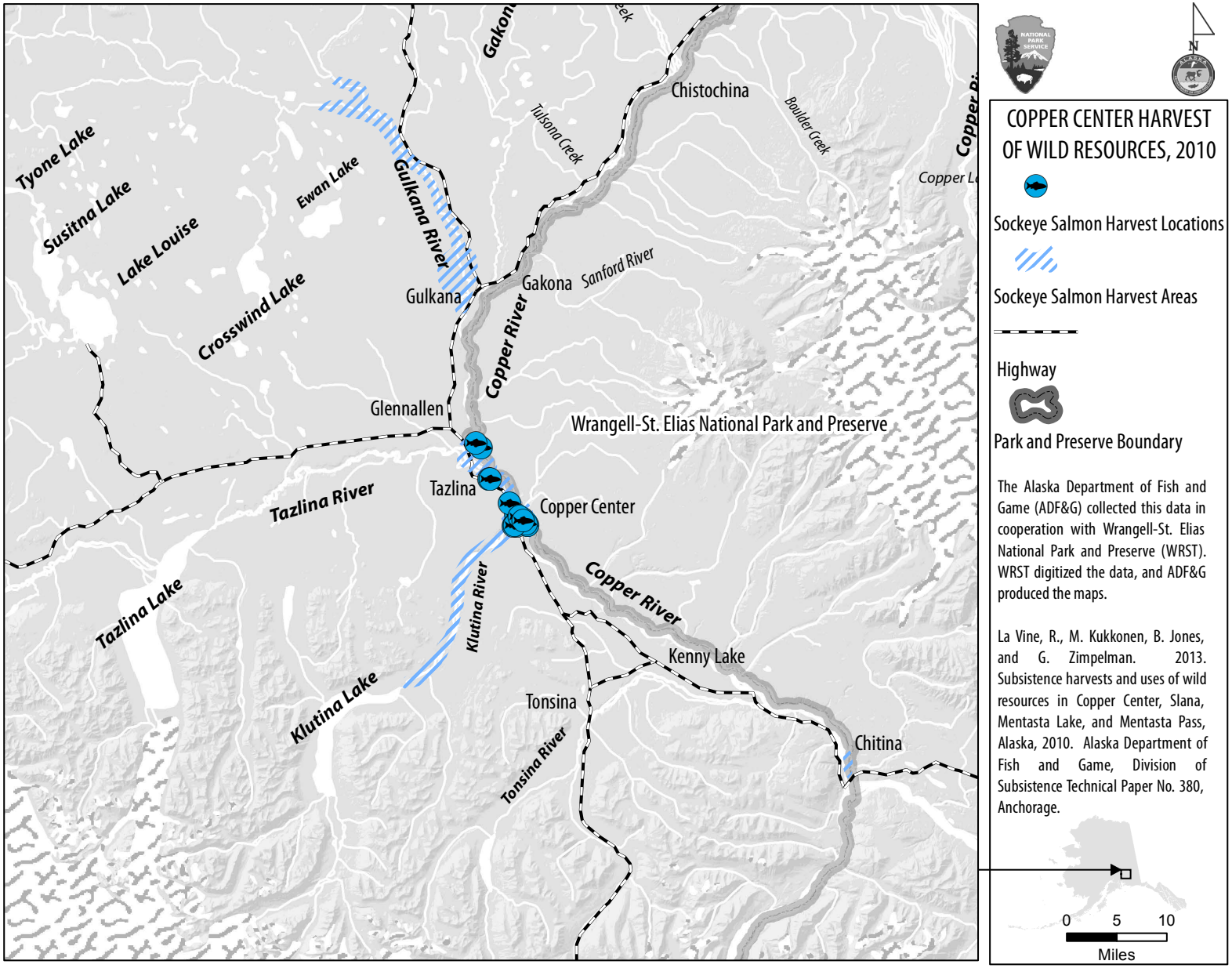


Figure 2-6.– Sockeye salmon search and harvest areas, Copper Center, 2010.

wheels along the Copper River, with some harvested by rod and reel along the Gulkana (sockeye and Chinook salmon only), Klutina, and Tonsina rivers (Figure 2-6). Additionally, some residents traveled to Valdez for rod and reel fishing for coho and sometimes pink salmon.

NONSALMON FISH

Copper Center residents harvested an estimated total of 7,396 lb, or 17 lb per capita, of nonsalmon fish; this harvest made up 8% of the total wild resource harvest in 2010 (Table 2-11; Figure 2-3). In terms of total pounds and percentages, the largest portion of the nonsalmon fish harvest (31%) was Pacific halibut (2,281 lb, or 5 lb per capita); in fact, the majority of the nonsalmon fish harvest by Copper Center was marine fish, including rockfish (1,406 lb, or 3 lb per capita), lingcod (725 lb, or 2 lb per capita), and smelt (40 lb, or less than 1 lb per capita) (Table 2-11). Halibut ranked sixth in terms of total pounds harvested per capita, and tied with caribou for the rank of seventh most used resource in 2010 (Table 2-12).

Other nonsalmon fish harvested by Copper Center residents included trout (738 lb, or 2 lb per capita), of which the majority were rainbow trout (724 lb, or 2 lb per capita) (Table 2-11). In addition, lake trout (636 lb), burbot (446 lb), and Arctic grayling (412 lb) each composed between 6% and 9% of the nonsalmon harvest (Table 2-11; Figure 2-7). It is interesting to note that despite the relatively low percentage of households that harvested Arctic grayling in 2010 (26%), the resource ranked 10th of the resources used by Copper Center residents (33% of households used grayling) (tables 2-11 and 2-12). Humpback whitefish (318 lb) and broad whitefish (47 lb) made up the majority (83%) of the 438 lb of whitefishes harvested in 2010 (Table 2-11).

Table 2-14 lists the number and pounds of each nonsalmon fish species harvested by Copper Center residents in 2010 in percentages by gear type. Copper Center households harvested about 98% of all nonsalmon fish, including saltwater nonsalmon fish, using rod and reel. The remaining 2% were caught using other subsistence methods such as jigging through the ice or using spears in the fall to catch whitefishes, least cisco, and some Arctic grayling, lake trout, burbot, and rainbow trout (Table 2-14).

In the study year 2010, Copper Center residents harvested the majority of their nonsalmon freshwater fish in the Copper River Basin but, aside from fishing activities in the Klutina River, road travel was required to do so (Figure 2-8). Most fishing of nonsalmon freshwater fish (excluding Arctic grayling and northern pike) for Copper Center residents took place at Lake Louise, and Tyone, Susitna, Nulna, and Crosswind lakes, and some whitefishes and Arctic grayling were caught in the Tangle Lakes area off the Denali Highway. In addition, Arctic grayling were caught on the Tonsina, Gulkana, Chitina, and Gakona rivers. Pike are available locally in Mineral Lakes in the Mentasta Pass community, which is part of the Upper Tanana watershed.

Finally, a harvest anomaly is worth pointing out. Arctic char is not known to naturally occur in the upper Copper River watershed; however, a few fish were reported harvested by 2 different households in

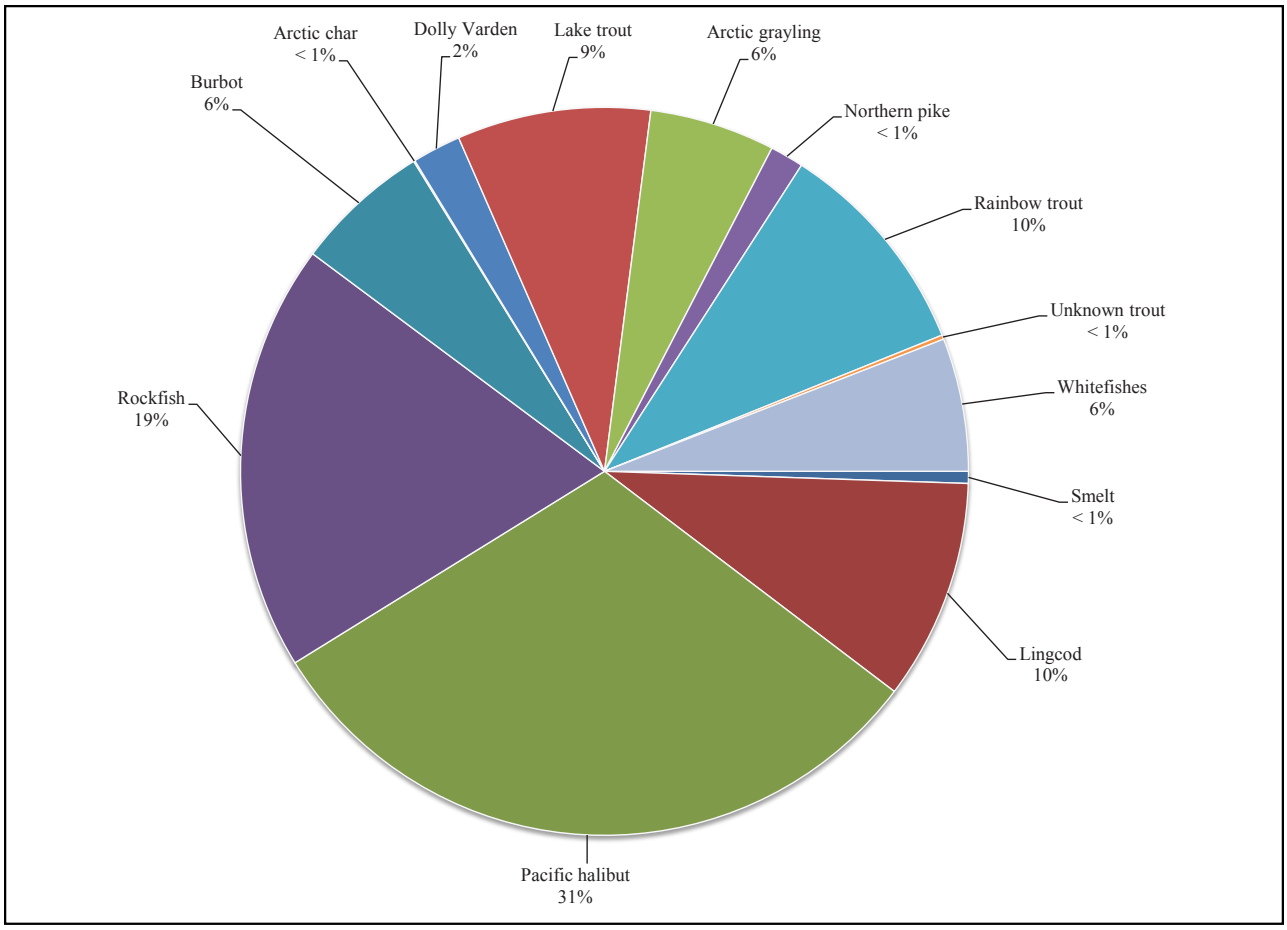


Figure 2-7.– Composition of nonsalmon fish harvest, Copper Center, 2010.

this survey. While Arctic char are stocked by ADF&G in John and Dick lakes, the 6 fish were reported as being harvested from the Gulkana River, which is nowhere near the stocked lakes. Additionally, these Arctic char were written into the survey at the request of the household.

Table 2-14. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Copper Center, 2010.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	12.0%	12.0%	12.0%	12.0%	88.0%	88.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	12.0%	12.0%	12.0%	12.0%	88.0%	88.0%	100.0%	100.0%
Herring	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%
	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%
	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%
Herring sac roe	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%
	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%
	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%
Herring spawn on kelp	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%
	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%
	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%
Eulachon (hooligan, candlefish)	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.6%	0.8%	0.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.5%	0.8%	0.5%
Unknown 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%
	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%
	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%
Pacific cod (gray)	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%
	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%
	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%
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%
	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%
	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%
Starry flounder	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%
	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%
	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%
Lingcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	11.1%	5.9%	9.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	9.8%	5.9%	9.8%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	35.1%	44.8%	30.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	44.8%	30.8%	44.8%	30.8%
Arctic lamprey	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%
	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%
	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%

-continued-

Table 2-14.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	21.6%	6.9%	19.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.9%	19.0%	6.9%	19.0%
Slimy sculpin	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%
	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%
	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%
Salmon shark	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%
	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%
	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%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	21.9%	36.2%	21.9%	36.2%	1.1%	1.9%	3.6%	6.0%
	Resource	0.0%	0.0%	0.0%	0.0%	72.3%	72.3%	72.3%	72.3%	27.7%	27.7%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	2.6%	4.4%	2.6%	4.4%	1.0%	1.7%	3.6%	6.0%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	2.5%	3.5%	2.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	2.2%	3.5%	2.2%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	21.9%	30.1%	21.9%	30.1%	4.1%	5.6%	6.2%	8.6%
	Resource	0.0%	0.0%	0.0%	0.0%	42.2%	42.2%	42.2%	42.2%	57.8%	57.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	2.6%	3.6%	2.6%	3.6%	3.6%	5.0%	6.2%	8.6%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	4.8%	2.3%	4.8%	2.3%	12.5%	6.0%	11.5%	5.6%
	Resource	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	5.0%	5.0%	95.0%	95.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.6%	0.3%	0.6%	0.3%	11.0%	5.3%	11.5%	5.6%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	1.7%	0.8%	1.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	1.5%	0.8%	1.5%
Longnose sucker	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%
	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%
	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%
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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	13.2%	12.7%	13.2%	12.7%	9.7%	9.4%	10.2%	9.8%
	Resource	0.0%	0.0%	0.0%	0.0%	15.6%	15.6%	15.6%	15.6%	84.4%	84.4%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.6%	1.5%	1.6%	1.5%	8.6%	8.3%	10.2%	9.8%

-continued-

Table 2-14.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Steelhead	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%
	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%
	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%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	1.3%	1.2%	1.3%	1.2%	0.0%	0.0%	0.2%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	80.0%	80.0%	80.0%	80.0%	20.0%	20.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.2%	0.1%	0.0%	0.0%	0.2%	0.2%
Broad whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.7%	0.2%	0.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.6%	0.2%	0.6%
Least cisco	Gear type	0.0%	0.0%	0.0%	0.0%	8.0%	2.2%	8.0%	2.2%	0.0%	0.0%	1.0%	0.3%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.0%	0.3%	1.0%	0.3%	0.0%	0.0%	1.0%	0.3%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	25.7%	31.0%	25.7%	31.0%	0.5%	0.6%	3.6%	4.3%
	Resource	0.0%	0.0%	0.0%	0.0%	87.0%	87.0%	87.0%	87.0%	13.0%	13.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	3.1%	3.7%	3.1%	3.7%	0.5%	0.6%	3.6%	4.3%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.3%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%	0.3%	0.2%
Unknown whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	3.2%	3.9%	3.2%	3.9%	0.0%	0.0%	0.4%	0.5%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.4%	0.5%	0.4%	0.5%	0.0%	0.0%	0.4%	0.5%
Unknown nonsalmon fish	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%
	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%
	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%

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

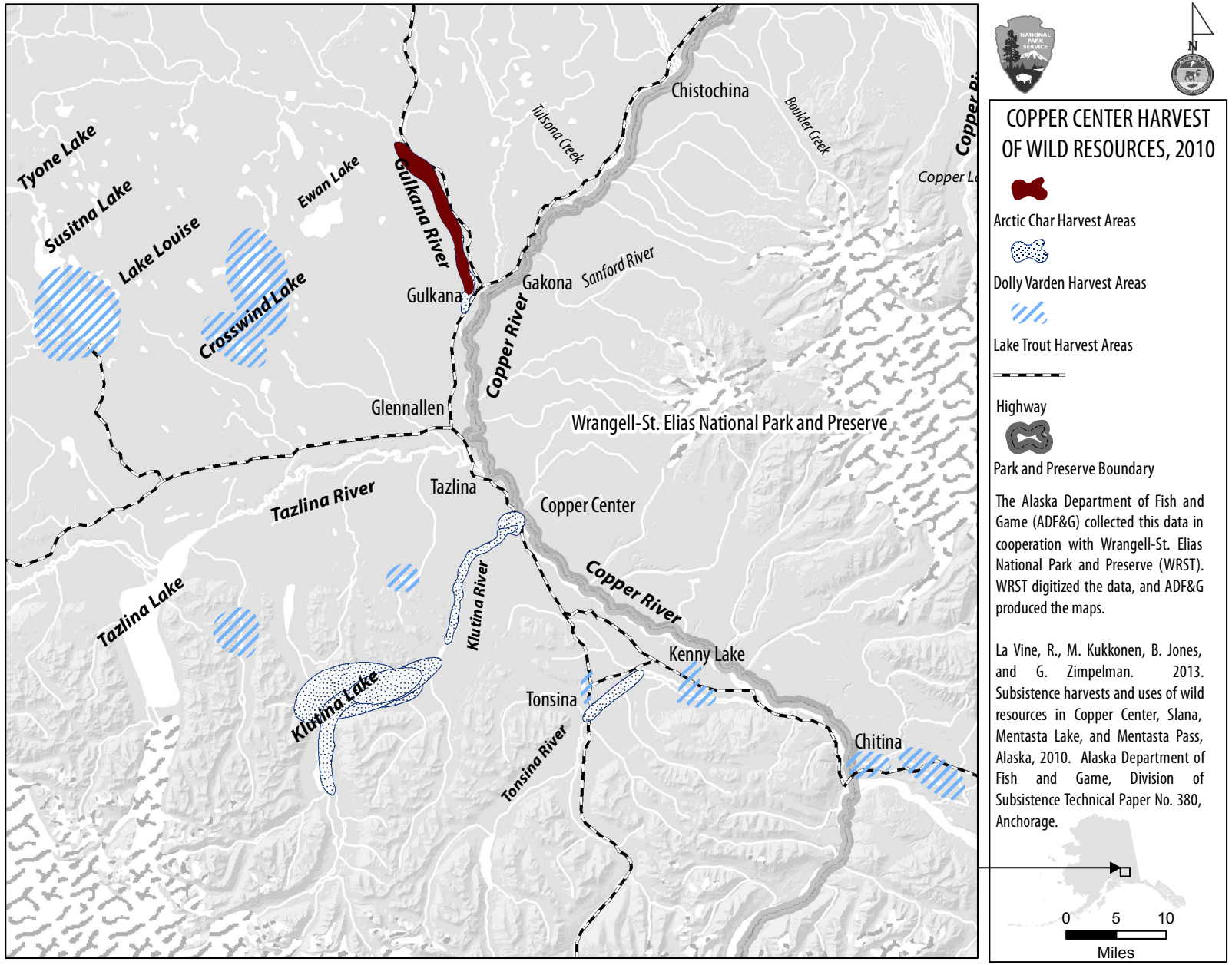


Figure 2-8.– Arctic char, Dolly Varden, and lake trout search and harvest areas, Copper Center, 2010.

LARGE LAND MAMMALS

In 2010, large land mammals made up 24% of the total Copper Center harvest by weight (Figure 2-3). The largest portion of the large land mammal harvest by usable weight was moose (63%, 14,220 lb, or 33 lb per capita) followed by caribou (34%, 7,703 lb, or 18 lb per capita), black bear (2%, 458 lb, or 1 lb per capita) and Dall sheep (1%, 128 lb, or 0.3 lb per capita) (Table 2-11). Sixty-one percent of households attempted to harvest moose; 18% of Copper Center households reported harvesting moose and 66% of households used moose (Table 2-11). In terms of pounds harvested in 2010, moose ranked second on the list of top 10 ranked resources harvested as well as third on the list of top 10 resources used (Table 2-12). According to the study, most successful moose hunting took place in September 2010, with some harvests in August 2010 and a very small percentage reported being harvested in June 2010 (Table 2-15). The June harvest could be attributed to a moose being harvested for a potlatch for customary and traditional purposes.

While moose was the most sought after and harvested large land mammal species (in terms of total pounds rather than numbers of animals), 49% of Copper Center residents attempted to harvest caribou; 24% of households reported successfully harvesting a caribou. Caribou ranked third among the top 10 ranked resources harvested and seventh in terms of percentage of households using the resource (Table 2-12). Caribou harvests took place primarily in September and October with smaller amounts being harvested in March, August, and November. In addition, 14% of households attempted to harvest black bear; 4% of households harvested black bear in 2010 (Table 2-11). Black bears were harvested in May, June, and October. Only 4% of households attempted to harvest Dall sheep; 1% of households harvested this species and all reported harvests took place in August (Table 2-11). Households were unsuccessful in their attempts to harvest goat (1%), deer (1%), and brown bear (5%). Moose, caribou, and black bears were shared widely in the community; 55% of the households reported receiving moose, 29% received caribou, 6% received black bear, 5% received deer, 3% received Dall sheep, 3% received bison, and 1% received goat (Table 2-11).

Copper Center residents used much of the upper Copper River Basin and extended areas for access to large land mammal hunting grounds. Moose search areas included parts of the Glenn Highway extending from near Sheep Mountain to Mentasta Pass, the Lake Louise Road and recreation area, a small section of the Old Edgerton Highway, the Richardson Highway from Paxson to Valdez, and the entire length of the Denali Highway including broad bands of land both north and south of the Denali Highway (Figure 2-9). Additional moose search areas included off-road areas northeast of Chitina, the Klutina Lake area, the upper Chistochina watershed, Crosswind Lake, and excursions were made east of the Copper River from Copper Center. The caribou search area was more road-dependent and included the entire Denali Highway, the Richardson Highway from Paxson to Valdez, a section of the Glenn Highway from between Lake Louise Road and Glennallen, and an area near Crosswind Lake. Brown and black bears were sought along the Richardson Highway from Paxson to Valdez;

Table 2-15. – Estimated harvests of large land mammals by month and sex, Copper Center, 2010.

	Bison	Black bear	Brown bear	Caribou		Moose		Deer	Goat	Dall sheep
Harvest month	Number	Number	Number	Male	Female	Male	Female	Number	Number	Number
January	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
March	0.0	0.0	0.0	5.9	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
May	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	2.0	0.0	0.0	0.0	2.0	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
August	0.0	0.0	0.0	4.0	2.0	9.9	0.0	0.0	0.0	2.0
September	0.0	0.0	0.0	17.8	0.0	19.8	0.0	0.0	0.0	0.0
October	0.0	2.0	0.0	17.8	2.0	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	7.9	2.0	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
Unknown month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**7.9**	**0.0**	**53.3**	**5.9**	**31.6**	**0.0**	**0.0**	**0.0**	**2.0**

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

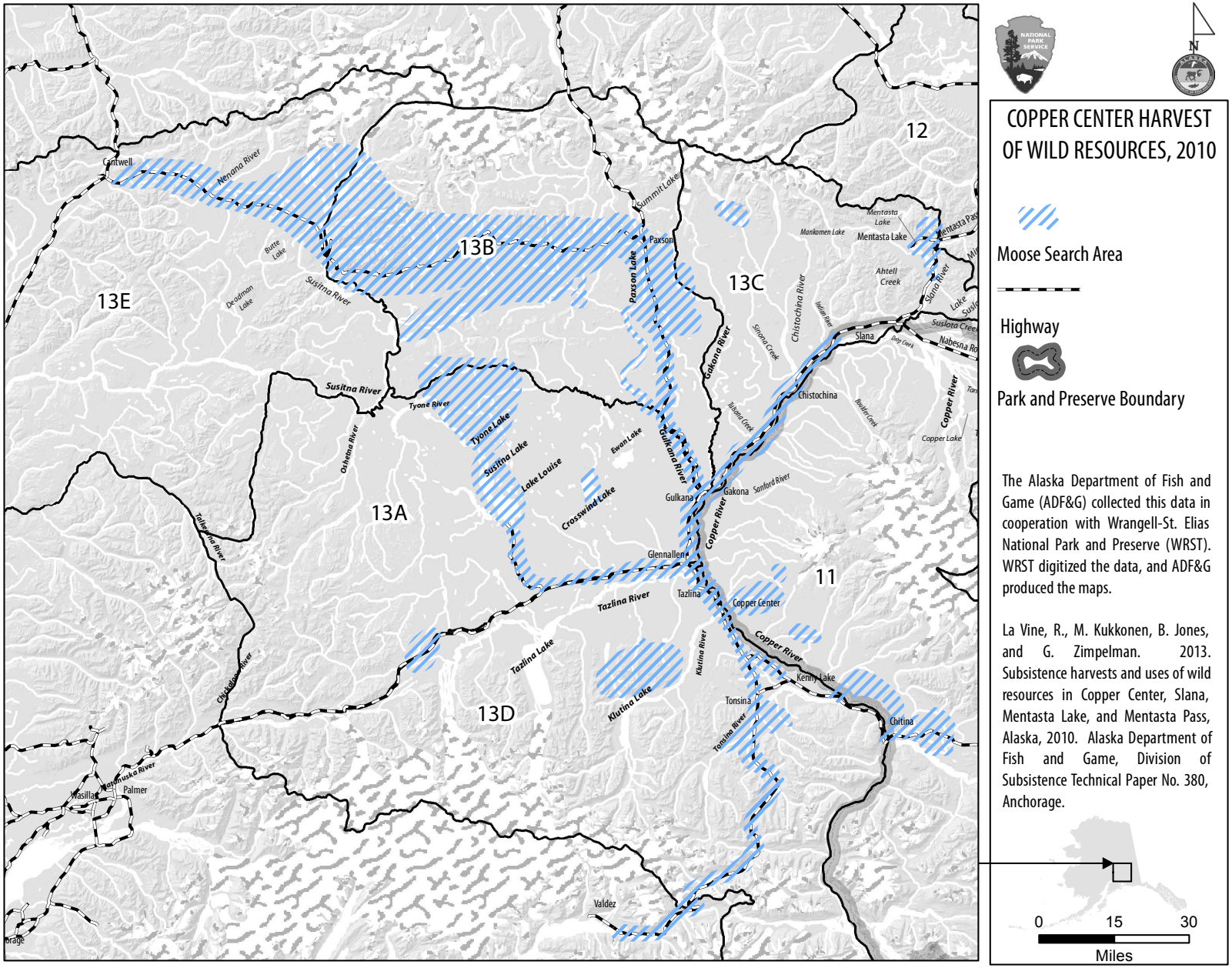


Figure 2-9.– Moose search and harvest areas, Copper Center, 2010.

in addition, search areas included land around the Glenn Highway near Sheep Mountain and along the Lake Louise Road. Black bears were also hunted in a small area to the northeast of Valdez in the uplands north of Thompson Pass. Finally, Dall sheep were hunted to the north of the McCarthy Road in the Wrangell-St. Elias National Park and Preserve, and in an area east along the Richardson Highway.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 2-11, the total harvest of small land mammals by Copper Center residents in 2010 was 1,065 lb, or 3 lb per capita, composing approximately 1% of the community harvest (Figure 2-3). The majority of the harvest was snowshoe hares (494 lb, or 1 lb per capita) followed by beavers (178 lb), porcupines (142 lb) and red (tree) squirrels (83 lb) (Table 2-11). As noted earlier in this report, tree squirrels were taken as a means of pest control and were not part of the local subsistence diet. Other furbearers in the small land mammals category trapped for their pelts did not contribute to the total community harvest of subsistence foods, including foxes and wolves.

Furbearers were primarily harvested during the trapping season, usually beginning in the early winter and extending through early spring. For 2010, lynx, porcupines, and wolves were taken in the early part of the year—January and February (Table 2-16). Red foxes, lynx, and muskrats were harvested in November and into December. Porcupines were also harvested during the summer months of July, August, and September; beavers were taken June through September; snowshoe hares were harvested in January and February, and then again from August through December. Red (tree) squirrels were taken from March through November. The harvest and search areas for small land mammals in 2010 were mostly along the Richardson Highway from Paxson to Valdez, the Glenn Highway from roughly Gunsight Mountain to Glennallen, and along the Klutina River from Klutina Lake to its convergence with the Copper River. Additional harvest areas included land in and around Glennallen, the Copper Center community, and park lands east of Copper Center on the opposite side of the Copper River (Figure 2-10).

BIRDS

In 2010, birds were harvested in slightly smaller amounts than small land mammals and made up less than 1% of the total wild food harvest for Copper Center households (Figure 2-3). The total harvest of birds was an estimated 552 lb, or approximately 1 lb per capita (Table 2-11). Migratory birds composed the majority of this harvest totaling 319 lb, or less than 1 lb per capita. Ducks, such as mallards, spectacled eiders, wigeons, and northern pintails, made up most of the harvest (Table 2-11). Other migratory birds harvested included geese (40 lb, or less than 1 lb per capita). Most of the geese harvested were snow geese (24 lb), white-fronted geese (10 lb), and Canada geese (7 lb), including both cackling and lesser Canada geese. The total harvest of upland game birds (234 lb, or

Table 2-16. – Estimated harvests of small land mammals by month, Copper Center, 2010.

Species	January	February	March	April	May	June	July	August	September	October	November	December	Unknown	Total
Small land mammals	**43.5**	**47.4**	**9.9**	**11.9**	**25.7**	**17.8**	**37.5**	**51.4**	**77.0**	**100.7**	**45.4**	**45.4**	**0.0**	**513.5**
Beaver	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	5.9	0.0	0.0	0.0	0.0	11.9
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
Fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	5.9	0.0	7.9
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	5.9	0.0	7.9
Hare	11.9	35.6	0.0	0.0	0.0	0.0	0.0	9.9	47.4	88.9	23.7	29.6	0.0	246.9
Snowshoe hare	11.9	35.6	0.0	0.0	0.0	0.0	0.0	9.9	47.4	88.9	23.7	29.6	0.0	246.9
River otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lynx	21.7	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	9.9	0.0	39.5
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	5.9
Porcupine	5.9	7.9	0.0	0.0	0.0	0.0	4.0	7.9	5.9	0.0	0.0	0.0	0.0	31.6
Squirrel	0.0	0.0	9.9	11.9	25.7	15.8	31.6	31.6	17.8	11.9	9.9	0.0	0.0	165.9
Tree squirrel	0.0	0.0	9.9	11.9	25.7	15.8	31.6	31.6	17.8	11.9	9.9	0.0	0.0	165.9
Unknown 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	0.0	0.0	0.0
Wolf	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

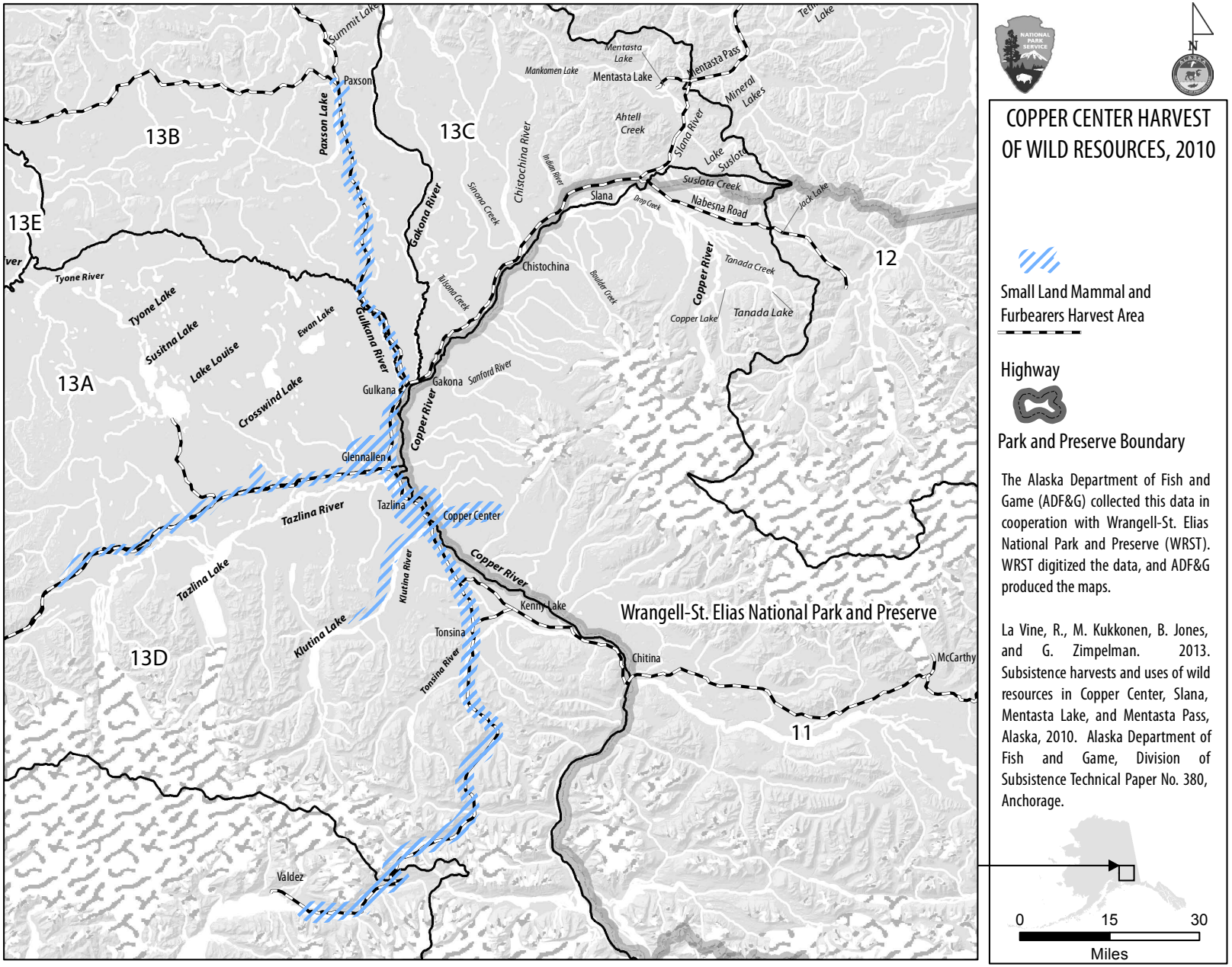


Figure 2-10.– Small land mammals and furbearers search and harvest areas, Copper Center, 2010.

Table 2-17. – Harvest of birds by season, Copper Center, 2010.

Species	Spring	Summer	Fall	Winter
Migratory birds	**51.4**	**19.8**	**148.1**	**51.4**
Canvasback	0.0	0.0	0.0	0.0
Spectacled eider	0.0	19.8	0.0	15.8
Goldeneye	0.0	0.0	4.0	0.0
Mallard	35.6	0.0	57.3	35.6
Northern pintail	15.8	0.0	17.8	0.0
Black scoter	0.0	0.0	0.0	0.0
Northern shoveler	0.0	0.0	7.9	0.0
Green-winged teal	0.0	0.0	4.0	0.0
Wigeon	0.0	0.0	39.5	0.0
Unknown ducks	0.0	0.0	0.0	0.0
Brant	0.0	0.0	0.0	0.0
Cacklers	0.0	0.0	4.0	0.0
Lesser Canada geese (taverner/parvipes)	0.0	0.0	0.0	0.0
Unknown Canada geese	0.0	0.0	2.0	0.0
Emperor geese	0.0	0.0	0.0	0.0
Snow geese	0.0	0.0	7.9	0.0
White-fronted geese	0.0	0.0	4.0	0.0
Unknown geese	0.0	0.0	0.0	0.0
Tundra swan (whistling)	0.0	0.0	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0
Upland game birds	**7.9**	**280.5**	**57.3**	**23.7**
Spruce grouse	7.9	205.4	31.6	0.0
Ptarmigan	0.0	75.1	25.7	23.7

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

less than 1 lb per capita) was less than the total of migratory birds but more than the amount of geese harvested by Copper Center households by weight in 2010 (Table 2-11). Some sea gull eggs were given to Copper Center residents in 2010; these eggs were used by 1% of households.

Migratory birds were harvested primarily along the major road corridors from Glukana to Paxson Lake, a portion of the Tok Cuttoff Highway and a small section of the Richardson Highway north of Valdez (Figure 2-11). Additionally, migratory waterfowl were harvested in the Mentasta Lake Village area and wetlands in and around Copper Center. Upland game birds were also harvested along the road corridors from Copper Center to Valdez, sections of the Richardson Highway to Paxson and the Denali Highway toward Cantwell, and up the Nabesna Road. Other areas for upland game bird harvests included the Glennallen area, the Kenny Lake area between the Old and New Edgerton highways, in the Copper Center community, and along the Klutina Lake Road (Figure 2-11). More than half the migratory waterfowl were harvested in the fall, while the majority of upland game birds were harvested during the summer months (Table 2-17).

MARINE INVERTEBRATES

The harvest of marine invertebrates by Copper Center residents in 2010 was composed entirely of razor clams and made up the least total harvest weight of any harvest category with approximately 243 lb, or less than 1 lb per capita, harvested (Figure 2-3; Table 2-11). Some Copper Center residents received shrimp (6%), Dungeness crab (3%), and king crab (3%) and these resources were also shared with additional households (1%) (Table 2-11). In sum, 14% of Copper Center households used and

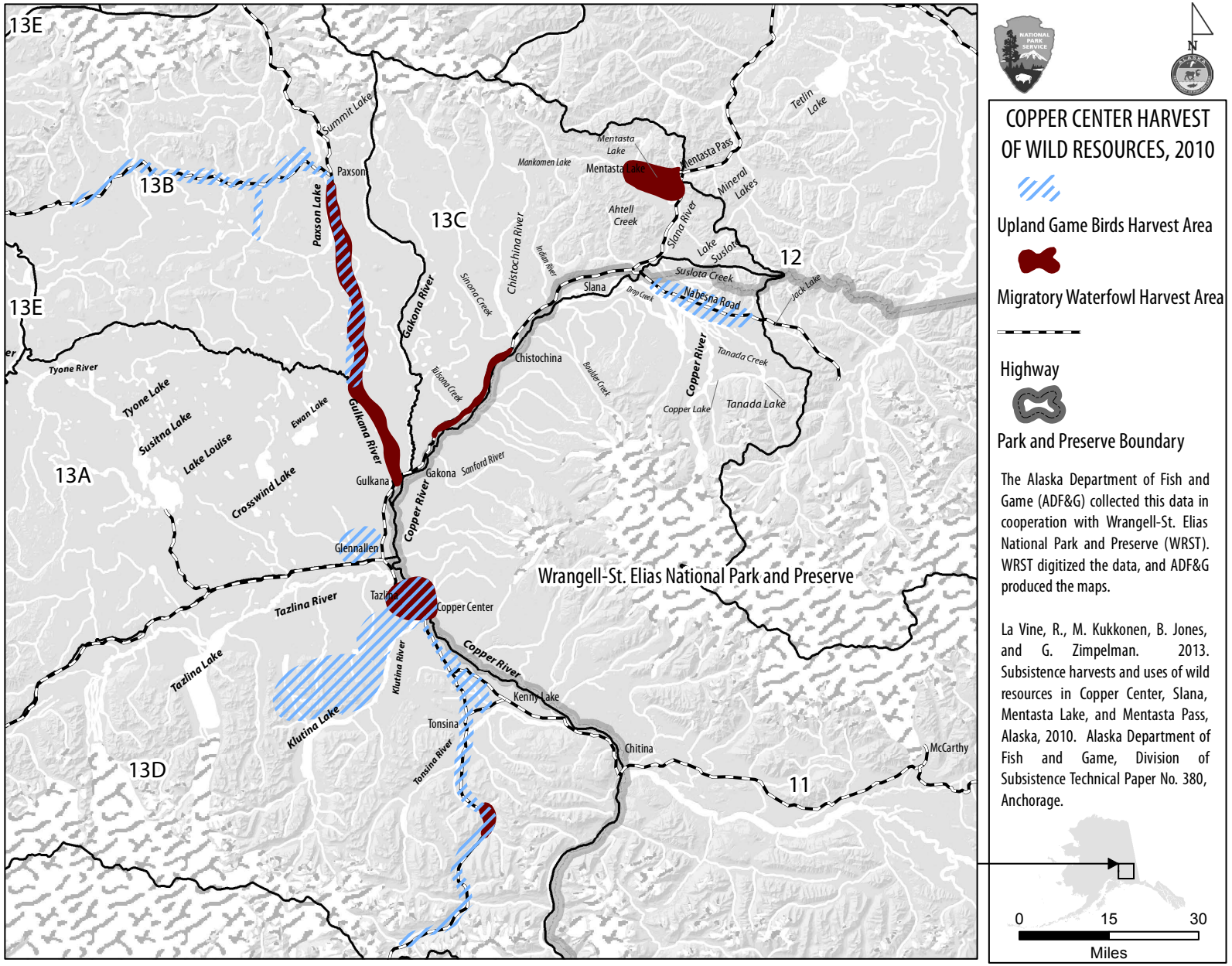


Figure 2-11.– Upland game birds and migratory waterfowl search and harvest areas, Copper Center, 2010.

Table 2-18. – Use of firewood for home heating, Copper River Basin communities, 2010.

Community	Average annual cost of home heating	Household use of wood for home heating as a percentage of sampled households													
		0%		1–25%		26–50%		51–75%		76–99%		100%		Did not respond	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Copper Center	3,307.97	31	38.8	10	12.5	11	13.8	12	15.0	13	16.3	2	2.5	1	1.3
Mentasta Lake	1,445.83	10	43.5	1	4.3	2	8.7	1	4.3	3	13.0	6	26.1	0	0.0
Slana	2,869.40	7	11.3	5	8.1	9	14.5	7	11.3	15	24.2	18	29.0	1	1.6
Mentasta Pass	5,220.00	0	0.0	1	11.1	2	22.2	0	0.0	4	44.4	2	22.2	0	0.0

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

10% received marine invertebrates in 2010 (Table 2-11). All of the marine invertebrates used in Copper Center homes came from outside the Copper River Basin area.

VEGETATION

While vegetation made up approximately 4% of the total wild foods harvest in 2010, 85% of Copper Center households used and 80% harvested some form of vegetation during the study year (Figure 2-3; Table 2-11). In 2010, Copper Center residents harvested 3,473 lb, or 8 lb per capita, of vegetation; the harvest consisted mostly of berries. Wild rose hips (111 lb), mushrooms (76 lb), fireweed (15 lb), Eskimo potatoes (8 lb), and Hudson's Bay (Labrador) tea (1 lb) were also harvested and used by Copper Center residents in 2010. Households that harvested plants, greens, and mushrooms reported sharing Eskimo potatoes (1%), mushrooms (6%), and fireweed (3%). Some households reported receiving wild rose hips (1%) and some received wild mushrooms (4%) (Table 2-11).

Wood collected either for heating or other uses was also an important vegetation resource collected in 2010; however, because wood is not used for human consumption, its weight is not tallied in the total community harvest for subsistence foods.

A total of 51% of households in Copper Center used wood and 49% harvested wood (Table 2-11). Uses for wood include smoking fish, building fish wheels, and making crafts. But the most common use of wood is for heating homes. In Copper Center approximately 60% of the residents used wood for heating homes, and the average cost of heating a home in 2010 was estimated to be $3,308 (Table 2-18).

In addition, wood was ranked the fifth most used item on the top 10 list for 2010 (Table 2-12). Wood was also shared (11%) and received (14%) by Copper Center households in 2010 (Table 2-11).

The blueberry harvest placed eighth in terms of pounds per capita harvested in 2010; blueberries were ranked as the second most used resource on the list of top 10 ranked resources harvested and used in 2010 (Table 2-12). Lowbush cranberries were ranked eighth place for most used resource in 2010 (Table 2-12). Residents of Copper Center harvested 3,257 lb of berries (or 8 lb per capita), and 216 lb (or less than 1 lb per capita) of other plants (Table 2-11). Berries were frequently shared

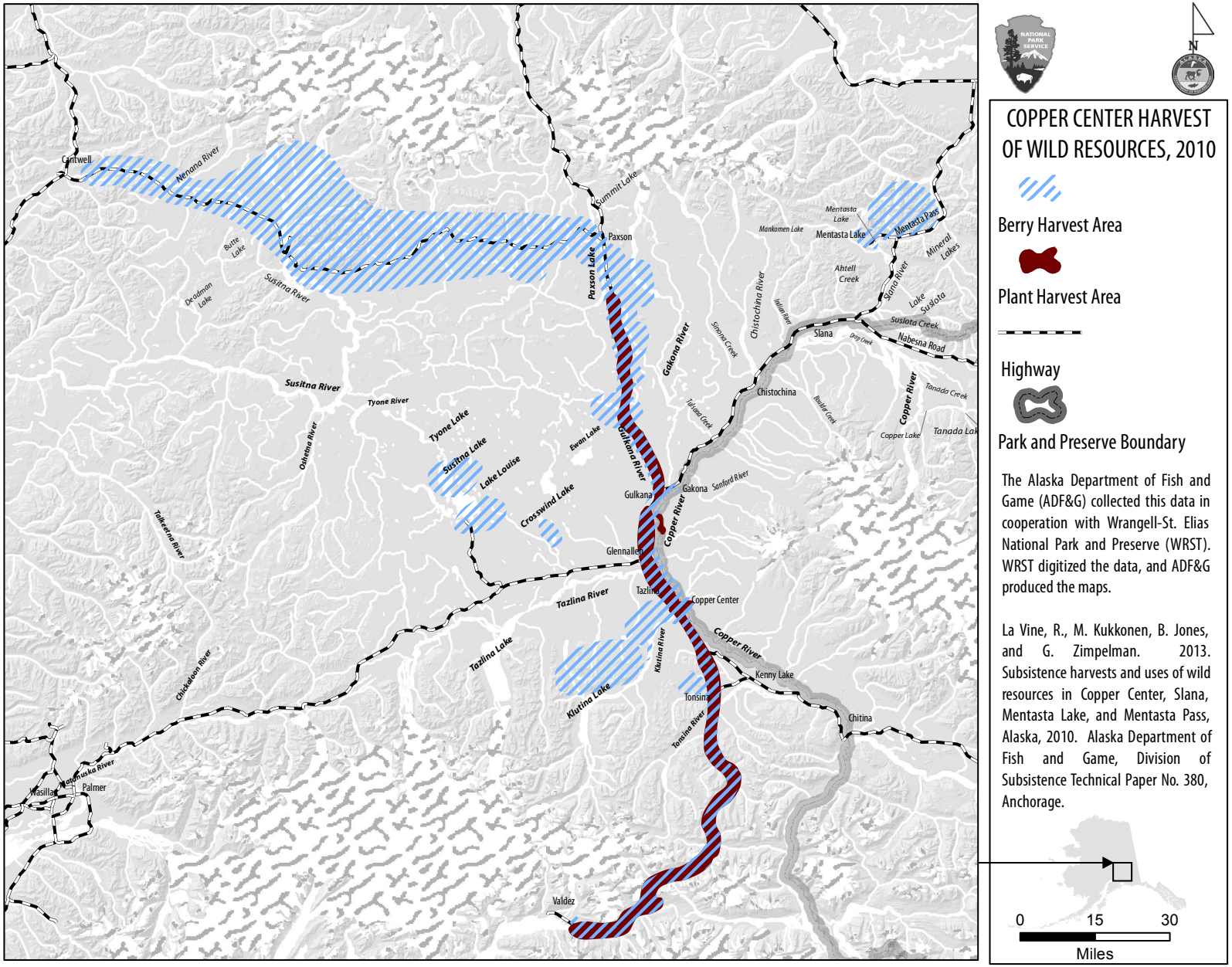


Figure 2-12.– Berries and plants, greens, and mushrooms search and harvest areas, Copper Center, 2010.

(25%) by households and received by an almost equal number (24%). This may help explain why blueberries and cranberries were both placed on the top 10 ranked resources used list in the Copper Center area despite their relatively lower harvest yields (compared to salmon or nonsalmon fish, for example). Most berries were harvested along the Denali and Richardson highways (Figure 2-12). Additional areas include the Mentasta Pass and Mentasta Lake areas, the area around Lake Louise, and the Klutina Road and Lake areas. Plant harvests occurred along the Richardson Highway from just south of Paxson to just north of Valdez (Figure 2-12). A lot of the firewood harvest occurred on Ahtna, Inc., land just west of the Richardson Highway from Copper Center and Tazlina. These are woodlots accessible only to Ahtna tribal members. Additional firewood harvest areas included the Klutina Lake Road, the road corridor of the Richardson Highway north from Gulkana, and a significant area west along the Glenn Highway from Glennallen.

COMPARING HARVESTS AND USES IN 2010 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 9 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2010 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 2-19 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 2-19, 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 2-13 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 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, when asked at the end of the survey most households, 46%, said they used less subsistence resources in general over the previous 12 months compared to recent years (Table 2-19). A smaller number, 38% of all households, said they used about the same amount, and only 17% said they used more. In responding to the individual resource categories, about 43% reported that their use of salmon was less in 2010 than in previous years. Other categories where a significant percent reported less use in 2010 was nonsalmon fish (37% reporting less use), large land mammals (34%), and vegetation (28%). However, of all resource categories listed in Table 2-19, the majority of respondents reported their use in 2010 as the same as previous years;

Table 2-19. – Change in household use of resources compared to recent years, Copper Center, 2010.

Resource category	Sampled households	Valid responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	80	80	56	70.0%	68	85.0%	32	40.0%
All resources	80	79	36	45.6%	30	38.0%	13	16.5%
Salmon	80	73	31	42.5%	34	46.6%	8	11.0%
Nonsalmon fish	80	52	19	36.5%	23	44.2%	10	19.2%
Large land mammals	80	71	24	33.8%	34	47.9%	13	18.3%
Small land mammals	80	22	8	36.4%	12	54.5%	2	9.1%
Migratory birds	80	16	8	50.0%	8	50.0%	0	0.0%
Other birds	80	37	15	40.5%	18	48.6%	4	10.8%
Bird eggs	80	6	3	50.0%	3	50.0%	0	0.0%
Marine invertebrates	80	16	5	31.3%	7	43.8%	4	25.0%
Vegetation	80	69	19	27.5%	42	60.9%	8	11.6%

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

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

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.

significantly for vegetation (61%), small land mammals (55%), upland game birds (49%), and large land mammals (48%). Of minor note, migratory bird and egg use were evenly split between those who reported less use and those who reported the same use (Table 2-19; Figure 2-13).

Tables 2-20 and 2-21 list the reasons Copper Center respondents gave for changes in harvests and uses by resource category. These were open-ended questions, and respondents could provide more than one reason for changes. Project staff grouped the responses into categories, such as competition for resources, regulations hindering or helping residents to harvest resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work, change in household size, age and health, and other outside effects on residents' opportunities to engage in subsistence activities. The survey received 79 valid responses to questions on whether all resource use had been used less, the same, or more during the study year (80 were surveyed but 1 household reported no use for the study year) (Table 2-20). Of those 79 responses, there were 36 who reported less use of all resources in general. Twenty-eight of the 36 respondents cited "other personal reasons" as the No. 1 reason why their harvest was less (78%) (Table 2-20). Few other categories were cited as reasons why general use of all resources was down, but responses included "fewer resources available" (11%) and "fuel or equipment too expensive" (8%).

Thirty-one households of the 73 reported that their salmon use was less in the study year (tables 2-19 and 2-20). Reasons given for this decline were primarily attributed to "other personal reasons" by 19 households (or 61% of those who reported their harvest was less), with "less sharing" as the next largest category, cited by 4 households (13%).

Of the 80 valid responses, there were 13 households who reported their overall 2011 resource use as being more than in recent years. Reasons given for the increase were primarily attributed to "other

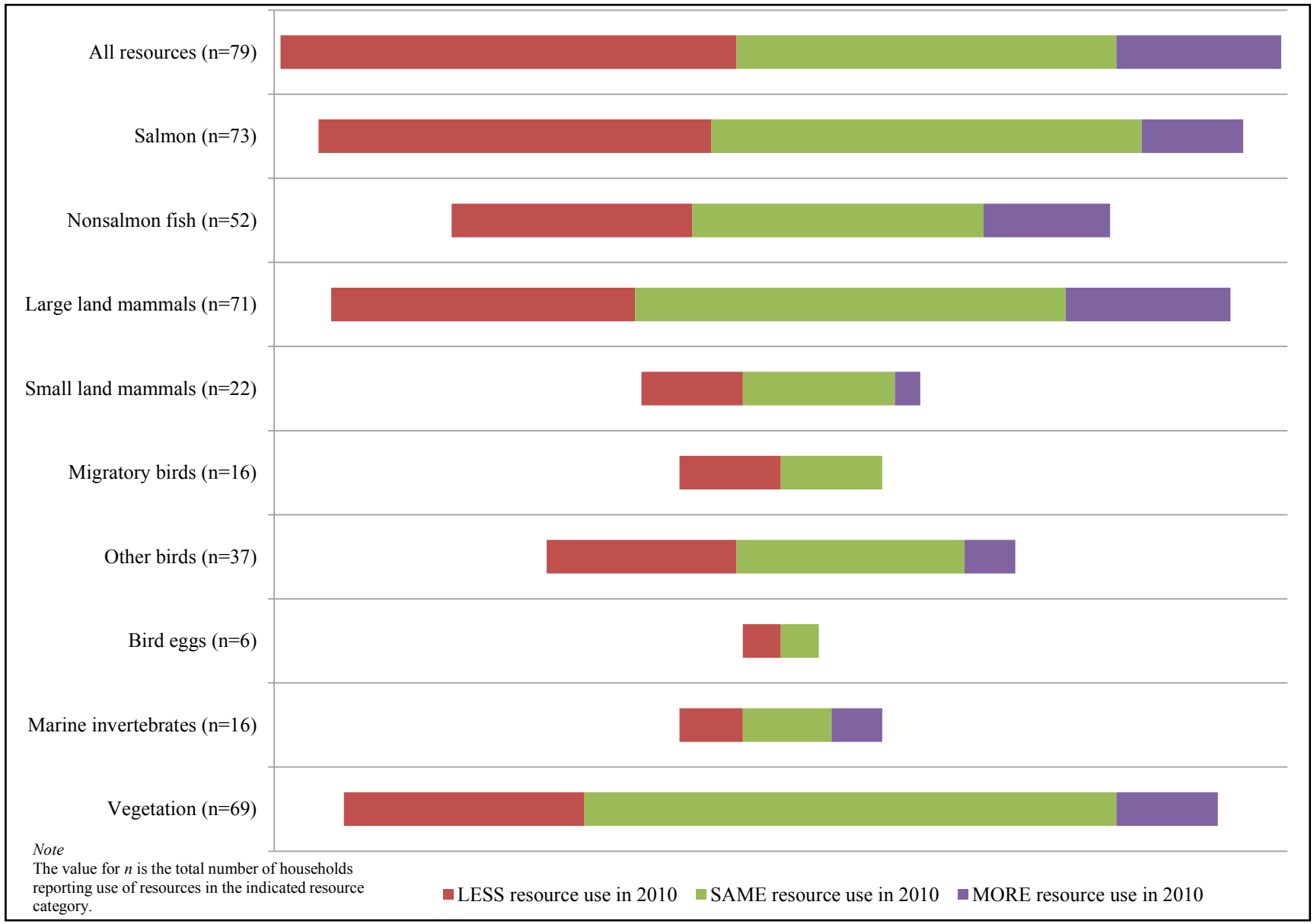


Figure 2-13.– Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Copper Center, 2010.

Table 2-20. – Reasons household use of resources was less compared to recent years, Copper Center, 2010.

Resource category	Households using[a]	Total households	Households reporting less use									
			No reason reported		Fewer resources available		Unfavorable weather		Employment interfered		Too much competition	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	80	56	1	1.8%	15	26.8%	2	3.6%	9	16.1%	1	1.8%
All resources	79	36	0	0.0%	4	11.1%	0	0.0%	1	2.8%	0	0.0%
Salmon	73	31	0	0.0%	3	9.7%	1	3.2%	2	6.5%	1	3.2%
Nonsalmon fish	52	19	0	0.0%	0	0.0%	0	0.0%	3	15.8%	0	0.0%
Large land mammals	71	24	0	0.0%	4	16.7%	0	0.0%	1	4.2%	0	0.0%
Small land mammals	22	8	0	0.0%	3	37.5%	1	12.5%	0	0.0%	0	0.0%
Migratory birds	16	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	37	15	0	0.0%	4	26.7%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	6	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	16	5	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	69	19	0	0.0%	5	26.3%	0	0.0%	3	15.8%	0	0.0%

Table 2-19.–Continued.

Resource category	Households using[a]	Total households	Households reporting less use							
			Regulatory restrictions		Less sharing		Other personal reasons		Fuel or equipment too expensive	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[b]	80	56	4	7.1%	15	26.8%	47	83.9%	6	10.7%
All resources	79	36	0	0.0%	1	2.8%	28	77.8%	3	8.3%
Salmon	73	31	1	3.2%	4	12.9%	19	61.3%	0	0.0%
Nonsalmon fish	52	19	0	0.0%	6	31.6%	9	47.4%	0	0.0%
Large land mammals	71	24	1	4.2%	4	16.7%	14	58.3%	2	8.3%
Small land mammals	22	8	1	12.5%	2	25.0%	2	25.0%	1	12.5%
Migratory birds	16	8	0	0.0%	0	0.0%	8	100.0%	0	0.0%
Other birds	37	15	1	6.7%	0	0.0%	10	66.7%	0	0.0%
Bird eggs	6	3	0	0.0%	0	0.0%	2	66.7%	1	33.3%
Marine invertebrates	16	5	0	0.0%	2	40.0%	2	40.0%	0	0.0%
Vegetation	69	19	0	0.0%	2	10.5%	10	52.6%	2	10.5%

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

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

a. Households using include only households that used a resource and responded to the question about use.

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 2-21. – Reasons household use of resources was more compared to recent years, Copper Center, 2010.

Resource category	Households using[a]	Households reporting more use: Total households	No reason reported: Number	No reason reported: Percentage	More resources available: Number	More resources available: Percentage	Favorable weather: Number	Favorable weather: Percentage	Employment conducive: Number	Employment conducive: Percentage	Less competition: Number	Less competition: Percentage
Any resource[b]	80	32	0	0.0%	1	3.1%	0	0.0%	0	0.0%	0	0.0%
All resources	79	13	0	0.0%	1	7.7%	0	0.0%	0	0.0%	0	0.0%
Salmon	73	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	52	10	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	71	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	22	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	37	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	16	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	69	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Table 2-20.–Continued.

Resource category	Households using[a]	Households reporting more use: Total households	Regulations conducive: Number	Regulations conducive: Percentage	Sharing increased: Number	Sharing increased: Percentage	Other personal reasons: Number	Other personal reasons: Percentage	Fuel, equipment, or both affordable: Number	Fuel, equipment, or both affordable: Percentage
Any resource[b]	80	32	0	0.0%	12	37.5%	23	71.9%	3	9.4%
All resources	79	13	0	0.0%	3	23.1%	6	46.2%	1	7.7%
Salmon	73	8	0	0.0%	1	12.5%	5	62.5%	1	12.5%
Nonsalmon fish	52	10	0	0.0%	3	30.0%	6	60.0%	1	10.0%
Large land mammals	71	13	0	0.0%	5	38.5%	8	61.5%	0	0.0%
Small land mammals	22	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Other birds	37	4	0	0.0%	0	0.0%	3	75.0%	0	0.0%
Marine invertebrates	16	4	0	0.0%	2	50.0%	2	50.0%	0	0.0%
Vegetation	69	8	0	0.0%	1	12.5%	4	50.0%	1	12.5%

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

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

Note The categories for "migratory birds" and "bird eggs" are not included in this table because no (zero) households in Copper Center reported harvesting more "migratory birds" or "bird eggs."

a. Households using include only households that used a resource and responded to the question about use.

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.

personal reasons" (6 households or 46%), but also included in smaller numbers "more sharing," "more resources available," and "economic" reasons (Table 2-21).

HARVEST DATA

Changes in the harvest of resources by Copper Center residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Copper Center in 1982 and 1987 by the Division of Subsistence. Figure 2-14 highlights the per capita harvests of resources for all 3 study years (1982, 1987, and 2010), and Figure 2-15 highlights the total pounds harvested for each study year. In 1982, the total harvest of all wild resources in pounds usable weight was 49,533 lb, or 114 lb per capita. In 1987 the total harvest of wild resources increased in pounds of usable weight to 85,895 lb, or 174 lb per capita. In 2010, the wild foods harvest further increased to 94,653 lb, or 220 lb per capita, thus almost doubling the per capita harvest from 1982 to 2010 (figures 2-14 and 2-15).

With regard to individual resource categories, between 1982 and 1987 there was a 45 lb increase in per capita harvests of large land mammals. Between 1987 and 2010 the per capita harvest of large land mammals declined slightly by 6 lb (Figure 2-14). Between 1982 and 1987 there was a 16 lb per capita decrease in nonsalmon harvests. The nonsalmon fish per capita harvest increased in 2010 to 17 lb per capita, which was higher than the harvest in 1987, but still approximately 6 lb less than the 1982 harvest. Salmon per capita harvests have been steadily increasing since the 1982 study: 33 lb greater per capita harvest in 1987 and 34 lb per capita more than that in 2010. Per capita harvests for vegetation began at 5 lb in 1982 but then dropped to 4 lb per capita in 1987 only to end in 2010 at 8 lb per capita. The per capita harvest of birds remained roughly the same for all 3 study years, staying at or below 1%. Small land mammals per capita harvests began at 2 lb per capita in 1982, dropped to 1 lb per capita in 1987, and returned to 2 lb per capita in 2010. In summary, the estimated per capita harvest for Copper Center over time indicates there has been an overall increase in per capita harvests of all resources beginning in 1982 and ending in 2010 (Figure 2-14).

Figure 2-16 breaks down the resource composition percentages of the Copper Center annual harvest for the 3 study years: 1982, 1987, and 2010. Despite the trend seen in the per capita harvests, the composition of the harvest has, for salmon (in pounds usable weight), remained relatively steady at around 60% from 1982 to 2010. The percentage of the harvest consisting of nonsalmon fish declined from a high portion of the harvest in 1982 to a small percentage in the following study years. However, while nonsalmon fish composed less of the harvest in 1987, during that year a larger percentage of the harvest was taken up by large land mammals than in any other year. In 1982 large land mammals harvests made up 11% of the total household harvest for Copper Center residents, rose to 33% of the household harvest in 1987, and fell to 24% of the household harvest in 2010. This illustrates an overall increase in reliance upon large land mammals from 1982 to 2010. Small land mammals composed 2%

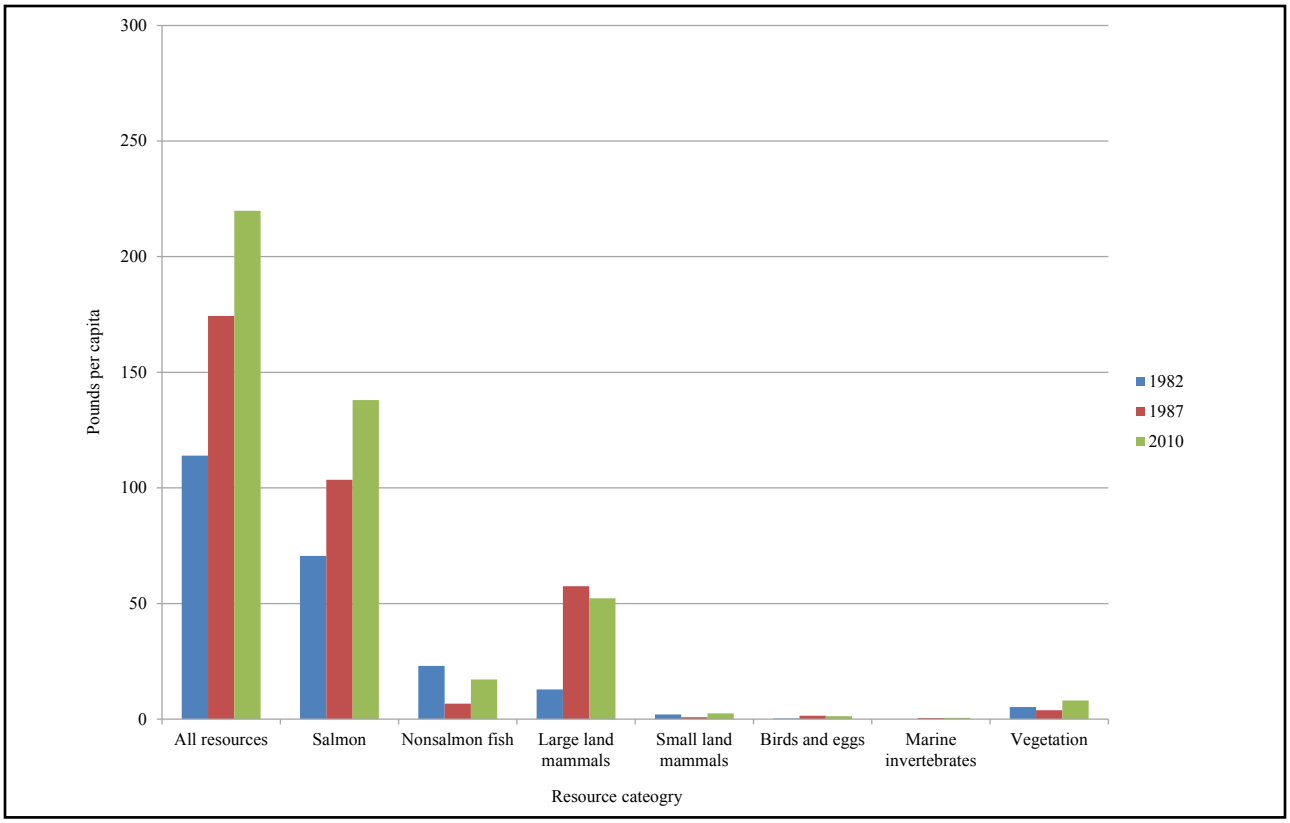


Figure 2-14.– Per capita harvests in pounds usable weight, Copper Center, 1982, 1987, and 2010.

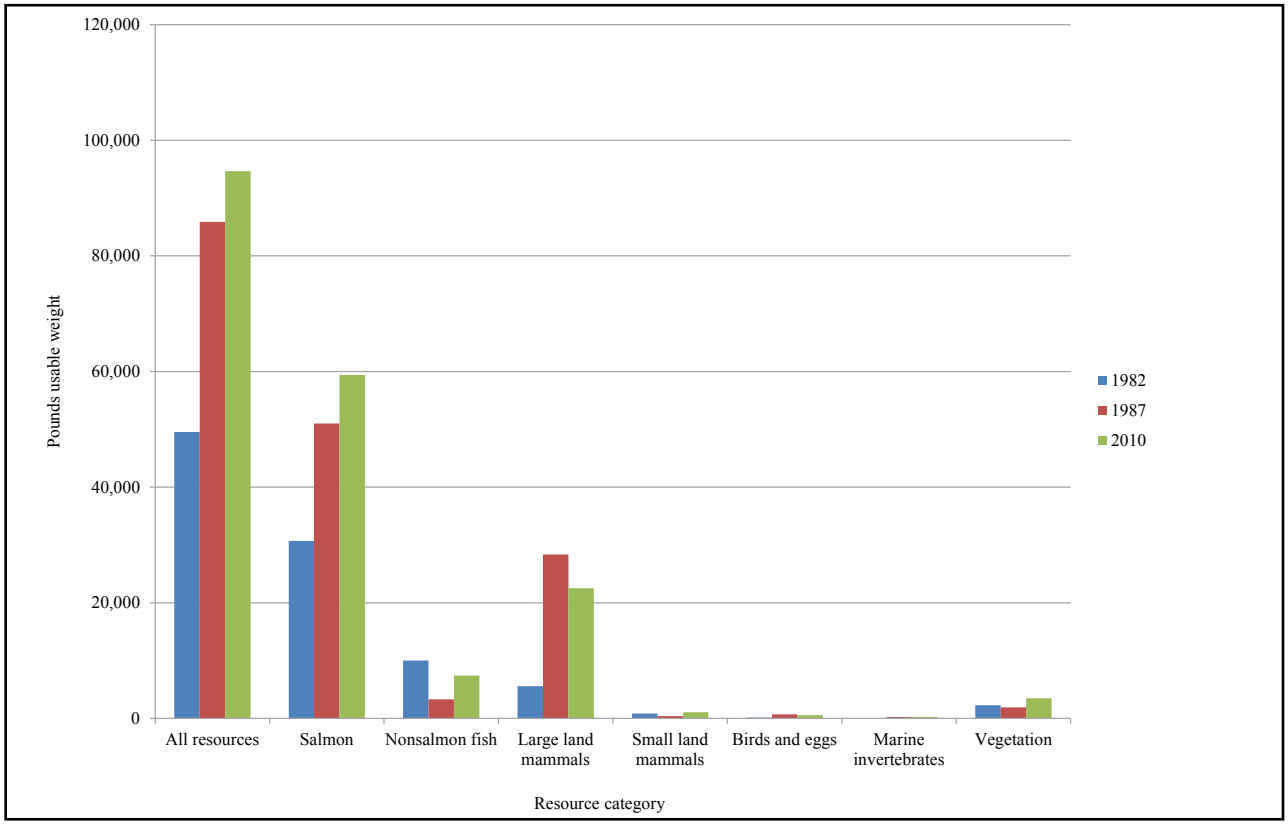


Figure 2-15.– Harvests by pounds usable weight, Copper Center, 1982, 1987, and 2010.

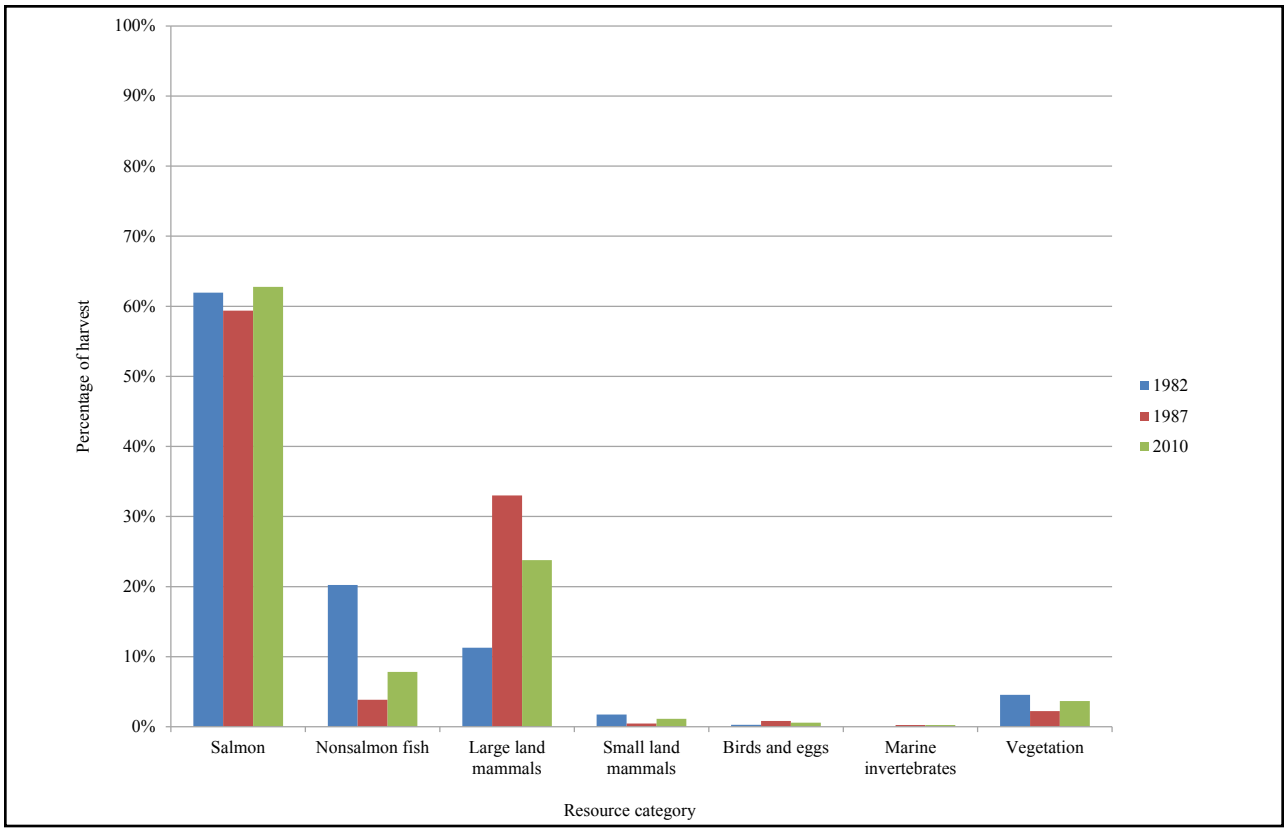


Figure 2-16.– Composition of total harvest as a percentage of usable weight, Copper Center, 1982, 1987, and 2010.

of the harvest for Copper Center households in 1982, fell to less than 1% the total harvest in 1987, and went up to 1% of the total household harvest in 2010. Birds and eggs contributed less than 1% of the harvest in 1982 and 2010, but in 1987 composed about 1% of the total harvest. Marine invertebrates remained below 1% of the harvest for all 3 study years. Vegetation began as 5% of the harvest in 1982, fell to 2% of the harvest in 1987, and then in 2010 increased to approximately 4% of the total harvest for Copper Center households. Overall, this figure shows an increased reliance on nonsalmon fish and large land mammals with a subsequent reduction in reliance on other resources in Copper Center from 1982 to 2010.

Figures 2-17, 2-18, and 2-19 present the level of household use and harvest of wild resources in terms of percentages of households surveyed. These figures exhibit a continuous level of high use of wild resources in the community of Copper Center, but they also echo the changes in harvest patterns between the 3 study years discussed above. In 1982, the 3 most used resource categories were salmon (85% of households using, and 70% of households harvesting), large land mammals (70% of households using, and 22% harvesting the resources), and vegetation (67% of households using and harvesting the resource) (Figure 2-17). In 1987, the 3 most used resource categories were salmon (90% using and 68% harvesting the resource), vegetation (88% of households using and harvesting the resource), and

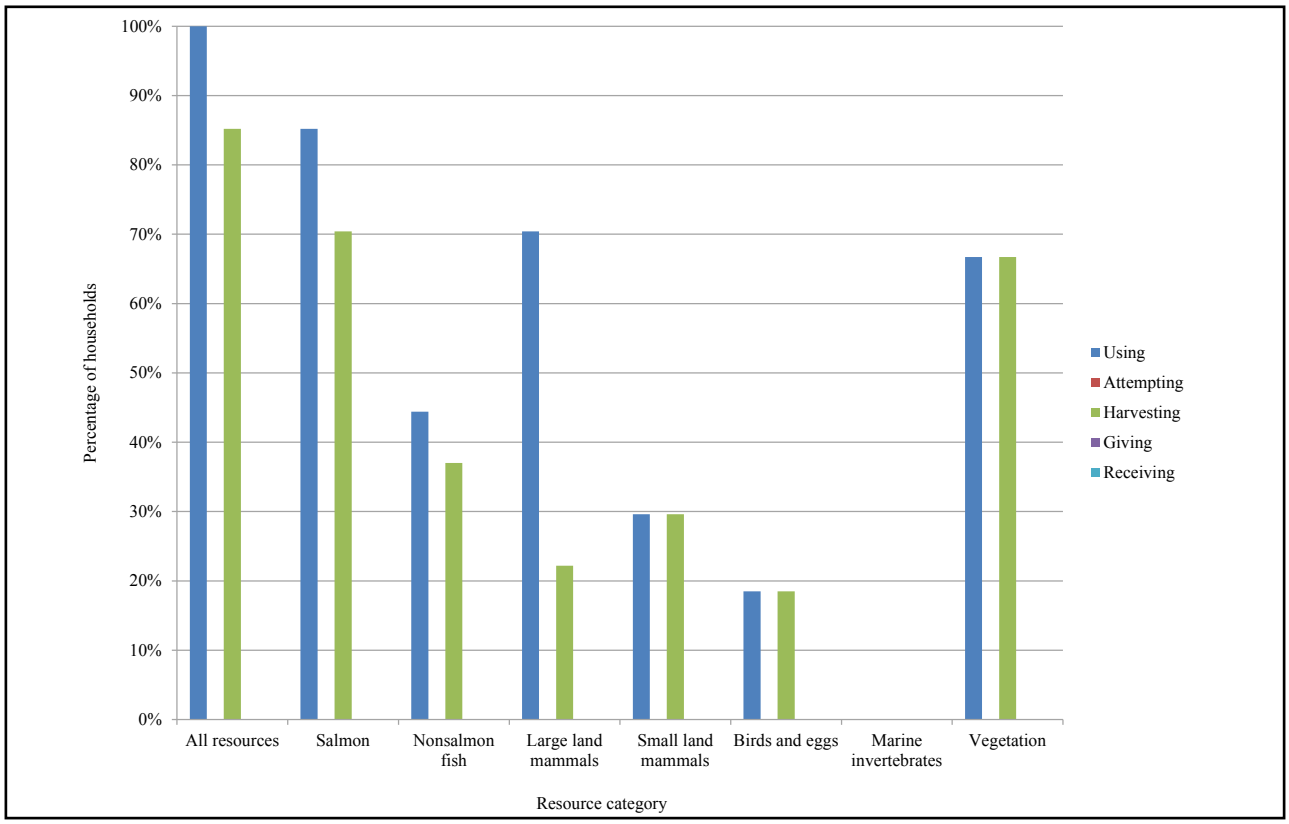


Figure 2-17.– Household harvests and uses of resources, Copper Center, 1982.

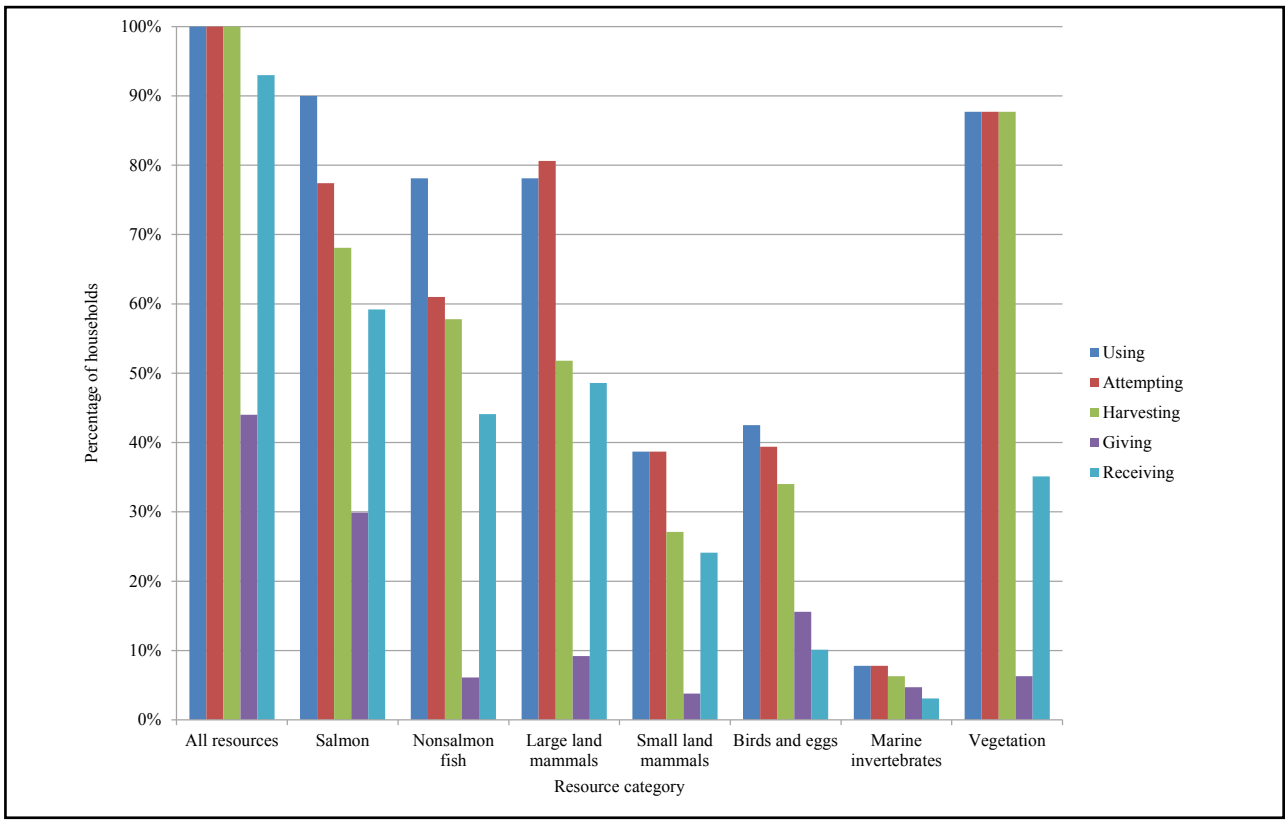


Figure 2-18.– Household harvests and uses of resources, Copper Center, 1987.

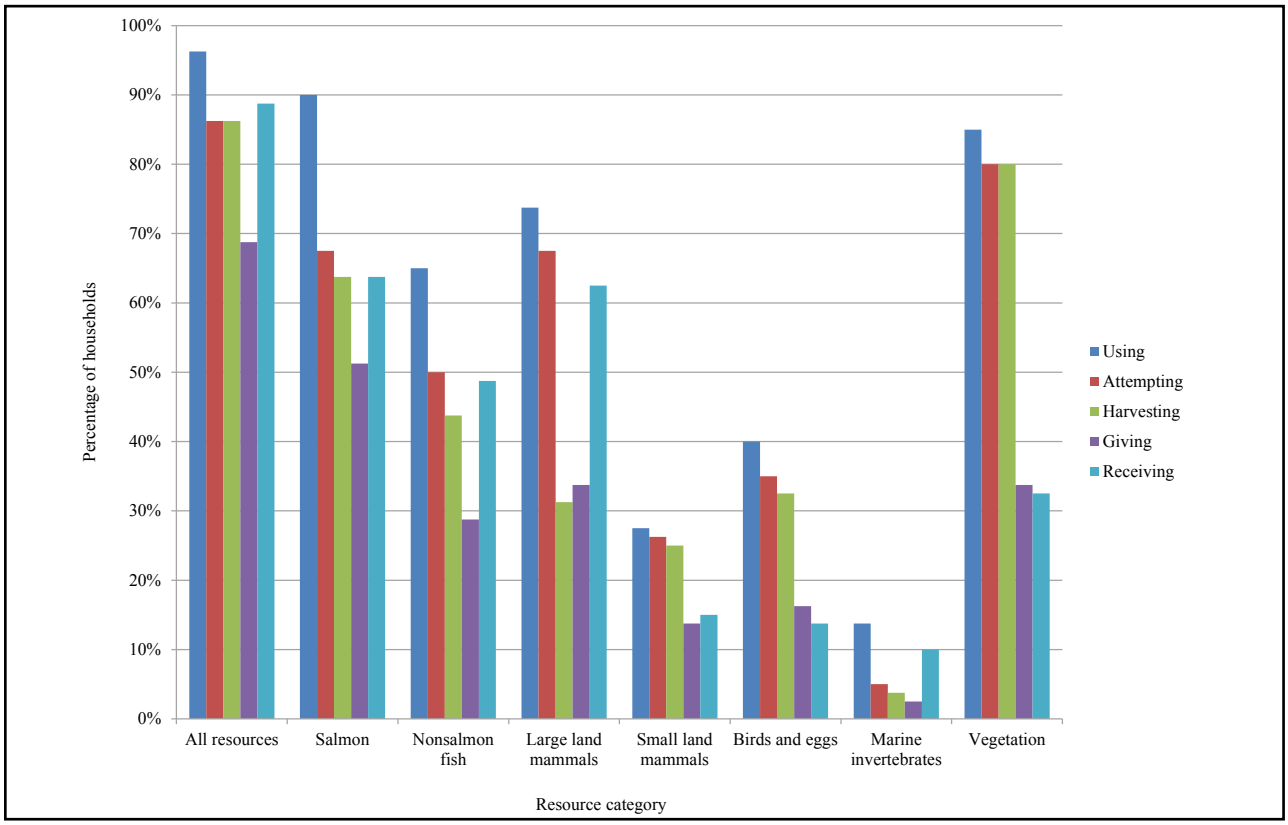


Figure 2-19.– Household harvests and uses of resources, Copper Center, 2010.

nonsalmon fish (78% of households using and 58% harvesting the resource) (Figure 2-18). In 2010, the most used resources were salmon (90% of households using resources, but only 64% harvesting), vegetation (85% using and 80% of households harvesting the resource), and large land mammals (74% of households using resources and only 31% harvesting) (Figure 2-19).

CURRENT AND HISTORICAL HARVEST AREAS

The Alaska Department of Fish and Game, Division of Habitat mapped the Copper Basin community resource use areas between 1983 and 1984 (Stratton and Georgette 1985). The maps produced for the *Alaska Habitat Management Guide Southcentral Region: map atlas* (ADF&G 1985) depict areas used between 1964 and 1984 for hunting, fishing, trapping, and gathering by 20 communities in the Copper River Basin including Copper Center. A total of 113 maps at the 1:250,000 scale are available in digital format in the ADF&G archives (ADF&G 1985).

The map collection in the 1985 publication contains 10 historical harvest and use area maps for Copper Center. These maps cover harvest and use areas for select large land mammal species (moose, caribou, and Dall sheep), waterfowl, furbearers, fish (salmon and freshwater fish), and vegetation. Absent from these maps are harvest and use areas for upland game birds, and black and brown bears. Changes in the resource harvest and use areas by Copper Center residents can be discerned through

limited comparisons of the 1985 maps, which depict harvest and use areas for 20 years, and the maps produced from this study, which only reflect harvest and use areas for the study year 2010.

While there are some similarities between the harvest and use areas in the historical and the 2010 maps, there also are noticeable differences. In the historical maps, the harvest and use areas cover a wide expanse of land in the immediate Copper River watershed, but also follow along a number of tributaries to the Copper River on both the north and south sides of the Glenn Highway and east and west of the Richardson Highway. During the study year 2010, the harvest and use areas were more concentrated along the Richardson Highway reaching farther down south, as far as Valdez, than in the historical maps. Another noticeable difference is that the historical maps depict substantial use of areas along the Nabesna Road for several resources; in 2010, upland game birds were the only resources Copper Center residents reported to have searched and harvested along a small section of the Nabesna Road. At the same time, the Denali Highway continues to be an important harvest and use area for a variety of resources for Copper Center households in 2010.

With regard to specific species, the most conspicuous differences in the harvest and use areas in the 2 maps were visible with moose, caribou, Dall sheep, and small land mammals. In the historical maps, the harvest and use areas for both moose and caribou extended substantially farther west from the community along the Glenn Highway; these areas also stretched considerably farther away from the road system than harvest and use areas mapped in 2010. Another important observation is that the historical maps, demonstrating harvest patterns prior to the formation of the park in 1980, illustrate harvest and search areas for moose and caribou extending deeper into the area of the Wrangell-St. Elias National Park and Preserve than those of this study; the 2010 maps show only a few, small harvest and use areas in the park and preserve area in the vicinity of Copper Center and along the road between Kenny Lake and Chitina, and also Chitina and McCarthy. Similar development has taken place with Dall sheep harvest and use areas; in the historical maps Copper Center residents reported using several remote areas off the road system in the area of the Wrangell-St. Elias National Park and Preserve. In the 2010 maps there is only 1 Dall sheep harvest and use area in the park and preserve. As for small land mammals, there are several large harvest and use areas off the road system in the vicinity of Copper Center but also significant distances north, northeast, and east of the community in the historical maps. In 2010, the harvest and use areas for small land mammal harvests were reduced primarily to the road system; along the Richardson Highway from Valdez to Paxson and east along a small section of the Glenn Highway from Glennallen to approximately Eureka.

Compared to the historical maps, the 2010 salmon harvest and use areas were substantially more concentrated in the vicinity of Copper Center or the nearby community of Tazlina. Some salmon were also harvested north of Gulkana on the Gulkana River; the harvest areas, however, did not extend as far north as shown in the historical maps. In the historical maps, the Gulkana River as well as Klutina River and Klutina Lake appear as the main harvest and use areas for salmon fishing. Another major

difference to the historical salmon harvest and use areas is that in 2010 some Copper Center households reported harvesting coho salmon in Prince William Sound.

The 2010 study found Copper Center residents' nonsalmon harvest and use areas extending from a small area along the Denali Highway to the north to an area along the Richardson Highway past Tonsina to the south. In 2010, the most northeastern nonsalmon fish harvest and use areas were around Mentasta Lake; in the historical maps, the harvest and use areas do not reach quite as far northeast. In the historical maps, both Copper and Tanada lakes were reported as harvest and use areas for nonsalmon fish; the 2010 maps do not depict any harvest in this area. Instead, both the historical and the 2010 maps show use of the Klutina River and Klutina Lake, as well as Tyone and Susitna lakes, and Lake Louise for harvesting nonsalmon fish. Other important nonsalmon fish harvest and use areas for Copper Center residents continue to be the Gulkana River and Crosswind Lake.

According to the 2010 study, Copper Center residents harvest vegetation in areas extending all the way through the Denali Highway to the north to the proximity of the city of Valdez to the south. The harvest and use areas are largely along the road system; in some areas along the Denali Highway they extend substantially off the highway into Game Management Units 13E and 13B. Both the historical and 2010 maps show vegetation harvest and use areas very close to the community and along the Klutina River. In addition, both maps depict a harvest and use area pattern, which shows that Copper Center residents likely harvest vegetation resources while looking for other wild resource such as large land mammals or nonsalmon fish. The most noticeable differences in the harvest and use areas for vegetation are the facts that the 2010 map does not show any use of the Wrangell-St. Elias National Park and Preserve area nor areas off or along the Nabesna Road.

LOCAL CONCERNS REGARDING RESOURCES

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

LARGE LAND MAMMALS

Many respondents cited 2010 as a bad year for the harvest of moose, in part because of low population, poor weather during the season, and in part due to the cost of travel to fruitful hunting grounds. A number of individuals commented that it was becoming cheaper to purchase meat rather than hunt for it. Additionally, others noted a change in the migration patterns of local caribou. One respondent thought that there used to be far more caribou out near Lake Louise, but felt the cause

might be natural as opposed to hunting or human population pressure. Finally, some respondents felt that predator control is needed in the area to better manage game animals.

FISH

Some residents noted that when sharing a fish wheel, productive harvest is a combination of timing and luck; there is no guarantee that the run will be good on the day a household is given access to the wheel. A handful of individuals commented that fish wheel limits should be lowered, for example, from the current 500 fish limit down to 250.

One concern expressed was the impact of guiding activity and sport fishing on Chinook salmon in the Copper River and surrounding area. Guides were providing transportation to remote areas which now no longer feel remote, and local community-based fishing spots were overrun, impacting resident experience and harvest ability. One resident felt the status of sport fishing guides should be changed to commercial fishermen because they were primarily involved in an activity geared toward commercial gain. As Chinook salmon become scarce and the seasons cut back, the resident felt that harvest for subsistence purposes, regardless of gear type, should be allowed to continue with higher priority than sport fishing activity.

SMALL LAND MAMMALS/FURBEARERS

A number of households commented that trapping has declined due to land access issues on Native corporation lands. Additionally, they commented that tree squirrels are often taken for pest control purposes, some are used as trapline bait, but none are harvested for food.

BIRDS

Some households reported 2010 as a good year for upland game bird harvests, but others noted that 2010 was actually a natural down cycle in the local game bird population, especially for sharp-tailed grouse.

VEGETATION

Some residents expressed a desire to see berries and plants regulated for value adding and sale. They thought that regulations should reflect or encourage the sale of subsistence harvested foods like local plants and berries rather than the sale of invasive or non-local species. Additionally, some households reported that firewood is hard to find in the areas available to them; they said that most of the productive woodlots are now on Ahtna, Inc., land and not freely accessible to local non-Native residents.

MARINE INVERTEBRATES

Some residents used to travel every year to harvest razor clams at Ninilchik, but say that now the resource has been over-harvested and the clams are too small. Residents suggested that the beaches should be closed down for a few seasons to allow the population to recover.

OTHER COMMENTS

A number of residents made comments throughout the survey process expressing their concern that 2010 would not be a good representative year as harvest levels for their own household was down from previous years. Some experienced illness, some had just lost a household member (via death, or children leaving for school or work, etc.), and older residents commented on the fact that they were not as active as before. All who made these comments worried that the 2010 survey would not accurately reflect the value of harvested wild foods to the community.

Others worried about stressors impacting abundance from outside the community, meaning external forces like development (the mining exploration occurring in the Tangle Lakes area), out-of-area hunters and fishers, and an increase in boats on the rivers. Other factors some locals felt constrained their activities included limited access to area lands belonging to Ahtna, Inc., and a burdensome and confusing regulatory process.

Some participating households expressed concern about the mapping process and requests for specific locations and were reluctant to share harvest area details. This was due in large part to the fact that community hunting and fishing areas are accessible via the road system and many state residents living in the non-subsistence areas of Fairbanks or the Anchorage and Matanuska–Susitna Valley communities come to recreate, fish, and hunt in the Copper River Basin. Some local respondents see this situation as placing a greater burden on the local resources and increasing competition for harvest. Some Copper Center residents feared that mapped resource use areas would serve as a guide to the most productive hunting and fishing spots in the region.

SUMMARY

The household survey findings demonstrate subsistence harvests for Copper Center remain vital to community residents. Significantly, the per capita harvest more than doubled from the initial study year in 1982 (114 lb per capita) to 2010 (220 lb per capita). However, the composition of harvests remained somewhat consistent from 1982 to 2010. Salmon made up the bulk of the community harvest in all study years. Large land mammal harvests generally increased from 1982, while nonsalmon fish harvests generally decreased since 1982. The remaining harvest categories of small land mammals, birds and eggs, marine invertebrates, and vegetation all made only negligible fluctuations in their harvest composition percentage among 1982, 1987, and 2010.

By most respondent accounts, the overall harvest in 2010 was average compared to the previous 5 years; however a significant number of residents also reported a decline in harvest of salmon and large land mammals compared to recent years. Copper Center residents expressed specific concern about user pressure in the area, limited local land access, and a confusing regulatory process.

CHAPTER 3: SLANA AND THE NABESNA ROAD

COMMUNITY BACKGROUND

The community of Slana/Nabesna is stretched primarily along the Nabesna Road, which starts heading south at mile 63 of the Tok Cutoff Highway. Slana is situated at the junction of the Slana and Copper rivers and borders the northwest corner of Wrangell-St. Elias National Park and Preserve (ADCCED 2012b). The community is surrounded by mountains; to the south lie the Wrangell Mountains, to the northeast are the Mentasta Mountains, and to the northwest is the Alaska Range. The community itself however lies on lower land areas and is traversed by a multitude of creeks and small lakes. Typical vegetation in the area includes black spruce, willows, and a variety of lowland shrubs.

THE COMMUNITY OF SLANA

The current community of Slana has 3 distinct historical trajectories and populations; the roadhouse, around which the oldest road-based community was built; Nabesna Road, which was settled by mine workers and more recently features a lodge and guides; and the homesteading community, which was started by people interested in living the Alaska dream far from the bustle of the Lower 48. But before the homestead, the mine, and even the roadhouse, Alaska Native people settled the area in pursuit of wild resources. According to de Laguna and McClellan (1981:642), the mouth of the Slana River at the junction of the Copper River was an old Ahtna village and fish camp site. De Laguna and McClellan (1981:642) estimate that a village was located at the site as early as 1819. Oral testimony reported the site was used in 1885 when Lt. Henry Allen passed through the area during his exploration trek. Archeological research at the site of the Slana village in the late 1930s also found evidence of the village being continuously inhabited after Russian contact. While fishing was the most important activity in the historical village, oral sources indicated that the site was also used as a rendezvous point for hunting parties by people from Slana and Mentasta (Reckord 1983b:189–190).

The Valdez Trail, which provided the first overland access to much of Interior Alaska, was built between 1899 and 1906. The trail followed the old trading routes of the Ahtna and Chugach Natives and provided a substantially safer route into Interior Alaska. Even though the trail was not fully finished until 1906, by 1901 the trail reached Eagle City. At that time it opened up a new route to Copper Center for prospectors heading to Eagle City. Additionally, in 1890 the federal government

authorized installation of a telegraph line following the newly constructed Valdez Trail to provide both military and civilian communications for Alaska. The rough trail was later improved for wagon and automobile travel, and eventually developed into the current Richardson Highway (Bureau of Land Management 2012; Bleakley *n.d.*).

The construction of the Valdez Trail and the telegraph line brought non-Natives into the Slana area. Because of its location, Slana developed into an important trading post for the Upper Ahtna and the Upper Tanana Indians after the telegraph station and Army road passed by the village. In 1914, Lawrence DeWitt settled next to the new road and started a trading post and a roadhouse at the mouth of the Slana River (Reckord 1983b:190; National Park Service 2005). Over the years, the community of Slana developed around the roadhouse (National Park Service 2005).

Mining activity in the Nabesna area started in the early 1920s when Carl F. Whitman staked mine claims at White Mountain and started the Nabesna Gold Mine. Whitman also submitted a petition to the Alaska Road Commission (ARC) for a wagon road from the main road (the Richardson Highway) to Nabesna; it was not until 1933 that the ARC began building the 46-mile road from Slana to the Nabesna Gold Mine. In 1946, the Nabesna Road was finally opened for continuous summer traffic (National Park Service 2005).

Lawrence DeWitt moved and expanded the original Slana Roadhouse in the late 1920s; the improved structure continued to provide essential services for travelers and workers alike through the 1930s and 1940s when large development projects, such as the construction of the Alaska Highway, took place in the area (National Park Service 2005; Stratton and Georgette 1984:148–149; Reckord 1983b:190). But aside from the success of the roadhouse, other circumstances challenged the way of life of some of the area residents. Before the 1930s, fur trade had provided a good living for the local Native population but the federal government's introduction of game laws in 1927 drastically changed Natives' ability to lead a subsistence lifestyle. At the same time, in the late 1930s, school became a requirement for children and some families left Slana because there was no schoolhouse in the community at the time (Reckord 1983b:190–191).

With the completion of the Tok Cutoff Road in the early 1940s, the Richardson and Alaska highways were connected. At the same time, Slana became accessible by road from Anchorage (Stratton and Georgette 1984:148–149). The Nabesna Gold Mine closed in the late 1940s; with the diminished number of people, traffic, and military personnel in the area, business at the Slana Roadhouse slowed down. The realignment of the Tok Cutoff, which bypassed the Slana Roadhouse, was the last blow to the Slana Roadhouse; it closed in 1953. Since 1962 it has served as a private, permanent residence of a Slana household (National Park Service 2005).

A new page in the history of Slana started in the early 1980s when the Bureau of Land Management offered free land for homesteading in 2 separate areas close to the old village of Slana. These areas are called Slana Homestead North and Slana Homestead South and cover 10,250 acres of land southeast

of the Tok Cutoff Road and north of the Nabesna Road junction (Bureau of Land Management *n.d.*). Slana Homestead South had some road access along the Nabesna Road and thus was the first to be staked and attracted a larger population. Slana Homestead North was 3.5 miles from the Tok Cutoff Road and harder to access. The majority of the settlement claims were made by non-Alaskan U.S. residents.

In 1983 Stratton and Georgette (1984) found 43 residents living in Slana year-round with an additional 37 residents living in the Nabesna Road area. According to Hunt, by the early 1990s the total population had increased to approximately 150 people (1991:179); however, McMillan and Cuccarese (1988) found a combined population of 333 when all area communities and recently settled homesteads were surveyed in 1988—Slana (49), Nabesna Road (37), Slana Homestead South (186), and Slana Homestead North (61). None but Slana were a CDP at the time. By 2000, Nabesna Road became its own CDP and Slana Homestead South was wrapped into the Slana CDP. Slana Homestead North remains outside of any CDP.

The current study community for this report is composed largely of homesteaders within the Slana and Nabesna CDPs—all of whom depend significantly on subsistence harvest activities. Some residents also maintain large gardens and keep domestic animals such as chickens, rabbits, and ducks. The community is part of the Valdez-Cordova Census Area and continues to be an unincorporated CDP without a local government (ADCCED 2012b). Services for Slana residents are available in the community (post office and store), at the Mentasta Lodge located approximately 20 road miles northeast of Slana (gas, store, and restaurant), and in the regional hub of Tok (approximately 65 road miles northeast of Slana).

Prior to 1980 and the establishment of the Wrangell-St. Elias National Park and Preserve (WRST), under the Alaska National Interest Lands Conservation Act (ANILCA), Slana residents were able to hunt and gather local wild resources without significant restrictions.[1] The implementation of joint state and federal management structures on the area lands and resources took several years before reaching its current status. Today, Slana is included among the 23 resident zone communities in the area of WRST, and under current federal regulations, qualified local rural residents may subsistence hunt, fish, and trap in both the national park and the preserve.[2]

1. It should be noted that the State of Alaska had established the Tok Management area in 1974 to provide Dall sheep hunters additional opportunity to harvest large-horned, trophy rams (Gardner 2002:65).
2. Title 36 Code of Federal Regulations 13.1902(a) – Subsistence.

DEMOGRAPHY, CASH EMPLOYMENT, AND MONETARY INCOME

DEMOGRAPHY

As mentioned in the community overview, Slana/Nabesna Road is composed of 2 communities that are recognized as distinct census designated places; the settlement of Slana—including the smaller highway community—and those people who live along the Nabesna Road. For the purposes of this project, both communities were included in a single survey and their data combined. According to the federal census, Slana and Nabesna Road combined had 152 residents in 2010 (U.S. Census Bureau 2011) (Table 3-1). However, the household survey conducted for this study found an estimated population in 2010 of 176 residents, of which 17% (29 residents) were Alaska Native (Table 3-1). Figure 3-1 shows the population of the community over time according to U.S. Census data and Alaska Department of Labor estimates. Because of changing CDP boundaries over the last 30 years, population estimates prior to 2000 are not representative of the demographic trends for this study's sample population of Slana/Nabesna Road. However, over the past 10 years, Figure 3-1 demonstrates a fairly steady population with a slight increase in 2008 and 2010.

Prior to the study, the Division of Subsistence researchers, in consultation with community representatives and other knowledgeable respondents, estimated and confirmed 86 year-round households in Slana/Nabesna Road in 2010 (Table 2-2). Of these, 62 households (72%) were interviewed (Table 2-2). However, in a community review meeting in Mentasta Pass on March 22, 2012, Mentasta Pass residents pointed out that they knew of 3–6 households in an off-road area just north of Slana and south of Mentasta Pass that were not included in either community effort. Further investigation concluded that these households were those year-round residents remaining from Slana Homestead North (35 original households surveyed for the 1987 study year). Because it was not possible to survey these 3–6 missed households at that point of the project, it is noted here that harvest data from these households are missing from this study.

The following data are expanded to cover the remaining households not surveyed from the original 86. The mean number of years of residency in Slana/Nabesna Road was 18 years, with the maximum length of residence at 83 years (Table 2-2). Survey results estimate that about 56% of the population was male, while the remaining 44% were female (Table 2-2). The largest age cohort of the entire population was men between the ages of 55 and 59; this age cohort represented 21% of the male population (Table 3-2; Figure 3-2). Fifty-four percent of the entire community population was between the ages of 50 and 69; 58% of the male population and 48% of the female population. Male and female populations were somewhat evenly distributed by sex between the ages of 10 through 49 with a slightly larger cohort existing of children between the ages of 5 and 9 (Figure 3-2).

Of the Slana/Nabesna Road household heads interviewed, approximately 12% were born in various

Table 3-1. – Population of Slana/Nabesna Road, 2010.

2010 Census[a]				Study findings for 2010			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
80	152	19	12.5%	86	176	29	16.5%

Source ADF&G Division of Subsistence household surveys, 2011.
a. *Source* U.S. Census (2011). Includes Slana CDP and Nabesna CDP.

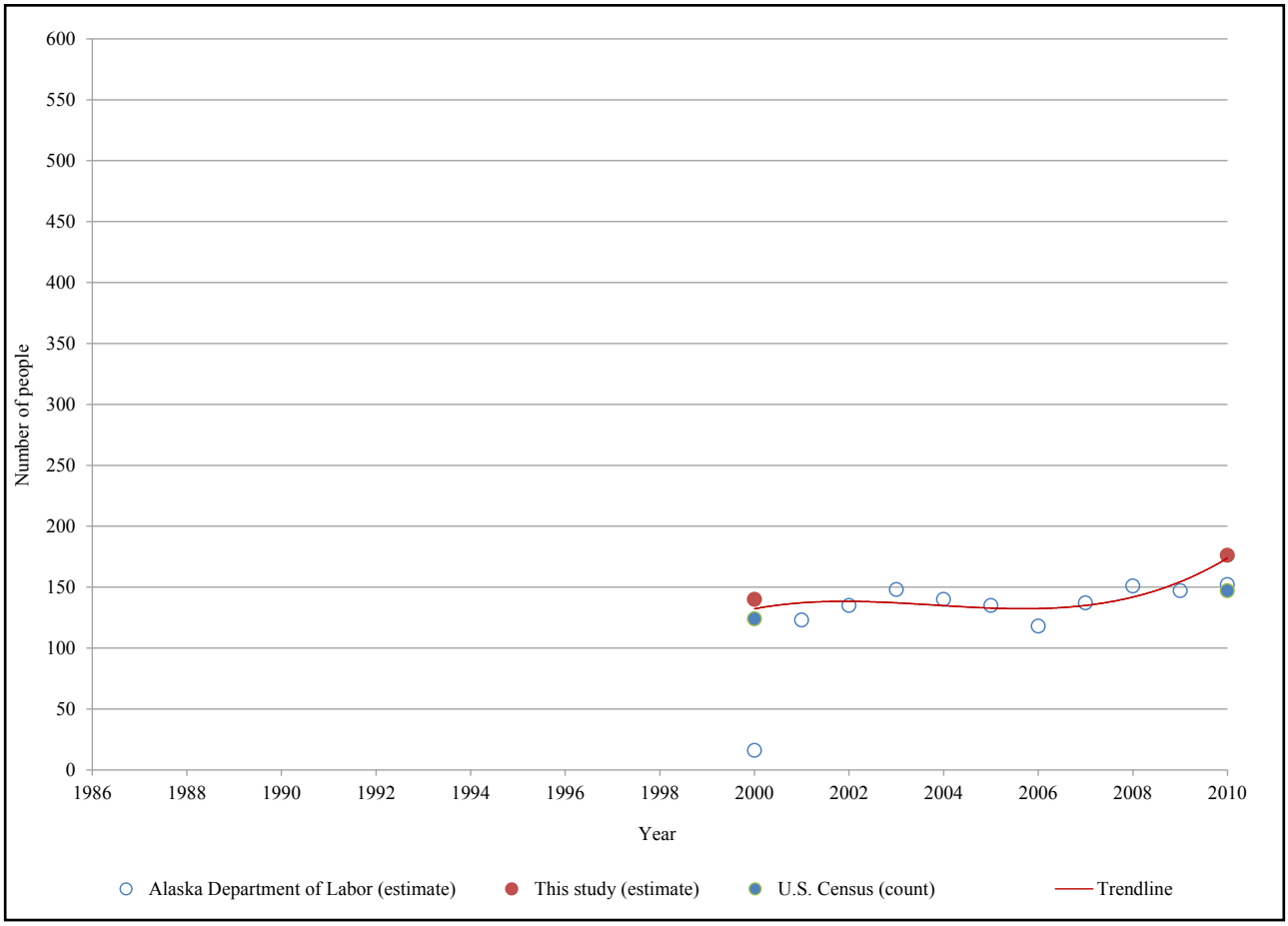


Figure 3-1.– Population history, Slana/Nabesna Road, 2000–2010.

Table 3-2. – Population profile, Slana/Nabesna Road, 2010.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	2.8	2.8%	2.8%	0.0	0.0%	0.0%	2.8	1.6%	1.6%
5–9	8.3	8.5%	11.3%	6.9	8.9%	8.9%	15.3	8.7%	10.2%
10–14	2.8	2.8%	14.1%	2.8	3.6%	12.5%	5.5	3.1%	13.4%
15–19	4.2	4.2%	18.3%	4.2	5.4%	17.9%	8.3	4.7%	18.1%
20–24	4.2	4.2%	22.5%	1.4	1.8%	19.6%	5.5	3.1%	21.3%
25–29	1.4	1.4%	23.9%	4.2	5.4%	25.0%	5.5	3.1%	24.4%
30–34	2.8	2.8%	26.8%	4.2	5.4%	30.4%	6.9	3.9%	28.3%
35–39	2.8	2.8%	29.6%	4.2	5.4%	35.7%	6.9	3.9%	32.3%
40–44	1.4	1.4%	31.0%	4.2	5.4%	41.1%	5.5	3.1%	35.4%
45–49	2.8	2.8%	33.8%	4.2	5.4%	46.4%	6.9	3.9%	39.4%
50–54	13.9	14.1%	47.9%	11.1	14.3%	60.7%	25.0	14.2%	53.5%
55–59	20.8	21.1%	69.0%	5.5	7.1%	67.9%	26.4	15.0%	68.5%
60–64	13.9	14.1%	83.1%	12.5	16.1%	83.9%	26.4	15.0%	83.5%
65–69	8.3	8.5%	91.5%	8.3	10.7%	94.6%	16.6	9.4%	92.9%
70–74	2.8	2.8%	94.4%	2.8	3.6%	98.2%	5.5	3.1%	96.1%
75–79	0.0	0.0%	94.4%	0.0	0.0%	98.2%	0.0	0.0%	96.1%
80–84	0.0	0.0%	94.4%	1.4	1.8%	100.0%	1.4	0.8%	96.9%
85–89	2.8	2.8%	97.2%	0.0	0.0%	100.0%	2.8	1.6%	98.4%
90–94	1.4	1.4%	98.6%	0.0	0.0%	100.0%	1.4	0.8%	99.2%
95–99	0.0	0.0%	98.6%	0.0	0.0%	100.0%	0.0	0.0%	99.2%
100–104	0.0	0.0%	98.6%	0.0	0.0%	100.0%	0.0	0.0%	99.2%
Missing	1.4	1.4%	100.0%	0.0	0.0%	100.0%	1.4	0.8%	100.0%
Total	98.5	**100.0%**	**100.0%**	77.7	**100.0%**	**100.0%**	**176.2**	**100.0%**	**100.0%**

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

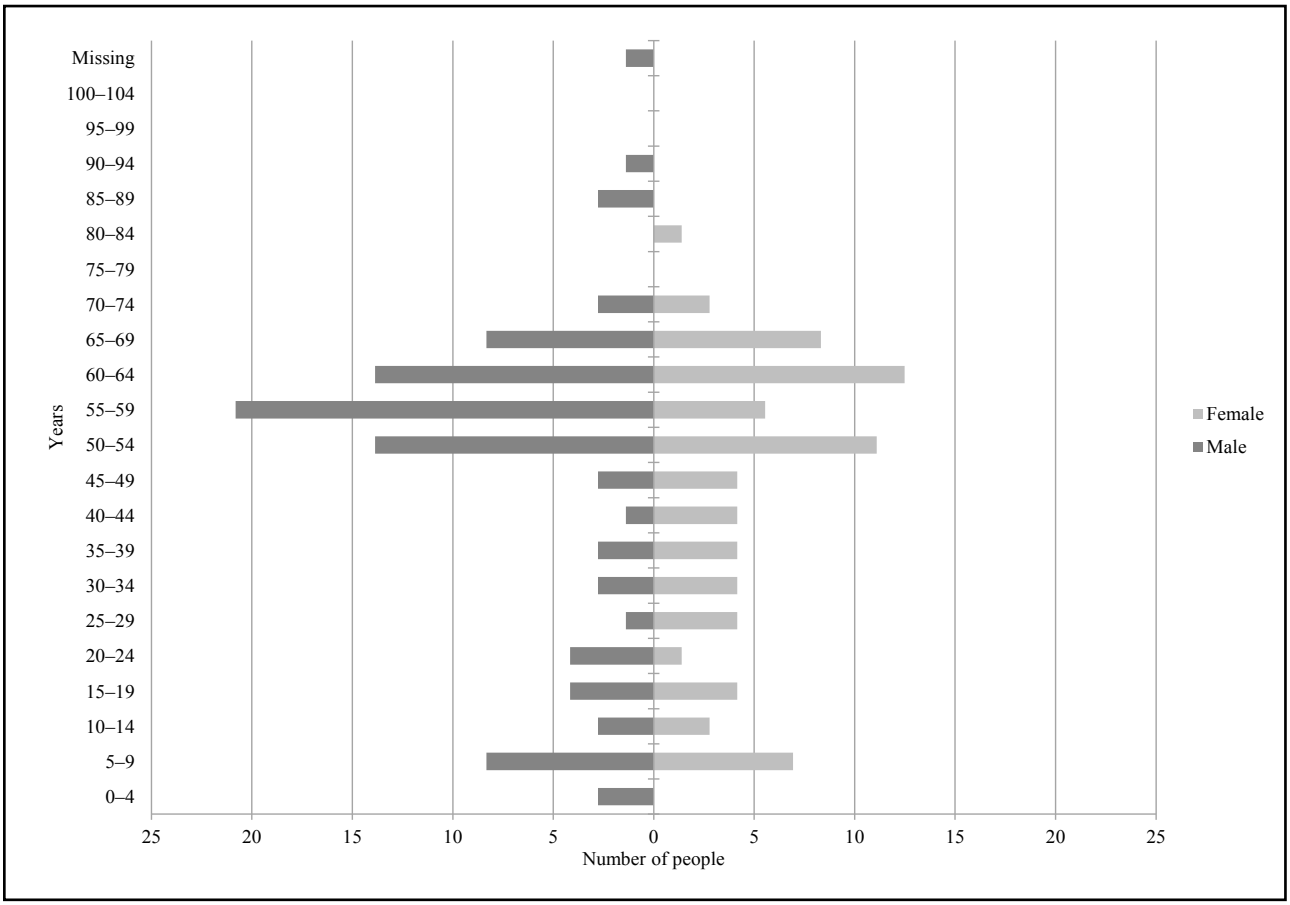


Figure 3-2.– Population profile, Slana/Nabesna Road, 2010.

Table 3-3. – Birthplaces of household heads, Slana/Nabesna Road, 2010.

Birthplace	Percentage
Anchorage	1.0%
Crooked Creek	1.0%
Fairbanks	2.0%
Ketchikan	1.0%
Mentasta Lake	1.0%
Nenana	1.0%
Savoonga	2.0%
Slana	2.0%
Stevens Village	1.0%
Other U.S.	83.7%
Foreign	3.1%
Missing	1.0%

Source ADF&G Division of Subsistence household surveys, 2011.
Note "birthplace" means the residence of the parents of the individual when the individual was born.

communities across Alaska, with only 2% claiming the Slana area as their place of birth. Most household heads (approximately 84%) were born somewhere else in the United States—demonstrating the large number of individuals who chose to settle in Slana/Nabesna Road when homestead lands came available (Table 3-3). Approximately 3% were foreign born and just 1% of the data are missing.

CASH EMPLOYMENT CHARACTERISTICS AND MONETARY INCOME

Slana/Nabesna Road is located approximately 65 miles from the nearest hub of Tok, and about 76 miles from Glennallen. Outside of the area school and National Park Service ranger station, there were few businesses local to the community that provided consistent wage-earning opportunities. Instead, much of the employment was independently generated by the residents themselves. In 2010, the largest category of income (16%) in the community came from jobs in the services sector; the second highest percentage of income (9%) was generated by federal government jobs (Table 3-4). Other important contributions for community income came from Social Security, retirement, and the Alaska Permanent Fund dividend (approximately 22% combined).

Other earned income of note came from the agriculture, forestry, and fishing sector (14% of earned income); transportation, communication, and utilities work (12% of earned income); and local government (including tribal) jobs (11% of earned income) (Table 3-5).

In 2010, 89% of the community adults of working age (16 and over) were considered by this survey as employed at some point during the study year. Of those employed adults, 57% were employed year-round with the average length of employment being approximately 9 months (Table 2-7). On

Table 3-4. – Estimated earned and other income, Slana/Nabesna Road, 2010.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
Federal government	10.8	10.0	$299,268	$3,480	9.4%
State government	8.6	8.0	$95,951	$1,116	3.0%
Local government, including tribal	25.9	22.0	$186,007	$2,163	5.8%
Agriculture, forestry, and fishing	19.5	12.0	$239,454	$2,784	7.5%
Construction	10.8	10.0	$88,476	$1,029	2.8%
Manufacturing	2.2	2.0	$24,463	$284	0.8%
Transportation, communication, and utilities	13.0	12.0	$200,327	$2,329	6.3%
Wholesale trade	4.3	2.0	$22,651	$263	0.7%
Retail trade	13.0	10.0	$59,822	$696	1.9%
Services	49.7	38.0	$517,057	$6,012	16.2%
Earned income subtotal	**131.9**	**86.0**	**$1,733,477**	**$20,157**	**54.4%**
Other income					
Dividends		**76.3**	**$188,602**	**$2,193**	**5.9%**
Native corporation dividends		11.1	$5,776	$67	0.2%
Alaska Permanent Fund dividend		76.3	$182,826	$2,126	5.7%
Job benefits		**13.9**	**$87,138**	**$1,013**	**2.7%**
Workers' compensation/insurance		1.4	$3,641	$42	0.1%
Unemployment		13.9	$83,497	$971	2.6%
Assistance		**9.7**	**$63,851**	**$742**	**2.0%**
Adult public assistance		4.2	$14,698	$171	0.5%
Food stamps		9.7	$49,153	$572	1.5%
Elder benefits		**37.5**	**$524,946**	**$6,104**	**16.5%**
Retirement/pension		20.8	$228,001	$2,651	7.2%
Alaska senior benifits (longevity bonus)		6.9	$16,701	$194	0.5%
Social Security		29.1	$280,245	$3,259	8.8%
Child benefits		**5.5**	**$33,164**	**$386**	**1.0%**
Supplemental Security		5.5	$33,164	$386	1.0%
Child support		0.0	$0	$0	0.0%
Foster care		0.0	$0	$0	0.0%
Other income sources		**30.5**	**$125,819**	**$1,463**	**3.9%**
Energy assistance		26.4	$25,448	$296	0.8%
Other		8.3	$100,371	$1,167	3.2%
Other income subtotal		**156.0**	**$1,452,619**	**$9,194**	**45.6%**
Community income total			**$3,186,095**	**$20,165**	**100.0%**

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

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 3-5. – Employment by industry, Slana/Nabesna Road, 2010.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**177.3**	**86.0**	**131.9**	**$1,733,477**
Federal government (total)	**7.3%**	**11.6%**	**8.2%**	**17.3%**
Natural scientists and mathematicians	1.2%	2.3%	1.6%	1.2%
Technologists and technicians, except health	1.2%	2.3%	1.6%	1.3%
Administrative support occupations, including clerical	1.2%	2.3%	1.6%	4.4%
Service occupations	1.2%	2.3%	1.6%	6.8%
Mechanics and repairers	1.2%	2.3%	1.6%	1.3%
Transportation and material moving occupations	1.2%	2.3%	1.6%	2.2%
State government (total)	**4.9%**	**9.3%**	**6.6%**	**5.5%**
Technologists and technicians, except health	2.4%	4.7%	3.3%	0.1%
Service occupations	1.2%	2.3%	1.6%	0.4%
Transportation and material moving occupations	1.2%	2.3%	1.6%	5.1%
Local government, including tribal (total)	**15.9%**	**25.6%**	**19.7%**	**10.7%**
Teachers, librarians, and counselors	8.5%	14.0%	9.8%	4.7%
Service occupations	3.7%	7.0%	4.9%	1.6%
Construction and extractive occupations	2.4%	4.7%	3.3%	0.7%
Transportation and material moving occupations	1.2%	2.3%	1.6%	3.7%
Agriculture, forestry, and fishing (total)	**12.2%**	**14.0%**	**14.8%**	**13.8%**
Administrative support occupations, including clerical	1.2%	2.3%	1.6%	3.4%
Agricultural, forestry, and fishing occupations	8.5%	9.3%	9.8%	7.3%
Production working occupations	1.2%	2.3%	1.6%	3.1%
Transportation and material moving occupations	1.2%	2.3%	1.6%	0.0%
Construction (total)	**6.1%**	**11.6%**	**8.2%**	**5.1%**
Construction and extractive occupations	4.9%	9.3%	6.6%	3.7%
Handlers, equipment cleaners, helpers, and laborers	1.2%	2.3%	1.6%	1.4%
Manufacturing (total)	**1.2%**	**2.3%**	**1.6%**	**1.4%**
Production working occupations	1.2%	2.3%	1.6%	1.4%
Transportation, communication, and utilities (total)	**7.3%**	**14.0%**	**9.8%**	**11.6%**
Construction and extractive occupations	2.4%	4.7%	3.3%	7.4%
Transportation and material moving occupations	4.9%	9.3%	6.6%	4.1%
Wholesale trade (total)	**2.4%**	**2.3%**	**3.3%**	**1.3%**
Writers, artists, entertainers, and athletes	2.4%	2.3%	3.3%	1.3%
Retail trade (total)	**7.3%**	**11.6%**	**9.8%**	**3.5%**
Writers, artists, entertainers, and athletes	6.1%	11.6%	8.2%	2.7%
Marketing and sales occupations	1.2%	2.3%	1.6%	0.8%
Services (total)	**35.4%**	**44.2%**	**37.7%**	**29.8%**
Executive, administrative, and managerial	2.4%	2.3%	3.3%	2.7%
Social scientists, social worksers, religious workers, and lawyers	1.2%	2.3%	1.6%	1.3%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	1.2%	2.3%	1.6%	6.7%
Writers, artists, entertainers, and athletes	2.4%	4.7%	3.3%	3.3%
Health technologists, and technicians	2.4%	4.7%	3.3%	0.9%
Marketing and sales occupations	2.4%	2.3%	3.3%	7.3%
Service occupations	19.5%	25.6%	21.3%	5.0%
Transportation and material moving occupations	1.2%	2.3%	1.6%	2.4%

-continued-

Table 3-5.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Handlers, equipment cleaners, helpers, and laborers	1.2%	2.3%	1.6%	0.0%
Miscellaneous occupations	1.2%	2.3%	1.6%	0.2%

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

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

average in 2010, households contained 2 employed adults with the mean number of jobs per employed household being 2.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 3-6 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Slana/Nabesna Road residents in 2010. Approximately 97% of residents participated in the harvest of resources in 2010. With reference to specific resource categories, 89% of all residents gathered plants and berries, 75% fished, 22% hunted for birds, 44% hunted for large land mammals, and 20% of the residents were involved in furbearer hunting or trapping. Ninety-two percent of all Slana/Nabesna Road residents processed some resources in 2010. Most residents (85%) participated in processing plants and berries, followed by 65% of the population participating in fish processing. About 46% of Slana/Nabesna Road residents participated in large land mammal processing, and 23% participated in processing furbearing animals. Only 21% participated in processing birds. Additionally, very few residents (1%) participated in building fish wheels, while 18% sewed skins or cloth, and 82% cooked wild foods (Table 3-7).

RESOURCE HARVEST AND USE PATTERNS

Table 3-8 summarizes resource harvest and use characteristics for Slana/Nabesna Road in 2010 at the household level. Approximately 98% of households used wild resources in 2010 and 98% attempted to harvest a resource while 97% experienced success with harvesting some kind of resource. The average total harvest was an estimated 492 lb usable weight per household, or 240 lb per capita. During the study year, a total of 111 different resources were available locally to Slana/Nabesna Road residents. On average, households attempted to harvest approximately 12 kinds of resources, harvested 10 kinds of resources, and used an average of 13 kinds of resources. The maximum number of resources used by any household was 29. In addition, households gave away an average of 4 kinds of resources and received 5 kinds of resources. While 73% of the households reported sharing resources with other households, 92% reported receiving a resource.

Table 3-6. – Participation in subsistence harvesting and processing activities, Slana/Nabesna Road, 2010.

Total number of people	**176.2**
Birds	
Hunt	
Number	38.8
Percentage	22.2%
Process	
Number	37.5
Percentage	21.4%
Fish	
Fish	
Number	130.4
Percentage	74.6%
Process	
Number	113.7
Percentage	65.1%
Large land mammals	
Hunt	
Number	77.7
Percentage	44.4%
Process	
Number	80.5
Percentage	46.0%
Small land mammals	
Hunt or trap	
Number	34.7
Percentage	19.8%
Process	
Number	40.2
Percentage	23.0%
Vegetation	
Gather	
Number	155.4
Percentage	88.9%
Process	
Number	148.4
Percentage	84.9%
Any resource	
Attempt	
Number	170.6
Percentage	96.9%
Process	
Number	162.3
Percentage	92.1%

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

Table 3-7. – Household member participation in additional processing activities, Slana/Nabesna Road, 2010.

Total number of people	**176.2**
Building fish wheels	
Number	1.4
Percentage	0.8%
Sewing skins or cloth	
Number	30.5
Percentage	17.5%
Cooking wild foods	
Number	142.9
Percentage	81.7%

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

Table 3-8. – Resource harvest and use characteristics, Slana/Nabesna Road, 2010.

Characteristic	
Mean number of resources used per household	13.0
Minimum	0.0
Maximum	29.0
Mean number of resources attempted to harvest per household	11.6
Minimum	0.0
Maximum	31.0
Mean number of resources harvested per household	9.8
Minimum	0.0
Maximum	29.0
Mean number of resources received per household	4.6
Minimum	0.0
Maximum	16.0
Mean number of resources given away per household	3.8
Minimum	0.0
Maximum	17.0
Mean household harvest, pounds	492.4
Minimum	0.0
Maximum	4,239.0
Total harvest weight, pounds	42,345.7
Community per capita harvest, pounds	240.4
Percentage using any resource	98.4%
Percentage attempting to harvest any resource	98.4%
Percentage harvesting any resource	96.8%
Percentage receiving any resource	91.9%
Percentage giving away any resource	72.6%
Number of households in sample	62.0
Number of resources available	111.0

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

SPECIES USED AND SEASONAL ROUND

Residents of Slana/Nabesna Road harvest a wide variety of species throughout the year and like most rural Alaska communities they often target specific species during certain seasons of the year, following a cyclical harvest pattern that is in part defined by seasonal availability, and in part by laws, regulations, and land access. Many Slana/Nabesna Road subsistence harvest activities occur in the upper Copper River drainage where most of the critical resources can be found, but residents also travel to the Upper Tanana River valley for nonsalmon fishing, and up to the Denali Highway in pursuit of caribou. Residents will travel even farther for deep sea fishing opportunities occurring primarily out of Valdez.

While harvest activities are ongoing throughout the year, we will begin our discussion with the most harvested resource in the community—salmon. Being one of the farthest upstream communities with direct river access in the upper Copper River Basin, salmon are relatively late to arrive in the Slana/Nabesna Road area. Fishing starts in earnest mid-June, with most residents obtaining access to the 1 fish wheel site owned and operated within the community of Slana. Other residents have access to wheels downriver of Slana and thus may have access to fish earlier than other community residents. Salmon are also obtained by traveling to Valdez for rod and reel fishing of coho and pink salmon later in the season. Only sockeye and Chinook salmon are found in the Copper River north of the Klutina drainage.

Nonsalmon fish, such as trout, lake trout, Arctic grayling, Dolly Varden, and some burbot, were harvested during the summer and fall mostly at local fishing spots within the community. In the fall, many residents participate in the local whitefishes spear fishery taking place during October in the Slana Slough. Northern pike, burbot, and some trout were harvested during the winter and spring months via jigging through the ice. Other nonsalmon fishing activities included summer charters for Pacific halibut, lingcod, rockfish, and Pacific cod. During the survey it was discovered that a women's group of about 8 people made an annual trip to Valdez to sport fish in Prince William Sound. These women were responsible for a large portion of the community harvest of nonsalmon saltwater fish.

Large land mammal hunting is an important fall activity that starts in August and, depending on the resource, can stretch into the winter and spring (if bears are harvested). During the study year most of the harvests took place in August through November and much of the effort was local.

Once snow falls, trapping for small land mammals and furbearers becomes the next intensive activity for those residents who participate. While some small land mammals are taken year-round for human consumption (hares, porcupines, and occasionally beavers), trapping for furbearers is a winter activity that typically takes place from November into March.

Most of the upland game birds were harvested year-round and in proximity to the homestead community, and some birds were taken opportunistically along the Tok Cutoff Highway and Copper and Tanada lakes while residents pursued large land mammals or jigged through the ice. Migratory

waterfowl were harvested primarily in the fall along the road corridors of the Tok Cutoff Highway, within the community, and up the Nabesna Road.

Berries and other edible plants are harvested in the summer and fall with some morel mushrooms harvested in the spring. Firewood is typically taken in the early spring as the days lengthen but the snow still provides easy access to wood lots by snowmachine.

HARVEST QUANTITIES

Table 3-9 reports estimated wild resource harvests and uses by Slana/Nabesna Road residents in 2010 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix B for conversion factors[3]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

Table 3-9 summarizes the estimated harvests and uses of fish, game, and plant resources, and Table 3-10 lists the top 10 ranked resources harvested in terms of pounds per capita and the 10 most used resources ranked by Slana/Nabesna Road households during the study year. In 2010 residents of Slana/Nabesna Road harvested an estimated total of 42,346 lb, or 240 lb per capita of wild resources (Table 3-9). Sockeye salmon, moose, coho salmon, and caribou were ranked the top 4 most harvested resources in pounds per capita. In comparison, blueberries, followed by a tied ranking between sockeye salmon and wood for second, and moose, were ranked the top 4 most used resources by all households in the survey (Table 3-10).

In terms of pounds harvested, salmon constituted the biggest portion of the subsistence harvest, which totaled 23,414 lb, or 133 lb per capita (Table 3-9; Figure 3-3). The majority (80%) of this was sockeye salmon, which was the most harvested resource in the community and ranked second on the list of top 10 most used resources (tables 3-9 and 3-10). Coho salmon was the third most harvested resource (Table 3-10).

Large land mammals was the second most harvested resource category of wild foods harvested by the Slana and Nabesna Road communities and made up approximately 16% of the total harvest (Figure 3-3). In 2010, an estimated 6,974 lb, or 40 lb per capita, of large land mammals were harvested, most

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

Table 3-9. – Estimated harvests and uses of fish, game, and vegetation resources, Slana/Nabesna Road, 2010.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**98.4%**	**98.4%**	**96.8%**	**91.9%**	**72.6%**	**42,345.7**	**492.4**	**240.4**				**20.6%**
Fish	**93.5%**	**80.6%**	**74.2%**	**75.8%**	**58.1%**	**30,245.0**	**351.7**	**171.7**				**23.2%**
Salmon	**83.9%**	**71.0%**	**56.5%**	**50.0%**	**46.8%**	**23,414.2**	**272.3**	**132.9**	**3,628.6**		**42.2**	**24.5%**
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	16.1%	14.5%	11.3%	6.5%	6.5%	3,001.3	34.9	17.0	342.6	Ind.	4.0	63.7%
Chinook salmon	27.4%	22.6%	14.5%	16.1%	8.1%	952.5	11.1	5.4	48.5	Ind.	0.6	40.5%
Pink salmon	4.8%	1.6%	1.6%	4.8%	3.2%	609.2	7.1	3.5	166.5	Ind.	1.9	105.6%
Sockeye salmon	80.6%	66.1%	54.8%	46.8%	46.8%	18,844.2	219.1	107.0	3,064.1	Ind.	35.6	26.7%
Landlocked salmon	1.6%	4.8%	1.6%	0.0%	0.0%	6.9	0.1	0.0	6.9	Ind.	0.1	105.6%
Unknown salmon	1.6%	0.0%	0.0%	1.6%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Nonsalmon fish	**80.6%**	**69.4%**	**66.1%**	**61.3%**	**41.9%**	**6,830.9**	**79.4**	**38.8**			**52.2**	**35.3%**
Herring	4.8%	1.6%	1.6%	3.2%	0.0%	83.2	1.0	0.5	13.9	Gal.	0.2	105.6%
Herring roe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Herring sac roe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Herring spawn on kelp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Smelt	3.2%	0.0%	0.0%	3.2%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Unknown smelt	3.2%	0.0%	0.0%	3.2%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Cod	4.8%	3.2%	3.2%	1.6%	0.0%	38.8	0.5	0.2	9.7		0.1	74.9%
Pacific cod (gray)	4.8%	3.2%	3.2%	1.6%	0.0%	38.8	0.5	0.2	9.7	Ind.	0.1	74.9%
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	24.2%	12.9%	12.9%	12.9%	6.5%	635.8	7.4	3.6	264.9		3.1	71.1%
Lingcod	24.2%	12.9%	12.9%	12.9%	6.5%	635.8	7.4	3.6	264.9	Ind.	3.1	71.1%
Pacific halibut	62.9%	21.0%	19.4%	50.0%	16.1%	1,234.5	14.4	7.0	1,234.5	Lb.	14.4	42.9%
Arctic lampreys	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Rockfish	19.4%	12.9%	12.9%	8.1%	3.2%	355.1	4.1	2.0	88.8	Ind.	1.0	67.3%
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	33.9%	32.3%	29.0%	11.3%	8.1%	932.1	10.8	5.3	388.4	Ind.	4.5	35.3%
Char	53.2%	56.5%	50.0%	9.7%	9.7%	845.3	9.8	4.8	610.3		7.1	34.8%
Dolly Varden	30.6%	33.9%	29.0%	6.5%	4.8%	307.1	3.6	1.7	341.2	Ind.	4.0	27.1%
Lake trout	32.3%	40.3%	29.0%	4.8%	4.8%	538.2	6.3	3.1	269.1	Ind.	3.1	45.5%
Arctic grayling	50.0%	48.4%	45.2%	11.3%	19.4%	557.3	6.5	3.2	796.2	Ind.	9.3	24.3%
Northern pike	8.1%	8.1%	8.1%	0.0%	1.6%	256.3	3.0	1.5	91.5	Ind.	1.1	52.4%
Longnose sucker	1.7%	1.7%	1.6%	0.0%	0.0%	1.0	0.0	0.0	1.4	Ind.	0.0	105.6%
Trout	12.9%	14.5%	12.9%	3.2%	3.2%	730.2	8.5	4.1	521.5		6.1	84.6%
Cutthroat throut	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	11.3%	12.9%	11.3%	3.2%	1.6%	681.6	7.9	3.9	486.9	Ind.	5.7	90.4%
Unknown trout	1.6%	4.8%	1.6%	0.0%	1.6%	48.5	0.6	0.3	34.7	Ind.	0.4	105.6%
Whitefishes	29.0%	19.4%	19.4%	12.9%	6.5%	1,161.1	13.5	6.6	471.6		5.5	54.2%
Broad whitefish	8.1%	6.5%	6.5%	3.2%	3.2%	760.1	8.8	4.3	190.0	Ind.	2.2	79.4%

-continued-

Table 3-9.–Page 2 of 4.

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	
Nonsalmon fish, continued												
Cisco	3.2%	3.2%	3.2%	0.0%	0.0%	13.3	0.2	0.1	33.3		0.4	74.1%
Least cisco	3.2%	3.2%	3.2%	0.0%	0.0%	13.3	0.2	0.1	33.3	Ind.	0.4	74.1%
Humpback whitefish	12.9%	8.1%	8.1%	6.6%	1.6%	310.7	3.6	1.8	177.5	Ind.	2.1	62.8%
Round whitefish	6.5%	3.2%	3.2%	3.3%	0.0%	62.4	0.7	0.4	62.4	Ind.	0.7	78.2%
Unknown whitefish	3.2%	1.6%	1.6%	1.6%	1.6%	14.6	0.2	0.1	8.3	Ind.	0.1	105.6%
Land mammals	**79.0%**	**75.8%**	**37.1%**	**72.6%**	**37.1%**	**8,148.6**	**94.8**	**46.3**	**607.1**		**7.1**	**28.7%**
Large land mammals	**77.4%**	**72.6%**	**21.0%**	**69.4%**	**33.9%**	**6,974.3**	**81.1**	**39.6**	**30.5**		**0.4**	**30.5%**
Bison	1.6%	0.0%	0.0%	1.6%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Black bear	11.3%	6.5%	1.6%	9.7%	6.5%	80.5	0.9	0.5	1.4	Ind.	0.0	105.6%
Brown bear	0.0%	9.7%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Caribou	40.3%	30.6%	8.1%	32.3%	9.7%	1,622.9	18.9	9.2	12.5	Ind.	0.1	52.5%
Deer	8.1%	1.6%	1.6%	6.5%	0.0%	176.9	2.1	1.0	4.2	Ind.	0.0	105.6%
Goat	4.8%	1.6%	1.6%	3.2%	1.6%	100.6	1.2	0.6	1.4	Ind.	0.0	105.6%
Moose	71.0%	62.9%	12.9%	62.9%	27.4%	4,993.5	58.1	28.3	11.1	Ind.	0.1	35.1%
Dall sheep	16.1%	4.8%	0.0%	16.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Small land mammals[b]	**30.6%**	**30.6%**	**29.0%**	**8.1%**	**11.3%**	**1,174.3**	**13.7**	**6.7**	**576.6**		**6.7**	**44.5%**
Beaver	3.2%	1.6%	1.6%	1.6%	3.2%	249.7	2.9	1.4	16.6	Ind.	0.2	105.6%
Coyote	6.5%	9.7%	6.5%	0.0%	0.0%	0.0	0.0	0.0	11.3	Ind.	0.1	60.4%
Fox	11.3%	11.3%	11.3%	0.0%	0.0%	0.0	0.0	0.0	32.4		0.4	62.7%
Red fox	11.3%	11.3%	11.3%	0.0%	0.0%	0.0	0.0	0.0	32.4	Ind.	0.4	62.7%
Hare	24.2%	24.2%	24.2%	4.8%	6.5%	485.5	5.6	2.8	242.7		2.8	34.4%
Snowshow hare	24.2%	24.2%	24.2%	4.8%	6.5%	485.5	5.6	2.8	242.7	Ind.	2.8	34.4%
River otter	4.8%	8.1%	4.8%	0.0%	1.6%	0.0	0.0	0.0	8.5	Ind.	0.1	88.8%
Lynx	11.3%	11.3%	9.7%	1.6%	0.0%	377.8	4.4	2.1	94.5	Ind.	1.1	56.9%
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	8.1%	9.7%	8.1%	0.0%	0.0%	0.0	0.0	0.0	74.7	Ind.	0.9	72.5%
Mink	1.6%	3.2%	1.6%	0.0%	0.0%	0.0	0.0	0.0	1.4	Ind.	0.0	0.0%
Muskrat	1.6%	1.6%	1.6%	0.0%	0.0%	10.0	0.1	0.1	5.5	Ind.	0.1	105.6%
Porcupine	3.2%	3.2%	3.2%	0.0%	1.6%	25.0	0.3	0.1	5.5	Ind.	0.1	83.1%
Squirrel	9.7%	9.7%	8.1%	1.6%	3.2%	26.4	0.3	0.1	52.7		0.6	52.2%
Tree squirrel	8.1%	8.1%	6.5%	1.6%	1.6%	18.7	0.2	0.1	37.5	Ind.	0.4	62.3%
Unknown squirrel	3.2%	4.8%	3.2%	0.0%	1.6%	7.6	0.1	0.0	15.3	Ind.	0.2	96.4%
Weasel	4.8%	4.8%	4.8%	0.0%	0.0%	0.0	0.0	0.0	20.8	Ind.	0.2	85.6%
Wolf	4.8%	11.3%	4.8%	0.0%	0.0%	0.0	0.0	0.0	8.5	Ind.	0.1	88.8%
Wolverine	1.6%	6.5%	1.6%	0.0%	0.0%	0.0	0.0	0.0	1.4	Ind.	0.0	0.0%
Birds and eggs	**40.3%**	**38.7%**	**38.7%**	**9.7%**	**9.7%**	**366.0**	**4.3**	**2.1**	**571.4**		**6.6**	**29.1%**
Migratory birds	**11.3%**	**8.1%**	**8.1%**	**6.5%**	**4.8%**	**48.0**	**0.6**	**0.3**	**58.3**		**0.7**	**58.4%**
Ducks	9.7%	8.1%	8.1%	4.8%	4.8%	48.0	0.6	0.3	58.3		0.7	58.4%
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%

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Table 3-9.–Page 3 of 4.

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	
Migratory birds, continued												
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	6.5%	4.8%	4.8%	3.2%	1.6%	11.1	0.1	0.1	11.1	Ind.	0.1	63.8%
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	1.6%	1.6%	1.6%	0.0%	1.6%	17.5	0.2	0.1	19.4		0.2	105.6%
Black scoter	1.6%	1.6%	1.6%	0.0%	1.6%	17.5	0.2	0.1	19.4	Ind.	0.2	105.6%
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	3.3%	1.6%	1.6%	1.6%	1.6%	19.4	0.2	0.1	27.7	Ind.	0.3	105.6%
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 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%
Lesser 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%
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%
Emperor 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%
Swan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Tundra swan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Crane	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%
Seabirds, loons, grebes	1.6%	0.0%	0.0%	1.6%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Murre	1.6%	0.0%	0.0%	1.6%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Other birds	**38.7%**	**37.1%**	**37.1%**	**6.5%**	**8.1%**	**318.0**	**3.7**	**1.8**	**513.1**		**6.0**	**32.0%**
Upland game birds	38.7%	37.1%	37.1%	6.5%	8.1%	318.0	3.7	1.8	513.1		6.0	32.0%
Grouse	37.1%	35.5%	35.5%	6.5%	8.1%	215.1	2.5	1.2	307.3		3.6	29.4%
Spruce grouse	37.1%	35.5%	35.5%	6.5%	6.5%	183.6	2.1	1.0	262.2	Ind.	3.0	30.8%
Sharp-tailed grouse	3.2%	3.2%	3.2%	0.0%	0.0%	6.8	0.1	0.0	9.7	Ind.	0.1	80.8%
Ruffed grouse	4.8%	4.8%	4.8%	0.0%	1.6%	24.8	0.3	0.1	35.4	Ind.	0.4	54.0%
Ptarmigan	19.4%	21.0%	17.7%	3.2%	4.8%	102.9	1.2	0.6	205.8	Ind.	2.4	40.8%
Bird eggs	**1.6%**	**0.0%**	**0.0%**	**1.6%**	**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	Ind.	0.0	0.0%
Goose eggs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Seabird and loon eggs	1.6%	0.0%	0.0%	1.6%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Gull eggs	1.6%	0.0%	0.0%	1.6%	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%

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Table 3-9.–Page 4 of 4.

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	
Marine invertebrates	**9.7%**	**3.2%**	**3.2%**	**6.5%**	**3.2%**	**706.0**	**8.2**	**4.0**				**103.8%**
Clams	1.6%	1.6%	1.6%	0.0%	1.6%	12.5	0.1	0.1	4.2		0.0	105.6%
Freshwater clams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Razor clams	1.6%	1.6%	1.6%	0.0%	1.6%	12.5	0.1	0.1	4.2	Gal.	0.0	105.6%
Crabs	3.2%	1.6%	1.6%	1.6%	1.6%	693.5	8.1	3.9	693.5		8.1	105.6%
Dungeness crab	3.2%	1.6%	1.6%	1.6%	1.6%	416.1	4.8	2.4	416.1	Lb.	4.8	105.6%
King crab	1.6%	0.0%	0.0%	1.6%	0.0%	0.0	0.0	0.0	0.0	Lb.	0.0	0.0%
Tanner crab	1.6%	1.6%	1.6%	0.0%	0.0%	277.4	3.2	1.6	277.4	Lb.	3.2	105.6%
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	4.8%	0.0%	0.0%	4.8%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Squid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Vegetation	**91.9%**	**90.3%**	**90.3%**	**33.9%**	**50.0%**	**2,880.0**	**33.5**	**16.3**				**16.4%**
Berries	**88.7%**	**82.3%**	**82.3%**	**25.8%**	**45.2%**	**2,610.5**	**30.4**	**14.8**	**652.6**		**7.6**	**16.0%**
Blueberry	83.9%	79.0%	79.0%	19.4%	37.1%	1,062.5	12.4	6.0	265.6	Gal.	3.1	16.9%
Lowbush cranberry	64.5%	59.7%	58.1%	11.3%	14.5%	613.1	7.1	3.5	153.3	Gal.	1.8	27.4%
Highbush cranberry	12.9%	11.3%	11.3%	1.6%	6.5%	69.4	0.8	0.4	17.3	Gal.	0.2	46.5%
Crowberry	3.2%	3.2%	3.2%	0.0%	0.0%	25.0	0.3	0.1	6.2	Gal.	0.1	94.4%
Currants	29.0%	27.4%	27.4%	6.5%	9.7%	216.4	2.5	1.2	54.1	Gal.	0.6	30.6%
Cloudberry	3.2%	3.2%	3.2%	0.0%	0.0%	16.6	0.2	0.1	4.2	Gal.	0.0	78.2%
Nagoonberry	1.6%	1.6%	1.6%	0.0%	0.0%	22.2	0.3	0.1	5.5	Gal.	0.1	105.6%
Raspberry	46.8%	43.5%	43.5%	4.8%	12.9%	477.2	5.5	2.7	119.3	Gal.	1.4	20.6%
Salmonberry	4.8%	4.8%	4.8%	0.0%	3.2%	27.7	0.3	0.2	6.9	Gal.	0.1	62.5%
Other wild berry	6.5%	6.5%	6.5%	0.0%	3.2%	80.5	0.9	0.5	20.1	Gal.	0.2	64.8%
Plants, greens, and mushrooms	**45.2%**	**43.5%**	**43.5%**	**12.9%**	**11.3%**	**269.4**	**3.1**	**1.5**	**202.9**		**2.4**	**39.1%**
Hudson's Bay (Labrador) tea	11.3%	9.7%	9.7%	1.6%	1.6%	11.1	0.1	0.1	11.1	Gal.	0.1	47.9%
Wild rose hips	11.3%	11.3%	11.3%	0.0%	3.2%	88.8	1.0	0.5	22.2	Gal.	0.3	44.1%
Yarrow	1.6%	1.6%	1.6%	0.0%	0.0%	3.5	0.0	0.0	3.5	Gal.	0.0	105.6%
Other wild greens	16.1%	16.1%	16.1%	1.6%	6.5%	13.5	0.2	0.1	13.5	Gal.	0.2	35.7%
Mushrooms	33.9%	29.0%	29.0%	11.3%	4.8%	54.1	0.6	0.3	54.1	Gal.	0.6	37.6%
Fireweed	4.8%	4.8%	4.8%	0.0%	1.6%	98.5	1.1	0.6	98.5	Gal.	1.1	98.3%
Wood	**80.6%**	**80.6%**	**80.6%**	**14.5%**	**25.8%**	**0.0**	**0.0**	**0.0**				**0.0%**
Bark	4.8%	4.8%	4.8%	1.6%	0.0%	0.0	0.0	0.0	3.5	Gal.	0.0	62.5%
Other wood	80.6%	80.6%	80.6%	14.5%	25.8%	0.0	0.0	0.0	427.0	Cord	5.0	14.4%

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

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.

Table 3-10. – Top 10 ranked resources harvested and used, Slana/Nabesna Road, 2010.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Sockeye salmon	107.0	1	1.	Blueberry	83.9%
2	2.	Moose	28.3	2	2.	Sockeye salmon	80.6%
3	3.	Coho salmon	17.0	3	2.	Wood	80.6%
4	4.	Caribou	9.2	4	4.	Moose	71.0%
5	5.	Pacific halibut	7.0	5	5.	Lowbush cranberry	64.5%
6	6.	Blueberry	6.0	6	6.	Pacific halibut	62.9%
7	7.	Chinook salmon	5.4	7	7.	Arctic grayling	50.0%
8	8.	Burbot	5.3	8	8.	Raspberry	46.8%
9	9.	Broad whitefish	4.3	9	9.	Caribou	40.3%
10	10.	Rainbow trout	3.9	10	10.	Spruce grouse	37.1%

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

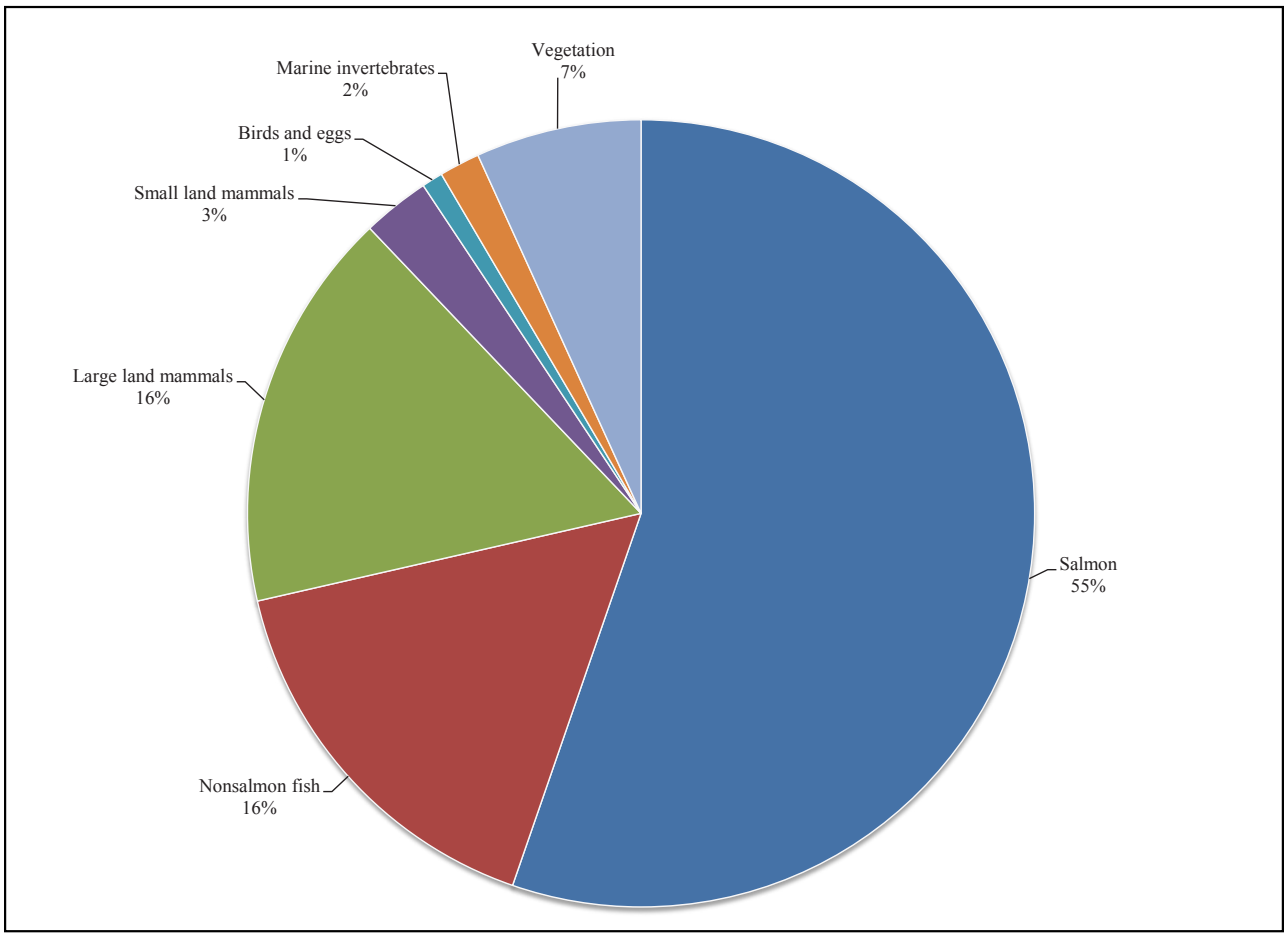


Figure 3-3.– Composition of wild resource harvest, Slana/Nabesna Road, 2010.

of which was moose. Both moose and caribou were listed on the top 10 ranked harvested resources list in second and fourth place, respectively (Table 3-10).

Nonsalmon fishing was a notable activity in 2010 with an overall harvest of 6,831 lb, or 39 lb per capita. Nonsalmon fish composed approximately 16% of the total annual harvest (Figure 3-3). Of note, Pacific halibut was the fifth most harvested resource in pounds useable weight, and ranked as the sixth most used resource after having been used in 63% of the community households. Other nonsalmon fish showed up in the lists of top 10 ranked resources harvested and used; burbot, broad whitefish, and rainbow trout were in eighth, ninth, and 10th place, respectively, in the top 10 harvested list, while Arctic grayling—having been used in 50% of community households—ranked seventh of the most used resources (Table 3-10).

Wild plants and berries made up approximately 7% of the total harvest for Slana/Nabesna Road in 2010 (Figure 3-3). Most of the households (92%) used vegetation and 90% attempted to harvest vegetation. The total harvest was 2,880 consumable pounds, or 16 lb per capita, with berries making up the bulk of the harvest (2,611 lb). Blueberries were the most used resource on the top 10 ranked resources list (Table 3-10) and made up the largest percentage of the berry harvest in terms of total pounds (1,063 lb, or 6 lb per capita). The community harvested 269 lb of plants, greens, and mushrooms, most of which was fireweed at 99 lb of the total community harvest (Table 3-9).

The harvest of small land mammals for wild foods composed approximately 3% of the total pounds of wild resource harvests in 2010 (Figure 3-3). The majority of the animals were taken for their furs either for personal use or to be further processed into different fur items for gifts or sale and do not figure into the community harvest numbers for pounds edible weight. The main species harvested for food consumption in 2010 was snowshoe hare at 486 lb (or 3 lb per capita) harvested (Table 3-9). Other small land mammals harvested in lesser quantities than snowshoe hares that still contributed a significant edible weight included lynx (378 lb, or 2 lb per capita) and beavers (250 lb, or 1 lb per capita). However, lynx are just as often caught for their pelt alone in the Copper River Basin as they are for their meat (as is common in other parts of Alaska).

In terms of total pounds harvested, marine invertebrates contributed 2% of the total harvest of wild resources by the community of Slana/Nabesna Road in 2010. The total harvest was 706 lb, or 4 lb per capita; the harvest was composed primarily of crabs, although some razor clams were also harvested (Table 3-9).

Birds and eggs made up approximately 1% of the total annual harvest for Slana/Nabesna Road in 2010 (Figure 3-3). The overall community harvest of birds was 366 lb, or a little more than 2 lb per capita, most of which was upland game birds. No eggs were harvested by community members in 2010 (Table 3-9).

SHARING AND RECEIVING WILD RESOURCES

In Slana/Nabesna Road in 2010, out of the total 111 resources available locally, the average harvest per household was 13 resources (Table 3-8). Estimates of sharing indicate that 92% of households received wild resources from other households and 73% of households gave resources away (tables 3-8 and 3-9). Households received an average of 5 resources and gave away an average of 4 resources (Table 3-8). The resources most often received in Slana were fish (76%) and large land mammals (69%) generally, and moose (63%), Pacific halibut (50%), and sockeye salmon (47%) more specifically. The resources most commonly shared were sockeye salmon (47%), berries (45%), and moose (27%) (Table 3-9). Patterns of sharing and receiving specific resources are discussed in greater detail in the following section.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

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

As shown in Figure 3-4, in the 2012 study year in Slana/Nabesna Road, about 71% of the harvests of wild resources as estimated in usable pounds was harvested by 24% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Slana and the other study communities.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

In 2010, 57% of the households in Slana/Nabesna Road harvested salmon and 84% of the households used salmon. Salmon composed 55% of the wild resource harvest in pounds usable weight for 2010 totaling 23,414 lb (Figure 3-3; Table 3-9). Approximately 80% of this harvest was sockeye salmon, with coho (13%), Chinook (4%), and pink salmon (3%) making up the remainder of the salmon harvest (Figure 3-5). As the most harvested resource in the community, the sockeye salmon harvest totaled 18,844 lb (or 107 lb per capita). Coho salmon was the third most harvested resource (Table

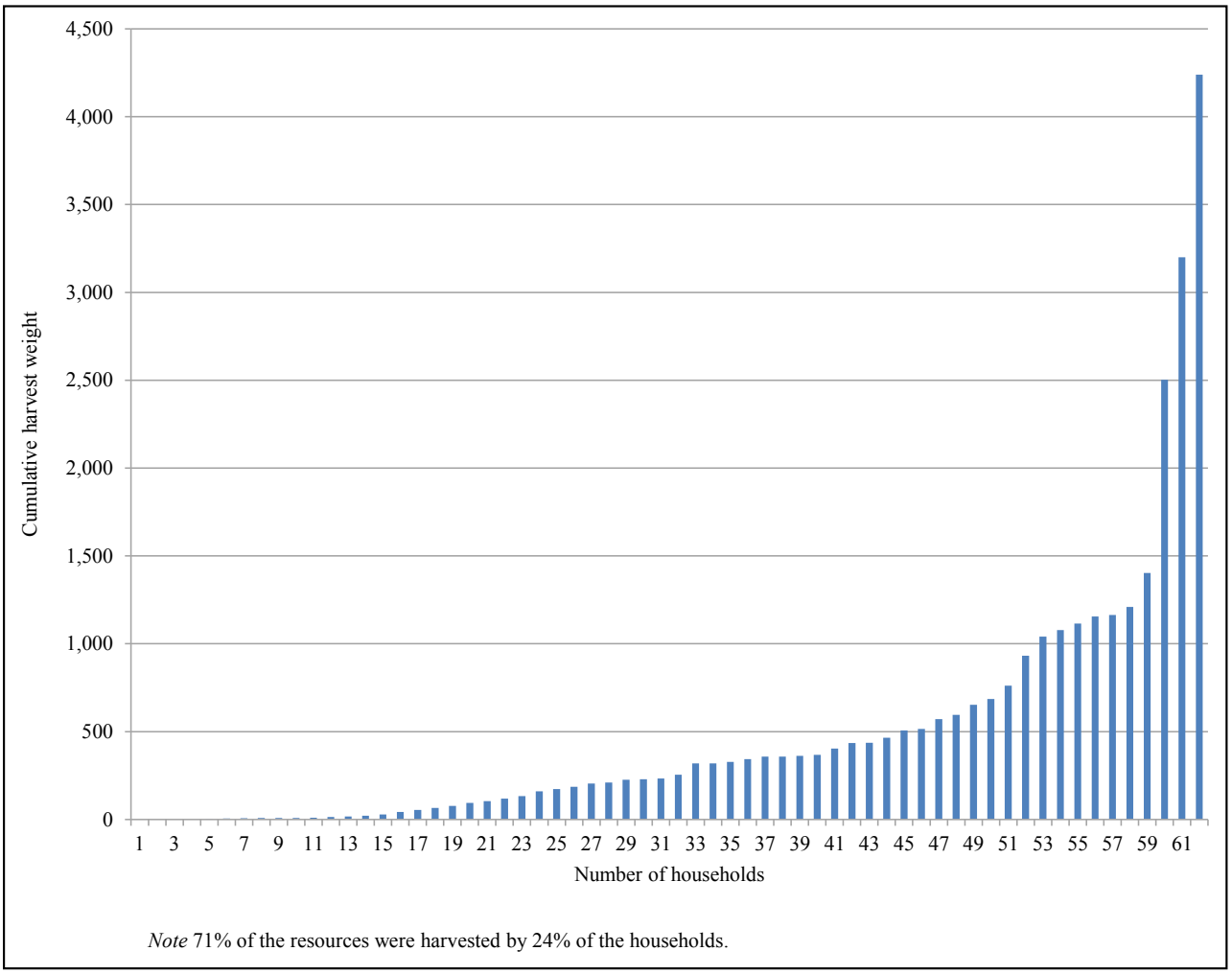


Figure 3-4.– Household specialization, Slana/Nabesna Road, 2010.

3-10) constituting 3,001 lb of the total harvest, or 17 lb per capita. Additionally, Slana/Nabesna Road residents harvested 953 lb of Chinook salmon (5 lb per capita) and 609 lb of pink salmon (4 lb per capita) (Table 3-9).The 2010 harvest of landlocked salmon totaled 7 lb for the entire community.

During the study year, Slana/Nabesna Road residents harvested the bulk of their salmon (about 79% of the total pounds harvested) by fish wheel. Approximately 18% of the salmon harvest was caught with rod and reel while the remaining fraction of the harvest was removed from commercial catch or taken by dip net (Table 3-11). Approximately 92% of the sockeye salmon harvest was taken by fish wheel, 6% was caught using rod and reel gear, and less than 2% was removed from commercial harvest. The Chinook salmon harvest followed a similar pattern where 80% of Chinook salmon were taken by fish wheel and the remainder (20%) were caught by rod and reel. Coho salmon were harvested using primarily rod and reel (83%), and 15% were removed from commercial harvest and a few were taken by fish wheel on the lower Copper River.

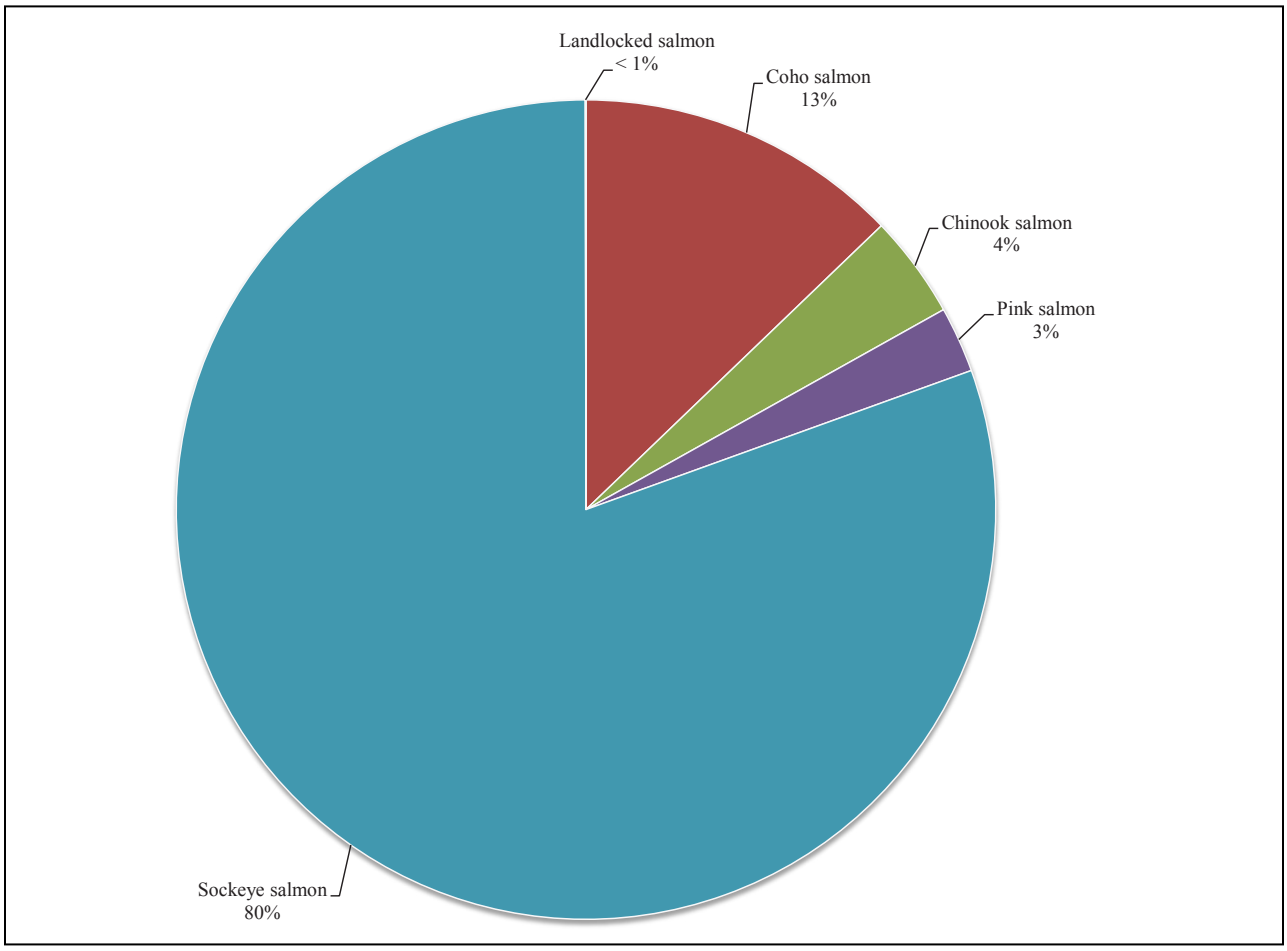


Figure 3-5.– Composition of salmon harvest, Slana/Nabesna Road, 2010.

In 2010, most salmon were harvested in Slana/Nabesna Road at the 1 fish wheel site owned and operated by a community member, but some residents also had access to wheels in Chistochina (Figure 3-6). Coho salmon and all pink salmon were taken in Valdez by rod and reel, or in some cases as harvest removed from commercial catch. Landlocked salmon were harvested exclusively in Tanada and Copper lakes.

NONSALMON FISH

In 2010, nonsalmon fish made up 16% of the Slana/Nabesna Road harvest by weight with a total of 6,831 lb harvested, or 39 lb per capita, of which 4,483 lbs, were freshwater fish, or 25 lb per capita (Figure 3-3; Table 3-9). Approximately 81% of the households used nonsalmon fish with 66% successfully harvesting nonsalmon fish. The most used nonsalmon fish in 2010 were Pacific halibut (63% of the households using), char (53%), Arctic grayling (50%), and burbot (34%) (Table 3-9). In

Table 3-11. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Slana/Nabesna Road, 2010.

Resource	Percentage base	Removed from commercial catch		Subsistence methods											
				Dip net		Fish wheel		Other method		Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	2.8%	2.8%	0.0%	0.0%	79.2%	79.2%	0.0%	0.0%	79.2%	79.2%	18.1%	18.1%	100.0%	100.0%
	Total	2.8%	2.8%	0.0%	0.0%	79.2%	79.2%	0.0%	0.0%	79.2%	79.2%	18.1%	18.1%	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%
	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%
Coho salmon	Gear type	50.0%	67.9%	0.0%	0.0%	0.3%	0.4%	0.0%	0.0%	0.3%	0.4%	43.3%	58.8%	9.4%	12.8%
	Resource	14.6%	14.6%	0.0%	0.0%	2.4%	2.4%	0.0%	0.0%	2.4%	2.4%	83.0%	83.0%	100.0%	100.0%
	Total	1.4%	1.9%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.2%	0.3%	7.8%	10.6%	9.4%	12.8%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	1.4%	4.1%	0.0%	0.0%	1.4%	4.1%	1.5%	4.5%	1.3%	4.1%
	Resource	0.0%	0.0%	0.0%	0.0%	80.0%	80.0%	0.0%	0.0%	80.0%	80.0%	20.0%	20.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.1%	3.3%	0.0%	0.0%	1.1%	3.3%	0.3%	0.8%	1.3%	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%	25.4%	14.4%	4.6%	2.6%
	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%	4.6%	2.6%	4.6%	2.6%
Sockeye salmon	Gear type	50.0%	47.7%	0.0%	0.0%	98.4%	93.7%	0.0%	0.0%	98.4%	93.7%	28.8%	27.4%	84.4%	80.5%
	Resource	1.6%	1.6%	0.0%	0.0%	92.2%	92.2%	0.0%	0.0%	92.2%	92.2%	6.2%	6.2%	100.0%	100.0%
	Total	1.4%	1.3%	0.0%	0.0%	77.9%	74.2%	0.0%	0.0%	77.9%	74.2%	5.2%	5.0%	84.4%	80.5%
Landlocked salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.2%	0.2%	0.0%
	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%	0.0%	0.2%	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%
	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, 2011.

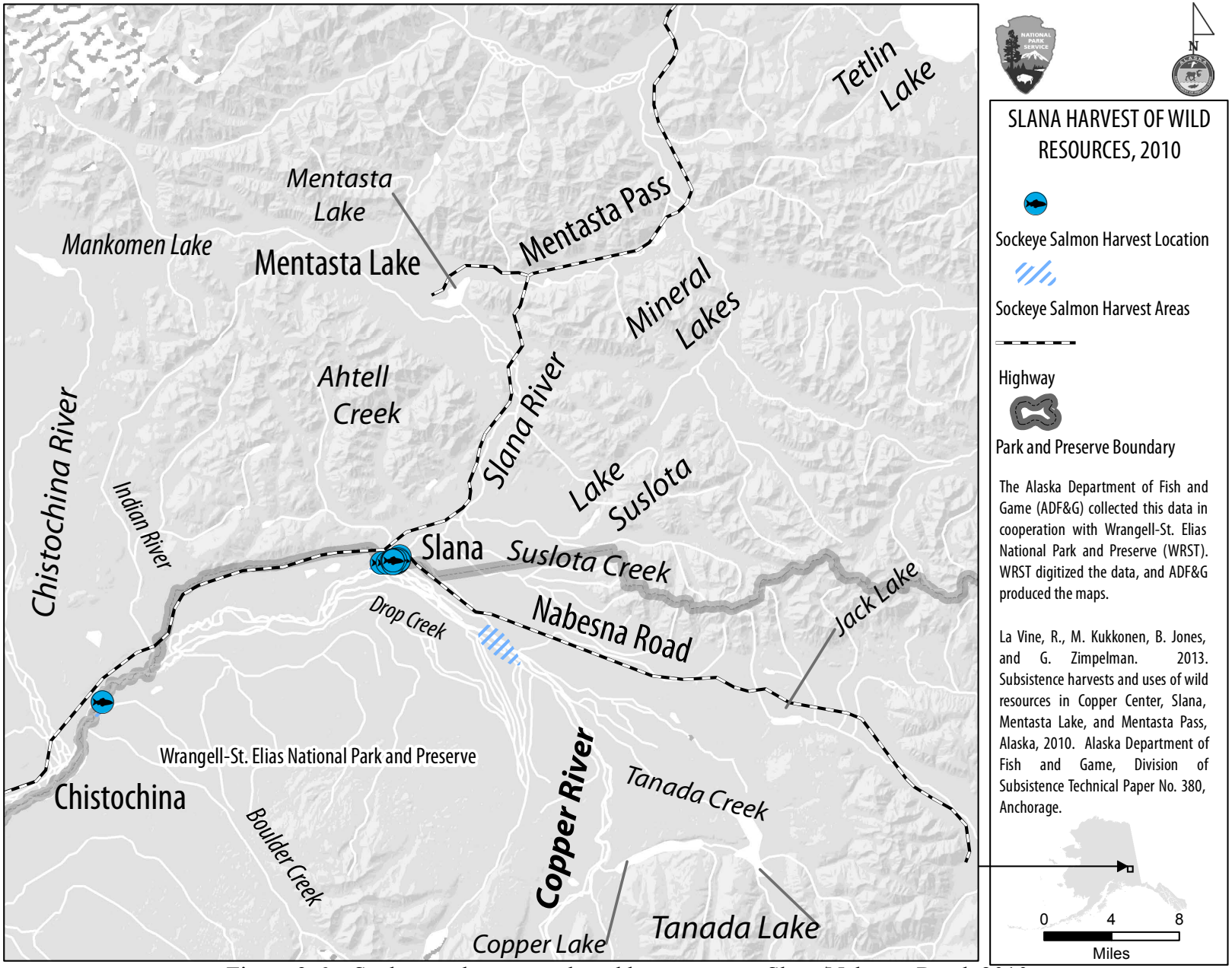


Figure 3-6.– Sockeye salmon search and harvest areas, Slana/Nabesna Road, 2010.

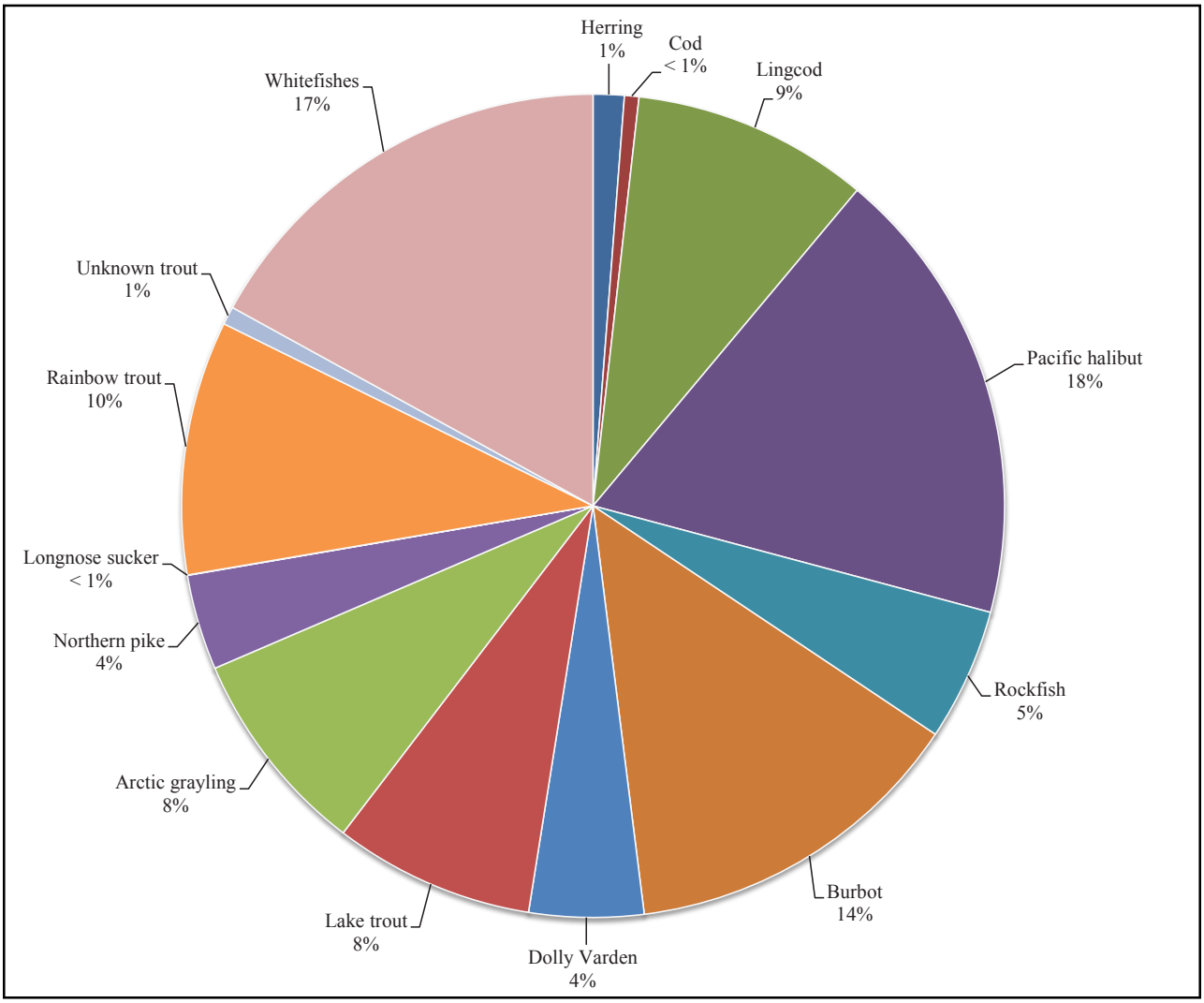


Figure 3-7.– Composition of nonsalmon fish harvest, Slana/Nabesna Road, 2010.

terms of total pounds harvested and highest percentage of the nonsalmon fish harvest, Pacific halibut ranked first (18%), followed by whitefishes (17%), and burbot (14%) (Figure 3-7). Table 3-12 lists the number and pounds of each nonsalmon fish species harvested by Slana/Nabesna Road residents in 2010 in percentages by gear type. Slana/Nabesna Road residents harvested Pacific halibut with rod and reel by charter out of Valdez. Almost all of the whitefishes harvest was done by spear on the Slana Slough with the remaining 13% of the humpback whitefish harvest obtained using rod and reel (Table 3-12).

In the study year 2010, Slana/Nabesna Road residents concentrated their nonsalmon freshwater fish harvests in areas close to the community area along with bodies of water near Mentasta Pass, Mentasta Lake, and along the Nabesna Road. Locations for harvests included Jack, Tanada, Copper, and Mentasta lakes (Figure 3-8).

Table 3-12. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Slana/Nabesna Road, 2010.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	19.3%	19.3%	19.3%	19.3%	80.7%	80.7%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	19.3%	19.3%	19.3%	19.3%	80.7%	80.7%	100.0%	100.0%
Herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	1.5%	0.3%	1.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.2%	0.3%	1.2%
Herring sac roe	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%
	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%
	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%
Herring spawn on kelp	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%
	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%
	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%
Unknown 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%
	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%
	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%
Pacific cod (gray)	Gear type	0.0%	0.0%	0.0%	0.0%	0.5%	1.3%	0.5%	1.3%	0.2%	0.4%	0.2%	0.6%
	Resource	0.0%	0.0%	0.0%	0.0%	42.9%	42.9%	42.9%	42.9%	57.1%	57.1%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%	0.1%	0.3%	0.2%	0.6%
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%
	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%
	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%
Starry flounder	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%
	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%
	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%
Lingcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.2%	0.3%	7.3%	11.5%	5.9%	9.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%	0.5%	0.5%	99.5%	99.5%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	9.3%	5.9%	9.3%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	3.2%	2.1%	3.2%	2.1%	33.3%	21.9%	27.5%	18.1%
	Resource	0.0%	0.0%	0.0%	0.0%	2.2%	2.2%	2.2%	2.2%	97.8%	97.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.6%	0.4%	0.6%	0.4%	26.9%	17.7%	27.5%	18.1%
Arctic lamprey	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%
	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%
	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%
Rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.3%	0.8%	0.3%	0.8%	2.4%	6.2%	2.0%	5.2%
	Resource	0.0%	0.0%	0.0%	0.0%	3.1%	3.1%	3.1%	3.1%	96.9%	96.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%	1.9%	5.0%	2.0%	5.2%
Slimy sculpin	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%
	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%
	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%

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Table 3-12.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	27.8%	43.9%	27.8%	43.9%	4.1%	6.4%	8.6%	13.6%
	Resource	0.0%	0.0%	0.0%	0.0%	62.1%	62.1%	62.1%	62.1%	37.9%	37.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	5.4%	8.5%	5.4%	8.5%	3.3%	5.2%	8.6%	13.6%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.4%	5.6%	7.6%	4.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.6%	4.5%	7.6%	4.5%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	10.1%	13.3%	10.1%	13.3%	5.0%	6.6%	6.0%	7.9%
	Resource	0.0%	0.0%	0.0%	0.0%	32.5%	32.5%	32.5%	32.5%	67.5%	67.5%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.9%	2.6%	1.9%	2.6%	4.0%	5.3%	6.0%	7.9%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.0%	10.1%	17.7%	8.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.7%	8.2%	17.7%	8.2%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	4.6%	2.0%	3.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	3.8%	2.0%	3.8%
Longnose sucker	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%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	3.8%	3.5%	3.8%	3.5%	12.5%	11.5%	10.8%	10.0%
	Resource	0.0%	0.0%	0.0%	0.0%	6.8%	6.8%	6.8%	6.8%	93.2%	93.2%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	0.7%	0.7%	10.1%	9.3%	10.8%	10.0%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.9%	0.8%	0.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.7%	0.8%	0.7%
Broad whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	21.9%	57.7%	21.9%	57.7%	0.0%	0.0%	4.2%	11.1%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	4.2%	11.1%	4.2%	11.1%	0.0%	0.0%	4.2%	11.1%
Least cisco	Gear type	0.0%	0.0%	0.0%	0.0%	3.8%	1.0%	3.8%	1.0%	0.0%	0.0%	0.7%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.7%	0.2%	0.7%	0.2%	0.0%	0.0%	0.7%	0.2%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	20.2%	23.2%	20.2%	23.2%	0.1%	0.1%	4.0%	4.5%
	Resource	0.0%	0.0%	0.0%	0.0%	98.4%	98.4%	98.4%	98.4%	1.6%	1.6%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	3.9%	4.5%	3.9%	4.5%	0.1%	0.1%	4.0%	4.5%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	7.2%	4.7%	7.2%	4.7%	0.0%	0.0%	1.4%	0.9%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.4%	0.9%	1.4%	0.9%	0.0%	0.0%	1.4%	0.9%

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Table 3-12.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Unknown whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	1.0%	1.1%	1.0%	1.1%	0.0%	0.0%	0.2%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.2%	0.2%

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

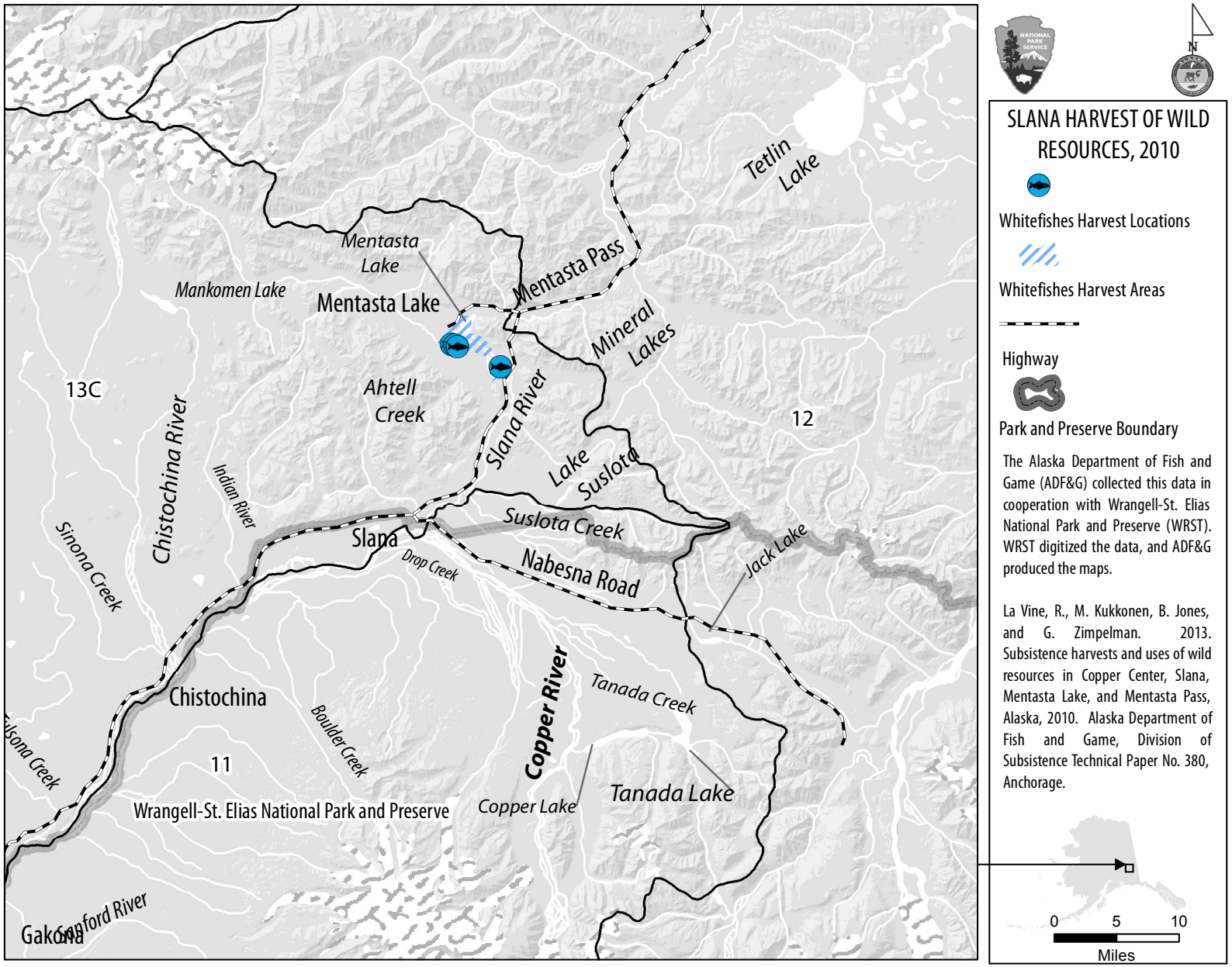


Figure 3-8.– Whitefishes search and harvest areas, Slana/Nabesna Road, 2010.

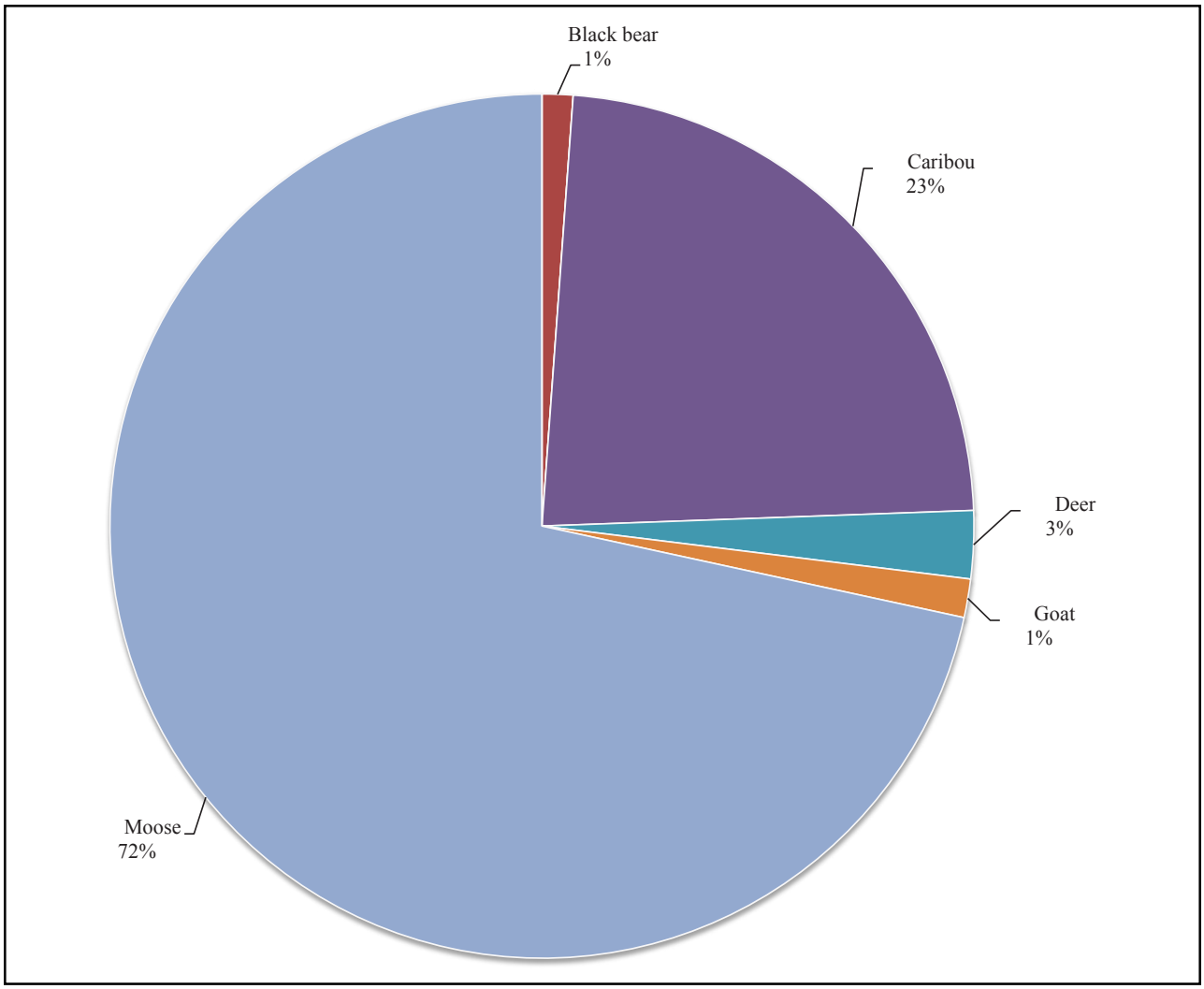


Figure 3-9.– Composition of large land mammals harvest, Slana/Nabesna Road, 2010.

LARGE LAND MAMMALS

For Slana/Nabesna Road residents, large land mammals composed 16% of the wild resource harvest in pounds usable weight for 2010, totaling 6,974 lb (Figure 3-3; Table 3-9). While the successful harvest of large land mammals was relatively low (21%) compared to the hunting effort expended by households (73%) in Slana/Nabesna Road, 77% of the households reported using large land mammals. Species harvested in 2010 were moose, caribou, deer, goat, and black bear. However, additional species (bison and Dall sheep) were used in 2010, which indicates leftover resources from previous years or harvests shared from other communities were used in 2010 by Slana/Nabesna Road households. The large land mammals most used included moose (71% of households), caribou (40%), and Dall sheep (16%) (Table 3-9). In terms of pounds usable weight, moose made up 72% of the large land mammal harvest followed by caribou at 23%, and deer at 3% (Figure 3-9). Sixty-three percent of households

Table 3-13. – Estimated harvests of large land mammals by month and sex, Slana/Nabesna Road, 2010.

	Bison	Black bear	Brown bear	Caribou		Moose		Deer	Goat	Dall sheep
Harvest month	Number	Number	Number	Male	Female	Male	Female	Number	Number	Number
January	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
February	0.0	0.0	0.0	2.8	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
April	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
June	0.0	1.4	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
August	0.0	0.0	0.0	1.4	0.0	1.4	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	8.3	1.4	0.0	1.4	0.0
October	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0
November	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0
December	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Unknown month	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Total harvest	**0.0**	**1.4**	**0.0**	**12.5**	**0.0**	**9.7**	**1.4**	**4.2**	**1.4**	**0.0**

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

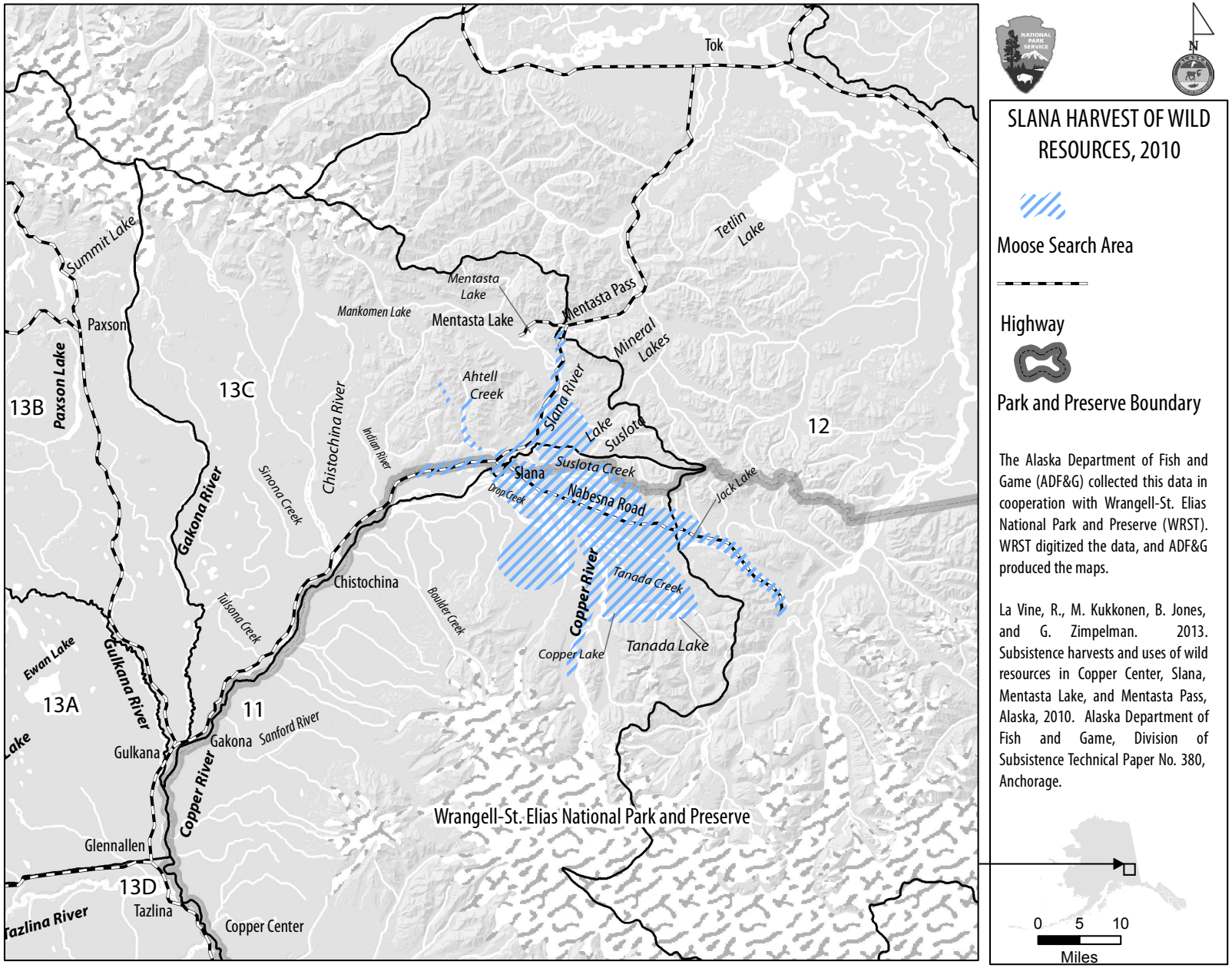


Figure 3-10.– Moose search and harvest areas, Slana/Nabesna Road, 2010.

attempted to harvest moose; only 13% of Slana/Nabesna Road households successfully harvested moose (Table 3-9). Nevertheless, 71% of households used moose during the study year (Table 3-9). In 2010, moose ranked second on the list of the top 10 resources harvested (Table 3-10). According to the study, all successful moose hunting took place in August and September 2010 (Table 3-13).

Caribou made up 23% of the large land mammal harvest for Slana/Nabesna Road in 2010. In 2010, about 31% of Slana/Nabesna Road residents reported attempting to harvest caribou, 9% of Slana/Nabesna Road households succeeded in harvesting caribou, and 40% reported using the resource (Table 3-9). In terms of pounds harvested in 2010, caribou ranks fourth on the list of top 10 resources harvested (Table 3-10). Deer made up 3% of the large land mammal harvest for Slana/Nabesna Road in 2010. Few residents (2%) reported attempting to harvest deer; 2% of Slana/Nabesna Road households reported harvesting deer (Table 3-9).

Slana/Nabesna Road residents relied primarily on the road corridors for access to large land mammal hunting. Moose search areas included along the Tok Cutoff from Indian River heading east to the end of the Nabesna Road, as far north as Mentasta Pass and as far south as Copper and Tanada lakes (Figure 3-10). Caribou search areas were along the Tok Cutoff from Indian River heading east to Jack Lake on the Nabesna Road, and within Game Management Unit 13B along the Denali Highway. Most of the hunting in 2010 was done with the help of highway vehicles, but boats and 4-wheelers are also used.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 3-9, the total harvest of small land mammals by Slana/Nabesna Road residents in 2010 was 1,174 lb, or 7 lb per capita. The majority of the edible harvest was snowshoe hares (486 lb) followed by lynx (378 lb) and beavers (250 lb). A few porcupines and muskrats were harvested as well. Hares and porcupines are harvested for food only, but lynx, beavers, and muskrats can be harvested for food as well as for their fur. The remaining animals harvested in 2010 were those taken for their fur only and included martens, foxes, and weasels, among others (Table 3-9). The harvest of small land mammals for wild foods composed approximately 3% of the total harvest in 2010 (Figure 3-3). Fewer households (31%) participated in small land mammal hunting and trapping in 2010; 29% of households in Slana/Nabesna Road reported harvests of this resource category. Despite a lower level of community participation in pursuing these species, trapping provided economic support for those households who did participate. The harvest and search areas for small land mammals in 2010 were mostly local to the community area, extending out in swaths along the Nabesna Road and as far west as the Indian River (Figure 3-11).

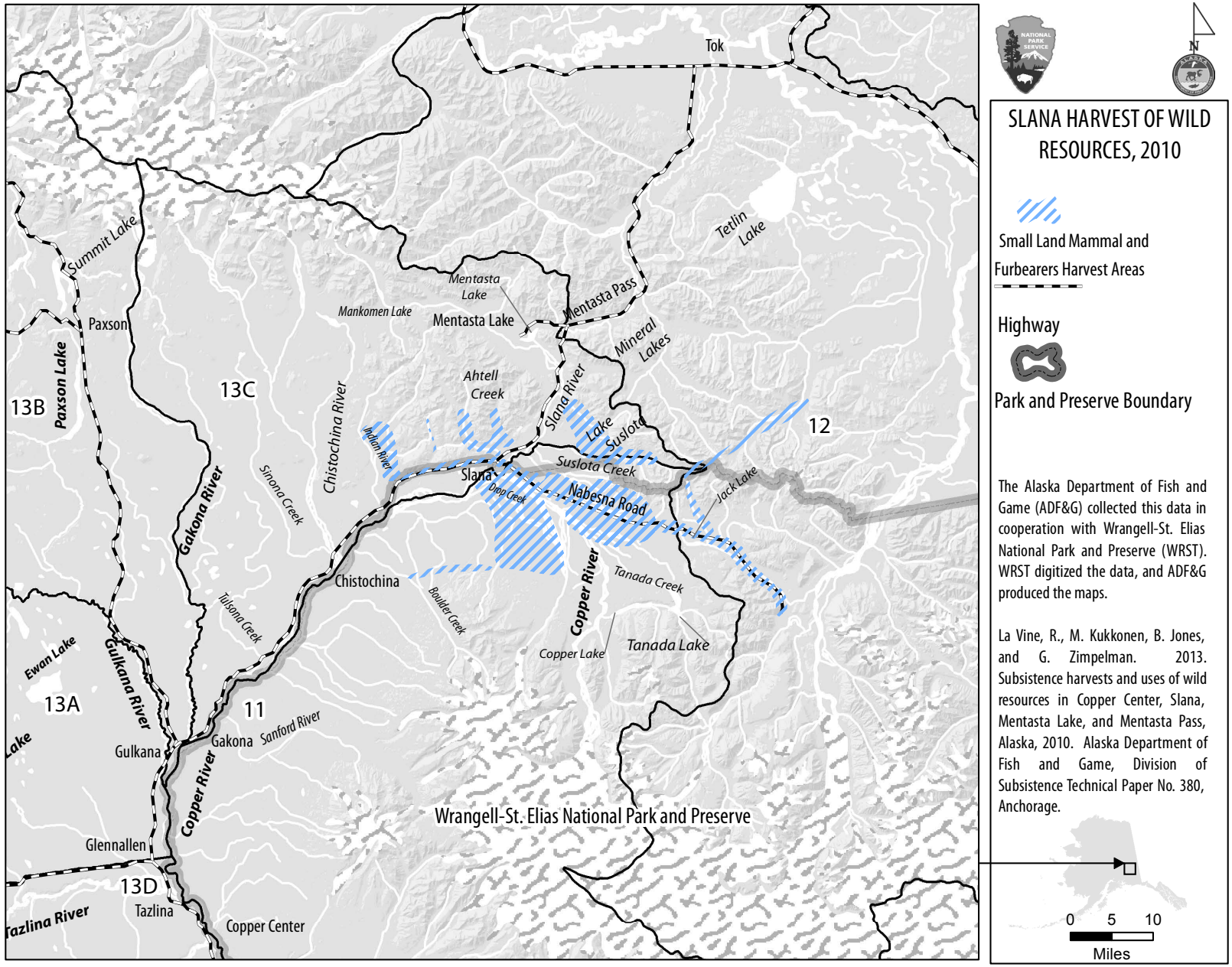


Figure 3-11.– Small land mammals and furbearers search and harvest areas, Slana/Nabesna Road, 2010.

Table 3-14. – Harvest of birds by season, Slana/Nabesna Road, 2010.

Species	Spring	Summer	Fall	Winter
Migratory birds	**5.5**	**22.2**	**27.7**	**2.8**
Canvasback	0.0	0.0	0.0	0.0
Spectacled eider	0.0	0.0	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0
Mallard	5.5	2.8	0.0	2.8
Northern pintail	0.0	0.0	0.0	0.0
Black scoter	0.0	19.4	0.0	0.0
Green-winged teal	0.0	0.0	0.0	0.0
Unknown ducks	0.0	0.0	27.7	0.0
Brant	0.0	0.0	0.0	0.0
Cacklers	0.0	0.0	0.0	0.0
Lesser Canada geese (taverner/parvipes)	0.0	0.0	0.0	0.0
Unknown Canada geese	0.0	0.0	0.0	0.0
Emperor geese	0.0	0.0	0.0	0.0
Snow geese	0.0	0.0	0.0	0.0
White-fronted geese	0.0	0.0	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0
Tundra swan (whistling)	0.0	0.0	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0
Murre	0.0	0.0	0.0	0.0
Upland game birds	**30.5**	**221.9**	**117.9**	**102.6**
Spruce grouse	30.5	122.1	52.7	36.1
Sharp-tailed grouse	0.0	6.9	2.8	0.0
Ruffed grouse	0.0	23.6	0.0	0.0
Ptarmigan	0.0	69.4	62.4	66.6

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

BIRDS

Birds (both migratory waterfowl and upland game birds) were used by more households (40%) than small land mammals, but made up a smaller percentage of the overall community harvest (just 1%). During the study year, 11% of the households used migratory birds and 8% harvested them, while 39% of households used and 37% harvested upland game birds, which made up the bulk of the bird harvest (Table 3-9). An estimated 366 lb, or a little more than 2 lb per capita of birds were harvested in 2010 (Table 3-9). The upland game bird harvest was 318 lb, or less than 2 lb per capita. The total harvest of migratory birds was much less than that of upland game birds—only 48 lb, or less than 1 lb per capita. The migratory bird harvest included ducks, such as mallards and black scoters. Additionally, seabirds, in particular murres, were received and used by 2% of Slana/Nabesna Road households (Table 3-9). No households surveyed harvested bird eggs, however, 2% of households reported receiving and using gull eggs (Table 3-9).

Almost half of the upland game birds were harvested during the summer months, but many were harvested during the fall and winter months as well (Table 3-14). Almost half of the migratory birds were harvested in the fall (Table 3-14). Upland game birds were harvested within and just outside the Slana/Nabesna Road community, and along the along the Tok Cutoff from Indian River heading east to the end of the Nabesna Road. Migratory waterfowl were harvested within and just outside the Slana/Nabesna Road community, as well as near Copper and Tanada lakes (Figure 3-12).

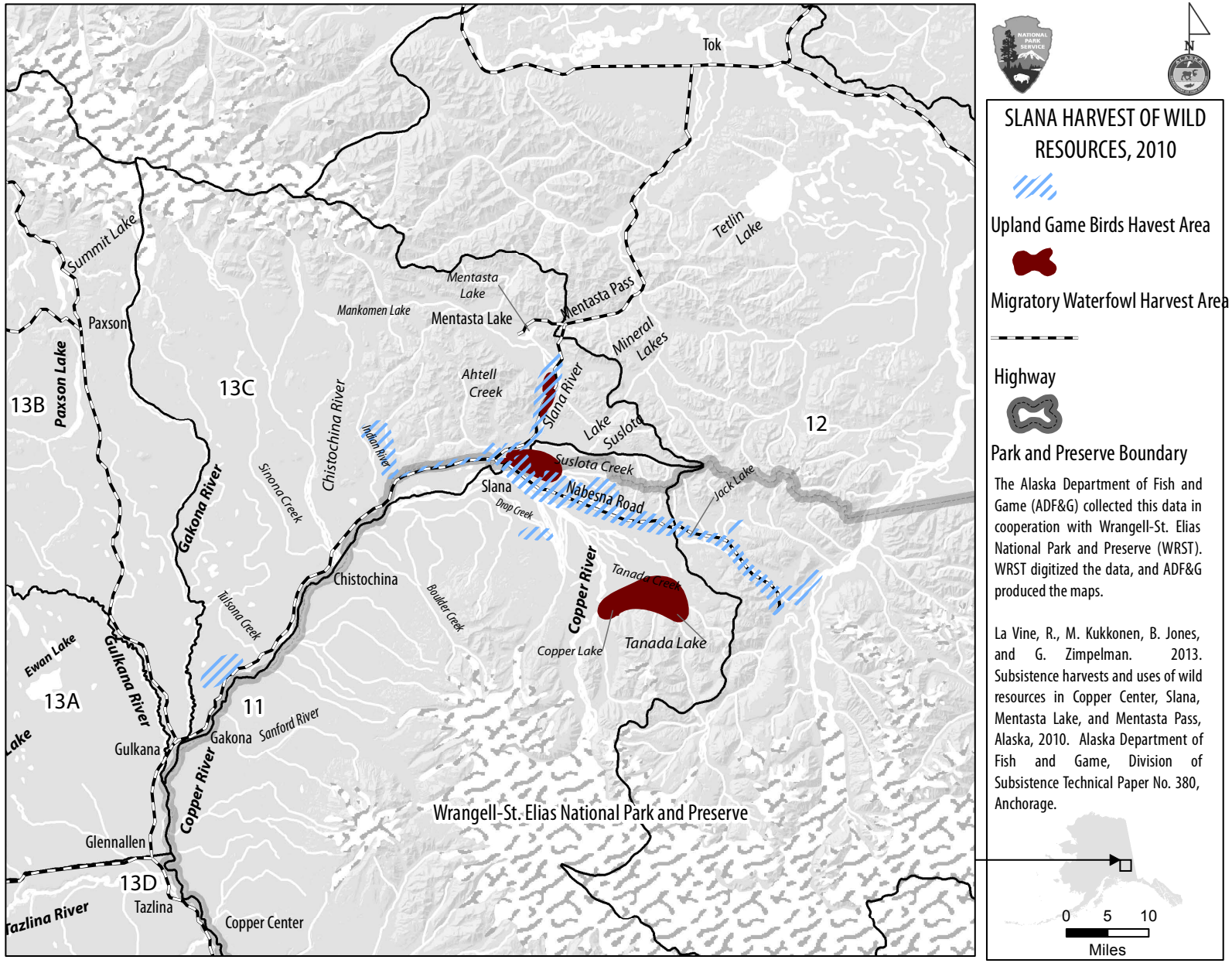


Figure 3-12.– Upland game birds and migratory waterfowl search and harvest areas, Slana/Nabesna Road, 2010.

MARINE INVERTEBRATES

The harvest of marine invertebrates by Slana/Nabesna Road residents in 2010 made up a small fraction of the total harvest— approximately 2% of the total harvest (706 lb, or 4 lb per capita) (Figure 3-3; Table 3-9). Of the marine invertebrate species harvested, Dungeness crab ranked first with 416 lb harvested, followed by Tanner crab with a total community harvest of 277 lb, and ranking third was razor clams with a harvest of 13 lb for the entire community (Table 3-9).

VEGETATION

Vegetation made up approximately 7% of the total harvest of edible foods in 2010. Even though the harvest weight was relatively low, 92% of the households surveyed used some form of vegetation and 90% harvested vegetation (Table 3-9). Approximately 89% of the households used berries, 81% used wood, and 45% reported using plants, greens, and mushrooms (Table 3-9). Uses for wood include smoking fish, building fish wheels and making crafts. The most common use of wood is for heating homes. In Slana/Nabesna Road, for 2010 approximately 87% of residents used some wood to heat their homes, 29% used only wood to heat their homes, and the average annual cost of heating homes using both wood and/or other resources was $2,869 (Table 2-18). In 2010, Slana/Nabesna Road residents harvested 2,880 lb of vegetation, or just more than 16 lb per capita. Within the plants, greens, and mushrooms category, fireweed, wild rose hips, and mushrooms were the top 3 harvested resources by weight (Table 3-9). Most plants and berries were harvested close to the community of Slana/Nabesna Road, but harvest and search areas also extended along the Tok Cutoff from Indian River heading east to the end of the Nabesna Road, as far north as Mentasta Pass, and as far south as Copper and Tanada lakes, as well as around Mineral Lakes (Figure 3-13).

COMPARING HARVESTS AND USES IN 2010 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 9 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2010 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 3-15 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 3-15, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category.

Figure 3-14 depicts responses to the “less, same, more” assessment question. Households that

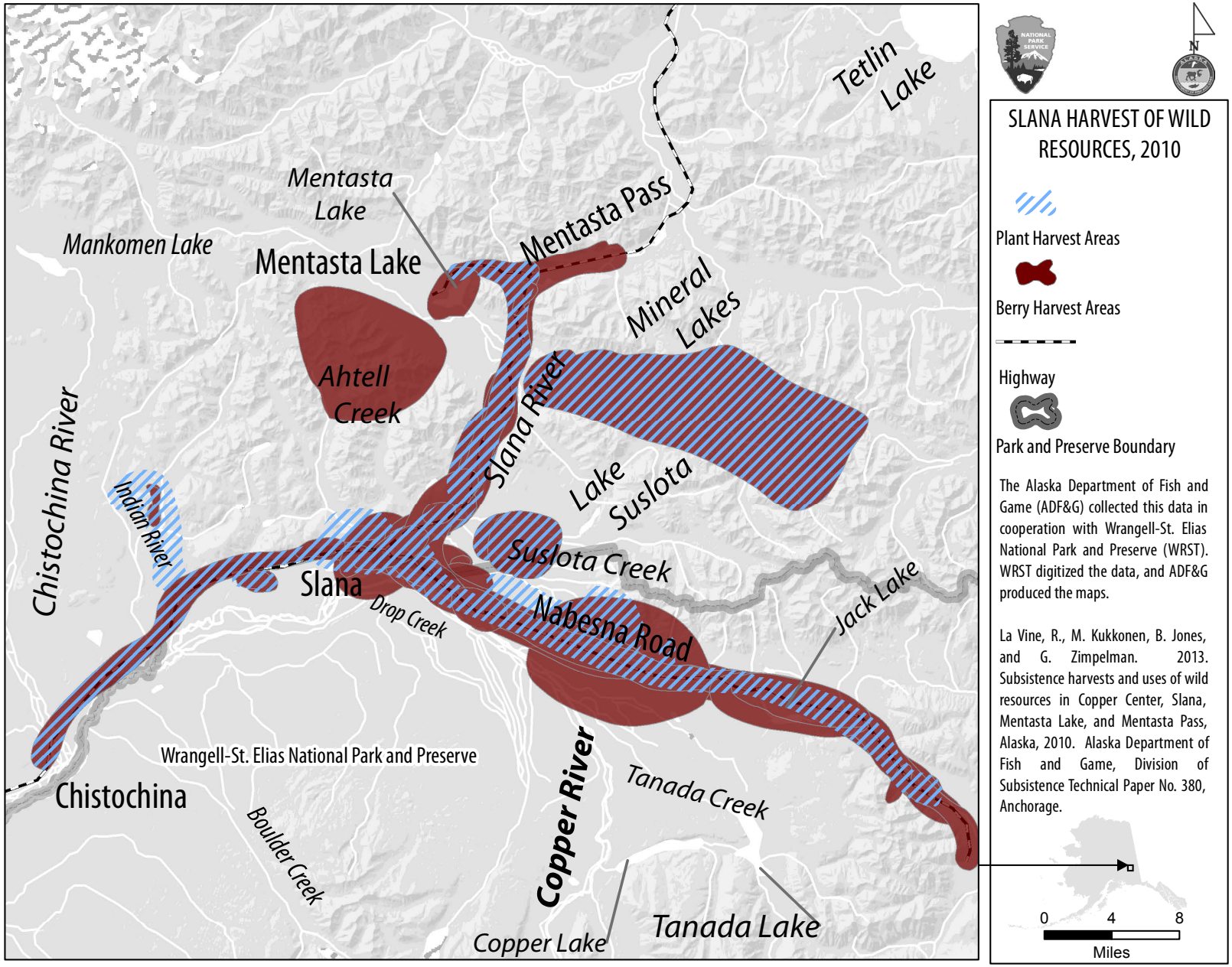


Figure 3-13.– Berries and plants, greens, and mushrooms search and harvest areas, Slana/Nabesna Road, 2010.

Table 3-15. – Change in household use of resources compared to recent years, Slana/Nabesna Road, 2010.

Resource category	Sampled households	Valid Responses[a]	Households reporting use[b] Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage
Any resource[c]	62	62	45	73%	53	85%	27	44%
All resources	62	61	29	48%	20	33%	12	20%
Salmon	62	58	23	40%	24	41%	11	19%
Nonsalmon fish	62	49	15	31%	24	49%	10	20%
Large land mammals	62	58	31	53%	24	41%	3	5%
Small land mammals	62	23	5	22%	17	74%	1	4%
Migratory birds	62	6	0	0%	4	67%	2	33%
Other birds	62	29	9	31%	16	55%	4	14%
Bird eggs	62	2	2	100%	0	0%	0	0%
Marine invertebrates	62	8	6	75%	2	25%	0	0%
Vegetation	62	57	13	23%	30	53%	14	25%

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

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

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.

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 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, when asked at the end of the survey, most households (48%) said they used less subsistence resources in general over the previous 12 months compared to recent years (Table 3-15). A smaller number, 33% of households, said they used about the same amount, and only 20% said they used more.

In responding to questions about the individual resource categories, 75% reported that their use of marine invertebrates was less in 2010 than in previous years. Other categories where a significant percentage of households reported less use in 2010 were large land mammals (53%), salmon (40%), and nonsalmon fish and upland game birds (31% reporting less use in each) (Table 3-15). Also, of the 62 sampled households, 2 households responded to the question and reported that their use of bird eggs was less in 2010 than in previous years (Table 3-15). In the resource categories of small land mammals and vegetation, the majority of households (74% reporting using the same amount of small land mammals and 53% vegetation) estimated their use of these resources were the same in 2010 in comparison to previous years (Table 3-15).

Tables 3-16 and 3-17 list the reasons Slana/Nabesna Road respondents gave for changes in harvests and uses by resource category. These were open-ended questions, and respondents could provide more than one reason for changes. Project staff grouped the responses into categories, such as competition for resources, regulations hindering or helping residents to harvest resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal

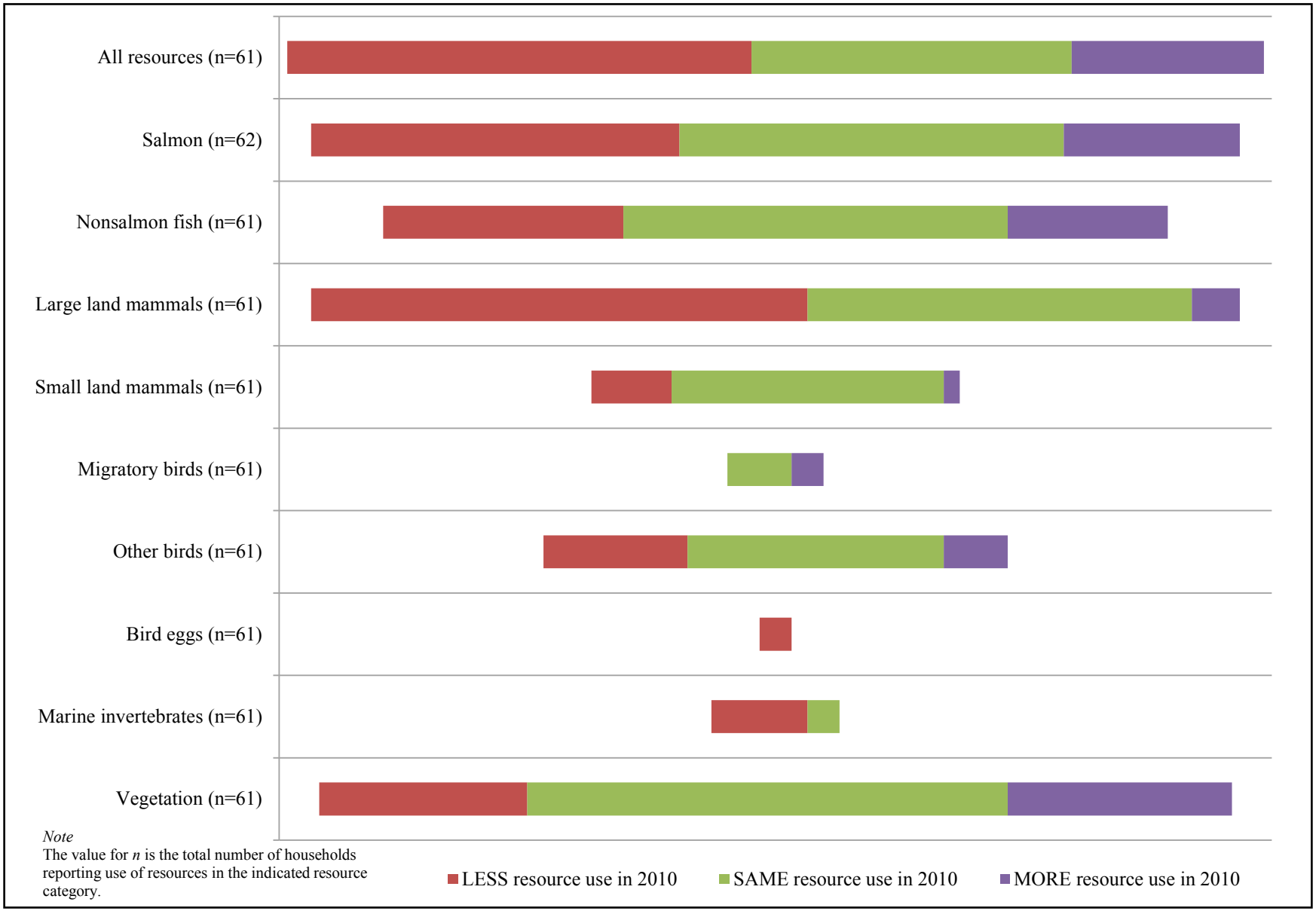


Figure 3-14.– Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Slana/ Nabesna Road, 2010.

Table 3-16. – Reasons household use of resources was less compared to recent years, Slana/Nabesna Road, 2010.

Resource category	Households using[a]	Households reporting less use: Total households	No reason reported: Number	No reason reported: Percentage	Fewer resources available: Number	Fewer resources available: Percentage	Poor weather: Number	Poor weather: Percentage	Work interfered: Number	Work interfered: Percentage	Competition: Number	Competition: Percentage
Any resource[b]	62	45	1	2.2%	12	26.7%	4	8.9%	13	28.9%	5	11.1%
All resources	61	29	0	0.0%	3	10.3%	0	0.0%	3	10.3%	1	3.4%
Salmon	58	23	0	0.0%	4	17.4%	1	4.3%	3	13.0%	2	8.7%
Nonsalmon fish	49	15	0	0.0%	2	13.3%	1	6.7%	5	33.3%	0	0.0%
Large land mammals	58	31	0	0.0%	6	19.4%	0	0.0%	4	12.9%	3	9.7%
Small land mammals	23	5	0	0.0%	1	20.0%	2	40.0%	1	20.0%	0	0.0%
Other birds	29	9	0	0.0%	3	33.3%	0	0.0%	3	33.3%	0	0.0%
Bird eggs	2	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	8	6	0	0.0%	0	0.0%	0	0.0%	3	50.0%	0	0.0%
Vegetation	57	13	0	0.0%	1	7.7%	0	0.0%	4	30.8%	0	0.0%

Table 3-16.–Continued.

Resource category	Households using[a]	Households reporting less use: Total households	Regulations: Number	Regulations: Percentage	Less sharing: Number	Less sharing: Percentage	Other personal reasons: Number	Other personal reasons: Percentage	Fuel or equipment too expensive: Number	Fuel or equipment too expensive: Percentage
Any resource[b]	62	45	6	13.3%	12	26.7%	38	84.4%	3	6.7%
All resources	61	29	1	3.4%	3	10.3%	19	65.5%	0	0.0%
Salmon	58	23	1	4.3%	2	8.7%	12	52.2%	0	0.0%
Nonsalmon fish	49	15	2	13.3%	1	6.7%	4	26.7%	1	6.7%
Large land mammals	58	31	3	9.7%	8	25.8%	15	48.4%	0	0.0%
Small land mammals	23	5	0	0.0%	0	0.0%	1	20.0%	0	0.0%
Other birds	29	9	0	0.0%	0	0.0%	2	22.2%	1	11.1%
Bird eggs	2	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Marine invertebrates	8	6	0	0.0%	1	16.7%	2	33.3%	1	16.7%
Vegetation	57	13	0	0.0%	0	0.0%	8	61.5%	0	0.0%

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

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

Note The category for "migratory birds" is not included in this table because no (zero) households in Slana reported harvesting less "migratory birds."

a. Households using include only households that used a resource and responded to the question about use.

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 3-17. – Reasons household use of resources was more compared to recent years, Slana/Nabesna Road, 2010.

Resource category	Households using[a]	Households reporting more use: Total households	No reason reported: Number	No reason reported: Percentage	More resources available: Number	More resources available: Percentage	Better weather: Number	Better weather: Percentage	Work related: Number	Work related: Percentage	Less competition: Number	Less competition: Percentage
Any resource[b]	62	27	0	0.0%	5	18.5%	2	7.4%	1	3.7%	1	3.7%
All resources	61	12	0	0.0%	1	8.3%	0	0.0%	0	0.0%	0	0.0%
Salmon	58	11	0	0.0%	2	18.2%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	49	10	0	0.0%	0	0.0%	0	0.0%	1	10.0%	1	10.0%
Large land mammals	58	3	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	23	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	6	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	29	4	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	57	14	0	0.0%	2	14.3%	2	14.3%	1	7.1%	0	0.0%

Table 3-17.–Continued.

Resource category	Households using[a]	Households reporting more use: Total households	Better regulations: Number	Better regulations: Percentage	More sharing: Number	More sharing: Percentage	Other personal reasons: Number	Other personal reasons: Percentage	Economic: Number	Economic: Percentage
Any resource[b]	62	27	0	0.0%	2	7.4%	22	81.5%	2	7.4%
All resources	61	12	0	0.0%	0	0.0%	9	75.0%	1	8.3%
Salmon	58	11	0	0.0%	1	9.1%	6	54.5%	1	9.1%
Nonsalmon fish	49	10	0	0.0%	2	20.0%	5	50.0%	0	0.0%
Large land mammals	58	3	0	0.0%	1	33.3%	1	33.3%	0	0.0%
Small land mammals	23	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Migratory birds	6	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Other birds	29	4	0	0.0%	0	0.0%	3	75.0%	0	0.0%
Vegetation	57	14	0	0.0%	0	0.0%	10	71.4%	1	7.1%

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

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

Note The categories of "bird eggs" and "marine invertebrates" are not included in this table because no (zero) households in Slana reported using more "bird eggs" or "marine invertebrates."

a. Households using include only households that used a resource and responded to the question about use.

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.

reasons such as work, change in household size, age and health, and other outside effects on residents' opportunities to engage in subsistence activities.

The survey received 61 valid responses to questions on whether all resource use had been less, the same, or more during the study year (Table 3-16). Of those 61 responses, there were 29 who reported less use of all resources in general. Nineteen of 29 respondents (or 66%) cited "other personal reasons" as the No. 1 reason why their harvest was less for all resources (Table 3-16). Few other categories were cited as reasons why general use of all resources was down, but included "fewer resources available" (10%), "work interfered" (10%) and "less sharing" (10%). Twenty-three households (40%) of 58 valid responses indicated that their salmon use was less in the study year (Table 3-15). The majority of households (52%) attributed their declined use of salmon to "other personal reasons" followed by "fewer resources available" as the next most frequently cited reason (4 households, or 17%) (Table 3-16). Out of 61 valid responses, there were 12 households who reported their overall 2010 resource use was more than in recent years (Table 3-15). Reasons given for the increase were primarily attributed to "other personal reasons" (9 households, or 75%), but also included in smaller numbers "economic" (8%) and "more resources available" (8%) reasons (Table 3-17).

HARVEST DATA

Changes in the harvest of resources by Slana/Nabesna Road residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Slana and along the Nabesna Road in 1982 and 1987 by the Division of Subsistence. In the following comparisons, data for 1982 are derived from the communities of Slana and Nabesna Road. Data for 1987 are derived from the communities of Slana, Nabesna Road, and the then newly formed settlements of Slana Homestead South and Slana Homestead North. It should be noted that Slana Homestead North lies outside of any current CDP boundary and for this reason, as well as its decline in permanent residences, Homestead North data are missing from the 2010 study. Figure 3-15 highlights the per capita harvests of resources for all 3 study years (1982, 1987, and 2010), and Figure 3-16 highlights the total pounds harvested for each study year. In 1982, the total harvest of all wild resources in pounds usable weight was 30,983 lb, or 265 lb per capita. In 1987 the total harvest of wild resources increased in pounds of usable weight to 68,890 lb but the per capita harvest decreased to 200 lb. In 2010 total harvest of all wild resources in pounds usable weight decreased to 42,346 lb, conversely the per capita harvest increased to 240 lb per capita, which was 25 lb short of the 1982 per capita harvest (figures 3-15 and 3-16).

With regard to individual resource categories, between 1982 and 1987 there was a 23 lb decrease in per capita harvests of large land mammals, and the per capita harvest level declined again between 1987 and 2010 by 50 lb (Figure 3-15). Between 1982 and 1987 the salmon per capita harvest decreased by 29 lb per capita but after 1987 the per capita salmon harvest underwent a large increase by 68 lb per

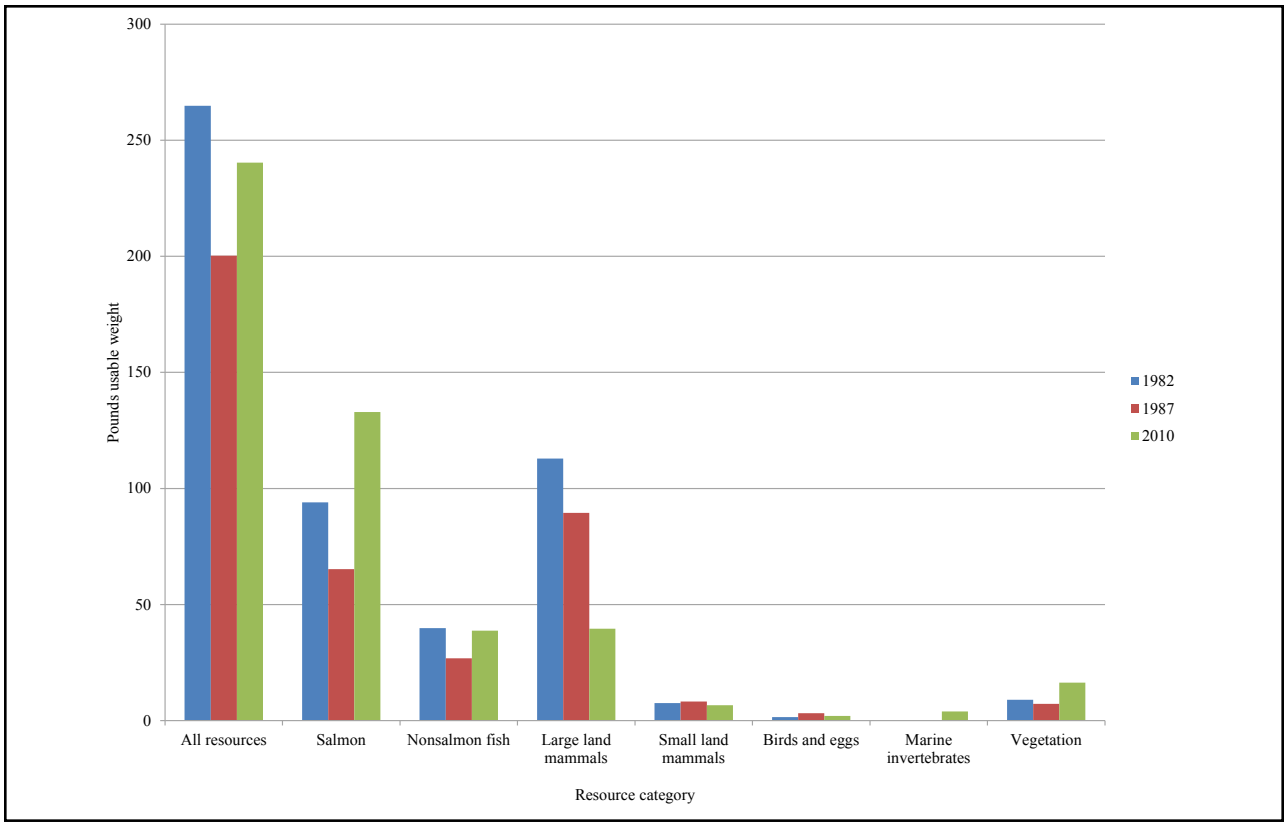


Figure 3-15.– Per capita harvests in pounds usable weight, Slana/Nabesna Road, 1982, 1987, and 2010.

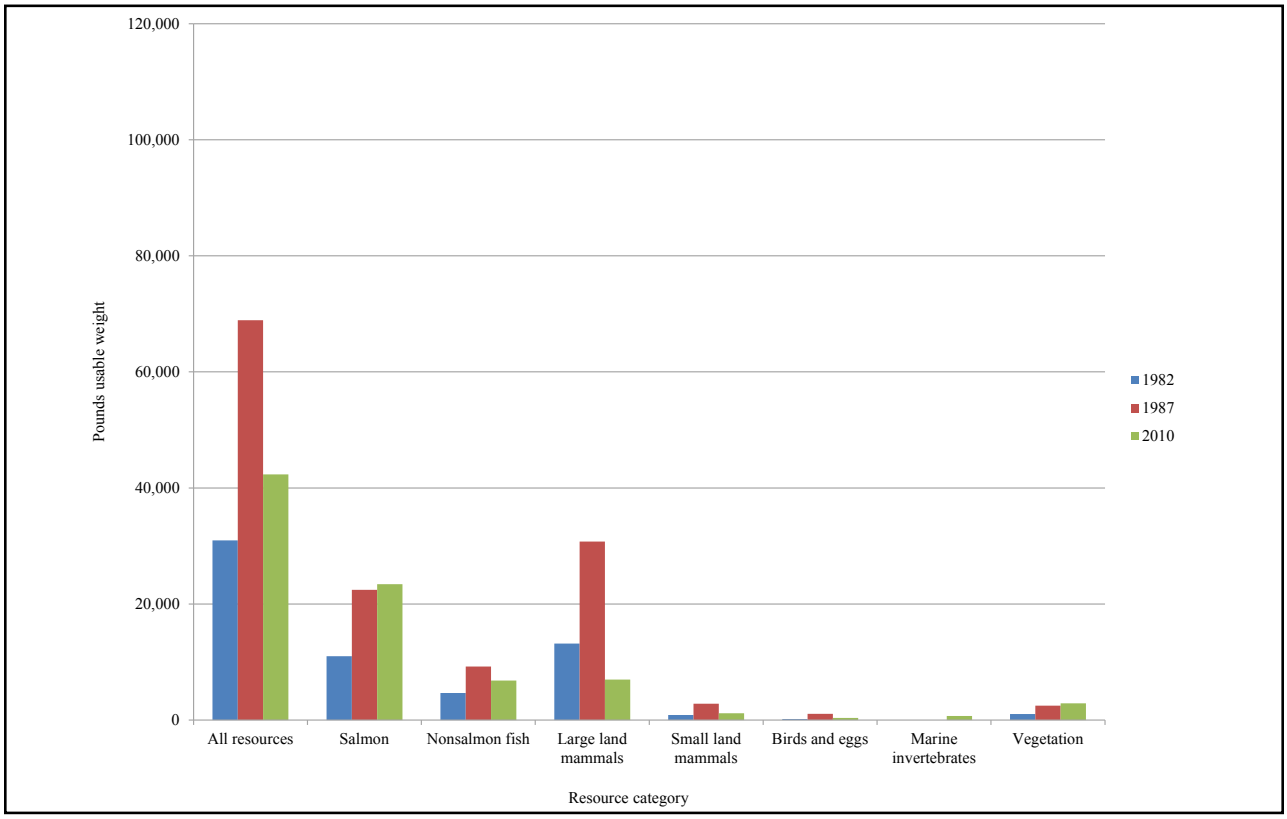


Figure 3-16.– Harvests by pounds usable weight, Slana/Nabesna Road, 2010.

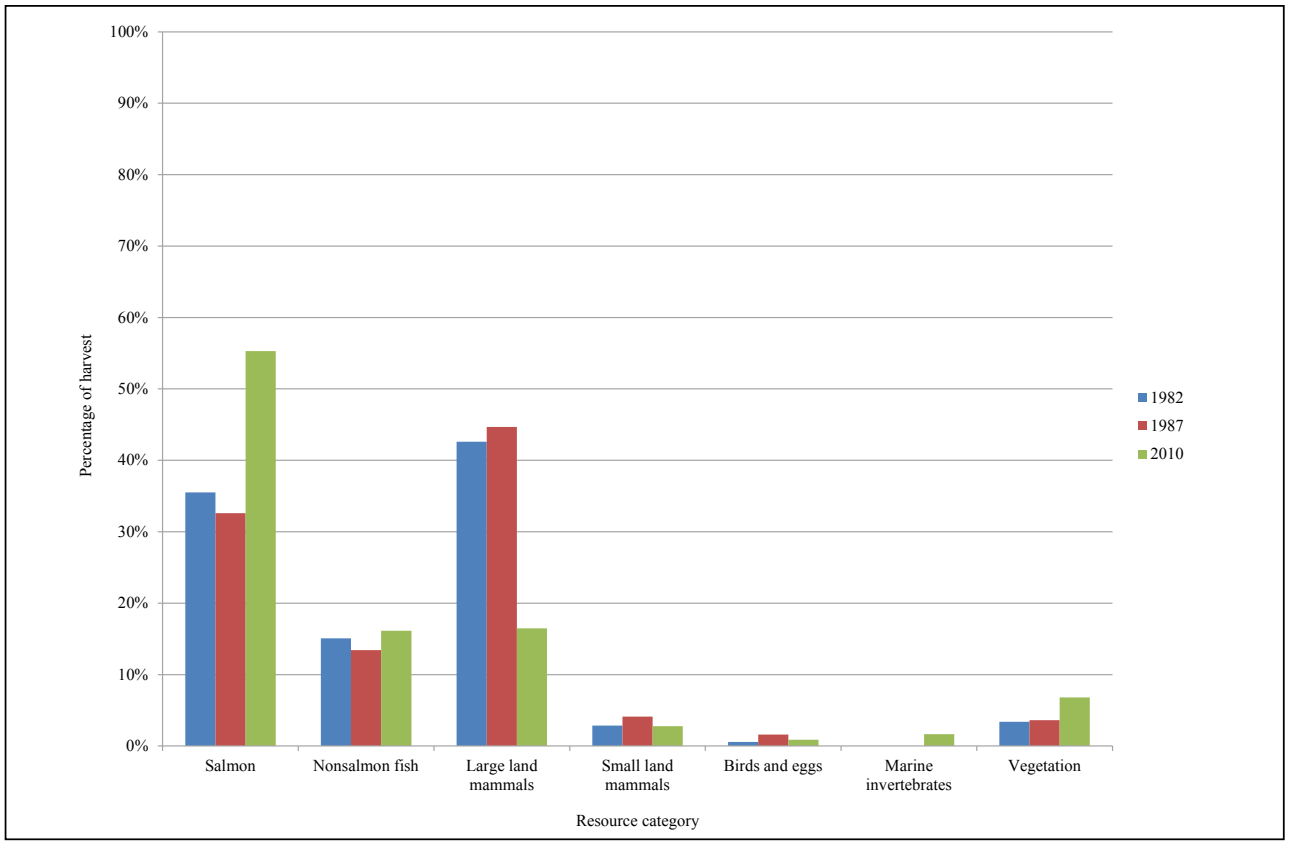


Figure 3-17.– Composition of total harvest as a percentage of usable weight, Slana/Nabesna Road, 1982, 1987, and 2010.

capita. Nonsalmon fish per capita harvests follow the same trend as salmon. Between 1982 and 1987 there was a 13 lb per capita decrease in nonsalmon fish harvests but after 1987 there was an increase in the nonsalmon fish per capita harvest by 12 lb per capita. Per capita harvests for vegetation began at 9 lb in 1982 but then dropped to 7 lb per capita in 1987 and rose to 16 lb per capita in 2010. The per capita harvest of birds remained roughly the same for all 3 study years, hovering between 2 and 3 lb each study year. Small land mammal per capita harvests began at 8 lb per capita in 1982, and remained steady at 8 lb in 1987, then dropped to 7 lb per capita in 2010. In summary, Figure 3-15 most dramatically illustrates the decline in large land mammal per capita harvests from 1982 to 2010. Both salmon and nonsalmon fish per capita harvests decreased from the 1982 study to the 1987 study but then increased in 2010. This change in large land mammal per capita harvests and fish harvest amounts illustrates a shift from a reliance on large land mammals to a reliance on salmon and nonsalmon fish for the residents of Slana/Nabesna Road.

Figure 3-17 breaks down the Slana/Nabesna Road annual harvest composition into percentages for the 3 study years: 1982, 1987, and 2010. There is a similar trend for salmon in terms of the per capita harvest and composition of the total harvest; in 1982 salmon composed 36% of the total Slana/

Nabesna Road harvest, then dropped slightly to 33% of the harvest in 1987, and increased to 55% of the harvest in 2010. The same is not true for large land mammals. In 1982, large land mammals composed 43% of the annual harvest; they increased to 45% in 1987, but dropped significantly in 2010 to 16% of the annual harvest.

Vegetation began in 1982 as 3% of the total household harvest for Slana/Nabesna Road residents, increased up to 4% of the household harvests in 1987 and continued to rise to 7% of the household harvest in 2010. This illustrates an overall increase in reliance upon vegetation from 1982 to 2010. Nonsalmon fish composed 15% of the harvest for Slana/Nabesna Road households in 1982, fell to 13% of the total harvest in 1987, and went up to 16% of the total household harvest in 2010.

Although the large land mammal harvest trends differ for the per capita harvest and percentage of total harvest, overall Figure 3-17 shows an increased reliance on salmon rather than large game with a subsequent slight increased reliance on other resources, too, from 1987 to 2010.

CURRENT AND HISTORICAL HARVEST AREAS

The Alaska Department of Fish and Game Division of Habitat mapped the community resource use areas for Slana/Nabesna Road and other communities in or near the Copper River Basin during the study years of 1983 and 1984 (Stratton and Georgette 1985). The maps produced for the *Alaska Habitat Management Guide Southcentral Region: map atlas* (ADF&G 1985) depict areas used between 1964 and 1984 for hunting, fishing, trapping, and gathering resources. A total of 8 maps for Slana/Nabesna Road at the 1:250,000 scale are available in digital format in the ADF&G archives (ADF&G 1985). The maps cover harvest and use areas for moose, caribou and waterfowl, sheep and plants, nonsalmon fish and salmon, and trapping areas. Absent from these maps are harvest and use areas for black bears and upland game birds.

While it is important to keep in mind that the maps produced in 1985 capture multiple decades of activity rather than just one year, it is significant to note how diminished the harvest areas are in 2010 in comparison to the previous study. On all small and large land mammal maps from the 1983 and 1984 mapping surveys, use areas cover a wide expanse of land in the immediate area surrounding the community of Slana/Nabesna Road, across the flats, and up multiple tributaries to the Copper River on both the north and south sides of the Tok Cutoff. Notably, fall season caribou harvest and search areas were conducted on the roadways along the Tok Cutoff between Slana and Mentasta Pass, along the Nabesna Road, and down along the Copper River toward Tanada and Copper lakes for the 1980s caribou seasons in Unit 11. Additionally, moose were sought in an area along the Nabesna Road up to Jack Lake, along the Tok Cutoff between Chistochina and Mentasta Pass, in the area surrounding Slana/Nabesna Road, including a section of the Slana River as well as surrounding the area of Mineral lakes, and along the Gakona River north to Summit Lake.

Compared to the historical maps, the 2010 moose harvest and search patterns altered significantly

from the past; earlier harvest areas included most of the modern harvest areas but also extended much farther off the road system and included much larger areas to the north of Nabesna Road, such as the areas around Suslota Lake and Mineral Lakes, as well as southeast into the Wrangell-St. Elias National Park and Preserve along Boulder Creek and into the Copper River as far south as portions of Goat Creek and Tanada Lake. Search areas went as far to the northwest as Paxson and Summit Lake. Caribou harvest and search patterns were altered significantly from the past; earlier harvest areas included the area surrounding the community of Slana/Nabesna Road, heavily along the Nabesna Road and extending south past Copper Lake as well as into what is now Wrangell-St. Elias National Park and Preserve. These patterns also extended north to Mentasta Pass and the area surrounding Mineral Lakes. The 2010 caribou harvest and search patterns were concentrated on the Denali Highway just west of Paxson, as well as along the Nabesna Road from Slana to Jack Lake. These changes in caribou harvest and search areas demonstrate the elimination of a caribou season in Unit 11 due to conservation concerns.

Demonstrative of the diminished harvest of small game from 1987 to 2010, small land mammal harvest areas were reduced primarily to the road system on the Nabesna Road from Slana to Nabesna, and along a small section to the north of the Nabesna Road near Suslota Lake. The historical search and harvest patterns included all of the modern harvest areas but also extended much farther off the road system and included much larger areas to the south of Nabesna Road, such as the along the Copper River, and into what is now Wrangell-St. Elias National Park and Preserve.

LOCAL CONCERNS REGARDING RESOURCES

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

LARGE LAND MAMMALS

Slana residents are primarily concerned about access to large game hunting areas. Slana/Nabesna Road residents reported that both moose and caribou hunts are becoming more popular with non-local hunters, which is leading to a change in traffic patterns during the hunting season and creating crowded and unsafe roads through the community. In addition to increased competition for resources, Slana/Nabesna Road residents stated they no longer hunt the Cobb Lake area due to uncertainty over the pending transference of the land into Ahtna, Inc., ownership (currently still managed as federal public lands open to hunting under federal subsistence regulations). In the past this area was a popular spot for hunting caribou due to its close proximity to the community.

FISH

Residents reported a heavy reliance on salmon in the Slana/Nabesna Road community and stated that they were concerned about accessing a fish wheel to harvest salmon. In the past, many Slana/Nabesna Road residents relied on a fish wheel that was located on the property of a local community member—the only locally-owned tract of land with river access and good placement for wheel installation. This community member welcomed any Slana/Nabesna Road resident to share his fish wheel. However, the property owner passed away in 2012 causing uncertainty over future access to the property and the wheel.

SMALL LAND MAMMALS/FURBEARERS

Slana/Nabesna Road residents observed inconsistency in the amounts of small land mammals in traplines over the past decade. In addition, the price of Ahtna land-use permits recently increased significantly, making it unaffordable for many Slana/Nabesna Road residents to pursue trapping.

BIRDS

Slana/Nabesna Road residents harvested very few migratory birds in 2010. One resident made the observation that waterfowl are not as abundant now as they were in the past. Some residents commented that upland game birds are found in greater abundance than migratory birds, and are most often harvested opportunistically, while searching for large game mammals.

VEGETATION

Firewood is a heavily harvested and used resource because it is the preferred source of heat for many residents. The community members have concerns about ensuring continued use of chainsaws within park boundaries. Many feared current or future regulations preventing the use chainsaws within park boundaries to collect firewood. There is an existing nationwide NPS regulation requiring a permit for the operation of portable motors within parks, but locally this has not been enforced and the park has no plans to ban the use of chainsaws.

SUMMARY

The household survey findings demonstrate that residents of Slana/Nabesna Road continue to harvest a wide variety of resources in 2010, but over time, while some resources remain critical and the per capita harvest remains steady, the overall composition of the annual harvest has changed from 1987 to 2010. Large land mammals made up 16% of the harvest, salmon 55%, vegetation 7%, and nonsalmon fish made up 16% of the overall harvest in 2010. Small land mammals, birds and eggs,

and marine invertebrates made up the remaining 6% of the harvest. Significant changes in harvest composition over time are seen in the decline in harvests of nonsalmon fish, birds and eggs, and small land mammals, but an increase in reliance on salmon and vegetation. Harvest and use areas for Slana/Nabesna Road residents are significantly reduced since the last mapping effort occurred in 1983 and 1984 (Stratton and Georgette 1985).

CHAPTER 2: MENTASTA LAKE

COMMUNITY BACKGROUND

Mentasta Lake is situated 6 miles off the Tok-Slana Cutoff of the Glenn Highway on the west side of Mentasta Pass approximately 38 miles southwest of Tok. The mountains and upland waterways surrounding Mentasta Lake are at the northernmost extent of the Copper River watershed and drain into the Slana River, which in turn joins the Copper River.

THE COMMUNITY OF MENTASTA LAKE

Mentasta Lake is the eastern-most Upper Ahtna village in the Copper River Basin, with an estimated 92% of the population identified as Alaska Native. Historically, due to Mentasta Lake's location near the boundary of Upper Tanana and Ahtna territories, the area is reported to have been part of the best-known route of Native migration across the Alaska Range (Stratton and Georgette 1984:161). Early village settlements were located at various sites around the lake that were strategically situated near good salmon fishing areas (McMillan and Cuccarese 1988:122).

The early settlement of Mentasta Lake experienced great fluctuations in population over time. During the first half of the 20th century, the village suffered the effects of epidemics and outmigration. In 1940, the U.S. Census listed the population of Mentasta Lake as 15 residents and by 1951 only 1 family remained in the village located at the southcentral shore (Strong 1972:164). Then in 1942, the Tok-Slana Cutoff was completed, which dramatically impacted the Upper Ahtna people and affected the vitality of Mentasta Lake. In 1951, the village of Mentasta Lake moved from its previous southcentral position on the lake to its present site on the north side of the lake in order to gain access to a newly completed road system. By 1952, residents from Nabesna, Suslota, Slana, Batzulnetas, and other area communities began to relocate to the new village site. (Strong 1972:164). When the Division of Subsistence conducted a baseline subsistence survey study in the Copper River Basin in 1987 the population of Mentasta Lake was estimated as 80 residents, of which 87% (or 69 individuals) were Alaska Native (McMillan and Cuccarese 1988:122).

Today, the Mentasta Traditional Council is a federally-recognized tribe located in Mentasta Lake. In 1992, Mt. Sanford Tribal Consortium was established in Mentasta Lake under a joint effort by Chistochina Village and Mentasta Village to advance and protect common interests of the descendants of the Upper Ahtna indigenous people (Mt. Sanford Tribal Consortium 2012). Mt. Sanford Tribal

Consortium provides health and wellness services to its stakeholders and is a source of local employment for people in the community.

The current community of Mentasta Lake is part of the Valdez-Cordova Census Area and is an unincorporated census designated place (CDP) and current as well as historical population estimates are available from the U.S. Census Bureau and the State of Alaska. With the exception of the aforementioned Mentasta Traditional Council, there is no local government in the community. The closest major services available for Mentasta Lake residents are in Tok approximately 38 miles northeast of the community, but many residents will more frequently travel the short drive from the village to Mentasta Lodge, which features a year-round restaurant, lodging, bar, gas station, and limited grocery store. Additionally, the majority of permanent residents in the community of Mentasta Lake use a variety of subsistence species throughout the year. Prior to 1980 and the establishment of the Wrangell-St. Elias National Park and Preserve (WRST) under the Alaska National Interest Lands Conservation Act (ANILCA), residents of Mentasta Lake were able to hunt and gather local wild resources without significant restrictions.[1] The implementation of joint state and federal management structures on the area lands and resources took several years before reaching its current status. In the course of this process, Katie John of Mentasta Lake as well as members of other area communities impacted by these decisions were actively involved in making sure that they would be able to continue to pursue their subsistence way of life into the future. Today, Mentasta Lake is included among the 23 resident zone communities in the area of WRST, and under current federal regulations, qualified local rural residents may subsistence hunt, fish, and trap in both the park and the preserve.[2]

DEMOGRAPHY, CASH EMPLOYMENT, AND MONETARY INCOME

DEMOGRAPHY

According to the federal census, Mentasta Lake had 112 residents in 2010 (U.S. Census Bureau 2011). However, the household survey conducted for this study found an estimated 2010 population of 106 residents, of which 92% (98 residents) were Alaska Native (Table 4-1). Figure 4-1 shows the population of the community over time from U.S. Census data and Alaska Department of Labor estimates. The chart demonstrates a slight growth in population from 77 residents in 1987, a peak of 149 in 2002, to 106 during the study year of 2010.

Prior to the study, the Division of Subsistence researchers, in consultation with community officials and other knowledgeable respondents, estimated and confirmed 36 year-round households in Mentasta Lake in 2010; of these, 6 could not be contacted and 7 refused to participate (Table 1-3) leaving 23

1. It should be noted that the State of Alaska had established the Tok Management area in 1974 to provide Dall sheep hunters additional opportunity to harvest large-horned, trophy rams (Gardner 2002:65).
2. Title 36 Code of Federal Regulations 13.1902(a) – Subsistence.

Table 4-1. – Population of Mentasta Lake, 2010.

2010 Census[a]				Study findings for 2010			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
46	112	85	75.9%	36	106	98	92.1%

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

a. *Source* U.S. Census (2011). Mentasta Lake CDP includes Mentasta Pass population, which our study treats as a separate population area.

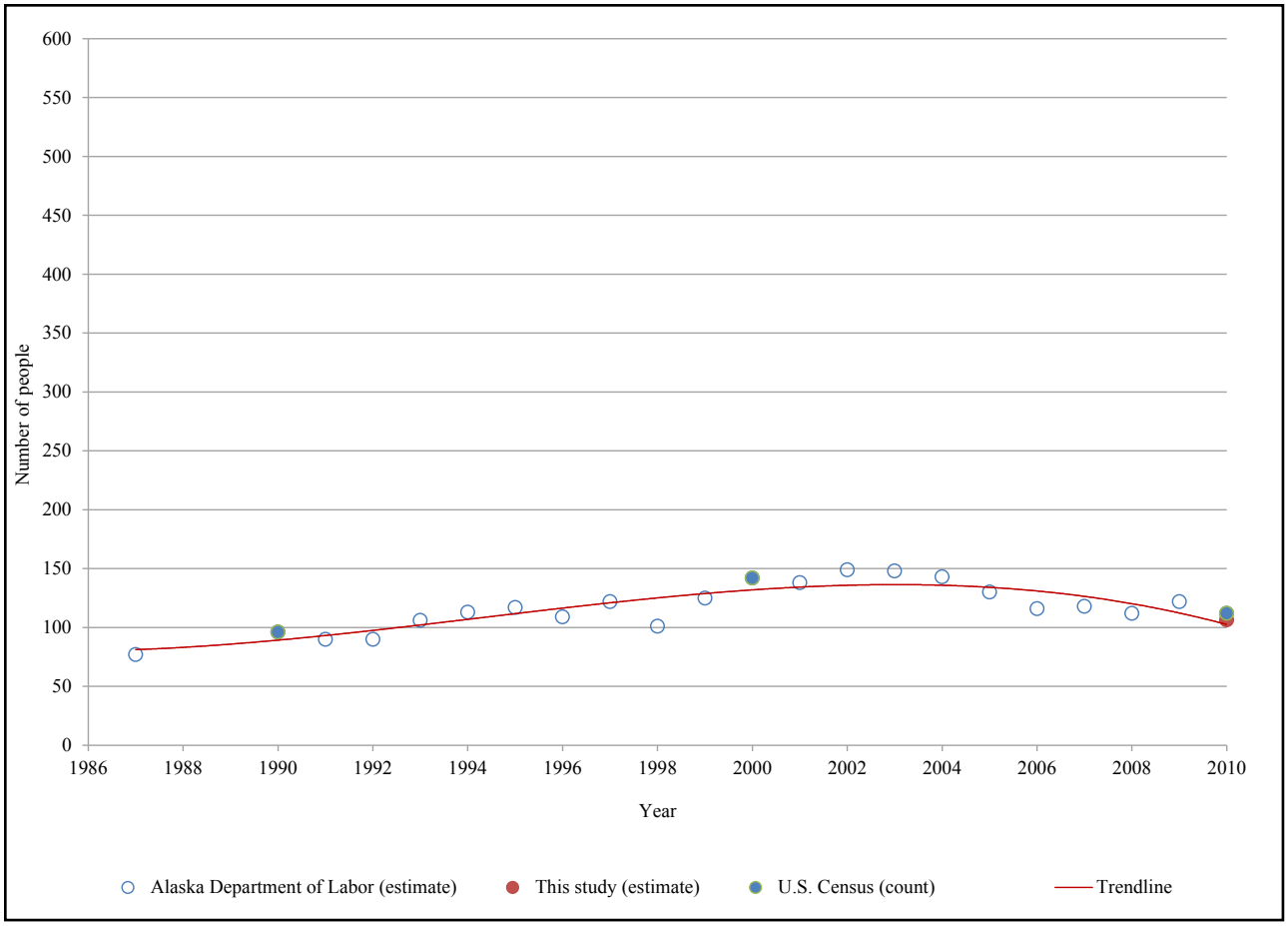


Figure 4-1.– Population history, Mentasta Lake, 1986–2010.

Table 4-2. – Population profile, Mentasta Lake, 2010.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	7.8	11.4%	11.4%	0.0	0.0%	0.0%	7.8	7.4%	7.4%
5–9	14.1	20.5%	31.8%	6.3	16.7%	16.7%	20.3	19.1%	26.5%
10–14	9.4	13.6%	45.5%	6.3	16.7%	33.3%	15.7	14.7%	41.2%
15–19	3.1	4.5%	50.0%	0.0	0.0%	33.3%	3.1	2.9%	44.1%
20–24	1.6	2.3%	52.3%	1.6	4.2%	37.5%	3.1	2.9%	47.1%
25–29	4.7	6.8%	59.1%	3.1	8.3%	45.8%	7.8	7.4%	54.4%
30–34	6.3	9.1%	68.2%	4.7	12.5%	58.3%	11.0	10.3%	64.7%
35–39	1.6	2.3%	70.5%	4.7	12.5%	70.8%	6.3	5.9%	70.6%
40–44	3.1	4.5%	75.0%	1.6	4.2%	75.0%	4.7	4.4%	75.0%
45–49	3.1	4.5%	79.5%	3.1	8.3%	83.3%	6.3	5.9%	80.9%
50–54	3.1	4.5%	84.1%	4.7	12.5%	95.8%	7.8	7.4%	88.2%
55–59	3.1	4.5%	88.6%	0.0	0.0%	95.8%	3.1	2.9%	91.2%
60–64	3.1	4.5%	93.2%	0.0	0.0%	95.8%	3.1	2.9%	94.1%
65–69	1.6	2.3%	95.5%	0.0	0.0%	95.8%	1.6	1.5%	95.6%
70–74	1.6	2.3%	97.7%	0.0	0.0%	95.8%	1.6	1.5%	97.1%
75–79	1.6	2.3%	100.0%	0.0	0.0%	95.8%	1.6	1.5%	98.5%
80–84	0.0	0.0%	100.0%	0.0	0.0%	95.8%	0.0	0.0%	98.5%
85–89	0.0	0.0%	100.0%	0.0	0.0%	95.8%	0.0	0.0%	98.5%
90–94	0.0	0.0%	100.0%	0.0	0.0%	95.8%	0.0	0.0%	98.5%
95–99	0.0	0.0%	100.0%	1.6	4.2%	100.0%	1.6	1.5%	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	68.9	**100.0%**	**100.0%**	37.6	**100.0%**	**100.0%**	**106.4**	**100.0%**	**100.0%**

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

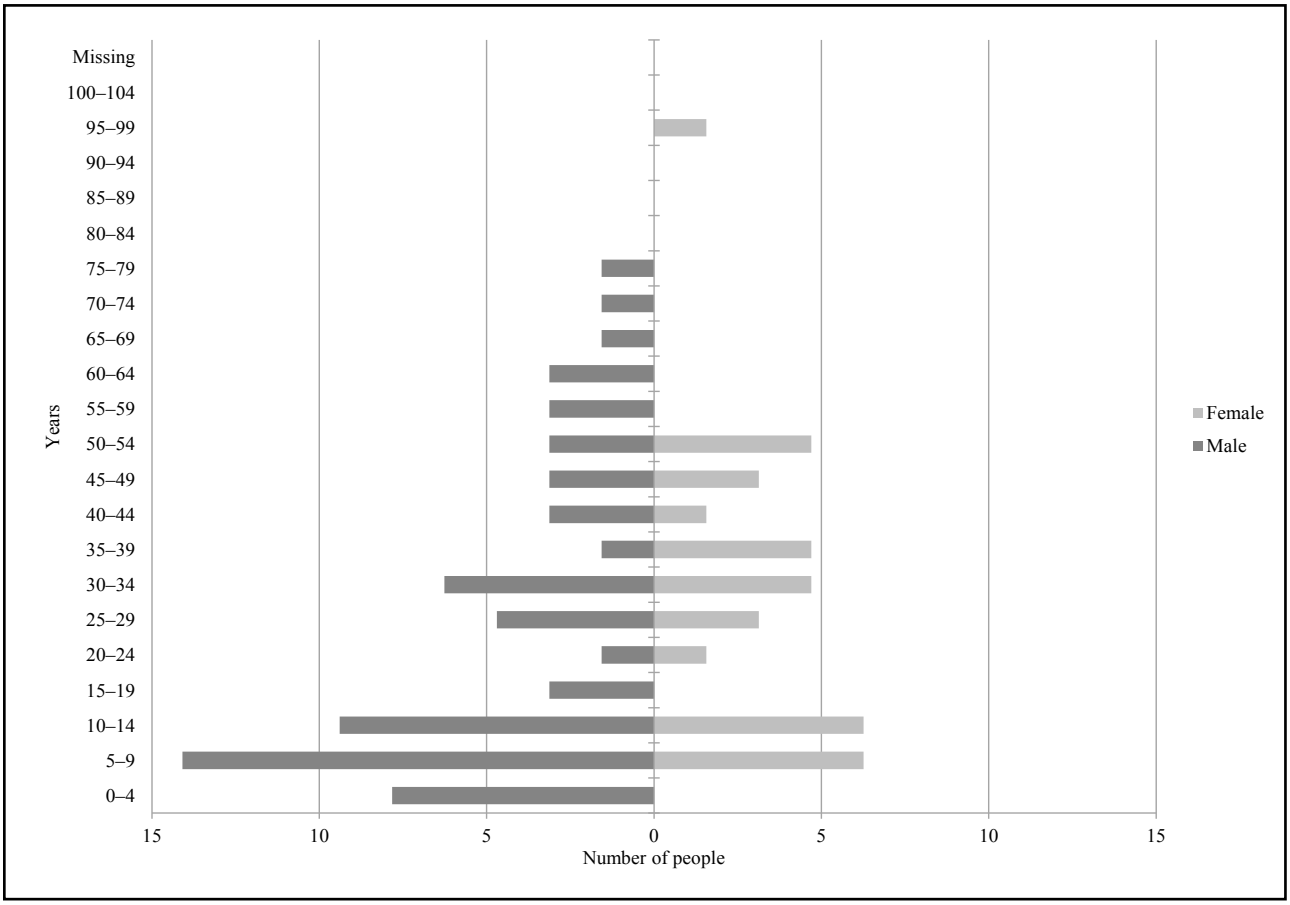


Figure 4-2.– Population profile, Mentasta Lake, 2010.

Table 4-3. – Birthplaces of household heads, Mentasta Lake, 2010.

Birthplace	Percentage
Anchorage	8.8%
Chisana	2.9%
Chistochina	2.9%
Mentasta Lake	35.3%
Nabesna Road	5.9%
Nenana	2.9%
Northway	2.9%
Seward	2.9%
Stevens Village	2.9%
Tanacross	2.9%
Tetlin	5.9%
Tok	2.9%
Tyonek	2.9%
Unalakleet	2.9%
Tanaina	2.9%
Eklutna	2.9%
Batzulnetas	2.9%
Other U.S.	5.9%

Source ADF&G Division of Subsistence household surveys, 2011.
Note "birthplace" means the residence of the parents of the individual when the individual was born.

households (64%) interviewed (Table 2-2). The following data are expanded to cover the remaining households not surveyed. The mean number of years of residency in Mentasta Lake was 18 years, with the maximum length of residence at 78 years (Table 2-2). Sixty-five percent of the population was male, while the remaining 35% were female (Table 2-2). The largest age cohort of the entire population was males between the ages of 5 and 9, which accounted for 21% of the male population (Table 4-2; Figure 4-2). Significantly, 41% of the entire community population was between the ages of 0 and 14; 46% of the male population and 33% of the female population (Table 4-2). Between the ages of 45 and 49 there was the same number of both sexes (Figure 4-2).

Of the Mentasta Lake household heads interviewed, approximately 94% were born in various communities across Alaska, with only 35% claiming Mentasta Lake as their place of birth. Some household heads (approximately 6%) were born somewhere else in the United States (Table 4-3).

CASH EMPLOYMENT CHARACTERISTICS AND MONETARY INCOME

Table 4-4 is a summary of the estimated earned income as well as other sources of income for residents of Mentasta Lake in 2010. This table shows that in 2010 earned income accounted for an average of $21,993 per household, or 74% of the total community income, compared to other income sources that accounted for an average of $7,694 per household, or 26% of the total community income. The greatest contributing sector for earned income was local government. The largest source of other

Table 4-4. – Estimated earned and other income, Mentasta Lake, 2010.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
State government	2.1	2.0	$31,251	$868	2.9%
Local government, including tribal	33.7	26.0	$408,561	$11,349	38.2%
Agriculture, forestry, and fishing	6.3	6.0	$46,159	$1,282	4.3%
Mining	2.1	2.0	$169,798	$4,717	15.9%
Transportation, communication, and utilities	4.2	4.0	$20,617	$573	1.9%
Services	10.5	10.0	$115,361	$3,204	10.8%
Earned income subtotal	**48.4**	**36.0**	**$791,749**	**$21,993**	**74.1%**
Other income					
Dividends		**34.4**	**$127,717**	**$3,548**	**12.0%**
Native corporation dividends		31.3	$18,777	$522	1.8%
Alaska Permanent Fund dividend		34.4	$108,941	$3,026	10.2%
Job benefits		**9.4**	**$32,121**	**$892**	**3.0%**
Workers' compensation/insurance		0.0	$0	$0	0.0%
Unemployment		9.4	$32,121	$892	3.0%
Assistance		**17.2**	**$56,139**	**$1,559**	**5.3%**
Adult public assistance		0.0	$0	$0	0.0%
Food stamps		17.2	$56,139	$1,559	5.3%
Elder benefits		**6.3**	**$45,813**	**$1,273**	**4.3%**
Retirement/pension		0.0	$0	$0	0.0%
Alaska senior benifits (longevity bonus)		3.1	$5,635	$157	0.5%
Social Security		4.7	$40,178	$1,116	3.8%
Child benefits		**3.1**	**$9,382**	**$261**	**0.9%**
Supplemental Security		0.0	$0	$0	0.0%
Child support		3.1	$9,382	$261	0.9%
Foster care		0.0	$0	$0	0.0%
Other income sources		**11.0**	**$5,825**	**$162**	**0.5%**
Energy assistance		9.4	$5,592	$155	0.5%
Other		1.6	$233	$6	0.0%
Other income subtotal		**34.4**	**$276,998**	**$7,694**	**25.9%**
Community income total			**$1,068,746**	**$6,764**	**100.0%**

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

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 4-5. – Employment by industry, Mentasta Lake, 2010.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**67.4**	**36.0**	**48.4**	**$791,748.6**
State government (total)	**3.1%**	**5.6%**	**4.3%**	**3.9%**
Handlers, equipment cleaners, helpers, and laborers	3.1%	5.6%	4.3%	3.9%
Local government, including tribal (total)	**62.5%**	**72.2%**	**69.6%**	**51.6%**
Executive, administrative, and managerial	6.3%	5.6%	8.7%	3.9%
Teachers, librarians, and counselors	9.4%	16.7%	13.0%	3.6%
Administrative support occupations, including clerical	12.5%	16.7%	13.0%	11.1%
Service occupations	18.8%	27.8%	21.7%	17.9%
Mechanics and repairers	12.5%	22.2%	17.4%	12.9%
Handlers, equipment cleaners, helpers, and laborers	3.1%	5.6%	4.3%	2.2%
Agriculture, forestry, and fishing (total)	**9.4%**	**16.7%**	**13.0%**	**5.8%**
Service occupations	3.1%	5.6%	4.3%	4.3%
Agricultural, forestry, and fishing occupations	6.3%	11.1%	8.7%	1.5%
Mining (total)	**3.1%**	**5.6%**	**4.3%**	**21.4%**
Construction and extractive occupations	3.1%	5.6%	4.3%	21.4%
Transportation, communication, and utilities (total)	**6.3%**	**11.1%**	**8.7%**	**2.6%**
Transportation and material moving occupations	6.3%	11.1%	8.7%	2.6%
Services (total)	**15.6%**	**27.8%**	**21.7%**	**14.6%**
Technologists and technicians, except health	3.1%	5.6%	4.3%	3.3%
Service occupations	6.3%	11.1%	8.7%	4.1%
Production working occupations	3.1%	5.6%	4.3%	5.0%
Handlers, equipment cleaners, helpers, and laborers	3.1%	5.6%	4.3%	2.2%

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

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

income was the Alaska Permanent Fund dividend, which accounted for 10% of the total community income in 2010 (Table 4-4).

In 2010, most (63%) of the jobs in Mentasta Lake were with local and tribal governments. Other important employment sectors during the study year were services (16% of jobs) and agriculture, forestry, and fishing (9%) (Table 4-5). The income generated by households employed by local government in Mentasta Lake during 2010 was 52% of the total earned income for this community. The second highest total community earned income was generated by mining (21%). Services generated 15% of the community's earned income. Lastly, state government generated 4% and transportation, communication, and utilities generated 3% of the community's earned income in 2010 (Table 4-5).

The study found 61 adults over the age of 16 in Mentasta Lake in 2010 and the calculated average length of employment for all Mentasta Lake adults was approximately 30 weeks or approximately 8 months (Table 2-7). Of the 61 adults in Mentasta Lake, the study found 48, or 79%, were employed in 2010. For the employed adults, the mean length of employment was more, approximately 9 months,

and of those employed adults 39% were employed year-round. On the household level, 100% (or 36 of the 36 households) were employed at some point during the study year. The average number of jobs during the study year per employed household was about 2. On average in 2010, households having an employed resident contained on average 1 employed adult (Table 2-7).

Most jobs were located in Mentasta Lake, coming as they did from local and tribal government infrastructure. Others jobs were seasonal, and/or required travel out of the immediate community to surrounding communities like Slana, Chistochina, or Tok. A few respondents were employed outside the Copper River Basin area. Mentasta Lake is located approximately 38 miles from the nearest hub of Tok, and about 280 miles from Anchorage.

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 4-6 reports the expanded levels of individual participation in the harvest and processing of wild resources by all Mentasta Lake residents in 2010. Approximately 90% of residents participated in the effort to harvest resources in 2010. With reference to specific resource categories, 90% of all residents gathered plants and berries, 53% fished, 25% hunted for birds, 39% hunted or trapped furbearers, and 43% hunted for large land mammals. Similarly, 84% of all Mentasta Lake residents processed some resources in 2010. Most residents (75%) participated in the processing of large land mammals, followed by 66% of residents who participated in the processing of plants and berries. About 60% of the population participated in fish processing and 38% participated in the processing of birds. Only 29% participated in the processing of furbearers. Additionally, 4% participated in the building of fish wheels, while 20% sewed skins or cloth, and 64% cooked wild foods (Table 4-7).

RESOURCE HARVEST AND USE PATTERNS

Table 4-8 summarizes resource harvest and use characteristics for Mentasta Lake in 2010 at the household level. Overall 100% of households used wild resources in 2010, while 91% attempted to harvest a resource and 91% successfully harvested some kind of resource. The average total harvest was an estimated 499 lb usable weight per household, or 169 lb per capita. During the study year, Mentasta Lake households had 117 different resources available to them for harvest. On average, households attempted to harvest approximately 12 kinds of resources, harvested 10 kinds of resources, and used an average of 16 kinds of resources. The maximum number of resources used by any household was 33. In addition, households gave away an average of 8 kinds of resources and received 9. While 78% of the households reported sharing resources with other households, 100% reported receiving a resource.

Table 4-6. – Participation in subsistence harvesting and processing activities, Mentasta Lake, 2010.

Total number of people	**106.4**
Birds	
Hunt	
Number	26.6
Percentage	25.0%
Process	
Number	40.7
Percentage	38.2%
Fish	
Fish	
Number	56.3
Percentage	52.9%
Process	
Number	64.2
Percentage	60.3%
Large land mammals	
Hunt	
Number	45.4
Percentage	43.3%
Process	
Number	79.8
Percentage	75.0%
Small land mammals	
Hunt or trap	
Number	40.7
Percentage	38.8%
Process	
Number	29.7
Percentage	28.4%
Vegetation	
Gather	
Number	95.5
Percentage	89.7%
Process	
Number	70.4
Percentage	66.2%
Any resource	
Attempt	
Number	95.5
Percentage	89.7%
Process	
Number	89.2
Percentage	83.8%

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

Table 4-7. – Household member participation in additional processing activities, Mentasta Lake, 2010.

Total number of people	**106.4**
Building fish wheels	
Number	4.7
Percentage	4.4%
Sewing skins or cloth	
Number	20.3
Percentage	19.4%
Cooking wild foods	
Number	67.3
Percentage	64.2%

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

Table 4-8. – Resource harvest and use characteristics, Mentasta Lake, 2010.

Characteristic	
Mean number of resources used per household	16.2
Minimum	3.0
Maximum	33.0
Mean number of resources attempted to harvest per household	12.0
Minimum	0.0
Maximum	28.0
Mean number of resources harvested per household	10.0
Minimum	0.0
Maximum	28.0
Mean number of resources received per household	8.8
Minimum	2.0
Maximum	24.0
Mean number of resources given away per household	7.9
Minimum	0.0
Maximum	25.0
Mean household harvest, pounds	498.7
Minimum	0.0
Maximum	3,067.1
Total harvest weight, pounds	17,953.3
Community per capita harvest, pounds	168.7
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	91.3%
Percentage harvesting any resource	91.3%
Percentage receiving any resource	100.0%
Percentage giving away any resource	78.3%
Number of households in sample	23.0
Number of resources available	117.0

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

SPECIES USED AND SEASONAL ROUND

Residents of Mentasta Lake harvest a wide variety of species throughout the year and like most rural Alaska communities they often target specific species during certain seasons of the year, following a cyclical harvest pattern that is in part defined by seasonal availability, and in part by laws, regulations, and land access. Many Mentasta Lake subsistence harvest activities occur in the upper Copper River drainage and just east of Mentasta Pass where most of the critical resources can be found. And while Batzulnetas, just off the Nabesna Road, continues to be a culturally significant fish camp for the people of Mentasta Lake, in 2010 a large quantity of the community's salmon came from Cook Inlet, or from family members with fish wheels lower downriver on the Copper River.

While harvest activities are ongoing throughout the year, we will begin our discussion with the most significant contributor to the total community harvest—large land mammals. Hunting for large land mammals typically begins in the fall. For the 2010 study year, Mentasta Lake residents actively hunted for moose, caribou, and Dall sheep in the fall during open season but caribou were taken into October and a moose was harvested in January.

Sockeye salmon were the second most harvested resource, and salmon as a general category was used by all households surveyed. The traditional fish camp of the Mentasta people continues to be Batzulnetas, the farthest point of salmon harvest from the ocean within the Copper River watershed. For those who harvest salmon at Batzulnetas, fishing does not start in earnest until mid- to late June. Mentasta Lake still conducts a culture camp at Batzulnetas in the summer, but most of the community's fish come from other locations. During the study year, members of the Mentasta Lake community with family ties in Eklutna and Tyonek traveled to Cook Inlet to fish with other family members in the early part of the summer. These individuals harvested and shared a large portion of Cook Inlet salmon with the Mentasta Lake residents. In addition, other community members had family ties and fish wheel access farther downriver in Chistochina. The fish harvested lower down on the Copper River also made it onto Mentasta Lake tables earlier in the season than would fish harvested at Batzulnetas.

Most households surveyed (96%) reported using vegetation. All types of vegetation are harvested throughout the year depending on seasonality of the resource and weather conditions; firewood is most often harvested in the spring; plants, greens, and mushrooms are harvested throughout the summer and into the fall; and berry picking is conducted mostly local to the village in the late summer and fall.

Nonsalmon freshwater fish were harvested throughout the year and mostly in locations local to the village in and around Mentasta Lake and along the Slana River. After hunting season closes in the fall, village and area residents participate in the whitefishes spear fishery that takes place in the Slana Slough in October. Later in the season—February and March—local people jig through the ice for burbot, or start to rod and reel fish for nonsalmon fish once the ice is clear from the local lakes and streams, which usually occurs by the end of May.

Migratory birds can be harvested in the spring and into the fall months while upland game birds

can be harvested year-round, but most all of the 2010 Mentasta Lake bird harvest occurred at the end of summer and into the fall. Small land mammals like porcupines, snowshoe hares, and beavers are harvested opportunistically throughout the year primarily for food. Furbearers that are harvested seasonally both for their fur and for food include lynx and beavers, which are trapped along with other animals that are harvested for fur only. Trapping season begins once a substantial layer of snow has set and stretches from one calendar year to the next—from November into March.

HARVEST QUANTITIES

Table 4-9 reports estimated wild resource harvests and uses by Mentasta Lake residents in 2010 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix B for conversion factors[3]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given to hunting guides by their clients. Purchased foods are not included but other wild resources such as firewood are included as they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing between households, which results in a wider distribution of wild foods.

Table 4-10 lists the top 10 ranked resources harvested in terms of pounds per capita and the 10 most used resources by Mentasta Lake households during the study year. In 2010 residents of Mentasta Lake harvested an estimated total of 17,953 lb, or 169 lb per capita, of wild resources (Table 4-9). Moose, sockeye salmon, caribou, and blueberries were the top 4 most harvested resources in pounds per capita. In comparison, moose and blueberries (tying for first place), sockeye salmon (ranking third), and lowbush cranberries (ranking fourth) were ranked the top most used resources by all households in the survey (Table 4-10).

Large land mammals constituted the biggest portion (43%) of the 2010 harvest with a total 7,654 lb harvested, or 72 lb per capita. Salmon was the second largest contributor to the subsistence harvest at 36%, totaling 6,511 lb, or 61 lb per capita (Table 4-9; Figure 4-3). Vegetation made up approximately 12% of the total wild food harvest in 2010 contributing 2,167 lb, or 20 lb per capita, and nonsalmon fish came in fourth place, composing 6% of the total community harvest at 1,094 lb, or approximately 10 lb per capita. The remaining categories contributed 2% or less to the 2010 consumable harvest in the following order; the small land mammal harvest was 324 lb, birds contributed 156 lb, and marine invertebrates contributed 47 lb to the community total (Table 4-9).

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

Table 4-9. – Estimated harvests and uses of fish, game, and vegetation resources, Mentasta Lake, 2010.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**100.0%**	**91.3%**	**91.3%**	**100.0%**	**78.3%**	**17,953.3**	**498.7**	**168.7**				**35.9%**
Fish	**100.0%**	**73.9%**	**56.5%**	**100.0%**	**65.2%**	**7,605.4**	**211.3**	**71.5**				**64.7%**
Salmon	**100.0%**	**47.8%**	**30.4%**	**95.7%**	**52.2%**	**6,511.3**	**180.9**	**61.2**	**1,017.4**		**28.3**	**74.7%**
Chum salmon	4.3%	4.3%	4.3%	0.0%	4.3%	10.9	0.3	0.1	1.6	Ind.	0.0	0.0%
Coho salmon	52.2%	8.7%	0.0%	52.2%	26.1%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Chinook salmon	52.2%	26.1%	8.7%	47.8%	26.1%	368.5	10.2	3.5	18.8	Ind.	0.5	86.1%
Pink salmon	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Sockeye salmon	78.3%	47.8%	30.4%	69.6%	47.8%	6,131.8	170.3	57.6	997.0	Ind.	27.7	78.9%
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	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Nonsalmon fish	**82.6%**	**56.5%**	**47.8%**	**73.9%**	**52.2%**	**1,094.2**	**30.4**	**10.3**				**44.1%**
Herring	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Herring roe	8.7%	0.0%	0.0%	8.7%	0.0%	0.0	0.0	0.0				0.0%
Herring roe/unspecified	8.7%	0.0%	0.0%	8.7%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
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%
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	4.3%	4.3%	4.3%	0.0%	4.3%	25.4	0.7	0.2	7.8		0.2	124.6%
Unknown smelt	4.3%	4.3%	4.3%	0.0%	4.3%	25.4	0.7	0.2	7.8	Gal.	0.2	124.6%
Cod	13.0%	0.0%	0.0%	13.0%	8.7%	0.0	0.0	0.0	0.0		0.0	0.0%
Pacific cod (gray)	4.3%	0.0%	0.0%	4.3%	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%
Unknown cod	8.7%	0.0%	0.0%	8.7%	8.7%	0.0	0.0	0.0	0.0		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	13.0%	4.3%	4.3%	8.7%	4.3%	18.8	0.5	0.2	7.8		0.2	124.6%
Lingcod	13.0%	4.3%	4.3%	8.7%	4.3%	18.8	0.5	0.2	7.8	Ind.	0.2	124.6%
Pacific halibut	34.8%	8.7%	4.3%	30.4%	13.0%	156.5	4.3	1.5	156.5	Lb.	4.3	124.6%
Arctic lampreys	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Rockfish	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	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	13.0%	8.7%	8.7%	4.3%	4.3%	7.5	0.2	0.1	3.1	Ind.	0.1	86.1%
Char	43.5%	34.8%	30.4%	17.4%	17.4%	91.3	2.5	0.9	68.9		1.9	71.6%
Dolly Varden	39.1%	34.8%	30.4%	13.0%	17.4%	38.0	1.1	0.4	42.3	Ind.	1.2	55.7%
Lake trout	13.0%	8.7%	8.7%	8.7%	8.7%	53.2	1.5	0.5	26.6	Ind.	0.7	87.6%
Arctic grayling	69.6%	52.2%	47.8%	30.4%	34.8%	243.2	6.8	2.3	347.5	Ind.	9.7	40.5%
Northern pike	4.3%	0.0%	0.0%	4.3%	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	17.4%	17.4%	17.4%	8.7%	8.7%	59.2	1.6	0.6	42.3		1.2	65.6%
Cutthroat throut	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	13.0%	13.0%	13.0%	8.7%	8.7%	52.6	1.5	0.5	37.6	Ind.	1.0	73.4%
Unknown trout	4.3%	4.3%	4.3%	0.0%	0.0%	6.6	0.2	0.1	4.7	Ind.	0.1	124.6%
Whitefishes	60.9%	39.1%	34.8%	39.1%	30.4%	492.3	13.7	4.6	433.6		12.0	47.8%
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%

-continued-

Table 4-9.–Page 2 of 4.

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	
Nonsalmon fish, continued												
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	21.7%	17.4%	13.0%	17.4%	4.3%	137.0	3.8	1.3	78.3	Ind.	2.2	89.8%
Round whitefish	52.2%	34.8%	30.4%	30.4%	30.4%	355.3	9.9	3.3	355.3	Ind.	9.9	60.0%
Unknown whitefish	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Land mammals	**95.7%**	**73.9%**	**47.8%**	**91.3%**	**65.2%**	**7,977.9**	**221.6**	**75.0**			**4.5**	**35.5%**
Large land mammals	**95.7%**	**73.9%**	**39.1%**	**91.3%**	**60.9%**	**7,653.9**	**212.6**	**71.9**	**20.3**		**0.6**	**35.9%**
Bison	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Black bear	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Brown bear	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Caribou	47.8%	30.4%	4.3%	47.8%	26.1%	610.4	17.0	5.7	4.7	Ind.	0.1	124.6%
Deer	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Goat	8.7%	0.0%	0.0%	8.7%	4.3%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Moose	95.7%	73.9%	39.1%	91.3%	60.9%	7,043.5	195.7	66.2	15.7	Ind.	0.4	35.2%
Dall sheep	30.4%	13.0%	0.0%	30.4%	8.7%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Small land mammals[b]	**52.2%**	**43.5%**	**39.1%**	**39.1%**	**34.8%**	**324.0**	**9.0**	**3.0**	**140.8**		**3.9**	**50.6%**
Beaver	21.7%	4.3%	4.3%	17.4%	8.7%	23.5	0.7	0.2	1.6	Ind.	0.0	124.6%
Coyote	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Fox	4.3%	8.7%	4.3%	0.0%	0.0%	0.0	0.0	0.0	1.6		0.0	0.0%
Red fox	4.3%	8.7%	4.3%	0.0%	0.0%	0.0	0.0	0.0	1.6	Ind.	0.0	0.0%
Hare	34.8%	39.1%	30.4%	4.3%	30.4%	147.1	4.1	1.4	73.6		2.0	46.6%
Snowshow hare	34.8%	39.1%	30.4%	4.3%	30.4%	147.1	4.1	1.4	73.6	Ind.	2.0	46.6%
River otter	0.0%	4.3%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Lynx	4.3%	8.7%	4.3%	0.0%	0.0%	6.3	0.2	0.1	1.6	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	8.7%	8.7%	8.7%	0.0%	0.0%	0.0	0.0	0.0	9.8	Ind.	0.3	121.9%
Mink	4.3%	4.3%	4.3%	0.0%	0.0%	0.0	0.0	0.0	1.6	Ind.	0.0	0.0%
Muskrat	17.4%	17.4%	17.4%	0.0%	8.7%	55.5	1.5	0.5	30.9	Ind.	0.9	82.6%
Porcupine	43.5%	39.1%	26.1%	34.8%	17.4%	91.6	2.5	0.9	20.3	Ind.	0.6	49.6%
Squirrel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
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%
Unknown 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%	4.3%	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%
Birds and eggs	**60.9%**	**39.1%**	**34.8%**	**39.1%**	**47.8%**	**155.9**	**4.3**	**1.5**	**193.4**		**5.4**	**58.9%**
Migratory birds	**56.5%**	**30.4%**	**26.1%**	**39.1%**	**39.1%**	**104.2**	**2.9**	**1.0**	**115.1**		**3.2**	**65.3%**
Ducks	56.5%	30.4%	26.1%	39.1%	39.1%	104.2	2.9	1.0	115.1		3.2	65.3%
Canvasback	4.3%	4.3%	4.3%	0.0%	4.3%	10.3	0.3	0.1	9.4	Ind.	0.3	124.6%
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	8.7%	4.3%	4.3%	4.3%	4.3%	1.3	0.0	0.0	1.6	Ind.	0.0	0.0%

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Table 4-9.–Page 3 of 4.

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	
Migratory birds, continued												
Mallard	47.8%	30.4%	26.1%	26.1%	26.1%	47.5	1.3	0.4	47.5	Ind.	1.3	67.3%
Long-tailed duck	8.7%	4.3%	4.3%	4.3%	4.3%	1.3	0.0	0.0	1.6	Ind.	0.0	0.0%
Northern pintail	21.7%	13.0%	13.0%	8.7%	13.0%	9.2	0.3	0.1	11.5	Ind.	0.3	92.2%
Scaup	8.7%	4.3%	4.3%	4.3%	4.3%	0.0	0.0	0.0	1.6	Ind.	0.0	0.0%
Scoter	34.8%	8.7%	8.7%	30.4%	17.4%	32.3	0.9	0.3	35.9		1.0	111.2%
Black scoter	30.4%	8.7%	8.7%	26.1%	17.4%	29.5	0.8	0.3	32.7	Ind.	0.9	121.9%
Surf scoter	4.3%	4.3%	4.3%	0.0%	4.3%	1.4	0.0	0.0	1.6	Ind.	0.0	0.0%
White-winged scoter	8.7%	4.3%	4.3%	4.3%	4.3%	1.4	0.0	0.0	1.6	Ind.	0.0	0.0%
Teal	4.3%	4.3%	4.3%	0.0%	4.3%	1.4	0.0	0.0	4.7		0.1	124.6%
Green-winged teal	4.3%	4.3%	4.3%	0.0%	4.3%	1.4	0.0	0.0	4.7	Ind.	0.1	124.6%
Unknown ducks	4.3%	4.3%	4.3%	0.0%	4.3%	1.1	0.0	0.0	1.6	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 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%
Lesser 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%
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%
Emperor 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%
Swan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Tundra swan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Crane	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	**34.8%**	**30.4%**	**26.1%**	**17.4%**	**26.1%**	**51.7**	**1.4**	**0.5**	**78.3**		**2.2**	**52.5%**
Upland game birds	34.8%	30.4%	26.1%	17.4%	26.1%	51.7	1.4	0.5	78.3		2.2	52.5%
Grouse	30.4%	30.4%	26.1%	13.0%	26.1%	43.8	1.2	0.4	62.6		1.7	53.5%
Spruce grouse	30.4%	30.4%	26.1%	13.0%	26.1%	43.8	1.2	0.4	62.6	Ind.	1.7	53.5%
Ptarmigan	13.0%	4.3%	4.3%	8.7%	4.3%	7.8	0.2	0.1	15.7	Ind.	0.4	124.6%
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	Ind.	0.0	0.0%
Goose eggs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
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	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	**17.4%**	**4.3%**	**4.3%**	**13.0%**	**8.7%**	**47.0**	**1.3**	**0.4**				**124.6%**
Clams	17.4%	4.3%	4.3%	13.0%	8.7%	47.0	1.3	0.4	15.7		0.4	124.6%
Butter clams	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Freshwater clams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Razor clams	13.0%	4.3%	4.3%	8.7%	8.7%	47.0	1.3	0.4	15.7	Gal.	0.4	124.6%
Cockles	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%

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Table 4-9.–Page 4 of 4.

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 (±)
Marine invertebrates, continued												
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	Lb.	0.0	0.0%
King crab	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Lb.	0.0	0.0%
Tanner crab	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Lb.	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%
Scallops	4.3%	0.0%	0.0%	4.3%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Shrimp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Squid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Vegetation	**95.7%**	**91.3%**	**91.3%**	**60.9%**	**60.9%**	**2,167.1**	**60.2**	**20.4**				**32.1%**
Berries	**95.7%**	**91.3%**	**91.3%**	**52.2%**	**56.5%**	**1,994.1**	**55.4**	**18.7**	**498.5**		**13.8**	**29.5%**
Blueberry	95.7%	91.3%	91.3%	30.4%	52.2%	601.0	16.7	5.6	150.3	Gal.	4.2	23.2%
Lowbush cranberry	73.9%	65.2%	65.2%	39.1%	34.8%	441.4	12.3	4.1	110.3	Gal.	3.1	34.9%
Highbush cranberry	43.5%	39.1%	39.1%	8.7%	26.1%	203.5	5.7	1.9	50.9	Gal.	1.4	43.5%
Currants	26.1%	21.7%	21.7%	4.3%	8.7%	197.2	5.5	1.9	49.3	Gal.	1.4	80.8%
Raspberry	65.2%	69.6%	65.2%	13.0%	21.7%	297.4	8.3	2.8	74.3	Gal.	2.1	34.3%
Salmonberry	21.7%	21.7%	21.7%	0.0%	8.7%	128.3	3.6	1.2	32.1	Gal.	0.9	79.6%
Strawberry	4.3%	4.3%	4.3%	0.0%	0.0%	12.5	0.3	0.1	3.1	Gal.	0.1	124.6%
Blackberry	30.4%	26.1%	26.1%	4.3%	17.4%	100.2	2.8	0.9	25.0	Gal.	0.7	57.9%
Other wild berry	4.3%	4.3%	4.3%	0.0%	0.0%	12.5	0.3	0.1	3.1	Gal.	0.1	124.6%
Plants, greens, and mushrooms	**47.8%**	**47.8%**	**47.8%**	**0.0%**	**17.4%**	**173.1**	**4.8**	**1.6**				**87.1%**
Wild rhubarb	4.3%	4.3%	4.3%	0.0%	0.0%	1.6	0.0	0.0	1.6	Gal.	0.0	124.6%
Hudson's Bay (Labrador) tea	13.0%	13.0%	13.0%	0.0%	8.7%	2.4	0.1	0.0	2.4	Gal.	0.1	87.4%
Other wild greens	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Mushrooms	34.8%	34.8%	34.8%	0.0%	8.7%	14.9	0.4	0.1	16.4		0.5	54.4%
Stinkweed	13.0%	13.0%	13.0%	0.0%	0.0%	154.2	4.3	1.4	154.2	qt	4.3	96.9%
Wood	**56.5%**	**56.5%**	**52.2%**	**26.1%**	**30.4%**	**0.0**	**0.0**	**0.0**				**0.0%**
Bark	4.3%	4.3%	4.3%	0.0%	0.0%	0.0	0.0	0.0	4.7	Gal.	0.1	124.6%
Roots	4.3%	4.3%	4.3%	0.0%	0.0%	0.0	0.0	0.0	15.7	Lb.	0.4	124.6%
Cottonwood	4.3%	4.3%	4.3%	0.0%	0.0%	0.0	0.0	0.0	0.8	Cord	0.0	124.6%
Other wood	56.5%	56.5%	52.2%	26.1%	30.4%	0.0	0.0	0.0	136.2	Cord	3.8	36.0%

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

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.

Table 4-10. – Top 10 ranked resources harvested and used, Mentasta Lake, 2010.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	66.2	1	1.	Moose	95.7%
2	2.	Sockeye salmon	57.6	2	1.	Blueberry	95.7%
3	3.	Caribou	5.7	3	3.	Sockeye salmon	78.3%
4	4.	Blueberry	5.6	4	4.	Lowbush cranberry	73.9%
5	5.	Lowbush cranberry	4.1	5	5.	Arctic grayling	69.6%
6	6.	Chinook salmon	3.5	6	6.	Raspberry	65.2%
7	7.	Round whitefish	3.3	7	7.	Wood	56.5%
8	8.	Raspberry	2.8	8	8.	Coho salmon	52.2%
9	9.	Arctic grayling	2.3	9	8.	Chinook salmon	52.2%
10	10.	Highbush cranberry	1.9	10	8.	Round whitefish	52.2%

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

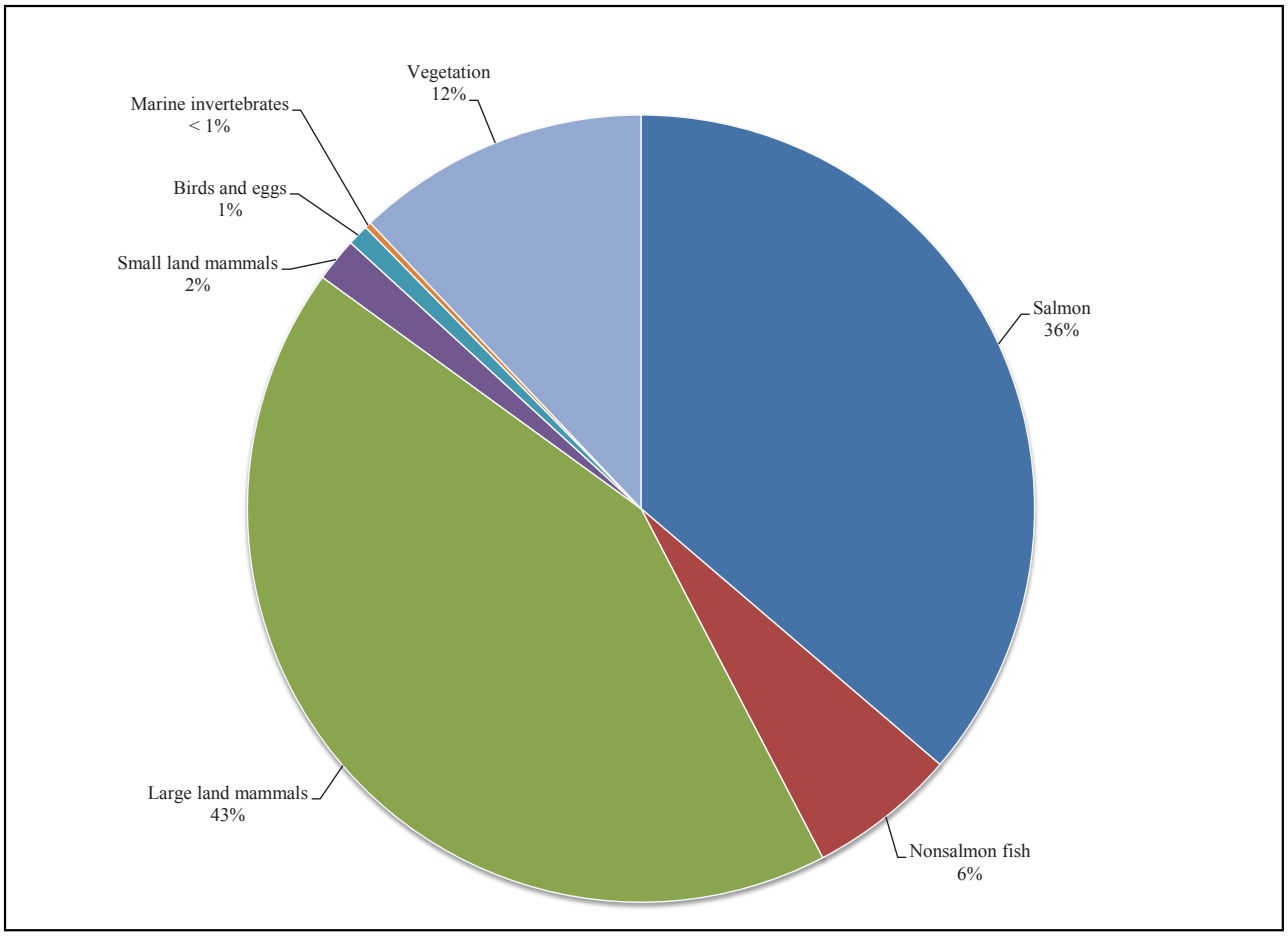


Figure 4-3.– Composition of wild resource harvest, Mentasta Lake, 2010.

SHARING AND RECEIVING WILD RESOURCES

In Mentasta Lake in 2010, the maximum number of resources used by any household was 33 and the average harvest per household was 16 resources (Table 4-8). Wild resources are shared widely in the community; estimates of sharing indicate that 100% of Mentasta Lake households received and 78% gave away wild resources during 2010 (Table 4-8). Most households used some fish (100%), land mammals (96%), and vegetation (96%) (Table 4-9). In addition, fish and large land mammals were the most commonly received resource, with 100% of households receiving fish and 91% of households receiving large land mammals (Table 4-9). In comparison, 65% of households gave away fish and 61% gave away large land mammals. The most commonly shared individual fish resource was sockeye salmon; 70% of the households received and 48% gave away the resource. Of interest, only 39% of Mentasta Lake households harvested moose in 2010 while 61% reported giving away moose during the study year. This might indicate that some Mentasta Lake households were sharing moose harvested prior to 2010 or giving meat that they themselves had received (Table 4-9). In fact, 91% of households reported receiving moose.

Vegetation, particularly berries, was also widely shared with 61% of the households reporting sharing and 61% reporting receiving vegetation resources (Table 4-9). Marine invertebrates were another widely received resource type; 13% of community households received these resources while only 4% harvested (Table 4-9). Because the number of households receiving marine invertebrates is larger than the number of households harvesting, it is possible that some Mentasta Lake households received these resources from outside the community; conversely it is possible that the total harvest of marine invertebrates, composed of 47 lb of razor clams (less than 1 lb per capita) harvested by Mentasta Lake households, was enough to share within the community of Mentasta Lake. It is also noteworthy that 30% of community households reported receiving and 35% of households reported using Pacific halibut when only 4% reported harvesting and 13% shared the resource. Again, the substantially larger number of households using and receiving halibut indicates that a large portion of the halibut used in Mentasta Lake homes may have come from outside the community, or perhaps more likely was that the large harvest of a relatively small percentage of the households (157 lb, or 2 lb per capita) was sufficient to share amongst community members.

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

Previous studies by the Division of Subsistence (Wolfe 1987; Wolfe et al. 2010 have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A recent study of 3,265 households in 66 rural Alaska communities found that about 33% of the households accounted for 76% of subsistence harvests (Wolfe et al. 2010). Although overall the set of very productive households

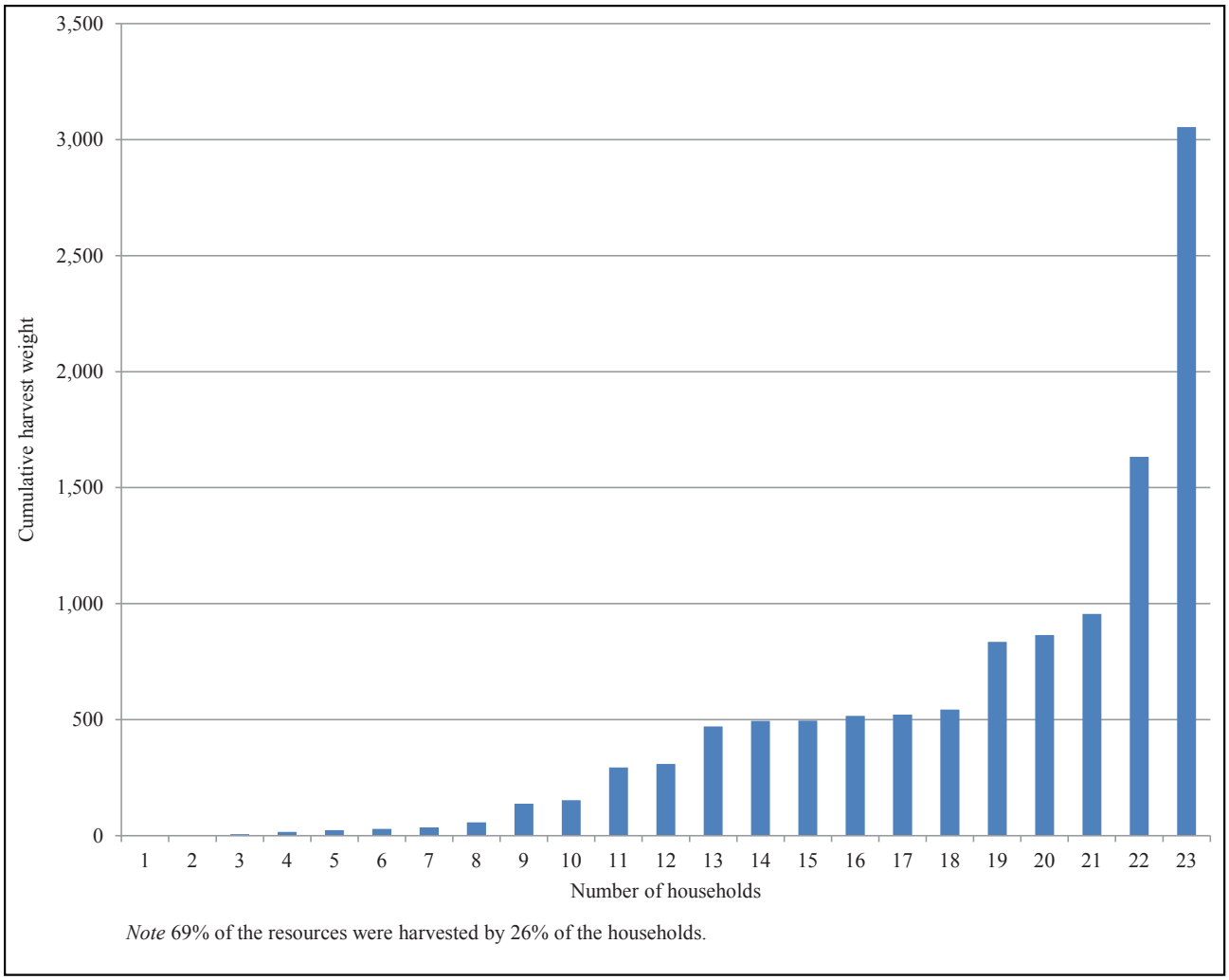


Figure 4-4.– Household specialization, Mentasta Lake, 2010.

was diverse, factors that were associated with higher levels of subsistence harvests included larger households with a pool of adult male labor, higher wage income, involvement in commercial fishing, and community location.

As shown in Figure 4-4, in the 2012 study year in Mentasta Lake, about 69% of the harvests of wild resources as estimated in usable pounds was harvested by 26% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Mentasta Lake and the other study communities.

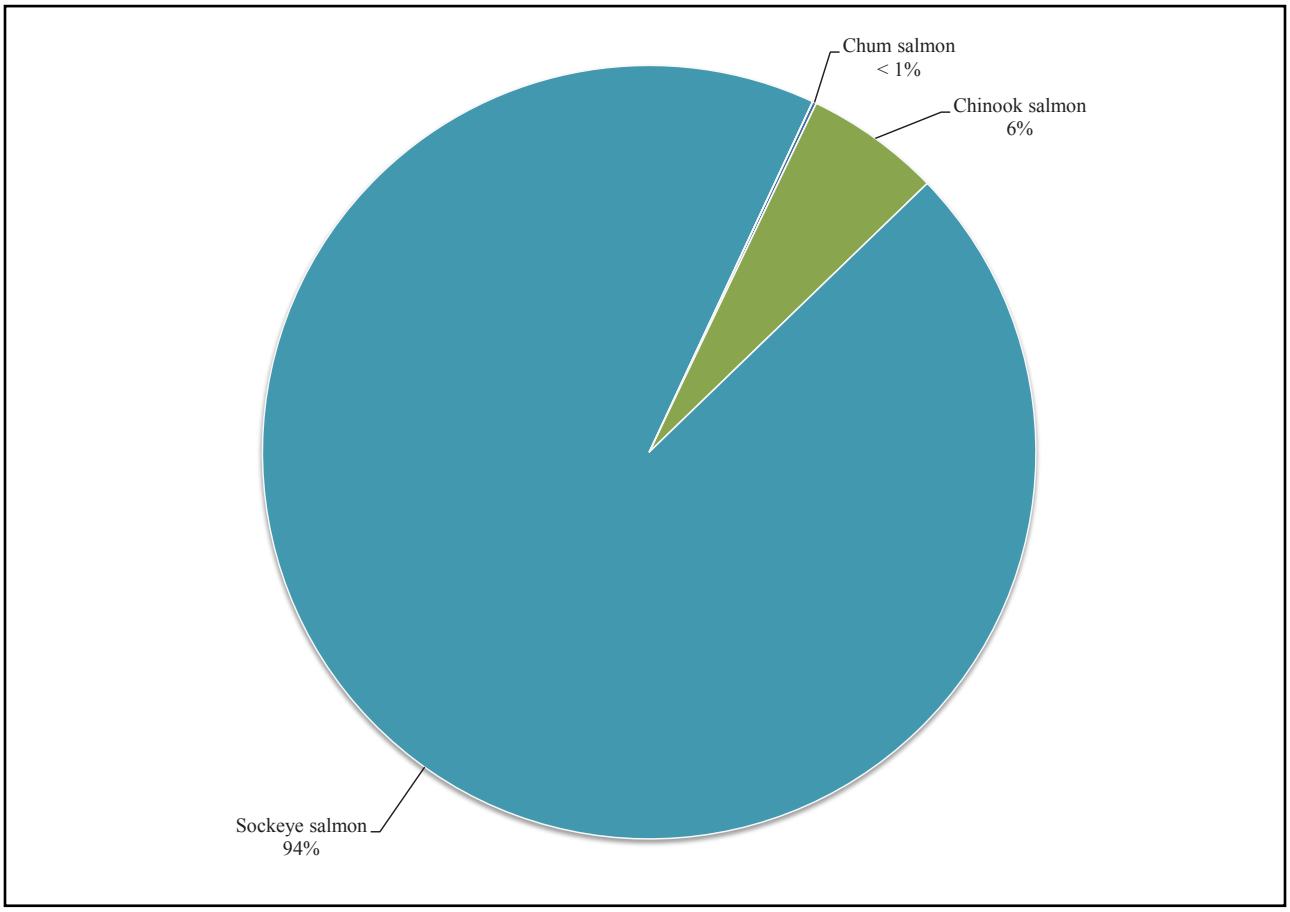


Figure 4-5.– Composition of salmon harvest, Mentasta Lake, 2010.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For the community of Mentasta Lake, salmon composed 36% of the wild resource harvest in pounds usable weight for 2010 totaling 6,511 lb (Figure 4-3; Table 4-9). The majority of this (94%) was sockeye salmon, with 6,132 lb harvested, or 58 lb per capita, making sockeye the second most harvested and third most used resource in the community (tables 4-9 and 4-10; Figure 4-5). The harvests of Chinook and chum salmon were negligible with the total Chinook salmon harvest weighing 367 lb and chum salmon 11 lb (Table 4-9). Coho salmon were not harvested by Mentasta Lake households; however, coho salmon was tied for eighth place (with Chinook salmon and round whitefish) as a most used resource by Mentasta Lake residents (Table 4-10).

Some Mentasta Lake residents have extended family in the Cook Inlet area and this connection provided a significant amount of salmon for the inland community. During the 2010 study year, Mentasta Lake residents harvested the bulk of their salmon (100% of the total harvest in pounds) with subsistence gear such as seine and fish wheel (Table 4-11). Specifically, 15% of salmon were

Table 4-11. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Mentasta Lake, 2010.

		Removed from		Subsistence methods											
	Percentage	commercial catch		Dip net		Fish wheel		Other method		Subsistence gear, any		Rod and reel		Any method	
Resource	base	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	Gear type	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Resource	0.0%	0.0%	11.5%	11.5%	14.5%	14.5%	74.0%	74.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	11.5%	11.5%	14.5%	14.5%	74.0%	74.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.2%	0.2%
	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%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.2%	0.2%
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%	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%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	12.8%	39.1%	0.0%	0.0%	1.8%	5.7%	0.0%	0.0%	1.8%	5.7%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.8%	5.7%	0.0%	0.0%	1.8%	5.7%	0.0%	0.0%	1.8%	5.7%
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%
	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%
Sockeye salmon	Gear type	0.0%	0.0%	100.0%	96.1%	87.2%	83.8%	99.8%	95.9%	98.0%	94.2%	0.0%	0.0%	98.0%	94.2%
	Resource	0.0%	0.0%	11.8%	11.8%	12.9%	12.9%	75.4%	75.4%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	11.5%	11.1%	12.6%	12.1%	73.8%	71.0%	98.0%	94.2%	0.0%	0.0%	98.0%	94.2%
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%
	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 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%
	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, 2011.

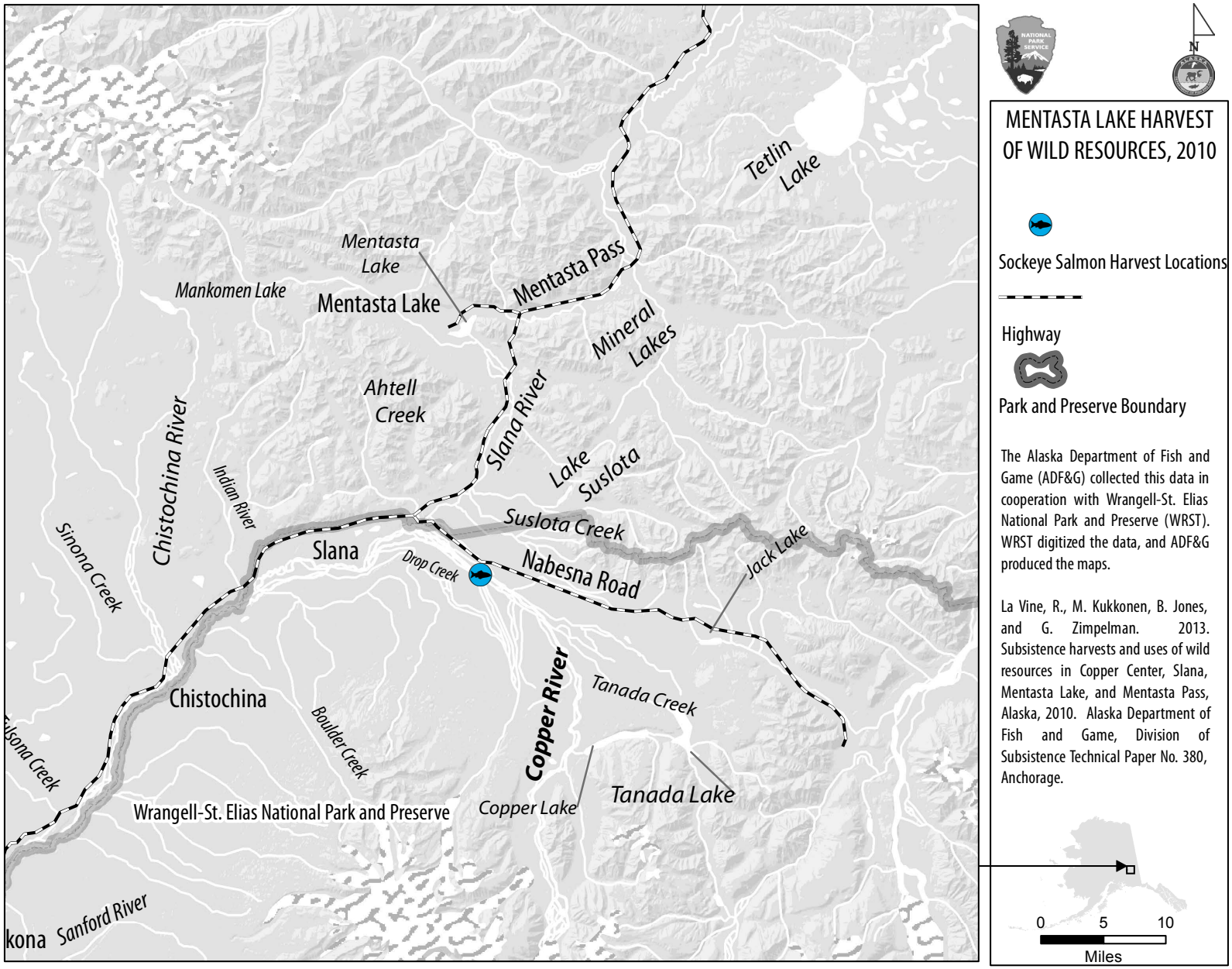


Figure 4-6.– Sockeye salmon search and harvest areas, Mentasta Lake, 2010.

harvested by fish wheel, 12% by dip net, and 74% were harvested by net, indicating those salmon were harvested by residents with familial ties in the Cook Inlet communities of Eklutna, which has an educational fishery, and Tyonek (Table 4-11). Within the Copper River Basin, sockeye and Chinook salmon were harvested in Batzulnetas and Chitina; additionally, sockeye was harvested in Copper Center (Figures 4-6).

NONSALMON FISH

In 2010, Mentasta Lake residents harvested an estimated total of 1,094 lb, or 10 lb per capita, of nonsalmon fish (Table 4-9). Nonsalmon fish made up 6% of the total wild resource harvest by Mentasta Lake residents in 2010 (Figure 4-3). In terms of total pounds and percentages, most of the harvest (46%) was whitefishes; including: round whitefish (355 lb, or 3 lb per capita) and humpback whitefish (137 lb, or 1 lb per capita). In fact, the majority of the nonsalmon harvest by Mentasta Lake households was of freshwater fish, including Arctic grayling (243 lb, or 2 lb per capita), lake trout (53 lb), rainbow trout (53 lb), Dolly Varden (38 lb), and burbot (8 lb) (Table 4-9; Figure 4-7). Other nonsalmon fish harvested by Mentasta Lake residents included Pacific halibut (157 lb, or 2 lb per capita), smelt (25 lb), and lingcod (19 lb). It is interesting to note that despite the fact that more lake trout were harvested than Dolly Varden, the resource was used less than Dolly Varden; in fact, only 13% of households used lake trout while 39% of households used Dolly Varden (Table 4-9). Furthermore, another nonsalmon fish was harvested at similar quantities and used at a similar level as lake trout: namely, rainbow trout (53 lb were harvested by the community and rainbow trout was used by 13% of households) (Table 4-9). This data may reflect a slight preference for Dolly Varden compared to lake trout and rainbow trout, or alternatively it could reflect the fact that more households received Dolly Varden and this accounted for its greater use in the community. In fact, 13% of households received Dolly Varden whereas only 9% of households received rainbow trout and lake trout (Table 4-9).

Table 4-12 lists the number and pounds of each nonsalmon fish species harvested by Mentasta Lake residents in 2010 in percentages by gear type. Half of the burbot (50%), most of the round whitefish (87%) and all of the humpback whitefish were taken by "other" subsistence methods or jigging gear used for fishing through the ice in winter and spring, such as by participating in the popular late fall whitefishes spear fishery (Table 4-12). Smelt was also taken by "other" subsistence methods. All other freshwater species and the remaining saltwater nonsalmon fish (Pacific halibut and lingcod) were caught by rod and reel. Aside from the saltwater species, Mentasta Lake residents harvested the majority of their nonsalmon freshwater fish on Mentasta Lake and along a short section of the Slana River (Figure 4-8). Halibut, lingcod, and smelt were harvested in marine areas including, but not limited to, the Kenai Peninsula and charters out of Valdez.

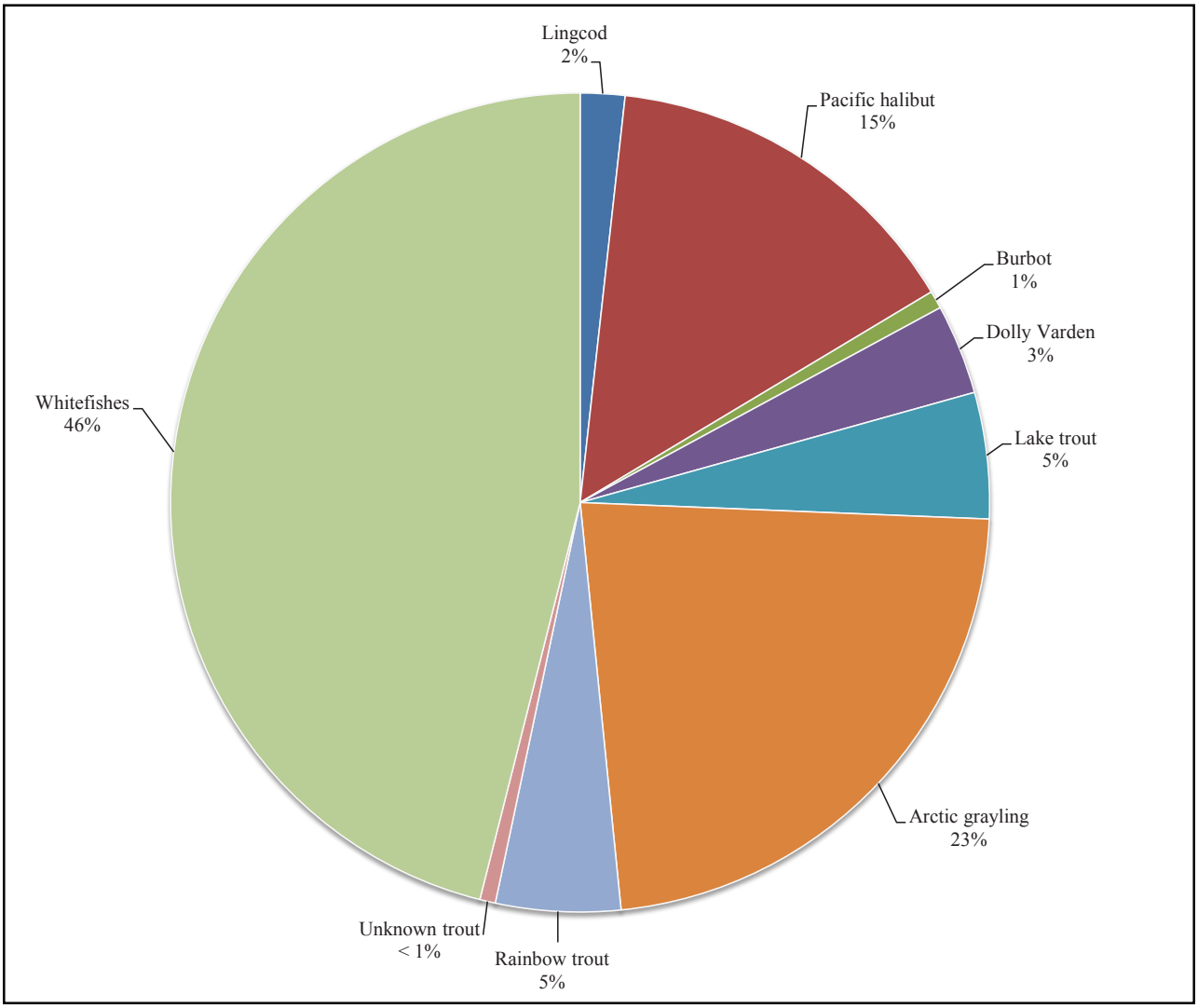


Figure 4-7.– Composition of nonsalmon fish harvest, Mentasta Lake, 2010.

Table 4-12. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Mentasta Lake, 2010.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	37.1%	37.1%	37.1%	37.1%	62.9%	62.9%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	37.1%	37.1%	37.1%	37.1%	62.9%	62.9%	100.0%	100.0%
Herring	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%
	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%
	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%
Herring roe/unspecified	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%
	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%
	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%
Herring sac roe	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%
	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%
	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%
Herring spawn on kelp	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%
	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%
	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%
Unknown smelt	Gear type	0.0%	0.0%	0.0%	0.0%	2.0%	6.3%	2.0%	6.3%	0.0%	0.0%	0.7%	2.3%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.7%	2.3%	0.7%	2.3%	0.0%	0.0%	0.7%	2.3%
Pacific cod (gray)	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%
	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%
	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%
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%
	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%
	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%
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%
	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%
	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%
Starry flounder	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%
	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%
	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%
Lingcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	2.7%	0.7%	1.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.7%	0.7%	1.7%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.3%	22.7%	14.7%	14.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.7%	14.3%	14.7%	14.3%

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Table 4-12.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Arctic lamprey	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%
	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%
	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%
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%
	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%
	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%
Slimy sculpin	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%
	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%
	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%
Burbot	Gear type	0.0%	0.0%	0.0%	0.0%	0.4%	0.9%	0.4%	0.9%	0.2%	0.5%	0.3%	0.7%
	Resource	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.1%	0.3%	0.1%	0.3%	0.3%	0.7%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%	5.5%	4.0%	3.5%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	3.5%	4.0%	3.5%
Lake trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	7.7%	2.5%	4.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	4.9%	2.5%	4.9%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	51.7%	35.3%	32.6%	22.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.6%	22.2%	32.6%	22.2%
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%
	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%
	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%
Longnose sucker	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%
	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%
	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%
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%
	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%
	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%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	7.6%	3.5%	4.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	4.8%	3.5%	4.8%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.0%	0.4%	0.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.6%	0.4%	0.6%

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Table 4-12.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Broad 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%
	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%
	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%
Least cisco	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%
	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%
	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%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	19.8%	33.7%	19.8%	33.7%	0.0%	0.0%	7.3%	12.5%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	7.3%	12.5%	7.3%	12.5%	0.0%	0.0%	7.3%	12.5%
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	77.9%	76.0%	77.9%	76.0%	7.0%	6.8%	33.3%	32.5%
	Resource	0.0%	0.0%	0.0%	0.0%	86.8%	86.8%	86.8%	86.8%	13.2%	13.2%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	28.9%	28.2%	28.9%	28.2%	4.4%	4.3%	33.3%	32.5%
Unknown 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%
	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%
	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%

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

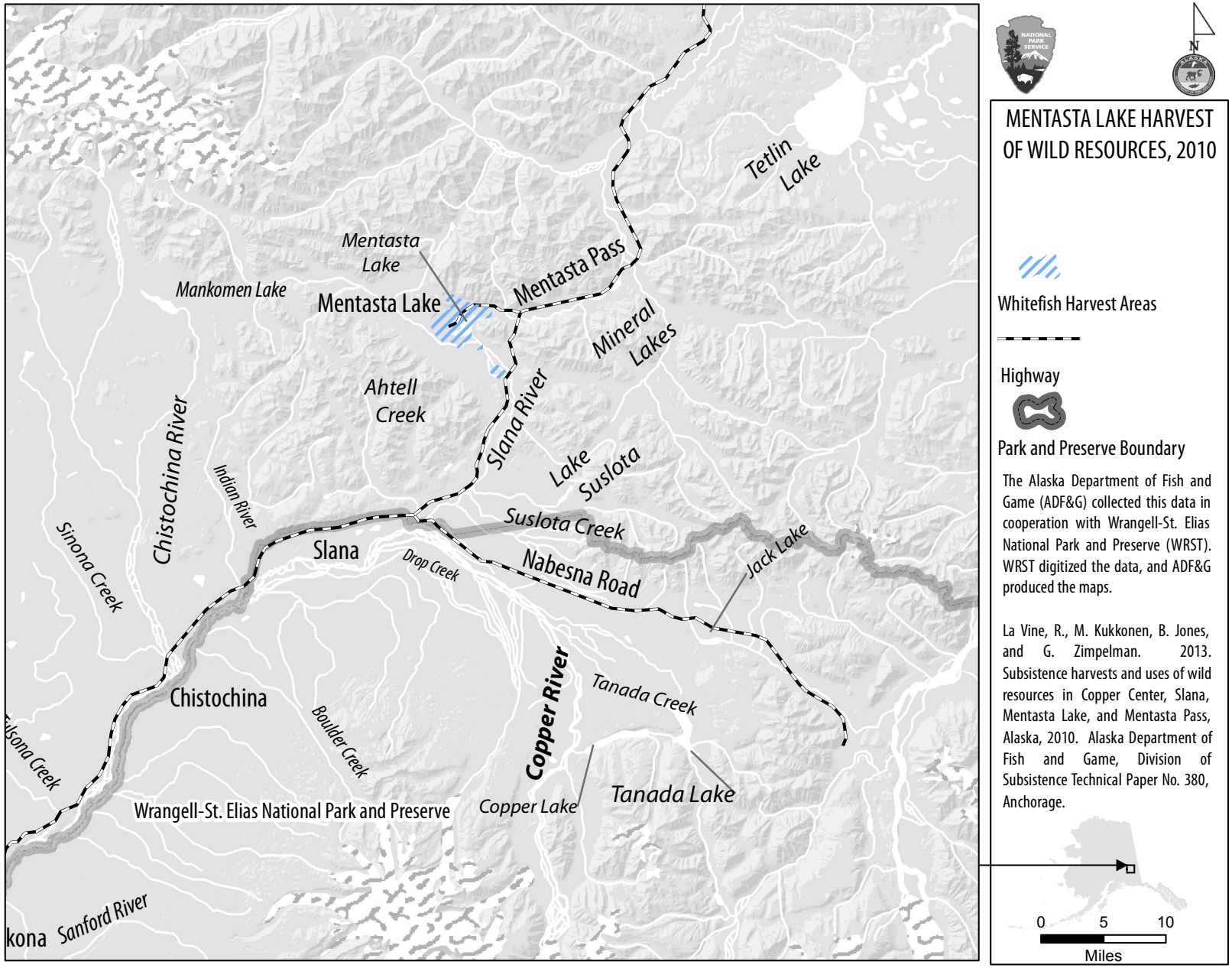


Figure 4-8.–Whitefishes search and harvest areas, Mentasta Lake, 2010.

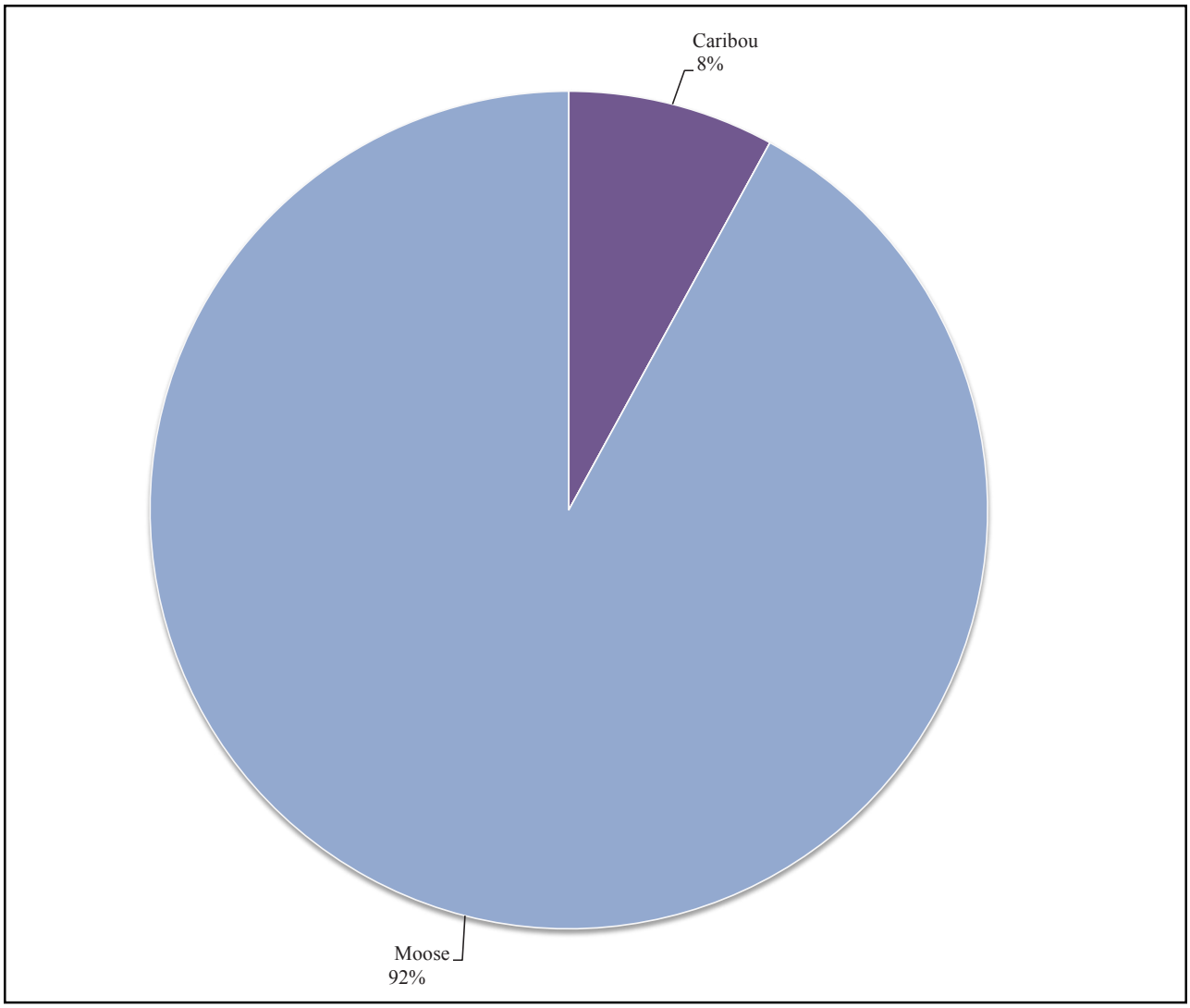


Figure 4-9.– Composition of large land mammals harvest, Mentasta Lake, 2010.

LARARGE LAND MAMMALS

In 2010, large land mammals made up 43% of the total Mentasta Lake harvest with a total harvest of 7,978 lb (Figure 4-3; Table 4-9). Survey data indicate that 96% of community households used large land mammals, 74% hunted them, 39% reported harvesting large mammals, and 91% and 61% reported receiving and giving away large land mammals, respectively. The biggest portion of the expanded harvest by usable weight was moose. Ten moose were reported harvested by the 23 households surveyed; this number was expanded to approximately 15 animals making up 92% of the large mammal harvest (totaling 7,044 lb, or 66 lb per capita), followed by caribou (8% of large mammal harvest totaling 610 lb, or 6 lb per capita) (Figure 4-9; Table 4-9). Additional species used in 2010 included bison, deer, Dall sheep, black bears, and goats. This could indicate the use of leftover resources from previous years but is more than likely due to local hunting guides from Mentasta Pass

sharing meat harvested by their clients with their Mentasta Lake neighbors. The most used large land mammal species included moose (96% of households), caribou (48%), Dall sheep (30%), and goat (9%) (Table 4-9). Seventy-four percent of households attempted to harvest moose, with 39% claiming harvests and a majority of households (96%) using moose (Table 4-9). In terms of pounds harvested in 2010, moose ranked first on the list of top 10 resources harvested and used by community households (Table 4-10). According to the study, most successful moose hunting took place in September 2010 with the expanded harvest totaling14 bulls (Table 4-13).

While moose was the most sought after and harvested large land mammal species, 30% of Mentasta Lake households attempted to harvest caribou (Table 4-9). Caribou harvests took place primarily in October with a total of 5 bulls being harvested by only a few households (4%) (tables 4-13 and 4-9). Moose and caribou were shared widely in the community; 61% of the households reported giving away moose with 91% receiving the resource and 26% of households reported giving away caribou while 48% received the resource (Table 4-9). Caribou was ranked third among the top 10 resources harvested (Table 4-10).

Mentasta Lake residents relied primarily on waterways and the road corridors for access to large land mammal hunting areas. Moose search areas included parts of the Tok Cutoff extending from Slana to Mentasta Pass; in addition, moose were hunted along the first half of the Nabesna Road (Figure 4-10). Caribou and moose were also hunted in Mentasta Lake and moose were hunted along the Slana River in a corridor from just above Mentasta Lake downriver to the Tok Cutoff.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 4-9, the total harvest of small land mammals by Mentasta Lake residents in 2010 was 324 lb, or 3 lb per capita. The majority of the harvest was snowshoe hares (147 lb, or just more than 1 lb per capita) followed by porcupines (92 lb, or less than 1 lb per capita), muskrats (56 lb), and beavers (24 lb), most of which were harvested for human consumption. The remaining harvest was composed of animals harvested for their fur and included martens, mink, lynx, and foxes. The small land mammal harvest composed approximately 2% of the total wild food harvest in 2010 (Figure 4-3).

The harvest and search areas for small land mammals in 2010 were mostly along the Tok Cutoff from Chistochina to Tok, and in the areas around Mentasta Lake, including Mentasta Lake Road (Figure 4-11).

BIRDS

Birds composed a small percentage (1%) of the total harvest of wild resources during 2010 (Figure 4-3). The Mentasta Lake household harvest of birds was 156 lb, or under 2 lb per capita (Table 4-9). In terms of pounds harvested, the majority of the bird harvest (104 lb, or 1 lb per capita) was migratory

Table 4-13. – Estimated harvests of large land mammals by month and sex, Mentasta Lake, 2010.

	Bison	Black bear	Brown bear	Caribou		Moose		Deer	Goat	Dall sheep
Harvest month	Number	Number	Number	Male	Female	Male	Female	Number	Number	Number
January	0.0	0.0	0.0	0.0	0.0	0.0	1.6	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
March	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
May	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
July	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
September	0.0	0.0	0.0	0.0	0.0	14.1	0.0	0.0	0.0	0.0
October	0.0	0.0	0.0	4.7	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
December	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
Total harvest	**0.0**	**0.0**	**0.0**	**4.7**	**0.0**	**14.1**	**1.6**	**0.0**	**0.0**	**0.0**

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

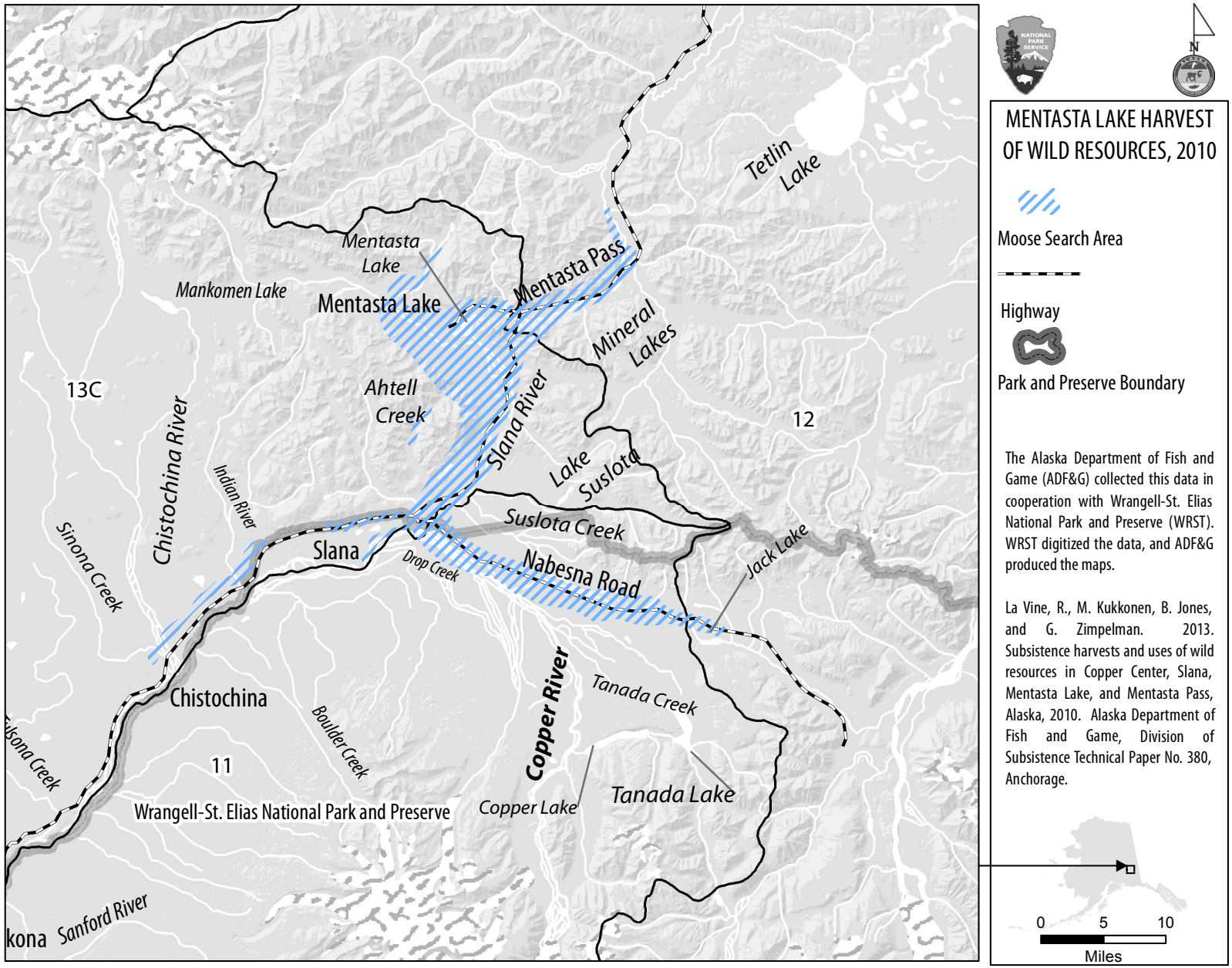


Figure 4-10.– Moose search and harvest areas, Mentasta Lake, 2010.

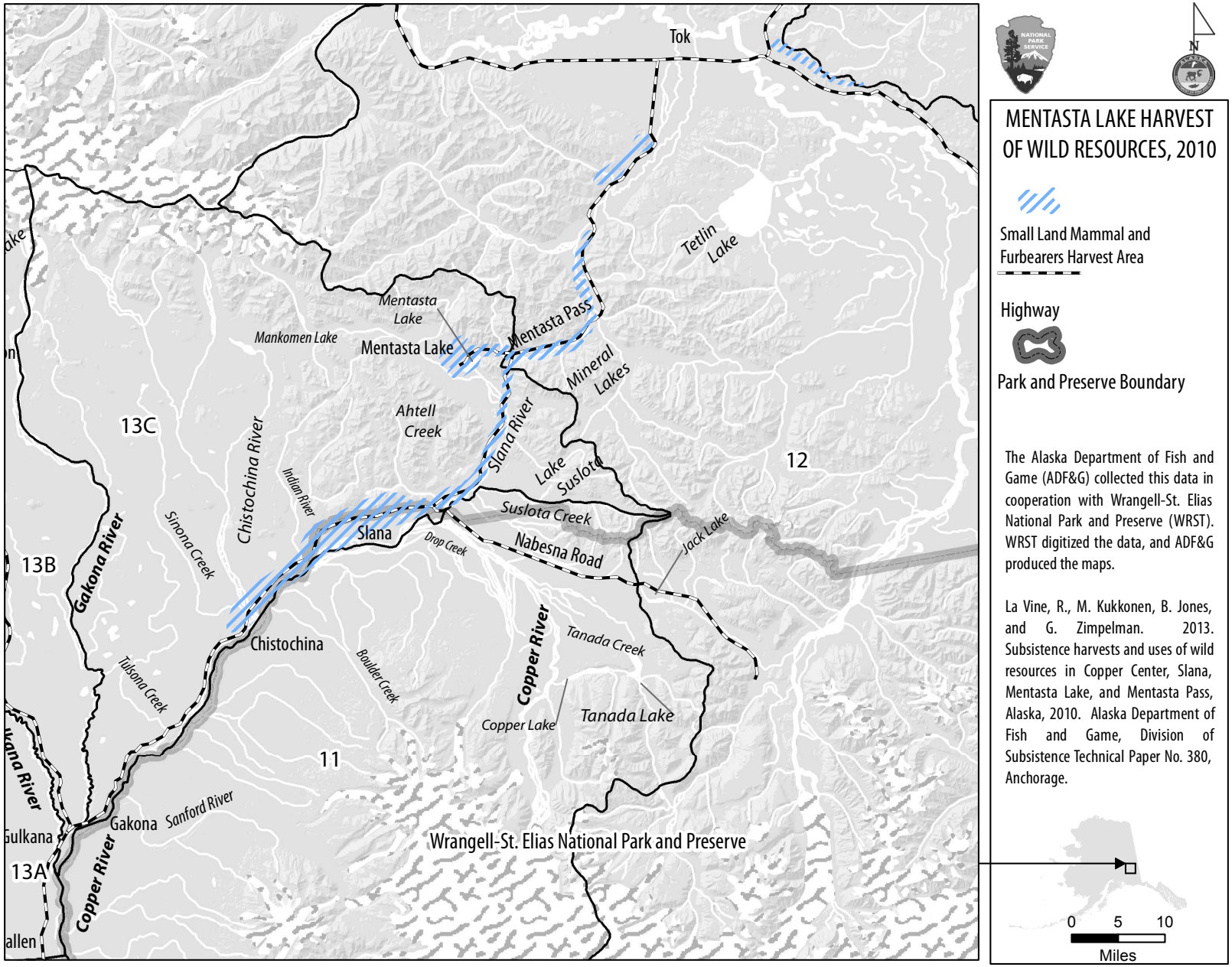


Figure 4-11.– Small land mammals and furbearers search and harvest areas, Mentasta Lake, 2010.

Table 4-14. – Harvest of birds by season, Mentasta Lake, 2010.

Species	Spring	Summer	Fall	Winter
Migratory birds	**0.0**	**93.9**	**0.0**	**7.8**
Canvasback	0.0	9.4	0.0	0.0
Spectacled eider	0.0	0.0	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0
Mallard	0.0	37.6	0.0	7.8
Long-tailed duck (oldsquaw)	0.0	0.0	0.0	0.0
Northern pintail	0.0	11.0	0.0	0.0
Scaup	0.0	0.0	0.0	0.0
Black scoter	0.0	31.3	0.0	0.0
Surf scoter	0.0	0.0	0.0	0.0
White-winged scoter	0.0	0.0	0.0	0.0
Green-winged teal	0.0	4.7	0.0	0.0
Unknown ducks	0.0	0.0	0.0	0.0
Brant	0.0	0.0	0.0	0.0
Cacklers	0.0	0.0	0.0	0.0
Lesser Canada geese (taverner/parvipes)	0.0	0.0	0.0	0.0
Unknown Canada geese	0.0	0.0	0.0	0.0
Emperor geese	0.0	0.0	0.0	0.0
Snow geese	0.0	0.0	0.0	0.0
White-fronted geese	0.0	0.0	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0
Tundra swan (whistling)	0.0	0.0	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0
Upland game birds	**0.0**	**68.9**	**0.0**	**0.0**
Spruce grouse	0.0	53.2	0.0	0.0
Ptarmigan	0.0	15.7	0.0	0.0

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

birds such as ducks, including canvasbacks, mallards, long-tailed ducks, northern pintails, goldeneyes, scaups, scoters (black, white-winged, and surf), and green-winged teals (Table 4-9). Upland game birds such as spruce grouse and ptarmigan were harvested less, with only a total of 52 lb or less than 1 lb per capita harvested in 2010 (Table 4-9). According to the study, Mentasta Lake residents did not attempt to harvest any bird eggs in 2010. During the study year, 61% of the households surveyed used birds and 39% participated in hunting birds. Of the birds used, most were migratory waterfowl, with 57% of the households using and 26% harvesting them.

In Mentasta Lake, almost all birds, both migratory and upland game, were harvested during the summer months (Table 4-14). Migratory birds were harvested in the Mentasta Lake area and along the Tok Cutoff between Mentasta Pass and Slana. In addition upland game birds were hunted along the Mentasta Lake area, along the Slana River between Mentasta Lake and the Tok Cutoff and along a short section of the Tok Cutoff between Slana and Mentasta Pass (Figure 4-12).

MARINE INVERTEBRATES

The harvest of marine invertebrates by Mentasta Lake residents in 2010 was small; these resources made up 0.3% of the total harvest with approximately 47 lb, or less than 1 lb per capita, harvested (Figure 4-3; Table 4-9). Razor clams were the only marine invertebrate harvested by Mentasta Lake residents in 2010, but some Mentasta Lake residents received cockles (4%), butter clams (4%), and

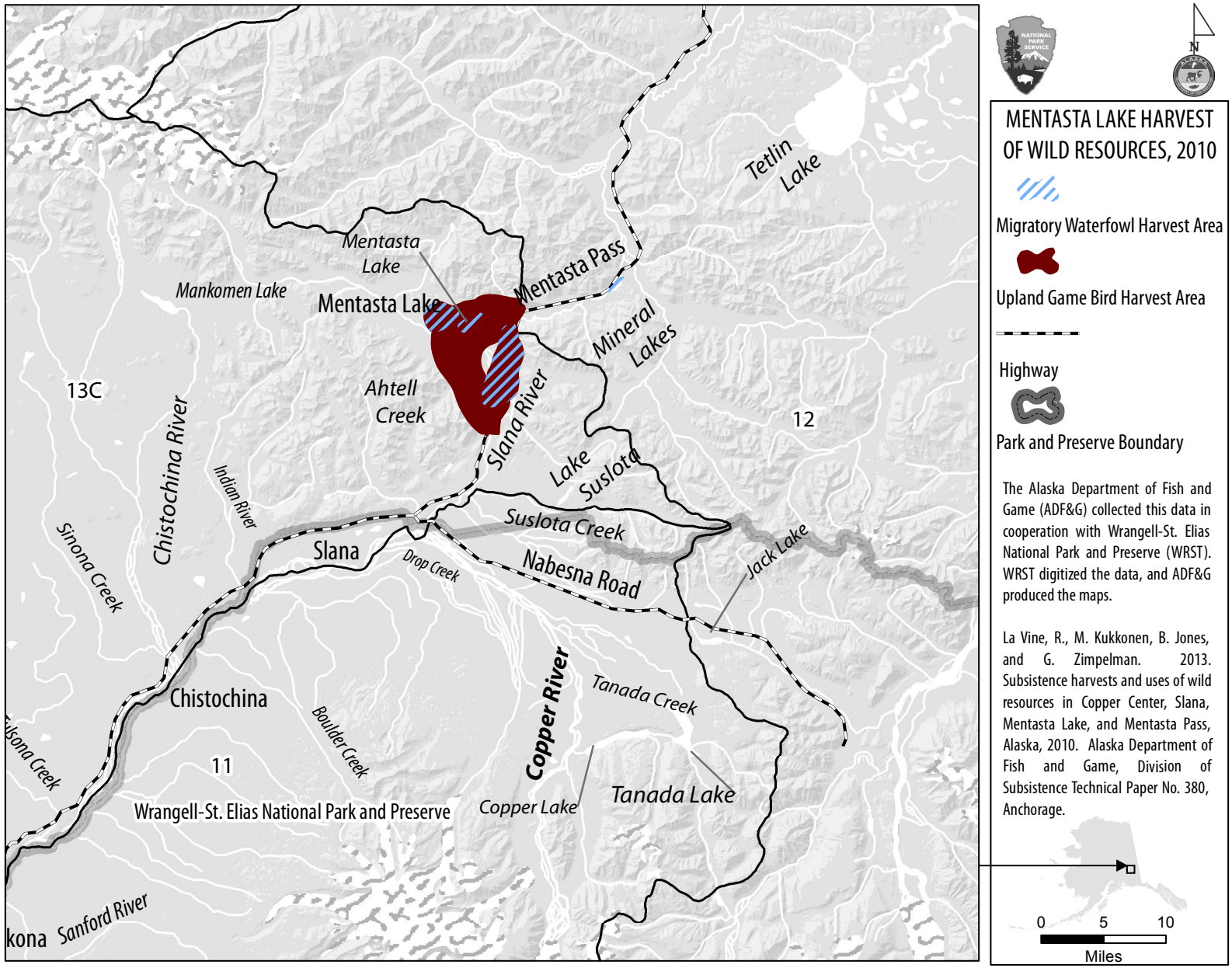


Figure 4-12.– Upland game birds and migratory waterfowl search and harvest areas, Mentasta Lake, 2010.

scallops (4%) (Table 4-9). In sum 17% of Mentasta Lake residents used marine invertebrates (Table 4-9). All of the marine invertebrates used in Mentasta Lake homes came from outside the Copper River Basin area.

VEGETATION

While vegetation made up approximately 12% of the total wild food harvest in 2010, 96% of Mentasta Lake households used and 91% harvested some form of vegetation during the study year (Figure 4-3; Table 4-9). In 2010, Mentasta Lake residents harvested 2,167 lb, or 20 lb per capita, of vegetation, consisting mostly of berries. Wild rhubarb (2 lb), Hudson's Bay tea (2 lb), and mushrooms (15 lb) were also harvested by Mentasta Lake residents in 2010. Of these resources, Hudson's Bay tea and mushrooms were shared (by 9% of households each) (Table 4-9). Wood collected either for heating or other uses was also an important vegetation resource harvested by 52%, used by 57%, shared by 30%, and received by 26% of Mentasta Lake households (Table 4-9). Wood ranked as the seventh most used resource in Mentasta Lake during 2010 (Table 4-10). Uses for wood include smoking fish, building fish wheels, making crafts, and heating homes. In Mentasta Lake approximately 56% of the residents used some wood for heating homes, 26% used only wood to heat homes, and approximately 44% used no wood in the heating of their homes (Table 2-18). For the study year of 2010, the average cost of heating a home by any means was $1,446.

The harvest of blueberries placed fourth in terms of pounds per capita harvested in 2010 (Table 4-10) and was tied with moose as the most used resource; in addition, lowbush cranberries were the fifth most harvested and the fourth most used resource in 2010 (Table 4-10). Residents of Mentasta Lake harvested 1,994 lb of berries (or 19 lb per capita), and 173 lb (around 2 lb per capita) of other plants (Table 4-9). Berries were frequently shared by households (57%) and were received by an almost equal amount (52%). This may help explain why blueberries and cranberries both placed so high on the list of top 10 ranked resources used in the Mentasta Lake area despite their relatively lower harvest yields (compared to salmon or nonsalmon fish, for example). Most berries were harvested along the Tok Cutoff between Chistochina and Mentasta Pass, along a short section of the Nabesna Road near Jack Lake, and around Mentasta Lake and the surrounding areas. Plant harvests occurred in the Mentasta Lake area and along a section of the Slana River between Mentasta Lake and the Tok Cutoff; plants were also harvested in a small section on the Tok Cutoff to the northeast of Slana (Figure 4-13).

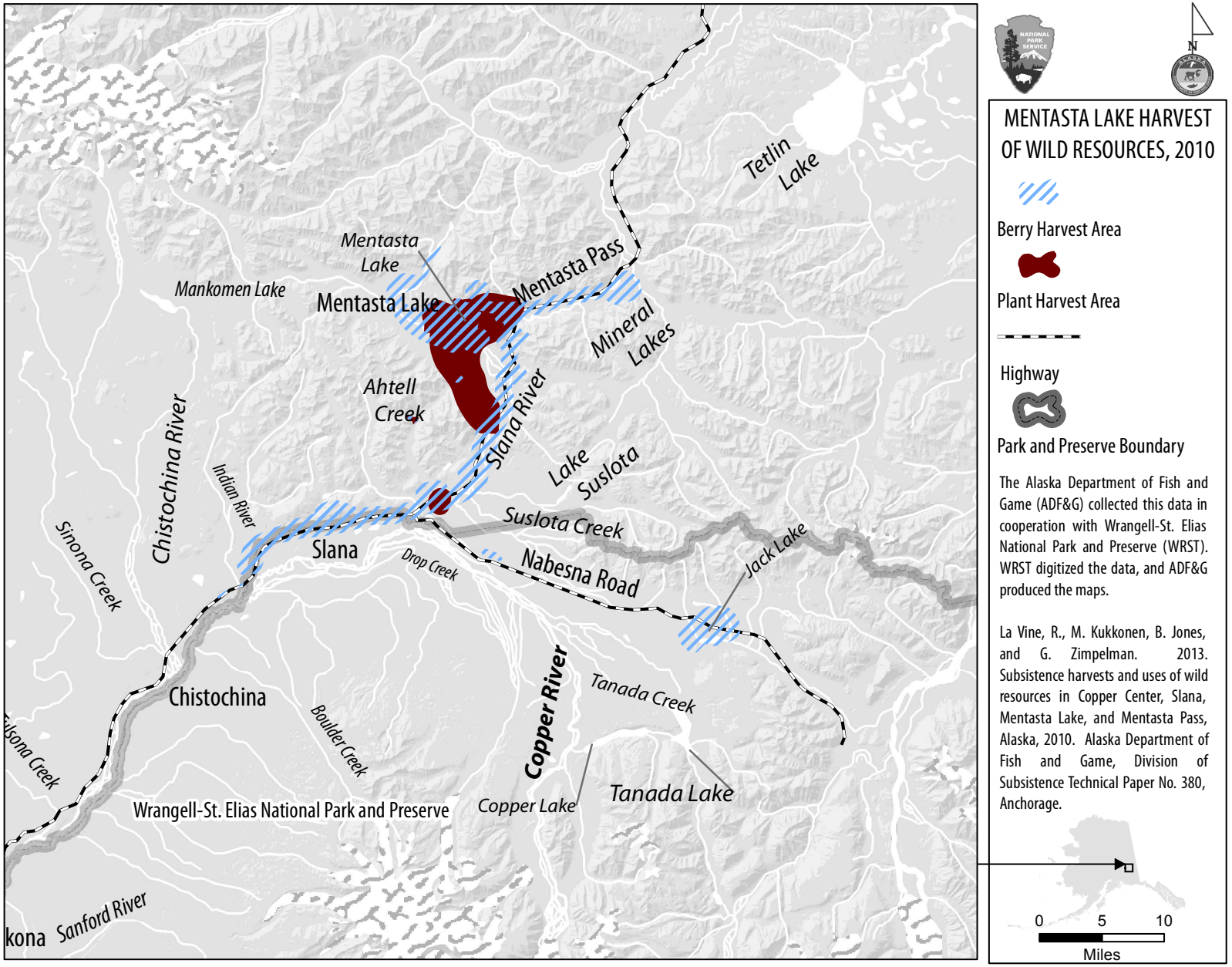


Figure 4-13.– Berries and plants, greens, and mushrooms search and harvest areas, Mentasta Lake, 2010.

Table 4-15. – Change in household use of resources compared to recent years, Mentasta Lake, 2010.

Resource category	Sampled households	Valid Responses[a]	Households reporting use[b]					
			Less		Same		More	
			Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	23	23	18	78.3%	16	69.6%	13	56.5%
All resources	23	23	4	17.4%	11	47.8%	8	34.8%
Salmon	23	23	11	47.8%	5	21.7%	7	30.4%
Nonsalmon fish	23	19	4	21.1%	7	36.8%	8	42.1%
Large land mammals	23	22	6	27.3%	7	31.8%	9	40.9%
Small land mammals	23	13	7	53.8%	4	30.8%	2	15.4%
Migratory birds	23	13	1	7.7%	5	38.5%	7	53.8%
Other birds	23	8	1	12.5%	4	50.0%	3	37.5%
Bird eggs	23	2	0	0.0%	2	100.0%	0	0.0%
Marine invertebrates	23	6	1	16.7%	4	66.7%	1	16.7%
Vegetation	23	22	4	18.2%	10	45.5%	8	36.4%

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

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

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 2010 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 9 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests in the 2010 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 4-15 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 4-15, response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category.

Figure 4-14 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 bird eggs or marine invertebrates, 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, when asked at the end of the survey most households, 17%, said they used less subsistence resources in general over the previous 12 months compared to recent years (Table 4-15). About 48% of all households said they used about the same amount, and 35% said they used more. In responding to the individual resource categories, about 48% reported that their use of salmon was less in 2010 than in previous years. Other categories where a

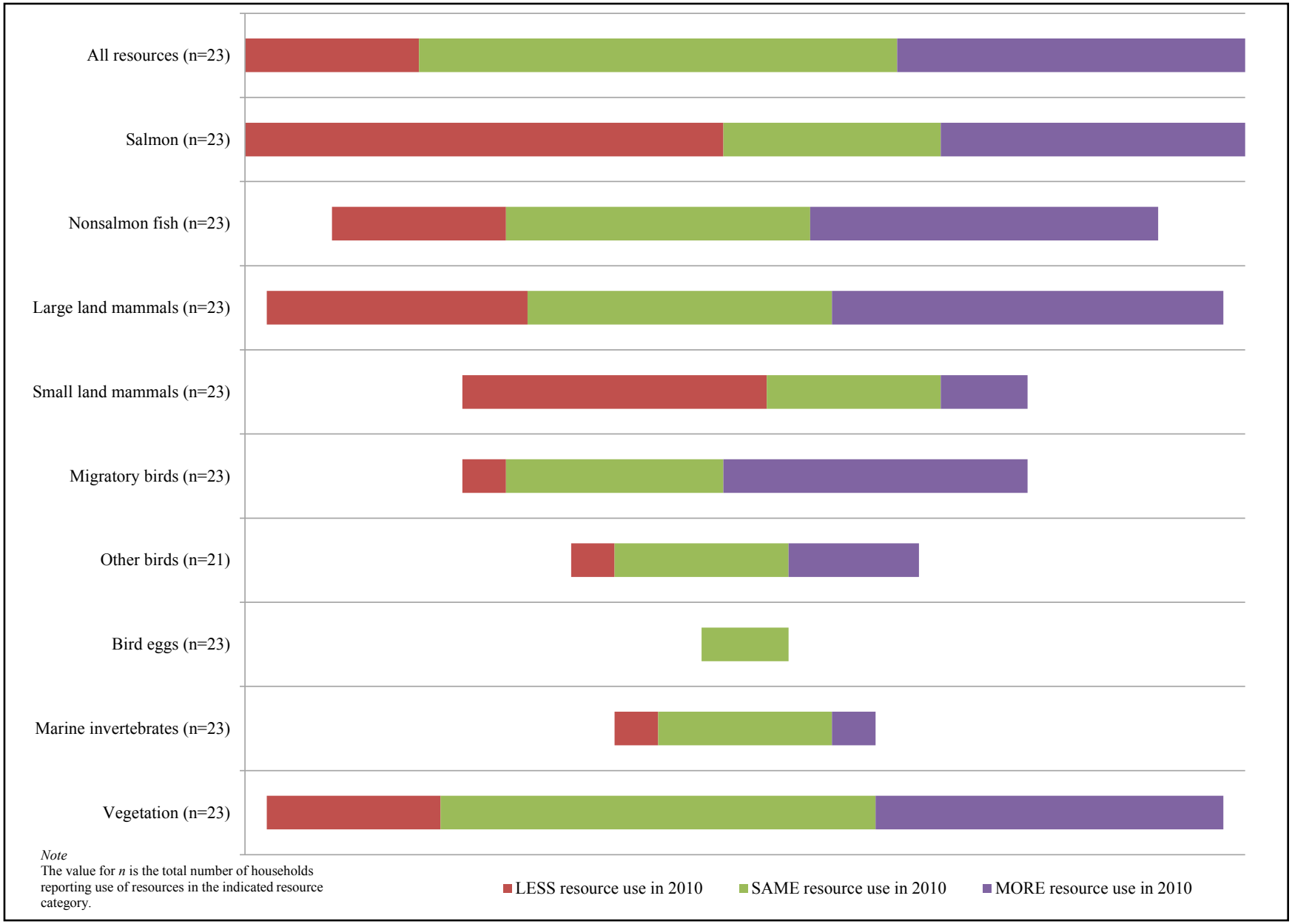


Figure 4-14.– Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Mentasta Lake, 2010.

Table 4-16. – Reasons household use of resources was less compared to recent years, Mentasta Lake, 2010.

Resource category	Households using[a]	Households reporting less use: Total households	No reason reported: Number	No reason reported: Percentage	Fewer resources available: Number	Fewer resources available: Percentage	Unfavorable weather: Number	Unfavorable weather: Percentage	Employment interfered: Number	Employment interfered: Percentage	Too much competition: Number	Too much competition: Percentage
Any resource[b]	23	18	2	11.1%	4	22.2%	0	0.0%	2	11.1%	0	0.0%
All resources	23	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	23	11	1	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	19	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	22	6	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	13	7	1	14.3%	1	14.3%	0	0.0%	1	14.3%	0	0.0%
Migratory birds	13	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	8	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	6	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	22	4	0	0.0%	1	25.0%	0	0.0%	1	25.0%	0	0.0%

Table 4-16.–Continued.

Resource category	Households using[a]	Households reporting less use: Total households	Regulatory restrictions: Number	Regulatory restrictions: Percentage	Less sharing: Number	Less sharing: Percentage	Other personal reasons: Number	Other personal reasons: Percentage	Fuel, equipment, or both too expensive: Number	Fuel, equipment, or both too expensive: Percentage
Any resource[b]	23	18	1	5.6%	5	27.8%	14	77.8%	2	11.1%
All resources	23	4	0	0.0%	0	0.0%	4	100.0%	0	0.0%
Salmon	23	11	0	0.0%	4	36.4%	6	54.5%	1	9.1%
Nonsalmon fish	19	4	0	0.0%	0	0.0%	4	100.0%	0	0.0%
Large land mammals	22	6	1	16.7%	1	16.7%	3	50.0%	0	0.0%
Small land mammals	13	7	0	0.0%	0	0.0%	4	57.1%	1	14.3%
Migratory birds	13	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Other birds	8	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	6	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Vegetation	22	4	0	0.0%	0	0.0%	2	50.0%	0	0.0%

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

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

Note The category for "bird eggs" is not included in the table because no (zero) households in Mentasta Lake reported harvesting less "bird eggs."

a. Households using include only households that used a resource and responded to the question about use.

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 4-17. – Reasons household use of resources was more compared to recent years, Mentasta Lake, 2010.

Resource category	Households using[a]	Households reporting more use: Total households	No reason reported: Number	No reason reported: Percentage	More resources available: Number	More resources available: Percentage	Favorable weather: Number	Favorable weather: Percentage	Employment conducive: Number	Employment conducive: Percentage	Less competition: Number	Less competition: Percentage
Any resource[b]	23	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All resources	23	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	23	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	19	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	22	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	13	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	13	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	8	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	6	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	22	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Table 4-17.–Continued.

Resource category	Households using[a]	Households reporting more use: Total households	Regulations conducive: Number	Regulations conducive: Percentage	Sharing increased: Number	Sharing increased: Percentage	Other personal reasons: Number	Other personal reasons: Percentage	Fuel, equipment, or both affordable: Number	Fuel, equipment, or both affordable: Percentage
Any resource[b]	23	13	0	0.0%	7	53.8%	10	76.9%	5	38.5%
All resources	23	8	0	0.0%	2	25.0%	3	37.5%	3	37.5%
Salmon	23	7	0	0.0%	3	42.9%	3	42.9%	1	14.3%
Nonsalmon fish	19	8	0	0.0%	1	12.5%	6	75.0%	1	12.5%
Large land mammals	22	9	0	0.0%	2	22.2%	4	44.4%	3	33.3%
Small land mammals	13	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Migratory birds	13	7	0	0.0%	3	42.9%	3	42.9%	1	14.3%
Other birds	8	3	0	0.0%	0	0.0%	2	66.7%	1	33.3%
Marine invertebrates	6	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Vegetation	22	8	0	0.0%	0	0.0%	7	87.5%	2	25.0%

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

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

Note The category for "bird eggs" is not included in the table because no (zero) houses reported harvesting more "bird eggs."

a. Households using include only households that used a resource and responded to the question about use.

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.

significant percent reported less use in 2010 was small land mammals (54% reporting less use), large land mammals (27%), nonsalmon fish (21%), and vegetation (18%). However, for the all resources category listed in Table 4-15, the largest percentage of respondents reported their use in 2010 as the same as previous years.

Tables 4-16 and 4-17 list the reasons Mentasta Lake respondents gave for changes in harvests and uses by resource category. These were open-ended questions, and respondents could provide more than one reason for changes. Project staff grouped the responses into categories, such as competition for resources, regulations hindering or helping residents to harvest resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work, change in household size, age and health, and other outside effects on residents' opportunities to engage in subsistence activities. The survey received 23 valid responses to questions on whether all resource use had been less, the same, or more during the study year. Of those 23 responses, there were 4 who reported less use of all resources in general. All 4 respondents cited other personal reasons as the reason why their harvest was less (Table 4-16). No other categories were cited as reasons why use of all resources was generally down.

Eleven households (48%) of the 23 that reported salmon use responded that their salmon use was less in the study year (tables 4-15 and 4-16). Reasons given for this decline were primarily attributed to "other personal reasons" by 6 households (55%), with "less sharing" as the next largest category, cited by 4 households (36%).

Of the 23 valid responses, there were 8 households who reported their overall 2010 resource use as being more than in recent years. Reasons given for the increase were primarily attributed to "other personal reasons" (3 households, or 38%), "economic reasons" (3 households, or 38%), and "more sharing" was the least frequently cited reason (2 households, or 25%) (Table 4-17).

HARVEST DATA

Changes in the harvest of resources by Mentasta Lake residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted by the Division of Subsistence for the community of Mentasta in 1982, which combined both Mentasta Lake and Mentasta Pass. In 1987 Mentasta Lake was surveyed separately from the distinct community of Mentasta Pass. Figure 4-15 highlights the per capita harvests of resources for all 3 study years (1982, 1987, and 2010). In 1982, the total harvest of all wild resources in pounds usable weight was 11,012 lb, or 115 lb per capita. In 1987 the total harvest of wild resources decreased in pounds of usable weight to 9,672 lb but the per capita weight increased to 125 lb, and in 2010 the total harvest of wild resources increased in pounds of usable weight to 17,953 lb or 169 lb per capita (Figure 4-15).

With regard to individual resource categories, between 1982 and 1987 there was a 24 lb decrease in

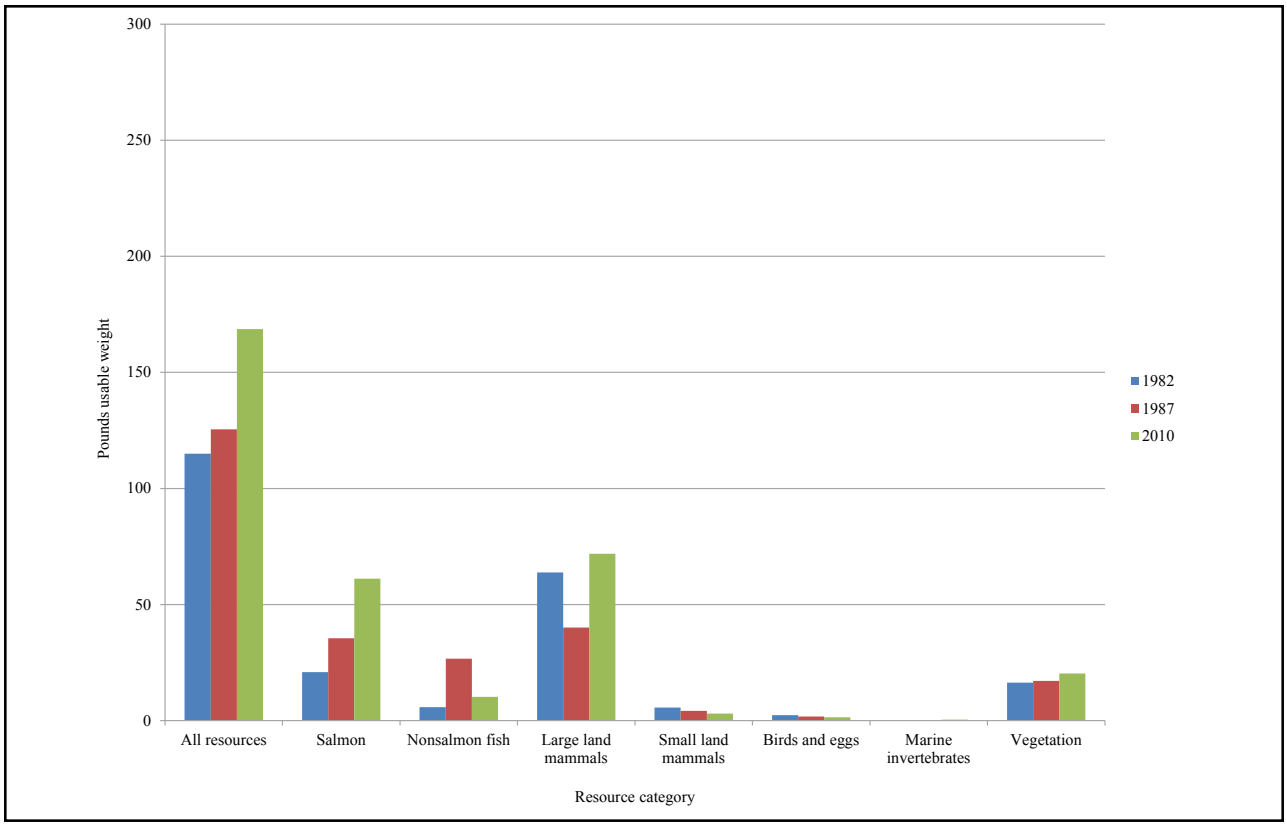


Figure 4-15.– Per capita harvests in pounds usable weight, Mentasta Lake, 1982, 1987, and 2010.

the per capita harvest of large land mammals, however between 1987 and 2010 the per capita harvest increased by 32 lb (Figure 4-15). Between 1982 and 1987 there was a 21 lb per capita increase in the nonsalmon fish harvest, but after 1987 there was a decrease in the nonsalmon fish per capita harvest by 17 lb. Salmon per capita harvests have been steadily increasing since the 1982 study. The per capita harvest was 15 lb greater in 1987 than in 1982 and 25 lb per capita more in 2010 than in 1987. Per capita harvests of vegetation began at 16 lb in 1982, slightly increased to 17 lb per capita in 1987, and ended in 2010 at 20 lb per capita. The per capita harvest of birds remained roughly the same for all 3 study years, at 2 lb for 1982 and 1987, and decreasing to 1.5 lb in 2010. Small land mammal per capita harvests began at 6 lb per capita in 1982, dropped to 4 lb per capita in 1987, and continued to drop to 3 lb per capita in 2010. In summary, the estimated per capita harvest for Mentasta Lake over time indicates there has been an overall increase in per capita harvests of the most significant resources—salmon and large land mammals—between1982 and 2010 (Figure 4-15).

Figure 4-16 breaks down the Mentasta Lake annual harvest into percentages of resource composition for the 3 study years: 1982, 1987, and 2010. Similar to the trend seen in the per capita harvests, the percentage of salmon in usable weight has steadily increased from 18% of the harvest in 1982 to 36% of the harvest in 2010. The percentage of nonsalmon fish in usable weight fluctuated significantly over time; it composed 5% of the harvest in 1982, 21% of the harvest in 1987, and then dropped to 6% of the total community harvest in 2010. Large land mammals began as 56% of the total wild food

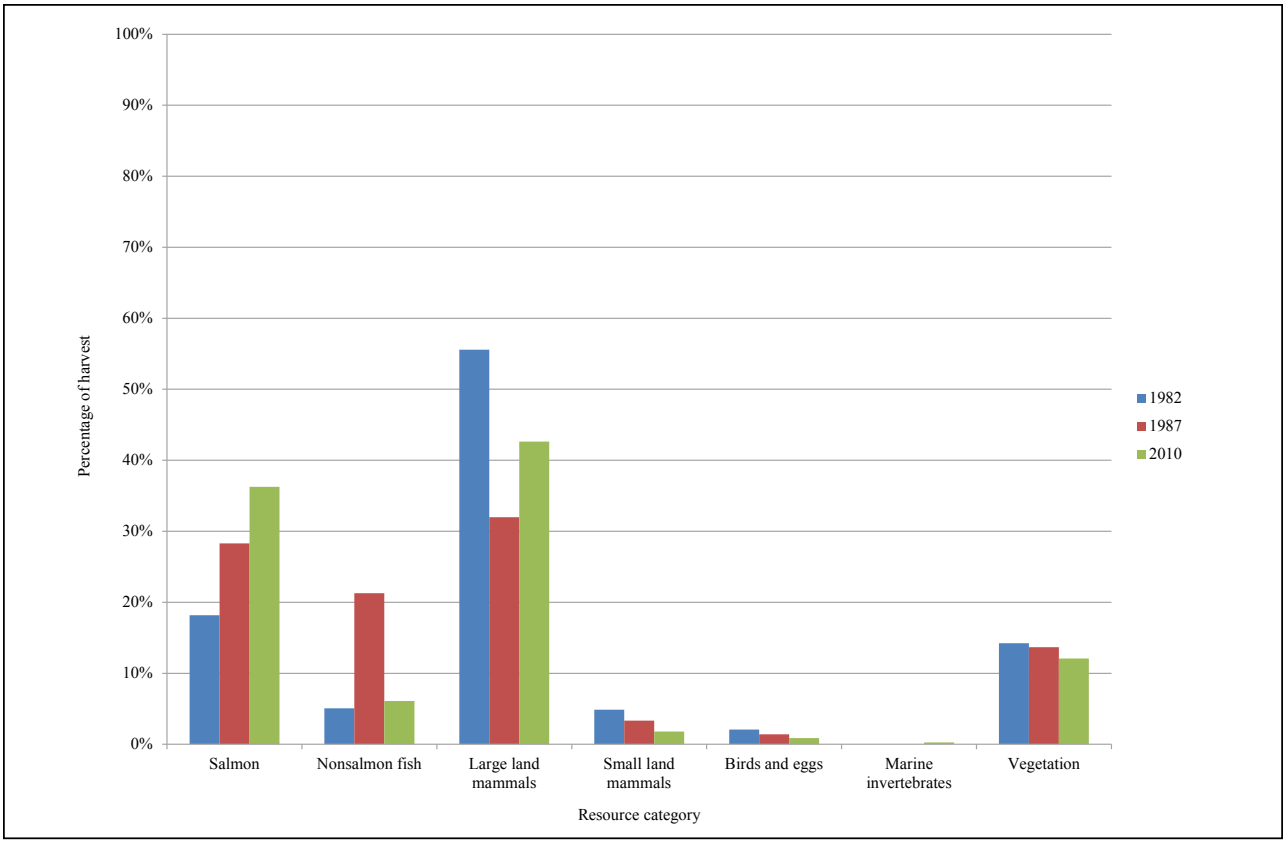


Figure 4-16.– Composition of total harvest as a percentage of usable weight, Mentasta Lake, 1982, 1987, and, 2010.

harvest in 1982, decreased to 32% in 1987, and then increased to 43% of the community harvest in 2010. The harvest of small land mammals has decreased somewhat over time; making up 5% of the harvest for Mentasta Lake households in 1982, 3% of the total harvest in 1987, and just 2% of total household harvests in 2010. Additionally bird and bird egg harvests fell from 2% in 1982 to 1% of total household harvests in 2010. The vegetation harvest likewise experienced a slight decline, beginning as just more than 14% of the harvest in 1982 to just under 14% in 1987, and then in 2010 fell to 12% of the total harvest for Mentasta Lake households. Overall this figure demonstrates an increased reliance upon salmon specifically, a decrease in harvest of large land mammals, and a slight reduction in the harvest of other resources such as vegetation, small land mammals, and birds and eggs in Mentasta Lake from 1982 to 2010.

CURRENT AND HISTORICAL HARVEST AREAS

The Alaska Department of Fish and Game, Division of Habitat mapped the Copper Basin community resource use areas between 1983 and 1984 (Stratton and Georgette 1985), including the community resource use areas for Mentasta Lake. The maps produced for the *Alaska Habitat Management Guide Southcentral Region: map atlas* (Alaska Department of Fish and Game Habitat Division 1985) depict

areas used between 1964 and 1984 for hunting, fishing, and trapping. A total of 6 maps for Mentasta Lake at the 1:250,000 scale are available with the report in hard copy and online in PDF format. The maps cover harvest and use areas for moose, caribou and waterfowl, sheep and plants, furbearers, and fish. Absent from these maps are harvest and use areas for black bear and upland game birds.

While it is important to keep in mind that the maps produced from the 1983 and 1984 study capture multiple decades of activity rather than just 1 year, it is significant to note how diminished the harvest areas are in 2010 in comparison to the previous study. On all 6 maps, use areas cover a wide expanse of land in the immediate watershed, across the flats, and up multiple tributaries to the Copper River on both the north and south sides of the Tok Cutoff. Notably, fall season caribou harvest and search areas were conducted on the roadways along the Tok Cutoff between Slana and Mentasta Pass; in addition, caribou were sought in the Mentasta Lake area. Additionally, moose were sought in an area along the Nabesna Road up to Jack Lake, along the Tok Cutoff between Chistochina and Mentasta Pass and in the area surrounding Mentasta Lake, including a section of the Slana River.

The 2010 moose harvest search areas mapped demonstrated a focused reliance upon the roadways and the area most local to the village for access. The historical search pattern included the present-day search areas along the highways but also extended out much farther off the road system and included large areas inside the present-day Wrangell-St. Elias National Park and Preserve. To the southeast, moose search areas included: the area to the west of the Tetlin Reservation boundary down into the Nabesna River and along the areas surrounding the Nabesna Road; also the area to the north of the Tok Cutoff as far to the northwest as the foothills of Mount Kimball and ending just to the south of Cathedral Rapids.

Caribou harvest and search patterns were also altered significantly from the past; earlier harvest areas included most of the modern harvest areas but also extended much farther south into the Wrangell-St. Elias National Park along Boulder Creek and into the Copper River as far south as portions of Goat Creek and Tanada Lake. Search areas went as far to the southeast as Soda Lake and encompassed an area to the northeast, including the junction of Tok Creek and Little Tok Creek and an area to the northeast of Mount Kimball (but not quite as close to Cathedral Rapids as the moose hunting area).

Demonstrative of the diminished harvest of small game from 1987 to 2010, the 2010 small land mammal harvest areas were reduced primarily to the road system on the Tok Cutoff from Chistochina to just south of Tok and along a small section to the north of the Alaska Highway near Tetlin Junction. This harvest area is reduced from expanded hunting and trapping territory both north and south of the Tok Cutoff that stretched from Ahtell Creek in the east to the Tok and Little Tok rivers to the northwest and the Nabesna River to the southwest.

LOCAL CONCERNS REGARDING RESOURCES

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

LARGE LAND MAMMALS

The community residents of Mentasta Lake expressed that large land mammals, and particularly moose, are an essential part of the protein in their diet. Residents noted that in 2010, there were not as many moose in and around the community as there had been in the past. More money, time, and effort had to be put into hunting for moose in 2010. Some residents noted an increase of predators such as bears and wolves, which they believe is aiding in the decline of moose in and around the community, as well as hunting pressure due to hunters from outside of the Copper River Basin.

FISH

Many Mentasta Lake residents must use fish wheels from other Copper River communities in order to harvest salmon and many are concerned that access to a fish wheel was harder during the study year than in the past. Some residents use fish nets on nearby rivers to catch whitefishes and the odd salmon (most salmon are spawned out or just look battered from the run). Several residents remarked on the poor condition of whitefishes in 2010, citing that some whitefishes caught suffered what appeared to be lesions.

One household in the community commented in detail about the decline of Chinook salmon in the immediate area. This household observed that Chinook salmon used to spawn in Bone Creek but their numbers have declined dramatically. It is believed that this decline is due in part to a "tractor trail" crossing Bone Creek and Fish Creek, both local anadramous streams. Additionally, Chinook salmon are often snagged at Ahtell Creek, another factor this household considers is contributing to Chinook decline in the area.

SMALL LAND MAMMALS/FURBEARERS

Mentasta Lake residents observed that fewer people had traplines in the community.

BIRDS

In the 2010 study year, there was a decline in the bird harvest. Several respondents noted that upland game birds were going through a low cycle of abundance in 2010 and that for this reason they simply did not want to harvest as many as they typically would.

VEGETATION

Firewood and berries were scarce in and around the community of Mentasta Lake in 2010. Residents had to spend more time and travel farther to harvest firewood and gather berries. Residents commented that firewood had existed in the community in the past 5 years, but it had all been harvested.

OTHER COMMENTS

There is a "tractor trail" that provides Alaska resident access to state-owned land beyond the community of Mentasta Lake, through Ahtna-owned land, stretching as far as Mankomen Lake. Mentasta Lake residents are concerned that many who use the trail often deviate from it, trespassing on private land, harvesting resources from private lands, and changing the local environment. Finally, several residents noted that in 2010 they did not make enough money to be able to participate in many of the subsistence activities that they would have liked to participate in.

SUMMARY

The household survey findings demonstrate that residents of Mentasta Lake continue to harvest a wide variety of resources in 2010, but that over time, while some resources remain critical and the per capita harvest remains pretty steady, the overall composition of the community harvest has changed from 1987 to 2010. Large land mammals made up 43% of the harvest, salmon 36%, vegetation 12%, and nonsalmon fish made 6% of the overall harvest in 2010 (Figure 4-3). Small land mammals, birds and eggs, and marine invertebrates made up the remaining less than 3% of the harvest (Figure 4-3). Significant changes in harvest composition from the 1982 study are seen in the decline in the percentages of large land mammals, small land mammals, birds and eggs, and vegetation, but there was an increase in reliance on salmon, nonsalmon fish, and marine invertebrates (Figure 4-15).

CHAPTER 5: MENTASTA PASS

COMMUNITY BACKGROUND

Mentasta Pass is a major mountain pass in eastern Interior Alaska that separates the Alaska Range on the west from the Mentasta Mountains to the east. The Tok Cutoff section of the Glenn Highway travels through the pass and descends into the Tanana River drainage and the community of Tok. The Mentasta Pass area is surrounded by mountains, a multitude of creeks and lakes of various sizes, and most significantly it straddles the transition zone between 2 watersheds; the northeastern-most corner of the Copper River Basin and the upper reaches of the Tanana River, with the Tok and Little Tok rivers passing through part of the area. The vegetation changes according to the topographic features and includes forested slopes to shrubby lowlands and grass- and moss-dominated wetlands. In November 2002 the area experienced a 7.9 magnitude earthquake along the Denali fault system; this was the biggest earthquake ever recorded in Interior Alaska. The event caused significant damage to the transportation system in Interior Alaska and damaged parts of the trans-Alaska pipeline. The population centers hit hardest by the earthquake were the Native village of Mentasta, Mentasta Pass and Northway; no lives were lost but community residents experienced damage to local infrastructure, transportation vehicles, and household possessions (Alaska Earthquake Information Center 2012).

THE COMMUNITY OF MENTASTA PASS

The community of Mentasta Pass is characteristic of many rural road-based communities. Rather than being in a centralized location, Mentasta Pass is composed of a collection of households stretching along the Tok Cutoff from approximately milepost 79 to milepost 110. The households considering Mentasta Pass as their permanent place of residency are mostly scattered along the highway but a few households are situated off the road and are accessible only by all-terrain vehicle (ATV) or snowmachine. Most households do not have any neighbors in the immediate vicinity and houses can be miles apart.

There is no organized local government in the community and neither the U.S. Census Bureau nor the State of Alaska provides any historical population information on the development of the community thus making it challenging to find any information about the history of the community overall. In most studies and census efforts of the past, those households that this report defines as Mentasta Pass residences were included with the nearby Ahtna community of Mentasta Lake; demographics and resource harvest and use patterns for the communities are however quite different from each other.

Holly Reckord (1983a:256) generally described the people living along the Tok Cutoff as homesteaders, retired people, or guides. She continued that some of these people had lived in the area for 20 to 30 years and that it was the lifestyle that had brought them to this country (Reckord 1983a:257). This sentiment was echoed in the key respondent interviews conducted with Mentasta Pass residents as a part of this study.

The respondents also informed the research team that while various construction projects on existing homes have taken place, there have not been any new homes built in the community since the late 1970s simply because there is very little private land available. Most of the land immediately along the highway has either been conveyed to Native corporation ownership according to the Alaska Native Claims Settlement Act (ANCSA), or continues to be owned by the State of Alaska (Jason Cheney, Natural Resource Specialist I, ADF&G, Anchorage, personal communication, December 2012).

Another interesting point about the community's history is that despite being along the Tok Cutoff, Mentasta Pass households did not get the opportunity to obtain grid-based electricity until 2009 (Sue Entsminger, resident, Mentasta Pass, personal communication, Dec. 11, 2012). Before that, without the convenience of appliances powered by consistent electricity, most residents were incentivized to find alternative ways to store their subsistence harvests prior to the arrival of winter; for instance, harvested resources were canned or dried. Many residents had generators, solar panels, or both to provide for their electricity needs, but these options could not be relied upon to provide consistent support. Others stored their subsistence harvests with relatives or friends in communities with electricity. Since approximately 2005, a store in Tok allowed customers to hook up their freezers at the store in exchange for a monthly charge (Sue Entsminger, resident, Mentasta Pass, personal communication, Dec. 11, 2012; Reckord 1983a:257–258).

The closest services available for Mentasta Pass residents are either in Tok, northeast from Mentasta Pass, or at Mentasta Lodge, which is located at milepost 78 on the Tok Cutoff. As described by Holly Reckord (1983a:257), the majority of permanent residents along the Tok Cutoff use a variety of subsistence species yearly. Prior to 1980 and the establishment of the Wrangell-St. Elias National Park and Preserve (WRST), under the Alaska National Interest Lands Conservation Act (ANILCA), residents of Mentasta Pass were able to hunt and gather wild resources on large areas without significant restrictions.[1] The implementation of the joint state and federal management structures on the area lands and resources took several years before reaching its current status. In the course of this process, some residents of Mentasta Pass, as well as members of other area communities impacted by these decisions, were actively involved in community meetings to ensure that they would be able to continue to live their subsistence way of life in the future.

1. It should be noted that the State of Alaska had established the Tok Management area in 1974 to provide Dall sheep hunters additional opportunity to harvest large-horned, trophy rams (Gardner 2002:65).

DEMOGRAPHY, CASH EMPLOYMENT, AND MONETARY INCOME

DEMOGRAPHY

The study area for this research included households located approximately between mileposts 79 and 110 on the Tok Cutoff; this is the study area as defined by the 1987 baseline survey and contemporary Mentasta Pass residents. Neither the U.S. Census Bureau nor the State of Alaska provides any population estimates for the community of Mentasta Pass because it is a part of the broader Mentasta Lake CDP. However, the 1987 survey found a population of 26 people in 11 households in Mentasta Pass (Figure 5-1). At the time, 4 community members (17%) were Alaska Native (McMillan and Cuccarese 1988:127). The survey conducted in 2011 for study year 2010 found an estimated population of 35 residents in 12 households. Of the total population, 23% (8 residents) were Alaska Native (Table 5-1). Prior to the study, the Division of Subsistence researchers, in consultation with knowledgeable community residents, made an initial estimate of 12 year-round households in Mentasta Pass. Of these, 9 households (75%) were interviewed (Table 2-2).

According to the study, the mean number of years of residency in Mentasta Pass for the population overall was approximately 16 years and the maximum length of residence was 41 years (Table 2-2). In comparison, the mean number of years of residency for Mentasta Pass households heads was approximately 23 years and the maximum 41 years (Table 2-2). Survey results estimate 54% of the population was male and 46% was female (Table 2-2). The largest age cohort for males was 0–4 years of age (36% of the male population) and for females it was 60–64 years of age (25% of the female population) (Table 5-2; Figure 5-2). Because of the small population size, most of the age cohorts for both males and females are missing in Mentasta Pass. For the female population, the age categories present in the community were categories covering 15–24, 30–49, 55–64, and 80–84 years of age. With the exception of a large concentration of females in the category of 60–64 years of age (25%) and also 15–19 years of age (17%), the distribution of the Mentasta Pass female population was fairly even. For the male population, the age categories present in the community were 0–4, 10–14, 30–34, 40–44, 55–69, and 75–79 years of age. With the exception of a large concentration of males in the category of 0–4 years of age (36%), the distribution of the Mentasta Pass male population was fairly even as well.

The majority (82%) of the Mentasta Pass household heads interviewed were born outside Alaska in other U.S. locations (Table 5-3). The remaining 18% of household heads were born in Alaska; either in Fairbanks (6%), Mentasta Lake (6%), or Tok (6%). All the aforementioned Alaska communities are in Interior Alaska and, with the exception of Fairbanks, are within easy driving distance of Mentasta Pass.

Table 5-1. – Population of Mentasta Pass, 1987 and 2010.

Study findings for 1987				Study findings for 2010			
Total population		Alaska Native population		Total population		Alaska Native population	
Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
11	26	4	16.7%	12	35	8	23.1%

Sources ADF&G Division of Subsistence household surveys, 2011; ADF&G Division of Subsistence, Community Subsistence Information System (CSIS), accessed July 2012.

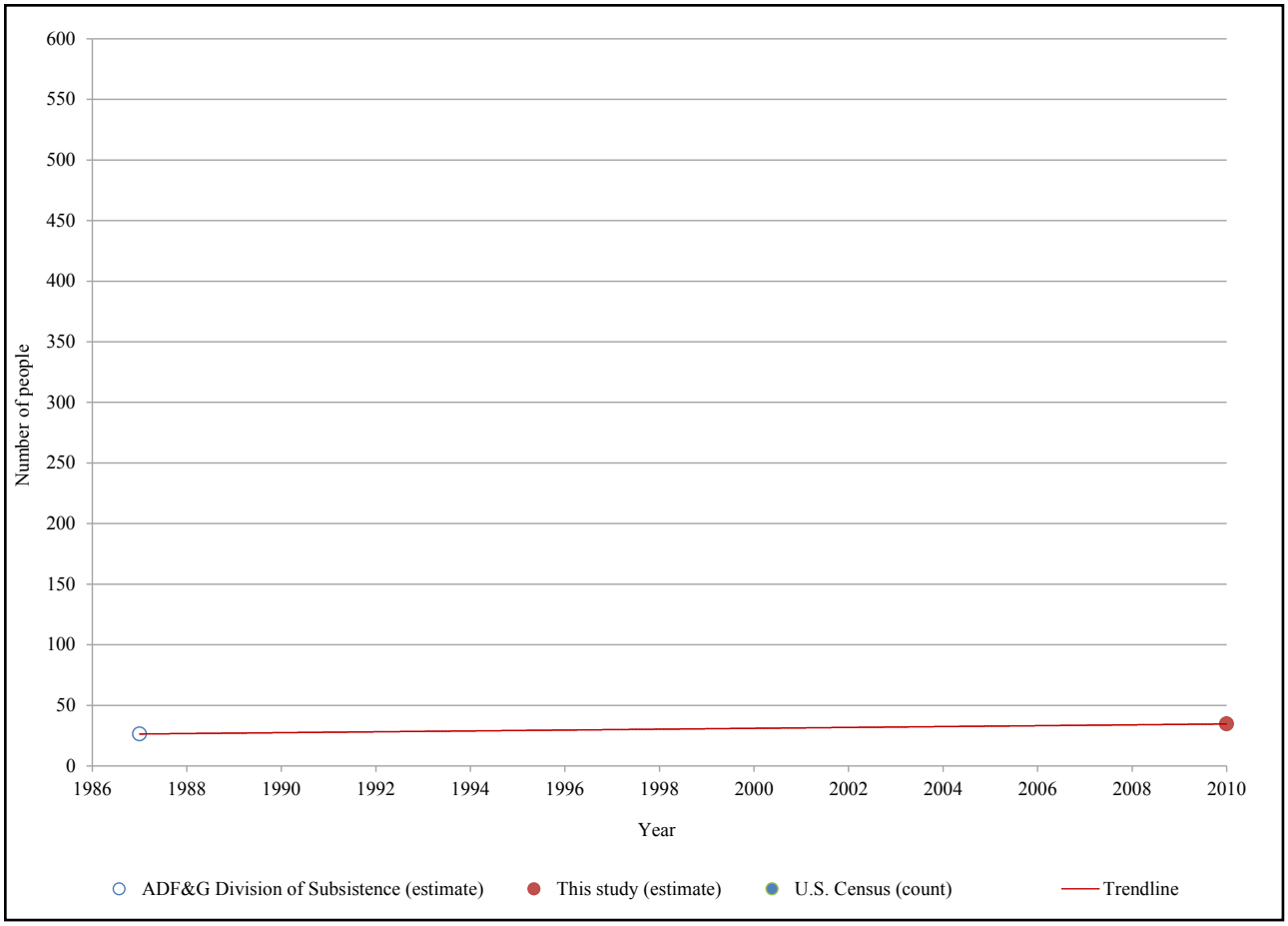


Figure 5-1.– Population history, Mentasta Pass, 1986–2010.

Table 5-2. – Population profile, Mentasta Pass, 2010.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	6.7	35.7%	35.7%	0.0	0.0%	0.0%	6.7	19.2%	19.2%
5–9	0.0	0.0%	35.7%	0.0	0.0%	0.0%	0.0	0.0%	19.2%
10–14	1.3	7.1%	42.9%	0.0	0.0%	0.0%	1.3	3.8%	23.1%
15–19	0.0	0.0%	42.9%	2.7	16.7%	16.7%	2.7	7.7%	30.8%
20–24	0.0	0.0%	42.9%	1.3	8.3%	25.0%	1.3	3.8%	34.6%
25–29	0.0	0.0%	42.9%	0.0	0.0%	25.0%	0.0	0.0%	34.6%
30–34	1.3	7.1%	50.0%	1.3	8.3%	33.3%	2.7	7.7%	42.3%
35–39	0.0	0.0%	50.0%	1.3	8.3%	41.7%	1.3	3.8%	46.2%
40–44	2.7	14.3%	64.3%	1.3	8.3%	50.0%	4.0	11.5%	57.7%
45–49	0.0	0.0%	64.3%	1.3	8.3%	58.3%	1.3	3.8%	61.5%
50–54	0.0	0.0%	64.3%	0.0	0.0%	58.3%	0.0	0.0%	61.5%
55–59	1.3	7.1%	71.4%	1.3	8.3%	66.7%	2.7	7.7%	69.2%
60–64	1.3	7.1%	78.6%	4.0	25.0%	91.7%	5.3	15.4%	84.6%
65–69	2.7	14.3%	92.9%	0.0	0.0%	91.7%	2.7	7.7%	92.3%
70–74	0.0	0.0%	92.9%	0.0	0.0%	91.7%	0.0	0.0%	92.3%
75–79	1.3	7.1%	100.0%	0.0	0.0%	91.7%	1.3	3.8%	96.2%
80–84	0.0	0.0%	100.0%	1.3	8.3%	100.0%	1.3	3.8%	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	18.7	**100.0%**	**100.0%**	16.0	**100.0%**	**100.0%**	**34.7**	**100.0%**	**100.0%**

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

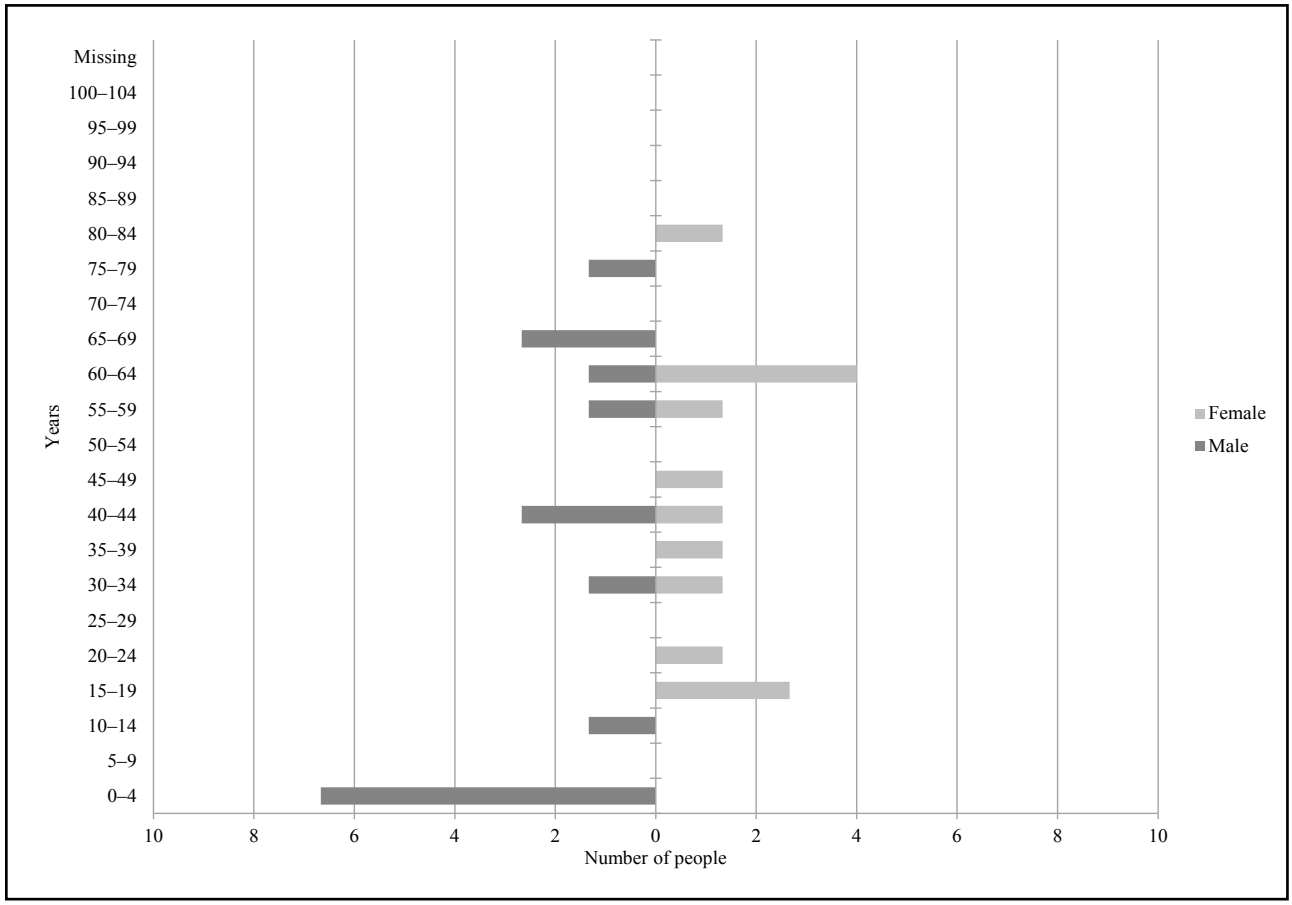


Figure 5-2.– Population profile, Mentasta Pass, 2010.

Table 5-3. – Birthplaces of household heads, Mentasta Pass, 2010.

Birthplace	Percentage
Fairbanks	5.9%
Mentasta Lake	5.9%
Tok	5.9%
Other U.S.	82.4%

Source ADF&G Division of Subsistence household surveys, 2011.
Note "birthplace" means the residence of the parents of the individual when the individual was born.

CASH EMPLOYMENT CHARACTERISTICS AND MONETARY INCOME

The location of Mentasta Pass along the Tok Cutoff, beginning at milepost 79 and extending to milepost 110 approximately 15 miles from Tok, enables residents to travel on the State-maintained highway to nearby communities for work. In comparison to other area communities, the level of year-round employment in Mentasta Pass is high; during the study year 79% of employed adults worked year-round (Table 2-7).

In 2010, the industry that provided most of Mentasta Pass residents' earned income was services (50%), with a comparable percentage of jobs (48%) in the same category (Table 5-4). State government jobs were also important, accounting for 25% of the community's total income and 15% of community jobs (tables 5-4 and 5-5). Employment in agriculture, forestry, and fishing made up 19% of jobs held by community residents but accounted for approximately 12% of the community total income as well as earned income (tables 5-4 and 5-5). Most jobs were located in Mentasta Pass and Tok but a few residents worked outside the Tanana River Valley area in other parts of Alaska.

The study found 28 adults over the age of 16 in Mentasta Pass in 2010; the calculated average length of employment for all Mentasta Pass adults was approximately 41 weeks or a little over 10 months (Table 2-7). According to the study, of the 28 adults in Mentasta Pass, 25 were employed in 2010. For the employed adults, the mean length of employment was more—approximately 11 months. At the household level, the study found approximately 11 employed households. The average number of jobs for employed Mentasta households during the 2010 study year was about 4. Furthermore, all employed Mentasta Pass households had a minimum of 2 employed adults at some point during the study year (Table 2-7).

LEVELS OF PARTICIPATION IN THE HARVESTS AND USES OF WILD RESOURCES

Table 5-6 reports individual levels of participation in the harvest and processing of wild resources by all Mentasta Pass residents in 2010. Approximately 89% of residents attempted to harvest some wild resources in 2010. With reference to specific resource categories, 89% of all residents gathered

Table 5-4. – Employment by industry, Mentasta Pass, 2010.

Industry	Jobs	Households	Individuals	Percentage of income[a]
Estimated total number	**48.0**	**10.5**	**24.9**	**$703,219**
State government (total)	**14.8%**	**42.9%**	**28.6%**	**26.4%**
Natural scientists and mathematicians	11.1%	28.6%	21.4%	25.0%
Teachers, librarians, and counselors	3.7%	14.3%	7.1%	1.4%
Local government, including tribal (total)	**7.4%**	**28.6%**	**14.3%**	**2.4%**
Executive, administrative, and managerial	3.7%	14.3%	7.1%	2.3%
Teachers, librarians, and counselors	3.7%	14.3%	7.1%	0.1%
Agriculture, forestry, and fishing (total)	**18.5%**	**28.6%**	**28.6%**	**12.2%**
Agricultural, forestry, and fishing occupations	18.5%	28.6%	28.6%	12.2%
Transportation, communication, and utilities (total)	**3.7%**	**14.3%**	**7.1%**	**0.1%**
Transportation and material moving occupations	3.7%	14.3%	7.1%	0.1%
Retail trade (total)	**7.4%**	**28.6%**	**14.3%**	**9.3%**
Writers, artists, entertainers, and athletes	3.7%	14.3%	7.1%	0.1%
Marketing and sales occupations	3.7%	14.3%	7.1%	9.2%
Services (total)	**48.1%**	**71.4%**	**64.3%**	**49.5%**
Executive, administrative, and managerial	3.7%	14.3%	7.1%	3.9%
Engineers, surveyors, and architects	7.4%	28.6%	14.3%	15.4%
Teachers, librarians, and counselors	3.7%	14.3%	7.1%	0.1%
Writers, artists, entertainers, and athletes	7.4%	28.6%	14.3%	0.3%
Administrative support occupations, including clerical	3.7%	14.3%	7.1%	9.2%
Service occupations	18.5%	28.6%	28.6%	19.2%
Agricultural, forestry, and fishing occupations	3.7%	14.3%	7.1%	1.4%

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

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

Table 5-5. – Estimated earned and other income, Mentasta Pass, 2010.

Income source	Number of people	Number of households	Total for community	Mean per household[a]	Percentage of total[b]
Earned income					
State government	7.1	4.5	$185,542	$15,462	25.1%
Local government, including tribal	3.6	3.0	$17,184	$1,432	2.3%
Agriculture, forestry, and fishing	7.1	3.0	$86,129	$7,177	11.7%
Transportation, communication, and utilities	1.8	1.5	$987	$82	0.1%
Retail trade	3.6	3.0	$65,350	$5,446	8.9%
Services	16.0	7.5	$348,026	$29,002	47.1%
Earned income subtotal	**24.9**	**10.5**	**$703,219**	**$58,602**	**95.3%**
Other income[b]					
Dividends		**9.3**	**33,060**	**$2,755**	**4.5%**
Native corporation dividends		1.3	1,740	$145	0.2%
Alaska Permanent Fund dividend		9.3	31,320	$2,610	4.2%
Job benefits		**0.0**	**0**	**$0**	**0.0%**
Workers' compensation/insurance		0.0	0	$0	0.0%
Unemployment		0.0	0	$0	0.0%
Assistance		**1.3**	**232**	**$19**	**0.0%**
Adult public assistance		0.0	0	$0	0.0%
Food stamps		1.3	232	$19	0.0%
Elder benefits		**5.3**	**1,392**	**$116**	**0.2%**
Retirement/pension		4.0	696	$58	0.1%
Alaska senior benifits (longevity bonus)		0.0	0	$0	0.0%
Social Security		4.0	696	$58	0.1%
Child benefits		**1.3**	**232**	**$19**	**0.03%**
Supplemental Security		0.0	0	$0	0.0%
Child support		1.3	232	$19	0.03%
Foster care		0.0	0	$0	0.0%
Other income sources		**0.0**	**0**	**$0**	**0.0%**
Energy assistance		0.0	0	$0	0.0%
Other		0.0	0	$0	0.0%
Other income subtotal		**9.3**	**34,916**	**$2,910**	**4.7%**
Community income total			**738,134.75**	**61,511.23**	**100.0%**

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

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

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

Table 5-6. – Participation in subsistence harvesting and processing activities, Mentasta Pass, 2010.

Total number of people	**34.7**
Birds	
Hunt	
Number	13.3
Percentage	38.5%
Process	
Number	17.3
Percentage	50.0%
Fish	
Fish	
Number	20.0
Percentage	57.7%
Process	
Number	24.0
Percentage	69.2%
Large land mammals	
Hunt	
Number	20.0
Percentage	57.7%
Process	
Number	25.3
Percentage	73.1%
Small land mammals	
Hunt or trap	
Number	18.7
Percentage	53.8%
Process	
Number	14.7
Percentage	42.3%
Vegetation	
Gather	
Number	30.7
Percentage	88.5%
Process	
Number	29.3
Percentage	84.6%
Any resource	
Attempt	
Number	30.7
Percentage	88.5%
Process	
Number	30.7
Percentage	88.5%

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

Table 5-7. – Household member participation in additional processing activities, Mentasta Pass, 2010.

Total number of people	**34.7**
Building fish wheels	
Number	2.7
Percentage	7.7%
Sewing skins or cloth	
Number	14.7
Percentage	42.3%
Cooking wild foods	
Number	28.0
Percentage	80.8%

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

plants (including berries), 58% fished and hunted large land mammals, 54% hunted or trapped small land mammals, and 39% hunted for birds. Likewise, 89% of all Mentasta Pass residents processed some resources in 2010. Most residents (85%) participated in processing plants and berries, followed by 73% of the population participating in processing large land mammals. Fewer (69%) participated in processing fish, and 50% participated in processing birds. The least number of people (42%) participated in the processing of small land mammals. The study also asked about participation in building fish wheels, sewing skins or cloth, and cooking wild foods. A small number (8%) of Mentasta Pass residents said they had participated in building fish wheels, but more (42%) had been involved in sewing skins or cloth. In comparison, most residents (80%) had cooked wild foods (Table 5-7).

RESOURCE HARVEST AND USE PATTERNS

Table 5-8 summarizes resource harvest and use characteristics for Mentasta Pass in 2010 at the household level. In 2010, all households used, attempted to harvest, and harvested wild resources. The average total household harvest was an estimated 580 lb usable weight per household, or 201 lb per capita. During the study year, Mentasta Pass households on average attempted to harvest 23 kinds of resources, harvested 18 kinds of resources, and used an average of 27 kinds of resources. The maximum number of resources used by any household was 51. In addition, households gave away an average of 12 kinds of resources and received 14 kinds. All Mentasta Pass households reported sharing resources with other households, as well as receiving resources.

SPECIES USED AND SEASONAL ROUND

Residents of Mentasta Pass harvest a wide variety of species throughout the year often targeting specific species during certain seasons of the year and following a cyclical harvest pattern. Mentasta Pass residents are highly mobile, traveling around the Tanana River Valley and the Copper River Basin

Table 5-8. – Resource harvest and use characteristics, Mentasta Pass, 2010.

Characteristic	
Mean number of resources used per household	26.9
Minimum	8.0
Maximum	51.0
Mean number of resources attempted to harvest per household	23.4
Minimum	5.0
Maximum	55.0
Mean number of resources harvested per household	17.9
Minimum	4.0
Maximum	38.0
Mean number of resources received per household	13.9
Minimum	1.0
Maximum	28.0
Mean number of resources given away per household	12.3
Minimum	2.0
Maximum	31.0
Mean household harvest, pounds	579.8
Minimum	7.2
Maximum	1,462.3
Total harvest weight, pounds	6,958.1
Community per capita harvest, pounds	200.7
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	100.0%
Number of households in sample	9.0
Number of resources available	114.0

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

to harvest resources; they use motorized vehicles, such as airplanes, highway vehicles, snowmachines, and 4-wheelers, to get to their hunting, fishing, and gathering areas. According to some Mentasta Pass residents, people also use pack animals for transporting gear and equipment while harvesting resources.

Large land mammals are by far the most important subsistence resource for Mentasta Pass residents as a source of protein. Hunting for large land mammals is a traditional and popular fall activity that often stretches into the winter. Most of the hunting takes place with highway vehicles, 4-wheelers, and snowmachines. In addition, some residents own airplanes, or have access to airplanes, and use them to fly out to distant harvest areas—for example in the Wrangell-St. Elias National Preserve.

Fish are another essential wild resource for Mentasta Pass residents. Nonsalmon fish, such as Arctic grayling and northern pike, are harvested locally in the area lakes and streams but also in other locations around the Copper River Basin. Much of the nonsalmon fish harvest takes place in the winter and spring in the form of ice fishing. Ocean fish, such as Pacific halibut, are harvested during the summer months either on fishing charters or from private boats while ocean fishing from locations, for example, in Prince William Sound. Since there is no salmon fishing opportunity in the immediate vicinity of Mentasta Pass, during the summer months community residents must travel to locations along the Copper River where they have access to a fish wheel through family connections and/or friends, or travel outside the Copper River watershed to fish for salmon.

Harvesting vegetation, particularly berries in the summer, is another important activity for Mentasta Pass residents. The harvest of firewood can take place year-round but most often occurs in the winter and spring, when snow provides greater access to wood resources via snowmachine.

Small land mammals (including furbearers) are important to Mentasta Pass residents for personal use but also as a source of income. The yearly timing of small land mammal hunting or trapping depends on the snow depth but takes place during the winter months, usually from November through February.

Migratory birds and waterfowl travel through the area in fall and spring, stopping to rest and often nest in the lush wetlands of the Tetlin National Wildlife Refuge and other portions of the Copper River valley and Upper Tanana River valley. Some migratory birds are harvested in the spring when they first arrive, a few are harvested during the summer, but most birds are targeted in the fall before their migration south. Upland game birds, such as grouse and ptarmigan, are harvested by Mentasta Pass residents throughout the year.

Marine invertebrates, which are usually harvested during late spring and throughout the summer months, make up a small amount of the total wild resource harvest of Mentasta Pass residents. With the exception of the rarely used freshwater clams, considerable travel is necessary for community residents to harvest marine invertebrates.

HARVEST QUANTITIES

Table 5-9 reports the estimated wild resource harvests and uses by Mentasta Pass residents in 2010. Table 5-9 is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix B 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, whether as gifts, by barter or trade, through hunting partnerships, or as meat given to hunting guides by their clients. Purchased foods are not included but resources such as firewood are included as they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

Table 5-10 lists the top 10 ranked resources harvested in terms of pounds per capita and the 10 most used resources by Mentasta Pass households during the study year. The 2010 total estimated harvest of all subsistence resources for Mentasta Pass was 6,958 lb, or 201 lb per capita (Table 5-9). In terms of pounds harvested, large land mammals constituted the biggest portion of the subsistence harvest totaling 4,204 lb (121 lb per capita) or 60% of the total wild resource harvest, most of which was moose (Table 5-9; Figure 5-3). According to the study, moose was also the most harvested and used resource in Mentasta Pass in 2010 (Table 5-10). Caribou also appeared on the community's top 10 ranked resources harvested and used lists; it was the third most harvested and eighth most used resource in 2010 (Table 5-10).

Regardless of the need to travel outside the immediate vicinity of the community, Mentasta Pass residents harvested a lot of salmon in 2010; salmon made up an estimated 1,334 lb, or 19%, of the total harvest by pounds usable weight (Table 5-9; Figure 5-3). Most of the salmon harvest was sockeye salmon, making it the second most harvested and, in a 5-way tie with Arctic grayling, blueberries, lowbush cranberries, and raspberries, the third most used resource in the community in 2010 (Table 5-10).

Vegetation was the third most harvested wild resource category in Mentasta Pass for 2010, composing 7% of the total harvest (Figure 5-3). All Mentasta Pass households used and harvested vegetation during the study year; berries were the most harvested resource with 89% of households reporting harvesting and using some berries during 2010 (Table 5-9). The total harvest of vegetation (not including wood) was 481 lb, or 14 lb per capita, most of which were berries (Table 5-9). Furthermore, blueberries, lowbush cranberries, and raspberries placed third in a 5-way tie on the list of most used resources by Mentasta Pass households (Table 5-10). It is also important to note that all Mentasta Pass households harvested and used wood for both heating and other purposes, tying with moose for first place in the list of top 10 ranked most used resources (Table 5-10).

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 5-9. – Estimated harvests and uses of fish, game, and vegetation resources, Mentasta Pass, 2010.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean household	Per capita	Total	Unit	Mean household	confidence limit (±)
All resources	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**6,958.1**	**579.8**	**200.7**				**32.0%**
Fish	**100.0%**	**100.0%**	**77.8%**	**100.0%**	**77.8%**	**1,743.5**	**145.3**	**50.3**				**42.8%**
Salmon	**88.9%**	**77.8%**	**55.6%**	**88.9%**	**44.4%**	**1,334.2**	**111.2**	**38.5**	**210.7**		**17.6**	**45.9%**
Chum salmon	0.0%	11.1%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Coho salmon	22.2%	11.1%	0.0%	22.2%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Chinook salmon	44.4%	44.4%	22.2%	33.3%	33.3%	104.6	8.7	3.0	5.3	Ind.	0.4	76.3%
Pink salmon	11.1%	22.2%	11.1%	0.0%	0.0%	48.8	4.1	1.4	13.3	Ind.	1.1	115.3%
Sockeye salmon	88.9%	77.8%	55.6%	88.9%	44.4%	1,180.8	98.4	34.1	192.0	Ind.	16.0	45.3%
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	**88.9%**	**77.8%**	**77.8%**	**66.7%**	**66.7%**	**409.2**	**34.1**	**11.8**				**45.3%**
Herring	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Herring roe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
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%
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		0.0	0.0%
Unknown smelt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Cod	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Pacific cod (gray)	11.1%	0.0%	0.0%	11.1%	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	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Lingcod	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Pacific halibut	66.7%	11.1%	11.1%	66.7%	22.2%	133.3	11.1	3.8	133.3	Lb.	11.1	115.3%
Arctic lampreys	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Rockfish	11.1%	0.0%	0.0%	11.1%	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%	11.1%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Char	33.3%	22.2%	22.2%	11.1%	11.1%	7.2	0.6	0.2	8.0		0.7	81.5%
Dolly Varden	33.3%	22.2%	22.2%	11.1%	11.1%	7.2	0.6	0.2	8.0	Ind.	0.7	81.5%
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	88.9%	77.8%	77.8%	22.2%	44.4%	60.4	5.0	1.7	86.3	Ind.	7.2	35.3%
Northern pike	55.6%	55.6%	55.6%	11.1%	22.2%	126.9	10.6	3.7	45.3	Ind.	3.8	71.5%
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	11.1%	11.1%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Cutthroat throut	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	11.1%	11.1%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Unknown trout	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Whitefishes	33.3%	33.3%	33.3%	11.1%	11.1%	81.3	6.8	2.3	59.3		4.9	103.3%
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%

-continued-

Table 5-9.–Page 2 of 4.

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	
Nonsalmon fish, continued												
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	22.2%	22.2%	11.1%	11.1%	0.0%	46.7	3.9	1.3	26.7	Ind.	2.2	115.3%
Round whitefish	33.3%	33.3%	22.2%	11.1%	11.1%	30.0	2.5	0.9	30.0	Ind.	2.5	108.7%
Unknown whitefish	11.1%	11.1%	11.1%	11.1%	0.0%	4.7	0.4	0.1	2.7	Ind.	0.2	115.3%
Land mammals	**100.0%**	**88.9%**	**77.8%**	**88.9%**	**88.9%**	**4,456.0**	**371.3**	**128.5**	**249.3**		**20.8**	**32.9%**
Large land mammals	**100.0%**	**88.9%**	**66.7%**	**88.9%**	**88.9%**	**4,204.0**	**350.3**	**121.3**	**17.3**		**1.4**	**33.3%**
Bison	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Black bear	44.4%	44.4%	11.1%	44.4%	11.1%	77.3	6.4	2.2	1.3	Ind.	0.1	115.3%
Brown bear	33.3%	22.2%	0.0%	22.2%	11.1%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Caribou	77.8%	44.4%	33.3%	55.6%	55.6%	1,040.0	86.7	30.0	8.0	Ind.	0.7	64.5%
Deer	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Goat	44.4%	11.1%	0.0%	44.4%	11.1%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Moose	100.0%	88.9%	55.6%	55.6%	77.8%	3,000.0	250.0	86.5	6.7	Ind.	0.6	36.5%
Muskox	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Dall sheep	55.6%	33.3%	11.1%	55.6%	33.3%	86.7	7.2	2.5	1.3	Ind.	0.1	115.3%
Small land mammals[b]	**66.7%**	**66.7%**	**66.7%**	**44.4%**	**66.7%**	**252.0**	**21.0**	**7.3**	**232.0**		**19.3**	**50.8%**
Beaver	44.4%	22.2%	11.1%	33.3%	11.1%	100.0	8.3	2.9	6.7	Ind.	0.6	115.3%
Coyote	22.2%	55.6%	11.1%	11.1%	22.2%	0.0	0.0	0.0	5.3	Ind.	0.4	115.3%
Fox	55.6%	44.4%	33.3%	33.3%	44.4%	0.0	0.0	0.0	16.0		1.3	77.6%
Red fox	55.6%	44.4%	33.3%	33.3%	44.4%	0.0	0.0	0.0	16.0	Ind.	1.3	77.6%
Hare	11.1%	22.2%	0.0%	11.1%	11.1%	0.0	0.0	0.0	0.0		0.0	0.0%
Snowshow hare	11.1%	22.2%	0.0%	11.1%	11.1%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
River otter	11.1%	22.2%	0.0%	11.1%	11.1%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Lynx	55.6%	44.4%	33.3%	22.2%	33.3%	80.0	6.7	2.3	20.0	Ind.	1.7	67.2%
Marmot	11.1%	11.1%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Marten	55.6%	44.4%	33.3%	22.2%	33.3%	0.0	0.0	0.0	56.0	Ind.	4.7	69.8%
Mink	33.3%	44.4%	11.1%	22.2%	22.2%	0.0	0.0	0.0	1.3	Ind.	0.1	115.3%
Muskrat	22.2%	11.1%	11.1%	11.1%	11.1%	24.0	2.0	0.7	13.3	Ind.	1.1	115.3%
Porcupine	22.2%	22.2%	22.2%	11.1%	22.2%	18.0	1.5	0.5	4.0	Ind.	0.3	81.5%
Squirrel	22.2%	33.3%	22.2%	0.0%	0.0%	30.0	2.5	0.9	60.0		5.0	101.7%
Tree squirrel	22.2%	33.3%	22.2%	0.0%	0.0%	28.0	2.3	0.8	56.0	Ind.	4.7	109.3%
Unknown squirrel	11.1%	11.1%	11.1%	0.0%	0.0%	2.0	0.2	0.1	4.0	Ind.	0.3	115.3%
Weasel	11.1%	33.3%	11.1%	0.0%	0.0%	0.0	0.0	0.0	2.7	Ind.	0.2	115.3%
Wolf	33.3%	33.3%	33.3%	11.1%	22.2%	0.0	0.0	0.0	38.7	Ind.	3.2	106.5%
Wolverine	33.3%	44.4%	22.2%	11.1%	22.2%	0.0	0.0	0.0		Ind.	0.7	0.0%
Marine mammals	**11.1%**	**0.0%**	**0.0%**	**11.1%**	**0.0%**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0%**
Whale	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Bowhead	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%

-continued-

Table 5-9.–Page 3 of 4.

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	
Birds and eggs	**66.7%**	**66.7%**	**66.7%**	**44.4%**	**22.2%**	**191.2**	**15.9**	**5.5**	**201.3**		**16.8**	**54.9%**
Migratory birds	**55.6%**	**44.4%**	**44.4%**	**44.4%**	**11.1%**	**168.0**	**14.0**	**4.8**	**164.0**		**13.7**	**60.4%**
Ducks	44.4%	44.4%	44.4%	0.0%	11.1%	118.4	9.9	3.4	149.3		12.4	54.9%
Bufflehead	11.1%	11.1%	11.1%	0.0%	11.1%	1.1	0.1	0.0	2.7	Ind.	0.2	115.3%
Canvasback	11.1%	11.1%	11.1%	0.0%	11.1%	2.9	0.2	0.1	2.7	Ind.	0.2	115.3%
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%
Gadwall	11.1%	11.1%	11.1%	0.0%	11.1%	2.1	0.2	0.1	2.7	Ind.	0.2	115.3%
Goldeneye	33.3%	33.3%	33.3%	0.0%	11.1%	14.9	1.2	0.4	18.7	Ind.	1.6	64.3%
Mallard	44.4%	44.4%	44.4%	0.0%	11.1%	40.0	3.3	1.2	40.0	Ind.	3.3	52.5%
Merganser	11.1%	11.1%	11.1%	0.0%	11.1%	1.2	0.1	0.0	1.3	Ind.	0.1	115.3%
Northern pintail	44.4%	44.4%	44.4%	0.0%	11.1%	14.9	1.2	0.4	18.7	Ind.	1.6	73.2%
Scoter	22.2%	22.2%	22.2%	0.0%	11.1%	14.4	1.2	0.4	16.0		1.3	95.6%
Black scoter	22.2%	22.2%	22.2%	0.0%	11.1%	14.4	1.2	0.4	16.0	Ind.	1.3	95.6%
Teal	44.4%	44.4%	44.4%	0.0%	11.1%	4.4	0.4	0.1	14.7		1.2	64.4%
Green-winged teal	44.4%	44.4%	44.4%	0.0%	11.1%	4.4	0.4	0.1	14.7	Ind.	1.2	64.4%
Wigeon	11.1%	11.1%	11.1%	0.0%	11.1%	3.7	0.3	0.1	5.3	Ind.	0.4	115.3%
Unknown ducks	33.3%	33.3%	33.3%	0.0%	11.1%	18.7	1.6	0.5	26.7	Ind.	2.2	74.8%
Geese	55.6%	22.2%	22.2%	44.4%	0.0%	16.0	1.3	0.5	10.7		0.9	92.2%
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 goose	55.6%	22.2%	22.2%	44.4%	0.0%	9.6	0.8	0.3	8.0		0.7	81.5%
Cackling goose	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Lesser Canada goose	22.2%	11.1%	11.1%	11.1%	0.0%	6.4	0.5	0.2	5.3	Ind.	0.4	115.3%
Canada/cackling goose	22.2%	11.1%	11.1%	22.2%	0.0%	3.2	0.3	0.1	2.7	Ind.	0.2	115.3%
Emperor 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	11.1%	22.2%	11.1%	0.0%	0.0%	6.4	0.5	0.2	2.7	Ind.	0.2	115.3%
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%
Swan	0.0%	22.2%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Tundra swan	0.0%	22.2%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Crane	22.2%	22.2%	11.1%	11.1%	11.1%	33.6	2.8	1.0	4.0		0.3	115.3%
Sandhill crane	22.2%	22.2%	11.1%	11.1%	11.1%	33.6	2.8	1.0	4.0	Ind.	0.3	115.3%
Other birds	**66.7%**	**66.7%**	**66.7%**	**0.0%**	**22.2%**	**23.2**	**1.9**	**0.7**	**37.3**		**3.1**	**42.4%**
Upland game birds	66.7%	66.7%	66.7%	0.0%	22.2%	23.2	1.9	0.7	37.3		3.1	42.4%
Grouse	44.4%	55.6%	44.4%	0.0%	11.1%	15.9	1.3	0.5	22.7		1.9	54.3%
Spruce grouse	44.4%	55.6%	44.4%	0.0%	11.1%	11.2	0.9	0.3	16.0	Ind.	1.3	59.4%
Ruffed grouse	22.2%	22.2%	22.2%	0.0%	11.1%	4.7	0.4	0.1	6.7	Ind.	0.6	78.2%
Ptarmigan	44.4%	44.4%	44.4%	0.0%	22.2%	7.3	0.6	0.2	14.7	Ind.	1.2	49.2%
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	Ind.	0.0	0.0%
Goose eggs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%

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Table 5-9.–Page 4 of 4.

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	
Bird eggs, continued												
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	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	**66.7%**	**33.3%**	**33.3%**	**55.6%**	**11.1%**	**86.1**	**7.2**	**2.5**				**62.8%**
Clams	44.4%	11.1%	11.1%	33.3%	0.0%	40.0	3.3	1.2	13.3		1.1	115.3%
Freshwater clams	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Razor clams	44.4%	11.1%	11.1%	33.3%	0.0%	40.0	3.3	1.2	13.3	Gal.	1.1	115.3%
Crabs	55.6%	22.2%	22.2%	44.4%	11.1%	46.1	3.8	1.3	46.1		3.8	81.4%
Dungeness crab	33.3%	11.1%	11.1%	33.3%	0.0%	9.3	0.8	0.3	9.3	Lb.	0.8	115.3%
King crab	44.4%	22.2%	22.2%	22.2%	11.1%	33.7	2.8	1.0	33.7	Lb.	2.8	104.0%
Tanner crab	22.2%	0.0%	0.0%	22.2%	0.0%	0.0	0.0	0.0	0.0	Lb.	0.0	0.0%
Unknown crab	11.1%	11.1%	11.1%	11.1%	0.0%	3.1	0.3	0.1	3.1	Lb.	0.3	115.3%
Octopus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Ind.	0.0	0.0%
Oyster	11.1%	0.0%	0.0%	11.1%	0.0%	0.0	0.0	0.0	0.0		0.0	0.0%
Shrimp	22.2%	0.0%	0.0%	22.2%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Squid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0	Gal.	0.0	0.0%
Vegetation	**100.0%**	**100.0%**	**100.0%**	**55.6%**	**77.8%**	**481.3**	**40.1**	**13.9**				**32.1%**
Berries	**100.0%**	**88.9%**	**88.9%**	**55.6%**	**66.7%**	**446.7**	**37.2**	**12.9**	**111.7**		**9.3**	**32.2%**
Blueberry	88.9%	77.8%	77.8%	55.6%	55.6%	130.7	10.9	3.8	32.7	Gal.	2.7	43.7%
Lowbush cranberry	88.9%	77.8%	77.8%	55.6%	55.6%	114.7	9.6	3.3	28.7	Gal.	2.4	50.8%
Highbush cranberry	11.1%	11.1%	11.1%	11.1%	11.1%	21.3	1.8	0.6	5.3	Gal.	0.4	115.3%
Currants	11.1%	11.1%	11.1%	0.0%	11.1%	16.0	1.3	0.5	4.0	Gal.	0.3	115.3%
Cloudberry	11.1%	11.1%	11.1%	11.1%	11.1%	5.3	0.4	0.2	1.3	Gal.	0.1	115.3%
Raspberry	88.9%	88.9%	88.9%	33.3%	44.4%	100.0	8.3	2.9	25.0	Gal.	2.1	34.5%
Other wild berry	33.3%	44.4%	33.3%	0.0%	22.2%	58.7	4.9	1.7	14.7	Gal.	1.2	69.9%
Plants, greens, and mushrooms	**66.7%**	**66.7%**	**66.7%**	**44.4%**	**33.3%**	**34.7**	**2.9**	**1.0**	**18.7**		**1.6**	**73.8%**
Eskimo potato	11.1%	11.1%	11.1%	11.1%	0.0%	21.3	1.8	0.6	5.3	Gal.	0.4	115.3%
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 hips	0.0%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0		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		0.0	0.0%
Mushrooms	66.7%	66.7%	66.7%	33.3%	33.3%	13.3	1.1	0.4	13.3	Gal.	1.1	30.9%
Wood	**100.0%**	**100.0%**	**100.0%**	**33.3%**	**55.6%**	**0.0**	**0.0**	**0.0**				**0.0%**
Birch	11.1%	11.1%	11.1%	11.1%	11.1%	0.0	0.0	0.0	6.7	Ind.	0.6	115.3%
Willow	22.2%	22.2%	22.2%	11.1%	22.2%	0.0	0.0	0.0	34.7	Ind.	2.9	89.4%
Other wood	100.0%	100.0%	100.0%	33.3%	55.6%	0.0	0.0	0.0	141.3	Cord	11.8	23.5%

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

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.

Table 5-10. – Top 10 ranked resources harvested and used, Mentasta Pass, 2010.

Harvested				Used			
Number	Rank	Resource	Pounds per capita	Number	Rank	Resource	Percentage of households using
1	1.	Moose	86.5	1	1.	Moose	100.0%
2	2.	Sockeye salmon	34.1	2	1.	Wood	100.0%
3	3.	Caribou	30.0	3	3.	Sockeye salmon	88.9%
4	4.	Pacific halibut	3.8	4	3.	Arctic grayling	88.9%
5	5.	Blueberry	3.8	5	3.	Blueberry	88.9%
6	5.	Northern pike	3.7	6	3.	Lowbush cranberry	88.9%
7	7.	Lowbush cranberry	3.3	7	3.	Raspberry	88.9%
8	8.	Chinook salmon	3.0	8	8.	Caribou	77.8%
9	9.	Beaver	2.9	9	9.	Pacific halibut	66.7%
10	9.	Raspberry	2.9	10	9.	Mushrooms	66.7%

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

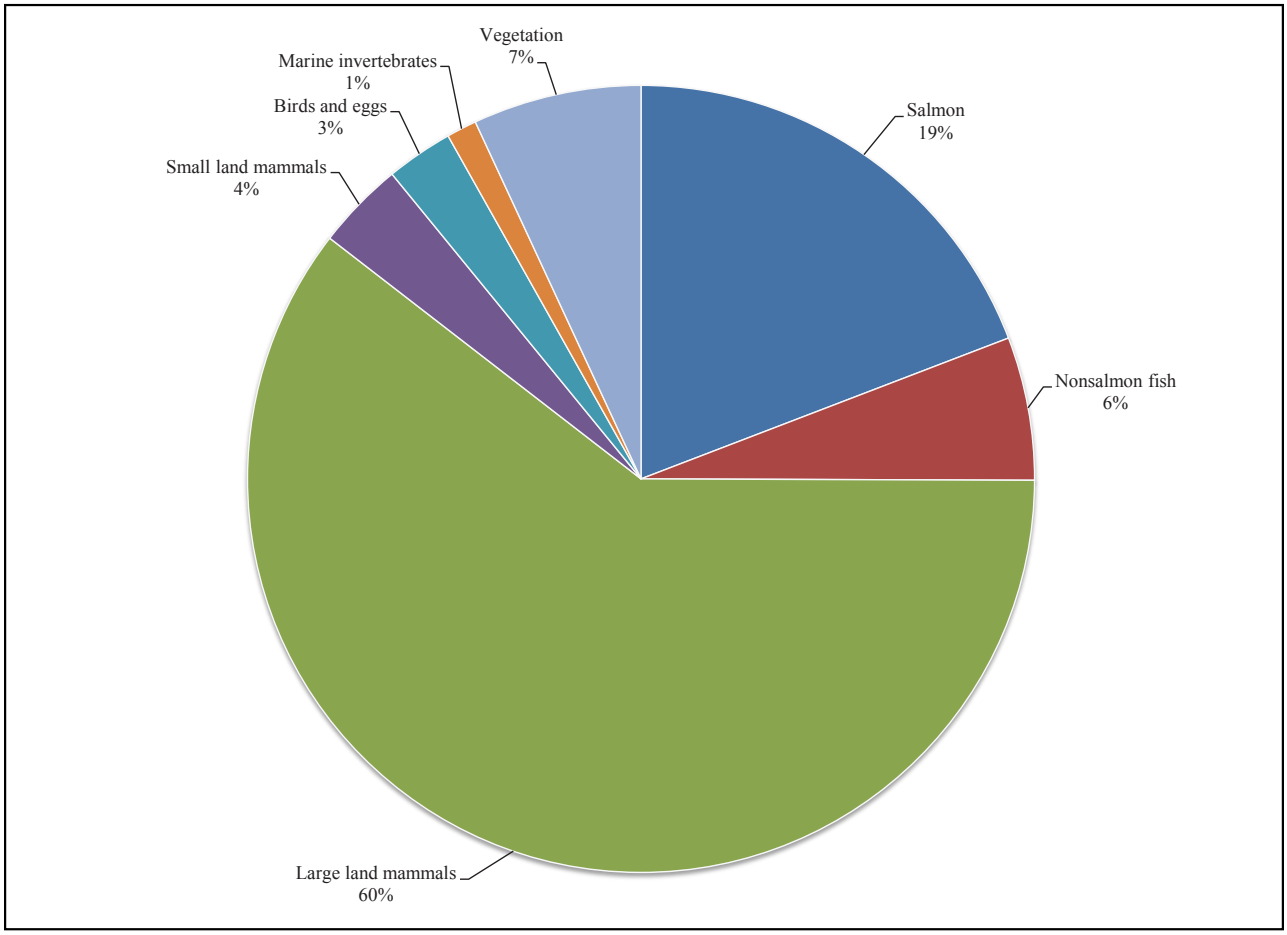


Figure 5-3.– Composition of wild resource harvest, Mentasta Pass, 2010.

Nonsalmon fish composed 6% of the harvest during the study year (Figure 5-3). The total harvest of nonsalmon fish in 2010 was 409 lb, or 12 lb per capita. According to the list of top 10 ranked resources harvested and used, Pacific halibut was the fourth most harvested resource and Arctic grayling was among the resources included in a 5-way tie for third place in the list of most used resources (Table 5-10).

The harvest of small land mammals for wild foods composed approximately 4% of the total pounds of wild resources harvested in 2010 (Figure 5-3). Small land mammals contributed 252 lb, or 7 lb per capita, to the total consumable harvest, most of which was beavers (Table 5-9). However, the majority of the animals were taken for their furs either for personal use or to be further processed into different fur items as gifts or for sale.

In terms of total pounds harvested, marine invertebrates and birds contributed the least to the total harvest of wild resources by the community of Mentasta Pass in 2010 (Figure 5-3). The total harvest of marine invertebrates was 86 lb (3 lb per capita) and was composed mainly of both king and dungeness crab (46 lb, or 1 lb per capita) and razor clams (40 lb, or 1 lb per capita) (Table 5-9). All these resources were harvested outside the Copper River watershed. The Mentasta Pass household harvest of birds was 191 lb (6 lb per capita) comprising mainly of migratory birds (168 lb, or 5 lb per capita) (Table 5-9). Upland game birds such as spruce grouse and ptarmigan were harvested less—only a total of 23 lb, or less than 1 lb per capita (Table 5-9).

SHARING AND RECEIVING WILD RESOURCES

In Mentasta Pass in 2010, the maximum number of resources used by any household was 51 and on average households harvested 18 resources (Table 5-8). Wild resources are shared widely in the community; estimates of sharing indicate that all Mentasta Pass households received and gave away some wild resources during 2010 (tables 5-8 and 5-9). All households also used some fish, land mammals, and vegetation resources. In addition, fish and large land mammals were the most commonly received resource, with 100% of households receiving fish and 89% receiving large land mammals (Table 5-9). In comparison 78% of households gave away fish and vegetation, and 89% gave away large land mammals (Table 5-9). The most commonly received individual fish resource was sockeye salmon; 89% of the households received and 44% gave away the resource. The most shared large land mammal species was moose with 78% of households sharing meat and 56% receiving (Table 5-9). Of interest, only 56% of Mentasta Pass households harvested moose in 2010 while 78% reported giving away moose during the study year. This might indicate that some Mentasta Pass households were sharing moose harvested prior to 2010 or giving away meat that they themselves had received. The same could be true also with caribou and Dall sheep; 33% of Mentasta Pass households reported harvesting caribou in 2010 while 56% gave away the resource. For Dall sheep the corresponding numbers are only 11% of households harvesting and 33% sharing the resource (Table 5-9).

Vegetation, particularly berries, was also widely shared; 78% of Mentasta Pass households reported sharing vegetation and 56% receiving some vegetation resources (Table 5-9). Since the number of Mentasta Pass households receiving vegetation is smaller than the number sharing, it is likely that some vegetation was shared to households in other communities. Marine invertebrates was another resource category where many households reported receiving resources; 56% of community households received some resources while only 33% harvested, and 11% shared the resource (Table 5-9). Because the number of households receiving marine invertebrates is larger than the number of households harvesting and sharing, it is likely that some Mentasta Pass households received these resources from outside the community. It is also noteworthy that 67% of community households reported receiving and using Pacific halibut while only 11% reported harvesting it and 22% reportedly shared the resource (Table 5-9). This indicates that those who harvested Pacific halibut shared widely within the community, or that the Pacific halibut may have come from other harvesters outside the community. The sharing pattern is opposite for upland game birds; 67% of Mentasta Pass households reported harvesting and using the resources, 22% gave away some upland game birds, but no household said that they received upland game birds (Table 5-9). It is likely that some resources were shared with households in other communities. Another resource given away to other communities by some Mentasta Pass households was wood; all households reported harvesting and using the resource while 56% said they had given some away but only 33% of households reported receiving wood (Table 5-9).

HOUSEHOLD SPECIALIZATION IN RESOURCE HARVESTING

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

As shown in Figure 5-4, in the 2012 study year in Mentasta Pass, about 74% of the harvests of wild resources as estimated in usable pounds was harvested by 44% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Mentasta Pass and the other study communities.

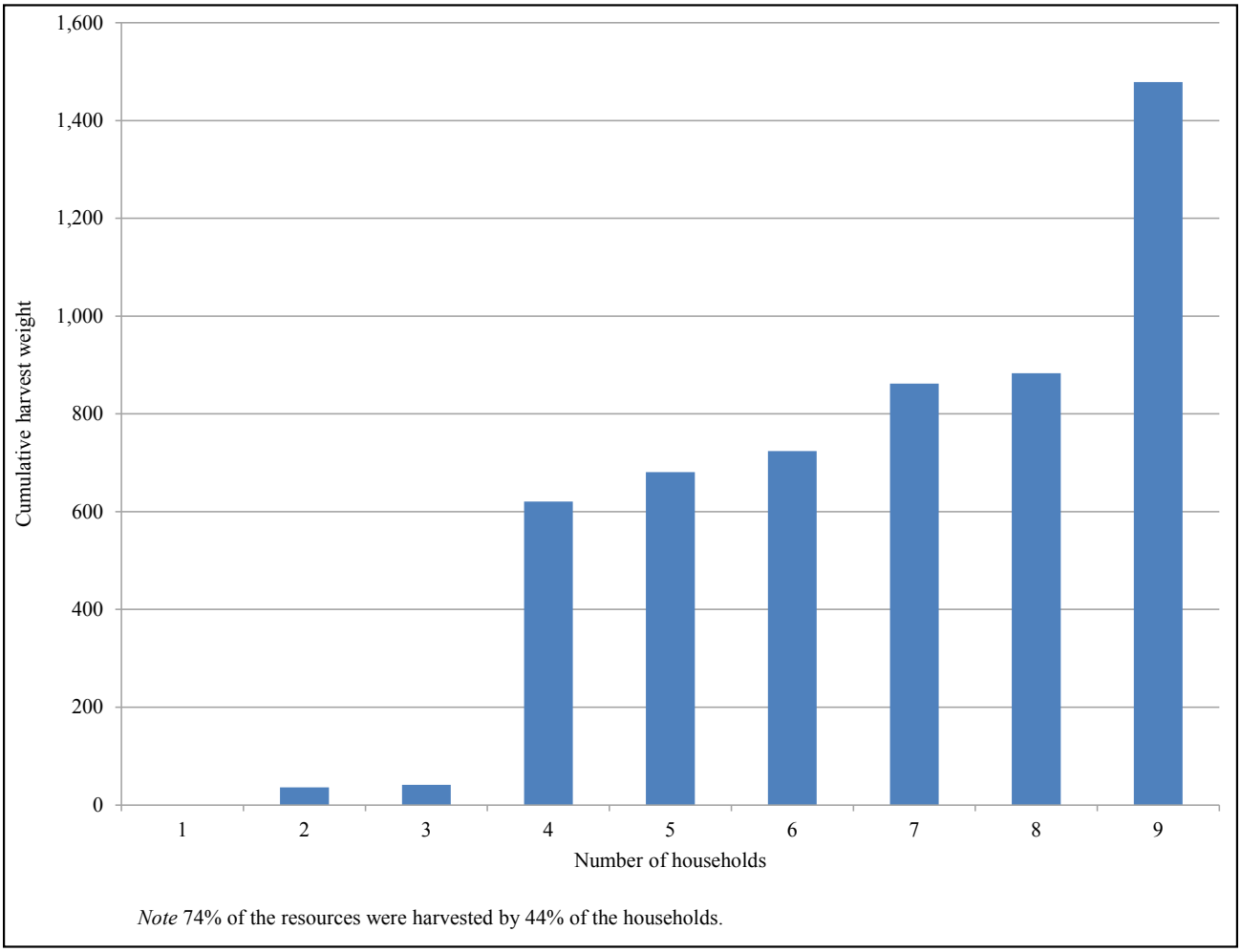


Figure 5-4.– Household specialization, Mentasta Pass, 2010.

USE AND HARVEST CHARACTERISTICS BY RESOURCE CATEGORY

SALMON

For the community of Mentasta Pass in 2010, salmon composed 19% of the wild resource harvest in pounds usable weight totaling 1,334 lb, or 39 lb per capita (Figure 5-3; Table 5-9). Sockeye salmon was the primary salmon species targeted by Mentasta Pass households; approximately 88% (1,181 lb, or 34 lb per capita) of the total salmon harvest was sockeye salmon (Figure 5-5; Table 5-9). Chinook salmon made up 8% (105 lb, or 3 lb per capita) of the salmon harvest, and pink salmon approximately 4% (49 lb, or 1 lb per capita) (Figure 5-5; Table 5-9).

According to the 2010 study year, Mentasta Pass residents harvested the bulk of their salmon (98% of the total pounds harvested) with subsistence gear, fish wheels in particular (Table 5-11). The remaining harvest was taken with rod and reel. Salmon are not harvested locally in the immediate Mentasta Pass area. Rather, residents travel to other communities in the Copper River watershed or to other parts of

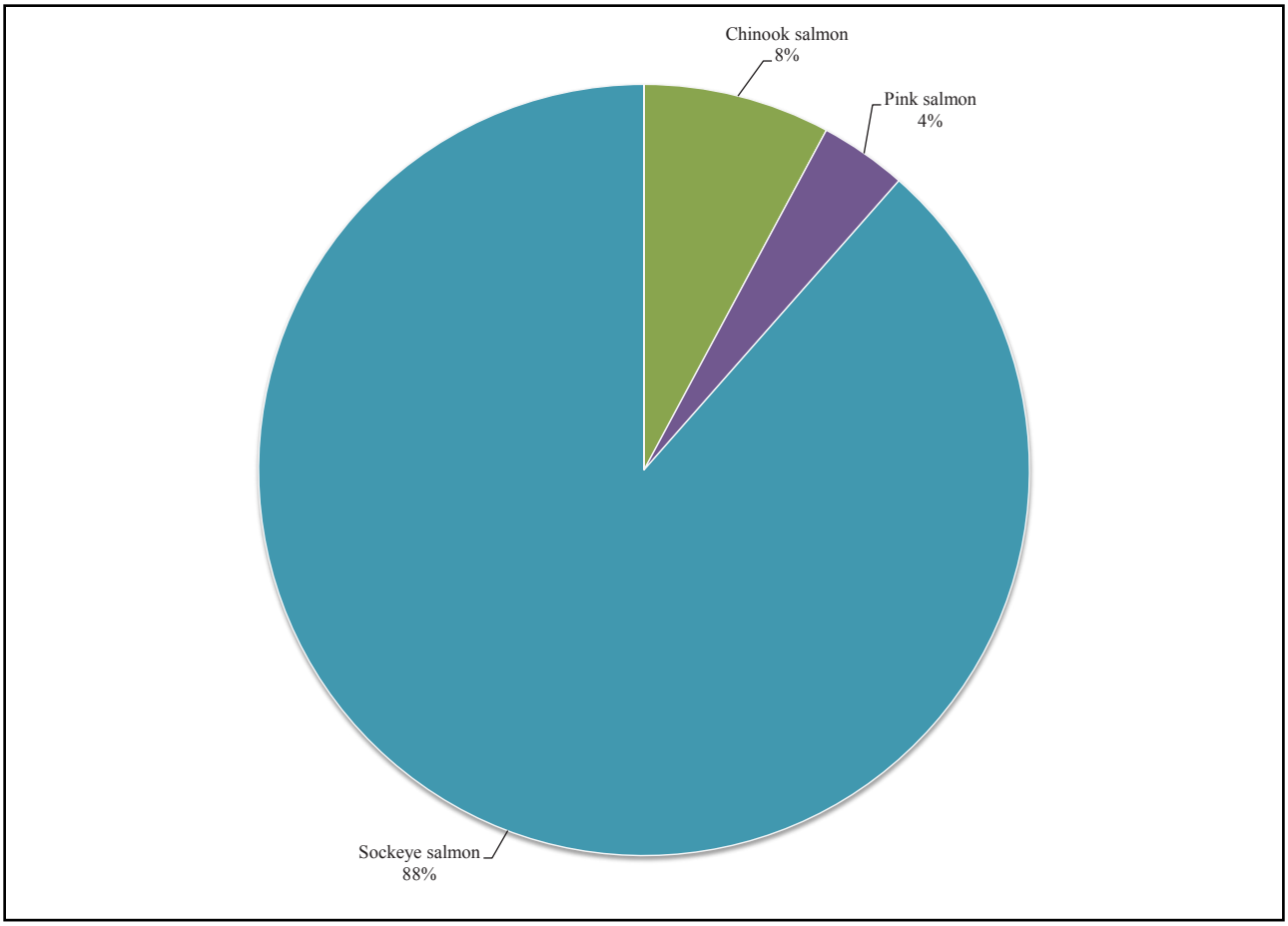


Figure 5-5.– Composition of salmon harvest, Mentasta Pass, 2010.

the state like Prince William Sound. During the study year of 2010, respondents reported harvesting both sockeye and Chinook salmon around Slana and along the Copper River off the Nabesna Road corridor (Figure 5-6). The pink salmon taken by Mentasta Pass households in 2010 came from outside the Copper River watershed.

NONSALMON FISH

In 2010, Mentasta Pass residents harvested an estimated total of 409 lb (12 lb per capita) of nonsalmon fish (Table 5-9). In terms of total pounds and percentages, most of the harvest included Pacific halibut (133 lb, or 4 lb per capita), northern pike (127 lb, or 4 lb per capita), whitefishes (81 lb, or 2 lb per capita), and Arctic grayling (60 lb, or 2 lb per capita) (Table 5-9; Figure 5-7). The rest of the harvest was made up by Dolly Varden (Table 5-9; Figure 5-7). Humpback and round whitefish made up the majority of the whitefishes harvest (Table 5-9). Table 5-12 lists the number and pounds of each nonsalmon fish species harvested by Mentasta Pass residents in 2010 in percentages by gear type. Mentasta Pass households harvested all Pacific halibut, which is a marine fish, with other subsistence

Table 5-11. – Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Mentasta Pass, 2010.

		Removed from commercial catch		Subsistence methods											
				Dip net		Fish wheel		Other method		Subsistence gear, any		Rod and reel		Any method	
Resource	Percentage base	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%
	Resource	0.0%	0.0%	0.0%	0.0%	59.5%	59.5%	38.0%	38.0%	97.5%	97.5%	2.5%	2.5%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	59.5%	59.5%	38.0%	38.0%	97.5%	97.5%	2.5%	2.5%	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%
	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%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	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%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	4.3%	13.2%	0.0%	0.0%	2.6%	8.0%	0.0%	0.0%	2.5%	7.8%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	2.5%	7.8%	0.0%	0.0%	2.5%	7.8%	0.0%	0.0%	2.5%	7.8%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	9.6%	6.5%	3.8%	0.0%	0.0%	6.3%	3.7%
	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%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%	3.7%	6.3%	3.7%	0.0%	0.0%	6.3%	3.7%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	95.7%	93.0%	83.3%	80.9%	90.9%	88.3%	100.0%	97.1%	91.1%	88.5%
	Resource	0.0%	0.0%	0.0%	0.0%	62.5%	62.5%	34.7%	34.7%	97.2%	97.2%	2.8%	2.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	57.0%	55.3%	31.6%	30.7%	88.6%	86.0%	2.5%	2.5%	91.1%	88.5%
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%
	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 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%
	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, 2011.

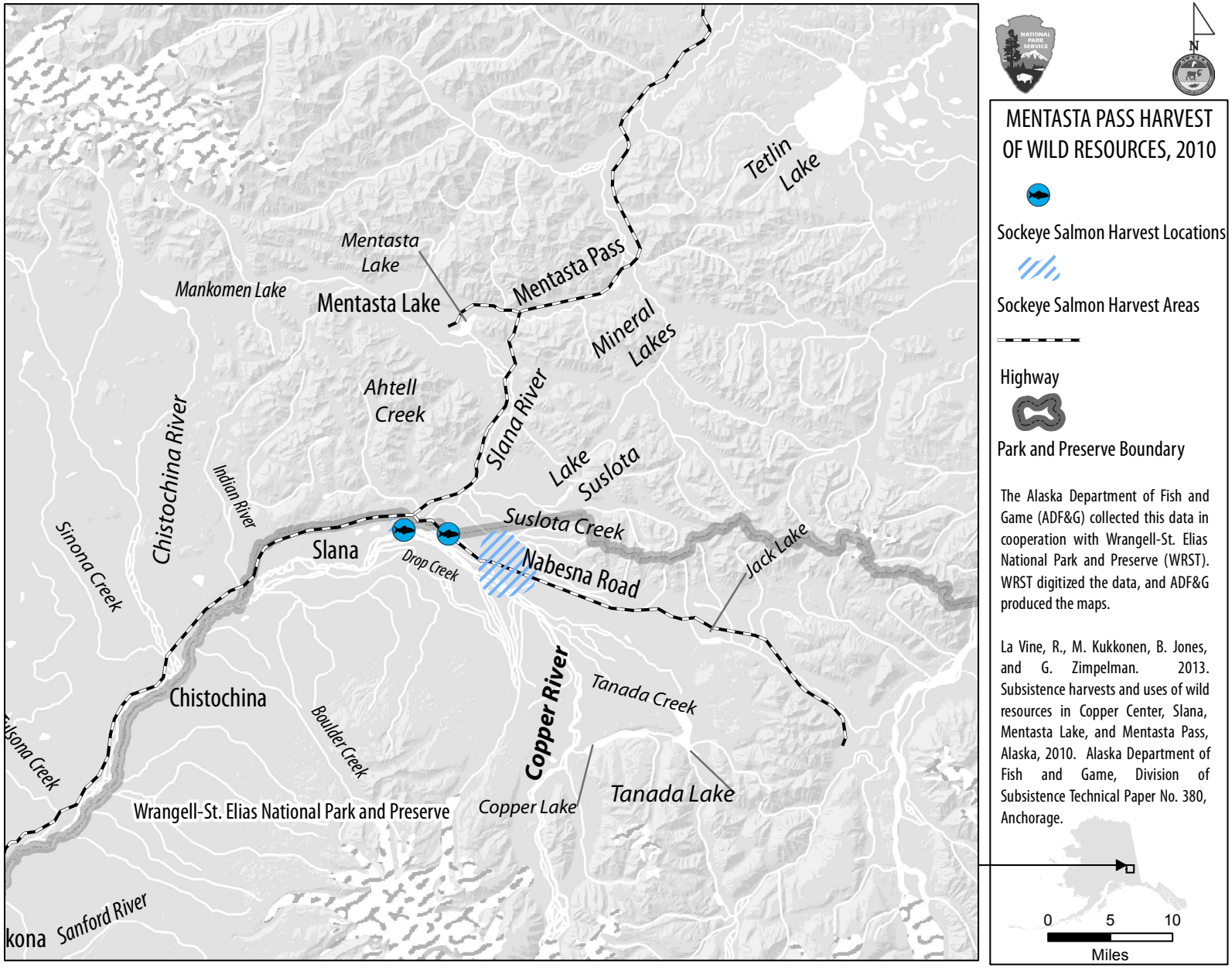


Figure 5-6.– Sockeye salmon search and harvest areas, Mentasta Pass, 2010.

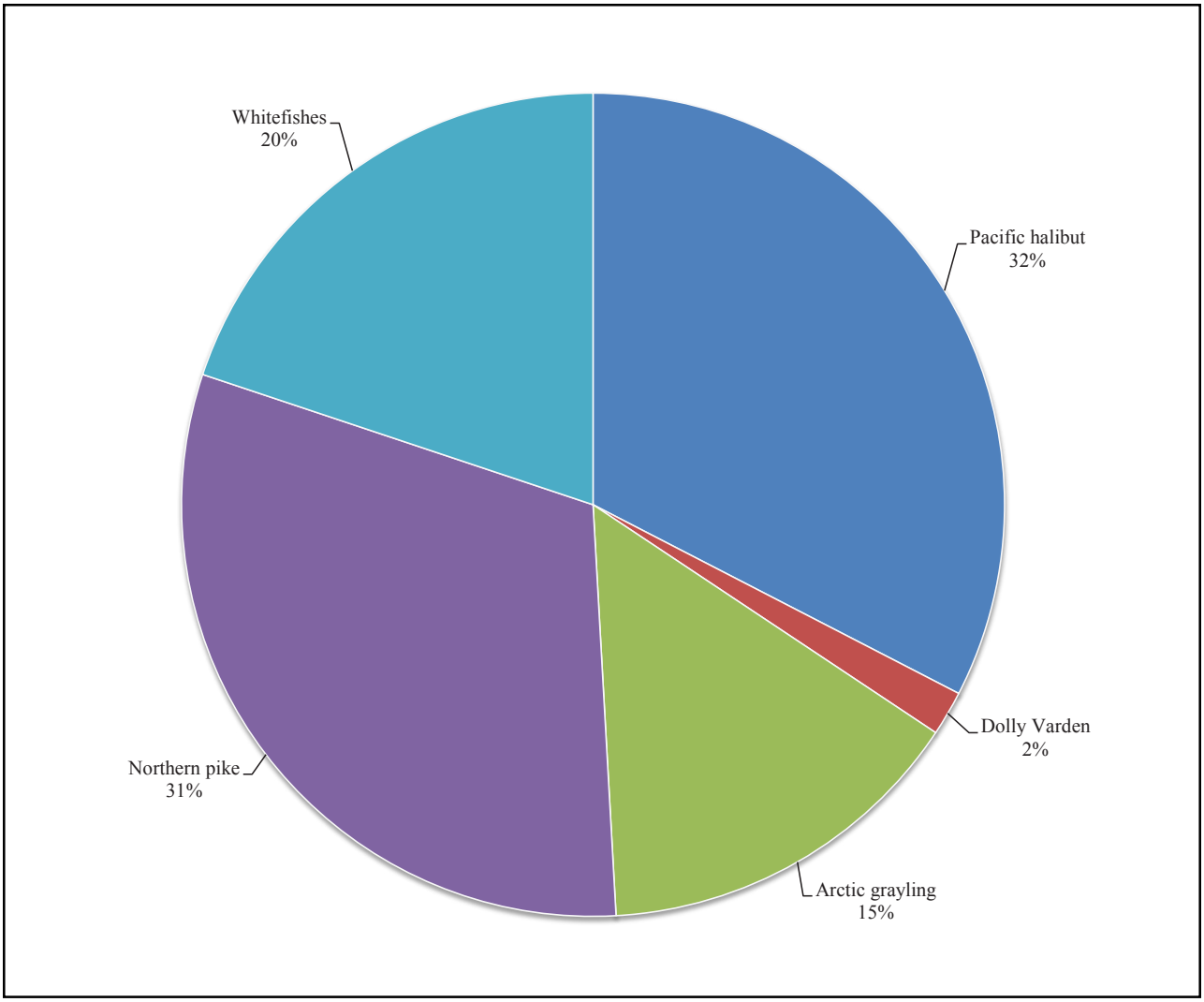


Figure 5-7.– Composition of nonsalmon fish harvest, Mentasta Pass, 2010.

gear, which could for example be stationary setline gear such as longline. The majority of northern pike, Arctic grayling, and Dolly Varden were taken with rod and reel (Table 5-12). Whitefishes, in comparison, were caught with subsistence gear, which likely included some ice fishing equipment along with spears used in the fall spear fishery in the Slana River (Table 5-12).

In the study year 2010, Mentasta Pass residents harvested the majority of their nonsalmon freshwater fish on Mentasta Lake and nearby creeks; all reported whitefishes harvests and the majority of Dolly Varden were taken in these locations. Fishing locations for Arctic grayling were also highly centralized on Mentasta Lake with a few additional harvest sites on Mineral Lakes. In addition to Mineral Lakes, Mentasta Pass residents reported harvesting northern pike in lakes east of the Nabesna River and North of the Nutzotin mountains in the Tetlin National Wildlife Refuge (Figure 5-8).

Table 5-12. – Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Mentasta Pass, 2010.

Resource	Percentage base	Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Nonsalmon fish	Gear type	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Resource	0.0%	0.0%	0.0%	0.0%	61.2%	61.2%	61.2%	61.2%	38.8%	38.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	61.2%	61.2%	61.2%	61.2%	38.8%	38.8%	100.0%	100.0%
Herring	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%
	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%
	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%
Herring sac roe	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%
	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%
	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%
Herring spawn on kelp	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%
	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%
	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%
Unknown 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%
	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%
	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%
Pacific cod (gray)	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%
	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%
	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%
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%
	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%
	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%
Starry flounder	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%
	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%
	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%
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%
	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%
	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%
Pacific halibut	Gear type	0.0%	0.0%	0.0%	0.0%	65.6%	53.3%	65.6%	53.3%	0.0%	0.0%	40.1%	32.6%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	40.1%	32.6%	40.1%	32.6%	0.0%	0.0%	40.1%	32.6%
Arcitc lamprey	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%
	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%
	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%
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%
	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%
	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%

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Table 5-12.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Other		Subsistence gear, any		Rod and reel		Any method	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Slimy sculpin	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%
	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%
	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%
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%
	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%
	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%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.2%	4.5%	2.4%	1.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	1.8%	2.4%	1.8%
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%
	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%
	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%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	2.6%	1.5%	2.6%	1.5%	62.8%	35.7%	26.0%	14.8%
	Resource	0.0%	0.0%	0.0%	0.0%	6.2%	6.2%	6.2%	6.2%	93.8%	93.8%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.6%	0.9%	1.6%	0.9%	24.4%	13.9%	26.0%	14.8%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	2.6%	6.0%	2.6%	6.0%	31.0%	70.5%	13.6%	31.0%
	Resource	0.0%	0.0%	0.0%	0.0%	11.8%	11.8%	11.8%	11.8%	88.2%	88.2%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	1.6%	3.6%	1.6%	3.6%	12.0%	27.4%	13.6%	31.0%
Longnose sucker	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%
	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%
	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%
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%
	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%
	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%
Rainbow 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%
	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%
	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%
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%
	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%
	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%
Broad 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%
	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%
	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%
Least cisco	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%
	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%
	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%
Humpback whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	13.1%	18.6%	13.1%	18.6%	0.0%	0.0%	8.0%	11.4%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	8.0%	11.4%	8.0%	11.4%	0.0%	0.0%	8.0%	11.4%

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Table 5-12.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch		Subsistence methods						Rod and reel		Any method	
				Gillnet or seine		Other		Subsistence gear, any					
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Round whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	14.8%	12.0%	14.8%	12.0%	0.0%	0.0%	9.0%	7.3%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	9.0%	7.3%	9.0%	7.3%	0.0%	0.0%	9.0%	7.3%
Unknown whitefish	Gear type	0.0%	0.0%	0.0%	0.0%	1.3%	1.9%	1.3%	1.9%	0.0%	0.0%	0.8%	1.1%
	Resource	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.8%	1.1%	0.8%	1.1%	0.0%	0.0%	0.8%	1.1%

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

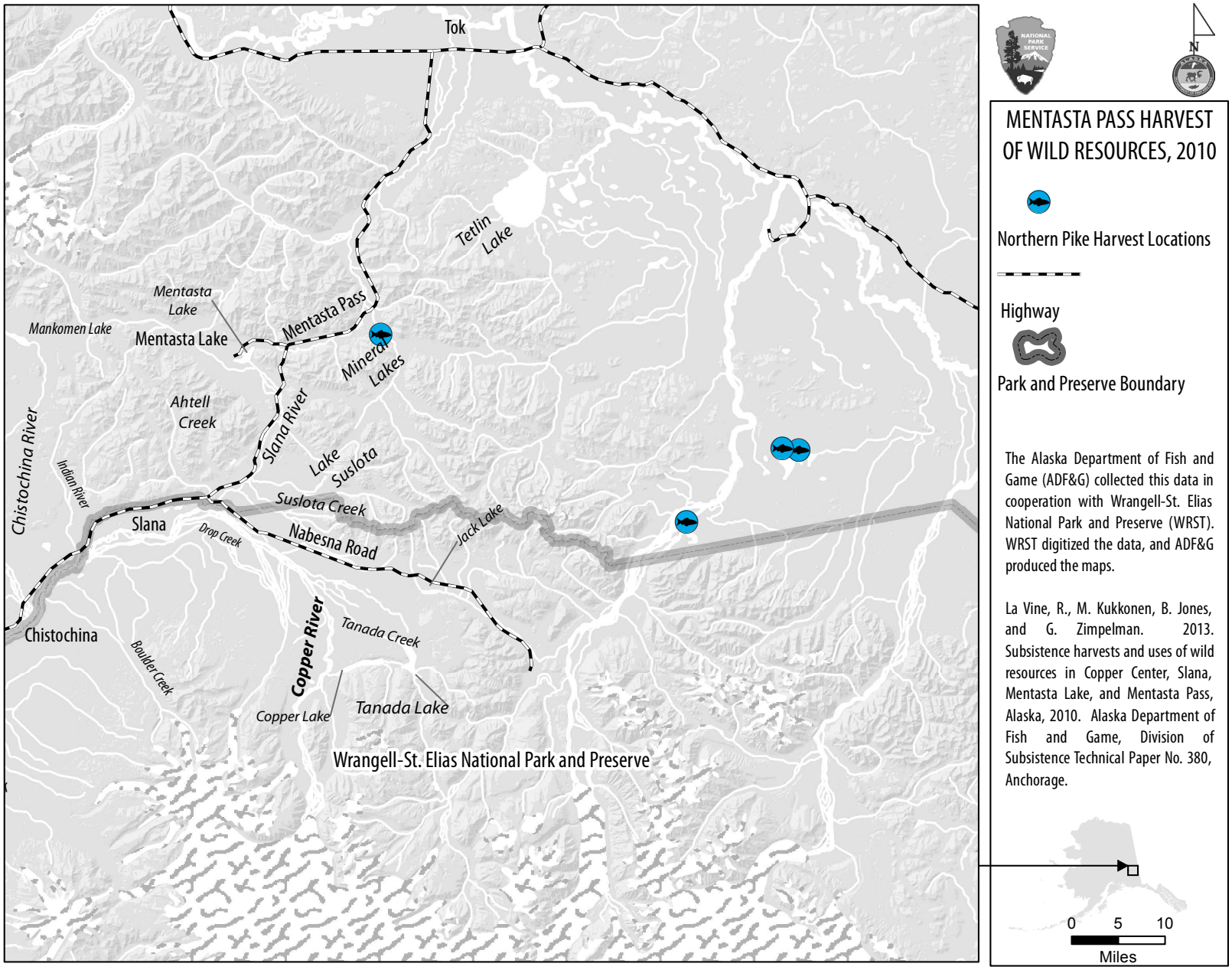


Figure 5-8.– Northern pike search and harvest areas, Mentasta Pass, 2010.

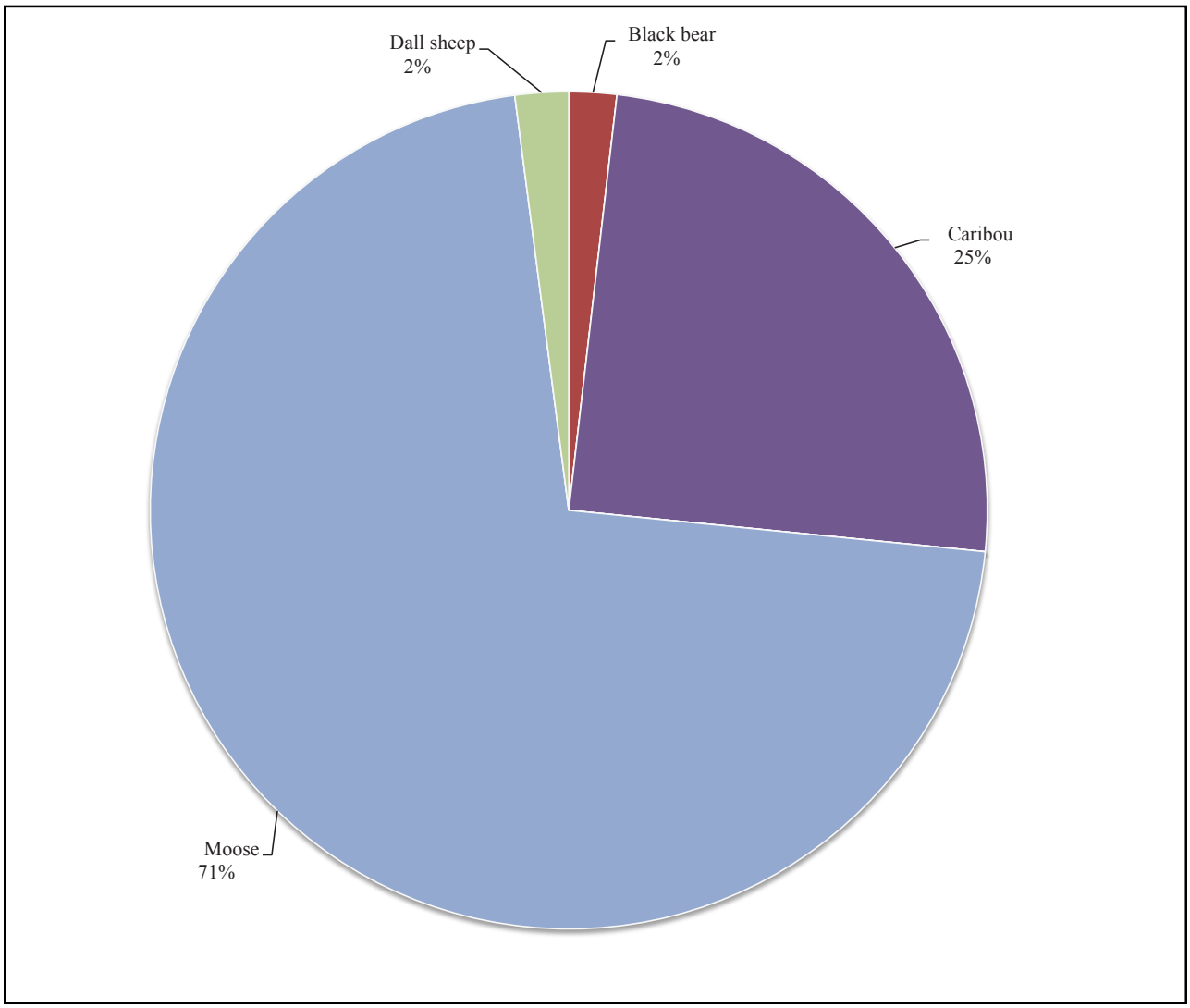


Figure 5-9.– Composition of large land mammals harvest, Mentasta Pass, 2010.

LARGE LAND MAMMALS

In 2010, large land mammals made up 60% of the total Mentasta Pass wild resource harvest by weight, the largest portion of harvest by resource category (Figure 5-3). During the household interviews some respondents commented that moose, caribou, and black bears are generally the 3 main species targeted by community residents; Dall sheep is considered a rare but preferred harvest. The results of the 2010 harvest survey also reflect these traditions; in terms of pounds usable weight, harvested moose made up 71% of the total large land mammal harvest followed by caribou at 25%, and Dall sheep and black bear at 2% each (Figure 5-9).

Eighty-nine percent of households hunted for moose but only 56% of community households reported success (Table 5-9). This discrepancy between attempt and actual harvest can be accounted for in part by the possibility of hunting partnerships between different households. Partners may hunt together

Table 5-13. – Estimated harvests of large land mammals by month and sex, Mentasta Pass, 2010.

	Bison	Black bear	Brown bear	Caribou		Moose		Deer	Goat	Dall sheep
Harvest month	Number	Number	Number	Male	Female	Male	Female	Number	Number	Number
January	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
March	0.0	0.0	0.0	2.7	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
May	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
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0
September	0.0	1.3	0.0	1.3	0.0	6.7	0.0	0.0	0.0	1.3
October	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
December	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
Total harvest	**0.0**	**1.3**	**0.0**	**6.7**	**1.3**	**6.7**	**0.0**	**0.0**	**0.0**	**1.3**

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

and share the harvest, but only 1 person can claim the harvest on his or her permit. Nevertheless, all households used moose during the study year 2010 (Table 5-9). In terms of total pounds harvested in 2010, moose ranked first on the list of top 10 resources harvested as well as used by community households (Table 5-10). Respondents also said that moose is an essential source of protein in their subsistence diet. According to the study, all successful moose hunting took place in September 2010 (Table 5-13).

While moose was the most sought-after and harvested large land mammal species, 44% of Mentasta Pass households attempted to harvest caribou and black bear, and 33% hunted Dall sheep (Table 5-9). Only 11% of households were successful at hunting black bears or Dall sheep (Table 5-9). In comparison, 33% of Mentasta Pass households successfully harvested caribou in 2010 (Table 5-9). Caribou ranked third on the list of top 10 ranked resources harvested and eighth on the list of top used resources by households in 2010 (Table 5-10).

All 3 species (caribou, black bear, and Dall sheep) were widely shared by Mentasta Pass residents; 56% of the households reported receiving caribou and Dall sheep, and 44% received black bear (Table 5-9). Of the 3 species, caribou was the most widely shared (56% of households reported sharing) while black bear was shared by only 11% of the households (Table 5-9). It is also interesting that while 56% of Mentasta Pass households reported using Dall sheep only 33% said they had given some away, this may be in part due to residents receiving Dall sheep meat from local guides. These numbers indicate that the few households who harvested sheep shared widely within their community, or that some households received the resource from outside the community. It also needs to be noted that during the study year, 44% of households received and used goat even though none reported harvesting any (Table 5-9). Among the more rarely used species were bison, deer, and muskox; 11% of Mentasta pass households reported receiving and using each of the 3 species (Table 5-9).

During the mapping part of the household surveys, Mentasta Pass residents expressed strong concerns about mapping search and harvest areas only for the study year 2010. Community members commented that 2010 was a particularly poor harvest year for many of them due to, for example, bad weather, engagement in home improvement/renovation projects, work interference, or because of a need to take care of households' small children. Because of these concerns, several of the interviewed households preferred only to map harvest and search areas that represented a lifetime of subsistence harvest patterns. Therefore, the maps for this community portray larger geographic areas of use than those reported in other communities, and should be viewed with this caveat in mind.

Figures 5-10 and 5-11 depict Mentasta Pass households' moose and caribou harvest and use areas mapped during the survey effort that occurred in 2011. The harvest areas are large; for moose they extend as far southwest as past Glennallen heading south along the Glenn Highway. In the north, they go as far as a small section along the Taylor Highway (Figure 5-10). The westernmost harvest areas for moose are largely located in Game Management Unit (GMU) 12 and the Tetlin National Wildlife

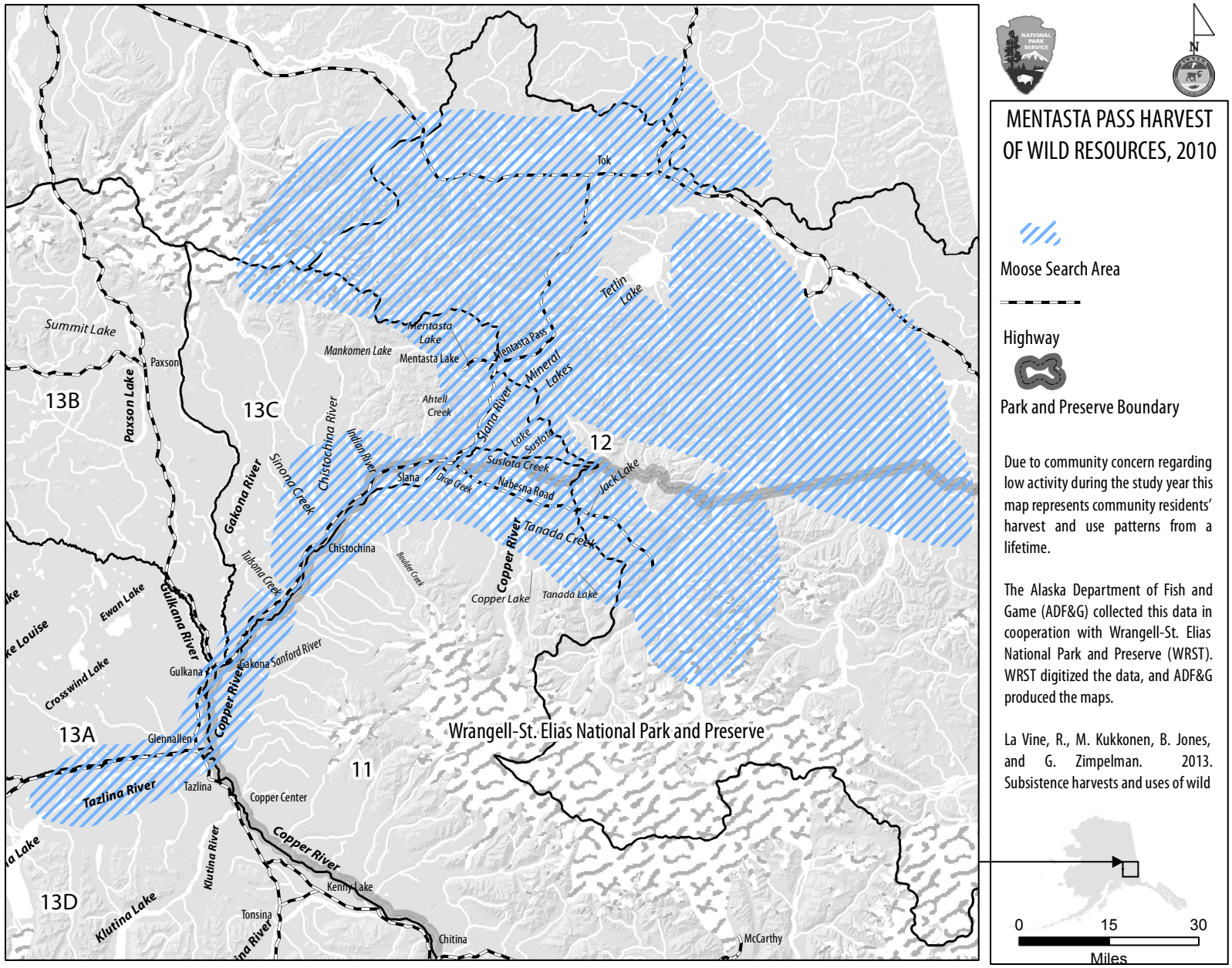


Figure 5-10.– Moose search and harvest areas, Mentasta Pass, 2010.

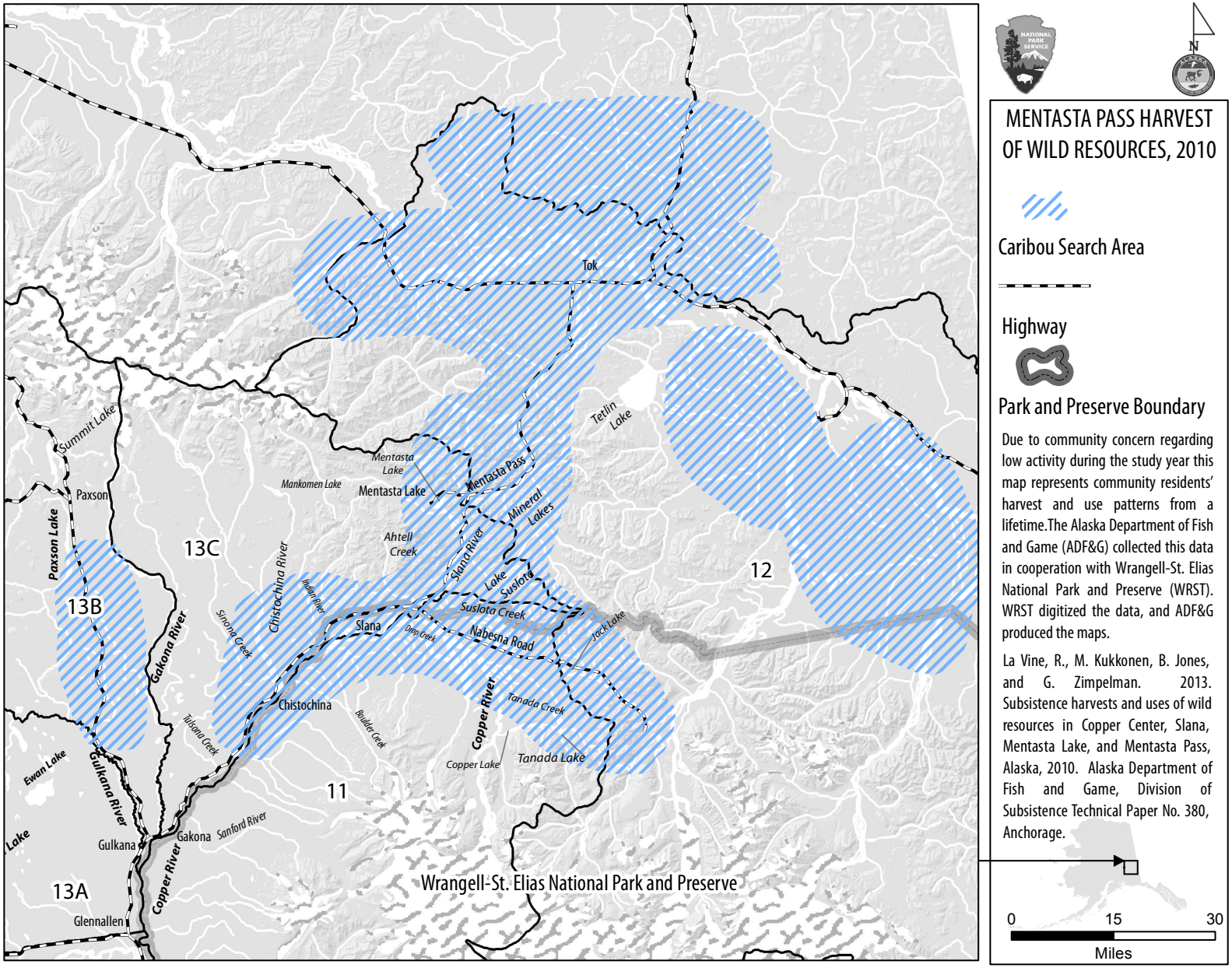


Figure 5-11.– Caribou search and harvest areas, Mentasta Pass, 2010.

Refuge. In comparison, Mentasta Pass households' caribou harvest and use areas do not extend quite as far to the east as their moose harvest areas; the easternmost areas are along the Richardson Highway north of Gulkana. In addition, the westernmost areas do not extend quite as far into the Wrangell-St. Elias National Park and Preserve and the northernmost harvest areas go farther up north along the Taylor Highway (Figure 5-11). All in all, while much of the moose and caribou harvest is done along the major roads, some Mentasta Pass residents also travel long distances into wilderness areas to harvest these resources.

Maps in Appendix C depict Mentasta Pass households' black bear, brown bear, and Dall sheep search and harvest areas mapped for 2010. While both bear species were hunted in locations as far southwest as moose, Dall sheep search and harvest areas extend farther north, all the way to a section along the Taylor Highway. Mentasta Pass households harvest both bear species and Dall sheep off McCarthy Road, and up high in the Wrangell and Saint Elias mountains, which is an important difference compared to both the moose and caribou harvest areas (figures 5-9 and 5-10). There are several airstrips and public use cabins in these high mountain areas that Mentasta Pass residents access by airplane—either using their own or by joining another household on their hunting trip. In 2010, a few households said they had used charter airplanes for harvesting wild resources. The areas closest to the roads are accessed either on foot or by ATVs, while more distant areas may be accessed with boats.

SMALL LAND MAMMALS/FURBEARERS

As listed in Table 5-9, the total harvest of small land mammals for wild foods by Mentasta Pass households in 2010 was approximately 252 lb, or 7 lb per capita, and composed approximately 4% of the total harvest in 2010 (Figure 5-3). The majority of the harvest was beavers (100 lb, or 3 lb per capita), lynx (80 lb, or 2 lb per capita), and red (tree) squirrels (28 lb, or 1 lb per capita) (Table 5-9). It needs to be added that only some of the harvested lynx and tree squirrels were used for human consumption. Furthermore, the use of squirrels in the community was varied; one household reported killing squirrels to protect their property from being damaged and feeding the carcasses to dogs, another household reported consuming the harvested squirrels, and one household said they had only used the skins.

There are several active trappers in Mentasta Pass and 67% of households reported harvesting some small land mammals (Table 5-9). In 2010, the species harvested by most Mentasta Pass households primarily for fur only were red fox, marten, and wolf (each harvested by 33% of households), as well as wolverine (harvested by 22% of households) (Table 5-9). In numbers of animals harvested for their fur only, the top 3 species were marten, wolf, and red fox (Table 5-9). A small portion (11%) of the households reported using snowshoe hares; only 22% attempted to harvest hares in 2010, although none were successful (Table 5-9).

Figure 5-12 depicts Mentasta Pass residents' small land mammal search and harvest areas mapped

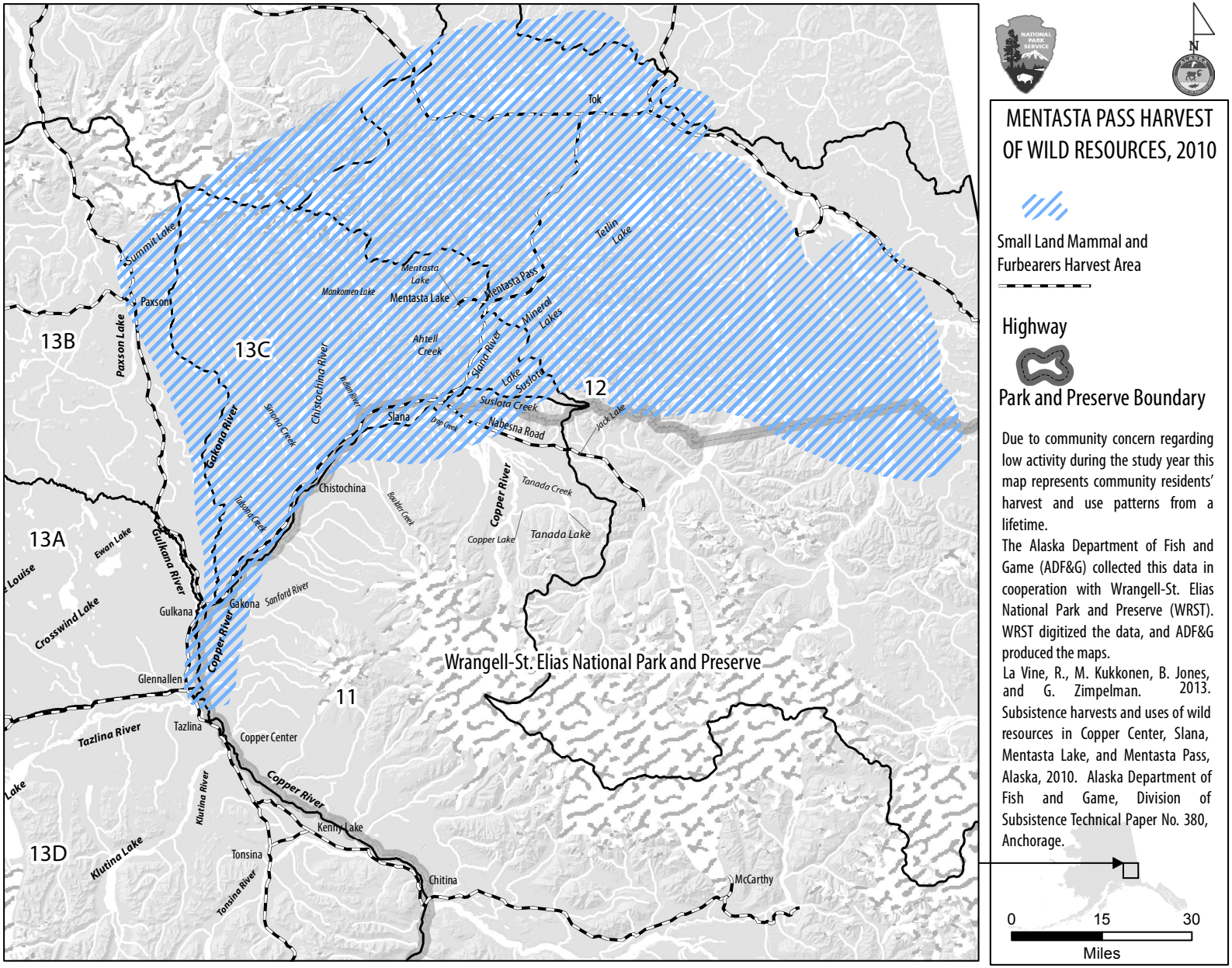


Figure 5-12.– Small land mammals and furbearers search and harvest areas, Mentasta Pass, 2010.

during the 2010 study. The activities encompass a large geographical area; the easternmost point is at Paxson and the westernmost point is in the Wrangell-St. Elias National Preserve in the proximity of the border to the Tetlin National Wildlife Refuge. The southernmost point was located near Tazlina and the northernmost point located north of Tok, past the border of GMU 12. The southernmost harvest areas are relatively close to the Richardson Highway but the majority of the small land mammal search and harvest areas are way off the road system in GMUs 13C and 12. In comparison to the harvest areas of large land mammals such as Dall sheep and moose, a relatively small portion of the total search areas for small land mammal harvests are located in the Wrangell-St. Elias National Park and Preserve.

BIRDS

In 2010, the harvest of birds contributed the least (only approximately 3%) to the total wild resource harvest (Figure 5-3). The total harvest of birds was an estimated 191 lb, or approximately 6 lb per capita (Table 5-9). Migratory birds composed the majority of this harvest totaling 168 lb, or 5 lb per capita (Table 5-9). Ducks, such as mallards, northern pintails, black scoters, and goldeneyes, made up the majority of the migratory bird harvest (Table 5-9). The total harvest of upland game birds was noticeably less, only 23 lb, or less than 1 lb per capita, and consisted mostly of spruce grouse and ptarmigan (Table 5-9). Several respondents said that their harvest of upland game birds was down in 2010 because the area ptarmigan and grouse were going through a low population cycle during the study year 2010. According to the study, Mentasta Pass households did not harvest any eggs in 2010.

Mentasta Pass residents harvest migratory waterfowl close to the community but also in the rich lowland areas off the Alaska Highway in the Tetlin National Wildlife Refuge and GMU 12 (Figure 5-13). Upland game bird harvest areas are more dispersed and follow the Richardson Highway south all the way to Tulsona Creek. In the north the harvest areas extend all the way to the Taylor Highway and east of Tok along and off the Alaska Highway. The southeastern-most harvest areas are off the Nabesna Road corridor toward Tanada and Copper lakes. (Figure 5-13). For Mentasta Pass, the vast majority of migratory birds and about half the upland game birds were harvested during the summer months (Table 5-14).

MARINE INVERTEBRATES

In 2010 the harvest of marine invertebrates by Mentasta Pass households was small; these resources made up approximately 1% of the harvest (Figure 5-3). The total harvest was 86 lb, or 3 lb per capita (Table 5-9). Several respondents reported going clamming during 2010 and razor clams were the most harvested marine invertebrate species; overall the harvest totaled 40 lb (about 1 lb per capita) (Table 5-9). King crab (34 lb total) and Dungeness crab (9 lb total) were also part of the harvest. In addition, 11% of Mentasta Pass households reported receiving and using oysters and 22% received and used

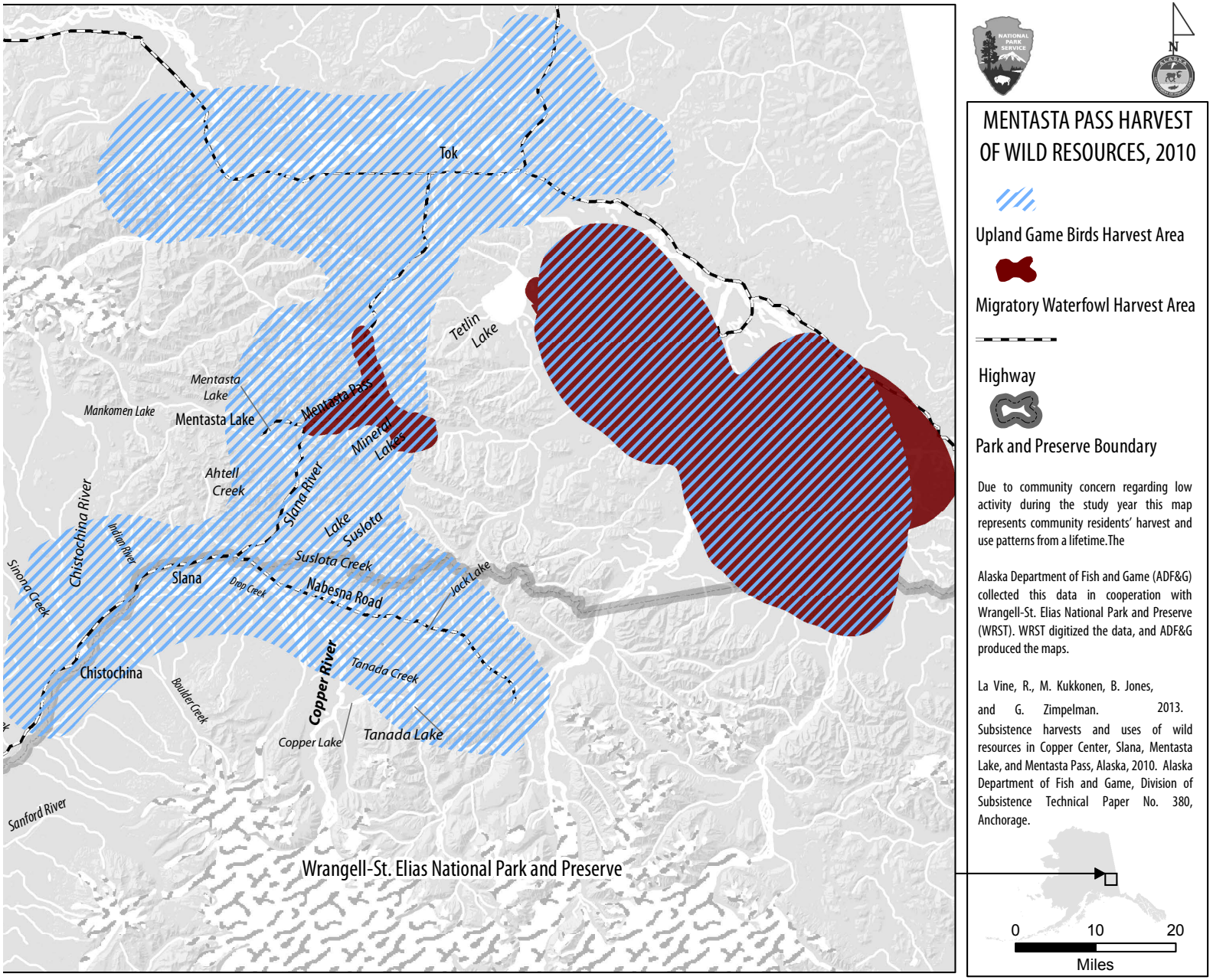


Figure 5-13.– Upland game birds and migratory waterfowl search and harvest areas, Mentasta Pass, 2010.

Table 5-14. – Harvest of birds by season, Mentasta Pass, 2010.

Species	Spring	Summer	Fall	Winter
Migratory birds	**25.3**	**124.0**	**0.0**	**14.7**
Bufflehead	0.0	2.7	0.0	0.0
Canvasback	0.0	2.7	0.0	0.0
Spectacled eider	0.0	0.0	0.0	0.0
Gadwall	0.0	2.7	0.0	0.0
Goldeneye	2.7	13.3	0.0	2.7
Mallard	9.3	26.7	0.0	4.0
Merganser	0.0	1.3	0.0	0.0
Northern pintail	4.0	10.7	0.0	4.0
Black scoter	0.0	16.0	0.0	0.0
Green-winged teal	1.3	9.3	0.0	4.0
Wigeon	0.0	5.3	0.0	0.0
Unknown ducks	4.0	22.7	0.0	0.0
Brant	0.0	0.0	0.0	0.0
Cacklers	0.0	0.0	0.0	0.0
Lesser Canada geese (taverner/parvipes)	1.3	4.0	0.0	0.0
Unknown Canada geese	2.7	0.0	0.0	0.0
Emperor geese	0.0	0.0	0.0	0.0
Snow geese	0.0	0.0	0.0	0.0
White-fronted geese	0.0	2.7	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0
Tundra swan (whistling)	0.0	0.0	0.0	0.0
Sandhill crane	0.0	4.0	0.0	0.0
Upland game birds	**0.0**	**18.7**	**1.3**	**17.3**
Spruce grouse	0.0	12.0	1.3	2.7
Ruffed grouse	0.0	4.0	0.0	2.7
Ptarmigan	0.0	2.7	0.0	12.0

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

shrimp (Table 5-9). All of the marine invertebrates used in Mentasta Pass homes came from outside the Copper River Basin area; residents traveled considerable distances (e.g., Kenai Peninsula, Valdez, and other locations) to harvest these resources.

VEGETATION

While vegetation made up approximately 7% of the total harvest of wild foods in 2010, all Mentasta Pass households used and harvested some vegetation resources during the study year (Figure 5-3; Table 5-9). In 2010, Mentasta Pass residents harvested 481 lb (14 lb per capita) of vegetation, consisting mostly of berries. Wood was collected either for heating homes, or other uses such as crafts or smoking harvested resources. The total harvest of vegetation was composed mostly of berries; Mentasta Pass residents harvested a total of 447 lb of berries (or 13 lb per capita), and 35 lb (less than 1 lb per capita) of other plants (Table 5-9). The harvest of other plants included 21 lb (less than 1 lb per capita) of Eskimo potatoes and 13 lb (less than 1 lb per capita) of mushrooms (Table 5-9). Residents reported that the lack of wildfires close by had noticeably reduced the number of morels in the area in 2010; other mushrooms such as puff balls and coral mushrooms were fairly easily available.

In 2010, the majority of the Mentasta Pass households' berry harvest was composed of blueberries (131 lb, or 4 lb per capita), lowbush cranberries (115 lb, or 3 lb per capita) and raspberries (100 lb, or 3 lb per capita) (Table 5-9). Blueberries placed fifth, lowbush cranberries eighth, and raspberries

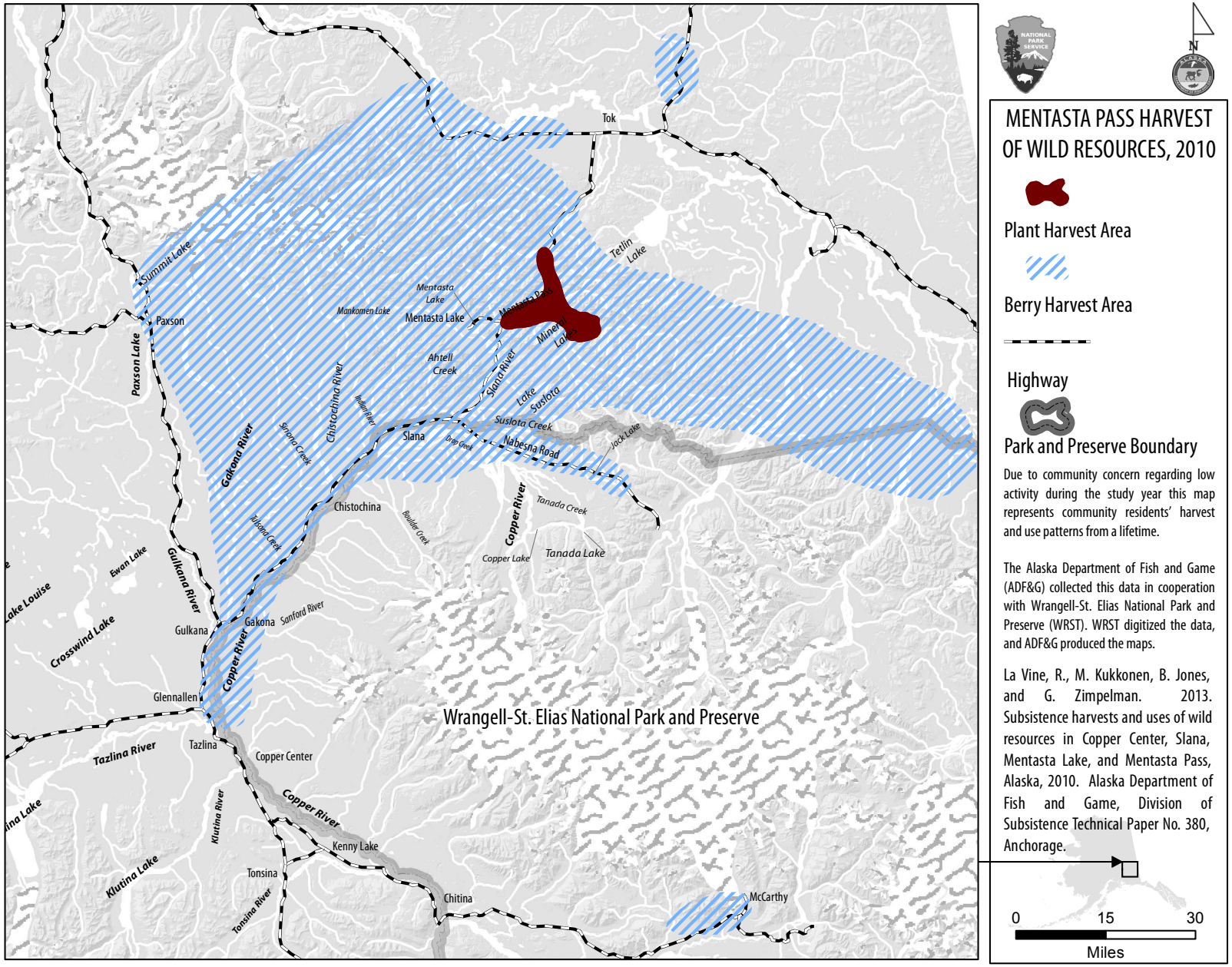


Figure 5-14.– Berries and plants, greens, and mushrooms search and harvest areas, Mentasta Pass, 2010.

10th on the list of top 10 ranked resources harvested per capita in 2010 (Table 5-10). Blueberries, lowbush cranberries, and raspberries tied with sockeye salmon and Arctic grayling for third place on the top 10 list of most used resources (Table 5-10). Another commonly used vegetation resource is wood. Uses for wood include smoking fish, making crafts, and most importantly, wood is used for heating homes. In Mentasta Pass, all households used at least some wood to heat their homes (22% used wood exclusively) and the cost of heating homes in Mentasta Pass was the highest in all 4 study communities for 2010 at an average of $5,220 per household (Table 2-18).

Mentasta Pass residents harvested most plants close to the community. The harvest areas for berries are larger and cover areas along the Richardson and Tok Cutoff highways but also areas going deep into Game Management Units 13C and 12. The easternmost berry harvest areas extend to Paxson, while the northernmost areas extend to sections of the Taylor Highway (Figure 5-14).

COMPARING HARVESTS AND USES IN 2010 WITH PREVIOUS YEARS

HARVEST ASSESSMENTS

For 9 resource categories and for all resources combined, survey respondents were asked to assess whether their uses and harvests of wild resources in the 2010 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 5-15 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 5-15,

Table 5-15. – Change in household use of resources compared to recent years, Mentasta Pass, 2010.

			Households reporting use[b]					
			Less		Same		More	
Resource category	Sampled households	Valid Responses[a]	Number	Percentage	Number	Percentage	Number	Percentage
Any resource[c]	9	9	9	100.0%	7	77.8%	3	33.3%
All resources	9	9	5	55.6%	3	33.3%	1	11.1%
Salmon	9	9	2	22.2%	5	55.6%	2	22.2%
Nonsalmon fish	9	8	4	50.0%	3	37.5%	1	12.5%
Large land mammals	9	9	7	77.8%	1	11.1%	1	11.1%
Small land mammals	9	6	4	66.7%	1	16.7%	1	16.7%
Migratory birds	9	5	1	20.0%	3	60.0%	1	20.0%
Other birds	9	6	5	83.3%	0	0.0%	1	16.7%
Bird eggs	9	0	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	9	6	3	50.0%	2	33.3%	1	16.7%
Vegetation	9	9	1	11.1%	6	66.7%	2	22.2%

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

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

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.

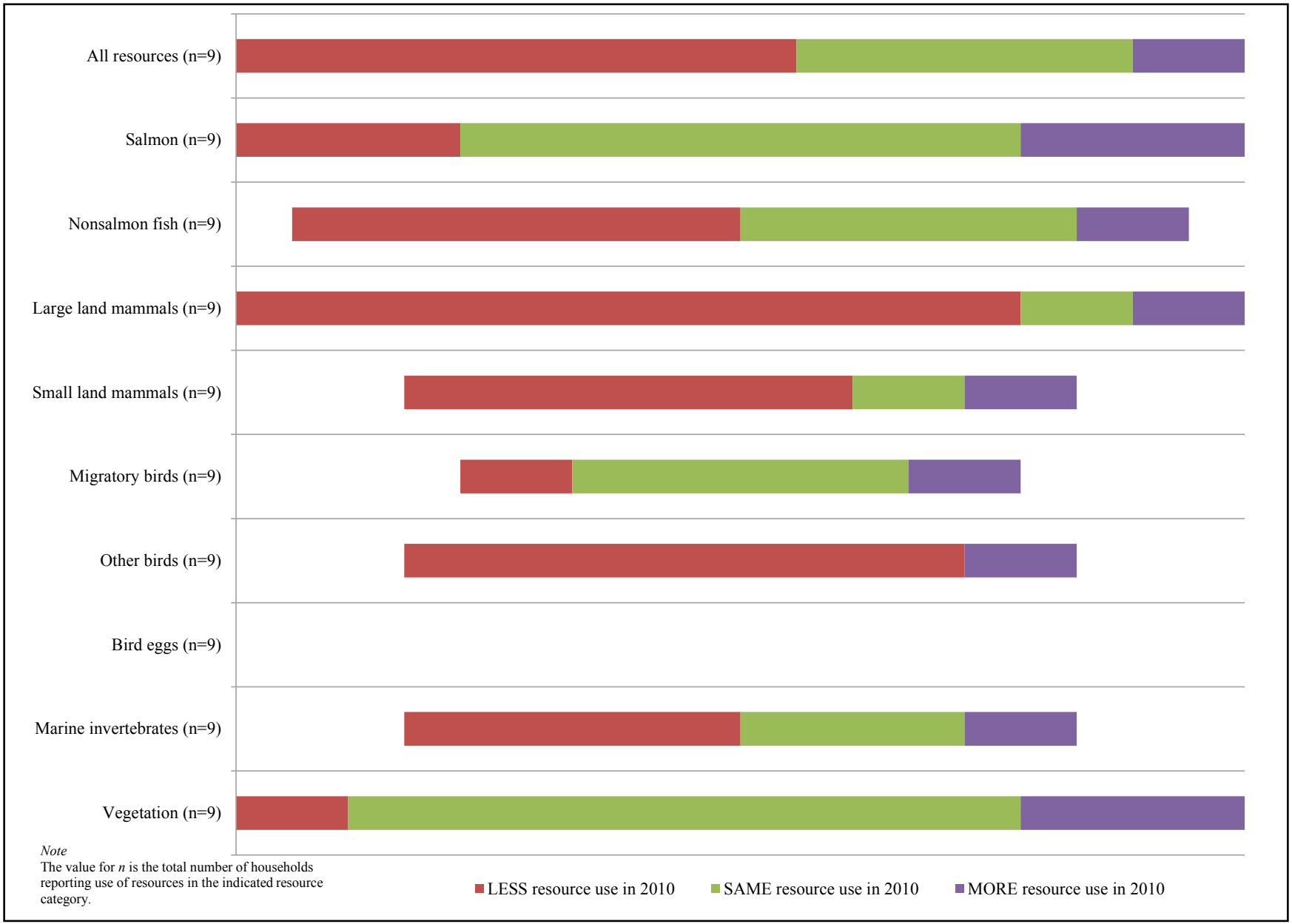


Figure 5-15.– Number of households using a resource and reporting LESS, SAME, or MORE use as compared to previous years, Mentasta Pass, 2010.

response percentages are based on the number of valid responses for each category to contextualize these assessments within the set of community households that typically use each category.

Figure 5-15 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 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. It needs to be added that some households did not respond to the question.

Taking into consideration all the resource categories, the majority (56%) of Mentasta Pass households said they used less subsistence resources in general over the previous 12 months compared to recent years (Table 5-15). A smaller number, 33% of all households, said they used about the same amount, and only 11% said they used more.

In responding to the individual resource categories, a large percentage of Mentasta Pass households reported using less of large land mammals (78%) and upland game birds (83% reporting less use) (Table 5-15). Other resource categories where a significant percentage of households reported less use in 2010 were small land mammals (67% reporting less use), nonsalmon fish, and marine invertebrates (50% reporting less use in each) (Table 5-15). In comparison, 56% of households reported that their use of salmon was the same in 2010 compared to previous years; additionally 60% described their use of migratory birds, and 67% their use of vegetation as the same in 2010 than in previous years (Table 5-15; Figure 5-15).

Tables 5-16 and 5-17 list the reasons Mentasta Pass respondents gave for changes in harvests and uses by resource category. These were open-ended questions, and respondents could provide more than one reason for changes. Project staff grouped the responses into categories, such as competition for resources, regulations hindering or helping residents to harvest resources, sharing of harvests, effects of weather on animals and subsistence activities, changes in the animal populations, personal reasons such as work, change in household size, age and health, and other outside effects on residents' opportunities to engage in subsistence activities. The survey received 9 valid responses to questions on whether all resource use had been less, the same, or more during the study year (9 households were surveyed and all 9 household reported some use of wild resources for the study year) (Table 5-15). Of those 9 responses, there were 5 households (or 56%) who reported less use of all resources in general. Two (40%) of the 5 respondents cited "work interfered," "poor weather," and "other personal reasons" as the main reasons why their yearly harvest was less (Table 5-16). In addition, one household (20%) cited "fewer resources available" as a reason why general use of all resources was down (Table 5-16).

Of the 9 responses received from Mentasta Pass households, 7 (or 78%) reported their use of large land mammals was less in the study year (Table 5-15). Of the 9 households, 7 cited specific reasons for the decline in harvest (Table 5-16). Reasons given for this decline were primarily attributed to "other personal reason" (57% of respondents), "less sharing" (29%), and "work interfered" (14%)

Table 5-16. – Reasons household use of resources was less compared to recent years, Mentasta Pass, 2010.

Resource category	Households using[a]	Households reporting less use: Total households	No reason reported: Number	No reason reported: Percentage	Fewer resources available: Number	Fewer resources available: Percentage	Unfavorable weather: Number	Unfavorable weather: Percentage	Employment interfered: Number	Employment interfered: Percentage	Too much competition: Number	Too much competition: Percentage
Any resource[b]	9	9	0	0.0%	4	44.4%	2	22.2%	3	33.3%	0	0.0%
All resources	9	5	0	0.0%	1	20.0%	2	40.0%	2	40.0%	0	0.0%
Salmon	9	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	8	4	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%
Large land mammals	9	7	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%
Small land mammals	6	4	0	0.0%	0	0.0%	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%
Other birds	6	5	0	0.0%	4	80.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	6	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
Vegetation	9	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%

Table 5-14.–Continued.

Resource category	Households using[a]	Households reporting less use: Total households	Regulatory restrictions: Number	Regulatory restrictions: Percentage	Less sharing: Number	Less sharing: Percentage	Other personal reasons: Number	Other personal reasons: Percentage	Fuel, equipment, or both too expensive: Number	Fuel, equipment, or both too expensive: Percentage
Any resource[b]	9	9	0	0.0%	4	44.4%	8	88.9%	1	11.1%
All resources	9	5	0	0.0%	0	0.0%	2	40.0%	0	0.0%
Salmon	9	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Nonsalmon fish	8	4	0	0.0%	1	25.0%	3	75.0%	0	0.0%
Large land mammals	9	7	0	0.0%	2	28.6%	4	57.1%	0	0.0%
Small land mammals	6	4	0	0.0%	1	25.0%	3	75.0%	0	0.0%
Migratory birds	5	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Other birds	6	5	0	0.0%	0	0.0%	1	20.0%	1	20.0%
Marine invertebrates	6	3	0	0.0%	0	0.0%	2	66.7%	0	0.0%
Vegetation	9	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

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

a. Households using include only households that used a resource and responded to the question about use.

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 5-17. – Reasons household use of resources was more compared to recent years, Mentasta Pass, 2010.

Resource category	Households using[a]	Total households	Households reporting more use: No reason reported Number	No reason reported Percentage	More resources available Number	More resources available Percentage	Favorable weather Number	Favorable weather Percentage	Employment conducive Number	Employment conducive Percentage	Less competition Number	Less competition Percentage
Any resource[b]	9	3	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
All resources	9	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	9	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	8	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	9	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	6	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Migratory birds	5	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	6	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	6	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	9	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%

Table 5-15.–Continued.

Resource category	Households using[a]	Total households	Households reporting more use: Regulations conducive Number	Regulations conducive Percentage	Sharing increased Number	Sharing increased Percentage	Other personal reasons Number	Other personal reasons Percentage	Fuel, equipment, or both affordable Number	Fuel, equipment, or both affordable Percentage
Any resource[b]	9	3	0	0.0%	2	66.7%	3	100.0%	0	0.0%
All resources	9	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Salmon	9	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Nonsalmon fish	8	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Large land mammals	9	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Small land mammals	6	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Migratory birds	5	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Other birds	6	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Marine invertebrates	6	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Vegetation	9	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%

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

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

a. Households using include only households that used a resource and responded to the question about use.

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 5-15). Of the 6 responses received from Mentasta Pass households, 5 (or 83%) reported their use of upland game birds was less in the study year (Table 5-15). Of these 5 households, 4 (or 80%) said that the main reason for less use was "fewer resources available" (Table 5-16). One household (or 20%) cited "other personal reasons," and 1 (or 20%) cited "fuel or equipment too expensive" as reasons for less use (Table 5-16). As for nonsalmon fish, of the 8 responses 4 households gave specific reasons for less use; 3 households (or 75%) cited "other personal reasons" and 1 household (or 25%) cited "less sharing" and "work interfered" as reasons for less use (Table 5-16). With regard to marine invertebrates, the survey received 6 responses; 3 of these households reported less use of these resources during the study year (Table 5-15). The majority (67%) of households attributed the main reason for the declined use of marine invertebrates to "other personal reasons" (Table 5-16). Finally, the survey received 6 responses for the use of small land mammals and of those responses 4 reported less use in 2010. All 4 households provided some reasons for less use; 3 (or 75%) households cited "other personal reasons" and 1 household cited "less sharing" (Table 5-16).

Of the 9 valid responses, there were 3 households who reported their use of all resources in 2010 as the same and only 1 household said they had used more wild resources during the study year than in recent years (Table 5-15). Overall, a small percentage of the total community households surveyed reported more use of wild resources in 2010 than in recent years; approximately 11% of the interviewed households reported more use of all wild resources in 2010. With regard to specific resource categories, salmon and vegetation were the only 2 resource categories in which more than 20% of Mentasta Pass households (22% of surveyed households) reported using more resources in 2010 than in previous years (Table 5-15). Twenty percent of Mentasta Pass households reported using more migratory birds in 2010 than in previous years. Interestingly, an equal amount (20%) of Mentasta Pass households reported using less migratory birds in 2010 than in previous years (Table 5-15). The survey results reflect a similar kind of split in the use of salmon as well; 22% of Mentasta Pass households reported using more salmon in 2010 than in recent years, and 22% less (Table 5-15). In the remaining resources categories, the percentage of households reporting more use in 2010 than in previous years was small—ranging from 11 percent to 17 percent (Table 5-15).

The most often cited reason given for the increased use of wild resources overall was included in the category of "other personal reasons" (Table 5-17). In specific resource categories; more sharing, personal reasons, and better resource availability were cited as reasons for increased use in 2010 in comparison to previous years (Table 5-17). For all resource categories, no one cited competition, regulations, less sharing, or fuel or equipment costs as reasons why their use of wild resources was less in 2010 (Table 5-17).

Table 5-18. – Estimated harvests by percentage, total pounds usable weight, and per capita pounds usable weight, Mentasta Pass, 1982, 1987, and 2010.

Harvests by percent usable weight				Harvests by pounds usable weight				Per capita harvests by pounds usable weight			
	1982	1987	2010		1982	1987	2010		1982	1987	2010
All resources		100.0%	100.0%	All resources		4,962.0	6,958.1	All resources		188.0	200.7
Salmon		16.2%	19.2%	Salmon		805.0	1,334.2	Salmon		30.5	38.5
Nonsalmon fish		19.9%	5.9%	Nonsalmon fish		988.0	409.2	Nonsalmon fish		37.4	11.8
Large land mammals		51.4%	60.4%	Large land mammals		2,552.0	4,204.0	Large land mammals		96.7	121.3
Small land mammals	ND	1.5%	3.6%	Small land mammals	ND	73.0	252.0	Small land mammals	ND	2.8	7.3
Marine mammals		ND	0.0%	Marine mammals		ND	0.0	Marine mammals		ND	0.0
Birds and eggs		3.2%	2.7%	Birds and eggs		157.0	191.2	Birds and eggs		6.0	5.5
Marine invertebrates		0.0%	1.2%	Marine invertebrates		0.0	86.1	Marine invertebrates		0.0	2.5
Vegetation		7.8%	6.9%	Vegetation		387.0	481.3	Vegetation		14.7	13.9

Source CSIS for 1982 and 1987; for 2010, ADF&G Division of Subsistence household surveys, 2011.

Note ND means no data.

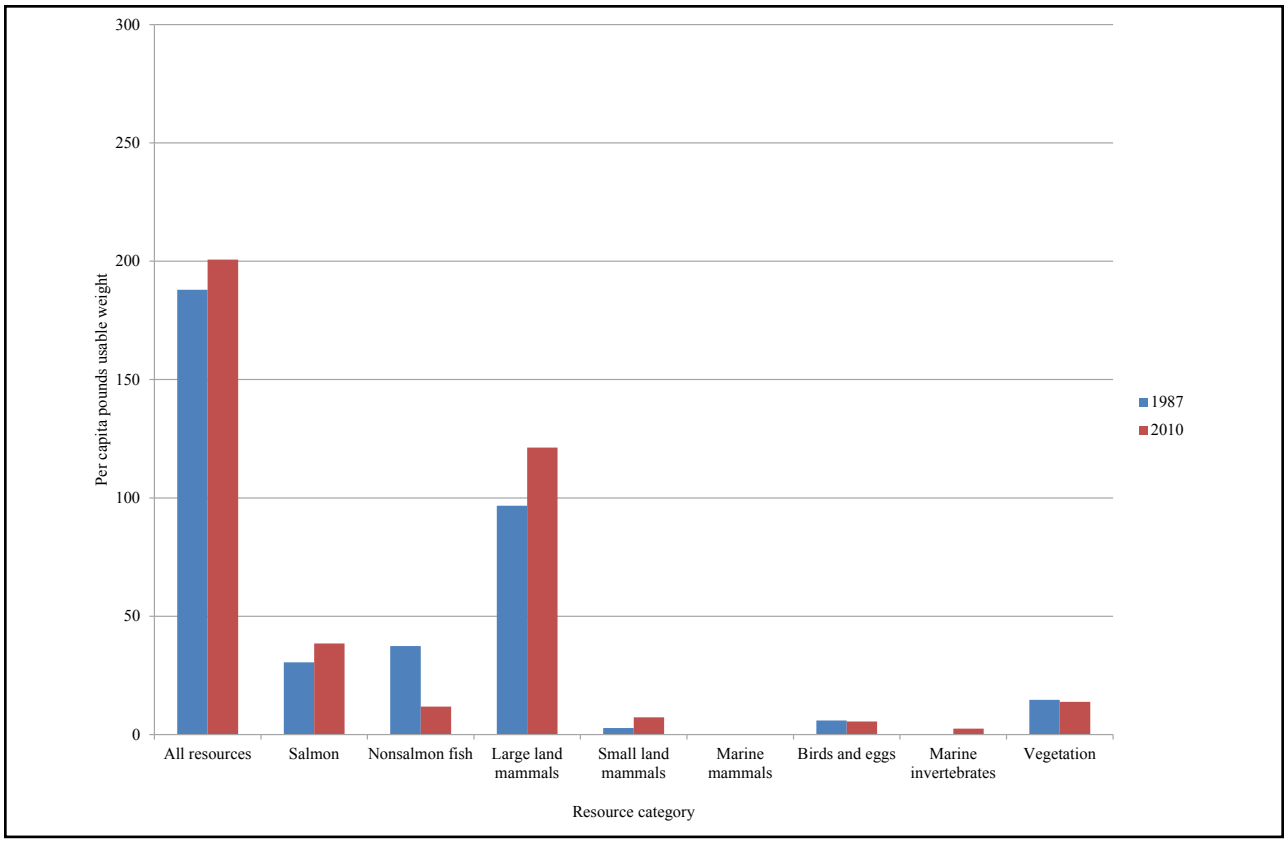


Figure 5-16.– Per capita harvests in pounds usable weight, Mentasta Pass, 1987 and 2010.

HARVEST DATA

Changes in the resource harvest by Mentasta Pass residents can also be discerned through comparisons with findings from other study years. Two comprehensive surveys were administered in the Copper River Basin prior to this multi-year survey; the first in 1982 and the second in 1987. The first survey combined the communities of Mentasta Lake and Mentasta Pass. The second did not. For this report, we can only compare those discrete results from the 1987 study for Mentasta Pass. Data representing the harvest efforts of Mentasta Pass residents in 1982 are included in the Chapter 4 analysis of Mentasta Lake.

Table 5-18 summarizes the estimated harvests in pounds usable weight for each major resource category from the 2 studies in 1987 and 2010. In 1987, the total harvest of wild resources in pounds usable weight for Mentasta Pass was 4,962 lb, or 188 lb per capita, and in 2010 it had increased to 6,958 lb, or 201 lb per capita (Table 5-18; Figure 5-16). Comparing the composition of the harvest from the 2 studies shows that only the total harvest of nonsalmon fish has declined from 1987 to 2010; all other resource categories have increased in total harvest (Figure 5-17). At the per capita level, nonsalmon fish was the resource category showing a major decline; 26 lb less per capita harvested in 2010 than in 1987 (Table 5-18; Figure 5-16). At the same time, the category of large land mammals has grown

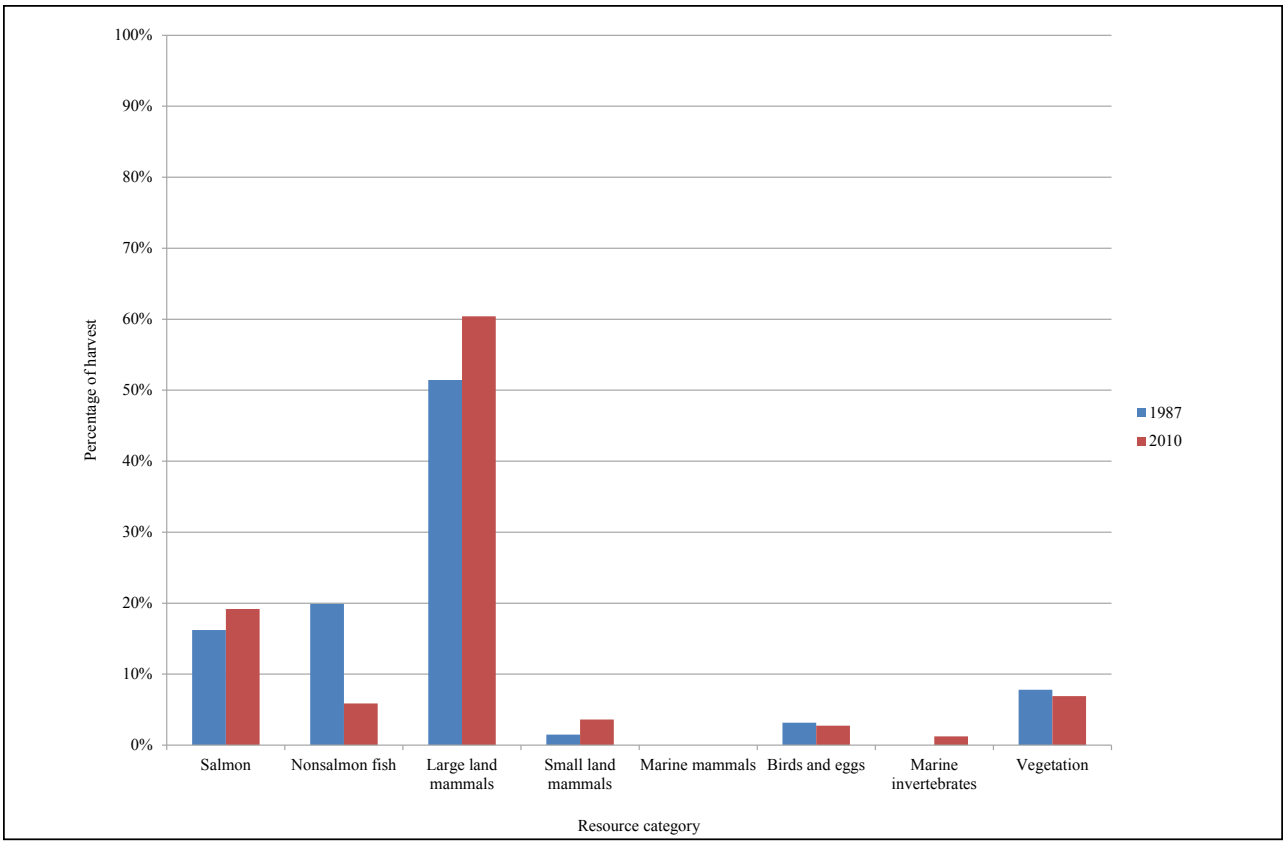


Figure 5-17.– Composition of total harvest as a percentage of usable weight, Mentasta Pass, 1987 and 2010.

the most; 25 lb more harvested per capita in 2010 than in 1987. The harvest of salmon had increased 8 lb per capita and the small land mammals harvest increased 5 lb per capita from 1987 to 2010. The per capita harvest of birds remained the same and vegetation experienced only a minor decline from 1987 to 2010 (Table 5-18).

Figure 5-17 summarizes the composition of total harvest as a percentage of the total subsistence harvest in pounds usable weight for each major resource category from the 2 comprehensive studies. The chart depicts a small increase in salmon harvests while similarly showing a substantial decline in nonsalmon fish harvests harvest between 1987 and 2010. One can also note a moderate increase in small land mammal harvests, and a relative consistency in the community's harvest of birds and vegetation resources. The most outstanding feature is the nearly 10% increase from 1987 to 2010 in the total amount of large land mammals harvested (Figure 5-17). On this last observation, it is important to recall that the community felt that large land mammals, moose in particular, are an essential part of the protein in their diet. The 2010 study found that while most respondents were satisfied with their 2010 moose harvest, a few households who share a lot of their moose meat said they could have used more. With regard to the slight decline in bird harvest, several respondents noted that upland game

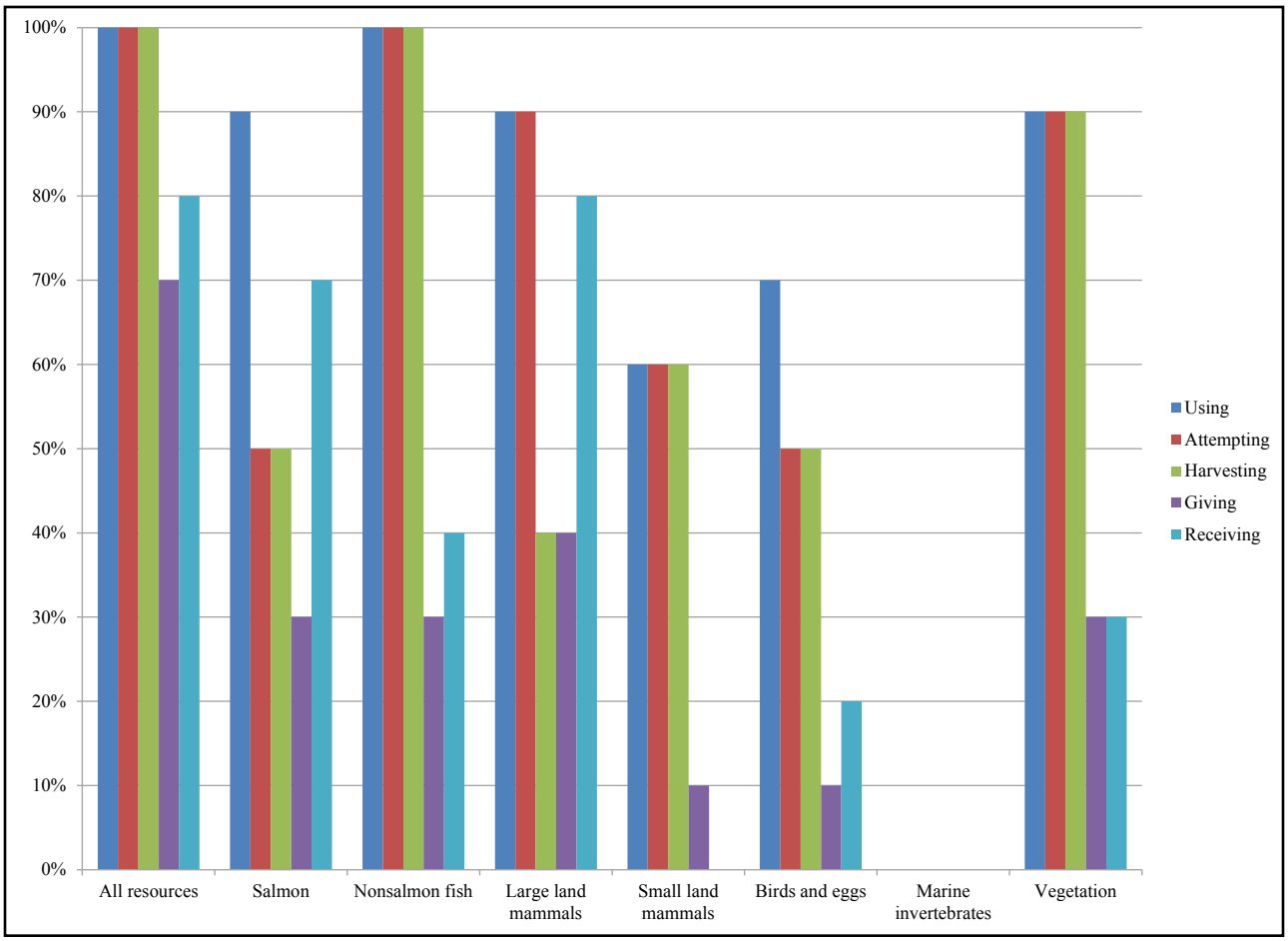


Figure 5-18.– Household harvests and uses of resources, Mentasta Pass, 1987.

birds were going through a low abundance cycle in 2010 and that realizing this they simply did not want to harvest as many.

Figures 5-18 and 5-19 present the level of household participation in using, attempting, and harvesting of wild resources in percentages for 1987 and 2010, respectively. These figures exhibit the continuous, high level of use of wild resources in the community of Mentasta Pass; at the same time they showcase some changes in harvest patterns between the 2 study years. According to the 1987 study, Mentasta Pass residents harvested most resources from these 3 resource categories: nonsalmon fish (100% of households attempting to harvest, harvesting, and using resources), vegetation (90% of households attempting to harvest, harvesting, and using resources), and large land mammals (90% of households attempting to harvest and using resources but only 40% harvesting) (Figure 5-18). In 2010 the 4 most sought-after resource categories were vegetation (100% of households attempting to harvest, harvesting, and using resources), large land mammals (100% of households using resources, 89% attempting to harvest, but only 67% harvesting), and salmon (89% of households using resources, 78% attempting to harvest, but only 56% harvesting) as well as nonsalmon fish (89% of households using resources, and 78% attempting to harvest and harvesting) (Figure 5-19).

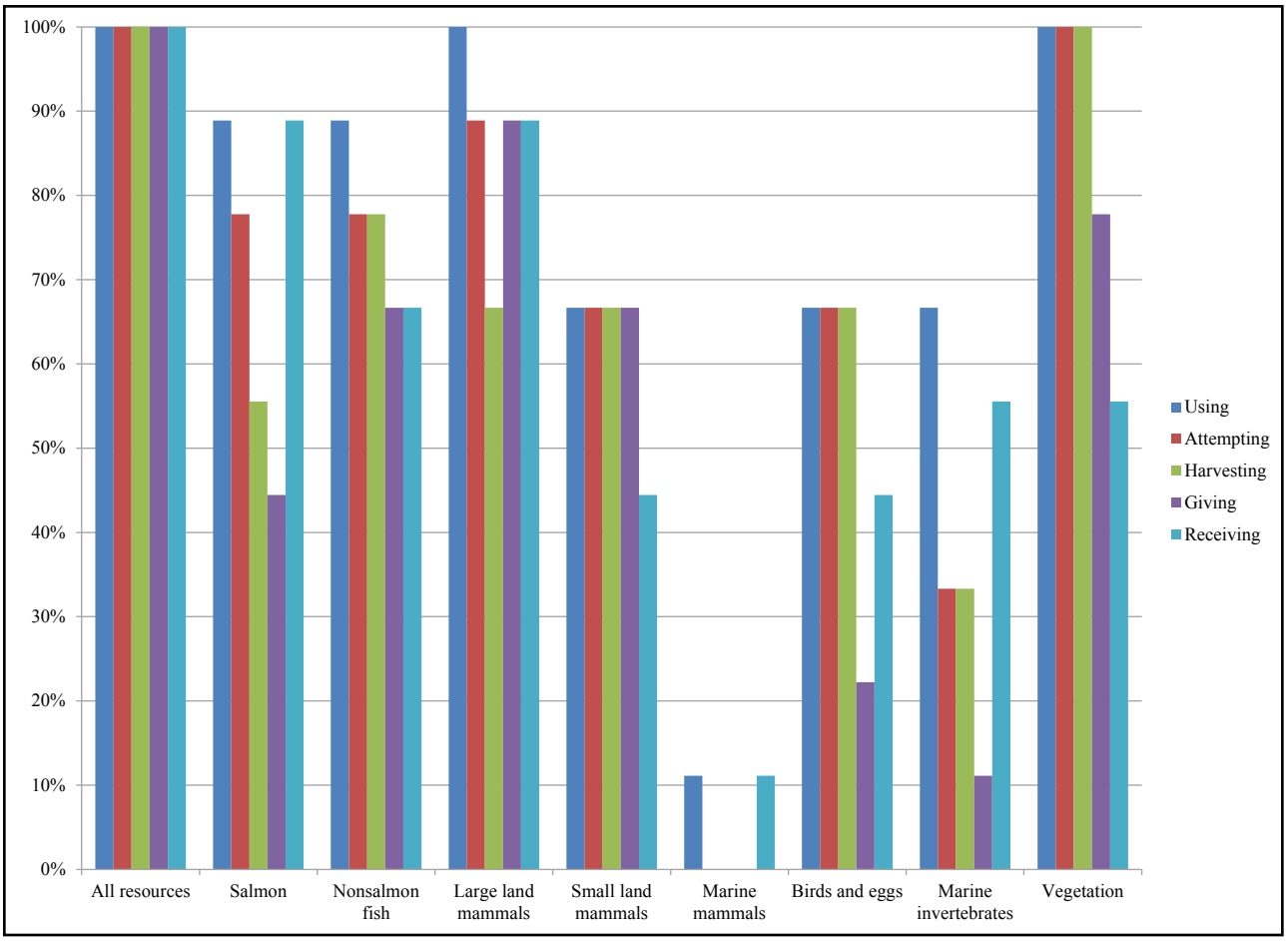


Figure 5-19.– Household harvests and uses of resources, Mentasta Pass, 2010.

As pointed out earlier, in terms of total pounds harvested, the harvest of nonsalmon fish has declined the most and the harvest of large land mammals has increased the most from 1987 to 2010 (Table 5-18). The harvest of other resources has remained relatively stable or increased slightly. In the community review meeting some Mentasta Pass residents commented that the harvest limits for Pacific halibut and freshwater fish (such as Arctic grayling) were more generous in 1987; the stricter regulations may have brought down the total harvest of nonsalmon fish in 2010. Another community review participant pointed out that participation in the traditional fall whitefishes spear fishery in the Slana River has declined from the last survey; this might have also impacted the level of nonsalmon fish harvested in 2010.

One possible explanation for the substantial increase in large land mammal harvest could be increased individual effort as opposed to hunting in groups. It is possible that when community members hunt in a group rather than individually, the reported total number of animals taken declines because only one person in the group will report the harvest regardless of the resource potentially being shared among a number of households. Another factor to be considered is hunters' increased success at harvesting; despite respondents' comments about 2010 being a poor harvest year for large land mammals, their

success at harvesting large land mammals could have been greater in 2010 than in 1987. In fact, in the community review meeting one participant commented that the moose populations in the area were not as good in the 1980s as they have been during the past few years.

The causes of changes and reasons for fluctuations in the levels of a community's subsistence harvests are complex and therefore it is a challenge to make generalized statements about subsistence harvest trends based on only 2 studies over the course of a couple decades. Although harvests of certain wild resources, such as large land mammals and nonsalmon fish, have changed over time, the 2 studies show that overall Mentasta Pass residents continue to profoundly rely on subsistence harvests. The same thought was emphasized by most Mentasta Pass households during the household surveys; their reliance on wild resources has remained consistent over time.

LOCAL CONCERNS REGARDING RESOURCES

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

LARGE LAND MAMMALS

Mentasta Pass residents commented that 2010 was a poor year for large land mammal harvests; this may not have been only due to resource availability, but could have been a result of many factors. The main reasons given by Mentasta Pass households for lower harvests were poor weather conditions (rainy summer), and many households stated that they were unusually busy during the study year, for example, because they were working on household construction projects or tending to the care of new children. One surveyed household expressed frustrations about the continuously changing hunting regulations. Another household commented that it is very difficult to get a local sheep hunting permit; because of this they have been forced to go sheep hunting in the Wrangell-St. Elias National Park and Preserve rather than in the Mentasta Pass area.

FISH

For salmon fishing, most Mentasta Pass residents travel to other communities in the Copper River Basin or to other parts of the state in order to harvest salmon. Some have family/friends with boats outside the Copper River watershed and the households fish there for salmon, Pacific halibut, and other marine fish and invertebrates. A few households mentioned that they had needed to rely on previous years' harvests because they were not able to travel.

BIRDS

Mentasta Pass residents harvested less ptarmigan and grouse in 2010. Survey respondents commented that this was because the species were going through a low population cycle in 2010 and they did not want to harvest as many individuals. Several respondents commented that they normally harvest significantly more of both species.

VEGETATION

According to Mentasta Pass residents, the 2010 study year was a good berry year. Community residents harvest berries from a large geographic area and some residents said that there were more available in 2010 than in recent years. According to one household, 2010 was a poor year for morels in the area but other vegetation was available as usual. Another household said they had harvested more wood because the trees had been in poor condition due to an unspecified illness.

OTHER COMMENTS

Mentasta Pass residents expressed their concerns about the survey being based on only 1 year of subsistence harvest data during the household surveys and the community review meeting. Because the fluctuation of harvest levels between years can be so significant, respondents questioned how truly representative data from 1 study year can be in the assessment of long-term subsistence harvest trends in their community. Some respondents additionally pointed out that yearly resource harvests are based solely on resource availability. Another household commented that resource use, harvest areas, and harvest amounts may vary annually due to changes in regulations or weather. During the mapping portion of the survey, many participants refused to map only 1 year of harvest activity; their maps reflect a harvest pattern that extends beyond the study year. Additionally, a number of households also refused to answer or were offended by the more "personal" queries regarding income and occupation.

Finally, residents commented that overall 2010 was a poor harvest year. This was due in part because of poor weather (plenty of rain) but also because of other, personal reasons such as needing to take care of small children or working on their house. Because of the wet summer and high river and creek water levels, a few households also said they had experienced problems accessing their hunting areas.

SUMMARY

The household survey findings demonstrate that Mentasta Pass residents continue to harvest a wide variety of resources in 2010, but that over time, while some resources remain critical and the per capita harvest remains fairly steady, the overall composition of harvest has changed from 1987 to 2010. Large land mammals made up 59% of the harvest, salmon 19%, vegetation 7%, and nonsalmon fish 6% of

the overall harvest in 2010. The resource categories of small land mammals, marine invertebrates, and birds and eggs each made up less than 4% of the remaining harvest. Significant changes in harvest composition over time are seen in the decline of the harvest of nonsalmon fish, and an increase in reliance on salmon and large land mammals. Mentasta Pass residents continue to use large areas for harvesting wild resources; residents also travel beyond the Copper River watershed to harvest some resources such as salmon, marine invertebrates, and nonsalmon fish.

By most respondent accounts, the harvest in 2010 was low compared to the previous 5 years; however, the 2010 total wild resource harvest was substantially larger than what was found in the 1987 study. Mentasta Pass residents expressed specific concerns about the survey being based on only 1 year of subsistence harvest data and questioned the quality of a long subsistence harvest trend assessment based on only 1 year of harvest data.

CHAPTER 6: DISCUSSION AND CONCLUSIONS

OVERVIEW OF FINDINGS FOR THE STUDY COMMUNITIES, 2010

The 4 communities included in this study are located within or just along the periphery of the upper reaches of the Copper River drainage and draw on the lands within and surrounding the Wrangell-St. Elias National Park and Preserve for the harvesting and gathering of wild resources. The communities range in location from the mid-Basin position of Copper Center to the upper extent of the watershed where the proximal communities of Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass are all within 30 minutes of each other by vehicle and rely upon many of the same areas for the harvest of wild foods.

Table 6-1 summarizes selected findings regarding demography, cash economy, and wild resource uses in 2010 by the study communities of Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass. These communities differed from one another in size, ethnic composition, and percentage of household heads that were born in Alaska. Mentasta Lake, with an estimated population of 106, claimed a Native population of 92% and the highest percentage of household heads born in Alaska (94%). Copper Center had the highest number of residents (431), and the second highest percentage of Alaska Native residents and household heads born in Alaska (39% and 42%, respectively). Slana/Nabesna Road, population 176, was notable for having the lowest percentage of Alaska Native residents and the lowest percent of household heads born in Alaska; 17% and 12%, respectively. Mentasta Pass had the smallest estimated population in the area (35) with an Alaska Native population of approximately 23%; about 18% of the household heads were born in the state of Alaska (Table 6-1). Finally, this study's 2010 population estimates, calculated in 2011, produced data that demonstrated some growth in the study communities since the U.S. Census Bureau population survey was conducted for the 2010 federal census. See community chapters for discussion on current and historical populations.

In terms of the cash sectors of the local economies during the 2010 study year, the community with the highest proportion of year-round employment was Mentasta Pass (79%), followed by Copper Center (67%) (Table 6-1). These 2 communities also had higher per capita and household incomes for slightly different reasons. Copper Center is very near the Copper Basin hub community of Glennallen which provides the most consistent year-round wage earning opportunities of the area. Mentasta Pass is a small community where only a few households provided a response to survey questions on income; those that responded were employed. Additionally, Mentasta Pass is not far from the Interior

Table 6-1. – Comparison of selected study findings for Copper River Basin communities, 2010.

	Copper Center	Mentasta Lake	Slana/ Nabesna Road	Mentasta Pass
Demography				
Population	431	106	176	35
Percent Alaska Native	39.4%	92.1%	16.5%	23.1%
Percentage of household heads born in Alaska	41.7%	94.1%	12.2%	17.6%
Average length of residency of household heads (yr)	23.2	31.4	20.6	22.6
Cash economy				
Estimated number of jobs	318.7	67.4	177.3	48.0
Average number of months employed	10.3	8.6	9.2	10.6
Percentage of employed adults working year-round	66.7%	39.1%	57.4%	78.6%
Average household income	$45,935	$21,993	$20,157	$58,602
Per capita income	$16,857	$7,439	$9,840	$20,285
Resource harvest and use				
Per capita harvest, pounds edible weight	219.8	168.7	240.4	200.7
Average household harvest, pounds edible weight	599.1	498.7	492.4	579.8
Average number of resources used per household	10.4	16.2	13.0	26.9
Average number of resources attempted to harvest per household	9.1	12.0	11.6	23.4
Average number of resources harvested per household	7.2	10.0	9.8	17.9
Average number of resources received per household	4.8	8.8	4.6	13.9
Average number of resources given away per household	3.9	7.9	3.8	12.3

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

hub community of Tok, which also provides year-round employment opportunities for some of the study community residents.

As estimated in pounds usable weight per person, harvests of wild foods in 2010 ranged from 240 lb per person in Slana/Nabesna Road to 169 lb per person in Mentasta Lake, with the harvests in the remaining communities exceeding 200 lb per person (Table 6-1). Harvests were also diverse: in Copper Center households used an average of 10 different kinds of resources (including those resources not eaten, such as firewood or furbearers), in Mentasta Lake the household average was 16 resources, in Slana/Nabesna Road an average of 13 types of resources were used, and in Mentasta Pass surveyed households used on average 27 different kinds of wild resources; the greater variety of resources in this last community is due to the small sample size. Additionally, variety was demonstrated in the number of resources households attempted or sought to harvest during the study year (from an average of 9 in Copper Center to an average of 23 in Mentasta Pass), the average number of resources that were actually harvested (from an average of 7 in Copper Center to 18 in Mentasta Pass), and the average numbers of resources received and given by households in each study community (Table 6-1).

During the 2010 study year, residents of all communities participated in subsistence hunting, fishing, and gathering for nutrition and to support their way of life. A vast majority of every household used wild resources: 100% of households in 2 of the study communities and more than 96% in the other 2. Eighty-six percent or more of the households in all 4 communities engaged in harvesting activities, with 2 communities having a harvest participation rate of more than 97%. The sharing of resources played a significant role in the distribution of wild foods; in Copper Center 88% of the surveyed households

reported they received wild food from others, in Slana/Nabesna Road 92% reported receiving wild foods, and 100% of the surveyed households in Mentasta Lake and Mentasta Pass reported receiving subsistence foods from others (Figure 6-1).

HARVEST COMPOSITION IN 2010

Harvests in the study communities were composed of a variety of resources including salmon and other fish, large and small land mammals, birds, a small harvest of marine invertebrates, and wild plants. Figure 6-2 represents the composition of total harvest for each study community by resource category. It is not surprising to note that fish (both salmon and nonsalmon fish) composed the bulk of the harvest for Copper Center (71%) and Slana/Nabesna Road (71%); both have in-community access to fish wheels for the harvest of salmon as well as nearby locations where freshwater fish can be caught. Additionally, households in Copper Center and Slana/Nabesna Road make regular trips to sport fish out of Valdez; Pacific halibut contributed to 31% of the nonsalmon fish harvest in Copper Center and 18% of the nonsalmon harvest in Slana/Nabesna Road (figures 2-7 and 3-7). In the 2 furthermost up-river communities of Mentasta Lake and Mentasta Pass fish featured less prominently in the annual harvest; approximately 42% of the harvest in Mentasta Lake and 25% of the harvest in Mentasta Pass were fish, most of which was salmon (Figure 6-2). Instead, large land mammals were the major contributors to the harvests of these up-river communities; 43% of the harvest in Mentasta Lake and 60% in Mentasta Pass, most of which was moose (figures 6-2, 4-3, and 5-3).

Vegetation, almost all of which was berries, made important contributions to all community harvests, perhaps not by weight but as one of the most used resource categories in all 4 communities. The remaining categories of small land mammals, marine invertebrates, and birds and eggs made smaller contributions to overall community harvests in terms of pounds edible weight. Many households also harvested and used wood and trapped animals for fur, but firewood and some furbearers are typically not eaten and are thus excluded from the weight calculations. Table 6-2 represents the top 10 most used resources in each study community, whether that resource was harvested by the responding household or shared with the household by other harvesters. Wood made the top 10 list in all communities, as did sockeye salmon, moose and multiple species of berries.

PER CAPITA HARVEST TRENDS

Figure 6-3 shows per capita total harvest estimates over the course of three studies starting in 1982 to the present study in 2010. Overall, the harvests in the study communities have increased over time, with the exception of Slana/Nabesna Road whose harvest has fluctuated (see Chapter 3 for more discussion on possible reasons why Slana's harvest follows a different trend than other communities). Copper Center survey results demonstrate the most consistent increase in subsistence harvests per

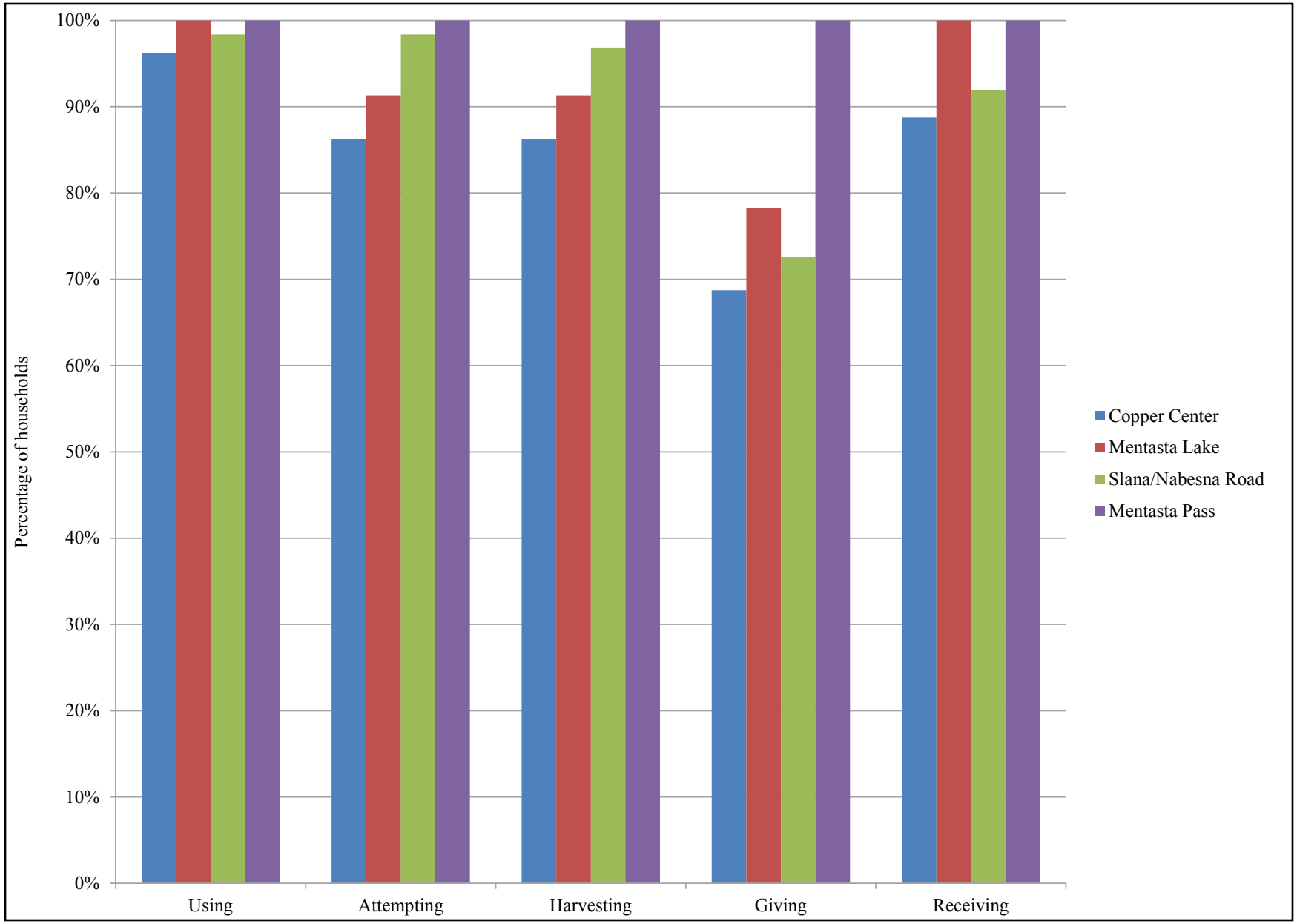


Figure 6-1.– Harvests and uses of wild resources, Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, 2010.

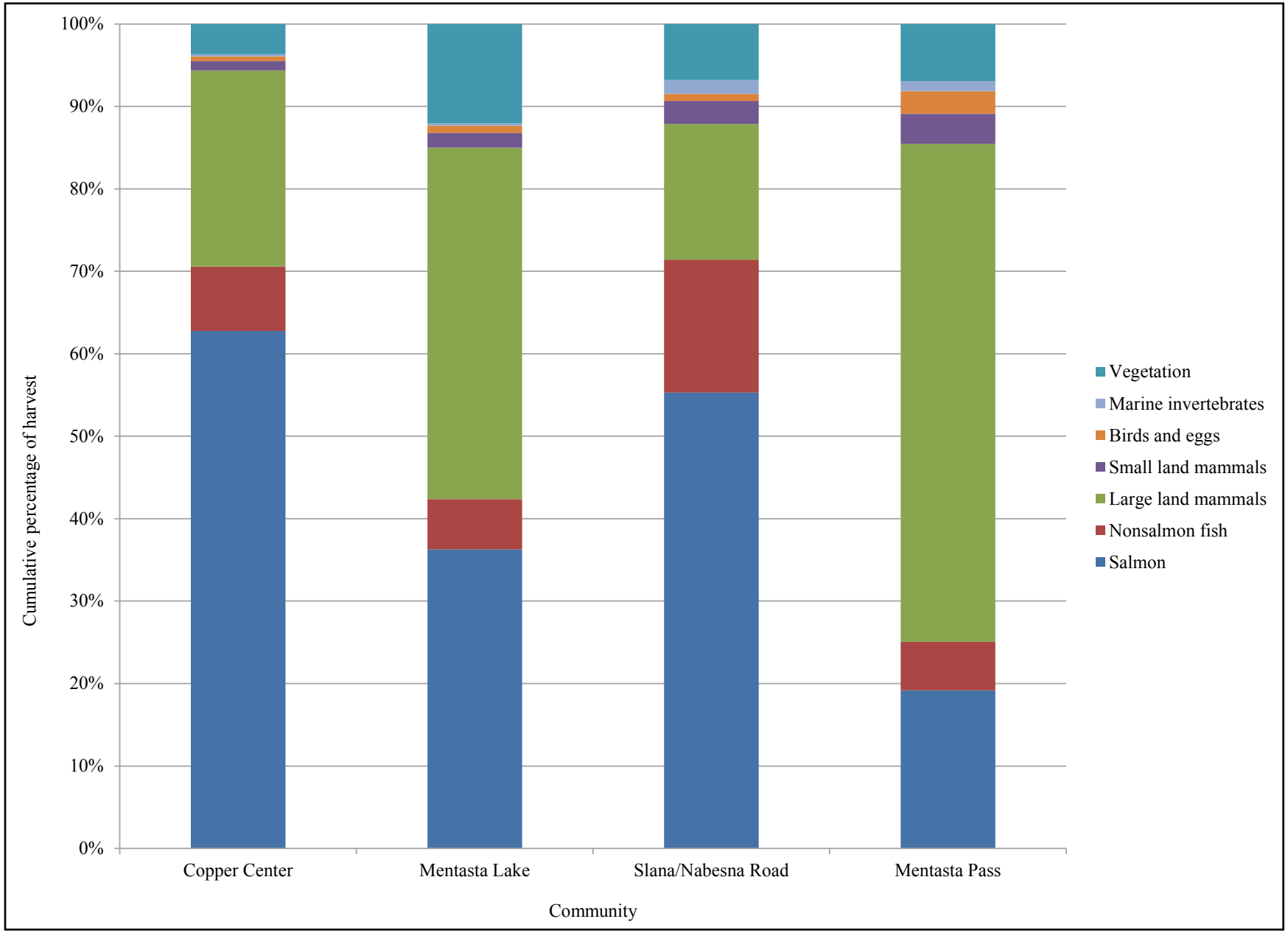


Figure 6-2.– Harvest composition percentage by resource category, Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, 2010.

Table 6-2. – Top 10 ranked resources used for Copper River Basin communities, 2010.

Copper Center			Mentasta Lake		
Rank	Resource	Percentage of households using	Rank	Resource	Percentage of households using
1.	Sockeye salmon	86.3%	1.	Moose	95.7%
2.	Blueberry	68.8%	1.	Blueberry	95.7%
3.	Moose	66.3%	3.	Sockeye salmon	78.3%
4.	Chinook salmon	57.5%	4.	Lowbush cranberry	73.9%
5.	Wood	51.3%	5.	Arctic grayling	69.6%
6.	Pacific halibut	47.5%	6.	Raspberry	65.2%
6.	Caribou	47.5%	7.	Wood	56.5%
8.	Lowbush cranberry	45.0%	8.	Coho salmon	52.2%
9.	Coho salmon	32.5%	8.	Chinook salmon	52.2%
9.	Arctic grayling	32.5%	8.	Round whitefish	52.2%

Slana/Nabesna Road			Mentasta Pass		
Rank	Resource	Percentage of households using	Rank	Resource	Percentage of households using
1.	Blueberry	83.9%	1.	Moose	100.0%
2.	Sockeye salmon	80.6%	1.	Wood	100.0%
2.	Wood	80.6%	3.	Sockeye salmon	88.9%
4.	Moose	71.0%	3.	Arctic grayling	88.9%
5.	Lowbush cranberry	64.5%	3.	Blueberry	88.9%
6.	Pacific halibut	62.9%	3.	Lowbush cranberry	88.9%
7.	Arctic grayling	50.0%	3.	Raspberry	88.9%
8.	Raspberry	46.8%	8.	Caribou	77.8%
9.	Caribou	40.3%	9.	Pacific halibut	66.7%
10.	Spruce grouse	37.1%	9.	Mushrooms	66.7%

Source ADF&G Division of Subsistence household surveys, 2010.

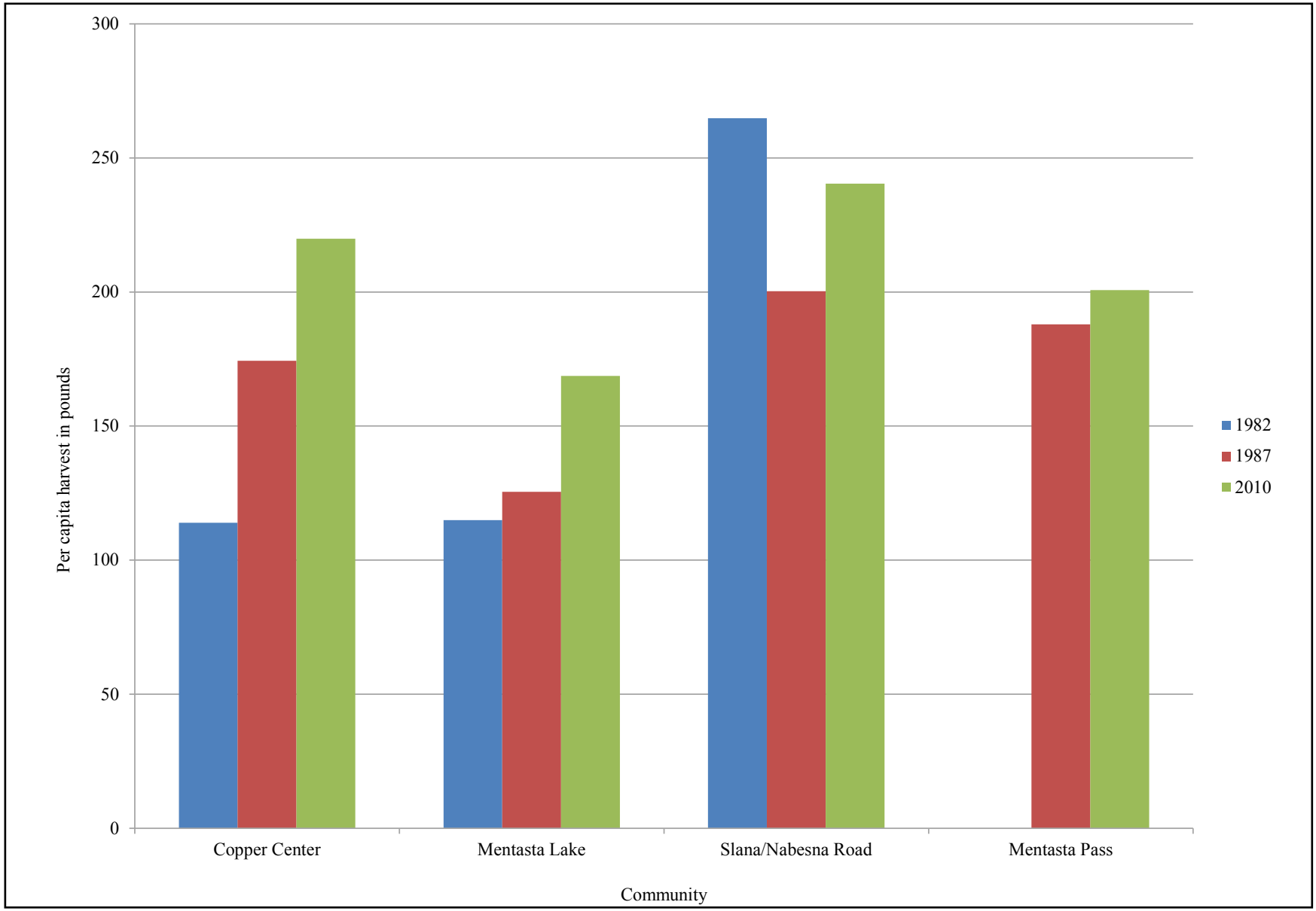


Figure 6-3.– Per capita harvest comparison for all resources for Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, 1982, 1987, and 2010.

capita: from a harvest of 114 lb per capita in 1982, 174 lb per capita in 1987, to a harvest of 220 lb per capita in 2010. Mentasta Lake also demonstrated a growth in per capita harvests between the study years: there was a slight rise in harvest levels between the 1982 and 1987 study years (115 lb per capita to 126 lb per capita), and then a greater increase to 169 lb per capita in the 2010 study year. Mentasta Pass was surveyed in 1982 as part of the Mentasta Lake community, and those results cannot be isolated. However, Mentasta Pass was surveyed as a discrete community in the following study years and experienced a slight harvest increase from 188 lb per capita in 1987 to 200 lb per capita in 2010. Finally, Slana/Nabesna Road started with a high per capita harvest of 265 lb in 1982, dropped to a 200 lb per capita harvest in 1987, then rose again to a 240 lb per capita harvest in 2010.

In spite of a documented increase in per capita harvests across the study years, household assessments of recent trends in subsistence harvests were poor. When asked whether household subsistence harvests were less, same, or more than other harvests over the last 5 years, the largest percentage of responding households from study communities said their harvest was less (figures 2-13, 3-14, 4-14, and 5-15). Mentasta Lake alone estimated that the overall harvest of subsistence resources was about the same in 2010 as in the previous 5 years. Additionally, older members from many of the study communities recall times long before the first ADF&G study in 1982 when harvests of all resources were significantly higher, and access to prime hunting, fishing, and gathering areas was not complicated by federal, state, or corporate boundaries.

Salmon

As noted in the previous sections, salmon (most of which was sockeye salmon) made up a majority of the harvest in Copper Center and Slana/Nabesna Road and was the second most harvested category in Mentasta Lake and Mentasta Pass in 2010. As estimated in usable pounds, salmon composed 63% of the harvest in Copper Center (138 lb per capita), 55% of the harvest in Slana/Nabesna Road (133 lb per capita), 36% of the harvest in Mentasta Lake (62 lb per capita), and 19% of the harvest in Mentasta Pass (38 lb per capita) (Figure 6-4 and tables 2-11, 3-9, 4-9, and 5-9). Additionally, despite the varying contribution to harvest composition in each community, the per capita salmon harvest has increased in all study communities since the first comprehensive survey was conducted in 1982 (Figure 6-4). Notably, the patterns of increase in per capita salmon harvest in the study communities most closely replicates the patterns of per capita harvest of all resources across study years; as per capita harvests increased over the years (or decreased as in Slana/Nabesna Road) so too did the per capita harvest of salmon (figures 6-3 and 6-4).

While per capita salmon harvests continued to rise across the study years, perceptions of recent salmon harvest success varied from community to community. In all communities a combined majority of respondents reported their harvest remained the same or had actually increased in 2010 compared to harvests from the 5 years previous (figures 2-13, 3-14, 4-14, and 5-15). However a large percentage of

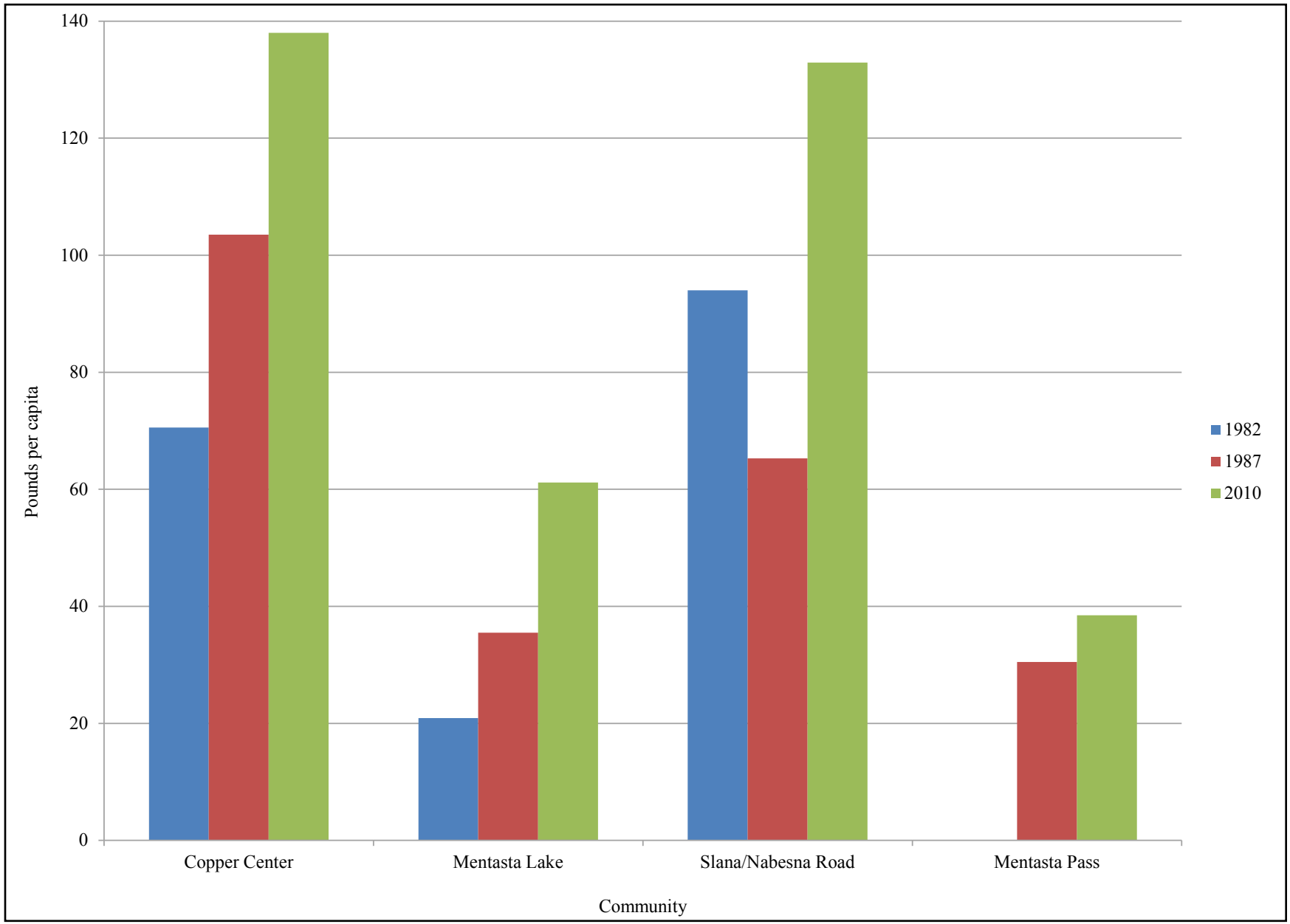


Figure 6-4.– Per capita salmon harvests by community for Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, 1982, 1987, and 2010.

respondents in Mentasta Lake and Slana/Nabesna Road reported that they felt that their 2010 harvest was down from those harvests of the previous 5 years.

Our ability to document and confirm these more recent trends is limited by the length of time between comprehensive subsistence surveys (23 years since the last in the area), and the challenge of comparing data from other sources. For example, another means of discerning trends is through review of and comparison with other harvest assessment programs like hunting and fishing permits. In the Copper River Basin this is a challenging endeavor. Some communities have different mailing addresses from their place of residence and some families may obtain their harvest from a completely different area. For example, we know that 1 household in Mentasta Pass obtained salmon from Southeast and 2 households in Mentasta Lake obtained salmon from Cook Inlet. All 3 households contributed significantly to the harvest total in their communities and none of their harvest is represented in the area permitting system.

Large Land Mammals

Large land mammals was the largest harvest category in Mentasta Pass and Mentasta Lake and the second most harvested category in both Copper Center and Slana/Nabesna Road. As estimated in usable pounds, large land mammals composed 60% of the harvest in Mentasta Pass (121 lb per capita), 43% of the harvest in Mentasta Lake (72 lb per capita), 24% of the harvest in Copper Center (52 lb per capita), and 16% of the harvest in Slana/Nabesna Road (40 lb per capita) (Figure 6-5 and tables 2-11, 3-9, 4-9, and 5-9). Most of the large land mammal harvests in all communities were composed of moose and, to a lesser extent, caribou. Moose composed the largest portion of the large land mammal harvest in all study communities for the 2010 study year; and in all communities, aside from Slana/Nabesna Road (which has experienced a steady decrease in moose harvest over time), per capita moose harvests have increased since the 1982 survey (Figure 6-5). Caribou harvest fluctuated over all 3 study years; however, the per capita harvest was highest during the 1987 study year for all communities except Mentasta Pass (Figure 6-6).

Interviewed households' assessments of recent trends in the large land mammal harvest reflect a somewhat similar picture with most Copper Center and Mentasta Lake respondents who reported their harvest in 2010 as being the same or more than harvests of recent years (figures 2-13 and 4-14), but a larger percent of Slana/Nabesna Road respondents reported their recent harvests as less than those of previous years (Figure 3-14). Of note, a majority of Mentasta Pass households also reported their harvest of large land mammals as less in 2010 than in recent years despite what appears to be a slight increase in the community's large land mammal harvest from the 1987 study year to 2010 (Figure 5-16).

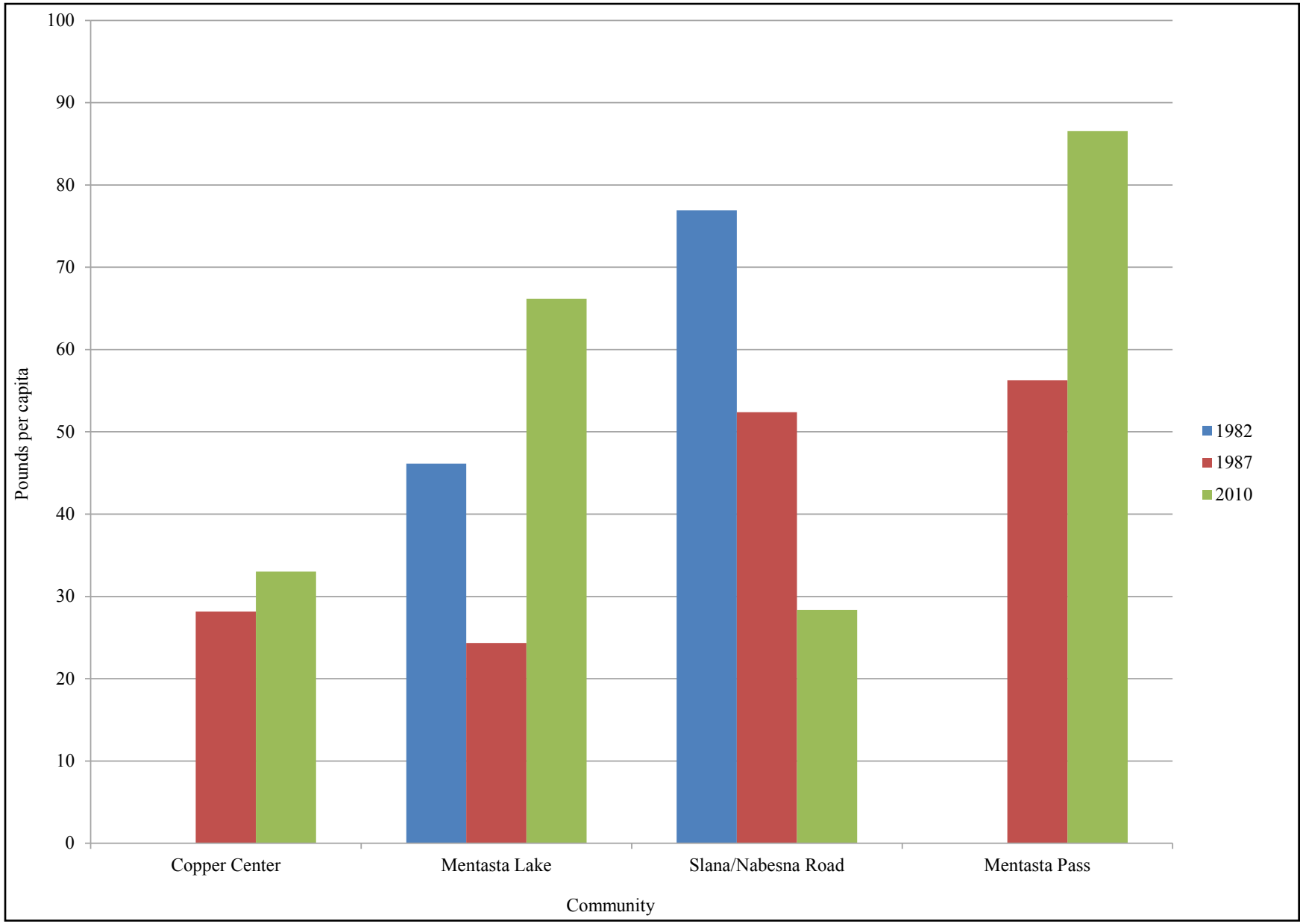


Figure 6-5.– Harvest of moose, pounds per capita for Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, 1982, 1987, and 2010.

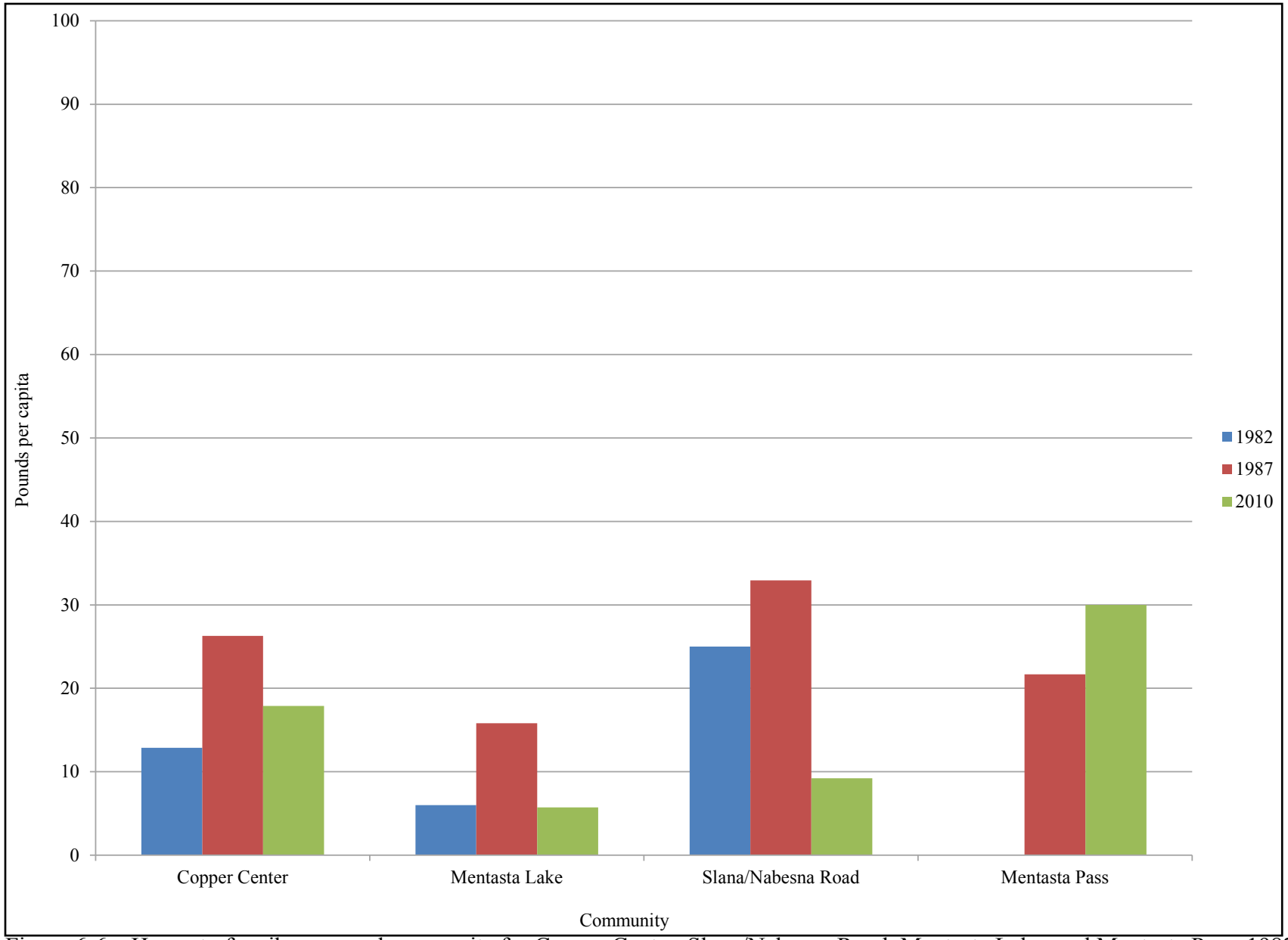


Figure 6-6.– Harvest of caribou, pounds per capita for Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass, 1982, 1987, and 2010.

CONCLUSION

This study documented the continuing importance of subsistence hunting, fishing, and gathering to the residents in the upper Copper River communities of Copper Center, Slana/Nabesna Road, Mentasta Lake, and Mentasta Pass. In the 2010 study year, almost all households in the 4 communities used wild resources coinciding with a high level of per person participation in fishing, hunting, and gathering efforts (ranging from 76% participation in Copper Center to almost 97% in Slana/Nabesna Road). Subsistence harvests were primarily composed of salmon, large land mammals, nonsalmon fish, and vegetation (especially berries and firewood). Other resources—like small land mammals for food and fur, upland game birds and migratory waterfowl, even marine invertebrates from outside the region—demonstrated a diversity of harvest and use by many households in the study. The exchange of resources was of critical importance for all communities surveyed as many families and individuals were reliant upon resources shared by other, high-harvesting households and detailed networks of exchange assisted in increasing the diversity of foods found in most residences. Even when subsistence harvest activities were hampered by age or inability, most residents expressed their preference for wild foods compared to those that could be purchased at the store. Even those wild foods gained by less conventional means (e.g., road kill or extra meat received from guiding activities, salmon shared as a byproduct of the commercial fishing and hatchery industry) were always greatly appreciated.

At the end of each survey and during community reviews, many participants expressed great concern that the study year represented a low harvest year and documents not only a decline in the normal harvest levels but a significant decline in participation compared to recent years. Some of the reasons the year was deemed a poor one in regard to harvests included a decline in resources, particularly moose; increased pressure from hunters residing outside the region; land access issues particularly affecting the harvest of firewood, trapping, and access to large land mammal hunting areas; and reasons of a more personal nature such as illness, work, or a decline in the number of household members. Study participants in most communities also expressed concerns that mapping only 1 year of activity might limit access to harvest areas in the future if this study did not demonstrate reliance upon lands outside of those used during the study year. While all these observations were sincerely offered, the data collected from the survey instrument demonstrated that most persons felt their use of most resources in 2010 was comparable to that of recent years. In addition, and more significantly, all 4 communities demonstrated a notable increase in per capita harvest since the last comprehensive subsistence survey was conducted in 1987.

Given this increase in subsistence harvests over the last 25 years, it is not surprising that respondents surveyed in the study communities expressed concerns about their future opportunities to hunt, fish, and gather wild resources in a manner consistent with their traditions, their chosen lifestyle, and at levels that meet their harvest goals. As demonstrated by the study findings, subsistence uses of healthy fish and wildlife populations meaningfully link people to their past, are vital to the present health of

each community, and encourage optimism about the future. In addition, providing opportunities for subsistence hunting and fishing is a mandate of state and federal law. Local residents desire to continue subsistence activities, not only for themselves, but also for their children and other future generations. The intent of this report has been to provide information that will help the communities work toward their goal of sustaining their way of life.

This report represents year 2 of a multi-year study effort to update the subsistence harvest data of all communities in the Copper River Basin. In year 3 of this study, the discussion will expand to include a more detailed analysis of trends in harvest patterns for all communities surveyed over the course of the 3-year effort; Chistochina, Copper Center, Slana/Nabesna Road, Mentasta Lake, Mentasta Pass, Kenny Lake/Willow Creek, Gakona, McCarthy, and Chitina.

ACKNOWLEDGEMENTS

The Division of Subsistence would like to thank everyone who helped make our work throughout the Copper Basin a success. In Copper Center, representatives from the Native Village of Kluti Kaah, the neighborhood of Silver Springs, and those from the wider Copper Center area contributed through their support of the project by offering recommendations for local research assistants, key respondent interviews, and by providing feedback on the draft of the report. We would also like to thank our local research assistants Mary Ella Hicks, Lucille Lincoln, Rebecca Nelson, and Barb Sanders. They were all indispensable with the development of the household list and helped to inform and guide quality data collection.

In Slana/Nabesna Road we were lucky enough to have the expert assistance of local resident Vicki Penwell, first in the development of the community household list and then as the lead local research assistant helping to organize and conduct the household surveys. Vicki was also instrumental in identifying additional talent for local research assistance, bringing on Leah Dewitt and Erin Lehman. All 3 provided expert guidance on working within the community. We cannot thank them enough.

For our work in Mentasta Lake, we would first like to extend our gratitude to the Mentasta Traditional Council for their approval of and assistance with our work in their community. They recommended our exceptional local research assistants and allowed valuable office space to be used as a project base and place to conduct interviews. Our local research assistants were outstanding: Melody Chickalusion, Smitty Chilligan, and Charles David. All 3 provided excellent assistance in moving through the community, and Melody and Smitty made a wonderful team both mapping and conducting the survey as needed on their own.

We could not have conducted this survey in Mentasta Pass without the guidance and assistance of Sue Entsminger. Sue was our sole local research assistant during the study period, and she graciously offered her home from which to conduct the community review of the preliminary data, inviting both residents and research staff to an informal night of dinner and discussion.

Finally we wish to extend our thanks to project partner Barbara Cellarius and the Wrangell-St. Elias National Park and Preserve for guidance in all stages of project implementation and completion, and for providing an excellent home base to work from while in the Copper River Basin.

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Appendix A–Survey

SURVEY FORM FOR COPPER CENTER

COMPREHENSIVE SUBSISTENCE SURVEY

COPPER CENTER, ALASKA

January to December, 2010

OMB# 1024-0224(NPS# 10-001)
Expiration date: June 30, 2011

This survey is used to estimate subsistence harvests and to describe community subsistence economies. We will publish a summary report, and send it to all households in your community. We share the community information with the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Park Service. We work with the Federal Regional Advisory Councils and with local Fish and Game Advisory Committees to better manage subsistence, and to implement federal and state subsistence priorities.

We will NOT identify your household. We will NOT use this information for enforcement. Participation in this survey is voluntary. Even if you agree to be surveyed, you may stop at any time.

HOUSEHOLD ID:		
COMMUNITY ID:	COPPER CENTER	103
RESPONDENT ID:		
INTERVIEWER:		
INTERVIEW DATE:		
START TIME:		
STOP TIME:		
DATA CODED BY:		
DATA ENTERED BY:		
SUPERVISOR:		



COOPERATING ORGANIZATIONS

NATIVE VILLAGE OF KLUTI KAAH
P.O. BOX 68
COPPER CENTER, AK 99573

907-822-5541

WRANGELL-ST. ELIAS
NATIONAL PARK AND PRESERVE
P.O. BOX 439
COPPER CENTER, AK 99573-0439

907-822-5234

DIVISION OF SUBSISTENCE
ALASKA DEPT OF FISH & GAME
333 RASPBERRY ROAD
ANCHORAGE, AK 99518

907-267-2353

HOUSEHOLD MEMBERS

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2010…
…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 COPPER CENTER (number)	WHAT IS THE HIGHEST LEVEL OF EDUCATION ATTAINED? (number)
HEAD 1	Y N	M F	Y N				YRS	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	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	YRS
04	Y N	M F	Y N				YRS	YRS
05	Y N	M F	Y N				YRS	YRS
06	Y N	M F	Y N				YRS	YRS
07	Y N	M F	Y N				YRS	YRS
08	Y N	M F	Y N				YRS	YRS
09	Y N	M F	Y N				YRS	YRS
10	Y N	M F	Y N				YRS	YRS
11	Y N	M F	Y N				YRS	YRS
12	Y N	M F	Y N				YRS	YRS
13	Y N	M F	Y N				YRS	YRS
14	Y N	M F	Y N				YRS	YRS
15	Y N	M F	Y N				YRS	YRS

PERMANENT HH MEMBERS: 01 **COPPER CENTER: 103**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2010…
…did this person...

PERSON	Fish		Large Land Mammals		Small Land Mammals Furbearers		Birds & Eggs		Plants/Berries/Wood	
ID# FROM	Process	Fish For	Process	Hunt	Process	Hunt/Trap	Process	Hunt/Gather	Process	Gather
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 **COPPER CENTER: 103**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2010…
…did this person...

PERSON ID# FROM Page 2	Build Fish Wheels *(circle)*	Sew Skins/Cloth *(circle)*	Cook Wild Foods *(circle)*
Head 1	Y N	Y N	Y N
Head 2	Y N	Y N	Y N
03	Y N	Y N	Y N
04	Y N	Y N	Y N
05	Y N	Y N	Y N
06	Y N	Y N	Y N
07	Y N	Y N	Y N
08	Y N	Y N	Y N
09	Y N	Y N	Y N
10	Y N	Y N	Y N
11	Y N	Y N	Y N
12	Y N	Y N	Y N
13	Y N	Y N	Y N
14	Y N	Y N	Y N
15	Y N	Y N	Y N

PERMANENT HH MEMBERS: 01 **COPPER CENTER: 103**

HARVESTS: COMMERCIAL SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2010…
…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 2010. 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 2010 DID MEMBERS OF YOUR HH…		IN 2010, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2010, 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, 2010…
…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 2010. 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 2010 DID MEMBERS OF YOUR HH…		IN 2010, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2010, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
HALIBUT	Y N	Y N	LBS	LBS	LBS		
121800000							
HERRING	Y N	Y N	GAL	GAL	GAL		
120200000							
HERRING SPAWN ON KELP	Y N	Y N	GAL	GAL	GAL		
120306000							
HERRING SAC ROE	Y N	Y N	GAL	GAL	GAL		
120304000							
PACIFIC COD (GRAY)	Y N	Y N	IND	IND	IND		
121004000							
PACIFIC TOM COD	Y N	Y N	IND	IND	IND		
121008000							
SCULPIN	Y N	Y N	IND	IND	IND		
123000000							
STARRY FLOUNDER	Y N	Y N	IND	IND	IND		
121406000							
SMELT	Y N	Y N	GAL	GAL	GAL		
120400000							
ROCKFISH	Y N	Y N	IND	IND	IND		
122600000							
LAMPREY	Y N	Y N	IND	IND	IND		
122000000							
LINGCOD	Y N	Y N	IND	IND	IND		
121606000							

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, 2010…
…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 2010. 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 2010 DID MEMBERS OF YOUR HH…		IN 2010, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2010, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
TANNER CRAB	Y N	Y N	LBS	LBS	LBS		
501012000							
DUNGENESS CRAB	Y N	Y N	LBS	LBS	LBS		
501004000							
SHRIMP	Y N	Y N	GAL	GAL	GAL		
503400000							
SQUID	Y N	Y N	GAL	GAL	GAL		
503800000							
OCTOPUS	Y N	Y N	IND	IND	IND		
502200000							
	Y N	Y N					
	Y N	Y N					
	Y N	Y N					
	Y N	Y N					
	Y N	Y N					
	Y N	Y N					
	Y N	Y N					
	Y N	Y N					

COMMERCIAL MARINE INVERTEBRATE HARVEST: 03 **COPPER CENTER: 103**

HARVESTS: SALMON (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest SALMON ?.....Y N

Between JANUARY and DECEMBER, 2010…
…Did members of your household USE or TRY TO HARVEST salmon?.....Y N

IF NO, go to the next harvest page.

If YES, continue on this page…

Please estimate how many salmon ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2010, 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 2010 DID MEMBERS OF YOUR HH…				IN 2010, HOW MANY _____ DID YOUR HOUSEHOLD…				
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH A FISH WHEEL?	…CATCH WITH A DIPNET?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)				*(number taken by each gear type)*				*(ind, lbs)*
CHINOOK (KING) SALMON 113000000	Y N	Y N	Y N	Y N					IND
SOCKEYE (RED) SALMON 115000000	Y N	Y N	Y N	Y N					IND
COHO (SILVER) SALMON 112000000	Y N	Y N	Y N	Y N					IND
CHUM (DOG) SALMON 111000000	Y N	Y N	Y N	Y N					IND
PINK (HUMPIES) SALMON 114000000	Y N	Y N	Y N	Y N					IND
LANDLOCKED SALMON *Kokanee* 116000000	Y N	Y N	Y N	Y N					IND
UNKNOWN SALMON 119000000	Y N	Y N	Y N	Y N					IND
					These columns should include all the harvests: salmon HARVESTED by members of this household in 2010.				

SALMON

Between JANUARY and DECEMBER, 2010…
…Did your household use LESS, SAME, or MORE salmon than in recent years?..... X L S M

X = DO NOT USE

If SAME or DO NOT USE, skip the next question.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…
…WHERE did members of your household HARVEST salmon? *On MAP, mark all harvest locations for page subject.*

SALMON : 04 **COPPER CENTER: 103**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest OTHER FISH ?.....Y N

Between JANUARY and DECEMBER, 2010…
…Did members of your household USE or TRY TO HARVEST other fish?.....Y N

IF NO, 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 2010, 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 2010 DID MEMBERS OF YOUR HH…				IN 2010, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH GILL NET OR SEINE?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)				*(number taken by each gear type)*			*(ind, lbs)*
RAINBOW TROUT 126204000	Y N	Y N	Y N	Y N				IND
LAKE TROUT 125010000	Y N	Y N	Y N	Y N				IND
CUTTHROAT TROUT 126202000	Y N	Y N	Y N	Y N				IND
TROUT *Unknown* 126200000	Y N	Y N	Y N	Y N				IND
DOLLY VARDEN 125006000	Y N	Y N	Y N	Y N				IND
GRAYLING 125200000	Y N	Y N	Y N	Y N				IND
PIKE 125400000	Y N	Y N	Y N	Y N				IND
BURBOT *Ling Cod* 124800000	Y N	Y N	Y N	Y N				IND
ROUND WHITEFISH 126412000	Y N	Y N	Y N	Y N				IND
HUMPBACK WHITEFISH 126408000	Y N	Y N	Y N	Y N				IND
BROAD WHITEFISH 126404000	Y N	Y N	Y N	Y N				IND
LEAST CISCO 126406060	Y N	Y N	Y N	Y N				IND
UNKNOWN WHITEFISH 126400000	Y N	Y N	Y N	Y N				IND
SUCKER 126000000	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 2010.

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

…continued

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2010 , 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 2010 DID MEMBERS OF YOUR HH…				IN 2010, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	…CATCH WITH GILL NET OR SEINE?	…CATCH WITH ROD AND REEL?	…CATCH WITH OTHER GEAR?	UNITS
	(circle)				*(number taken by each gear type)*			*(ind, lbs)*
HALIBUT 121800000	Y N	Y N	Y N	Y N				LBS
HERRING 120200000	Y N	Y N	Y N	Y N				GAL
PACIFIC COD (GRAY) 121004000	Y N	Y N	Y N	Y N				IND
PACIFIC TOM COD 121008000	Y N	Y N	Y N	Y N				IND
STARRY FLOUNDER 121406000	Y N	Y N	Y N	Y N				IND
SMELT 120400000	Y N	Y N	Y N	Y N				GAL
ROCKFISH 122600000	Y N	Y N	Y N	Y N				IND
LAMPREY 122000000	Y N	Y N	Y N	Y N				IND
LINGCOD 121606000	Y N	Y N	Y N	Y N				IND
	Y N	Y N	Y N	Y N				

These columns should include all the harvests: other fish HARVESTED by members of this household in 2010.

OTHER FISH

Between JANUARY and DECEMBER, 2010…

…Did your household use LESS, SAME, or MORE other fish than in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE, skip the next question.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…

…WHERE did members of your household HARVEST other fish? *On MAP, mark all harvest locations for page subject.*

OTHER FISH: 06 **COPPER CENTER: 103**

HARVESTS: MARINE INVERTEBRATES/SHELLFISH

HOUSEHOLD ID

Do members of your household USUALLY harvest MARINE INVERTEBRATES/SHELLFISH ?.....Y N

Between JANUARY and DECEMBER, 2010…
…Did members of your household USE or TRY TO HARVEST marine invertebrates/shellfish ?.....Y N

IF NO, 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 2010. 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 2010 DID MEMBERS OF YOUR HH…					
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	IN 2010, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST?	UNITS
	(circle)				*(number taken)*	*(ind, lbs,gal)*
DUNGENESS CRAB 501004000	Y N	Y N	Y N	Y N		LBS
KING CRAB 501008000	Y N	Y N	Y N	Y N		LBS
TANNER CRAB 501012000	Y N	Y N	Y N	Y N		LBS
RAZOR CLAMS 500612000	Y N	Y N	Y N	Y N		GAL
FRESHWATER CLAMS 500604000	Y N	Y N	Y N	Y N		GAL
	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N		

These columns should include all the harvests: marine invertebrates/shellfish HARVESTED by members of this household in 2010.

MARINE INVERTEBRATES/SHELLFISH

Between JANUARY and DECEMBER, 2010…
…Did your household use LESS, SAME, or MORE marine invertebrates/shellfish than in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE, skip the next question.

If different (LESS or MORE), how and why was your use different?

Between JANUARY and DECEMBER, 2010…
…WHERE did members of your household HARVEST marine invertebrates/shellfish?

On MAP, mark all harvest locations for page subject.

MARINE INVERTEBRATES/SHELLFISH: 08 **COPPER CENTER: 103**

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for LARGE LAND MAMMALS?.....Y N

Between JANUARY and DECEMBER, 2010…
…Did members of your household USE or TRY TO HARVEST large land mammals?.....Y N

IF NO, 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 2010. 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.

	IN 2010 DID MEMBERS OF YOUR HH…					IN 2010, 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
	(circle)					*(enter number by sex and month of take)*													*(ind)*
MOOSE	Y N	Y N	Y N	Y N	M														IND
					F														
211800000					?														
211800001					M														
211800002					F														
211800009					?														
CARIBOU	Y N	Y N	Y N	Y N	M														IND
					F														
211000000					?														
211000001					M														
211000002					F														
211000009					?														
BLACK BEAR	Y N	Y N	Y N	Y N															IND
210600000																			
BROWN BEAR	Y N	Y N	Y N	Y N															IND
210800000																			
DALL SHEEP	Y N	Y N	Y N	Y N															IND
212200000																			
GOAT	Y N	Y N	Y N	Y N															IND
211600000																			
DEER	Y N	Y N	Y N	Y N															IND
211200000																			
BISON	Y N	Y N	Y N	Y N															IND
210400000																			

LARGE LAND MAMMALS

Between JANUARY and DECEMBER, 2010…
…Did your household use LESS, SAME, or MORE large land mammals than in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE, skip the next question.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…
…WHERE did members of your household HUNT FOR large land mammals? *On MAP, mark all harvest locations for page subject.*
…WHERE did members of your household HARVEST large land mammals? *Circle all search areas on MAP*

LARGE LAND MAMMALS: 10 **COPPER CENTER: 103**

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, 2010…

…Did members of your household USE or TRY TO HARVEST small land mammals or furbearers?..... Y N

IF NO, 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 2010. 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 2010 DID MEMBERS OF YOUR HH…					IN 2010, 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
	(circle)					*(enter number by month of take)*													*(ind)*
BEAVER	Y N	Y N	Y N	Y N															IND
220200000																			
PORCUPINE	Y N	Y N	Y N	Y N															IND
222600000																			
SNOWSHOE HARE	Y N	Y N	Y N	Y N															IND
221004000																			
RED FOX	Y N	Y N	Y N	Y N															IND
220804000																			
CROSS FOX	Y N	Y N	Y N	Y N															IND
220804020																			
WOLF	Y N	Y N	Y N	Y N															IND
223200000																			
WOLVERINE	Y N	Y N	Y N	Y N															IND
223400000																			
LAND OTTER	Y N	Y N	Y N	Y N															IND
221200000																			
MUSKRAT	Y N	Y N	Y N	Y N															IND
222400000																			
	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 2010. 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 2010 DID MEMBERS OF YOUR HH…					IN 2010, 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
	(circle)					*(enter number by month of take)*													*(ind)*
WEASEL	Y N	Y N	Y N	Y N															IND
223000000																			
LYNX	Y N	Y N	Y N	Y N															IND
221600000																			
MARTEN	Y N	Y N	Y N	Y N															IND
222000000																			
COYOTE	Y N	Y N	Y N	Y N															IND
220400000																			
MINK	Y N	Y N	Y N	Y N															IND
222200000																			
MARMOT	Y N	Y N	Y N	Y N															IND
221800000																			
GROUND SQUIRREL	Y N	Y N	Y N	Y N															IND
222800000																			
TREE SQUIRREL	Y N	Y N	Y N	Y N															IND
222804000																			
	Y N	Y N	Y N	Y N															IND

SMALL LAND MAMMALS OR FURBEARERS

Between JANUARY and DECEMBER, 2010…

…Did your household use LESS, SAME, or MORE small land mammals or furbearers than in recent years X L S M

X = DO NOT USE

If the SAME or DO NOT USE, skip the next question.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…

…WHERE did members of your household HUNT OR TRAP FOR small land mammals or furbearers?

…WHERE did members of your household HARVEST small land mammals or furbearers?

On MAP, mark all harvest locations for page subject.

Circle all search areas on MAP

SMALL LAND MAMMALS: 14 **COPPER CENTER: 103**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

Do members of your household USUALLY hunt for MIGRATORY WATERFOWL?.....Y N

Between JANUARY and DECEMBER, 2010…
…Did members of your household USE or TRY TO HARVEST migratory waterfowl?.....Y N

IF NO, 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 2010. 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 2010 DID MEMBERS OF YOUR HH…				IN 2010, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?											
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
	(circle)																
CANADA GEESE (CACKLERS) 410404040	Y N	Y N	Y N	Y N													
CANADA GEESE (BIG LESSER) 410404080	Y N	Y N	Y N	Y N													
CANADA GEESE (UNKNOWN) 410404000	Y N	Y N	Y N	Y N													
WHITE-FRONTED GEESE *Specklebelly* 410410000	Y N	Y N	Y N	Y N													
SPECTACLED EIDER 410206060	Y N	Y N	Y N	Y N													
BRANT (SEA GEESE) 410402000	Y N	Y N	Y N	Y N													
EMPEROR GEESE 410406000	Y N	Y N	Y N	Y N													
SNOW GEESE 410408000	Y N	Y N	Y N	Y N													
GEESE (UNKNOWN) 410400000	Y N	Y N	Y N	Y N													
TUNDRA SWAN (WHISTLING) 410604000	Y N	Y N	Y N	Y N													
SANDHILL CRANE 410802000	Y N	Y N	Y N	Y N													
MALLARD 410214000	Y N	Y N	Y N	Y N													
NORTHERN PINTAIL 410220000	Y N	Y N	Y N	Y N													

Continue on next page.

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

...continued

	IN 2010 DID MEMBERS OF YOUR HH…				IN 2010, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?											
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
	(circle)																
GOLDENEYE 410210000	Y N	Y N	Y N	Y N													
GREEN WINGED TEAL 410232060	Y N	Y N	Y N	Y N													
CANVASBACK 410204000	Y N	Y N	Y N	Y N													
BLACK SCOTER (BLACK DUCK) 410228020	Y N	Y N	Y N	Y N													
DUCKS (UNKNOWN) 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													
	Y N	Y N	Y N	Y N													
	Y N	Y N	Y N	Y N													

MIGRATORY WATERFOWL

Between JANUARY and DECEMBER, 2010…

…Did your household use LESS, SAME, or MORE migratory waterfowl than in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE go on to next page.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…

…WHERE did members of your household HARVEST migratory waterfowl? *On MAP, mark all harvest locations for migratory waterfowl.*

…WHERE did members of your household HUNT FOR migratory waterfowl? *Circle all search areas on MAP*

HARVESTS: BIRD EGGS

HOUSEHOLD ID

Do members of your household USUALLY look for BIRD EGGS?.....Y N

Between JANUARY and DECEMBER, 2010…
…Did members of your household USE or TRY TO GATHER bird eggs?.....Y N

IF NO, 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 2010. 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 2010 DID MEMBERS OF YOUR HH… (circle)				IN 2010, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD GATHER?											
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
GULL EGGS 431212000	Y N	Y N	Y N	Y N													
GEESE EGGS 430400000	Y N	Y N	Y N	Y N													
DUCK EGGS 430200000	Y N	Y N	Y N	Y N													
EGGS (UNKNOWN) 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	Y N													
	Y N	Y N	Y N	Y N													
	Y N	Y N	Y N	Y N													

EGGS

Between JANUARY and DECEMBER, 2010…
…Did your household use LESS, SAME, or MORE eggs than in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE go on to next page.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…
…WHERE did members of your household GATHER bird eggs? *On MAP, mark all harvest locations for bird eggs.*
…WHERE did members of your household LOOK FOR bird eggs? *Circle all search areas on MAP*

BIRD EGGS: 15 **COPPER CENTER: 103**

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, 2010…
…Did members of your household USE or TRY TO HARVEST plants and berries including wood?..... Y N

IF NO, 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 2010. 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 2010 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	IN 2010, 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		
LOW BUSH CRANBERRY 601004000	Y N	Y N	Y N	Y N		
HIGH BUSH CRANBERRY 601006000	Y N	Y N	Y N	Y N		
RASPBERRY 601020000	Y N	Y N	Y N	Y N		
OTHER BERRIES *(List)* 601000000	Y N	Y N	Y N	Y N		
HUDSON BAY TEA *Labrador Tea* 602018000	Y N	Y N	Y N	Y N		
MUSHROOMS 602040000	Y N	Y N	Y N	Y N		
OTHER PLANTS *(List)* 602000002	Y N	Y N	Y N	Y N		
WOOD *Firewood* 604000000	Y N	Y N	Y N	Y N		
WOOD *(Specify Use)* 604000002	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N		

PLANTS AND BERRIES

Between JANUARY and DECEMBER, 2010…
…Did your household use LESS, SAME, or MORE plants and berries than in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE go on to next page.

If different (LESS or MORE), how and why was your use different? _____

Between JANUARY and DECEMBER, 2010…
…WHERE did members of your household harvest plants and berries including wood? *On MAP, mark all harvest areas for page subject.*

PLANTS AND BERRIES: 17 **COPPER CENTER: 103**

WILD RESOURCES

Between JANUARY and DECEMBER, 2010…

…Did your household use LESS, SAME, or MORE wild resources overall as in recent years?..... X L S M

X = DO NOT USE

If the SAME or DO NOT USE, skip the next question.

If different (LESS or MORE), how and why was your use different?

...Are there any resources your household avoided harvesting due to poor resource health? If *YES*, which resources did you avoid?

Wild Harvest Assessment

In your opinion, in 2010 did your household get enough wild foods to meet its needs? Y N

Transportation

During 2010, did members of your household use the following when harvesting or attempting to harvest wild foods?

	circle	
boat	Y	N
snowmachine	Y	N
4-wheeler/ORV	Y	N
airplane	Y	N
dogsled	Y	N

Does your household own, borrow, lease, or charter this equipment?

Circle only responses that the respondent answered yes to above.

	Own		Borrow		Lease		Charter	
boat	Y	N	Y	N	Y	N	Y	N
snowmachine	Y	N	Y	N	Y	N	Y	N
4-wheeler/ORV	Y	N	Y	N	Y	N	Y	N
airplane	Y	N	Y	N	Y	N	Y	N
dogsled	Y	N	Y	N	Y	N	Y	N

Comments:

Heating

What proportion of your household's heating comes from firewood?

	circle
0%	
1-25%	
26-50%	
51-75%	
76-99%	
100%	

In the past 5 years has your harvest area for firewood changed? *circle* Y N

If yes, please explain why?

How much do you spend annually to heat your home? $

JOBS **FOR EACH PERSON IN THE HOUSEHOLD, 16 YEARS OLD AND OLDER** **HOUSEHOLD ID**

Between JANUARY and DECEMBER, 2010…

…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 1995, please list EACH JOB held between JANUARY and DECEMBER, 2010.
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 1995.

We ask about jobs and income because we are trying to understand all parts of the community economy. Many people use wages from jobs to support subsistence activities. If one person has more than one job, list each job on a separate line. (One person may have several lines.)

REMEMBER COMMERCIAL FISHING & TRAPPING IF APPLICABLE.

	WHO HAD THIS JOB?	WHAT KIND OF WORK DID HE/SHE DO IN THIS JOB?	FOR WHOM DID HE/SHE WORK IN THIS JOB?	JOB LOCATION?	IN 2010, WHAT MONTHS DID HE OR SHE WORK IN THIS JOB?	*WORK SCHEDULE…* FULL TIME	PART TIME	SHIFT - FULL TIME	ON-CALL, VARIES	SHIFT - PART TIME	IN 2010, 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 **COPPER CENTER: 103**

OTHER INCOME

THIS PAGE IS ONLY FOR INCOME THAT IS NOT EARNED FROM WORKING **HOUSEHOLD ID**

Between JANUARY and DECEMBER, 2010…

…Did any members of your household receive a dividend from the Permanent Fund or a Native Corporation?..... Y N

IF NO, go to the next section on this page.

If YES, continue below…

		DID ANYONE IN YOUR HH RECEIVE INCOME FROM _____ IN 2010? (circle one)	TOTAL AMOUNT ALL MEMBERS OF YOUR HH RECEIVED IN 2010? (dollars)
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND 32	Y N	$ /YR
DIVIDENDS	NATIVE CORPORATION DIVIDENDS 13	Y N	$ /YR

ALASKA PFD IN 2010
1 PFD = $1,281
2 PFDs = $2,562
3 PFDs = $3,843
4 PFDs = $5,124
5 PFDs = $6,405
6 PFDs = $7,686
7 PFDs = $8,967
8 PFDs = $10,248
9 PFDs = $11,529
10 PFDs = $12,810
11 PFDs = $14,091

AHTNA INC. DIVIDENDS IN 2010		
1	*share=*	*$2.79*
100	*shrs=*	*$279*
150	*shrs=*	*$419*
200	*shrs=*	*$558*

Between JANUARY and DECEMBER, 2010…

…Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next page.

If YES, continue below…

		RECEIVED IN 2010? (circle one)	TOTAL AMOUNT IN 2010? (dollars)	*scratch paper for calculations*
JOB BENEFITS	UNEMPLOYMENT 12	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
JOB BENEFITS	WORKERS' COMPENSATION 8	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ASSISTANCE	FOOD STAMPS (QUEST CARD) 11	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ASSISTANCE	ADULT PUBLIC ASSISTANCE 3	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ELDER BENEFITS	ALASKA SENIOR BENEFITS (LONGEVITY) 6	Y N	$ /YR	Depends on Income: $125 per month for 12 months = $1,500 per elder; $175 per month for 12 months = $2,100 per elder; $250 per month for 12 months = $3,000 per elder
ELDER BENEFITS	PENSION & RETIREMENT 5	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
ELDER BENEFITS	SOCIAL SECURITY 7	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	SUPPLEMENTAL SECURITY 10	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	FOSTER CARE 41	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
CHILD BENEFITS	CHILD SUPPORT 15	Y N	$ /YR	$_____ per week for _____ weeks = $_____ per month for _____ months =
OTHER	ENERGY ASSISTANCE 9	Y N	$ /YR	
OTHER	OTHER *(describe)*	Y N	$ /YR	

OTHER INCOME: 24 **COPPER CENTER: 103**

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 **COPPER CENTER: 103**

Appendix B–Conversion Factors

The following table presents conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 5 individual lingcod, the quantity would be multiplied by the appropriate conversion factor (in this case 2.4) to show a harvest of 12 lb of lingcod.

Resource	Reported units	Reported units to pounds	Default units	Pounds to default units
Chum salmon	ind	6.980	ind	0.143
Coho salmon	ind	8.760	ind	0.114
Chinook salmon	ind	19.620	ind	0.051
Pink salmon	ind	3.660	ind	0.273
Sockeye salmon	ind	6.150	ind	0.163
Sockeye salmon	lb	0.163	ind	6.150
Landlocked salmon	ind	1.000	ind	1.000
Unknown salmon	ind	8.000	ind	0.125
Herring	gal	6.000	gal	0.167
Herring sac roe	gal	7.000	gal	0.143
Herring spawn on kelp	gal	7.000	gal	0.143
Smelt	gal	3.250	gal	0.308
Eulachon (hooligan, candlefish)	lb	1.000	lb	1.000
Eulachon (hooligan, candlefish)	gal	3.250	gal	0.308
Unknown smelt	gal	3.250	gal	0.308
Pacific cod (gray)	ind	4.000	ind	0.250
Pacific tomcod	ind	0.500	ind	2.000
Starry flounder	ind	3.000	ind	0.333
Lingcod	ind	2.400	ind	0.417
Lingcod	lb	1.000	ind	0.417
Pacific halibut	ind	18.900	lb	1.000
Pacific halibut	lb	1.000	lb	1.000
Arctic lampreys	ind	0.600	ind	1.667
Rockfish	ind	4.000	ind	0.250
Rockfish	lb	1.000	ind	0.250
Sculpin	ind	0.500	ind	2.000
Burbot	ind	2.400	ind	0.417
Arctic char	ind	0.700	ind	1.429
Dolly Varden	ind	0.900	ind	1.111
Lake trout	ind	2.000	ind	0.500
Arctic grayling	ind	0.700	ind	1.429
Northern pike	ind	2.800	ind	0.357

-continued-

Resource	Reported units	Reported units to pounds	Default units	Pounds to default units
Longnose sucker	ind	0.700	ind	1.429
Cutthroat throut	ind	1.400	ind	0.714
Rainbow trout	ind	1.400	ind	0.714
Unknown trout	ind	1.400	ind	0.714
Broad whitefish	ind	4.000	ind	0.250
Least cisco	ind	0.400	ind	2.500
Humpback whitefish	ind	1.750	ind	0.571
Round whitefish	ind	1.000	ind	1.000
Unknown whitefish	ind	1.750	ind	0.571
Bison	ind	450.000	ind	0.002
Black bear	ind	58.000	ind	0.017
Brown bear	ind	141.000	ind	0.007
Caribou	ind	130.000	ind	0.008
Deer	ind	42.500	ind	0.024
Goat	ind	72.500	ind	0.014
Moose	ind	450.000	ind	0.002
Dall sheep	ind	65.000	ind	0.015
Beaver	ind	15.000	ind	0.067
Coyote	ind	0.000	ind	0.000
Red fox	ind	0.000	ind	0.000
Red fox - cross phase	ind	0.000	ind	0.000
Snowshow hare	ind	2.000	ind	0.500
River otter	ind	0.000	ind	0.000
Lynx	ind	4.000	ind	0.250
Marmot	ind	0.000	ind	0.000
Marten	ind	0.000	ind	0.000
Mink	ind	0.000	ind	0.000
Muskrat	ind	1.800	ind	0.556
Porcupine	ind	4.500	ind	0.222
Tree squirrel	ind	0.500	ind	2.000
Unknown squirrel	ind	0.500	ind	2.000
Weasel	ind	0.000	ind	0.000
Wolf	ind	0.000	ind	0.000
Wolverine	ind	0.000	ind	0.000
Bufflehead	ind	0.400	ind	2.500
Canvasback	ind	1.100	ind	0.909
Spectacled eider	ind	2.430	ind	0.412
Gadwall	ind	0.800	ind	1.250
Goldeneye	ind	0.800	ind	1.250
Mallard	ind	1.000	ind	1.000
Merganser	ind	0.900	ind	1.111
Long-tailed duck	ind	0.800	ind	1.250
Northern pintail	ind	0.800	ind	1.250
Black scoter	ind	0.900	ind	1.111
Surf scoter	ind	0.900	ind	1.111
White-winged scoter	ind	0.900	ind	1.111

-continued-

Resource	Reported units	Reported units to pounds	Default units	Pounds to default units
Northern shoveler	ind	0.600	ind	1.667
Green-winged teal	ind	0.300	ind	3.333
Wigeon	ind	0.700	ind	1.429
Unknown ducks	ind	0.700	ind	1.429
Brant	ind	1.200	ind	0.833
Cackling goose	ind	1.200	ind	0.833
Lesser Canada goose	ind	1.200	ind	0.833
Canada/cackling goose	ind	1.200	ind	0.833
Emperor goose	ind	0.000	ind	0.000
Snow goose	ind	3.000	ind	0.333
White-fronted goose	ind	2.400	ind	0.417
Unknown goose	ind	5.000	ind	0.200
Tundra swan	ind	0.000	ind	0.000
Sandhill crane	ind	8.400	ind	0.119
Murre	ind	0.000	ind	0.000
Spruce grouse	ind	0.700	ind	1.429
Sharp-tailed grouse	ind	0.700	ind	1.429
Ruffed grouse	ind	0.700	ind	1.429
Ptarmigan	ind	0.500	ind	2.000
Duck eggs	ind	0.150	ind	6.667
Goose eggs	ind	0.250	ind	4.000
Gull eggs	ind	0.300	ind	3.333
Unknown eggs	ind	1.800	ind	0.556
Butter clams	gal	3.000	gal	0.333
Freshwater clams	gal	3.000	gal	0.333
Razor clams	gal	3.000	gal	0.333
Cockles	gal	3.000	gal	0.333
Dungeness crab	ind	0.700	lb	1.000
Dungeness crab	lb	1.000	lb	1.000
King crab	ind	2.300	lb	1.000
King crab	lb	1.000	lb	1.000
Tanner crab	ind	1.600	lb	1.000
Tanner crab	lb	1.000	lb	1.000
Unknown crab	ind	2.300	lb	1.000
Octopus	ind	4.000	ind	0.250
Shrimp	gal	0.000	gal	0.000
Squid	gal	0.000	gal	0.000
Berries	gal	4.000	gal	0.250
Berries	qt	1.000	gal	0.250
Blueberry	gal	4.000	gal	0.250
Blueberry	qt	1.000	gal	0.250
Blueberry	pt	0.500	gal	0.250
Blueberry	cup	0.250	gal	0.250
Lowbush cranberry	gal	4.000	gal	0.250
Lowbush cranberry	qt	1.000	gal	0.250
Lowbush cranberry	pt	0.500	gal	0.250
Lowbush cranberry	cup	0.250	gal	0.250

-continued-

Resource	Reported units	Reported units to pounds	Default units	Pounds to default units
Highbush cranberry	gal	4.000	gal	0.250
Highbush cranberry	qt	1.000	gal	0.250
Highbush cranberry	pt	0.500	gal	0.250
Highbush cranberry	cup	0.250	gal	0.250
Crowberry	gal	4.000	gal	0.250
Crowberry	qt	1.000	gal	0.250
Currants	gal	4.000	gal	0.250
Currants	qt	1.000	gal	0.250
Cloudberry	gal	4.000	gal	0.250
Nagoonberry	qt	1.000	gal	0.250
Raspberry	gal	4.000	gal	0.250
Raspberry	qt	1.000	gal	0.250
Raspberry	pt	0.500	gal	0.250
Raspberry	cup	0.250	gal	0.250
Salmonberry	gal	4.000	gal	0.250
Salmonberry	qt	1.000	gal	0.250
Salmonberry	pt	0.500	gal	0.250
Salmonberry	cup	0.250	gal	0.250
Strawberry	gal	4.000	gal	0.250
Blackberry	gal	4.000	gal	0.250
Other wild berry	gal	4.000	gal	0.250
Other wild berry	qt	1.000	gal	0.250
Other wild berry	pt	0.500	gal	0.250
Other wild berry	cup	0.250	gal	0.250
Plants, greens, and mushrooms [non commercial]	ind	1.000	gal	1.000
Plants, greens, and mushrooms [non commercial]	lb	1.000	gal	1.000
Plants, greens, and mushrooms [non commercial]	gal	1.000	gal	1.000
Plants, greens, and mushrooms [non commercial]	qt	0.250	gal	1.000
Plants, greens, and mushrooms [non commercial]	cup	0.063	gal	1.000
Wild rhubarb	gal	1.000	gal	1.000
Eskimo potato	gal	4.000	gal	0.250
Eskimo potato	qt	1.000	gal	0.250
Hudson's Bay (Labrador) tea	gal	1.000	gal	1.000
Hudson's Bay (Labrador) tea	qt	0.250	gal	1.000
Hudson's Bay (Labrador) tea	pt	0.125	gal	1.000
Hudson's Bay (Labrador) tea	cup	0.063	gal	1.000
Wild rose hips	ind	0.005	gal	0.250
Wild rose hips	gal	4.000	gal	0.250
Wild rose hips	qt	1.000	gal	0.250
Wild rose hips	pt	0.500	gal	0.250
Yarrow	gal	1.000	gal	1.000
Other wild greens	lb	1.000	gal	1.000
Other wild greens	gal	1.000	gal	1.000
Other wild greens	qt	0.250	gal	1.000
Other wild greens	pt	0.125	gal	1.000
Unknown mushrooms	ind	0.050	gal	1.000

-continued-

Resource	Reported units	Reported units to pounds	Default units	Pounds to default units
Unknown mushrooms	lb	1.000	gal	1.000
Unknown mushrooms	gal	1.000	gal	1.000
Unknown mushrooms	qt	0.250	gal	1.000
Unknown mushrooms	cup	0.063	gal	1.000
Fireweed	lb	1.000	gal	1.000
Fireweed	gal	1.000	gal	1.000
Fireweed	qt	0.250	gal	1.000
Fireweed	pt	0.125	gal	1.000
Stinkweed	lb	1.000	gal	1.000
Stinkweed	2-gal	2.500	qt	1.000
Wood	crd	0.000	crd	0.000
Roots	qt	0.000	qt	0.000

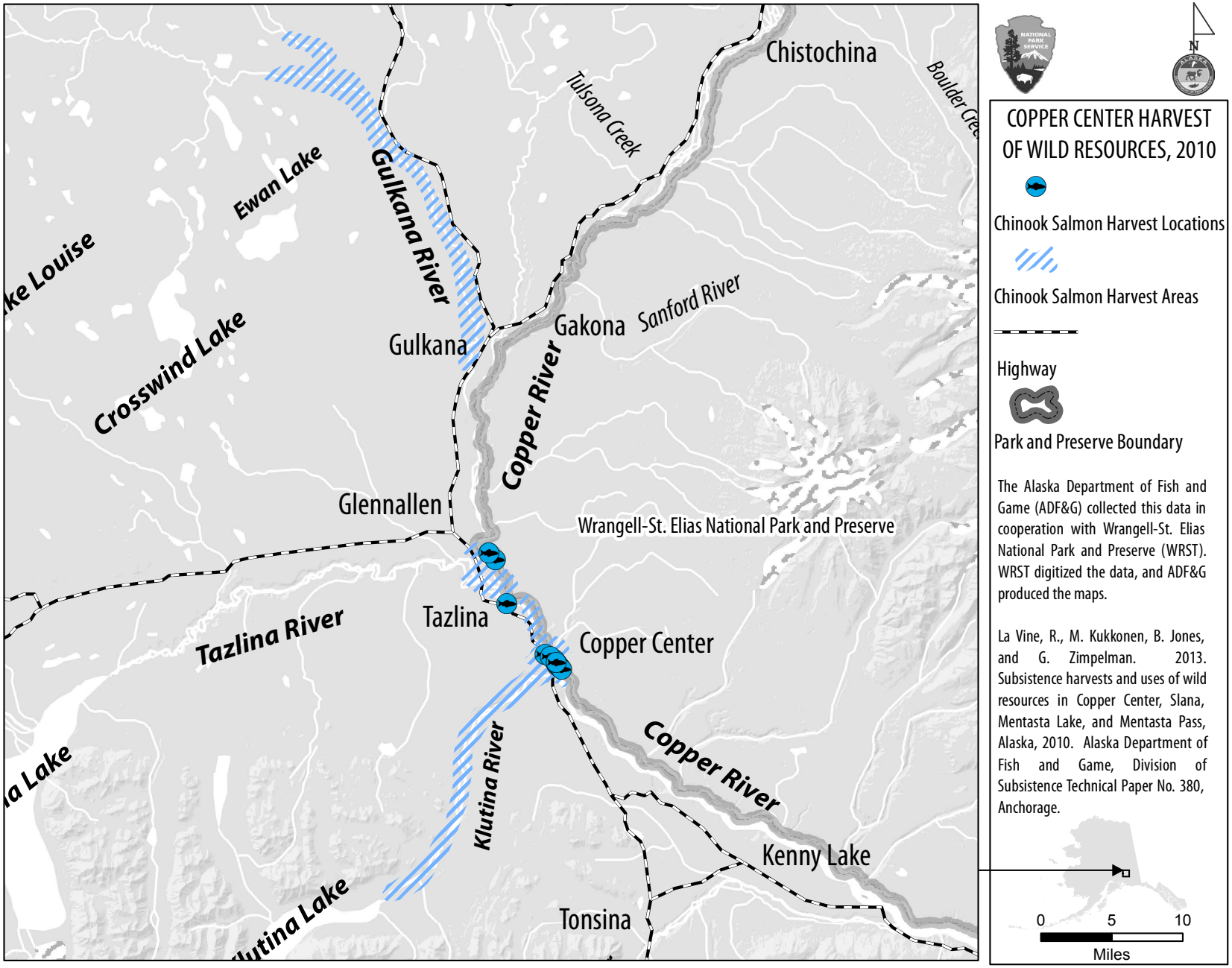
Source CSIS.

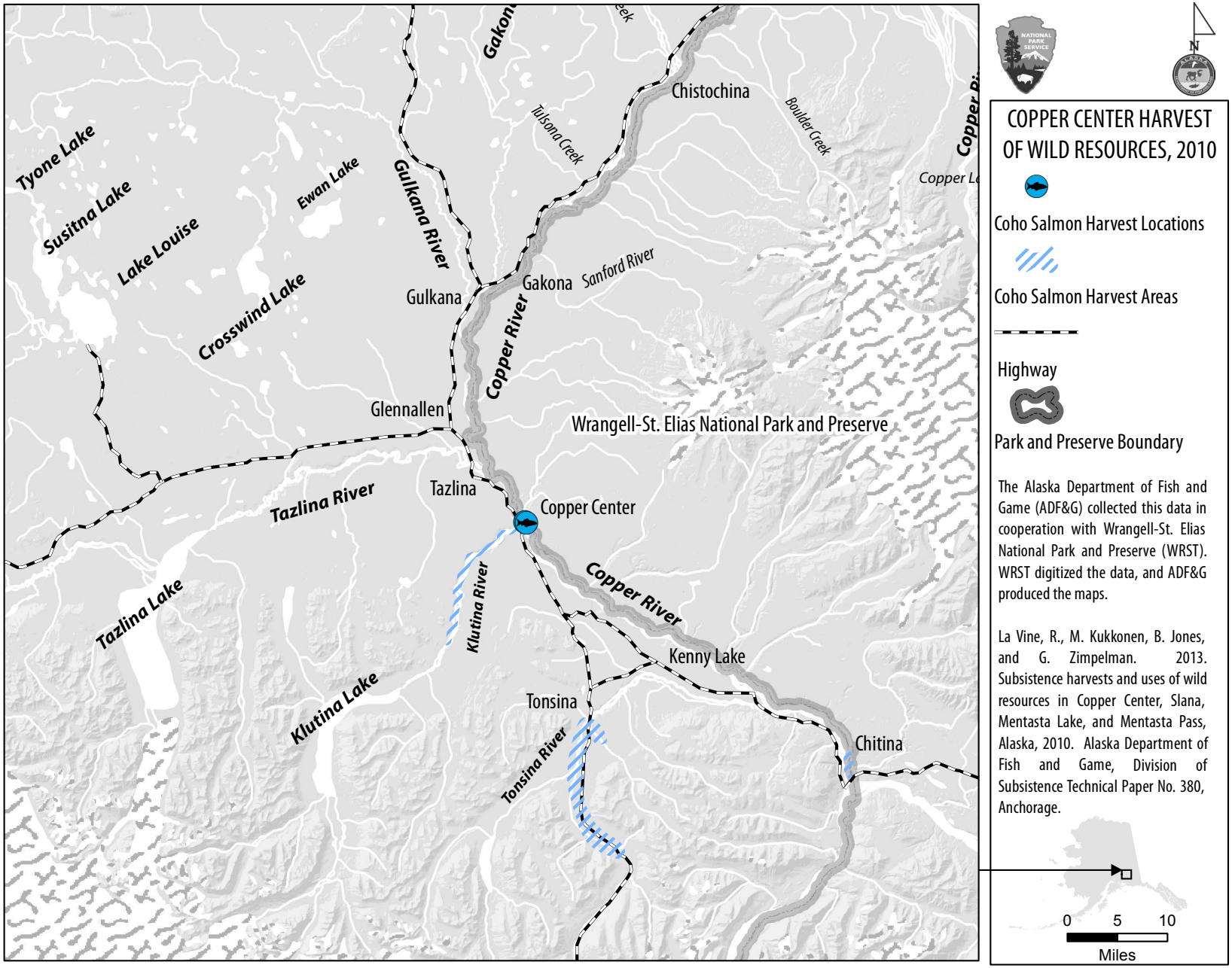
Notes

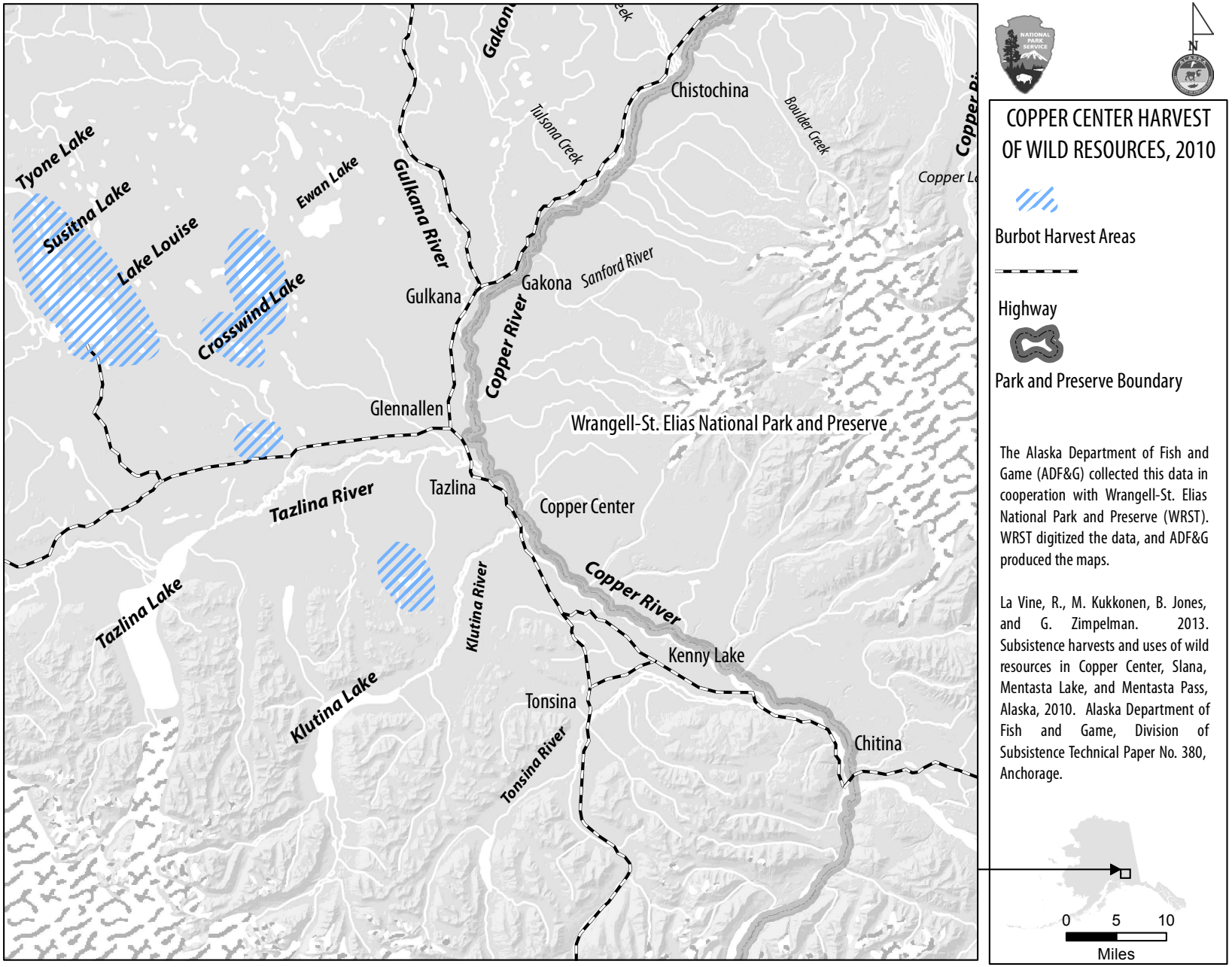
Resources that have a conversion factor of zero were either used but not harvested, or harvested but not typically eaten.

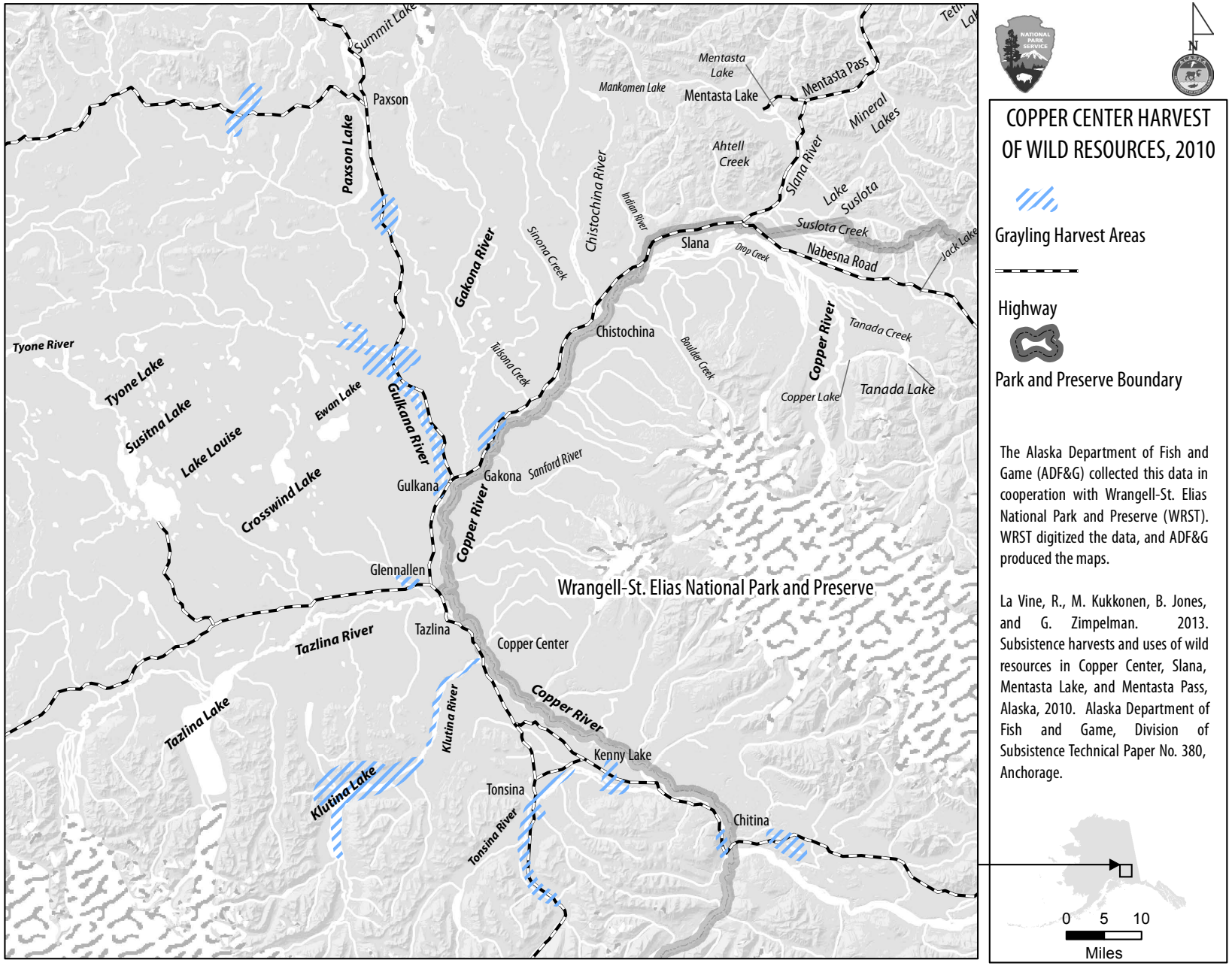
Resource harvests may be reported in different units by different households, therefore some resources may have multiple conversion factors.

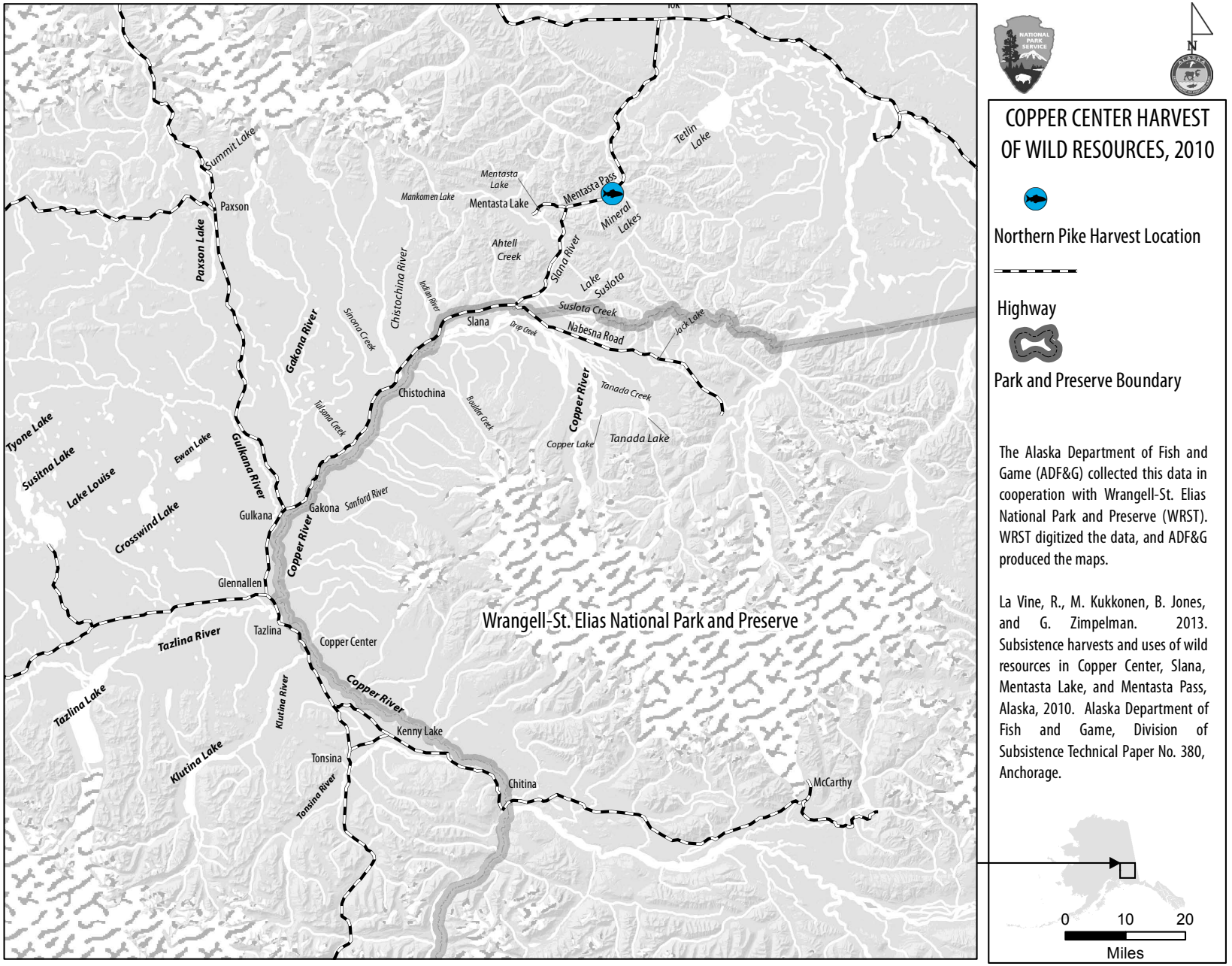
Appendix C–Additional Harvest Maps

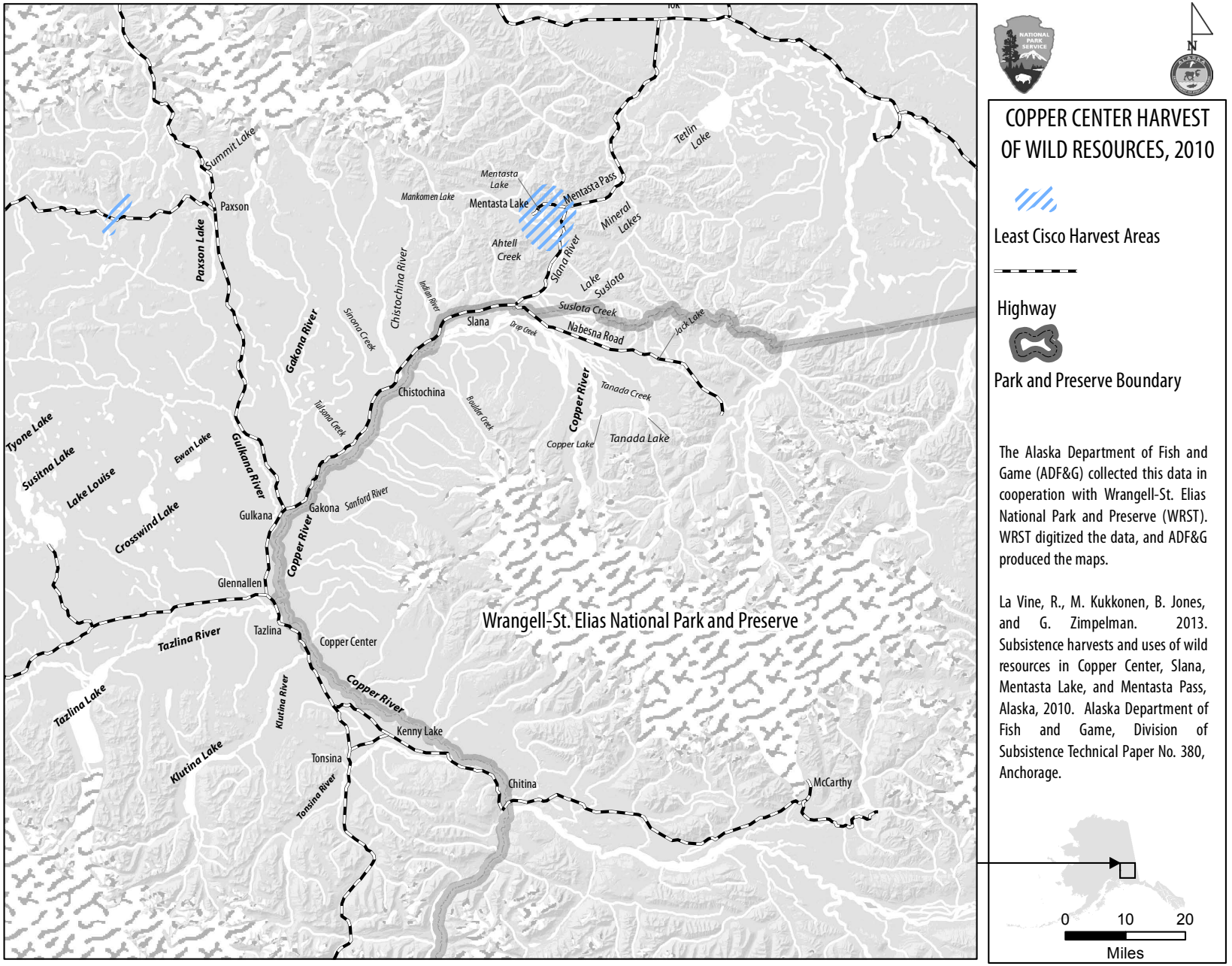

Chistochina
Tulsona Creek
Boulder Creek
Ewan Lake
Gulkana River
ke Louise
Crosswind Lake
Gulkana
Gakona
Sanford River
Copper River
Glennallen
Wrangell-St. Elias National Park and Preserve
Tazlina River
Tazlina
Copper Center
Klutina River
Copper River
Kenny Lake
Tonsina
a Lake
lutina Lake
COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Chinook Salmon Harvest Locations
Chinook Salmon Harvest Areas
Highway
Park and Preserve Boundary
The Alaska Department of Fish and Game (ADF&G) collected this data in cooperation with Wrangell-St. Elias National Park and Preserve (WRST). WRST digitized the data, and ADF&G produced the maps.
La Vine, R., M. Kukkonen, B. Jones, and G. Zimpelman. 2013. Subsistence harvests and uses of wild resources in Copper Center, Slana, Mentasta Lake, and Mentasta Pass, Alaska, 2010. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 380, Anchorage.
0
5
10
Miles


Tyone Lake
Susitna Lake
Lake Louise
Ewan Lake
Crosswind Lake
Gulkana River
Gakona
Tuisona Creek
Chistochina
Boulder Creek
Copper River
Gulkana
Gakona
Sanford River
Glennallen
Wrangell-St. Elias National Park and Preserve
Tazlina River
Tazlina
Copper Center
Tazlina Lake
Klutina River
Copper River
Kenny Lake
Klutina Lake
Tonsina
Tonsina River
Chitina
COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Coho Salmon Harvest Locations
Coho Salmon Harvest Areas
Highway
Park and Preserve Boundary
The Alaska Department of Fish and Game (ADF&G) collected this data in cooperation with Wrangell-St. Elias National Park and Preserve (WRST). WRST digitized the data, and ADF&G produced the maps.
La Vine, R., M. Kukkonen, B. Jones, and G. Zimpelman. 2013. Subsistence harvests and uses of wild resources in Copper Center, Slana, Mentasta Lake, and Mentasta Pass, Alaska, 2010. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 380, Anchorage.
0 5 10
Miles


Tyone Lake
Susitna Lake
Lake Louise
Ewan Lake
Crosswind Lake
Gulkana River
Tulsona Creek
Chistochina
Boulder Creek
Gulkana
Gakona
Sanford River
Copper River
Glennallen
Wrangell-St. Elias National Park and Preserve
Tazlina River
Tazlina
Copper Center
Tazlina Lake
Klutina River
Copper River
Kenny Lake
Klutina Lake
Tonsina
Tonsina River
Chitina
COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Burbot Harvest Areas
Highway
Park and Preserve Boundary
The Alaska Department of Fish and Game (ADF&G) collected this data in cooperation with Wrangell-St. Elias National Park and Preserve (WRST). WRST digitized the data, and ADF&G produced the maps.
La Vine, R., M. Kukkonen, B. Jones, and G. Zimpelman. 2013. Subsistence harvests and uses of wild resources in Copper Center, Slana, Mentasta Lake, and Mentasta Pass, Alaska, 2010. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 380, Anchorage.
0 5 10
Miles


COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Grayling Harvest Areas
Highway
Park and Preserve Boundary
The Alaska Department of Fish and Game (ADF&G) collected this data in cooperation with Wrangell-St. Elias National Park and Preserve (WRST). WRST digitized the data, and ADF&G produced the maps.
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0 5 10
Miles
Wrangell-St. Elias National Park and Preserve
Summit Lake
Paxson
Paxson Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mentasta Lake
Mineral Lakes
Ahtell Creek
Slana River
Lake Suslota
Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Chistochina River
Indian River
Simona Creek
Gakona River
Chistochina
Tanada Creek
Boulder Creek
Copper River
Copper Lake
Tanada Lake
Tyone River
Tyone Lake
Susitna Lake
Lake Louise
Crosswind Lake
Ewan Lake
Gulkana River
Tulsona Creek
Gulkana
Gakona
Sanford River
Copper River
Glennallen
Tazlina River
Tazlina
Copper Center
Tazlina Lake
Klutina River
Copper River
Kenny Lake
Klutina Lake
Tonsina
Tonsina River
Chitina


COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Northern Pike Harvest Location
Highway
Park and Preserve Boundary
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0 10 20
Miles
Wrangell-St. Elias National Park and Preserve
Summit Lake
Paxson
Paxson Lake
Mentasta Lake
Mentasta Pass
Mineral Lakes
Tetlin Lake
Ahtell Creek
Slana River
Lake Suslota
Suslota Creek
Nabesna Road
Jack Lake
Slana
Chistochina River
Indian River
Sinona Creek
Gakona River
Chistochina
Tanada Creek
Copper River
Tanada Lake
Copper Lake
Boulder Creek
Tyone Lake
Susitna Lake
Lake Louise
Ewan Lake
Crosswind Lake
Gulkana River
Gulkana
Gakona
Sanford River
Glennallen
Tazlina River
Tazlina
Copper Center
Tazlina Lake
Klutina River
Klutina Lake
Kenny Lake
Tonsina
Tonsina River
Chitina
McCarthy



COPPER CENTER HARVEST OF WILD RESOURCES, 2010

Least Cisco Harvest Areas

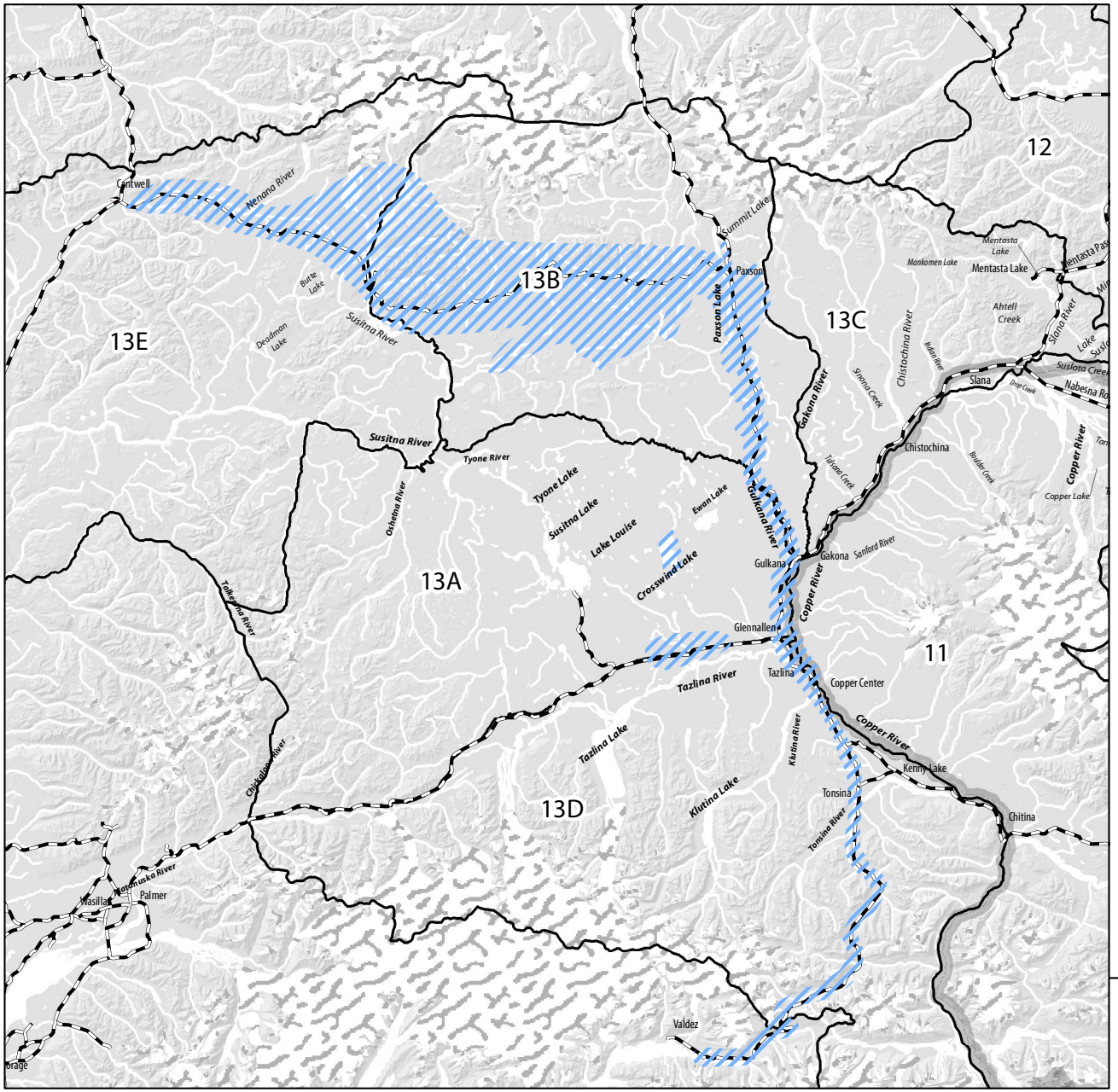
Highway

Park and Preserve Boundary

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Miles



COPPER CENTER HARVEST OF WILD RESOURCES, 2010

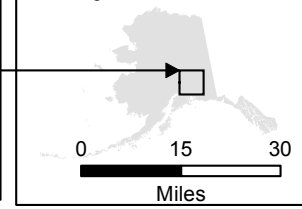
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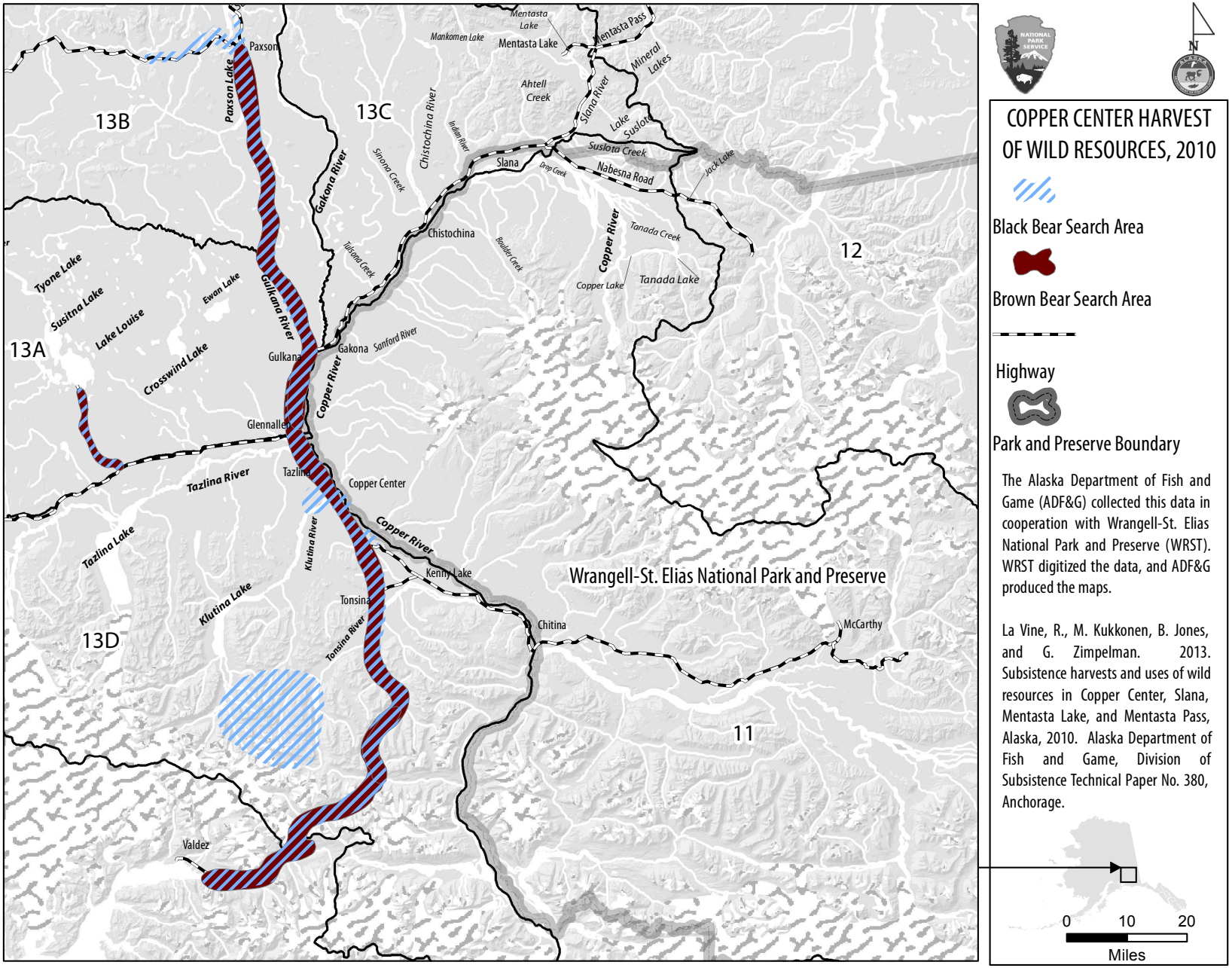
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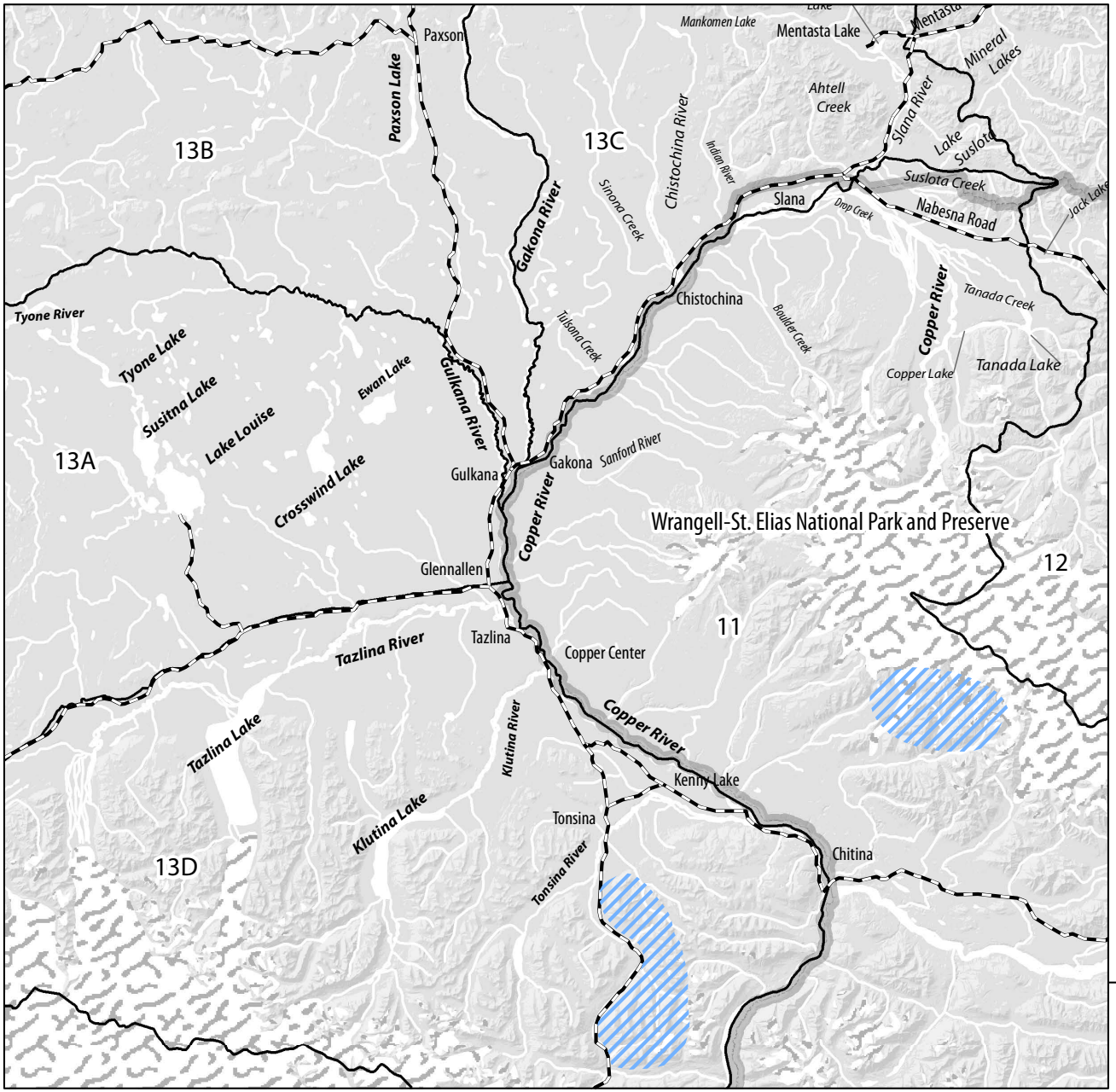
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13A
13B
13C
13D
12
11
Paxson
Paxson Lake
Gakona River
Chistochina River
Mentasta Lake
Mentasta Pass
Mankomen Lake
Ahtell Creek
Mineral Lakes
Slana River
Lake Suslota
Suslota Creek
Slana
Nabesna Road
Jack Lake
Indian River
Sinona Creek
Chistochina
Tulsona Creek
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
Tyone Lake
Susitna Lake
Lake Louise
Ewan Lake
Crosswind Lake
Gulkana River
Gulkana
Gakona
Sanford River
Glennallen
Tazlina River
Tazlina
Copper Center
Tazlina Lake
Klutina River
Klutina Lake
Kenny Lake
Tonsina
Tonsina River
Chitina
McCarthy
Wrangell-St. Elias National Park and Preserve
Valdez
N
COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Black Bear Search Area
Brown Bear Search Area
Highway
Park and Preserve Boundary
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Miles





COPPER CENTER HARVEST OF WILD RESOURCES, 2010

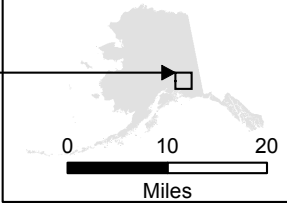
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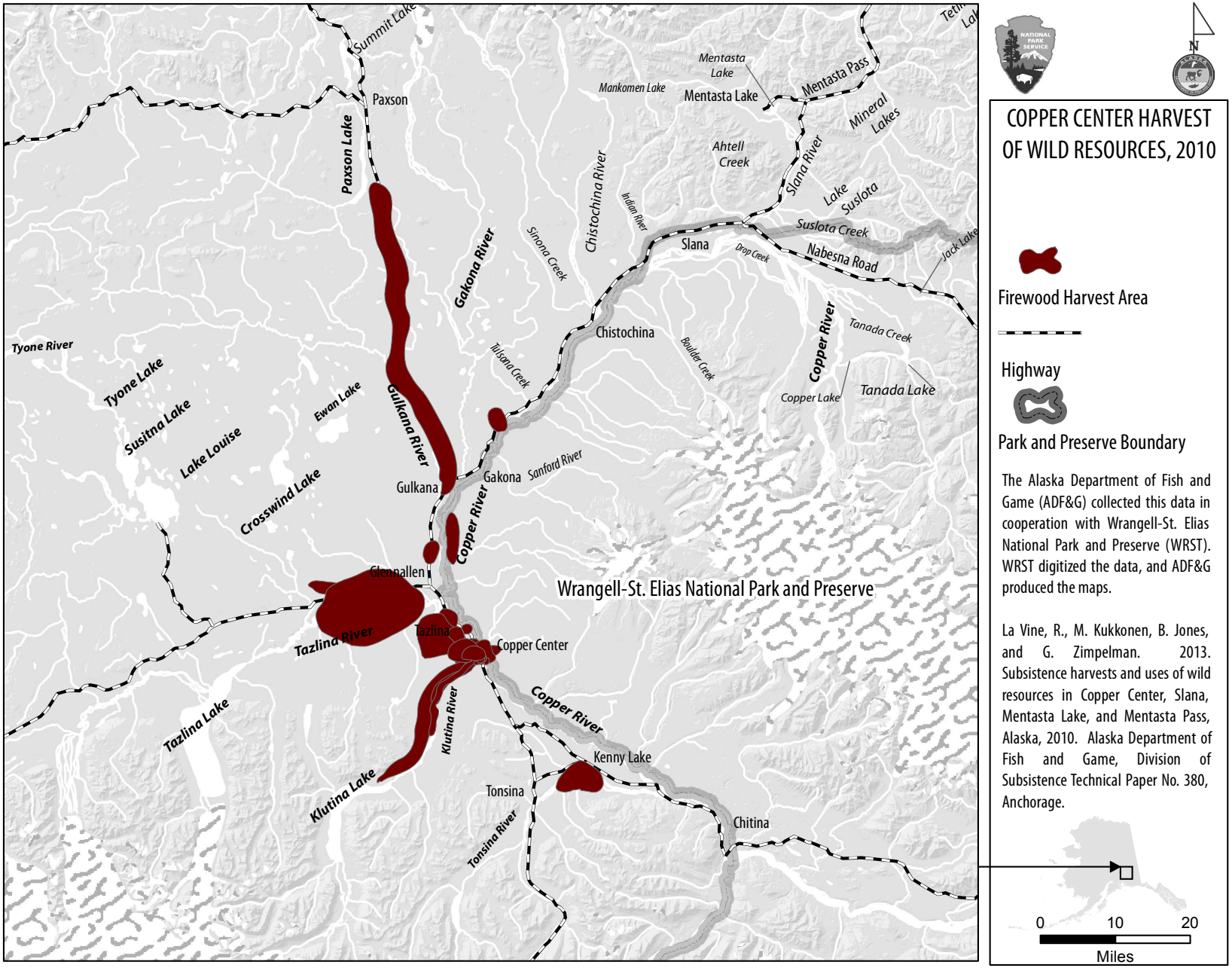
Highway

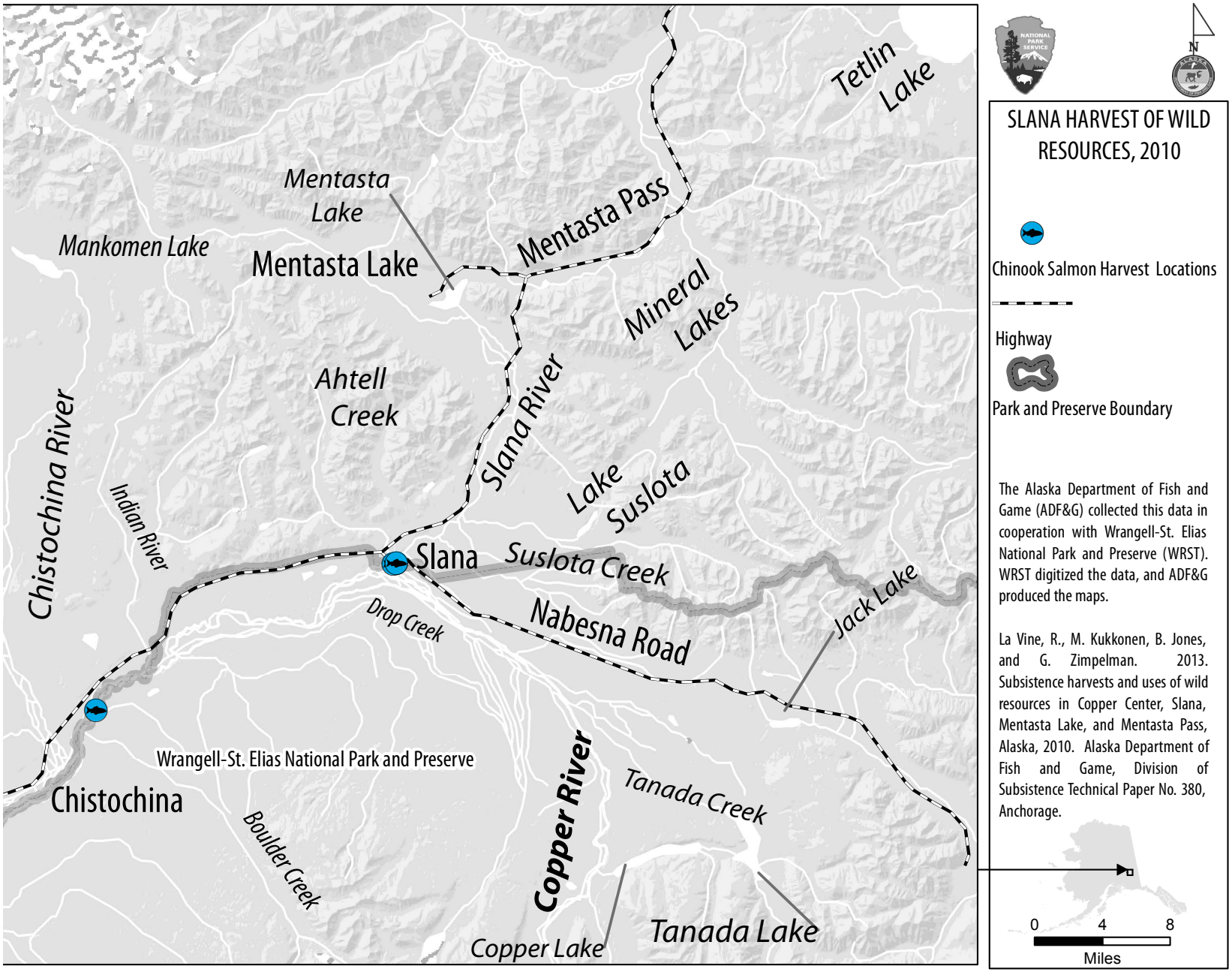
Park and Preserve Boundary

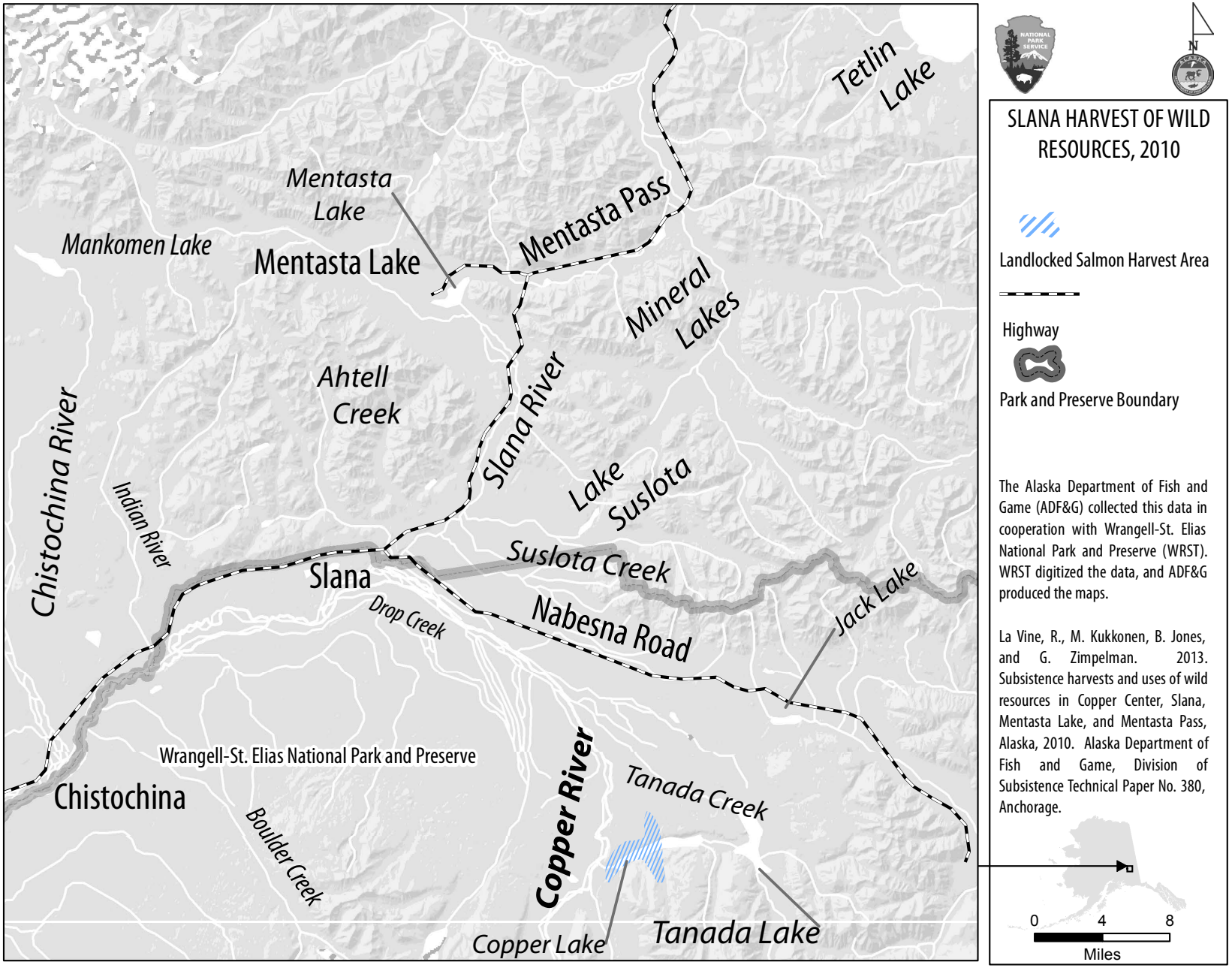
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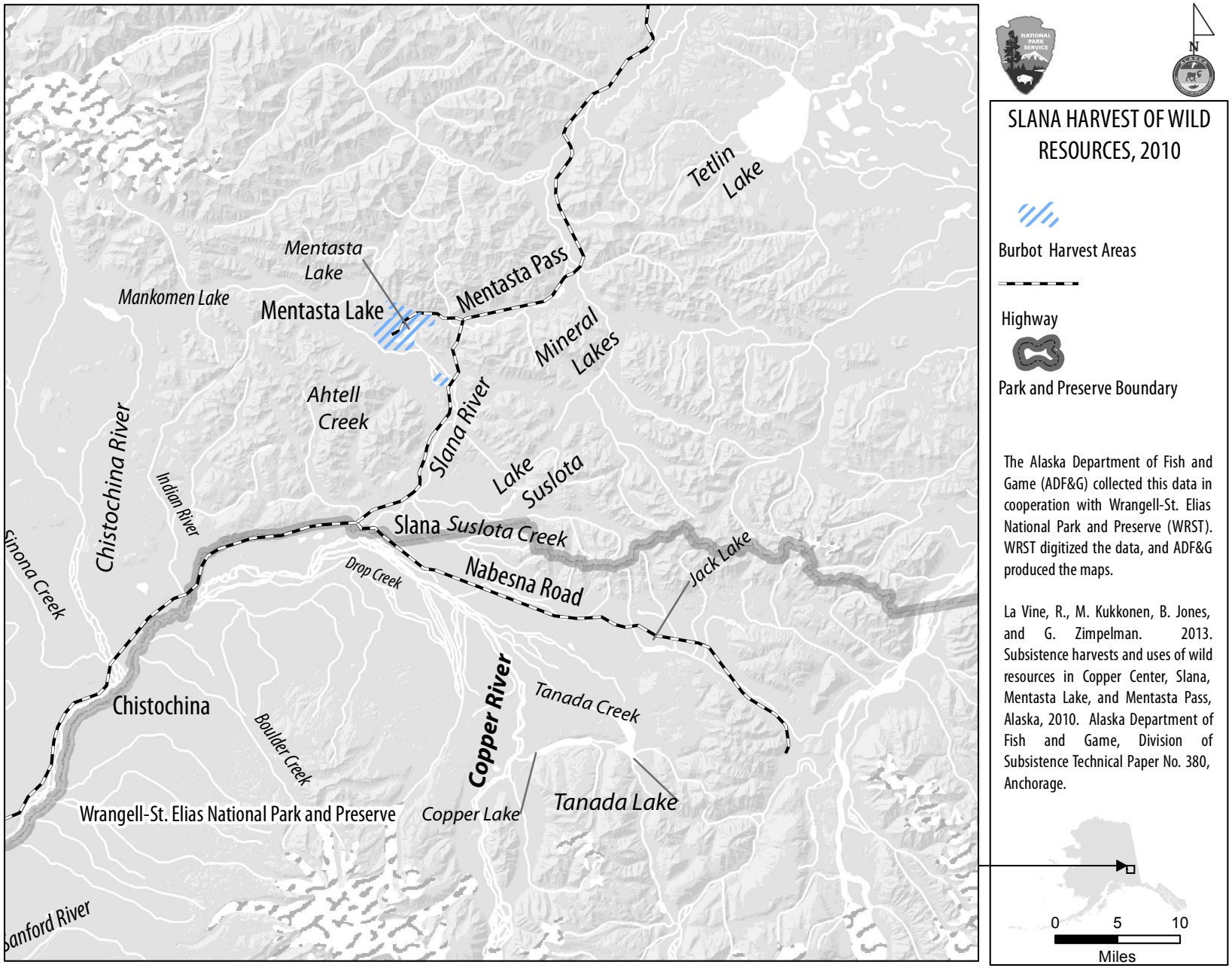
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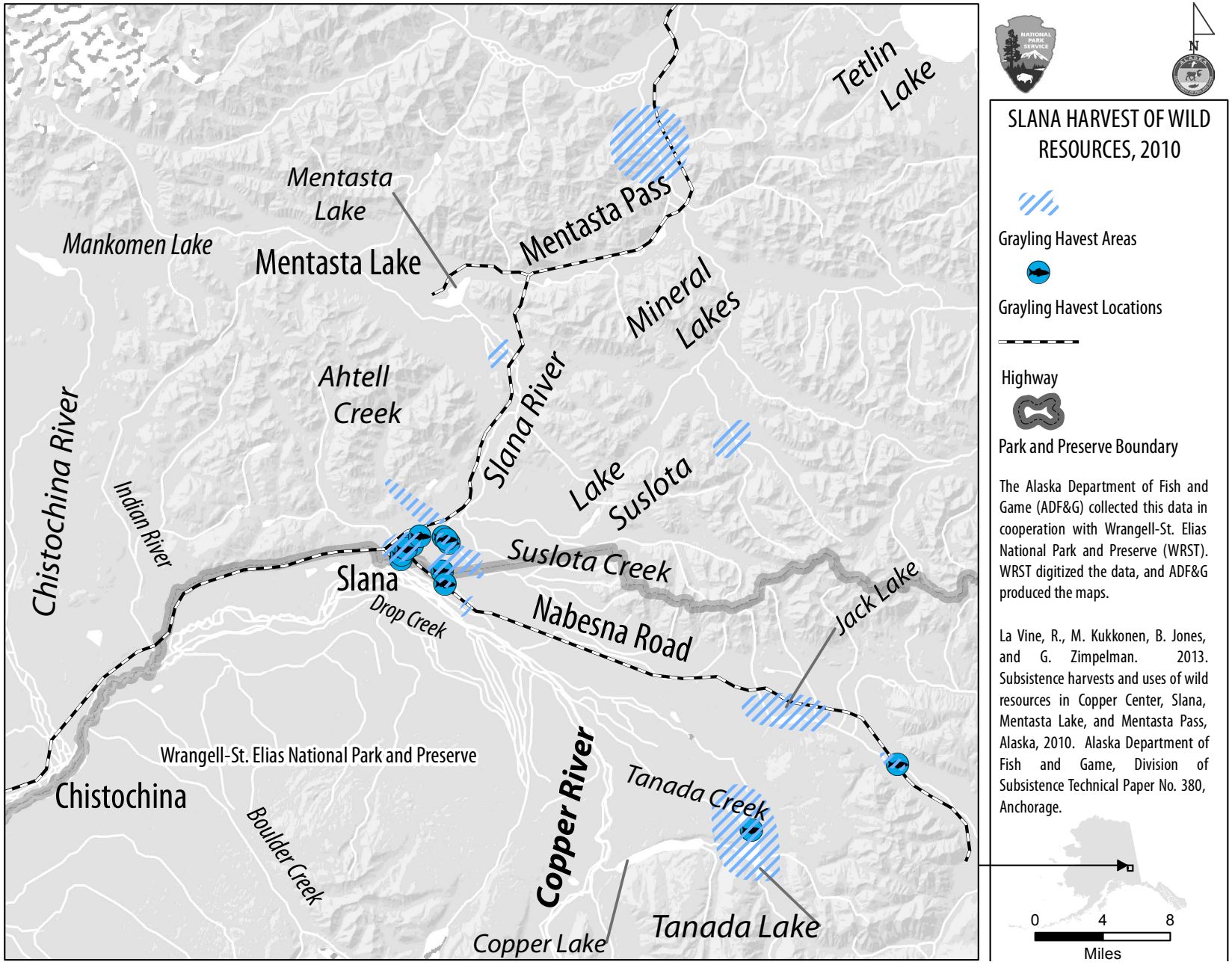


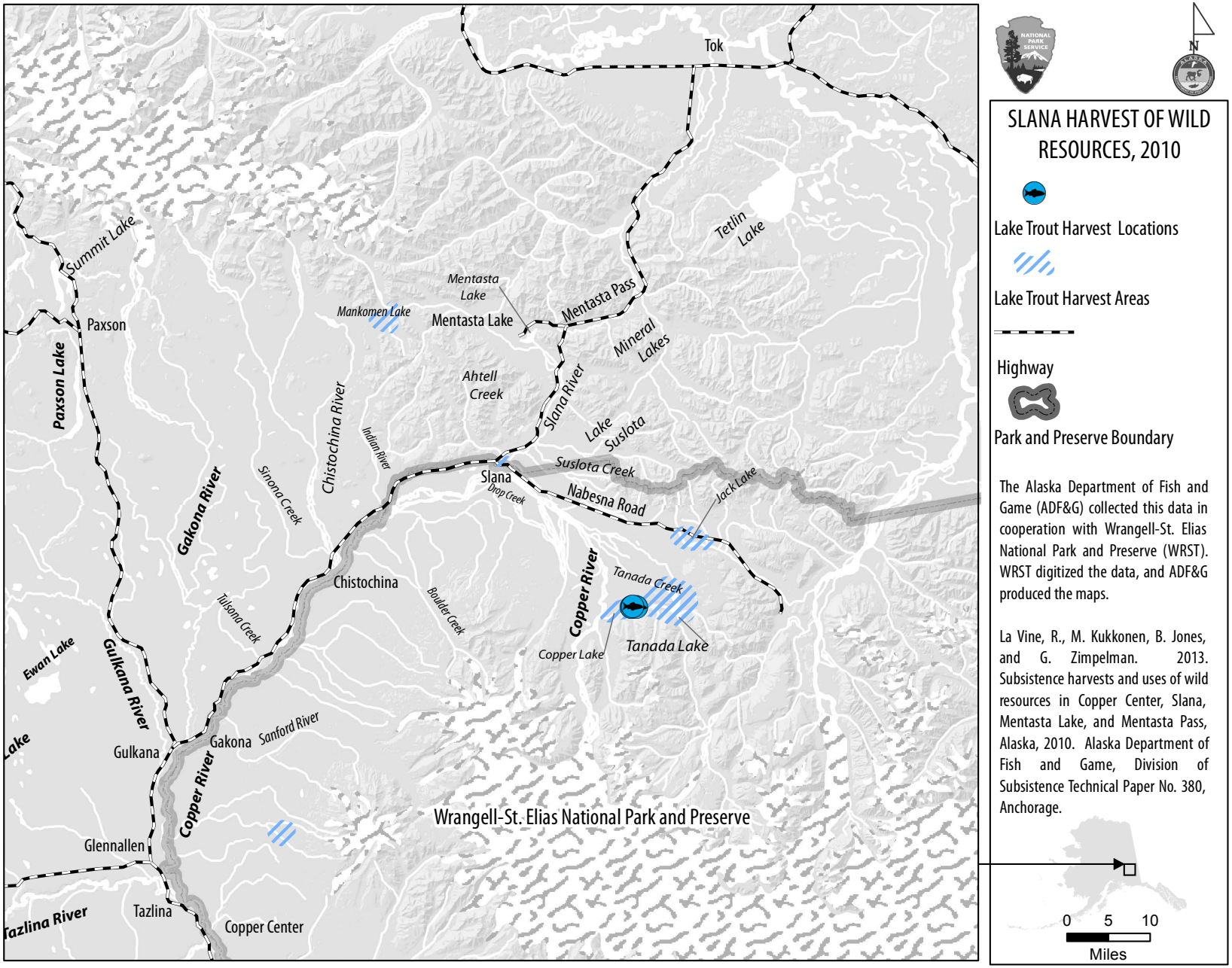

Summit Lake
Paxson
Paxson Lake
Mentasta Lake
Mankomen Lake
Mentasta Pass
Mineral Lakes
Ahtell Creek
Slana River
Lake Suslota
Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Chistochina River
Indian River
Sinona Creek
Gakona River
Chistochina
Tanada Creek
Copper River
Boulder Creek
Copper Lake
Tanada Lake
Tyone River
Tyone Lake
Susitna Lake
Lake Louise
Ewan Lake
Crosswind Lake
Gulkana River
Tulsina Creek
Gulkana
Gakona
Sanford River
Copper River
Glennallen
Wrangell-St. Elias National Park and Preserve
Tazlina River
Tazlina
Copper Center
Tazlina Lake
Klutina River
Copper River
Kenny Lake
Klutina Lake
Tonsina
Tonsina River
Chitina
COPPER CENTER HARVEST OF WILD RESOURCES, 2010
Firewood Harvest Area
Highway
Park and Preserve Boundary
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Miles

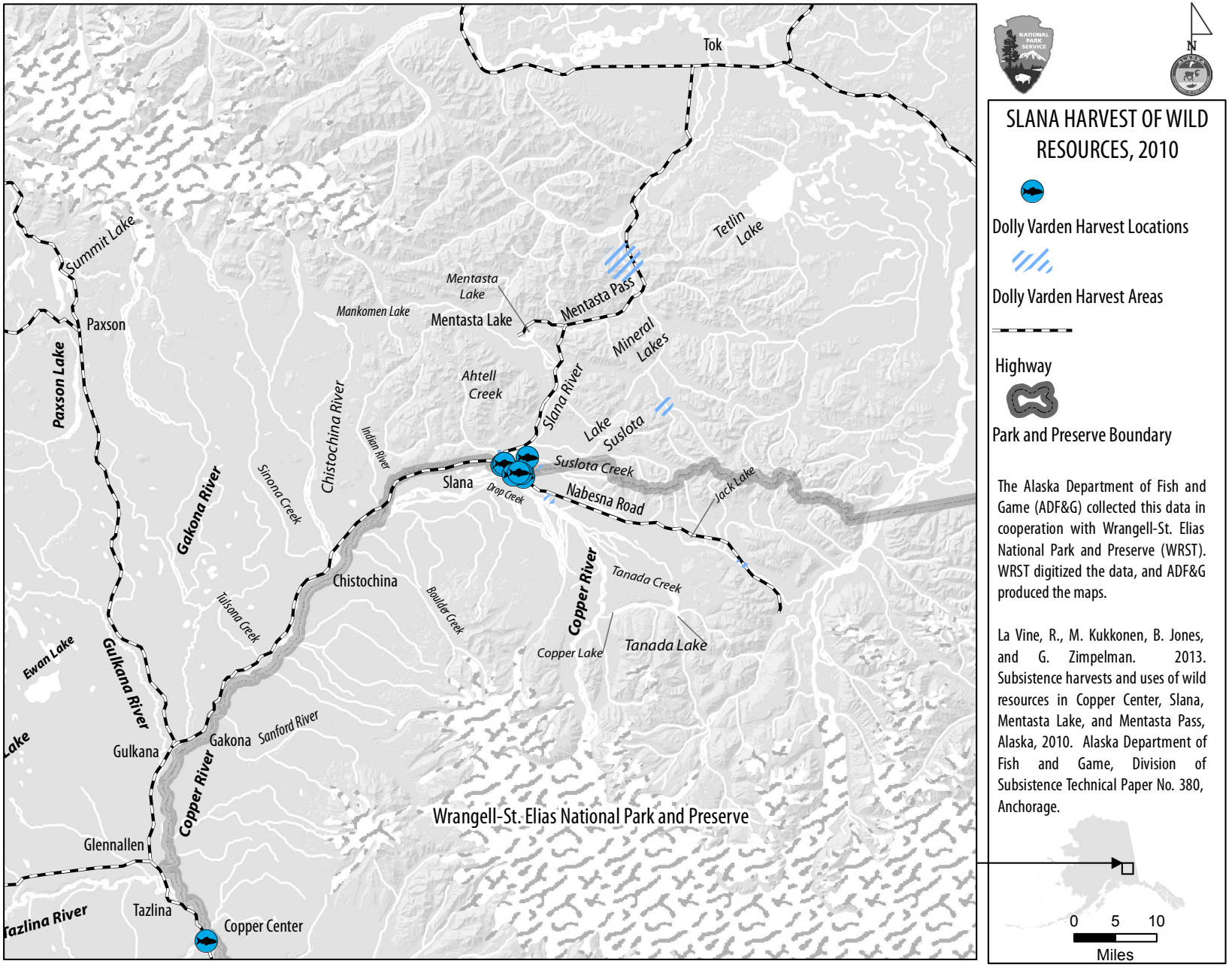

Tetlin Lake
Mentasta Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mineral Lakes
Ahtell Creek
Slana River
Chistochina River
Indian River
Lake Suslota
Slana
Suslota Creek
Drop Creek
Nabesna Road
Jack Lake
Wrangell-St. Elias National Park and Preserve
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Chinook Salmon Harvest Locations
Highway
Park and Preserve Boundary
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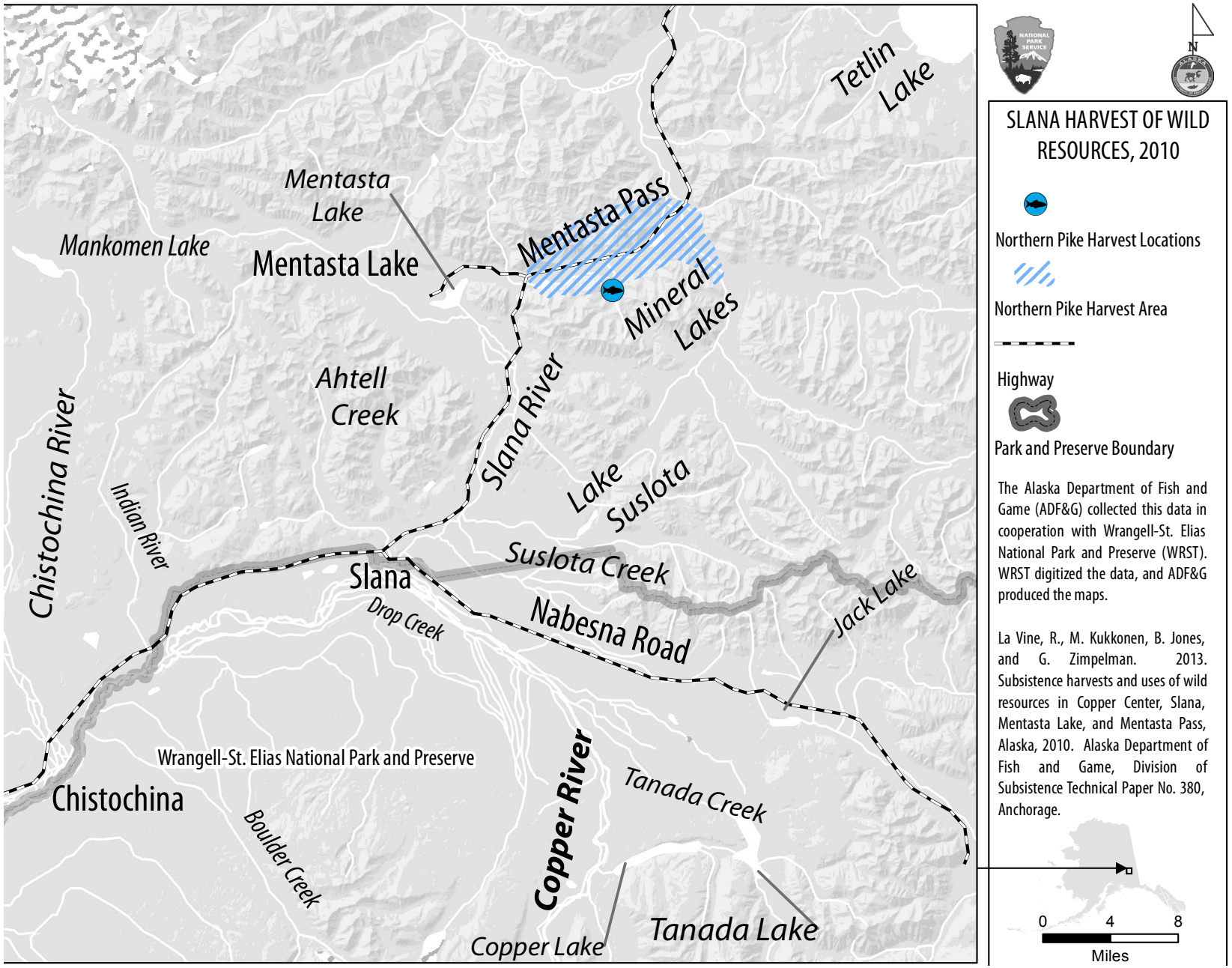

Tetlin Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mentasta Lake
Mineral Lakes
Ahtell Creek
Slana River
Chistochina River
Indian River
Lake Suslota
Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Wrangell-St. Elias National Park and Preserve
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Landlocked Salmon Harvest Area
Highway
Park and Preserve Boundary
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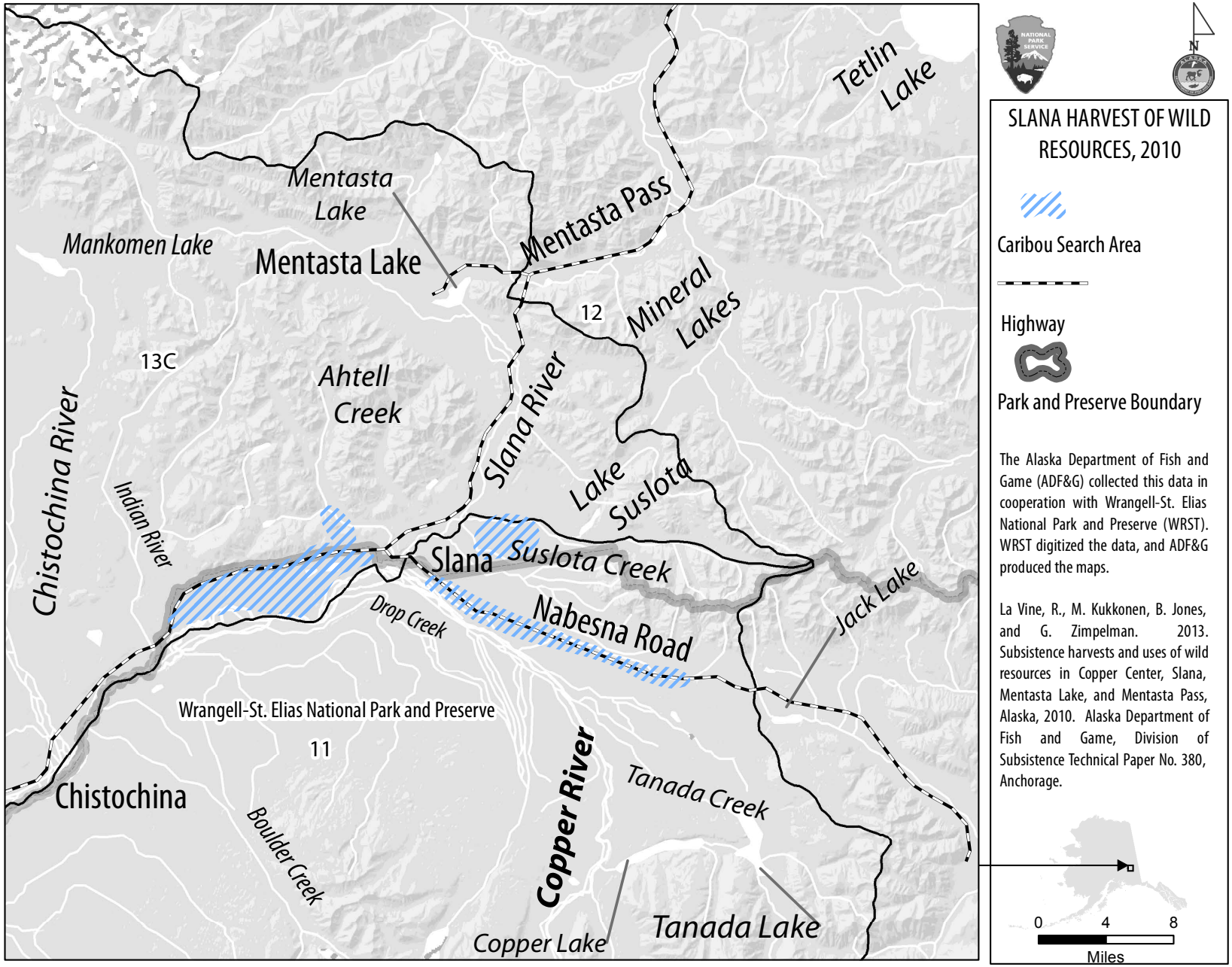

Tetlin Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mentasta Lake
Mineral Lakes
Ahtell Creek
Slana River
Chistochina River
Indian River
Lake Suslota
Slana
Suslota Creek
Sinona Creek
Drop Creek
Nabesna Road
Jack Lake
Chistochina
Boulder Creek
Copper River
Tanada Creek
Wrangell-St. Elias National Park and Preserve
Copper Lake
Tanada Lake
anford River
SLANA HARVEST OF WILD RESOURCES, 2010
Burbot Harvest Areas
Highway
Park and Preserve Boundary
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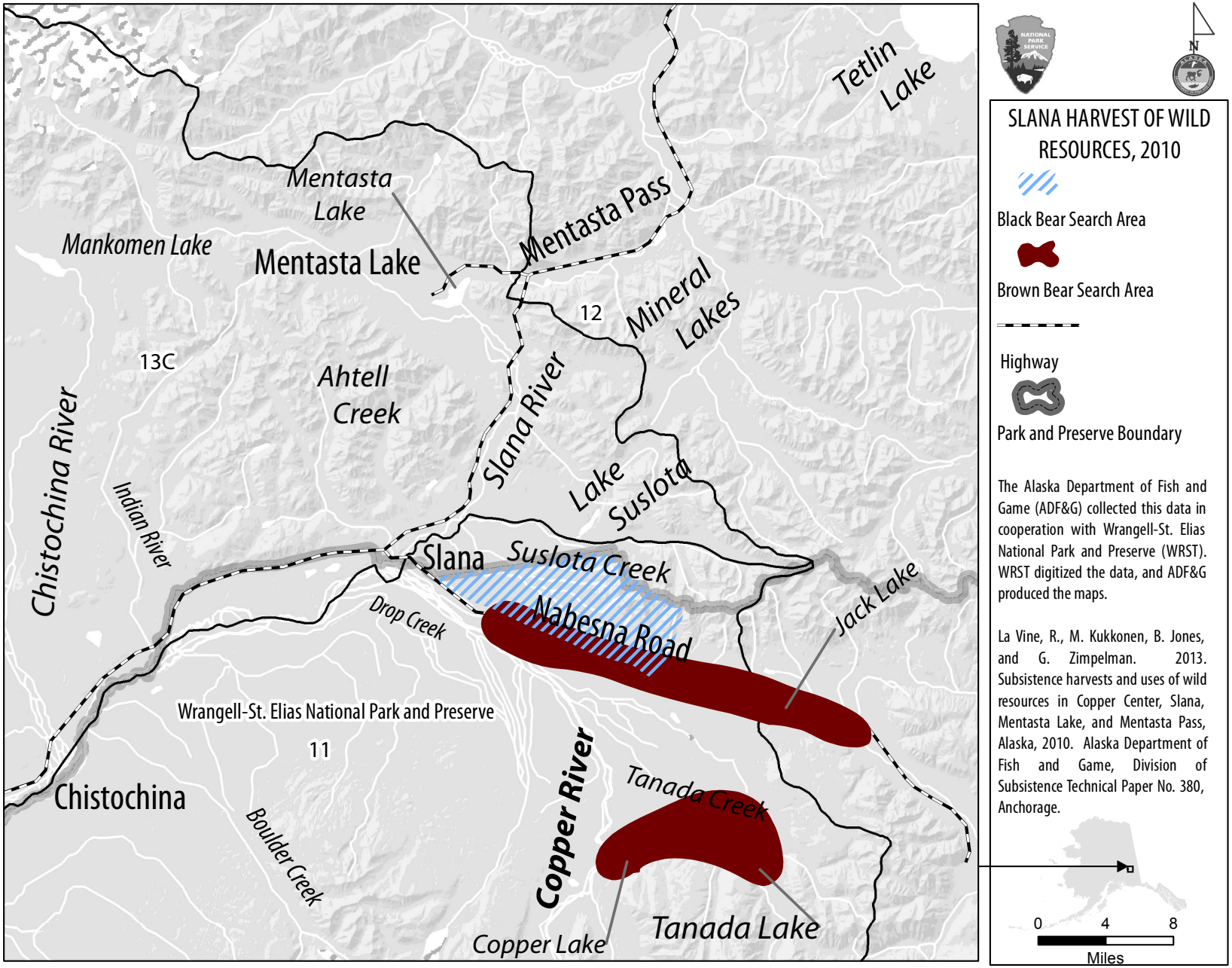

Tetlin Lake
Mentasta Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mineral Lakes
Ahtell Creek
Slana River
Chistochina River
Indian River
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Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Wrangell-St. Elias National Park and Preserve
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Grayling Havest Areas
Grayling Havest Locations
Highway
Park and Preserve Boundary
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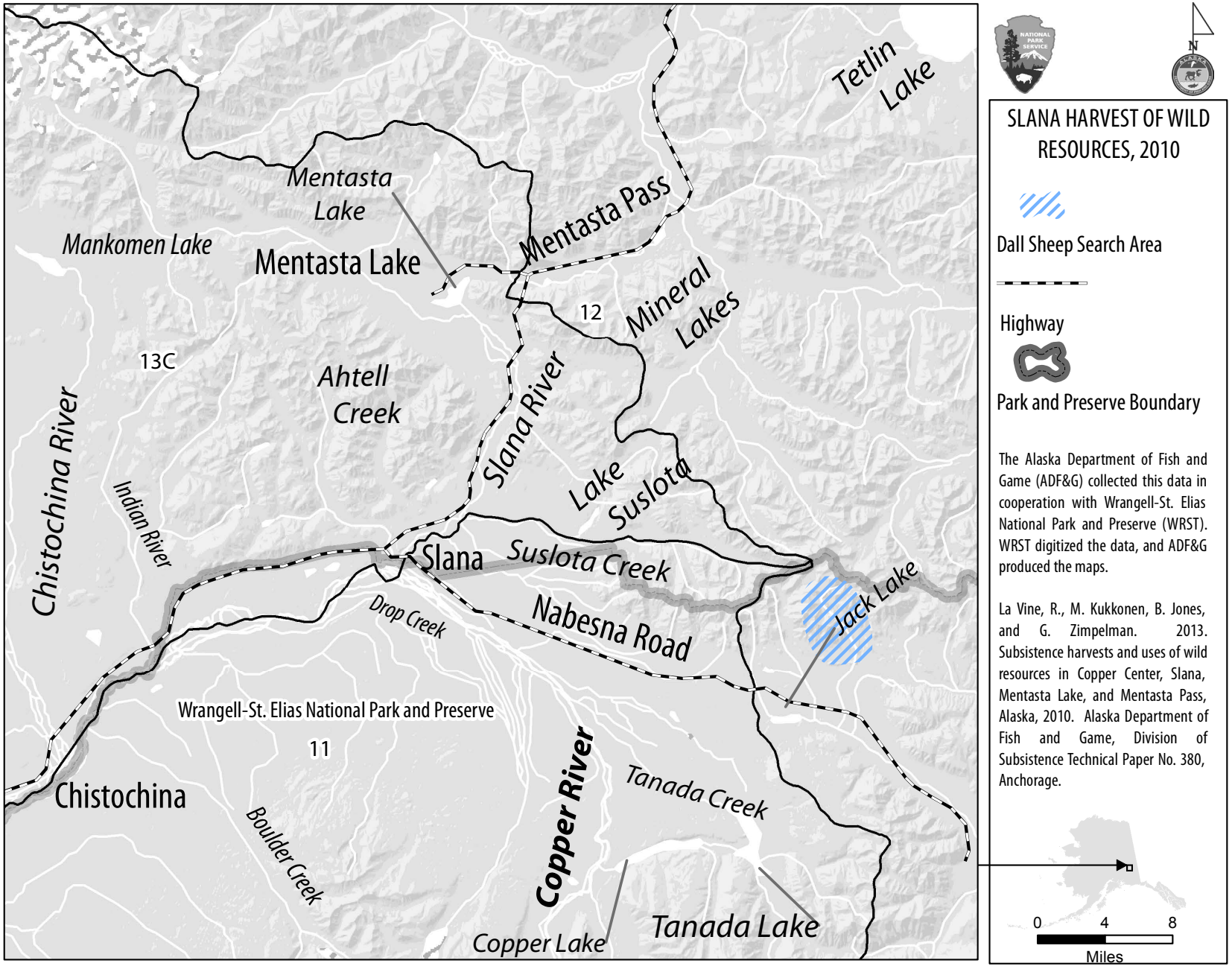

Tok
Summit Lake
Paxson
Paxson Lake
Tetlin Lake
Mentasta Lake
Mankomen Lake
Mentasta Lake
Mentasta Pass
Mineral Lakes
Ahtell Creek
Slana River
Chistochina River
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Lake Suslota
Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Sinona Creek
Gakona River
Chistochina
Tanada Creek
Boulder Creek
Copper River
Tiilsona Creek
Copper Lake
Tanada Lake
Ewan Lake
Gulkana River
Gulkana
Gakona
Sanford River
Copper River
Wrangell-St. Elias National Park and Preserve
Glennallen
Tazlina River
Tazlina
Copper Center
SLANA HARVEST OF WILD RESOURCES, 2010
Lake Trout Harvest Locations
Lake Trout Harvest Areas
Highway
Park and Preserve Boundary
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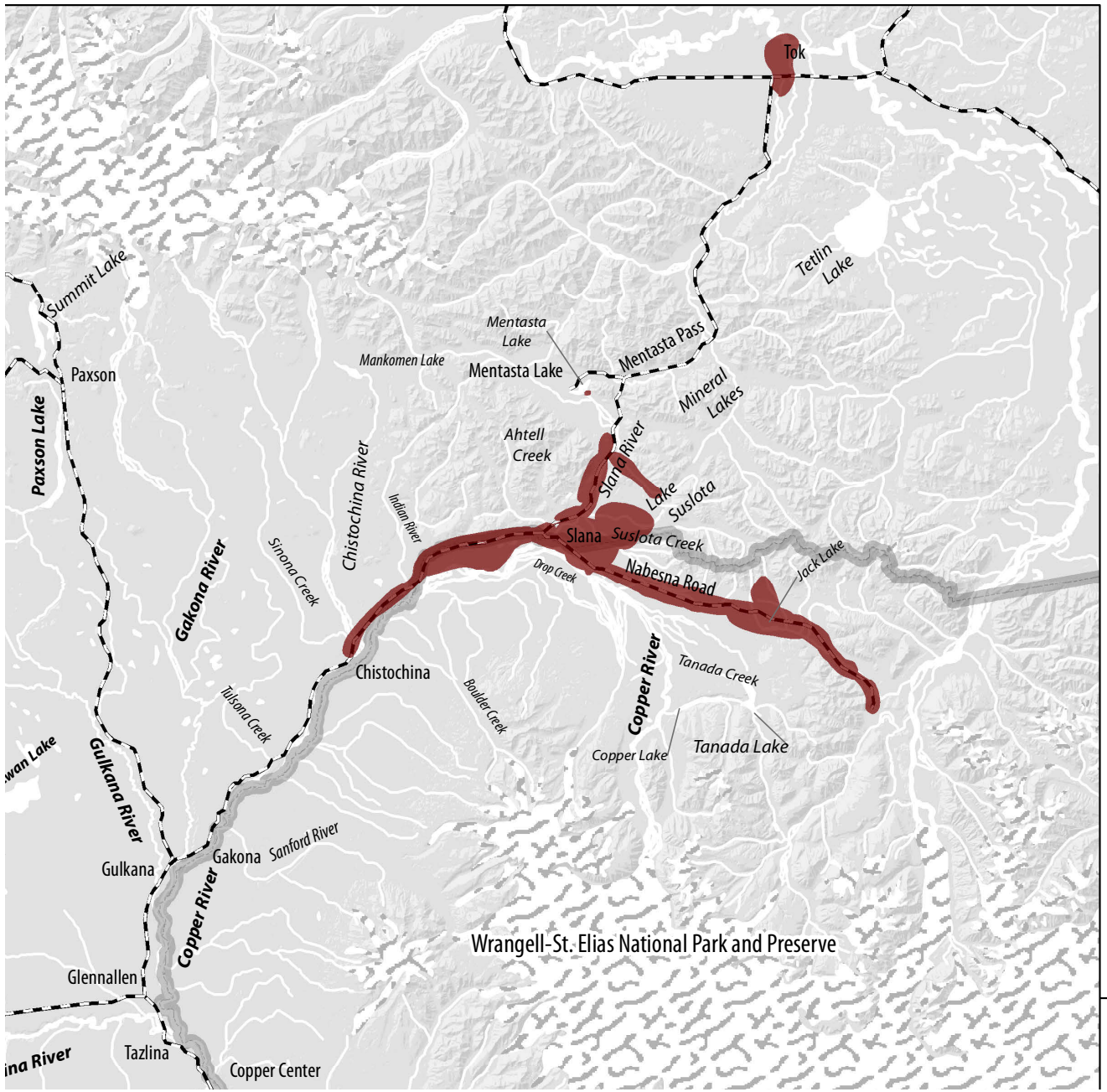

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Tetlin Lake
Summit Lake
Paxson
Paxson Lake
Mentasta Lake
Mankomen Lake
Mentasta Pass
Mineral Lakes
Ahtell Creek
Slana River
Lake Suslota
Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Chistochina River
Indian River
Sinona Creek
Gakona River
Chistochina
Tulsona Creek
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
Ewan Lake
Gulkana River
Gulkana
Gakona
Sanford River
Copper River
Wrangell-St. Elias National Park and Preserve
Glennallen
Tazlina
Tazlina River
Copper Center
SLANA HARVEST OF WILD RESOURCES, 2010
Dolly Varden Harvest Locations
Dolly Varden Harvest Areas
Highway
Park and Preserve Boundary
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Tetlin Lake
Mentasta Lake
Mankomen Lake
Mentasta Lake
Mentasta Pass
Mineral Lakes
Ahtell Creek
Slana River
Chistochina River
Indian River
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Suslota Creek
Slana
Drop Creek
Nabesna Road
Jack Lake
Wrangell-St. Elias National Park and Preserve
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Northern Pike Harvest Locations
Northern Pike Harvest Area
Highway
Park and Preserve Boundary
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Tetlin Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mentasta Lake
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Mineral Lakes
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Ahtell Creek
Slana River
Chistochina River
Indian River
Lake Suslota
Slana
Suslota Creek
Drop Creek
Nabesna Road
Jack Lake
Wrangell-St. Elias National Park and Preserve
11
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Caribou Search Area
Highway
Park and Preserve Boundary
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Miles


Tetlin Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mentasta Lake
12
Mineral Lakes
13C
Ahtell Creek
Slana River
Chistochina River
Indian River
Lake Suslota
Slana
Suslota Creek
Nabesna Road
Jack Lake
Drop Creek
Wrangell-St. Elias National Park and Preserve
11
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Black Bear Search Area
Brown Bear Search Area
Highway
Park and Preserve Boundary
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Miles


Tetlin Lake
Mentasta Lake
Mentasta Pass
Mankomen Lake
Mentasta Lake
12
Mineral Lakes
13C
Ahtell Creek
Slana River
Chistochina River
Indian River
Lake Suslota
Slana
Suslota Creek
Jack Lake
Drop Creek
Nabesna Road
Wrangell-St. Elias National Park and Preserve
11
Chistochina
Boulder Creek
Copper River
Tanada Creek
Copper Lake
Tanada Lake
SLANA HARVEST OF WILD RESOURCES, 2010
Dall Sheep Search Area
Highway
Park and Preserve Boundary
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SLANA HARVEST OF WILD RESOURCES, 2010

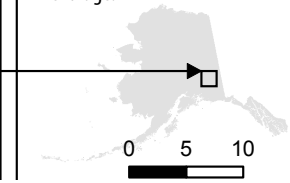
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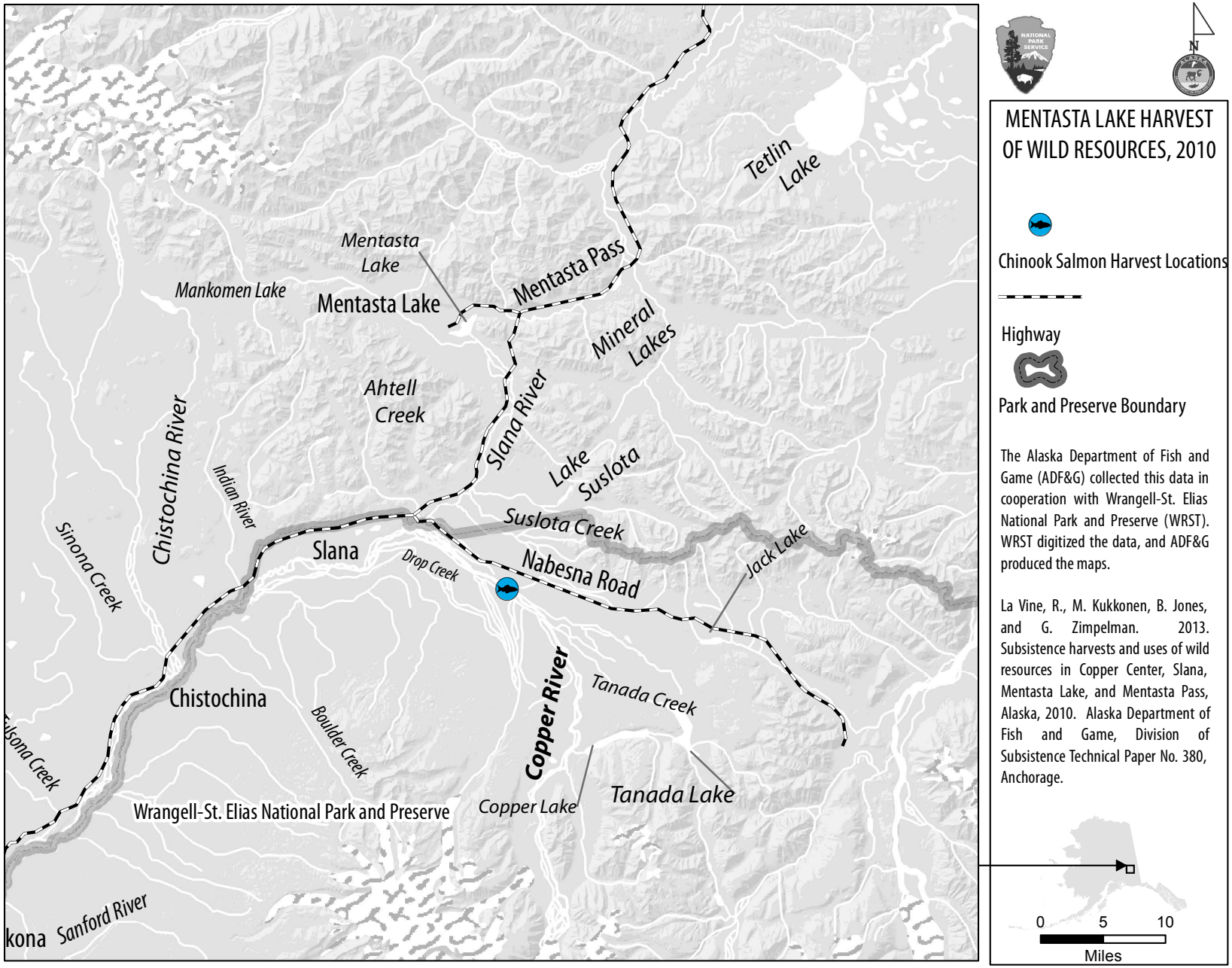
Highway

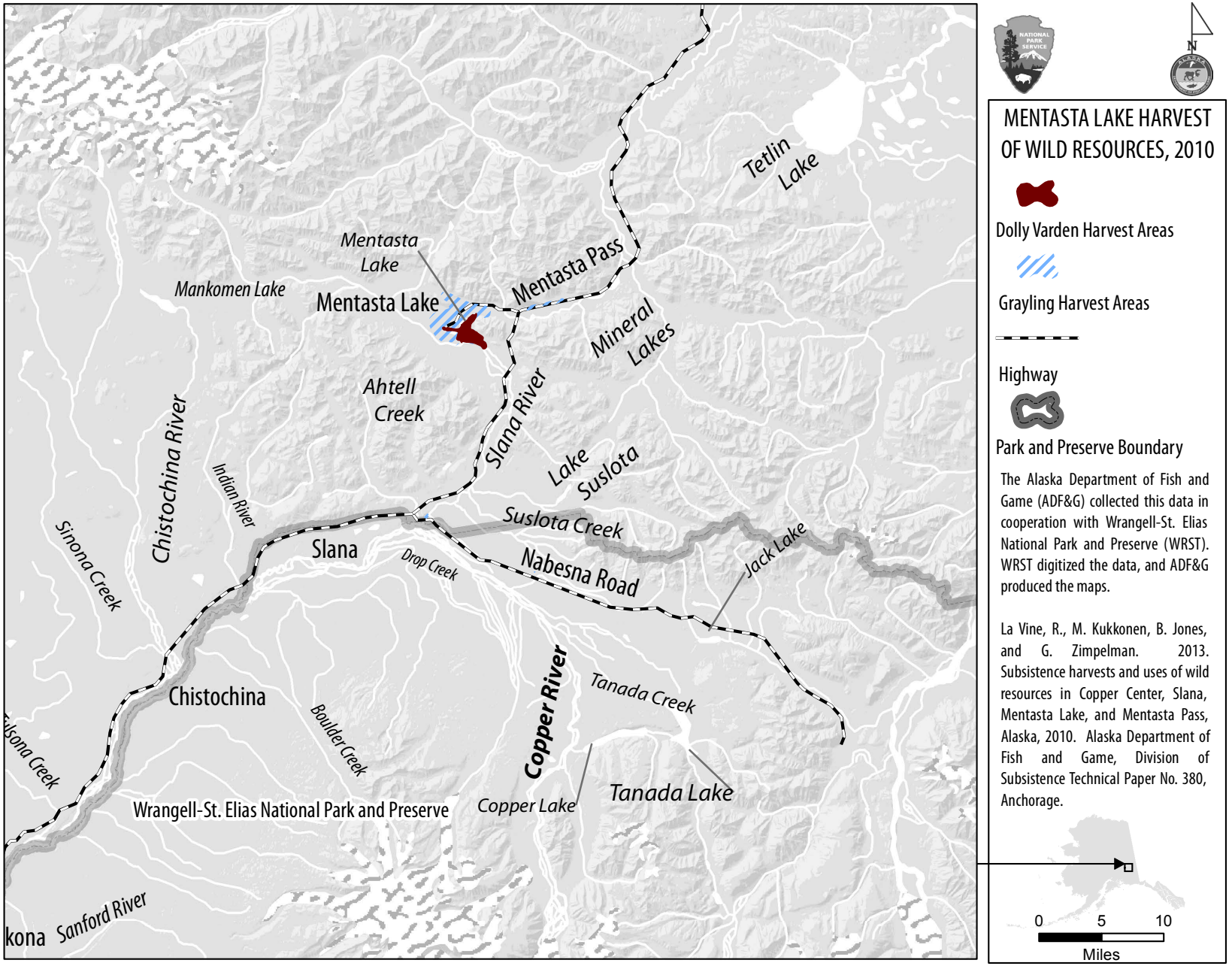
Park and Preserve Boundary

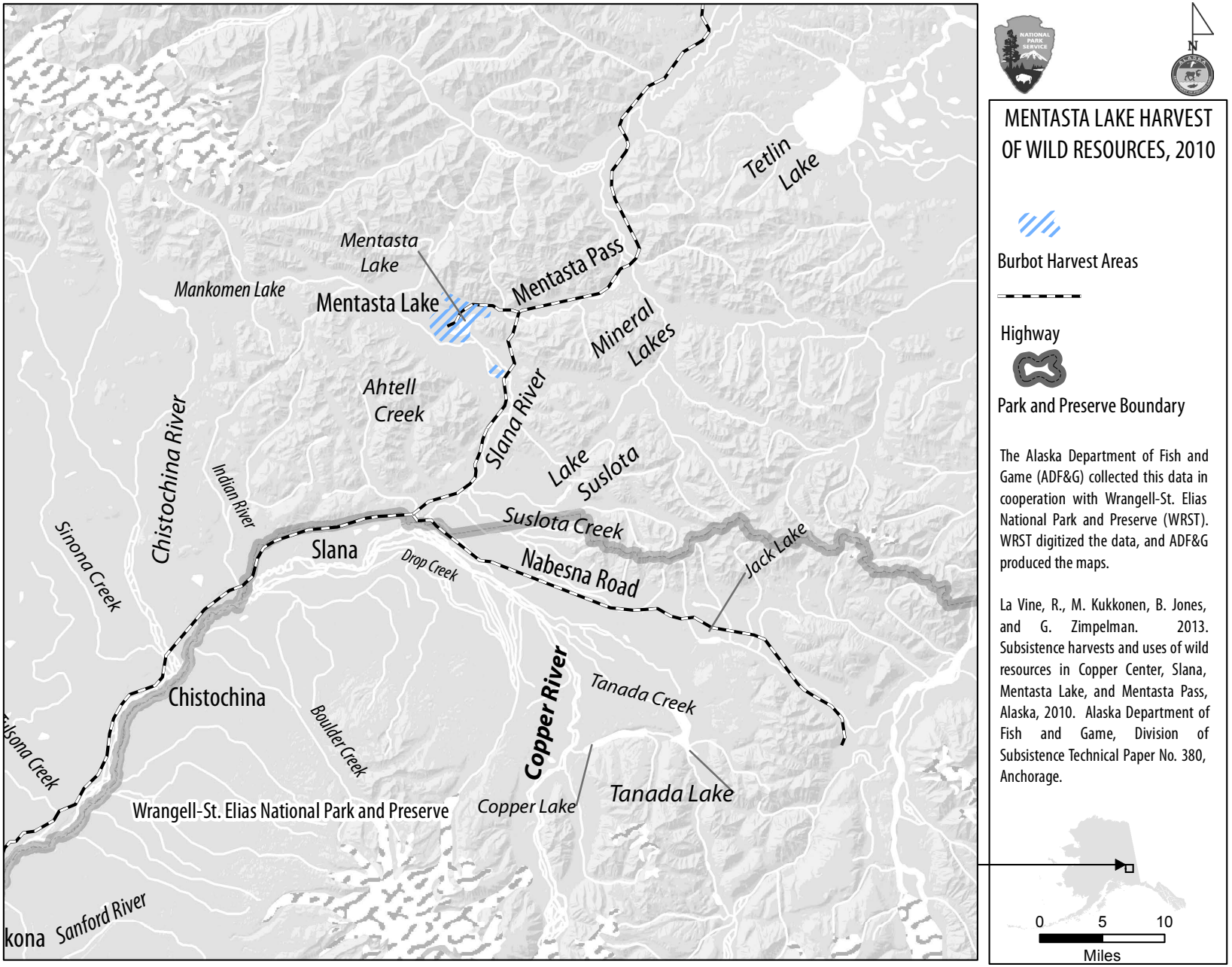
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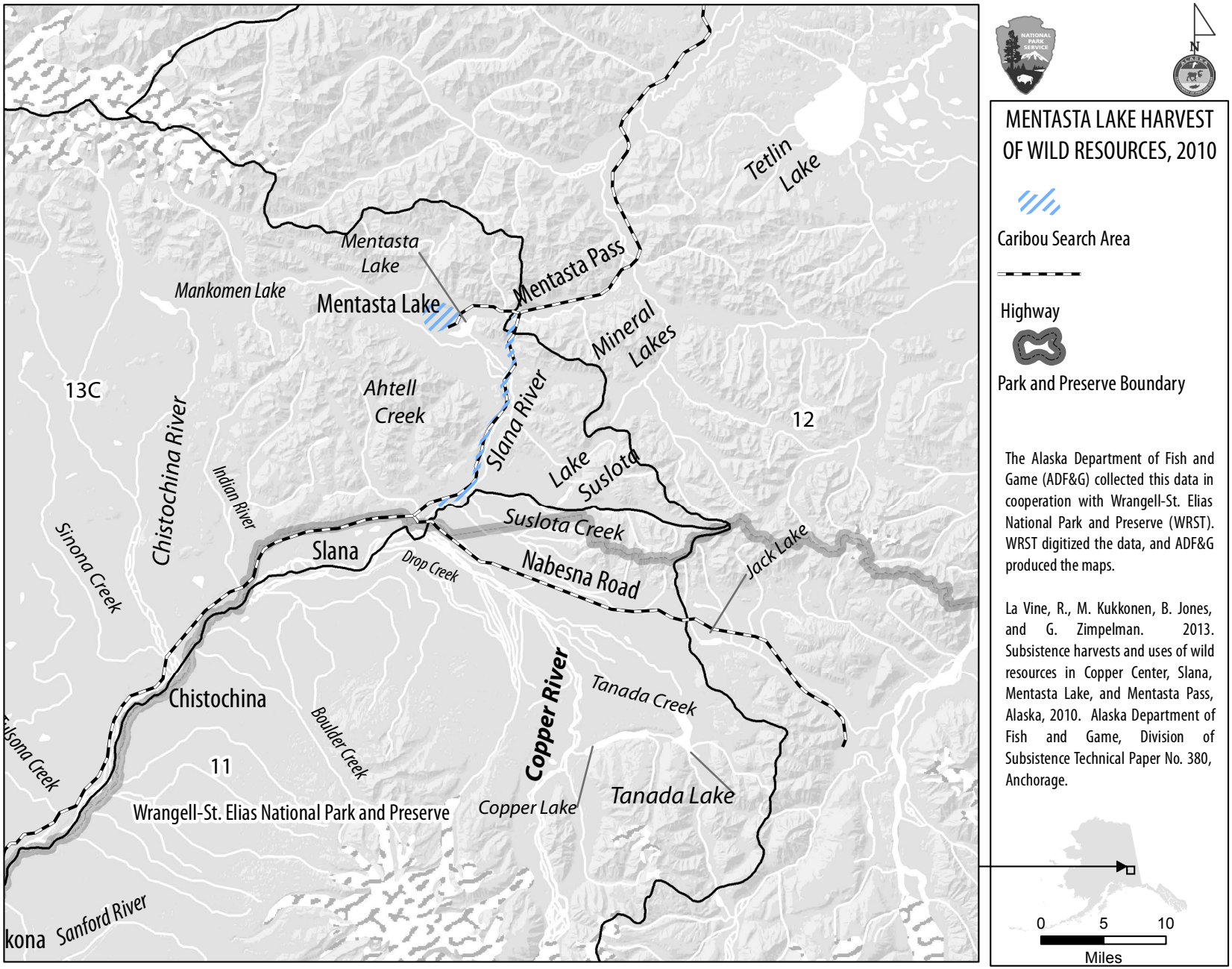
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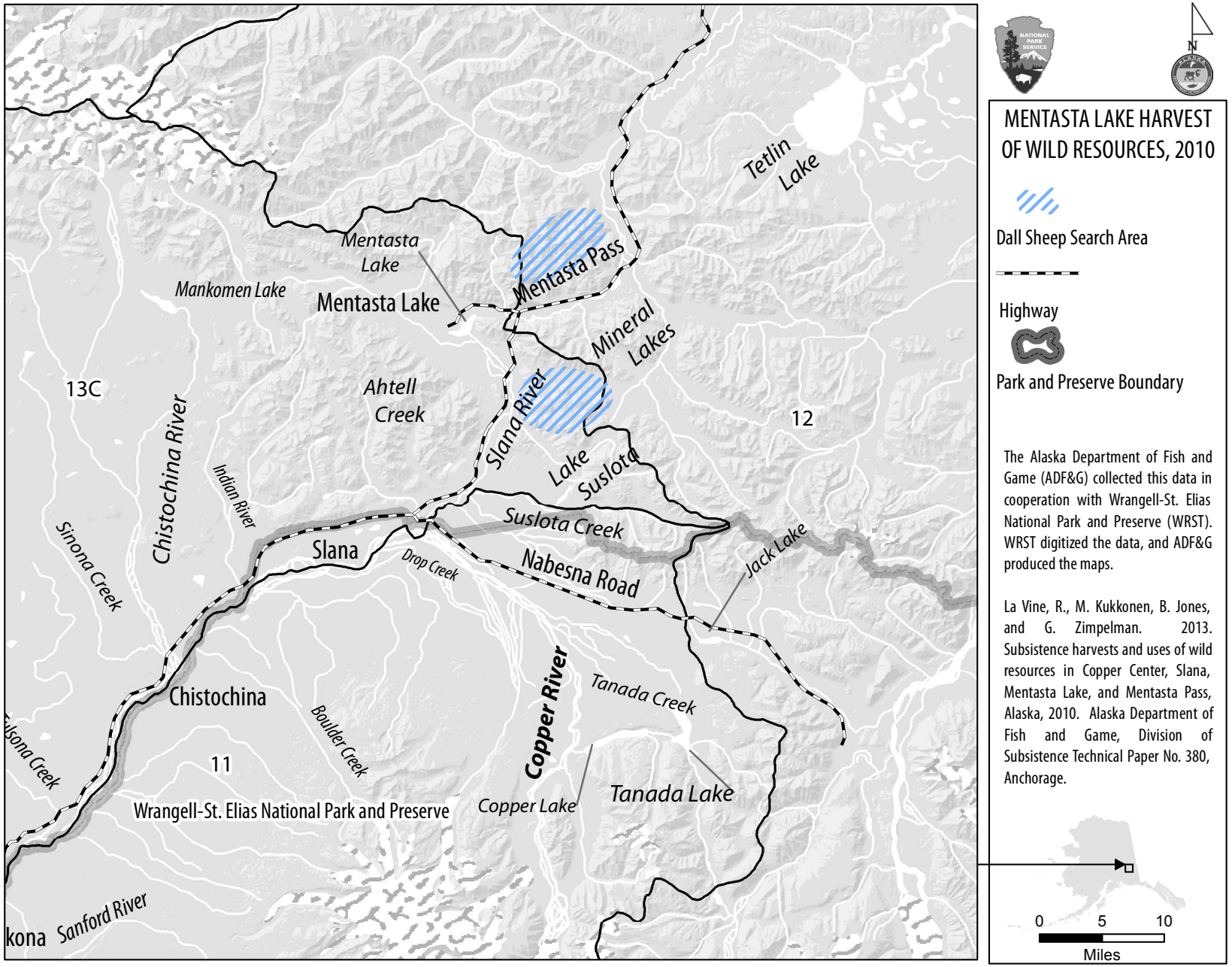


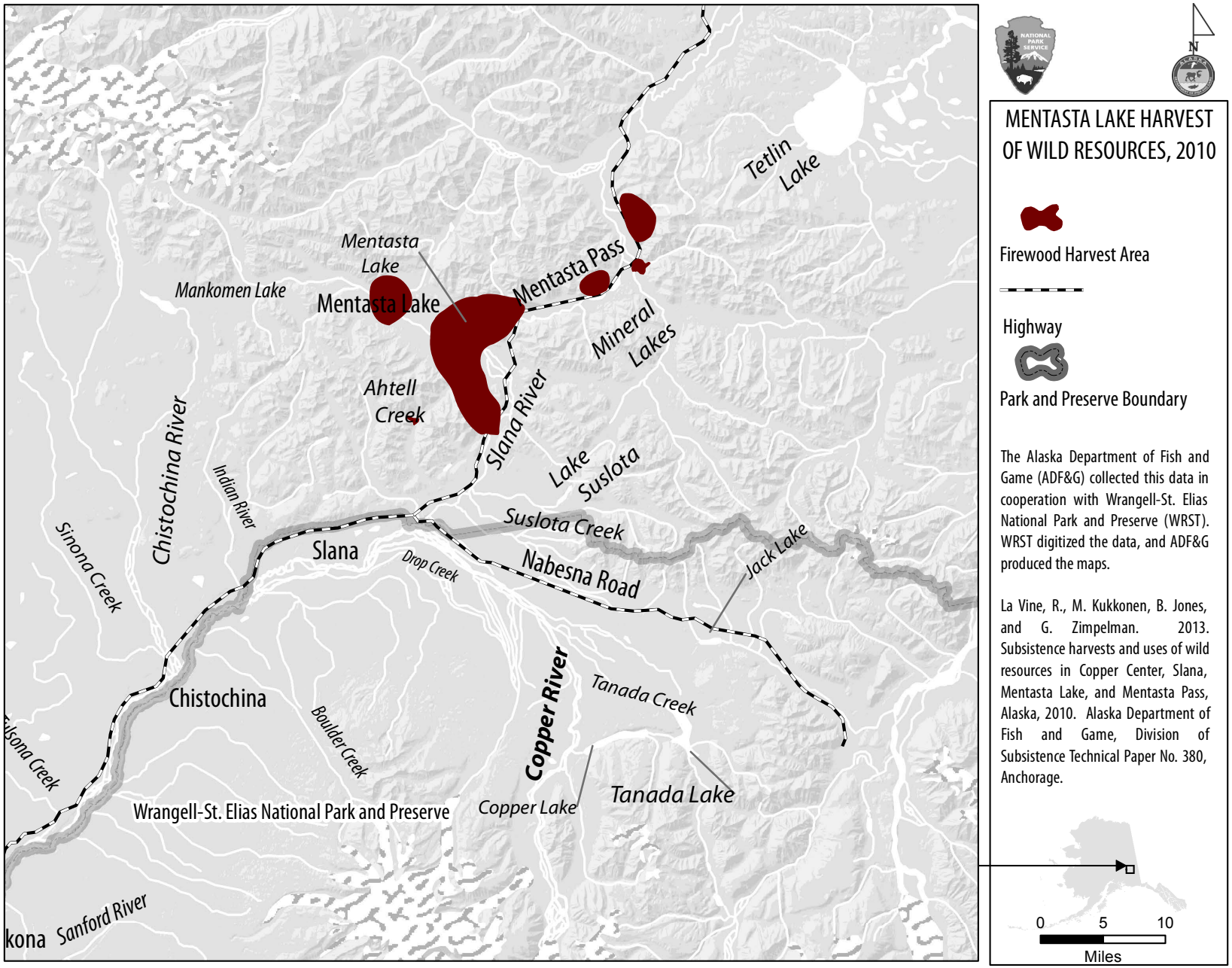

MENTASTA LAKE HARVEST OF WILD RESOURCES, 2010
Chinook Salmon Harvest Locations
Highway
Park and Preserve Boundary
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Wrangell-St. Elias National Park and Preserve
Sanford River

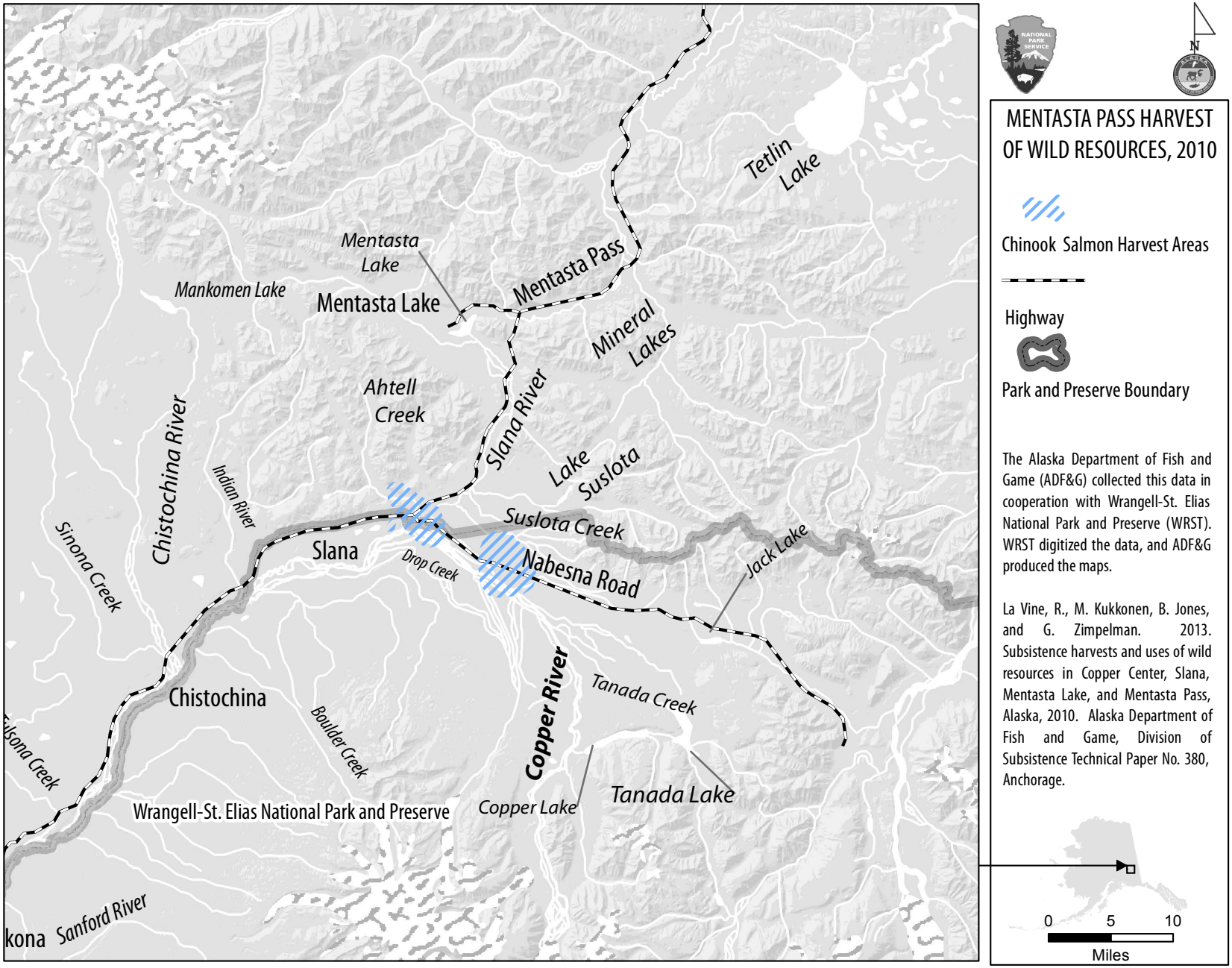

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MENTASTA LAKE HARVEST OF WILD RESOURCES, 2010
Dolly Varden Harvest Areas
Grayling Harvest Areas
Highway
Park and Preserve Boundary
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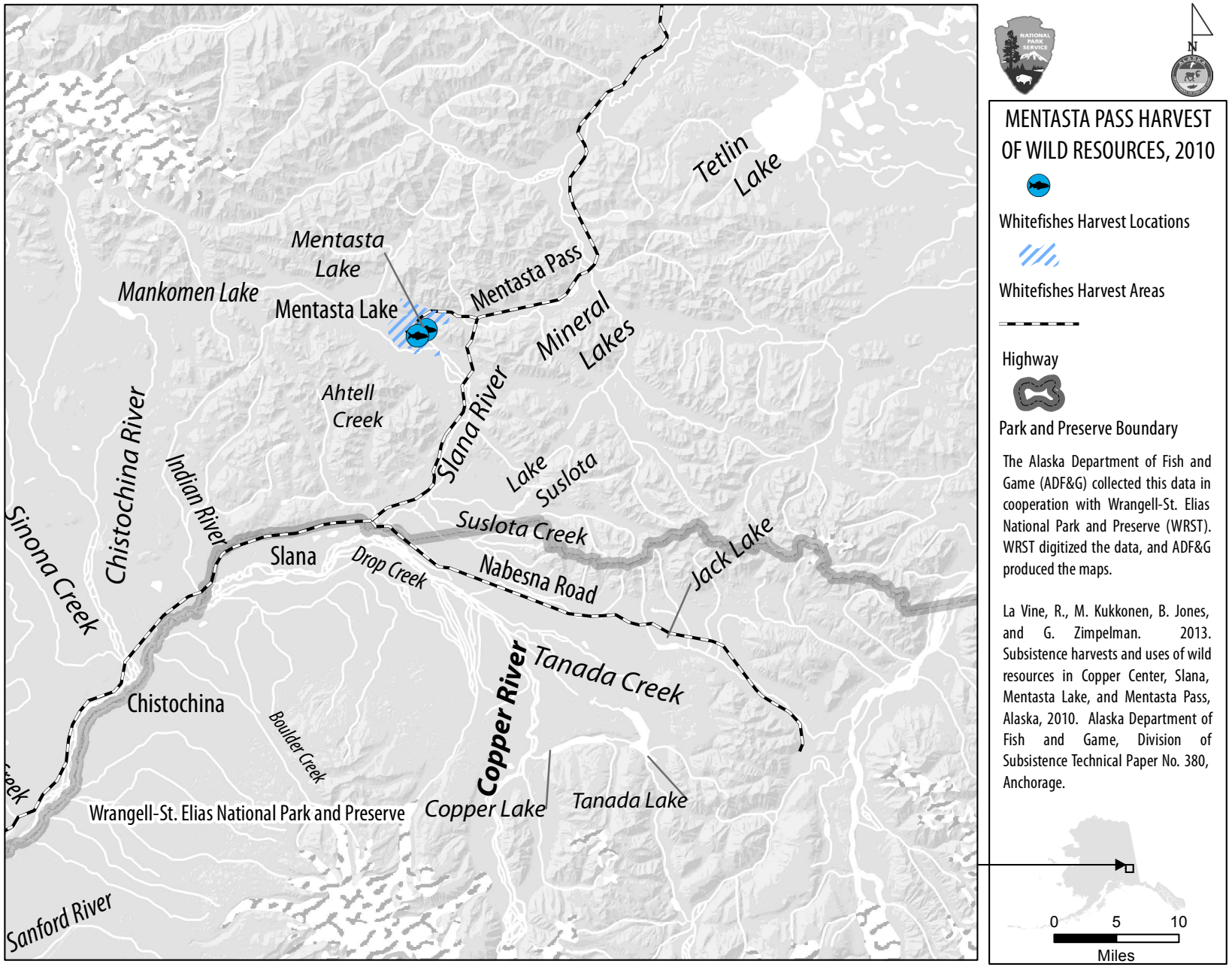

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Suslota Creek
Sinona Creek
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Drop Creek
Nabesna Road
Jack Lake
Chistochina
Boulder Creek
Copper River
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MENTASTA LAKE HARVEST OF WILD RESOURCES, 2010
Burbot Harvest Areas
Highway
Park and Preserve Boundary
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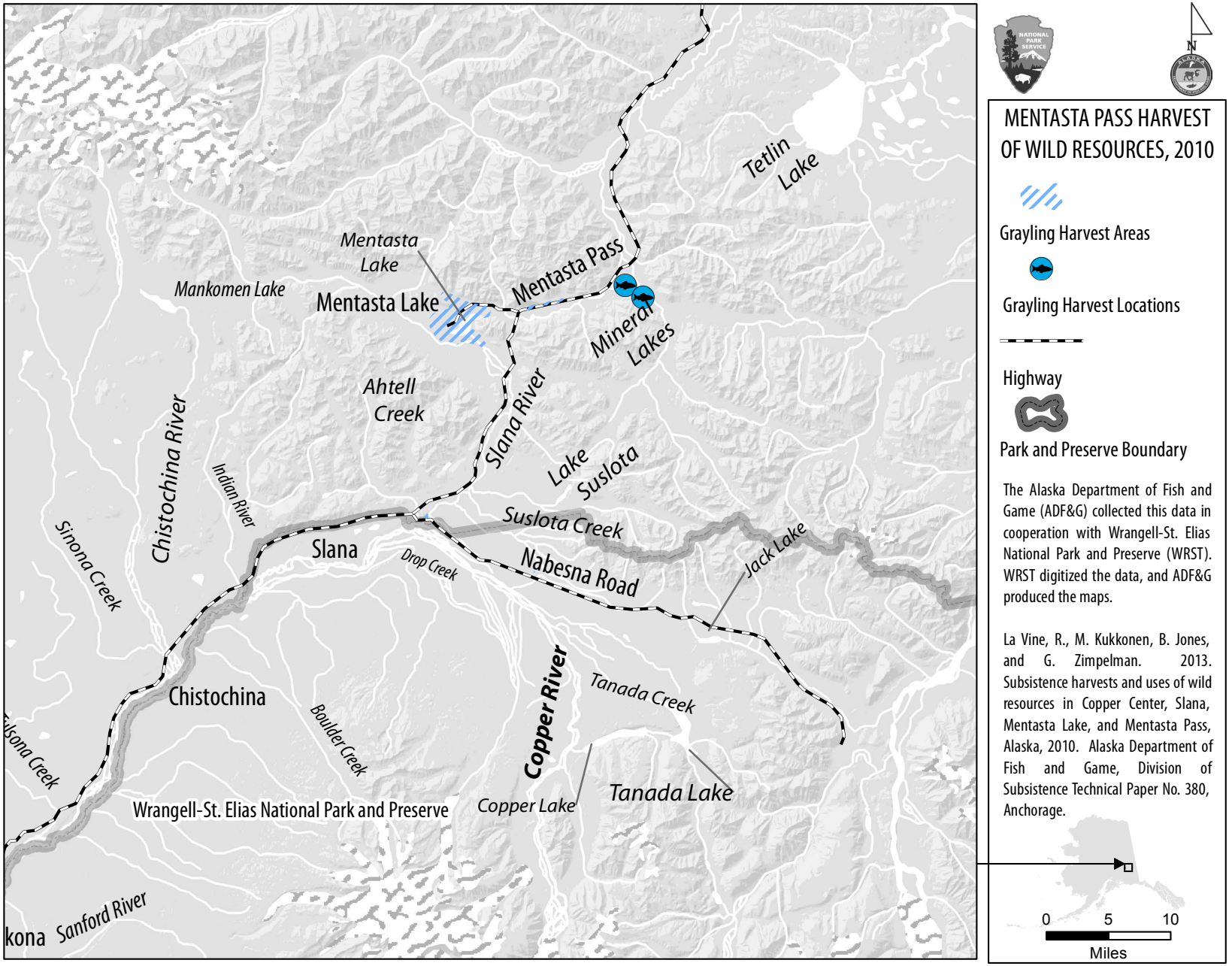

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Wrangell-St. Elias National Park and Preserve
Copper Lake
Tanada Lake
Sanford River
MENTASTA LAKE HARVEST OF WILD RESOURCES, 2010
Caribou Search Area
Highway
Park and Preserve Boundary
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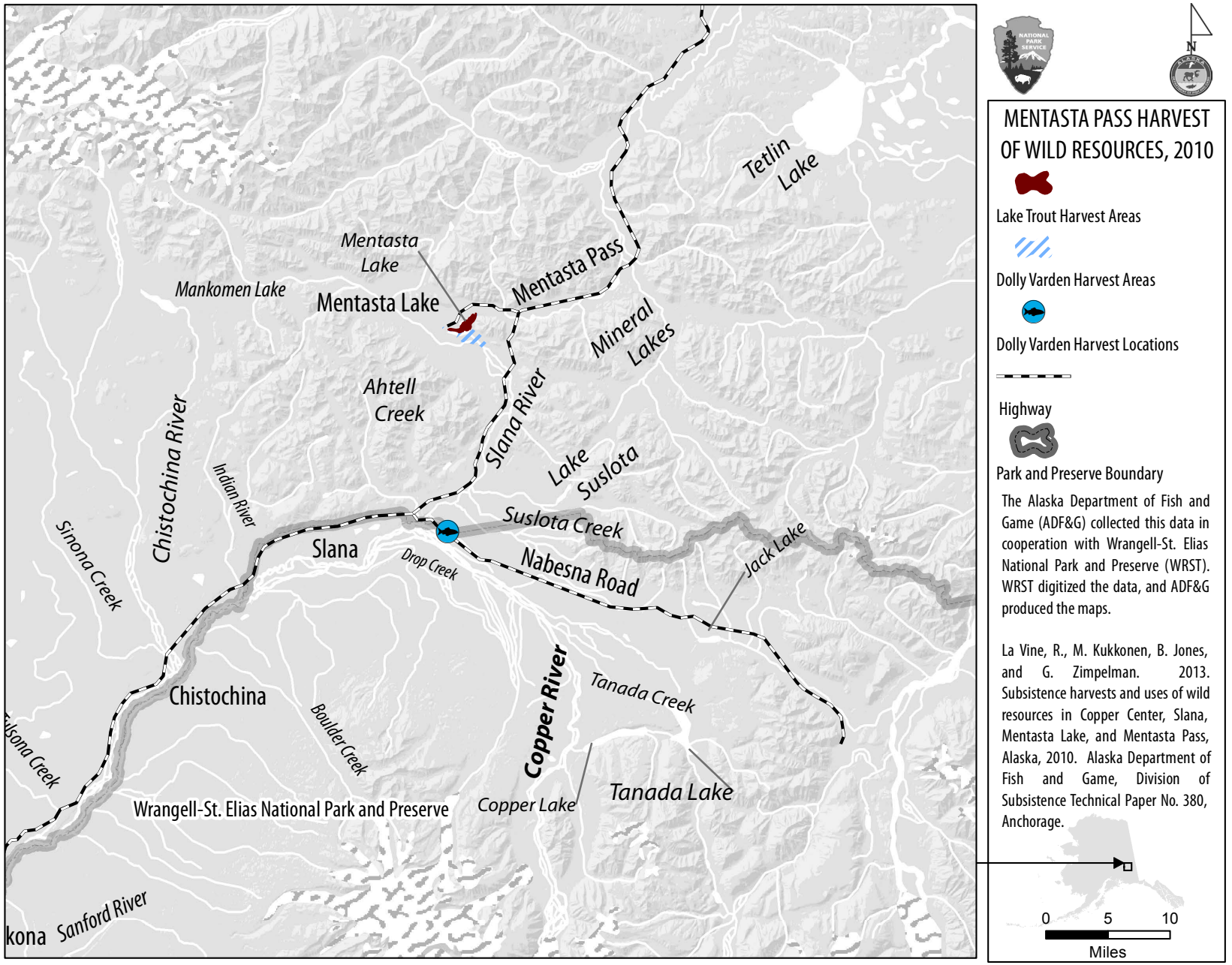

MENTASTA LAKE HARVEST OF WILD RESOURCES, 2010
Dall Sheep Search Area
Highway
Park and Preserve Boundary
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Copper Lake
Tanada Lake
Sanford River

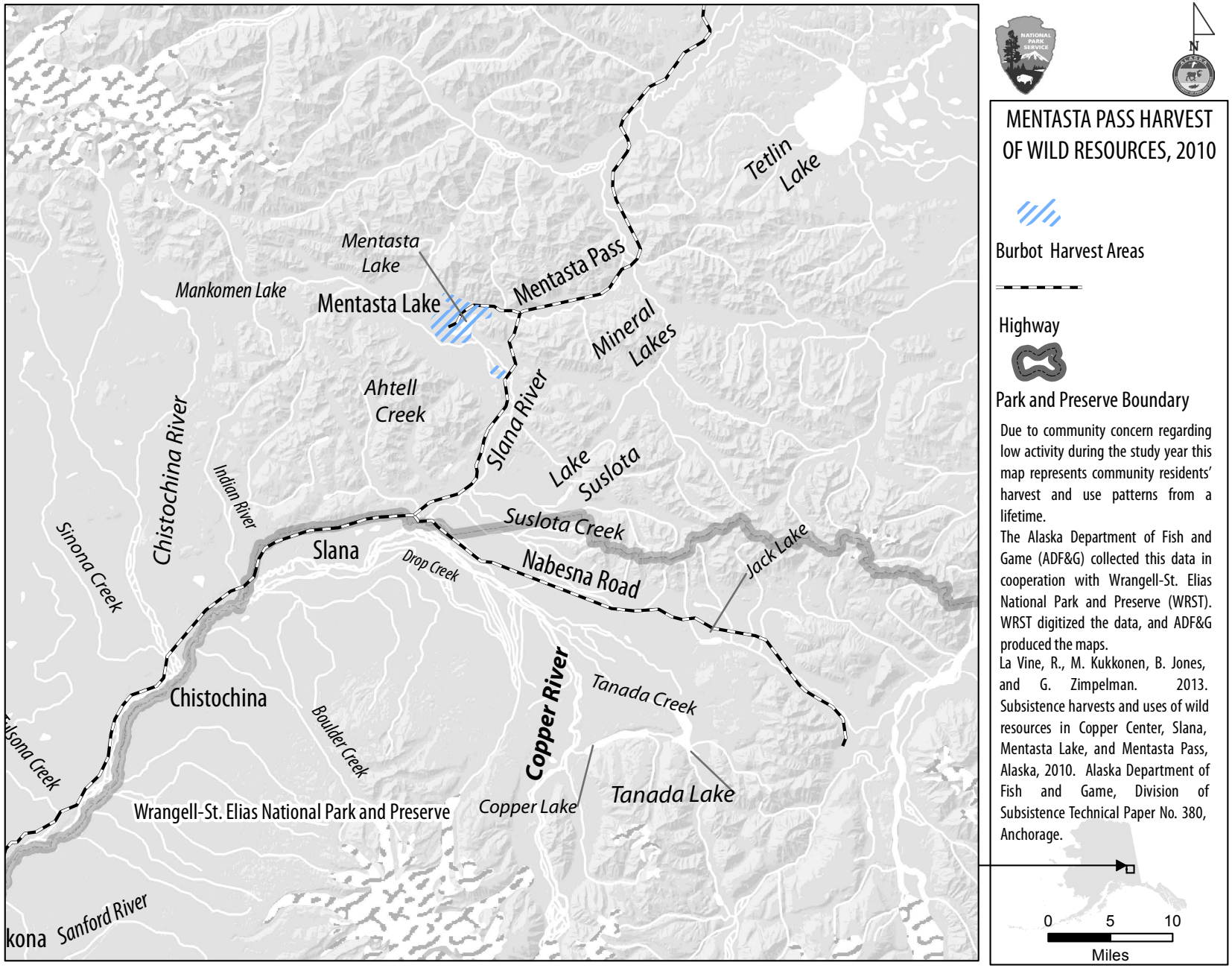

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Copper Lake
Tanada Lake
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MENTASTA LAKE HARVEST OF WILD RESOURCES, 2010
Firewood Harvest Area
Highway
Park and Preserve Boundary
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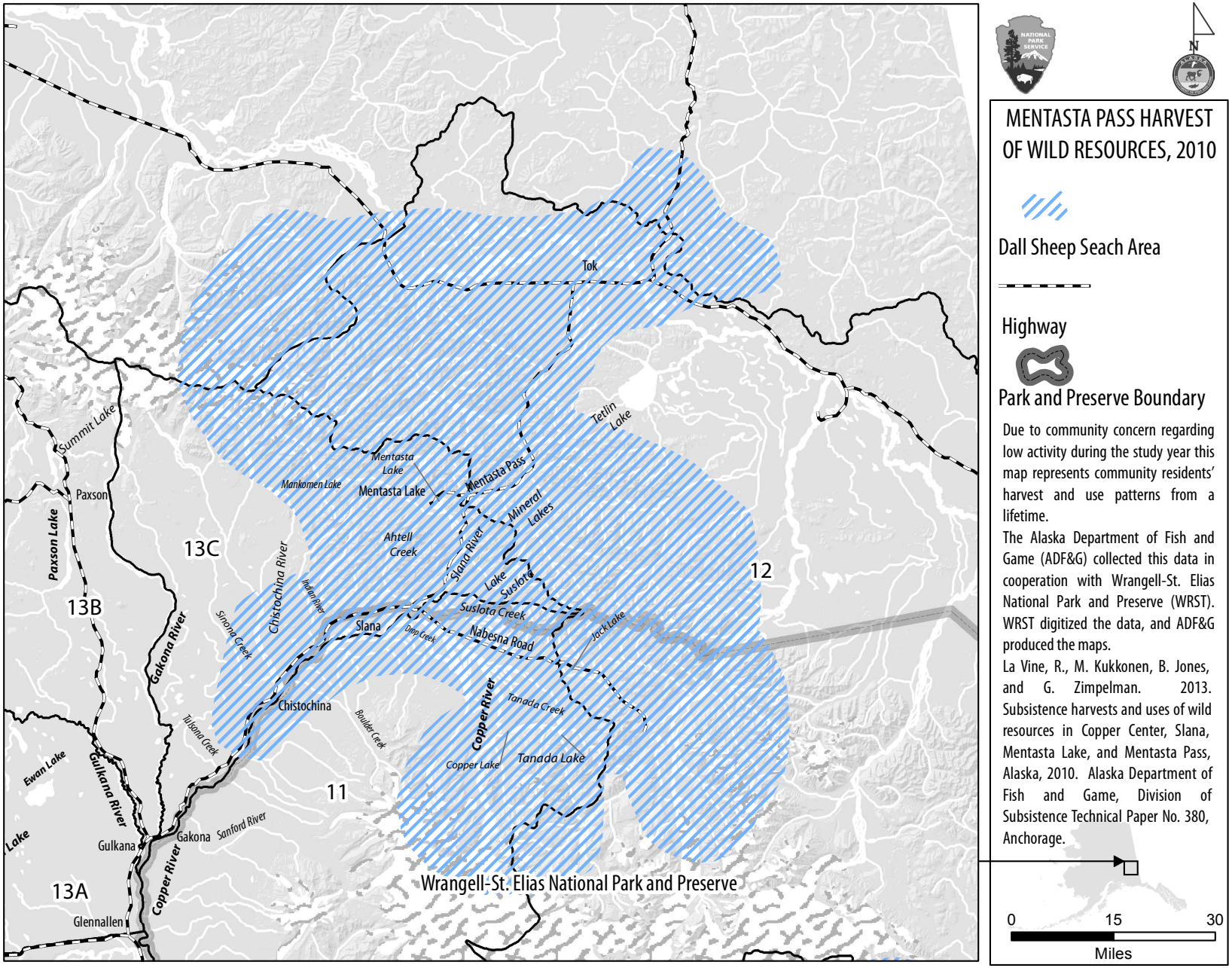

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Jack Lake
Chistochina
Boulder Creek
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Tanada Creek
Tanada Lake
Copper Lake
Wrangell-St. Elias National Park and Preserve
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MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Chinook Salmon Harvest Areas
Highway
Park and Preserve Boundary
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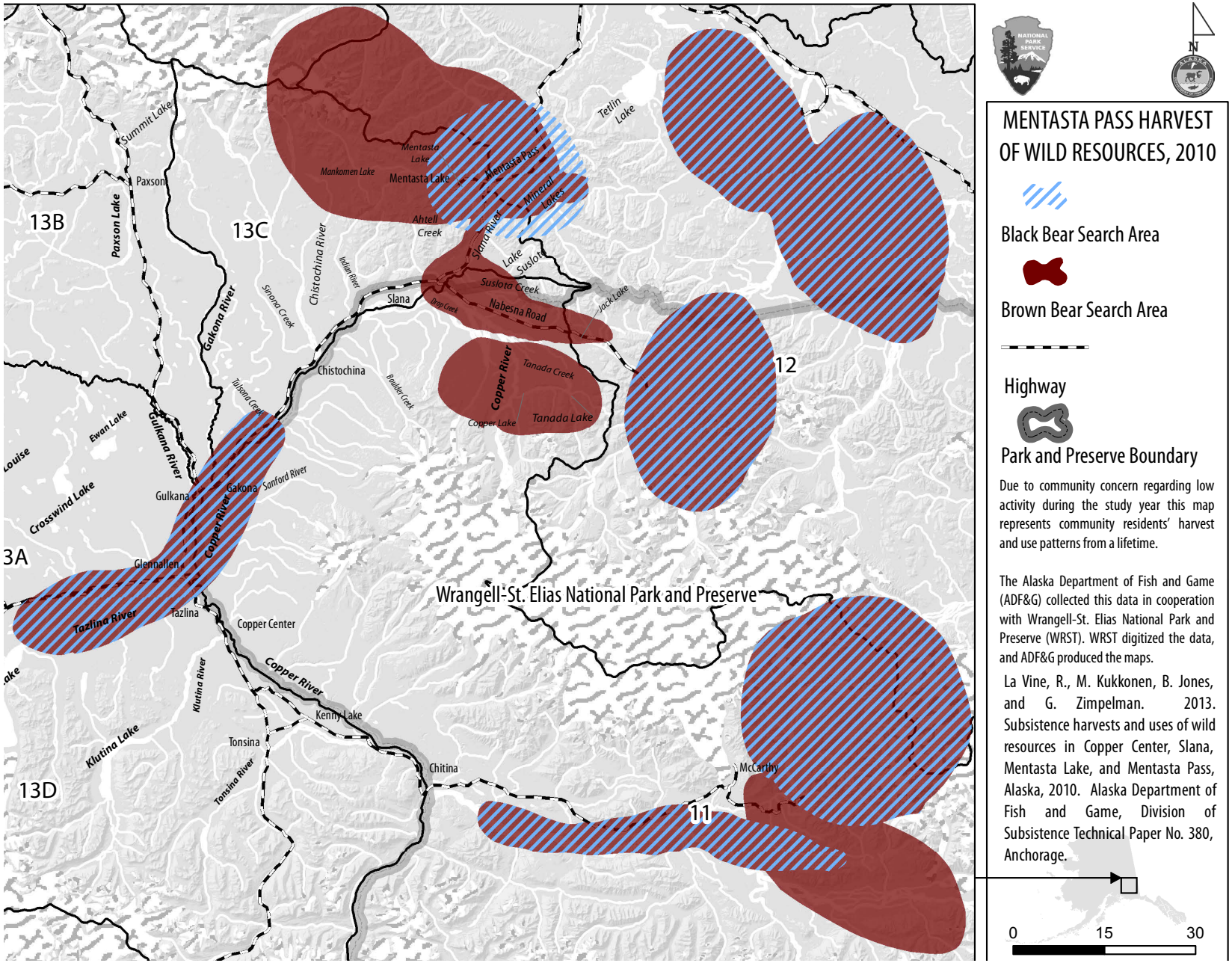

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Sinona Creek
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Nabesna Road
Jack Lake
Tanada Creek
Copper River
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Wrangell-St. Elias National Park and Preserve
Copper Lake
Tanada Lake
Sanford River
MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Whitefishes Harvest Locations
Whitefishes Harvest Areas
Highway
Park and Preserve Boundary
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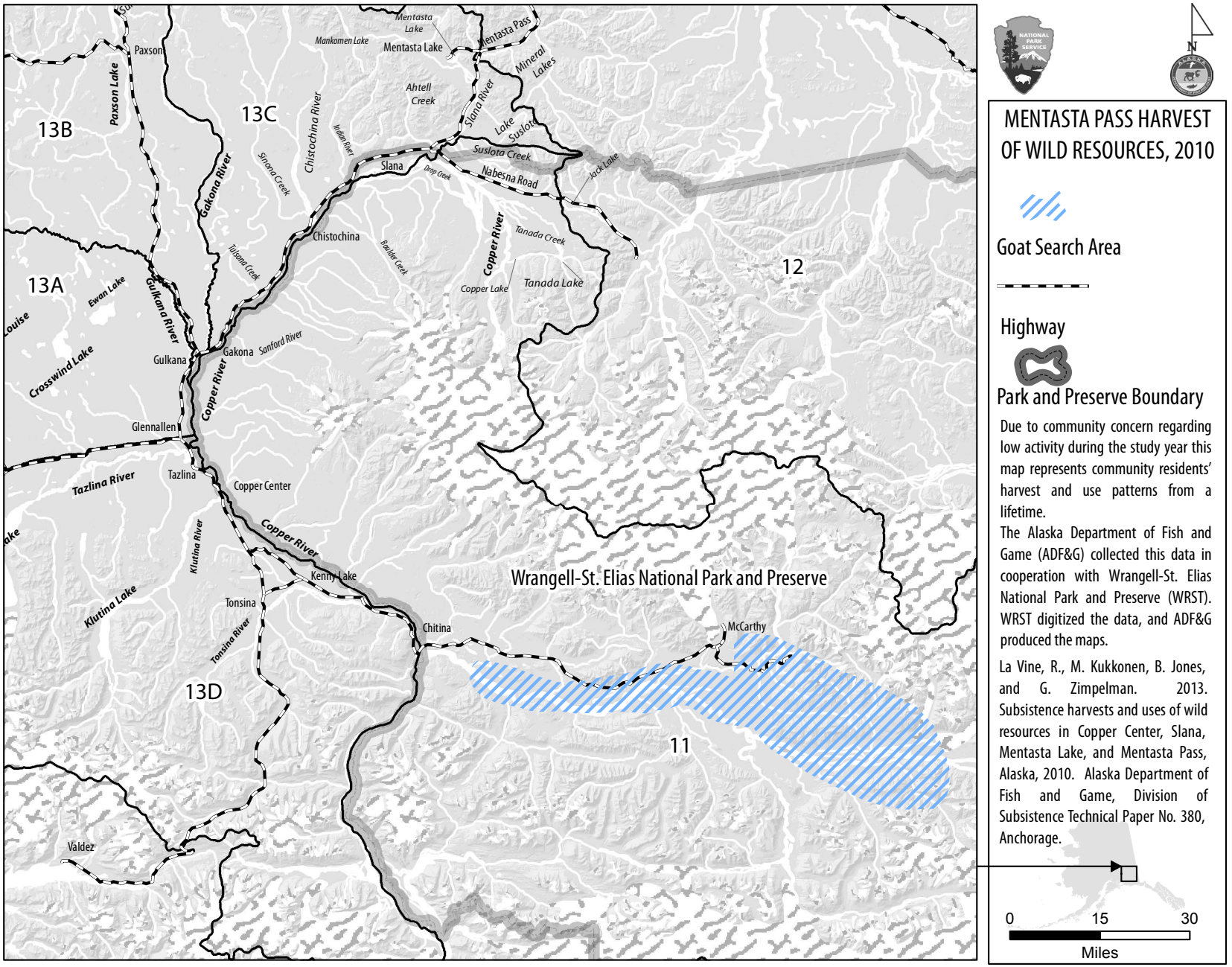

MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Grayling Harvest Areas
Grayling Harvest Locations
Highway
Park and Preserve Boundary
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Copper Lake
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MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Lake Trout Harvest Areas
Dolly Varden Harvest Areas
Dolly Varden Harvest Locations
Highway
Park and Preserve Boundary
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Nabesna Road
Jack Lake
Chistochina
Boulder Creek
Copper River
Tanada Creek
Wrangell-St. Elias National Park and Preserve
Copper Lake
Tanada Lake
Sanford River
MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Burbot Harvest Areas
Highway
Park and Preserve Boundary
Due to community concern regarding low activity during the study year this map represents community residents' harvest and use patterns from a lifetime.
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MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Dall Sheep Seach Area
Highway
Park and Preserve Boundary
Due to community concern regarding low activity during the study year this map represents community residents' harvest and use patterns from a lifetime.
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Chistochina River
Indian River
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Tulsona Creek
Boulder Creek
Copper River
Tanada Creek
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Ewan Lake
Gulkana River
Gulkana
Gakona
Sanford River
Glennallen
Wrangell-St. Elias National Park and Preserve


MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Black Bear Search Area
Brown Bear Search Area
Highway
Park and Preserve Boundary
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Boulder Creek
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Tanada Lake
Ewan Lake
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MENTASTA PASS HARVEST OF WILD RESOURCES, 2010

Goat Search Area

Highway

Park and Preserve Boundary

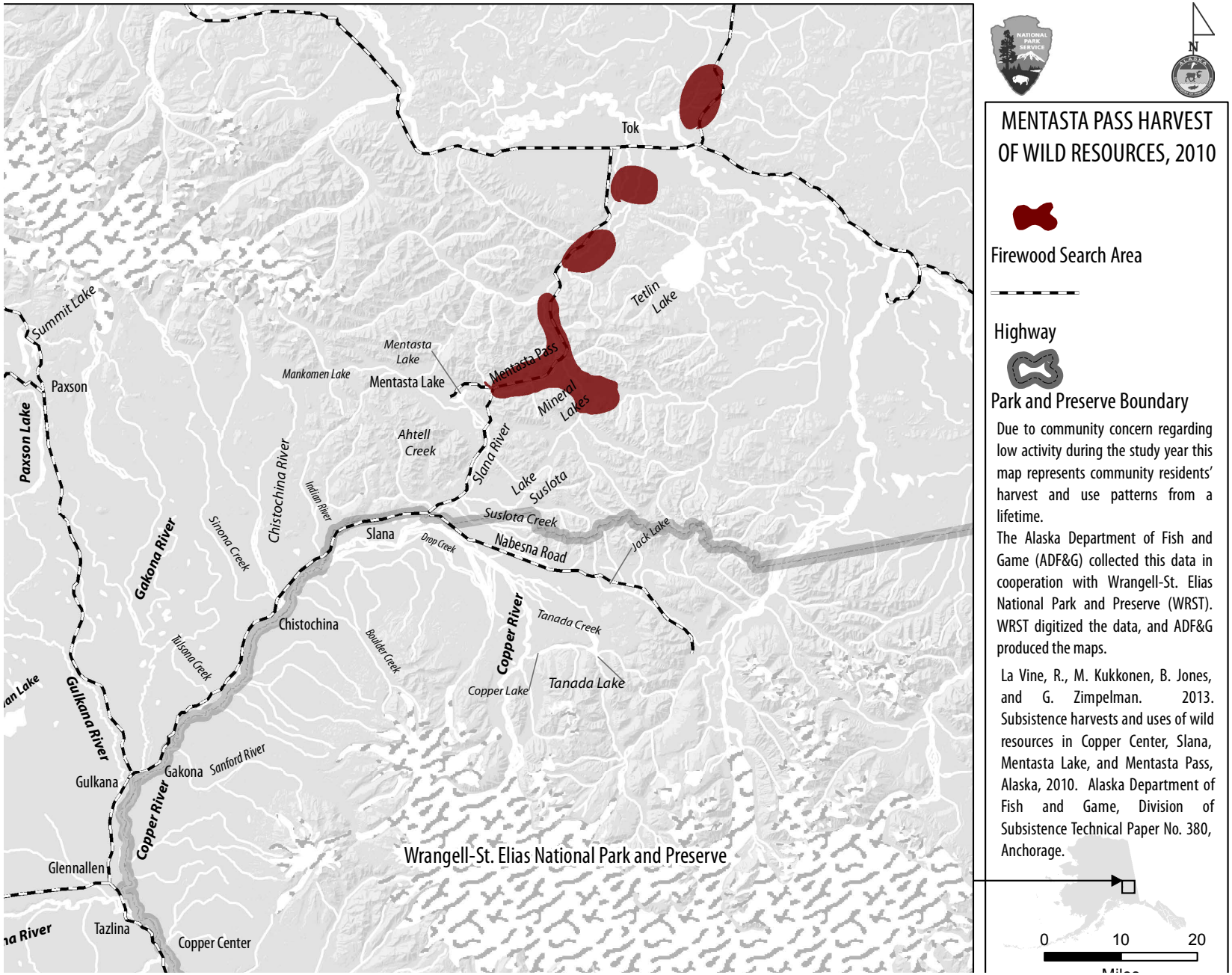
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Lake Suslota
Suslota Creek
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Drop Creek
Nabesna Road
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Sinona Creek
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MENTASTA PASS HARVEST OF WILD RESOURCES, 2010
Firewood Search Area
Highway
Park and Preserve Boundary
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Appendix D–Summary of Findings

Subsistence Harvests and Uses of Wild Resources in Copper Center, Slana/Nabesna Road, Mentasta Lake and Mentasta Pass, Alaska 2010

An Overview of Study Findings

Background

The following is a brief overview of research conducted by the Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) in partnership with the National Park Service, Wrangell-St. Elias National Park and Preserve, to provide baseline information about the role of subsistence uses of fish, wildlife, and wild plant resources in the communities of Copper Center, Slana and the Nabesna Road, Mentasta Lake, and Mentasta Pass, Alaska. The study period for this report covers January 1 to December 31, 2010. Funding was provided to ADF&G through a cooperative agreement with the National Park Service (NPS), through Alaska Regional Natural Resource Projects funds, NPS Ethnography Program, NPS Alaska Subsistence Research Projects and Wrangell-St. Elias National Park and Preserve base funding to conduct a multi-year, multi-community harvest update project. This report is project year 2. In 2010, research was conducted in Chistochina for the 2009 study year, or project year 1 (Kukkonen and Zimpleman 2012). An additional report, project year 3, will be produced for the 2012 study year for the communities of Chitina, Kenny Lake, Gakona, and McCarthy.

Methods

The primary data gathering method was systematic household surveys using a modified version of the ADF&G Division of Subsistence standard data gathering instrument. The surveys were conducted face-to-face with community residents. The study team interviewed a total of 174 households in the 4 study communities: 64% of the households in Mentasta Lake (23), 72% in Slana/Nabesna Road (62), and 75% in Mentasta Pass (9). In Copper Center, where the population was larger, a 51% sample was achieved (80). With the help of community research assistants, household interviews were conducted to collect harvest and use information for all wild resources. Each household had accompanying mapping conducted, for each resource, including use area and/or harvest location, amount of harvest, and month of harvest. Participation was voluntary, and individual as well as household-level data are confidential, as are mapped harvest locations. In addition, subsistence users were asked to discuss their observations about resource use and abundance, and their concerns relating to subsistence resources and their continuing opportunities to harvest subsistence resources.

Findings

Project data describe high participation in, a diverse harvest of, and continued reliance on wild resources for all study communities. During 2010, residents of all communities participated in subsistence hunting, fishing, and gathering for nutrition and to support their way of life. A vast majority of households used wild resources: 100% of households in 2 of the study communities and more than 96% in the other 2. Eighty-six percent or more of the households in all 4 communities engaged in harvesting activities, with 2 communities having a harvest participation rate of more than 97%. The sharing of resources played a significant role in the distribution of wild foods; in Copper Center 88% of the surveyed households reported they received wild food from others, in Slana/Nabesna Road 92% reported receiving wild foods, and 100% of the surveyed households in Mentasta Lake and Mentasta Pass reported receiving subsistence foods from others (Figure 1).

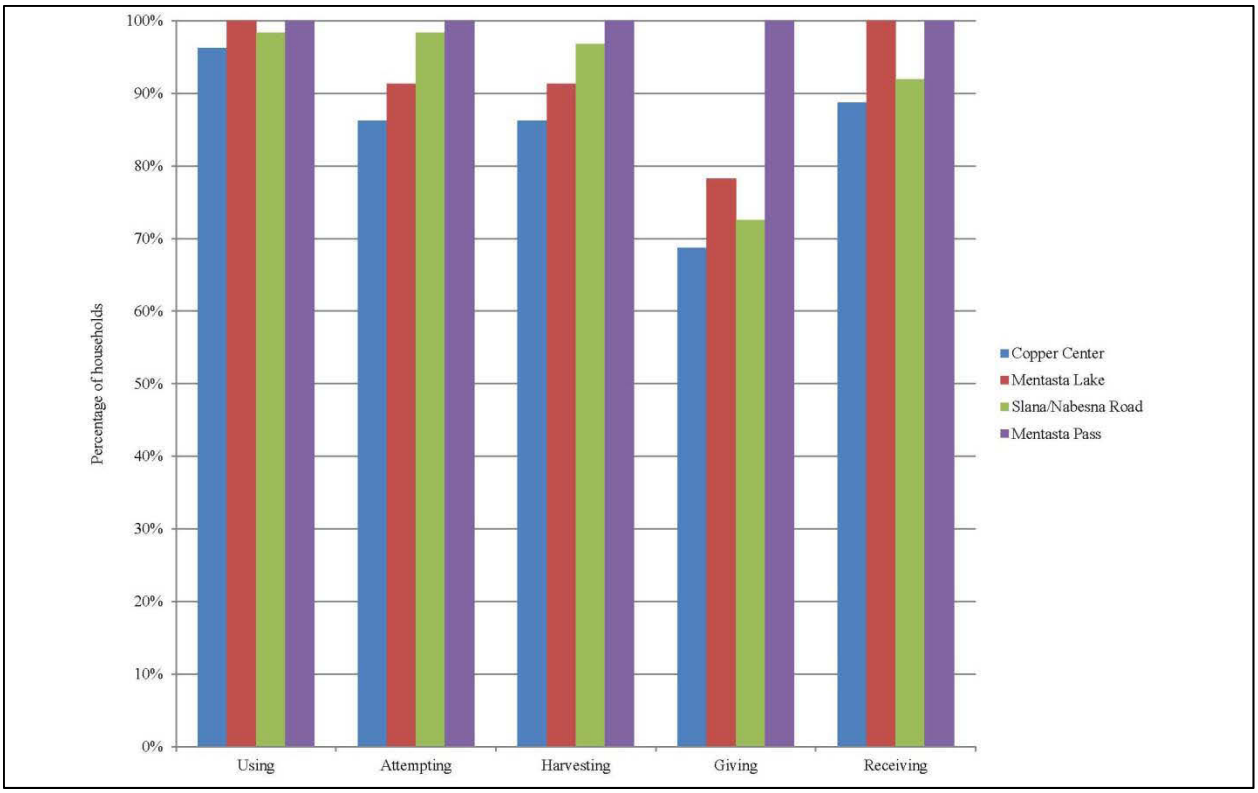


Figure 1.– Harvests and uses of wild resources, Copper River Basin communities, 2010.

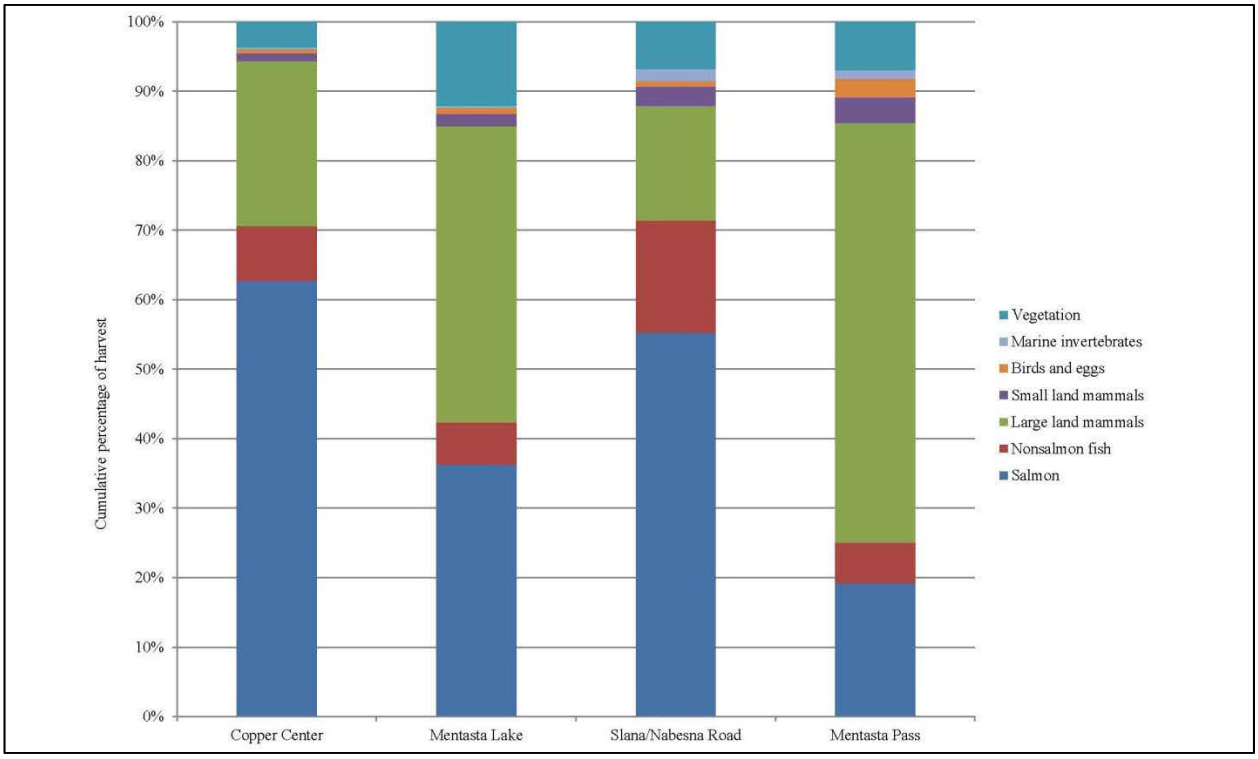


Figure 2.– Harvest composition percentage by resource category, Copper River Basin communities, 2010.

Table 1.– Top 10 ranked resources used for Copper River Basin communities, 2010.

Copper Center			Mentasta Lake		
Rank	Resource	Percentage of households using	Rank	Resource	Percentage of households using
1.	Sockeye salmon	86.3%	1.	Moose	95.7%
2.	Blueberry	68.8%	1.	Blueberry	95.7%
3.	Moose	66.3%	3.	Sockeye salmon	78.3%
4.	Chinook salmon	57.5%	4.	Lowbush cranberry	73.9%
5.	Wood	51.3%	5.	Arctic grayling	69.6%
6.	Pacific halibut	47.5%	6.	Raspberry	65.2%
6.	Caribou	47.5%	7.	Wood	56.5%
8.	Lowbush cranberry	45.0%	8.	Coho salmon	52.2%
9.	Coho salmon	32.5%	8.	Chinook salmon	52.2%
9.	Arctic grayling	32.5%	8.	Round whitefish	52.2%

Slana/Nabesna Road			Mentasta Pass		
Rank	Resource	Percentage of households using	Rank	Resource	Percentage of households using
1.	Blueberry	83.9%	1.	Moose	100.0%
2.	Sockeye salmon	80.6%	1.	Wood	100.0%
2.	Wood	80.6%	3.	Sockeye salmon	88.9%
4.	Moose	71.0%	3.	Arctic grayling	88.9%
5.	Lowbush cranberry	64.5%	3.	Blueberry	88.9%
6.	Pacific halibut	62.9%	3.	Lowbush cranberry	88.9%
7.	Arctic grayling	50.0%	3.	Raspberry	88.9%
8.	Raspberry	46.8%	8.	Caribou	77.8%
9.	Caribou	40.3%	9.	Pacific halibut	66.7%
10.	Spruce grouse	37.1%	9.	Mushrooms	66.7%

Source ADF&G Division of Subsistence household surveys, 2010.

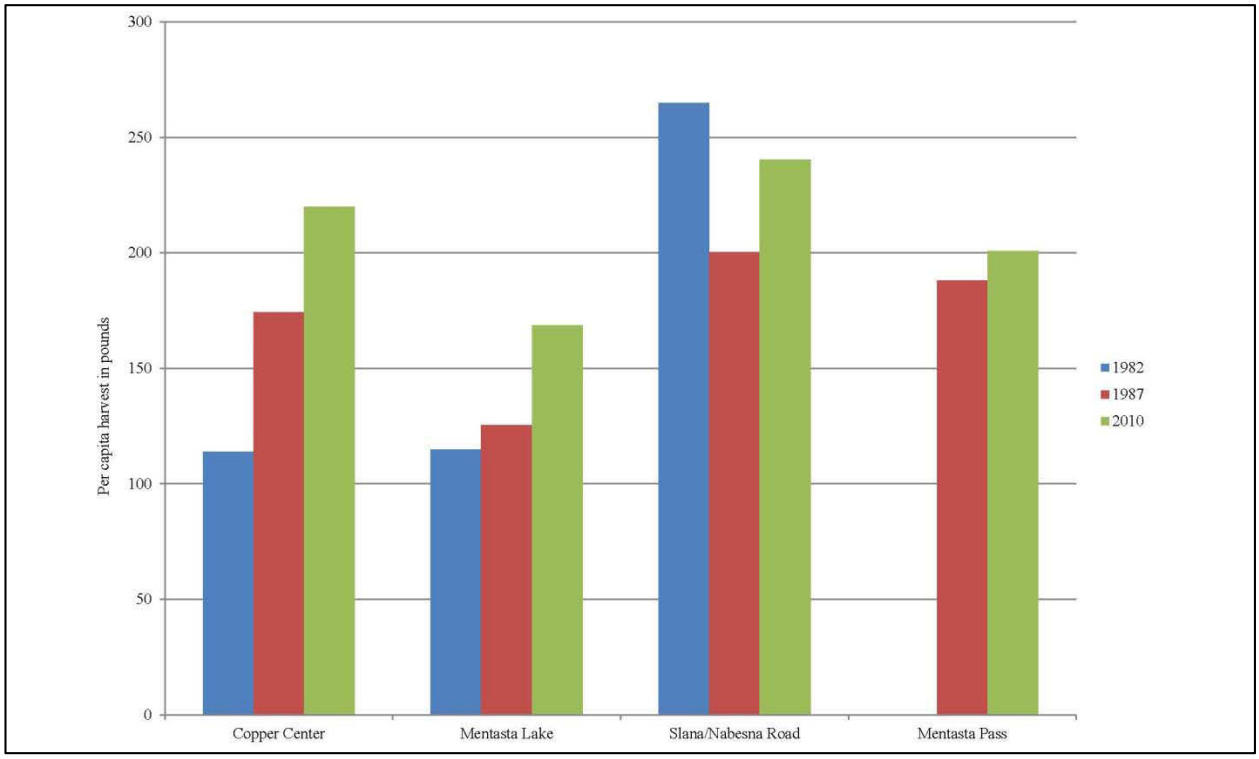


Figure 3.– harvest composition percentage by resource category, Copper River Basin communities, 2010.

Figure 2 represents the composition of total harvests for each study community by resource category. While harvest composition varied from community to community, salmon (mostly sockeye salmon) and large land mammals (specifically moose) composed the bulk of each community harvest. Fish (both salmon and nonsalmon fish) composed the bulk of the harvest for Copper Center (71%) and Slana/Nabesna Road (71%), but made smaller contributions to the harvests in Mentasta Lake (42%) and Mentasta Pass (25%). Large land mammal harvests composed the majority of the harvest in Mentasta Pass (60%), 43% of the harvest in Mentasta Lake, 24% of the harvest in Copper Center, and 16% of the harvest in Slana/Nabesna Road. Vegetation, almost all of which was berries, made important contributions to all community harvests, perhaps not by weight but as one of the most used resource categories in all 4 communities. The remaining categories of small land mammals, marine invertebrates, and birds and eggs made smaller contributions to overall community harvests in terms of edible pounds. Many households also harvested and used wood and trapped animals for fur, but firewood and some furbearers are typically not eaten and are thus excluded from the weight calculations. Table 1 represents the top 10 most used resource in each study community, whether that resource was harvested by the responding household or shared with the household by other harvesters. Wood made the top 10 list in all communities, as did sockeye salmon, moose and multiple species of berries.

Figure 3 shows per capita total harvest estimates over the course of 3 studies starting in 1982 to the present study for 2010. Overall, with the exception of Slana/Nabesna Road, the harvests in the study communities have increased over time. As estimated in pounds usable weight per person, harvests of wild foods in 2010 ranged from 240 lb per person in Slana/Nabesna Road to 169 lb per person in Mentasta Lake, with the harvests in the remaining communities exceeding 200 lb per person.

For More Information

Complete results for this project appear in: *R. La Vine, 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.*

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