Technical Paper No. 399

The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012

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March 2017

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	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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March 2017

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This document should be cited as:
Sill, L. A. and D. Koster, editors. 2017. The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 399, Douglas.

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ABSTRACT

This report summarizes the results of research conducted on the 2012 harvests and uses of wild foods by 5 communities in Southeast Alaska. Between January and April 2013, eligible households in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg answered questions about their harvest and use of fish, wildlife, and wild plants in 2012. Through these household surveys, researchers: 1) estimated annual harvests and uses of wild fish, wildlife, and wild plant resources in a 12-month study period by residents of study communities; 2) mapped areas used for hunting, fishing, and gathering; 3) collected demographic and income information; and 4) evaluated trends in wild resource harvests.

During the 2012 study year, most households of the study communities relied on wild resources—obtained through sharing, hunting, fishing, or wild food gathering—for nutrition and to support their way of life. Residents of the study communities used a large variety of resources, including salmon and other fish, marine invertebrates, large land mammals, marine mammals, and wild plants and berries, as well small land mammals, migratory waterfowl, and upland game birds. Total estimated harvests of wild foods for the 5 study communities were: 260,034 usable pounds (135 lb per capita) in Haines, 251,365 usable pounds (343 lb per capita) in Hoonah, 62,416 usable pounds (183 lb per capita) in Angoon, 13,656 usable pounds (247 lb per capita) in Whale Pass, and 176,310 usable pounds (531 lb per capita) in Hydaburg. Results indicate that the use, harvest, and sharing of wild resources remains important to these Southeast Alaska communities, despite changing demographics. Estimated harvests appear to have slightly decreased in Haines, Hoonah, and Angoon and slightly increased in Whale Pass and Hydaburg, but none of the differences are likely significant.

Funding for the study was provided through the Alaska State Legislature as one component of an overall index community program, the purpose of which is to develop and implement a program to monitor subsistence harvests of fish and wildlife in all areas of the state through a system of index communities. The information was collected by research staff of the Division of Subsistence, Alaska Department of Fish and Game, in collaboration with the Hoonah Indian Association in Hoonah, the Whale Pass Community Association in Whale Pass, and the Hydaburg Cooperative Association in Hydaburg.

Key words: subsistence hunting, subsistence fishing, wild resources, Haines, Hoonah, Angoon, Whale Pass, Hydaburg

1. INTRODUCTION

Lauren A. Sill and David Koster

This report provides updated information about the harvests of fish, wildlife, and wild plant resources by the communities of Haines, Hoonah, Angoon, Whale Pass, and Hydaburg. A household survey was administered to these communities between January and April of 2013 for the 2012 study year. Results from the survey are detailed in this report.

The study communities are located throughout Southeast Alaska (Figure 1-1). The communities represent a broad cross-section of community types found in Southeast Alaska. Demographic characteristics of the communities range from a small population (Whale Pass with 55 individuals) to large (Haines with 1,921 residents), and non-Native (Whale Pass with 0% Alaska Native population) to having a predominantly Alaska Native population (Hydaburg with 93% Alaska Native population) (Table 1-1). In addition, the communities span the length of Southeast Alaska. Haines is located farthest north, on the mainland, and has road service connecting residents to the road systems on the mainland of Alaska and Canada. Hydaburg is the farthest south community and has road connections only to other communities on Prince of Wales Island. The other communities all rely on ferry and air service for access to other communities. Where the communities are located (islands versus mainland, more northerly or southerly) informs the resources that residents commonly use and harvest. In 2012, the majority of survey respondents participated in hunting, fishing, or gathering for nutrition and to support their way of life. Residents used and harvested a large variety of resources, including salmon and other fish, marine invertebrates, large land mammals such as deer and moose, marine mammals, small land mammals and furbearers, migratory waterfowl and bird eggs, as well as wild plants, berries, and seaweed. A list of all the resources used by any survey respondent is shown in Table 1-2, but as will be seen in the community chapters, some resources are more available locally and are therefore relied upon to a greater extent than in other communities.

Harvest information was collected by the staff of the Alaska Department of Fish and Game (ADF&G) Division of Subsistence. The Division of Subsistence scientifically quantifies harvests of wild resources by Alaska residents to assist the Alaska Board of Fisheries and the Board of Game in determining the amounts reasonably necessary for subsistence for each game population or fish stock with a positive customary and traditional use finding. Since its inception in 1979, the Division of Subsistence has conducted comprehensive harvest assessment surveys in more than 200 communities in Alaska. The information collected by the Division of Subsistence is also used in resource planning. Understanding the harvests of wild resources by communities throughout Alaska, especially the locations and timing of hunting, fishing, and gathering activities, allows a better assessment of the potential effects of development or regulation changes on local harvesting patterns. In Southeast Alaska, harvest assessment information has been approximately 20 years (or more) out of date for all communities. While it was not possible to update all the communities in Southeast Alaska, the broad range of communities chosen for this survey effort will provide timely and relevant information for Board of Fisheries and Board of Game meetings.

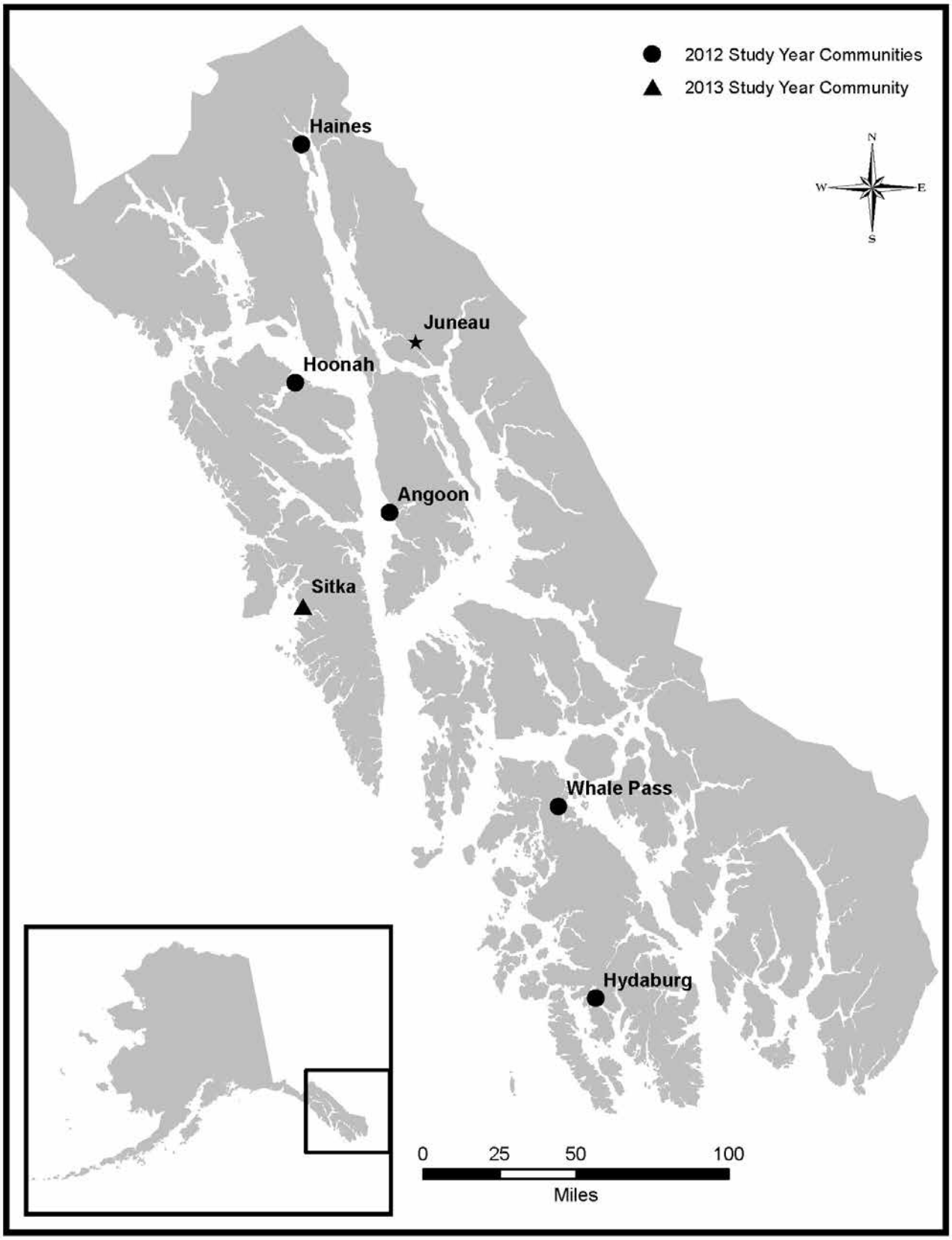


Figure 1-1.–Map of Southeast Alaska study communities, 2012 and 2013.

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

	2010 U.S. Census[a]				Study findings for 2012[b]				5-year American Community Survey (2008–2012)[c]			
	Total population		Alaska Native population		Total population		Alaska Native population		Total population		Alaska Native population	
Community	Households	Population	People	Percentage of total	Households	Population	People	Percentage of total	Households	Population	People	Percentage of total
Haines[d]	886	1,925	287	14.9%	818	1,921	304	15.8%	944	2,113	286	13.5%
Hoonah	305	760	502	66.1%	280	732	468	63.9%	318	694	438	63.1%
Angoon	167	459	405	88.2%	122	342	306	89.5%	173	404	371	89.2%
Whale Pass	20	31	0	0.0%	27	55	0	0.0%	26	38	0	0.0%
Hydaburg	128	376	324	86.2%	119	332	307	92.5%	160	411	368	89.5%
All communities	**1,506**	**3,551**	**1,518**	**42.7%**	**1,366**	**3,382**	**1,386**	**41.0%**	**1,621**	**3,660**	**1,463**	**40.0%**

a. *Source* U.S. Census Bureau (2011) for 2010 estimate.

b. *Source* ADF&G Division of Subsistence household surveys, 2013, for 2012 estimate.

c. *Source* U.S. Census Bureau for American Community Survey (ACS) 5-year average estimate.

d. Haines includes Haines census designated place (CDP) and Mud Bay CDP.

Table 1-2.–Species used by study community households, 2012.

Resource	Scientific name
Chum salmon	*Oncorhynchus keta*
Coho salmon	*Oncorhynchus kisutch*
Chinook salmon	*Oncorhynchus tshawytscha*
Pink salmon	*Oncorhynchus gorbuscha*
Sockeye salmon	*Oncorhynchus nerka*
Unknown salmon	*Oncorhynchus spp.*
Pacific herring	*Clupea pallasi*
Pacific herring roe (eggs)/unspecified	*Clupea pallasi*
Pacific herring sac roe	*Clupea pallasi*
Pacific herring spawn (eggs) on kelp	*Clupea pallasi*
Pacific herring roe (eggs) on hair seaweed	*Clupea pallasi*
Pacific herring roe (eggs) on hemlock branches	*Clupea pallasi*
Eulachon (hooligan, candlefish)	*Thaleichthys pacificus*
Sea bass	
Pacific (gray) cod	*Gadus macrocephalus*
Pacific tomcod	*Microgadus proximus*
Unknown cod	
Flounder	
Kelp greenling	*Hexagrammos decagrammus*
Lingcod	*Ophiodon elongatus*
Unknown greenling	
Pacific halibut	*Hippoglossus stenolepis*
Black rockfish	*Sebastes melanops*
Yelloweye rockfish	*Sebastes ruberrimus*
Quillback rockfish	*Sebastes maliger*
Brown rockfish	*Sebastes auriculatus*
Unknown rockfish	*Sebastes spp.*
Sablefish (black cod)	*Anoplopoma fimbria*
Bullhead sculpin	*Cottidae spp.*
Buffalo sculpin	*Enophrys bison*
Red Irish lord	*Hemilepidotus hemilepidotus*
Unknown shark	
Skates	*Raja spp.*
Sole	
Arctic char	*Salvelinus alpinus*
Dolly Varden	*Salvelinus malma*
Arctic grayling	*Thymallus arcticus*
Cutthroat trout	*Oncorhynchus clarkii*
Rainbow trout	*Oncorhynchus mykiss*
Steelhead	*Oncorhynchus mykiss*
Unknown trout	
Whitefishes	
American (plains) bison	*Bison bison*

-continued-

Table 1-2.–Page 2 of 4.

Resource	Scientific name
Black bear	*Ursus americanus*
Caribou	*Rangifer tarandus*
Deer	*Odocoileus hemionus*
Elk	*Cervus canadensis*
Mountain goat	*Oreamnos americanus*
Moose	*Alces alces*
Common muskox	*Ovibos moschatus*
Dall sheep	*Ovis dalli*
Beaver	*Castor canadensis*
Coyote	*Canis latrans*
Snowshoe hare	*Lepus americanus*
North American river (land) otter	*Lontra canadensis*
Marten	*Martes spp.*
Mink	*Neovison vison*
Porcupine	*Erethizon dorsatum*
Red (tree) squirrel	*Tamiasciurus hudsonicus*
Northern flying squirrel	*Glaucomys volans Zaphaeus*
Least weasel	*Mustela nivalis*
Gray wolf	*Canis lupus*
Harbor seal	*Phoca vitulina*
Sea otter	*Enhydra lutris*
Steller sea lion	*Eumetopias jubatus*
Bufflehead	*Bucephala albeola*
Canvasback	*Aythya valisineria*
Goldeneye	*Bucephala spp.*
Mallard	*Anas platyrhynchos*
Long-tailed duck	*Clangula hyemalis*
Northern pintail	*Anas acuta*
Scaup	*Aythya spp.*
Surf scoter	*Melanitta perspicillata*
Unknown scoter	*Melanitta spp.*
Teal	*Anas spp.*
Wigeon	*Anas spp.*
Unknown duck	
Unknown Canada/cackling goose	*Branta spp.*
White-fronted goose	*Anser albifrons*
Unknown geese	
Sandhill crane	*Grus canadensis*
Grouse	
Ptarmigan	*Lagopus spp.*
Black oystercatcher eggs	*Haematopus bachmani*
Glaucous-winged gull eggs	*Larus glaucescens*
Unknown gull eggs	

-continued-

Table 1-2.–Page 3 of 4.

Resource	Scientific name
Unknown seabird eggs	
Abalone	*Haliotis kamtschatkana*
Red (large) chitons	*Cryptochiton stelleri*
Black (small) chitons	*Katharina tunicata*
Unknown chitons	
Butter clams	*Saxidomus gigantea*
Horse clams	*Simomactra planulata*
Pacific littleneck clams (steamers)	*Protothaca staminea*
Razor clams	*Siliqua spp.*
Unknown clams	
Basket cockles	*Clinocardium nuttallii*
Heart cockles	*Clinocardium ciliatum*
Unknown cockles	
Dungeness crab	*Cancer magister*
Blue king crab	*Paralithodes platypus*
Brown king crab	*Lithodes aequispinus*
Red king crab	*Paralithodes camtschaticus*
Tanner crab	*Chionoecetes spp.*
Limpets	*Patella vulgata*
Geoducks	*Panopea abrupta*
Mussels	*Mytilus spp.*
Octopus	*Octopus vulgaris*
Weathervane scallops	*Patinopecten caurinus*
Rock scallops	*Crassadoma gigantea*
Unknown scallops	
Sea cucumber	*Parastichopus californicus*
Green sea urchin	*Strongylocentrotus droebachiensis*
Red sea urchin	*Strongylocentrotus franciscanus*
Purple sea urchin	*Strongylocentrotus purpuratus*
Shrimp	
Squid	*Loligo opalescens*
Blueberry	*Vaccinium uliginosum alpinum*
Lowbush cranberry	*Vaccinum vitis-idaea minus*
Highbush cranberry	*Viburnum edule*
Crowberry	*Empetrum nigrum*
Elderberry	*Sambucus racemosa*
Gooseberry	*Ribes oxyacanthoides*
Currants	*Ribes spp.*
Huckleberry	*Vaccinium parvifolium*
Cloudberry	*Rubus chamaemorus*
Nagoonberry	*Rubus arcticus spp.*
Raspberry	*Rubus idaeus*
Salmonberry	*Rubus spectabilis*
Soapberry	*Shepherdia canadensis*

-continued-

Table 1-2.–Page 4 of 4.

Resource	Scientific name
Strawberry	*Fragaria virginiana*
Thimbleberry	*Rubus parviflorus*
Twisted stalk berry (watermelon berry)	*Streptopus amplexifolius*
Other wild berry	
Beach asparagus	*Salicornia virginica*
Goose tongue	*Plantago maritima*
Wild rhubarb	*Polygonum alaskanum*
Wild potato	*Hedysarum alpinum*
Other beach greens	
Devil's club	*Echinopanax horridum*
Fiddlehead ferns	
Nettle	*Urtica spp.*
Hudson's Bay (Labrador) tea	*Ledum palustre*
Indian rice	*Fritillaria camschatcensis*
Mint	*Mentha spp.*
Salmonberry shoots	*Rubus spectabilis*
Skunk cabbage	*Lysichiton americanum*
Sourdock	*Rumex fenestratus*
Dandelion greens	*Taraxacum L.*
Spruce tips	*Picea spp.*
Wild celery	*Angelica lucida*
Wild parsley	*Pastinaca sativa*
Wild rose hips	*Rosa acicularis*
Yarrow	*Achillea spp.*
Other wild greens	
Unknown mushrooms	
Sorrel	*Rumex spp.*
Fireweed	*Epilobium angustifolium*
Plantain	*Plantago major*
Black seaweed	*Porphyra abbottaie*
Bull kelp	*Nereocystis luetkeana*
Red seaweed	*Palmaria hecatensis*
Sea ribbons	*Palmaria hecatensis*
Giant kelp	*Macrocystis pyrifera*
Alaria	*Alaria marginata*
Red laver (dulse)	*Porphyra aestivalis*
Bladder wrack	*Fucus Vesiculosus*
Seaweed/kelp used for fertilizer	
Unknown seaweed	
Wood	
Spruce pitch	*Picea spp.*
Spruce	*Picea spp.*
Cottonwood	*Populus spp.*
Alder	*Alnus spp.*

Project Background

This project was funded through the Alaska State Legislature as one component of an overall index community program, the purpose of which is to develop and implement a program to monitor subsistence harvests of fish and wildlife in all areas of the state through a system of index communities. Maintaining a comprehensive and up-to-date database of subsistence harvests in order to fulfill the mission of the Division of Subsistence is increasingly challenging due to the diversity of harvest patterns across the state, the large number of rural communities, the vast distances between rural communities primarily off the road system, and the consequent high costs of conducting research. Due to the large number of communities in rural Alaska (approximately 300) and the high cost of conducting research, it is not possible to update comprehensive data for most communities on a regular basis. Therefore, the index community program was developed to explore the possibility of identifying a set of index communities within regional groups to represent all areas of the state. Comprehensive surveys would then be conducted on a regular, rotational schedule in the identified index communities, and results would be used to estimate total harvest in the regional area (based on relationships between regional villages and the index community) that the index communities represent. The first step in the development of this program is to update information from communities around the state that are out of date. In Southeast Alaska, the last comprehensive harvest update took place during 1996–1998, meaning that for many communities, the harvest information in almost 20 years old. Table 1-3 identifies what types of surveys have been done in Southeast Alaska communities and for which years.

Funding was provided for 2 years of community harvest updates (Figure 1-1). In 2013, the 5 communities that are covered in this report (Haines, Hoonah, Angoon, Whale Pass, and Hydaburg) were surveyed for the 2012 study year. In 2014, the community of Sitka was updated for the 2013 study year. Apart from filling a data gap for the index community program and general management needs, results of this study were used to address proposals put before the 2015 Board of Fisheries Southeast Alaska meeting and the 2015 Board of Game Southeast Alaska meeting.

Table 1-3.–History of Southeast Alaska communities studied.

Community	Estimated number of households 2010[a]	1983	1984	1985	1987	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2012
Angoon	167		ALL		ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL
Coffman Cove	89				ALL				ALL											
Craig	470				ALL	MM	MM	ALL	MM		MM	MM	MM	MM	MM	MM	MM	MM		
Edna Bay	18				ALL				ALL											
Elfin Cove	13				ALL															
Game Creek CDP	7						ALL													
Gustavus	212				ALL															
Haines[b]	782	ALL			ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL
Hollis	44				ALL				ALL											
Hoonah	305			ALL	ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	ALL
Hydaburg	128				ALL	MM	MM	ALL	MM		MM	MM	MM	MM	MM	MM	MM	MM		ALL
Hyder	48				ALL															
Kake	213			ALL	ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	
Kasaan	23				ALL				ALL											
Klawock	297		ALL		ALL	MM	MM	ALL	MM	D	MM	MM	MM	MM	MM	MM	MM	MM	MM	
Klukwan	41	ALL			ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM		
Metlakatla	493				ALL															
Meyers Chuck	[c]				ALL															
Naukati Bay	49								ALL											
Pelican	41				ALL	MM	MM	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	
Petersburg	1,252				ALL	MM	MM	MM	MM		ALL	MM	MM	MM	MM	MM	MM	MM	MM	
Point Baker	8				ALL		ALL													
Port Alexander	22				ALL															
Port Protection	26				ALL		ALL													
Saxman	120				ALL	MM	MM	MM	MM	ALL	MM	MM	MM	MM	MM	MM	MM	MM	MM	
Sitka	3,545				ALL	MM	ALL	MM	MM		MM	MM	MM	MM	MM	MM	MM	MM	MM	
Skagway	410				ALL															
Tenakee Springs	72		ALL		ALL															
Thorne Bay	214				ALL				ALL											
Whale Pass	20				ALL				ALL											ALL
Whitestone Logging Camp	8						ALL													
Wrangell	1,053				ALL	MM	MM	MM	MM		ALL	MM	MM	MM	MM	MM	MM	MM		
Yakutat	270		ALL		ALL	MM	MM	MM	MM		ALL	MM	MM	MM	MM	MM	MM	MM	MM	

Note The key for the table is:

ALL = "comprehensive" baseline survey of all resources used for subsistence purposes; MM = marine mammals survey; and D = deer survey.

a. *Source* U.S. Census Bureau (2011).

b. In 2012, "Haines" included the city of Haines and the census designated place (CDP) of Mud Bay. The comprehensive harvest surveys for 1983 and 1996 included the city of Haines, Mud Bay CDP, Covenant Life CDP, Lutak CDP, Mosquito Lake CDP, and the remainder of the Haines Borough along the road system. The 1987 comprehensive harvest survey included the city of Haines and perhaps some limited adjacent areas, but not the entire road system population.

c. Meyers Chuck became part of the City and Borough of Wrangell in 2008 and is no longer its own census designated place (CDP); therefore, there are no census data for this community in 2010.

Regional Background

Southeast Alaska is characterized by the wet, northern climate of the Alexander Archipelago, a 600-mile stretch of rugged mountainous islands and coastline separated by deep fjords. Marine and upland wildlife are abundant. Many species of saltwater and anadromous fish, shellfish, plants, marine mammals, land mammals, and small furbearers supported unknown prehistoric peoples for millennia, as well as contemporary Tlingit, Haida, and Tsimshian groups for untold centuries (Dauenhauer and Dauenhauer 1987; Goldschmidt and Haas 1998). Native peoples lived throughout the islands and waterways, having developed an intricate knowledge of the area's resources and a highly refined technology to harvest and process them (Emmons 1991; Goldschmidt and Haas 1998; Langdon 1977; Price 1990). During the mid-1700s, explorers and traders from Europe and Russia entered the region on sailing ships, with the Russians settling at Sitka on the outer coast to maintain a fur trade stronghold (Black 2004; Tikhmenev 1978). The richness of local wild salmon stocks was discovered by the emerging West Coast commercial fishing industry in the late 1800s, bringing droves of Euro-American and Asian laborers to fill jobs at canneries, salteries, and oil reduction plants. Their entry inspired new settlements and a host of social, cultural, and economic influences (Price 1990). Mining and logging ventures developed in the late 1890s and early 20th century as well, adding to the growing diversity of human activity in the region (Mackovjak 2010). The present configuration of communities in Southeast Alaska is a complex mixture of historical backgrounds and cultures, and subsistence and market economies.

Southeast Alaska encompasses approximately 22.9 million acres of land, most of which is under federal jurisdiction; the Tongass National Forest covers 17 million acres (74%), roughly 3 million acres (13%) are encompassed by Glacier Bay National Park and Preserve, and another 1.5 million acres (7%) of land is part of Wrangell-St. Elias National Park and Preserve. The remainder of the land is owned by the State of Alaska, Alaska Native corporations, or other private entities. The towns of Juneau and Ketchikan are considered non-rural under federal subsistence regulations and the areas surrounding these towns are included in the state nonsubsistence areas. For the purposes of the following discussion, these 2 communities will not be included. There are 33 rural communities in Southeast Alaska that range from unincorporated communities to home rule cities and boroughs (Table 1-3). Communities range in size from less than 10 households (Point Baker, Whitestone Logging Camp, and Game Creek CDP) to 3,000 households (Sitka). Contemporary rural communities in the Southeast Alaska region each tend to be characterized by a unique combination of socio-cultural, historical, and economic elements. Roughly defined, 4 community types emerge: Alaska Native, non-Native commercial fishing, non-Native logging, and non-Native mining/tourism. Each community presents some degree of social, cultural, and economic overlap as well. Thus the Alaska Native communities (Angoon, Hoonah, Hydaburg, Kake, Kasaan, Klawock, Klukwan, Metlakatla, Saxman, and Yakutat) are those with predominant Alaska Native populations, history, and culture, and are also involved in commercial fisheries and logging. Many of the non-Native commercial fishing communities (Craig, Edna Bay, Elfin Cove, Haines, Meyers Chuck, Pelican, Petersburg, Point Baker, Port Alexander, Port Protection, Sitka, Tenakee Springs, and Wrangell) include Alaska Native residents, and in some cases grew up around existing Alaska Native settlements. Several of these communities are also heavily involved in logging operations and other economic endeavors. The non-Native logging communities (Hollis, Coffman Cove, Thorne Bay, and Whale Pass) tend to comprise the most recent and almost exclusively non-Native populations; some residents in these communities also participate in commercial fishing. Tourism and government employment play a role in most communities. The remaining communities (Gustavus, Hyder, and Skagway) are primarily non-Native whose cash economies are based generally on mining, tourism, or commercial fishing.

There is a generally high level of infrastructure development within Southeast Alaska communities. Only the communities of Haines, Skagway, Hyder, and Klukwan are connected to the rest of the state by a road; the remaining Southeast Alaska communities are connected through marine ferry service (either the Alaska Marine Highway System or the Inter-Island Ferry Authority) and regular or chartered air service. The majority of communities in Southeast Alaska have an airport or seaplane base, port/harbor facilities, piped water and sewage, and a landfill. Many communities have a school, and a regional boarding school is located in Sitka, which serves youth from around the state.

Salmon is one of the most important resources throughout Southeast Alaska, and can be harvested almost year-round in many localities. Other resources of importance in the region are Pacific halibut, shellfish, Pacific herring, seaweed, deer, and berries. In some areas of Southeast Alaska, resources such as eulachon, moose, or mountain goat are available and play a role in the seasonal round for those areas. Marine mammals are important in filling cultural and nutritional needs in some communities. Subsistence use of fish and wildlife continues to be a significant component of the economies of Southeast Alaska communities. In Alaska Native communities, harvest and use of wild resources supported the subsistence-based economy that predated the introduction of cash income. In the modern era, beginning in the late 1700s, the economies of Alaska Native communities have undergone a progressive transformation, incorporating cash income into the subsistence-based system. Southeast Alaska communities settled primarily by non-Native immigrants have also depended on a mix of subsistence uses of wild resources and cash income. A mixed subsistence-market economy in which subsistence harvests and cash income are complementary characterizes the economies of most of the region's rural communities.

Cash income in most Southeast Alaska rural communities is limited and intermittent; this cash income frequently supports the purchase of fuel and equipment that are a part of subsistence harvest technology. Subsistence harvests fill essential food needs in most rural communities in the region. These harvests are also customarily shared among community residents and between members of different communities. Some subsistence products, such as eulachon or Pacific herring roe (eggs), are widely traded and bartered within the region.

Regulatory Context

Under the Alaska state constitution, any resident of the state is able to participate in subsistence hunting and fishing. Through the Alaska National Interest Lands Conservation Act (ANILCA, PL 96-487), the federal government created a priority for rural residents to participate in federal subsistence hunting and fishing opportunities. In Southeast Alaska, this dual management can create a confusing regulatory structure because of the large amount of land and water under federal jurisdiction. There are 2 state nonsubsistence areas in Southeast Alaska (Figure 1-2); one located around the community of Juneau (5 AAC 99.015(2)) and one around the community of Ketchikan (5 AAC 99.015(1)). Within these nonsubsistence areas, no subsistence fisheries or hunts can be authorized by the state's regulatory boards. None of the study communities are found within these nonsubsistence areas.

Fish are taken for use in the home under federal and state subsistence, state personal use, state sport, and state commercial regulations. Most freshwater subsistence fishing occurs under a federal subsistence permit, while marine fish are mostly taken under state regulations and permits. The exception to this is subsistence-caught Pacific halibut, which may be taken only under federal subsistence regulations by residents of eligible rural communities and members of eligible tribes. Outside of the nonsubsistence areas, subsistence fisheries are authorized where the Alaska Board of Fisheries has made positive customary and traditional use findings. Where no such findings exist, personal use fisheries may be authorized. In Southeast Alaska, a state subsistence permit is required for subsistence harvests of salmon, trout, Arctic char, Pacific herring spawn on kelp, sablefish, and also for eulachon caught in the Unuk River (5 AAC 01.730). There are 5 fisheries management areas within Southeast Alaska and each area issues its own permit. While there are some general conditions shared in common among all the permits, each area manager has discretionary authority to set specific regulations through the permit. All permits specify locations for subsistence/personal use harvests, seasons, daily and annual limits, and allowable gear. There is no authorized subsistence fishery for Chinook salmon anywhere in Southeast Alaska; however, Chinook salmon taken incidentally under the conditions of most subsistence permits may be retained (5 AAC 01.730 (b)).

Under state regulations, rod and reel is not a legal gear type for subsistence harvests in Southeast Alaska, except in Redoubt Bay near Sitka. Therefore, many of the residents in Southeast Alaska communities also harvest fish for home use under sport fishing regulations. Sport fishing regulations vary throughout the region, but generally set a maximum daily and annual possession limit for all species harvested. In addition, removing some of a commercial catch for personal use is allowed under commercial fishing regulations and can provide a significant source of fish for some communities.

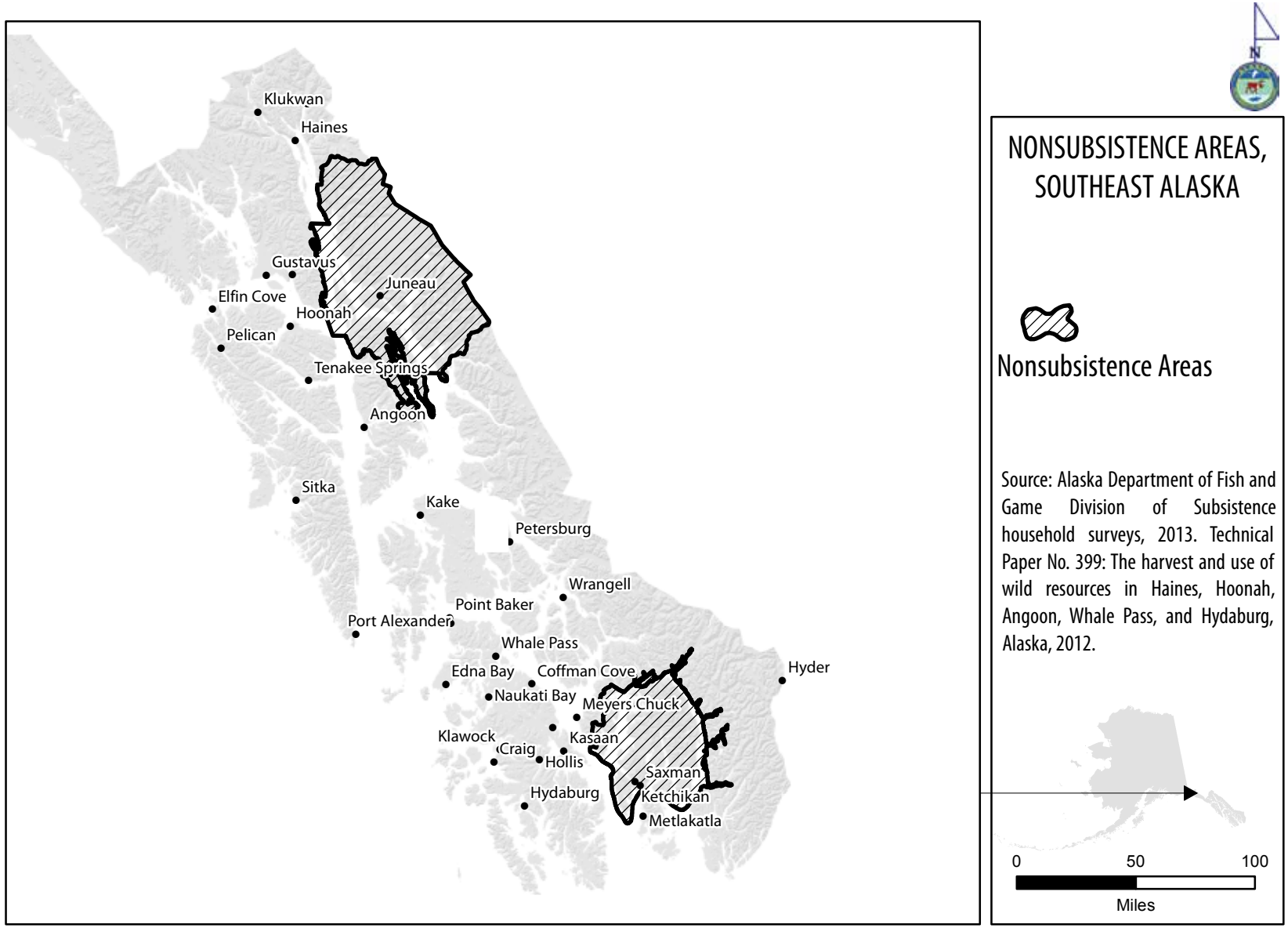


Figure 1-2.–Map of Southeast Alaska nonsubsistence areas.

Since the majority of land in Southeast Alaska is federally owned, most hunts take place on federal land. State and federal regulations tend to mirror each other, though additional opportunity for local rural residents can be provided through federal regulations. Hunting in Southeast Alaska is limited through the use of bag limits, by animal size or sex restrictions, by limiting who can hunt through use of permits, and by specifying the length of the season. The least restrictive hunts tend to be for deer, which usually only require a harvest ticket and have bag limits and possibly sex restrictions. Deer are available throughout Southeast Alaska, with the highest concentrations found on the many islands. Deer are also the most highly harvested game species in Southeast Alaska and the specific regulations concerning the hunting of deer vary by game management unit (GMU), depending on how the deer population is faring. The most restrictive hunt in Southeast Alaska exists for moose in GMU 1D, which is a Tier II hunt.[1] Moose are less available than deer in Southeast Alaska, with populations existing only in GMUs 1, 3, and 5 (Yakutat). Other game species in Southeast Alaska include mountain goat, black bear, brown bear, elk, and wolf. These hunting opportunities require either a registration permit or a drawing permit to participate.

For this report, when discussing harvest patterns, authors refer to fisheries and hunts as they exist within the regulatory context. However, while conducting surveys and key respondent interviews, some residents referred to their harvesting patterns, regardless of the hunt or fishery, as subsistence. Some residents characterized their participation in general deer hunts or rod and reel sport fisheries, for example, as subsistence, and these comments have been incorporated into the discussion in each chapter.

Study Objectives

The project had the following objectives:

- Design a survey instrument to produce updated comprehensive baseline information about hunting, fishing, gathering, and other topics that is compatible with information collected in past household surveys for the study communities.
- Conduct community scoping meetings.
- Train local research assistants (LRAs) in administration of the systematic household survey.
- Conduct household surveys to record the following information:
  - Demographic information.
  - Involvement in use, harvest, and sharing of fish, wildlife, and wild plants during the study year.
  - Estimates of amount of resources harvested in the study year.
  - Information about employment and cash income.
  - Assessments of changes in wild resource harvest and use patterns compared to the past 5 years.
  - Location of fishing, hunting, and gathering activities in the study year.
- Collaboratively review and interpret study findings.
- Communicate study findings to the communities.
- Produce a final report.

1. State Tier II hunts are held when there is not enough of a game population with customary and traditional uses to provide a reasonable opportunity for subsistence uses. Hunters must answer questions on an application concerning their dependence on the game for their livelihood and availability of alternative resources. Applications are scored based on responses to the questionnaire and permits are issued to those with the highest scores.

Research Methods

Ethical Principles for the Conduct of Research

The project was guided by the research principles outlined in the *Alaska Federation of Natives Guidelines for Research*[2] and by the National Science Foundation, Office of Polar Programs in its *Principles for the Conduct of Research in the Arctic*[3], the *Ethical Principles for the Conduct of Research in the North* (Association of Canadian Universities for Northern Studies 2003), as well as the Alaska confidentiality statute (AS 16.05.815). These principles stress community approval of research designs, informed consent, anonymity or confidentiality of study participants, community review of draft study findings, and the provision of study findings to each study community upon completion of the research.

Project Planning and Approvals

As noted above, funding for this project came from the Alaska State Legislature. Although all communities in Southeast Alaska are in need of updated harvest assessments, with limited funding it was only possible to survey a representative set of communities. Communities were chosen to maximize the finite amount of funds that were available for the index project goal of developing regional wild resource harvest and use estimates. In addition, communities were chosen to represent geographically, economically, and culturally diverse places in Southeast Alaska. Final project approval was granted by the Division of Subsistence Regional Program Manager and the Statewide Research Director. The entire project was carried out with Division of Subsistence staff, with the assistance of LRAs in each community (Table 1-4). Division of Subsistence research staff worked with Information Management staff to update the comprehensive wild foods survey for use in Southeast Alaska communities (Appendix A). Additional questions were added to the surveys regarding subsistence salmon fishing effort and general commercial fishing participation; this project did not include supportive funding for the analysis of those results. Also, additional questions concerning health impact assessments and environmental change were added to the surveys at the request of researchers from other organizations working in these communities so as not to duplicate effort or increase interviewee fatigue; the results of the added components of the surveys were provided to those other researchers for their analysis and use.

Once the 5 communities of Haines, Hoonah, Angoon, Whale Pass, and Hydaburg were chosen, ADF&G staff Lauren Sill and Meredith Marchioni approached each community to describe the survey and to gauge interest in their participation. After these initial communications, a scoping meeting was held in each community (Table 1-5). The surveys were reviewed by each community selected for the study during each scoping meeting to ensure the community was clear about what kinds of questions would be asked if approval to participate was granted and also to ensure that no important species had been missed on the survey form.

The first community scoping meeting occurred in Whale Pass on November 7, 2012. The meeting was held in the local school and was open to the general public. Prior to the meeting, the head of the community association alerted residents as to the location and time of the meeting. Four residents were in attendance. The meeting was held on a Wednesday, which is a day that many residents from Whale Pass drive into the largest town on Prince of Wales Island for grocery shopping. After Sill presented on the proposed survey, the logistics of when to conduct the survey and how best to create a list of all the households in the community were discussed.

2. Alaska Federation of Natives. 2013. "Alaska Federation of Natives Guidelines for Research." Alaska Native Knowledge Network. http://www.ankn.uaf.edu/IKS/afnguide.html (accessed February 25, 2014).
3. National Science Foundation Interagency Social Science Task Force. 2012. "Principles for the Conduct of Research in the Arctic." http://www.nsf.gov/od/opp/arctic/conduct.jsp (accessed February 25, 2014).

Table 1-4.–Project staff.

Task	Name	Organization
Project design and management	James A. Fall, Davin Holen	ADF&G Division of Subsistence
Principal investigator	James A. Fall	ADF&G Division of Subsistence
Project lead	Lauren A. Sill	ADF&G Division of Subsistence
Data management lead	David Koster	ADF&G Division of Subsistence
Data management assistant	Theresa M. Quiner	ADF&G Division of Subsistence
Administrative support	Jennifer Bond	ADF&G Division of Subsistence
	Maegan Smith	ADF&G Division of Subsistence
Programmer	Garrett Zimpelman	ADF&G Division of Subsistence
Data entry	Margaret Cunningham	ADF&G Division of Subsistence
	Theresa M. Quiner	ADF&G Division of Subsistence
	Zayleen Kalalo	ADF&G Division of Subsistence
	Barbara Dodson	ADF&G Division of Subsistence
	John Dwyer	ADF&G Division of Subsistence
Data cleaning/validation	Margaret Cunningham	ADF&G Division of Subsistence
Data analysis	David Koster	ADF&G Division of Subsistence
	Garrett Zimpleman	ADF&G Division of Subsistence
	Erica Mitchell	ADF&G Division of Subsistence
Cartography	Bronwyn Jones	ADF&G Division of Subsistence
	Terri Lemons	ADF&G Division of Subsistence
Editorial review lead	Mary Lamb	ADF&G Division of Subsistence
Production lead	Mary Lamb	ADF&G Division of Subsistence
Field research staff	Brianna Bierma	ADF&G Division of Subsistence
	Jennifer Bond	ADF&G Division of Subsistence
	Rosalie A. Grant	ADF&G Division of Subsistence
	Bronwyn Jones	ADF&G Division of Subsistence
	Meredith A. Marchioni (Haines and Hoonah lead)	ADF&G Division of Subsistence
	Joshua T. Ream	ADF&G Division of Subsistence
	Lauren A. Sill (Angoon, Hydaburg, Whale Pass lead)	ADF&G Division of Subsistence
	Jim Powell	University of Alaska Fairbanks
Local research assistants	Rebecca Wilson	Haines
	Laurie Mastrella	Haines
	Melina Shields	Haines
	Gina St. Clair	Haines
	Michelle Webb	Haines
	Jedediah Blum-Evitts	Haines
	Arthur Woodard	Haines
	Stanley Hotch	Haines
	Kirk Sharp	Angoon
	Curtis Lane	Angoon
	Alberta Saleem	Angoon
	Kathy Marvin	Hoonah
	Myron Murphy	Hoonah
	Mike Williams	Hoonah
	Jamieson Williams	Hoonah
	Archie Brown, III	Hoonah
	Jay Erickson	Hoonah
	Geri Cheslock	Hoonah
	Mona Peratrovich	Hydaburg
	Jodi Sanderson	Hydaburg
	Joey Adams	Hydaburg
	Connie Plante	Whale Pass

Table 1-5.–Community scoping meetings, study communities, 2014.

Community	Date	Attendance	
		Community residents	Staff
Haines	4/3/2013	12	2
Hoonah	1/14/2013	12	2
Angoon	12/18/2012	8	2
Whale Pass	11/7/2012	4	1
Hydaburg	12/12/2012	5	2

On December 12, 2012, a community scoping meeting was held in Hydaburg at the Alaska Native Brotherhood Hall. Five community residents were in attendance. Sill and Rosalie Grant (ADF&G staff) presented the project information and then answered questions and discussed some of the specific details of the project with the community residents. Local names of some species listed on the survey were verified and changed where necessary. A cooperative agreement was signed with the Hydaburg Cooperative Association for the hiring and overseeing of LRAs who would participate in survey administration (Appendix B).

The Angoon City Council met on December 18, 2012, at Angoon City Offices. Sill presented the project to the city council. Council members had many questions about the survey and use of the data as well as how the survey would be conducted. The city council approved a motion to allow the surveys to be conducted in Angoon the following year. A good time for the surveys to be administered was discussed at this meeting. Posters were placed around the community advertising the survey and the hiring of LRAs to assist with survey administration.

The Hoonah Indian Association (HIA) met January 14, 2013, at the tribal offices. Marchioni and Grant presented the project to the council members and received formal approval to conduct the survey (Appendix B). Timing of the survey was discussed with council members. Fliers advertising LRA positions were posted around town and HIA made a few recommendations for additional LRAs.

A community meeting was held at the Haines Borough Public Library on April 3, 2013. Approximately 12 community residents were in attendance. Marchioni and Davin Holen (ADF&G staff) gave a short presentation discussing the project and then answered questions about the project and the Division of Subsistence's work. Grant spoke with the Borough of Haines and with the city about the project and was informed no official approval was necessary. Marchioni was interviewed by the local radio station and the local newspaper prior to the beginning of the surveys to further inform the community. To locate and hire LRAs for the Haines survey, Marchioni put an announcement in the local paper and on the local radio, as well as the community website calendar. In addition, ADF&G employees stationed in Haines posted fliers around town.

Systematic Household Surveys

The primary method for collecting subsistence harvest and use information in this project was a systematic household survey. Following receipt of comments at the scoping meetings, ADF&G finalized the survey instrument in January 2013. A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and 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[4]). Appendix A is an example of the survey instrument used in this project.

To define which households were eligible for survey administration within each geographic area, different boundaries were used, as appropriate. Hoonah, Angoon, and Hydaburg are first- or second-class cities, so city boundaries were used to delineate the survey area. Whale Pass is unorganized, so the boundaries of the

4. ADF&G Community Subsistence Information System: http://www.adfg.alaska.gov/sb/CSIS/. Hereinafter cited as CSIS.

Table 1-6.–Estimated households and sample achievement, study communities, 2012.

	Haines	Hoonah	Angoon	Whale Pass	Hydaburg
Number of dwelling units	933	280	122	27	119
Interview goal	140	112	51	27	119
Households interviewed	132	122	51	21	48
Households failed to be contacted	47	41	13	5	45
Households declined to be interviewed	35	36	8	1	7
Households moved or occupied by nonresident	22	0	0	0	3
Total households attempted to be interviewed	167	158	59	22	55
Refusal rate	21.0%	22.8%	13.6%	4.5%	12.7%
Final estimate of permanent households	**818**[a]	**280**	**122**	**27**	**119**
Percentage of total households interviewed	**16.1%**	**43.6%**	**41.8%**	**77.8%**	**40.3%**
Interview weighting factor	6.20	2.30	2.39	1.29	2.48
Sampled population	310	319	143	43	134
Estimated population	1,921	732	342	55	332

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

a. The initial estimate of households was later reduced to 818 occupied units based on observations during survey implementation.

U.S. Census Bureau census designated place (CDP) were used. Haines is part of a borough that includes several other small communities. Due to funding restrictions, it was decided to not survey the outlying communities within the Haines Borough; only Mud Bay was included, due to its geographical proximity to Haines as well as its substantial population.

Table 1-6 shows the sampling strategy employed in each of the study communities. For the least populated community of Whale Pass, a census survey effort (where every household in the community is contacted) was attempted. Of the 27 households identified in Whale Pass through the knowledge of the local residents, surveys were accomplished with 21 households. One household refused the survey and 5 households were out of town during the survey period. For the larger communities of Angoon and Hoonah, a simple random sample of 40% of the households was attempted. In Angoon, a map of the community was used to identify all the structures that were inhabited in 2012, which became the household list; 122 households were identified and 51 were successfully surveyed (42%). In Hoonah, the household list was based on a list provided by the city of Hoonah, which was verified for accuracy by multiple city employees. Out of the 280 identified households, 122 households were surveyed (44%). Although Hydaburg has a similar population size to Angoon, at the request of the community a census survey effort was attempted. A household list was created with the help of the LRAs and others in the community. Out of the 119 household identified, 48 households were successfully surveyed (40%).

Creating a random sample in Haines was more complex due to its larger population size. To create a household list, maps showing all structures and zoning designations for Haines CDP and Mud Bay CDP were obtained from the Haines Borough and then groundtruthed by Marchioni. A total of 933 households were initially identified by this method. A simple random sample of 140 households (15%; identified by address) was then attempted. During the process of administering the survey, the final count of households was revised to 818 households. Out of the final estimated households, 132 households were surveyed (16%).

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

Community	Interview length (in minutes)		
	Average	Minimum	Maximum
Angoon	60	20	152
Haines	49	7	155
Hoonah	69	22	185
Hydaburg	52	25	100
Whale Pass	55	25	105

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

In each community, for every household that was selected for a survey, staff contacted the household and a survey was attempted on at least 3 occasions. If a reasonable effort was made to contact the household at least 3 times—on different days and at different times—with no success, then the household was coded a "no contact" and staff attempted to contact the next household on the list. For the census communities, researchers created a disposition (such as surveyed, moved, no contact, refused) for each household until the household list was exhausted. For the 3 communities where a sample was taken, an initial list of 100 households was provided to the research team by Information Management lead David Koster. When that list was exhausted, 10 more names were added to the list. This was repeated until the survey sample targets were achieved. To conduct the survey, an LRA worked with an ADF&G staff member. Table 1-7 shows the length of the interviews; on average, surveys took approximately an hour. The time taken to complete surveys was slightly shorter in Haines and slightly longer in Hoonah. The longest survey was in Hoonah at just longer than 3 hours.

Mapping Locations of Subsistence Hunting, Fishing, and Gathering Activities

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

Harvest locations and fishing, hunting, and gathering areas were documented in one of 2 ways. One method used an application designed on the ArcGIS Runtime SDK for iOS platform; basically a mapping data collection application for Apple iPad.[5] The point, polygon, or line was drawn on a U.S. Geological Survey (USGS) topographic relief map downloaded on the iPad. The iPad allowed the user to zoom in and out to the appropriate scale, and the ability to document harvesting activities wherever they occurred in the state of Alaska. Once a feature was accepted, an attribute box was filled out by the researcher that noted the species harvested, amount, method of access to the resource, and month(s) of harvest. The data were uploaded via Wi-Fi to a server. Once data collection was complete the data were downloaded into an ArcGIS file geodatabase. The application was developed by HDR, Inc., an environmental research firm located in Anchorage. The second method of documenting fishing, search, and harvest locations was with the use of paper maps. The maps used in each community consisted of a set of, at a minimum, 3 maps: 1) a map covering a large area at a scale of 1:1,000,000; 2) a map covering the general area around a community at a scale of 1:500,000; and 3) a map covering the immediate area around a community at a scale of 1:250,000. The maps were produced by Division of Subsistence staff using ArcGIS 10.0 software on 11-inch by 17-inch paper and displayed a USGS topographic relief. Maps were organized by writing the community

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

identification number, the household identification number, the survey date, and the interviewer's initials. With the exception of numerous surveys in Haines, very few paper maps were used and research staff or Information Management staff digitized markings on paper maps using the iPad application.

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

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

Key Respondent Interviews

During the surveying effort, researchers conducted extended surveys with several respondents in each community. In Hoonah, researchers consulted with the tribal government and LRAs to identify key respondents to interview. The purpose of the extended surveys and the key respondent interviews was to provide additional context for the quantitative data and also to provide information for the community background section at the beginning of each chapter, the seasonal round sections, harvest-over-time analysis, and the community comments and concerns section at the end of each chapter. Key respondent interviews in Hoonah were semi-structured and directed by the survey instrument. Besides gathering qualitative data through the key respondent interview protocol and extended surveys, ADF&G staff took notes during surveys to provide additional context for this report. Researchers analyzed key respondent interviews and survey notes in preparation for this report. Key respondents were informed that, to maintain anonymity, their names would not be included in the report.

Household Survey Implementation

Haines

A community scoping meeting was held in Haines on April 3, 2013, by Marchioni and Holen. An article[6] was published in the Chilkat Valley News and a radio story was broadcast to inform Haines residents about the survey. LRA training occurred at the Haines library on April 19, 2013. Additional LRAs were hired once the survey effort was underway and these LRAs were provided one-on-one training with Marchioni. The main survey effort lasted from April 20–June 15 and was conducted by ADF&G staff Marchioni, Grant, Sill, and Jennifer Bond. The work was supported by several LRAs: Rebecca Wilson, Laurie Mastrella, Melina Shields, Gina St. Clair, Michelle Webb, Jedediah Blum-Evitts, Arthur Woodard, and Stanley Hotch. After the main survey effort ended, there were still a few remaining surveys to be completed; these were conducted through the mid part of July by Marchioni and several LRAs. Due to limitations on staff time, the survey in Haines began later than planned. This had an effect on the survey effort—it was more challenging to find residents to survey because the weather had begun to turn nice and many people were preparing for their summer activities and were not found at home. Overall, this caused the survey effort to be more protracted than in the other communities that were able to be surveyed earlier in the year.

Hoonah

On January 14, 2013, Marchioni and Grant attended the HIA monthly meeting to introduce the project and receive approval for conducting the surveys. On February 4, 2013, a training session was held for anyone interested in being an LRA for the survey. The survey effort lasted from February 5–11, 2013, and was conducted by ADF&G staff Marchioni, Grant, Sill, Brianna Bierma, and Joshua Ream. All surveys were completed during this period. This work was supported by LRAs Kathy Marvin, Myron Murphy, Mike Williams, Jamieson Williams, Archie Brown, III, Jay Erickson, and Geri Cheslock. While surveying was ongoing, researchers conducted 5 key respondent interviews.

6. Tom Morphet, "Subsistence Surveys Start Next Week," Chilkat Valley News, April 11, 2013, http://www.chilkatvalleynews.com/story/2013/04/11/news/subsistence-surveys-start-next-week/4614.html?m=true (accessed June 2015).

Angoon

ADF&G staff Sill and Grant attended the Angoon City Council meeting on December 18, 2012, to introduce the project and receive approval for conducting the surveys. In January 2013, signs were posted around the community seeking LRAs for the survey effort. A training session was held for interested LRAs on February 18, 2013. The survey effort commenced on February 19, 2013, and was complete by February 22. Surveys were conducted by ADF&G staff Bierma, Grant, and Sill and LRAs Alberta Saleem, Kirk Sharp, and Curtis Lane. Also, Jim Powell, doctoral degree candidate from University of Alaska Fairbanks, who included survey questions about environmental change, conducted surveys in Angoon.

Whale Pass

On November 7, 2012, Sill held a meeting with residents of Whale Pass to present the proposed research and to seek community approval. Sill and Bierma returned to Whale Pass on January 20, 2013. Due to the small size of the community and lack of interest by local residents in administering the survey to their neighbors, no LRA was hired for survey administration. There were several residents instrumental in helping researchers identify and locate residents, and LRA Connie Plante assisted researchers in setting up interviews with households. All surveys were conducted between January 21 and January 25, 2013.

Hydaburg

A community meeting was held in Hydaburg on December 12, 2012. Sill and Grant presented the proposed project and received feedback on the study design and survey instrument. A cooperative agreement with the Hydaburg Cooperative Association (HCA) was signed for the hiring and oversight of LRAs to assist with survey implementation. At the request of the community, the sampling strategy for the community was changed to be a census survey. A training session for the LRAs was held on March 4, 2013; all LRAs had assisted with previous surveys, though not comprehensive ones, in Hydaburg. ADF&G staff Grant, Sill, and Bronwyn Jones conducted surveys from March 5 through March 10, 2013, with the assistance of LRAs Mona Peratrovich, Joey Adams, and Jodi Sanderson. Approximately one-half of the targeted surveys were completed during this time. Due to funding considerations, ADF&G staff could not remain in town for a prolonged survey effort. After staff left, several more surveys were completed by the LRAs; however, the census survey achievement that had been planned for this community was not attained.

Data Analysis and Review

Survey Data Entry and Analysis

Surveys were coded for data entry by research staff and reviewed by the project leads in each community for consistency. Responses were coded following standardized conventions used by the Division of Subsistence to facilitate data entry. Information Management staff within the Division of Subsistence set up database structures within Microsoft SQL Server at ADF&G in Anchorage to hold the survey data. The database structures included rules, constraints, and referential integrity to ensure that data were entered completely and accurately. Data entry screens were available on a secured internet site. Daily incremental backups of the database occurred, and transaction logs were backed up hourly. Full backups of the database occurred twice weekly. This ensured that no more than 1 hour of data entry would be lost in the unlikely event of a catastrophic failure. All survey data were entered twice and each set compared in order to minimize data entry errors.

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

ADF&G staff also used SPSS for analyzing the survey information. Analyses included review of raw data frequencies, cross tabulations, table generation, estimation of population parameters, and calculation of confidence intervals for the estimates. Missing information was dealt with on a case-by-case basis according to standardized practices, such as minimal value substitution or using an averaged response for similarly-characterized households. Typically, missing data are an uncommon, randomly-occurring phenomenon in household surveys conducted by the division. In unusual cases where a substantial amount of survey information was missing, the household survey was treated as a "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:

$$\bar{h}_i = \frac{h_i}{n_i} \tag{2}$$

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

$\bar{h}_i$ = the mean harvest per returned survey,

h_i = the total harvest reported in returned surveys,

n_i = the number of returned surveys, and

S_i = the number of households in a community.

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

$$C.L.\%(\pm) = \frac{t_{a/2} \times \frac{s}{\sqrt{n}} \times \sqrt{\frac{N-n}{N-1}}}{\bar{x}} \tag{3}$$

where:

S = sample standard deviation,

n = sample size,

N = population size,

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

$\bar{x}$ = sample mean.

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 Whale Pass and Hydaburg and for a sample of all year-round households in the other study communities. For this study, "year-round" was defined as being domiciled in the community when the surveys took place and for at least 3 months during the study year 2012. Because not all households were interviewed, population estimates for each community were calculated by multiplying the average household size of interviewed households by the total number of year-round households, as identified by Division of Subsistence researchers in consultation with community officials and other knowledgeable respondents.

There may be several reasons for the differences among the population estimates for each community generated from the division's surveys and other demographic data developed by the 2010 federal census (U.S. Census Bureau 2011) and the U.S. Census Bureau's American Community Survey (ACS) (U.S. Census Bureau n.d.). Two likely sources of difference are in the timing of the various surveys and in the definition of the populations. This survey was completed mainly during the first months of 2013 (except in Haines) when much of the year-round resident population is at home. It also only shows residents who were present in the community for more than 3 months during the study year period of January 1, 2012, to December 31, 2012. The federal census is usually completed later in the spring and may include some households that would be considered seasonal for this survey. In addition, the census may overestimate housing structures. In Angoon, researchers, with the help of LRAs, could not identify the number of structures listed as housing units in the 2010 census, and many of those identified were uninhabitable. The census reported the total population of the study communities in 2010 was 3,551 (1,506 households), the 5-year ACS survey estimated total population was 3,660 (1,621 households), and this study's survey estimated 3,382 total population (1,366 households) (Table 1-1). The difference in population estimates between this study and the census was 5% and between this study and the 5-year ACS estimate was 8%.

Map Data Entry and Analysis

As discussed above, maps were generated based on data collected using an iPad or on 11-inch by 17-inch paper maps. All data were entered on the iPad, whether in the field during interviews or by ADF&G research staff while coding survey data, or by Information Management staff after field work concluded. Map features were matched to the survey form to ensure that all harvest data were recorded accurately. Once all data were entered, an ArcGIS file geodatabase was downloaded by ADF&G researchers from the server and maps showing harvest locations for each species were created in ArcGIS 10.2 using a standard template for reports. Maps show harvest areas for fish species, gathering areas for plants, berries, and wood, and hunting areas for land mammals, marine mammals, and birds. To ensure confidentiality, harvest locations for large land or marine mammals are not produced for the report. Maps were reviewed at community review meetings to ensure accuracy.

Food Security Analysis

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

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

Table 1-8.–Community review meetings, study communities, 2012.

Community	Date	Attendance	
		Community residents	Staff
Haines	–	–	–
Hoonah	12/18/2014	3	1
Angoon[a]	12/17/2013	9	1
	1/22/2014	11	1
Whale Pass	12/4/2014	3	1
Hydaburg	10/13/2014	5	3

Note "–" indicates no meeting was held.

a. There were 2 meetings held in Angoon: 1 at the city council regular meeting and 1 at the tribal council regular meeting.

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

Community Review Meetings

ADF&G staff presented preliminary survey findings and associated search area and harvest maps at a meeting in each community. Table 1-8 shows when a community review meeting occurred in each study community and how many community residents attended. Sill conducted 2 community review meetings in Angoon; one with the city council members in their chambers on December 17, 2013, and one with the Angoon Community Association (ACA) at the tribal hall on January 22, 2014. Raynelle Jack and Juanita Silva with ACA and Matthew Kookesh with the City of Angoon were able to include these review sessions on the agendas of their respective councils. Grant, Holen, and Jones held a review session in Hydaburg on October 13, 2014, at the Hydaburg Cooperative Association's offices. They were assisted with organizing the meeting by Anthony Christiansen. Fliers were placed around town to advertise the meeting the weekend before the meeting. Sill conducted a review meeting in Whale Pass on December 4, 2014, at the community school. Gregg Cook was instrumental in setting up the meeting. In Hoonah, Jon Hillman of HIA collaborated with Sill for the review meeting, which was held in HIA offices on December 18, 2014. Fliers were posted around town and a message was posted to a local Facebook page to announce the meeting. No review meeting was held in Haines. The Haines data and chapter were reviewed by several knowledgeable residents in the community as well as by area fisheries managers. The purpose of these meetings was to present the draft study findings for community review and input. At each meeting, a Microsoft PowerPoint presentation was given that included tables and charts of survey results as well as maps with draft search and harvest areas for the community of each species harvested. Comments received by community members at these meetings have been incorporated into each community's chapter of this report, under the section titled "Local Concerns Regarding Resources."

Final Report Organization

This report summarizes the results of systematic household surveys and mapping interviews conducted by staff from ADF&G as well as LRAs, and the report also summarizes resident feedback provided at community review meetings. The findings are organized by study community. Each chapter includes tables and figures that report findings on demographic characteristics, employment characteristics, individual participation in harvesting and processing of wild resources, and characteristics of resource harvests and uses—including the sharing of wild foods—and food security, as well as harvest and use trends over time. Table 1-9 shows selected study findings for all the study communities and will be referenced in later discussions of survey results.

Because of the large number of maps of hunting, fishing, and gathering areas used by each community in 2012, selected maps are included in individual chapters and the remaining maps are published as Appendix D, "Harvest Use Area Maps by Community." The final chapter of the report provides a short, general overview of the harvests and uses of wild resources in the study communities.

With regard to the 2012 harvest and use data, the content is consistent in each chapter because the data are based on the survey instrument; however, there are differences among the chapters in terms of documenting historical trends because each community has a different history of subsistence harvesting practices and not all communities have had the same number of past comprehensive harvest surveys upon which to base comparisons. Table 1-3 identifies when the study communities have had previous harvest surveys conducted. As can be seen from the table, marine mammal studies were conducted over many years in the study communities that use marine mammals (Angoon, Haines, Hoonah, and Hydaburg). Each of the 5 study communities have had at least 2 previous comprehensive surveys done: one in 1987 and one in the 1990s. Three communities had an additional comprehensive survey done in the mid-1980s. For 4 of the 5 communities, each previous comprehensive study used the same geographic boundaries from which to draw a sample. The exception to this was in Haines, where previous studies used different geographic boundaries to define the population. Chapter 2 will discuss in more detail how that change affects the ability to compare studies.

The following chapters present the results from each community, presented in order from the most northerly community to the most southerly. Each chapter begins with a brief description of the community's settlement history and a description of the contemporary community. Following these sections are subsections presenting the data collected from the household survey, highlighting community demographics, employment and income characteristics of the community, as well as food security conditions. A summary of harvest and use patterns, including individual and household levels of participation in subsistence activities, a description of the wild resources that are targeted by season, and harvest quantities, is discussed in the following sections, and are presented in the order in which they appear in the survey instrument (Appendix A). Each community chapter concludes with a summary of concerns that local residents shared regarding wild resources with surveyors during the household survey, through a key respondent interview, or in feedback received during the community data review meetings.

After the report was finalized, ADF&G mailed the report and a short (4-page) community-specific summary of the study findings to the 5 study communities (see Appendix E to view each summary).

Table 1-9.–Comparison of selected Southeast Alaska community study findings, study communities, 2012.

Category	Community				
	Angoon	Haines	Hoonah	Hydaburg	Whale Pass
Demography					
Population	342.1	1,921.1	732.1	332.2	55.3
Percentage of population that is Alaska Native	89.5%	16.0%	63.9%	92.5%	0.0%
Percentage of household heads born in Alaska	87.5%	18.6%	56.5%	65.8%	6.9%
Average length of residency of household heads (year)	46.4	24.2	33.8	36.6	18.0
Cash economy					
Average number of months employed	6.9	7.1	7.8	3.7	6.1
Percentage of employed adults working year-round	38.7%	40.4%	41.9%	22.8%	20.4%
Percentage of income from sources other than employment	35.1%	23.3%	31.0%	16.2%	30.4%
Average household income[a]	$25,688	$61,796	$51,389	$37,113	$41,768
Per capita income[a]	$9,161	$26,313	$19,654	$13,294	$20,398
Resource harvest and use					
Per capita harvest, pounds usable weight	182.5	135.3	343.3	530.7	247.0
Average household harvest, pounds usable weight	511.6	317.8	897.7	1,481.6	505.8
Number of resources used by 50% or more households	11.0	8.0	11.0	19.0	7.0
Average number of resources used per household	14.2	12.7	17.8	21.3	11.8
Average number of resources attempted to be harvested per household	9.5	9.4	12.0	13.1	10.4
Average number of resources harvested per household	8.9	8.7	11.3	12.7	9.5
Average number of resources received per household	7.1	5.1	9.2	13.4	2.8
Average number of resources given away per household	5.4	3.0	7.8	11.2	2.1
Percentage of total harvest taken by top 25% ranked households	69.4%	76.4%	76.7%	65.9%	67.6%
Percentage of households that harvested 70% of harvest	23.5%	19.7%	18.9%	27.1%	23.8%
Per capita harvest by lowest ranked 50% of households	9.3	7.2	18.1	61.2	26.4
Percentage of total harvest taken by lowest ranked 50% of harvesting households	5.1%	5.3%	5.3%	11.5%	10.7%
Average number of resources used by lowest ranked 50% of households	10.4	8.9	10.9	18.0	8.9
Average number of resources used by top 25% ranked households	22.2	18.6	31.7	28.6	19.0

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

a. Includes income from sources other than employment.

2. HAINES

Meredith Ann Marchioni and James M. Van Lanen

Community Background

Haines is located 80 miles north of Juneau on the mainland at the head of Lynn Canal and between the Chilkoot and Chilkat inlets. The mainland in this area is mountainous terrain, bisected by the Chilkat River watershed. The Chilkat River and the smaller Chilkoot River are glacially-fed, lake-associated rivers that are rich in fish resources. Haines falls within the southeast maritime climate zone, but has a more continental climate than the island-based communities throughout Southeast Alaska. The community is just south of the Canadian border at British Columbia, and is 775 road miles from Anchorage. The Haines Highway provides the link between the Alaska Marine Highway and the Alaska Highway at Haines Junction in the Yukon Territory.

Haines is a predominantly non-Native community, originally formed around a mission at Deishu, a seasonal camp of the Chilkoot Tlingit. The Tlingit of this area were historically divided into 2 regional groups: the Chilkat and the Chilkoot. The Chilkat territory included the Chilkat River valley, the west side of Lynn Canal to northern Berners Bay, and land and water routes into Interior Alaska. The Chilkoot territory included Chilkoot lake and river, Lutak Inlet, Taiyasanka Harbor, the east side of northern Lynn Canal, and the area around Dyea. Like elsewhere in Southeast Alaska, Tlingit in this area had access to a wide variety of resources in their home territory, but they also enjoyed proximity to the resources of the Interior, as well as to bountiful and varied fish stocks. Currently, both the Chilkat and the Chilkoot are federally recognized tribes, headquartered in Klukwan and Haines, respectively.

Prior to European contact, there were permanent villages, forts, and seasonal fishing camps along the Chilkat River as well as historical settlements and mixed seasonal and year-round use settlements at Pyramid Point, which is across Chilkat Inlet from Haines. Residents of these communities fished all along the river and processed salmon at camps and in the villages while using other hunting, trapping, and gathering locations throughout the area. Historically the fish harvest was conducted inriver, enabling the Chilkat and Chilkoot Tlingit to participate in an extensive system of exchange with the Interior and coastal peoples; they traded eulachon oil, salmon, and other coastal products for furs, copper, jade, and other goods from the Interior, as well as dentalia shells, Chilkat blankets, slaves, and other goods from the coast (Oswalt 1978). The exchange of eulachon oil was a particularly significant trade activity, and the local Tlingit created and used a portion of the network of "grease trails" along which eulachon oil was carried into the Interior. During the Gold Rush period, these routes were used extensively by hopeful miners to gain access to the Interior. In some cases, the Chilkat were compensated and even hired to assist with passage over the mountains (Muir 1993), but they experienced a significant loss of control over these routes during and following the Klondike Gold Rush period.

Contact with European explorers occurred in the late 1700s, and, until the 1880s, trading ships looking for sea otter pelts and furs from the Interior increasingly frequented the area. Settlement did not concentrate in Haines until the late 1800s after a Christian mission was established in 1879 and the local population had experienced several disease epidemics. A wave of economic development in the 1880s brought increasing numbers of Euro-American settlers to Haines: the commercial fishing industry began to build several canneries in the Chilkat Inlet, the Klondike Gold Rush brought thousands of prospectors to the town in the late 1890s, and the Dalton Trail was established to access Interior Alaska in the 1890s. Haines incorporated as a city in 1910 and as a third-class borough in 1968. The City of Haines and the Haines Borough were consolidated into a home-rule borough in 2002. While much of the population outside of Haines is scattered, within the borough there are settlement clusters at Mud Bay, Covenant Life, Lutak, Mosquito Lake, and Excursion Inlet.

In 1942, the Haines Highway into the Interior was completed; later, in the 1950s, the Alaska Marine Highway System also provided a link between Haines and other Southeast Alaska locations. Tourism and the logging industry became increasingly important economic mainstays for Haines, as well as commercial gillnet, salmon troll, and crab fisheries. Haines has been attracting a growing summer seasonal population, as well as cruise ship landings. In 2012, in addition to road and ferry access, 2 airlines served the Haines community with regularly scheduled flights to Juneau. The Haines School District operates K–12 schools in Haines that serve the residents of the city and borough. The federally recognized Chilkoot Indian Association maintains a local office in town. A health clinic and post office serve residents of the city and borough, as well as the neighboring community of Klukwan. There are hotels, varied restaurants, and 2 grocery stores. Several state agencies, including ADF&G, maintain offices in Haines. Haines residents participate in the Upper Lynn Canal Fish and Game Advisory Committee, and are represented on the federal Subsistence Southeast Regional Advisory Council.

Population Estimates and Demographic Information

For this project, the study area for the community of Haines was defined as the combined Haines and Mud Bay census designated places (CDPs); areas within the Haines Borough but outside of these 2 CDPs were not included in the study. Throughout this report, "Haines" will be used to refer to the study area, not just the Haines CDP. According to the federal census, Haines had 1,925 residents in 2010, 15% of which were Alaska Native; the federal census 5-year American Community Survey reported the average population of Haines between the years 2008–2012 to be 2,113 residents with a 14% Alaska Native population (Table 2-1). The household survey conducted for this study in 2012 estimated the population at 1,921 residents, of which 16% were Alaska Native. The population of Haines has increased steadily since 1960 (Figure 2-1), likely due to its road-connected location and relatively diverse economy, including a growing tourism sector.

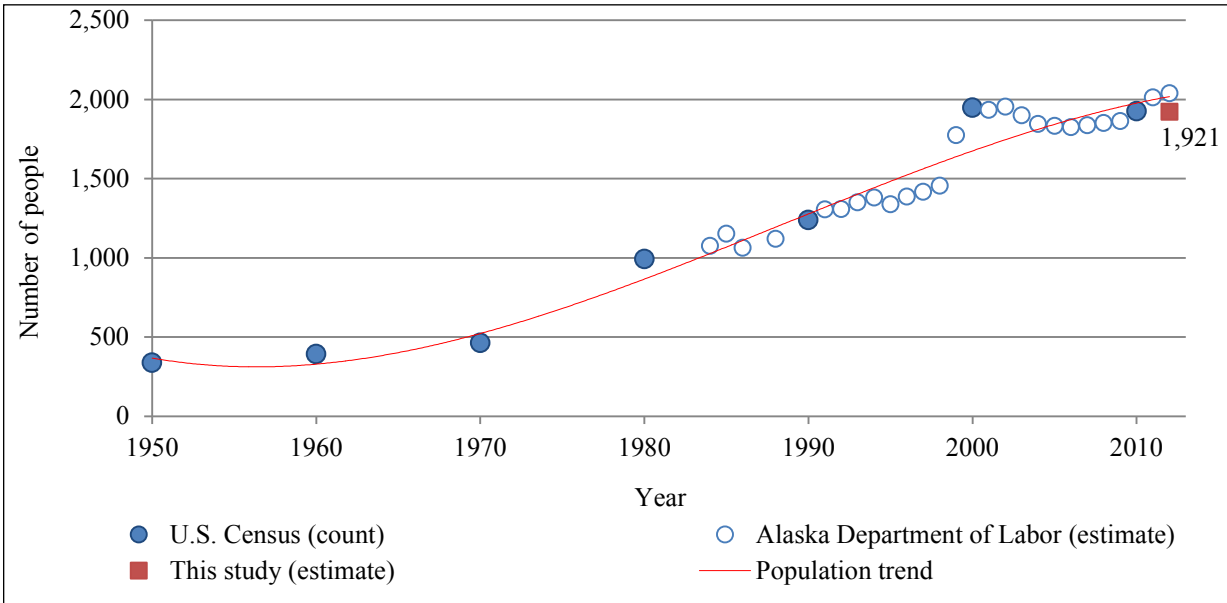
A total of 132 randomly selected households were interviewed in this study, or 16% of the estimated community households (Table 2-2). The mean household size was 2.3 individuals, with a minimum size of 1 and a maximum of 11 (Table 2-3). The average age of a Haines resident was 44 years. The mean length of residency was 20 years, with a maximum length of 96 years. The gender profile of Haines residents was fairly balanced, with slightly more females than males (Figure 2-2). The largest age cohort for males was the 60–64 age range, and for females it was a tie between the 55–59 and 60–64 age ranges (Table 2-4; Figure 2-2). Only males were represented in the 90–94 age range and only females were represented in the 95–99 age range.

Of the 1,921 Haines residents estimated in this study, approximately 21% were born in Haines and 11% were born elsewhere in Alaska (Table 2-5). An estimated 62% of residents were born in another state and 3% of the population was born outside of the country. Of just the household heads in the community, 19% were born in Alaska; 10% of household heads were born in Haines (Table 2-6). Most (75%) of the household heads were born in other U.S. states.

Table 2-1.–Population estimates, Haines, 2010 and 2012.

	Census (2010)	5-year American Community Survey (2008–2012)	This study (2012)
Total population			
Households	886	944	818.0
Population	1,925	2,113	1,921.1
Alaska Native			
Population	287	286	303.7
Percentage	14.9%	13.5%	15.8%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey 5-year survey estimate; and ADF&G Division of Subsistence household surveys, 2013, for 2012 estimate.
Note Haines includes Haines census designated place (CDP) and Mud Bay CDP.



Note Data for 2000 and later combine estimates for Haines and Mud Bay CDPs; estimates prior to 2000 are for only Haines city because Mud Bay CDP did not exist.

Figure 2-1.–Historical population estimates, Haines, 1950–2012.

Table 2-2.–Sample achievement, Haines, 2012.

	Community
	Haines
Number of dwelling units	933
Interview goal	140
Households interviewed	132
Households failed to be contacted	47
Households declined to be interviewed	35
Households moved or occupied by nonresident	22
Total households attempted to be interviewed	167
Refusal rate	21.0%
Final estimate of permanent households[a]	818
Percentage of total households interviewed	16.1%
Interview weighting factor	6.20
Sampled population	310
Estimated population	1,921.1

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

a. The initial estimate of households was later reduced to 818 occupied units based on observations during survey implementation.

Table 2-3.–Demographic characteristics, Haines, 2012.

Characteristics	Community Haines
Household size	
Mean	2.3
Minimum	1
Maximum	11
Age	
Mean	43.8
Minimum[a]	0
Maximum	98
Median	49
Length of residency	
Total population	
Mean	20.4
Minimum[a]	0
Maximum	96
Heads of household	
Mean	24.2
Minimum[a]	1
Maximum	78
Alaska Native households[b]	
Number	131.1
Percentage	16.0%

Source ADF&G Division of Subsistence household surveys, 2013.
a. A minimum age of 0 (zero) is used for infants who are less than 1 year of age.
b. The estimated number of households in which at least 1 head of household is Alaska Native.

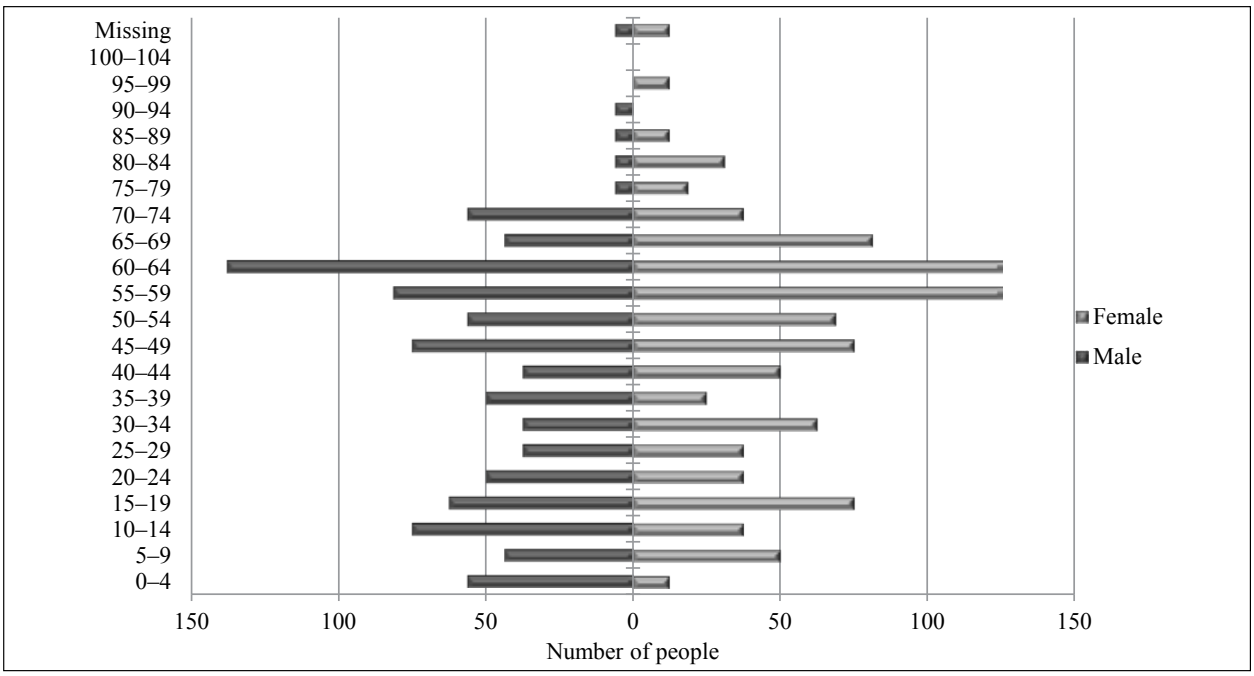


Figure 2-2.–Population profile, Haines, 2012.

Table 2-4.–Population profile, Haines, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	56.3	6.0%	6.0%	12.5	1.3%	1.3%	68.8	3.6%	3.6%
5–9	43.8	4.7%	10.7%	50.1	5.1%	6.3%	93.9	4.9%	8.5%
10–14	75.1	8.1%	18.8%	37.5	3.8%	10.1%	112.6	5.9%	14.3%
15–19	62.6	6.7%	25.5%	75.1	7.6%	17.7%	137.7	7.2%	21.5%
20–24	50.1	5.4%	30.9%	37.5	3.8%	21.5%	87.6	4.6%	26.1%
25–29	37.5	4.0%	34.9%	37.5	3.8%	25.3%	75.1	3.9%	30.0%
30–34	37.5	4.0%	38.9%	62.6	6.3%	31.6%	100.1	5.2%	35.2%
35–39	50.1	5.4%	44.3%	25.0	2.5%	34.2%	75.1	3.9%	39.1%
40–44	37.5	4.0%	48.3%	50.1	5.1%	39.2%	87.6	4.6%	43.6%
45–49	75.1	8.1%	56.4%	75.1	7.6%	46.8%	150.2	7.8%	51.5%
50–54	56.3	6.0%	62.4%	68.8	7.0%	53.8%	125.2	6.5%	58.0%
55–59	81.3	8.7%	71.1%	125.2	12.7%	66.5%	206.5	10.7%	68.7%
60–64	137.7	14.8%	85.9%	125.2	12.7%	79.1%	262.8	13.7%	82.4%
65–69	43.8	4.7%	90.6%	81.3	8.2%	87.3%	125.2	6.5%	88.9%
70–74	56.3	6.0%	96.6%	37.5	3.8%	91.1%	93.9	4.9%	93.8%
75–79	6.3	0.7%	97.3%	18.8	1.9%	93.0%	25.0	1.3%	95.1%
80–84	6.3	0.7%	98.0%	31.3	3.2%	96.2%	37.5	2.0%	97.1%
85–89	6.3	0.7%	98.7%	12.5	1.3%	97.5%	18.8	1.0%	98.0%
90–94	6.3	0.7%	99.3%	0.0	0.0%	97.5%	6.3	0.3%	98.4%
95–99	0.0	0.0%	99.3%	12.5	1.3%	98.7%	12.5	0.7%	99.0%
100–104	0.0	0.0%	99.3%	0.0	0.0%	98.7%	0.0	0.0%	99.0%
Missing	6.3	0.7%	100.0%	12.5	1.3%	100.0%	18.8	1.0%	100.0%
Total	**932.4**	**100.0%**	**100.0%**	**988.7**	**100.0%**	**100.0%**	**1,921.1**	**100.0%**	**100.0%**

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

Table 2-5.–Birthplaces of population, Haines, 2012.

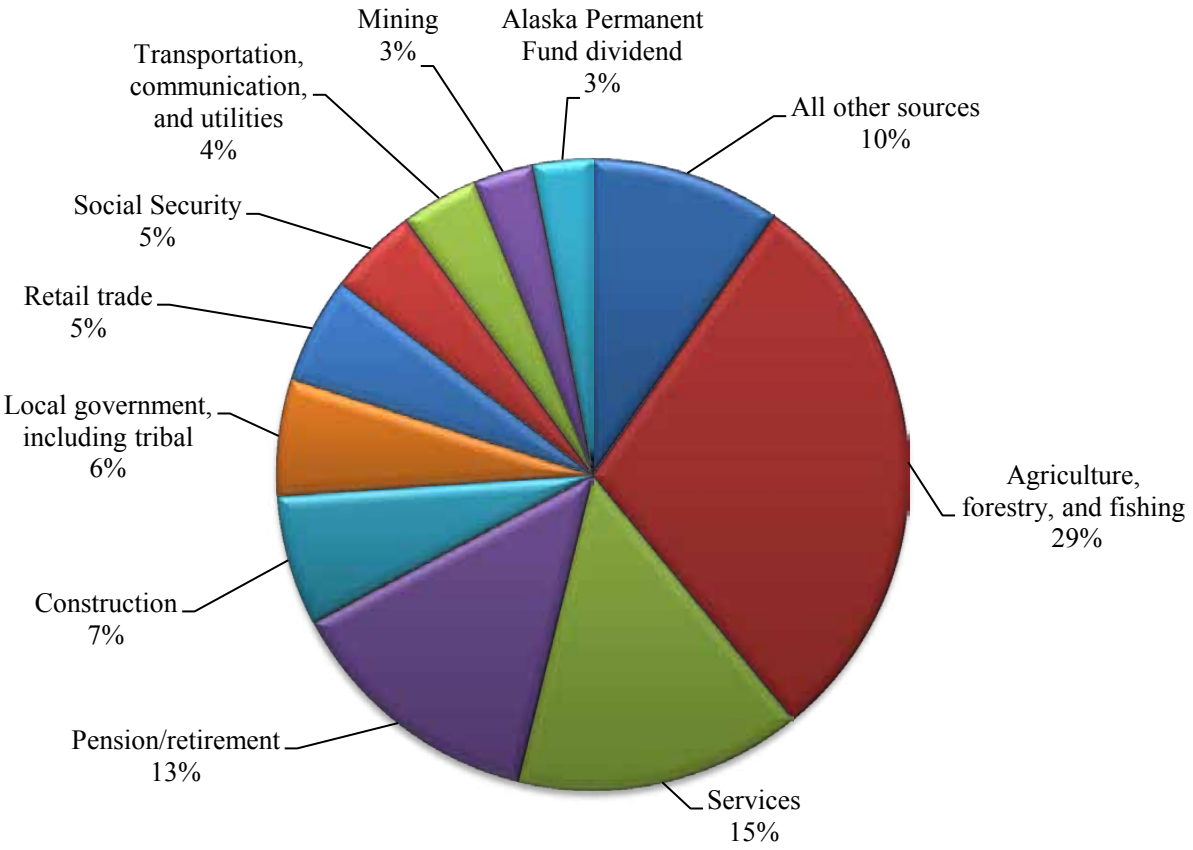
Birthplace	Percentage
Adak	0.3%
Anchorage	1.6%
College	0.3%
Fairbanks	1.6%
Haines	21.3%
Juneau	2.6%
Ketchikan	0.3%
Klukwan	0.3%
Pelican	0.3%
Sitka	1.3%
Tatitlek	0.3%
Wrangell	0.3%
Yakutat	0.3%
Other Alaska	1.9%
Missing	2.3%
Other U.S.	61.6%
Foreign	3.2%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 2-6.–Birthplaces of household heads, Haines, 2012.

Birthplace	Percentage
Anchorage	0.9%
College	0.5%
Haines	9.8%
Juneau	2.3%
Ketchikan	0.5%
Klukwan	0.5%
Pelican	0.5%
Sitka	1.4%
Tatitlek	0.5%
Wrangell	0.5%
Other Alaska	1.4%
Missing	2.3%
Other U.S.	74.9%
Foreign	4.2%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.



Note the "all other sources" category refers to income sources that each contributed less than 2% to the total community income.

Figure 2-3.–Top income sources, Haines, 2012.

Income and Cash Employment

Figure 2-3 presents the top sources of income for Haines residents in 2012. More than one-half of the total income came from the agricultural/forestry/fishing category (29%), the services sector (15%), and from pensions or retirement (13%). Total earned income ($38.8 million) accounted for an average of $47,392 per household, or 77% of the total community income, compared to other income sources ($11.8 million) that accounted for an average of $14,403 per household, or 23% of the total community income (Table 2-7). The largest sources of other income were pension/retirement funds and Social Security, which accounted for 14% and 5%, respectively, of the total community income in 2012. The median household income in 2012, estimated by this study, was $59,722, approximately $10,000 lower than the median income for all Alaska households, probably reflecting fewer opportunities for year-round employment as compared to some other parts of the state (Figure 2-4). The per capita income was $26,313 (Table 1-9).

Haines residents earned income from a variety of sources in 2012. The greatest percentage of earned income was from agriculture/forestry/fishing (38%) (Table 2-8). Jobs in the services sector provided the second greatest percentage of earned income (19%). In terms of the number of jobs, the services sector provided the greatest number, accounting for 30% of all jobs, followed by retail and agricultural/forestry/fishing jobs at 15% of all jobs each.

Table 2-7.–Estimated earned and other income, Haines, 2012.

Income source	Number of people	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Agriculture, forestry, and fishing	31.0	216.5	$14,833,780	$7,087,882 – $27,833,160	$18,134	29.3%
Services	56.0	336.8	$7,453,682	$4,538,718 – $12,125,149	$9,112	14.7%
Construction	14.0	104.3	$3,366,386	$1,369,375 – $7,391,329	$4,115	6.7%
Local government, including tribal	17.0	128.3	$3,019,376	$1,372,019 – $5,647,148	$3,691	6.0%
Retail trade	32.0	224.5	$2,758,494	$1,566,024 – $4,582,481	$3,372	5.5%
Transportation, communication, and utilities	12.0	96.2	$1,989,867	$825,947 – $4,288,136	$2,433	3.9%
Mining	4.0	32.1	$1,547,929	$427,200 – $3,880,554	$1,892	3.1%
Manufacturing	11.0	72.2	$979,922	$280,893 – $2,032,462	$1,198	1.9%
State government	7.0	48.1	$913,681	$273,680 – $2,142,285	$1,117	1.8%
Other employment	7.0	48.1	$854,621	$86,540 – $2,385,802	$1,045	1.7%
Federal government	4.0	32.1	$805,906	$83,021 – $2,817,418	$985	1.6%
Finance, insurance, and real estate	3.0	24.1	$243,246	$40,002 – $702,336	$297	0.5%
Earned income subtotal	**174.0**	**802.0**	**$38,766,889**	**$31,580,665 – $55,906,627**	**$47,392**	**76.7%**
Other income						
Pension/retirement		247.9	$6,804,288	$4,365,902 – $10,079,382	$8,318	13.5%
Social Security		291.3	$2,319,649	$1,518,235 – $3,239,703	$2,836	4.6%
Alaska Permanent Fund dividend		780.8	$1,538,214	$1,368,559 – $1,724,821	$1,880	3.0%
Rental income		26.1	$185,597	$5,287 – $474,303	$227	0.4%
Heating assistance		74.4	$179,960	$54,325 – $386,977	$220	0.4%
Disability		18.6	$157,356	$25,392 – $446,182	$192	0.3%
Other		18.6	$106,153	$17,130 – $293,481	$130	0.2%
Supplemental Security income		24.8	$102,681	$9,072 – $348,871	$126	0.2%
Native corp. dividend		112.7	$88,583	$31,851 – $189,525	$108	0.2%
Unemployment		37.2	$75,508	$12,682 – $174,840	$92	0.1%
Adult public assistance (OAA, APD)		18.6	$63,092	$10,181 – $166,187	$77	0.1%
Workers' compensation/insurance		6.2	$49,576	$8,000 – $99,152	$61	0.1%
Food stamps		18.6	$45,734	$7,380 – $128,649	$56	0.1%
Child support		24.8	$34,242	$268 – $135,914	$42	0.1%
Longevity bonus		6.2	$13,014	$2,100 – $26,027	$16	0.0%
Investments/stocks/bonds		13.7	$4,803	$1,938 – $10,325	$6	0.0%
Sales (property/garage sales, etc.)		13.7	$4,803	$1,947 – $10,602	$6	0.0%
Medicare/Medicaid		13.7	$4,571	$1,226 – $12,992	$6	0.0%
Veterans assistance		6.2	$3,677	$593 – $15,530	$4	0.0%
CITGO fuel voucher		6.2	$343	$55 – $1,696	$0	0.0%
TANF (Temporary cash assistance for needy families)		0.0	$0		$0	0.0%
Foster care		0.0	$0		$0	0.0%
Other income subtotal		**18.6**	**$11,781,840**	**$9,012,564 – $15,647,246**	**$14,403**	**23.3%**
Community income total			**$50,548,729**	**$43,352,899 – $66,260,728**	**$61,796**	**100.0%**

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

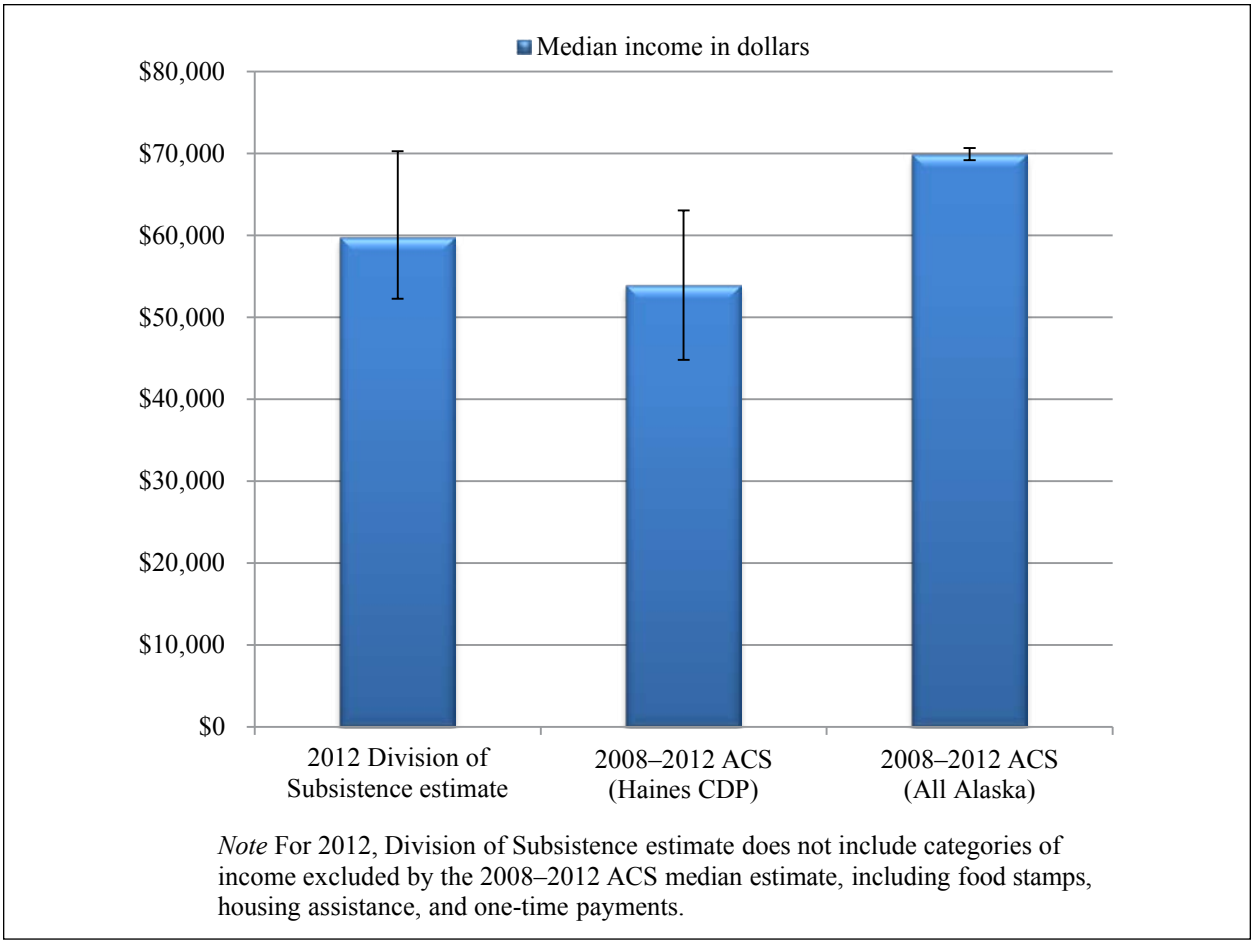


Figure 2-4.–Comparison of median household income estimates, Haines, 2012.

Table 2-8.–Employment by industry, Haines, 2012.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Estimated total number	**1,712.9**	**802.0**	**1,412.5**	
Federal government	**1.9%**	**4.0%**	**2.3%**	**2.1%**
Teachers, librarians, and counselors	0.5%	1.0%	0.6%	0.3%
Service occupations	0.5%	1.0%	0.6%	1.5%
Military occupations	0.5%	1.0%	0.6%	0.1%
Miscellaneous occupations	0.5%	1.0%	0.6%	0.1%
State government	**3.7%**	**6.0%**	**4.0%**	**2.4%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	0.3%
Technologists and technicians, except health	1.9%	3.0%	2.3%	0.8%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.3%
Transportation and material moving occupations	0.5%	1.0%	0.6%	0.6%
Occupation not indicated	0.5%	1.0%	0.6%	0.4%
Local government, including tribal	**8.4%**	**16.0%**	**9.8%**	**7.8%**
Executive, administrative, and managerial	2.3%	5.0%	2.9%	2.2%
Teachers, librarians, and counselors	3.7%	7.0%	4.0%	3.5%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.3%
Service occupations	1.4%	3.0%	1.7%	1.0%
Occupation not indicated	0.5%	1.0%	0.6%	0.8%
Agriculture, forestry, and fishing	**15.4%**	**27.0%**	**17.8%**	**38.3%**
Executive, administrative, and managerial	1.4%	3.0%	1.7%	2.0%
Agricultural, forestry, and fishing occupations	13.6%	24.0%	15.5%	36.2%
Mechanics and repairers	0.5%	1.0%	0.6%	0.0%
Mining	**1.9%**	**4.0%**	**2.3%**	**4.0%**
Mechanics and repairers	0.5%	1.0%	0.6%	1.2%
Construction and extractive occupations	1.4%	3.0%	1.7%	2.8%
Construction	**7.5%**	**13.0%**	**8.0%**	**8.7%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	0.5%
Agricultural, forestry, and fishing occupations	0.5%	1.0%	0.6%	1.1%
Construction and extractive occupations	3.3%	7.0%	4.0%	4.3%
Precision production occupations	0.5%	1.0%	0.6%	0.4%
Production working occupations	0.5%	1.0%	0.6%	0.4%
Transportation and material moving occupations	1.9%	3.0%	1.7%	1.8%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.1%
Manufacturing	**5.1%**	**9.0%**	**6.3%**	**2.5%**
Writers, artists, entertainers, and athletes	4.2%	7.0%	5.2%	2.0%
Precision production occupations	0.9%	2.0%	1.1%	0.6%
Transportation, communication, and utilities	**5.6%**	**12.0%**	**6.9%**	**5.1%**
Technologists and technicians, except health	0.5%	1.0%	0.6%	0.3%
Administrative support occupations, including clerical	2.3%	5.0%	2.9%	1.8%
Mechanics and repairers	0.5%	1.0%	0.6%	0.1%
Construction and extractive occupations	0.5%	1.0%	0.6%	1.1%
Transportation and material moving occupations	1.4%	3.0%	1.7%	1.7%
Miscellaneous occupations	0.5%	1.0%	0.6%	0.0%

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Table 2-8.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Retail trade	**15.4%**	**28.0%**	**18.4%**	**7.1%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	0.5%
Writers, artists, entertainers, and athletes	0.5%	1.0%	0.6%	0.1%
Marketing and sales occupations	5.6%	10.0%	6.3%	2.1%
Service occupations	7.5%	14.0%	9.2%	3.3%
Precision production occupations	0.5%	1.0%	0.6%	0.4%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.3%
Occupation not indicated	0.5%	1.0%	0.6%	0.4%
Finance, insurance and real estate	**1.4%**	**3.0%**	**1.7%**	**0.6%**
Executive, administrative, and managerial	0.9%	2.0%	1.1%	0.2%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.4%
Services	**30.4%**	**42.0%**	**32.2%**	**19.2%**
Executive, administrative, and managerial	11.2%	17.0%	12.6%	8.6%
Social scientists, social workers, religious workers, and lawyers	1.4%	3.0%	1.7%	0.4%
Teachers, librarians, and counselors	1.4%	3.0%	1.7%	0.7%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	2.3%	5.0%	2.9%	1.8%
Writers, artists, entertainers, and athletes	0.9%	2.0%	1.1%	0.6%
Health technologists and technicians	1.9%	4.0%	2.3%	1.2%
Technologists and technicians, except health	1.4%	2.0%	1.1%	0.8%
Marketing and sales occupations	0.5%	1.0%	0.6%	0.0%
Administrative support occupations, including clerical	0.9%	2.0%	1.1%	1.0%
Service occupations	6.5%	14.0%	8.0%	2.8%
Mechanics and repairers	0.5%	1.0%	0.6%	0.1%
Transportation and material moving occupations	0.9%	1.0%	0.6%	1.2%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.2%
Industry not indicated	**3.3%**	**6.0%**	**4.0%**	**2.2%**
Executive, administrative, and managerial	0.9%	1.0%	1.1%	1.1%
Natural scientists and mathematicians	0.5%	1.0%	0.6%	0.3%
Social scientists, social workers, religious workers, and lawyers	0.5%	1.0%	0.6%	0.8%
Precision production occupations	0.5%	1.0%	0.6%	0.0%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.0%
Occupation not indicated	0.5%	1.0%	0.6%	0.0%

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

In 2012 in Haines, 88% of the adults of working age (16 and older) were employed at some point during the study year (Table 2-9). On average, 98% of households contained at least 1 adult who was employed. The mean number of jobs per employed household was 2.1. Of the employed adults, 40% were employed year-round. Fifty-seven percent of employed persons were employed full-time, 28% had part-time jobs, and 19% were engaged in on-call work (Table 2-10). Of the jobs held by members of the community, 49% were full-time positions, 25% were part-time, and 20% were on-call.

Table 2-9.–Employment characteristics, Haines, 2012.

Characteristic	Community Haines
All adults	
Number	1,605.0
Mean weeks employed	27.2
Employed adults	
Number	1,412.5
Percentage	88.0%
Jobs	
Number	1,712.9
Mean	1.2
Minimum	1
Maximum	3
Months employed	
Mean	7.1
Minimum	0
Maximum	12
Percentage employed year-round	40.4%
Mean weeks employed	30.9
Households	
Number	818
Employed	
Number	802.0
Percentage	98.0%
Jobs per employed household	
Mean	2.1
Minimum	1
Maximum	5
Employed adults	
Mean	
Employed households	1.8
Total households	1.7
Minimum	1
Maximum	4
Mean person-weeks of employment	34.3

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

Table 2-10.–Reported job schedules, Haines, 2012.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full-time	840.4	49.1%	794.4	56.9%	561.4	70.0%
Part-time	432.2	25.2%	393.2	28.2%	312.8	39.0%
Shift	48.0	2.8%	48.1	3.4%	40.1	5.0%
On-call (occasional)	336.2	19.6%	264.8	19.0%	224.5	28.0%
Part-time shift	16.0	0.9%	16.0	1.1%	16.0	2.0%
Schedule not reported	40.0	2.3%	40.1	2.9%	32.1	4.0%

Source ADF&G Division of Subsistence household surveys, 2013.
Note Respondents who had more than 1 job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Food Security

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. The food security status of households is based on the aggregated number of affirmative responses to questions about experiencing food insecure conditions. Food security status is characterized by 4 ranges:

1. High food security;
2. Marginal food security;
3. Low food security; and
4. Very low food security.

For reporting purposes, households with high or marginal food security were broadly categorized as being food secure, and households with low or very low food security were broadly categorized as being food insecure following a USDA protocol (Bickel et al. 2000).[1]

Households with a high or marginal level of food security reported 1 or 2 instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Haines residents are summarized in Figure 2-5. Food security results for Haines, the state of Alaska, and the United States are summarized in Figure 2-6. Less than one-quarter of Haines households (17%) said they lacked the resources they needed to get food. The modified food security questionnaire used in this study defined a lack of resources as not having what was needed "to hunt, fish, gather, or buy food." Twenty-five percent of households said they ran out of subsistence foods and could not get more, while only 4% ran out of store-bought food and were not able to get more (Figure 2-5).

1. U.S. Department of Agriculture, Economic Research Service. 2015. "Food Security in the U.S.: Measurement," http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx (accessed Nov. 2016).

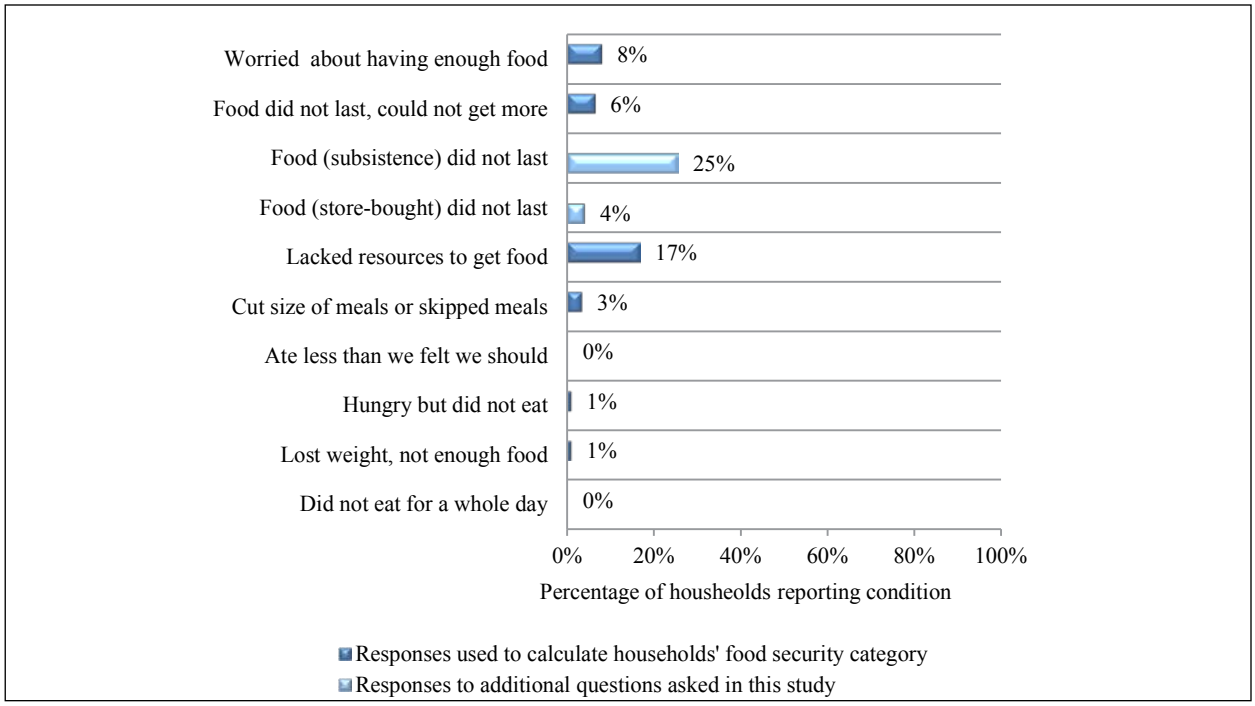

Figure 2-5.–Responses to questions about food insecure conditions, Haines, 2012.

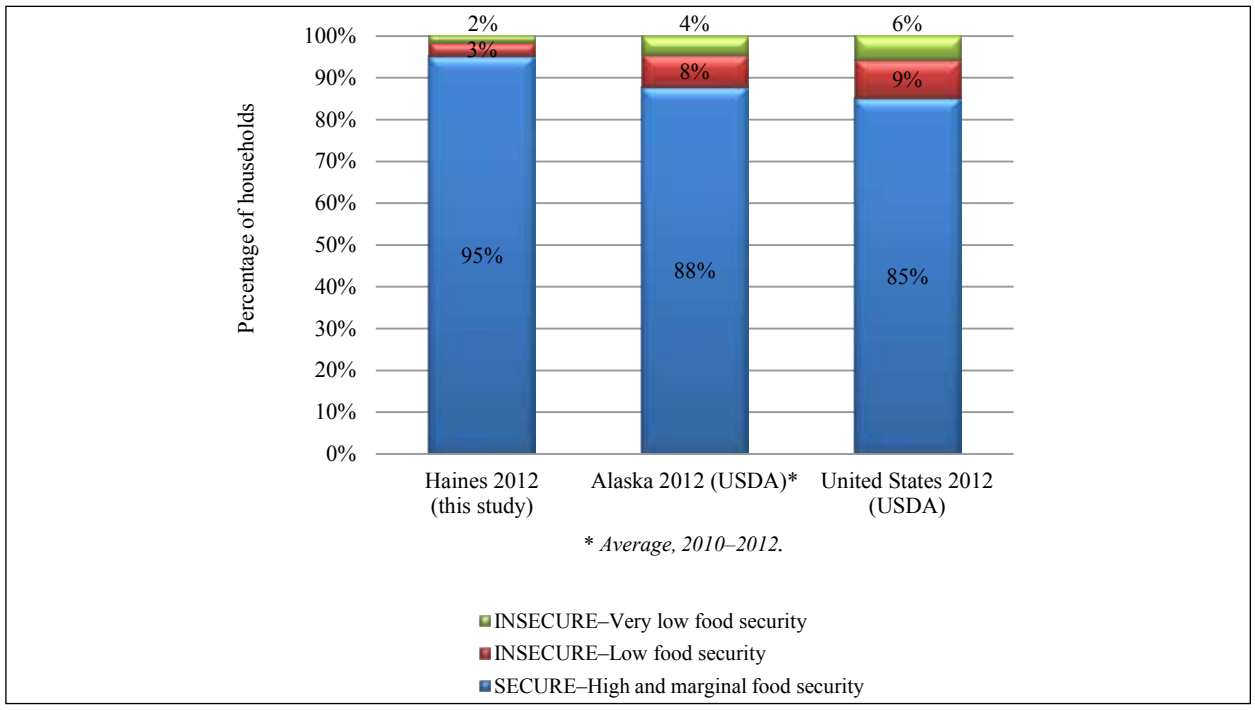

Figure 2-6.–Comparison of food security categories, Haines, Alaska, and United States, 2012.

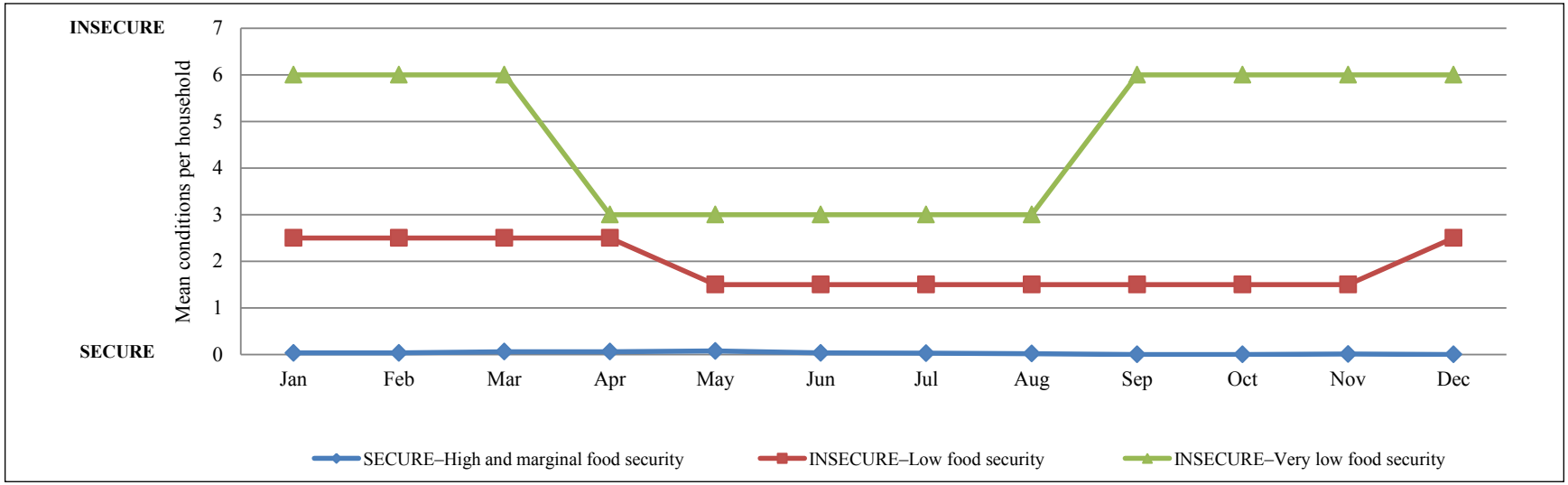

Figure 2-7.–Mean number of food insecure conditions by month and by household food security category, Haines, 2012.

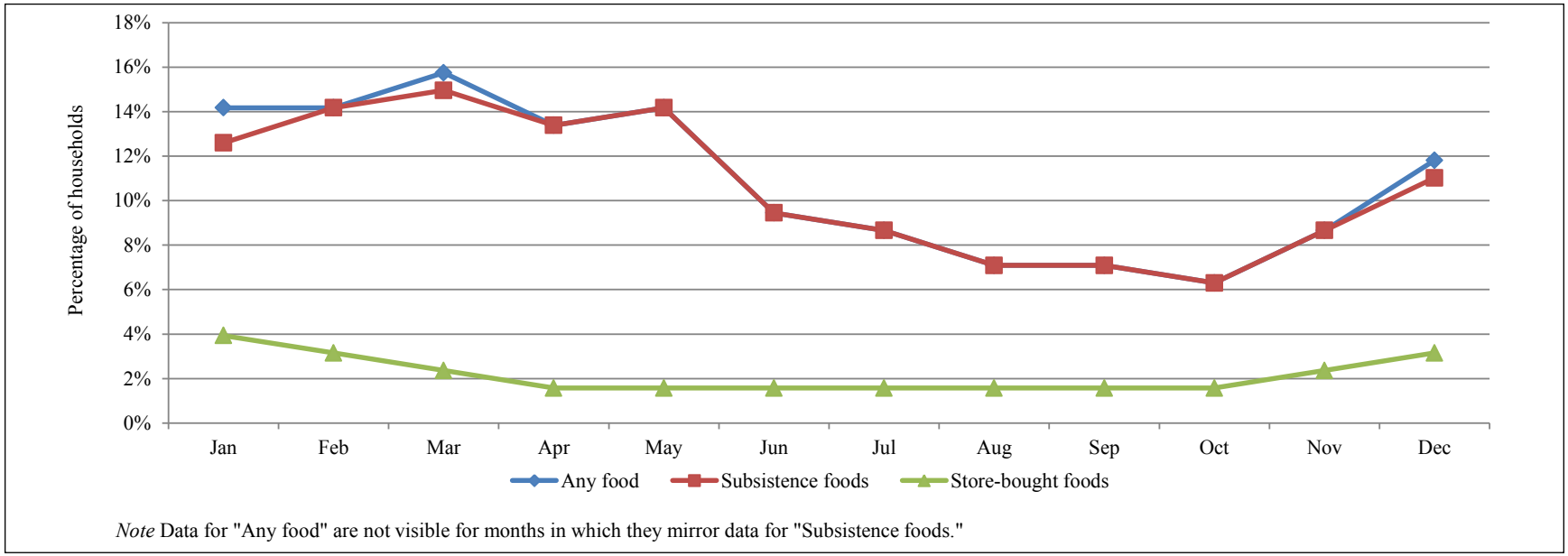

Figure 2-8.–Comparison of months when food did not last, Haines, 2012.

Some households were concerned about not having enough food (8%) and adults in a few households cut the size of meals (3%). One percent of Haines households reported adults experiencing hunger and not eating because there was not enough food, or lost weight because of a lack of food. Overall, the majority of households in Haines (95%) are considered food secure (Figure 2-6). Haines had lower percentages of households considered food insecure than Alaska overall and the United States in general; only 5% of Haines households reported low or very low food security, compared to 12% of households for the state of Alaska and 15% of households in the nation.

Households that reported food insecure conditions (i.e., they worried about having enough food, or lacked resources to get food) were asked to name the months when they experienced these conditions. Figure 2-7 portrays the mean number of food insecure conditions per household by food security category and by month. Figure 2-8 shows which months households reported foods not lasting. The households with the highest food insecurity (very low food security) experienced their greatest insecurity during the fall and winter months, and their greatest security during the spring and summer months. Households with low food security followed a similar pattern, but did not begin experiencing increased insecurity until well into winter (November). Typically, in rural Alaska communities, food insecurity decreases during spring and summer months when subsistence activities gear up and peak, a pattern that continues into fall. In general, more food is available. These times of year have the best conditions for travel and subsistence activities, and they usually require less fuel (whether oil or firewood) to heat homes. Households that were considered food secure (with either high or marginal levels) demonstrated no difference in food security conditions throughout the year. Seasonal food security patterns were similar between subsistence foods and store-bought foods throughout the year, with more households reporting food not lasting more often in the winter months than the summer and fall months (Figure 2-8).

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Table 2-11 and Figure 2-9 report the expanded levels of individual participation in the harvest and processing of wild resources by Haines residents in 2012. Approximately 86% of residents attempted to harvest at least 1 resource. With reference to specific resource categories, 81% of all residents gathered plants and berries, 66% fished, 27% hunted for large land mammals, and 14% hunted for birds. Fewer residents (4%) were involved in furbearer hunting or trapping and no resident hunted marine mammals. In comparison, 88% of Haines residents processed at least 1 resource in 2012. Participation in processing plants and berries was 81%, while 78% of residents participated in processing fish, 43% processed large land mammals, 15% of residents participated in processing birds, and 5% of residents participated in small land mammal processing. Although no residents reported hunting marine mammals, 1% of residents helped process them. As is seen in fish and large land mammals, fewer residents harvest the resource than process it, indicating that a group effort is made by residents to process the meat once a successful hunter or fisher returns to camp or home.

Table 2-11.–Individual participation in subsistence harvesting and processing activities, Haines, 2012.

Total number of people	**1,921.1**
Fish	
Fish	
Number	1,261.7
Percentage	65.7%
Process	
Number	1,496.3
Percentage	77.9%
Large land mammals	
Hunt	
Number	519.9
Percentage	27.1%
Process	
Number	830.6
Percentage	43.2%
Small land mammals	
Hunt or trap	
Number	82.4
Percentage	4.3%
Process	
Number	88.8
Percentage	4.6%
Marine mammals	
Hunt	
Number	0.0
Percentage	0.0%
Process	
Number	19.0
Percentage	1.0%
Birds and eggs	
Hunt/gather	
Number	259.9
Percentage	13.5%
Process	
Number	279.0
Percentage	14.5%
Vegetation	
Gather	
Number	1,559.7
Percentage	81.2%
Process	
Number	1,547.0
Percentage	80.5%
Any resource	
Attempt harvest	
Number	1,654.6
Percentage	86.1%
Process	
Number	1,698.0
Percentage	88.4%

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

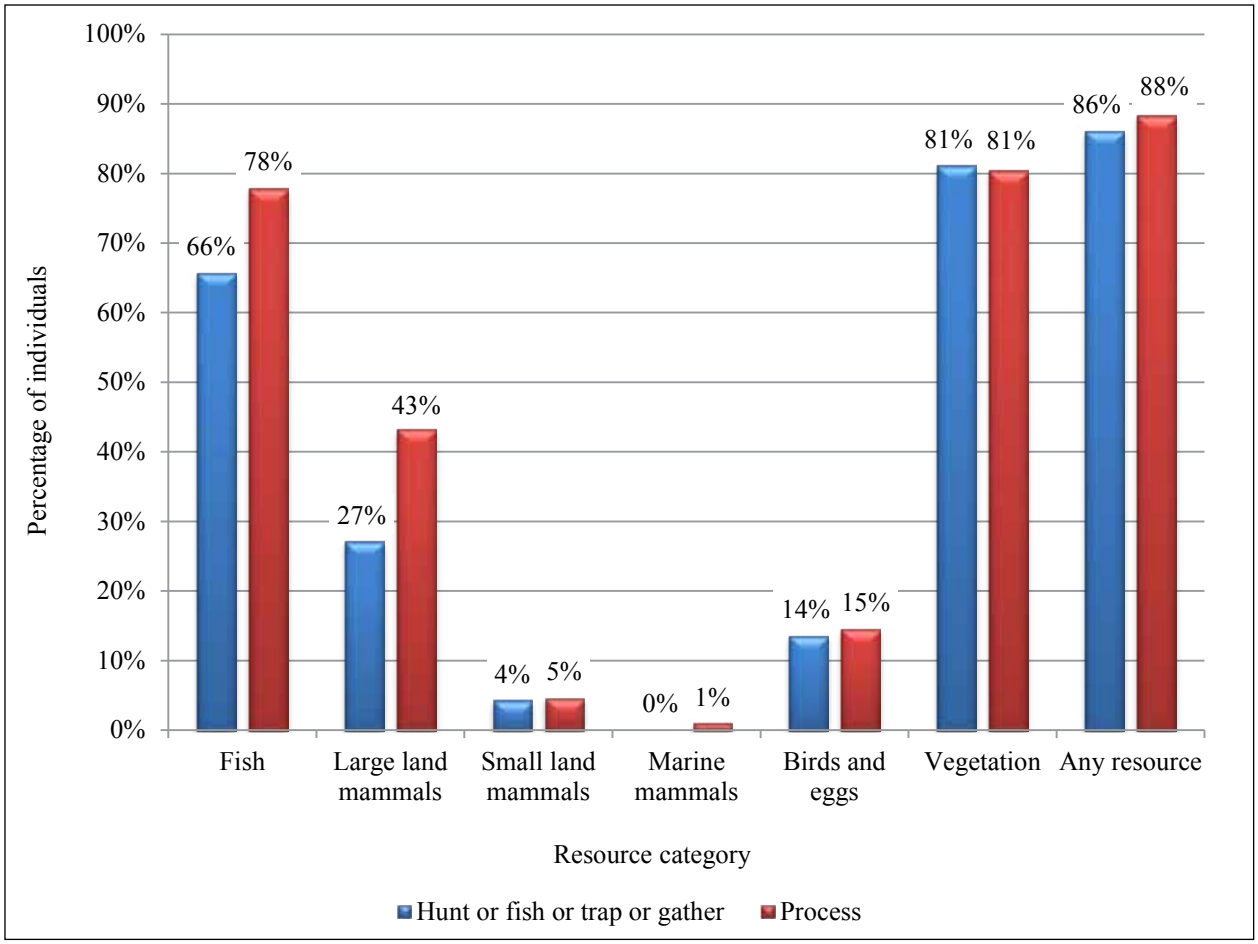

Figure 2-9.–Individual participation in subsistence harvesting and processing activities, Haines, 2012.

Harvest and Use of Wild Resources at the Household Level

Figure 2-10 shows by resource category the percentages of households that used, attempted to harvest, or harvested wild foods. Salmon were used by the greatest percentage of households (92%), followed by vegetation (89%), nonsalmon fish (84%), marine invertebrates (74%), and land mammals (68%). Birds and eggs were used by fewer households (19%), and marine mammals were the least used (only 4% of households). Every household attempting to harvest marine invertebrates and vegetation was successful, but all other categories exhibited some degree of failure to harvest. The greatest discrepancy between attempt to harvest and success was with land mammals where 38% of households attempted to harvest, but only 24% of community households were successful. In all cases, more households used a resource than harvested, particularly for marine invertebrates, fish, and land mammals.

Table 2-12 summarizes resource harvest and use characteristics for Haines in 2012 at the household level. The average household harvest was 318 lb usable weight (135 lb per capita). During the study year, households harvested an average of 9 kinds of resources and used an average of 13 types of resources. The maximum number of resources used by any household was 51. In addition, households gave away an average of 3 types of resources and received an average of 5 types.

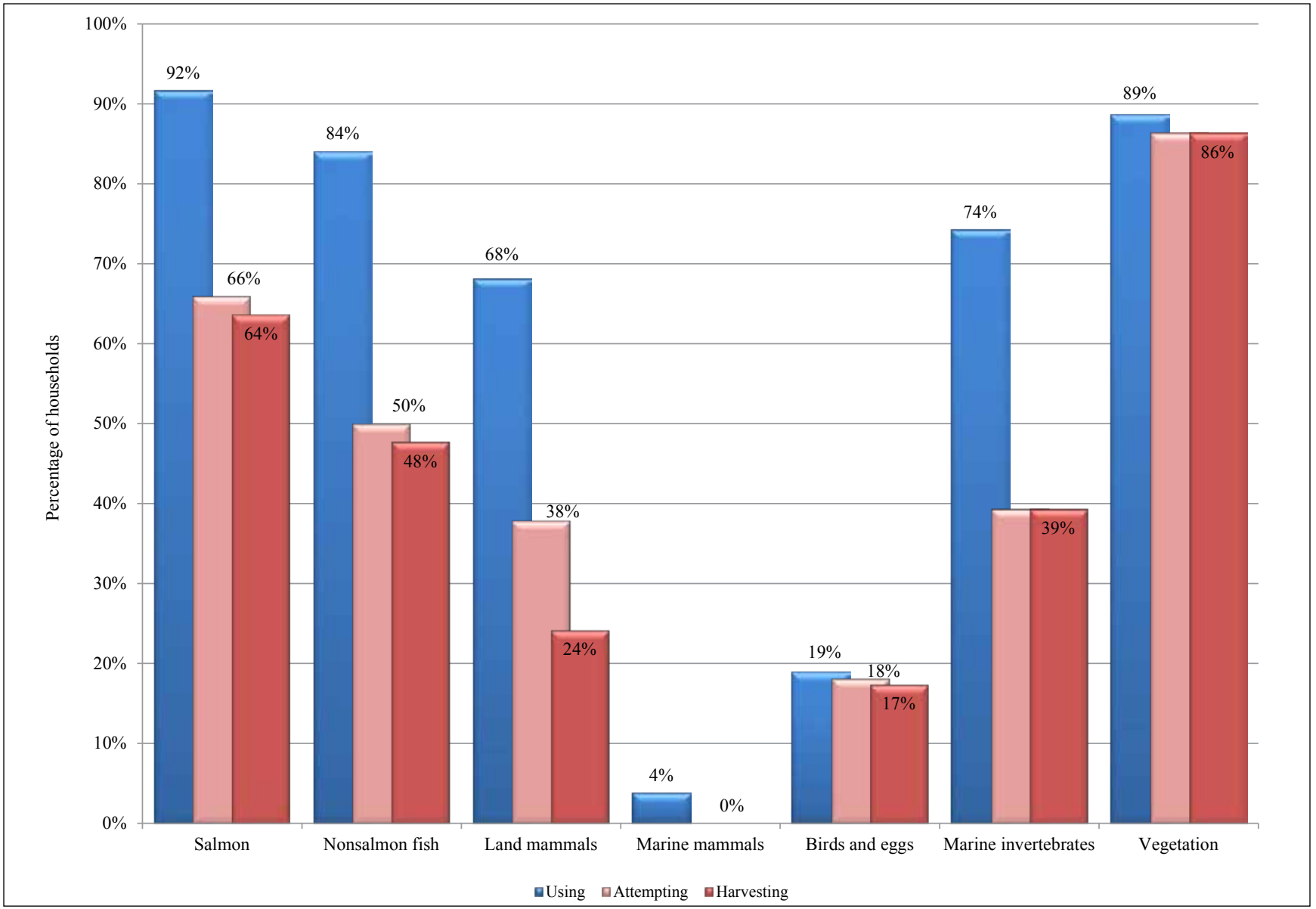

Figure 2-10.–Percentages of households using, attempting to harvest, and harvesting wild resources, by resource category, Haines, 2012.

Table 2-12.–Resource harvest and use characteristics, Haines, 2012.

Characteristic	
Mean number of resources used per household	**12.7**
Minimum	0
Maximum	51
95% confidence limit (±)	10.6%
Median	10
Mean number of resources attempted to harvest per household	**9.4**
Minimum	0
Maximum	38
95% confidence limit (±)	13.5%
Median	7.5
Mean number of resources harvested per household	**8.7**
Minimum	0
Maximum	37
95% confidence limit (±)	13.8%
Median	7
Mean number of resources received per household	**5.1**
Minimum	0
Maximum	24
95% confidence limit (±)	15.0%
Median	4
Mean number of resources given away per household	**3.0**
Minimum	0
Maximum	20
95% confidence limit (±)	19.9%
Median	2
Household harvest (pounds)	
Minimum	0.0
Maximum	3,611.9
Mean	317.8
Median	127.5
Total harvest weight (lb)	259,955.7
Community per capita harvest (lb)	135.3
Percentage using any resource	98.5%
Percentage attempting to harvest any resource	90.9%
Percentage harvesting any resource	90.2%
Percentage receiving any resource	90.2%
Percentage giving away any resource	70.5%
Number of households in sample	132
Number of resources asked about and identified voluntarily by respondents	186

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

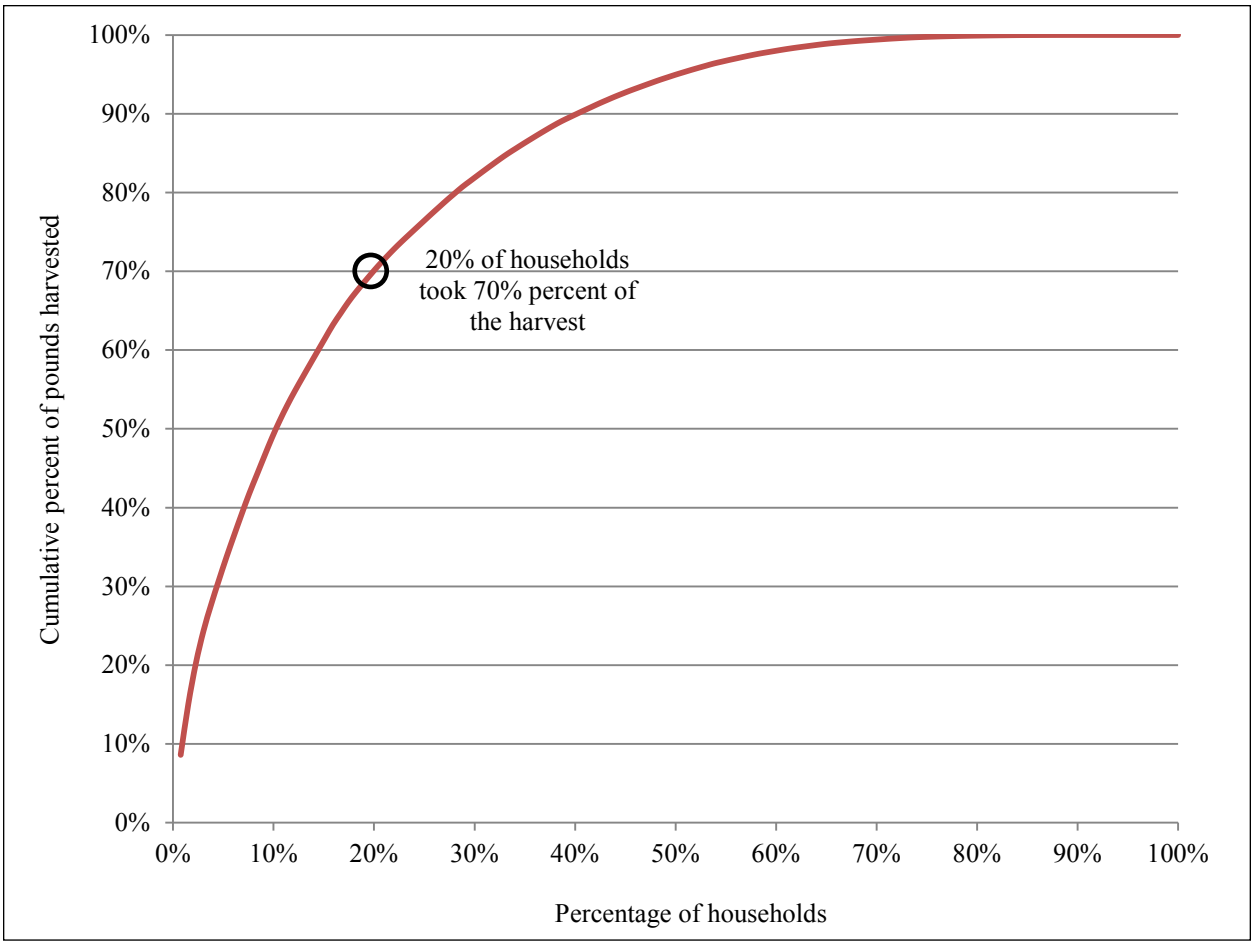

Figure 2-11.–Household specialization, Haines, 2012.

Sharing of Wild Resources

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 2-11, in the 2012 study year in Haines, about 70% of the harvests of wild resources as estimated in usable pounds were harvested by 20% 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 Haines and the other study communities.

Harvest Quantities and Composition

Table 2-13 reports estimated wild resource harvests and uses by Haines residents in 2012 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors[2]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as firewood are included because they are an important part of the way of life in the area. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total estimated harvest for all fish, wildlife, and wild plant resources during 2012 for Haines was 259,956 lb (135 lb per capita) (Table 2-13). Fish provided the majority (62%) of the total pounds of wild resources harvested by Haines households; salmon accounted for 34% of the total harvest (89,526 lb; 47 lb per capita) while nonsalmon fish composed 28% (72,535 lb; 38 lb per capita) (Figure 2-12; Table 2-13). Large land mammals provided 21% of the total harvest (53,827 lb; 28 lb per capita). Marine invertebrates, birds, small land mammals, and vegetation also contributed to the total harvest of wild resources by Haines residents. Marine invertebrates provided 9% (22,837 lb; 12 lb per capita), vegetation provided 7% (19,136 lb; 10 lb per capita), birds provided 1% (1,739 lb; 1 lb per capita) and small land mammals provided less than 1% (356 lb; 0.2 lb per capita) of the total harvest.

Seasonal Round

Subsistence household harvest surveys and key respondent interviews illustrate the seasonal round of fishing, hunting, and gathering activities by Haines residents. In spring, summer, fall, and winter, Haines residents harvest resources along the Chilkat and Chilkoot rivers, their tributaries—including the Kelsall and Tahini rivers—and within adjacent forests and lakes. Haines residents use motorized boats suitable for travel on waterways, all-terrain vehicles (ATVs), cars, trucks, and snowmachines to reach their hunting, fishing, and gathering areas.

During spring and summer salmon are caught in the Chilkat and Chilkoot rivers.[3] During May, June, and July, Chinook salmon are harvested with rod and reel in fresh water and trolled for in salt water under sport fishing regulations; they are caught by set gillnet under subsistence regulations in the Chilkat River. In recent years the Division of Sport Fish and the Division of Commercial Fisheries have encouraged people to return all live subsistence-caught Chinook salmon to the water in an effort to preserve the run. During June, July, and August, sockeye, chum, and pink salmon are generally caught in salt and fresh water by set gillnet under subsistence fishing regulations in the Chilkat River, Chilkat Inlet, Chilkoot Inlet, and Lutak Inlet. Coho salmon arrive in the area in August and continue to return through late-September. Coho salmon are caught by rod and reel and set gillnet along the Chilkat and Chilkoot rivers. Unless extended by emergency order, the subsistence salmon fishing season ends on September 30.

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.

3. Due to a weak and late Chinook salmon run, an emergency order was issued in July that extended seasonal fishing closures in portions of the Chilkat Inlet and Chilkat River through July 31, 2012. See the news release for Emergency Order No. 1-KS-F-22-12: Alaska Department of Fish and Game, July 12, 2012. "Northern Chilkat Inlet and Chilkat River Subsistence and Sport King Salmon Fishery Announcement," http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/172790093.pdf (accessed March 2017).

Table 2-13.–Estimated uses and harvests of fish, game, and vegetation resources, Haines, 2012.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	**98.5**	**90.9**	**90.2**	**90.2**	**70.5**	**259,955.7**	**317.8**	**135.3**				**26.0**
Salmon	**91.7**	**65.9**	**63.6**	**58.3**	**43.9**	**89,526.0**	**109.4**	**46.6**				**30.7**
Chum salmon	26.5	19.7	19.7	6.8	7.6	6,198.2	7.6	3.2	921.4	ind	1.1	48.1
Coho salmon	37.1	28.8	28.0	11.4	9.8	6,254.6	7.6	3.3	1,305.1	ind	1.6	37.7
Chinook salmon	57.6	41.7	35.6	28.0	17.4	12,958.8	15.8	6.7	1,380.2	ind	1.7	51.6
Pink salmon	31.1	28.8	28.0	4.5	6.8	5,915.9	7.2	3.1	2,270.0	ind	2.8	43.0
Sockeye salmon	81.8	56.1	53.8	46.2	37.1	57,887.2	70.8	30.1	12,496.2	ind	15.3	33.4
Unknown salmon	5.3	0.8	0.8	5.3	0.8	311.3	0.4	0.2	62.0	ind	0.1	181.2
Nonsalmon fish	**84.1**	**50.0**	**47.7**	**62.9**	**30.3**	**72,534.5**	**88.7**	**37.8**				**52.0**
Pacific herring	17.4	13.6	13.6	6.8	6.1	7,758.6	9.5	4.0	1,293.1	gal	1.6	72.8
Pacific herring roe/unspecified	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	1.5	0.8	0.8	1.5	0.8	650.7	0.8	0.3	93.0	gal	0.1	181.2
Pacific herring roe on hair seaweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hemlock branches	15.2	0.8	0.8	15.2	2.3	433.8	0.5	0.2	62.0	gal	0.1	181.2
Eulachon (hooligan, candlefish)	31.1	17.4	17.4	16.7	13.6	25,020.3	30.6	13.0	2,780.0	gal	3.4	122.0
Silver smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific (gray) cod	6.8	6.1	6.1	0.8	1.5	436.3	0.5	0.2	136.3	ind	0.2	79.4
Pacific tomcod	0.8	0.8	0.8	0.0	0.0	9.3	0.0	0.0	18.6	ind	0.0	181.2
Flounder	1.5	1.5	1.5	0.0	0.0	520.5	0.6	0.3	173.5	ind	0.2	162.8
Lingcod	5.3	3.0	3.0	2.3	0.8	858.9	1.1	0.4	136.3	ind	0.2	117.0
Pacific halibut	71.2	31.1	26.5	50.8	18.9	25,834.7	31.6	13.4	25,834.7	lb	31.6	41.3
Black rockfish	10.6	5.3	5.3	5.3	1.5	532.9	0.7	0.3	266.5	ind	0.3	75.8
Yelloweye rockfish	6.1	3.8	3.8	3.0	3.0	353.2	0.4	0.2	117.7	ind	0.1	84.7
Unknown rockfish	1.5	0.0	0.0	1.5	0.8	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sablefish (black cod)	4.5	1.5	1.5	3.0	0.8	124.9	0.2	0.1	31.2	ind	0.0	179.8
Bullhead sculpin	0.8	0.8	0.8	0.0	0.0	12.4	0.0	0.0	12.4	ind	0.0	181.2
Buffalo sculpin	0.8	0.8	0.8	0.0	0.0	12.4	0.0	0.0	12.4	ind	0.0	181.2
Red Irish lord	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Skates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sole	0.8	0.8	0.8	0.0	0.0	93.0	0.1	0.0	93.0	ind	0.1	181.2
Arctic char	0.8	0.8	0.8	0.0	0.0	100.4	0.1	0.1	37.2	ind	0.0	181.2

-continued-

Table 2-13.– Page 2 of 7.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Nonsalmon fish, continued												
Dolly Varden	30.3	26.5	25.0	6.8	8.3	6,789.1	8.3	3.5	2,263.0	ind	2.8	44.0
Arctic grayling	1.5	0.8	0.8	0.8	0.8	309.8	0.4	0.2	309.8	ind	0.4	181.2
Cutthroat trout	4.5	4.5	4.5	1.5	3.0	743.6	0.9	0.4	495.8	ind	0.6	108.0
Rainbow trout	11.4	9.1	9.1	2.3	1.5	991.5	1.2	0.5	495.8	ind	0.6	58.4
Steelhead	4.5	3.8	3.0	1.5	2.3	948.1	1.2	0.5	111.5	ind	0.1	114.1
Whitefishes	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Large land mammals	**68.2**	**37.1**	**19.7**	**61.4**	**16.7**	**53,826.9**	**65.8**	**28.0**				**37.4**
Wood bison	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black bear	12.9	9.1	3.8	9.1	3.8	2,516.0	3.1	1.3	43.4	ind	0.1	84.7
Brown bear	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Caribou	10.6	3.8	2.3	8.3	2.3	4,028.0	4.9	2.1	31.0	ind	0.0	119.6
Deer	29.5	10.6	7.6	24.2	7.6	14,377.0	17.6	7.5	179.7	ind	0.2	64.1
Elk	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mountain goat	10.6	7.6	3.8	8.3	2.3	3,160.5	3.9	1.6	31.0	ind	0.0	79.8
Moose	55.3	25.8	8.3	48.5	8.3	29,745.5	36.4	15.5	74.4	ind	0.1	54.4
Dall sheep	2.3	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals	**7.6**	**8.3**	**6.8**	**2.3**	**0.8**	**356.3**	**0.4**	**0.2**				**115.1**
Beaver	1.5	1.5	0.8	0.8	0.0	216.9	0.3	0.1	24.8	ind	0.0	181.2
Coyote	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snowshoe hare	1.5	2.3	1.5	0.8	0.0	62.0	0.1	0.0	31.0	ind	0.0	130.2
North American river (land) otter	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lynx	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	3.0	3.8	2.3	1.5	0.0	0.0	0.0	0.0	241.7	ind	0.3	112.4
Mink	0.8	1.5	0.8	0.0	0.0	0.0	0.0	0.0	18.6	ind	0.0	181.2
Muskrat	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.8	1.5	0.8	0.0	0.8	37.2	0.0	0.0	6.2	ind	0.0	181.2
Red (tree) squirrel	2.3	3.0	2.3	0.0	0.0	40.3	0.0	0.0	105.3	ind	0.1	167.7
Least weasel	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 2-13.– Page 3 of 7.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Small land mammals, continued												
Gray wolf	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**3.8**	**0.0**	**0.0**	**3.8**	**0.0**	**0.0**	**0.0**	**0.0**				**0.0**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	2.3	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seal	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**18.9**	**18.2**	**17.4**	**3.8**	**1.5**	**1,739.2**	**2.1**	**0.9**				**97.3**
Canvasback	0.8	0.8	0.8	0.0	0.0	136.3	0.2	0.1	68.2	ind	0.1	181.2
Goldeneye	0.8	0.8	0.8	0.0	0.0	69.4	0.1	0.0	86.8	ind	0.1	181.2
Mallard	5.3	4.5	4.5	1.5	0.8	254.1	0.3	0.1	254.1	ind	0.3	86.7
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern pintail	0.8	0.8	0.8	0.0	0.0	74.4	0.1	0.0	74.4	ind	0.1	181.2
Scaup	0.8	0.8	0.8	0.0	0.0	74.4	0.1	0.0	74.4	ind	0.1	181.2
Surf scoter	0.8	0.8	0.8	0.0	0.0	97.9	0.1	0.1	62.0	ind	0.1	181.2
Unknown scoter	0.8	0.8	0.8	0.0	0.0	39.2	0.0	0.0	24.8	ind	0.0	181.2
Teal	3.0	2.3	2.3	1.5	0.8	67.7	0.1	0.0	130.1	ind	0.2	131.2
Wigeon	0.8	0.8	0.8	0.0	0.0	129.9	0.2	0.1	99.2	ind	0.1	181.2
Unknown ducks	2.3	3.0	2.3	0.8	0.0	46.8	0.1	0.0	43.4	ind	0.1	105.9
Unknown Canada/cackling geese	1.5	2.3	1.5	0.0	0.0	275.5	0.3	0.1	80.6	ind	0.1	155.6
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.8	0.8	0.8	0.0	0.0	21.3	0.0	0.0	6.2	ind	0.0	181.2
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 2-13.– Page 4 of 7.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs, continued												
Grouse	12.1	12.1	11.4	1.5	1.5	371.8	0.5	0.2	371.8	ind	0.5	56.9
Ptarmigan	5.3	4.5	3.8	1.5	0.8	80.6	0.1	0.0	80.6	ind	0.1	83.6
Mallard 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 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
Unknown Canada/cackling 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
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swan eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher 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 shorebird eggs – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebird eggs – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Glaucous-winged 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 loon 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 tern 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 seabird 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 grouse 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 ptarmigan 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	**74.2**	**39.4**	**39.4**	**52.3**	**20.5**	**22,836.8**	**27.9**	**11.9**				**60.0**
Abalone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red (large) chitons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Black (small) chitons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Butter clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Horse clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific littleneck clams (steamers)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Basket cockles	1.5	0.8	0.8	1.5	0.0	19.3	0.0	0.0	6.2	gal	0.0	181.2
Heart cockles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Dungeness crab	62.1	33.3	33.3	38.6	11.4	10,871.2	13.3	5.7	8,235.8	ind	10.1	33.0
Blue king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 2-13.– Page 5 of 7.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine invertebrates, continued												
Brown king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red king crab	4.5	2.3	1.5	3.0	1.5	1,833.7	2.2	1.0	340.8	ind	0.4	128.1
Tanner crab	2.3	2.3	2.3	0.0	1.5	520.5	0.6	0.3	260.3	ind	0.3	108.7
Geoducks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Limpets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mussels	1.5	1.5	1.5	0.0	0.0	139.4	0.2	0.1	93.0	gal	0.1	134.6
Octopus	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	lb	0.0	0.0
Weathervane scallops	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Rock scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown scallops	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sea cucumber	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Green sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Purple sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Shrimp	50.8	22.7	22.7	34.1	10.6	9,452.7	11.6	4.9	4,726.3	gal	5.8	119.1
Squid	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**88.6**	**86.4**	**86.4**	**37.1**	**39.4**	**19,136.0**	**23.4**	**10.0**				**22.4**
Blueberry	66.7	62.9	60.6	14.5	17.6	6,439.4	7.9	3.4	1,609.9	gal	2.0	28.9
Lowbush cranberry	6.1	4.5	3.8	2.3	0.8	130.1	0.2	0.1	32.5	gal	0.0	112.0
Highbush cranberry	32.6	28.8	28.0	6.9	6.9	2,754.5	3.4	1.4	688.6	gal	0.8	38.9
Crowberry	1.5	1.5	1.5	0.0	0.0	12.4	0.0	0.0	3.1	gal	0.0	127.6
Elderberry	0.8	0.8	0.8	0.0	0.8	123.9	0.2	0.1	31.0	gal	0.0	181.2
Gooseberry	0.8	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	gal	0.0	0.0
Currants	10.6	10.6	9.8	0.8	2.3	589.3	0.7	0.3	147.3	gal	0.2	111.9
Huckleberry	3.8	3.8	3.0	0.0	0.8	210.7	0.3	0.1	52.7	gal	0.1	116.6
Cloudberry	0.8	0.8	0.8	0.0	0.0	12.4	0.0	0.0	3.1	gal	0.0	181.2
Nagoonberry	1.5	1.5	1.5	0.0	0.8	26.3	0.0	0.0	6.6	gal	0.0	170.8
Raspberry	30.3	28.8	27.3	4.6	6.1	991.3	1.2	0.5	247.8	gal	0.3	53.6
Salmonberry	25.0	22.7	22.7	3.1	2.3	652.0	0.8	0.3	163.0	gal	0.2	62.8
Soapberry	2.3	1.5	1.5	0.8	0.8	74.4	0.1	0.0	18.6	gal	0.0	134.6

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Table 2-13.– Page 6 of 7.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Vegetation, continued												
Strawberry	23.5	22.0	22.0	3.0	3.8	1,030.2	1.3	0.5	257.6	gal	0.3	56.2
Thimbleberry	22.0	20.5	20.5	1.5	0.8	403.5	0.5	0.2	100.9	gal	0.1	70.7
Twisted stalk berry (watermelon berry)	12.9	12.9	12.9	0.8	0.8	132.5	0.2	0.1	33.1	gal	0.0	78.8
Beach asparagus	3.0	1.5	1.5	1.5	0.8	32.5	0.0	0.0	32.5	gal	0.0	172.7
Goose tongue	6.8	6.1	6.1	0.8	0.0	15.3	0.0	0.0	15.3	gal	0.0	90.4
Wild rhubarb	2.3	2.3	2.3	0.8	0.8	105.3	0.1	0.1	105.3	gal	0.1	120.5
Wild potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Other beach greens	6.1	6.1	6.1	0.8	0.8	197.5	0.2	0.1	290.5	gal	0.4	117.2
Devil's club	9.8	9.1	9.1	1.5	3.0	73.9	0.1	0.0	73.9	gal	0.1	75.2
Fiddlehead ferns	10.6	9.8	9.8	0.8	0.8	174.3	0.2	0.1	174.3	gal	0.2	86.5
Nettle	9.8	9.1	9.1	1.5	3.0	509.0	0.6	0.3	509.0	gal	0.6	85.7
Hudson's Bay (Labrador) tea	3.8	3.0	3.0	0.8	3.0	8.9	0.0	0.0	8.9	gal	0.0	130.6
Indian rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mint	2.3	2.3	2.3	0.8	0.0	9.3	0.0	0.0	9.3	gal	0.0	131.6
Salmonberry shoots	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Skunk cabbage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Dandelion greens	2.3	2.3	2.3	0.0	0.8	13.9	0.0	0.0	13.9	gal	0.0	115.0
Sourdock	2.3	2.3	2.3	0.0	2.3	9.5	0.0	0.0	9.5	gal	0.0	127.2
Spruce tips	12.9	12.1	12.1	1.5	5.3	150.8	0.2	0.1	150.8	gal	0.2	71.5
Wild celery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild parsley	1.5	1.5	1.5	0.0	0.8	9.3	0.0	0.0	9.3	gal	0.0	134.6
Wild rose hips	16.7	15.9	15.9	1.5	1.5	369.5	0.5	0.2	92.4	gal	0.1	58.7
Yarrow	0.8	0.8	0.8	0.0	0.8	12.4	0.0	0.0	12.4	gal	0.0	181.2
Other wild greens	9.1	8.3	8.3	0.8	3.8	299.9	0.4	0.2	299.9	gal	0.4	107.1
Unknown mushrooms	28.0	26.5	25.8	7.6	6.8	766.5	0.9	0.4	766.5	gal	0.9	50.7
Sorrel	1.5	1.5	1.5	0.0	0.0	13.2	0.0	0.0	13.2	gal	0.0	170.8
Fireweed	3.8	3.0	3.0	1.5	1.5	10.2	0.0	0.0	10.2	gal	0.0	123.7
Plantain	0.8	0.8	0.8	0.0	0.8	3.1	0.0	0.0	3.1	gal	0.0	181.2
Black seaweed	7.6	0.8	0.8	7.6	2.3	62.0	0.1	0.0	20.7	gal	0.0	181.2
Bull kelp	5.3	3.8	3.8	2.3	3.0	1,065.9	1.3	0.6	268.5	gal	0.3	102.1

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Table 2-13.– Page 7 of 7.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Vegetation, continued												
Red seaweed	12.9	10.6	10.6	3.0	2.3	981.8	1.2	0.5	1,366.3	gal	1.7	91.3
Sea ribbons	2.3	1.5	1.5	1.5	0.8	21.7	0.0	0.0	7.2	gal	0.0	128.9
Giant kelp *(macrocystis)*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Alaria	4.5	4.5	4.5	0.0	0.8	218.8	0.3	0.1	72.9	gal	0.1	96.8
Red laver (dulse)	3.0	3.0	3.0	0.8	0.8	103.0	0.1	0.1	34.3	gal	0.0	113.8
Bladder wrack	9.8	9.8	9.8	0.0	0.8	0.0	0.0	0.0	36,211.0	gal	44.3	84.5
Seaweed/kelp used for fertilizer	4.5	4.5	4.5	0.0	0.8	0.0	0.0	0.0	9,047.6	gal	11.1	87.2
Unknown seaweed	10.6	9.8	9.8	1.5	0.8	315.4	0.4	0.2	7,402.1	gal	9.0	57.3
Wood	61.4	56.8	56.8	10.6	11.4	0.0	0.0	0.0	2,254.8	cord	2.8	26.9
Spruce pitch	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

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

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

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

Note "Unknown" means "unspecified" resources (i.e., respondents may have known the specific resource harvested, but that information was not collected during the survey).

Note For all types of seaweed, amounts harvested include amounts used for fertilizer; these harvests were not converted into usable pounds.

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

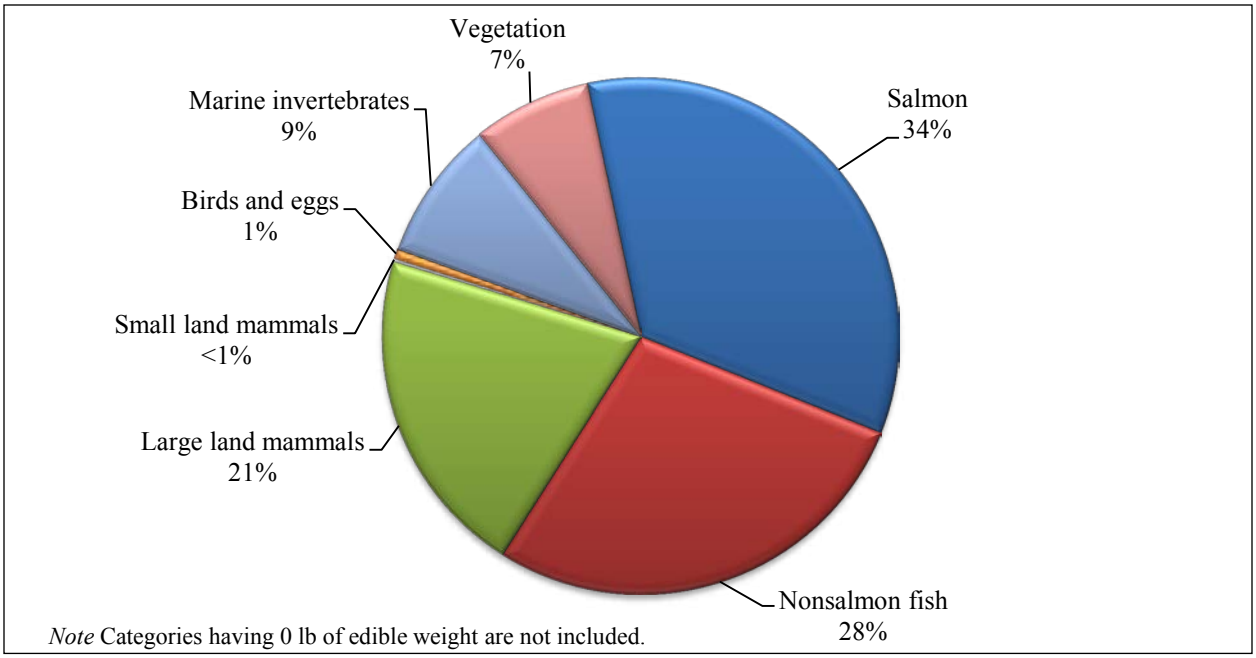


Figure 2-12.–Composition of harvest by resource category in pounds usable weight, Haines, 2012.

Nonsalmon freshwater fish are caught by rod and reel under sport fishing regulations. Cutthroat trout are not common in Chilkoot River and Chilkoot Lake; however, some people will harvest them in the Chilkoot watershed. Sport fishing for cutthroat trout in Chilkat Lake and Mosquito Lake takes place year-round. There is a great deal of fishing pressure on Dolly Varden in the Chilkoot River watershed, so there are regulations limiting the daily harvest. When they arrive to spawn in March or April, nonsalmon saltwater fish such as eulachon and Pacific herring are caught in the waters of the upper Lynn Canal, primarily in Chilkat, Chilkoot, and Lutak inlets. Eulachon and Pacific herring are typically caught by cast net under subsistence regulations. While some individuals may harvest eulachon in the salt water, they are primarily harvested in the fresh water of the Chilkat and Chilkoot rivers. Pacific halibut are caught by skate, longline, and rod and reel year-round.

Residents put out their subsistence shrimp and crab pots primarily during the summer months, but a few individuals will continue to fish year-round. Crab and shrimp pots are generally placed in Chilkoot, Chilkat, and Lutak inlets. During the community surveys, it was found that in recent years many residents have chosen to stop fishing for crab during the summer months because commercial crabbers were setting their pots in locations traditionally used for subsistence and making it too difficult for residents to continue setting their subsistence pots. A public proposal to close waters near the community to commercial crabbing was considered by the Board of Fisheries at the January 2015 shellfish meeting, but the proposal was not adopted.

Regulations concerning hunting seasons and bag limits shape the hunting activities of Haines residents. Most of the land used for hunting around Haines is part of Game Management Unit 1D. In Unit 1D, grouse and ptarmigan are harvested during winter, spring, and fall. Ducks are harvested during winter, summer, and fall. Geese are harvested during winter and summer. Black bears are harvested during spring and early summer. Mountain goats are pursued during fall and early winter. Moose are harvested in a Tier II hunt[4]

4. State Tier II hunts are held when there is not enough of a game population with customary and traditional uses to provide a reasonable opportunity for subsistence uses. Hunters must answer questions on an application concerning their dependence on the game for their livelihood and availability of alternative resources. Applications are scored based on responses to the questionnaire and permits are issued to those with the highest scores.

Table 2-14.–Top ranked resources used by households, Haines, 2012.

Rank[a]	Resource	Percentage of households using
1.	Sockeye salmon	81.8%
2.	Pacific halibut	71.2%
3.	Blueberry	66.7%
4.	Dungeness crab	62.1%
5.	Chinook salmon	57.6%
6.	Moose	55.3%
7.	Shrimp	50.8%
8.	Coho salmon	37.1%
9.	Highbush cranberry	32.6%
10.	Pink salmon	31.1%
10.	Eulachon (hooligan, candlefish)	31.1%

Source ADF&G Division of Subsistence household surveys, 2013.
a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.

that takes place from September 15 through October 7. Small land mammals and furbearers are harvested during winter and trapping occurs along the Chilkat and Chilkoot rivers and in adjacent sloughs and forests.

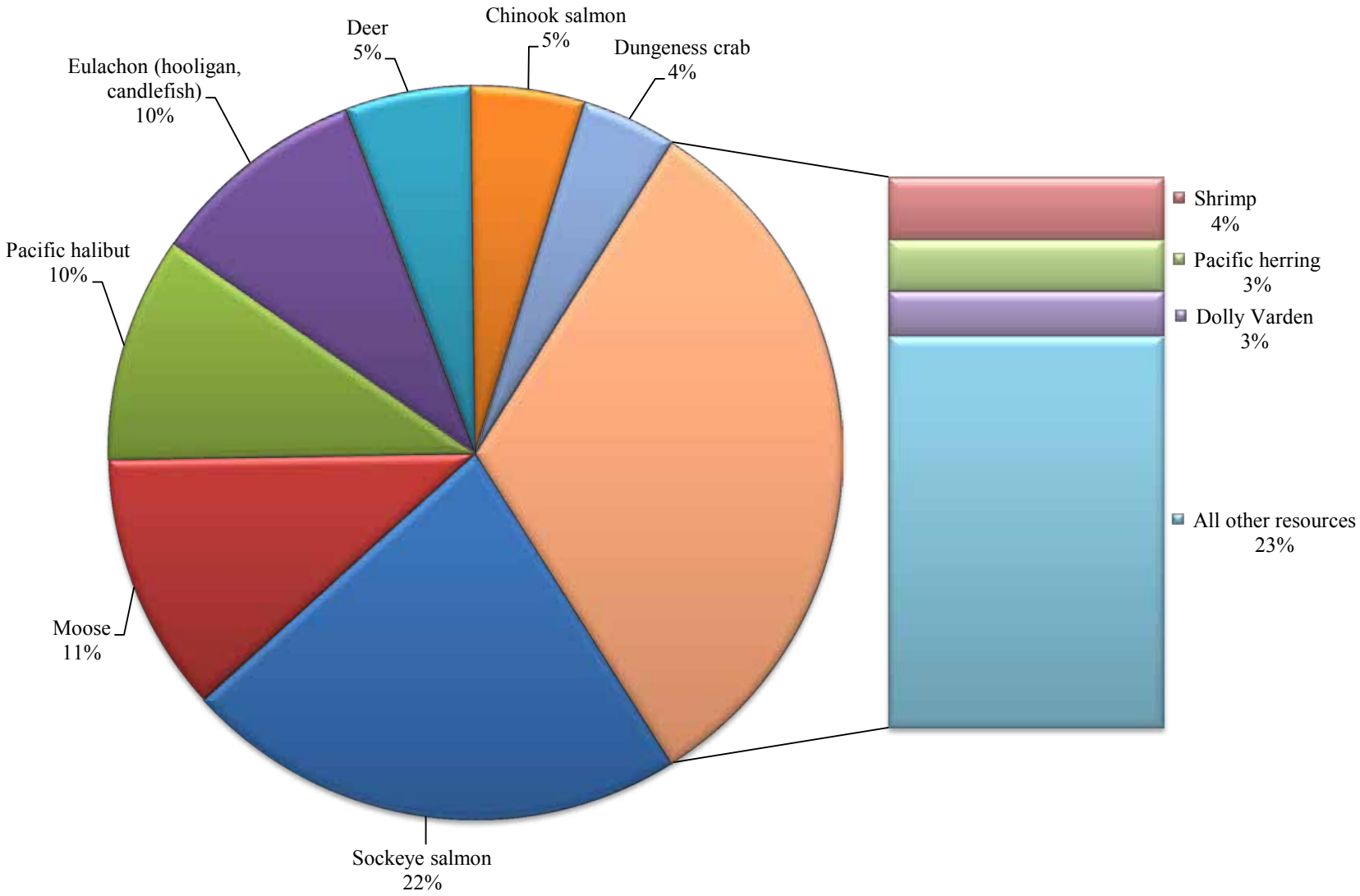
Haines residents harvest plants, mushrooms, and berries during spring, summer, and fall. For example, devil's club is sought during spring; blueberries, salmonberries, soapberries, mushrooms, and fireweed are sought during summer; and clovers and mushrooms are gathered during fall. Harvesting firewood for home heating is an important year-round activity for Haines residents (primarily hemlock and spruce).

Use and Harvest Characteristics by Resource Category

Nearly all (99%) of Haines households used a wild resource in 2012, and most households harvested at least 1 resource (Table 2-13). Most of the households that attempted a harvest were successful. The mean usable weight of all wild resources combined, per household, was 318 lb (135 lb per capita). Estimates of sharing indicate that in 2012, an estimated 90% of Haines households received wild resources from other households and 71% of households gave resources away.

Salmon and nonsalmon fish were the most commonly received and shared resources (Table 2-13). Salmon were given away by 44% of households and received by 58% of households, while nonsalmon fish were shared by 30% of households and received by 63%. Large land mammals were shared by only 17% of households but were received by 61%. Small land mammals and birds or eggs were the least shared resources, with less than 5% of households estimated as having given or received these resources.

Table 2-14 lists the 10 most used resources by Haines households during the 2012 study year. Of all the available resources, sockeye salmon was the most used by Haines residents (used by 82% of households), followed by Pacific halibut (71%), blueberries (67%), and Dungeness crab (62%). Figure 2-13 shows the top resources harvested by households by usable weight during the 2012 study year. Sockeye salmon made the largest single contribution to Haines' 2012 wild resource harvest (30 lb per capita and 22% of the community's total resource harvest by weight), followed by moose (16 lb per capita and 11% of the community total), Pacific halibut (13 lb per capita and 10% of the community total), and eulachon (13 lb per capita and 10% of the community total). Deer, Chinook salmon, Dungeness crab, shrimp, Pacific herring, and Dolly Varden each accounted for 5% of the harvest or less. Haines is clearly a community utilizing a variety of subsistence resources, however sockeye salmon is the most used and one of the most valued resources.



Note The "all other resources" category represents all resources that contributed 2.5% or less to the total harvest weight.

Figure 2-13.–Top species harvested by percentage of total harvest in pounds usable weight, Haines, 2012.

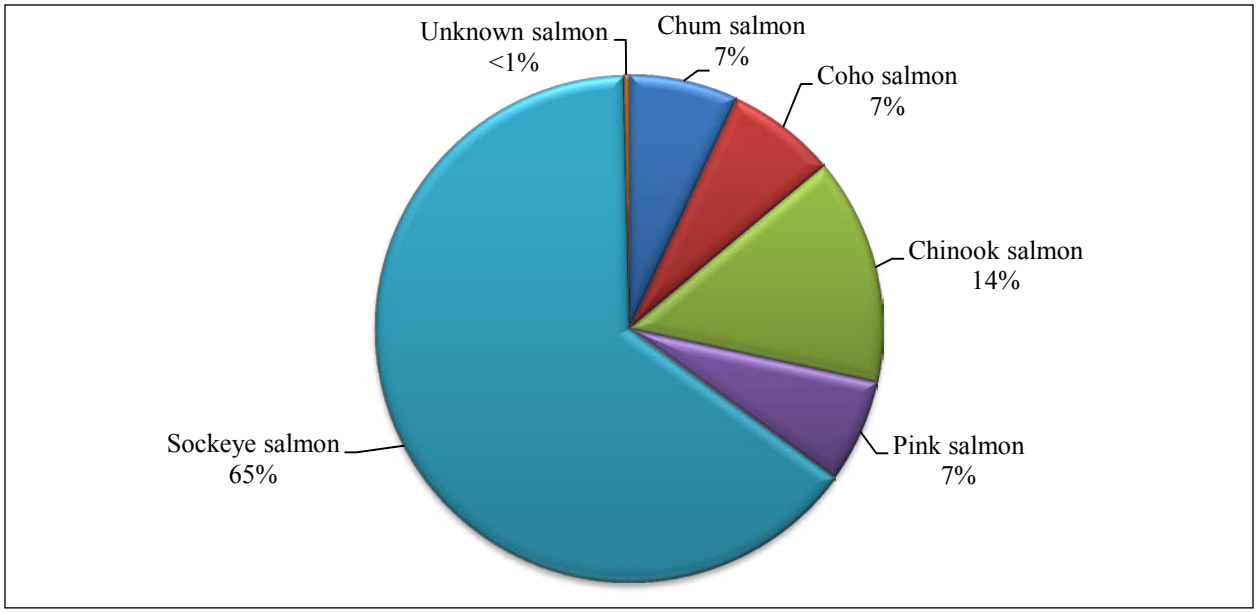


Figure 2-14.–Composition of salmon harvest in pounds usable weight, Haines, 2012.

Salmon

An estimated total of 89,526 lb of salmon was harvested by residents of Haines, accounting for 34% of the wild resource harvest in pounds usable weight in 2012 (Table 2-13; Figure 2-12). The composition of the salmon harvest was as follows: 65% sockeye salmon (57,887 lb; 30 lb per capita); 14% Chinook salmon (12,959 lb; 7 lb per capita); 7% coho salmon (6,255 lb; 3 lb per capita); 7% chum salmon (6,198 lb; 3 lb per capita); 7% pink salmon (5,916 lb; 3 lb per capita), and less than 1% of the harvest was unknown salmon (311 lb; 0.2 lb per capita) (Table 2-13; Figure 2-14). Salmon was one of the most used, harvested, and shared resources in Haines. Most households attempting to harvest salmon were successful, with 66% attempting to harvest and 64% of all households successfully harvesting (Table 2-13). Salmon was used by 92% of households, and received by 58%. Sockeye salmon was the most shared salmon species, with an estimated 37% of households sharing sockeye salmon and 46% of households receiving this resource. Chinook salmon was the next most shared species with 17% of households giving and 28% of households receiving this resource. With the exception of the use and sharing of unknown species of salmon, chum and pink salmon were the species least used or shared.

An estimated 11,042 salmon (50,962 lb) were harvested using subsistence gillnets or seines (Table 2-15). An estimated 5,172 salmon (27,647 lb) were removed from commercial harvests for home use. An additional 2,026 salmon (9,541 lb) were taken with rod and reel gear. Dip nets and trolling also were used to harvest salmon. Figure 2-15 is a visual representation of the salmon harvest weight by gear type. An estimated 57% of the salmon harvest was caught using subsistence gear (mainly using gillnets but also dip nets), 31% of the salmon harvest was removed from commercial catches, and 11% was harvested with rod and reel gear (Table 2-16). All species of salmon were removed from commercial catches, caught using a gillnet or seine, and caught with rod and reel gear. Approximately 65% of the sockeye, chum, and pink salmon harvests were taken by gillnets. The most common harvest method for Chinook salmon was removal from commercial catch (53%). Coho salmon was harvested in almost equal amounts by gillnets (40%) or by rod and reel gear (41%). Chinook salmon was the only species caught by trolling and dip nets were only used to harvest sockeye and pink salmon.

Table 2-15.–Estimated harvest of salmon by gear type and resource, Haines, 2012.

	Removed from commercial catch		Subsistence methods													
			Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Trolling		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**5,172.3**	**27,646.6**	**11,041.5**	**50,961.5**	**86.8**	**364.2**	**0.0**	**0.0**	**11,128.3**	**51,325.8**	**107.9**	**1,012.9**	**2,026.4**	**9,540.8**	**18,434.9**	**89,526.0**
Chum salmon	283.2	1,904.7	594.9	4,001.7	0.0	0.0	0.0	0.0	594.9	4,001.7	0.0	0.0	43.4	291.8	921.4	6,198.2
Coho salmon	245.4	1,176.1	520.5	2,494.7	0.0	0.0	0.0	0.0	520.5	2,494.7	0.0	0.0	539.1	2,583.8	1,305.1	6,254.6
Chinook salmon	733.2	6,884.1	303.7	2,850.9	0.0	0.0	0.0	0.0	303.7	2,850.9	107.9	1,012.9	235.5	2,210.9	1,380.2	12,958.8
Pink salmon	213.9	557.5	1,461.2	3,807.9	18.6	48.4	0.0	0.0	1,479.8	3,856.4	0.0	0.0	576.3	1,501.9	2,270.0	5,915.9
Sockeye salmon	3,696.6	17,124.2	8,161.3	37,806.3	68.2	315.8	0.0	0.0	8,229.4	38,122.0	0.0	0.0	570.1	2,641.0	12,496.2	57,887.2
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.0	311.3	62.0	311.3

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

Note The harvested number of salmon is represented as individual fish harvested.

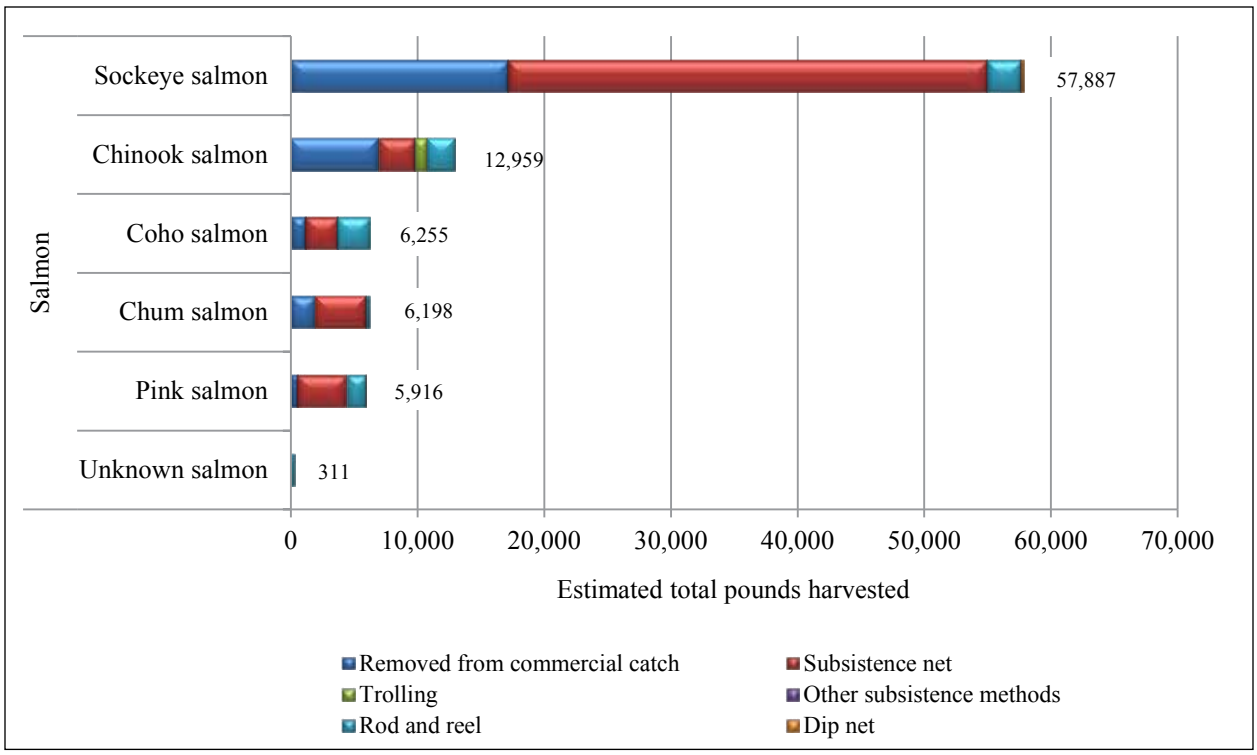


Figure 2-15.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Haines, 2012.

During the 2012 study year, Haines respondents reported harvesting sockeye salmon in the Chilkat river and inlet, Lutak Inlet, and Chilkoot river, lake, and inlet, as well as at Excursion Inlet and the coast of Yakobi Island by Cross Sound (Figure 2-16).[5] Chinook salmon were harvested in the Chilkat river and inlet, Lutak Inlet, Taiya Inlet, and Chilkoot inlet and lake, and on the east side of Sullivan Island, as well as in the Icy Strait area (Figure 2-17). Coho salmon were harvested in the Chilkat river, inlet, and lake, the Chilkoot river and lake and Lutak Inlet, as well as the Icy Strait and Chatham Strait areas. Chum salmon were harvested in the Chilkat river and inlet, in Lutak Inlet, and in Game Creek near Hoonah. Pink salmon were harvested in Chilkat inlet and river, Lutak Inlet, and Chilkoot inlet and lake. Maps showing search and harvest areas for coho, chum, and pink salmon can be found in Appendix D.

Nonsalmon Fish

In 2012, Haines residents harvested an estimated total of 72,535 lb (38 lb per capita) of nonsalmon fish (Table 2-13). Nonsalmon fish composed 28% of the wild resource harvest in usable pounds in 2012 (Figure 2-12). In terms of total pounds and percentages harvested, most of the harvest was Pacific halibut (36% of the total nonsalmon fish harvest; 25,835 lb; 13 lb per capita), followed by eulachon (34% of the total; 25,020 lb; 13 lb per capita), Pacific herring (11% of the total; 7,759 lb; 4 lb per capita), and Dolly Varden (9% of the total; 6,789 lb; 4 lb per capita); combined, these species composed 90% of the nonsalmon fish harvest (Figure 2-18; Table 2-13). Haines residents also harvested Pacific herring roe (eggs), Pacific cod, Pacific tomcod, flounder, lingcod, black rockfish, yelloweye rockfish, sablefish, buffalo sculpin, bullhead sculpin, sole, Arctic char, Arctic grayling, cutthroat trout, rainbow trout, and steelhead (Table 2-13).

5. Because not every household in Haines was surveyed for this study, the maps presented for the harvest of each wild resource may not show the full extent of harvest areas used by the community during 2012. In addition, resource harvest areas change over time, so areas not used in 2012 might be used in other years.

Table 2-16.–Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Haines, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods						
			Gillnet or seine	Dip net	Other	Subsistence gear, any method	Trolling	Rod and reel	Any method
Salmon	**Gear type**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**30.9%**	**56.9%**	**0.4%**	**0.0%**	**57.3%**	**1.1%**	**10.7%**	**100.0%**
	Total	**30.9%**	**56.9%**	**0.4%**	**0.0%**	**57.3%**	**1.1%**	**10.7%**	**100.0%**
Chum salmon	Gear type	6.9%	7.9%	0.0%	0.0%	7.8%	0.0%	3.1%	6.9%
	Resource	30.7%	64.6%	0.0%	0.0%	64.6%	0.0%	4.7%	100.0%
	Total	2.1%	4.5%	0.0%	0.0%	4.5%	0.0%	0.3%	6.9%
Coho salmon	Gear type	4.3%	4.9%	0.0%	0.0%	4.9%	0.0%	27.1%	7.0%
	Resource	18.8%	39.9%	0.0%	0.0%	39.9%	0.0%	41.3%	100.0%
	Total	1.3%	2.8%	0.0%	0.0%	2.8%	0.0%	2.9%	7.0%
Chinook salmon	Gear type	24.9%	5.6%	0.0%	0.0%	5.6%	100.0%	23.2%	14.5%
	Resource	53.1%	22.0%	0.0%	0.0%	22.0%	7.8%	17.1%	100.0%
	Total	7.7%	3.2%	0.0%	0.0%	3.2%	1.1%	2.5%	14.5%
Pink salmon	Gear type	2.0%	7.5%	13.3%	0.0%	7.5%	0.0%	15.7%	6.6%
	Resource	9.4%	64.4%	0.8%	0.0%	65.2%	0.0%	25.4%	100.0%
	Total	0.6%	4.3%	0.1%	0.0%	4.3%	0.0%	1.7%	6.6%
Sockeye salmon	Gear type	61.9%	74.2%	86.7%	0.0%	74.3%	0.0%	27.7%	64.7%
	Resource	29.6%	65.3%	0.5%	0.0%	65.9%	0.0%	4.6%	100.0%
	Total	19.1%	42.2%	0.4%	0.0%	42.6%	0.0%	3.0%	64.7%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%	0.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%

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

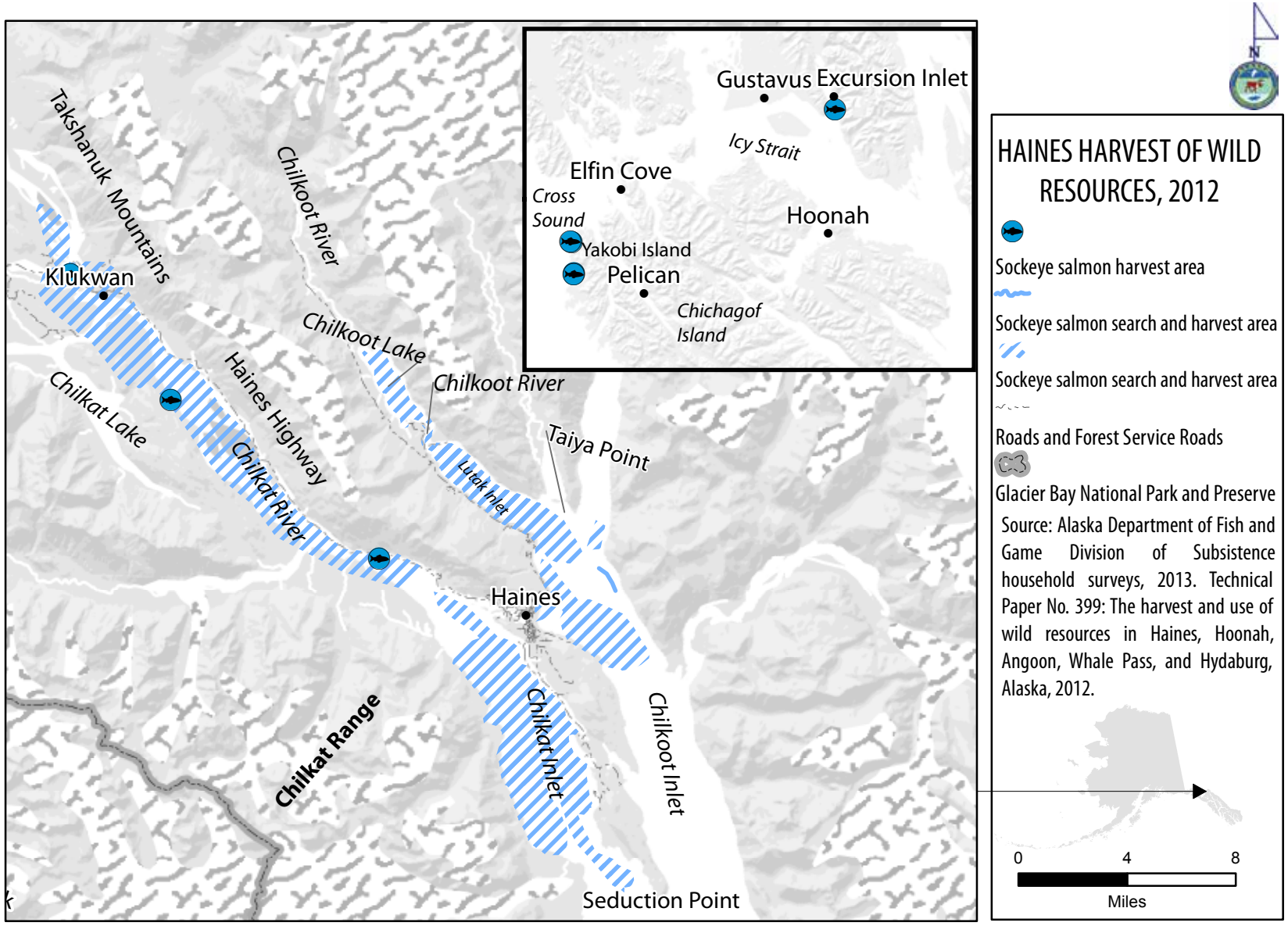


Figure 2-16.–Fishing and harvest locations of sockeye salmon, Haines, 2012.

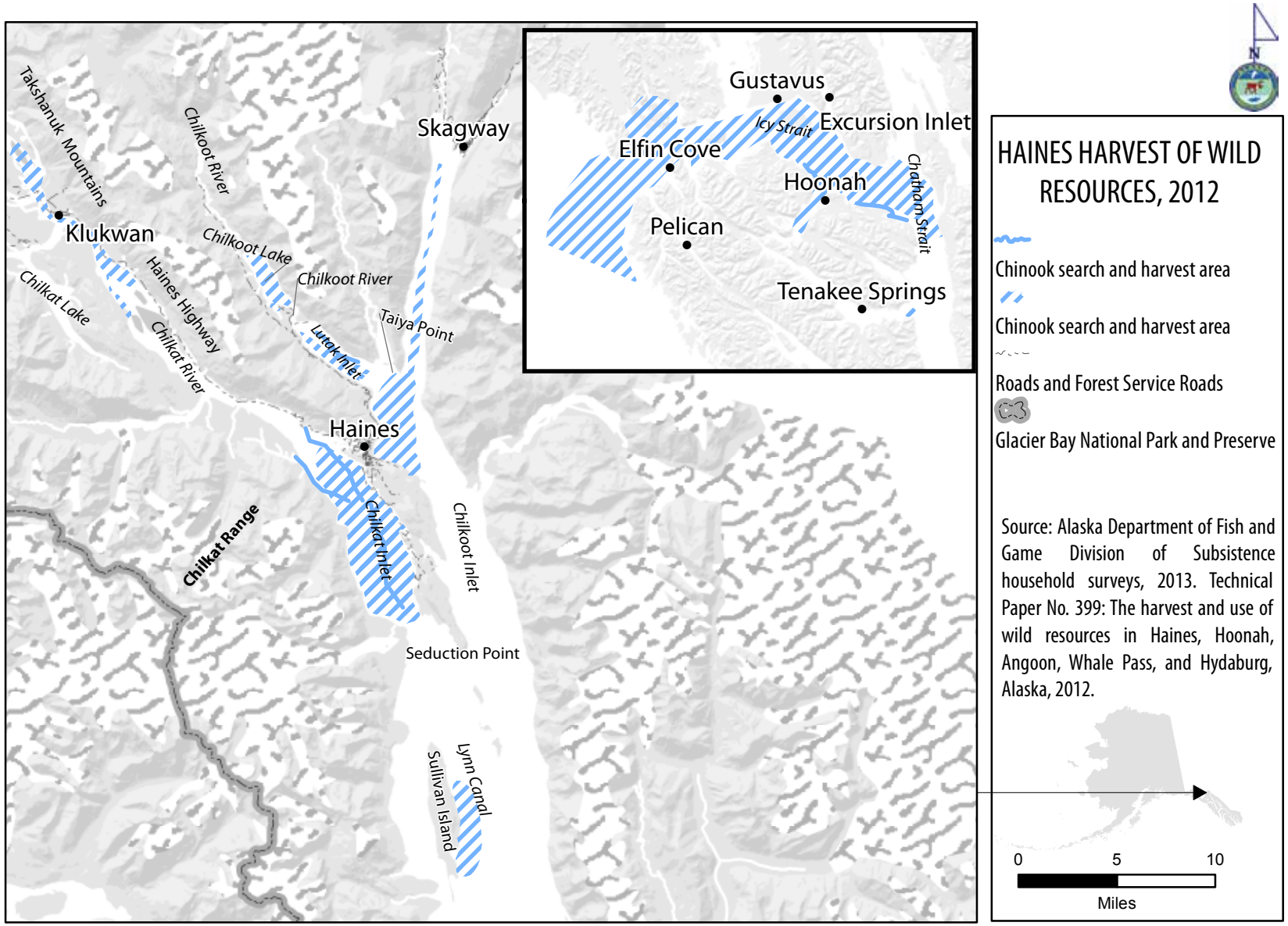
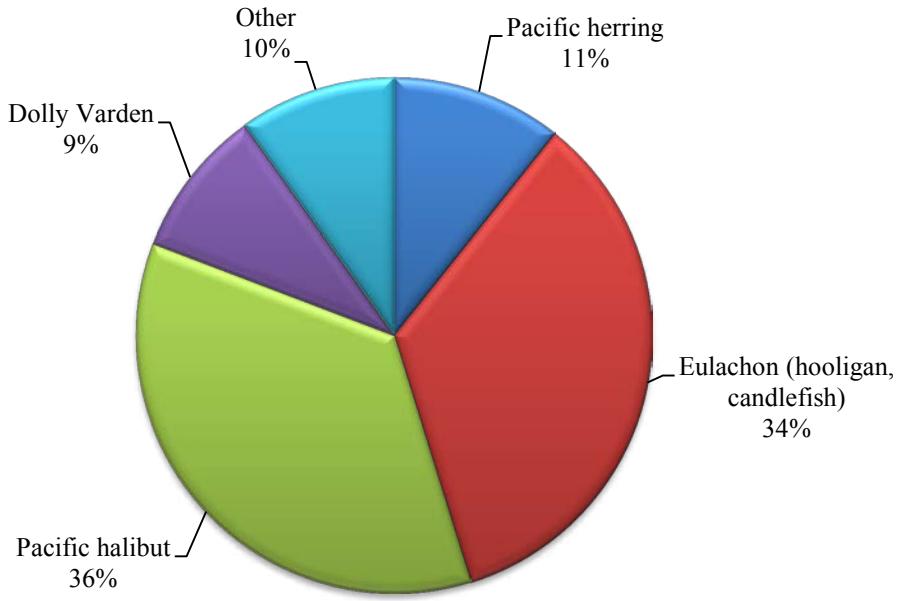


Figure 2-17.–Fishing and harvest locations of Chinook salmon, Haines, 2012.



Note The "other" category represents all resources that contributed less than 2% to the nonsalmon fish harvest.

Figure 2-18.–Composition of nonsalmon fish harvest in pounds usable weight, Haines, 2012.

During 2012, an estimated 84% of Haines households used nonsalmon fish, 48% harvested these resources, and 30% shared and 63% received nonsalmon fish, indicating that the primary harvesters of nonsalmon fish in the community actively shared with other households (Table 2-13). Pacific halibut was the primary nonsalmon fish shared; 51% of Haines households received halibut from other households and 19% shared it in 2012. Pacific herring eggs on hemlock branches and eulachon were received by 15% and 17% of Haines households, respectively. No other nonsalmon fish was given or received by more than 10% of households in Haines.

An estimated 31,192 lb of nonsalmon fish was harvested using gillnets and 19,944 lb were taken with longlines (Table 2-17). An additional 13,162 lb were harvested with rod and reel gear and 3,418 lb were removed from commercial catches. Figure 2-19 is a visual representation of the pounds of nonsalmon fish harvested by gear type. As estimated in pounds of fish, 43% of the nonsalmon fish harvest was caught using gillnets and 28% was caught on a longline (Table 2-18). Gillnets or seines were used to harvest the majority of Pacific herring and eulachon. Longlines were the primary harvest method for a variety of marine fish, including Pacific cod and Pacific halibut. Rod and reel gear was the primary method of harvest for flounder, yelloweye rockfish, and sole, as well as all char and trout species and Arctic grayling. Pacific tomcod, lingcod, black rockfish, sablefish, and bullhead sculpin were mainly removed from commercial catches.

During the 2012 study year, Haines respondents reported harvesting Pacific halibut in Lynn Canal, Chilkat, Chilkoot, and Lutak inlets, as well as in Icy Strait (Figure 2-20). Pacific herring was harvested off of the nearby shore to the east of Haines, in the Chilkat River, along Mud Bay Road in the Chilkat Inlet, and in Mud Bay (Figure 2-21). Eulachon were harvested in the Chilkat and Lutak inlets as well as in the Chilkat and Chilkoot rivers and Chilkoot Lake (Figure 2-22). Dolly Varden harvest locations ranged from the Chilkat and Klehini rivers to Chilkoot Lake, Chilkat Inlet, and Mud Bay, as well as along the outer northwestern coast of Chichagof Island and in streams in the Hoonah and Excursion Inlet area (Figure 2-23). For fishing locations of other nonsalmon fish species, see Appendix D.

Table 2-17.–Estimated harvest of nonsalmon fish by gear type and resource, Haines, 2012.

Resource	Unit[a]	Removed from commercial catch		Subsistence methods									
				Gillnet or seine		Longline and skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds
Nonsalmon fish			**3,418.4**		**31,191.8**		**19,943.8**		**4,818.1**		**55,953.8**		**13,162.3**		**72,534.5**
Pacific herring	gal	0.0	0.0	1,152.6	6,915.8	0.0	0.0	140.5	842.8	1,293.1	7,758.6	0.0	0.0	1,293.1	7,758.6
Pacific herring roe/unspecified	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring sac roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	93.0	650.7	93.0	650.7	0.0	0.0	93.0	650.7
Pacific herring roe on hair seaweed	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe on hemlock branches	gal	0.0	0.0	0.0	0.0	0.0	0.0	62.0	433.8	62.0	433.8	0.0	0.0	62.0	433.8
Eulachon (hooligan, candlefish)	gal	0.0	0.0	2,465.0	22,185.2	0.0	0.0	315.0	2,835.1	2,780.0	25,020.3	0.0	0.0	2,780.0	25,020.3
Silver smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific (gray) cod	ind	0.0	0.0	12.4	39.7	93.0	297.5	0.0	0.0	105.3	337.1	31.0	99.2	136.3	436.3
Pacific tomcod	ind	18.6	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.6	9.3
Flounder	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	173.5	520.5	173.5	520.5
Lingcod	ind	86.8	546.6	0.0	0.0	18.6	117.1	0.0	0.0	18.6	117.1	31.0	195.2	136.3	858.9
Pacific halibut	lb	2,328.6	2,328.6	0.0	0.0	19,349.5	19,349.5	0.0	0.0	19,349.5	19,349.5	4,156.6	4,156.6	25,834.7	25,834.7
Black rockfish	ind	161.1	322.2	0.0	0.0	55.8	111.5	0.0	0.0	55.8	111.5	49.6	99.2	266.5	532.9
Yelloweye rockfish	ind	24.8	74.4	0.0	0.0	18.6	55.8	0.0	0.0	18.6	55.8	74.4	223.1	117.7	353.2
Unknown rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sablefish (black cod)	ind	31.2	124.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.2	124.9
Buffalo sculpin	ind	0.0	0.0	0.0	0.0	12.4	12.4	0.0	0.0	12.4	12.4	0.0	0.0	12.4	12.4
Bullhead sculpin	ind	12.4	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	12.4
Red Irish lord	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown shark	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skates	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sole	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.0	93.0	93.0	93.0
Arctic char	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.2	100.4	37.2	100.4
Dolly Varden	ind	0.0	0.0	458.6	1,375.7	0.0	0.0	18.6	55.8	477.2	1,431.5	1,785.9	5,357.6	2,263.0	6,789.1
Arctic grayling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	309.8	309.8	309.8	309.8
Cutthroat trout	ind	0.0	0.0	12.4	18.6	0.0	0.0	0.0	0.0	12.4	18.6	483.4	725.0	495.8	743.6
Rainbow trout	ind	0.0	0.0	117.7	235.5	0.0	0.0	0.0	0.0	117.7	235.5	378.0	756.0	495.8	991.5
Steelhead	ind	0.0	0.0	49.6	421.4	0.0	0.0	0.0	0.0	49.6	421.4	62.0	526.7	111.5	948.1
Whitefishes	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Note The summary row that incliudes incompatible units of measure for harvest number has been left blank.

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

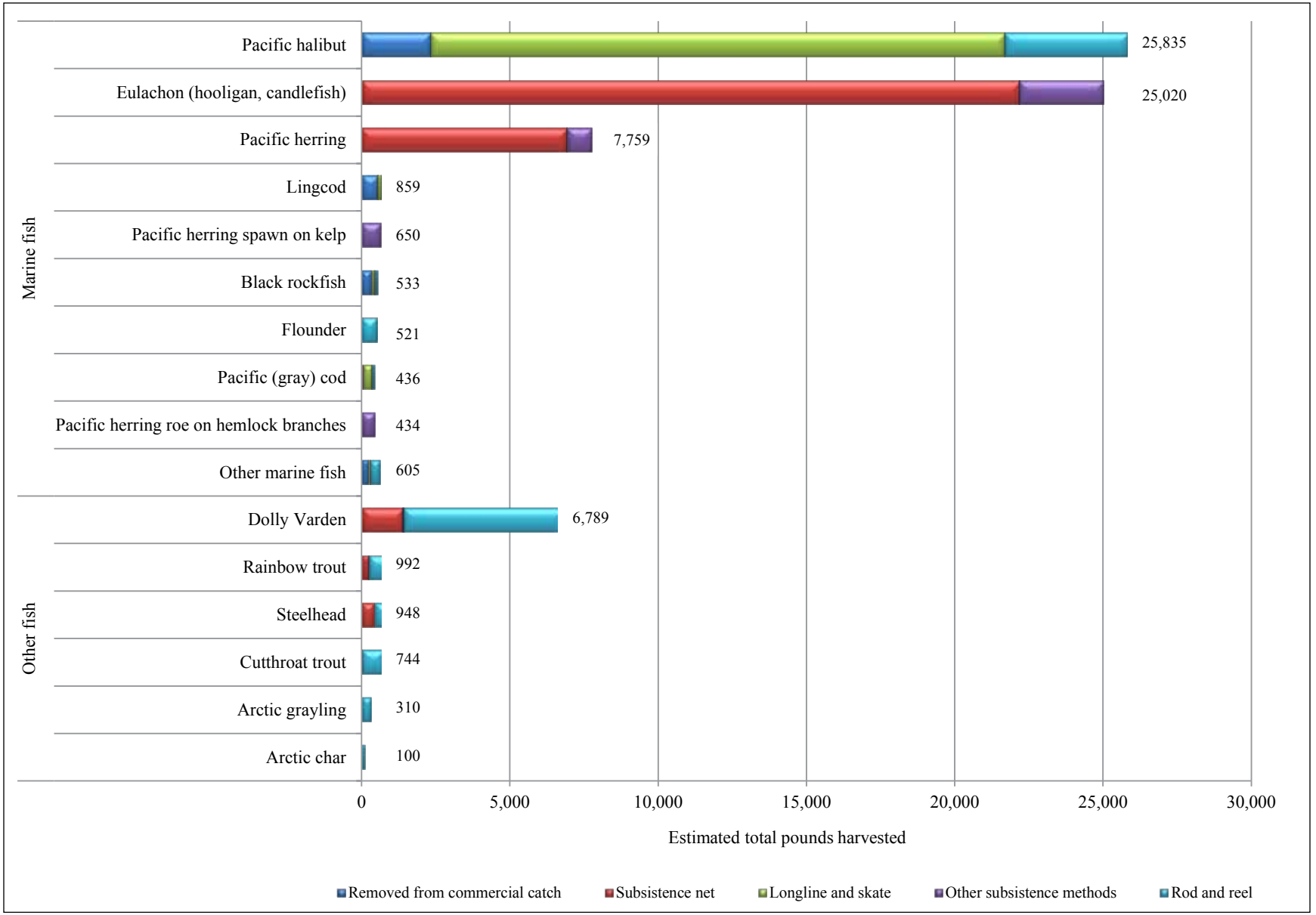


Figure 2-19.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Haines, 2012.

Table 2-18.–Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Haines, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Rod and reel	Any method
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method		
Nonsalmon fish	**Gear type**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**4.7%**	**43.0%**	**27.5%**	**6.6%**	**77.1%**	**18.1%**	**100.0%**
	Total	**4.7%**	**43.0%**	**27.5%**	**6.6%**	**77.1%**	**18.1%**	**100.0%**
Pacific herring	Gear type	0.0%	22.2%	0.0%	17.5%	13.9%	0.0%	10.7%
	Resource	0.0%	89.1%	0.0%	10.9%	100.0%	0.0%	100.0%
	Total	0.0%	9.5%	0.0%	1.2%	10.7%	0.0%	10.7%
Pacific herring roe/unspecified	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring sac roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	13.5%	1.2%	0.0%	0.9%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.9%	0.9%	0.0%	0.9%
Pacific herring roe on hair seaweed	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe on hemlock branches	Gear type	0.0%	0.0%	0.0%	9.0%	0.8%	0.0%	0.6%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.6%	0.6%	0.0%	0.6%
Eulachon (hooligan, candlefish)	Gear type	0.0%	71.1%	0.0%	58.8%	44.7%	0.0%	34.5%
	Resource	0.0%	88.7%	0.0%	11.3%	100.0%	0.0%	100.0%
	Total	0.0%	30.6%	0.0%	3.9%	34.5%	0.0%	34.5%
Silver smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific (gray) cod	Gear type	0.0%	0.1%	1.5%	0.0%	0.6%	0.8%	0.6%
	Resource	0.0%	9.1%	68.2%	0.0%	77.3%	22.7%	100.0%
	Total	0.0%	0.1%	0.4%	0.0%	0.5%	0.1%	0.6%

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Table 2-18.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Pacific tomcod	Gear type	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flounder	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	0.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%
Lingcod	Gear type	16.0%	0.0%	0.6%	0.0%	0.2%	1.5%	1.2%
	Resource	63.6%	0.0%	13.6%	0.0%	13.6%	22.7%	100.0%
	Total	0.8%	0.0%	0.2%	0.0%	0.2%	0.3%	1.2%
Pacific halibut	Gear type	68.1%	0.0%	97.0%	0.0%	34.6%	31.6%	35.6%
	Resource	9.0%	0.0%	74.9%	0.0%	74.9%	16.1%	100.0%
	Total	3.2%	0.0%	26.7%	0.0%	26.7%	5.7%	35.6%
Black rockfish	Gear type	9.4%	0.0%	0.6%	0.0%	0.2%	0.8%	0.7%
	Resource	60.5%	0.0%	20.9%	0.0%	20.9%	18.6%	100.0%
	Total	0.4%	0.0%	0.2%	0.0%	0.2%	0.1%	0.7%
Yelloweye rockfish	Gear type	2.2%	0.0%	0.3%	0.0%	0.1%	1.7%	0.5%
	Resource	21.1%	0.0%	15.8%	0.0%	15.8%	63.2%	100.0%
	Total	0.1%	0.0%	0.1%	0.0%	0.1%	0.3%	0.5%
Unknown rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (black cod)	Gear type	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
	Resource	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Total	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
Buffalo sculpin	Gear type	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bullhead sculpin	Gear type	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Red Irish lord	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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Table 2-18.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Unknown shark	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skates	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sole	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Arctic char	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Dolly Varden	Gear type	0.0%	4.4%	0.0%	1.2%	2.6%	40.7%	9.4%
	Resource	0.0%	20.3%	0.0%	0.8%	21.1%	78.9%	100.0%
	Total	0.0%	1.9%	0.0%	0.1%	2.0%	7.4%	9.4%
Arctic grayling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%
Cutthroat trout	Gear type	0.0%	0.1%	0.0%	0.0%	0.0%	5.5%	1.0%
	Resource	0.0%	2.5%	0.0%	0.0%	2.5%	97.5%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%
Rainbow trout	Gear type	0.0%	0.8%	0.0%	0.0%	0.4%	5.7%	1.4%
	Resource	0.0%	23.8%	0.0%	0.0%	23.8%	76.3%	100.0%
	Total	0.0%	0.3%	0.0%	0.0%	0.3%	1.0%	1.4%
Steelhead	Gear type	0.0%	1.4%	0.0%	0.0%	0.8%	4.0%	1.3%
	Resource	0.0%	44.4%	0.0%	0.0%	44.4%	55.6%	100.0%
	Total	0.0%	0.6%	0.0%	0.0%	0.6%	0.7%	1.3%
Whitefishes	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

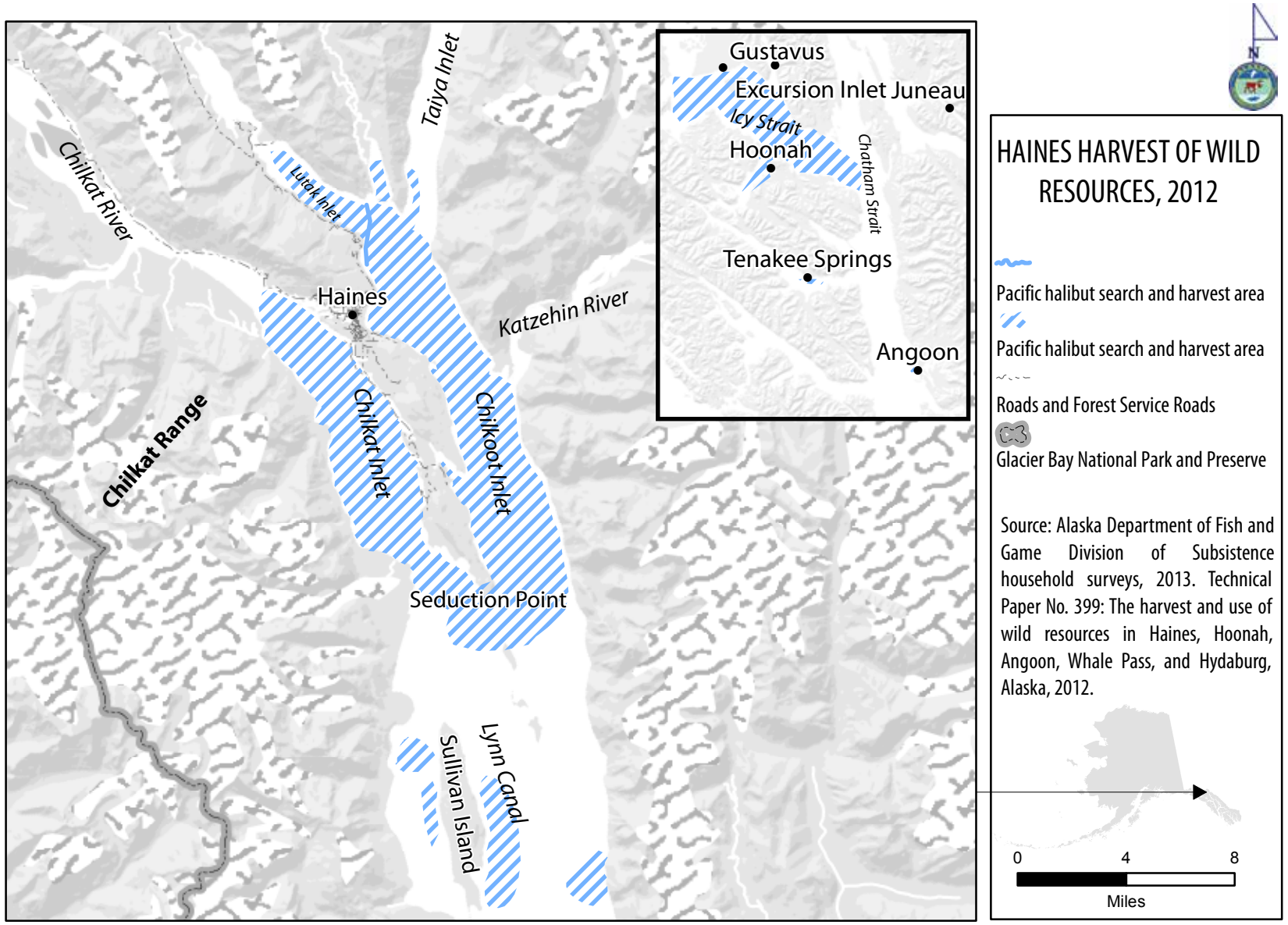


Figure 2-20.–Fishing and harvest locations of Pacific halibut, Haines, 2012.

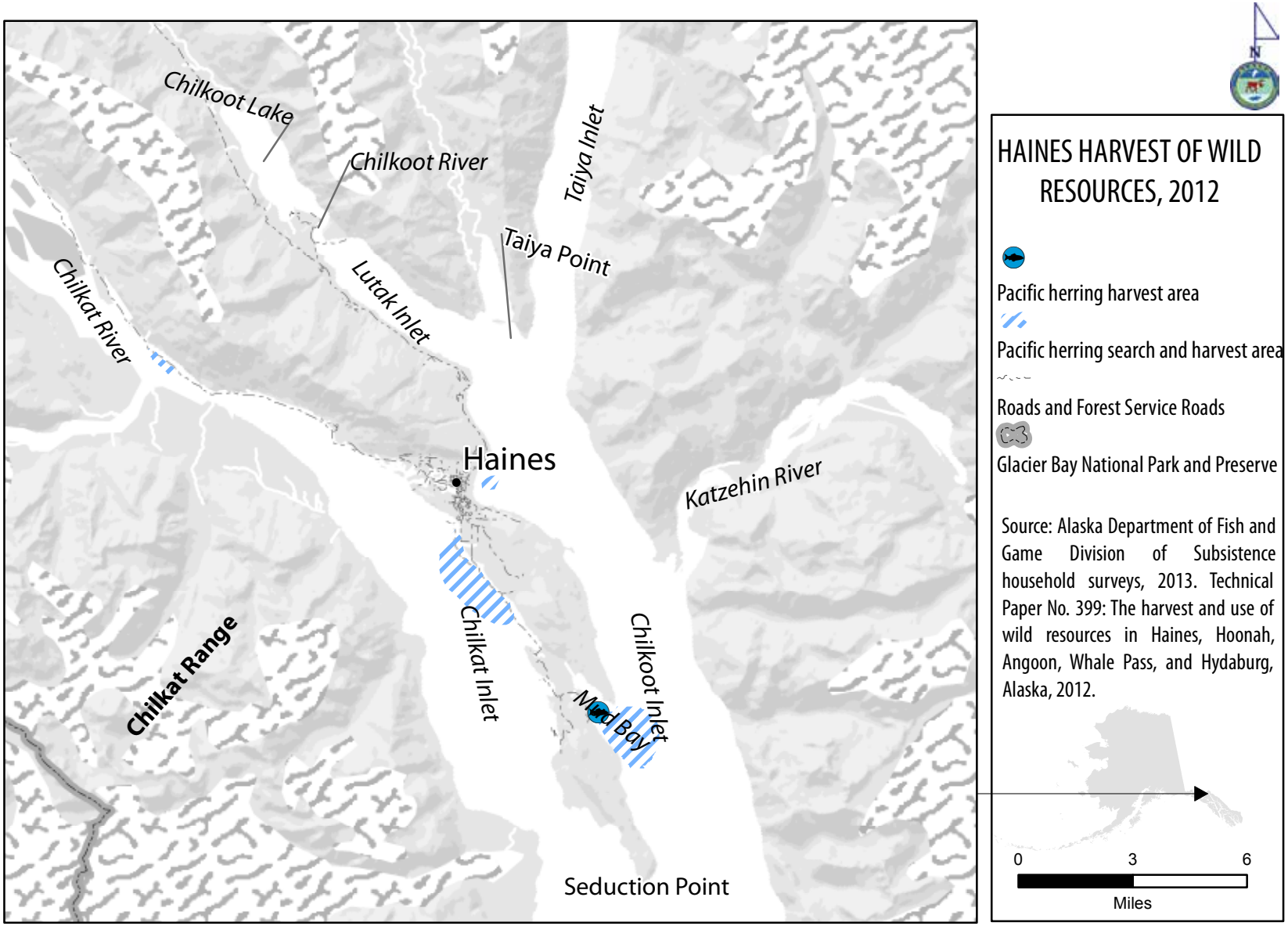


Figure 2-21.–Fishing and harvest locations of Pacific herring, Haines, 2012.

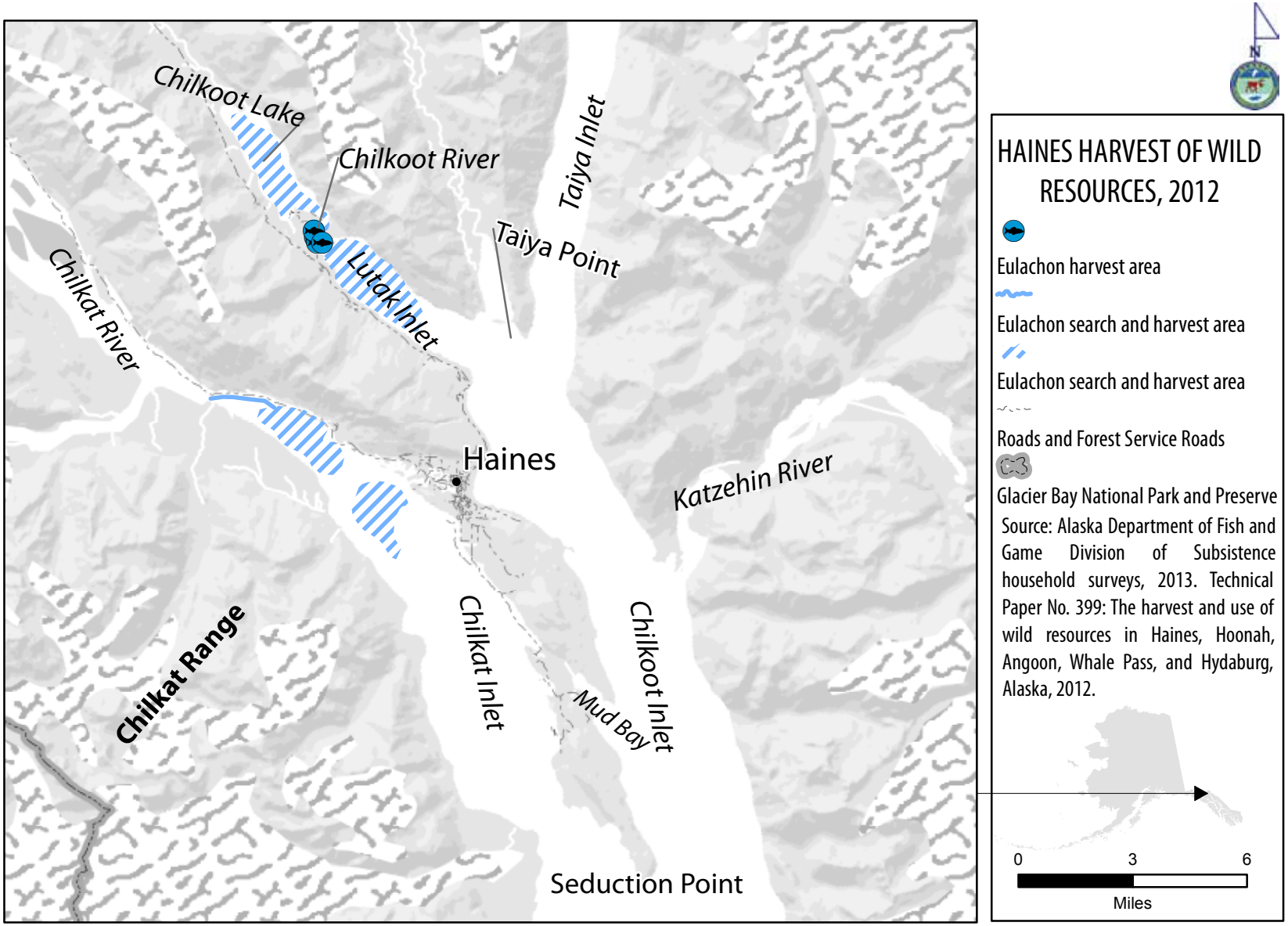


Figure 2-22.–Fishing and harvest locations of eulachon, Haines, 2012.

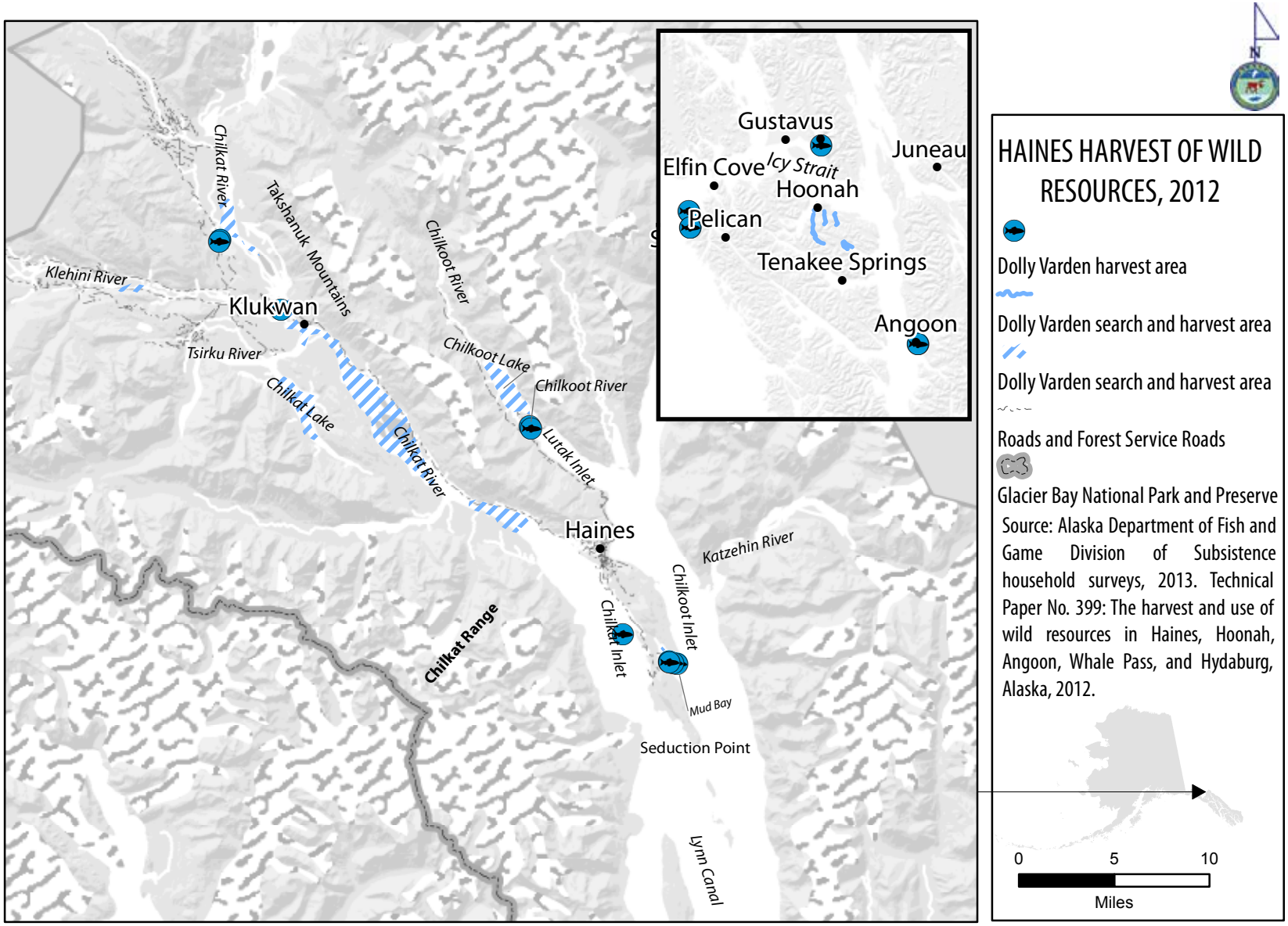
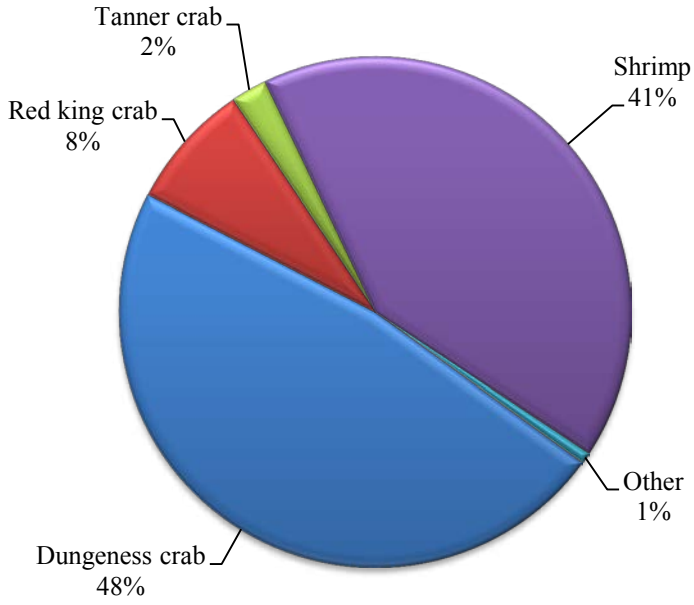


Figure 2-23.–Fishing and harvest locations of Dolly Varden, Haines, 2012.



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

Figure 2-24.–Composition of marine invertebrate harvest in pounds usable weight, Haines, 2012.

Marine Invertebrates

In 2012, Haines residents harvested an estimated total of 22,837 lb (12 lb per capita) of marine invertebrates (Table 2-13). Marine invertebrates composed 9% of the wild resource harvest in usable pounds (Figure 2-12). In terms of pounds of usable weight, most (48%) of the harvest was Dungeness crab (10,871 lb; 6 lb per capita), followed by shrimp at 41% of the harvest (9,453 lb; 5 lb per capita), red king crab with 8% (1,834 lb; 1 lb per capita), and Tanner crab at 2% of the total (521 lb; 0.3 lb per capita) (Figure 2-24; Table 2-13). Haines residents also harvested mussels and basket cockles.

During 2012, 74% of Haines households used marine invertebrates, while 39% attempted to harvest them and all were successful (Table 2-13). An estimated 21% of households shared marine invertebrates and 52% received them, indicating that the primary harvesters of marine invertebrates in the community actively shared with other households. Dungeness crab was the most widely shared marine invertebrate, with 39% of Haines households having received Dungeness crab from other households. Shrimp was also shared more than most other marine invertebrate resources with 11% of households having given it away and 34% indicating they received some. No other marine invertebrate was given or received by more than 3% of households.

During the 2012 study year, Haines respondents reported harvesting crab (either Dungeness, king, or Tanner) in Chilkat, Chilkoot, and Lutak inlets, in the southern portion of Taiya Inlet, on the west side of Sullivan Island in Lynn Canal and offshore south of Tenakee Springs (Figure 2-25). Shrimp were harvested in the same areas around Haines but also outside of Hoonah (Figure 2-26). Search and harvest areas for other marine invertebrates were limited to Chilkat and Lutak inlets and in Port Frederick and Chatham Strait (Figure 2-27).

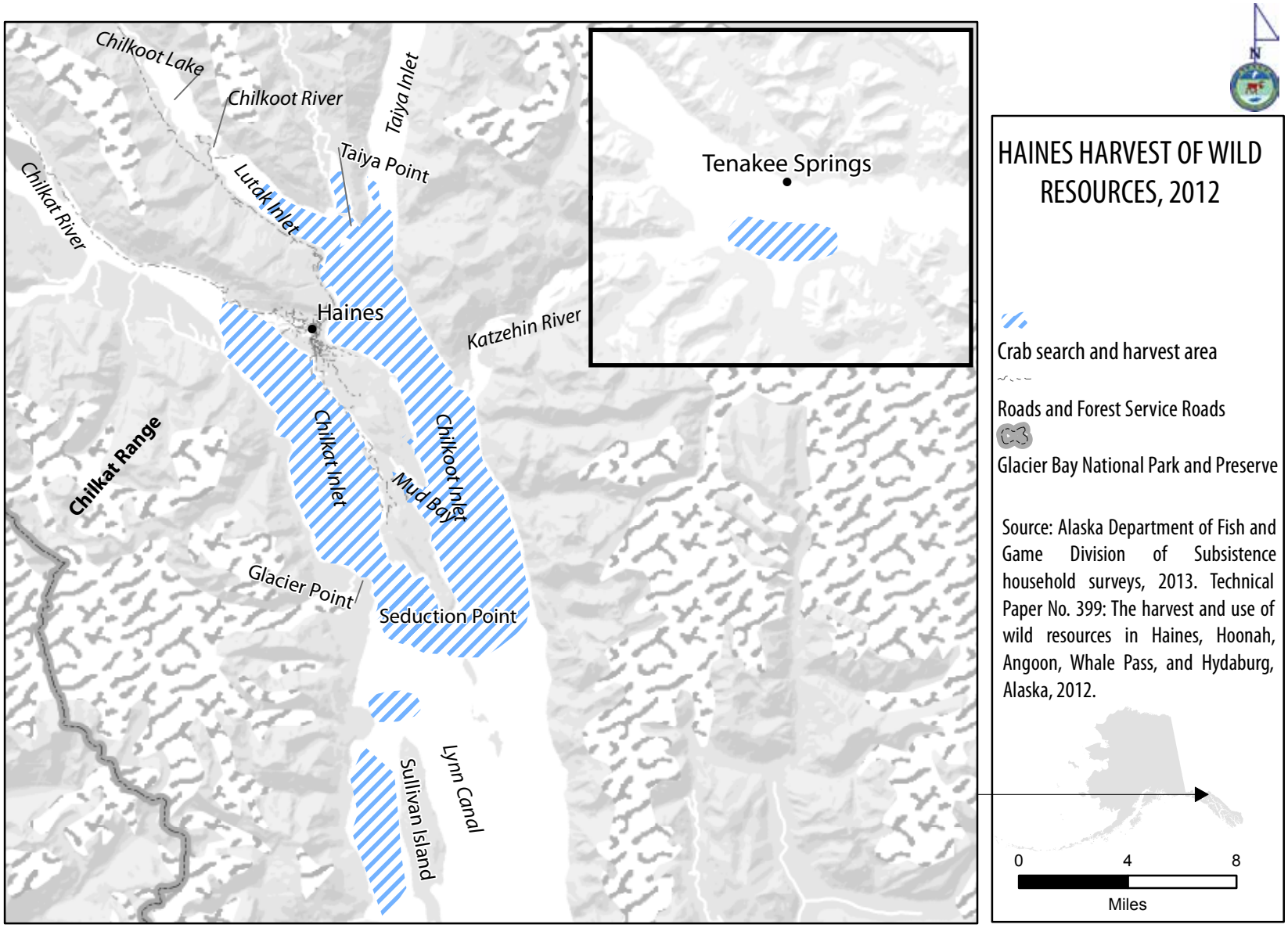


Figure 2-25.–Fishing and harvest locations of crabs, Haines, 2012.

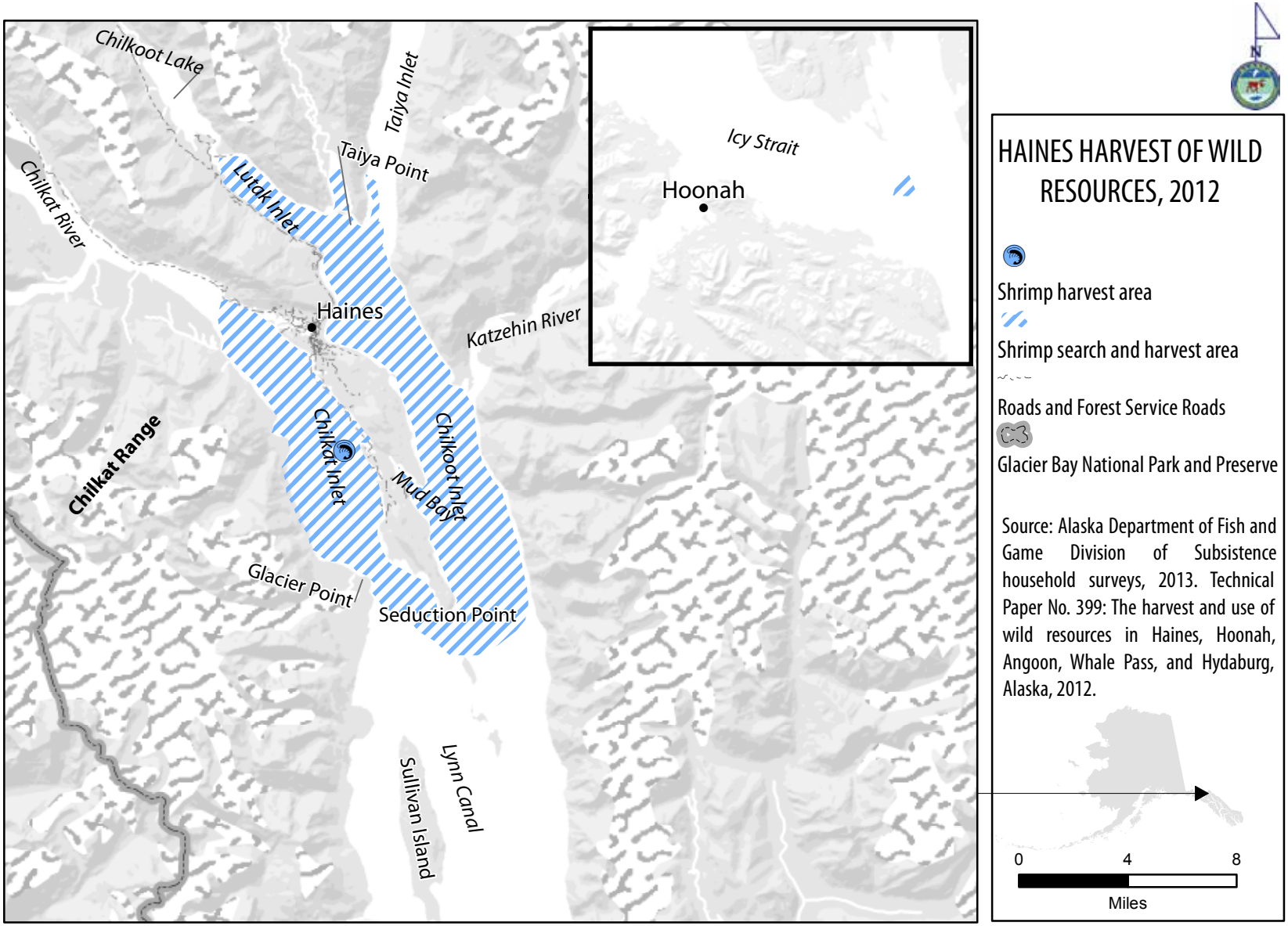


Figure 2-26.–Fishing and harvest locations of shrimp, Haines, 2012.

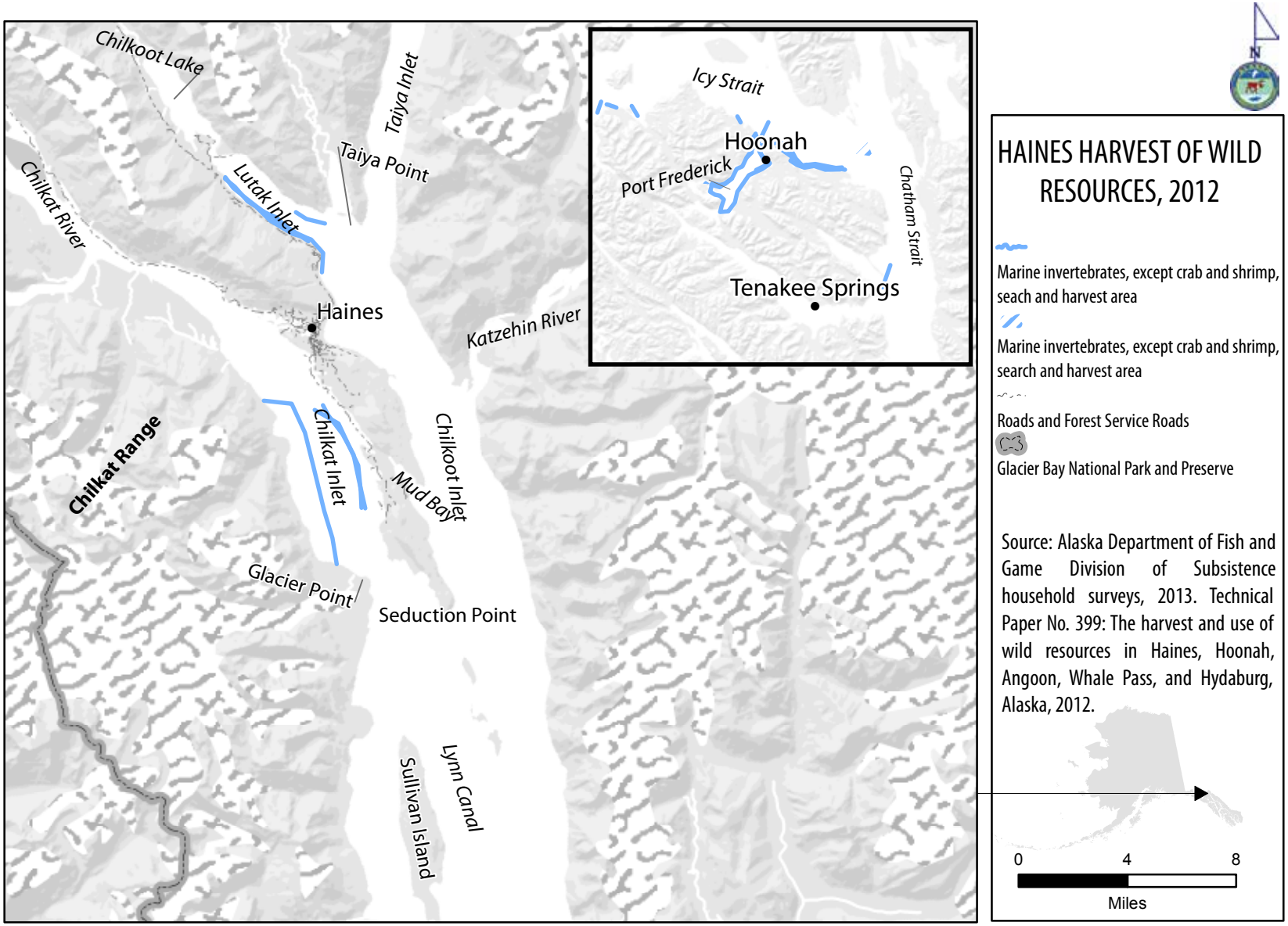


Figure 2-27.–Fishing and harvest locations of marine invertebrates (except crabs and shrimp), Haines, 2012.

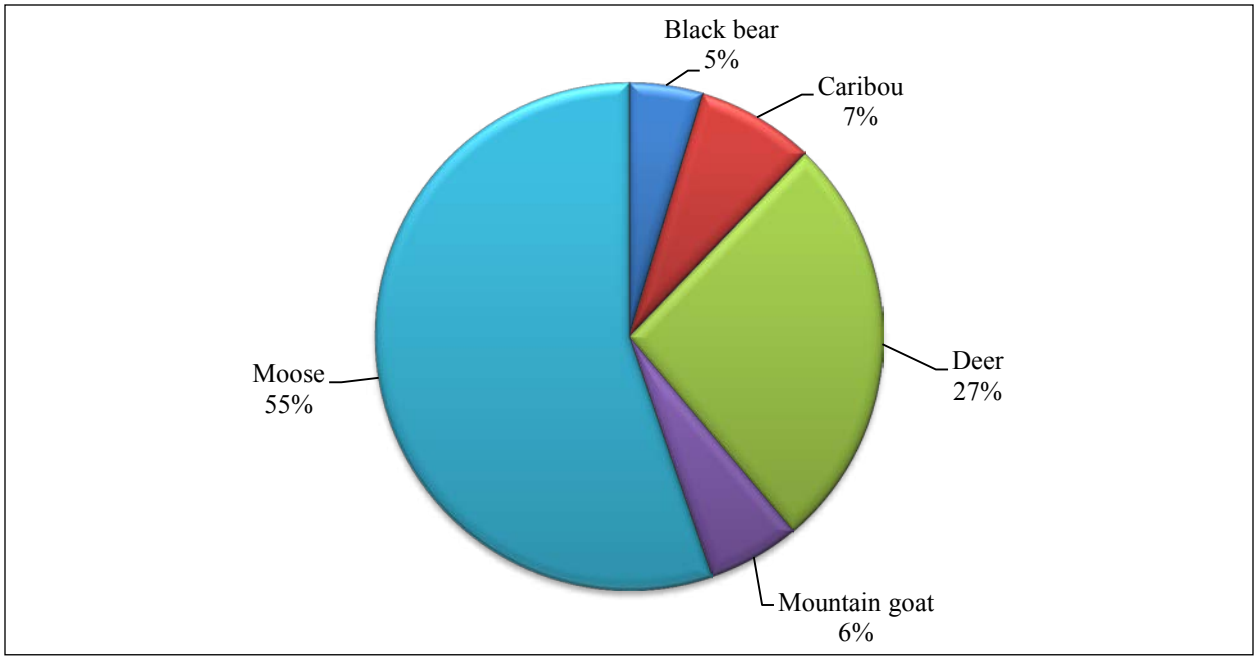


Figure 2-28.–Composition of large land mammal harvest in pounds usable weight, Haines, 2012.

Large Land Mammals

In 2012, large land mammals, predominantly moose, made up 21% of the total Haines wild resource harvest by weight (Figure 2-12). Moose composed 55% of the large land mammal harvest (29,746 lb; 16 lb per capita), followed by deer at 27% of the harvest (14,377 lb; 8 lb per capita), caribou at 7% (4,028 lb; 2 lb per capita), mountain goat with 6% (3,161 lb; 2 lb per capita), and black bear at 5% of the harvest (2,516 lb; 1 lb per capita) (Figure 2-28; Table 2-13). Moose was the most used large land mammal (by 55% of Haines households) followed by deer (30%) (Table 2-13). These were also the 2 most hunted large land mammals; 26% of households hunted moose and 11% hunted deer. Only 8% of Haines households were successful hunting either species. An estimated 8% of households also shared moose and 8% shared deer, but 49% of households received moose and 24% received deer, illustrating the importance of sharing of resources from this category. Other large mammals were used by 13% or less households in Haines and were harvested and shared by less than 10%.

In 2012, successful moose hunting took place during late summer, fall, and early winter. An estimated total of 74 moose were harvested: 12 in August, 56 in September, and 6 in November (Table 2-19). Most of the harvested animals were bull moose. Deer hunting also took place from late summer through the winter, with the majority of the harvests occurring in November. In 2012, a total of 180 animals were harvested: 6 in August, 37 in September, 12 in October, 112 in November, and 12 in December. The majority of animals of known sex were male.

Caribou, mountain goat, and black bear were also harvested in 2012 (Table 2-19). Although caribou are not found in Southeast Alaska, Haines residents can access caribou herds in Interior Alaska as well as Canada via the Haines Highway connection to the Alaska Highway. In 2012, Haines residents harvested 31 caribou: 12 in August and 19 in September. A total of 31 mountain goats were harvested in 2012—mostly males and mostly in the fall. An estimated 12 mountain goats were harvested in September and 12 more in October, and, in November, 6 mountain goats were harvested. In 2012, Haines residents harvested 43 male black bears during spring and early summer. During March and April, 6 black bears were harvested each month, during May, 18 black bears were harvested, and during June, 12 black bears were harvested.

Table 2-19.–Estimated large land mammal harvests by month and sex, Haines, 2012.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All large land mammals	**0.0**	**0.0**	**6.2**	**6.2**	**18.6**	**12.4**	**0.0**	**31.0**	**123.9**	**24.8**	**123.9**	**12.4**	**0.0**	**359.4**
American (plains) bison	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear	0.0	0.0	6.2	6.2	18.6	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**43.4**
Black bear, male	0.0	0.0	6.2	6.2	18.6	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**43.4**
Black bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	18.6	0.0	0.0	0.0	0.0	**31.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	12.4	0.0	0.0	0.0	0.0	**18.6**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	6.2	0.0	0.0	0.0	0.0	**12.4**
Caribou, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Deer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	37.2	12.4	111.5	12.4	0.0	**179.7**
Deer, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	12.4	99.2	0.0	0.0	**117.7**
Deer, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	**6.2**
Deer, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.2	0.0	6.2	12.4	0.0	**55.8**
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	12.4	6.2	0.0	0.0	**31.0**
Mountain goat, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	6.2	6.2	0.0	0.0	**24.8**
Mountain goat, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	**6.2**
Mountain goat, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	55.8	0.0	6.2	0.0	0.0	**74.4**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	55.8	0.0	0.0	0.0	0.0	**68.2**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	**6.2**
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

During the 2012 study year, Haines households reported searching for moose from the Canadian border south along the banks of the Chilkat River to Seduction Point, in the Takshanuk Mountains and the Chilkat Range, as well as around Gustavus and Excursion Inlet (Figure 2-29). Deer were hunted on Sullivan Island as well as northeast Chichagof Island, and parts of Admiralty Island and Douglas Island, as can be seen in Figure 2-30. Search areas for mountain goats and black bear can be seen in Appendix D.

Marine Mammals

No marine mammals were harvested by residents of Haines; 2% of households received and used harbor seals and 2% of households received and used an unknown species of seal (Table 2-13).

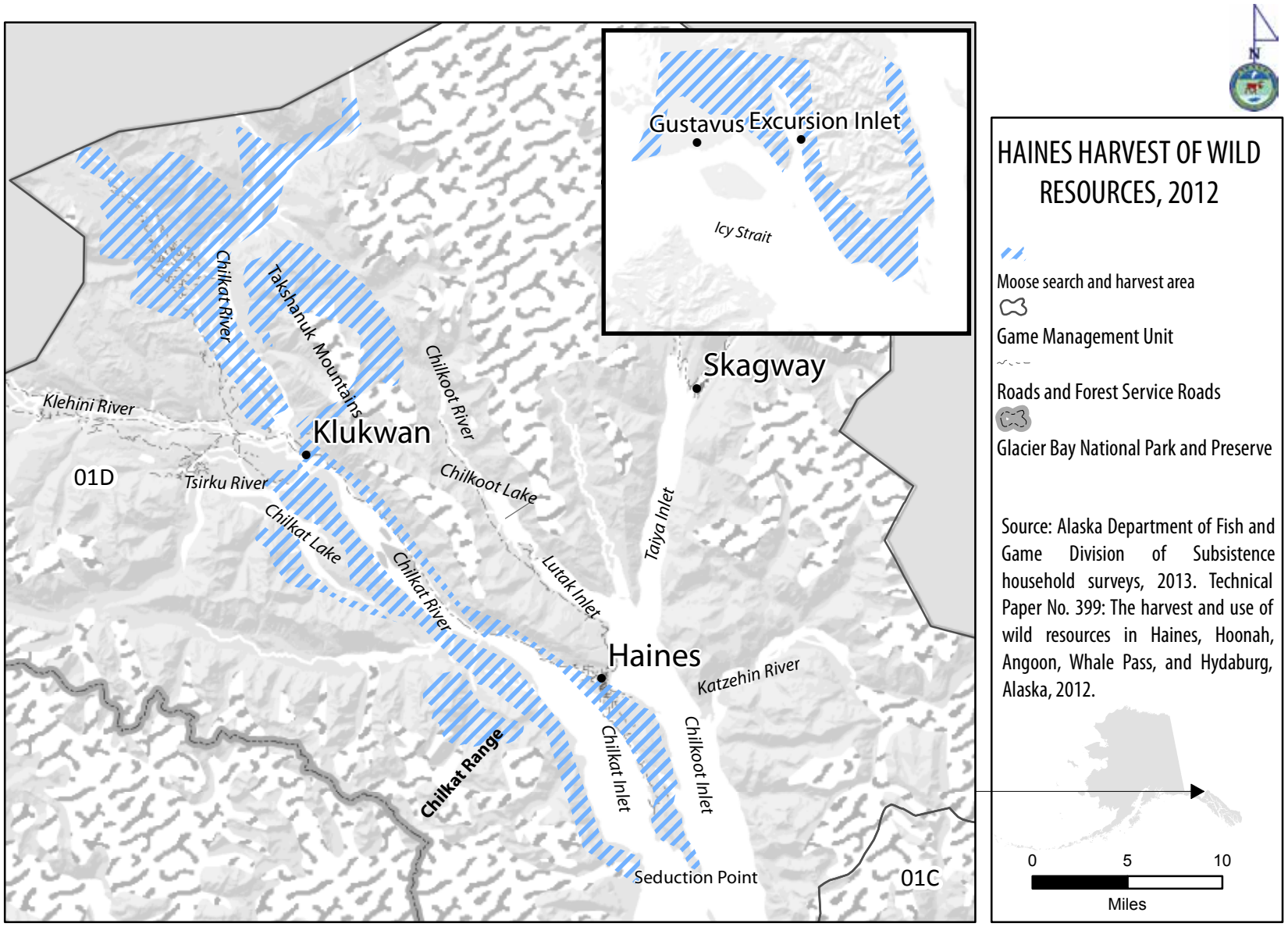


Figure 2-29.–Hunting locations of moose, Haines, 2012.

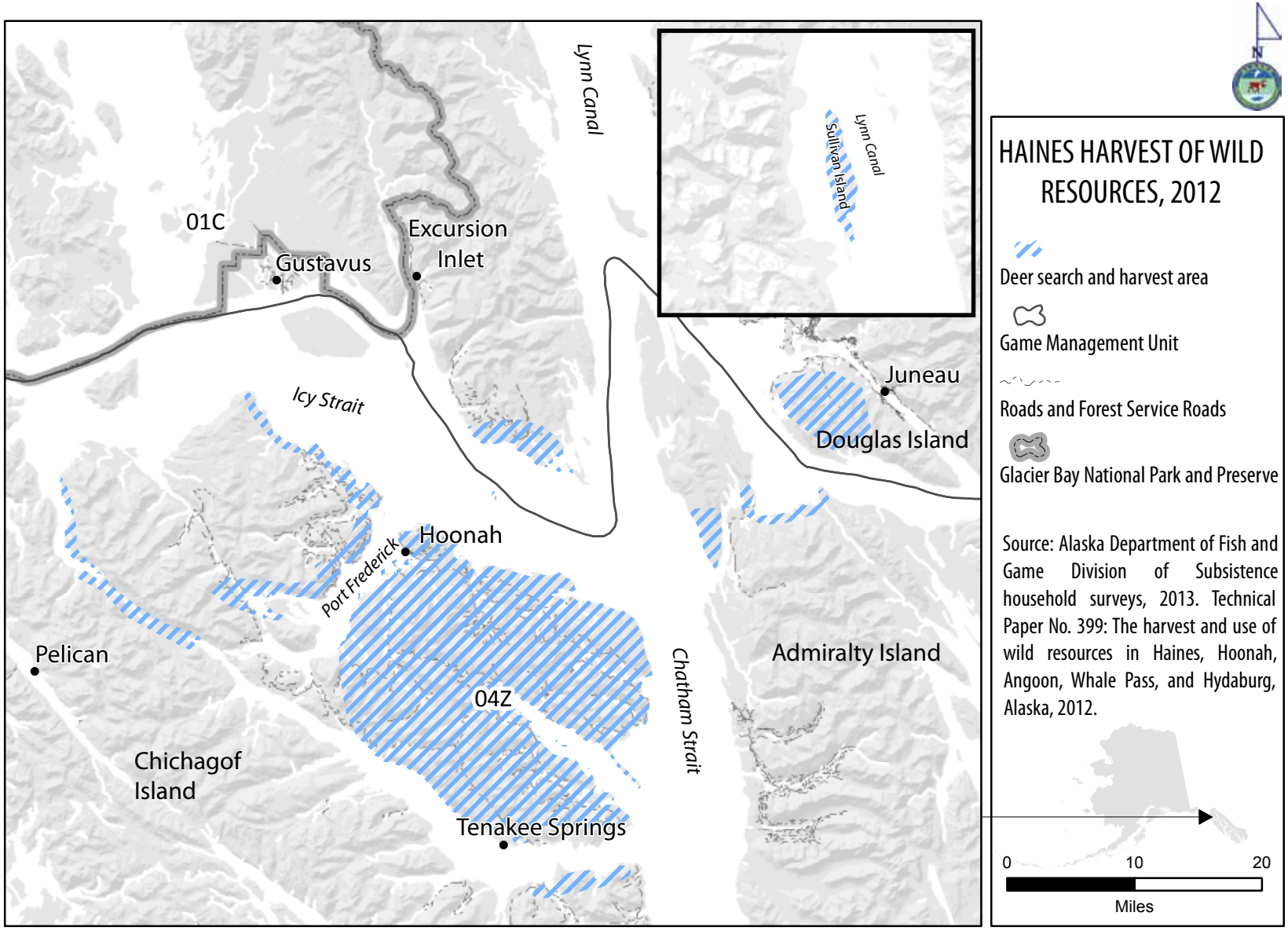


Figure 2-30.–Hunting locations of deer, Haines, 2012.

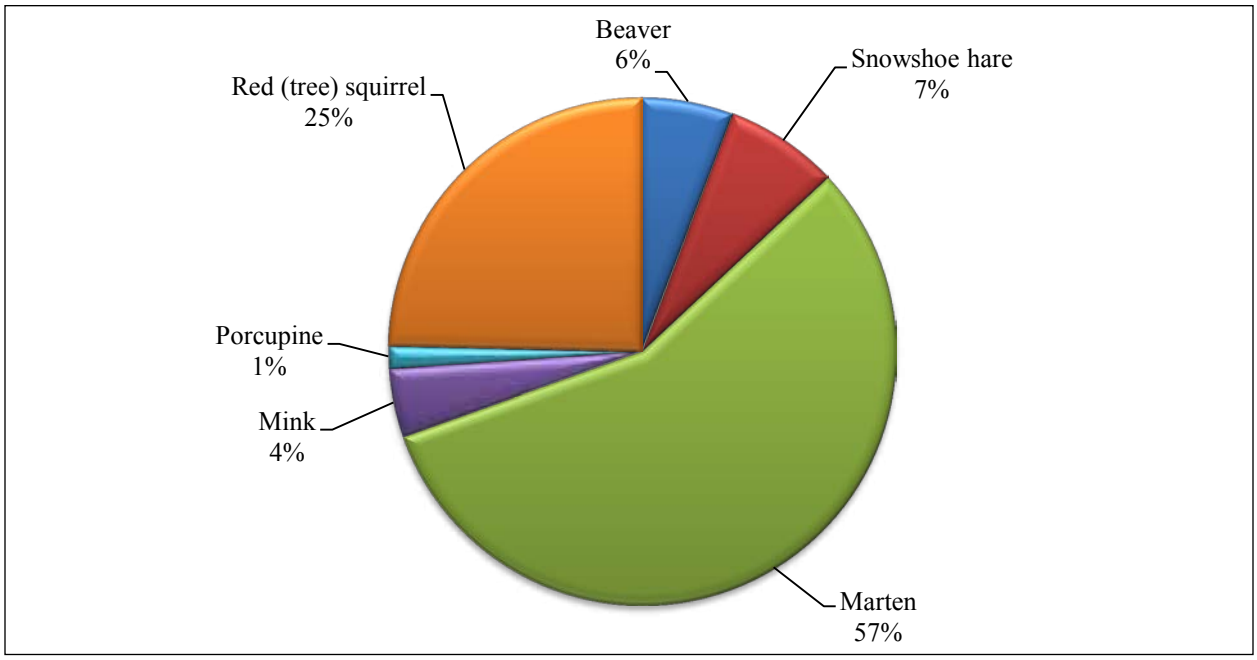


Figure 2-31.–Composition of small land mammal/furbearer harvest by individual animals harvested, Haines, 2012.

Small Land Mammals/Furbearers

As noted in Table 2-13, the total harvest of small land mammals by Haines residents in 2012 for food was an estimated 356 lb (0.2 lb per capita). By numbers of animals, marten harvests accounted for the majority of the overall small mammal harvest at 57%, followed by red (tree) squirrel at 25%, snowshoe hare at 7%, beaver at 6%, mink at 4%, and porcupine at 1% (Figure 2-31). Haines' small land mammal food harvest came from beavers (217 lb), snowshoe hares (62 lb), porcupines (37 lb), and red squirrels (40 lb). A small percentage of Haines residents used small land mammals or furbearers. Approximately 8% of households reported using or attempting to harvest small land mammals; these were shared by 2% of households and less than 1% of households received small mammal resources. Nearly one-half of small land mammals were harvested in an unknown month (Table 2-20). Based on harvests in known months, small land mammals were taken year-round, with the highest concentration in the winter. Beavers were harvested during summer, snowshoes hares were harvested during winter, porcupines were harvested during fall, and red squirrels were harvested year-round. Marten and mink were harvested as furbearers during the winter months. The search and harvest areas for furbearers in 2012 included the much of the Chilkat and Chilkoot watersheds (Figure 2-32).

Table 2-20.–Estimated small land mammal harvests by month, Haines, 2012.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All small land mammals	**93.0**	**6.2**	**6.2**	**6.2**	**6.2**	**6.2**	**37.2**	**6.2**	**6.2**	**12.4**	**24.8**	**49.6**	**167.3**	**427.6**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0	0.0	0.0	0.0	0.0	**24.8**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Snowshoe hare	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.6	0.0	0.0	**31.0**
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	74.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.4	123.9	**241.7**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.6	**18.6**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	**6.2**
Red (tree) squirrel	6.2	6.2	6.2	6.2	6.2	6.2	12.4	6.2	6.2	6.2	6.2	6.2	24.8	**105.3**
Least 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**
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

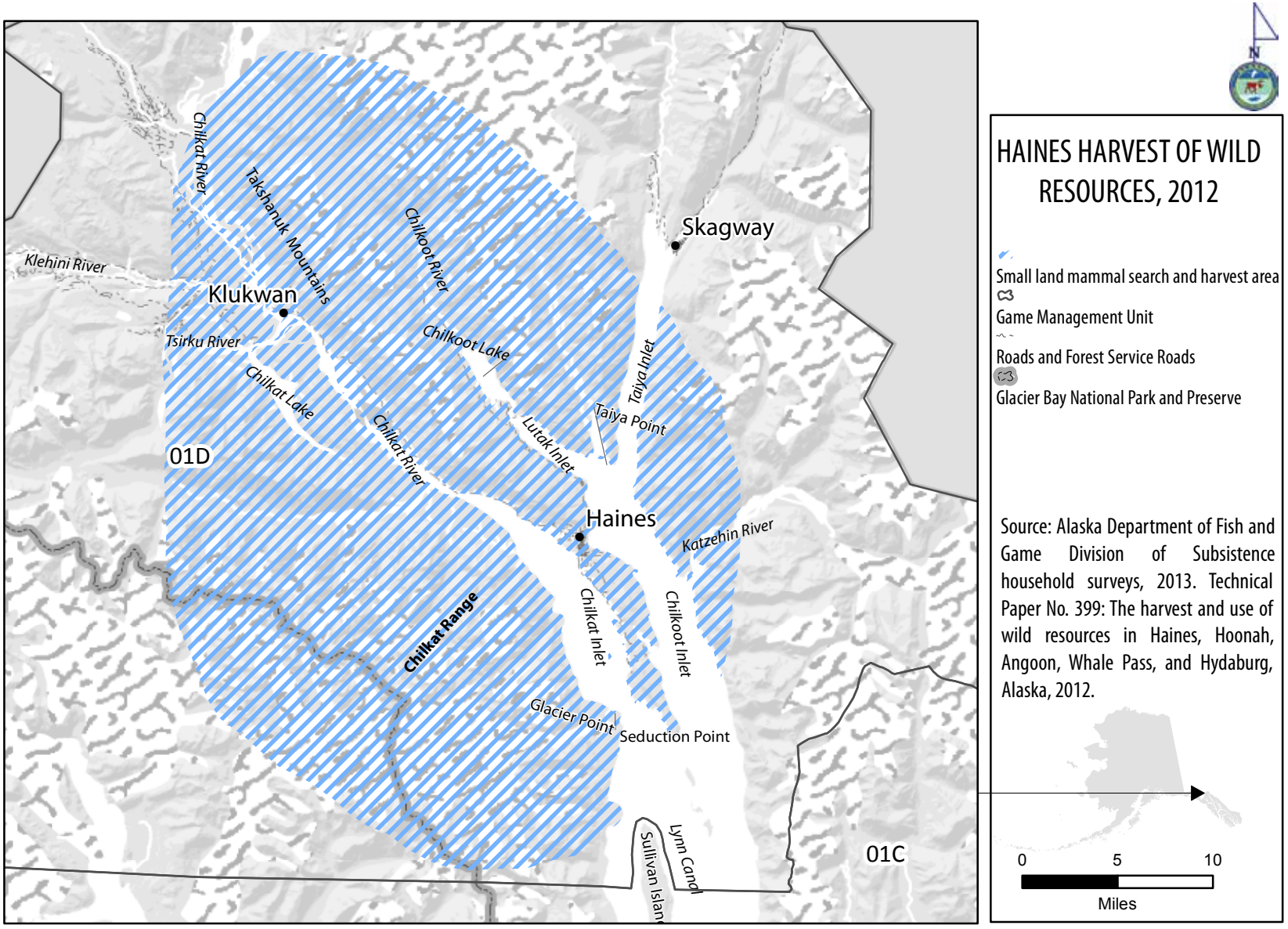


Figure 2-32.–Hunting and trapping locations of small land mammals/furbearers, Haines, 2012.

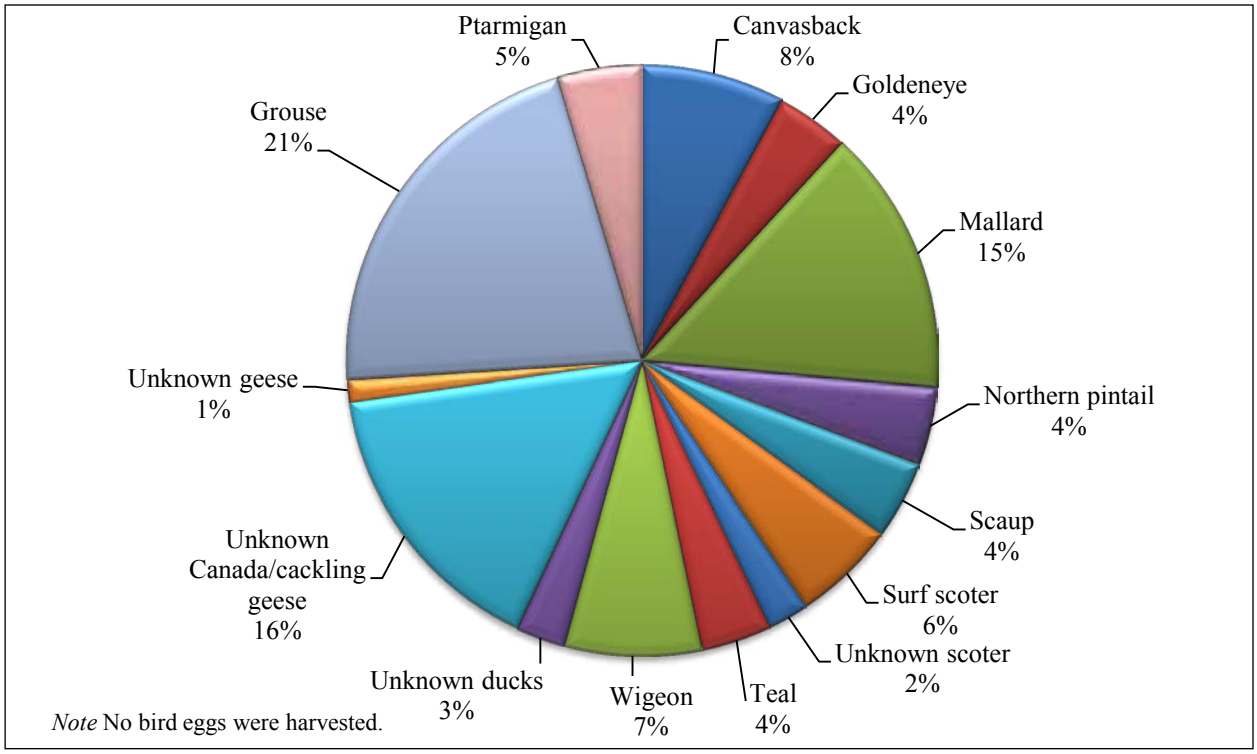


Figure 2-33.–Composition of bird and bird egg harvest in pounds usable weight, Haines, 2012.

Birds and Eggs

Fourteen types of birds were harvested by Haines households in 2012 that contributed approximately 1 lb per capita to the total Haines harvest (Table 2-13). No bird eggs were harvested or used. The most harvested bird species, by weight, was grouse (21%), followed by Canada geese (16%) and mallards (15%) (Figure 2-33). Migratory birds composed 74% of the total bird harvest with an estimated total of 1,287 lb (Table 2-13). Non-migratory birds composed 26% of the total bird harvest with an estimated total of 452 lb. Birds were harvested by 17% of Haines households and were used by 19% of households; they were not widely shared, with only 2% of households giving birds away and 4% of households receiving them.

Most bird harvests occurred during the fall and winter, however some ducks and geese were harvested during the summer and upland birds were harvested in the spring (Table 2-21).

In 2012, Haines residents harvested upland birds primarily along the Tsirku and Klehini rivers and portions of the Chilkat River roughly 15 miles north of Klukwan (Figure 2-34). Migratory waterfowl were hunted in the 6-mile stretch of the Chilkat River south of Klukwan, for approximately a 20-mile stretch of the Chilkat River north of Klukwan, in Lutak Inlet, and in Port Frederick adjacent to Hoonah (Figure 2-35).

Table 2-21.–Estimated bird harvests by season, Haines, 2012.

	Estimated harvest by season					
Resource	Winter	Spring	Summer	Fall	Season unknown	**Total**
All birds	**210.7**	**130.1**	**55.8**	**1,041.1**	**18.6**	**1,456.3**
Canvasback	0.0	0.0	0.0	68.2	0.0	**68.2**
Goldeneye	0.0	0.0	0.0	86.8	0.0	**86.8**
Mallard	43.4	0.0	18.6	192.1	0.0	**254.1**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	0.0	0.0	0.0	74.4	0.0	**74.4**
Scaup	0.0	0.0	0.0	74.4	0.0	**74.4**
Surf scoter	0.0	0.0	0.0	62.0	0.0	**62.0**
Unknown scoter	0.0	0.0	24.8	0.0	0.0	**24.8**
Teal	0.0	0.0	0.0	130.1	0.0	**130.1**
Wigeon	0.0	0.0	0.0	99.2	0.0	**99.2**
Unknown ducks	12.4	0.0	0.0	31.0	0.0	**43.4**
Unknown Canada/ cackling geese	68.2	0.0	12.4	0.0	0.0	**80.6**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	6.2	0.0	**6.2**
Unknown swans	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–small	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–large	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown loon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	**0.0**
Grouse	31.0	117.7	0.0	204.5	18.6	**371.8**
Ptarmigan	55.8	12.4	0.0	12.4	0.0	**80.6**

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

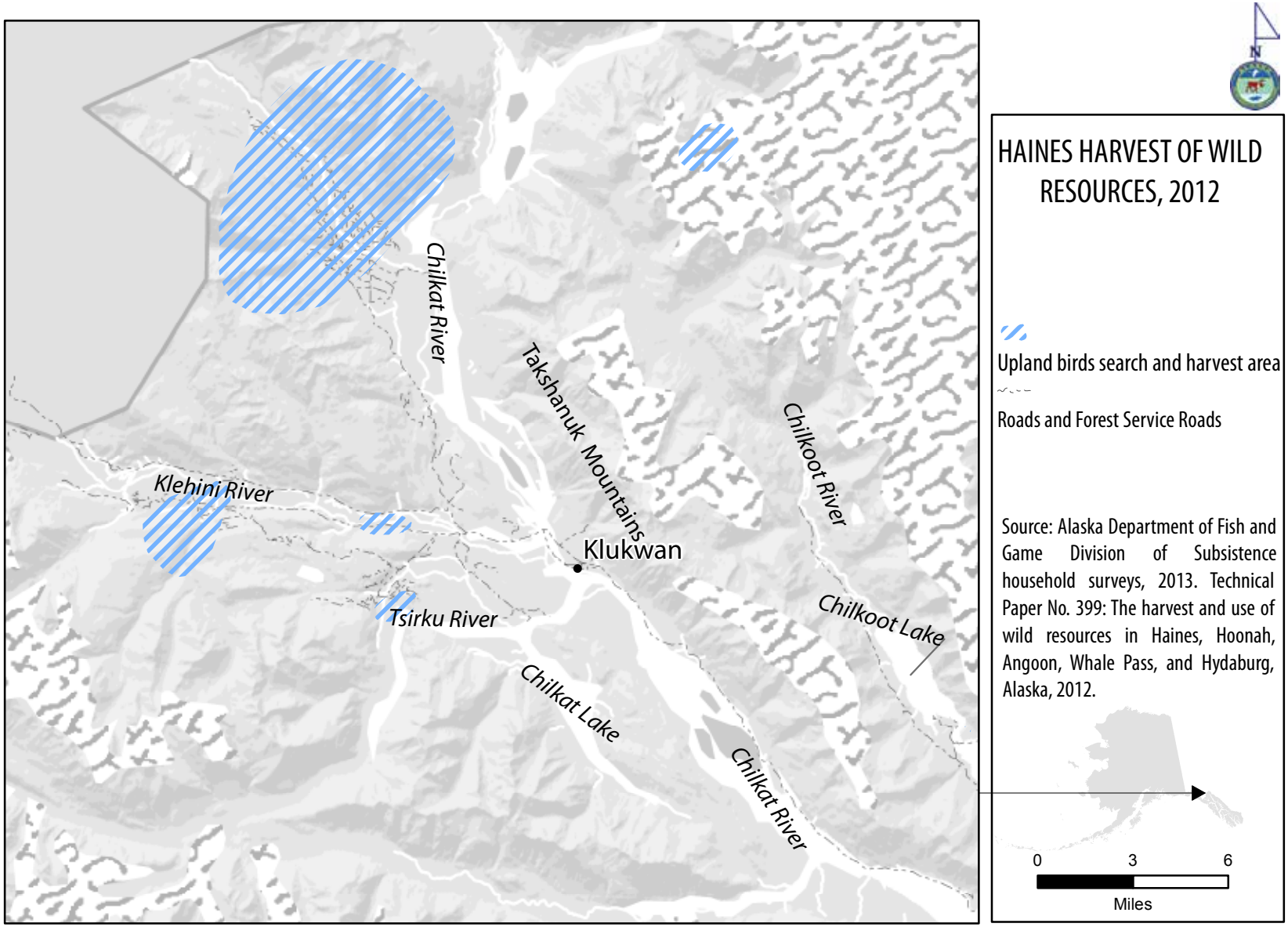


Figure 2-34.–Hunting and harvest locations of upland game birds, Haines, 2012.

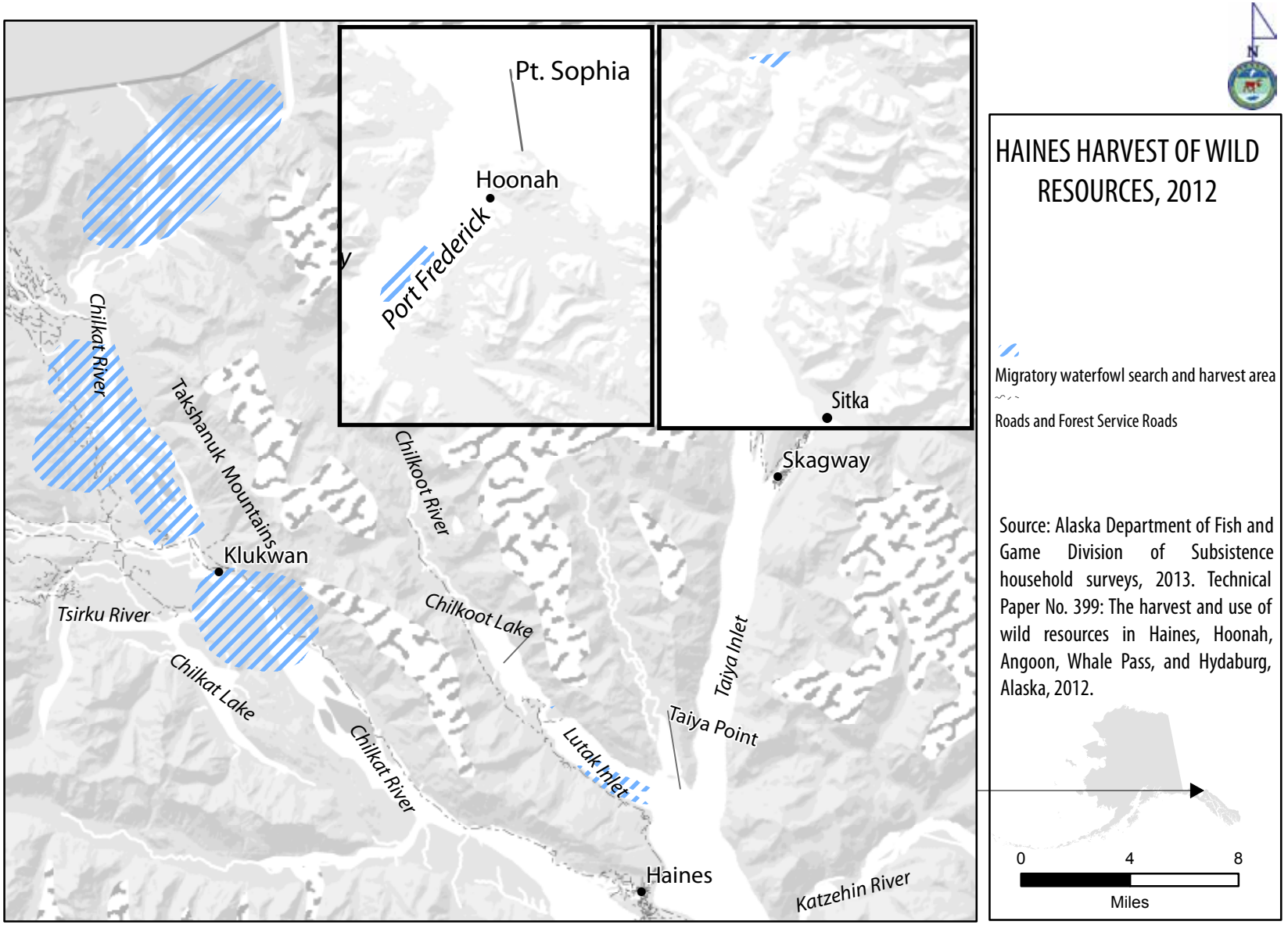


Figure 2-35.–Hunting and harvest locations of migratory waterfowl, Haines, 2012.

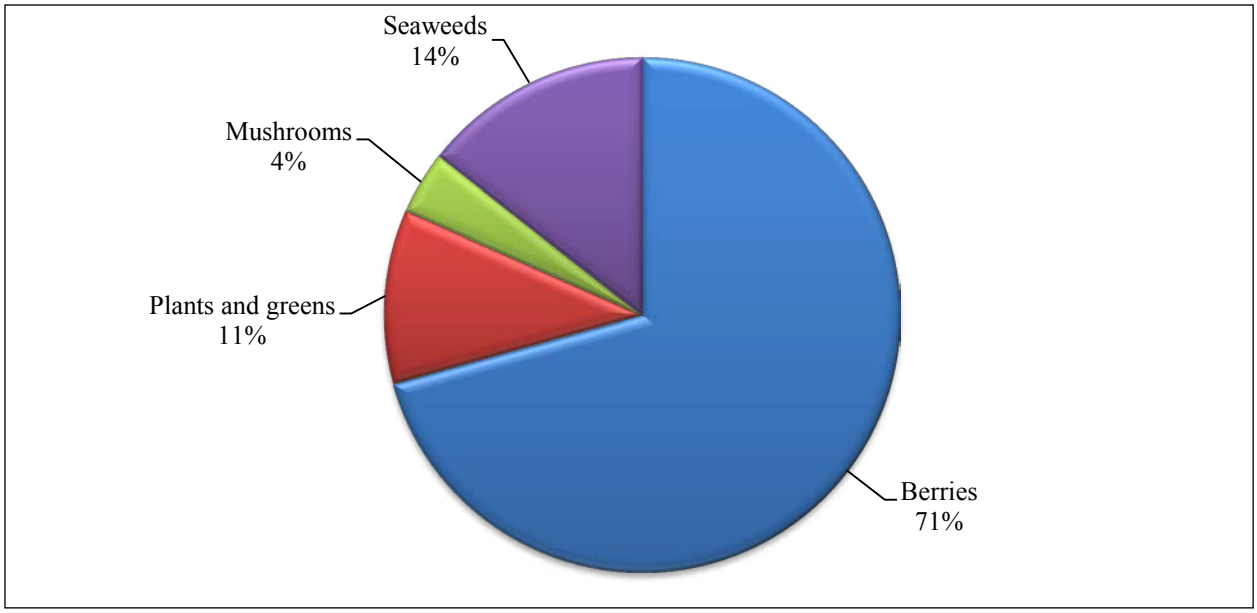


Figure 2-36.–Composition of vegetation harvest by type and pounds usable weight, Haines, 2012.

Vegetation

In 2012, Haines residents harvested an estimated 19,136 lb, or 10 lb per capita, of edible vegetation (Table 2-13). Of the total harvest by weight, 71% was berries, 14% was seaweeds, 11% was plants and greens, and 4% was mushrooms (Figure 2-36). Haines residents also harvested 2,255 cords of wood (Table 2-13). Haines households utilize a wide variety of wild vegetation for food, including berries, terrestrial plants, and seaweeds. Edible vegetation harvested during 2012 consisted of 40 different species. The berry species most heavily harvested by Haines residents in 2012 were blueberries (1,610 gallons; 3 lb per capita), followed by highbush cranberries (689 gallons; 1 lb per capita), strawberries (258 gallons; 0.5 lb per capita), and raspberries (248 gallons; 0.5 lb per capita) (Table 2-13). The non-berry species of terrestrial vegetation most heavily harvested by Haines residents in 2012 were mushrooms (767 gallons; 0.4 lb per capita), nettles (509 gallons; 0.3 lb per capita), unspecified wild greens (300 gallons; 0.2 lb per capita), unspecified beach greens (291 gallons; 0.1 lb per capita), and fiddlehead ferns (174 gallons; 0.1 lb per capita). The most heavily harvested marine plant species for food in 2012 were red seaweed (1,366 gallons; 0.5 lb per capita) and bull kelp (269 gallons; 0.6 lb per capita). Haines residents also harvested marine plants for use as garden fertilizer, which amounted to 36,211 gallons of bladder wrack and approximately 9,000 gallons of unknown seaweed used for fertilizer in 2012. In general, vegetation was widely used and harvested, but shared lightly. The majority (89%) of Haines households used vegetation during the 2012 study year; 86% of households attempted to harvest and harvested vegetation. Less than 10% of households gave away or received each type of edible vegetation, except for blueberries, of which 18% of households shared and 15% of households received.

Berries and terrestrial vegetation were harvested from the tip of Seduction Point, up through the entirety of the community of Haines, along the Chilkat and Chilkoot rivers, around Chilkat and Chilkoot lakes, along the Tsirku and Klehini rivers, up through the Takshanuk Mountains, and a great deal on Sunshine Mountain (Figure 2-37). Plants and berries were also harvested around the communities of Hoonah, Tenakee Springs, Angoon, and Gustavus. Marine vegetation was harvested along the waters of Chilkat Inlet (from 3 mile Mud Bay Road to Paradise Cove), Mud Bay, in Chilkoot Inlet from Tanani Point to the mouth of the Katzehin River, and along Lutak Inlet (Figure 2-38). Firewood was harvested in similar areas to berries—from Seduction Point up through the Chilkat River watershed and along the road system in Angoon (Figure 2-39).

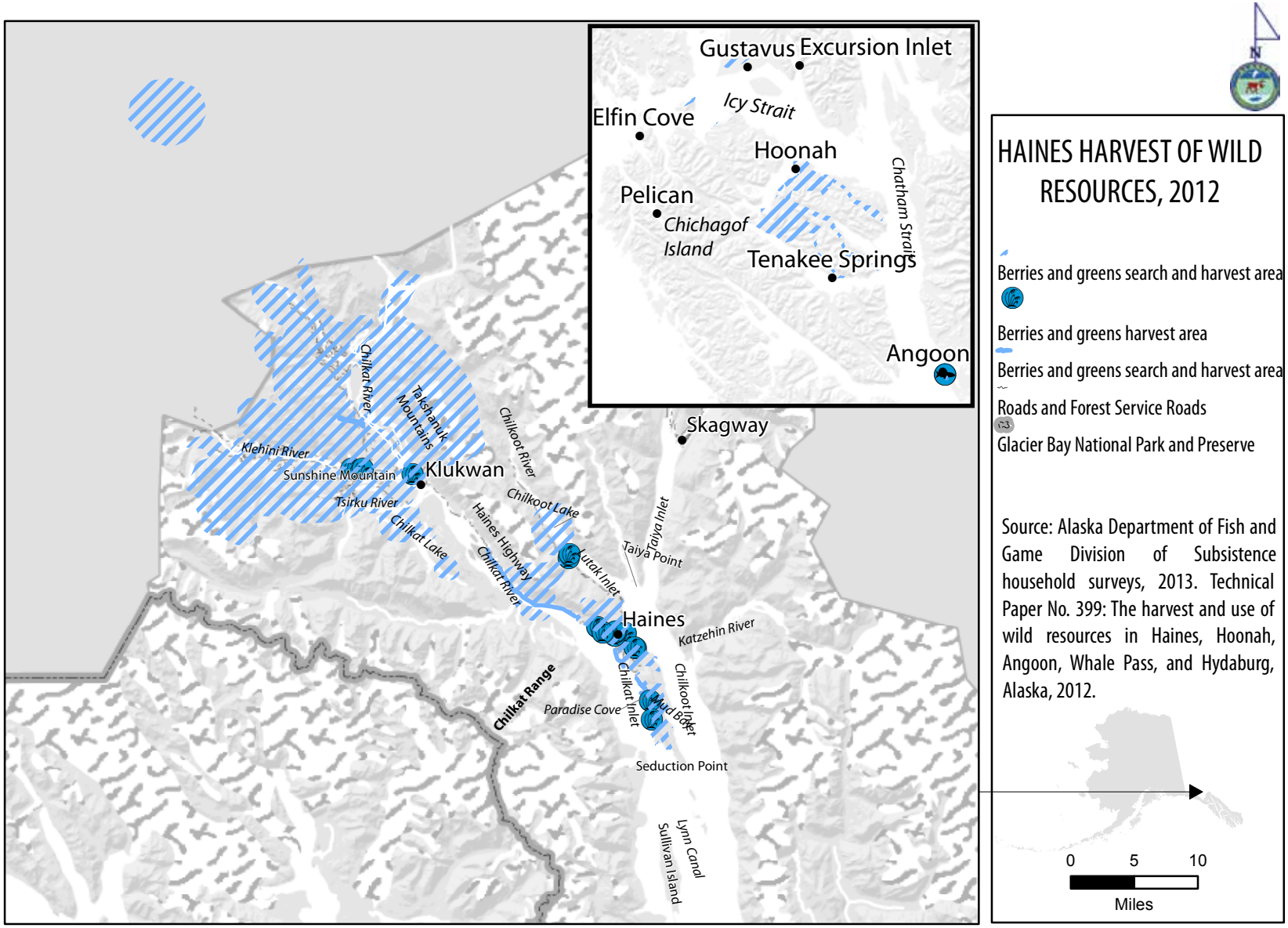


Figure 2-37.–Gathering and harvest locations of berries and plants, greens, and mushrooms, Haines, 2012.

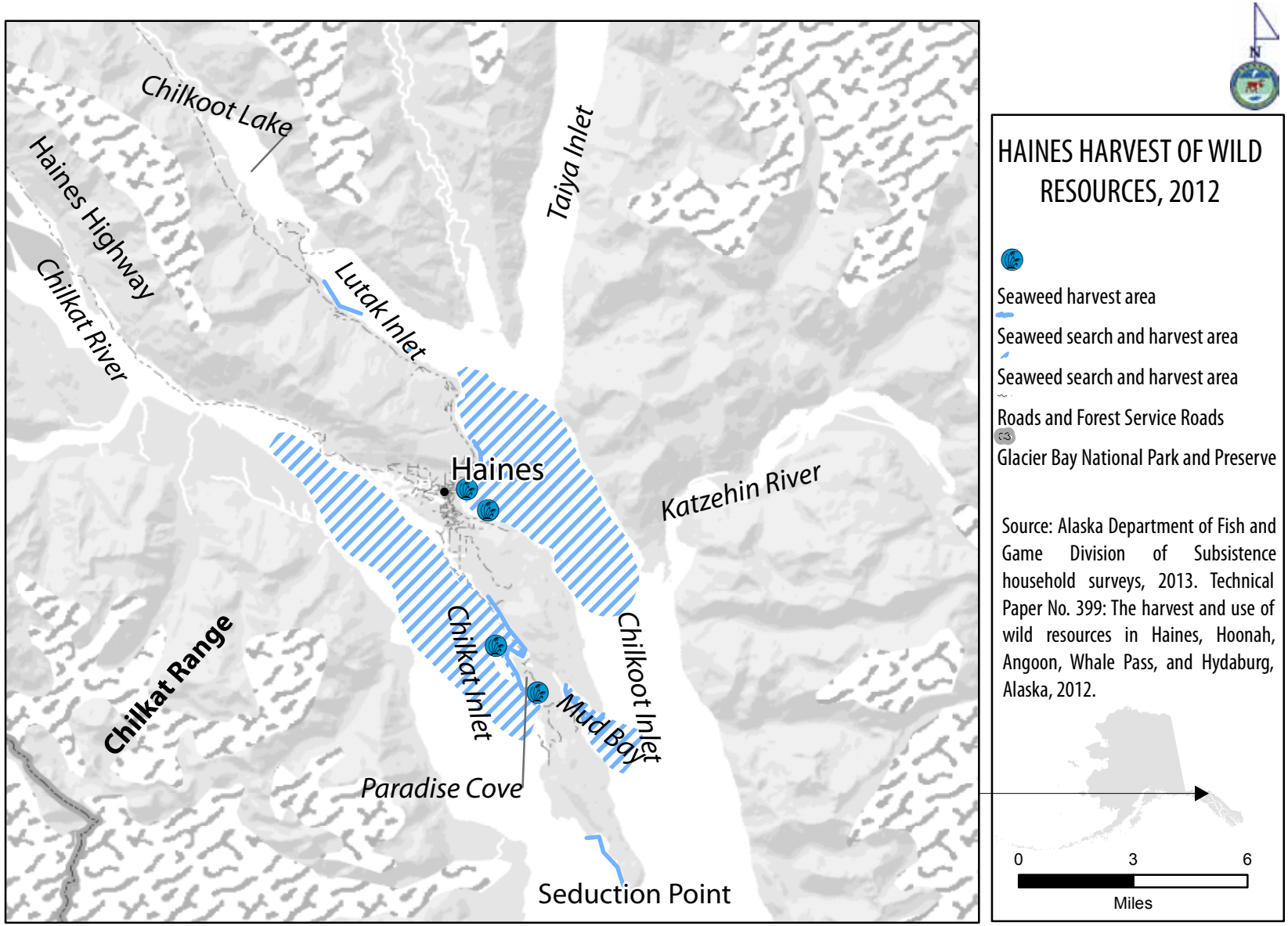


Figure 2-38.–Gathering and harvest locations of seaweed, Haines, 2012.

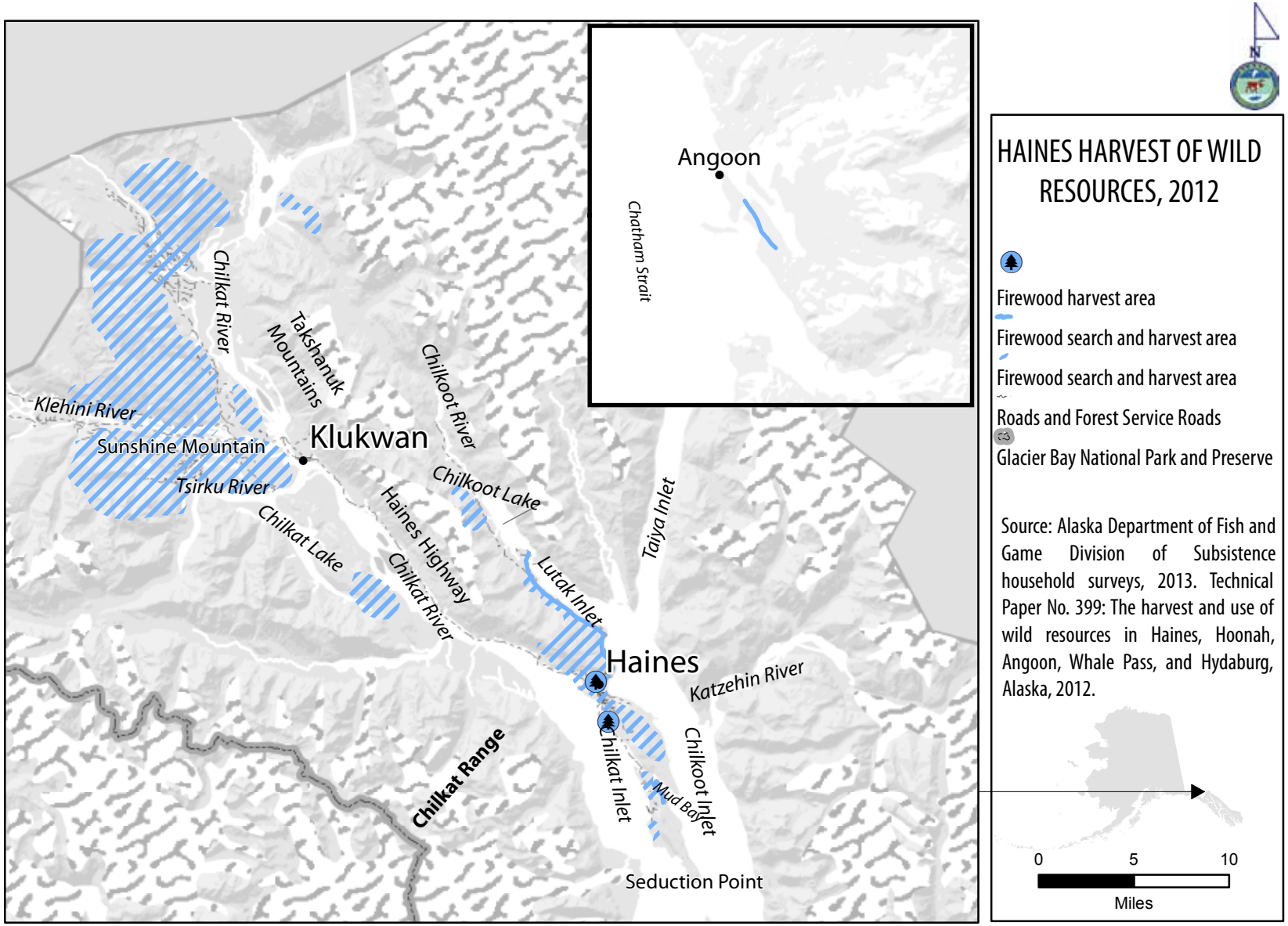


Figure 2-39.–Gathering and harvest locations of firewood, Haines, 2012.

Comparing Harvests and Uses in 2012 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their own harvests in 2 ways: whether they got more, less, or about the same amount of 12 resource categories in 2012 as in the past 5 years, and whether they got "enough" of each of the 12 resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

Together, Table 2-22 and Figure 2-40 and Figure 2-41 provide a broad overview of households' assessments of their harvests in 2012. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

Salmon is the most harvested of all subsistence resource categories used by Haines households; 45% of responding households explained that they used the same amount of salmon in 2012 as they did in previous years, 29% reported that they used less, and 16% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 31% of respondents reported that they did so due to a lack of effort (Table 2-23). Other stated reasons for using less salmon included family/personal reasons or lack of need. For those households that used more salmon in the study year, the main reason given for doing so was that the household received more or had more success fishing (Table 2-24). In Haines, 19% of respondents stated that they did not get enough salmon (Figure 2-41). When asked to evaluate the impact of not getting enough salmon, 64% described the impact as minor, 16% explained that not getting enough salmon had a major effect on their household, and 12% stated that the impact was severe (Table 2-25). Households that did not get enough salmon adapted primarily by using more commercial foods (Table 2-26).

Nonsalmon fish is the second most harvested of all subsistence resource categories used by Haines households. Assessment questions for nonsalmon fish were broken down into 3 separate assessments—one for Pacific herring eggs, one for rockfish, and one for all other nonsalmon fish. Rockfish and Pacific herring eggs will be discussed after other nonsalmon fish. Forty-seven percent of responding households explained that they used the same amount of nonsalmon fish in 2012 as they did in previous years, 34% reported that they used less, and 10% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 21% of respondents reported that they did so due to family/personal issues or a lack of effort (Table 2-23). Other stated reasons for using less nonsalmon fish included less sharing, did not need, just did not get enough, or that other resources were used. For those households that used more nonsalmon fish in the study year, the main reasons given for doing so were that the household received more, increased effort, or had more success fishing (Table 2-24). In Haines, 25% of respondents stated that they did not get enough nonsalmon fish (Figure 2-41). When asked to evaluate the impact of not getting enough nonsalmon fish, 76% described the impact as minor, 9% explained that not getting enough nonsalmon fish had a major effect on their household, and 3% stated that the impact was severe (Table 2-25). Households that did not get enough nonsalmon fish adapted primarily by using more commercial foods and replacing it with other subsistence foods (Table 2-26). Also, households received public assistance (11%) when there was not enough nonsalmon fish, which is the highest proportion of responses for this adaptation.

Rockfish was a subcategory of nonsalmon fish about which assessment questions were asked; 8% of responding households explained that they used the same amount of rockfish in 2012 as they did in previous years, 5% reported that they used less, and 3% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 33% of respondents reported that they did so due to family/personal reasons or due to less sharing (Table 2-23). Other stated reasons for using less rockfish included a lack of effort or that the household did not get enough. For those households that used more rockfish in the study year, 100% stated that they did so because they received more (Table 2-24). No further assessment questions were asked about rockfish.

Table 2-22.–Changes in household uses of resources compared to recent years, Haines, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Total households Number	Total households Percentage	Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage	Households not using Number	Households not using Percentage
Any resource	132	132	130	98.5%	110	83.3%	116	87.9%	58	43.9%	132	100.0%
All resources	**132**	**131**	**129**	**98.5%**	**53**	**40.5%**	**58**	**44.3%**	**18**	**13.7%**	**2**	**1.5%**
Salmon	132	129	116	89.9%	37	28.7%	58	45.0%	21	16.3%	13	10.1%
Pacific herring roe	132	128	25	19.5%	9	7.0%	11	8.6%	5	3.9%	103	80.5%
Rockfish	132	119	19	16.0%	6	5.0%	10	8.4%	3	2.5%	100	84.0%
All other fish	132	131	119	90.8%	44	33.6%	62	47.3%	13	9.9%	12	9.2%
Large land mammals	132	131	97	74.0%	34	26.0%	47	35.9%	16	12.2%	34	26.0%
Small land mammals	132	131	13	9.9%	2	1.5%	9	6.9%	2	1.5%	118	90.1%
Marine mammals	132	132	5	3.8%	0	0.0%	4	3.0%	1	0.8%	127	96.2%
Other birds	132	129	32	24.8%	14	10.9%	14	10.9%	4	3.1%	97	75.2%
Bird eggs	132	132	0	0.0%	0	0.0%	0	0.0%	0	0.0%	132	100.0%
Marine invertebrates	132	129	100	77.5%	44	34.1%	47	36.4%	9	7.0%	29	22.5%
Vegetation	132	127	116	91.3%	44	34.6%	55	43.3%	17	13.4%	11	8.7%
Seaweed	132	129	57	44.2%	16	12.4%	28	21.7%	13	10.1%	72	55.8%

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

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

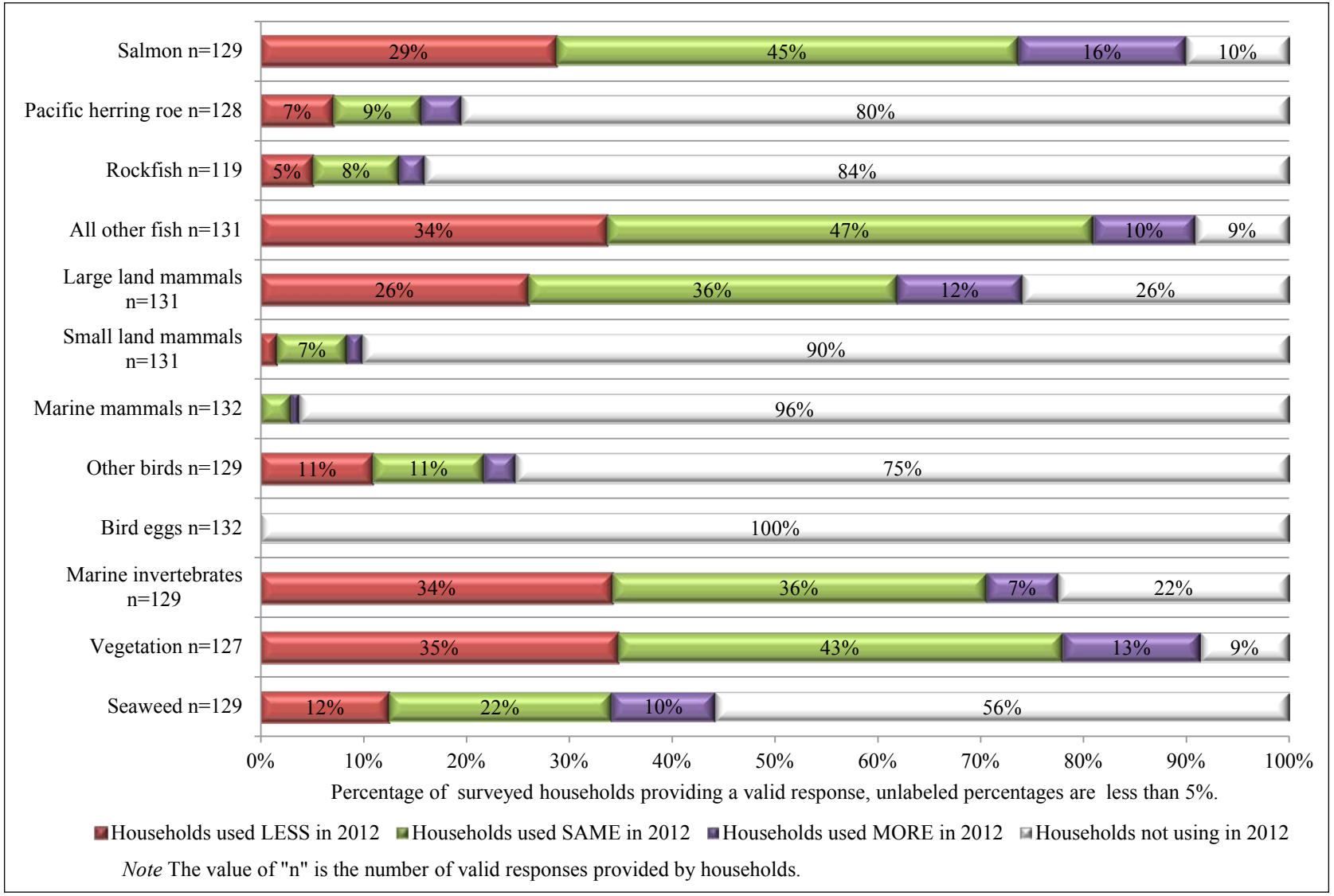


Figure 2-40.–Changes in household uses of resources compared to recent years, Haines, 2012.

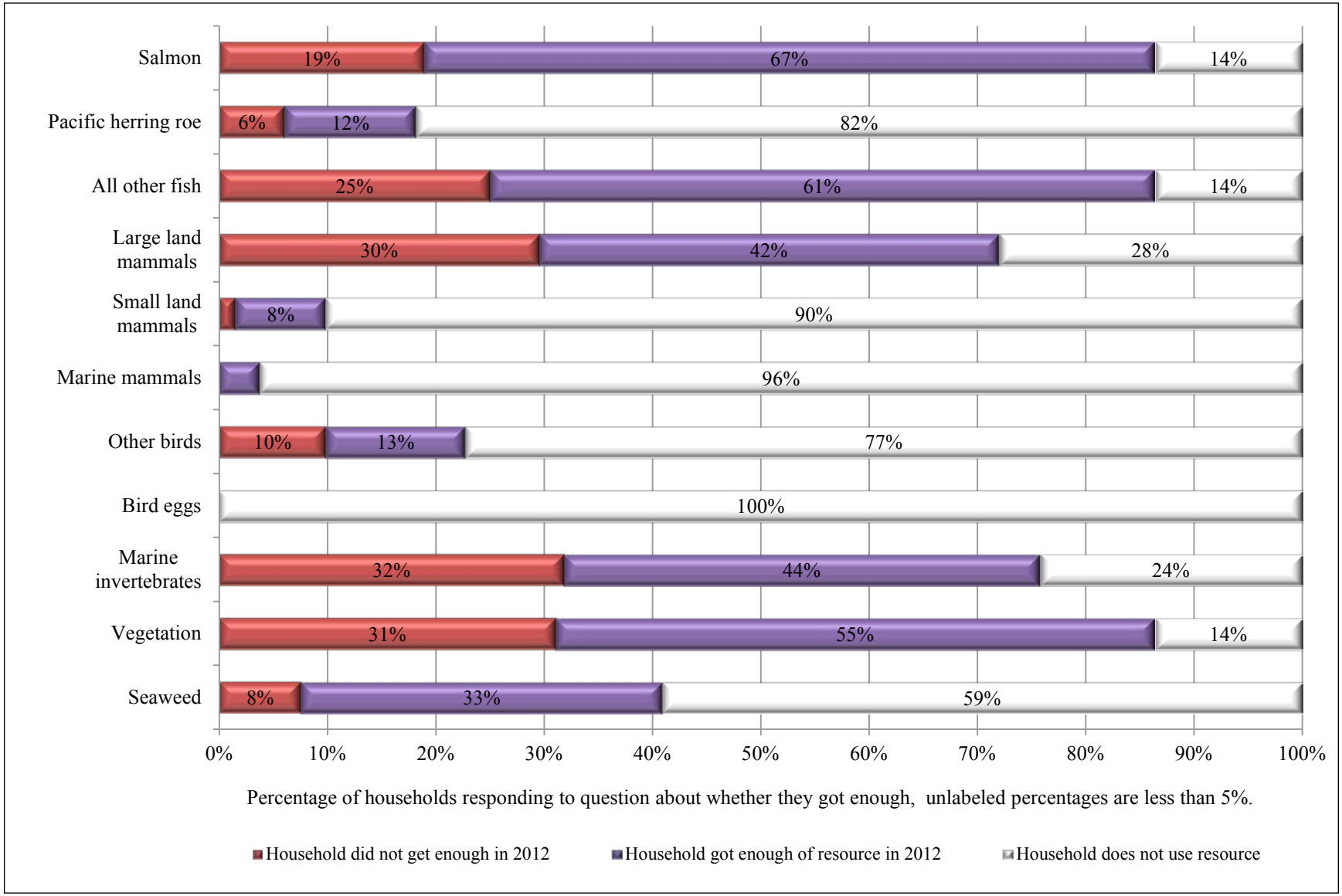


Figure 2-41.–Percentage of sampled households reporting whether they had enough resources, by resource category, Haines, 2012.

Table 2-23.–Reasons for less household uses of resources compared to recent years, Haines, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	132	105	20	19.0%	39	37%	0	0.0%	13	12%	27	26%	42	40%	10	9.5%	7	6.7%
All resources	**131**	**52**	**12**	**23.1%**	**11**	**21%**	**0**	**0.0%**	**6**	**12%**	**8**	**15%**	**10**	**19%**	**1**	**1.9%**	**2**	**3.8%**
Salmon	129	36	8	22.2%	1	3%	0	0.0%	5	14%	5	14%	11	31%	0	0.0%	0	0.0%
Pacific herring roe	128	9	2	22.2%	0	0%	0	0.0%	1	11%	4	44%	1	11%	0	0.0%	0	0.0%
Rockfish	119	6	2	33.3%	0	0%	0	0.0%	0	0%	2	33%	1	17%	0	0.0%	0	0.0%
All other fish	131	38	8	21.1%	3	8%	0	0.0%	3	8%	7	18%	8	21%	3	7.9%	0	0.0%
Large land mammals	131	30	6	20.0%	2	7%	0	0.0%	0	0%	4	13%	8	27%	6	20.0%	1	3.3%
Small land mammals	131	2	1	50.0%	1	50%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	1	50.0%
Marine mammals	132	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Other birds	129	13	2	15.4%	0	0%	0	0.0%	0	0%	0	0%	6	46%	2	15.4%	1	7.7%
Bird eggs	132	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine invertebrates	129	43	9	20.9%	14	33%	0	0.0%	6	14%	6	14%	7	16%	0	0.0%	0	0.0%
Vegetation	127	42	2	4.8%	21	50%	0	0.0%	0	0%	0	0%	6	14%	1	2.4%	3	7.1%
Seaweed	129	14	1	7.1%	1	7%	0	0.0%	1	7%	2	14%	3	21%	0	0.0%	0	0.0%

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Table 2-23.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	132	105	12	11%	19	18.1%	4	3.8%	2	1.9%	10	9.5%	24	22.9%	1	1.0%	1	1.0%
All resources	**131**	**52**	**3**	**6%**	**10**	**19.2%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**3.8%**	**9**	**17.3%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	129	36	0	0%	5	13.9%	0	0.0%	0	0.0%	1	2.8%	8	22.2%	0	0.0%	0	0.0%
Pacific herring roe	128	9	0	0%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	2	22.2%	0	0.0%	0	0.0%
Rockfish	119	6	0	0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
All other fish	131	38	3	8%	1	2.6%	0	0.0%	0	0.0%	4	10.5%	4	10.5%	0	0.0%	1	2.6%
Large land mammals	131	30	1	3%	0	0.0%	3	10.0%	0	0.0%	1	3.3%	1	3.3%	1	3.3%	0	0.0%
Small land mammals	131	2	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	132	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	129	13	1	8%	1	7.7%	1	7.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	132	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	129	43	4	9%	0	0.0%	0	0.0%	2	4.7%	1	2.3%	3	7.0%	0	0.0%	0	0.0%
Vegetation	127	42	0	0%	5	11.9%	0	0.0%	0	0.0%	2	4.8%	8	19.0%	0	0.0%	0	0.0%
Seaweed	129	14	1	7%	3	21.4%	0	0.0%	0	0.0%	0	0.0%	2	14.3%	0	0.0%	0	0.0%

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

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

Table 2-24.–Reasons for more household uses of resources compared to recent years, Haines, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	132	55	6	10.9%	1	1.8%	1	1.8%	24	43.6%	10	18.2%	16	29.1%	1	1.8%
All resources	**131**	**15**	**3**	**20.0%**	**0**	**0.0%**	**0**	**0.0%**	**5**	**33.3%**	**2**	**13.3%**	**5**	**33.3%**	**0**	**0.0%**
Salmon	129	21	3	14.3%	0	0.0%	0	0.0%	9	42.9%	2	9.5%	5	23.8%	1	4.8%
Pacific herring roe	128	3	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	119	3	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	131	13	1	7.7%	1	7.7%	0	0.0%	5	38.5%	0	0.0%	4	30.8%	0	0.0%
Large land mammals	131	16	1	6.3%	0	0.0%	0	0.0%	8	50.0%	1	6.3%	3	18.8%	0	0.0%
Small land mammals	131	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Marine mammals	132	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	129	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%
Bird eggs	132	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	129	9	0	0.0%	0	0.0%	0	0.0%	4	44.4%	0	0.0%	2	22.2%	0	0.0%
Vegetation	127	16	3	18.8%	0	0.0%	1	6.3%	1	6.3%	4	25.0%	5	31.3%	0	0.0%
Seaweed	129	12	2	16.7%	0	0.0%	0	0.0%	5	41.7%	5	41.7%	1	8.3%	0	0.0%

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Table 2-24.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	132	55	7	12.7%	0	0.0%	1	1.8%	14	25.5%	1	1.8%	1	1.8%	1	1.8%
All resources	**131**	**15**	**2**	**13.3%**	**0**	**0.0%**	**0**	**0.0%**	**5**	**33.3%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	129	21	0	0.0%	0	0.0%	0	0.0%	7	33.3%	0	0.0%	0	0.0%	0	0.0%
Pacific herring roe	128	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	119	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	131	13	1	7.7%	0	0.0%	0	0.0%	4	30.8%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	131	16	0	0.0%	0	0.0%	1	6.3%	3	18.8%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	131	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	132	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	129	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	132	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	129	9	2	22.2%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	0	0.0%
Vegetation	127	16	0	0.0%	0	0.0%	0	0.0%	3	18.8%	0	0.0%	1	6.3%	1	6.3%
Seaweed	129	12	1	8.3%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	0	0.0%

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

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

Table 2-25.–Reported impact to households reporting that they did not get enough of a type of resource, Haines, 2012.

Resource category	Sample households	Households not getting enough _____ . Valid responses[a] Number	Valid responses[a] Percentage[b]	Did not get enough Number	Did not get enough Percentage[b]	Impact to those not getting enough _____ . No response Number	No response Percentage[c]	Not noticeable Number	Not noticeable Percentage[c]	Minor Number	Minor Percentage[c]	Major Number	Major Percentage[c]	Severe Number	Severe Percentage[c]
All resources	**132**	**125**	**94.7%**	**47**	**35.6%**	**4**	**8.5%**	**1**	**2.1%**	**25**	**53.2%**	**16**	**34.0%**	**1**	**2.1%**
Salmon	132	114	86.4%	25	18.9%	2	8.0%	0	0.0%	16	64.0%	4	16.0%	3	12.0%
Pacific herring roe	132	24	18.2%	8	6.1%	–	–	–	–	–	–	–	–	–	–
All other fish	132	114	86.4%	33	25.0%	4	12.1%	0	0.0%	25	75.8%	3	9.1%	1	3.0%
Large land mammals	132	95	72.0%	39	29.5%	3	7.7%	0	0.0%	22	56.4%	13	33.3%	1	2.6%
Small land mammals	132	13	9.8%	2	1.5%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Marine mammals	132	5	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	132	30	22.7%	13	9.8%	1	7.7%	0	0.0%	12	92.3%	0	0.0%	0	0.0%
Bird eggs	132	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	132	100	75.8%	42	31.8%	4	9.5%	0	0.0%	34	81.0%	3	7.1%	1	2.4%
Vegetation	132	114	86.4%	41	31.1%	0	0.0%	0	0.0%	34	82.9%	7	17.1%	0	0.0%
Seaweed	132	54	40.9%	10	7.6%	3	30.0%	0	0.0%	6	60.0%	1	10.0%	0	0.0%

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

Note "–" indicates data are not available because the question was not asked for the resource.

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

b. Computed as the percentage of sampled households.

c. Computed as the percentage of households reporting "did not get enough."

Table 2-26.–Things households reported doing differently as the result of not getting enough of a resource, Haines, 2012.

Resource category	Valid responses	Bought/bartered		Used more commercial foods		Replaced with other subsistence foods		Asked others for help		Made do without	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**38**	**3**	**7.9%**	**34**	**89.5%**	**3**	**7.9%**	**0**	**0.0%**	**1**	**2.6%**
Salmon	17	1	5.9%	15	88.2%	1	5.9%	1	5.9%	2	11.8%
All other fish	18	1	5.6%	11	61.1%	7	38.9%	0	0.0%	0	0.0%
Large land mammals	33	0	0.0%	28	84.8%	6	18.2%	0	0.0%	0	0.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	6	0	0.0%	4	66.7%	1	16.7%	0	0.0%	1	16.7%
Bird eggs	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	19	1	5.3%	10	52.6%	8	42.1%	0	0.0%	1	5.3%
Vegetation	28	0	0.0%	25	89.3%	1	3.6%	0	0.0%	3	10.7%
Seaweed	4	0	0.0%	1	25.0%	1	25.0%	0	0.0%	1	25.0%

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Table 2-26.–Continued.

Resource category	Valid responses	Increased effort to harvest		Obtained food from other sources		Got a job		Got public assistance		Other reasons	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**38**	**0**	**0.0%**	**0**	**0.0%**	**1.00**	**2.6%**	**2**	**5.3%**	**1**	**2.6%**
Salmon	17	0	0.0%	0	0.0%	0.00	0.0%	1	5.9%	0	0.0%
All other fish	18	0	0.0%	1	5.6%	0.00	0.0%	2	11.1%	0	0.0%
Large land mammals	33	0	0.0%	0	0.0%	0.00	0.0%	1	3.0%	1	3.0%
Small land mammals	0	0	0.0%	0	0.0%	0.00	0.0%	0	0.0%	0	0.0%
Marine mammals	0	0	0.0%	0	0.0%	0.00	0.0%	0	0.0%	0	0.0%
Other birds	6	0	0.0%	0	0.0%	0.00	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	0.0%	0	0.0%	0.00	0.0%	0	0.0%	0	0.0%
Marine invertebrates	19	0	0.0%	0	0.0%	0.00	0.0%	1	5.3%	0	0.0%
Vegetation	28	1	3.6%	1	3.6%	0.00	0.0%	0	0.0%	0	0.0%
Seaweed	4	1	25.0%	0	0.0%	0.00	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.
Note The sum of the percentages may not add to 100% since households may give more than one response.

Pacific herring eggs was another subcategory of nonsalmon fish about which assessment questions were asked. Nine percent of responding households explained that they used the same amount of Pacific herring eggs in 2012 as they did in previous years, 7% reported that they used less, and 4% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 44% of respondents reported that they did so due to less sharing of the resource (Table 2-23). Other stated reasons for using less herring eggs included a lack of need or family/personal reasons. For those households that used more herring eggs in the study year, all responded that the reason was that they received more of the resource (Table 2-24). In Haines, 6% of respondents stated that they did not get enough herring eggs (Figure 2-41). No further assessment questions were asked about Pacific herring eggs.

Large land mammals is another of the most harvested of all subsistence resource categories used by Haines households. Approximately one-third (36%) of responding households explained that they used the same amount of large land mammals in 2012 as they did in previous years, 26% reported that they used less, and 12% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 27% of respondents reported that they did so due to a lack of effort (Table 2-23). Other stated reasons for using less large land mammals included family/personal reasons, unsuccessful hunting, and less sharing. For those households that used more large land mammals in the study year, the main reasons given for doing so was that the household received more, increased effort, or had more success hunting (Table 2-24). In Haines, 30% of respondents stated that they did not get enough large land mammals (Figure 2-41). When asked to evaluate the impact of not getting enough large land mammals, 56% described the impact as minor, 33% explained that not getting enough large land mammals had a major effect on their household, and 3% stated that the impact was severe (Table 2-25). Households that did not get enough large land mammals adapted primarily by using more commercial foods or replacing it with other subsistence foods (Table 2-26).

Marine invertebrates is a less harvested but still important subsistence resource category used by Haines households. Approximately one-third (36%) of responding households explained that they used the same amount of marine invertebrates in 2012 as they did in previous years, 34% reported that they used less, and 7% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 33% of respondents reported that they did so because the resources were less available and 21% stated it was due to family/personal reasons (Table 2-23). Other stated reasons for using less marine invertebrates included a lack of effort, a lack of equipment, or less sharing. For those households that used more marine invertebrates in the study year, the main reason given for doing so was that the household received more or increased effort to harvest these resources (Table 2-24). In Haines, 32% of respondents stated that they did not get enough marine invertebrates (Figure 2-41). When asked to evaluate the impact of not getting enough marine invertebrates, 81% described the impact as minor, 7% explained that not getting enough marine invertebrates had a major effect on their household, and 2% stated that the impact was severe (Table 2-25). Households that did not get enough marine invertebrates adapted by using more commercial foods, replacing them with other subsistence foods, buying or bartering for them, making do without, or receiving public assistance (Table 2-26).

Vegetation is one of the most used of all subsistence resource categories used by Haines households. Based on valid responses to the question, 43% of responding households explained that they used the same amount of vegetation in 2012 as they did in previous years, 35% reported that they used less, and 13% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 50% of respondents reported that they did so because the resources were less available (Table 2-23). Other stated reasons for using less vegetation included a lack of need, a lack of effort, or working/no time. For those households that used more vegetation in the study year, the main reasons given for doing so was that the household increased effort, needed more, had more success harvesting, or that the resource was more available (Table 2-24). In Haines, 31% of respondents stated that they did not get enough vegetation (Figure 2-41). When asked to evaluate the impact of not getting enough vegetation, 83% described the impact as minor, and 17% explained that not getting enough vegetation had a major effect on their household (Table 2-25). Households that did not get enough vegetation adapted primarily by using more commercial foods, or making do without (Table 2-26).

Although seaweed is a type of vegetation, it was given a separate resource category for these assessment questions because of the widespread use and importance of seaweed to Southeast Alaska residents. Almost one-quarter (22%) of responding households explained that they used the same amount of seaweed in 2012 as they did in previous years, 12% reported that they used less, and 10% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 21% of respondents reported that they did so because they were working/had no time or because of a lack of effort (Table 2-23). Other stated reasons for using less seaweed included less sharing and a lack of need. For those households that used more seaweed in the study year, the main reasons given for doing so was the household needed more or received more (Table 2-24). In Haines, 8% of respondents stated that they did not get enough seaweed (Figure 2-41). When asked to evaluate the impact of not getting enough seaweed, 60% described the impact as minor and 10% explained that not getting enough seaweed had a major effect on their household (Table 2-25). Households that did not get enough seaweed adapted by using more commercial foods, making do without, replacing it with other subsistence foods, or increasing harvest efforts (Table 2-26).

Birds and bird eggs is one of the least harvested and used of all subsistence resource categories used by Haines households. No households reported the use of bird eggs in 2012. For birds, 11% of responding households explained that they used the same amount in 2012 as they did in previous years, 11% reported that they used less, and 3% said they used more (Table 2-22; Figure 2-40). When asked why they used less, 46% of respondents reported that they did so due to a lack of effort (Table 2-23). Other stated reasons for using less birds included family/personal reasons or unsuccessful hunting. For those households that used more birds in the study year, all stated it was due to increased effort (Table 2-24). In Haines, 10% of respondents stated that they did not get enough birds (Figure 2-41). When asked to evaluate the impact of not getting enough birds, 92% described the impact as minor (Table 2-25). Households that did not get enough birds adapted by using more commercial foods, replacing them with other subsistence foods, or making do without the resource (Table 2-26).

Small land mammals is also one of the least harvested and used of all the subsistence resource categories used by Haines households. Out of the responding households, 7% explained that they used the same amount of small land mammals in 2012 as they did in previous years, 2% reported that they used less, and 2% said they used more (Table 2-22; Figure 2-40). When asked why they used less, one-half of the respondents reported that they did so due to family/personal issues, due to resources being less available, and due to the weather/environment (Table 2-23). For those households that used more small land mammals in the study year, the main reason given for doing so was that the household increased effort (Table 2-24). In Haines, 2% of respondents stated that they did not get enough small land mammals (Figure 2-41). When asked to evaluate the impact of not getting enough small land mammals, 100% described the impact as minor (Table 2-25). Households did not report doing anything differently if they did not get enough small land mammals (Table 2-26).

Marine mammals were not harvested by Haines households in 2012, but were used by a small percentage. Based on valid responses to the question, 3% of responding households explained that they used the same amount of marine mammals in 2012 as they did in previous years and 1% said they used more (Table 2-22; Figure 2-40). Those households that used more marine mammals in the study year reported receiving more as the reason (Table 2-24). In Haines, no respondents stated that they did not get enough marine mammals (Figure 2-41).

Considering all subsistence resource categories used by Haines households combined, 44% of responding households explained that they used the same amount of all subsistence resources in 2012 as they did in previous years, 41% reported that they used less, and 14% said they used more (Table 2-22). When asked why they used less, 23% of respondents reported that they did so due to family or personal issues (Table 2-23). Other major reasons stated for using less included resources being less available, a lack of effort, working/no time, no need, and less sharing. For those households that used more wild resources in the study year, reported reasons included increased effort, received more, and greater harvest success (Table 2-24). In Haines, 36% of respondents stated that they did not get enough wild resources (Table 2-25). When asked to evaluate the impact of not getting enough wild resources, 2% described it as not noticeable, 53% described

the impact as minor, 34% explained that not getting enough wild resources had a major effect on their household, and 2% stated that the impact was severe. Households that did not get enough wild resources adapted by using more commercial foods, replacing foods with other subsistence foods, buying/bartering, making do without, or received public assistance or got a job (Table 2-26).

Households that reported not having enough resources were asked which resources they needed. Responses to these questions are presented in Table 2-27. The highest percentage of households reported needing more moose. Moose was followed by Pacific halibut, then blueberries, shrimp, Dungeness crab, sockeye salmon, and berries in general. Many other resources were needed by smaller percentages of households, but no other resource was needed by more than 10% of all households.

Table 2-27.–Resources that households reported needing, Haines, 2012.

Resource	Households needing	Percentage of households [a]
All resources	**2**	**1.5%**
Fish	6	4.5%
Salmon	7	5.3%
Coho salmon	2	1.5%
Chinook salmon	6	4.5%
Sockeye salmon	19	14.4%
Nonsalmon fish	3	2.3%
Pacific cod	1	0.8%
Pacific halibut	30	22.7%
Perch	1	0.8%
Rockfish	2	1.5%
Sablefish (black cod)	1	0.8%
Cutthroat trout	2	1.5%
Large land mammals	9	6.8%
Black bear	3	2.3%
Caribou	5	3.8%
Deer	12	9.1%
Elk	2	1.5%
Mountain goat	7	5.3%
Moose	32	24.2%
Snowshoe hare	1	0.8%
Marten	1	0.8%
Ducks	3	2.3%
Geese	2	1.5%
Grouse	6	4.5%
Ptarmigan	1	0.8%
Clams	2	1.5%
Crabs	12	9.1%
Dungeness crab	22	16.7%
King crab	3	2.3%
Shrimp	24	18.2%
Berries	14	10.6%
Blueberry	25	18.9%

-continued-

Table 2-27.–Page 2 of 2

Resource	Households needing	Percentage of households [a]
Highbush cranberry	1	0.8%
Currants	1	0.8%
Raspberry	6	4.5%
Salmonberry	3	2.3%
Strawberry	2	1.5%
Thimbleberry	2	1.5%
Other beach greens	1	0.8%
Fiddlehead ferns	2	1.5%
Unknown mushrooms	5	3.8%
Unknown greens from land	1	0.8%
Seaweed/kelp	4	3.0%
Red laver (dulse)	2	1.5%
Bladder wrack	1	0.8%
Seaweed/kelp used for fertilizer	1	0.8%
Unknown seaweed	1	0.8%
Wood	3	2.3%

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

a. Computed as the percentage of sampled households.

Harvest Data

Changes in the harvest of resources by Haines residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest data was obtained in Haines in 1983 (Mills et al. 1984), 1987, and 1996.[6] These comprehensive study years differed in their methods, making clear comparisons across years difficult. In 2012, the sample population was confined to residents of the city of Haines and in Mud Bay. The previous 3 surveys used a broader geographic boundary, which included Haines as well as the nearby communities of Lutak, Covenant Life, Mosquito Lake, and Mud Bay. The study year was often the calendar year, but in 1983 the study year went from September to August. Although the data from 2012 are not directly comparable to previous studies, general trends can be discerned from the years of data collection in total per capita harvests and in the harvest composition.

A comparison of the per capita harvests of these study years for Haines shows a fluctuation in overall subsistence resource harvests by community residents over the 29-year period. For 1983, the harvest estimate from the survey was a per capita harvest of 126 lb of wild resources (Table 2-28). In 1987, this amount decreased to 97 lb of wild resources per capita harvested, but in 1996 wild resource harvests more than doubled to an estimated 196 lb per capita. In 2012, harvests by the community, at 135 lb per capita, declined back to 1983 harvest levels. The composition of harvests by resource category also shifted somewhat. Figure 2-42 summarizes the contribution each major resource category made to the community's wild food harvest for the 4 study years.

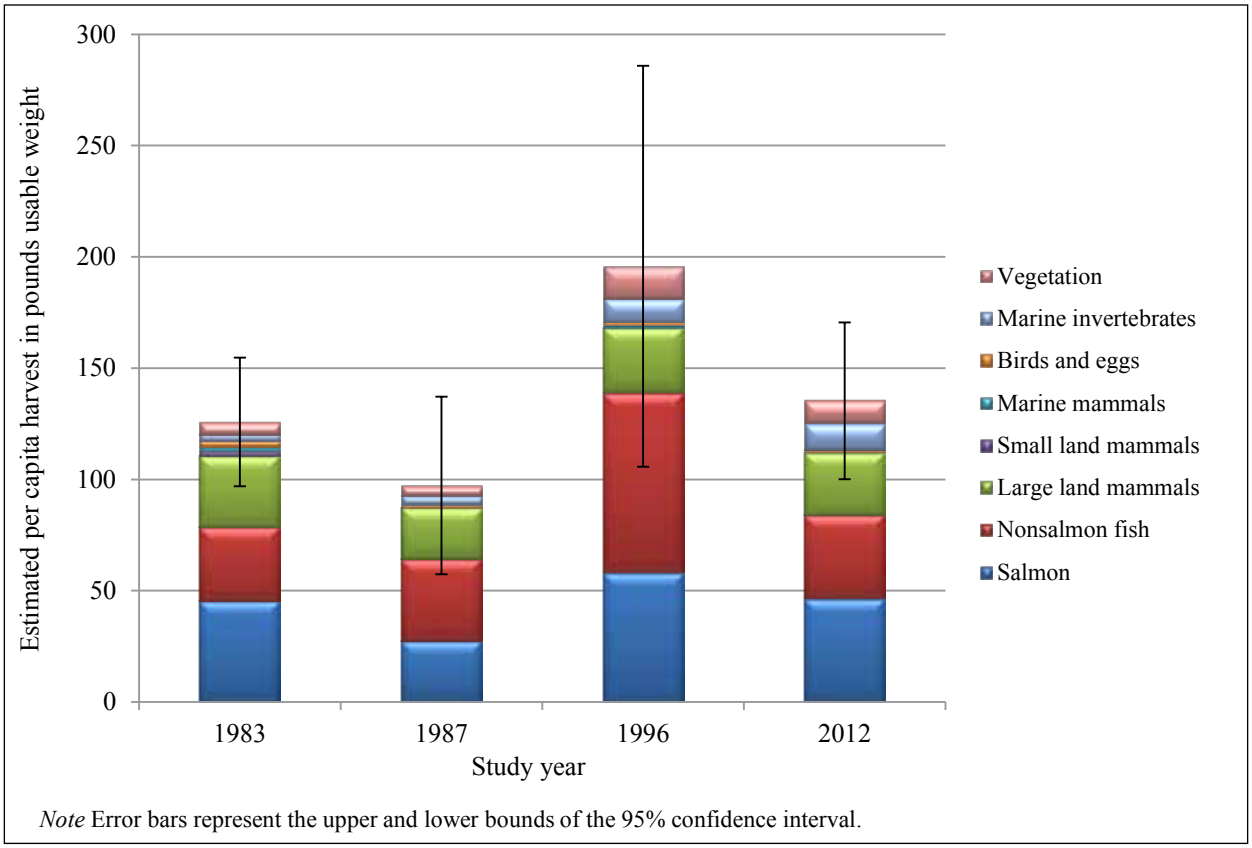
When compared to the 1983, 1987, and 2012 study years, an above-average level of harvest for nonsalmon fish during 1996 seems to have made the largest contribution to that year's 196 lb per capita resource harvest. In 1996, Haines residents harvested 81 lb per capita of nonsalmon fish compared to per capita harvests of 33 lb in 1983, 37 lb in 1987, and 38 lb in 2012. One explanation for the higher harvest of nonsalmon fish in 1996 was that there had been a good eulachon run, since 107,000 lb of the 174,000 lb harvest was of eulachon (CSIS).

6. Results for all 3 previous comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): http://www.adfg.alaska.gov/sb/CSIS/.

Table 2-28.–Estimated per capita harvest in pounds usable weight, Haines, 1983, 1987, 1996, and 2012.

	Estimated harvest in pounds usable weight											
	1983			1987			1996			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All resources	**240,029.0**	**125.8**	**23.0%**	**157,925.0**	**97.3**	**41.0%**	**421,430.0**	**195.8**	**46.0%**	**259,955.7**	**135.3**	**26.0%**
Salmon	87,021.0	45.6		44,732.0	27.6		125,619.0	58.4		89,526.0	46.6	
Nonsalmon fish	63,485.0	33.3		59,771.0	36.8		173,947.0	80.8		72,534.5	37.8	
Large land mammals	60,713.0	31.8		37,147.0	22.9		62,481.0	29.0		53,826.9	28.0	
Small land mammals	4,607.0	2.4		0.0	0.0		330.0	0.2		356.3	0.2	
Marine mammals	2,627.0	1.4		103.0	0.1		2,135.0	1.0		0.0	0.0	
Birds and eggs	5,914.0	3.1		2,033.0	1.3		3,009.0	1.4		1,739.2	0.9	
Marine invertebrates	5,293.0	2.8		6,563.0	4.0		22,599.0	10.5		22,836.8	11.9	
Vegetation	10,369.0	5.4		7,576.0	4.7		31,309.0	14.5		19,136.0	10.0	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.



Note Error bars represent the upper and lower bounds of the 95% confidence interval.

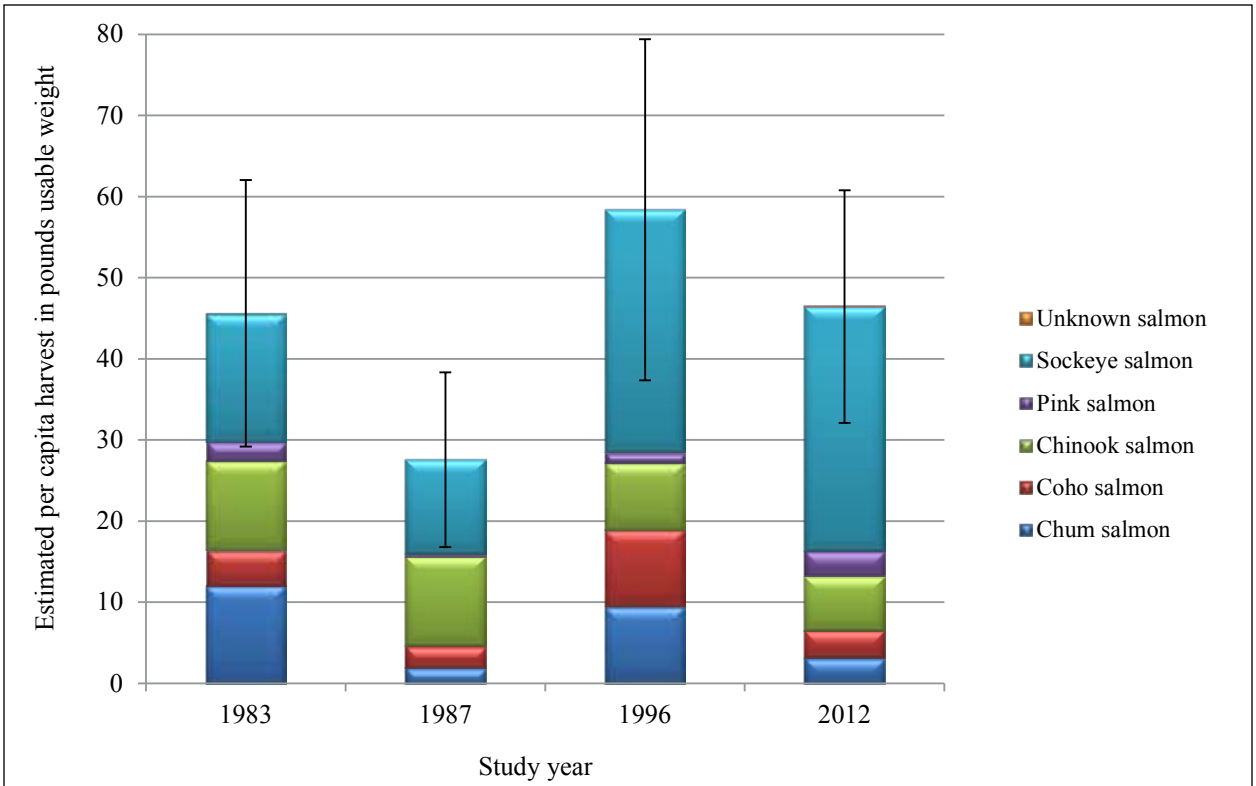
Figure 2-42.–Composition of harvest by resource category in pounds usable weight, Haines, 1983, 1987, 1996, and 2012.

In 1996, Haines residents harvested 58 lb per capita of salmon compared to 46 lb per capita in 1983, 28 lb per capita in 1987, and 47 lb per capita in 2012 (Table 2-28). The composition of the salmon harvest during these years changed (Figure 2-43). Sockeye salmon harvests nearly doubled between 1983 and 2012 while chum salmon harvests in 2012 were only one-quarter of what they were in 1983. Per capita harvests of Chinook salmon decreased from 11 lb in 1983 and 1987 to 8 lb in 1996 and 7 lb in 2012; overall Chinook salmon harvests show the least variability during these study years. Harvests of coho salmon spiked in 1996, more than doubling from the 1983 and 1987 estimated harvests, before declining again in 2012. Many individuals who had resided in Haines for more than 10 years mentioned how many more individuals were participating in subsistence salmon harvesting with each new year.

Harvest survey data for Haines show that large land mammal harvests have remained relatively stable over the 29-year period while both marine invertebrate and vegetation harvests have increased (Figure 2-42). In 1983, Haines residents harvested 3 lb per capita of marine invertebrates; per capita harvests continued to increase in each study year with the 2012 survey estimating a per capita harvest of 12 lb. In 1983 and 1987 Haines residents harvested 5 lb per capita of vegetation, but in 1996 vegetation harvests increased to 15 lb per capita before decreasing to 10 lb per capita in 2012.

Current and Historical Harvest Areas

Mapped data from previous study years is not available for a comparison to current harvest and use areas.



Note Error bars represent the upper and lower bounds of the 95% confidence interval.

Figure 2-43.–Composition of salmon harvest by species in pounds usable weight, Haines, 1983, 1987, 1996, and 2012.

Local Comments and Concerns

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Haines. Some households did not offer any additional information during the survey interviews, so not all households are represented in the summary. In addition, any concerns or comments expressed during the review of the preliminary data by selected community residents and area managers have been included in the summary.

Fish

Comments on fish and marine invertebrates composed the majority of comments during the surveys in Haines. Every type of fishing that takes place in the community was the focus of comments; concerns about an excessive commercial harvest causing a decline in salmon populations were voiced, the charter sport fishing fleet was noted as making it difficult to get fish during the summer, and the subsistence fishermen—particularly those fishing under federal subsistence Pacific halibut regulations—were seen as taking advantage of the system by either taking too many fish or qualifying for the fishery when they should not. There was also concern about non-consumptive tourist activities affecting salmon spawning grounds. In terms of fish populations, the most concern was expressed for king (Chinook) salmon, which were noted as getting skinny and having decreased runs, but all salmon were of concern. Some residents also worried about the health of the eulachon run. In contrast, the only comments on Pacific halibut populations were that it was healthy and there shouldn't be restrictions on fishing for halibut. Finally, there were a few comments about whether there was a benefit to the community from hatchery fish and that such fish are mushy. There were also several requests for a regulation change to allow subsistence salmon fishing in Mud Bay.

Large Land Mammals

Many comments were received about moose hunting and moose populations. Residents expressed their feelings that there was a lot of hunting pressure and moose populations were declining. Out of season harvesting of moose and bear was seen as a problem by at least one resident. Regulations regarding moose hunting were also seen as problematic. Comments were heard that the moose season was too early in the year and that the regulations targeting the bigger moose are weakening the population. Some residents felt the current Tier II regulations guiding moose hunting opportunities were not fair. Besides hunting pressure, moose populations are thought to be experiencing difficulties because of the number of bears preying upon moose and, because logging has largely ended, that the habitat is not as good for moose populations.

Small Land Mammals/Furbearers

No comments were offered about small land mammals or furbearers.

Birds and Eggs

No comments were offered on birds or bird eggs.

Marine Invertebrates

In 2012, many residents said they experienced difficulty harvesting Dungeness crab for subsistence because of the large amount of commercial Dungeness crab pots and the lack of crab in the areas they had traditionally fished for subsistence. This concern was noted as occurring in recent years when more commercial crab boats from other parts of Southeast Alaska were making their way to Haines. People were most concerned with the Dungeness crab stocks in the immediate vicinity of Haines being overfished.

Comments were also offered on the shrimp resource availability. Similar to crab, the commercial fleet was seen as having a negative effect on local shrimp stocks. The regulations for commercial fishing of shrimp did not make sense to some residents since the regulations allowed for commercial harvesting in October when shrimp are full of eggs. There was concern that harvesting these shrimp would hurt the populations in the long term.

Vegetation

Few comments were offered concerning vegetation. Some residents remarked it had been a bad year for berries. Another mentioned good seaweed harvesting beaches seemed harder to find. Some residents were concerned about potential restrictions to firewood gathering. Especially as fuel prices go up, this resident uses more firewood to heat his home and doesn't want to see that opportunity decline.

General Concerns

Increasing populations of sea otters was highlighted as a growing problem that was affecting other resources. Gold mining was called out for concern about its effects on habitat and subsistence. Other habitat effects of concern were from oil spills or other pollution, and whether these could affect human health as well. A few respondents noted changes in the weather, the disappearance of glaciers, and general concerns with the climate. There were a number of comments about the importance of subsistence to residents and their desire to see it continue.

ACKNOWLEDGMENTS

ADF&G Division of Subsistence would like to thank local research assistants Rebecca Wilson, Laurie Mastrella, Melina Shields, Gina St. Clair, Michelle Webb, Jedediah Blum-Evitts, Arthur Woodard, and Stanley Hotch for their valuable help in facilitating the Haines portion of this research.

3. HOONAH

Joshua T. Ream and Lauren A. Sill

Community Background

Hoonah is a predominantly Tlingit community located about 40 air miles west of Juneau at the entrance of Port Frederick in the northeastern part of Chichagof Island. It is situated within the Tongass National Forest and across Icy Strait from Glacier Bay National Park and Preserve. Hoonah is the principal village for the *Huna*, a Tlingit tribe that has lived in the Glacier Bay and Icy Strait area for hundreds of years. Swanton (1908) listed 6 main Huna villages at the time of contact with Euro-Americans but did not indicate locations for all of them. Dozens of camps and settlements have been documented through archaeological surveys (Ackerman 1968) and through anthropological research to record Huna Tlingit possessory rights (Goldschmidt and Haas 1998).[1] Oral history establishes the presence of Huna Tlingit in the Icy Straits and Cross Sound area hundreds of years ago. The oral history of Glacier Bay documents events surrounding the last glacial advance at around 1700. At that time there were 5 clan houses within Glacier Bay, all of which were abandoned and covered by the advancing ice. Most of the inhabitants moved to the present site of Hoonah at that time (James 1987; Marvin 1987). Although glacial scouring has removed all sign of human habitation in many parts of the Huna territory and the rebound of land following glaciation coupled with the thick cover of vegetation in Southeast Alaska has made archaeological sites difficult to locate, human occupation of this area is well represented in the archaeological record. In addition to the numerous sites of relatively recent Tlingit occupation, the Ground Hog Bay site provides a record of much earlier habitation, extending at least 9,000 years BCE (Ackerman 1968).

The commercial development of Hoonah revolved around fur, fishing, and timber. In 1880, the Northwest Trading Company built a store in Hoonah. Huna Tlingit participated in the fur trade and exerted some control over the trade moving through Chatham Strait and Lynn Canal between Sitka and Interior Alaska communities. The fur trade continued to be of some importance after the purchase of Alaska in 1867 (Schroeder and Kookesh 1990). Major commercial fisheries and canneries were established in the area and used by Hoonah residents from 1880 to 1910 (Cobb 1930; Moser 1899; Schroeder and Kookesh 1990). In the space of a few decades, fishing changed from being solely a subsistence economic activity to being a politically dominant commercial activity that would change both Huna Tlingits' control over their traditional territory, and, later, their ability to harvest subsistence fish resources (see Cobb 1930; Langdon 1977; Price 1990; Schroeder and Kookesh 1990; Thornton et al. 1990).[2] After World War I, Huna Tlingit became more involved in the commercial fishing industry, both as fishermen and as cannery workers (Schroeder and Kookesh 1990). Hoonah developed a strong commercial fishing fleet focused on seining and hand and power trolling for salmon. Commercial fishing for salmon and Pacific halibut is still an important aspect of the Hoonah economy today. The most recent period of timber harvesting activity began in 1980. Previous activity was much more limited in scope and scale to the contemporary large-scale, industrial activity that occurs on both U.S. Forest Service (USFS) lands and Native corporation lands. To facilitate timber harvest, an extensive network of logging roads was built around Hoonah. These roads have changed how Hoonah residents access some subsistence resources, as well as how non-local people hunt and use the land. Active logging has been greatly reduced in recent years, but the effects of past timber harvest and road building continue to be felt in Hoonah today.

1. Note that Goldschmidt and Haas (1998) is a reprint with an introduction by Thomas Thornton. The report was first issued in 1946 as a federal government Indian land claims document titled "Possessory Rights of the Natives of Southeast Alaska."

2. See also: Cooley, Richard Allen. "Decline of Alaska Salmon: A Case Study in Resource Conservation Policy." Unpublished dissertation, University of Michigan, Department of Political Science and Public Administration, 1962.

The administrative history of Hoonah begins with missionaries settling in the town in 1881 and establishing the Presbyterian Home Mission church and school. By 1887, 450 to 500 people were wintering in the village. A post office was established in 1901 when the village was officially named Hoonah. In 1944, a disastrous fire burned many homes in Hoonah and destroyed the traditional ceremonial costumes and keepsakes of the residents. The town was rebuilt and the city of Hoonah incorporated in 1946. While the timber and commercial fishing industries are still important today, tourism has been growing as an economic driver. One of the original canneries, the Hoonah Packing Company, has become Icy Strait Point, which is a tourist destination that employs many local residents. Services offered in Hoonah include a post office, USFS Ranger District, a clinic run by Southeast Alaska Regional Health Consortium (SEARHC), police and volunteer fire/EMS support, and an Alaska State Troopers post. Both a city government and tribal government operate in Hoonah along with a K–12 school. Amenities available include a grocery store, multiple lodges and bed and breakfasts, coffee shops/cafes, and a bar. Access to Hoonah is limited to air and water transportation methods. The State of Alaska owns and operates an airport with an asphalt runway as well as a seaplane base, both of which are served by small scheduled aircraft from Juneau. In an average year, the airport is closed 20–30 days due to weather. There is a terminal for the Alaska Marine Highway System with weekly service to Juneau and Angoon. A State-owned harbor and dock are also available. Freight arrives in Hoonah by barge or plane.

Population Estimates and Demographic Information

This study estimated the population of Hoonah during the 2012 study year at 732 residents living in 280 households (Table 3-1).The state of Alaska's population estimate for Hoonah in the same year was 775 while the 5-year American Community Survey (ACS) estimated the population at 694 individuals, which is slightly lower than this study's findings (Figure 3-1; Table 3-1). Differences in the estimates likely are a result of differences in survey methods and timing of the population survey. The population of Hoonah has remained relatively stable over the past 3 decades, exhibiting a slight increase until 2000, followed by a decrease through 2010. The decline may have been due, at least in part, to the closure of the cannery at Icy Point in 1999.[3]

3. Icy Strait Point. "About us: Our history—The Story of Icy Strait Point, Hoonah Alaska." http://www.icystraitpoint.com/AboutUs/History (accessed June 6, 2014).

Table 3-1.–Population estimates, Hoonah, 2010 and 2012.

	Census (2010)	5-year American Community Survey (2008–2012)	This study (2012)
Total population			
Households	305	318	280.0
Population	760	694	732.1
Alaska Native			
Population	502	438	468.2
Percentage	66.1%	63.1%	63.9%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey 5-year survey estimate; and ADF&G Division of Subsistence household surveys, 2013, for 2012 estimate.

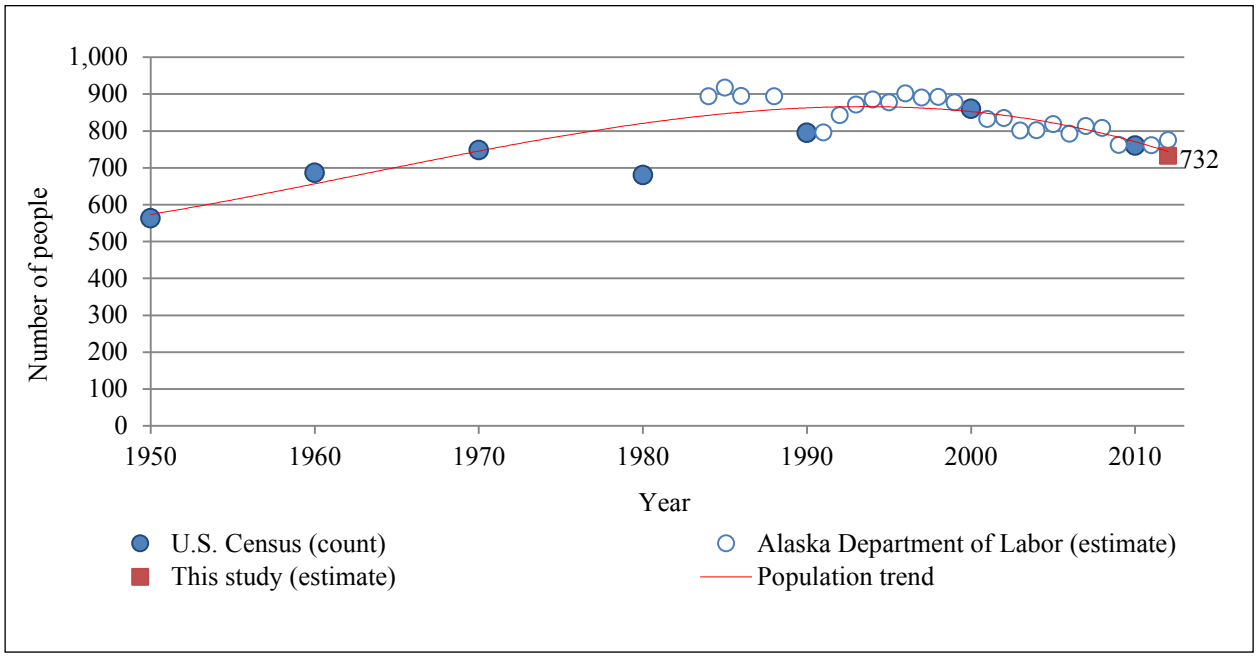


Figure 3-1.–Historical population estimates, Hoonah, 1950–2012.

Table 3-2.–Sample achievement, Hoonah, 2012.

	Community
	Hoonah
Number of dwelling units	280
Interview goal	112
Households interviewed	122
Households failed to be contacted	41
Households declined to be interviewed	36
Households moved or occupied by nonresident	0
Total households attempted to be interviewed	158
Refusal rate	22.8%
Final estimate of permanent households	280
Percentage of total households interviewed	43.6%
Interview weighting factor	2.30
Sampled population	319
Estimated population	732.1

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

Table 3-3.–Demographic characteristics, Hoonah, 2012.

Characteristics	Community Hoonah
Household size	
Mean	2.6
Minimum	1
Maximum	10
Age	
Mean	40.1
Minimum[a]	0
Maximum	88
Median	45
Length of residency	
Total population	
Mean	26.1
Minimum[a]	0
Maximum	88
Heads of household	
Mean	33.8
Minimum[a]	0
Maximum	88
Alaska Native households[b]	
Number	192.8
Percentage	68.9%

Source ADF&G Division of Subsistence household surveys, 2013.
a. A minimum age of 0 (zero) is used for infants who are less than 1 year of age.
b. The estimated number of households in which at least 1 head of household is Alaska Native.

A total of 122 households were sampled in this study, or 44% of the estimated community households (Table 3-2). The mean household size was 2.6 individuals, with the smallest household including 1 individual and the largest containing 10 individuals (Table 3-3). The mean age of Hoonah residents was 40 years old and the mean length of residency was 26 years. The overall gender profile of residents is fairly even with 54% males and 46% females (Table 3-4; Figure 3-2). Interestingly, 73% of individuals between the age of 0 and 4 are male. The most populated age cohort for both males and females was 55–64, and the least populated age cohort was 80 years and older.

Among the 732 residents estimated in this study, 64% self-identify as Alaska Native (Table 3-1). Approximately 46% of the total population was born in Hoonah, followed by 29% born in the United States outside of Alaska, 11% born in Juneau, 3% born in a foreign country, and smaller percentages elsewhere in Alaska (Table 3-5). However, 41% of household heads were born in the United States outside of Alaska and a slightly smaller percentage, 36%, were born in Hoonah (Table 3-6).

Table 3-4.–Population profile, Hoonah, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	36.7	9.4%	9.4%	13.8	4.1%	4.1%	50.5	6.9%	6.9%
5–9	25.2	6.4%	15.8%	25.2	7.4%	11.5%	50.5	6.9%	13.8%
10–14	23.0	5.8%	21.6%	25.2	7.4%	18.9%	48.2	6.6%	20.4%
15–19	25.2	6.4%	28.1%	11.5	3.4%	22.3%	36.7	5.0%	25.4%
20–24	16.1	4.1%	32.2%	18.4	5.4%	27.7%	34.4	4.7%	30.1%
25–29	20.7	5.3%	37.4%	20.7	6.1%	33.8%	41.3	5.6%	35.7%
30–34	13.8	3.5%	40.9%	11.5	3.4%	37.2%	25.2	3.4%	39.2%
35–39	20.7	5.3%	46.2%	16.1	4.7%	41.9%	36.7	5.0%	44.2%
40–44	18.4	4.7%	50.9%	16.1	4.7%	46.6%	34.4	4.7%	48.9%
45–49	20.7	5.3%	56.1%	18.4	5.4%	52.0%	39.0	5.3%	54.2%
50–54	23.0	5.8%	62.0%	45.9	13.5%	65.5%	68.9	9.4%	63.6%
55–59	39.0	9.9%	71.9%	27.5	8.1%	73.6%	66.6	9.1%	72.7%
60–64	50.5	12.9%	84.8%	39.0	11.5%	85.1%	89.5	12.2%	85.0%
65–69	20.7	5.3%	90.1%	23.0	6.8%	91.9%	43.6	6.0%	90.9%
70–74	20.7	5.3%	95.3%	16.1	4.7%	96.6%	36.7	5.0%	95.9%
75–79	9.2	2.3%	97.7%	2.3	0.7%	97.3%	11.5	1.6%	97.5%
80–84	2.3	0.6%	98.2%	0.0	0.0%	97.3%	2.3	0.3%	97.8%
85–89	2.3	0.6%	98.8%	4.6	1.4%	98.6%	6.9	0.9%	98.7%
90–94	0.0	0.0%	98.8%	0.0	0.0%	98.6%	0.0	0.0%	98.7%
95–99	0.0	0.0%	98.8%	0.0	0.0%	98.6%	0.0	0.0%	98.7%
100–104	0.0	0.0%	98.8%	0.0	0.0%	98.6%	0.0	0.0%	98.7%
Missing	4.6	1.2%	100.0%	4.6	1.4%	100.0%	9.2	1.3%	100.0%
Total	**392.5**	**100.0%**	**100.0%**	**339.7**	**100.0%**	**100.0%**	**732.1**	**100.0%**	**100.0%**

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

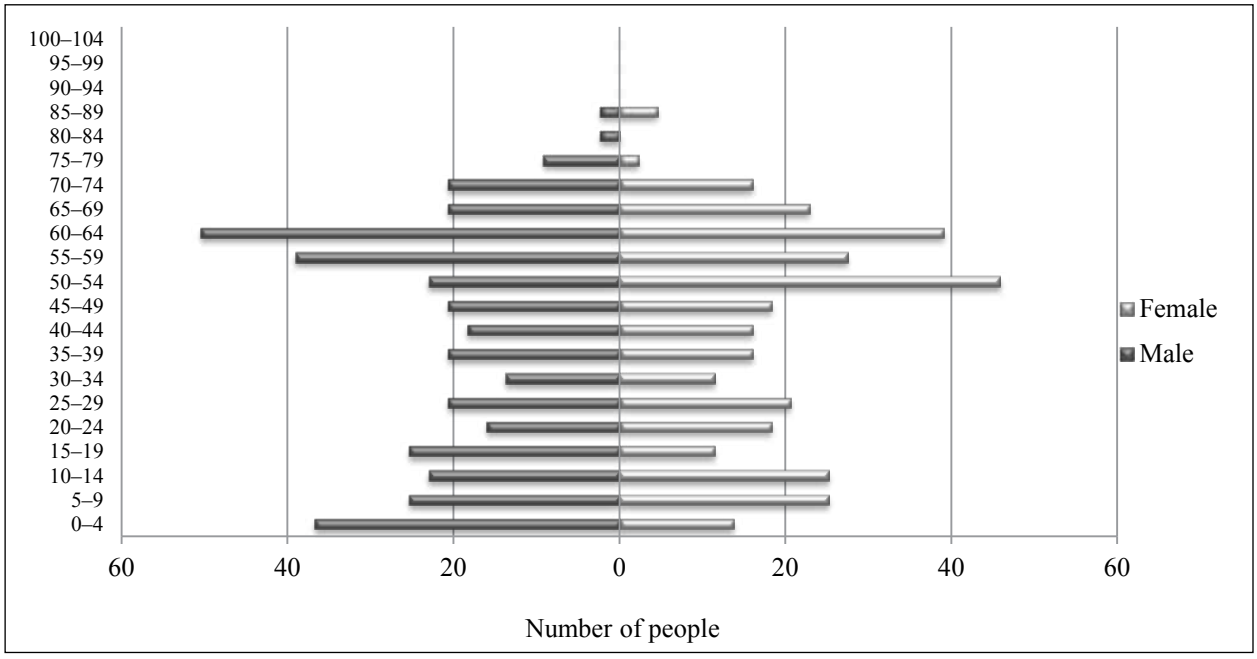


Figure 3-2.–Population profile, Hoonah, 2012.

Table 3-5.–Birthplaces of population, Hoonah, 2012.

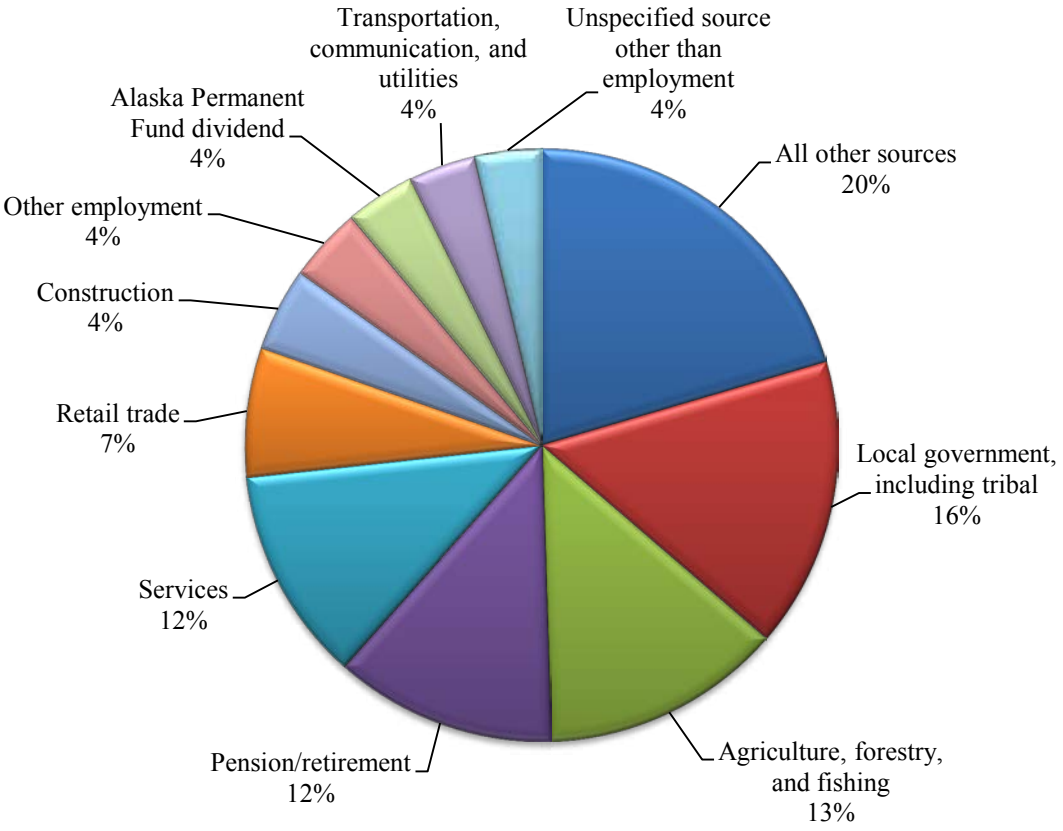
Birthplace	Percentage
Anchorage	0.6%
Angoon	0.3%
Barrow	0.3%
Haines	0.9%
Hoonah	46.1%
Juneau	11.3%
Kake	0.6%
Kodiak City	0.6%
Pelican	0.3%
Petersburg	0.3%
Port Alsworth	0.3%
Sitka	2.8%
Tenakee Springs	0.9%
Wrangell	0.9%
Yakutat	0.3%
Port Protection	0.3%
Douglas	0.3%
Excursion Inlet	0.3%
Mount Edgecumbe	0.3%
Other Alaska	0.3%
Other U.S.	29.2%
Foreign	2.5%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 3-6.–Birthplaces of household heads, Hoonah, 2012.

Birthplace	Percentage
Anchorage	0.5%
Barrow	0.5%
Haines	1.4%
Hoonah	35.7%
Juneau	7.7%
Kake	1.0%
Kodiak City	0.5%
Pelican	0.5%
Petersburg	0.5%
Port Alsworth	0.5%
Sitka	2.9%
Tenakee Springs	1.4%
Wrangell	1.0%
Yakutat	0.5%
Douglas	0.5%
Excursion Inlet	0.5%
Mount Edgecumbe	0.5%
Other Alaska	0.5%
Other U.S.	40.6%
Foreign	2.9%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.



Note The "all other sources" category includes sources providing 3.5% or less to the overall income.

Figure 3-3.–Top income sources, Hoonah, 2012.

Income and Cash Employment

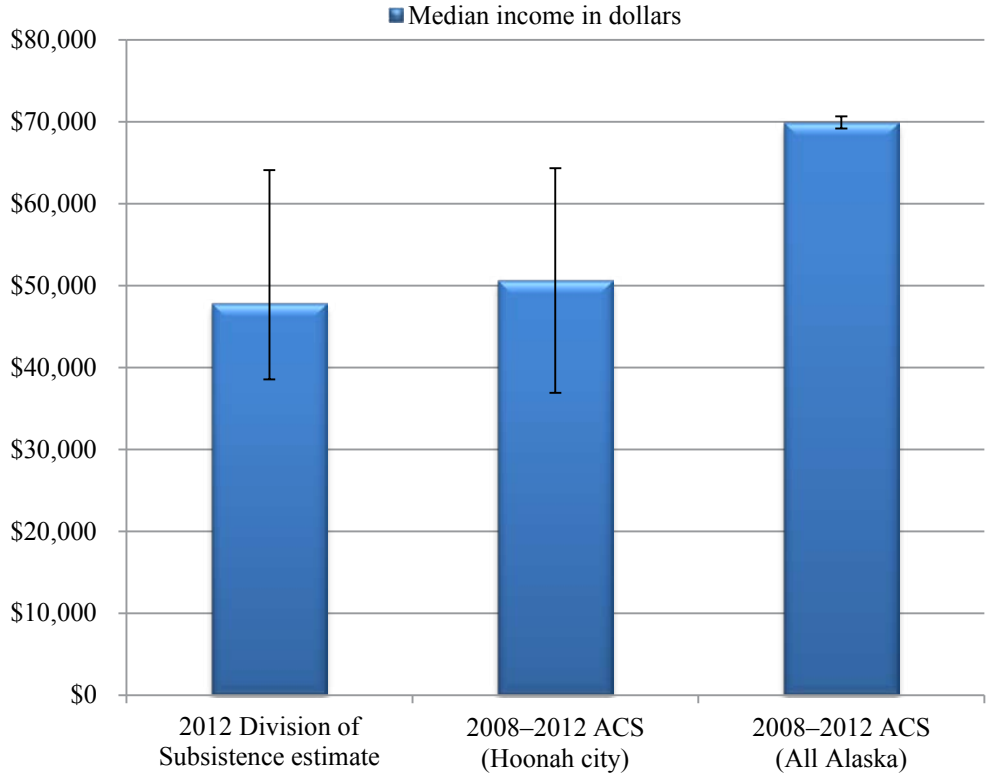
There was no single dominant source of income for Hoonah households in 2012. The largest sources were local and tribal government (16% of total community income), fishing and forestry (13%), and pension/retirement (12%) (Figure 3-3). Total earned income for the community ($9.9 million) accounted for 69% of total community income, while income derived from other sources ($4.5 million), such as pension, retirement, and Social Security, accounted for the rest (Table 3-7). This split between earned income and other income is consistent with findings from the other study communities in 2012. The per capita income in 2012 for Hoonah according to this study was $19,654 (Table 1-9). The mean household income was $51,389 (Table 3-7), and the median was $47,840 (Figure 3-4). Among the 5 study communities, this was the second highest mean household income, preceded only by Haines ($61,796) (Table 1-9). The median income as estimated by this study and by the ACS 5-year survey are lower than the ACS 5-year estimate for the entire state of Alaska (Figure 3-4), which is probably a reflection of the fewer opportunities for year-round employment in Hoonah as compared to other parts of the state.

Hoonah residents earned income from a variety of sources in 2012. The greatest percentage of earned income for Hoonah residents was from local and tribal governments (23%), followed by 19% from agriculture, forestry and fishing, 17% from services, 10% from retail trade, and smaller percentages from other sources (Table 3-8). The greatest amount of other income came from pension/retirement (12% of total community income), followed by Alaska Permanent Fund dividends (4%), unspecified sources (4%), and Social Security (3%) (Table 3-7).

Table 3-7.–Estimated earned and other income, Hoonah, 2012.

Income source	Number of people	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal	36.0	93.3	$2,282,753	$1,258,229 – $3,247,684	$8,153	15.9%
Agriculture, forestry, and fishing	44.0	93.3	$1,899,974	$1,009,626 – $2,948,914	$6,786	13.2%
Services	42.0	98.8	$1,684,882	$950,643 – $2,647,110	$6,017	11.7%
Retail trade	28.0	60.4	$1,010,412	$509,238 – $1,610,879	$3,609	7.0%
Construction	11.0	30.2	$655,264	$241,986 – $1,206,092	$2,340	4.6%
Other employment	10.0	22.0	$582,379	$144,425 – $1,310,949	$2,080	4.0%
Transportation, communication, and utilities	14.0	35.7	$525,715	$206,365 – $988,333	$1,878	3.7%
Federal government	6.0	13.7	$510,287	$107,290 – $1,119,969	$1,822	3.5%
State government	4.0	11.0	$348,394	$55,328 – $873,827	$1,244	2.4%
Mining	2.0	5.5	$253,193	$49,497 – $661,699	$904	1.8%
Manufacturing	4.0	8.2	$170,348	$221 – $725,161	$608	1.2%
Earned income subtotal	**161.0**	**274.5**	**$9,923,602**	**$7,719,343 – $11,929,575**	**$35,441**	**69.0%**
Other income						
Pension/retirement		68.9	$1,736,570	$1,008,949 – $2,715,990	$6,202	12.1%
Alaska Permanent Fund dividend		257.0	$548,102	$483,620 – $608,555	$1,958	3.8%
Other		11.5	$521,213	$16,066 – $1,619,639	$1,861	3.6%
Social Security		57.4	$482,955	$246,375 – $811,131	$1,725	3.4%
Rental income		5.6	$225,000	$3,428 – $892,035	$804	1.6%
Food stamps		57.4	$201,102	$118,635 – $301,280	$718	1.4%
Disability		16.1	$180,180	$34,294 – $434,980	$644	1.3%
Supplemental Security income		13.8	$155,319	$29,213 – $343,803	$555	1.1%
Native corp. dividend		190.5	$116,685	$74,943 – $176,050	$417	0.8%
Unemployment		45.9	$107,715	$48,559 – $195,078	$385	0.7%
Child support		13.8	$73,443	$19,738 – $158,361	$262	0.5%
Heating assistance		66.6	$44,945	$29,302 – $65,039	$161	0.3%
Foster care		2.3	$27,541	$12,000 – $55,082	$98	0.2%
TANF (temporary cash assistance for needy families)		6.9	$12,712	$419 – $51,275	$45	0.1%
Adult public assistance (OAA, APD)		9.2	$10,456	$508 – $32,181	$37	0.1%
Medicare/Medicade		5.6	$6,914	$3,131 – $13,519	$25	0.0%
CITGO fuel voucher		11.5	$5,833	$1,620 – $13,541	$21	0.0%
Veterans assistance		6.9	$5,170	$2,252 – $13,197	$18	0.0%
Longevity bonus		9.2	$3,529	$156 – $14,000	$13	0.0%
Workers' compensation/insurance		0.0	$0	$0 – $0	$0	0.0%
Meeting honoraria		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**266.3**	**$4,465,385**	**$3,244,866 – $6,035,220**	**$15,948**	**31.0%**
Community income total			**$14,388,987**	**$11,806,910 – $16,478,480**	**$51,389**	**100.0%**

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



Note For 2012, Division of Subsistence estimate does not include categories of income excluded by the 2008–2012 ACS median estimate, including food stamps, housing assistance, and one-time payments.

Figure 3-4.–Comparison of median household income estimates, Hoonah, 2012.

Full-time employment made up 56% of jobs in Hoonah in 2012 accounting for 64% of employed workers and 74% of employed households. The next most common job schedule was part-time (23% of jobs), and on-call jobs (14%) (Table 3-9). Approximately 79% of adults (98% of households) were employed in 559 jobs in Hoonah in 2012 (Table 3-10). Employed adults of working age (16 and older) in Hoonah held an average of 1.3 jobs throughout the year and were employed for 34 weeks on average. An estimated 42% of employed adults in Hoonah were employed year-round. On average, a household contained 1.6 employed adults and there was an average of 2 jobs held by each household in Hoonah.

Table 3-8.–Employment by industry, Hoonah, 2012.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Estimated total number	**561.8**	**274.5**	**445.6**	
Federal government	**2.8%**	**5.0%**	**3.7%**	**5.1%**
Natural scientists and mathematicians	0.5%	1.0%	0.6%	1.0%
Social scientists, social workers, religious workers, and lawyers	0.5%	1.0%	0.6%	0.5%
Writers, artists, entertainers, and athletes	0.5%	1.0%	0.6%	0.4%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	1.7%
Agricultural, forestry, and fishing occupations	0.9%	2.0%	1.2%	1.5%
State government	**1.9%**	**4.0%**	**2.5%**	**3.5%**
Service occupations	0.9%	2.0%	1.2%	1.7%
Mechanics and repairers	0.5%	1.0%	0.6%	1.3%
Transportation and material moving occupations	0.5%	1.0%	0.6%	0.5%
Local government, including tribal	**17.5%**	**34.0%**	**22.4%**	**23.0%**
Executive, administrative, and managerial	3.3%	7.0%	4.3%	8.4%
Teachers, librarians, and counselors	6.6%	14.0%	8.7%	5.6%
Writers, artists, entertainers, and athletes	0.5%	1.0%	0.6%	1.1%
Administrative support occupations, including clerical	2.4%	5.0%	3.1%	3.4%
Service occupations	1.9%	4.0%	2.5%	0.4%
Precision production occupations	0.5%	1.0%	0.6%	2.0%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.4%
Occupation not indicated	1.9%	4.0%	2.5%	1.7%
Agriculture, forestry, and fishing	**23.2%**	**34.0%**	**27.3%**	**19.1%**
Executive, administrative, and managerial	0.9%	1.0%	1.2%	1.9%
Engineers, surveyors, and architects	0.9%	2.0%	1.2%	1.3%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.9%
Service occupations	0.9%	2.0%	1.2%	0.6%
Agricultural, forestry, and fishing occupations	19.4%	28.0%	22.4%	14.4%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.2%
Mining	**0.9%**	**2.0%**	**1.2%**	**2.6%**
Mechanics and repairers	0.5%	1.0%	0.6%	0.9%
Occupation not indicated	0.5%	1.0%	0.6%	1.6%
Construction	**5.2%**	**11.0%**	**6.8%**	**6.6%**
Agricultural, forestry, and fishing occupations	0.5%	1.0%	0.6%	0.5%
Construction and extractive occupations	2.8%	6.0%	3.7%	2.9%
Transportation and material moving occupations	1.9%	4.0%	2.5%	3.2%
Manufacturing	**1.9%**	**3.0%**	**2.5%**	**1.7%**
Writers, artists, entertainers, and athletes	1.9%	3.0%	2.5%	1.7%

-continued-

Table 3-8.–Page 2 of 2.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Transportation, communication, and utilities	**6.6%**	**13.0%**	**8.7%**	**5.3%**
Executive, administrative, and managerial	0.9%	2.0%	1.2%	1.5%
Administrative support occupations, including clerical	1.4%	3.0%	1.9%	1.0%
Transportation and material moving occupations	3.3%	7.0%	4.3%	2.2%
Handlers, equipment cleaners, helpers, and laborers	0.5%	1.0%	0.6%	0.2%
Occupation not indicated	0.5%	1.0%	0.6%	0.5%
Retail trade	**13.3%**	**22.0%**	**17.4%**	**10.2%**
Executive, administrative, and managerial	2.8%	6.0%	3.7%	5.0%
Marketing and sales occupations	6.6%	11.0%	8.7%	3.4%
Administrative support occupations, including clerical	0.5%	1.0%	0.6%	0.7%
Service occupations	3.3%	7.0%	4.3%	1.0%
Services	**21.3%**	**36.0%**	**26.1%**	**17.0%**
Executive, administrative, and managerial	2.8%	5.0%	3.1%	4.8%
Teachers, librarians, and counselors	1.4%	3.0%	1.9%	1.0%
Registered nurses, pharmacists, dietitians, therapists, and physician assistants	0.5%	1.0%	0.6%	1.7%
Writers, artists, entertainers, and athletes	0.9%	2.0%	1.2%	0.1%
Technologists and technicians, except health	0.5%	1.0%	0.6%	1.7%
Marketing and sales occupations	2.4%	3.0%	3.1%	0.7%
Service occupations	8.1%	16.0%	10.6%	3.3%
Mechanics and repairers	1.4%	3.0%	1.9%	1.1%
Transportation and material moving occupations	0.5%	1.0%	0.6%	0.0%
Handlers, equipment cleaners, helpers, and laborers	0.9%	1.0%	0.6%	0.4%
Occupation not indicated	1.9%	3.0%	2.5%	2.2%
Industry not indicated	**5.2%**	**8.0%**	**6.2%**	**5.9%**
Executive, administrative, and managerial	0.5%	1.0%	0.6%	0.9%
Social scientists, social workers, religious workers, and lawyers	0.5%	1.0%	0.6%	0.5%
Transportation and material moving occupations	0.5%	1.0%	0.6%	0.1%
Occupation not indicated	3.8%	6.0%	5.0%	4.3%

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

Table 3-9.–Reported job schedules, Hoonah, 2012.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full-time	316.9	56.4%	279.8	64.0%	203.1	74.0%
Part-time	130.5	23.2%	116.8	26.7%	87.8	32.0%
Shift	5.3	0.9%	5.4	1.2%	2.7	1.0%
On-call (occasional)	79.9	14.2%	76.0	17.4%	63.1	23.0%
Part-time shift	8.0	1.4%	8.1	1.9%	8.2	3.0%
Schedule not reported	21.3	3.8%	8.1	1.9%	8.2	3.0%

Source ADF&G Division of Subsistence household surveys, 2013.
Note Respondents who had more than 1 job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Table 3-10.–Employment characteristics, Hoonah, 2012.

Characteristic	Community Hoonah
All adults	
Number	562.3
Mean weeks employed	26.6
Employed adults	
Number	443.4
Percentage	78.9%
Jobs	
Number	559.1
Mean	1.3
Minimum	1
Maximum	6
Months employed	
Mean	7.8
Minimum	3
Maximum	12
Percentage employed year-round	41.9%
Mean weeks employed	33.7
Households	
Number	280
Employed	
Number	274.5
Percentage	98.0%
Jobs per employed household	
Mean	2.0
Minimum	1
Maximum	7
Employed adults	
Mean	
Employed households	1.6
Total households	1.6
Minimum	1
Maximum	5
Mean person-weeks of employment	37.0

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

Food Security

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. The food security status of households is based on the aggregated number of affirmative responses to questions about experiencing food insecure conditions. Food security status is characterized by 4 ranges:

1. High food security;
2. Marginal food security;
3. Low food security; and
4. Very low food security.

For reporting purposes, households with high or marginal food security were broadly categorized as being food secure, and households with low or very low food security were broadly categorized as being food insecure following a USDA protocol (Bickel et al. 2000).[4]

Households with a high or marginal level of food security reported 1 or 2 instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Hoonah residents are summarized in Figure 3-5. Food security results for surveys for Hoonah, the state of Alaska, and the United States are summarized in Figure 3-6. In Hoonah, a greater percentage of households (45%) identified subsistence foods as the source of food insecurity as compared to store-bought foods (27%) (Figure 3-5). Approximately 45% of households responded that they lacked the resources to get food, meaning they did not have the equipment or money needed to get food. In approximately 12% of households adults cut the size of meals or skipped meals in 2012 due to food insecurity, and smaller percentages of households' adults experienced other effects of not having the food needed.

As shown in Figure 3-6, the majority of households in Hoonah can be termed food secure. Of the 31% of households that displayed food insecure conditions, the majority of those never cut the size of their meals or skipped meals, meaning that only 3% of Hoonah households would be classified as having very low food security. In comparison to state and national averages, Hoonah has fewer households classified as secure, but of the food insecure households, there is a smaller percentage of households in Hoonah with very low food security.

Figure 3-7 portrays the mean number of food insecure conditions per household by food security category by month. Figure 3-8 shows which months households reported foods not lasting. For households classified as food secure, there is little seasonal difference in insecure conditions (Figure 3-7). Households in the low food security category do show a slight seasonal pattern. Food insecure conditions decreased as summer approached and increased as the season moved back into winter. Households experiencing very low food security displayed an unusual pattern, with the least insecure conditions occurring in March and April and the most occurring in September and October. These households experienced a similar number of food insecure conditions in the middle of summer as in the middle of winter. Households overall experienced similar seasonal patterns of food insecurity for store-bought and subsistence foods, with more households reporting food not lasting more often in the winter months than in the summer months (Figure 3-8). For every month of the year, there were more households for which subsistence foods did not last than for store-bought foods.

4. U.S. Department of Agriculture, Economic Research Service. 2015. "Food Security in the U.S.: Measurement," http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx (accessed Nov. 2016).

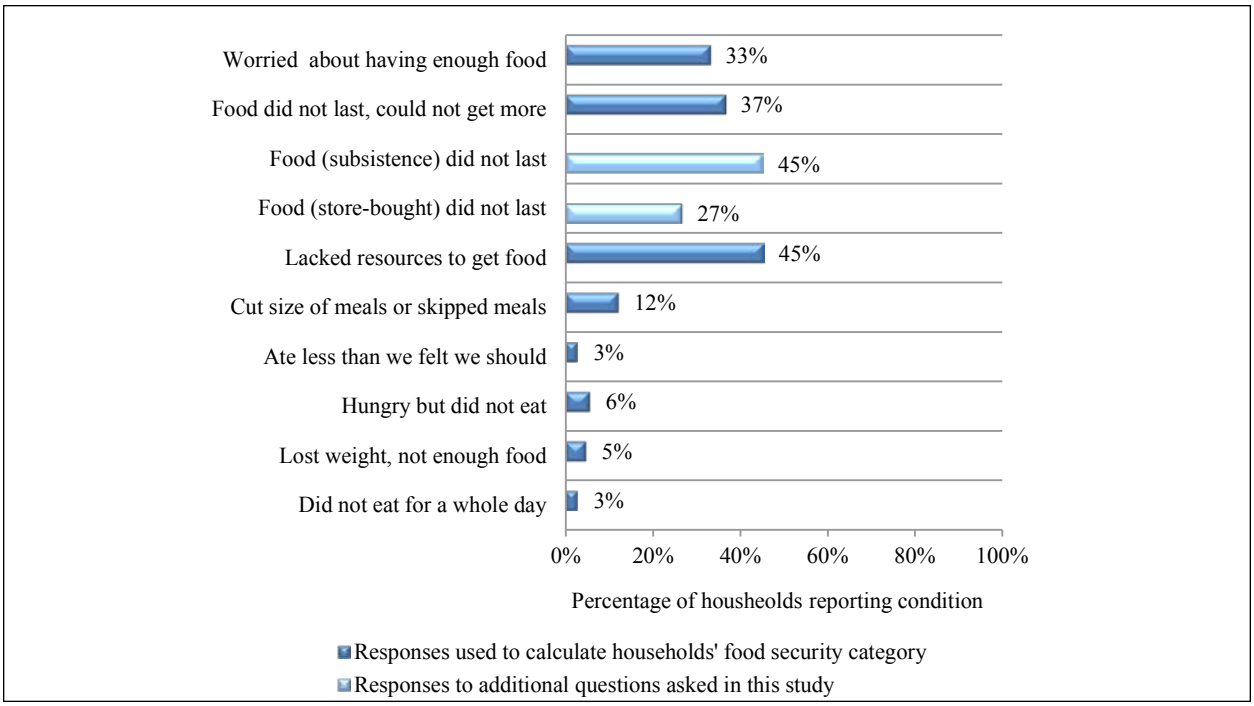


Figure 3-5.–Responses to questions about food insecure conditions, Hoonah, 2012.

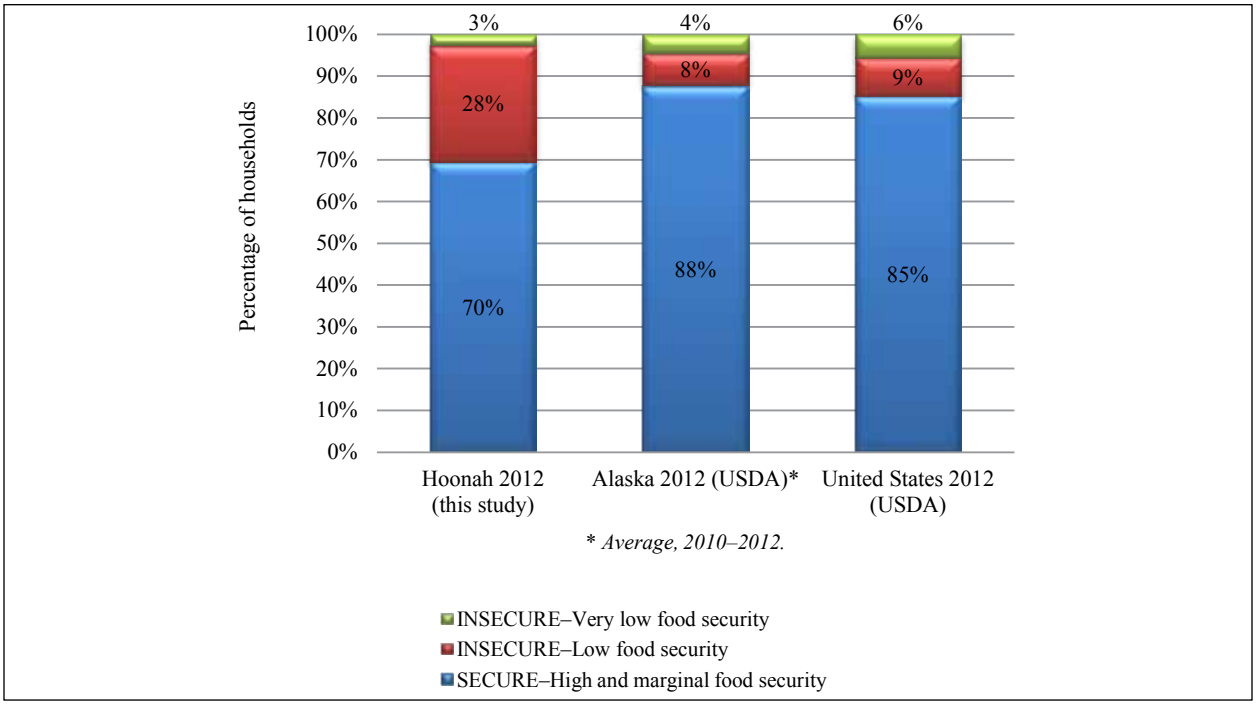


Figure 3-6.–Comparison of food security categories, Hoonah, Alaska, and United States, 2012.

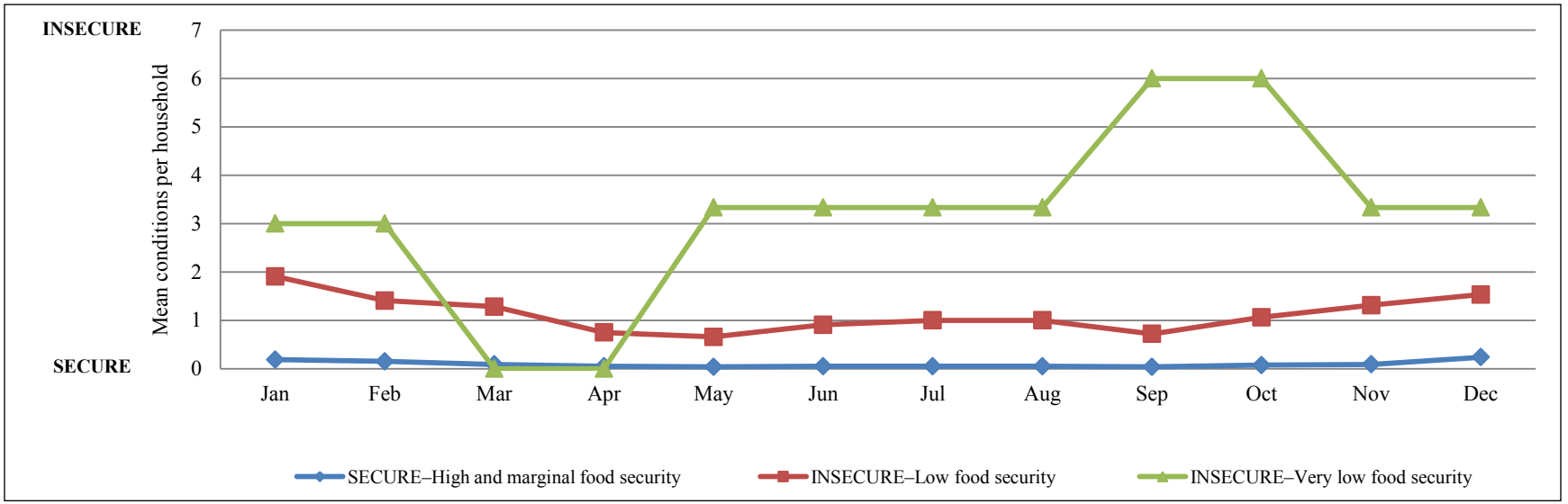


Figure 3-7.–Mean number of food insecure conditions by month and by household food security category, Hoonah, 2012.

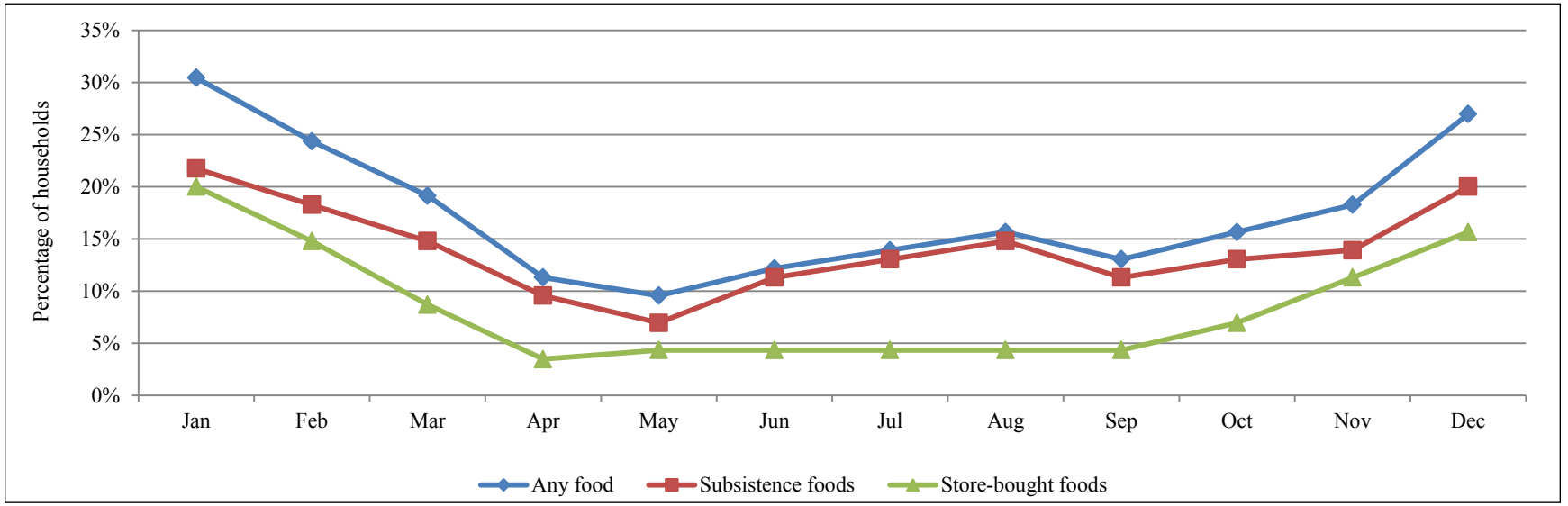


Figure 3-8.–Comparison of months when food did not last, Hoonah, 2012.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Table 3-11 and Figure 3-9 report the expanded levels of individual participation in the harvest and processing of wild resources by all Hoonah residents in 2012. A majority of Hoonah residents participated in either the harvest (76% of individuals) or the processing (77% of individuals) of wild resources, though participation was variable by resource category. The resource category with the greatest harvest participation was vegetation (65%), followed by fish (56%) and large land mammals (40%). Marine mammals (10%), birds and eggs (6%), and small land mammals (3%) showed the least participation in harvesting. For all categories, participation in the processing of the resource was equal to or slightly greater than participation in the actual harvest.

Harvest and Use of Wild Resources at the Household Level

Figure 3-10 shows by resource category the percentages of households that used wild resources, and attempted to harvest and harvested wild foods. Nonsalmon fish were used by the greatest percentage of households (94%), followed by vegetation (93%), salmon (89%), marine invertebrates (84%), and land mammals (77%). Marine mammals were used by 34% of households and birds and eggs were used by the least percentage of households (18%). Every household attempting to harvest marine invertebrates and vegetation was successful, but all other categories exhibited some degree of failure to harvest. The greatest discrepancy between attempt to harvest and success was with land mammals where 59% of households attempted to harvest these species but only 48% of households were successful. For all resource categories, more households used a resource than harvested, particularly for marine invertebrates, fish, and land mammals. In the case of marine mammals, twice as many households used the resource as harvested it.

Table 3-12 summarizes resource harvest and use characteristics for Hoonah in 2012 at the household level. The average harvest was 898 lb usable weight per household, 343 lb per person. During the study year, community households harvested an average of 11 kinds of resources and used an average of 18 kinds of resources. The maximum number of resources used by any household was 79, with a maximum of 71 resources harvested by any household. In addition, households gave away an average of 8 kinds of resources but received an average of 9 resources.

Table 3-11.–Individual participation in subsistence harvesting and processing activities, Hoonah, 2012.

Total number of people	**732.1**
Fish	
Fish	
Number	409.3
Percentage	55.9%
Process	
Number	467.8
Percentage	63.9%
Large land mammals	
Hunt	
Number	292.4
Percentage	39.9%
Process	
Number	339.2
Percentage	46.3%
Small land mammals	
Hunt or trap	
Number	21.1
Percentage	2.9%
Process	
Number	21.1
Percentage	2.9%
Marine mammals	
Hunt	
Number	74.9
Percentage	10.2%
Process	
Number	126.3
Percentage	17.3%
Birds and eggs	
Hunt/gather	
Number	42.2
Percentage	5.8%
Process	
Number	51.6
Percentage	7.1%
Vegetation	
Gather	
Number	476.4
Percentage	65.1%
Process	
Number	490.4
Percentage	67.0%
Any resource	
Attempt harvest	
Number	555.4
Percentage	75.9%
Process	
Number	566.9
Percentage	77.4%

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

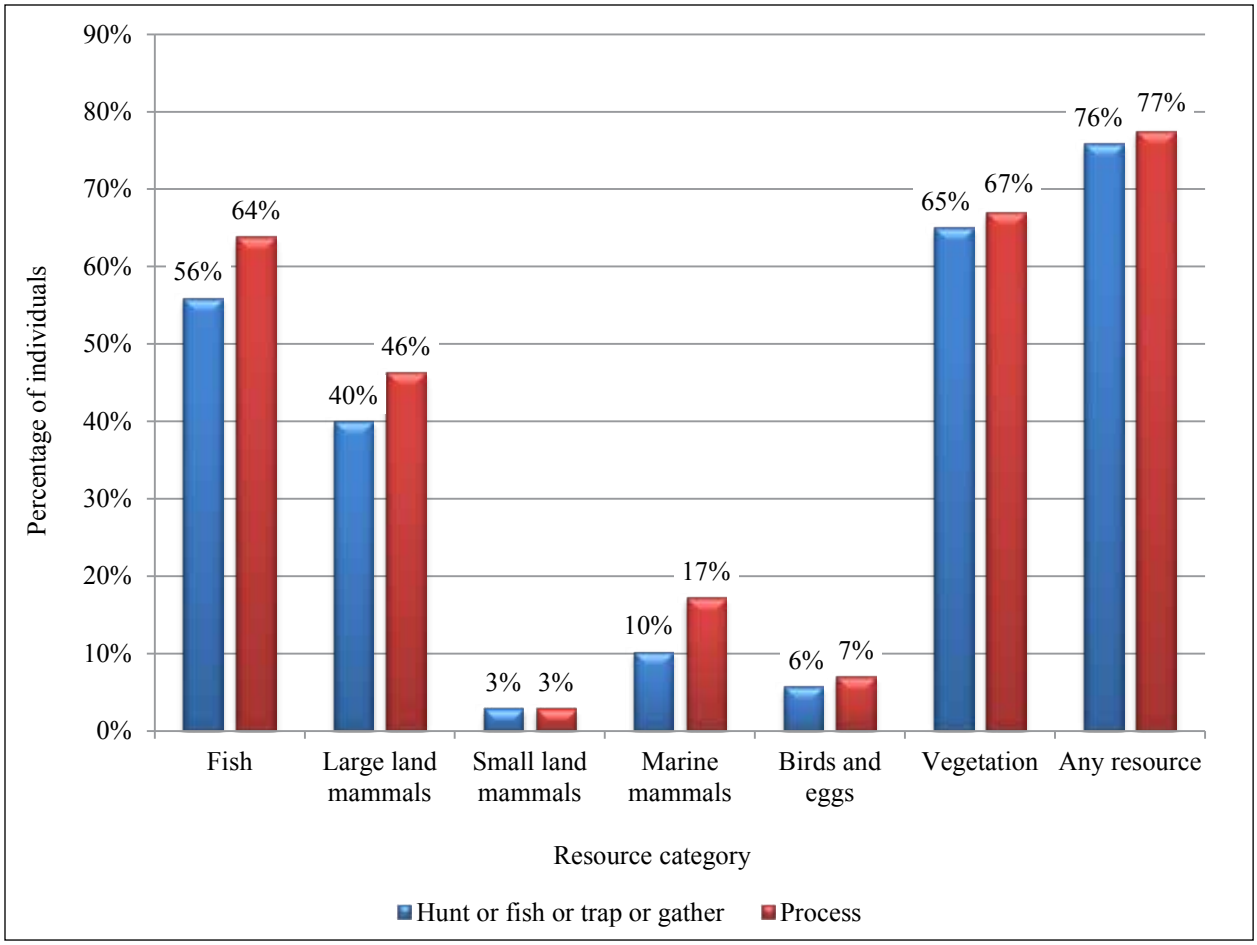


Figure 3-9.–Individual participation in subsistence harvesting and processing activities, Hoonah, 2012.

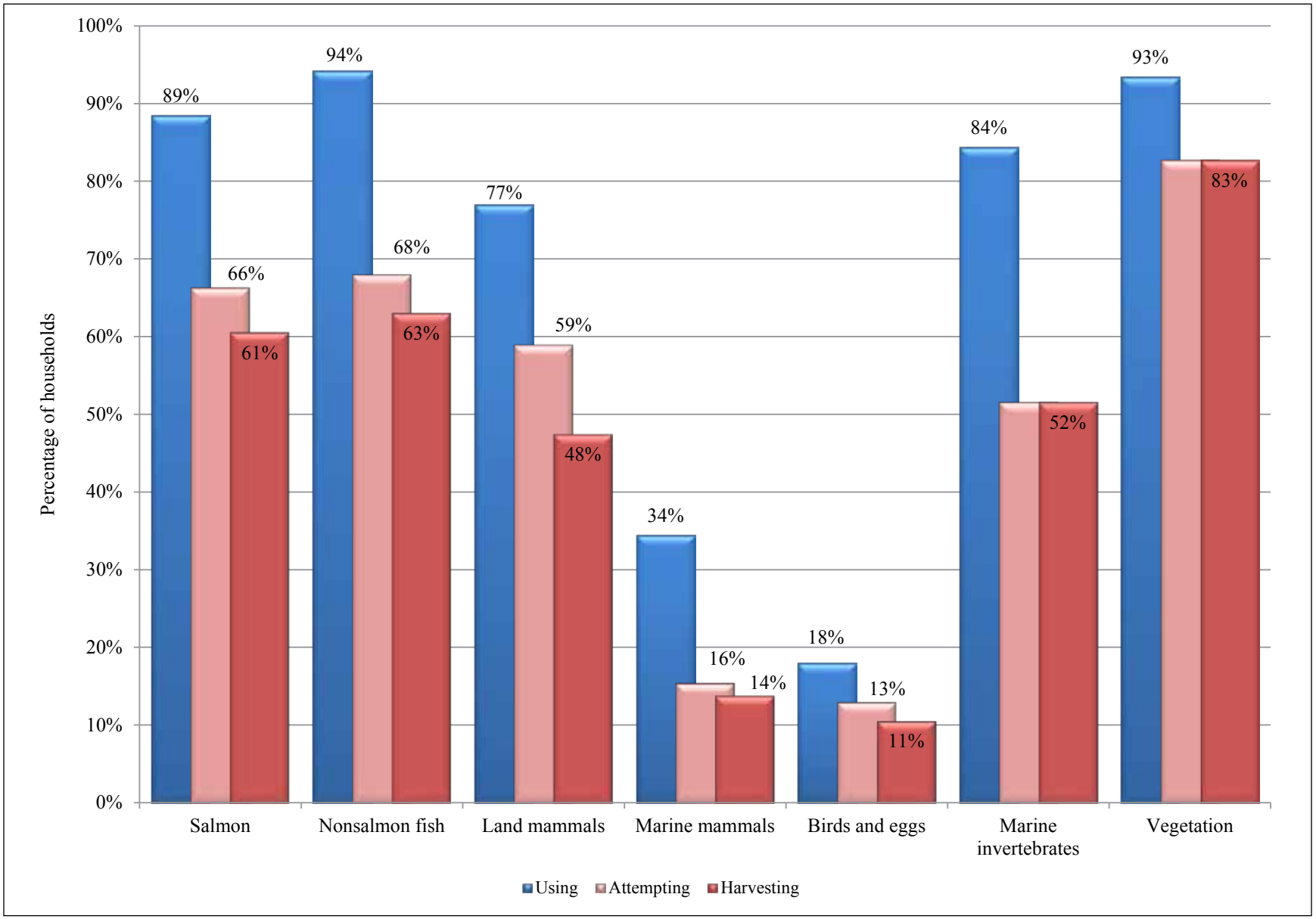


Figure 3-10.–Percentages of households using, attempting to harvest, and harvesting wild resources, by resource category, Hoonah, 2012.

Table 3-12.–Resource harvest and use characteristics, Hoonah, 2012.

Characteristic	
Mean number of resources used per household	**17.8**
Minimum	0
Maximum	79
95% confidence limit (±)	9.9%
Median	14.5
Mean number of resources attempted to harvest per household	**12.0**
Minimum	0
Maximum	76
95% confidence limit (±)	14.2%
Median	8.5
Mean number of resources harvested per household	**11.3**
Minimum	0
Maximum	71
95% confidence limit (±)	14.5%
Median	7
Mean number of resources received per household	**9.2**
Minimum	0
Maximum	32
95% confidence limit (±)	10.5%
Median	8
Mean number of resources given away per household	**7.8**
Minimum	0
Maximum	57
95% confidence limit (±)	16.5%
Median	4.5
Household harvest (pounds)	
Minimum	0.0
Maximum	17,866.4
Mean	897.7
Median	381
Total harvest weight (lb)	251,364.9
Community per capita harvest (lb)	343.3
Percentage using any resource	98.4%
Percentage attempting to harvest any resource	90.2%
Percentage harvesting any resource	90.2%
Percentage receiving any resource	95.9%
Percentage giving away any resource	85.2%
Number of households in sample	122
Number of resources asked about and identified voluntarily by respondents	184

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

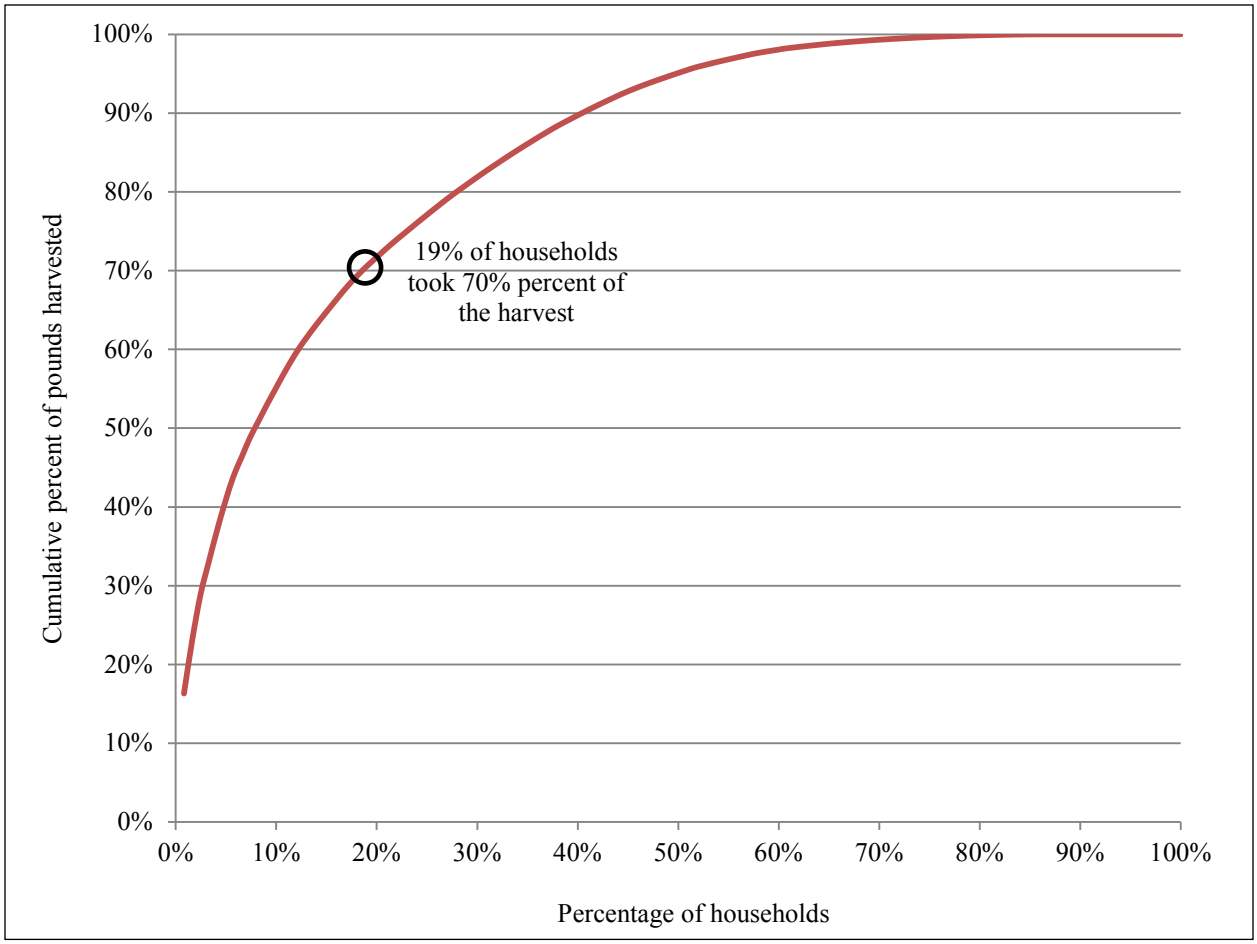


Figure 3-11.–Household specialization, Hoonah, 2012.

Sharing of Wild Resources

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 3-11, in the 2012 study year in Hoonah, about 70% of the harvests of wild resources as estimated in usable pounds were harvested by 19% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Hoonah and the other study communities.

Harvest Quantities and Composition

Table 3-13 reports estimated wild resource harvests and uses by Hoonah residents in 2012 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors[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 resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

In 2012, the community of Hoonah harvested a total usable weight of 251,365 lb of wild resources (Table 3-13). Nonsalmon fish dominated the harvest, representing 35% (88,126 lb; 120 lb per capita) of the total harvest (Figure 3-12). The second largest component of the harvest was salmon, with 21% (52,702 lb; 72 lb per capita) of the total harvest, followed by large land mammals (37,558 lb; 51 lb per capita), vegetation (31,913 lb; 44 lb per capita), marine invertebrates (29,803 lb; 41 lb per capita), marine mammals (9,832 lb; 13 lb per capita), birds and eggs (1,206 lb; 2 lb per capita), and small land mammals (225 lb; 0.3 lb per capita).

Seasonal Round

Harvest survey data and key respondent interview information provide information about the seasonal round of fishing, hunting, and gathering activities followed by Hoonah residents where a variety of species are harvested throughout the year. The majority of the fishing effort occurs in the marine waters of Icy Strait and Port Frederick and in the freshwater systems of Game Creek and Excursion River. Hunting effort is concentrated mainly on Chichagof Island. Residents use motorized boats suitable for travel on waterways and vehicles along the extensive road system of Chichagof Island to access their hunting, fishing, and gathering areas.

Many resources harvested for food can be found year-round in the lands and waters around Hoonah. Some harvest effort, such as that for deer, is constrained temporally by regulations while other species, such as Pacific halibut, have no such restrictions on the time of harvest. Nevertheless, a pattern emerges of the harvesting efforts of Hoonah residents with the harvest of some species taking on more importance at certain times of the year. Resources generally become more abundant and harvest efforts expand through the springtime into the summer, which is the busiest and most abundant time of year. During the fall, harvesting efforts slow down and resources become less diverse through the winter months, which are generally the least abundant months.

Springtime is often heralded by the arrival of spawning aggregations of Pacific herring. Pacific herring roe (eggs) can be harvested in the waters around Hoonah, though some residents will travel to Sitka Sound for the subsistence harvest. During the spring months, Chinook salmon are caught by rod and reel and trolling under sport fishing regulations. Pacific halibut is harvested with longlines under federal subsistence regulations or with rod and reel, under either federal subsistence regulations or state sport fish regulations. Trout, including Dolly Varden and steelhead, are available during the springtime. Trout can be harvested with rod and reel under state sport fish regulations or under federal subsistence regulations at this time of year. There is also an abundance of shellfish and marine invertebrates available for harvest in the springtime, including clams, cockles, chitons, shrimps, mussels, and Dungeness crab. The waters of Port Frederick are heavily used for the harvest of shellfish. Harbor seals are hunted by Alaska Natives during this time of year under an exception to the Marine Mammal Protection Act. On land, plants begin growing and are harvested, such as fiddlehead ferns, devil's club, salmonberry shoots, fireweed, and wild celery and rhubarb. Black seaweed is collected from the ocean. Firewood is collected opportunistically year-round.

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 3-13.–Estimated uses and harvests of fish, game, and vegetation resources, Hoonah, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	confidence limit (±) harvest
All resources	**98.4**	**90.2**	**90.2**	**95.9**	**85.2**	**251,364.9**	**897.7**	**343.3**				**29.2**
Salmon	**88.5**	**66.4**	**60.7**	**63.1**	**50.8**	**52,702.3**	**188.2**	**72.0**				**32.0**
Chum salmon	29.5	23.0	20.5	12.3	13.9	4,861.5	17.4	6.6	722.7	ind	2.6	49.1
Coho salmon	72.1	56.6	51.6	39.3	41.0	16,721.9	59.7	22.8	3,489.2	ind	12.5	25.2
Chinook salmon	69.7	42.6	36.9	44.3	29.5	12,310.1	44.0	16.8	1,311.1	ind	4.7	56.6
Pink salmon	28.7	23.0	22.1	9.8	10.7	2,169.3	7.7	3.0	832.4	ind	3.0	41.1
Sockeye salmon	51.6	27.9	22.1	37.7	25.4	16,639.6	59.4	22.7	3,592.0	ind	12.8	53.0
Unknown salmon	6.6	1.6	0.0	5.7	2.5	0.0	0.0	0.0	0.0	ind	0.0	0.0
Nonsalmon fish	**94.3**	**68.0**	**63.1**	**86.9**	**58.2**	**88,125.5**	**314.7**	**120.4**				**61.0**
Pacific herring	27.9	19.7	19.7	13.1	11.5	3,317.5	11.8	4.5	552.9	gal	2.0	42.9
Pacific herring roe/unspecified	0.8	0.8	0.0	0.8	0.8	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	9.0	2.5	2.5	8.2	4.9	592.4	2.1	0.8	84.6	gal	0.3	119.4
Pacific herring roe on hair seaweed	5.7	2.5	2.5	4.1	3.3	233.3	0.8	0.3	33.3	gal	0.1	147.5
Pacific herring roe on hemlock branches	68.0	7.4	6.6	66.4	33.9	35,909.6	128.2	49.0	5,129.9	gal	18.3	144.3
Eulachon (hooligan, candlefish)	13.1	3.3	3.3	12.3	4.9	1,735.5	6.2	2.4	192.8	gal	0.7	93.7
Silver smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sea bass	0.8	0.8	0.8	0.0	0.0	6.9	0.0	0.0	6.9	ind	0.0	148.7
Pacific (gray) cod	5.7	2.5	1.6	3.3	1.6	244.2	0.9	0.3	76.3	ind	0.3	140.0
Pacific tomcod	0.8	0.8	0.8	0.0	0.0	57.4	0.2	0.1	114.8	ind	0.4	148.7
Flounder	0.8	0.8	0.8	0.0	0.8	34.4	0.1	0.0	11.5	ind	0.0	148.7
Kelp greenling	0.8	0.8	0.8	0.0	0.0	13.8	0.0	0.0	13.8	ind	0.0	148.7
Lingcod	12.3	5.7	5.7	8.2	4.9	703.9	2.5	1.0	111.7	ind	0.4	100.4
Pacific halibut	85.2	53.3	47.5	56.6	41.8	39,996.9	142.8	54.6	39,996.9	lb	142.8	26.5
Black rockfish	7.4	5.7	5.7	2.5	2.5	257.0	0.9	0.4	128.5	ind	0.5	66.8
Yelloweye rockfish	25.4	8.2	7.4	18.0	12.3	1,598.8	5.7	2.2	532.9	ind	1.9	104.9
Quillback rockfish	1.6	1.6	1.6	0.0	0.8	75.7	0.3	0.1	25.2	ind	0.1	135.8
Brown rockfish	1.6	1.6	0.8	0.0	0.0	41.3	0.1	0.1	13.8	ind	0.0	148.7
Unknown rockfish	2.5	1.6	1.6	0.8	0.0	117.0	0.4	0.2	39.0	ind	0.1	109.2
Sablefish (black cod)	9.0	2.5	2.5	6.6	4.9	190.5	0.7	0.3	47.6	ind	0.2	107.4
Buffalo sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red Irish lord	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Skates	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sole	0.8	0.8	0.8	0.0	0.8	2.3	0.0	0.0	2.3	ind	0.0	148.7

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Table 3-13.–Page 2 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Nonsalmon fish, continued												
Dolly Varden	25.4	24.6	23.8	5.7	3.3	2,332.2	8.3	3.2	777.4	ind	2.8	39.7
Cutthroat trout	5.7	7.4	5.7	0.0	0.8	175.6	0.6	0.2	117.0	ind	0.4	65.2
Rainbow trout	6.6	7.4	6.6	1.7	1.7	166.6	0.6	0.2	83.3	ind	0.3	66.8
Steelhead	3.3	4.9	3.3	0.8	0.8	292.6	1.0	0.4	34.4	ind	0.1	119.9
Unknown trout	0.8	0.8	0.8	0.0	0.0	29.9	0.1	0.0	18.4	ind	0.1	148.7
Large land mammals	**77.0**	**59.0**	**47.5**	**51.6**	**40.2**	**37,558.4**	**134.1**	**51.3**				**22.1**
Black bear	0.0	0.0	0.0	0.0	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	1.6	0.8	0.0	1.6	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Deer	77.0	59.0	47.5	45.1	40.2	37,558.4	134.1	51.3	469.5	ind	1.7	22.1
Elk	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mountain goat	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	16.4	2.5	0.0	16.4	3.3	0.0	0.0	0.0	0.0	ind	0.0	0.0
Common muskox	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown large land mammals	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals	**2.5**	**2.5**	**2.5**	**0.0**	**1.6**	**224.9**	**0.8**	**0.3**				**124.1**
Beaver	0.8	0.8	0.8	0.0	0.8	40.2	0.1	0.1	4.6	ind	0.0	148.7
Coyote	0.8	0.8	0.8	0.0	0.8	183.6	0.7	0.3	9.2	ind	0.0	148.7
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	2.5	2.5	2.5	0.0	0.8	0.0	0.0	0.0	53.2	ind	0.2	130.1
Mink	1.6	1.6	1.6	0.0	0.8	0.0	0.0	0.0	2.3	ind	0.0	148.1
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	0.8	0.8	0.8	0.0	0.0	1.1	0.0	0.0	2.3	ind	0.0	0.0
Least weasel	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	2.3	ind	0.0	148.7
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 3-13.–Page 3 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Marine mammals	**34.4**	**15.6**	**13.9**	**27.0**	**21.3**	**9,832.1**	**35.1**	**13.4**				**50.5**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	34.4	15.6	13.9	27.3	21.3	9,832.1	35.1	13.4	117.0	ind	0.4	50.5
Sea otter	3.3	2.5	2.5	0.8	0.8	0.0	0.0	0.0	18.4	ind	0.1	107.7
Steller sea lion	1.6	1.6	0.0	0.0	0.8	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**18.0**	**13.1**	**10.7**	**9.8**	**4.9**	**1,206.2**	**4.3**	**1.6**				**82.4**
Goldeneye	0.8	0.8	0.8	0.0	0.8	9.2	0.0	0.0	11.5	ind	0.0	148.7
Mallard	6.6	5.7	4.9	2.5	2.5	88.7	0.3	0.1	88.7	ind	0.3	89.6
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Scaup	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Teal	1.6	1.6	0.8	0.8	0.8	7.2	0.0	0.0	13.8	ind	0.0	148.7
Wigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown ducks	2.5	1.6	1.6	0.8	0.8	2.5	0.0	0.0	2.3	ind	0.0	148.1
Unknown Canada/cackling geese	2.5	2.5	2.5	0.0	0.8	23.7	0.1	0.0	6.9	ind	0.0	110.0
White-fronted goose	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	1.6	1.6	1.6	0.0	0.8	15.9	0.1	0.0	4.6	ind	0.0	148.1
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Grouse	4.1	3.3	3.3	0.8	0.0	48.6	0.2	0.1	48.6	ind	0.2	105.4
Ptarmigan	2.5	1.6	1.6	0.8	0.0	4.6	0.0	0.0	4.6	ind	0.0	148.1
Mallard 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 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
Unknown Canada/cackling 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
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swan eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher eggs	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebird eggs – small	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 3-13.–Page 4 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Birds and eggs, continued												
Unknown shorebird eggs – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Glaucous-winged gull eggs	9.0	4.1	4.1	5.7	2.5	797.5	2.8	1.1	3,190.2	ind	11.4	104.2
Unknown gull eggs	0.8	0.8	0.8	0.0	0.8	208.3	0.7	0.3	833.1	ind	3.0	148.7
Unknown loon 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 tern 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 seabird eggs	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown grouse 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 ptarmigan 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	**84.4**	**51.6**	**51.6**	**69.7**	**47.5**	**29,802.9**	**106.4**	**40.7**				**28.3**
Abalone	0.8	0.8	0.8	0.8	0.8	0.9	0.0	0.0	0.4	gal	0.0	148.7
Red (large) chitons	8.2	5.7	5.7	4.9	4.9	314.4	1.1	0.4	104.8	gal	0.4	82.6
Black (small) chitons	18.9	15.6	14.8	8.2	9.8	4,373.8	15.6	6.0	586.6	gal	2.1	117.6
Unknown chitons	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Butter clams	36.9	24.6	24.6	15.6	17.2	4,510.6	16.1	6.2	1,004.0	gal	3.6	52.2
Horse clams	4.1	3.3	3.3	0.8	0.8	275.8	1.0	0.4	62.0	gal	0.2	99.1
Pacific littleneck clams (steamers)	27.9	21.3	21.3	10.7	9.9	1,105.1	3.9	1.5	368.4	gal	1.3	38.2
Pinkneck clams	5.7	5.7	5.7	0.8	4.1	704.6	2.5	1.0	234.9	gal	0.8	68.0
Razor clams	4.1	4.1	3.3	2.5	2.5	229.5	0.8	0.3	57.4	gal	0.2	78.3
Unknown clams	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Basket cockles	45.9	33.6	33.6	27.3	25.8	6,905.0	24.7	9.4	2,220.3	gal	7.9	40.7
Heart cockles	9.8	6.6	6.6	4.9	5.7	1,771.7	6.3	2.4	569.7	gal	2.0	74.0
Unknown cockles	3.3	3.3	3.3	1.6	2.5	199.9	0.7	0.3	64.3	gal	0.2	80.5
Dungeness crab	68.0	32.8	32.8	50.8	31.1	5,482.7	19.6	7.5	4,153.5	ind	14.8	35.3
Blue king crab	1.6	0.8	0.8	1.6	1.6	114.8	0.4	0.2	21.4	ind	0.1	148.7
Brown king crab	4.9	1.6	1.6	4.1	1.6	361.7	1.3	0.5	67.2	ind	0.2	111.6
Red king crab	28.7	8.2	8.2	24.6	9.0	1,608.8	5.7	2.2	299.0	ind	1.1	62.0
Tanner crab	9.8	4.9	4.9	6.6	3.3	454.4	1.6	0.6	227.2	ind	0.8	68.4
Geoducks	1.6	1.6	1.6	0.0	0.0	51.6	0.2	0.1	17.2	gal	0.1	110.5
Limpets	0.8	0.8	0.8	0.0	0.0	3.4	0.0	0.0	2.3	gal	0.0	148.7
Mussels	2.5	1.6	1.6	0.8	0.8	17.2	0.1	0.0	11.5	gal	0.0	106.8
Octopus	12.3	6.6	6.6	6.6	4.9	620.7	2.2	0.8	620.7	lb	2.2	77.3
Weathervane scallops	1.6	0.8	0.8	0.8	0.0	113.6	0.4	0.2	68.9	gal	0.2	148.7
Rock scallops	1.6	0.8	0.8	0.8	0.0	9.4	0.0	0.0	5.7	gal	0.0	148.7

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Table 3-13.–Page 5 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine invertebrates, continued												
Sea cucumber	3.3	2.5	2.5	0.8	0.0	13.1	0.0	0.0	6.5	gal	0.0	131.1
Green sea urchin	1.6	1.6	1.6	0.0	0.0	0.1	0.0	0.0	0.0	gal	0.0	148.1
Red sea urchin	1.6	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Purple sea urchin	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Shrimp	19.7	9.0	9.0	11.5	5.7	560.3	2.0	0.8	280.1	gal	1.0	93.9
Squid	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**93.4**	**82.8**	**82.8**	**74.6**	**63.9**	**31,912.6**	**114.0**	**43.6**				**26.5**
Blueberry	83.6	72.1	71.3	37.7	44.3	10,964.0	39.2	15.0	2,741.0	gal	9.8	32.3
Lowbush cranberry	6.6	4.9	4.1	2.5	4.1	307.5	1.1	0.4	76.9	gal	0.3	94.4
Highbush cranberry	23.0	21.3	19.7	3.3	8.2	828.4	3.0	1.1	207.1	gal	0.7	44.3
Blackberry	0.8	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	gal	0.0	0.0
Elderberry	6.6	5.7	5.7	1.6	4.1	394.8	1.4	0.5	98.7	gal	0.4	80.7
Gooseberry	4.9	4.1	4.1	0.8	2.5	335.1	1.2	0.5	83.8	gal	0.3	92.9
Currants	21.3	18.0	18.0	5.7	9.0	1,897.0	6.8	2.6	474.3	gal	1.7	87.7
Huckleberry	32.8	27.0	26.2	9.0	12.3	1,388.8	5.0	1.9	347.2	gal	1.2	42.2
Cloudberry	5.7	4.9	4.9	0.8	1.6	119.5	0.4	0.2	29.9	gal	0.1	77.5
Nagoonberry	18.0	15.6	14.8	4.1	8.2	624.2	2.2	0.9	156.0	gal	0.6	64.3
Raspberry	32.0	23.8	23.8	11.5	12.3	1,745.5	6.2	2.4	436.4	gal	1.6	47.0
Salmonberry	56.6	50.0	49.2	19.0	25.6	3,178.8	11.4	4.3	794.7	gal	2.8	33.6
Soapberry	8.2	4.1	4.1	4.1	4.9	259.2	0.9	0.4	64.8	gal	0.2	109.3
Strawberry	37.7	28.1	27.9	16.5	15.7	1,514.3	5.4	2.1	378.6	gal	1.4	50.7
Thimbleberry	14.8	10.7	10.7	4.9	4.9	390.2	1.4	0.5	97.5	gal	0.3	75.9
Twisted stalk berry (watermelon berry)	0.8	0.8	0.8	0.0	0.0	9.2	0.0	0.0	2.3	gal	0.0	148.7
Other wild berry	0.8	0.8	0.8	0.0	0.8	91.8	0.3	0.1	23.0	gal	0.1	148.7
Beach asparagus	21.3	13.1	13.1	12.3	6.6	114.3	0.4	0.2	114.3	gal	0.4	56.0
Goose tongue	12.3	11.5	11.5	1.6	4.1	75.9	0.3	0.1	75.9	gal	0.3	71.6
Wild rhubarb	9.0	8.2	8.2	1.6	4.9	181.7	0.6	0.2	181.7	gal	0.6	71.4
Wild potato	1.6	1.6	1.6	0.0	0.8	23.1	0.1	0.0	23.1	gal	0.1	147.8
Devil's club	21.3	17.2	17.2	8.2	13.9	1,332.2	4.8	1.8	1,332.2	gal	4.8	104.7
Fiddlehead ferns	11.5	10.7	10.7	0.8	2.5	46.0	0.2	0.1	46.0	gal	0.2	60.3
Nettle	3.3	3.3	3.3	0.0	0.8	7.2	0.0	0.0	7.2	gal	0.0	105.7
Hudson's Bay (Labrador) tea	40.2	24.6	24.6	23.0	15.6	281.0	1.0	0.4	281.0	gal	1.0	39.3
Indian rice	4.9	4.1	4.1	1.6	0.8	3.2	0.0	0.0	3.2	gal	0.0	111.0

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Table 3-13.–Page 6 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Vegetation, continued												
Mint	4.1	4.1	4.1	0.0	0.8	12.2	0.0	0.0	12.2	gal	0.0	83.6
Salmonberry shoots	9.0	9.0	9.0	0.8	4.1	66.4	0.2	0.1	66.4	gal	0.2	129.8
Skunk cabbage	3.3	3.3	3.3	0.0	2.5	82.6	0.3	0.1	82.6	gal	0.3	125.0
Sourdock	0.8	0.8	0.8	0.0	0.0	2.3	0.0	0.0	2.3	gal	0.0	148.7
Spruce tips	9.0	8.2	8.2	0.8	3.3	52.9	0.2	0.1	52.9	gal	0.2	75.0
Wild celery	9.0	7.4	7.4	1.6	4.1	25.7	0.1	0.0	25.7	gal	0.1	68.1
Wild parsley	1.6	1.6	1.6	0.0	0.8	2.3	0.0	0.0	2.3	gal	0.0	148.1
Wild rose hips	2.5	2.5	2.5	0.0	0.8	32.1	0.1	0.0	8.0	gal	0.0	86.9
Other wild greens	6.6	5.7	5.7	2.5	4.1	61.0	0.2	0.1	61.0	gal	0.2	78.3
Unknown mushrooms	10.7	9.8	9.8	1.6	4.9	164.3	0.6	0.2	164.3	gal	0.6	73.5
Fireweed	4.9	4.1	4.1	1.6	2.5	95.2	0.3	0.1	95.2	gal	0.3	90.4
Black seaweed	56.6	20.5	20.5	43.4	24.6	4,554.6	16.3	6.2	1,767.1	gal	6.3	38.1
Bull kelp	4.9	4.1	4.1	0.8	1.6	109.0	0.4	0.1	33.1	gal	0.1	85.6
Red seaweed	4.1	1.6	1.6	2.5	0.8	34.7	0.1	0.0	11.6	gal	0.0	148.1
Sea ribbons	13.9	4.9	4.9	9.8	3.3	160.0	0.6	0.2	64.8	gal	0.2	80.3
Giant kelp (*macrocystis*)	1.6	0.8	0.0	0.8	0.8	0.0	0.0	0.0	0.0	gal	0.0	0.0
Alaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Bladder wrack	0.8	0.8	0.8	0.0	0.8	344.3	1.2	0.5	114.8	gal	0.4	148.7
Unknown seaweed	1.6	1.6	1.6	0.0	0.0	0.0	0.0	0.0	149.2	gal	0.5	119.2
Wood	55.7	45.1	45.1	24.6	23.8	0.0	0.0	0.0	2,042.7	cord	7.3	42.6
Spruce pitch	0.8	0.8	0.8	0.0	0.8	0.0	0.0	0.0	6.9	gal	0.0	148.7
Spruce	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0	137.7	cord	0.5	148.7
Cottonwood	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0	68.9	cord	0.2	148.7
Alder	0.8	0.8	0.8	0.0	0.8	0.0	0.0	0.0	2.3	cord	0.0	148.7

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

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

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

Note "Unknown" means "unspecified" resources (i.e., respondents may have known the specific resource harvested, but that information was not collected during the survey).

Note For all types of seaweed, amounts harvested include amounts used for fertilizer; these harvests were not converted into usable pounds.

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

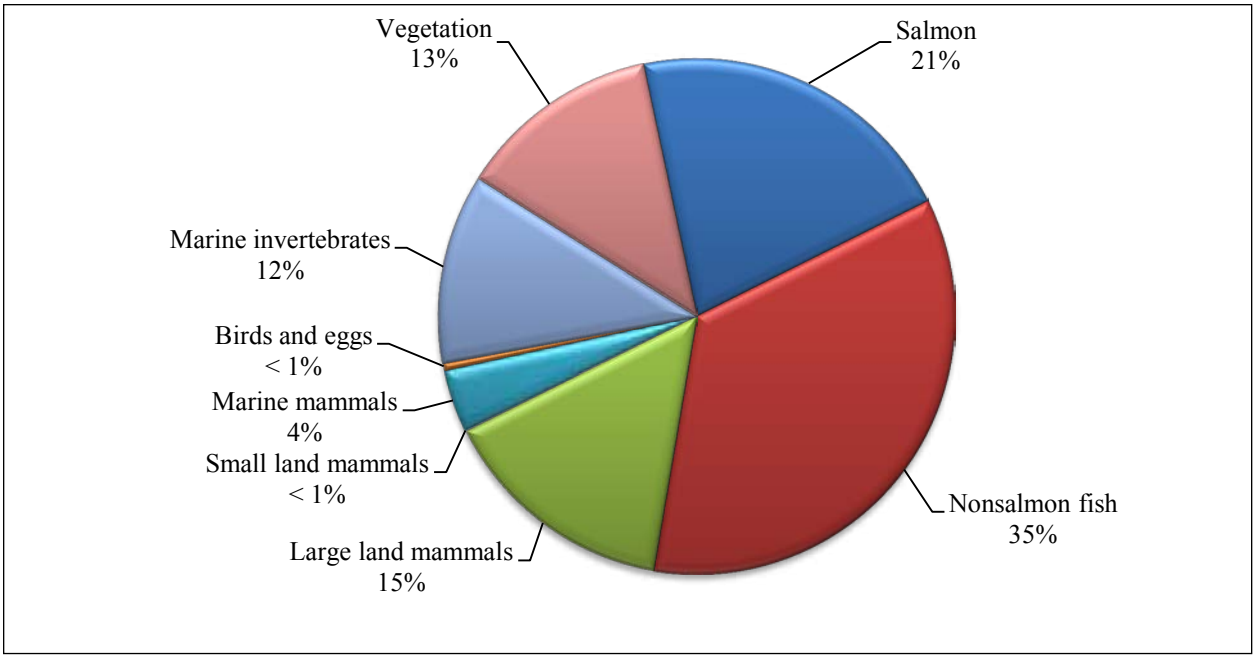


Figure 3-12.–Composition of harvest by resource category in pounds usable weight, Hoonah, 2012.

As spring gives way to summer, fishing efforts increase. All species of salmon are available to Hoonah residents during the summer. Chinook, coho, pink, and chum salmon are all harvested by rod and reel or trolling under state sport fish regulations. Sockeye salmon are most commonly harvested with a gillnet under state subsistence regulations; other salmon species are taken incidentally while sockeye salmon fishing. Bottomfishing opportunities expand from Pacific halibut to include rockfish, sablefish, lingcod, and other groundfish species. These are taken incidentally while Pacific halibut fishing under state or federal regulations. They are also targeted under state sport fish regulations. Trout and Dolly Varden are still harvested during the summer, as well as the shellfish and marine invertebrates that were harvested during the spring months. On land, hunting season for deer begins in August. Both state and federal hunting regulations apply to deer hunting on Chichagof Island. Summer is a time of plenty for plants and berries, including salmonberries, blueberries, huckleberries, strawberries, nagoonberries, and cranberries. Beach greens, such as beach asparagus and goose tongue, are also harvested during the summer.

After the frenzy of the summer, fall begins a slowdown of harvesting activity. Shellfish and crabs are still collected and most species of salmon are still locally available, at least in the early fall. As the months pass, only Chinook salmon remain to be fished. Pacific halibut can still be caught in local waters, as can trout, for which there is a fall federal subsistence season. Along with spring, fall is a good time for hunting harbor seals. Deer hunting effort increases through the fall. Most deer hunting occurs with the use of vehicles along the extensive road system in northeast Chichagof Island, but boats are also used to access hunting areas. Migratory birds pass through the region during the fall and can be hunted under state and federal regulations. Plants and berries are still abundant in the early fall; Hudson's Bay tea is a commonly gathered plant during this time.

Deer hunting continues through the winter; under federal hunting regulations deer hunting can continue through January. Shellfish are still harvested during the winter, including king and Tanner crabs, which can be harvested in Icy Strait under personal use regulations. Those residents who participate in trapping do so during the winter months. Furbearers such as wolves, coyotes, martens, and weasels can be trapped under both state and federal regulations. Trappers utilize boats and vehicles to engage in this activity.

Use and Harvest Characteristics by Resource Category

Nearly all (98%) Hoonah households used a wild resource in 2012 and every household that attempted to harvest a wild resource was successful at harvesting at least 1 species (Table 3-13). The mean usable weight of all wild resources combined, per household, was 898 lb (343 lb per capita). Sharing of wild resources in the community is very important with 96% of households receiving some wild resource and 85% of households giving some wild resource away in 2012.

Nonsalmon fish constituted the resource category with the greatest receipt by households with 87% of households receiving nonsalmon fish in 2012. This is followed by vegetation and marine invertebrates being received by 75% and 70% of households, respectively. Vegetation and nonsalmon fish constituted the resource categories given away by the greatest percentage of households, with 64% and 58% of households giving these items away, respectively. Small land mammals were shared least frequently, likely due to the minimal harvest of these species by members of the community and the prevalence of trapping for commercial purposes, rather than for food.

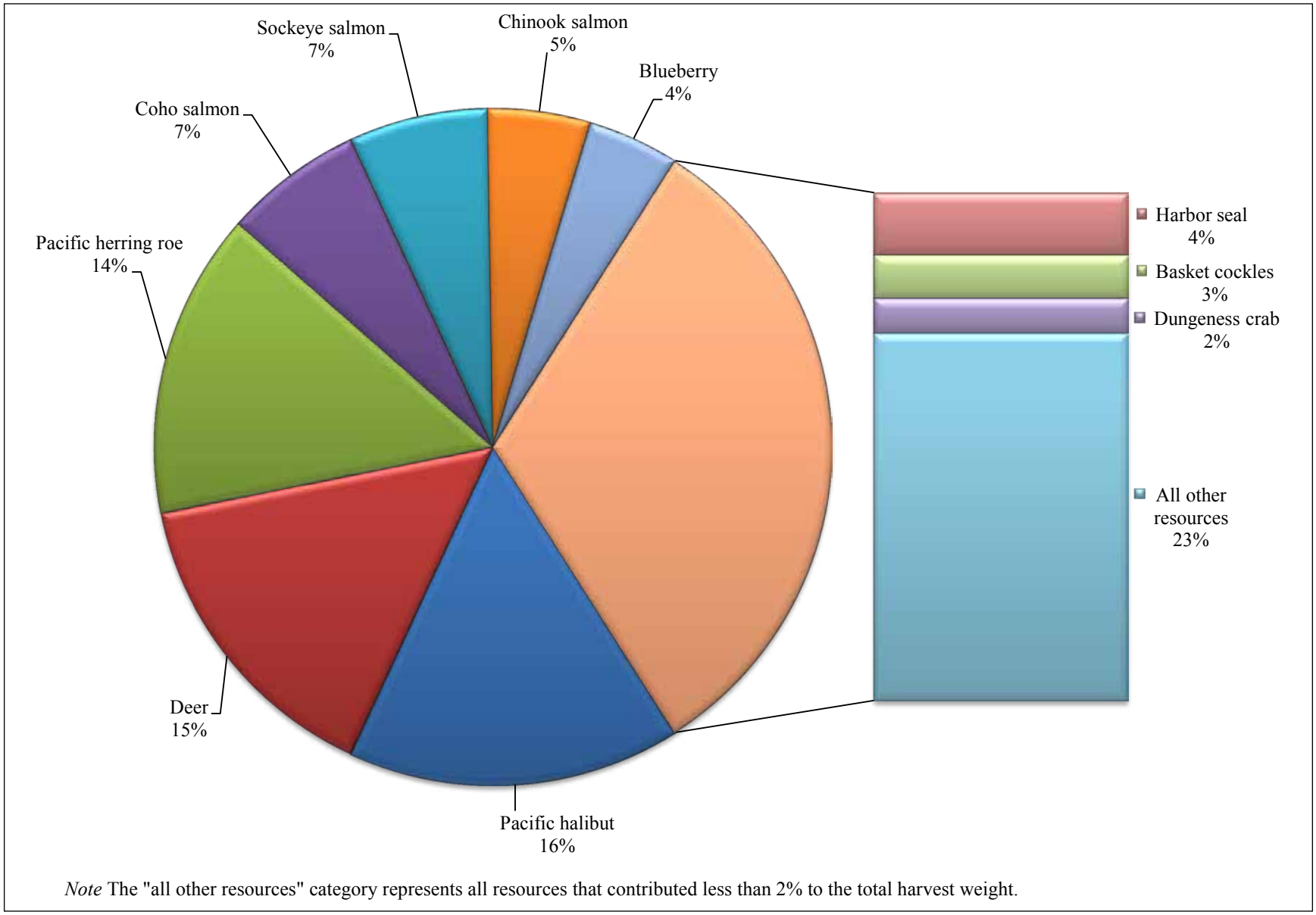
Table 3-14 lists the top 10 ranked resources used by households and Figure 3-13 shows the species with the highest per capita harvests during the 2012 study year. Pacific halibut was used by the greatest percentage of households (85%), followed by blueberries (84%), deer (77%), and coho salmon (72%) (Table 3-14). Interestingly, these top 4 resources are from 4 different resource categories. It is also of note that fish make up 4 of the top 10 resources used and vegetation make up 3. At a broader scale, 7 of the 10 most used resources are from the marine environment while the other 3 are land-based.

Looking at the top resources harvested, it can be seen that no single resource category dominates. Pacific halibut, deer, and Pacific herring eggs have the highest harvests (16%, 15%, and 14%, respectively) (Figure 3-13); these resources are also found in Table 3-14. Interestingly, even though blueberries make up a small percentage of the harvest (4%) they were the second most used resource by households. This is in contrast to harbor seal, for example, which also made up just 4% of the harvest, but did not rank in the top 10 resources used by households. This reflects the different nature of resource categories and the ways resources are shared through a community.

Table 3-14.–Top ranked resources used by households, Hoonah, 2012.

Rank[a]	Resource	Percentage of households using
1.	Pacific halibut	85.2%
2.	Blueberry	83.6%
3.	Deer	77.0%
4.	Coho salmon	72.1%
5.	Chinook salmon	69.7%
6.	Pacific herring roe (all substrates)	68.0%
6.	Dungeness crab	68.0%
8.	Salmonberry	56.6%
8.	Black seaweed	56.6%
10.	Sockeye salmon	51.6%

Source ADF&G Division of Subsistence household surveys, 2013.
a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.



Note The "all other resources" category represents all resources that contributed less than 2% to the total harvest weight.

Figure 3-13.–Top species harvested by percentage of total harvest in pounds usable weight, Hoonah, 2012.

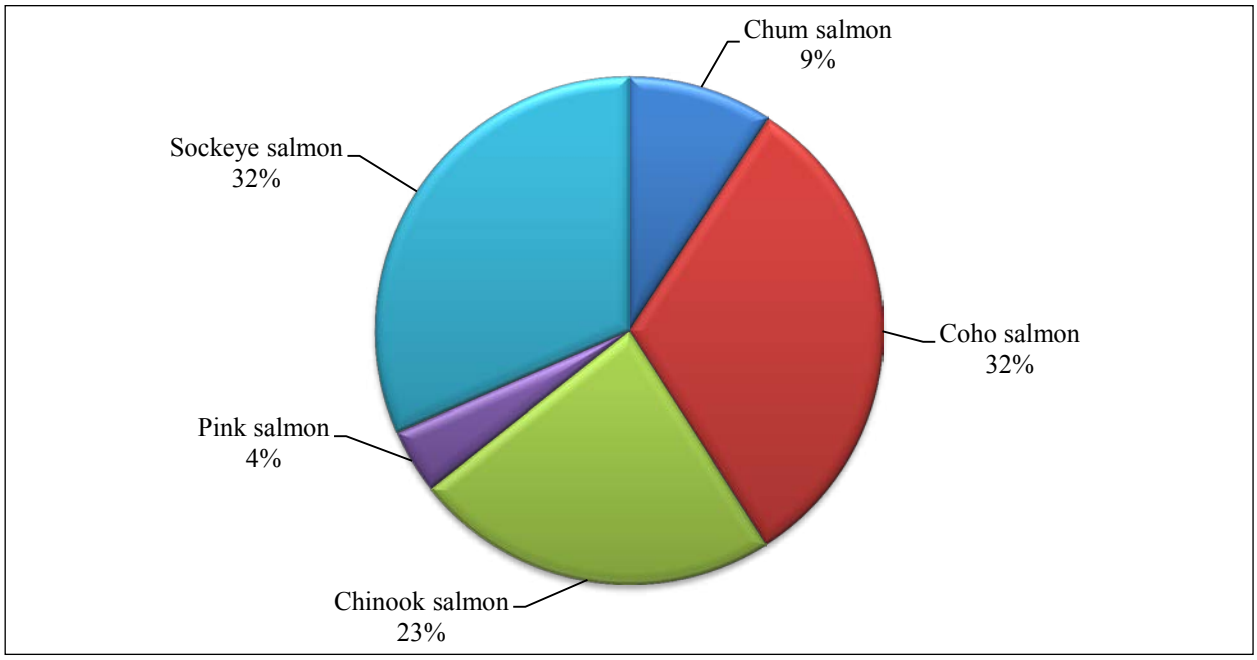


Figure 3-14.–Composition of salmon harvest in pounds usable weight, Hoonah, 2012.

Salmon

An estimated total of 52,702 lb of salmon was harvested by the community of Hoonah in 2012 (Table 3-13). Coho salmon and sockeye salmon each composed 32% of the overall usable salmon harvest, followed by Chinook salmon (23%), chum salmon (9%), and pink salmon (4%) (Figure 3-14). The per capita harvest of coho salmon and sockeye salmon was 23 lb each (Table 3-13).

Although coho and sockeye salmon made up equal percentages of the overall salmon harvest, coho salmon were used by the greatest percentage of households (72%), followed by Chinook salmon (70% of households) (Table 3-13). Sockeye salmon were used by a much smaller percentage of households (52%); this may be because Chinook salmon was the most frequently received salmon species (received by 44% of households) and that the relative size of the species as compared to other fish provides a greater amount of usable weight per fish. The comparatively large size of Chinook salmon also means that fewer households can be responsible for sharing with a large percentage of households, which is seen in Hoonah. Chinook salmon are received by the most households (44%), but are given away by a much smaller percentage of households (30%) in comparison to coho salmon, which is shared by the most households (41%) of all the species but is received by only 39% of households. Coho salmon harvest was attempted by the greatest percentage of households (57%), followed by Chinook salmon (43%) and sockeye salmon (28%). Most households attempting to harvest salmon were successful; approximately 9% of households that attempted to harvest salmon were unsuccessful with failure rates of 4%–20% for the harvests of the various species of salmon.

Of the estimated 9,947 salmon harvested by Hoonah households, approximately one-third (3,128 salmon; 16,342 lb) were removed from commercial catches (Table 3-15). An estimated 2,867 salmon (15,442 lb) were taken by rod and reel and 2,684 salmon (12,333 lb) were taken using subsistence gear (predominately nets or seines). An additional 1,268 salmon (8,586 lb) were taken by trolling. Figure 3-15 is a visual representation of the salmon harvest by gear type.

Table 3-15.–Estimated harvest of salmon by gear type and resource, Hoonah, 2012.

			Subsistence methods													
	Removed from commercial catch		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Trolling		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**3,128.3**	**16,341.6**	**2,249.5**	**10,347.6**	**45.9**	**119.6**	**388.6**	**1,865.5**	**2,684.1**	**12,332.8**	**1,268.2**	**8,585.6**	**2,866.8**	**15,442.3**	**9,947.4**	**52,702.3**
Chum salmon	401.0	2,697.6	41.7	280.2	0.0	0.0	13.8	92.6	55.4	372.8	78.0	524.9	188.2	1,266.2	722.7	4,861.5
Coho salmon	1,033.2	4,951.8	160.0	766.8	0.0	0.0	226.8	1,086.8	386.8	1,853.6	340.2	1,630.2	1,729.0	8,286.2	3,489.2	16,721.9
Chinook salmon	249.9	2,346.4	2.3	21.9	0.0	0.0	0.0	0.0	2.3	21.9	606.3	5,692.3	452.6	4,249.5	1,311.1	12,310.1
Pink salmon	169.8	442.6	97.2	253.3	45.9	119.6	0.0	0.0	143.1	372.9	192.8	502.4	326.7	851.3	832.4	2,169.3
Sockeye salmon	1,274.3	5,903.2	1,948.3	9,025.5	0.0	0.0	148.1	686.1	2,096.4	9,711.5	50.9	235.8	170.3	789.1	3,592.0	16,639.6
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Note The harvested number of salmon is represented as individual fish harvested.

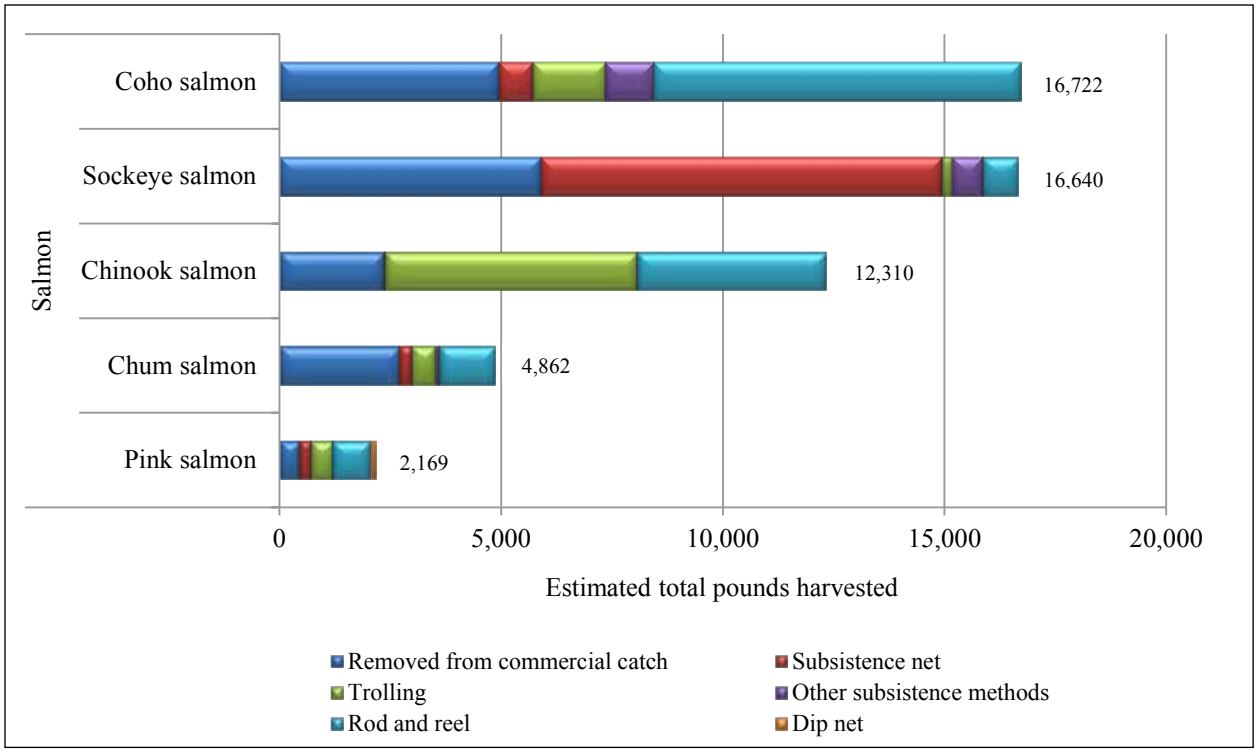


Figure 3-15.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Hoonah, 2012.

As can be seen, the type of gear used for harvest varies considerably depending on the species of salmon being targeted. For sockeye salmon, subsistence gillnets or seines were the most commonly used harvest method, constituting 54% of the harvest for this species (Table 3-16). For coho salmon, rod and reel was the most commonly used harvest method, constituting 50% of the coho salmon harvest. Chinook salmon was harvested in the greatest quantities by trolling (46%) or with rod and reel (35%). The majority of chum salmon (56%) was removed from commercial catches.

Hoonah residents fished for salmon in 2012 in the vicinity of Hoonah, and from the Cross Sound area to Freshwater Bay.[6] Fishing for coho salmon occurred from June through September in Port Frederick, Freshwater Bay, Homeshore, and Excursion Inlet, as well as farther from Hoonah in Portlock Harbor and Port Althorp on the western coast of Chichagof Island (Figure 3-16). Chinook salmon were harvested in many of the same places, including Port Frederick, along the western coast of Chichagof and Yakobi islands, as well as in Icy Strait along Homeshore and Whitestone Harbor (Figure 3-17). Subsistence sockeye salmon harvests occurred mainly in July and August on the western coast of Chichagof and Yakobi islands, including Hoktaheen Cove, Surge and Takanis bays, as well as Portlock Harbor and in Chilkoot Inlet near Haines (Figure 3-18). In addition, some sockeye harvesting occurred in Excursion Inlet and Freshwater Bay. Chum and pink salmon were harvested mostly in Port Frederick, but also in Freshwater Bay, Excursion Inlet, and the western coast of Chichagof Island. Maps depicting these harvest locations can be found in Appendix D.

6. Because not every household in Hoonah was surveyed for this study, the maps presented for the harvest of each wild resource may not show the full extent of harvest areas used by the community during 2012. In addition, resource harvest areas change over time, so areas not used in 2012 might be used in other years.

Table 3-16.–Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Hoonah, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods						
			Gillnet or seine	Dip net	Other	Subsistence gear, any method	Trolling	Rod and reel	Any method
Salmon	**Gear type**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**31.0%**	**19.6%**	**0.2%**	**3.5%**	**23.4%**	**16.3%**	**29.3%**	**100.0%**
	Total	**31.0%**	**19.6%**	**0.2%**	**3.5%**	**23.4%**	**16.3%**	**29.3%**	**100.0%**
Chum salmon	Gear type	16.5%	2.7%	0.0%	5.0%	3.0%	6.1%	8.2%	9.2%
	Resource	55.5%	5.8%	0.0%	1.9%	7.7%	10.8%	26.0%	100.0%
	Total	5.1%	0.5%	0.0%	0.2%	0.7%	1.0%	2.4%	9.2%
Coho salmon	Gear type	30.3%	7.4%	0.0%	58.3%	15.0%	19.0%	53.7%	31.7%
	Resource	29.6%	4.6%	0.0%	6.5%	11.1%	9.7%	49.6%	100.0%
	Total	9.4%	1.5%	0.0%	2.1%	3.5%	3.1%	15.7%	31.7%
Chinook salmon	Gear type	14.4%	0.2%	0.0%	0.0%	0.2%	66.3%	27.5%	23.4%
	Resource	19.1%	0.2%	0.0%	0.0%	0.2%	46.2%	34.5%	100.0%
	Total	4.5%	0.0%	0.0%	0.0%	0.0%	10.8%	8.1%	23.4%
Pink salmon	Gear type	2.7%	2.4%	100.0%	0.0%	3.0%	5.9%	5.5%	4.1%
	Resource	20.4%	11.7%	5.5%	0.0%	17.2%	23.2%	39.2%	100.0%
	Total	0.8%	0.5%	0.2%	0.0%	0.7%	1.0%	1.6%	4.1%
Sockeye salmon	Gear type	36.1%	87.2%	0.0%	36.8%	78.7%	2.7%	5.1%	31.6%
	Resource	35.5%	54.2%	0.0%	4.1%	58.4%	1.4%	4.7%	100.0%
	Total	11.2%	17.1%	0.0%	1.3%	18.4%	0.4%	1.5%	31.6%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

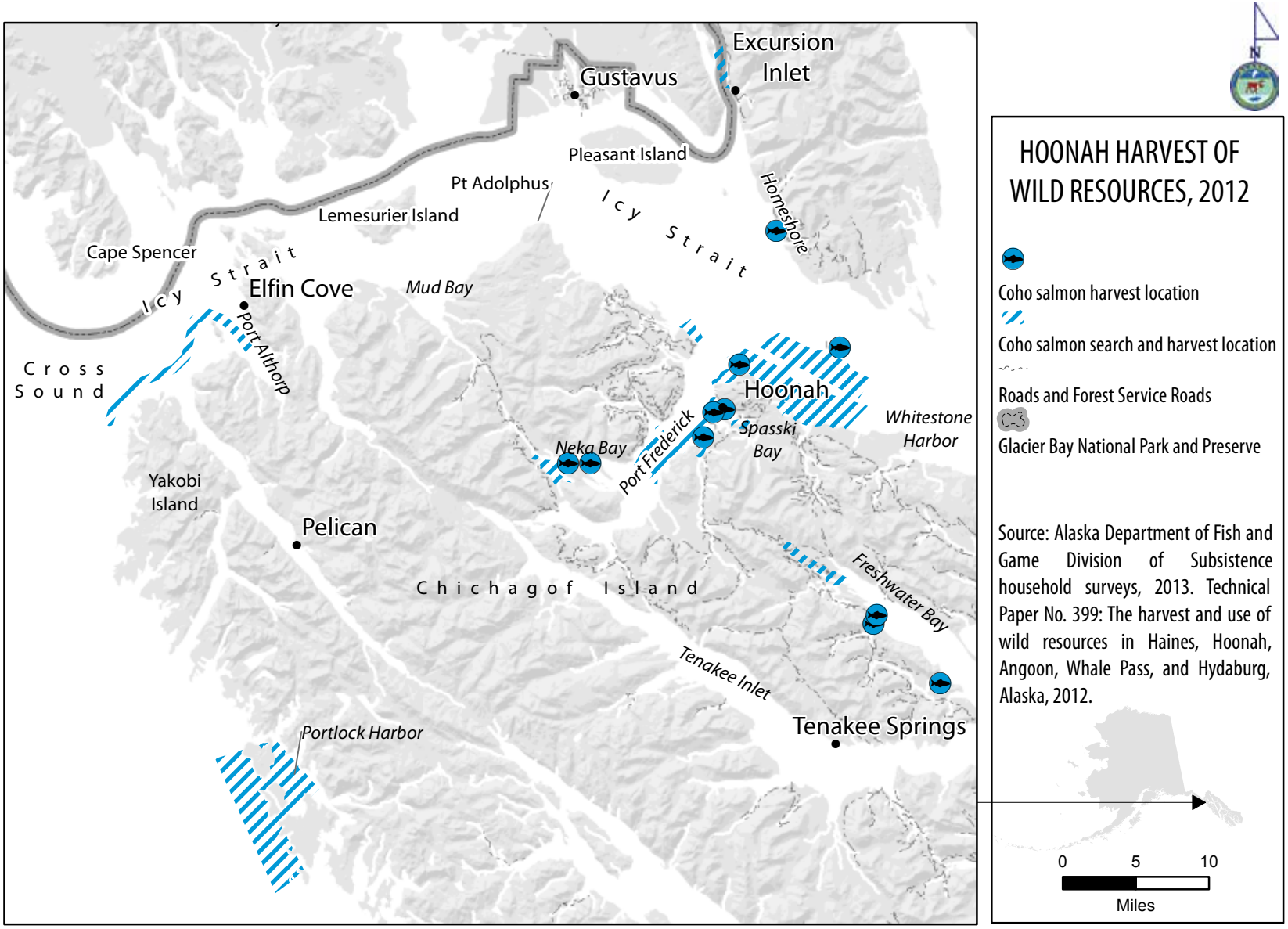


Figure 3-16.–Fishing and harvest locations of coho salmon, Hoonah, 2012.

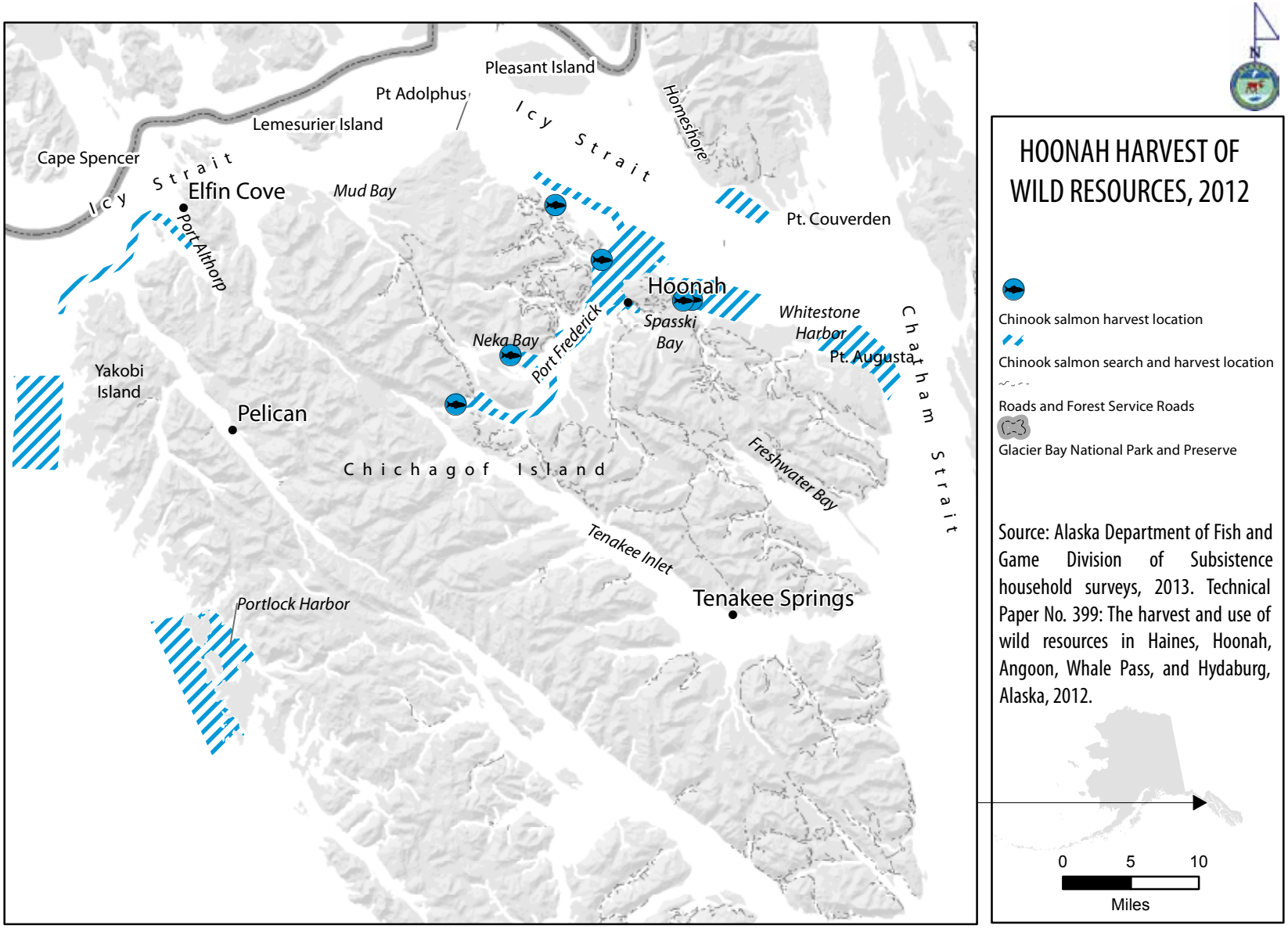


Figure 3-17.–Fishing and harvest locations of Chinook salmon, Hoonah, 2012.

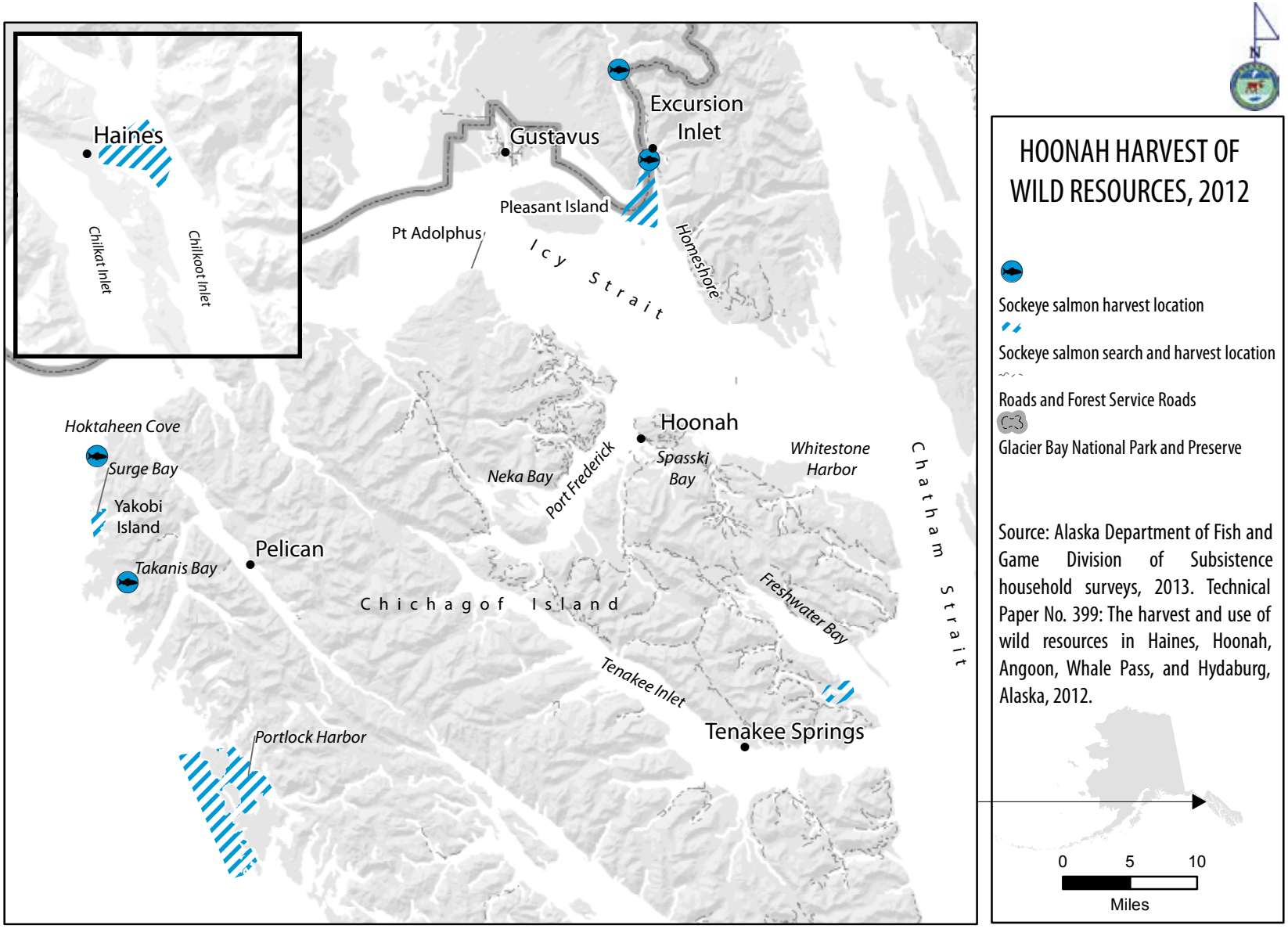
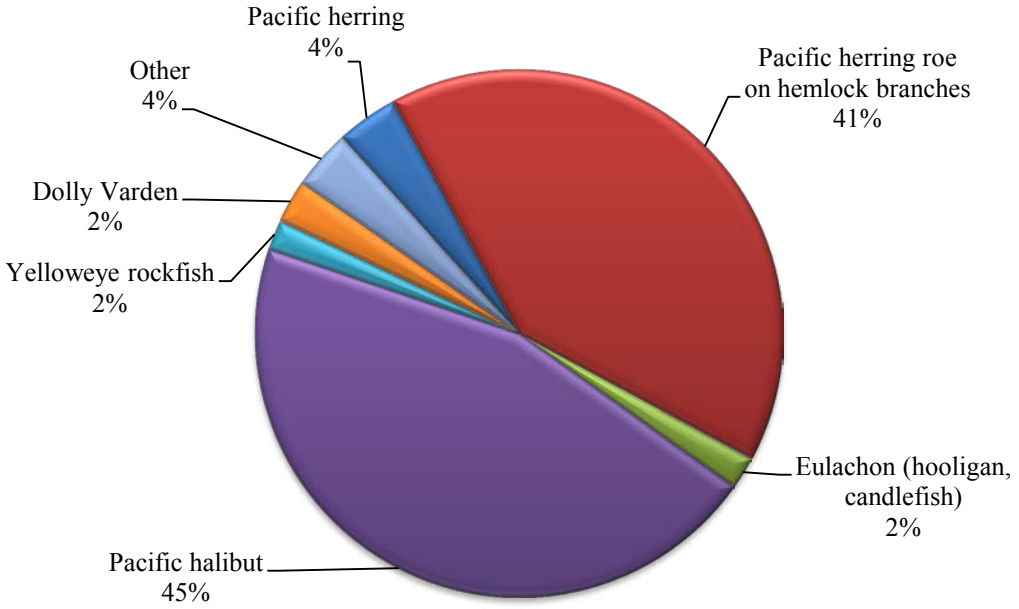


Figure 3-18.–Fishing and harvest locations of sockeye salmon, Hoonah, 2012.



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

Figure 3-19.–Composition of nonsalmon fish harvest in pounds usable weight, Hoonah, 2012.

Nonsalmon Fish

The majority of the nonsalmon fish harvest by weight in 2012 consisted of Pacific halibut (45%) and Pacific herring eggs on hemlock branches (41%) (Figure 3-19). No other species made up more than 4% by weight of the overall harvest of nonsalmon fish. The per capita harvest of Pacific halibut was 55 lb and the harvest of Pacific herring eggs on hemlock branches was 49 lb per capita (Table 3-13).

As mentioned previously, nonsalmon fish is the resource category used by the greatest portion of households (94%) (Table 3-13). Broken down by species, Pacific halibut was used the most, by 85% of households, followed by Pacific herring eggs on hemlock branches (68%), Pacific herring (28%), yelloweye rockfish (25%), and Dolly Varden (25%). Despite the wide use of nonsalmon fish, only Pacific halibut was targeted by a majority of households in Hoonah (53%), most of whom were successful. Pacific halibut was also highly shared, with 42% of households giving and 57% of households receiving this resource. Interestingly, only 7% of households attempted to harvest Pacific herring eggs on hemlock branches despite the large percentage of use in the community, reflecting the specialized nature of this harvest and the high amount of sharing that occurs (66% of households receiving and 34% giving this resource away). No other species was shared in such high percentages.

An estimated total of 58,989 lb of nonsalmon fish were harvested using subsistence gear, and 16,666 lb were harvested using rod and reel gear (Table 3-17). An additional 12,470 lb were removed from commercial catches for home use. Figure 3-20 is a visual representation of the pounds of nonsalmon fish harvested by gear type. Pacific herring eggs on hemlock branches and Pacific halibut dominate the harvest and were both taken mainly with subsistence gear.

Table 3-17.–Estimated harvest of nonsalmon fish by gear type and resource, Hoonah, 2012.

				Subsistence methods											
		Removed from commercial catch		Gillnet or seine		Longline and skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Unit[a]	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds
Nonsalmon fish			**12,469.7**		**510.9**		**18,223.5**		**40,254.9**		**58,989.3**		**16,666.4**		**88,125.5**
Pacific herring	gal	76.5	459.0	80.3	482.0	0.0	0.0	115.7	694.2	196.0	1,176.2	280.4	1,682.3	552.9	3,317.5
Pacific herring roe/unspecified	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring sac roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	84.6	592.4	84.6	592.4	0.0	0.0	84.6	592.4
Pacific herring roe on hair seaweed	gal	0.0	0.0	0.0	0.0	0.0	0.0	33.3	233.3	33.3	233.3	0.0	0.0	33.3	233.3
Pacific herring roe on hemlock branches	gal	0.0	0.0	0.0	0.0	0.0	0.0	5,123.3	35,863.3	5,123.3	35,863.3	6.6	46.3	5,129.9	35,909.6
Eulachon (hooligan, candlefish)	gal	0.0	0.0	0.0	0.0	0.0	0.0	192.8	1,735.5	192.8	1,735.5	0.0	0.0	192.8	1,735.5
Silver smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea bass	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	6.9	6.9	6.9
Pacific (gray) cod	ind	71.7	229.5	0.0	0.0	4.6	14.7	0.0	0.0	4.6	14.7	0.0	0.0	76.3	244.2
Pacific tomcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	114.8	57.4	114.8	57.4
Flounder	ind	0.0	0.0	0.0	0.0	11.5	34.4	0.0	0.0	11.5	34.4	0.0	0.0	11.5	34.4
Kelp greenling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8	13.8	13.8
Lingcod	ind	72.9	459.0	4.6	28.9	2.3	14.5	18.2	114.8	25.1	158.1	13.8	86.8	111.7	703.9
Pacific halibut	lb	9,659.4	9,659.4	0.0	0.0	18,074.7	18,074.7	803.3	803.3	18,878.0	18,878.0	11,459.4	11,459.4	39,996.9	39,996.9
Black rockfish	ind	13.8	27.5	0.0	0.0	25.2	50.5	45.9	91.8	71.1	142.3	43.6	87.2	128.5	257.0
Yelloweye rockfish	ind	464.0	1,391.9	0.0	0.0	11.6	34.7	19.1	57.4	30.7	92.1	38.3	114.8	532.9	1,598.8
Quillback rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	75.7	25.2	75.7
Brown rockfish	ind	13.8	41.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	41.3
Unknown rockfish	ind	25.2	75.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	41.3	39.0	117.0
Sablefish (black cod)	ind	31.6	126.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.1	64.3	47.6	190.5
Buffalo sculpin	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Irish lord	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown shark	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skates	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sole	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3	2.3
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	23.0	68.9	23.0	68.9	754.4	2,263.3	777.4	2,332.2
Cutthroat trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	117.0	175.6	117.0	175.6
Rainbow trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.3	166.6	83.3	166.6
Steelhead	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.4	292.6	34.4	292.6
Unknown trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	29.9	18.4	29.9

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

Note The summary row that incliudes incompatible unit of measure for harvest number has been left blank.

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

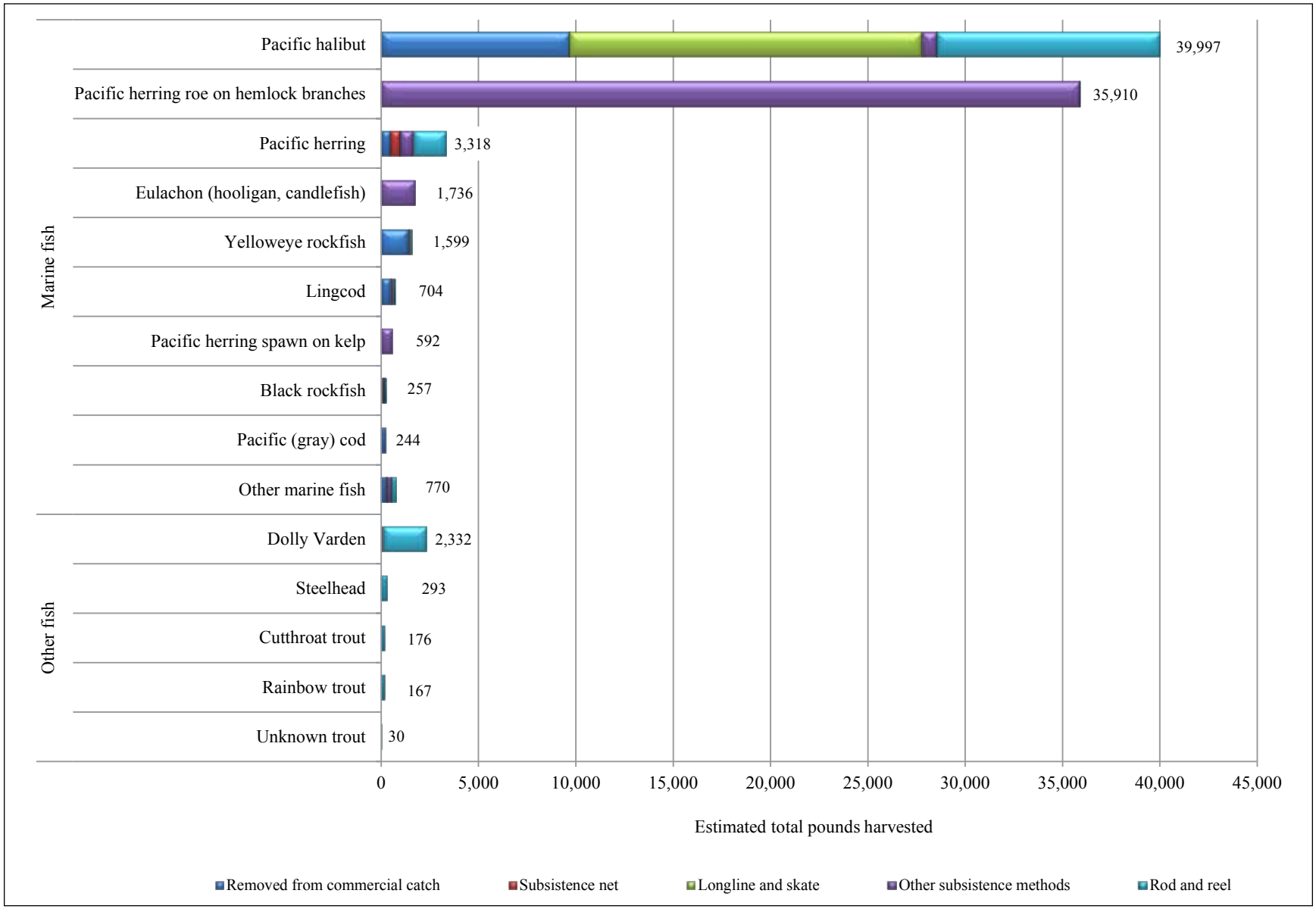


Figure 3-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Hoonah, 2012.

As estimated in total pounds of fish, 67% of the nonsalmon fish harvest was caught using subsistence gear (Table 3-18). For Pacific halibut, longlines or skates were the most commonly used harvest method, constituting 45% of the harvest by weight for this species. The rest of the Pacific halibut harvest was caught with rod and reel (29%) or removed from commercial catches (24%). Pacific herring eggs on hemlock branches are harvested by setting hemlock branches and then retrieving those branches after Pacific herring have spawned on them. Pacific herring was harvested mostly by rod and reel (51%). Eulachon (hooligan) was harvested entirely with subsistence nets. A majority of many nonsalmon fish species harvested were removed from a commercial catch, including brown rockfish (100%), Pacific cod (94%), yelloweye rockfish (87%), sablefish (66%), and lingcod (65%). Freshwater fish were harvested almost entirely with rod and reel.

Hoonah residents harvested Pacific halibut throughout Icy Strait, east toward Chatham Strait, and north past Cape Spencer, as well as in Port Frederick and Freshwater Bay (Figure 3-21). Pacific halibut is harvested throughout the year, but much of the fishing occurs during the summer and early fall months of May through September. Pacific herring was harvested right offshore from the community. Other nonsalmon fish were harvested throughout Icy Strait, east into Chatham Strait, along the western coast of Yakobi Island as well as inside Port Frederick and Freshwater Bay (for maps of harvest and use areas of other species, see Appendix D).

Table 3-18.–Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Hoonah, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Nonsalmon fish	**Gear type**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**14.1%**	**0.6%**	**20.7%**	**45.7%**	**66.9%**	**18.9%**	**100.0%**
	Total	**14.1%**	**0.6%**	**20.7%**	**45.7%**	**66.9%**	**18.9%**	**100.0%**
Pacific herring	Gear type	3.7%	94.3%	0.0%	1.7%	2.0%	10.1%	3.8%
	Resource	13.8%	14.5%	0.0%	20.9%	35.5%	50.7%	100.0%
	Total	0.5%	0.5%	0.0%	0.8%	1.3%	1.9%	3.8%
Pacific herring roe/unspecified	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring sac roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	1.5%	1.0%	0.0%	0.7%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.7%	0.7%	0.0%	0.7%
Pacific herring roe on hair seaweed	Gear type	0.0%	0.0%	0.0%	0.6%	0.4%	0.0%	0.3%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.3%
Pacific herring roe on hemlock branches	Gear type	0.0%	0.0%	0.0%	89.1%	60.8%	0.3%	40.7%
	Resource	0.0%	0.0%	0.0%	99.9%	99.9%	0.1%	100.0%
	Total	0.0%	0.0%	0.0%	40.7%	40.7%	0.1%	40.7%
Eulachon (hooligan, candlefish)	Gear type	0.0%	0.0%	0.0%	4.3%	2.9%	0.0%	2.0%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	2.0%	2.0%	0.0%	2.0%
Silver smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sea bass	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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Table 3-18.–Page 2 of 4.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Pacific (gray) cod	Gear type	1.8%	0.0%	0.1%	0.0%	0.0%	0.0%	0.3%
	Resource	94.0%	0.0%	6.0%	0.0%	6.0%	0.0%	100.0%
	Total	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Flounder	Gear type	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%
	Resource	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kelp greenling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lingcod	Gear type	3.7%	5.7%	0.1%	0.3%	0.3%	0.5%	0.8%
	Resource	65.2%	4.1%	2.1%	16.3%	22.5%	12.3%	100.0%
	Total	0.5%	0.0%	0.0%	0.1%	0.2%	0.1%	0.8%
Pacific halibut	Gear type	77.5%	0.0%	99.2%	2.0%	32.0%	68.8%	45.4%
	Resource	24.2%	0.0%	45.2%	2.0%	47.2%	28.7%	100.0%
	Total	11.0%	0.0%	20.5%	0.9%	21.4%	13.0%	45.4%
Black rockfish	Gear type	0.2%	0.0%	0.3%	0.2%	0.2%	0.5%	0.3%
	Resource	10.7%	0.0%	19.6%	35.7%	55.4%	33.9%	100.0%
	Total	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.3%
Yelloweye rockfish	Gear type	11.2%	0.0%	0.2%	0.1%	0.2%	0.7%	1.8%
	Resource	87.1%	0.0%	2.2%	3.6%	5.8%	7.2%	100.0%
	Total	1.6%	0.0%	0.0%	0.1%	0.1%	0.1%	1.8%
Quillback rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%

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Table 3-18.–Page 3 of 4.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Brown rockfish	Gear type	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown rockfish	Gear type	0.6%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%
	Resource	64.7%	0.0%	0.0%	0.0%	0.0%	35.3%	100.0%
	Total	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Sablefish (black cod)	Gear type	1.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.2%
	Resource	66.3%	0.0%	0.0%	0.0%	0.0%	33.7%	100.0%
	Total	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%
Buffalo sculpin	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Red Irish lord	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown shark	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skates	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sole	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dolly Varden	Gear type	0.0%	0.0%	0.0%	0.2%	0.1%	13.6%	2.6%
	Resource	0.0%	0.0%	0.0%	3.0%	3.0%	97.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.1%	0.1%	2.6%	2.6%

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Table 3-18.–Page 4 of 4.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Cutthroat trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Steelhead	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%
Unknown trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

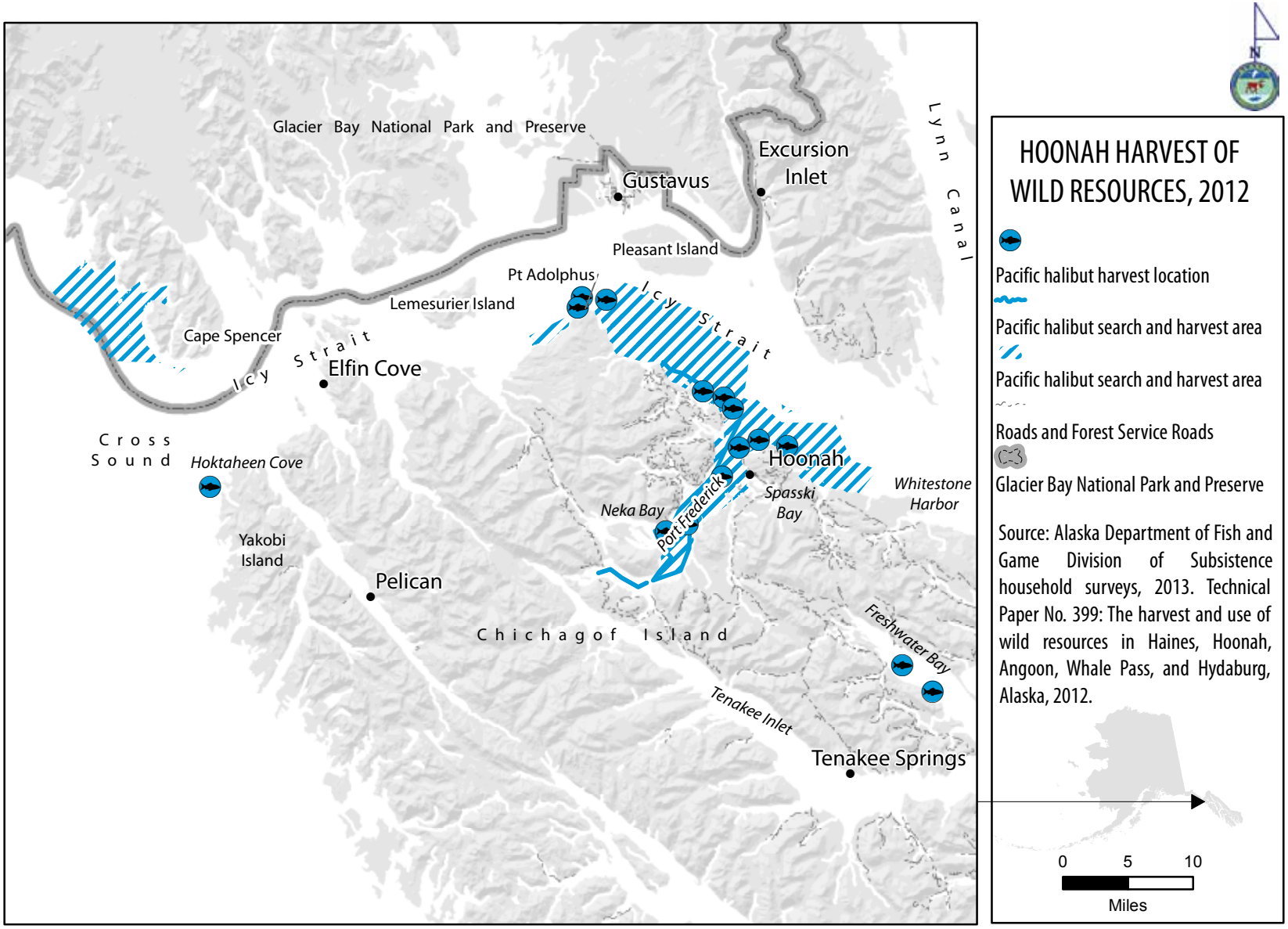
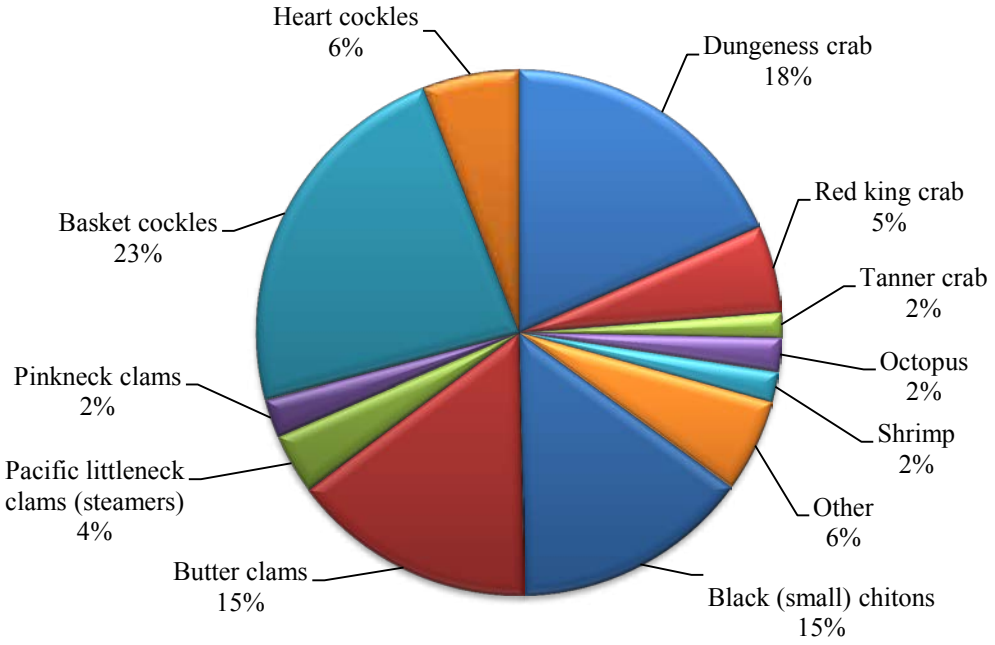


Figure 3-21.–Fishing and harvest locations of Pacific halibut, Hoonah, 2012.



Note The "other" category represents all resources that contributed less than 1.5% to the marine invertebrate harvest.

Figure 3-22.–Composition of marine invertebrate harvest in pounds usable weight, Hoonah, 2012.

Marine Invertebrates

An estimated total of 29,803 lb of marine invertebrates were harvested by Hoonah residents in 2012 equaling a harvest of 41 lb per capita (Table 3-13). The marine invertebrate harvest comprised basket cockles (23%; 6,905 lb), Dungeness crab (18%; 5,483 lb), butter clams (15%; 4,511 lb), black chitons (15%; 4,374 lb), and heart cockles (6%; 1,772 lb). No other species composed more than 5% of the overall harvest (Figure 3-22; Table 3-13). The per capita harvests of the most heavily collected resources were: basket cockles (9 lb), Dungeness crab (8 lb), butter clams (6 lb), and black chitons (6 lb).

Marine invertebrates were used by 84% of Hoonah households and all households that attempted to harvest were successful at harvesting at least 1 species in this category. In fact, the only 2 marine invertebrate species that a household attempted to harvest and was unable to do so were black chitons and razor clams. Overall, 70% of households received marine invertebrates and 48% gave these resources away. Among all marine invertebrates harvested, Dungeness crab was shared the most frequently, with 51% of households indicating that they received this resource and 31% gave it away. A few resources, such as urchins and squid, were used by a small percentage of households, though no households harvested these resources in Hoonah.

The harvest of marine invertebrates by Hoonah households was concentrated in Port Frederick, with some harvesting occurring along the shores of Icy Strait, as well as inside Freshwater Bay and Glacier Bay. Dungeness crab harvests occurred year-round and almost exclusively in Port Frederick (Figure 3-23). Other harvesting locations include Freshwater Bay, Sisters Island, and near the community of Gustavus. Marine invertebrates besides Dungeness crab were harvested mainly in Port Frederick as well, but harvests also occurred in Icy Strait along the shoreline to Point Adolphus, in Freshwater Bay, and in Glacier Bay (Figure 3-24).

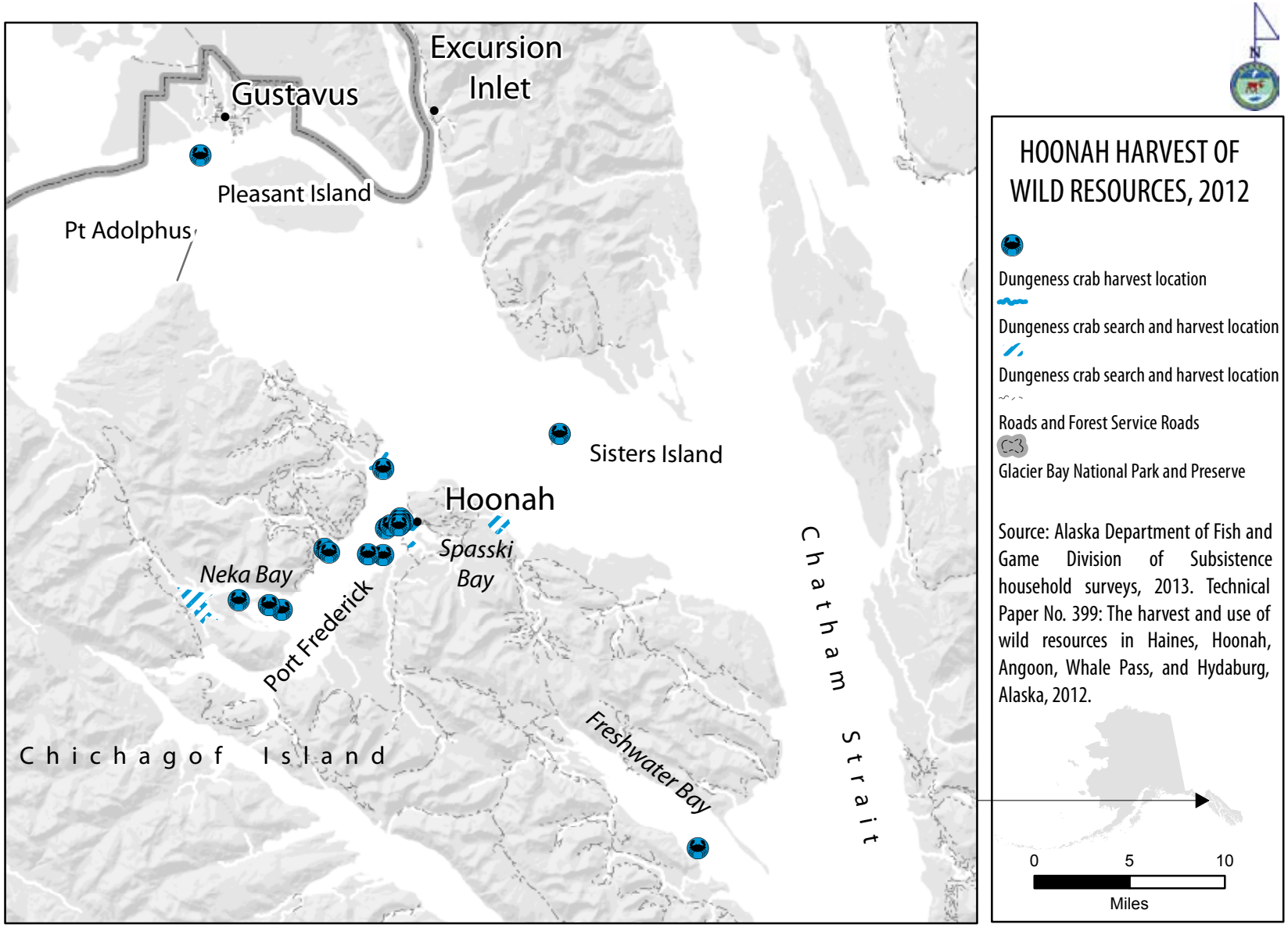


Figure 3-23.–Fishing and harvest locations of Dungeness crab, Hoonah, 2012.

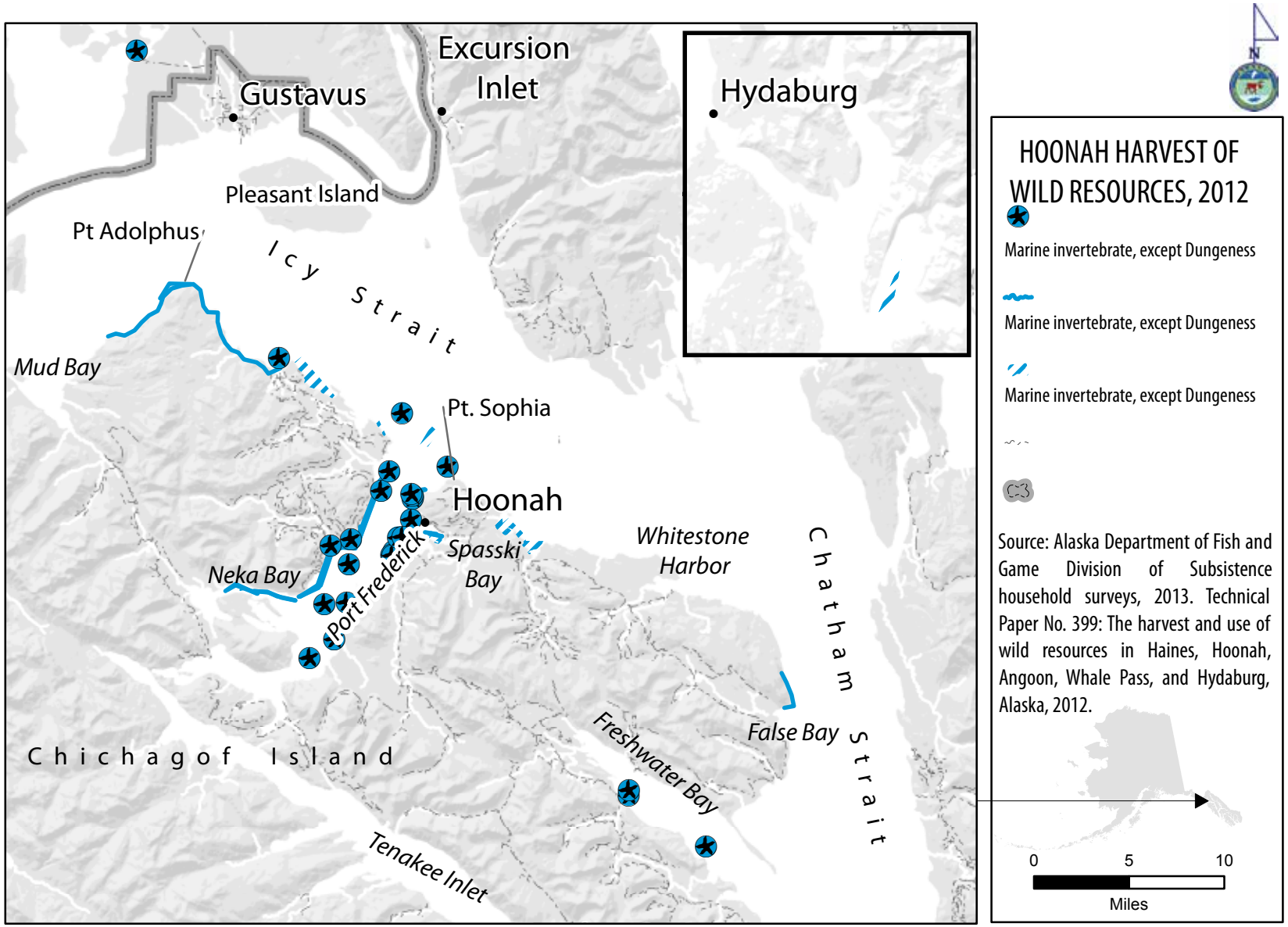


Figure 3-24.–Fishing and harvest locations of marine invertebrates (except Dungeness crab), Hoonah, 2012.

Large Land Mammals

The community of Hoonah harvested 37,558 lb of large land mammals in 2012, equaling a per capita harvest of 51 lb (Table 3-13). This harvest consisted entirely of deer and represents approximately 470 animals. A total of 77% of households used deer in 2012 and 59% of households hunted deer. Forty-eight percent of Hoonah households were successful at harvesting deer. This resource was heavily shared, with 45% of households receiving deer, and 40% giving it away. All deer were harvested in the fall and winter (August through January), with the majority of animals harvested in October and November (Table 3-19). The deer harvest by sex consisted of 84% (395) bucks, 14% (64) does, and 2% (11) of unknown sex.

Moose, caribou, and muskox were also used by a much smaller percentage of households—16%, 2%, and 1%, respectively (Table 3-13). Three percent of households attempted to harvest moose, 1% attempted to harvest caribou, and no household attempted to harvest muskox. Each of these 3 species was received by the households that used them. Besides deer, the only large land mammal resource given away was moose, and only by 3% of households. Approximately 1% of households attempted to harvest mountain goats and elk but were unsuccessful and no household reported use of these resources.

Hoonah residents harvested deer throughout the extensive logging road areas in northeast Chichagof Island (Figure 3-25). Residents also used boats to access the shores of Icy Strait from Hoonah to Point Adolphus, and Idaho Inlet. Dall Island, located off the west coast of Prince of Wales Island, was also utilized in a search for deer. Search areas for other large land mammals were not mapped.

Table 3-19.–Estimated large land mammal harvests by month and sex, Hoonah, 2012.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All large land mammals	**9.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**43.7**	**46.0**	**122.0**	**177.2**	**39.1**	**32.2**	**469.5**
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Deer	9.2	0.0	0.0	0.0	0.0	0.0	0.0	43.7	46.0	122.0	177.2	39.1	32.2	**469.5**
Deer, male	4.6	0.0	0.0	0.0	0.0	0.0	0.0	39.0	39.0	101.0	146.9	34.4	29.8	**394.8**
Deer, female	4.6	0.0	0.0	0.0	0.0	0.0	0.0	4.6	6.9	13.8	27.5	4.6	2.3	**64.3**
Deer, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	2.6	0.0	0.0	**10.5**
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Common muskox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

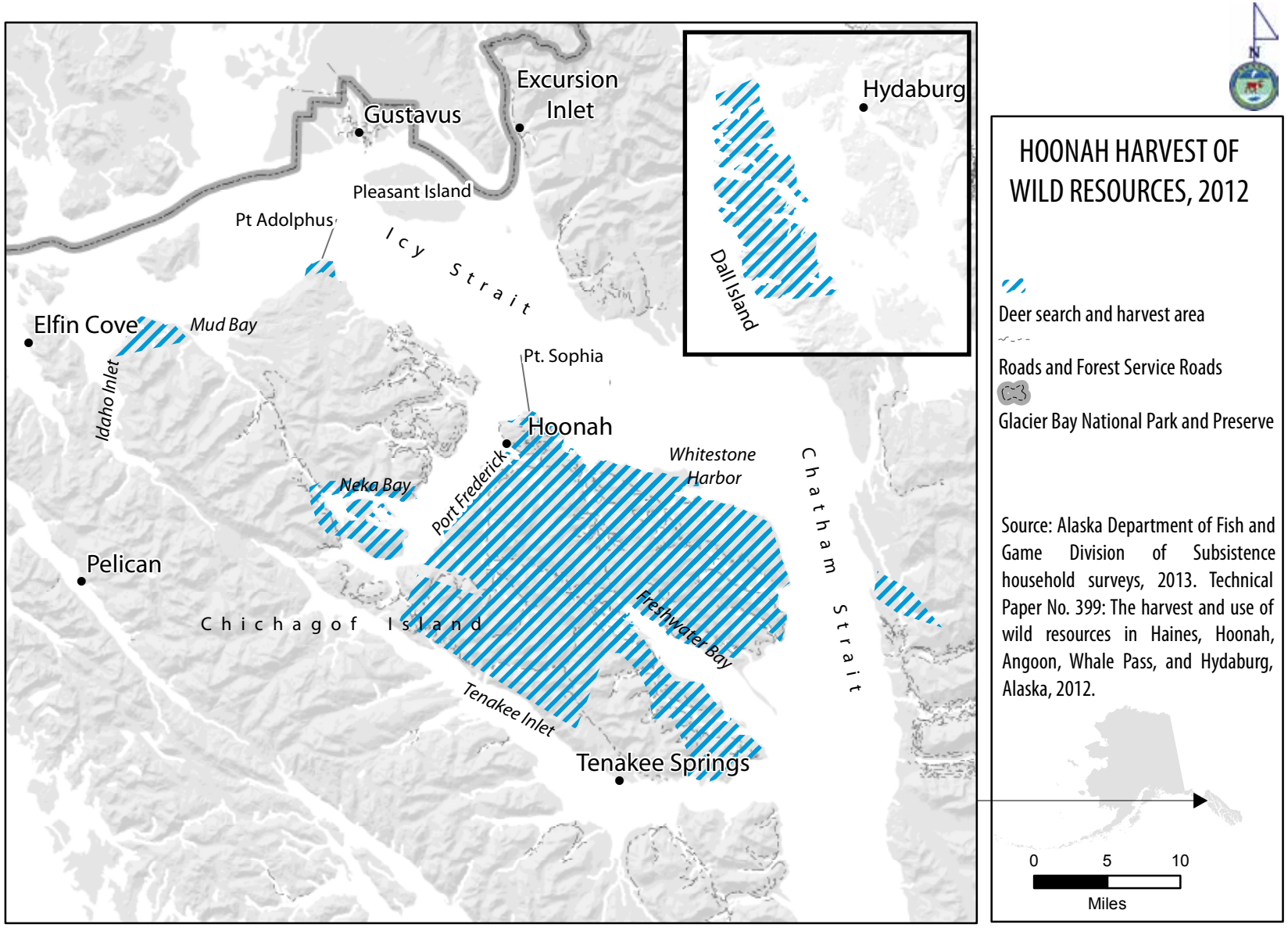


Figure 3-25.–Hunting locations of deer, Hoonah, 2012.

Table 3-20.–Estimated marine mammal harvests by month and sex, Hoonah, 2012.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All marine mammals	**0.0**	**2.3**	**2.3**	**2.3**	**0.0**	**2.3**	**4.6**	**6.9**	**23.0**	**18.4**	**25.3**	**0.0**	**48.2**	**135.5**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Harbor seal	0.0	2.3	2.3	2.3	0.0	2.3	0.0	4.6	23.0	18.4	13.8	0.0	48.2	**117.0**
Harbor seal, male	0.0	2.3	2.3	0.0	0.0	2.3	0.0	2.3	11.5	2.3	11.5	0.0	18.4	**52.8**
Harbor seal, female	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.3	2.3	2.3	2.3	0.0	2.3	**13.8**
Harbor seal, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	13.8	0.0	0.0	27.5	**50.5**
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	4.6	2.3	0.0	0.0	11.5	0.0	0.0	**18.4**
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

Marine Mammals

Hoonah residents harvested a total of 9,832 lb of marine mammals in 2012, equaling 35 lb per household and 13 lb per capita (Table 3-13). The entire usable harvest consisted of harbor seals; sea otters were also harvested for their hides. Thirty-four percent of households used harbor seals in 2012, compared to 3% of households that used sea otters and 2% that used Steller sea lions. All households that hunted sea otters were successful compared to an 89% success rate for harbor seals and 0% for Steller sea lions. Only 2% of households attempted to harvest Steller sea lions. Sharing of all 3 of these species occurred; the majority of sharing related to harbor seals: 27% of households received harbor seals while 21% gave away this resource. Less than 1% of households shared or received sea lions or sea otters.

The harvest of harbor seals occurred throughout much of the year, though 47% were harvested between September and November (Table 3-20). A large percentage of harbor seals (41%) were harvested during unknown months. Forty-five percent of individuals harvested were male, compared to 12% female, and the remainder were of unknown sex. Sea otters were only harvested during July, August, and November, with 63% being harvested in November.

Marine mammals were harvested in the general vicinity of Hoonah as well as near the community of Haines (Figure 3-26). Port Frederick was heavily used for marine mammal hunting, as was Icy Strait just outside of Port Frederick heading west. In addition, some hunting occurred in Freshwater Bay and Mud Bay.

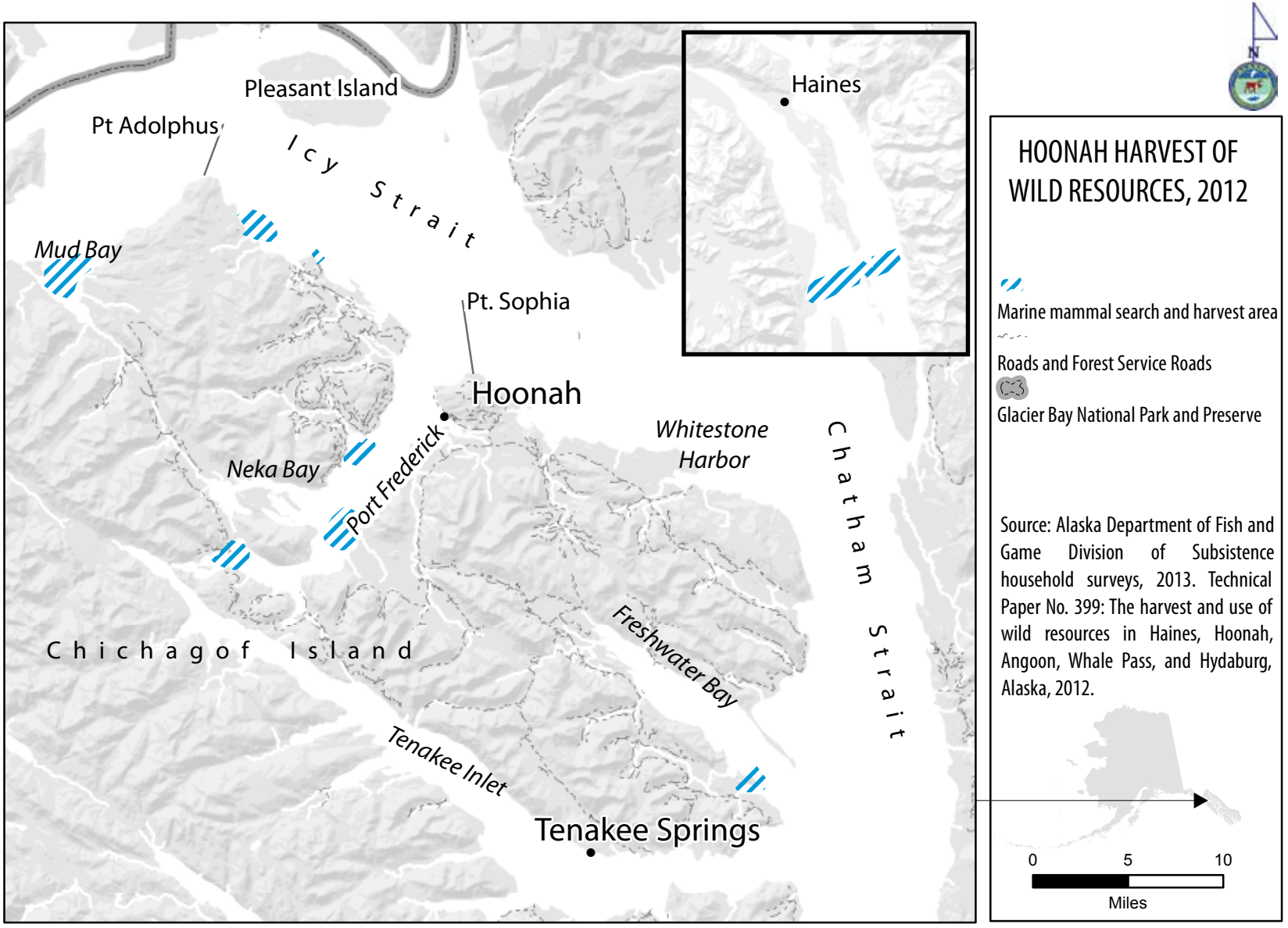


Figure 3-26.–Hunting locations of marine mammals, Hoonah, 2012.

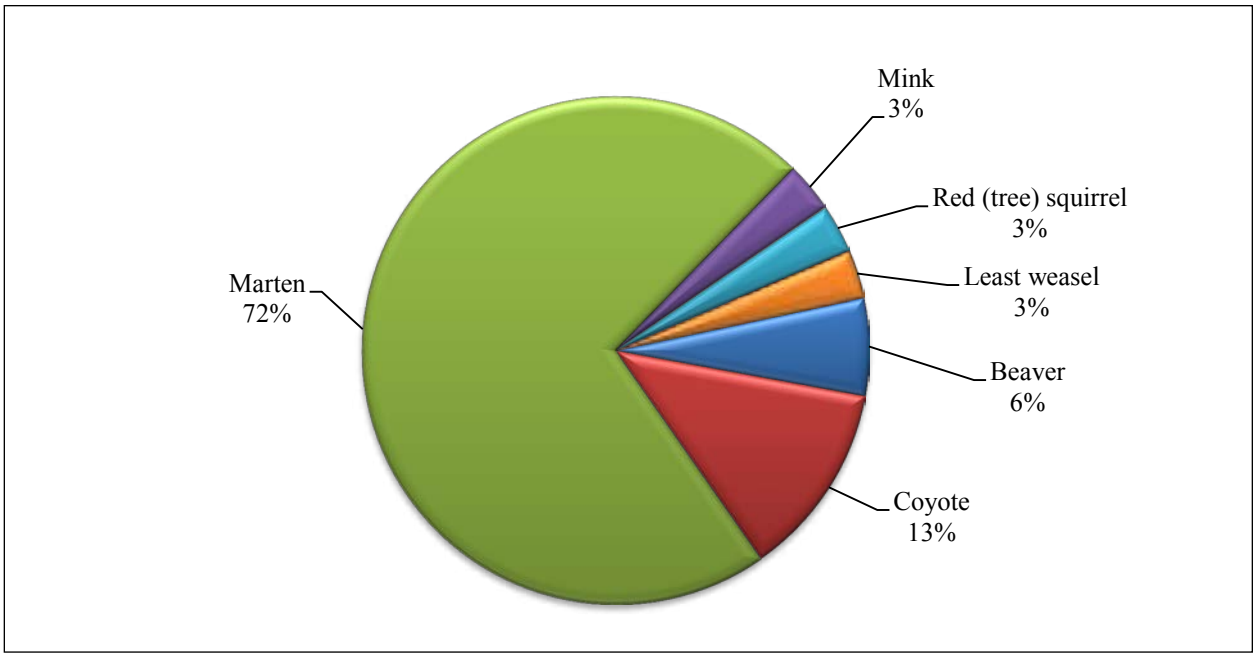


Figure 3-27.–Composition of small land mammal/furbearer harvest by individual animals harvested, Hoonah, 2012.

Small Land Mammals/Furbearers

Hoonah residents harvested a variety of small land mammals/furbearers, including martens (72% of the total harvest as estimated in number of animals); coyotes (13%); beavers (6%); and least weasels, red (tree) squirrels, and minks (each composing 3% of the harvest) (Figure 3-27). Minks, martens, and weasels were harvested only for fur, therefore those harvests are not included in the total pounds harvested. Only 3% of households used or harvested small land mammals and all households attempting to harvest these resources were successful (Table 3-13). No small land mammals were received by households, but 1% of households gave away beaver, coyote, marten, and mink. All martens, minks, and least weasels were harvested in December, all beavers were harvested in October, coyotes were harvested in February and March, and the months of harvest for the red (tree) squirrels was unknown (Table 3-21). Hunting and trapping locations for small land mammals and furbearers are not presented in this report due to the small number of households participating in the harvest.

Table 3-21.–Estimated small land mammal harvests by month, Hoonah, 2012.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All small land mammals	**0.0**	**4.6**	**4.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**4.6**	**0.0**	**57.8**	**2.3**	**73.9**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	**4.6**
Coyote	0.0	4.6	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**9.2**
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.2	0.0	**53.2**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	**2.3**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	**2.3**
Least weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	**2.3**
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

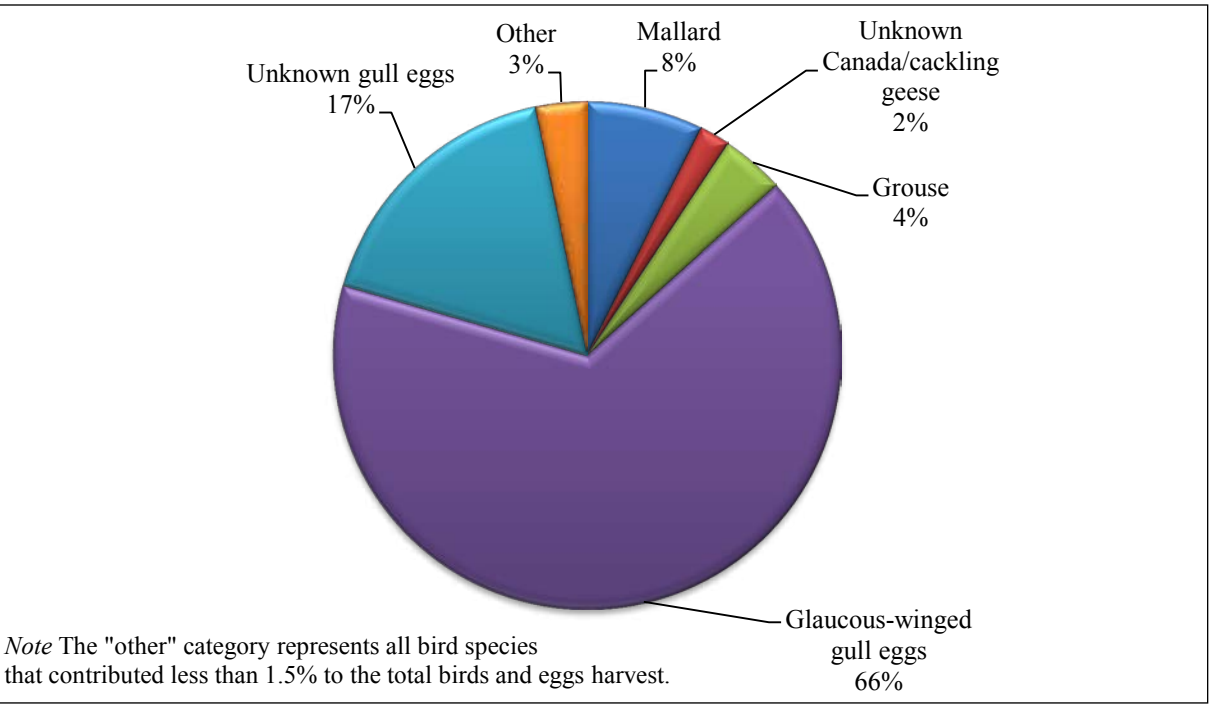


Figure 3-28.–Composition of bird and bird egg harvest in pounds usable weight, Hoonah, 2012.

Birds and Eggs

Approximately 83% of the bird and egg harvest in 2012 was bird eggs (Figure 3-28). The bird egg harvest consisted entirely of gull eggs; 66% of the overall bird and egg harvest was glaucous-winged gull eggs and 17% was recorded as unknown gull eggs. It is likely that the unknown gull eggs are glaucous-winged gull eggs as well. A total of 4,023 bird eggs were harvested (Table 3-13). Interestingly, bird eggs were not used by most of the community, nor were they highly shared. Approximately 6% of households received glaucous-winged gull eggs. Of the 17% of the bird and egg harvest that was birds, mallards were responsible for 8% of the overall bird and egg harvest, followed by grouse (4%), other birds (3%), and Canada geese (2%) (Figure 3-28). Birds were used and harvested by slightly more households than bird eggs, but were not shared highly either (Table 3-13). The majority of birds were harvested in the fall (132 birds) with the remainder harvested in the summer (16 birds) or in an unknown season (32 birds) (Table 3-22).

No bird egg search or harvest areas were mapped. Upland game birds were hunted across Icy Strait from Hoonah, while migratory waterfowl were harvested directly around the community of Hoonah and in Port Frederick near Neka Bay (Figure 3-29).

Table 3-22.–Estimated bird harvests by season, Hoonah, 2012.

Resource	Estimated harvest by season					
	Winter	Spring	Summer	Fall	Season unknown	**Total**
All birds	**0.0**	**0.0**	**16.3**	**132.3**	**32.4**	**181.0**
Goldeneye	0.0	0.0	0.0	11.5	0.0	**11.5**
Mallard	0.0	0.0	14.0	74.7	0.0	**88.7**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	0.0	0.0	0.0	0.0	0.0	**0.0**
Scaup	0.0	0.0	0.0	0.0	0.0	**0.0**
Teal	0.0	0.0	0.0	13.8	0.0	**13.8**
Wigeon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown ducks	0.0	0.0	0.0	2.3	0.0	**2.3**
Unknown Canada/cackling geese	0.0	0.0	2.3	4.6	0.0	**6.9**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	4.6	0.0	**4.6**
Unknown swans	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–small	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–large	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown loon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	**0.0**
Grouse	0.0	0.0	0.0	16.2	32.4	**48.6**
Ptarmigan	0.0	0.0	0.0	4.6	0.0	**4.6**

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

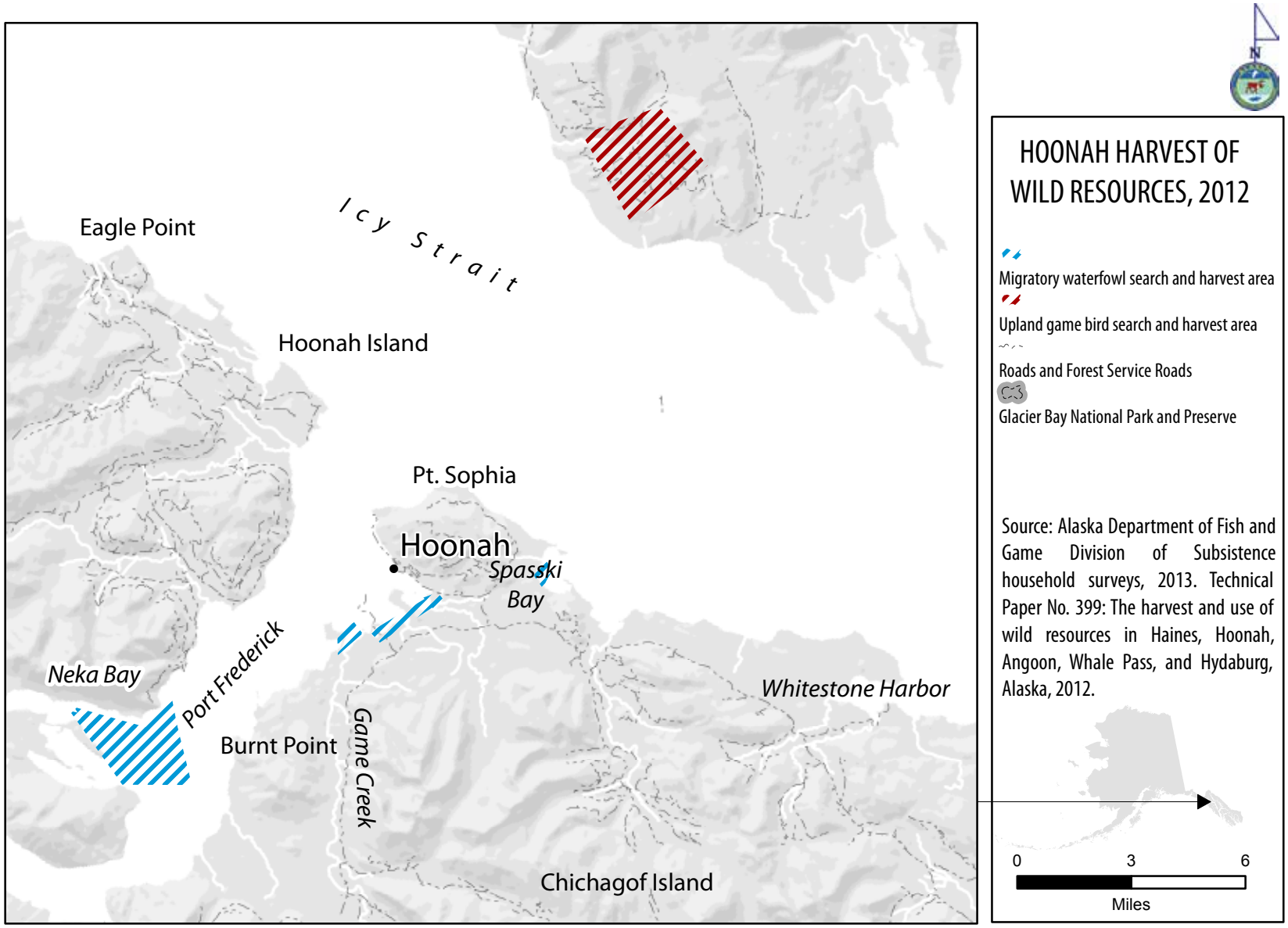


Figure 3-29.–Hunting and harvest locations of migratory waterfowl and upland game birds, Hoonah, 2012.

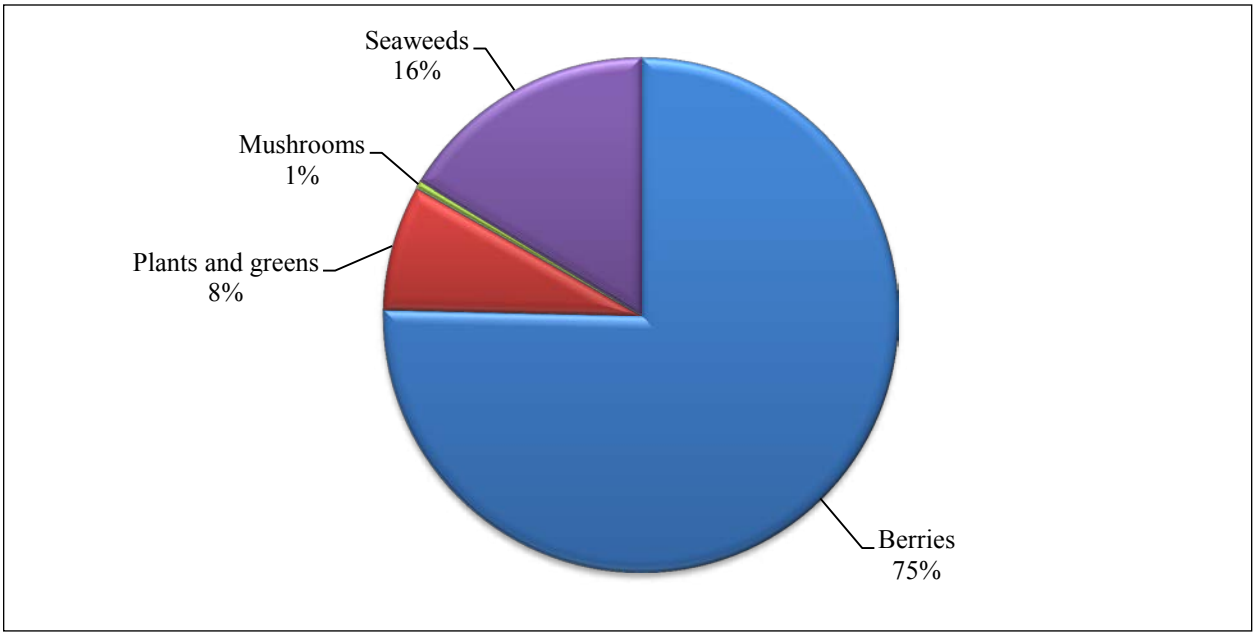


Figure 3-30.–Composition of vegetation harvest by type and pounds usable weight, Hoonah, 2012.

Vegetation

Hoonah residents harvested a total of 31,913 lb of vegetation in 2012 and more than 93% of households used this resource (Table 3-13). This equaled 44 lb harvested per capita. Seventy-five percent of the harvest by weight consisted of berries, followed by seaweeds (16%), plants and greens (8%), and mushrooms (1%) (Figure 3-30). Hoonah residents used a wide variety of vegetation resources, including 16 types of identified berry species, 17 specific types of terrestrial plants plus various mushrooms, and 6 identified types of seaweed, as well as firewood that was used mainly for heating homes. Blueberries, black seaweed, and salmonberries made up the largest percentages of the vegetation harvest: 34% (2,741 gallons), 14% (1,767 gallons), and 10% (795 gallons), respectively (Table 3-13). Among the plants and greens, devil's club represented the greatest harvest by weight (1,332 lb), accounting for 4% of the overall vegetation harvest.

All households that attempted to harvest vegetation (83% of households) were successful in harvesting at least 1 species (Table 3-13). Most households attempting to harvest individual species were successful in their pursuits. Sharing of vegetation was high in the community with approximately 75% of households receiving these resources and 64% giving away these resources. Blueberries, salmonberries, black seaweed, and Hudson's Bay tea were the most frequently used edible resources in this category. Black seaweed, blueberries, and Hudson's Bay tea were the most frequently received resources in the community. Almost 56% of the community households used wood and all of the 45% of households attempting to harvest this resource were successful. About one-quarter of households received and gave away wood.

Plants and berries were harvested extensively along the system of logging roads on the northeastern part of Chichagof Island, as well as in Glacier Bay, mostly around Bartlett Cove but also farther up the bay (Figure 3-31). Berries were also harvested along the shoreline of Dundas Bay. Plants and other greens were collected around Freshwater Bay and the shores of Port Frederick. Firewood was harvested mostly along the logging road system of northeast Chichagof Island (Figure 3-32). Seaweed was collected around the community of Hoonah, the shores of Icy Strait—including Point Sophia, Sisters Island, and Point Couverden—as well as off the southwest coast of Yakobi Island and along the islands off of Elfin Cove (Figure 3-33).

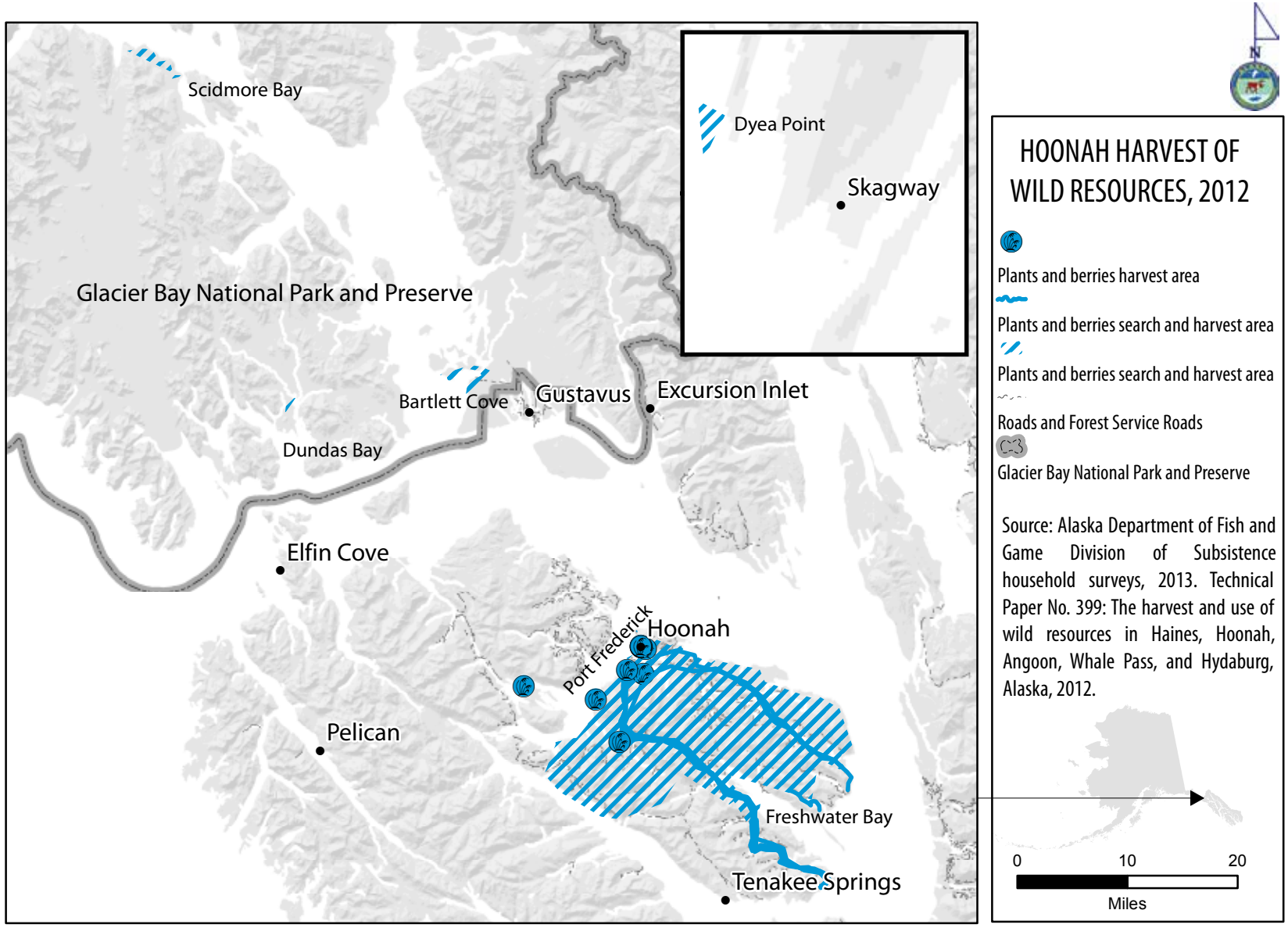


Figure 3-31.–Gathering and harvest locations of berries and plants, greens, and mushrooms, Hoonah, 2012.

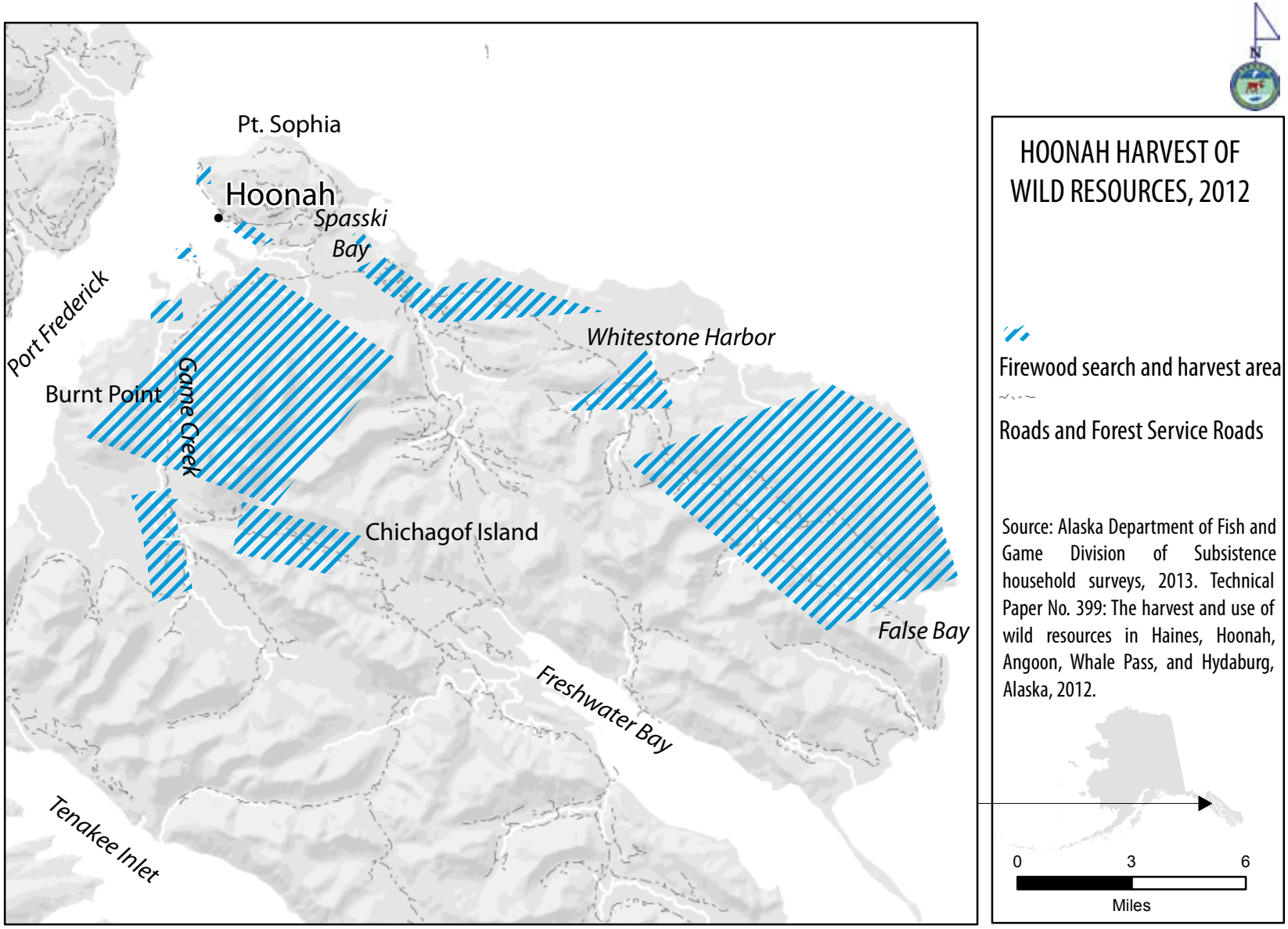


Figure 3-32.–Gathering and harvest locations of firewood , Hoonah, 2012.

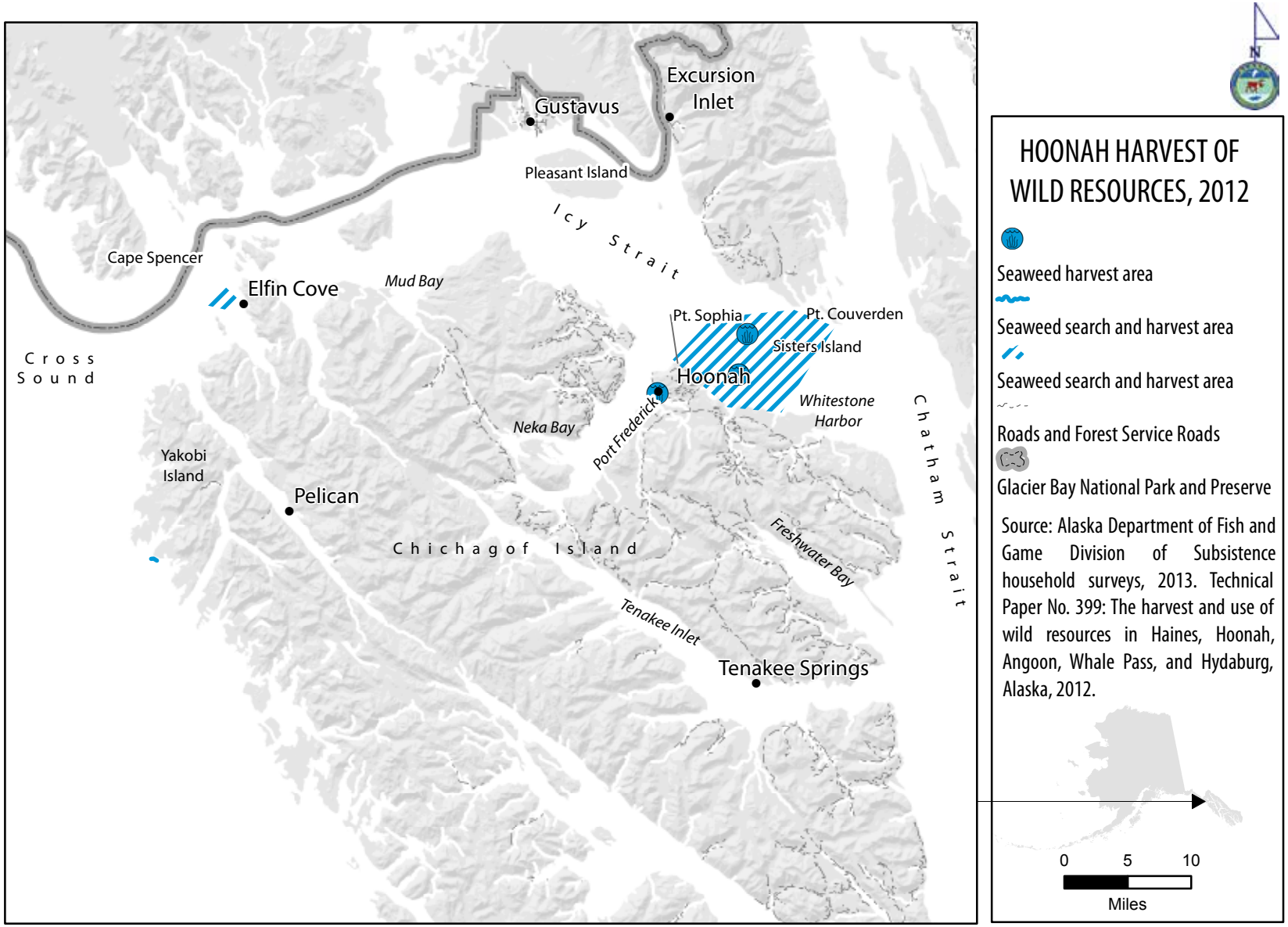


Figure 3-33.–Gathering and harvest locations of seaweed , Hoonah, 2012.

Comparing Harvests and Uses in 2012 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their own harvests in 2 ways: whether they got more, less, or about the same amount of 12 resource categories in 2012 as in the past 5 years, and whether they got "enough" of each of the 12 resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

Together, Table 3-23 and Figure 3-34 and Figure 3-35 provide a broad overview of households' assessments of their harvests in 2012. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

Nonsalmon fish is the most harvested of all subsistence resource categories used by Hoonah households. Assessment questions for nonsalmon fish were broken down into 3 separate assessments—1 for Pacific herring eggs, 1 for rockfish, and 1 for all other nonsalmon fish. Rockfish and Pacific herring eggs will be discussed after nonsalmon fish. Forty-three percent of responding households explained that they used the same amount of nonsalmon fish in 2012 as they did in previous years, 39% reported that they used less, and 14% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 26% of respondents reported that they did so due to the resource being less available (Table 3-24). Other stated reasons for using less nonsalmon fish included less sharing, a lack of effort, not enough time/working, or they did not need the resource. For those households that used more nonsalmon fish in the study year, reported reasons included that they needed more, they increased their effort, or they received more (Table 3-25). In Hoonah, 31% of respondents stated that they did not get enough nonsalmon fish (Figure 3-35). When asked to evaluate the impact of not getting enough nonsalmon fish, 37% described the impact as minor, 47% explained that not getting enough nonsalmon fish had a major effect on their household, and 13% stated that the impact was severe (Table 3-26). Households that did not get enough nonsalmon fish adapted primarily by using more commercial foods (Table 3-27).

Rockfish was a subcategory of nonsalmon fish about which assessment questions were asked; 27% of responding households explained that they used the same amount of rockfish in 2012 as they did in previous years, 21% reported that they used less, and 11% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 23% of respondents reported that they did so due to the resource being less available (Table 3-24). Other stated reasons for using less rockfish included less sharing and lack of effort. For those households that used more rockfish in the study year, 33% stated that they did so due to an increase in effort. Other reasons included receiving more rockfish and needing more of the resource (Table 3-25). No further assessment questions were asked about rockfish.

Pacific herring eggs was another subcategory of nonsalmon fish about which assessment questions were asked; 44% of responding households explained that they used the same amount of Pacific herring eggs in 2012 as they did in previous years, 35% reported that they used less, and 3% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 37% of respondents reported that they did so due to less sharing of the resource (Table 3-24). Other stated reasons for using less Pacific herring eggs included the resource was less available or the household did not need the resource. For those households that used more Pacific herring eggs in the study year, all responded that the reason was an increased need for the resource (Table 3-25). In Hoonah, 27% of respondents stated that they did not get enough Pacific herring eggs (Figure 3-35). No further assessment questions were asked about Pacific herring eggs.

Salmon is the second most harvested of all subsistence resource categories used by Hoonah households. Twenty-nine percent of responding households explained that they used the same amount of salmon in 2012 as they did in previous years, 52% reported that they used less, and 10% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 26% of respondents reported that they did so due to work or not having time (Table 3-24). Other stated reasons for using less salmon included that the resource was less available, a lack of equipment, family/personal reasons, and that they did not get enough salmon. For those households that used more salmon in the study year, 58% of respondents reported they did so because they needed more and 17% of respondents did so because they received more (Table 3-25). Other reported reasons for using more salmon included increased effort, used other resources, more successful harvest effort, store-bought expense, or other. In Hoonah, 43% of respondents stated that they did not get enough salmon (Figure 3-35). When asked to evaluate the impact of not getting enough salmon, 49% described the impact as minor, 36% explained that not getting enough salmon had a major effect on their household, and 13% stated that the impact was severe (Table 3-26). Households that did not get enough salmon adapted by using more commercial foods, replacing salmon with other subsistence foods, buying/bartering for salmon, receiving public assistance, or making do without the resource (Table 3-27).

Large land mammals are the third most harvested of all subsistence resource categories used by Hoonah households. Thirty-five percent of responding households explained that they used the same amount of large land mammals in 2012 as they did in previous years, 40% reported that they used less, and 15% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 22% of respondents reported that they did so due to work or not having time (Table 3-24). Other stated reasons for using less large land mammals included a lack of effort and less sharing. For those households that used more large land mammals in the study year, reported reasons included greater harvest success, increased effort, increased sharing from others, and needing more of these resources (Table 3-25). In Hoonah, 39% of respondents stated that they did not get enough large land mammals (Figure 3-35). When asked to evaluate the impact of not getting enough large land mammals, 47% described the impact as minor, 30% explained that not getting enough large land mammals had a major effect on their household, and 19% stated that the impact was severe (Table 3-26). Households that did not get enough large land mammals adapted by using more commercial foods, replacing large land mammals with other subsistence foods, making do without the resource, or receiving public assistance (Table 3-27).

Vegetation is also a highly harvested subsistence resource category used by Hoonah households; 41% of responding households explained that they used the same amount of vegetation in 2012 as they did in previous years, 34% reported that they used less, and 19% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 33% of respondents reported that they did so due to work or no time to harvest (Table 3-24). Other stated reasons for using less vegetation included a lack of effort. For those households that used more vegetation in the study year, 61% stated the reason was that they needed more. (Table 3-25). In Hoonah, 28% of respondents stated that they did not get enough vegetation (Figure 3-35). When asked to evaluate the impact of not getting enough vegetation, 65% described the impact as minor, 15% explained that not getting enough vegetation had a major effect on their household, and 12% stated that the impact was severe (Table 3-26). Households that did not get enough vegetation adapted by using commercial foods, making do without, bartering with others, increasing harvest efforts, and receiving public assistance (Table 3-27).

Table 3-23.–Changes in household uses of resources compared to recent years, Hoonah, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Total households Number	Total households Percentage	Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage	Households not using Number	Households not using Percentage
Any resource	122	122	122	100.0%	111	91.0%	109	89.3%	57	46.7%	113	92.6%
All resources	**122**	**120**	**120**	**100.0%**	**55**	**45.8%**	**44**	**36.7%**	**21**	**17.5%**	**0**	**0.0%**
Salmon	122	120	109	90.8%	62	51.7%	35	29.2%	12	10.0%	11	9.2%
Pacific herring roe	122	121	98	81.0%	42	34.7%	53	43.8%	3	2.5%	23	19.0%
Rockfish	122	115	68	59.1%	24	20.9%	31	27.0%	13	11.3%	47	40.9%
All other fish	122	119	114	95.8%	46	38.7%	51	42.9%	17	14.3%	5	4.2%
Large land mammals	122	112	101	90.2%	45	40.2%	39	34.8%	17	15.2%	11	9.8%
Small land mammals	122	104	4	3.8%	2	1.9%	2	1.9%	0	0.0%	100	96.2%
Marine mammals	122	107	46	43.0%	18	16.8%	22	20.6%	6	5.6%	61	57.0%
Other birds	122	102	13	12.7%	5	4.9%	6	5.9%	2	2.0%	89	87.3%
Bird eggs	122	105	15	14.3%	9	8.6%	5	4.8%	1	1.0%	90	85.7%
Marine invertebrates	122	115	102	88.7%	49	42.6%	45	39.1%	8	7.0%	13	11.3%
Vegetation	122	115	108	93.9%	39	33.9%	47	40.9%	22	19.1%	7	6.1%
Seaweed	122	108	74	68.5%	25	23.1%	40	37.0%	9	8.3%	34	31.5%

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

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

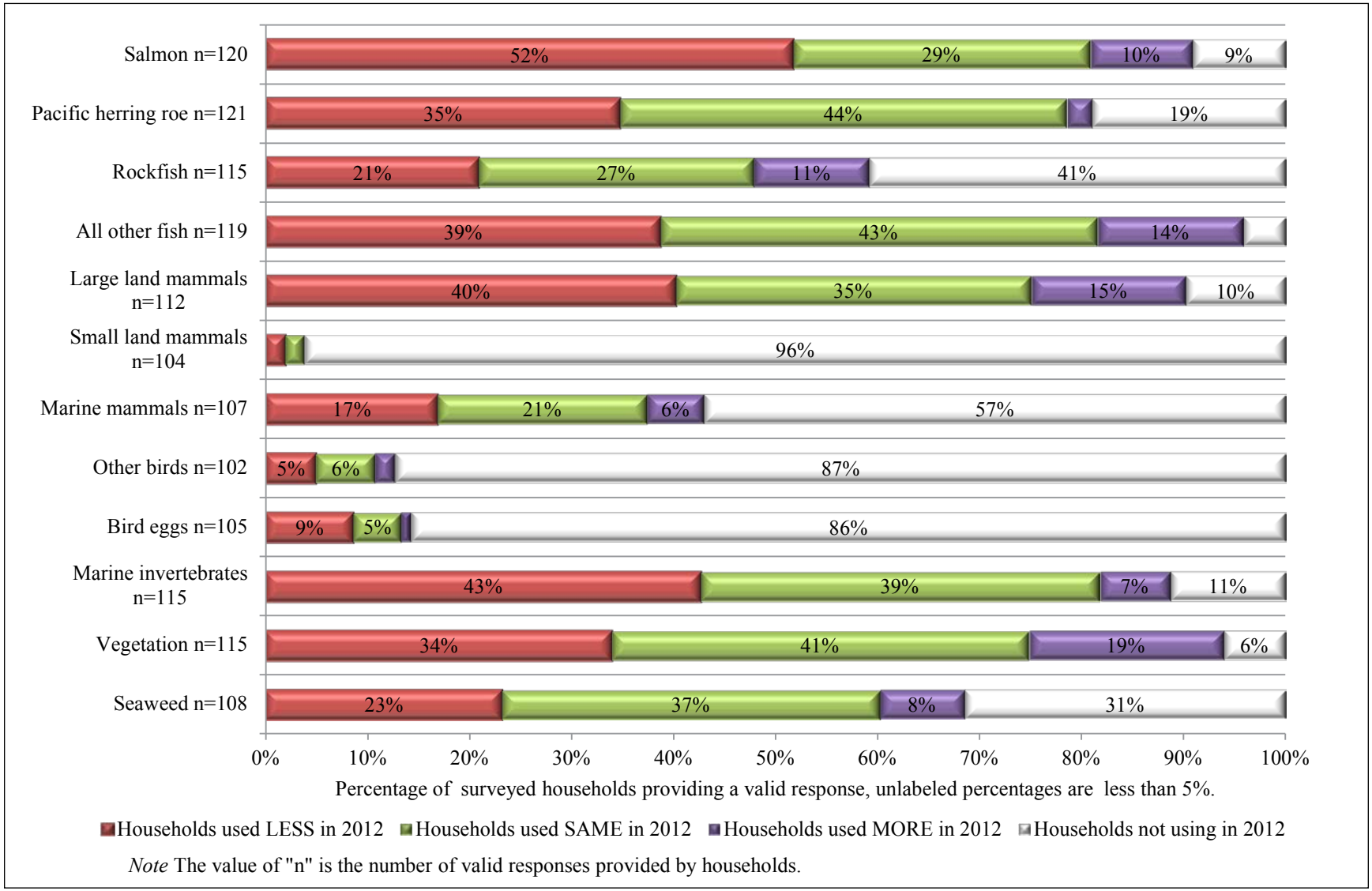


Figure 3-34.–Changes in household uses of resources compared to recent years, Hoonah, 2012.

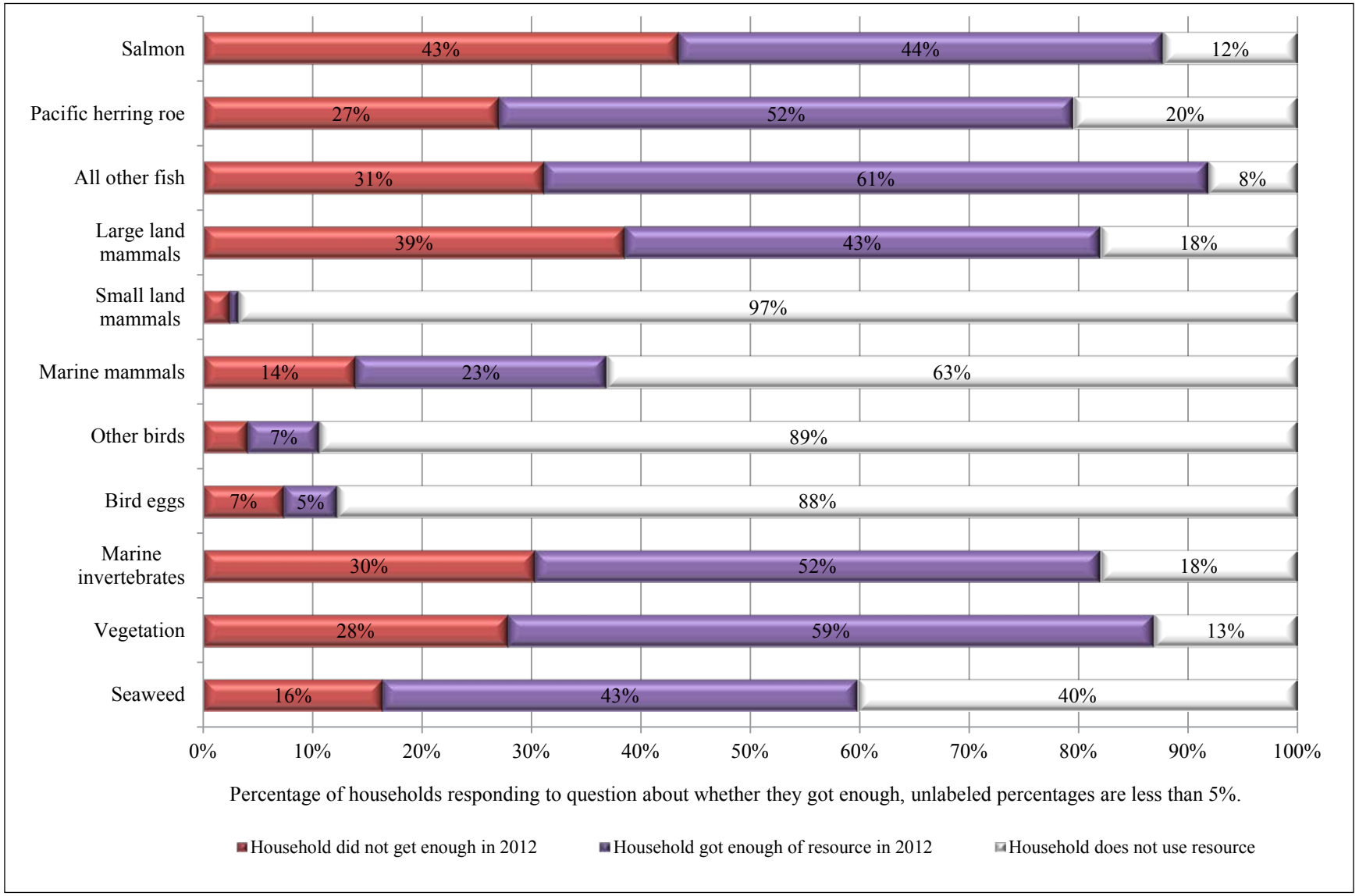


Figure 3-35.–Percentage of sampled households reporting whether they had enough resources, by resource category, Hoonah, 2012.

Table 3-24.–Reasons for less household uses of resources compared to recent years, Hoonah, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	122	108	18	16.7%	37	34%	0	0.0%	14	13%	45	42%	36	33%	10	9.3%	7	6.5%
All resources	**120**	**54**	**9**	**16.7%**	**10**	**19%**	**0**	**0.0%**	**5**	**9%**	**7**	**13%**	**7**	**13%**	**1**	**1.9%**	**4**	**7.4%**
Salmon	120	61	5	8.2%	12	20%	0	0.0%	8	13%	7	11%	4	7%	2	3.3%	2	3.3%
Pacific herring roe	121	41	2	4.9%	9	22%	0	0.0%	1	2%	15	37%	0	0%	1	2.4%	0	0.0%
Rockfish	115	22	3	13.6%	5	23%	0	0.0%	0	0%	4	18%	4	18%	2	9.1%	0	0.0%
All other fish	119	46	5	10.9%	12	26%	0	0.0%	3	7%	9	20%	6	13%	2	4.3%	1	2.2%
Large land mammals	112	45	4	8.9%	3	7%	0	0.0%	3	7%	7	16%	7	16%	4	8.9%	1	2.2%
Small land mammals	104	2	0	0.0%	1	50%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine mammals	107	17	3	17.6%	1	6%	0	0.0%	1	6%	6	35%	3	18%	1	5.9%	0	0.0%
Other birds	102	4	0	0.0%	1	25%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Bird eggs	105	7	0	0.0%	1	14%	0	0.0%	1	14%	2	29%	1	14%	0	0.0%	0	0.0%
Marine invertebrates	115	46	4	8.7%	6	13%	0	0.0%	1	2%	14	30%	8	17%	0	0.0%	2	4.3%
Vegetation	115	39	5	12.8%	3	8%	0	0.0%	3	8%	1	3%	11	28%	0	0.0%	3	7.7%
Seaweed	108	24	3	12.5%	0	0%	0	0.0%	3	13%	9	38%	3	13%	0	0.0%	2	8.3%

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Table 3-24.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	122	108	14	13%	37	34.3%	5	4.6%	5	4.6%	10	9.3%	20	18.5%	4	3.7%	0	0.0%
All resources	**120**	**54**	**3**	**6%**	**16**	**29.6%**	**2**	**3.7%**	**0**	**0.0%**	**1**	**1.9%**	**2**	**3.7%**	**1**	**1.9%**	**0**	**0.0%**
Salmon	120	61	2	3%	16	26.2%	0	0.0%	1	1.6%	5	8.2%	5	8.2%	0	0.0%	0	0.0%
Pacific herring roe	121	41	3	7%	1	2.4%	0	0.0%	1	2.4%	3	7.3%	7	17.1%	0	0.0%	0	0.0%
Rockfish	115	22	2	9%	2	9.1%	0	0.0%	0	0.0%	1	4.5%	1	4.5%	0	0.0%	0	0.0%
All other fish	119	46	3	7%	6	13.0%	0	0.0%	1	2.2%	1	2.2%	6	13.0%	0	0.0%	0	0.0%
Large land mammals	112	45	0	0%	10	22.2%	3	6.7%	1	2.2%	1	2.2%	2	4.4%	2	4.4%	0	0.0%
Small land mammals	104	2	0	0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	107	17	1	6%	2	11.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	102	4	0	0%	3	75.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	105	7	0	0%	0	0.0%	2	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	115	46	0	0%	10	21.7%	0	0.0%	1	2.2%	2	4.3%	1	2.2%	1	2.2%	0	0.0%
Vegetation	115	39	2	5%	13	33.3%	0	0.0%	0	0.0%	1	2.6%	2	5.1%	1	2.6%	0	0.0%
Seaweed	108	24	2	8%	3	12.5%	0	0.0%	0	0.0%	1	4.2%	0	0.0%	2	8.3%	0	0.0%

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

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

Table 3-25.–Reasons for more household uses of resources compared to recent years, Hoonah, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	122	52	5	9.6%	2	3.8%	3	5.8%	11	21.2%	22	42.3%	10	19.2%	0	0.0%
All resources	**120**	**20**	**2**	**10.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**10.0%**	**8**	**40.0%**	**2**	**10.0%**	**0**	**0.0%**
Salmon	120	12	0	0.0%	1	8.3%	0	0.0%	2	16.7%	7	58.3%	1	8.3%	0	0.0%
Pacific herring roe	121	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Rockfish	115	12	1	8.3%	0	0.0%	0	0.0%	3	25.0%	3	25.0%	4	33.3%	0	0.0%
All other fish	119	13	1	7.7%	1	7.7%	0	0.0%	2	15.4%	3	23.1%	3	23.1%	0	0.0%
Large land mammals	112	17	1	5.9%	0	0.0%	1	5.9%	3	17.6%	3	17.6%	3	17.6%	0	0.0%
Small land mammals	104	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	107	5	0	0.0%	0	0.0%	1	20.0%	4	80.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	102	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	105	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	115	7	0	0.0%	0	0.0%	0	0.0%	2	28.6%	3	42.9%	0	0.0%	0	0.0%
Vegetation	115	18	0	0.0%	0	0.0%	1	5.6%	1	5.6%	11	61.1%	3	16.7%	0	0.0%
Seaweed	108	9	0	0.0%	0	0.0%	0	0.0%	3	33.3%	5	55.6%	0	0.0%	0	0.0%

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Table 3-25.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	122	52	4	7.7%	2	3.8%	1	1.9%	15	28.8%	1	1.9%	6	11.5%	2	3.8%
All resources	**120**	**20**	**2**	**10.0%**	**0**	**0.0%**	**0**	**0.0%**	**5**	**25.0%**	**0**	**0.0%**	**5**	**25.0%**	**0**	**0.0%**
Salmon	120	12	1	8.3%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	1	8.3%	0	0.0%
Pacific herring roe	121	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	115	12	0	0.0%	0	0.0%	0	0.0%	2	16.7%	0	0.0%	1	8.3%	1	8.3%
All other fish	119	13	2	15.4%	0	0.0%	0	0.0%	1	7.7%	0	0.0%	1	7.7%	1	7.7%
Large land mammals	112	17	0	0.0%	0	0.0%	1	5.9%	5	29.4%	0	0.0%	0	0.0%	1	5.9%
Small land mammals	104	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	107	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	102	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	105	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	115	7	1	14.3%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%
Vegetation	115	18	0	0.0%	1	5.6%	0	0.0%	1	5.6%	0	0.0%	1	5.6%	0	0.0%
Seaweed	108	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	0	0.0%

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

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

Table 3-26.–Reported impact to households reporting that they did not get enough of a type of resource, Hoonah, 2012.

		Households not getting enough _____ .				Impact to those not getting enough _____ .									
		Valid responses[a]		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	Sample households	Number	Percentage[b]	Number	Percentage[b]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]
All resources	**122**	**121**	**99.2%**	**57**	**46.7%**	**1**	**1.8%**	**5**	**8.8%**	**22**	**38.6%**	**19**	**33.3%**	**10**	**17.5%**
Salmon	122	107	87.7%	53	43.4%	1	1.9%	0	0.0%	26	49.1%	19	35.8%	7	13.2%
Pacific herring roe	122	97	79.5%	33	27.0%	–	–	–	–	–	–	–	–	–	–
All other fish	122	112	91.8%	38	31.1%	1	2.6%	0	0.0%	14	36.8%	18	47.4%	5	13.2%
Large land mammals	122	100	82.0%	47	38.5%	2	4.3%	0	0.0%	22	46.8%	14	29.8%	9	19.1%
Small land mammals	122	4	3.3%	3	2.5%	1	33.3%	0	0.0%	2	66.7%	0	0.0%	0	0.0%
Marine mammals	122	45	36.9%	17	13.9%	1	5.9%	0	0.0%	8	47.1%	7	41.2%	1	5.9%
Other birds	122	13	10.7%	5	4.1%	0	0.0%	1	20.0%	4	80.0%	0	0.0%	0	0.0%
Bird eggs	122	15	12.3%	9	7.4%	0	0.0%	0	0.0%	6	66.7%	1	11.1%	2	22.2%
Marine invertebrates	122	100	82.0%	37	30.3%	0	0.0%	0	0.0%	22	59.5%	11	29.7%	4	10.8%
Vegetation	122	106	86.9%	34	27.9%	3	8.8%	0	0.0%	22	64.7%	5	14.7%	4	11.8%
Seaweed	122	73	59.8%	20	16.4%	3	15.0%	0	0.0%	15	75.0%	2	10.0%	0	0.0%

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

Note "–" indicates data are not available because the question was not asked for the resource.

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

b. Computed as the percentage of sampled households.

c. Computed as the percentage of households responding "did not get enough."

Table 3-27.–Things households reported doing differently as the result of not getting enough of a resource, Hoonah, 2012.

Resource category	Valid responses	Bought/bartered		Used more commercial foods		Replaced with other subsistence foods		Asked others for help		Made do without	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**47**	**0**	**0.0%**	**42**	**89.4%**	**0**	**0.0%**	**0**	**0.0%**	**5**	**10.6%**
Salmon	37	1	2.7%	30	81.1%	6	16.2%	0	0.0%	1	2.7%
All other fish	28	0	0.0%	26	92.9%	0	0.0%	0	0.0%	2	7.1%
Large land mammals	40	0	0.0%	36	90.0%	2	5.0%	0	0.0%	2	5.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	11	0	0.0%	6	54.5%	2	18.2%	0	0.0%	5	45.5%
Other birds	4	0	0.0%	4	100.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	4	0	0.0%	4	100.0%	0	0.0%	0	0.0%	1	25.0%
Marine invertebrates	22	1	4.5%	20	90.9%	2	9.1%	0	0.0%	0	0.0%
Vegetation	13	1	7.7%	9	69.2%	0	0.0%	0	0.0%	1	7.7%
Seaweed	7	0	0.0%	3	42.9%	0	0.0%	1	14.3%	3	42.9%

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Table 3-27.–Continued.

Resource category	Valid responses	Increased effort to harvest		Obtained food from other sources		Got a job		Got public assistance		Other reasons	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**47**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	37	0	0.0%	**0**	0.0%	**0**	**0.0%**	1	2.7%	0	0.0%
All other fish	28	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%
Large land mammals	40	0	0.0%	**0**	0.0%	**0**	**0.0%**	1	2.5%	0	0.0%
Small land mammals	0	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%
Marine mammals	11	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%
Other birds	4	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%
Bird eggs	4	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%
Marine invertebrates	22	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%
Vegetation	13	1	7.7%	**0**	0.0%	**0**	**0.0%**	1	7.7%	0	0.0%
Seaweed	7	0	0.0%	**0**	0.0%	**0**	**0.0%**	0	0.0%	0	0.0%

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

Note The sum of the percentages may not add to 100% since households may give more than one response.

Seaweed is used by many Hoonah households (for example, 57% of households used black seaweed); 37% of responding households explained that they used the same amount of seaweed in 2012 as they did in previous years, 23% reported that they used less, and 8% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 38% of respondents reported that they did so due to less sharing of the resource (Table 3-24). Other stated reasons for using less seaweed included lack of effort and lack of equipment. For those households that used more seaweed in the study year, 56% reported that they needed more of the resource. Other reasons given included receiving more and needing less (Table 3-25). In Hoonah, 16% of respondents stated that they did not get enough seaweed (Figure 3-35). When asked to evaluate the impact of not getting enough seaweed, 75% described the impact as minor and 10% explained that not getting enough seaweed had a major effect on their household (Table 3-26). No households responded that the impact was severe. Households that did not get enough seaweed adapted by using commercial foods or making do without, and asking others for help (Table 3-27).

Marine invertebrates are also harvested in quantity by Hoonah households; 39% of responding households explained that they used the same amount of marine invertebrates in 2012 as they did in previous years, 43% reported that they used less, and 7% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 30% of respondents reported that they did so due to less sharing of the resource (Table 3-24). Other stated reasons for using less marine invertebrates included working or no time to harvest and a lack of effort. For those households that used more marine invertebrates in the study year, the main reasons given were that the household needed more or received more (Table 3-25). In Hoonah, 30% of respondents stated that they did not get enough marine invertebrates (Figure 3-35). When asked to evaluate the impact of not getting enough marine invertebrates, 60% described the impact as minor, 30% explained that not getting enough marine invertebrates had a major effect on their household, and 11% stated that the impact was severe (Table 3-26). Households that did not get enough marine invertebrates adapted by using commercial foods or substituting other subsistence foods in their place, and also by bartering/trading with others (Table 3-27).

Marine mammals are not harvested by the majority of Hoonah households, but they are still an important component of the subsistence harvest; 21% of responding households explained that they used the same amount of marine mammals in 2012 as they did in previous years, 17% reported that they used less, and 6% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 35% of respondents reported that they did so due to less sharing of the resource (Table 3-24). Other stated reasons for using less marine mammals included family/personal reasons and lack of effort. For those households that used more marine mammals in the study year, 80% responded that it was because they received more of the resource, while 20% of households responded it was due to favorable weather (Table 3-25). In Hoonah, 14% of respondents stated that they did not get enough marine mammals (Figure 3-35). When asked to evaluate the impact of not getting enough marine mammals, 47% described the impact as minor, 41% explained that not getting enough marine mammals had a major effect on their household, and 6% stated that the impact was severe (Table 3-26). Households that did not get enough marine mammals adapted by using more commercial foods, making do without marine mammals, and replacing them with other subsistence foods (Table 3-27).

Small land mammals is one of the least harvested of all subsistence resource categories used by Hoonah households; 2% of responding households explained that they used the same amount of small land mammals/furbearers in 2012 as they did in previous years and 2% reported that they used less (Table 3-23; Figure 3-34). When asked why they used less, 50% of respondents reported that they did so due to the resource being less available and 50% stated it was because the household was working or did not have time to harvest (Table 3-24). In Hoonah, 3% of respondents stated that they did not get enough small land mammals (Figure 3-35). When asked to evaluate the impact of not getting enough small land mammals, 67% described the impact as minor (Table 3-26).

Birds and bird eggs is also among the least harvested of all subsistence resource categories used by Hoonah households; 6% of responding households explained that they used the same amount of birds in 2012 as they did in previous years, 5% reported that they used less, and 2% said they used more (Table 3-23; Figure

3-34). When asked why they used less, 75% of respondents reported that they did so due to working or not having time to harvest (Table 3-24). Other stated reasons for using fewer birds included the resource was less available. For those households that used more birds in the study year, 50% gave the reason as having received more of the resource and 50% stated it was due to greater harvesting success (Table 3-25). In Hoonah, 4% of respondents stated that they did not get enough birds (Figure 3-35). When asked to evaluate the impact of not getting enough birds, 20% described the impact as not noticeable and 80% explained that not getting enough birds had a minor effect on their household (Table 3-26). Households that did not get enough birds adapted by using commercial foods (Table 3-27).

For bird eggs, 5% of responding households explained that they used the same amount of bird eggs in 2012 as they did in previous years, 9% reported that they used less, and 1% said they used more (Table 3-23; Figure 3-34). When asked why they used less, 29% of respondents reported that they did so due to less sharing of the resource (Table 3-24). The other major stated reason for using less bird eggs was regulations.[7] For those households that used more bird eggs in the study year, 100% stated regulations concerning the harvest of bird eggs and the receipt of bird eggs were the reasons for more use (Table 3-25). In Hoonah, 7% of respondents stated that they did not get enough bird eggs (Figure 3-35). When asked to evaluate the impact of not getting enough bird eggs, 67% described the impact as minor, 11% explained that not getting enough bird eggs had a major effect on their household, and 22% stated that the impact was severe (Table 3-26). Households that did not get enough bird eggs adapted by using commercial foods or making do without bird eggs (Table 3-27).

Considering all subsistence resource categories used by Hoonah households combined, 37% of responding households explained that they used the same amount of all subsistence resources in 2012 as they did in previous years, 46% reported that they used less, and 18% said they used more (Table 3-23). When asked why they used less, 30% of respondents reported that they did so due to work or not having time (Table 3-24). Other stated reasons for using less included resources being less available and family/personal reasons. For those households that used more wild resources in the study year, reported reasons included needing more, greater harvest success, and the expense of store-bought foods (Table 3-25). In Hoonah, 47% of respondents stated that they did not get enough wild resources (Table 3-26). When asked to evaluate the impact of not getting enough wild resources, 9% described it as not noticeable, 39% described the impact as minor, 33% explained that not getting enough wild resources had a major effect on their household, and 18% stated that the impact was severe. Households that did not get enough wild resources adapted by using more commercial foods or doing without certain wild resources (Table 3-27).

Households that reported not having enough resources where asked which resources they needed. Responses to these questions are presented in Table 3-28. The highest percentage of households reported needing more deer. Deer was followed by Pacific halibut, then Chinook, sockeye, and coho salmon. Many other resources were needed by smaller percentages of households, but no other resource was needed by more than 13% of all households. It is interesting to note that of the top 5 resources needed, 3 were a species of salmon and 1 was Pacific halibut.

7. Although the history of gull egg harvesting and federal enforcement of prohibitions against it is far from clear, in general with the creation of Glacier Bay National Monument in 1925, the rights of Huna Tlingit to collect gull eggs from within Glacier Bay became tenuous. By the 1960s, egg gathering from within the monument area was not occurring overtly, though it was still likely happening (Hunn et al. 2002). Gull eggs have been and still are legally harvested from areas outside of Glacier Bay National Park and Preserve (established in 1980), such as at the Inian Islands. Limited harvests of gull eggs from within Glacier Bay were legalized in 2014. http://www.nps.gov/glba/learn/historyculture/tlingit-gull-egg-harvest.htm (accessed October 2015).

Table 3-28.–Resources that households reported needing, Hoonah, 2012.

Resource	Households needing	Percentage of households[a]
All resources	**11**	**9.0%**
Fish	10	8.2%
Salmon	20	16.4%
Chum salmon	4	3.3%
Coho salmon	23	18.9%
Chinook salmon	30	24.6%
Pink salmon	3	2.5%
Sockeye salmon	26	21.3%
Nonsalmon fish	2	1.6%
Pacific herring roe	2	1.6%
Lingcod	4	3.3%
Pacific halibut	32	26.2%
Rockfish	4	3.3%
Yelloweye rockfish	7	5.7%
Sablefish (black cod)	4	3.3%
Trout	1	0.8%
Large land mammals	2	1.6%
Deer	51	41.8%
Mountain goat	2	1.6%
Moose	5	4.1%
North American river (land) otter	1	0.8%
Marten	2	1.6%
Mink	1	0.8%
Seal	6	4.9%
Harbor seal	11	9.0%
Sea otter	1	0.8%
Birds and eggs	2	1.6%
Ducks	3	2.5%
Mallard	1	0.8%
Geese	2	1.6%
Grouse	2	1.6%
Ptarmigan	2	1.6%
Mallard eggs	1	0.8%
Goose eggs	1	0.8%
Black oystercatcher eggs	1	0.8%
Gull eggs	4	3.3%
Glaucous gull eggs	1	0.8%
Glaucous-winged gull eggs	1	0.8%
Unknown gull eggs	1	0.8%
Marine invertebrates	3	2.5%
Abalone	1	0.8%
Chitons (bidarkis, gumboots)	5	4.1%
Clams	8	6.6%
Butter clams	1	0.8%
Horse clams	1	0.8%
Pacific littleneck clams (steamers)	1	0.8%
Razor clams	1	0.8%

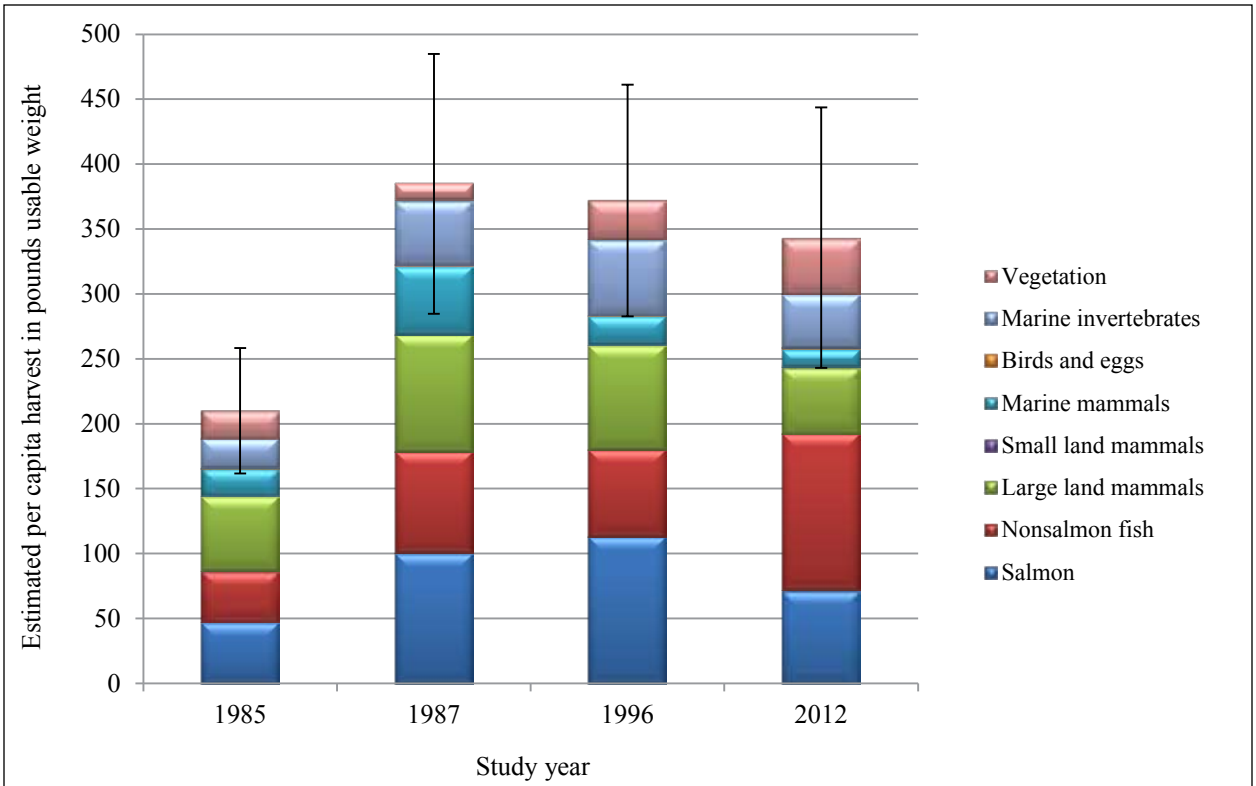
-continued-

Table 3-28.–Page 2 of 2.

Resource	Households needing	Percentage of households[a]
Cockles	11	9.0%
Basket cockles	2	1.6%
Crabs	16	13.1%
Dungeness crab	12	9.8%
King crab	6	4.9%
Brown king crab	1	0.8%
Red king crab	2	1.6%
Octopus	1	0.8%
Scallops	2	1.6%
Sea urchin	1	0.8%
Shrimp	4	3.3%
Berries	16	13.1%
Blueberry	15	12.3%
Lowbush cranberry	1	0.8%
Highbush cranberry	1	0.8%
Currants	2	1.6%
Huckleberry	2	1.6%
Nagoonberry	3	2.5%
Raspberry	6	4.9%
Salmonberry	10	8.2%
Strawberry	3	2.5%
Blackberry	1	0.8%
Plants, greens, and mushrooms	2	1.6%
Devil's club	1	0.8%
Hudson's Bay (Labrador) tea	1	0.8%
Other wild greens	1	0.8%
Seaweed/kelp	2	1.6%
Black seaweed	16	13.1%
Bull kelp	1	0.8%
Red seaweed	1	0.8%
Sea ribbons	3	2.5%
Giant kelp (*macropcystis*)	1	0.8%
Unknown seaweed	1	0.8%
Wood	8	6.6%
Roots	1	0.8%
Spruce pitch	1	0.8%

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

a. Computed as the percentage of sampled households.



Note Error bars represent the upper and lower bounds of the 95% confidence interval.

Figure 3-36.–Composition of harvest by resource category in pounds usable weight, Hoonah, 1985, 1987, 1996, and 2012.

Harvest Data

Changes in the harvest of resources by Hoonah residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Hoonah for the 1985 study year (Schroeder and Kookesh 1990), the 1987 study year and the 1996 study year.[8] The survey population of Hoonah residents was defined the same way for each study, but the definition of a study year differed slightly with each study: the 1985 study year was defined as from May 1985 through April 1986; the 1987 study year was defined as the 1987 calendar year; the 1996 study year covered February 1 1996 through January 31, 1997; and the 2012 study year was the 2012 calendar year. The varying time periods covered during each study is likely of little consequence to a comparison of the results.

Several interesting differences in the harvest of wild resources exist from 1985 to 2012. The most meaningful comparisons are represented by per capita harvest amounts since this measure accounts for population fluctuations (Figure 3-36). The overall per capita harvest of wild resources in 1985 was 210 lb (± 23%) compared to 385 lb (± 26%) per capita in 1987; 372 lb (± 24%) per capita in 1996; and 343 lb (± 29%) per capita in 2012; except for the 1985 study year, these estimates are not significantly different (Table 3-29). The 2012 per capita harvests of all resource categories, except for large land mammals and marine mammals, are greater than they were in 1985; however, there has not been a steady increase. Per capita harvests of most resource categories increased between 1985 and 1987 before declining in 1996. Between 1996 and 2012, harvests have generally declined except for nonsalmon fish and vegetation. Small land

8. Results for all 3 previous comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): http://www.adfg.alaska.gov/sb/CSIS/.

mammals and birds and eggs resource categories consistently have accounted for a very small per capita harvest (less than 1%) each study year. No small land mammal harvest was documented in any study year except 2012.

The first 3 study years show an increasing trend in per capita salmon harvests followed by a moderate decline in 2012 (Figure 3-36). Looking at the salmon harvest data by species shows that harvests of each species of salmon varied over the study years; Chinook and chum salmon harvests have decreased the most, while coho and pink salmon harvests have remained relatively stable, and sockeye salmon harvests have increased greatly since 1985 (Figure 3-37; Table 3-30). Per capita harvests of sockeye salmon jumped between 1987 and 1996 before declining slightly in 2012. The increase in harvest may be attributable to changes in subsistence fishing regulations in the early 1990s, though more research would be needed for a complete evaluation. The decline in per capita harvests of Chinook salmon mimics a general declining trend seen in Chinook salmon harvests in Southeast Alaska. The decline in chum salmon harvests after a large increase between 1985 and 1987 is not well understood, nor is it clear whether the 2012 survey data represents an anomalous year or a hastened trend in declining harvests.

In the 27 years between the initial and most recent survey, nonsalmon fish surpassed salmon as the most harvested wild resource category. This transition occurred sometime after the 1996 survey. In 1985, Hoonah residents harvested nearly 8 lb more salmon than nonsalmon fish per capita. In 2012, Hoonah residents harvested more than 48 lb more nonsalmon fish than salmon per capita. The increase in nonsalmon fish was primarily due to increased harvest of Pacific herring eggs and Pacific halibut, a per capita increase of 45 lb and 29 lb, respectively (CSIS). One likely cause of this increase in the nonsalmon fish harvest is the authorization of the federal subsistence Pacific halibut fishery in 2003, which created a fishery with more liberal gear restrictions and harvest limits. The 2012 per capita harvest of Pacific herring eggs was much higher than that documented or estimated during any other study year. Pacific herring egg harvesting is a highly specialized activity pursued by a small number of residents. It is not clear whether this substantial increase in harvest during 2012 represents an actual increase in harvest or is an artifact of the sampling strategy that may have missed the relatively few high Pacific herring egg harvesters during the other study years.

The increase in the vegetation harvest is mainly a result of an increase in berry harvests. In 1985, the per capita harvest of berries was approximately 8 lb (CSIS). In 2012, the per capita harvest of berries was more than 4 times greater at 33 lb (Table 3-13). While the berry harvest has increased substantially, the harvest of black seaweed fell over the same time period, from 13 lb per capita in 1985 to 6 lb per capita in 2012 (CSIS; Table 3-13).

Although marine invertebrate per capita harvests increased greatly between 1985 and 1987, since the 1996 study there has been a declining trend in the per capita harvest. Most of this decline is attributable to a decline in the clam and king crab harvest. Butter clams, the most heavily harvested clam species, declined from 12 lb per capita in 1996 to 6 lb per capita in 2012 (CSIS; Table 3-13). One factor that may be contributing to declining harvests is an increasing sea otter population in Southeast Alaska and their effect on marine invertebrates generally. The red king crab harvest increased dramatically from 1987 to 1996 when it reached a high of 10 lb per capita before decreasing to just 2 lb per capita in 2012 (CSIS; Table 3-13). A personal use fishery had been allowed for red king crab in Port Frederick but has not occurred since 2003, an issue that many residents had concerns about. This change in regulation is likely a contributing factor to the decrease of king crab harvests. While harvesting in Icy Strait is still allowed, many of the residents who commented on the issue expressed concern that Icy Strait was not only farther away but was also a more dangerous harvesting area.

Table 3-29.–Estimated per capita harvest in pounds usable weight, Hoonah, 1985, 1987, 1996, and 2012.

	Estimated harvest in pounds usable weight											
	1985			1987			1996			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All resources	**188,016.0**	**210.0**	**23.0%**	**269,367.0**	**384.9**	**26.0%**	**331,453.0**	**372.0**	**24.0%**	**251,364.9**	**343.3**	**29.2%**
Salmon	42,196.0	47.1		70,212.0	100.3		100,791.0	113.1		52,702.3	72.0	
Nonsalmon fish	30,004.0	39.6		54,808.0	78.3		59,553.0	66.9		88,125.5	120.4	
Large land mammals	51,503.0	57.5		63,163.0	90.3		71,825.0	80.6		37,558.4	51.3	
Small land mammals	0.0	0.0		0.0	0.0		0.0	0.0		224.9	0.3	
Marine mammals	18,990.0	21.2		36,926.0	52.8		20,084.0	22.5		9,832.1	13.4	
Birds and eggs	552.0	0.6		829.0	1.2		618.0	0.7		1,206.2	1.6	
Marine invertebrates	20,090.0	22.4		34,591.0	49.4		51,956.0	58.3		29,802.9	40.7	
Vegetation	19,236.0	21.5		8,838.0	12.6		26,627.0	29.9		31,912.6	43.6	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.

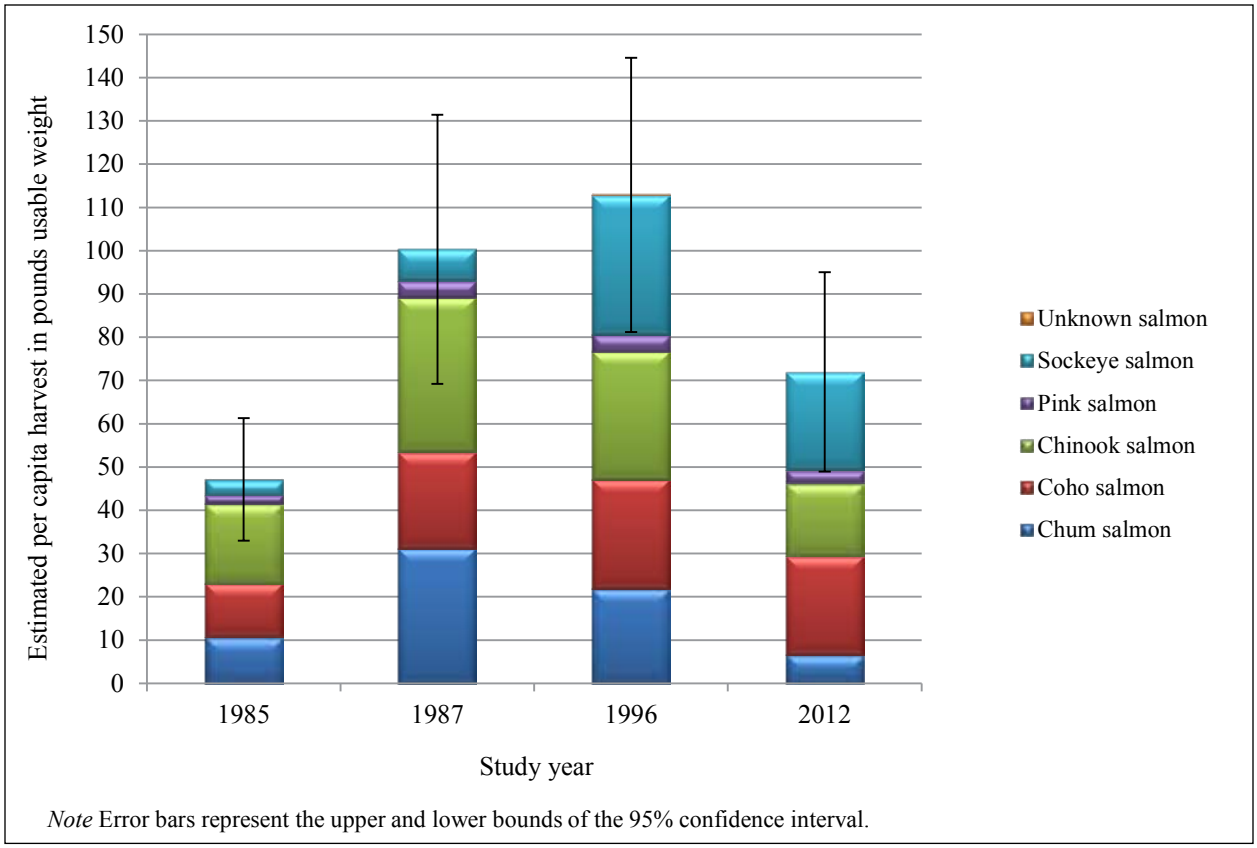


Figure 3-37.–Composition of salmon harvest by species in pounds usable weight, Hoonah, 1985, 1987, 1996, and 2012.

Table 3-30.–Estimated per capita harvest of salmon by species, in pounds usable weight, Hoonah, 1985, 1987, 1996, and 2012.

	Estimated harvest in pounds usable weight											
	1985			1987			1996			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All salmon	**42,196.0**	**47.1**	**30.0%**	**70,212.0**	**100.3**	**31.0%**	**100,791.0**	**113.1**	**28.0%**	**52,702.3**	**72.0**	**32.0%**
Chum salmon	9,615.0	10.7		21,810.0	31.2		19,527.0	21.9		4,861.5	6.6	
Coho salmon	11,074.0	12.4		15,597.0	22.3		22,492.0	25.3		16,721.9	22.8	
Chinook salmon	16,467.0	18.4		25,039.0	35.8		26,236.0	29.5		12,310.1	16.8	
Pink salmon	1,795.0	2.0		2,639.0	3.8		3,536.0	4.0		2,169.3	3.0	
Sockeye salmon	3,245.0	3.6		5,126.0	7.3		28,767.0	32.3		16,639.6	22.7	
Unknown salmon	–	–		–	–		233.0	0.3		0.0	0.0	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.

Note "–" indicates data are not available.

Current and Historical Harvest Areas

Each comprehensive harvest survey conducted in Hoonah included a mapping component, although the mapping methods varied between studies. In 1985 and 1987, survey respondents were asked to map all the areas ever used for hunting, fishing, and gathering resources while living in the community. In 1996, respondents were asked to map all the general areas for hunting, fishing, and gathering resources used in the last 5 years. For the 2012 survey, respondents were asked to map the areas they hunted, fished, or gathered resources during the study year only. Despite these differences, the maps provide insight on changing harvest areas over time. In general, the area used by Hoonah residents to harvest wild resources has contracted greatly since 1985, though it has not been a steady contraction (Figure 3-38). In 1996, residents used a much larger area for harvesting than in 1985 or 1987. The major contraction of harvest and use areas has occurred since 1996. In 1987, harvest areas stretched from the western coast of Chichagof Island to the northwest coast of Admiralty Island, as far north as the head of Glacier Bay and as far south as the southern shore of Tenakee Inlet, thus encompassing all of Icy Strait and Glacier Bay. In 1996, those same areas were utilized, but residents traveled even farther north—up to Dry Bay—and farther south to the northern shores of Peril Strait. Areas around Juneau and Douglas Island were utilized, as was Admiralty Island almost as far south as Angoon. In addition, much greater areas offshore of Chichagof Island were utilized in 1996. By 2012, search and harvest areas resembled the 1987 areas more closely, though 2012 showed a more reduced search and harvest area. Most noticeable is the lack of activity in Glacier Bay.

The changes seen by mapping resource search and harvest areas may reflect social, economic, and regulatory factors. As the cost of fuel has risen since the mid-1990s, hunters and fishers may elect to search closer to town in order to conserve fuel. Aside from some collected vegetation resources, the disappearance of Glacier Bay National Park from the 2012 mapped areas is likely due to regulations restricting subsistence harvests from the park. Glacier Bay was heavily utilized in 1985, 1987, and 1996, especially for harvesting salmon, nonsalmon fish, seals, and vegetation. Deer and marine mammal harvest and search areas also included Glacier Bay during the earlier studies. Although the park had been closed to subsistence uses since the 1920s, harvests continued to occur and the issue has been a contentious one among state regulatory agencies, federal agencies, and residents of Hoonah (Catton 1985).

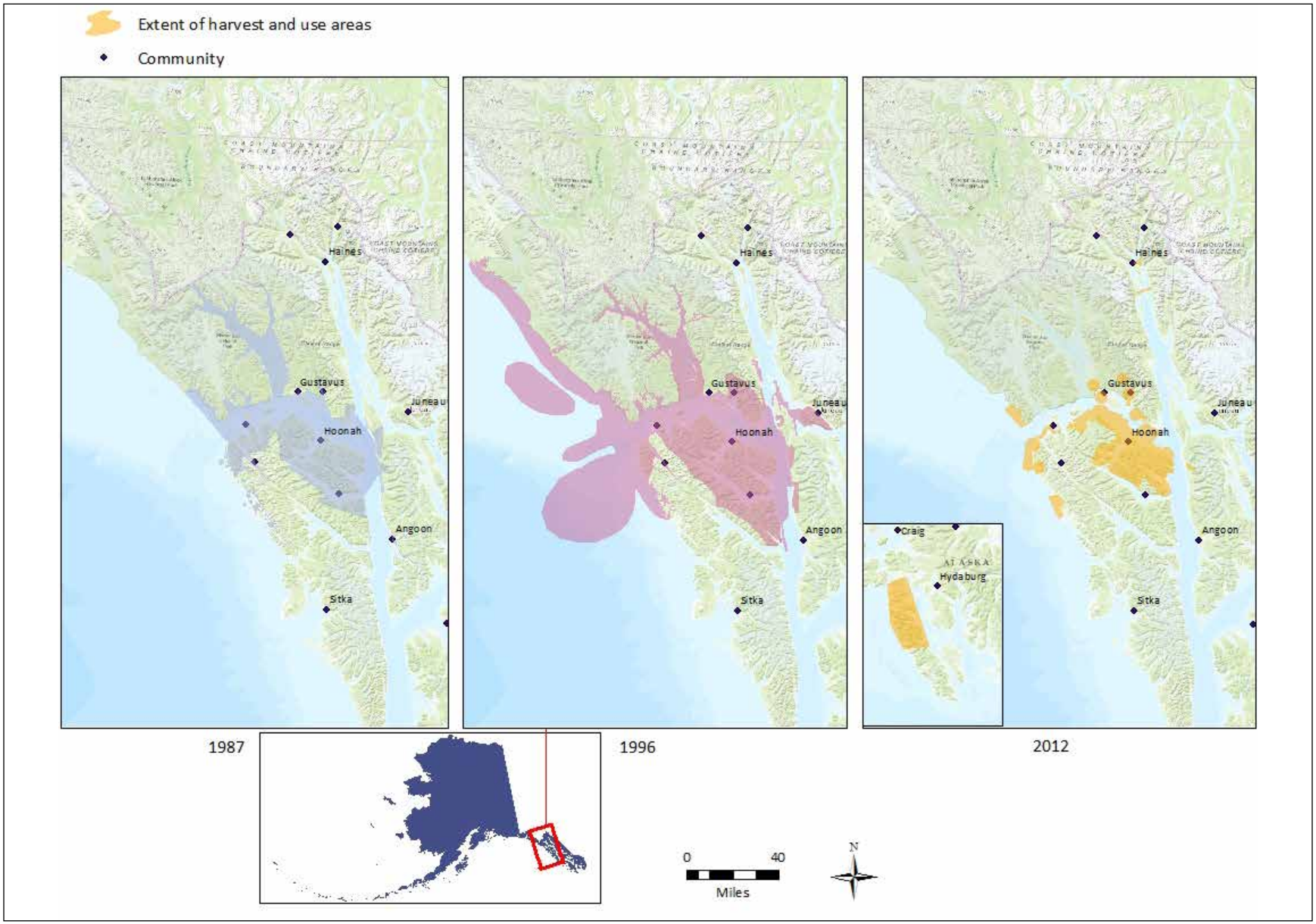


Figure 3-38.–Comparison of wild resources search and harvest areas, Hoonah, 1987, 1996, and 2012.

Local Comments and Concerns

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

Fish

Fish and fishing were of concern to many of the surveyed Hoonah households. Concern for the health of populations of Pacific halibut and Chinook, coho, and chum salmon was expressed as these populations have been perceived to be declining. Additional concerns expressed about Pacific halibut centered on their declining size and the impact of subsistence and sport fishermen. Views were expressed that the sport fishing industry had been growing and that charter boats keep too-small Pacific halibut. With regard to subsistence fishing, there was concern over the size of Pacific halibut caught in this fishery as well, but also a concern that subsistence regulations were being abused, either through over harvest or illegal participation. With regard to the commercial fishery for Pacific halibut, dissatisfaction with the reductions in Pacific halibut individual fishing quotas was expressed.

Salmon populations and fishing regulations were also of concern to many residents of Hoonah. Concern was expressed that all species of salmon were declining; the 2012 salmon run was particularly bad, which was attributed to environmental and weather-related causes. The subsistence sockeye fishery at Hoktaheen Cove was a subject brought up by many Hoonah respondents. In particular, changes to its management were desired, such as higher permit limits. Hoktaheen is a long boat ride from Hoonah and given the high cost of fuel people would like to be able to get enough fish for their households during 1 trip. A few respondents wished to see flexible dates for the Hoktaheen fishery to accommodate changes in the sockeye run timing. While it was mentioned how important Hoktaheen was to Hoonah and the history of the people and the community, the desire for other places to harvest subsistence sockeye was mentioned.

General comments on the regulatory system included statements that the proxy system is currently abused with people fishing for too many friends and family, that there should be a subsistence coho salmon fishery in Neka Bay, and that subsistence fishing regulations were unclear. Finally, there were concerns voiced about hatchery fish that they are not as nutritious as wild fish.

Other fish that were singled out for concern by Hoonah respondents were Pacific herring and Dolly Varden. Many respondents mentioned the importance of Pacific herring to the entire food chain and expressed concern that there were too many people harvesting Pacific herring for food or bait. Over the last 20 years, there has been a decrease in Pacific herring populations observed by residents. While one respondent mentioned that there were more Dolly Varden now, which might be causing salmon populations to decrease, another respondent felt the opposite—that Dolly Varden were not as plentiful anymore in either salt water or in the river.

More general comments offered about fish and fishing regulations included concerns about the amount of fish leaving the state from tourism/sport fishing, the impact of clearcuts and logging on salmon streams, and the detrimental effect increasing fuel prices are having on households' ability to harvest subsistence salmon.

Large Land Mammals

Deer populations and deer harvests were other subjects on which many Hoonah respondents had concerns or comments. It was heard repeatedly from respondents that a few hard winters around 2006 significantly reduced the deer populations and made successful hunting difficult, but that with recent milder winters more deer are being seen. More young deer were reported as were many twin fawns. While some respondents expressed the view that the deer population was recovering, others voiced their concerns that there were still too few deer and that competition for them from non-local hunters was a problem. The issue of how many deer are taken by non-local hunters was a concern due to the effect it has on local hunters, as was simply the number of deer hunters out hunting and making local areas and roads too crowded to hunt. Non-local hunters are seen by many respondents as being indiscriminate in their taking of deer or seeking trophy harvests and not following the regulations to protect deer. As fuel costs put greater pressure on subsistence hunters to be successful, there were a number of suggestions for better monitoring of non-local hunters as well as reducing the number of non-resident and non-local deer hunters in the Hoonah areas.

Deer hunting regulations allow for the taking of does during much of the open season. Federal regulations allow qualified users to harvest deer in January. Both of these regulations were the topic of many comments and concerns. In general, comments about the January season were critical. The respondents who commented on this season felt that it should not exist since the deer are too skinny and rundown by that point in the winter. The doe season had both support and opposition. Those who were critical of it felt that it should not exist or at least be more restrictive in the number of harvests allowed, the months harvests could occur, or in who was allowed to harvest. For those respondents who commented favorably on the doe season, they expressed a need for a doe season and favored the opportunity but that the doe season could be longer and more liberal since at least one respondent had observed many does. Another regulatory change suggested was to change the deer season so that beach hunting was not allowed after November 30.

The increased prevalence of brown bears in the community also garnered many comments. Generally, respondents reported that there were a lot more bears being seen now than in the past and that it was affecting some of their other subsistence harvesting activities, such as berry picking. Not only are the bears more abundant in town, they are also more aggressive. Some respondents felt that the increase in bears started after logging began and all the logging roads were put in. Others felt that the problem was that the bears were not hibernating as long and so were about in the winter. A few respondents felt more bears should be harvested and that in the past there were not as many bears because they were shot more frequently.

Small Land Mammals/Furbearers

Only one respondent commented upon small land mammals or furbearers and this was to say that he felt there was too much competition with a few other trappers in town and chose not to harvest as much as he had in the past.

Birds and Eggs

Hoonah residents had comments about both birds and bird eggs. Comments about birds centered on the introduction of marten by the State of Alaska to the island and the subsequent decline in the ptarmigan and grouse populations (Paul 2009rev.). According to some respondents, the grouse and ptarmigan populations have just recently started to rebound. One respondent suggested that part of the reason for the recovery was the closure of logging roads and reducing the access humans have to hunting the birds.

Comments about bird eggs were entirely about the harvest of sea gull eggs from Glacier Bay. Respondents held very strong feelings about the management of Glacier Bay and its closure to the harvest of sea gull eggs. Many felt that the bay should never have been closed and that it was closed for such a long time that people have become removed from the tradition of harvest and consumption of sea gull eggs. Many respondents indicated that they had not had sea gull eggs since they were children. There was some bitterness directed toward the federal government for making it difficult to legally subsist and for rumors that National Park Service personnel have destroyed sea gull eggs in an attempt at population control.

Marine Invertebrates

Comments and concerns about marine invertebrates were overwhelmingly about the crab fishing in Port Frederick. There were 2 main concerns: too many commercial Dungeness crab pots in areas used for subsistence crab harvesting in Port Frederick and that ADF&G has not opened the personal use red king crab fishery in Port Frederick since 2003.[9] Some respondents remarked upon their inability to get Dungeness crab because of the effect high commercial effort has had on the resource, or their physical inability to set subsistence pots because of all the commercial pots that are already set. Neka Bay crab were also described as smaller than they used to be. A number of respondents said they would like to see the area immediately around Hoonah in Port Frederick closed to non-subsistence crab harvesting. One respondent was also concerned about pollution from Hoonah impacting crab habitat and crab populations in Port Frederick.

Personal use fishing for king crab in Port Frederick had been allowed in the past, but has been shut down since 2003.[10] Most people reported that this has negatively affected their ability to get any king crab. Respondents who commented on king crab all felt that it was generally too dangerous to go into Icy Strait where king crab harvesting is still legal. Many would like to see even a very short season for local residents opened up for king crab in Port Frederick.

Vegetation

Few comments, all of which were about berries, were offered about the vegetation resources in Hoonah. Most comments concerned the poor berry season in 2012, particularly for salmonberries. One respondent remarked that the bears were eating more berries because fish were less abundant. Another respondent noted that the most abundant berries were found in watersheds that also had the most fish. Finally, one respondent expressed a concern about berry picking for profit.

Marine Mammals

Respondents had comments about seals, sea lions, and sea otters. In general, the sea lion and sea otter populations were observed to be increasing with detrimental effects on subsistence harvesting. Sea lions were viewed as responsible for eating too many salmon while sea otters decimate shellfish harvesting areas. Respondents said that both species should be better regulated. For sea otters in particular, the need for more clarification on and liberalization of regulations regarding harvest and use was noted. There is room for interpretation in the regulations concerning legal uses of sea otters, but in general a sea otter hide must be worked before it can be sold to a non-Native individual; in other words raw pelts cannot be sold outside of the Native community. Clarifying the rules about who can harvest and what can be sold would reassure potential hunters and sewers and may encourage more people to participate in active management of the local sea otter populations. Liberalizing what can be sold to the non-Native population may increase demand and also encourage more people to participate. In contrast to sea lion and sea otter populations, comments about seals were more concerned about the populations. One respondent noted that too many people are harvesting the food that seals eat, leading seals to be consistently too skinny over the last 10 years. Other respondents noted that the Glacier Bay seal population had decreased. A number of respondents remarked that they should be allowed to harvest seals in Glacier Bay as they have traditionally done.

9. During the Board of Fisheries 2015 Southeast meeting, the board passed Proposal 72, which closed the commercial Dungeness crab fishery in a portion of Frederick Sound. (Alaska Department of Fish and Game. 2015. "Alaska Board of Fisheries January 21–24, 2015, Board of Fisheries Southeast and Yakutat Crab, Shrimp, and Miscellaneous Shellfish, Wrangell, AK: Preliminary Summary of Actions." http://www.adfg.alaska.gov/static-f/regulations/regprocess/fisheriesboard/pdfs/2014-2015/southeast_crab/soa_bof_shellfish_2015.pdf [accessed March 2017]).
10. Following the study year, on October 1, 2015, Port Frederick was re-opened to personal use king crab fishing. (Alaska Department of Fish and Game Division of Commercial Fisheries. 2015. "News Release: Southeast Alaska Personal Use Red and Blue King Crab Fishery Announcement." http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/620926843.pdf [accessed March 2017]).

Glacier Bay

Respondents who commented upon Glacier Bay were displeased with its management. People felt that the subsistence way of life was negatively affected once Glacier Bay closed to harvesting activities and that the National Park Service had no right to keep Alaska Natives out of their homeland. It was felt by some respondents that non-Native people have more rights to Glacier Bay than the people from Hoonah through more liberal sport and commercial fishing opportunities. It was remarked that people do still harvest from Glacier Bay even if they are not allowed to be there, but most felt that Glacier Bay should be given back to the Huna Tlingit since it is their ancestral homeland.

Weather

A few respondents remarked upon changes in weather patterns that they have observed. There seems to be less consistency in the winter; whereas 20 years ago winters used to reliably have snowfall, now there are years of high snowfall followed by years where it mainly rains. Other respondents echoed the sentiment that there appears to be more rain during the winters with less consistent snowfall. Changes are not limited just to winter either. One respondent noted that once it was possible to depend on May being a dry month for processing, but now it is often too wet. In general, more rain was noted by many respondents.

Regulations

Subsistence regulations were a topic of concern to many respondents. Some respondents felt state and federal regulations were too burdensome and make it difficult to subsist. With the belief that Alaska Natives have a right to subsistence harvesting, some respondents felt the government had no business regulating harvests and requiring permits and licenses. Regulations only serve to make harvesters illegal when they feel they are simply using what they need and have traditionally harvested. Regulations, such as seasonal openings, can limit access to such an extent that subsistence foods tend to run out. Or regulations such as closing roads limits needed access to resources. With current economic conditions and high fuel prices, it is very important to be efficient when going out to harvest; it is too expensive to not bring back a harvest. The lack of clarity between different federal and state regulations was found to be burdensome and the general lack of clarity on subsistence regulations made some people fear participating in subsistence activities. Better information on regulations was asked for. A number of respondents felt that regulations should be made at the community level under some sort of local board that coordinates with other communities in the region. One respondent pointed out what he felt were unfair differences between harvesting under sport regulations versus under subsistence fishing regulations. Other respondents felt that more enforcement of the regulations was necessary.

General Concerns

During the review session in the community, it was clear from comments made that the maps created through this survey represent a minimum extent of harvest areas. Many areas important to the harvest of a variety of species were pointed out that were not included in the maps. During the surveys, a number of respondents expressed concern for what the survey results would be used for and asked if they would be used to implement new regulations and further limit access to subsistence resources. Review meeting participants asked that the results of the survey be made broadly available to Hoonah residents.

There were many comments about the general nature of subsistence. Subsistence is about sharing, but less sharing occurs when households can only harvest enough for themselves. There seems to be less sharing occurring now than there was 30 years ago, probably because resources seem scarcer. Poor opportunities in the cash economy led some respondents to reiterate the necessity of subsistence to offset the high cost of living in Hoonah. It was also noted that many people are stuck between needing to work more to earn money, and also needing more subsistence foods to supplement their income. With less abundant resources, harvesting is harder and takes longer, which affects their work schedules. While subsistence is important to supplement wages, many respondents also pointed out the high cost of participating in subsistence harvesting because of fuel and equipment needed.

Other general comments about subsistence included the feeling that there is less education about the subsistence way of life for young people, largely because of regulations, and that there needs to be more subsistence mentors for children. In general, subsistence rights need more advocacy, and there is concern that politics play too large of a role in determining rights and needs when it comes to subsistence.

ACKNOWLEDGMENTS

Many thanks to the community of Hoonah for its participating in and supporting this project. Particular thanks are extended to Hoonah Indian Association for facilitating the successful completion of this project in Hoonah and helping researchers find outstanding local research assistants to help with the administration of the survey. They were invaluable to the project, so many thanks to Kathy Marvin, Mike Williams, Jay Erickson, Archie Brown III, Myron Murphy, Jamieson Williams, and Geri Cheslock. Thanks also to all the individuals who welcomed us into their homes and spoke with us about their subsistence harvests now and in the past.

4. ANGOON

Rosalie A. Grant and Lauren A. Sill

Community Background

Located in Southeast Alaska, Angoon is a small town with a long history. Situated on the western side of Admiralty Island, the town of Angoon sits at the narrow entrance of 2 very large bays: Mitchell Bay and Favorite Bay. The disproportionately small entrance to these very large bays means the daily tides that come into Mitchell Bay from Chatham Strait arrive as a torrent. The numerous small islands inside the bay form an elaborate maze of inlets, coves, and channels that create strong currents and saltwater rapids within the bay. The majority of Admiralty Island is a part of the Admiralty Island National Monument, which is managed by the U.S. Forest Service as a wilderness area free of development. This mountainous island contains a wide array of habitats and ecosystems that help support a large population of brown bear for which the island is famous. The town of Angoon sits on the edge of this massive wilderness connected to the rest of Alaska via daily floatplane service, and twice weekly Alaska Marine Highway ferry service. Surrounded by rich fishing grounds and dense forests, the area has provided wild resources for its residents for thousands of years.

Angoon is one of the oldest towns in Southeast Alaska. It is old enough that no precise date has been established for its original occupation. According to Tlingit oral history, the Angoon village site was discovered by 3 members of the *Deisheetan* clan who followed a beaver to the site from Chatham Strait. After assessing the site and the natural harbor where the beaver had taken them, the Deisheetan then decided to move there and built a house—called *Deshoo-hit*, "end of the trail house." At their new clan site there were no trees growing and bears were easily visible in the area, so the people named the place *xuts nuwu*, or "Brown Bear's Fort." Admiralty Island itself was referred to as *xutsnuwu xat*, or "Brown Bear's Fort Island" (de Laguna 1960). When the Deisheetan clan moved to the new village site, the *Gaanax'adi* clan was already living in the vicinity. The Deisheetan asked permission to move to the area and lived near the Gaanax'adi for some time. Later on trouble between the 2 groups caused the Gaanax'adi to move and relinquish all of their land holdings to the Deisheetan (de Laguna 1960).

The first recorded contact with European explorers was in 1794 when British Captain George Vancouver sailed to Angoon. In Vancouver's account he noted the abundance of sea otters along the Admiralty Island shore and observed fur trading activity at Angoon. From the account of his visit, it is clear that fur trading with the Russians from the Sitka garrison was already an established activity for Angoon for many years before Vancouver's visit. By the time of the 1867 purchase of Alaska, most commercial fur trading in the Angoon area had ceased and by 1910 the sea otter population was nearly extinct (Alaska Consultants, Inc. 1976).

In 1880, a whaling station and trading post was established by the Northwest Trading Company on Killisnoo Island. It was here that one of the defining moments in Angoon's history happened—the bombing of Angoon in 1882 by the U.S. military. Both Killisnoo and Angoon residents worked at the whaling station when a premature explosion of a charge in a whaling harpoon killed a shaman. When the Alaska Natives demanded blankets as restitution for the death and as a condition for the return to the company of a whaling boat and 2 non-Native crew, the station superintendent sought aid from the U.S. Navy. The U.S. Revenue Marine Steamer *Thomas Corwin* steamed from Sitka to Angoon to provide support for the owners and non-Native workers at the whaling station. The U.S. Navy representative aboard the *Corwin* demanded the release of whaling station staff held by Angoon residents, as well as a substantial payment of goods to the federal government. Before the government demands were met, a ship's cannon was used to bombard Angoon. Shore parties from the *Corwin* burned the village and destroyed Tlingit boats and food stores; additionally, 6 lives were lost. It was not until 1973 that the U.S. government agreed to pay $90,000 in an out-of-court settlement (de Laguna 1960).[1]

1. United States Coast Guard. 2014. "*Thomas Corwin* (a.k.a. *Corwin*), 1876: Cutter history," n.p.: http://www.uscg.mil/history/webcutters/corwin1876.asp (accessed October 2015).

During the 1880s and 1890s, the communities of Angoon and Killisnoo were rebuilt and they prospered. The whaling station was converted to a Pacific herring reduction plant that processed Pacific herring, fish oil, and fertilizer until 1928 when a fire destroyed the village site (Thornton et al. 2010). After the fire the people living in Killisnoo moved to Angoon. Poor market conditions in 1930 forced the permanent closure of the Pacific herring plant. In 1947, the newly-formed Indian Reorganization Act (IRA) council, the Angoon Community Association, with the assistance of the U.S. Bureau of Indian Affairs, bought the Hood Bay Canning Company (Alaska Consultants, Inc. 1976). After the purchase, many people from Angoon moved to Hood Bay for the summer canning season. The cannery burned in 1961 and those Angoon residents employed there had to find other places of employment in nearby canneries at Sitkoh Bay, Hawk Inlet, Excursion Inlet, and Sitka. The majority of the local purse seine fleet began to deliver fish to the cannery at Hawk Inlet (Alaska Consultants, Inc. 1976).

In 1963, Angoon incorporated as a fourth-class city. In 1972, it was reclassified as a second-class city. The community is represented on the federal Subsistence Southeast Regional Advisory Council. Today, Angoon is a town rich in culture, history, and natural beauty that has consistently demonstrated a strong capacity for resilience and toughness. Although the Angoon economy and lifestyle are changing, Angoon is still predominately a Tlingit town that continues to rely on the traditional harvest and use of wild resources. Also supporting its 300-plus residents is a small grocery store, schools from elementary to high school, a city government building, a large tribal community building, a small boat harbor, an inn, and several fishing lodges.

Population Estimates and Demographic Information

Population size, demographics, history, and economics play an important role in the harvest of wild foods in a community. This section highlights the demographic findings from the 2012 survey. From February 19 to 22, 2013, a total of 51 households were surveyed for this 2012 comprehensive harvest study, which represents 42% of the total households in Angoon (Table 4-1). In total, 59 randomly-selected households were attempted to be contacted and 8 declined to be interviewed, creating a refusal rate of 14%.

At the time of this survey the estimated population size was 342 residents (Table 4-2). Angoon's population has been declining since the mid-1990s when the population was estimated by the Alaska Department of Labor to be 605 residents (Figure 4-1). Many other small Southeast Alaska towns have also declined in size during this time (Gilbertsen 2004; Hunsinger et al. 2012). While conducting these surveys, several respondents commented to researchers that in the past several years relatives and friends had moved away from Angoon, causing a noticeable difference in a group's ability to harvest resources. In 2010, the U.S. Census Bureau estimated the population to be 459 residents (Table 4-2). The American Community Survey estimated the population average to be 404 between 2008 and 2012. The variation between these 3 sources is likely the result of differences in survey methods, seasonal differences in the timing of survey administration, a recent decrease in population, or a combination of all or several of these factors.

The Alaska Native population remains proportionally high in Angoon. At the time of survey an estimated 110 of the 122 occupied households (90%) identified as Alaska Native (Table 4-3; Table 4-2). The survey asked for people to self-identify as either Alaska Native or not. No further distinctions were made to identify heritage or ethnicity (Appendix A).

Table 4-1.–Sample achievement, Angoon, 2012.

	Community
	Angoon
Number of dwelling units	122
Interview goal	51
Households interviewed	51
Households failed to be contacted	13
Households declined to be interviewed	8
Households moved or occupied by nonresident	0
Total households attempted to be interviewed	59
Refusal rate	13.6%
Final estimate of permanent households	122
Percentage of total households interviewed	41.8%
Interview weighting factor	2.39
Sampled population	143
Estimated population	342.1

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

The mean age of the general population at the time of the survey was 42 years old, with a minimum of 1 year of age and a maximum of 86 years of age (Table 4-3). The average household size was between 2 and 3 people, with a minimum of 1 and a maximum of 8 individuals in a household. For the general population the mean length of residency was 35 years, with a maximum of 80 years and minimum of 1 year. The mean length of residency for heads of households was longer than the general population at 46 years, with a minimum of 2 years and a maximum 80 years. There were approximately 191 men and 151 women in Angoon in 2012 (Table 4-4; Figure 4-2). The most populous age cohort for both men and women was ages 55 to 59. For men, the population of the age cohort of 60 to 64 was equal to that of the 55 to 59 cohort. The smallest age cohort overall was ages 85 to 89. For women, the smallest age cohorts were ages 40 to 44 years old, 65 to 69 years old, and 80 to 84 years old; each composed 2% of the total female population. For men the smallest age cohorts were in 5 different groups: ages 5 to 9, ages 20 to 24, ages 35 to 39, ages 80 to 84, and ages 85 to 89. Youth who were 0 to 19 years of age composed 24% of the total population of Angoon. People who were 20 to 64 years old composed 55% of the total population. People aged 65 and older composed 15% of the total population.

Most of Angoon's residents were born in the community or are from other Southeast Alaska towns. More than one-half (65%) of the heads of households were born in Angoon and 20% were born in other Southeast Alaska communities; only 13% were born outside of Alaska, leaving 88% of the Angoon heads of households Alaska-born (Table 4-5). For the overall population, 75% were born in Angoon and 13% were born in other Southeast Alaska communities; only 9% were born outside of Alaska (Table 4-6).

Table 4-2.–Population estimates, Angoon, 2010 and 2012.

	Census (2010)	5-year American Community Survey (2008–2012)	This study (2012)
Total population			
Households	167	173	122.0
Population	459	404	342.1
Alaska Native			
Population	405	371	306.2
Percentage	88.2%	89.2%	89.5%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey 5-year survey estimate; and ADF&G Division of Subsistence household surveys, 2013, for 2012 estimate.

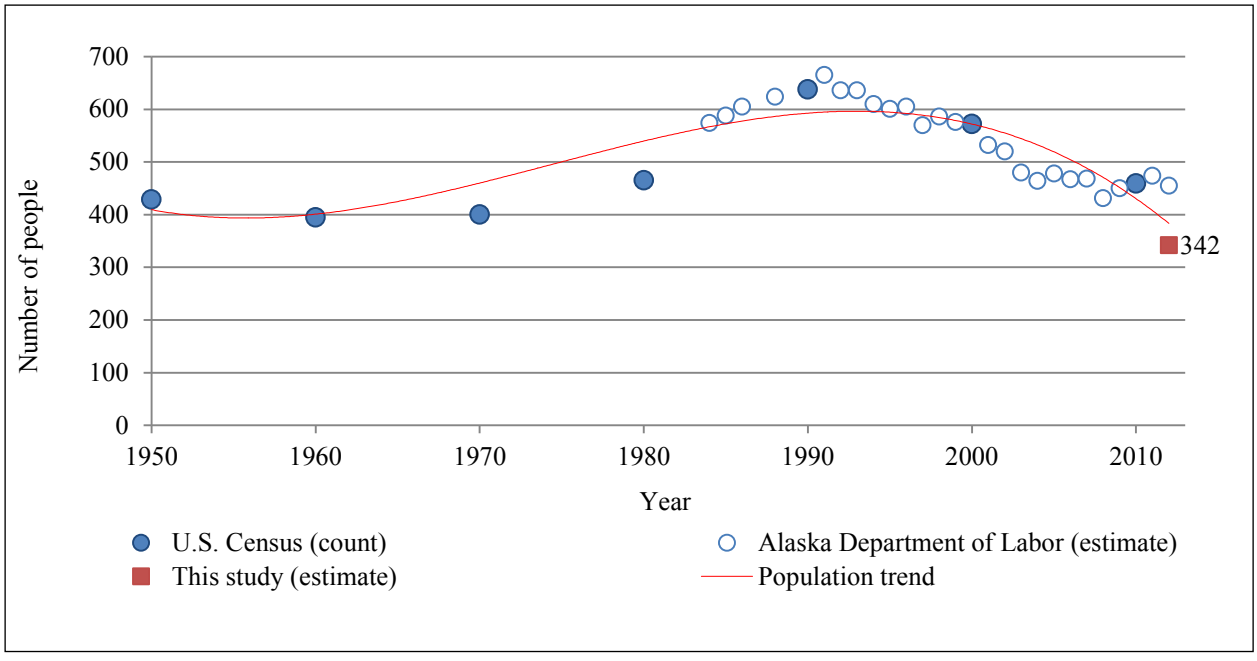


Figure 4-1.–Historical population estimates, Angoon, 1950–2012.

Table 4-3.–Demographic characteristics, Angoon, 2012.

Characteristics	Community Angoon
Household size	
Mean	2.8
Minimum	1
Maximum	8
Age	
Mean	41.5
Minimum[a]	1
Maximum	86
Median	46
Length of residency	
Total population	
Mean	35.0
Minimum[a]	1
Maximum	80
Heads of household	
Mean	46.4
Minimum[a]	2
Maximum	80
Alaska Native households[b]	
Number	110.0
Percentage	90.2%

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

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

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

Table 4-4.–Population profile, Angoon, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	9.6	5.0%	5.0%	7.2	4.8%	4.8%	16.7	4.9%	4.9%
5–9	2.4	1.3%	6.3%	9.6	6.3%	11.1%	12.0	3.5%	8.4%
10–14	9.6	5.0%	11.3%	16.7	11.1%	22.2%	26.3	7.7%	16.1%
15–19	16.7	8.8%	20.0%	9.6	6.3%	28.6%	26.3	7.7%	23.8%
20–24	2.4	1.3%	21.3%	9.6	6.3%	34.9%	12.0	3.5%	27.3%
25–29	9.6	5.0%	26.3%	4.8	3.2%	38.1%	14.4	4.2%	31.5%
30–34	14.4	7.5%	33.8%	9.6	6.3%	44.4%	23.9	7.0%	38.5%
35–39	2.4	1.3%	35.0%	7.2	4.8%	49.2%	9.6	2.8%	41.3%
40–44	12.0	6.3%	41.3%	2.4	1.6%	50.8%	14.4	4.2%	45.5%
45–49	14.4	7.5%	48.8%	9.6	6.3%	57.1%	23.9	7.0%	52.4%
50–54	14.4	7.5%	56.3%	9.6	6.3%	63.5%	23.9	7.0%	59.4%
55–59	19.1	10.0%	66.3%	19.1	12.7%	76.2%	38.3	11.2%	70.6%
60–64	19.1	10.0%	76.3%	7.2	4.8%	81.0%	26.3	7.7%	78.3%
65–69	7.2	3.8%	80.0%	2.4	1.6%	82.5%	9.6	2.8%	81.1%
70–74	7.2	3.8%	83.8%	7.2	4.8%	87.3%	14.4	4.2%	85.3%
75–79	12.0	6.3%	90.0%	7.2	4.8%	92.1%	19.1	5.6%	90.9%
80–84	2.4	1.3%	91.3%	2.4	1.6%	93.7%	4.8	1.4%	92.3%
85–89	2.4	1.3%	92.5%	0.0	0.0%	93.7%	2.4	0.7%	93.0%
90–94	0.0	0.0%	92.5%	0.0	0.0%	93.7%	0.0	0.0%	93.0%
95–99	0.0	0.0%	92.5%	0.0	0.0%	93.7%	0.0	0.0%	93.0%
100–104	0.0	0.0%	92.5%	0.0	0.0%	93.7%	0.0	0.0%	93.0%
Missing	14.4	7.5%	100.0%	9.6	6.3%	100.0%	23.9	7.0%	100.0%
Total	**191.4**	**100.0%**	**100.0%**	**150.7**	**100.0%**	**100.0%**	**342.1**	**100.0%**	**100.0%**

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

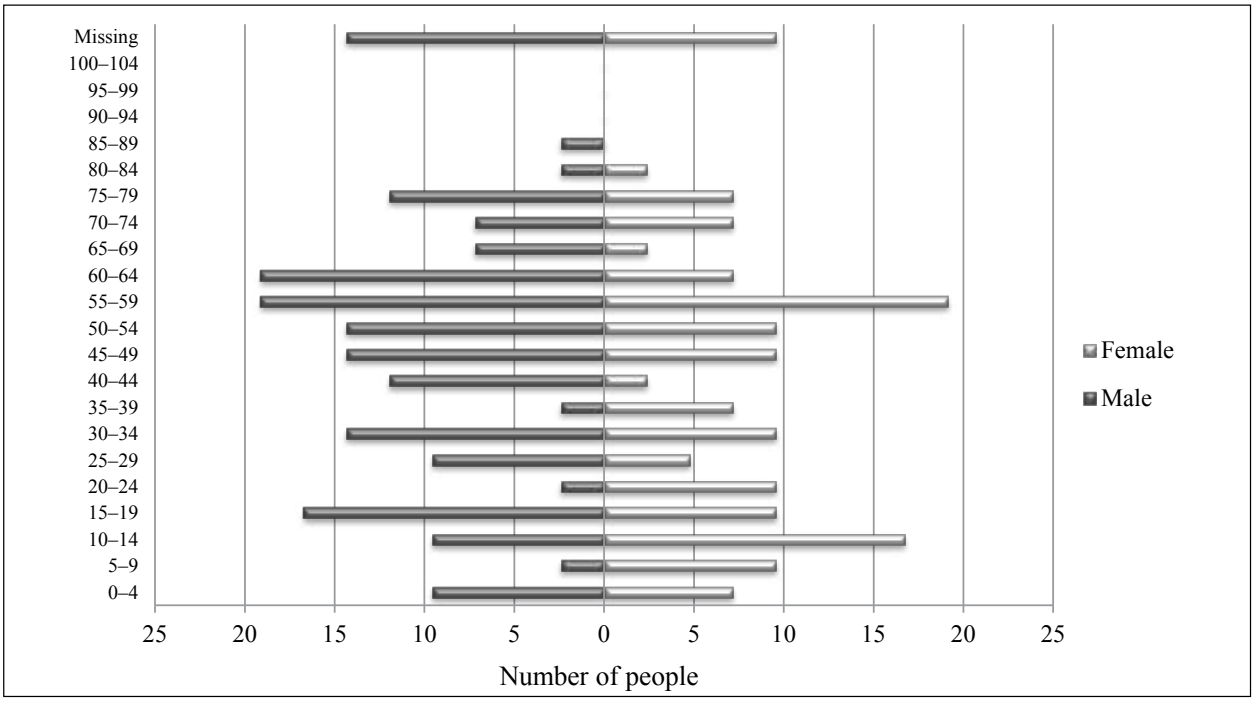


Figure 4-2.–Population profile, Angoon, 2012.

Table 4-5.–Birthplaces of household heads, Angoon, 2012.

Birthplace	Percentage
Angoon	65.3%
Balance of Skagway Census sub-area	1.4%
Juneau	2.8%
Klukwan	1.4%
Metlakatla	1.4%
Selawik	1.4%
Sitka	5.6%
Saint George	1.4%
Tenakee Springs	5.6%
Yakutat	1.4%
Other U.S.	12.5%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 4-6.–Birthplaces of population, Angoon, 2012.

Birthplace	Percentage
Angoon	74.8%
Balance of Skagway Census sub-area	0.7%
Juneau	2.8%
Klukwan	0.7%
Metlakatla	0.7%
Selawik	0.7%
Sitka	4.9%
Saint George	0.7%
Tenakee Springs	2.8%
Yakutat	0.7%
Other U.S.	9.1%
Missing	1.4%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Income and Cash Employment

Subsistence harvesting is a main component of the rural Alaska economy. The income of a household has a close relationship to the harvesting activities of a household; families invest their money into equipment—such as gillnets, boats, skiffs, fishing gear, and rifles—in order to increase their ability to harvest foods for their families and other community members (Fall 2014). It is because of this connection between cash and subsistence in the rural Alaska mixed market-subsistence economy that income data were collected during the survey.

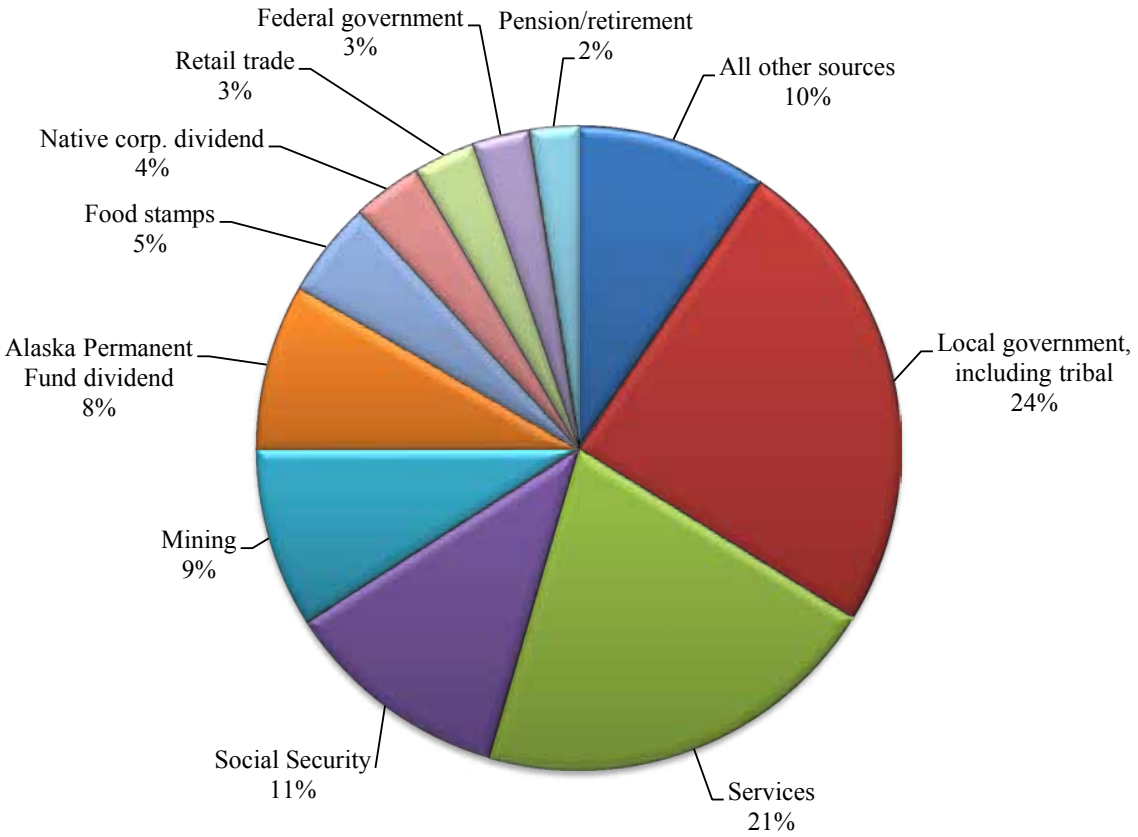
This survey estimated Angoon's total cash income for 2012 to be $3,133,936 (Table 4-7). Approximately three-fourths of this came from 5 income sources: local government jobs (24%), services jobs (21%), Social Security payments (11%), mining jobs (9%), and Alaska Permanent Fund dividends (8%) (Figure 4-3). Earned income in the community accounted for 65% ($2,033,030) of the total income and income derived from other sources composed the remainder of the total income (35%, or $1,100,906) (Table 4-7). The largest sources of other income came from Social Security benefits and Alaska Permanent Fund dividends, which contributed 12% and 8%, respectively, to the total community income in Angoon in 2012. The majority of earned income came from 3 job categories: local and tribal government jobs (37% of earned income; $761,162); service jobs (32% of earned income; $647,584); and mining jobs (14% of earned income; $282,553) (Table 4-8; Table 4-7). While the local and tribal government sector provided the second greatest percentage of jobs to the community, this industry employed the greatest percentage of households (Table 4-8). Services industry jobs provided the greatest percentage of overall jobs to the community and employed the largest percentage of individuals. The estimated median household income was $18,780 for 2012, which is less than the median income 5-year average estimated by the American Community Survey in 2012. Both estimates are far less than the 2012 statewide median income of $69,917 (Figure 4-4). The per capita income in 2012 in Angoon was $9,161, which is the lowest per capita income of the study communities (Table 1-9).

Of the approximately 254 adults of working age (16 and older) in Angoon, 73% were employed in 2012 (Table 4-9). The mean number of months working adults were employed was 7, with a minimum of 1 month of employment and a maximum of 12 months employment. Only 39% of employed adults were employed year-round and 48% were employed full-time (Table 4-9; Table 4-10). Of the estimated 122 Angoon households, 119 (97%) contained at least 1 adult who was employed. The mean number of jobs per household was 1.7 and the mean number of employed adults per household was 1.6. These employment statistics and characteristics seem to represent seasonal and temporary jobs that are the most readily available employment opportunities in the community. Periods of unemployment can provide time for harvesting activities, but income is needed to fund the equipment needed to harvest.

Table 4-7.–Estimated earned and other income, Angoon, 2012.

Income source	Number of people	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal	24.0	62.6	$761,162	$329,093 – $1,461,751	$6,239	24.3%
Services	26.0	56.3	$647,584	$231,722 – $1,310,933	$5,308	20.7%
Mining	5.0	15.6	$282,553	$17,414 – $915,622	$2,316	9.0%
Retail trade	2.0	6.3	$97,037	$37,621 – $285,376	$795	3.1%
Federal government	1.0	3.1	$89,573	$56,783 – $193,102	$734	2.9%
Transportation, communication, and utilities	2.0	6.3	$49,763	$7,089 – $144,352	$408	1.6%
Construction	3.0	9.4	$46,075	$4,825 – $143,765	$378	1.5%
State government	1.0	3.1	$37,436	$13,506 – $74,562	$307	1.2%
Agriculture, forestry, and fishing	1.0	3.1	$18,114	$6,501 – $38,668	$148	0.6%
Other employment	1.0	3.1	$3,732	$2,491 – $7,726	$31	0.1%
Earned income subtotal	**60.0**	**118.9**	**$2,033,030**	**$1,099,670 – $3,271,715**	**$16,664**	**64.9%**
Other income						
Social Security		40.7	$359,146	$218,604 – $312,779	$2,944	11.5%
Alaska Permanent Fund dividend		117.2	$261,363	$82,217 – $236,431	$2,142	8.3%
Food stamps		45.5	$150,510	$49,297 – $187,975	$1,234	4.8%
Native corp. dividend		107.6	$109,168	$15,574 – $170,800	$895	3.5%
Pension/retirement		16.7	$76,779	$23,743 – $53,070	$629	2.4%
Heating assistance		67.0	$37,775	$337 – $105,408	$310	1.2%
Longevity bonus		9.6	$30,624	$8,000 – $38,275	$251	1.0%
Other		2.4	$19,137	$883 – $48,999	$157	0.6%
Adult public assistance (OAA, APD)		9.6	$16,552	$6,000 – $28,706	$136	0.5%
Meeting honoraria		2.4	$14,353	$3,600 – $17,224	$118	0.5%
Disability		2.4	$8,612	$1,394 – $23,496	$71	0.3%
Unemployment		26.3	$8,505	$1,548 – $7,406	$70	0.3%
Veterans assistance		2.4	$3,703	$556 – $6,365	$30	0.1%
TANF (temporary cash assistance for needy families)		7.2	$2,311	$878 – $4,201	$19	0.1%
Child support		2.4	$2,100	$111 – $1,153	$17	0.1%
Foster care		2.4	$266	$0 – $0	$2	0.0%
Supplemental Security income		0.0	$0	$0 – $0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0 – $0	$0	0.0%
CITGO fuel voucher		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**117.2**	**$1,100,906**	**$156,382 – $604,556**	**$9,024**	**35.1%**
Community income total			**$3,133,936**	**$2,234,490 – $4,428,104**	**$25,688**	**100.0%**

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



Note The category "all other sources" category includes sources providing less than 2% each to the overall income.

Figure 4-3.–Top income sources, Angoon, 2012.

Table 4-8.–Employment by industry, Angoon, 2012.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Estimated total number	**209.3**	**118.9**	**187.4**	
Federal government	**1.5%**	**2.6%**	**1.7%**	**4.4%**
Social scientists, social workers, religious workers, and lawyers	1.5%	2.6%	1.7%	4.4%
State government	**1.5%**	**2.6%**	**1.7%**	**1.8%**
Technologists and technicians, except health	1.5%	2.6%	1.7%	1.8%
Local government, including tribal	**35.3%**	**52.6%**	**40.0%**	**37.4%**
Executive, administrative, and managerial	7.4%	13.2%	8.3%	5.0%
Teachers, librarians, and counselors	8.8%	13.2%	10.0%	17.3%
Administrative support occupations, including clerical	2.9%	5.3%	3.3%	1.6%
Service occupations	4.4%	7.9%	5.0%	5.8%
Mechanics and repairers	1.5%	2.6%	1.7%	1.1%
Precision production occupations	1.5%	2.6%	1.7%	2.0%
Transportation and material moving occupations	1.5%	2.6%	1.7%	0.2%
Handlers, equipment cleaners, helpers, and laborers	7.4%	13.2%	8.3%	4.5%
Agriculture, forestry, and fishing	**1.5%**	**2.6%**	**1.7%**	**0.9%**
Agricultural, forestry, and fishing occupations	1.5%	2.6%	1.7%	0.9%
Mining	**7.4%**	**13.2%**	**8.3%**	**13.9%**
Technologists and technicians, except health	1.5%	2.6%	1.7%	0.0%
Construction and extractive occupations	2.9%	5.3%	3.3%	12.2%
Transportation and material moving occupations	1.5%	2.6%	1.7%	0.9%
Handlers, equipment cleaners, helpers, and laborers	1.5%	2.6%	1.7%	0.8%
Construction	**4.4%**	**7.9%**	**5.0%**	**2.3%**
Construction and extractive occupations	1.5%	2.6%	1.7%	0.2%
Handlers, equipment cleaners, helpers, and laborers	2.9%	5.3%	3.3%	2.1%
Transportation, communication, and utilities	**2.9%**	**5.3%**	**3.3%**	**2.4%**
Transportation and material moving occupations	2.9%	5.3%	3.3%	2.4%
Retail trade	**2.9%**	**5.3%**	**3.3%**	**4.8%**
Executive, administrative, and managerial	1.5%	2.6%	1.7%	2.4%
Marketing and sales occupations	1.5%	2.6%	1.7%	2.3%
Services	**41.2%**	**47.4%**	**43.3%**	**31.9%**
Executive, administrative, and managerial	5.9%	5.3%	5.0%	7.4%
Teachers, librarians, and counselors	1.5%	2.6%	1.7%	0.7%
Health technologists and technicians	2.9%	5.3%	3.3%	3.7%
Service occupations	14.7%	21.1%	15.0%	9.6%
Agricultural, forestry, and fishing occupations	4.4%	7.9%	5.0%	1.9%
Handlers, equipment cleaners, helpers, and laborers	11.8%	18.4%	13.3%	8.6%
Industry not indicated	**1.5%**	**2.6%**	**1.7%**	**0.2%**
Handlers, equipment cleaners, helpers, and laborers	1.5%	2.6%	1.7%	0.2%

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

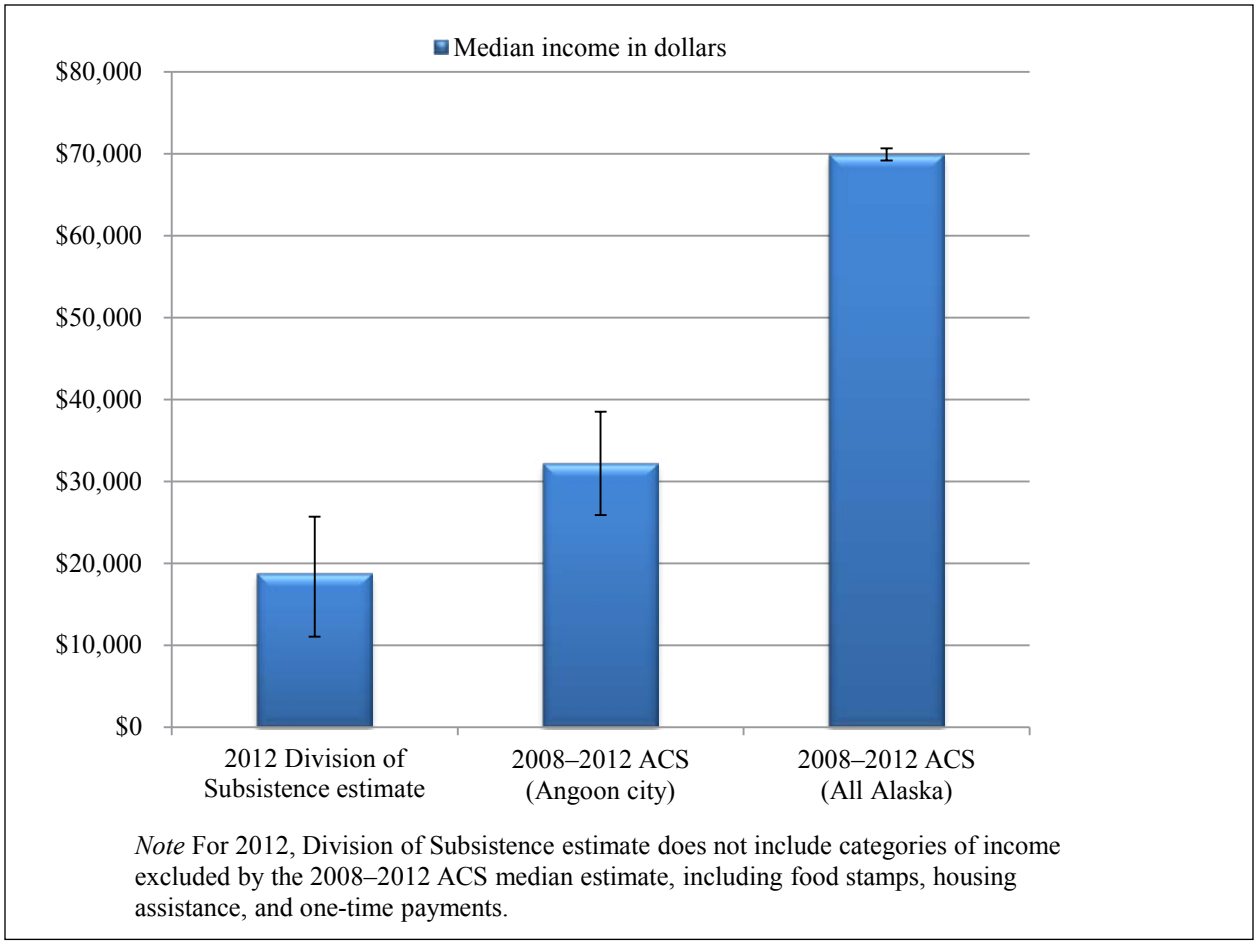


Figure 4-4.–Comparison of median household income estimates, Angoon, 2012.

Table 4-9.–Employment characteristics, Angoon, 2012.

Characteristic	Community Angoon
All adults	
Number	253.6
Mean weeks employed	21.9
Employed adults	
Number	185.3
Percentage	73.1%
Jobs	
Number	206.9
Mean	1.1
Minimum	1
Maximum	2
Months employed	
Mean	6.9
Minimum	1
Maximum	12
Percentage employed year-round	38.7%
Mean weeks employed	30.0
Households	
Number	122
Employed	
Number	118.9
Percentage	97.4%
Jobs per employed household	
Mean	1.7
Minimum	1
Maximum	4
Employed adults	
Mean	
Employed households	1.6
Total households	1.5
Minimum	1
Maximum	4
Mean person-weeks of employment	33.3

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

Table 4-10.–Reported job schedules, Angoon, 2012.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full-time	89.3	42.6%	89.1	48.3%	78.2	65.8%
Part-time	58.5	27.9%	55.3	30.0%	43.8	36.8%
Shift	15.4	7.4%	15.4	8.3%	12.5	10.5%
On-call (occasional)	43.1	20.6%	43.0	23.3%	40.7	34.2%
Part-time shift	0.0	0.0%	0.0	0.0%	0.0	0.0%
Schedule not reported	3.1	1.5%	3.1	1.7%	3.1	2.6%

Source ADF&G Division of Subsistence household surveys, 2013.
Note Respondents who had more than 1 job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Food Security

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. The food security status of households is based on the aggregated number of affirmative responses to questions about experiencing food insecure conditions. Food security status is characterized by 4 ranges:

1. High food security;
2. Marginal food security;
3. Low food security; and
4. Very low food security.

For reporting purposes, households with high or marginal food security were broadly categorized as being food secure, and households with low or very low food security were broadly categorized as being food insecure following a USDA protocol (Bickel et al. 2000).[2]

Households with a high or marginal level of food security reported 1 or 2 instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Figure 4-5 compares food security results of Angoon, the state of Alaska, and the United States. With nearly one-half (42%) of the households in Angoon experiencing low or very low food security in 2012, the percentage of food insecure households was more than 3 times higher than Alaska's average of 12% and the national average of 15%. Very low food security conditions in Angoon were also approximately twice as high as the state and national averages.

2. U.S. Department of Agriculture, Economic Research Service. 2015. "Food Security in the U.S.: Measurement," http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx (accessed Nov. 2016).

Responses to core questions qualifying the food insecure conditions experienced by Angoon households are summarized in Figure 4-6. The following is a summary of some of the more revealing conditions experienced by Angoon in 2012: 52% of Angoon households worried about having enough food, 73% of households indicated that they lacked the resources to get food (either store-bought or subsistence foods), and 54% of households stated their food (either store-bought or subsistence) did not last. There were 59% of households that stated that their subsistence food did not last while 44% stated store-bought food ran out. The very low food security conditions reported by Angoon households were greater than in any other study community. Some of the very low food security conditions reported were: 30% of households' adults reported cutting the size of their meals or skipping meals, 10% reported losing weight because of a lack of food and being hungry but not eating, 8% at one point did not eat for a whole day because of a lack of food, and 8% at some point in the year ate less than they should because of a lack of food.

Figure 4-7 shows that food insecure conditions increased in the winter months in Angoon with the highest level occurring in November. This figure shows for households having very low food security that conditions vary greatly through the year, and in low food secure households conditions stayed a bit more steady with generally fewer food insecurity occurrences in the summer and spring months. For food secure households, conditions stayed fairly uniform throughout the year. With less than one-half of the employed adults in Angoon working full-time and 38% employed year-round (Table 4-10; Table 4-9), the presumably highly varied employment status of households throughout the year combined with seasonal availability of wild foods likely affects food security. In the summer months there are more seasonal jobs available and wild foods are more abundantly available for harvest; consequently, food insecure conditions decrease.

Figure 4-8 compares months when store-bought and subsistence foods did not last for Angoon households. Subsistence foods showed a seasonal fluctuation for not lasting while instances of lacking store-bought foods remained fairly stable (between 20% and 27% of households reported store-bought foods not lasting all during 2012). Supplies can arrive year-round to stores, so access to these foods tends to be a factor of supply, price, and income combined. Subsistence foods are seasonally available and accessibility varies greatly throughout the year with the summer being the most productive for harvesting and winter the least productive because of rough winter weather, migration of fish and game to overwintering grounds, and the majority of vegetation being available only in the summer in Southeast Alaska. Correspondingly, summer months show the lowest percentage of households whose subsistence food did not last and winter months show the highest percentages of households whose subsistence food did not last.

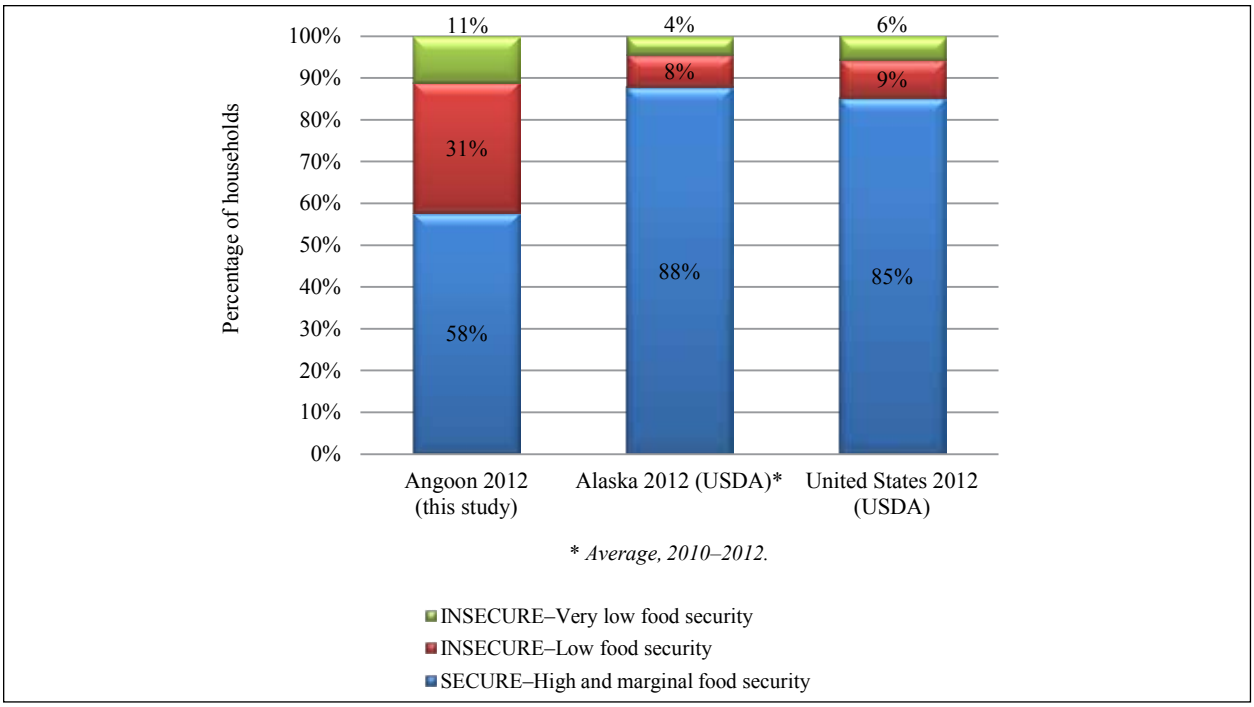


Figure 4-5.–Comparison of food security categories, Angoon, Alaska, and United States, 2012.

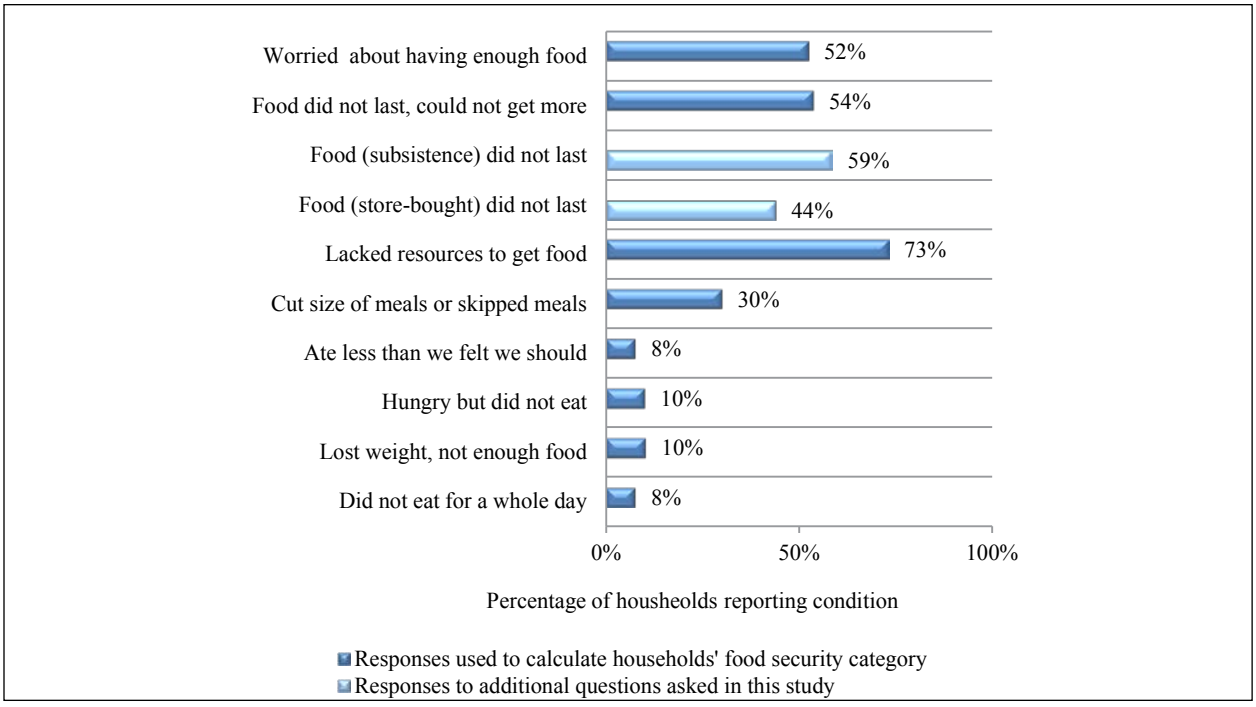


Figure 4-6.–Responses to questions about food insecure conditions, Angoon, 2012.

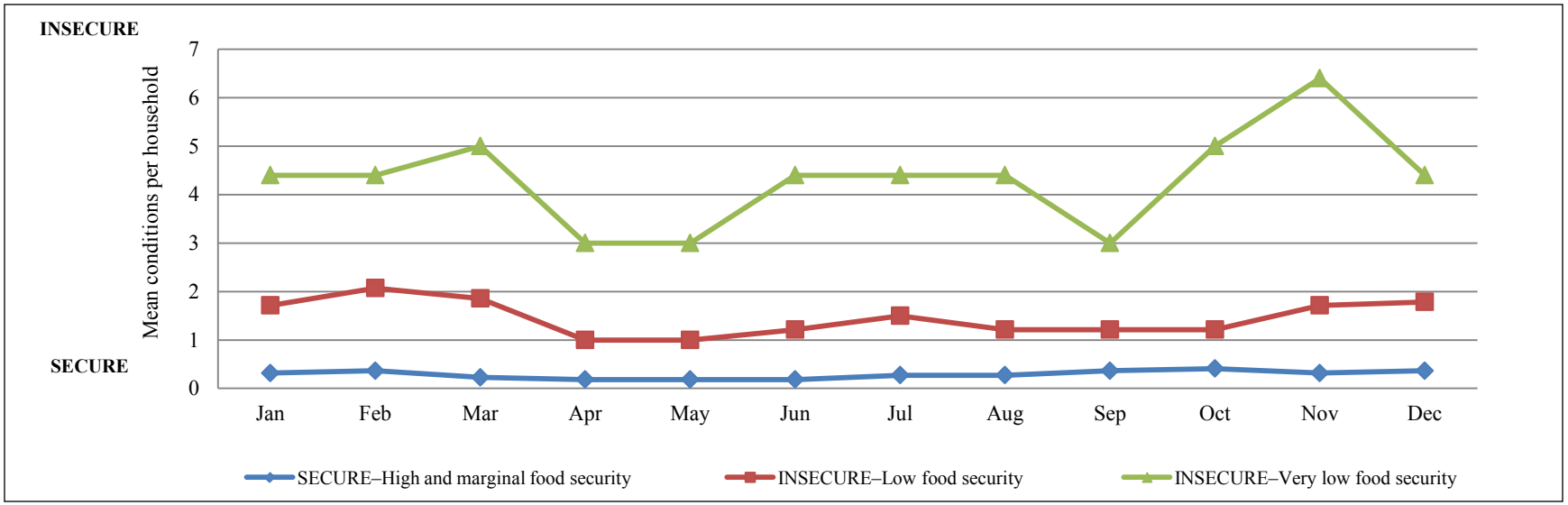


Figure 4-7.–Mean number of food insecure conditions by month and by household food security category, Angoon, 2012.

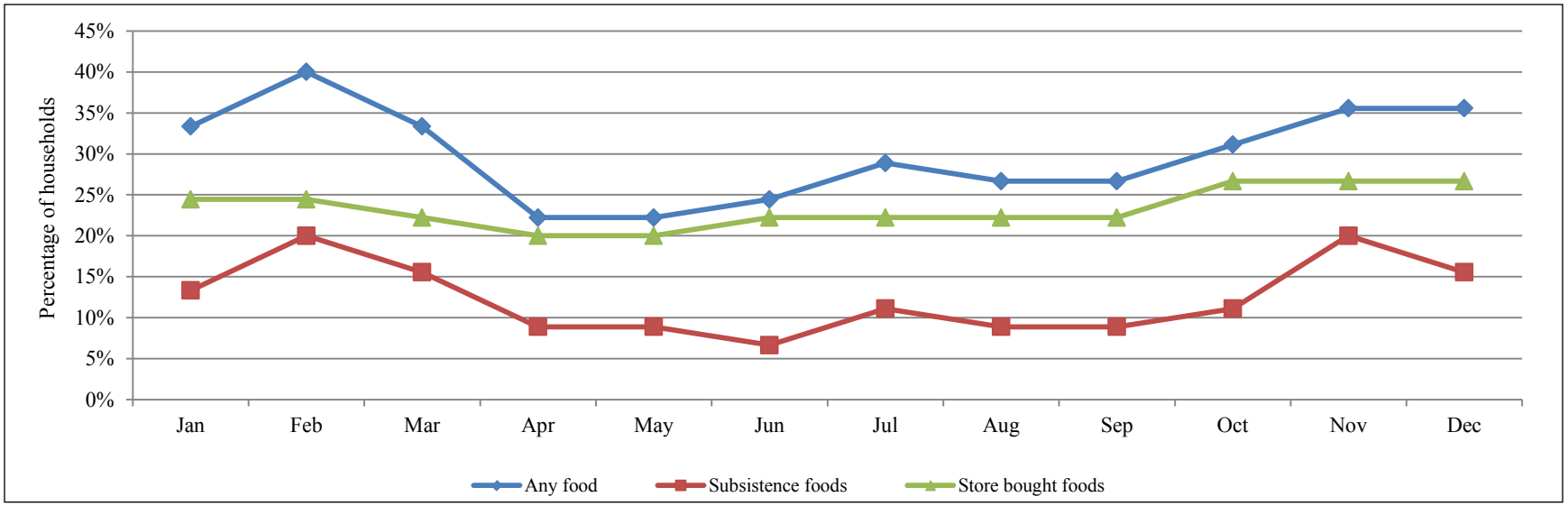


Figure 4-8.–Comparison of months when food did not last, Angoon, 2012.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Table 4-11 and Figure 4-9 report expanded levels of individual participation in harvesting and processing wild resources by all Angoon residents in 2012. The wild resources include edible as well as inedible resources (such as firewood and furs). The majority of Angoon residents harvested resources in 2012: 67% participated in processing wild foods/resources and 66% participated in gathering, hunting, fishing, or trapping wild resources (Table 4-11). The resource categories of vegetation, fish, and large land mammals showed the highest participation levels with around one-half the population participating in processing those types of resources. In contrast, the resource categories of small land mammals, marine mammals, and birds and bird eggs showed the least participation, with only 1% to 16% of individuals hunting or processing those types of resources.

In Angoon in 2012, vegetation resources had the highest percentage of individuals (57%) participating in harvesting (Figure 4-9). This is likely because commonly harvested vegetation—like berries, seaweed, and greens—are relatively easily accessible in comparison to other resources that require greater skills to harvest and are dependent on expensive equipment like boats, rifles, and fishing tackle. Berries, plants, and seaweed grow in and around town, which makes harvesting a low-tech affair usually requiring only a moderately agile person with a bucket or bag to harvest an abundance of vegetation.

In 2012, almost one-half the population participated in harvesting fish: 43% participated in fishing and 49% participated in processing the fish after the fish were caught (Figure 4-9). Typically, because of a fish's size and simple body structure, most fishers can catch and prepare their fish for storage the same day. Fishing methods that harvest larger quantities of fish at once (e.g., gillnetting) typically require extra help to process because the large number of fish caught cannot be processed in a timely manner by the fishers alone. Preserving fish by canning or drying also takes more labor in a day than other types of processing. Family members and friends who were unable to go out fishing often help with processing fish for storage when a large number of fish are caught. The extra help required in some harvest and preservation techniques is reflected in the slightly higher participation in processing fish than in harvesting.

Large land mammals and marine mammals both had nearly twice the participants processing resources than participated in the hunting effort (Table 4-11; Figure 4-9). These animals are large and require more effort and time to butcher and store than smaller species (like fish). Processing deer is labor intensive, and usually requires a group of people to butcher and prepare for storage; this is reflected in how 26% of the population participated in hunting deer while 46% of people participated in processing deer. The percentage of individuals who helped process marine mammals was more than double the amount of individuals hunting marine mammals, with 7% of individuals hunting and 16% processing marine mammals. Harbor seals are a prized animal in Southeast Alaska Native cultures. The meat is eaten, the hides are used in a variety crafts and regalia, and the fat is rendered into seal oil. Harvesting multiple products from 1 seal requires more skill and technique than just removing meat from bone.

Harvest and Use of Wild Resources at the Household Level

Arranged by resource category, Figure 4-10 shows the percentages of Angoon households that used, attempted to harvest, and successfully harvested wild resources. The figure shows that most households in Angoon use resources from all categories. More than 75% of all households use the 5 resource categories of salmon, nonsalmon fish, land mammals, marine invertebrates, and vegetation, with around one-half of the households harvesting resources from these categories. The lowest level of use and harvest by Angoon's households was in the marine mammals and birds/eggs categories. In Angoon, as with most Alaska communities, much of the harvest is shared between households. The difference between the percentage of households that harvest and the percentage of households that use a resource, as depicted in Figure 4-10, suggests the amount of sharing that occurs between households within the community. Quantifying the specific amounts shared and to whom the resources were shared with was beyond the scope and budget of this study.

Table 4-11.–Individual participation in subsistence harvesting and processing activities, Angoon, 2012.

Total number of people	**342.1**
Fish	
Fish	
Number	145.6
Percentage	42.6%
Process	
Number	167.4
Percentage	48.9%
Large land mammals	
Hunt	
Number	87.3
Percentage	25.5%
Process	
Number	157.7
Percentage	46.1%
Small land mammals	
Hunt or trap	
Number	4.8
Percentage	1.4%
Process	
Number	4.8
Percentage	1.4%
Marine mammals	
Hunt	
Number	24.1
Percentage	7.0%
Process	
Number	55.4
Percentage	16.2%
Birds and eggs	
Hunt/gather	
Number	14.5
Percentage	4.2%
Process	
Number	14.5
Percentage	4.2%
Vegetation	
Gather	
Number	194.4
Percentage	56.8%
Process	
Number	162.4
Percentage	47.5%
Any resource	
Attempt harvest	
Number	227.3
Percentage	66.4%
Process	
Number	229.6
Percentage	67.1%

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

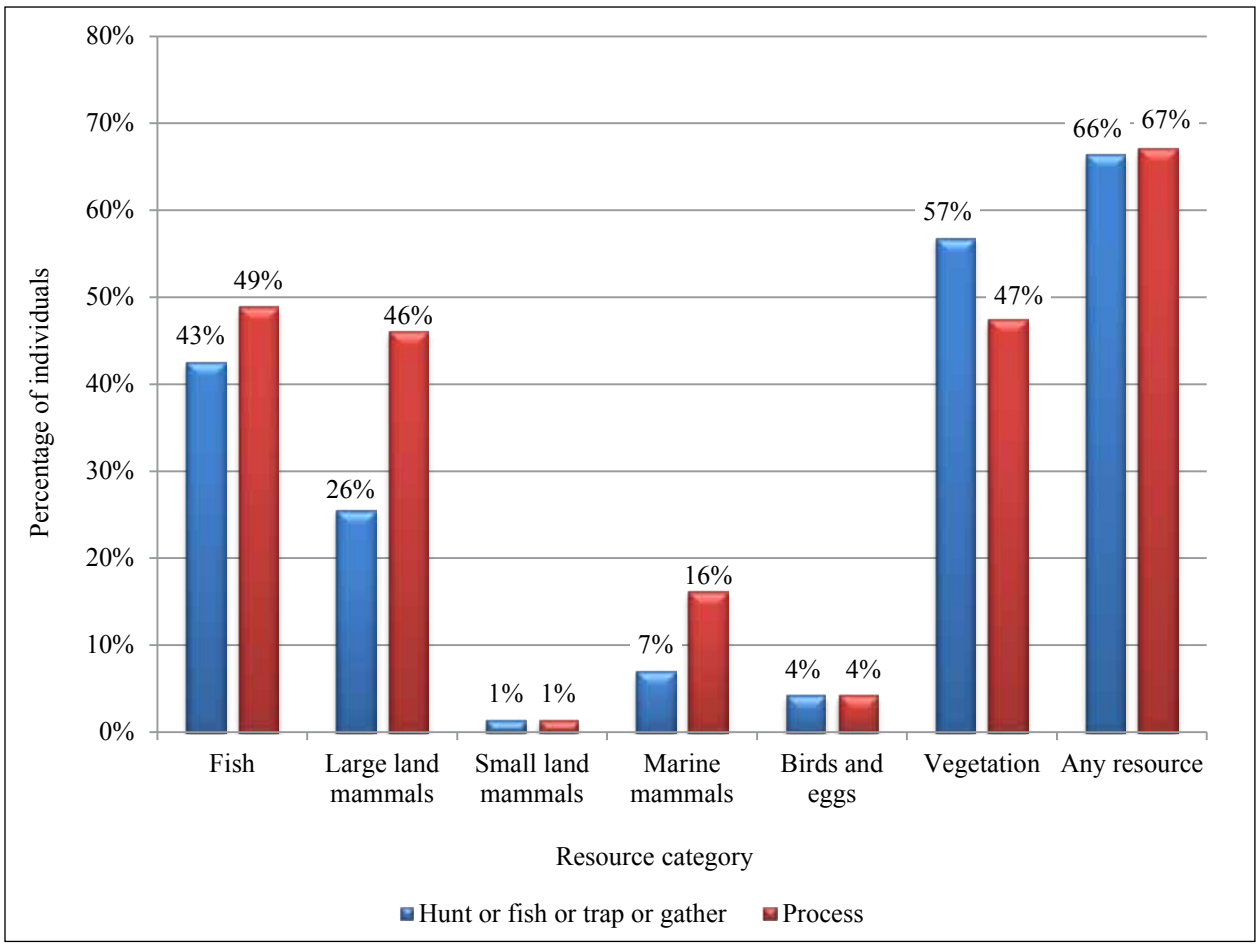


Figure 4-9.–Individual participation in subsistence harvesting and processing activities, Angoon, 2012.

The percentage of households that harvested salmon, marine mammals, and birds was the same as the percentage of households that pursued resources from those categories, suggesting that success in harvesting these kinds of resources was high. Most resource categories displayed a small difference between the percentage of households that attempted harvest and harvested, suggesting that the success rate is high for the hunter, fisher, and harvester in Angoon.

Table 4-12 summarizes resource harvest and use characteristics for Angoon in 2012 at the household level. The average harvest was 512 lb usable weight per household, 183 lb per person, with a minimum household harvest of 0 lb and a maximum of 4,233 lb. In 2012, Angoon households harvested an average of 9 kinds of resources and used an average of 14 kinds of resources. In addition, households gave away or shared an average of 5 different resources and were given on average 7 different resources.

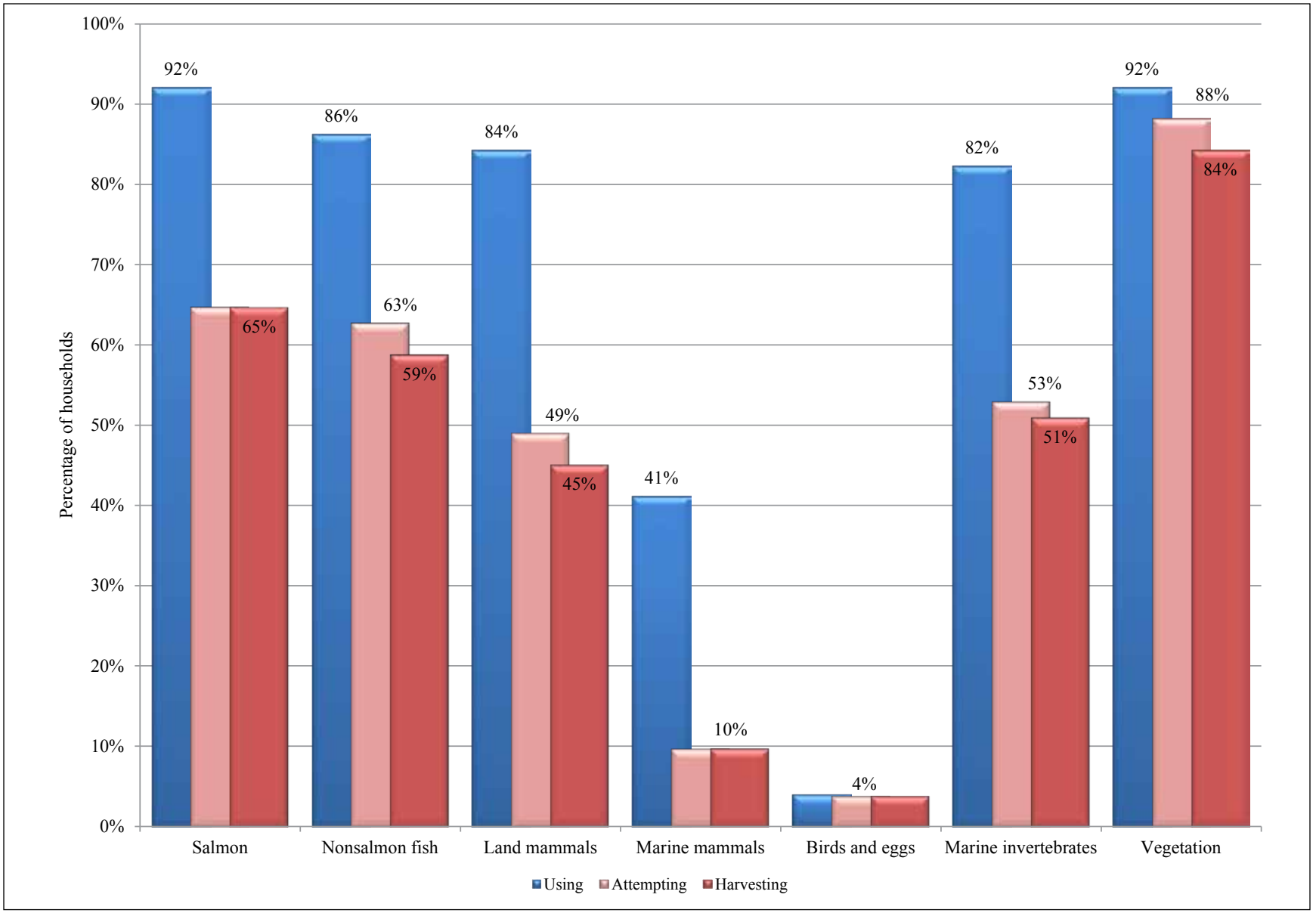


Figure 4-10.–Percentages of households using, attempting to harvest, and harvesting wild resources, by resource category, Angoon, 2012.

Table 4-12.–Resource harvest and use characteristics, Angoon, 2012.

Characteristic	
Mean number of resources used per household	**14.2**
Minimum	0
Maximum	45
95% confidence limit (±)	12.7%
Median	14
Mean number of resources attempted to harvest per household	**9.5**
Minimum	0
Maximum	43
95% confidence limit (±)	19.8%
Median	8
Mean number of resources harvested per household	**8.9**
Minimum	0
Maximum	43
95% confidence limit (±)	20.1%
Median	8
Mean number of resources received per household	**7.1**
Minimum	0
Maximum	16
95% confidence limit (±)	13.8%
Median	6
Mean number of resources given away per household	**5.4**
Minimum	0
Maximum	24
95% confidence limit (±)	21.2%
Median	4
Household harvest (pounds)	
Minimum	0.0
Maximum	4,232.9
Mean	511.6
Median	185
Total harvest weight (lb)	62,416.3
Community per capita harvest (lb)	182.5
Percentage using any resource	98.0%
Percentage attempting to harvest any resource	94.1%
Percentage harvesting any resource	92.2%
Percentage receiving any resource	94.1%
Percentage giving away any resource	84.3%
Number of households in sample	51
Number of resources asked about and identified voluntarily by respondents	170

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

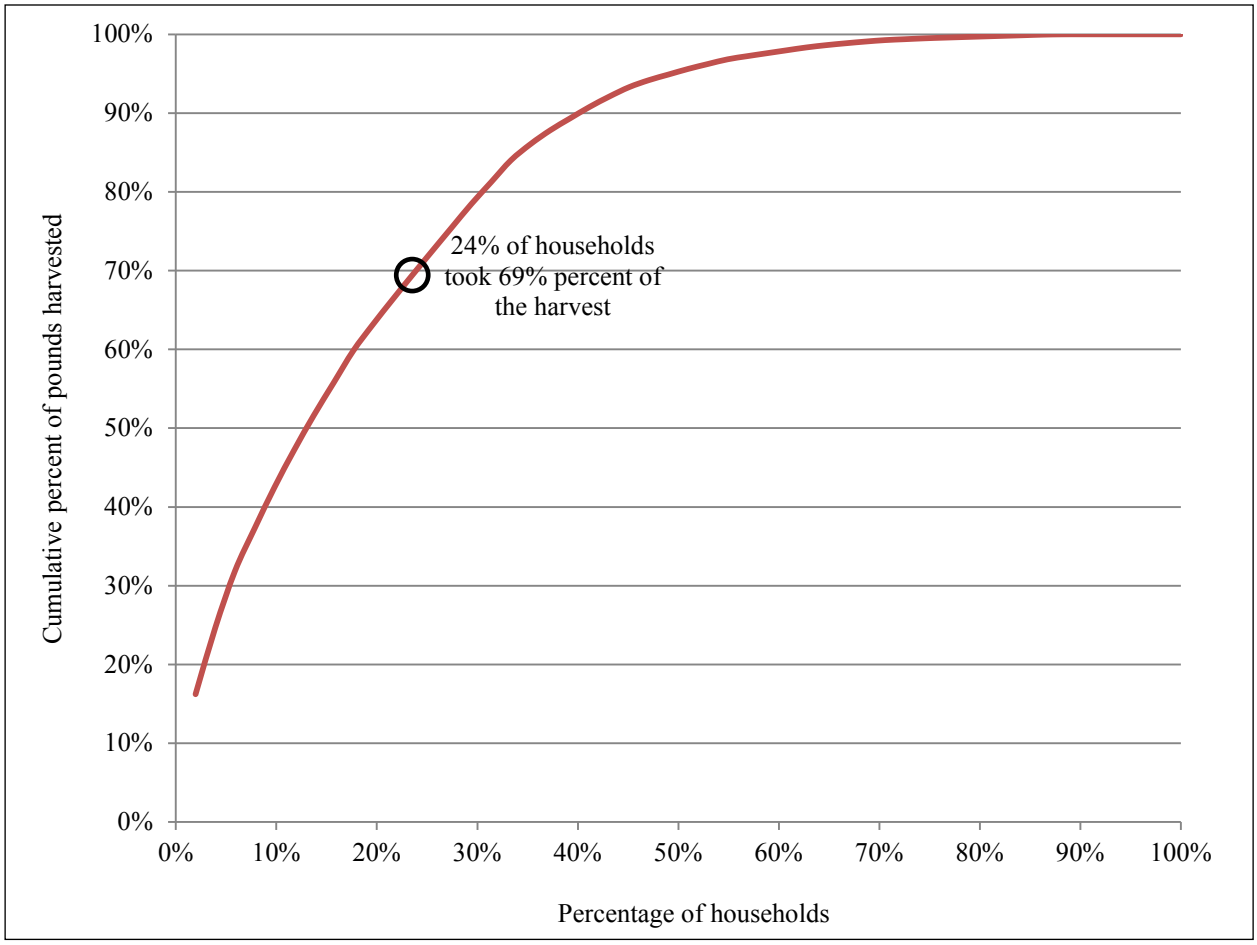


Figure 4-11.–Household specialization, Angoon, 2012.

Sharing of Wild Resources

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 4-11, in 2012 in Angoon, about 69% of the harvests of wild resources as estimated in usable pounds were harvested by 24% of Angoon's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Angoon and the other study communities.

Harvest Quantities and Composition

Table 4-13 reports estimated wild resource harvests and uses by Angoon residents in 2012. It is organized by general resource category and then by species. All edible resources are reported in pounds usable weight

(see Appendix C for conversion factors[3]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

In 2012 in Angoon, the estimated usable weight harvested from all resources combined was 62,416 lb (Table 4-13). The nonsalmon fish category represented the largest amount of usable weight harvested at 29% of the total (18,252 lb; 53 lb per capita) (Figure 4-12; Table 4-13). The second highest harvested category was large land mammals with 28% of the total (17,452 lb; 51 lb per capita). The categories of salmon and marine invertebrates were the third and fourth highest harvested categories with 21% (12,709 lb; 37 lb per capita) and 12% (7,671 lb; 22 lb per capita), respectively. Vegetation accounted for approximately 7% of the overall harvest by weight (4,404 lb; 13 lb per capita). The total amount of usable weight for marine mammals harvested accounted for 3% of the total harvest (1,809 lb; 5 lb per capita). The harvest of birds accounted for less than 1% of the overall harvest. The bird harvest totaled 121 lb of usable weight, or 0.4 lb per capita. The small land mammals were harvested for furs and not food so a usable harvest weight is not included in this comparison (Table 4-13).

Seasonal Round

In Angoon, boats and travel by foot are the main transportation methods used to access fishing, hunting, and harvesting opportunities. Surrounded by wilderness, there are only 4 miles of road leading outside of town. Because boats are the main way to access hunting and fishing grounds, sea and weather conditions are a limiting factor for harvesting activities. Harsh weather conditions combined with a changing tide can change calm and easily navigable waterways into dangerous conditions in a matter of hours. The nearby waters of Mitchell Bay are the preferred harvesting grounds for Angoon residents. Relatively close to town, Mitchell Bay provides one of the most sheltered harvesting areas, though it is not without its hazards. There are several passages that must be navigated to reach the fishing grounds within the bay where the water narrows between islands and turns into hazardous rapids during the daily tidal change.

Spring in Southeast Alaska is the beginning of a busy harvest season that lasts through the end of fall for many. The temperate climate in Southeast Alaska is heavily influenced by major ocean weather patterns so the start of warm spring weather varies from year to year, starting as early as late February and as late as May. Once spring begins, warm weather and the end of frosts bring plants out of their winter dormancy and plants and berries are once again available for harvest. Most spring harvests of plants include tender shoots and aquatics such as seaweed. Spring is also the time for harvesting fish and shellfish. Fish are less available in the spring in comparison to the abundance offered in the summer months. For many Alaska Native communities spring also brings a favorite traditional food, Pacific herring roe (eggs) on hemlock branches and spawn on seaweed.

Summer is the most abundant harvest season for almost all categories of wild foods. Prime summer harvests include berries and other plants, salmon, nonsalmon fish, shellfish, and firewood. The mild weather conditions and long daylight hours make for the most conducive environment for harvesting compared to the rest of the year. Resources are more readily available to those with limited amounts of gear as well. Berries and plants are harvested from roadsides and fish return to streams in large numbers. In Angoon, summertime is also when many seasonal jobs are available. For many people in Angoon, summer brings a busy working schedule, which means competing priorities between earning money through paid employment and having time to devote to harvesting foods that help sustain them through the year.

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 4-13.–Estimated uses and harvests of fish, game, and vegetation resources, Angoon, 2012.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	**98.0**	**94.1**	**92.2**	**94.1**	**84.3**	**62,416.3**	**511.6**	**182.5**				**31.6**
Salmon	**92.2**	**64.7**	**64.7**	**76.5**	**47.1**	**12,709.0**	**104.2**	**37.2**				**41.5**
Chum salmon	31.4	21.6	21.6	13.7	11.8	453.8	3.7	1.3	67.5	ind	0.6	52.8
Coho salmon	60.8	45.1	45.1	35.3	27.5	4,279.4	35.1	12.5	892.9	ind	7.3	58.6
Chinook salmon	76.5	39.2	35.3	51.0	27.5	3,288.7	27.0	9.6	350.3	ind	2.9	56.7
Pink salmon	25.5	17.6	17.6	11.8	5.9	424.3	3.5	1.2	162.8	ind	1.3	70.2
Sockeye salmon	74.5	39.2	37.3	52.9	35.3	4,262.9	34.9	12.5	920.2	ind	7.5	45.2
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	**86.3**	**62.7**	**58.8**	**68.6**	**51.0**	**18,251.5**	**149.6**	**53.4**				**46.9**
Pacific herring	43.1	37.3	37.3	9.8	15.7	5,084.2	41.7	14.9	847.4	gal	6.9	88.7
Pacific herring roe/unspecified	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	3.9	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hair seaweed	3.9	0.0	0.0	3.9	2.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hemlock branches	39.2	2.0	0.0	39.2	11.8	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	7.8	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Silver smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific (gray) cod	13.7	11.8	9.8	2.0	7.8	696.6	5.7	2.0	217.7	ind	1.8	97.4
Pacific tomcod	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Flounder	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lingcod	7.8	7.8	5.9	2.0	0.0	150.7	1.2	0.4	23.9	ind	0.2	87.6
Pacific halibut	80.4	47.1	39.2	54.9	45.1	10,957.5	89.8	32.0	10,957.5	lb	89.8	41.3
Black rockfish	11.8	7.8	5.9	5.9	7.8	153.1	1.3	0.4	76.5	ind	0.6	106.4
Yelloweye rockfish	13.7	5.9	3.9	7.8	5.9	179.4	1.5	0.5	59.8	ind	0.5	125.8
Quillback rockfish	2.0	2.0	2.0	0.0	0.0	28.7	0.2	0.1	9.6	ind	0.1	153.2
Unknown rockfish	2.0	2.0	2.0	0.0	2.0	574.1	4.7	1.7	191.4	ind	1.6	153.2
Sablefish (black cod)	7.8	3.9	2.0	3.9	2.0	191.4	1.6	0.6	47.8	ind	0.4	153.2
Buffalo sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red Irish lord	2.0	2.0	2.0	0.0	0.0	9.6	0.1	0.0	9.6	ind	0.1	153.2
Unknown shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Skates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dolly Varden	13.7	13.7	13.7	2.0	3.9	190.3	1.6	0.6	63.4	ind	0.5	71.3

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Table 4-13.–Page 2 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Nonsalmon fish, continued												
Cutthroat trout	5.9	5.9	3.9	3.9	0.0	21.5	0.2	0.1	14.4	ind	0.1	113.3
Rainbow trout	2.0	2.0	2.0	2.0	0.0	14.4	0.1	0.0	7.2	ind	0.1	153.2
Steelhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Large land mammals	**84.3**	**49.0**	**45.1**	**56.9**	**37.3**	**17,451.7**	**143.0**	**51.0**				**32.6**
Black bear	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Deer	84.3	49.0	45.1	51.0	38.0	17,451.7	143.0	51.0	218.1	ind	1.8	32.6
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mountain goat	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	5.9	0.0	0.0	5.9	2.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals	**2.0**	**2.0**	**2.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**				**0.0**
Beaver	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
North American river (land) otter	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	4.8	ind	0.0	153.2
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	7.2	ind	0.1	153.2
Mink	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	4.8	ind	0.0	153.2
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Least weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**41.2**	**9.8**	**9.8**	**33.3**	**9.8**	**1,808.5**	**14.8**	**5.3**				**71.7**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 4-13.–Page 3 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Marine mammals, continued												
Harbor seal	41.2	9.8	9.8	33.3	9.8	1,808.5	14.8	5.3	21.5	ind	0.2	71.7
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**3.9**	**3.9**	**3.9**	**0.0**	**0.0**	**120.9**	**1.0**	**0.4**				**110.7**
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	3.9	3.9	3.9	0.0	0.0	31.1	0.3	0.1	31.1	ind	0.3	110.2
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Scaup	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Teal	2.0	2.0	2.0	0.0	0.0	2.5	0.0	0.0	4.8	ind	0.0	153.2
Wigeon	2.0	2.0	2.0	0.0	0.0	6.3	0.1	0.0	4.8	ind	0.0	153.2
Unknown ducks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown Canada/cackling geese	3.9	3.9	3.9	0.0	0.0	40.9	0.3	0.1	12.0	ind	0.1	109.5
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	2.0	2.0	2.0	0.0	0.0	40.2	0.3	0.1	4.8	ind	0.0	153.2
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Grouse	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard 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 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
Unknown Canada/cackling 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
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swan eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane 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 4-13.–Page 4 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Birds and eggs, continued												
Black oystercatcher 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 shorebird eggs – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebird eggs – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Glaucous-winged 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 loon 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 tern 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 seabird 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 grouse 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 ptarmigan 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	**82.4**	**52.9**	**51.0**	**68.6**	**49.0**	**7,670.8**	**62.9**	**22.4**				**50.8**
Abalone	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red (large) chitons	2.0	2.0	2.0	2.0	2.0	717.6	5.9	2.1	239.2	gal	2.0	153.2
Black (small) chitons	66.0	44.0	41.2	38.0	32.0	1,947.2	16.0	5.7	263.2	gal	2.2	42.9
Butter clams	29.4	19.6	19.6	13.7	16.0	988.1	8.1	2.9	222.0	gal	1.8	53.5
Horse clams	2.0	2.0	2.0	0.0	0.0	42.6	0.3	0.1	9.6	gal	0.1	153.2
Pacific littleneck clams (steamers)	17.6	9.8	9.8	11.8	9.8	574.1	4.7	1.7	191.4	gal	1.6	99.1
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	5.9	5.9	5.9	0.0	2.0	134.5	1.1	0.4	31.7	gal	0.3	121.2
Basket cockles	51.0	27.5	27.5	25.5	24.0	1,277.6	10.5	3.7	410.8	gal	3.4	67.2
Heart cockles	19.6	11.8	11.8	9.8	5.9	110.7	0.9	0.3	35.6	gal	0.3	109.4
Unknown cockles	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Dungeness crab	49.0	21.6	21.6	37.3	21.6	1,112.6	9.1	3.3	842.9	ind	6.9	89.2
Blue king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Brown king crab	3.9	2.0	2.0	2.0	2.0	257.4	2.1	0.8	47.8	ind	0.4	153.2
Red king crab	3.9	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	5.9	5.9	5.9	2.0	5.9	277.5	2.3	0.8	138.7	ind	1.1	103.6
Geoducks	2.0	2.0	2.0	0.0	0.0	71.8	0.6	0.2	23.9	gal	0.2	153.2
Limpets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mussels	2.0	2.0	2.0	0.0	0.0	17.9	0.1	0.1	12.0	gal	0.1	153.2
Octopus	7.8	7.8	7.8	2.0	2.0	109.3	0.9	0.3	109.3	lb	0.9	86.8

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Table 4-13.–Page 5 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine invertebrates, continued												
Weathervane scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Rock scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sea cucumber	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Green sea urchin	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	153.2
Red sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Purple sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Shrimp	13.7	7.8	7.8	7.8	0.0	31.9	0.3	0.1	15.9	gal	0.1	119.4
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	**92.2**	**88.2**	**84.3**	**64.7**	**52.9**	**4,403.9**	**36.1**	**12.9**				**50.7**
Blueberry	64.7	56.9	52.9	21.6	27.5	1,734.7	14.2	5.1	433.7	gal	3.6	87.5
Lowbush cranberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Highbush cranberry	3.9	3.9	3.9	0.0	0.0	10.2	0.1	0.0	2.5	gal	0.0	144.3
Elderberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Gooseberry	2.0	2.0	2.0	0.0	2.0	19.1	0.2	0.1	4.8	gal	0.0	153.2
Currants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Huckleberry	45.1	47.1	45.1	5.9	23.5	505.7	4.1	1.5	126.4	gal	1.0	50.3
Cloudberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Nagoonberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Raspberry	17.6	15.7	15.7	3.9	5.9	100.7	0.8	0.3	25.2	gal	0.2	70.4
Salmonberry	56.9	54.9	52.9	9.8	15.7	672.3	5.5	2.0	168.1	gal	1.4	50.5
Soapberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Strawberry	17.6	17.6	17.6	2.0	0.0	55.0	0.5	0.2	13.8	gal	0.1	60.9
Thimbleberry	19.6	17.6	17.6	3.9	5.9	42.7	0.4	0.1	10.7	gal	0.1	61.4
Twisted stalk berry (watermelon berry)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Beach asparagus	3.9	2.0	2.0	2.0	0.0	7.2	0.1	0.0	7.2	gal	0.1	153.2
Goose tongue	3.9	3.9	3.9	0.0	0.0	4.2	0.0	0.0	4.2	gal	0.0	108.4
Wild rhubarb	3.9	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Devil's club	9.8	7.8	7.8	5.9	5.9	37.7	0.3	0.1	37.7	gal	0.3	145.9
Fiddlehead ferns	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

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Table 4-13.–Page 6 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Vegetation, continued												
Nettle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Hudson's Bay (Labrador) tea	43.1	31.4	29.4	17.6	13.7	77.2	0.6	0.2	77.2	gal	0.6	59.3
Indian rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Salmonberry shoots	2.0	2.0	2.0	0.0	0.0	2.4	0.0	0.0	2.4	gal	0.0	153.2
Skunk cabbage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sourdock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Spruce tips	3.9	3.9	3.9	0.0	0.0	0.7	0.0	0.0	0.7	gal	0.0	125.8
Wild celery	5.9	5.9	5.9	0.0	2.0	1.2	0.0	0.0	1.2	gal	0.0	106.2
Wild parsley	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild rose hips	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Other wild greens	2.0	2.0	2.0	0.0	0.0	12.0	0.1	0.0	12.0	gal	0.1	153.2
Unknown mushrooms	3.9	3.9	3.9	0.0	2.0	38.3	0.3	0.1	38.3	gal	0.3	143.8
Black seaweed	62.7	31.4	31.4	45.1	21.6	1,000.6	8.2	2.9	400.1	gal	3.3	55.0
Bull kelp	2.0	2.0	2.0	0.0	2.0	38.3	0.3	0.1	12.8	gal	0.1	153.2
Red seaweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sea ribbons	7.8	5.9	5.9	3.9	3.9	43.9	0.4	0.1	14.6	gal	0.1	112.2
Giant kelp (*macrocystis*)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Alaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Seaweed/kelp used for fertilizer	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	12.0	gal	0.1	153.2
Unknown seaweed	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wood	51.0	49.0	47.1	13.7	21.6	0.0	0.0	0.0	386.3	cord	3.2	39.8
Alder	5.9	3.9	0.0	2.0	2.0	0.0	0.0	0.0	0.0	cord	0.0	0.0

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

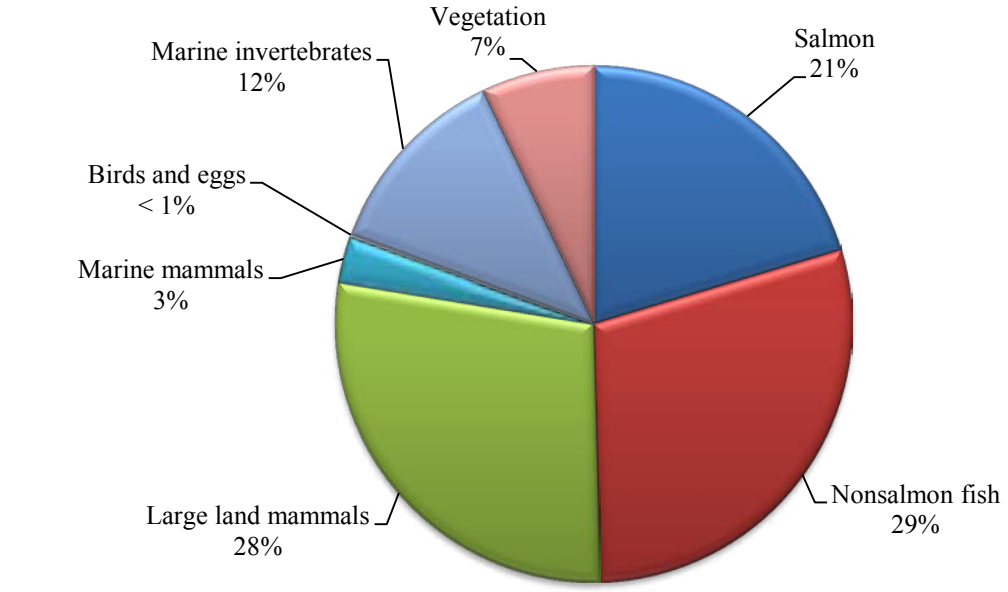
Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

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

Note "Unknown" means "unspecified" resources (i.e., respondents may have known the specific resource harvested, but that information was not collected during the survey).

Note For all types of seaweed, amounts harvested include amounts used for fertilizer; these harvests were not converted into usable pounds.

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



Note Categories having 0 lb of edible weight are not included.

Figure 4-12.–Composition of harvest by resource category in pounds usable weight, Angoon, 2012.

Fall harvests are primarily focused on hunting. There are also late salmon runs that are fished. Hunting season for deer opens August 1 in the Angoon area and continues through the winter. The general state hunt closes December 31 and the federal subsistence hunt closes January 31. Angoon residents use boats to access deer hunting grounds.

Winter harvest activities are limited by short daylight hours, harsh weather conditions (cold temperatures, snow, and wind), stormy sea conditions, and many species have migrated out of Southeast Alaska. The more severe winter conditions require more equipment to harvest wild resources; therefore, winter harvest activities are generally more expensive. The main resources harvested in the winter are Chinook salmon, clams, small mammals for fur, and crabs.

Use and Harvest Characteristics by Resource Category

Nearly all (98%) of Angoon households used a wild resource in 2012 and most households that attempted to harvest (94%) a wild resource were successful (92% of Angoon households) (Table 4-13). The mean usable weight of all wild resources combined, per household, was 512 lb (183 lb per capita). Sharing of wild resources was widespread with 94% of households receiving a wild resource and 84% sharing.

Sharing harvests with other households occurred for harvests from almost all resource categories, with the exception being that there was no sharing of the 2 least used categories of birds and small land mammals. Some resources were shared more widely than others in 2012. In particular, a high level of sharing was exhibited for salmon, nonsalmon fish, and marine invertebrates: 47% of households shared their salmon catch and 77% of households received salmon; 51% of households shared their nonsalmon fish catch with others and 69% received harvests of nonsalmon fish; 49% of households received marine invertebrates and 69% of households shared these resources.

The percentage of Angoon households that received resources was greater than the percentage of households that gave away harvests, indicating that households gave portions of their harvests to multiple households.

Table 4-14.–Top ranked resources used by households, Angoon, 2012.

Rank[a]	Resource	Percentage of households using
1.	Deer	84.3%
2.	Pacific halibut	80.4%
3.	Chinook salmon	76.5%
4.	Sockeye salmon	74.5%
5.	Black (small) chitons	66.0%
5.	Blueberry	64.7%
7.	Black seaweed	62.7%
8.	Coho salmon	60.8%
9.	Salmonberry	56.9%
10.	Basket cockles	51.0%

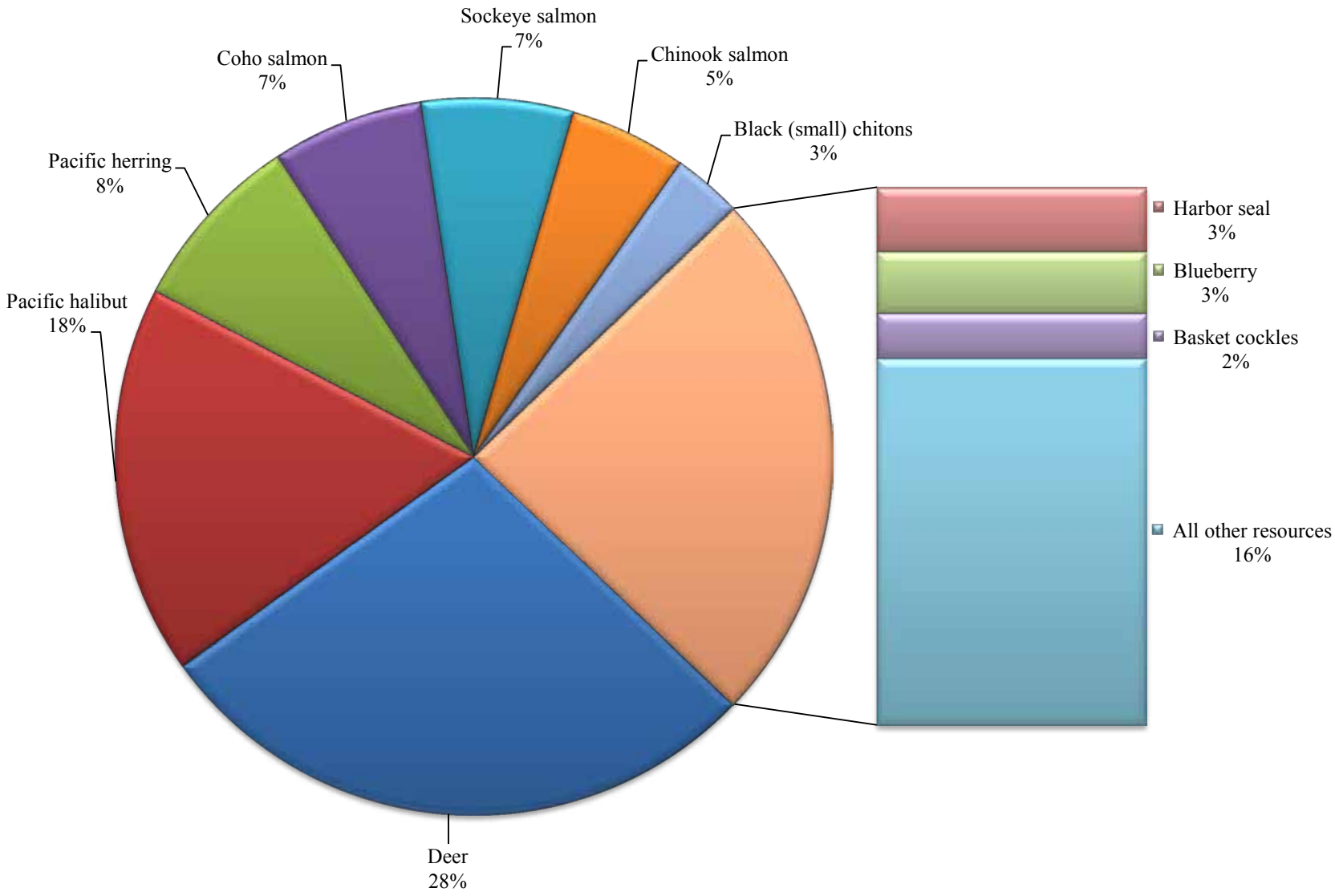
Source ADF&G Division of Subsistence household surveys, 2013.
a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.

A greater percentage of households receiving resources than giving them away is typical in small Alaska communities because different households tend to specialize in the harvest of certain resources and in turn share their harvest with many different households. Many harvest activities require physical agility, a significant time investment, and investment in boats and other costly equipment, which not all households have (Fall 2014). During interviews in Angoon, some respondents indicated reciprocal trades between harvester and receiver, though direct reciprocity was not indicated as necessary. One elder stated that she would have people in the community bring her animals and plants; in return she would tan hides and make products out of plants (jelly, pickles, preserves, etc.). In her case, the younger generation provided the labor to harvest, she provided the expertise and labor to process the materials into useful products, and in return both parties kept part of the harvest. Another respondent related they were too busy with work in the summer to fish or pick berries but would make pies or preserves for anyone that would bring them fish or berries.

Table 4-14 lists the top 10 ranked resources used by households and Figure 4-13 shows the species with the highest harvests during the 2012 study year. Both Table 4-14 and Figure 4-13 show the majority of the resources harvested and used in Angoon are from the sea; 7 of the top 10 resources used by households are from the marine environment as are 8 of the top species harvested as ranked by harvest weight. Though mainly marine-derived, the top 10 resources used by households cover a wide variety of foods: 4 types of fish, 1 red meat, 2 types of shellfish, and 3 types of vegetation. More than one-half of the households in Angoon used each of these highly nutritious foods.

The 2 top resources harvested by weight in 2012 were deer and Pacific halibut, which together composed nearly one-half of the total harvest. Most of the other top harvested resources were fairly evenly distributed; each of the remaining top harvested resources accounted for 2% to 8% of the overall harvest. The top resources harvested were proteins, with the exception of blueberries. It should also be noted that although Pacific herring contributed 8% to the overall harvest, respondent interviews and input at a community review meeting indicate Pacific herring seems to be primarily a baitfish harvested to catch Pacific halibut.

The top resources used in Angoon are similar to the most harvested resources, with deer and Pacific halibut being the 2 most used resources in 2012. Although some resources were not heavily harvested, such as basket cockles (accounting for just 2% of the overall harvest), they were still widely used (51% of households used basket cockles) (Figure 4-13; Table 4-13). Salmonberries and black seaweed were used by well more than one-half of the households in Angoon, but contributed less than 1% to the overall harvest, by weight.



Note The "all other resources" category represents all species that contributed less than 2% to the total harvest.

Figure 4-13.–Top species harvested by percentage of total harvest in pounds usable weight, Angoon, 2012.

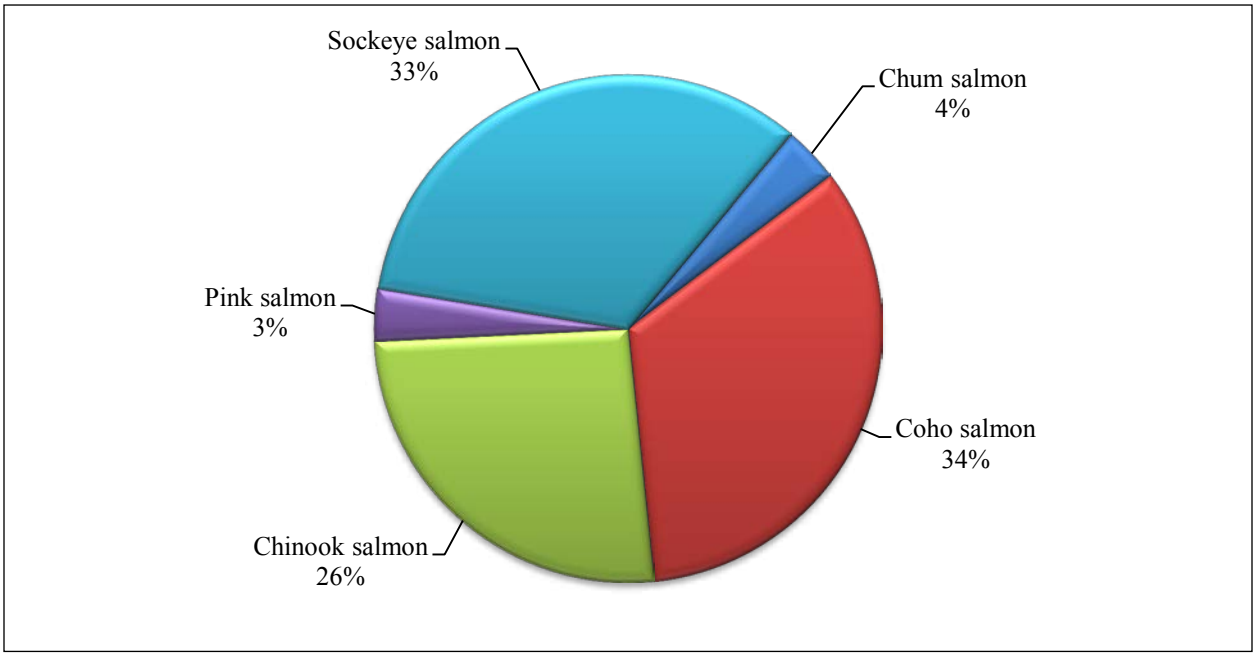


Figure 4-14.–Composition of salmon harvest in pounds usable weight, Angoon, 2012.

Salmon

Salmon was an important and widely used resource in Angoon in 2012. Salmon composed 21% (12,709 lb) of the total usable weight of all resources harvested; 92% of Angoon households used salmon in 2012, and almost 65% of households harvested it (Figure 4-12; Table 4-13). Of the 5 salmon species harvested, coho and sockeye salmon provided the most usable weight (4,279 lb and 4,263 lb, respectively) (Figure 4-14; Table 4-13). Chinook salmon provided 26% of the usable weight of salmon and was the third most used species by Angoon households (Figure 4-14; Table 4-14). An estimated 45% of households harvested coho salmon. The coho salmon harvest weight was more than any other salmon species in 2012, though they were shared less than sockeye salmon: 28% of households shared coho salmon while 35% shared their sockeye salmon. Nearly the same amount of households shared sockeye salmon as harvested it. In sharp contrast to the other salmon species, pink salmon and chum salmon were harvested and used very little. Pink salmon contributed 3% to the total salmon harvest weight, and chum salmon contributed 4%. It should also be noted no unknown salmon harvest or use were estimated; all species, whether canned, frozen, or fresh, were clearly identified by survey respondents.

An estimated 2,394 salmon (12,709 lb) were harvested using gillnet, seine, trolling, or rod and reel gear; no salmon were removed from commercial harvests for home use (Table 4-15). Figure 4-15 is a visual representation of the salmon harvest by gear type. An estimated 37% of the salmon harvest weight was caught using gillnets or seines; 37% of the salmon harvest was caught using trolling gear; and 26% of the salmon harvest was caught using rod and reel (Table 4-16). Trolling, which is regulated as a sport fishery, was the most commonly used harvest method for Chinook, coho, and chum salmon. Trolling accounted for 60% of the total Chinook salmon harvest, 59% of the coho salmon harvest, and 36% of chum salmon harvest. For 2 species, subsistence gillnet or seine was the most commonly used harvest method, accounting for 96% of the sockeye salmon harvest and 56% of the pink salmon harvest.

Table 4-15.–Estimated harvest of salmon by gear type and resource, Angoon, 2012.

			Subsistence methods													
	Removed from commercial catch		Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Trolling		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**0.0**	**0.0**	**1,039.8**	**4,680.5**	**0.0**	**0.0**	**0.0**	**0.0**	**1,039.8**	**4,680.5**	**771.2**	**4,688.4**	**582.7**	**3,340.1**	**2,393.7**	**12,709.0**
Chum salmon	0.0	0.0	19.1	128.7	0.0	0.0	0.0	0.0	19.1	128.7	24.4	164.1	23.9	160.9	67.5	453.8
Coho salmon	0.0	0.0	47.8	229.3	0.0	0.0	0.0	0.0	47.8	229.3	530.3	2,541.6	314.8	1,508.5	892.9	4,279.4
Chinook salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	209.1	1,963.6	141.1	1,325.1	350.3	3,288.7
Pink salmon	0.0	0.0	90.9	236.9	0.0	0.0	0.0	0.0	90.9	236.9	7.3	19.1	64.6	168.3	162.8	424.3
Sockeye salmon	0.0	0.0	882.0	4,085.6	0.0	0.0	0.0	0.0	882.0	4,085.6	0.0	0.0	38.3	177.3	920.2	4,262.9
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Note The harvested number of salmon is represented as individual fish harvested.

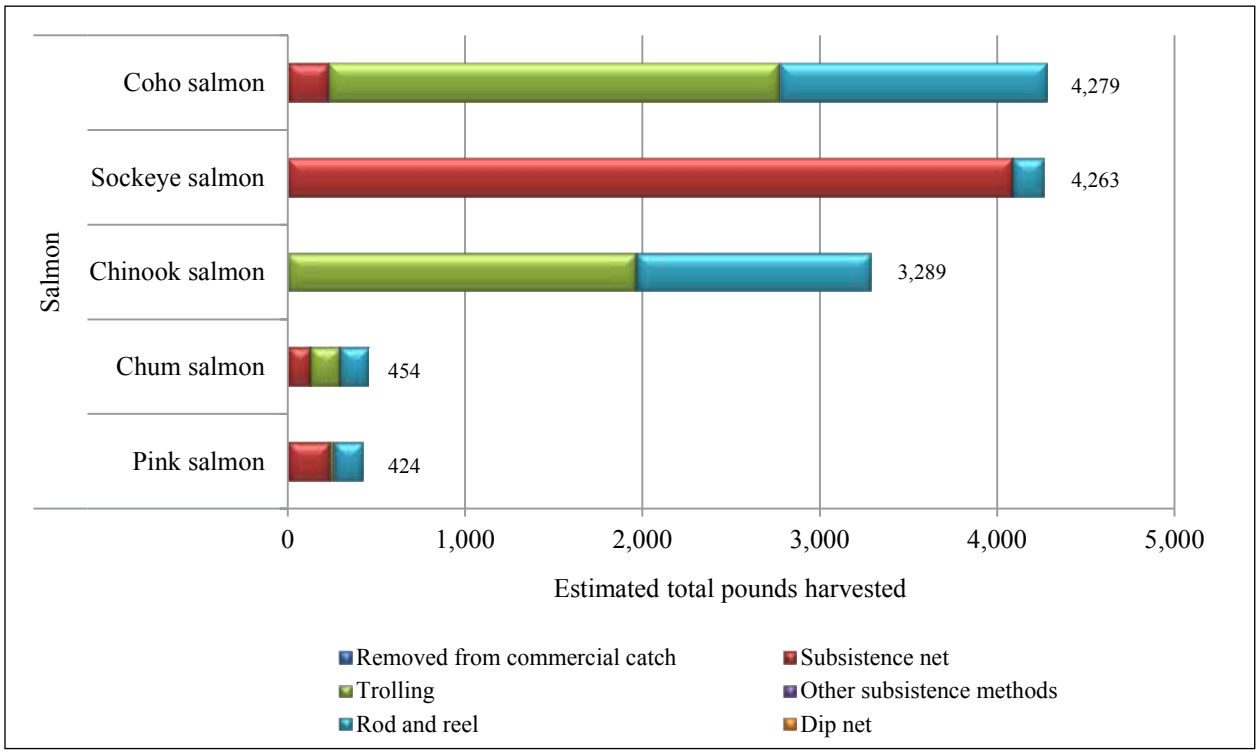


Figure 4-15.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Angoon, 2012.

Most salmon were harvested within 10 miles of Angoon.[4] The majority of sockeye salmon were harvested with subsistence gear near Angoon inside the protected waters of Mitchell Bay, Salt Lake, and Kanalku Bay (Figure 4-16). Most Chinook salmon and coho salmon were harvested with troll gear around Danger Point and into Favorite Bay, as well as along the coastline of Chatham Strait from Chaik Bay to north of Parker Point (Figure 4-17; Figure 4-18). Most of the chum and pink salmon were harvested using subsistence gear within the same protected waters as sockeye salmon (see Appendix D for search and harvest areas of chum and pink salmon). All salmon harvest locations were accessible only with the use of a boat.

Nonsalmon Fish

For the resource category nonsalmon fish, 16 species of fish and Pacific herring roe (eggs) were used in Angoon in 2012; the estimated harvest totaled 18,252 lb (Table 4-13). Pacific halibut made up the majority of the nonsalmon fish catch; with an estimated harvest of 10,958 lb (32 lb per capita), it accounted for 60% of the catch by per capita weight (Table 4-13; Figure 4-19). Pacific herring provided the other major proportion of the nonsalmon fish harvest with 28% (5,084 lb; 15 lb per capita) of the nonsalmon fish catch, by weight. Most of the Pacific herring caught was reported to be for bait for catching other fish and shellfish. Pacific cod and unspecified kinds of rockfish composed the third and fourth most harvested nonsalmon fish.

4. Because not every household in Angoon was surveyed for this study, the maps presented for the harvest of each wild resource may not show the full extent of harvest areas used by the community during 2012. In addition, resource harvest areas change over time, so areas not used in 2012 might be used in other years.

Table 4-16.–Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Angoon, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods						
			Gillnet or seine	Dip net	Other	Subsistence gear, any method	Trolling	Rod and reel	Any method
Salmon	**Gear type**	**0.0%**	**100.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**36.8%**	**0.0%**	**0.0%**	**36.8%**	**36.9%**	**26.3%**	**100.0%**
	Total	**0.0%**	**36.8%**	**0.0%**	**0.0%**	**36.8%**	**36.9%**	**26.3%**	**100.0%**
Chum salmon	Gear type	0.0%	2.8%	0.0%	0.0%	2.8%	3.5%	4.8%	3.6%
	Resource	0.0%	28.4%	0.0%	0.0%	28.4%	36.2%	35.5%	100.0%
	Total	0.0%	1.0%	0.0%	0.0%	1.0%	1.3%	1.3%	3.6%
Coho salmon	Gear type	0.0%	4.9%	0.0%	0.0%	4.9%	54.2%	45.2%	33.7%
	Resource	0.0%	5.4%	0.0%	0.0%	5.4%	59.4%	35.3%	100.0%
	Total	0.0%	1.8%	0.0%	0.0%	1.8%	20.0%	11.9%	33.7%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	41.9%	39.7%	25.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	59.7%	40.3%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	15.5%	10.4%	25.9%
Pink salmon	Gear type	0.0%	5.1%	0.0%	0.0%	5.1%	0.4%	5.0%	3.3%
	Resource	0.0%	55.8%	0.0%	0.0%	55.8%	4.5%	39.7%	100.0%
	Total	0.0%	1.9%	0.0%	0.0%	1.9%	0.2%	1.3%	3.3%
Sockeye salmon	Gear type	0.0%	87.3%	0.0%	0.0%	87.3%	0.0%	5.3%	33.5%
	Resource	0.0%	95.8%	0.0%	0.0%	95.8%	0.0%	4.2%	100.0%
	Total	0.0%	32.1%	0.0%	0.0%	32.1%	0.0%	1.4%	33.5%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

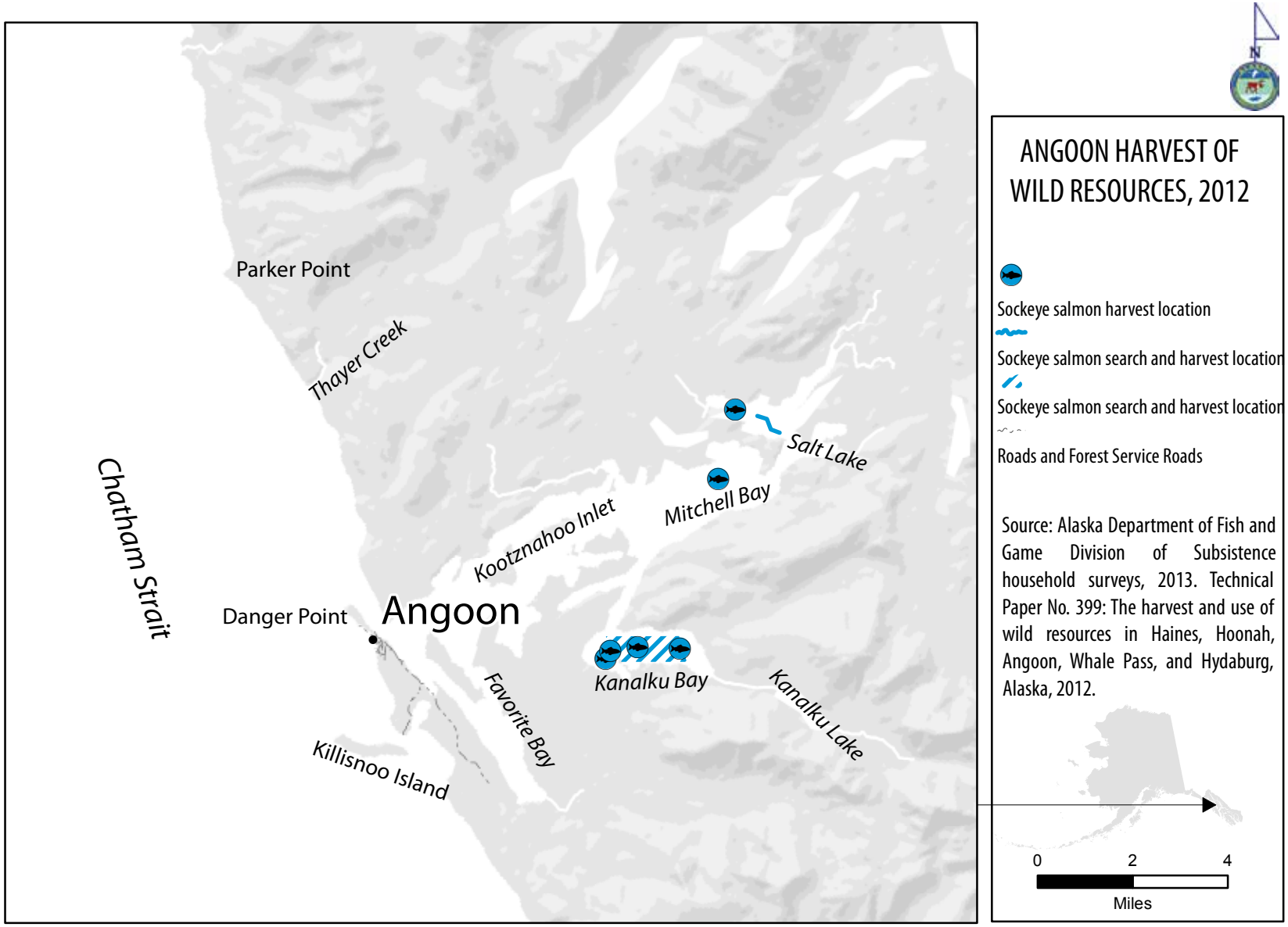


Figure 4-16.–Fishing and harvest locations of sockeye salmon, Angoon, 2012.

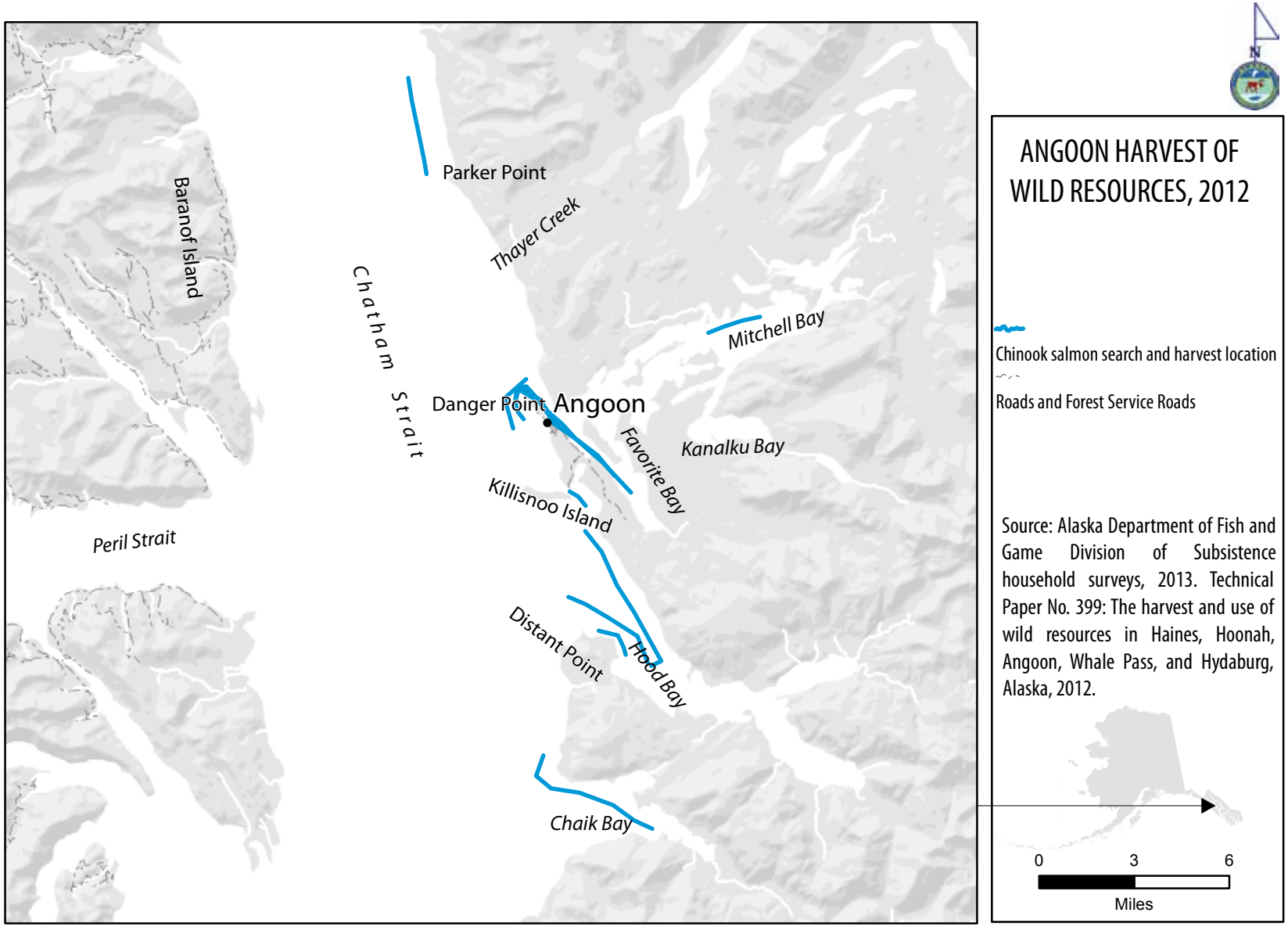


Figure 4-17.–Fishing and harvest locations of Chinook salmon, Angoon, 2012.

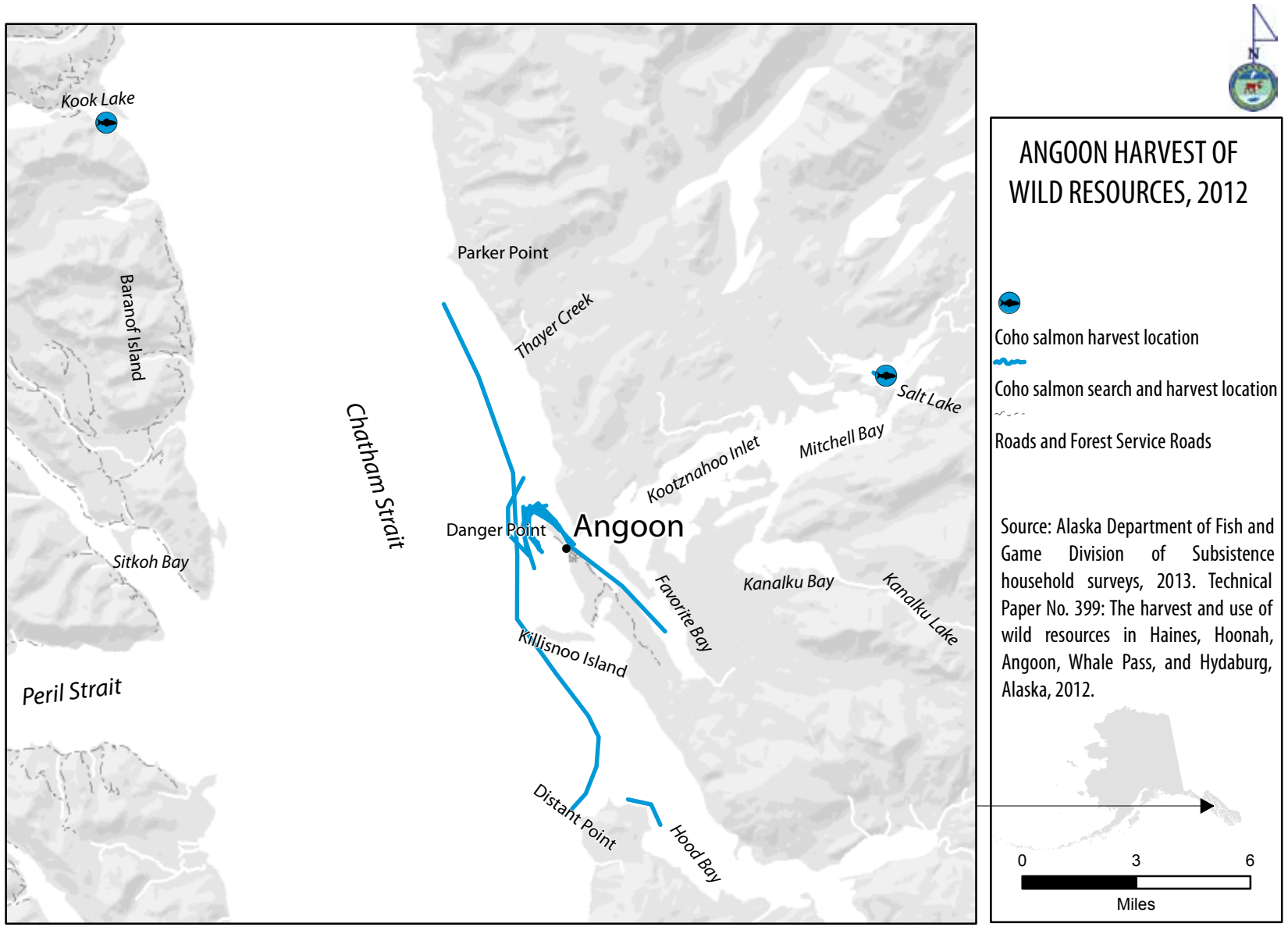
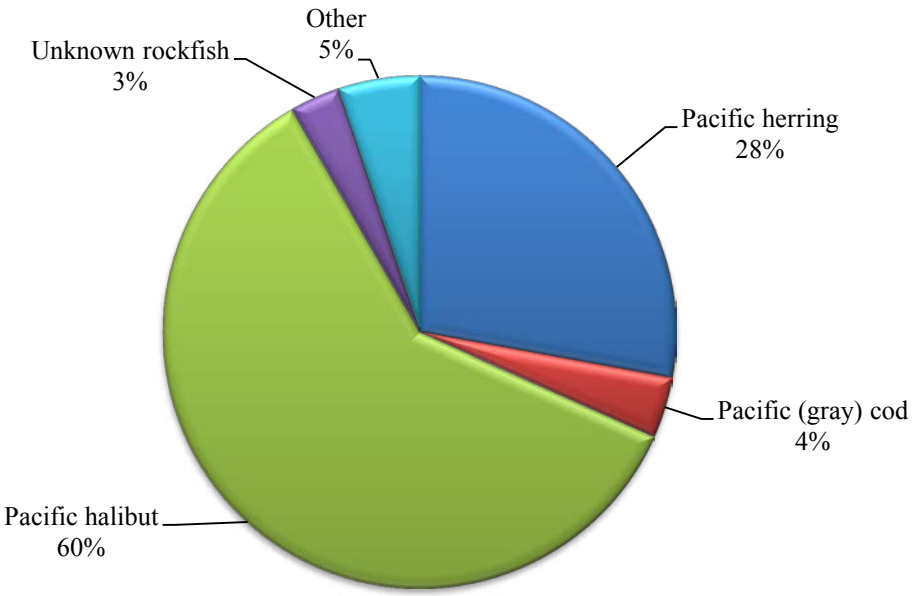


Figure 4-18.–Fishing and harvest locations of coho salmon, Angoon, 2012.



Note The "other" category represents all resources that contributed 1% or less to the nonsalmon fish harvest.

Figure 4-19.–Composition of nonsalmon fish harvest in pounds usable weight, Angoon, 2012.

An estimated 86% of households used nonsalmon fish while 63% of households attempted to harvest and 59% of households in Angoon successfully harvested nonsalmon fish (Table 4-13). Nonsalmon fish were frequently shared: 51% of households gave away and 69% of households received nonsalmon fish. Pacific halibut were used by the most households (80%) followed distantly by Pacific herring and herring eggs on branches (43% and 39%, respectively). No harvest was reported for Pacific herring eggs, meaning all the herring eggs were likely received from outside of Angoon. Almost 12% of households gave away some of the Pacific herring eggs they had received. While the nonsalmon fish resource category had a high number of species harvested, most were harvested and used by a small percentage of households.

An estimated 7,361 lb of nonsalmon fish were taken using subsistence gear and an estimated 10,891 lb were harvested using rod and reel gear (Table 4-17). Figure 4-20 is a visual representation of the pounds of nonsalmon fish harvested by gear type. As estimated in total pounds of fish, 60% of the nonsalmon fish harvest was taken with rod and reel while 40% of the nonsalmon fish harvest was caught using longline or skate gear (Table 4-18). Overall, 12 species were caught using rod and reel as compared to 5 species caught using subsistence gear. Longline was the most commonly used harvest method for 2 species: 64% of the Pacific halibut and 63% of the black rockfish harvest weight. For many species, rod and reel gear was the only harvest method: 100% of Pacific herring, lingcod, unknown rockfish, sablefish, Dolly Varden, cutthroat trout, and rainbow trout were harvested with rod and reel. In addition, 67% of Pacific cod and 80% of yelloweye rockfish were taken with rod and reel gear.

Harvest areas align with the preferred habitat of the different target species. Many of the fishing areas are outside of Angoon in deeper waters. Pacific halibut was harvested as far north as Parker Point and as far south as Distant Point, as well as within some of the inside waters of Mitchell Bay and Favorite Bay (Figure 4-21). Pacific herring was harvested almost exclusively around Danger Point (Figure 4-22). For search and harvest areas of other nonsalmon fish, see Appendix D.

Table 4-17.–Estimated harvest of nonsalmon fish by gear type and resource, Angoon, 2012.

				Subsistence methods											
		Removed from commercial catch		Gillnet or seine		Longline and skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Unit[a]	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds
Nonsalmon fish			**0.0**		**0.0**		**7,332.2**		**28.7**		**7,360.9**		**10,890.5**		**18,251.5**
Pacific herring	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	847.4	5,084.2	847.4	5,084.2
Pacific herring roe/unspecified	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring sac roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe on hair seaweed	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe on hemlock branches	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eulachon (hooligan, candlefish)	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Silver smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific (gray) cod	ind	0.0	0.0	0.0	0.0	71.8	229.6	0.0	0.0	71.8	229.6	145.9	466.9	217.7	696.6
Pacific tomcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flounder	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lingcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9	150.7	23.9	150.7
Pacific halibut	lb	0.0	0.0	0.0	0.0	6,966.2	6,966.2	0.0	0.0	6,966.2	6,966.2	3,991.3	3,991.3	10,957.5	10,957.5
Black rockfish	ind	0.0	0.0	0.0	0.0	47.8	95.7	0.0	0.0	47.8	95.7	28.7	57.4	76.5	153.1
Yelloweye rockfish	ind	0.0	0.0	0.0	0.0	12.0	35.9	0.0	0.0	12.0	35.9	47.8	143.5	59.8	179.4
Quillback rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	9.6	28.7	9.6	28.7	0.0	0.0	9.6	28.7
Unknown rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	191.4	574.1	191.4	574.1
Sablefish (black cod)	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.8	191.4	47.8	191.4
Buffalo sculpin	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Irish lord	ind	0.0	0.0	0.0	0.0	4.8	4.8	0.0	0.0	4.8	4.8	4.8	4.8	9.6	9.6
Unknown shark	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skates	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sole	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.4	190.3	63.4	190.3
Cutthroat trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4	21.5	14.4	21.5
Rainbow trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	14.4	7.2	14.4
Steelhead	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Note The summary row that incliudes incompatible units of measure for harvest number has been left blank.

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

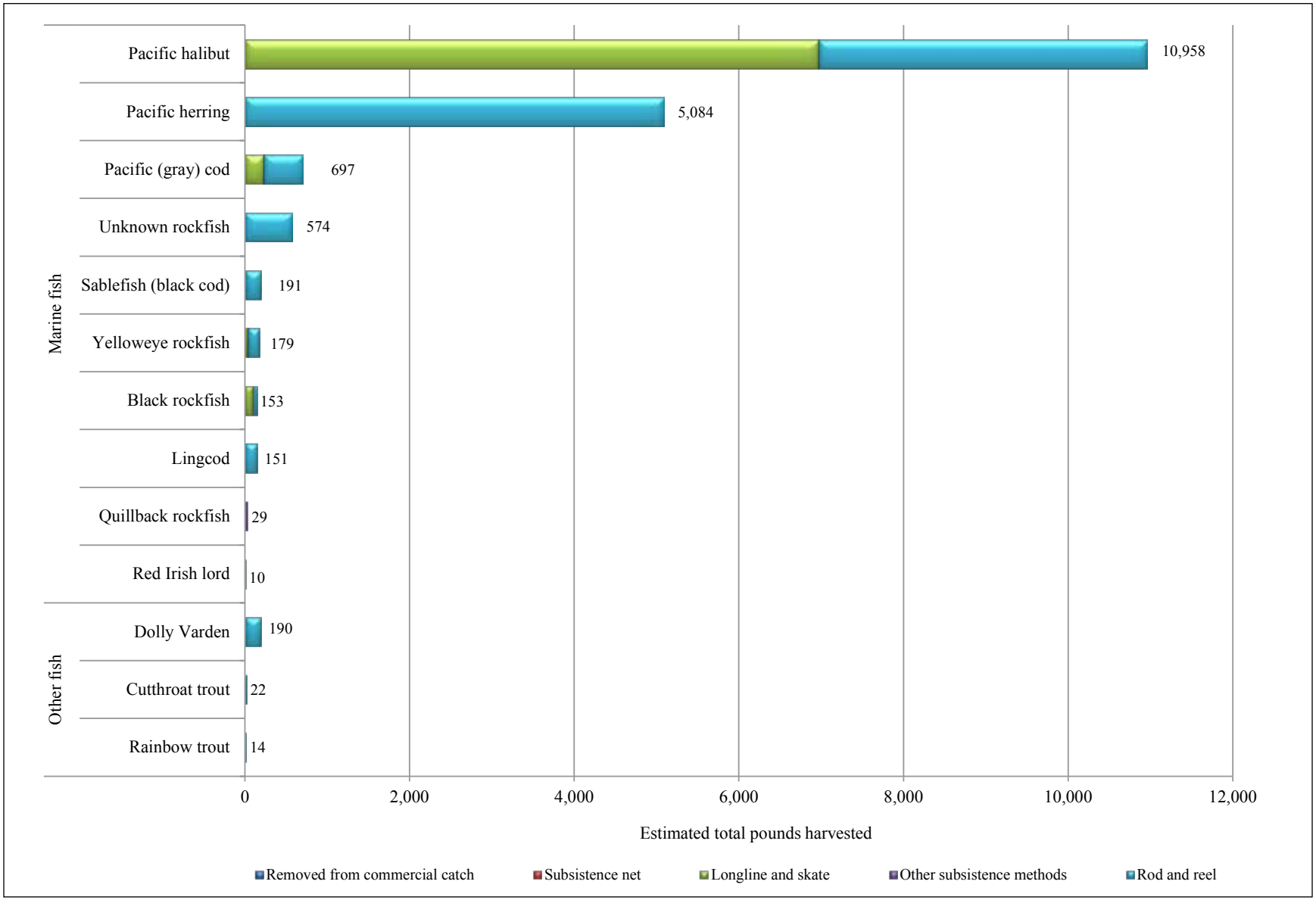


Figure 4-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Angoon, 2012.

Table 4-18.–Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Angoon, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**40.2%**	**0.2%**	**40.3%**	**59.7%**	**100.0%**
	Total	**0.0%**	**0.0%**	**40.2%**	**0.2%**	**40.3%**	**59.7%**	**100.0%**
Pacific herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	46.7%	27.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	27.9%	27.9%
Pacific herring roe/unspecified	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring sac roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe on hair seaweed	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe on hemlock branches	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Silver smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific (gray) cod	Gear type	0.0%	0.0%	3.1%	0.0%	3.1%	4.3%	3.8%
	Resource	0.0%	0.0%	33.0%	0.0%	33.0%	67.0%	100.0%
	Total	0.0%	0.0%	1.3%	0.0%	1.3%	2.6%	3.8%

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Table 4-18.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flounder	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%	1.4%	0.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.8%
Pacific halibut	Gear type	0.0%	0.0%	95.0%	0.0%	94.6%	36.6%	60.0%
	Resource	0.0%	0.0%	63.6%	0.0%	63.6%	36.4%	100.0%
	Total	0.0%	0.0%	38.2%	0.0%	38.2%	21.9%	60.0%
Black rockfish	Gear type	0.0%	0.0%	1.3%	0.0%	1.3%	0.5%	0.8%
	Resource	0.0%	0.0%	62.5%	0.0%	62.5%	37.5%	100.0%
	Total	0.0%	0.0%	0.5%	0.0%	0.5%	0.3%	0.8%
Yelloweye rockfish	Gear type	0.0%	0.0%	0.5%	0.0%	0.5%	1.3%	1.0%
	Resource	0.0%	0.0%	20.0%	0.0%	20.0%	80.0%	100.0%
	Total	0.0%	0.0%	0.2%	0.0%	0.2%	0.8%	1.0%
Quillback rockfish	Gear type	0.0%	0.0%	0.0%	100.0%	0.4%	0.0%	0.2%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.2%
Unknown rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	3.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	3.1%
Sablefish (black cod)	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	1.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%

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Table 4-18.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Buffalo sculpin	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Red Irish lord	Gear type	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
	Resource	0.0%	0.0%	50.0%	0.0%	50.0%	50.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Unknown shark	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skates	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sole	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%	1.7%	1.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%
Cutthroat trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Steelhead	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

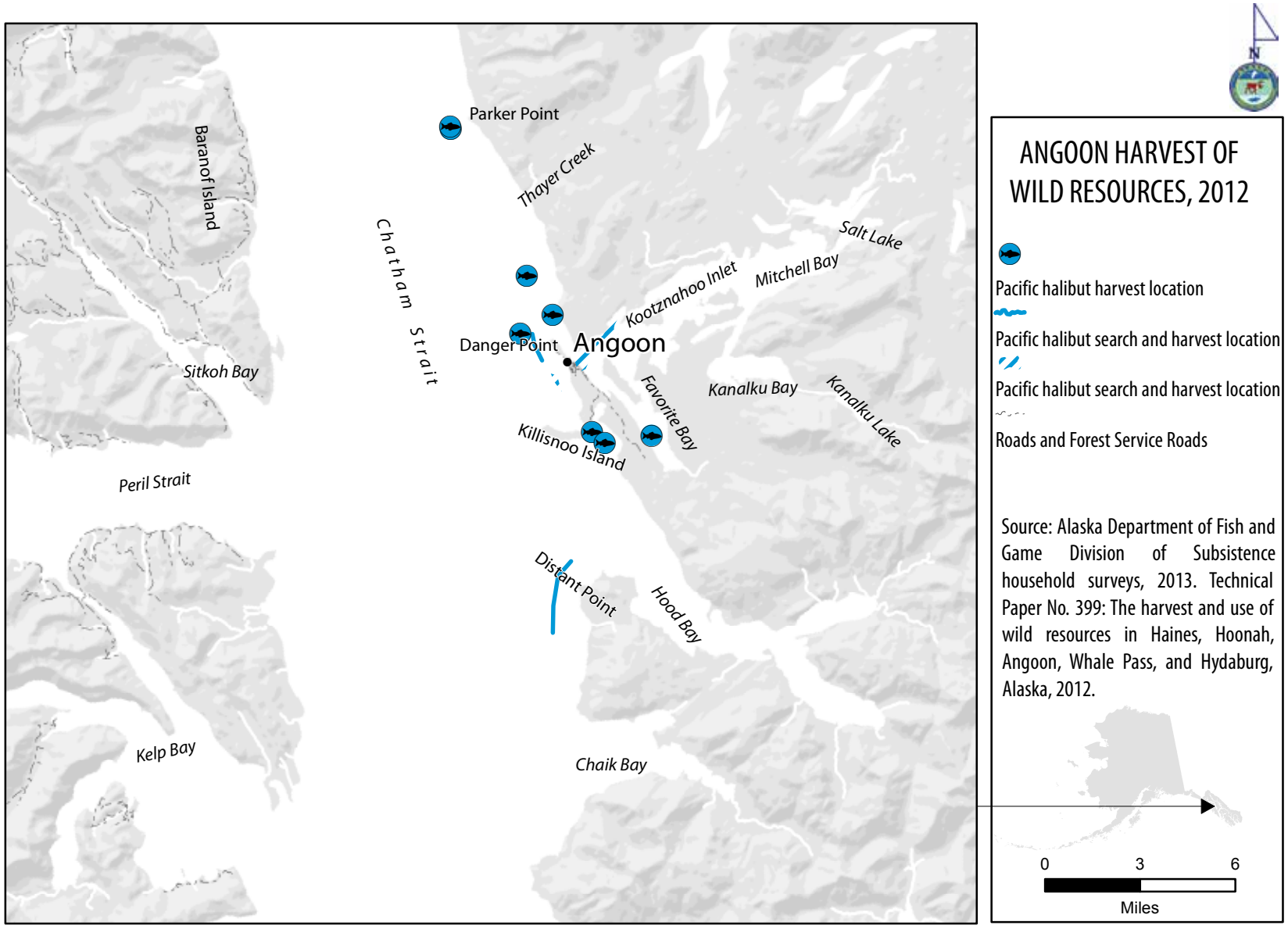


Figure 4-21.–Fishing and harvest locations of Pacific halibut, Angoon, 2012.

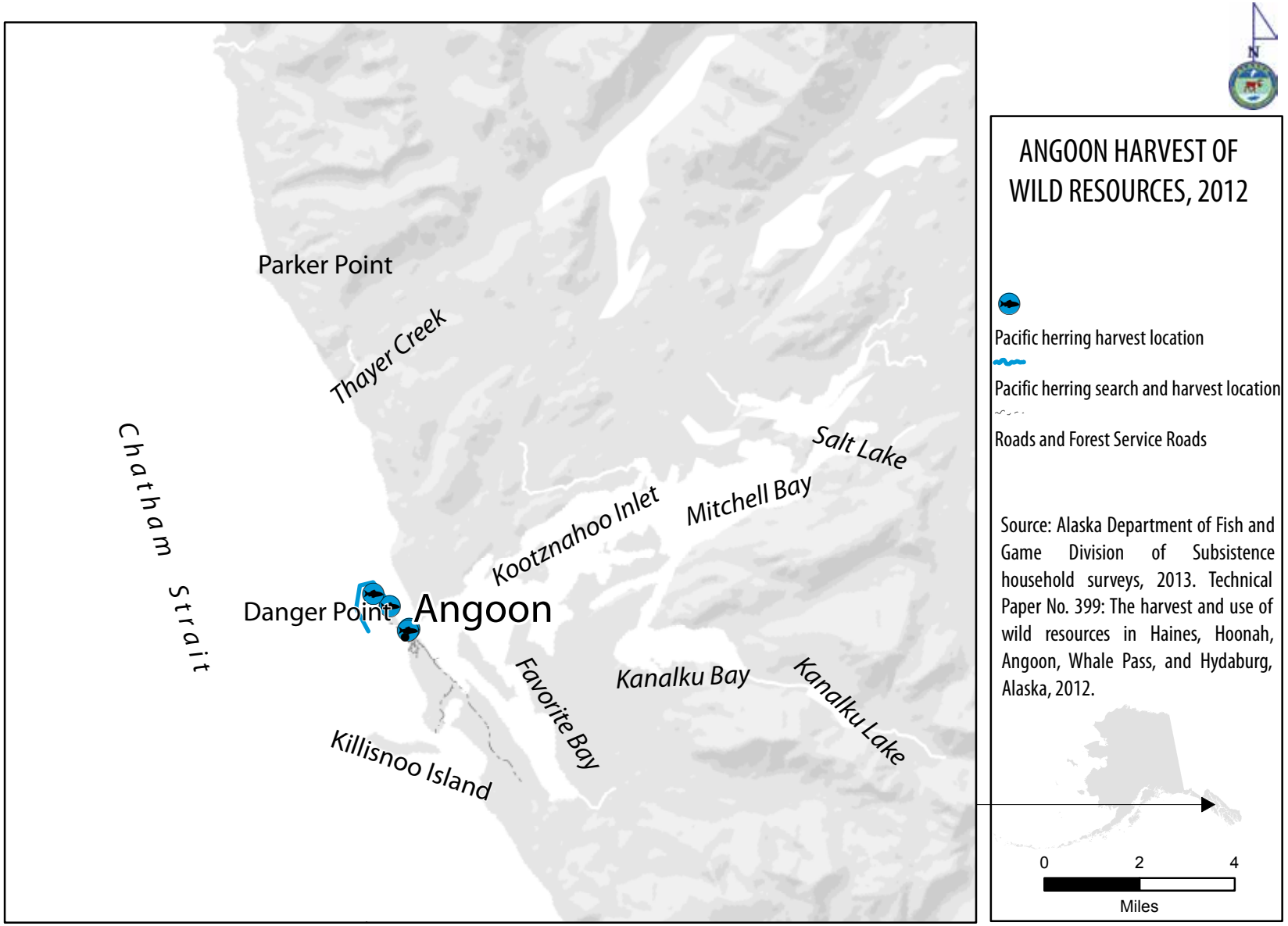
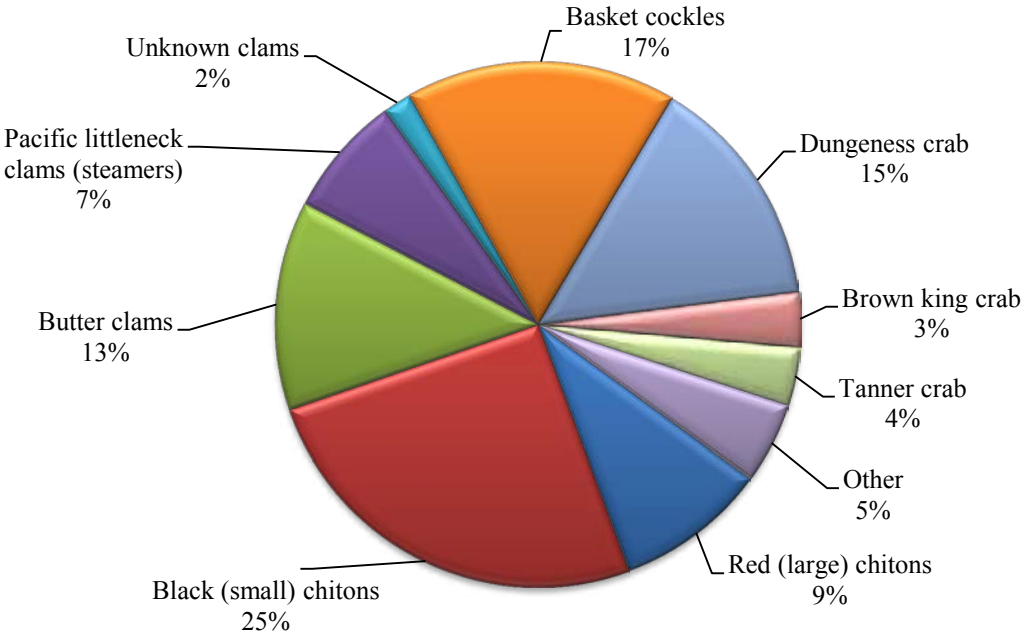


Figure 4-22.–Fishing and harvest locations of Pacific herring, Angoon, 2012.



Note The "other" category represents all resources that contributed less than 1.5% to the marine invertebrate harvest.

Figure 4-23.–Composition of marine invertebrate harvest in pounds usable weight, Angoon, 2012.

Marine Invertebrates

The use and harvest of marine invertebrate resources was one of the most diverse with 17 different identified species as well as unspecified kinds of clams and cockles used and 15 identified species harvested for a total estimated harvest of 7,671 lb (22 lb per capita) (Table 4-13). Black chitons (gumboots) were the number one species harvested by weight, contributing 25% (1,947 lb) to the total marine invertebrate catch (Figure 4-23; Table 4-13). Other highly harvested species were basket cockles with 17% of the harvest (1,278 lb; 4 lb per capita), Dungeness crab with 15% of the harvest (1,113 lb; 3 lb per capita), butter clams at 13% (988 lb; 3 lb per capita), and red chitons (lady slippers) at 9% (718 lb; 2 lb per capita). Overall, 83% of Angoon households used marine invertebrates, 51% of households harvested them, 69% of households received them, and 49% shared them (Table 4-13). All species harvested were shared, with the exception of horse clams, geoducks, mussels, and sea urchins. One harvester reported that every day they would walk back from their work site along the beach and they would pick up mussels and sea urchins off the beach, break the shell and eat them raw by sucking the meat out of the shells. The harvester said this was the best way to eat them and that the sea urchins were excellent for him and his work team after a long day of labor outside of town.

Many marine invertebrates are harvested from shore during low tides using knowledge on how to find the species, a shovel to extract them, and a bucket to collect them. Ten of the marine invertebrate species harvested in 2012 fall into the “bucket and shovel” method of harvest, including species like chitons and urchins that are not buried in shore substrate but are pried from rocks in the intertidal zone. Harvesting crab and shrimp usually requires the use of a boat in order to lower pots into deep water. Marine invertebrates were harvested mainly in intertidal and coastal areas along Favorite Bay and the coast of Chatham Strait south of Angoon as well as in Hood Bay (Figure 4-24).

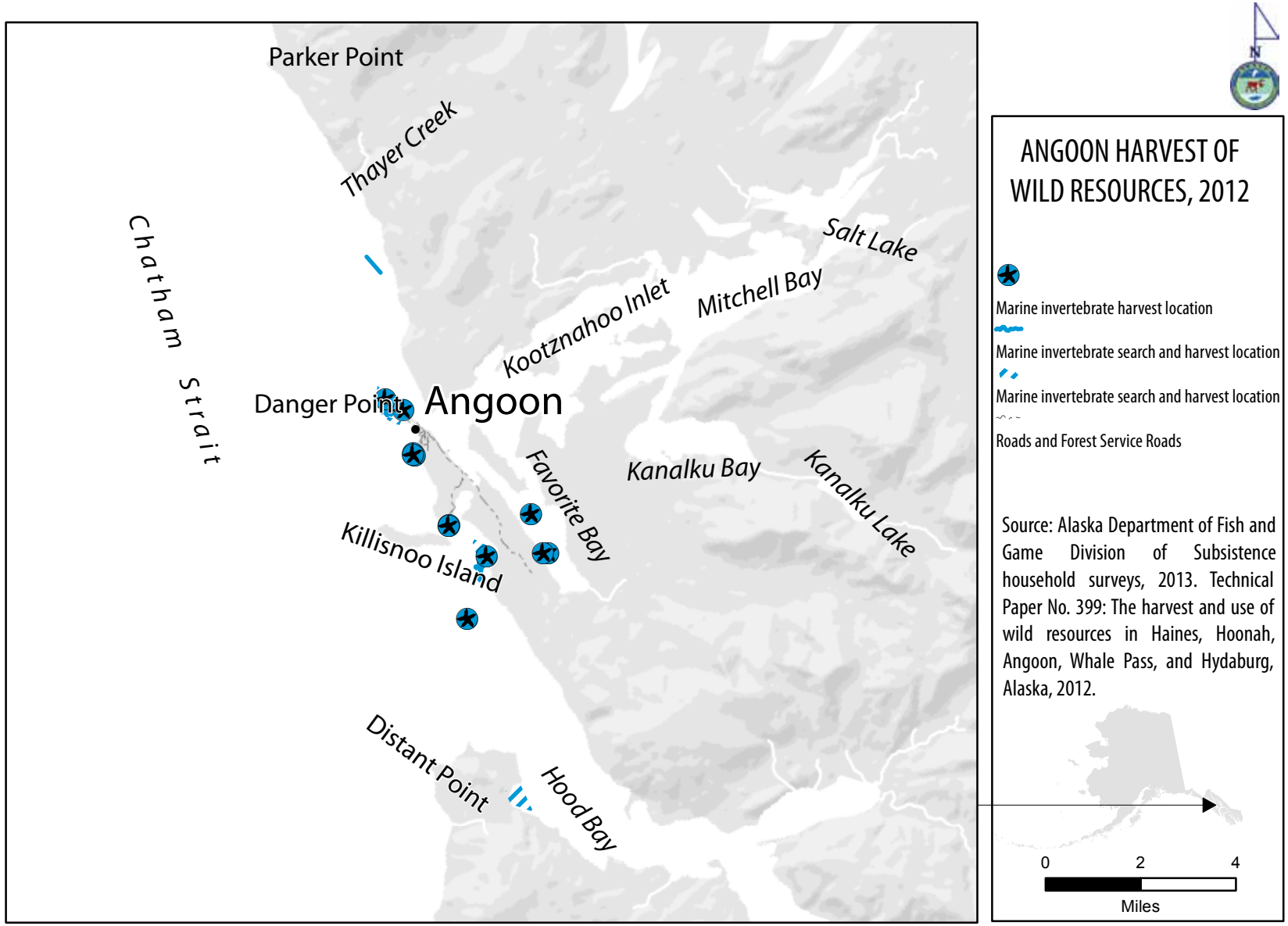


Figure 4-24.–Fishing and harvest locations of marine invertebrates, Angoon, 2012.

Large Land Mammals

Sitka black-tailed deer was the only large land mammal reported as harvested by Angoon households in 2012. While there are brown bear on Admiralty Island, to harvest moose and mountain goat requires travel to harvestable populations in Gustavus, Kake, or generally farther than is required for harvesting deer. Moose and mountain goat were used by 6% and 2% of households, respectively (Table 4-13). Both species were received and some moose was shared. A total of 45% of Angoon households harvested an estimated 218 deer for a total of 17,452 lb of deer harvested, which is 51 lb per capita. Deer was widely shared with 84% of households using deer, 51% of households receiving deer, and 38% of households sharing their deer.

Deer were harvested in January at the end of the 2011 season, and hunting began again in August 2012 continuing until January 2013. However, for the purposes of this survey only harvests in the calendar year were recorded and not by hunting season (Table 4-19). The most deer were harvested in November (53 deer) followed by December (46 deer) and October (41 deer). The fewest deer were harvested in September. Of the total estimated 218 deer harvested, 146 were male, 62 were female, and 10 were of unknown sex. More male deer than female deer were harvested in every month except September, when slightly more does were taken.

The documented deer hunting areas in 2012 cover the largest area and longest distance from Angoon compared to any of the resource categories or species harvested by Angoon households. The harvest and search areas cover shorelines and road systems almost exclusively ranging from Whitewater Bay in the south to Cube Cove in the north, inland to the east all through Mitchell and Favorite bays as well as Fishery Creek and across Chatham Strait around Peril Strait (Figure 4-25).

Table 4-19.–Estimated large land mammal harvests by month and sex, Angoon, 2012.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All large land mammals	**24.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**33.9**	**17.0**	**41.2**	**53.3**	**46.1**	**2.4**	**218.1**
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Deer	24.2	0.0	0.0	0.0	0.0	0.0	0.0	33.9	17.0	41.2	53.3	46.1	2.4	**218.1**
Deer, male	16.7	0.0	0.0	0.0	0.0	0.0	0.0	21.5	7.2	28.7	38.3	33.5	0.0	**145.9**
Deer, female	7.2	0.0	0.0	0.0	0.0	0.0	0.0	12.0	9.6	7.2	14.4	12.0	0.0	**62.2**
Deer, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	3.3	**10.0**
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

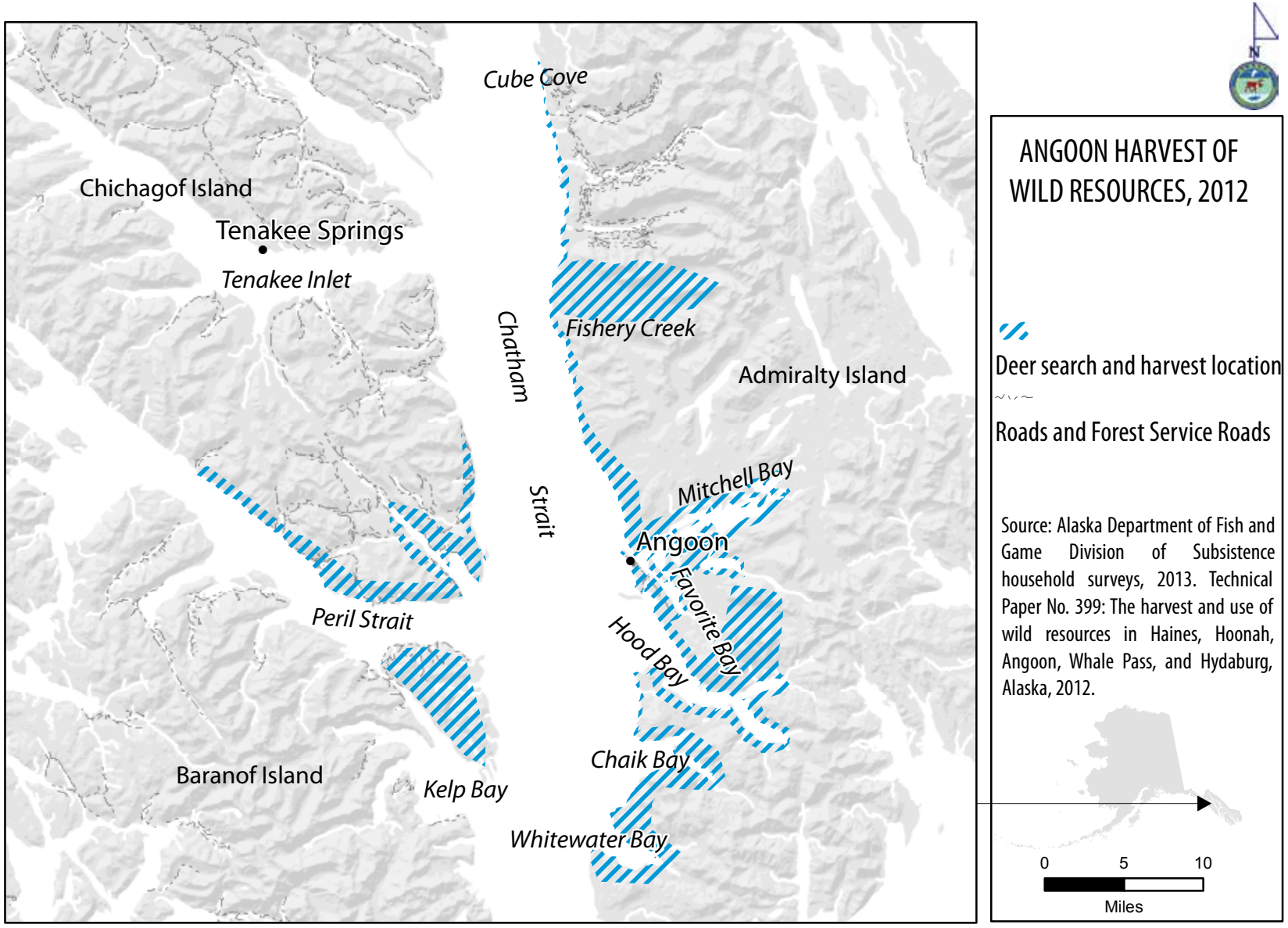


Figure 4-25.–Hunting locations of deer, Angoon, 2012.

Table 4-20.–Estimated marine mammal harvests by month and sex, Angoon, 2012.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All marine mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2.4**	**4.8**	**4.8**	**4.8**	**2.4**	**0.0**	**2.4**	**21.5**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.8	4.8	4.8	2.4	0.0	2.4	**21.5**
Harbor seal, male	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.8	2.4	0.0	2.4	0.0	0.0	**12.0**
Harbor seal, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	**2.4**
Harbor seal, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.8	0.0	0.0	0.0	**7.2**
Sea 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**
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

Marine Mammals

Harbor seals were the only marine mammal used or harvested by Angoon residents in 2012 (Table 4-13). Harbor seals were used by 41% of households while they were harvested by 10% of households, demonstrating the extensive sharing of resources that require specialized harvesting. An estimated 10% of households shared harbor seals while 33% of households received this resource. An estimated total of 22 seals were harvested, which produced an estimated 1,809 lb of usable harvest weight (5 lb per capita). Harbor seals were harvested from July through November, with a few reported harvests occurring in an unknown month. An estimated 12 male harbor seals were harvested, along with 2 female harbor seals and 7 seals of unknown sex (Table 4-20).

Search and harvest areas for harbor seals were all in the protected waters of Kanalku Bay (Figure 4-26).

Small Land Mammals/Furbearers

Small land mammals were harvested by very few households and what was harvested was not shared with other households. Only 2% of Angoon households harvested small land mammals in 2012 (Table 4-13). The species targeted and harvested were North American river otter (28% of harvest by number of animals), marten (43%), and mink (29%) (Figure 4-27). None of the animals harvested in this resource category were used for food; all were harvested for fur only. Species that are not eaten are given a conversion factor of 0 (zero) in Table 4-13 and are not included in the total harvest weight of edible foods. All 17 animals were harvested in November (Table 4-21).

Birds and Eggs

No bird eggs were harvested during this survey; under regulations of the Migratory Bird Treaty Act, residents of Angoon are not eligible to harvest migratory bird eggs. A total estimated 4% of Angoon households harvested birds with approximately 121 lb harvested in 2012 (Table 4-13). A total of 5 migratory bird species were harvested: Canada geese, sandhill cranes, and mallards made up more than three-quarters of the harvest weight, and teals and wigeons combined constituted only 7% of the harvest weight (Figure 4-28). Sandhill cranes were harvested in the fall. Teals and wigeons were harvested in the winter, while mallards and Canada geese were harvested in both the fall and winter (Table 4-22). During interviews many long-time Angoon residents stated only people from outside Angoon harvested birds; examples given were people who worked for the clinic and school.

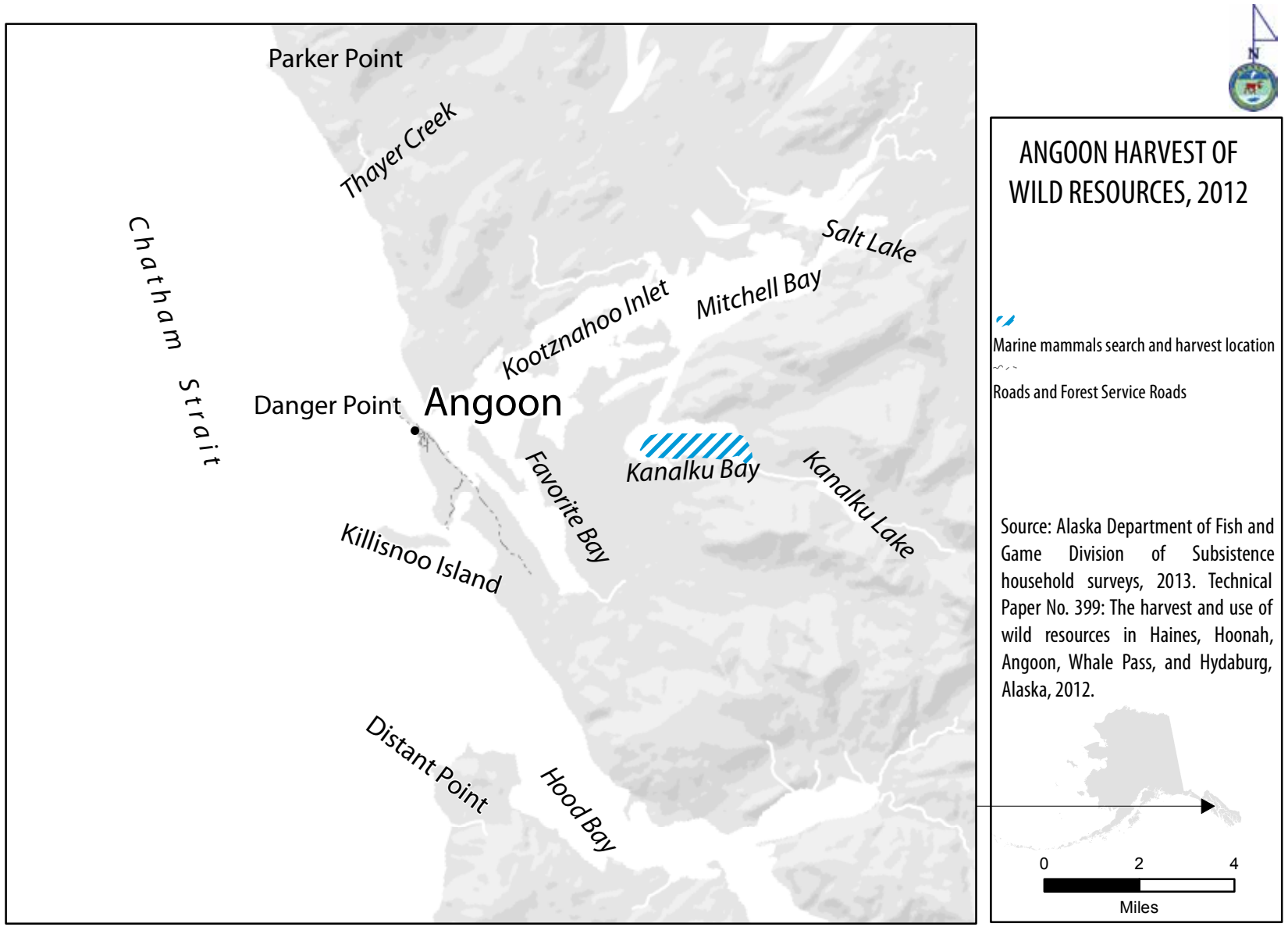


Figure 4-26.–Hunting locations of marine mammals, Angoon, 2012.

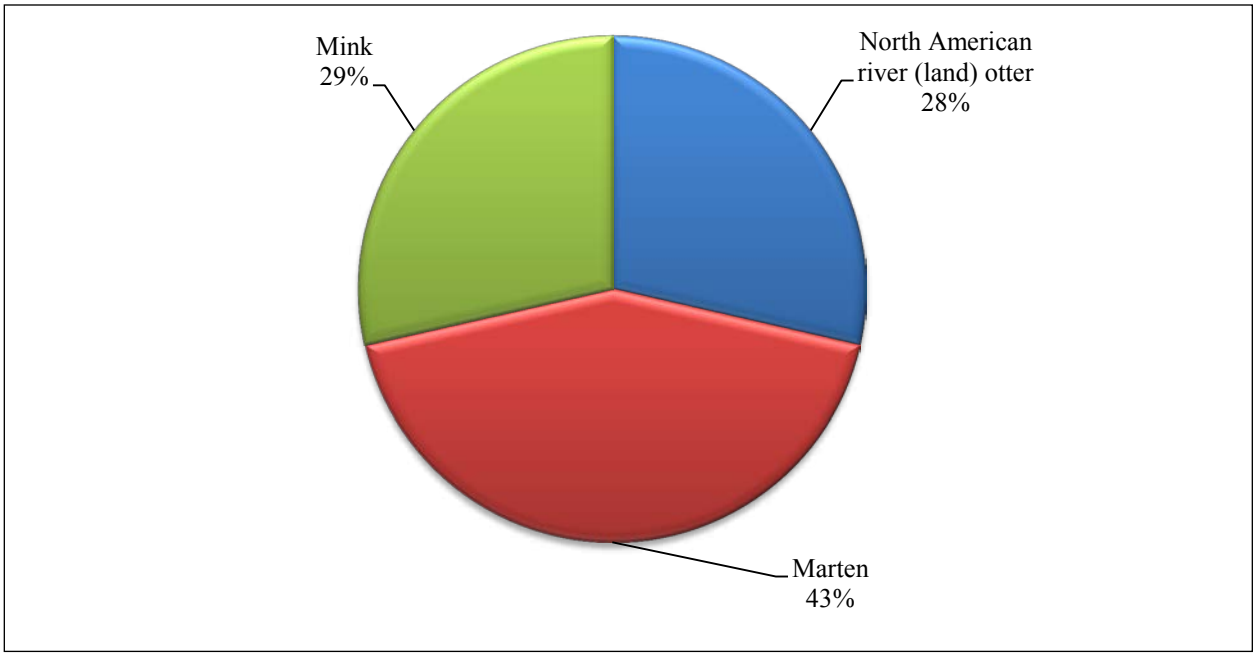
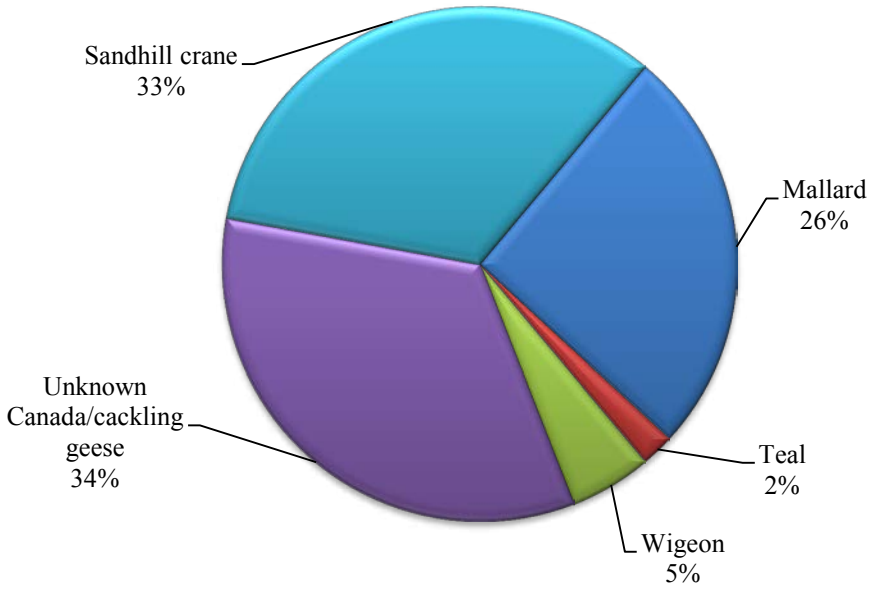


Figure 4-27.–Composition of small land mammal/furbearer harvest by individual animals harvested, Angoon, 2012.

Table 4-21.–Estimated small land mammal harvests by month, Angoon, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All small land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**16.7**	**0.0**	**0.0**	**16.7**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	**4.8**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	**7.2**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	**4.8**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Least 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**
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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



Note No bird eggs were harvested.

Figure 4-28.–Composition of bird and bird egg harvest in pounds usable weight, Angoon, 2012.

Table 4-22.–Estimated bird harvests by season, Angoon, 2012.

	Estimated harvest by season					
Resource	Winter	Spring	Summer	Fall	Season unknown	**Total**
All birds	**16.7**	**0.0**	**0.0**	**9.6**	**0.0**	**26.3**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	12.0	0.0	0.0	19.1	0.0	**31.1**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	0.0	0.0	0.0	0.0	0.0	**0.0**
Scaup	0.0	0.0	0.0	0.0	0.0	**0.0**
Teal	4.8	0.0	0.0	0.0	0.0	**4.8**
Wigeon	4.8	0.0	0.0	0.0	0.0	**4.8**
Unknown ducks	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown Canada/cackling geese	7.2	0.0	0.0	4.8	0.0	**12.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown swans	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	0.0	0.0	4.8	0.0	**4.8**
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–small	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–large	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown loon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	**0.0**
Grouse	0.0	0.0	0.0	0.0	0.0	**0.0**
Ptarmigan	0.0	0.0	0.0	0.0	0.0	**0.0**

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

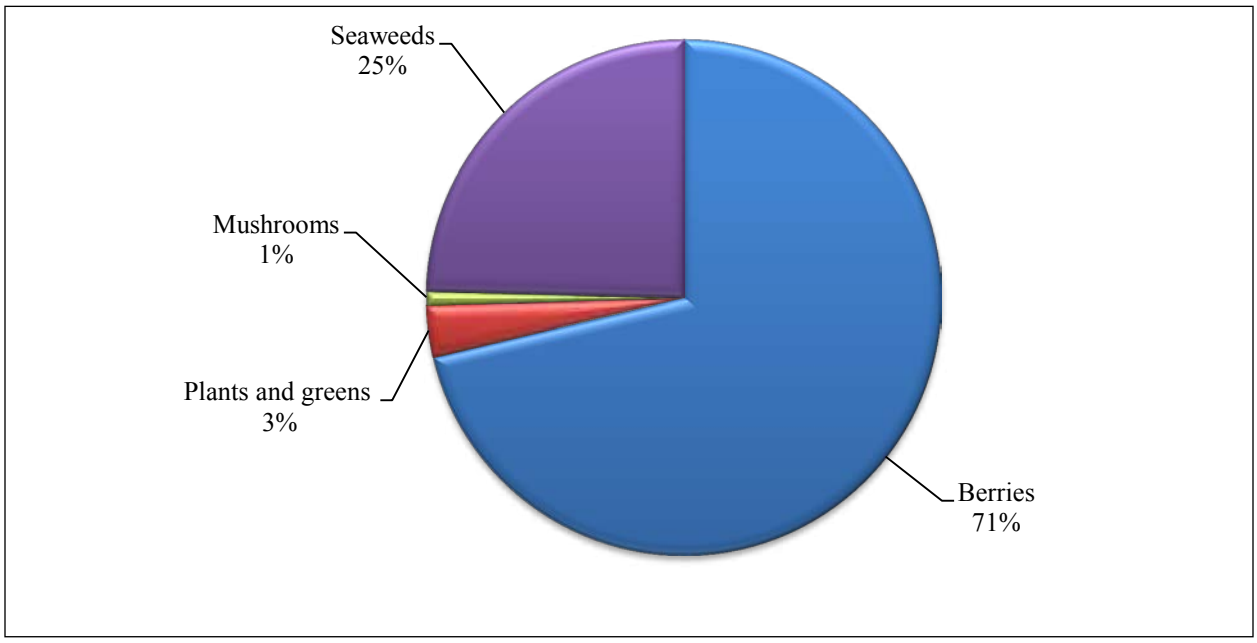


Figure 4-29.–Composition of vegetation harvest by type and pounds usable weight, Angoon, 2012.

Vegetation

Vegetation had the most diverse harvests of all the resource categories harvested in Angoon, however because of its light weight, it composed only 7% of the total usable weight of all resources harvested in Angoon (Figure 4-12). A total of 19 identified plant species were used by Angoon residents including 8 varieties of berries, 8 specified types of wild greens, and 3 specified types of seaweed; additionally, there were harvests of other wild greens, mushrooms, unspecified seaweed/kelp, and trees for firewood (Table 4-13). Berries were the most harvested vegetation, composing 71% of the total harvest, by weight; seaweeds composed 25%, while mushrooms and other plants made up the remainder of the vegetation harvest (Figure 4-29). The largest berry harvest came from blueberries with 1,735 lb harvested (5 lb per capita), followed distantly by salmonberries and huckleberries at 672 lb (2 lb per capita) and 506 lb (2 lb per capita), respectively (Table 4-13). Black seaweed was the most harvested species of seaweed with a total of 1,001 lb harvested (3 lb per capita).

Vegetation was also one of the most widely used resource categories in 2012 with 92% of households using some type of vegetation during the year (Table 4-13). The most households participated in the harvesting of vegetation as well; 88% of households attempted to harvest vegetation and 84% of Angoon households were successful. The most harvested vegetation species by weight, blueberry, was also shared by the most households (28%) but received by only 22% of households. Black seaweed, the second most harvested vegetation resource by weight was shared by 22% of households and received by 45% but harvested by fewer households (31%); this likely reflects the more specialized nature of seaweed harvesting and processing for a successful harvest.

Firewood was used by just more than one-half of the households in Angoon and harvested by nearly as many; 386 cords of firewood were harvested by Angoon households. At the time of the survey and preparation of this report, the average price of heating oil in Angoon was around $5 per gallon (Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs, Research and Analysis Section 2013:13). In addition, Angoon relies entirely on diesel to generate electricity, resulting in some of the highest electric rates in the state (Villalobos Melendez and Fay 2012).

Search and harvest areas for plants, berries, and firewood occurred near Angoon, mainly along the road system and in Favorite Bay (Figure 4-30; Figure 4-31). Seaweed was also harvested in Favorite Bay, as well as offshore from Killisnoo Island, near the entrance to Hood Bay, and north of Kootznahoo Inlet (Figure 4-32).

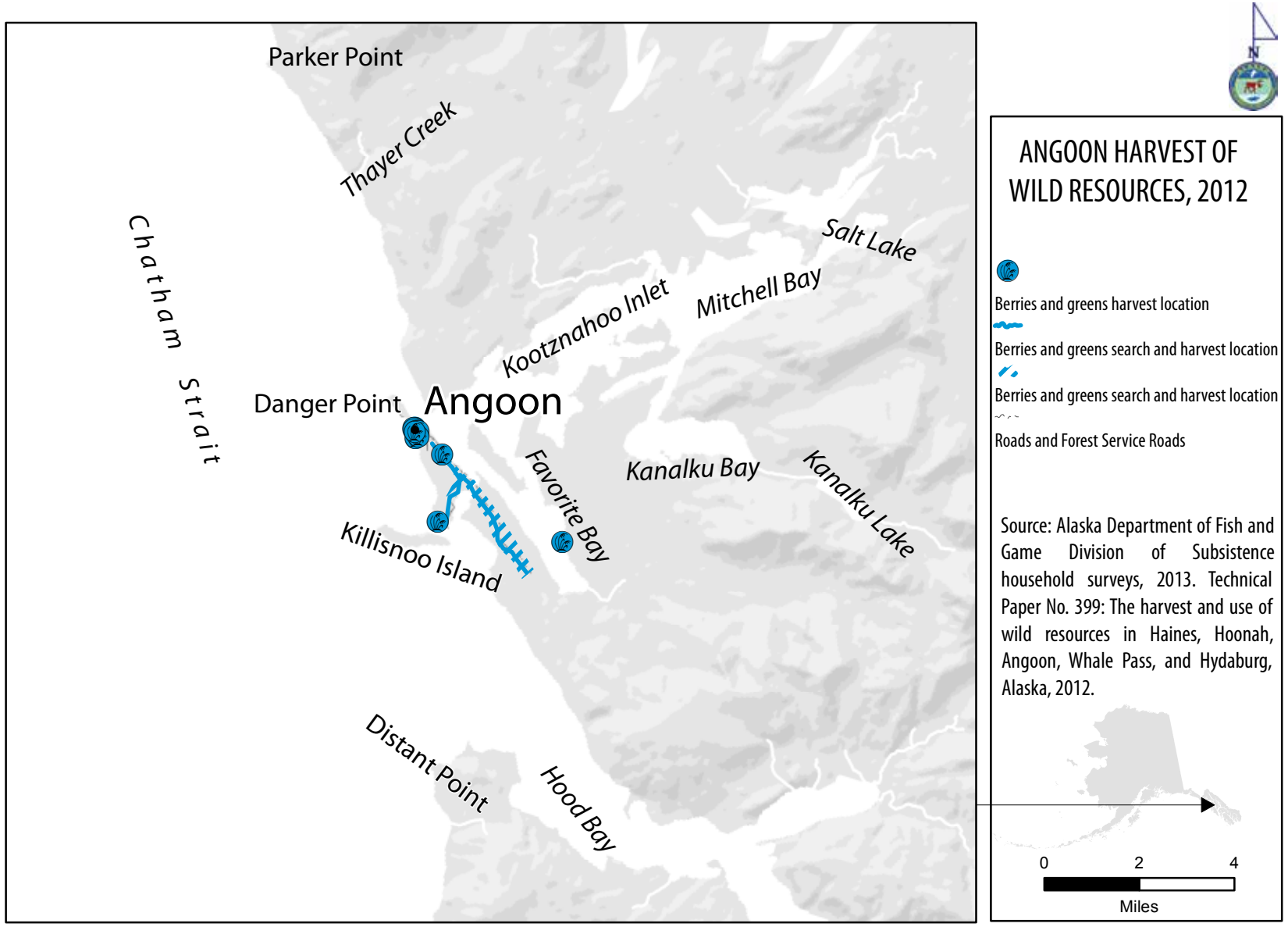


Figure 4-30.–Gathering and harvest locations of berries and plants, greens, and mushrooms, Angoon, 2012.

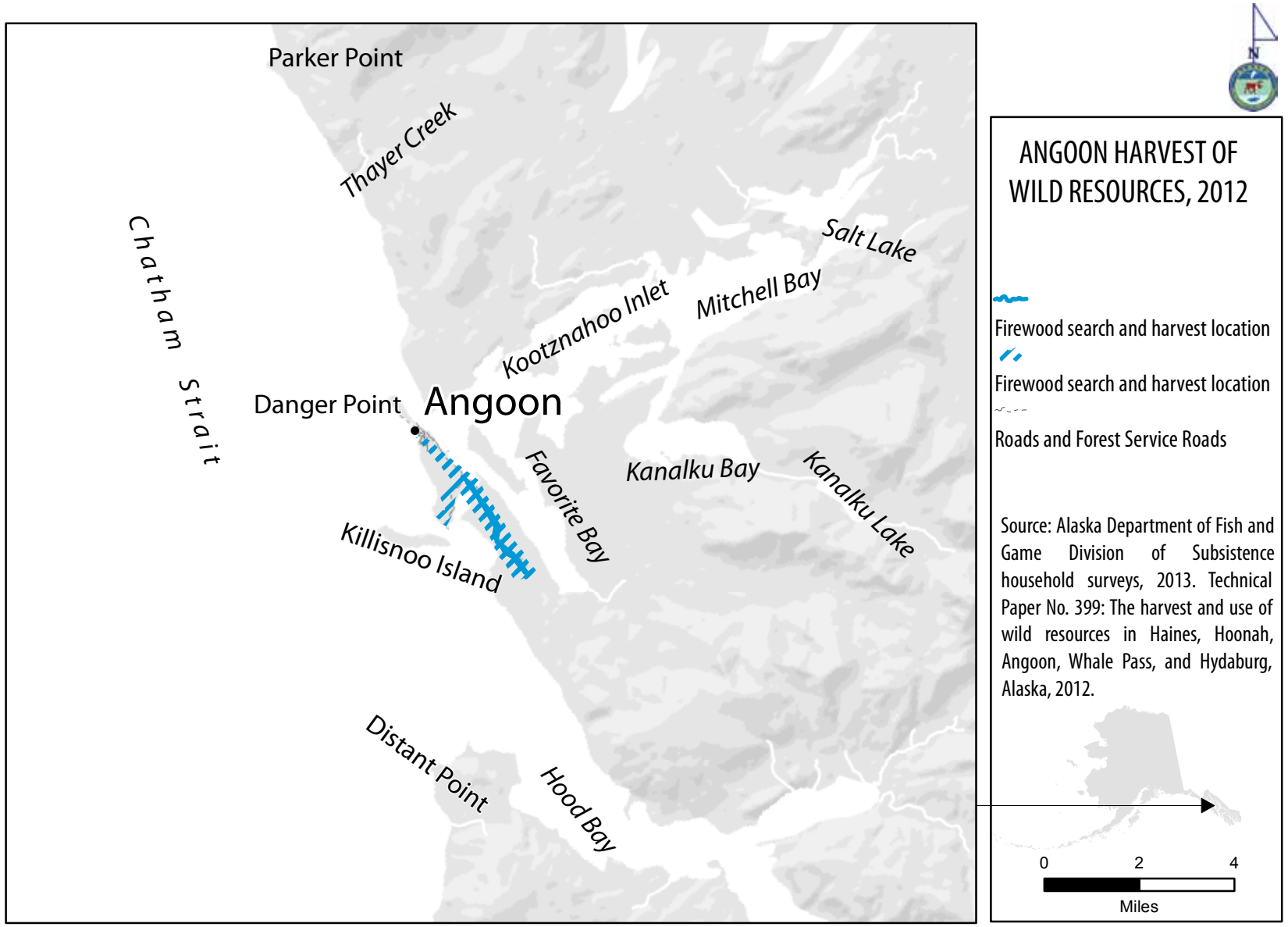


Figure 4-31.–Gathering and harvest locations of firewood, Angoon, 2012.

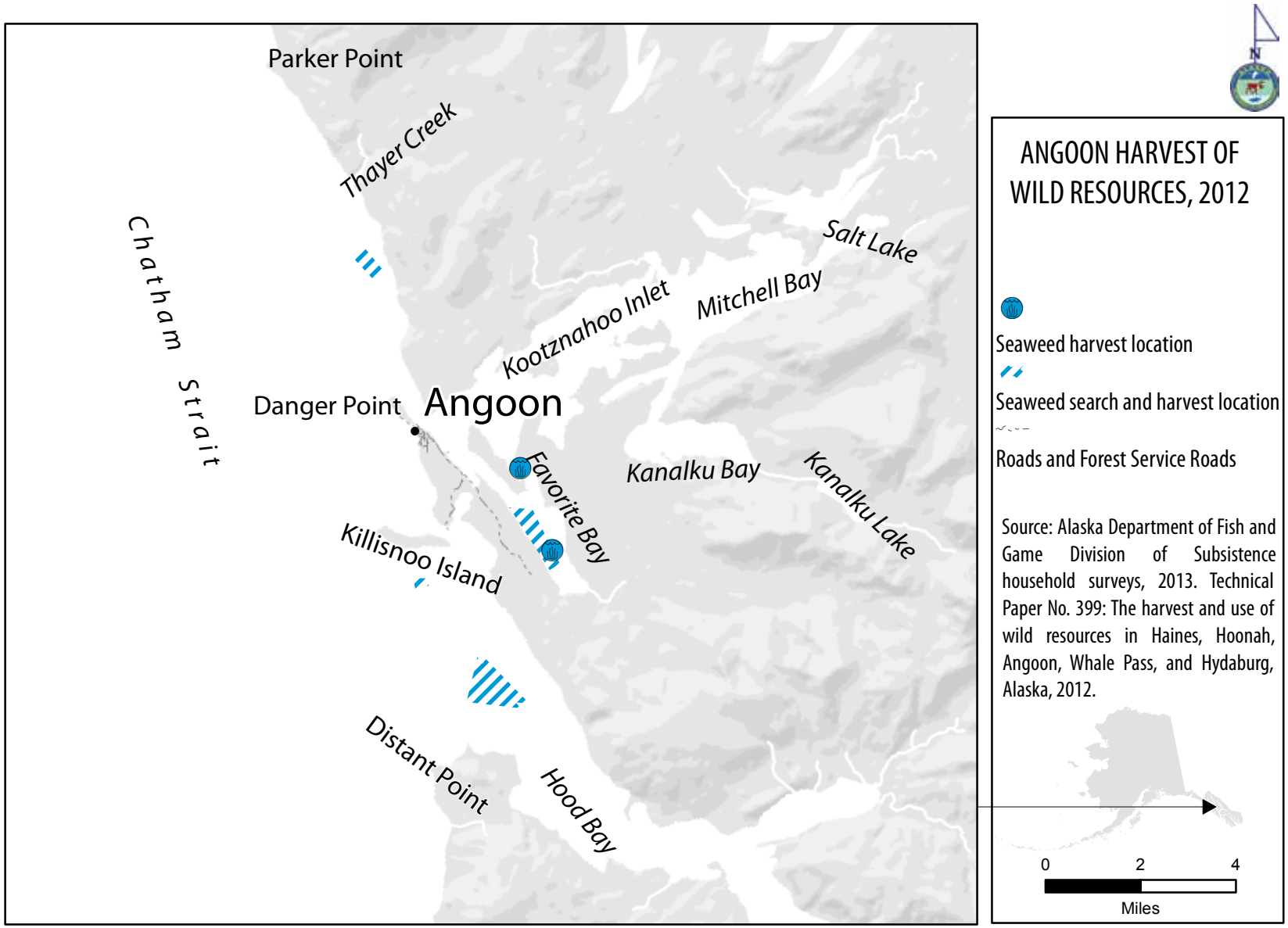


Figure 4-32.–Gathering and harvest locations of seaweed, Angoon, 2012.

Comparing Harvests and Uses in 2012 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their 2012 harvests in 2 ways: whether they got more, less, or about the same amount of 12 resource categories as in the past 5 years, and whether they got "enough" of each of the 12 resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

Together, Table 4-23 and Figure 4-33 and Figure 4-34 provide a broad overview of Angoon's households' assessments of their harvests in 2012. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not wish to answer the questions.

Nonsalmon fish was one of the most highly harvested resource categories by Angoon households in 2012. Assessment questions for nonsalmon fish were broken down into 3 separate assessments—one for Pacific herring eggs, one for rockfish, and one for all other nonsalmon fish. Rockfish and Pacific herring eggs will be discussed after nonsalmon fish. Thirty-one percent of responding households explained that they used the same amount of nonsalmon fish in 2012 as they did in previous years, 59% reported that they used less, and 6% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 36% of respondents reported that they did so due to less sharing (Table 4-24). Other stated reasons for using less nonsalmon fish included no time/working, lack of effort, lack of equipment, or unsuccessful harvest attempts. For those households that used more nonsalmon fish in the study year, 50% of respondents stated they were more successful, that the higher harvests were due to the cost of store-bought items, or because they got or fixed equipment (Table 4-25). In Angoon, 37% of respondents stated that they did not get enough nonsalmon fish (Figure 4-34). When asked to evaluate the impact of not getting enough nonsalmon fish, 32% described the impact as minor, 37% explained that not getting enough nonsalmon fish had a major effect on their household, and 21% stated that the impact was severe (Table 4-26). Households that did not get enough nonsalmon fish adapted by using more commercial foods, making do without, buying/bartering, and replacing nonsalmon fish with other subsistence foods, increasing efforts to harvest food, and getting a job (Table 4-27).

Rockfish and Pacific herring eggs were subcategories of nonsalmon fish about which assessment questions were asked. Fourteen percent of responding households explained that they used the same amount of Pacific herring eggs in 2012 as they did in previous years and 72% reported that they used less (Table 4-23; Figure 4-33). When asked why they used less, 69% of respondents reported that they used less due to not as much sharing (Table 4-24). Other stated reasons for using less Pacific herring eggs included less of the resource was available, unsuccessful harvest efforts, family/personal reasons, lack of effort, weather/environment interference, or working/no time. In Angoon, 59% of respondents stated that they did not get enough Pacific herring eggs (Figure 4-34). No further assessments were provided by survey respondents about Pacific herring eggs. Sixteen percent of responding households explained that they used the same amount of rockfish in 2012 as they did in previous years and 14% reported that they used less (Table 4-23; Figure 4-33). When asked why they used less, 25% of respondents reported that they did so due to unsuccessful fishing, the cost of fuel/equipment, working/no time, and other reasons (Table 4-24). No further assessment questions were asked about rockfish.

Large land mammals is another of the most harvested of all subsistence resource categories by Angoon households; 46% of responding households explained that they used the same amount of large land mammals in 2012 as they did in previous years, 42% reported that they used less, and 6% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 26% of respondents reported that they did so due to less sharing of harvested game (Table 4-24). Other stated reasons for using less large land mammals included working/no time, lack of effort, or lack of equipment. For those 6% of households that used more large land mammals in the study year, 67% reported they used more because more was shared with them; the remaining 33% reported they used more deer in lieu of other subsistence resources (Table 4-25). In Angoon, 37% of respondents stated that they did not get enough large game (Figure 4-34). When asked to evaluate the impact of not getting enough large game, 32% described the impact as minor, 47% explained that not getting enough large land mammals had a major effect on their household, and 16% stated that the impact was severe (Table 4-26). Households that did not get enough large land mammals adapted through using more commercial foods, replacing it with other subsistence foods, or buying/bartering for it (Table 4-27).

Salmon is also heavily harvested by Angoon households; 22% of responding households explained that they used the same amount of salmon in 2012 as they did in previous years, 70% reported that they used less, and 6% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 28% of respondents reported that they did so because salmon was less available and 28% stated that it was because they were working/had no time (Table 4-24). Other stated reasons for using less salmon included family or personal reasons, less salmon was shared with them, lack of effort, or unsuccessful fishing. For those households that used more salmon in the study year, when asked why they used more respondents reported 1 or more of the following reasons: favorable weather, more successful fishing, increased availability of salmon, or having new or fixed equipment that enabled them to fish (Table 4-25). In Angoon, 53% of respondents stated that they did not get enough salmon (Figure 4-34). When asked to evaluate the impact of not getting enough salmon, 4% described it as not noticeable, 44% described the impact as minor, 22% explained that not getting enough salmon had a major effect on their household, and 19% stated that the impact was severe (Table 4-26). Households that did not get enough salmon adapted by using more commercial foods, using other subsistence foods, making do without, or increasing effort to harvest (Table 4-27).

Marine invertebrates were the fourth most harvested of all subsistence resource categories (Figure 4-12). In 2012, 30% of responding households explained that they used the same amount of marine invertebrates as they did in previous years, 48% reported that they used less, and 13% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 25% of respondents reported that they did so due to working or no time for harvesting and 25% responded there was less sharing (Table 4-24). Other stated reasons for using less marine invertebrates included resources were less available, diseased/small resources[5], and personal or family reasons. For those households that used more marine invertebrates in the study year, 40% received more, 40% increased harvest effort, and 20% were more successful (Table 4-25). In Angoon, 39% of respondents stated that they did not get enough marine invertebrates (Figure 4-34). When asked to evaluate the impact of not getting enough, 45% described the impact as minor, 30% explained that not getting enough had a major effect on their household, and 15% stated that the impact was severe (Table 4-26). Households that did not get enough marine invertebrates adapted through buying more commercial food, making do without, and buying or bartering for the resource (Table 4-27).

5. Respondents commented on concerns about paralytic shellfish poisoning (PSP).

Table 4-23.–Changes in household uses of resources compared to recent years, Angoon, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Total households Number	Total households Percentage	Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage	Households not using Number	Households not using Percentage
Any resource	51	51	50	98.0%	48	94.1%	44	86.3%	23	45.1%	46	90.2%
All resources	**51**	**49**	**48**	**98.0%**	**33**	**67.3%**	**11**	**22.4%**	**4**	**8.2%**	**1**	**2.0%**
Salmon	51	50	49	98.0%	35	70.0%	11	22.0%	3	6.0%	1	2.0%
Pacific herring roe	51	50	43	86.0%	36	72.0%	7	14.0%	0	0.0%	7	14.0%
Rockfish	51	44	13	29.5%	6	13.6%	7	15.9%	0	0.0%	31	70.5%
All other fish	51	49	47	95.9%	29	59.2%	15	30.6%	3	6.1%	2	4.1%
Large land mammals	51	48	45	93.8%	20	41.7%	22	45.8%	3	6.3%	3	6.3%
Small land mammals	51	38	2	5.3%	1	2.6%	1	2.6%	0	0.0%	36	94.7%
Marine mammals	51	44	23	52.3%	11	25.0%	10	22.7%	2	4.5%	21	47.7%
Other birds	51	39	2	5.1%	0	0.0%	2	5.1%	0	0.0%	37	94.9%
Bird eggs	51	38	0	0.0%	0	0.0%	0	0.0%	0	0.0%	38	100.0%
Marine invertebrates	51	46	42	91.3%	22	47.8%	14	30.4%	6	13.0%	4	8.7%
Vegetation	51	49	47	95.9%	17	34.7%	19	38.8%	11	22.4%	2	4.1%
Seaweed	51	45	38	84.4%	20	44.4%	14	31.1%	4	8.9%	7	15.6%

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

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

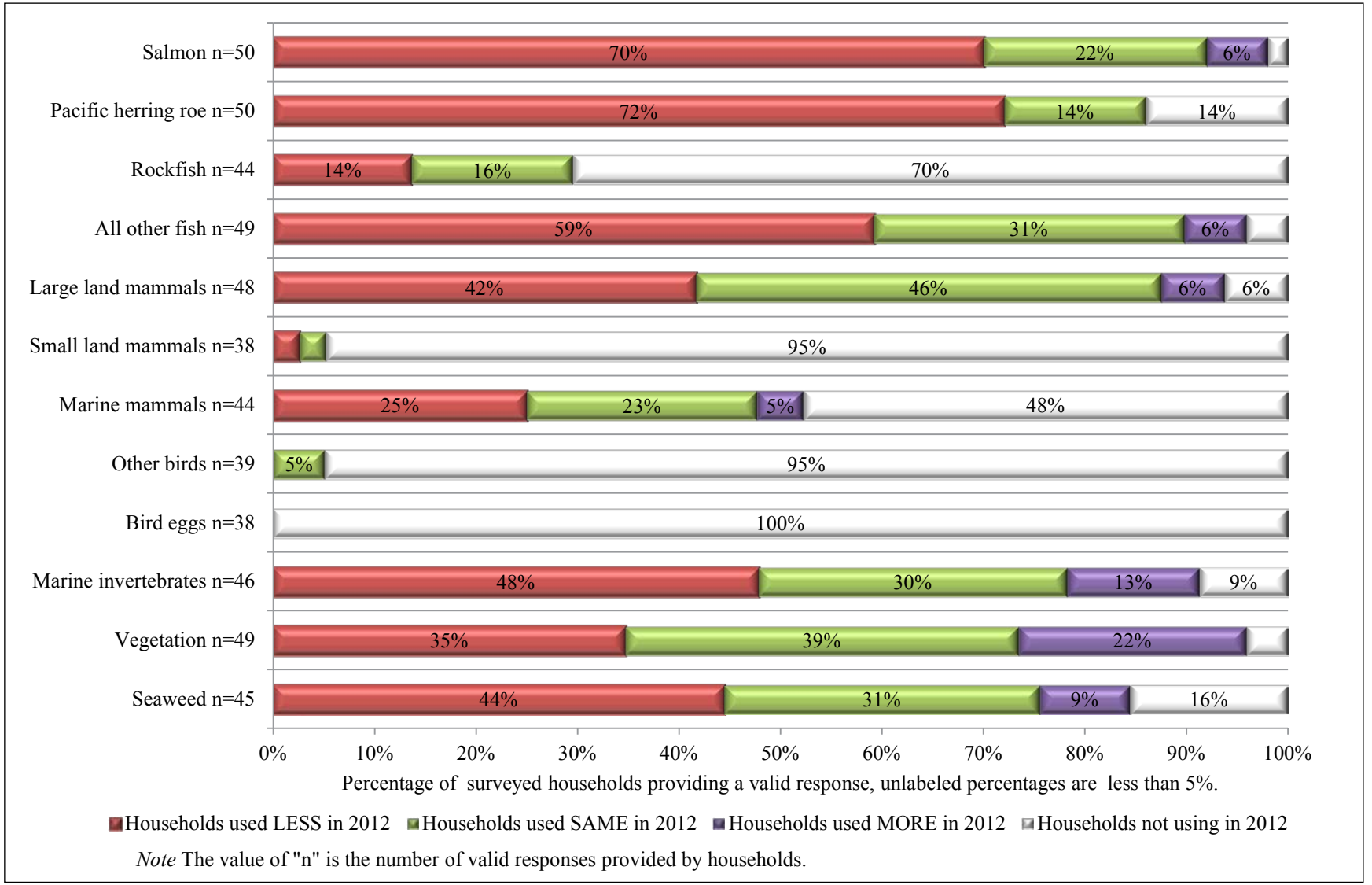


Figure 4-33.–Changes in household uses of resources compared to recent years, Angoon, 2012.

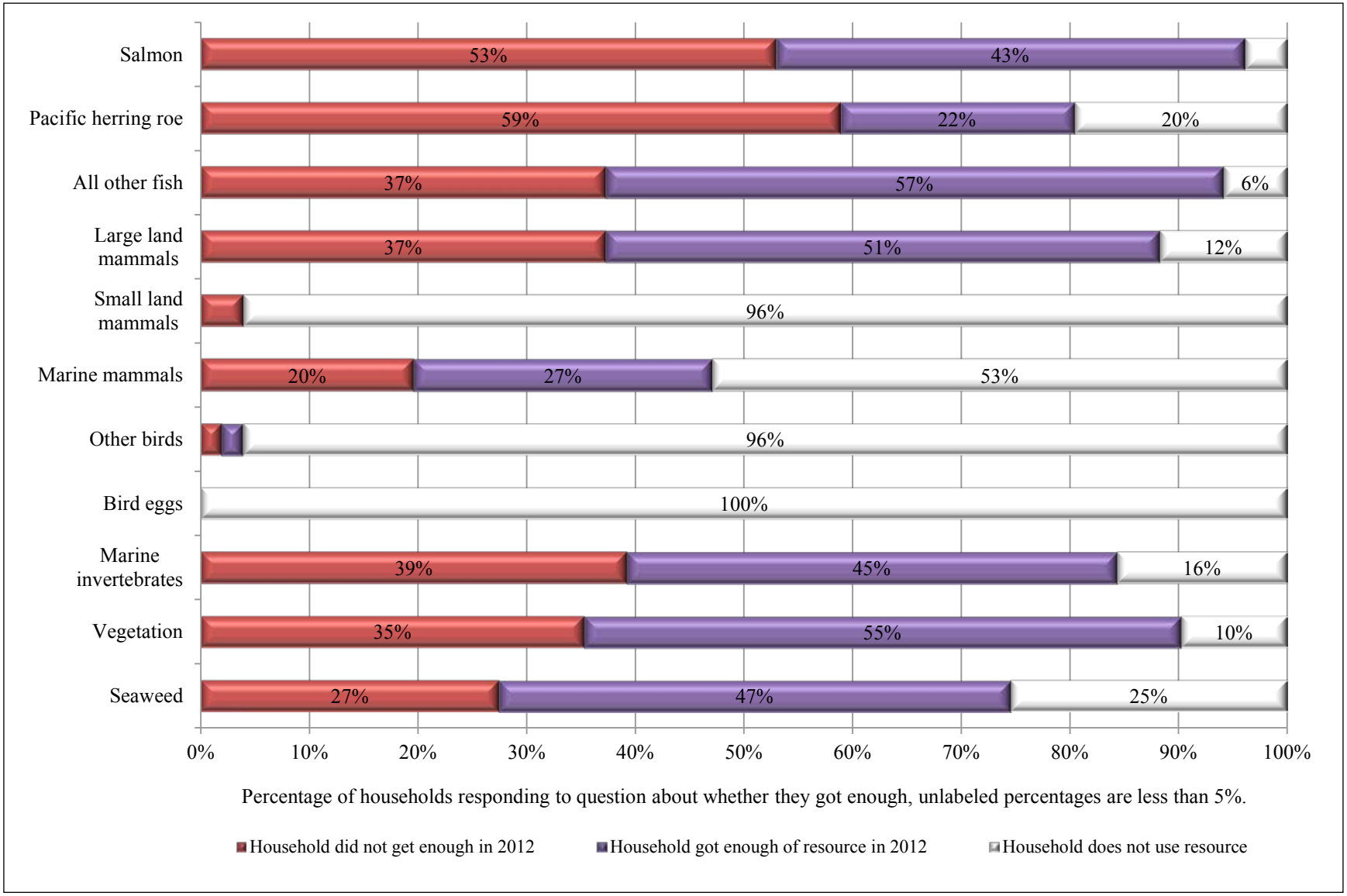


Figure 4-34.–Percentage of sampled households reporting whether they had enough resources, by resource category, Angoon, 2012.

Table 4-24.–Reasons for less household uses of resources compared to recent years, Angoon, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	51	47	7	14.9%	25	53%	0	0.0%	8	17%	33	70%	16	34%	8	17.0%	4	8.5%
All resources	**49**	**30**	**5**	**16.7%**	**2**	**7%**	**0**	**0.0%**	**3**	**10%**	**6**	**20%**	**4**	**13%**	**2**	**6.7%**	**1**	**3.3%**
Salmon	50	29	5	17.2%	8	28%	0	0.0%	1	3%	3	10%	2	7%	2	6.9%	1	3.4%
Pacific herring roe	50	32	1	3.1%	8	25%	0	0.0%	0	0%	22	69%	1	3%	2	6.3%	1	3.1%
Rockfish	44	4	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	1	25.0%	0	0.0%
All other fish	49	28	1	3.6%	2	7%	0	0.0%	3	11%	10	36%	5	18%	3	10.7%	0	0.0%
Large land mammals	48	19	1	5.3%	1	5%	0	0.0%	2	11%	5	26%	4	21%	1	5.3%	1	5.3%
Small land mammals	38	1	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine mammals	44	8	0	0.0%	1	13%	0	0.0%	0	0%	3	38%	0	0%	0	0.0%	0	0.0%
Other birds	39	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Bird eggs	38	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine invertebrates	46	20	2	10.0%	4	20%	0	0.0%	1	5%	5	25%	1	5%	0	0.0%	0	0.0%
Vegetation	49	17	1	5.9%	6	35%	0	0.0%	0	0%	1	6%	3	18%	0	0.0%	1	5.9%
Seaweed	45	18	0	0.0%	0	0%	0	0.0%	2	11%	6	33%	1	6%	0	0.0%	1	5.6%

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Table 4-24.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	51	47	5	11%	14	29.8%	1	2.1%	3	6.4%	4	8.5%	5	10.6%	3	6.4%	1	2.1%
All resources	**49**	**30**	**0**	**0%**	**9**	**30.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**6.7%**	**0**	**0.0%**	**2**	**6.7%**	**0**	**0.0%**
Salmon	50	29	1	3%	8	27.6%	0	0.0%	0	0.0%	0	0.0%	1	3.4%	0	0.0%	1	3.4%
Pacific herring roe	50	32	0	0%	1	3.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	44	4	1	25%	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%
All other fish	49	28	0	0%	8	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	48	19	1	5%	4	21.1%	0	0.0%	0	0.0%	0	0.0%	1	5.3%	1	5.3%	0	0.0%
Small land mammals	38	1	0	0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	44	8	0	0%	4	50.0%	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%
Other birds	39	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	38	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	46	20	1	5%	5	25.0%	1	5.0%	3	15.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	49	17	1	6%	2	11.8%	0	0.0%	0	0.0%	2	11.8%	0	0.0%	0	0.0%	0	0.0%
Seaweed	45	18	1	6%	5	27.8%	0	0.0%	0	0.0%	0	0.0%	2	11.1%	0	0.0%	0	0.0%

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

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

Table 4-25.–Reasons for more household uses of resources compared to recent years, Angoon, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	51	20	3	15.0%	1	5.0%	1	5.0%	5	25.0%	4	20.0%	9	45.0%	0	0.0%
All resources	**49**	**3**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**66.7%**	**0**	**0.0%**
Salmon	50	3	1	33.3%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pacific herring roe	50	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	44	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	49	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	48	3	0	0.0%	1	33.3%	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	38	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	44	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	39	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	38	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	46	5	0	0.0%	0	0.0%	0	0.0%	2	40.0%	0	0.0%	2	40.0%	0	0.0%
Vegetation	49	9	2	22.2%	0	0.0%	0	0.0%	0	0.0%	4	44.4%	3	33.3%	0	0.0%
Seaweed	45	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%	0	0.0%

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Table 4-25.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	51	20	0	0.0%	0	0.0%	0	0.0%	5	25.0%	0	0.0%	2	10.0%	1	5.0%
All resources	**49**	**3**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**33.3%**
Salmon	50	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	1	33.3%
Pacific herring roe	50	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	44	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	49	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	1	50.0%
Large land mammals	48	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	38	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	44	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	39	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	38	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	46	5	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	49	9	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	1	11.1%	0	0.0%
Seaweed	45	4	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	1	25.0%

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

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

Table 4-26.–Reported impact to households reporting that they did not get enough of a type of resource, Angoon, 2012.

		Households not getting enough _____ .				Impact to those not getting enough _____ .									
	Sample	Valid responses[a]		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage[b]	Number	Percentage[b]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]
All resources	**51**	**48**	**94.1%**	**24**	**47.1%**	**2**	**8.3%**	**1**	**4.2%**	**5**	**20.8%**	**11**	**45.8%**	**5**	**20.8%**
Salmon	51	49	96.1%	27	52.9%	3	11.1%	1	3.7%	12	44.4%	6	22.2%	5	18.5%
Pacific herring roe	51	41	80.4%	30	58.8%	–	–	–	–	–	–	–	–	–	–
All other fish	51	48	94.1%	19	37.3%	2	10.5%	0	0.0%	6	31.6%	7	36.8%	4	21.1%
Large land mammals	51	45	88.2%	19	37.3%	1	5.3%	0	0.0%	6	31.6%	9	47.4%	3	15.8%
Small land mammals	51	2	3.9%	2	3.9%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Marine mammals	51	24	47.1%	10	19.6%	2	20.0%	0	0.0%	3	30.0%	4	40.0%	1	10.0%
Other birds	51	2	3.9%	1	2.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	51	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	51	43	84.3%	20	39.2%	2	10.0%	0	0.0%	9	45.0%	6	30.0%	3	15.0%
Vegetation	51	46	90.2%	18	35.3%	1	5.6%	0	0.0%	10	55.6%	5	27.8%	2	11.1%
Seaweed	51	38	74.5%	14	27.5%	2	14.3%	0	0.0%	8	57.1%	4	28.6%	0	0.0%

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

Note "–" indicates data are not available because the question was not asked for the resource.

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

b. Computed as the percentage of sampled households.

c. Computed as the percentage of households reporting "did not get enough."

Table 4-27.–Things households reported doing differently as the result of not getting enough of a resource, Angoon, 2012.

Resource category	Valid responses	Bought/bartered		Used more commercial foods		Replaced with other subsistence foods		Asked others for help		Made do without	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**17**	**2**	**11.8%**	**15**	**88.2%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**5.9%**
Salmon	20	0	0.0%	13	65.0%	4	20.0%	0	0.0%	2	10.0%
All other fish	17	1	5.9%	11	64.7%	1	5.9%	0	0.0%	2	11.8%
Large land mammals	16	1	6.3%	13	81.3%	2	12.5%	0	0.0%	0	0.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	5	0	0.0%	4	80.0%	0	0.0%	0	0.0%	1	20.0%
Other birds	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	11	1	9.1%	8	72.7%	0	0.0%	0	0.0%	2	18.2%
Vegetation	11	0	0.0%	10	90.9%	0	0.0%	0	0.0%	1	9.1%
Seaweed	6	0	0.0%	4	66.7%	0	0.0%	0	0.0%	2	33.3%

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Table 4-27.–Continued.

Resource category	Valid responses	Increased effort to harvest		Obtained food from other sources		Got a job		Got public assistance		Other reasons	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**17**	**1**	**5.9%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	20	1	5.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	17	2	11.8%	0	0.0%	1	5.9%	0	0.0%	0	0.0%
Large land mammals	16	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	11	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	11	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Seaweed	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

Note The sum of the percentages may not add to 100% since households may give more than one response.

Vegetation is used by nearly all households in Angoon, though it only makes up 7% of the total harvest by weight (Table 4-13; Figure 4-12). Thirty-nine percent of responding households explained that they used the same amount of vegetation in 2012 as they did in previous years, 35% reported that they used less, and 22% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 35% of respondents reported that they did so due to resources being less available (Table 4-24). Other stated reasons for using less vegetation included lack of effort, no time or working, did not get enough, less sharing, family/personal reasons, weather/environment, or for other reasons. For those households that used more vegetation in the study year, 44% of respondents reported that they did so because they needed more. (Table 4-25). Other stated reasons for using more vegetation included increased effort, increased availability, more successful harvest, and because of the expense of store-bought items. In Angoon, 35% of respondents stated that they did not get enough vegetation (Figure 4-34). When asked to evaluate the impact of not getting enough vegetation, 56% described the impact as minor, 28% explained that not getting enough vegetation had a major effect on their household, and 11% stated that the impact was severe (Table 4-26). Households that did not get enough vegetation adapted by using more commercial foods or making do without (Table 4-27).

Seaweed is included within the vegetation resource category, but assessment questions were asked specifically about seaweed use and harvest; 31% of responding households explained that they used the same amount of seaweed in 2012 as they did in previous years, 44% reported that they used less, and 9% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 33% of respondents reported that they did so due to less sharing (Table 4-24). Other stated reasons for using less included working or having no time, lack of equipment, did not need the resource, lack of effort, and the influence of weather/environment. For those households that used more in the study year, 50% of respondents reported increased effort, 25% reported a more successful harvest, and 25% said they got or fixed equipment (Table 4-25). In Angoon, 27% of respondents stated that they did not get enough seaweed (Figure 4-34). When asked to evaluate the impact of not getting enough seaweed, 57% of responding households described the impact as minor and 29% explained that not getting enough had a major effect on their household (Table 4-26). Households that did not get enough seaweed adapted through using more commercial foods or making do without (Table 4-27).

Marine mammals is a less harvested but still widely used resource category; 23% of the responding households explained that they used the same amount of marine mammals in 2012 as they did in previous years, 25% reported that they used less, and 5% said they used more (Table 4-23; Figure 4-33). When asked why they used less, 50% of respondents reported that they did so due to working or no time, and 38% reported it was due to less sharing. Other stated reasons for using less included less resource availability and did not need the resource (Table 4-24). For those households that used more marine mammals in the study year, 100% said it was due to more being shared with them (Table 4-25). In Angoon, 20% of respondents stated that they did not get enough marine mammals (Figure 4-34). When asked to evaluate the impact of not getting enough, 30% of the respondents described the impact as minor, 40% explained that not getting enough had a major effect on their household, and 10% stated that the impact was severe (Table 4-26). Households that did not get enough adapted through using more commercial foods and making do without (Table 4-27).

Small land mammals is one of the least harvested and used of all resource categories used by Angoon households; 3% of responding households explained that they used the same amount of small land mammals in 2012 as they did in previous years and 3% reported that they used less (Table 4-23; Figure 4-33). For those respondents that used less small land mammals, when asked why they used less, all reported that they did so because they were working or had no time (Table 4-24). In Angoon, 4% of respondents stated that they did not get enough small land mammals (Figure 4-34). When asked to evaluate the impact of not getting enough, all respondents described the impact as minor (Table 4-26). No households reported doing anything differently because they did not get enough small land mammals (Table 4-27).

Birds are also one of the least harvested and used of all resource categories used by Angoon households; 5% of responding households explained that they used the same amount of birds in 2012 as they did in previous years (Table 4-23; Figure 4-33). In Angoon, 2% of respondents stated that they did not get enough birds (Figure 4-34). No responses were given as to the impact experienced from not getting enough birds (Table 4-26). No households reported doing anything differently because they did not get enough birds (Table 4-27).

For all subsistence resources combined, 22% of responding households explained that they used the same amount of subsistence resources in 2012 as they did in previous years, 67% reported that they used less, and 8% said they used more (Table 4-23). When asked why they used less, 30% of respondents reported that they did so because they were working or had no time (Table 4-24). Other stated reasons for using less overall subsistence resources included less sharing, family or personal reasons, lack of effort, and lack of equipment. For those households that reported using more subsistence resources in the study year, 67% said it was due to increased effort and 33% reported that they got or fixed equipment (Table 4-25). In Angoon, 47% of respondents stated that they did not get enough subsistence resources (Table 4-26). When asked to evaluate the impact of not getting enough, 4% described it as not noticeable, 21% described the impact as minor, 46% explained that not getting enough overall subsistence resources had a major effect on their household, and 21% stated that the impact was severe. Households that did not get enough subsistence resources adapted by using more commercial foods, buying/bartering for resources, making do without, or increased effort to harvest (Table 4-27).

Households that reported not getting enough resources were asked which resources they needed more of. Responses to these questions are presented in Table 4-28. Deer was the resource needed by the most households (41%), followed by Pacific halibut (37%), Chinook salmon (33%), sockeye salmon (28%), black seaweed (24%), and blueberries (22%). A total of 40 resources were reported as needed by at least 1 household, but no other resources were reported as being needed by more than 10 households.

Table 4-28.–Resources that households reported needing, Angoon, 2012.

Resource	Households needing	Percentage of households [a]
All resources	**2**	**3.9%**
Fish	2	3.9%
Salmon	8	15.7%
Chum salmon	1	2.0%
Coho salmon	9	17.6%
Chinook salmon	17	33.3%
Pink salmon	1	2.0%
Sockeye salmon	14	27.5%
Salmon roe	1	2.0%
Pacific herring	1	2.0%
Pacific herring roe	2	3.9%
Eulachon (hooligan, candlefish)	1	2.0%
Pacific halibut	19	37.3%
Yelloweye rockfish	1	2.0%
Dolly Varden	1	2.0%
Deer	21	41.2%
Beaver	1	2.0%
North American river (land) otter	2	3.9%
Marten	2	3.9%
Mink	1	2.0%
Seal	9	17.6%
Harbor seal	1	2.0%
Sea otter	2	3.9%
Geese	1	2.0%
Marine invertebrates	2	3.9%
Chitons (bidarkis, gumboots)	4	7.8%
Black (small) chitons	1	2.0%
Clams	5	9.8%
Butter clams	2	3.9%
Pacific littleneck clams (steamers)	2	3.9%
Softshell clams	1	2.0%
Cockles	9	17.6%
Basket cockles	1	2.0%
Crabs	5	9.8%
Dungeness crab	4	7.8%
King crab	2	3.9%
Tanner crab	1	2.0%
Berries	4	7.8%
Blueberry	11	21.6%
Huckleberry	7	13.7%
Raspberry	1	2.0%
Salmonberry	6	11.8%
Thimbleberry	1	2.0%
Seaweed/kelp	3	5.9%
Black seaweed	12	23.5%
Red seaweed	1	2.0%
Sea ribbons	1	2.0%
Wood	2	3.9%

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

a. Computed as the percentage of sampled households.

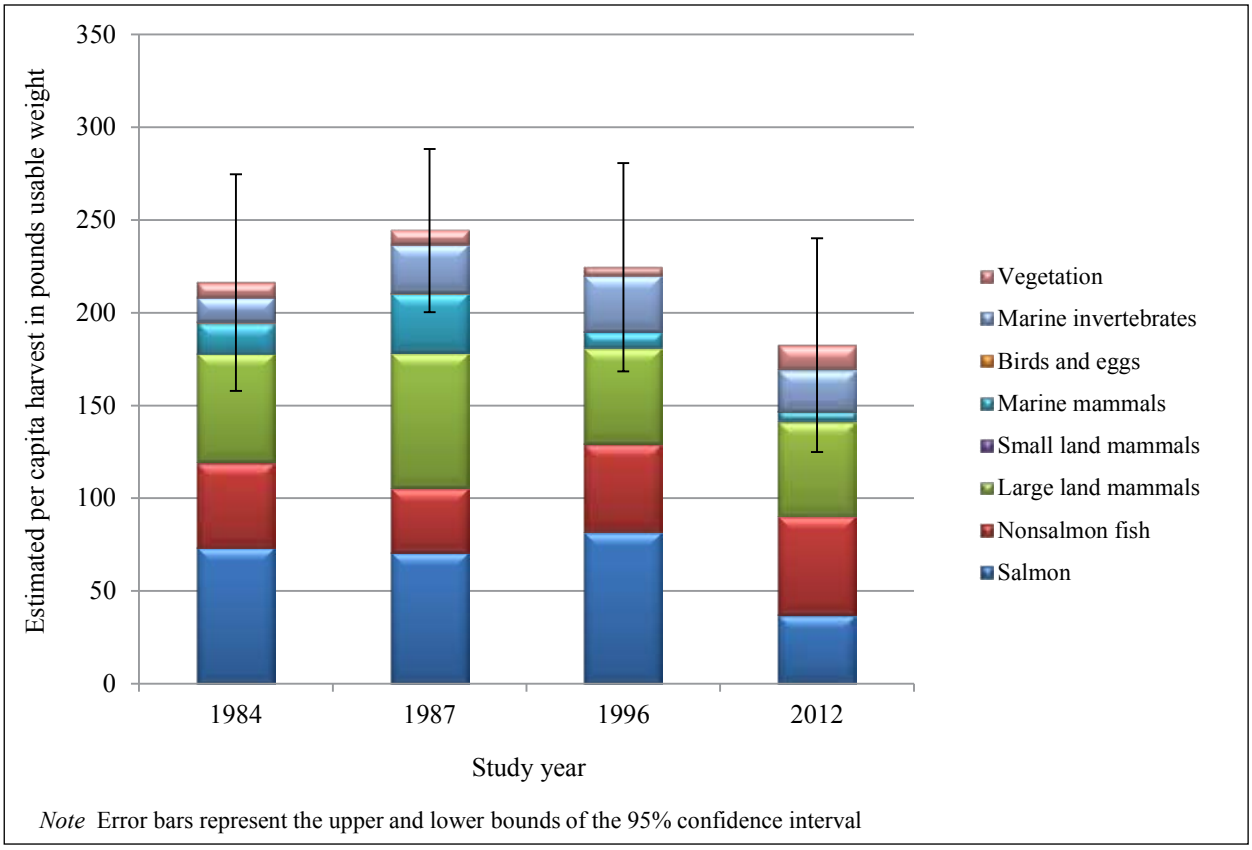


Figure 4-35.–Composition of harvest by resource category in pounds usable weight, Angoon, 1984, 1987, 1996, and 2012.

Harvest Data

Changes in the harvests by Angoon residents can also be discerned through comparisons with findings from other study years. Comprehensive harvest surveys were conducted in Angoon for study years 1984, 1987, and 1996.[6] Survey methods were generally the same in each study year; the calendar year was used as the basis for assessments in 1984, 1987, and 2012. The 1996 survey used February 1996 through January 1997 as the survey year. The city boundaries were used as the geographic boundary in each study year.

In the 16 years that passed between this survey and the previous one, Angoon's population declined by almost one-half—from 605 to 342 (Figure 4-1), which is why per capita harvest values are used to compare study year estimates. During the 3 previous studies, the overall estimated usable weight per capita stayed fairly stable, at approximately 225 lb per capita (Figure 4-35). In 2012, the per capita harvest declined to 183 lb (± 32%), which is not a statistically significant difference compared to the 1996 estimate.

Individual resource categories show variability in harvest from year to year, as would be expected. Subsistence harvests reflect variability in resource populations as well as residents' needs or wants for resources. Nonsalmon fish and vegetation both show higher per capita harvests in 2012 compared to 1984, however it has not been a steady increase. Vegetation harvests decreased during each study year, from 8 lb in 1984 to 4 lb in 1996, before almost tripling to the 2012 estimate. Most of this increase came from an increased harvest of berries, perhaps because 2012 was a good year for berries (CSIS; Table 4-13). Nonsalmon fish harvests have increased to 53 lb per capita in 2012 from a low of 35 lb per capita in 1987.

6. Results for all 3 previous comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): http://www.adfg.alaska.gov/sb/CSIS/.

Unlike the other study communities—where Pacific halibut harvests increased approximately 1–30 lb per capita between the late 1990s and the current study year (CSIS)—halibut harvests in Angoon decreased during that time period, although the 2012 Pacific halibut harvest (32 lb per capita) was still higher than in 1984 (27 lb per capita) (Table 4-13; CSIS). The biggest increase in nonsalmon fish harvests seen in 2012 was for Pacific herring, with the per capita harvest increasing from 3 lb per capita in 1984 to 15 lb per capita in 2012 (CSIS; Table 4-13).

Declines were observed for the other harvest categories. While the marine invertebrate harvest in 2012 (22 lb) is an increase from 1984 (13 lb), it is a significant decrease from the 1987 and 1996 estimates (26 lb and 30 lb, respectively) (Table 4-29).

The 2 largest declines in per capita harvests came from the resource categories of salmon and marine mammals. The per capita harvest of salmon in 1984 was 74 lb (± 39%), which increased to 82 lb (± 37%) in 1996 before falling to a low of 37 lb (± 42%) in 2012; at the species level there is a lot of variability in per capita harvest estimates—except for pink salmon harvests, which have declined in every study year (Table 4-29). The 2012 per capita estimate for each species is the lowest of all study year estimates. Chinook and coho salmon harvest estimates have declined dramatically: Chinook salmon since 1987, coho salmon since 1996 (Table 4-30; Figure 4-36). Chum and sockeye salmon harvests have declined overall since 1984, but increased in the 1996 survey in comparison to the 1987 and 2012 studies. Chinook salmon populations through Southeast Alaska have been low in recent years (ADF&G Chinook Salmon Research Team 2013), likely explaining at least some of the estimated decline in Chinook salmon harvests. Residents of Angoon have expressed concern about coho fishing in recent years, noting that catches have been lower due to less fish returning to the local areas. An unsuccessful proposal was submitted by the City of Angoon to the Alaska Board of Fisheries meeting in 2015 that would have altered the commercial coho salmon troll fishery in an attempt to increase the amount of coho salmon available to residents.[7] Sockeye salmon harvests have been of concern to Angoon residents since at least the early 2000s when a voluntary closure of Kanalku Bay was instituted (Bednarski et al. 2014:15). Residents rely on this local water body for much of their salmon fishing, but in recent years have had difficulty meeting their needs from fishing these salmon populations. One factor that has likely contributed significantly to decreased salmon harvests is the loss of commercial fishing permits and boats from Angoon. In 1986 there were 162 commercial fishing permits issued to Angoon residents for all commercial fisheries; in 2012 there were 17 commercial fisheries permits issued (not all permits were fished each year).[8] The reduction in commercial fishing activity directly reduces the amount of salmon coming into the community through the removal of fish from commercial catches. In 1996, almost 30 lb of salmon per capita were retained from commercial catches, while in 2012 no salmon came from commercial catches (Table 4-31). The loss of permits, and the resulting loss of commercial boats, may indirectly contribute to the decline not only in salmon harvests, but also other subsistence resources. Without the larger commercial fishing boats to use for transport, and the income derived from commercial fishing, the harvest area for resources is restricted, which leads to an even greater reliance on smaller, local ecosystems, such as Kanalku Bay.

7. The City of Angoon submitted Proposal 228 for consideration at the Alaska Board of Fisheries meeting held in Sitka on February 23–March 3, 2015. The proposal can be viewed online: http://www.adfg.alaska.gov/static-f/regulations/regprocess/fisheriesboard/pdfs/2014-2015/2014-2015_prop_book/220-233.pdf (accessed September 2015). A summary of actions for the Alaska Board of Fisheries meeting is also available online: http://www.adfg.alaska.gov/static-f/regulations/regprocess/fisheriesboard/pdfs/2014-2015/southeast_finfish/soa_finfish_se_2015.pdf (accessed September 2015).

8. Alaska Commercial Fisheries Entry Commission. n.d. "Permit & Fishing Activity by Year, State, and Census Area or Alaskan City: 1986 and 2012—Totals by Alaskan Community, Angoon." https://www.cfec.state.ak.us/fishery_statistics/earnings.htm (accessed January 2016).

Table 4-29.–Estimated per capita harvest in pounds usable weight, Angoon, 1984, 1987, 1996, and 2012.

	Estimated harvest in pounds usable weight											
	1984			1987			1996			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All resources	**134,469**	**216.2**	**27.0%**	**127,202**	**244.3**	**18.0%**	**130,385**	**224.5**	**25.0%**	**62,416.3**	**182.5**	**31.6%**
Salmon	45,714	73.5		36,841	70.8		47,590	81.9		12,709.0	37.2	
Nonsalmon fish	28,685	46.1		18,111	34.8		27,640	47.6		18,251.5	53.4	
Large land mammals	36,327	58.4		37,926	72.8		29,811	51.3		17,451.7	51.0	
Small land mammals	0	0.0		0	0.0		0	0.0		0.0	0.0	
Marine mammals	10,302	16.6		16,640	32.0		5,239	9.0		1,808.5	5.3	
Birds and eggs	508	0.8		296	0.6		99	0.2		120.9	0.4	
Marine invertebrates	8,056	13.0		13,510	25.9		17,480	30.1		7,670.8	22.4	
Vegetation	4,876	7.8		3,879	7.5		2,525	4.4		4,403.9	12.9	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.

Table 4-30.–Estimated per capita harvest of salmon by species, in pounds usable weight, Angoon, 1984, 1987, 1996, and 2012.

	Estimated harvest in pounds usable weight											
	1984			1987			1996			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All salmon	**45,714.0**	**73.5**	**39.0%**	**36,841.0**	**70.8**	**29.0%**	**47,590.0**	**81.9**	**37.0%**	**12,709.0**	**37.2**	**41.5%**
Chum salmon	7,317.0	11.8		2,080.0	4.0		5,074.0	8.7		453.8	1.3	
Coho salmon	12,150.0	19.5		10,578.0	20.3		17,446.0	30.0		4,279.4	12.5	
Chinook salmon	13,221.0	21.3		15,025.0	28.9		12,001.0	20.7		3,288.7	9.6	
Pink salmon	4,608.0	7.4		2,572.0	4.9		963.0	1.7		424.3	1.2	
Sockeye salmon	8,419.0	13.5		6,586.0	12.7		12,107.0	20.8		4,262.9	12.5	
Unknown salmon	ND	ND		ND	ND		0.0	0.0		0.0	0.0	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.

Note "ND" indicates data are not available because the question was not asked for that resource.

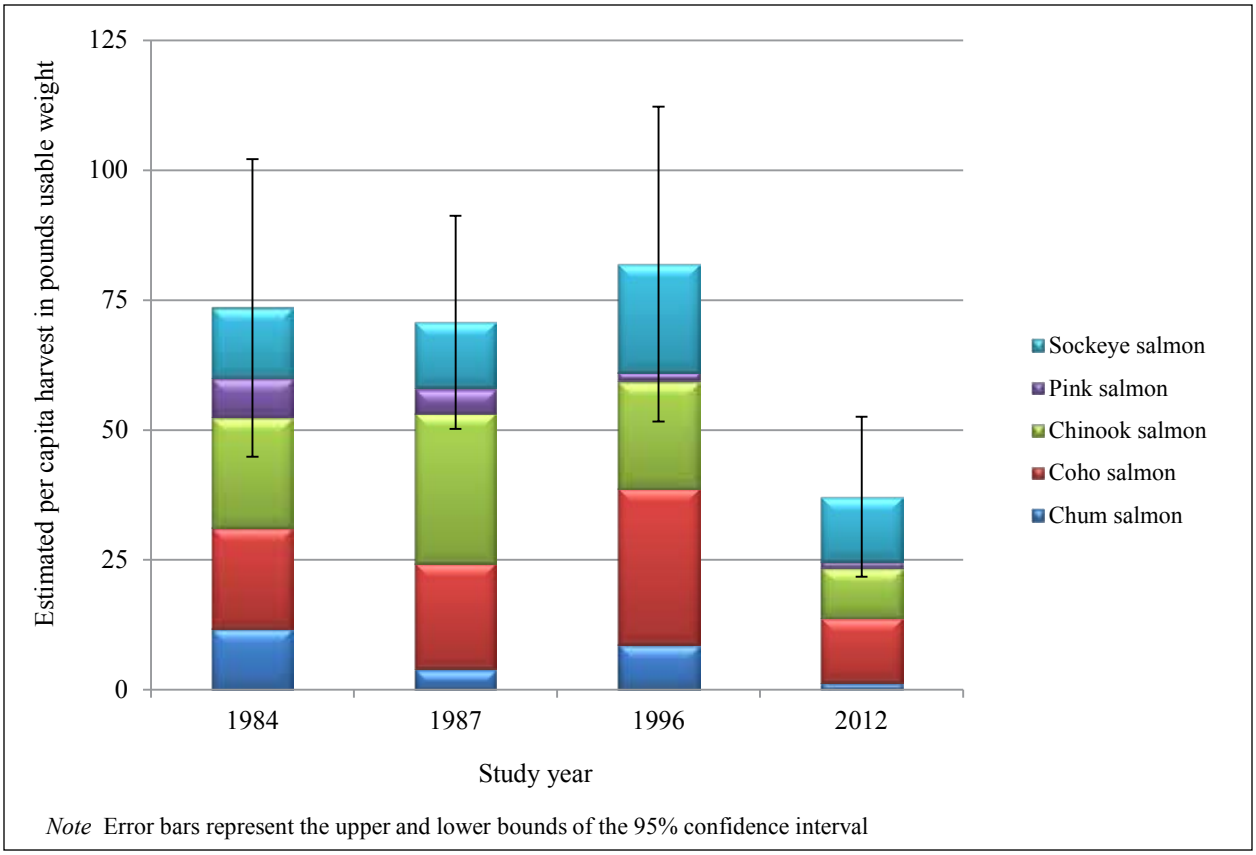


Figure 4-36.–Composition of salmon harvest by species in pounds usable weight, Angoon, 1984, 1987, 1996, and 2012.

Marine mammal harvest estimates declined in every study year since 1987, from 32 lb of usable weight per capita in 1987 to 5 lb per capita in 2012 (Table 4-29). Subsistence harvests of harbor seals in Southeast Alaska have been declining since harvest estimates began in 1992 (Wolfe et al. 2013). The overall harvest of harbor seals in Southeast Alaska in 2012 was the lowest recorded. These declines are generally associated with fewer seal hunters and decreasing productivity of successful hunters. These may be factors of a decreased demand for seal products due to changing food preferences, or of difficulties in recruiting and training new hunters, or economic factors that put constraints on hunting by households. During the surveys in 2012, there was little qualitative information gathered about decreases in seal harvests, though the majority of harvesters felt that they saw fewer seals than in recent years.

Current and Historical Harvest Areas

Three of the 4 harvest surveys of Angoon residents have included a mapping component; however, the methods of the mapping differed each year. For the 1987 survey, respondents were asked to map all the areas ever used for hunting, fishing, and gathering resources while living in Angoon. For the 1996 survey, respondents were asked to map all the general use areas for hunting, fishing, and gathering resources used in the last 5 years. For the 2012 survey, respondents were asked to map the areas where they hunted, fished, or gathered resources during the study year only. It may be expected that the first 2 studies would show a larger harvest and use area than the 2012 study since households likely use more areas over multiple years than they use in just 1 year, which is what is seen when comparing the study years (Figure 4-37). Based on responses gathered during the surveys, however, it appears unlikely that different mapping methods explain all the differences between the study years.

Table 4-31.–Estimated per capita harvest of salmon removed from commercial catches, and proportion of total salmon harvest, Angoon, 1984, 1987, 1996, and 2012.

	1984		1987		1996		2012	
Resource	CF retention per capita (lb)	Percentage of total salmon harvest	CF retention per capita (lb)	Percentage of total salmon harvest	CF retention per capita (lb)	Percentage of total salmon harvest	CF retention per capita (lb)	Percentage of total salmon harvest
Salmon	**24.94**	**33.9%**	**29.51**	**41.7%**	**29.14**	**35.6%**	**0.0**	**0.0%**
Chum salmon	1.4	1.9%	2.6	3.7%	3.5	4.2%	0.0	0.0%
Coho salmon	5.3	7.3%	7.3	10.3%	19.3	23.5%	0.0	0.0%
Chinook salmon	14.1	19.1%	15.4	21.8%	5.8	7.0%	0.0	0.0%
Pink salmon	3.5	4.7%	2.9	4.1%	0.6	0.7%	0.0	0.0%
Sockeye salmon	0.7	0.9%	1.4	1.9%	0.1	0.1%	0.0	0.0%

Sources For 2012 data, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2016.

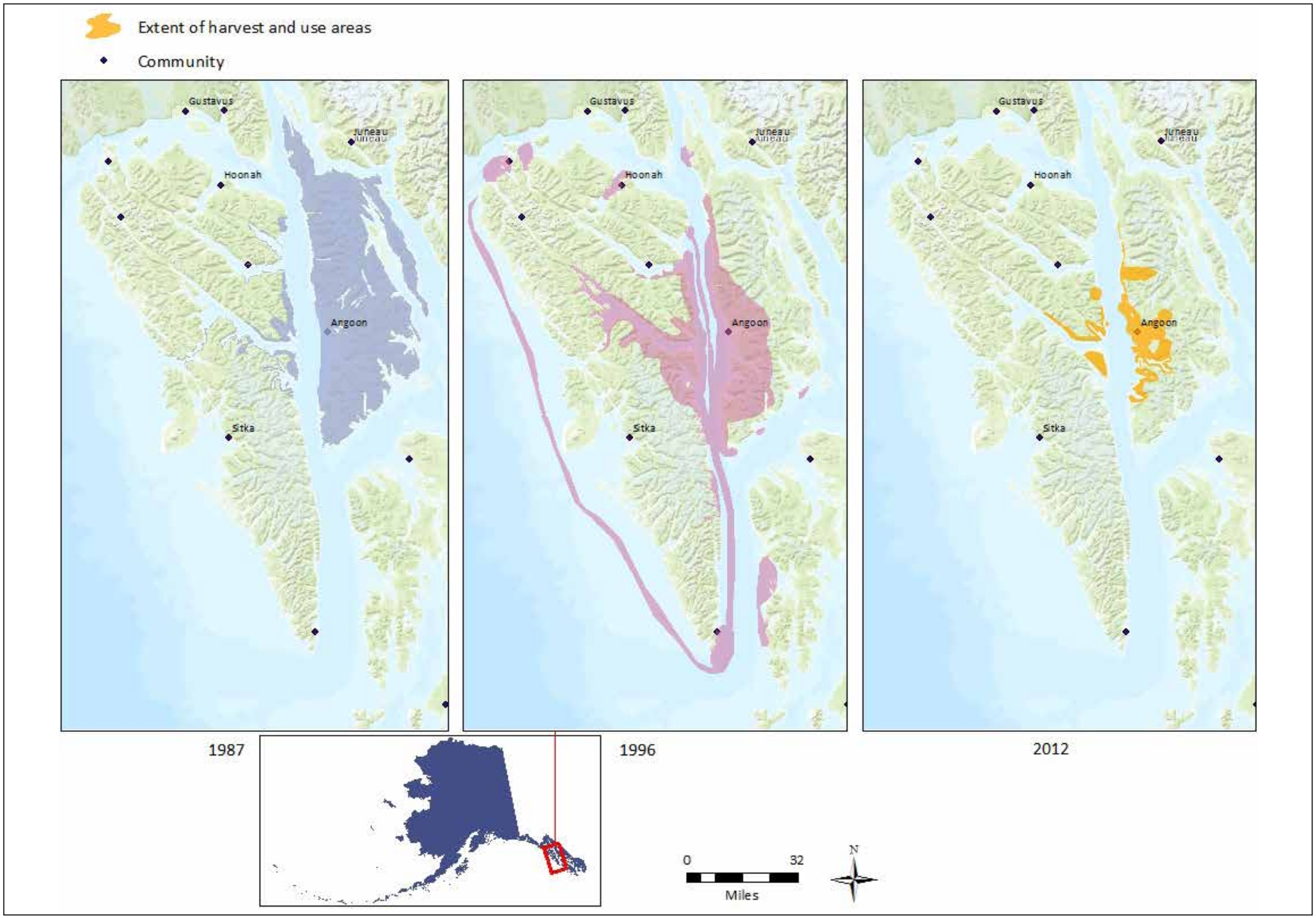


Figure 4-37.–Comparison of wild resources search and harvest areas, Angoon, 1987, 1996, and 2012.

The 2012 Angoon harvest areas are considerably smaller and are concentrated close to town, along shorelines, and in Mitchell Bay. During the surveys there were many comments made about the increasingly high cost of fuel limiting harvest activities and that the subsistence harvest had changed dramatically during past years. As discussed above, one factor likely influencing the contraction of search and harvest areas is the loss of commercial salmon permits. A local commercial fishing fleet not only is a source of capital to sustain subsistence and harvesting activities but it also provides a tremendous amount of equipment—like boats capable of traveling long distances. Most of the commercial permits that were in Angoon in 1987 and 1996 were troll permits and typically over the course of a year commercial trolling operations cover long distances across Southeast Alaska (Bednarski et al. 2014:22).

Local Comments and Concerns

Following is a summary of local observations of wild resource populations and trends that were recorded during the surveys in Angoon. 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 Angoon review meeting of preliminary data. These concerns have been included in the summary.

Fish

The comments concerning fish were generally focused on salmon and the perceived decline in abundance during past years. Comments were given on changes in salmon runs, such as changes in run abundance, timing, and size of fish. Concerns were also shared about competition with the commercial fishing fleet for the salmon resources near Angoon.

Large Land Mammals

Because of perceived changes in weather and harsher fall and winter weather conditions many respondents commented that they would like to see the deer season dates be more flexible. Stormy weather prevents most residents from hunting because of hazardous water conditions. Several respondents would like managers to extend the deer season by 2 weeks in years with severe weather conditions.

Birds and Eggs

Changes in migration patterns of birds were noted. One respondent noted, "Used to be able to set your clock to geese. Now the geese come back unpredictable at different times." New species of doves living in the area were also noted.

Marine Invertebrates

The concerns expressed about marine invertebrates noted a perceived decline in abundance in the area and concerns about contamination with paralytic shellfish poisoning.

Vegetation

Respondents noted dramatic changes in timing in recent years of when berries ripen and when other plants sprout in the spring time.

Overall Concerns

The comments by Angoon survey respondents covered a wide array of concerns and issues but the main theme throughout was that in recent years Angoon residents had experienced many changes in their harvests and in the availability of resources. Changes in the environment were noted along with changes in weather patterns. Many respondents also noted that frogs that had once been commonly seen around town have not been observed in recent years. Confusion over state and federal regulations was also commonly mentioned. Many residents felt that enforcement of the regulations was too strict and at times invasive or insensitive to individuals. The rising cost of fuel was also mentioned frequently as a main factor in limiting harvesting abilities. During review meetings of draft data held in the community, strong concerns were voiced about

how the data collected during the survey might be used, and particularly how it might be used against residents and hamper their subsistence harvesting activities.

Through all respondents' comments the importance of harvesting wild resources as a fundamental part of their life, economy, and health was apparent. All respondents expressed in many different ways the importance of their wild harvested food to them and their community. They also all shared a deep concern for the preservation of their ability to harvest in the future.

ACKNOWLEDGMENTS

Without the time and efforts of the residents of Angoon this survey would not have been possible. First and foremost we thank them for all their time, thoughtfulness, and information shared with researchers. The residents of Angoon were very welcoming and generous with their time. We also would like to thank Alberta Saleem, Kirk Sharp, and Curtis Lane for their invaluable assistance in completing the surveys and for all the information they shared with us. We hope that the information gathered will be beneficial to the people of Angoon and for all Alaskans.

5. WHALE PASS

Lauren A. Sill

Community Background

Located approximately 90 air miles northwest of Ketchikan, Whale Pass is a small, unincorporated community of 55 residents (according to survey estimates for 2012) that is situated on the west side of Whale Passage on the northeast coast of Prince of Wales Island. Whale Passage, the 10-mile-long body of water separating Thorne Island from Prince of Wales Island, was named by Lt. Commander A.S. Snow of the U.S. Navy in 1886; it is thought that the name refers to a feeding ground for migrating whales (Orth 1971rep.). Whale Pass is dominated by a cool maritime climate with summer temperatures reaching 70 °F and winter temperatures dropping as low as 15 °F. Rainfall averages 150 inches per year. The community is located near many islands, lakes, rivers, bays, and inlets that provide for an abundance of freshwater and saltwater fish. Inland, there is heavy timber cover and dense undergrowth with an abundance of muskeg. Mountains and small mountainous areas are in the vicinity of Whale Pass. The north end of Prince of Wales Island has one of the largest karst formations in the United States and there are large caves nearby.

Prince of Wales Island has been inhabited for thousands of years. Human remains dated between 9,730 and 9,880 years before the present have been found in On Your Knees Cave, which is at the northern end of Prince of Wales Island (Heaton 2002). However, the history of the community of Whale Pass does not begin until the turn of the 19th century. The early history of the community is not well documented, but a saltery was constructed at nearby Neck Creek in 1900. The saltery likely operated for some years, with fishing being the primary economic activity in the area until the middle of the century. A logging camp was established on the west side of Whale Passage in 1954, by which time the saltery had shut down. The logging camp thrived through the early 1980s, housing loggers and their families. An elementary school was opened in 1957, followed by a high school that was constructed in 1978. In 1982, the logging camp was removed and many of the families left the area. That same year, Whale Pass became the site of a state land sale, which brought renewed community growth and created a permanent community with a homeowner's association (Whale Pass Community Action Team 1997).

There is some private property in Whale Pass because of the state land sale, but the community itself did not own any land in 2012 since it was not incorporated. Most of the lands surrounding Whale Pass are State-owned or are part of the Tongass National Forest. There are no state or federal agencies present in Whale Pass. There is an unofficial post office and 2 mail planes a week visit the community. An Alaska State Trooper is stationed in Klawock, which is about 64 road miles south of town. There is no health clinic in the community; Thorne Bay is the nearest community (62 miles distant) with a staffed clinic. The Whale Pass School is part of the Southeast Island School District with approximately 11 children enrolled in 2012-2013.[1] There is a small library located in the community. Alaska Power and Telephone supplies electricity to the entire community.

Several sport fishing lodges are located in the community, but most are only open during the summer months. There are also several cabin rental businesses in the community. A private nonprofit corporation operates a fish hatchery at Neck Lake, which produces coho salmon. Fuel is available year-round. During the summer, there is a store that also has a laundromat. Most residents purchase groceries and other services in the larger island community of Craig, which is located about 70 road miles south of Whale Pass. Whale Pass is accessible via the Prince of Wales Island road system, or by boats or floatplanes that travel from off-island communities. The nearest road-connected communities are Naukati Bay and Coffman Cove. The Inter-Island Ferry Authority provides ferry service between the island community of Hollis and Ketchikan. There is a State-owned seaplane base in Whale Pass, as well as a dock and launch ramp.

1. Alaska Department of Education and Early Development. "Whale Pass School: Southeast Island School District." https://education.alaska.gov/DOE_Rolodex/SchoolCalendar/Home/SchoolDetails/440190 (accessed September 2013).

Table 5-1.–Population estimates, Whale Pass, 2010 and 2012.

	Census (2010)	5-year American Community Survey (2008–2012)	This study (2012)
Total population			
Households	20	26	27.0
Population	31	38	55.3
Alaska Native			
Population	0	0	0.0
Percentage	0.0%	0.0%	0.0%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey 5-year survey estimate; and ADF&G Division of Subsistence household surveys, 2013, for 2012 estimate.

Population Estimates and Demographic Information

During 2012, the estimated population of Whale Pass was 55 residents; this is slightly higher than the 31 residents estimated by the U.S. Census Bureau in 2010 and the 5-year average of 38 estimated by the American Community Survey (Table 5-1). It is likely that this variation is the result of differences in survey methods, seasonal differences in the timing of the survey administration, population growth, or some combination of reasons. The population of Whale Pass grew during the years when there was a logging camp, peaking in the mid-1990s. Since then, the population has experienced a decline (Figure 5-1). The 1982 land sale in Whale Pass spurred population growth, but economic opportunities for new residents have been limited and have not sustained that growth. This is a similar pattern to that exhibited on much of Prince of Wales Island: populations grew when logging was occurring on the island but as the timber industry contracted, populations fell. Region wide, the population has grown slightly since 2007, but regional unemployment rates averaged 15.3% in 2011, which was about twice the state average (Abrahamson 2012:11–12).

For the 2012 survey year, a total of 21 households in Whale Pass were surveyed, which represents 78% of the total estimated community households (Table 5-2). The mean household size was 2 individuals and the average age of residents was 44 years (Table 5-3). While the length of residency averaged 13 years, the average length of residency for household heads was 18 years, and the maximum length of residency was 40 years. There were no Alaska Native households residing in Whale Pass during the study year.

There was an approximately equal distribution of males (27) to females (28) living in Whale Pass (Table 5-4; Figure 5-2). Less than 35% of the population was under 25 and no residents were between the ages of 25 and 39. The cohort with the highest percentage of members was for ages 60–64, followed by the 45–49 cohort. There were a few residents over the age of 90. This age distribution likely affects the wild food harvest rates of the community, since past research has shown that one of the household characteristics associated with high wild food production is multiple working-age males (Wolfe et al. 2010).

A high percentage of household heads (90%) were born in another state and another 3% were born in another country (Table 5-5). Only 3% of household heads were born in Whale Pass. For the general population, slightly more residents were born in the community (12%), but the majority (81%) was born in another state (Table 5-6). Two percent of residents were born in another country and 4% were born in a different city in Alaska.

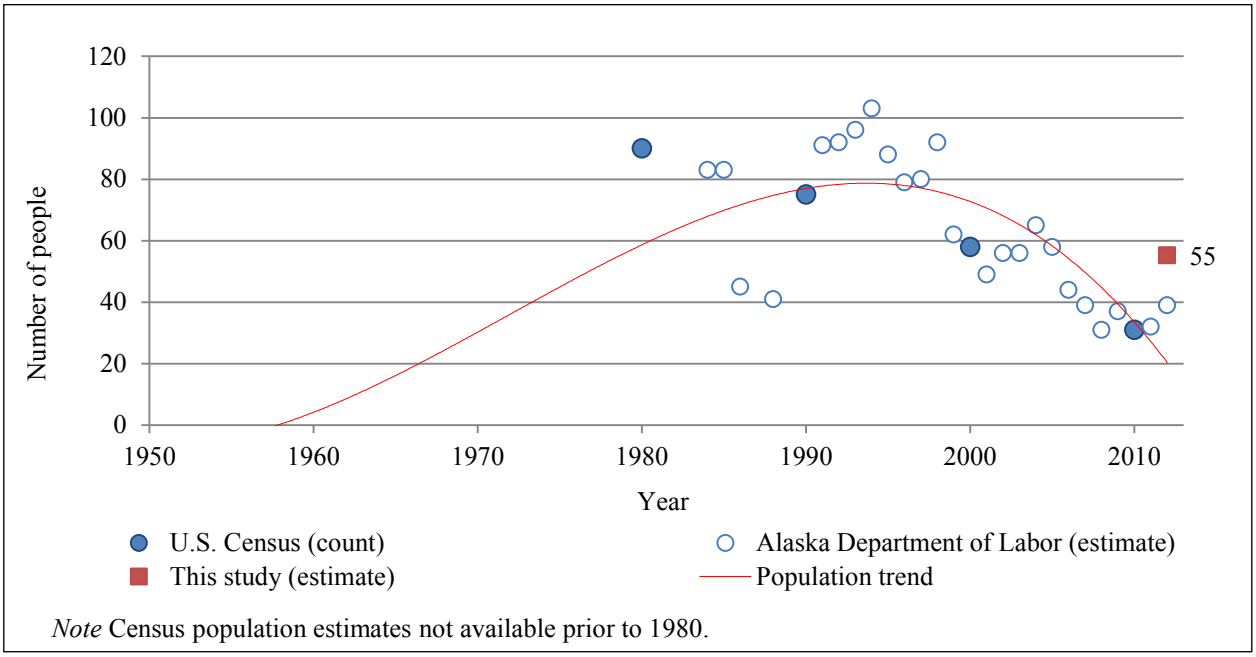


Figure 5-1.–Historical population estimates, Whale Pass, 1980–2012.

Table 5-2.–Sample achievement, Whale Pass, 2012.

	Community
	Whale Pass
Number of dwelling units	27
Interview goal	27
Households interviewed	21
Households failed to be contacted	5
Households declined to be interviewed	1
Households moved or occupied by nonresident	0
Total households attempted to be interviewed	22
Refusal rate	4.5%
Final estimate of permanent households	27
Percentage of total households interviewed	77.8%
Interview weighting factor	1.29
Sampled population	43
Estimated population	55.3

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

Table 5-3.–Demographic characteristics, Whale Pass, 2012.

Characteristics	Community Whale Pass
Household size	
Mean	2.0
Minimum	1
Maximum	6
Age	
Mean	44.0
Minimum[a]	0
Maximum	90
Median	47
Length of residency	
Total population	
Mean	13.3
Minimum[a]	0
Maximum	40
Heads of household	
Mean	18.0
Minimum[a]	1
Maximum	40
Alaska Native households[b]	
Number	0.0
Percentage	0.0%

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

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

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

Table 5-4.–Population profile, Whale Pass, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	0.0	0.0%	0.0%	3.9	13.6%	13.6%	3.9	7.0%	7.0%
5–9	1.3	4.8%	4.8%	3.9	13.6%	27.3%	5.1	9.3%	16.3%
10–14	0.0	0.0%	4.8%	0.0	0.0%	27.3%	0.0	0.0%	16.3%
15–19	2.6	9.5%	14.3%	2.6	9.1%	36.4%	5.1	9.3%	25.6%
20–24	3.9	14.3%	28.6%	1.3	4.5%	40.9%	5.1	9.3%	34.9%
25–29	0.0	0.0%	28.6%	0.0	0.0%	40.9%	0.0	0.0%	34.9%
30–34	0.0	0.0%	28.6%	0.0	0.0%	40.9%	0.0	0.0%	34.9%
35–39	0.0	0.0%	28.6%	0.0	0.0%	40.9%	0.0	0.0%	34.9%
40–44	0.0	0.0%	28.6%	3.9	13.6%	54.5%	3.9	7.0%	41.9%
45–49	5.1	19.0%	47.6%	1.3	4.5%	59.1%	6.4	11.6%	53.5%
50–54	1.3	4.8%	52.4%	0.0	0.0%	59.1%	1.3	2.3%	55.8%
55–59	0.0	0.0%	52.4%	3.9	13.6%	72.7%	3.9	7.0%	62.8%
60–64	2.6	9.5%	61.9%	6.4	22.7%	95.5%	9.0	16.3%	79.1%
65–69	2.6	9.5%	71.4%	0.0	0.0%	95.5%	2.6	4.7%	83.7%
70–74	3.9	14.3%	85.7%	0.0	0.0%	95.5%	3.9	7.0%	90.7%
75–79	1.3	4.8%	90.5%	0.0	0.0%	95.5%	1.3	2.3%	93.0%
80–84	0.0	0.0%	90.5%	1.3	4.5%	100.0%	1.3	2.3%	95.3%
85–89	1.3	4.8%	95.2%	0.0	0.0%	100.0%	1.3	2.3%	97.7%
90–94	1.3	4.8%	100.0%	0.0	0.0%	100.0%	1.3	2.3%	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	**27.0**	**100.0%**	**100.0%**	**28.3**	**100.0%**	**100.0%**	**55.3**	**100.0%**	**100.0%**

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

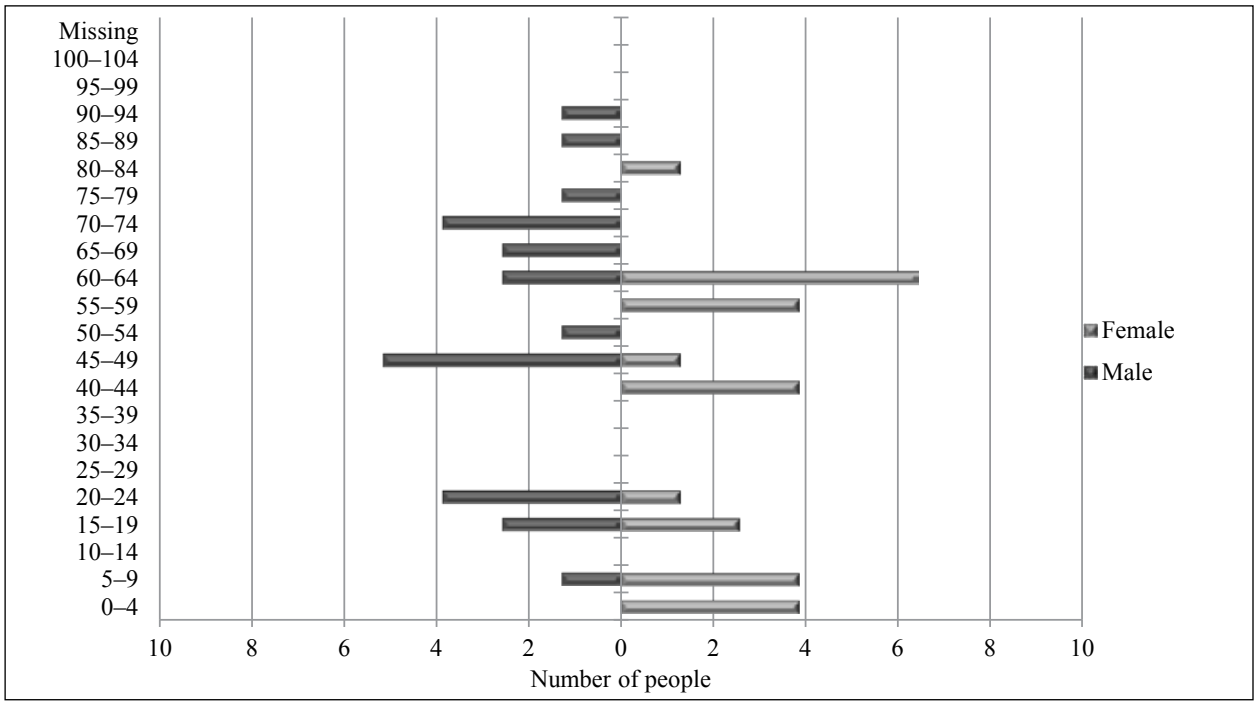


Figure 5-2.–Population profile, Whale Pass, 2012.

Table 5-5.–Birthplaces of household heads, Whale Pass, 2012.

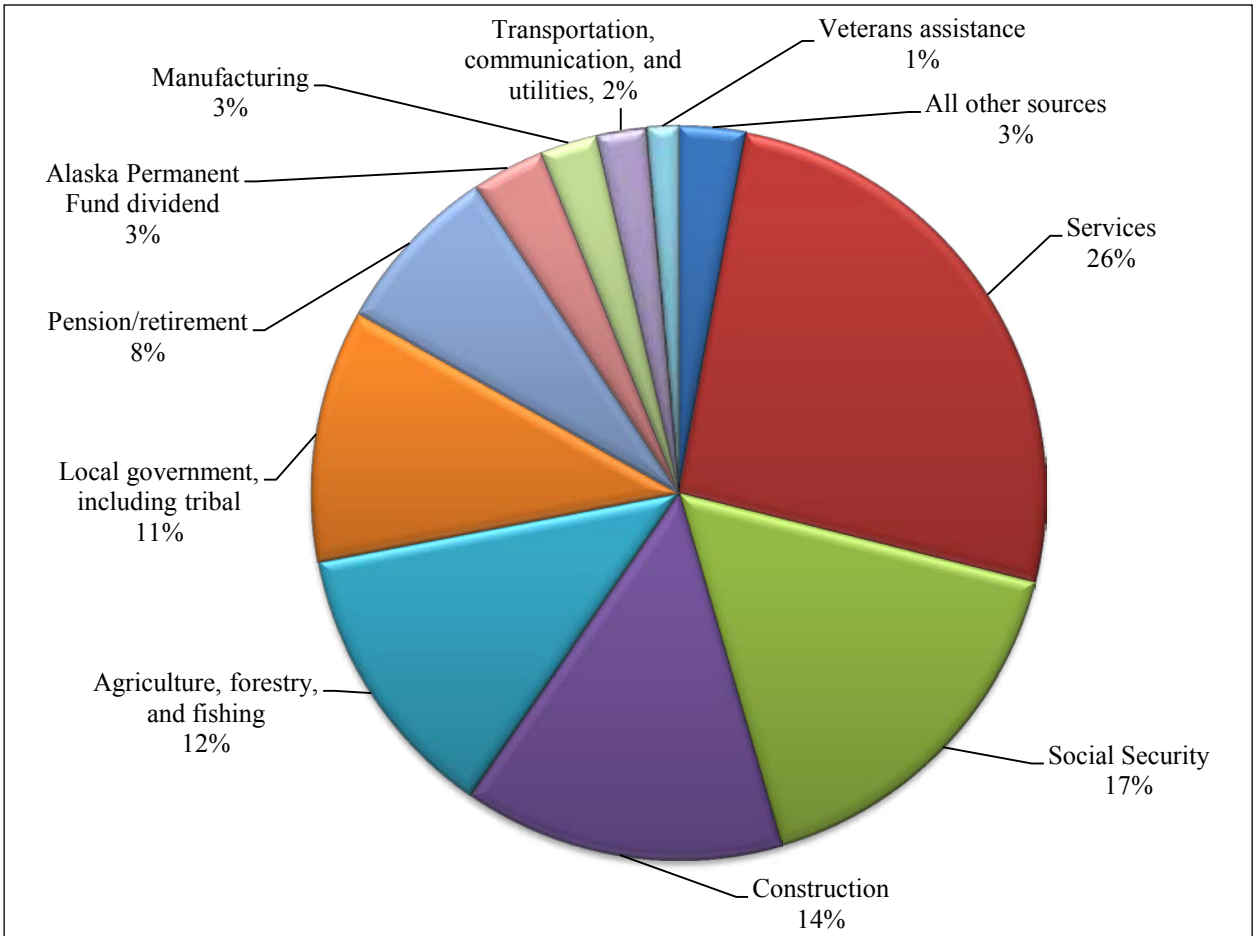
Birthplace	Percentage
Anchorage	3.4%
Whale Pass	3.4%
Other U.S.	89.7%
Foreign	3.4%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 5-6.–Birthplaces of population, Whale Pass, 2012.

Birthplace	Percentage
Anchorage	2.3%
Ketchikan	2.3%
Whale Pass	11.6%
Other U.S.	81.4%
Foreign	2.3%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.



Note The category "all other sources" includes sources providing less than 1% each to the overall income.

Figure 5-3.–Top income sources, Whale Pass, 2012.

Income and Cash Employment

In 2012, employment in the services sector contributed the most income to Whale Pass households (26%) (Figure 5-3). This was followed by Social Security, which contributed 17% of overall community income. Earned income in the community ($785,270) accounted for 70% of the total income in Whale Pass and income derived from other sources ($342,469) made up the other 30% (Table 5-7). Total income in Whale Pass is the lowest of the study communities, which is expected due to the much smaller population of this community. In terms of mean income per household, Whale Pass is situated in the middle of the 5 study communities (Table 1-9). The split between earned income and other income is approximately the same as the other study communities (approximately 70% earned income), excluding Hydaburg (84%), but Social Security payments made up a higher percentage of overall income in Whale Pass compared to all other study communities. Per capita income in Whale Pass in 2012 was $20,398, which was the second highest per capita income of the study communities (Table 1-9).

Table 5-7.–Estimated earned and other income, Whale Pass, 2012.

Income source	Number of people	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Services	8.0	12.5	$292,880	$72,536 – $776,326	$10,847	26.0%
Construction	3.0	6.2	$159,613	$16,330 – $489,768	$5,912	14.2%
Agriculture, forestry, and fishing	5.0	10.4	$139,335	$44,875 – $384,432	$5,161	12.4%
Local government, including tribal	5.0	6.2	$125,598	$15,923 – $310,394	$4,652	11.1%
Manufacturing	2.0	4.2	$28,279	$1,063 – $110,667	$1,047	2.5%
Transportation, communication, and utilities	2.0	4.2	$24,637	$1,055 – $76,797	$912	2.2%
Other employment	2.0	2.1	$7,234	$4,451 – $68,767	$268	0.6%
State government	2.0	2.1	$4,079	$3,537 – $14,045	$151	0.4%
Retail trade	1.0	2.1	$3,617	$2,175 – $30,137	$134	0.3%
Earned income subtotal	**21.0**	**27.0**	**$785,270**	**$420,674 – $1,337,406**	**$29,084**	**69.6%**
Other income						
Social Security		10.3	$186,763	$77,302 – $309,060	$6,917	16.6%
Pension/retirement		3.9	$85,258	$66,312 – $237,261	$3,158	7.6%
Alaska Permanent Fund dividend		21.9	$36,123	$23,706 – $50,799	$1,338	3.2%
Veterans assistance		1.3	$16,015	$12,456 – $32,030	$593	1.4%
Unemployment		5.1	$7,048	$1,047 – $19,131	$261	0.6%
Longevity bonus		2.6	$3,780	$2,940 – $9,334	$140	0.3%
Heating assistance		7.7	$3,510	$1,029 – $6,615	$130	0.3%
Food stamps		2.6	$988	$769 – $2,325	$37	0.1%
Workers' compensation/insurance		1.3	$746	$580 – $2,672	$28	0.1%
Investments/stocks/bonds		1.3	$746	$580 – $2,795	$28	0.1%
Women, infants, and children (WIC)		1.3	$746	$580 – $2,772	$28	0.1%
Inheritance		1.3	$746	$580 – $2,795	$28	0.1%
TANF (Temporary cash assistance for needy families)		0.0	$0	$0 – $0	$0	0.0%
Adult public assistance (OAA, APD)		0.0	$0	$0 – $0	$0	0.0%
Supplemental Security income		0.0	$0	$0 – $0	$0	0.0%
Disability		0.0	$0	$0 – $0	$0	0.0%
Native corp. dividend		0.0	$0	$0 – $0	$0	0.0%
Child support		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**3.9**	**$342,469**	**$180,649 – $532,681**	**$12,684**	**30.4%**
Community income total			**$1,127,739**	**$794,748 – $1,674,225**	**$41,768**	**100.0%**

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

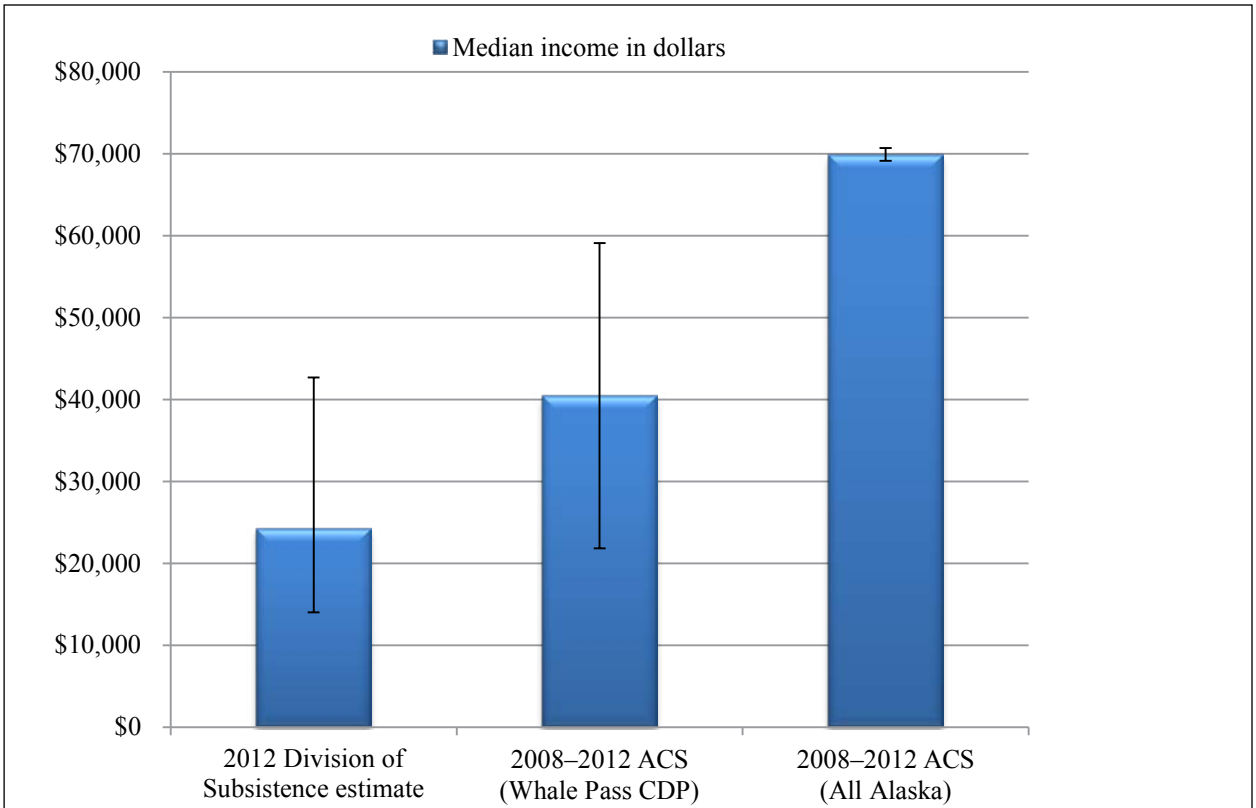


Figure 5-4.–Comparison of median household income estimates, Whale Pass, 2012.

The average household income in Whale Pass was $41,768 while the median household income was $24,242 (Table 5-7; Figure 5-4); the median household income for the Prince of Wales Census Area from 2006–2010 was $45,728 (Fried 2012:15). Both the American Community Survey (5-year median household income estimate $40,469 for 2008–2012) and this study estimate a significantly lower median income in Whale Pass than the statewide median household income; this probably reflects the lack of employment opportunities in the winter as well as a higher proportion of residents that are retired from the workforce.

Not surprisingly, the highest percentage of earned income (37%) and the most jobs came from the service-oriented sector, reflecting a shift in Whale Pass from timber industries to tourism and sport fishing opportunities (Table 5-8). Construction and agriculture/forestry/fishing round out the majority of earned income and employment sources (20% and 18% of earned income, respectively). The lack of state and federal agencies located in the community, as well as no tribal organizations, and the few commercial stores, is reflected in the very low percentages that these sectors contribute to the overall employment scene.

The highest percentage of jobs in the community were part-time, but full-time and on-call positions closely ranked second (31% of jobs, each) (Table 5-9). Overall, 84% of adults (working age 16 or older) in Whale Pass were employed during 2012 (Table 5-10). The average employed adult held 1.7 jobs during this time and was employed for 6 months of the year. Only 20% of employed adults were employed year-round. Turning to household data, rather than individual employment data, 100% of households in Whale Pass included an employed household member. On average, a household held 2.3 jobs during the 2012 study year and on average there were 1.4 employed adults in the household.

Table 5-8.–Employment by industry, Whale Pass, 2012.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Estimated total number	**63.0**	**27.0**	**37.8**	
State government	**5.7%**	**7.7%**	**9.5%**	**0.5%**
Technologists and technicians, except health	2.9%	7.7%	4.8%	0.2%
Service occupations	2.9%	7.7%	4.8%	0.3%
Local government, including tribal	**17.1%**	**23.1%**	**23.8%**	**16.0%**
Teachers, librarians, and counselors	8.6%	15.4%	14.3%	14.7%
Service occupations	8.6%	7.7%	9.5%	1.3%
Agriculture, forestry, and fishing	**20.0%**	**38.5%**	**23.8%**	**17.7%**
Agricultural, forestry, and fishing occupations	20.0%	38.5%	23.8%	17.7%
Construction	**8.6%**	**23.1%**	**14.3%**	**20.3%**
Construction and extractive occupations	8.6%	23.1%	14.3%	20.3%
Manufacturing	**5.7%**	**15.4%**	**9.5%**	**3.6%**
Writers, artists, entertainers, and athletes	2.9%	7.7%	4.8%	0.1%
Precision production occupations	2.9%	7.7%	4.8%	3.5%
Transportation, communication, and utilities	**5.7%**	**15.4%**	**9.5%**	**3.1%**
Mechanics and repairers	2.9%	7.7%	4.8%	1.0%
Handlers, equipment cleaners, helpers, and laborers	2.9%	7.7%	4.8%	2.1%
Retail trade	**2.9%**	**7.7%**	**4.8%**	**0.5%**
Marketing and sales occupations	2.9%	7.7%	4.8%	0.5%
Services	**28.6%**	**46.2%**	**38.1%**	**37.3%**
Executive, administrative, and managerial	11.4%	30.8%	19.0%	32.0%
Social scientists, social workers, religious workers, and lawyers	2.9%	7.7%	4.8%	0.5%
Service occupations	11.4%	23.1%	14.3%	3.1%
Agricultural, forestry, and fishing occupations	2.9%	7.7%	4.8%	1.7%
Industry not indicated	**5.7%**	**7.7%**	**9.5%**	**0.9%**
Occupation not indicated	5.7%	7.7%	9.5%	0.9%

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

Table 5-9.–Reported job schedules, Whale Pass, 2012.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full-time	19.8	31.4%	18.0	47.6%	14.5	53.8%
Part-time	23.4	37.1%	14.4	38.1%	10.4	38.5%
Shift	0.0	0.0%	0.0	0.0%	0.0	0.0%
On-call (occasional)	19.8	31.4%	14.4	38.1%	16.6	61.5%
Part-time shift	0.0	0.0%	0.0	0.0%	0.0	0.0%
Schedule not reported	0.0	0.0%	0.0	0.0%	0.0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.
Note Respondents who had more than 1 job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Table 5-10.–Employment characteristics, Whale Pass, 2012.

Characteristic	Community Whale Pass
All adults	
Number	45.0
Mean weeks employed	22.2
Employed adults	
Number	37.8
Percentage	84.0%
Jobs	
Number	63.0
Mean	1.7
Minimum	1
Maximum	5
Months employed	
Mean	6.1
Minimum	3
Maximum	12
Percentage employed year-round	20.4%
Mean weeks employed	26.4
Households	
Number	27
Employed	
Number	27.0
Percentage	100.0%
Jobs per employed household	
Mean	2.3
Minimum	1
Maximum	8
Employed adults	
Mean	
Employed households	1.4
Total households	1.4
Minimum	1
Maximum	4
Mean person-weeks of employment	26.0

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

Food Security

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. The food security status of households is based on the aggregated number of affirmative responses to questions about experiencing food insecure conditions. Food security status is characterized by 4 ranges:

1. High food security;
2. Marginal food security;
3. Low food security; and
4. Very low food security.

For reporting purposes, households with high or marginal food security were broadly categorized as being food secure, and households with low or very low food security were broadly categorized as being food insecure following a USDA protocol (Bickel et al. 2000).[2]

Households with a high or marginal level of food security reported 1 or 2 instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Whale Pass residents are summarized in Figure 5-5. Food security results for surveys for Whale Pass, the state of Alaska, and the United States are summarized in Figure 5-6. Overall, few responses to questions indicated food insecure conditions. The exception to this is whether the household had resources needed to get food; 40% of respondents replied that they lacked the resources to get food, meaning they did not have the equipment or money needed (Figure 5-5). This situation could apply to either store-bought or subsistence foods, or both. Also, 50% of the respondents replied in the affirmative that their subsistence foods did not last the entire year, while only 16% answered similarly for questions about their store-bought food. From these responses, it appears access to subsistence resources throughout the year is more of an issue for Whale Pass residents than is access to store-bought food, even though the nearest grocery store is several hours away by car. As shown in Figure 5-6, most of the households in Whale Pass can be termed food secure. Even for those households that displayed some food insecure conditions (5%), very few of them ever cut the size of meals or skipped meals, leading to an overall outcome for Whale Pass of no households with very low food security. These results are better than average for the state of Alaska, and even better than results for the United States as a whole.

Figure 5-7 portrays the mean number of food insecure conditions per household by food security category by month. Figure 5-8 shows which months households reported foods not lasting. For the majority of households that are food secure, there was little variation in food security by month (Figure 5-7). For households with low food security, January and December were months with particularly insecure conditions. This is not too surprising, given that hunting and fishing is more difficult in these high winter months, and the roads out of Whale Pass are at their least passable condition thus making it more challenging to travel to the larger communities and grocery stores.

2. U.S. Department of Agriculture, Economic Research Service. 2015. "Food Security in the U.S.: Measurement," http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx (accessed Nov. 2016).

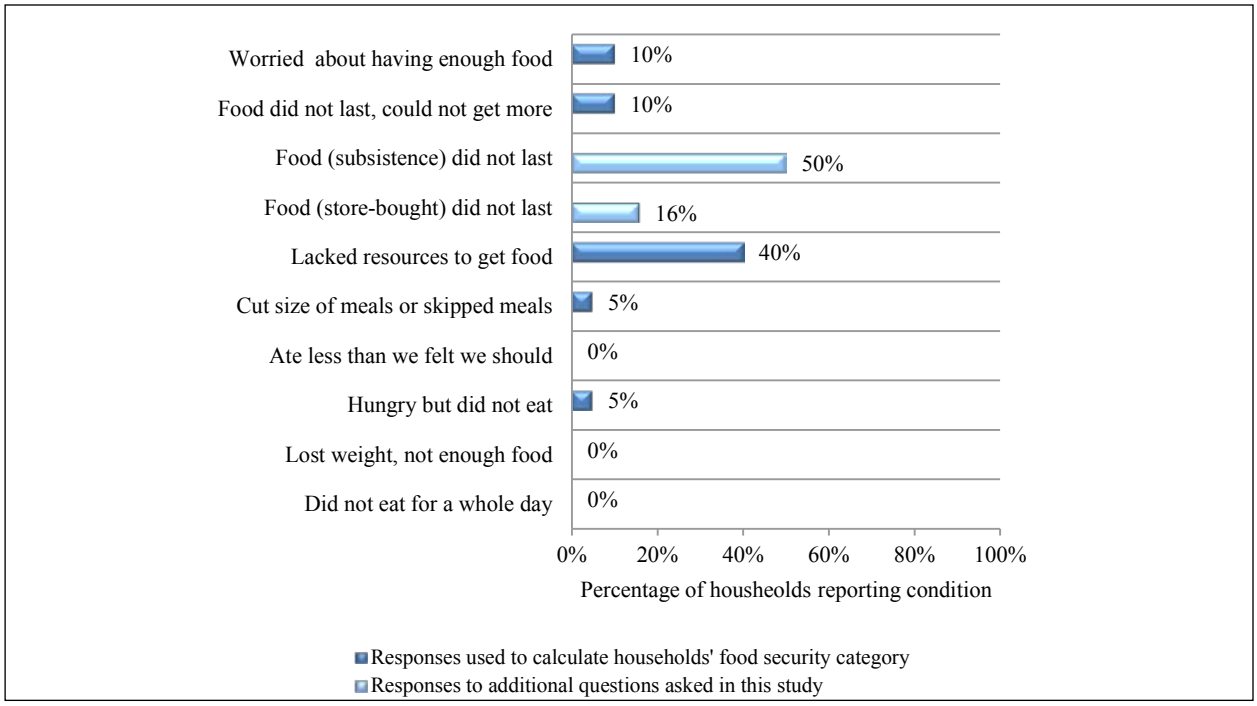


Figure 5-5.–Responses to questions about food insecure conditions, Whale Pass, 2012.

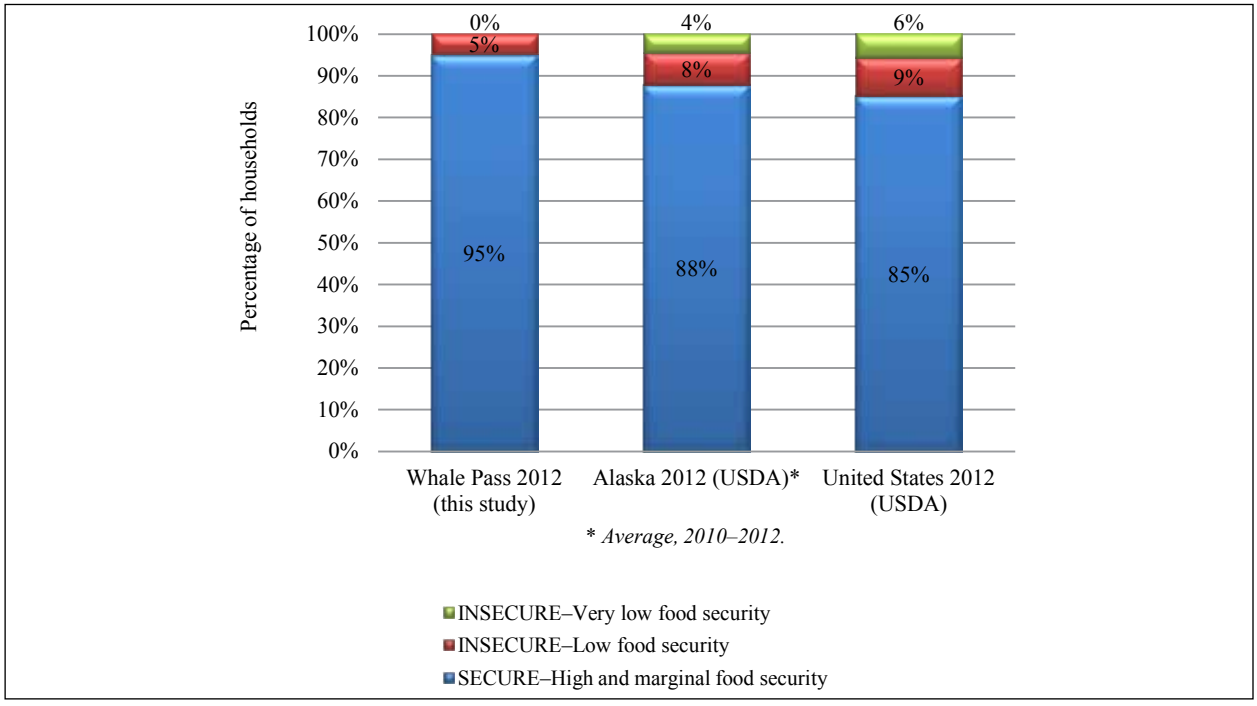


Figure 5-6.–Comparison of food security categories, Whale Pass, Alaska, and United States, 2012.

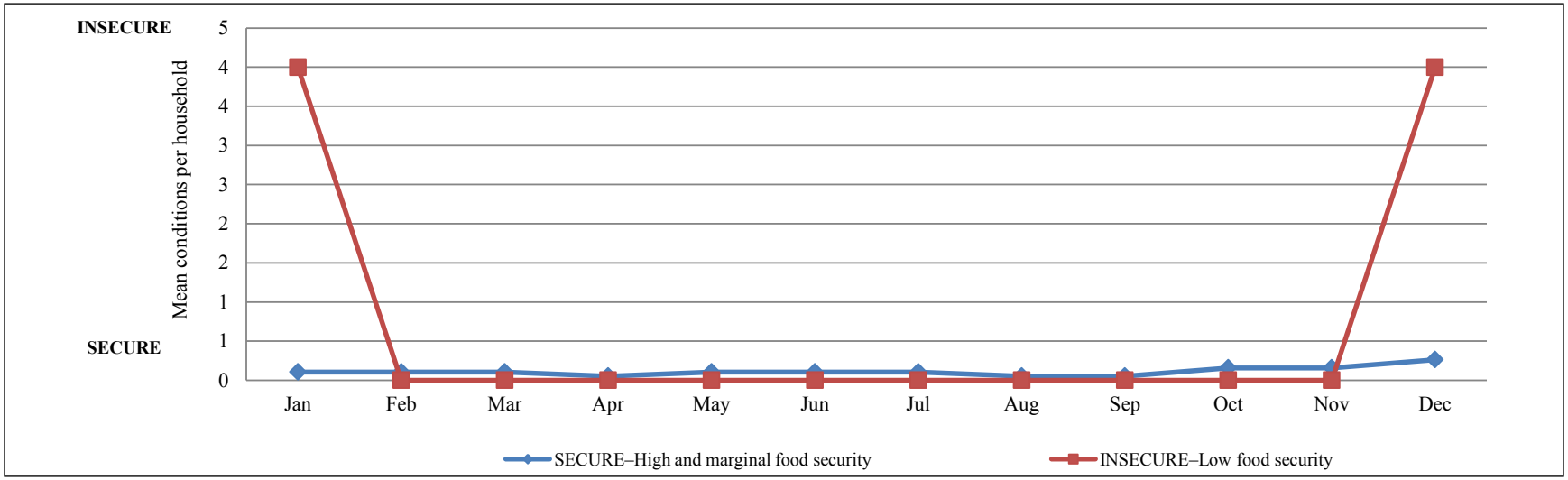


Figure 5-7.–Mean number of food insecure conditions by month and by household food security category, Whale Pass, 2012.

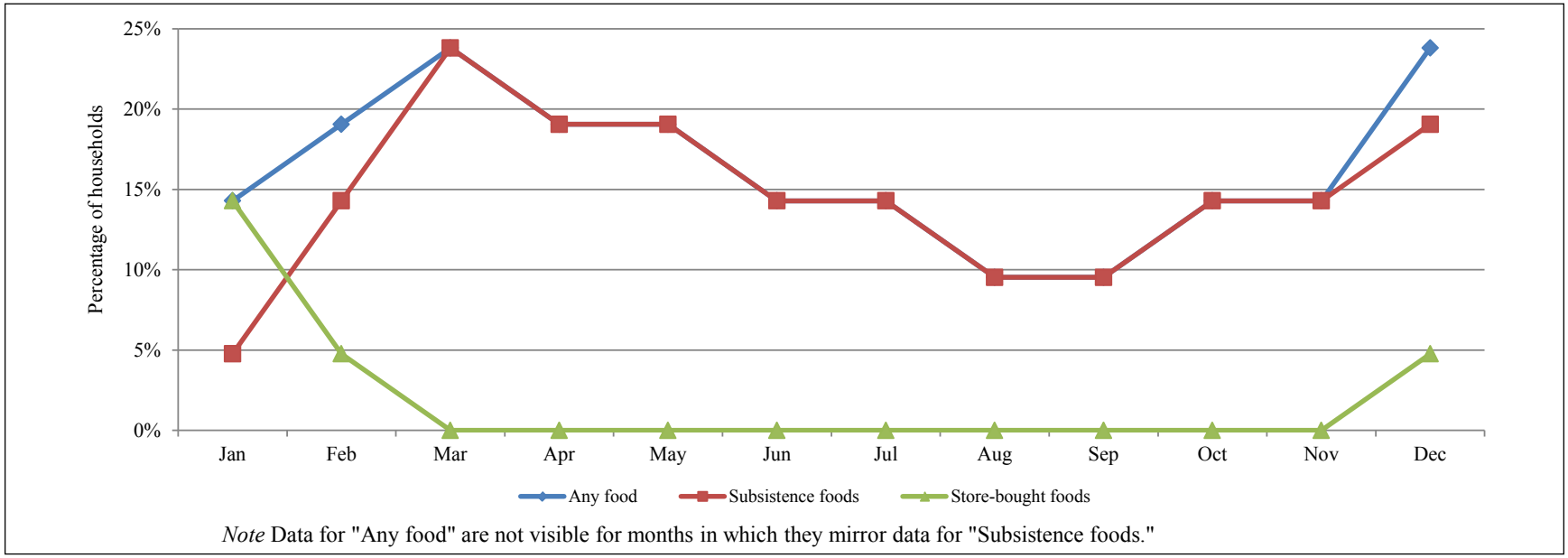


Figure 5-8.–Comparison of months when food did not last, Whale Pass, 2012.

Looking at Figure 5-8, the same general pattern is seen. There were no reported incidents of store-bought food not lasting during most of the year, except for the winter months of December through February. For subsistence foods, there was a higher general rate of these foods not lasting, but rates fell through the spring and summer and increased again in the winter. During the spring, summer, and fall, fish are abundant off the coast or in the nearby lakes and streams, shellfish can be harvested, and even those lacking the equipment to harvest salmon from marine waters are able to obtain some fish from the local hatchery. Hunting season is open and hunting areas are accessible in the fall. Travel out of Whale Pass, whether to another island community or off-island, is easier during the warmer weather, providing access to even more resources.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Table 5-11 and Figure 5-9 report the expanded levels of individual participation in the harvest and processing of wild resources by all Whale Pass residents in 2012. A total of 93% of residents hunted, fished, trapped, or gathered some resource during the study year. Specifically, residents gathered vegetation, including plants, berries, or seaweed (91%), fished (65%), hunted large land mammals (49%), hunted/trapped small land mammals (21%), or hunted birds/gathered bird eggs (21%). Participation in the processing of resources also involved 93% of Whale Pass residents. Participation in the processing of resources by category was 81% for vegetation and for fish, 70% for large land mammals, 26% for small land mammals, and 16% for birds and bird eggs. While harvesting and processing activities for any resource overall involved the same percentage of individuals, participation in the various categories differed. For example, for fish and large land mammals, many more people were involved in processing the harvest than were involved in the actual harvesting activity. Less than 50% of the individuals in Whale Pass hunted for large land mammals, but 70% of the community residents helped process those mammals. The same is true on a smaller scale for small land mammals. Vegetation shows the opposite characteristic—more people go out picking berries and plants together than participate in processing of those items, which is a similar pattern seen in the birds and bird eggs resource category.

Harvest and Use of Wild Resources at the Household Level

Figure 5-10 shows by resource category the percentages of households that used wild resources, attempted to harvest, and harvested wild foods. For most resource categories, more households used a resource than harvested it. This is especially true of salmon, where 95% of households used the resource, but only 57% harvested salmon. Nonsalmon fish and marine invertebrates display similarly large disparities between use and harvest. Vegetation and birds are the only resource categories where equal percentages of households used and participated in the harvest of resources. In the case of vegetation, every household in Whale Pass both harvested and used those resources. The percentage of households attempting to harvest a resource is fairly close to the percentage of households that successfully harvested in most resource categories, except in the case of large land mammals. In this resource category, 81% of households hunted large land mammals, but only 67% of community households were successful.

Table 5-12 summarizes resource harvest and use characteristics for Whale Pass in 2012 at the household level. The average household harvest was 506 lb usable weight (247 lb per capita). During the study year, community households harvested an average of 10 kinds of resources and used an average of 12 kinds of resources. The maximum number of resources used by any household was 26. In addition, households gave away an average of 2 kinds of resources. Overall, as many as 172 species were potentially available for households to harvest in the study area; this included species that survey respondents identified but were not asked about in the survey instrument.

Table 5-11.–Individual participation in subsistence harvesting and processing activities, Whale Pass, 2012.

Total number of people	**55.3**
Fish	
Fish	
Number	36.0
Percentage	65.1%
Process	
Number	45.0
Percentage	81.4%
Large land mammals	
Hunt	
Number	27.0
Percentage	48.8%
Process	
Number	38.6
Percentage	69.8%
Small land mammals	
Hunt or trap	
Number	11.6
Percentage	20.9%
Process	
Number	14.1
Percentage	25.6%
Marine mammals	
Hunt	
Number	0.0
Percentage	0.0%
Process	
Number	0.0
Percentage	0.0%
Birds and eggs	
Hunt/gather	
Number	11.6
Percentage	20.9%
Process	
Number	9.0
Percentage	16.3%
Vegetation	
Gather	
Number	50.1
Percentage	90.7%
Process	
Number	45.0
Percentage	81.4%
Any resource	
Attempt harvest	
Number	51.4
Percentage	93.0%
Process	
Number	51.4
Percentage	93.0%

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

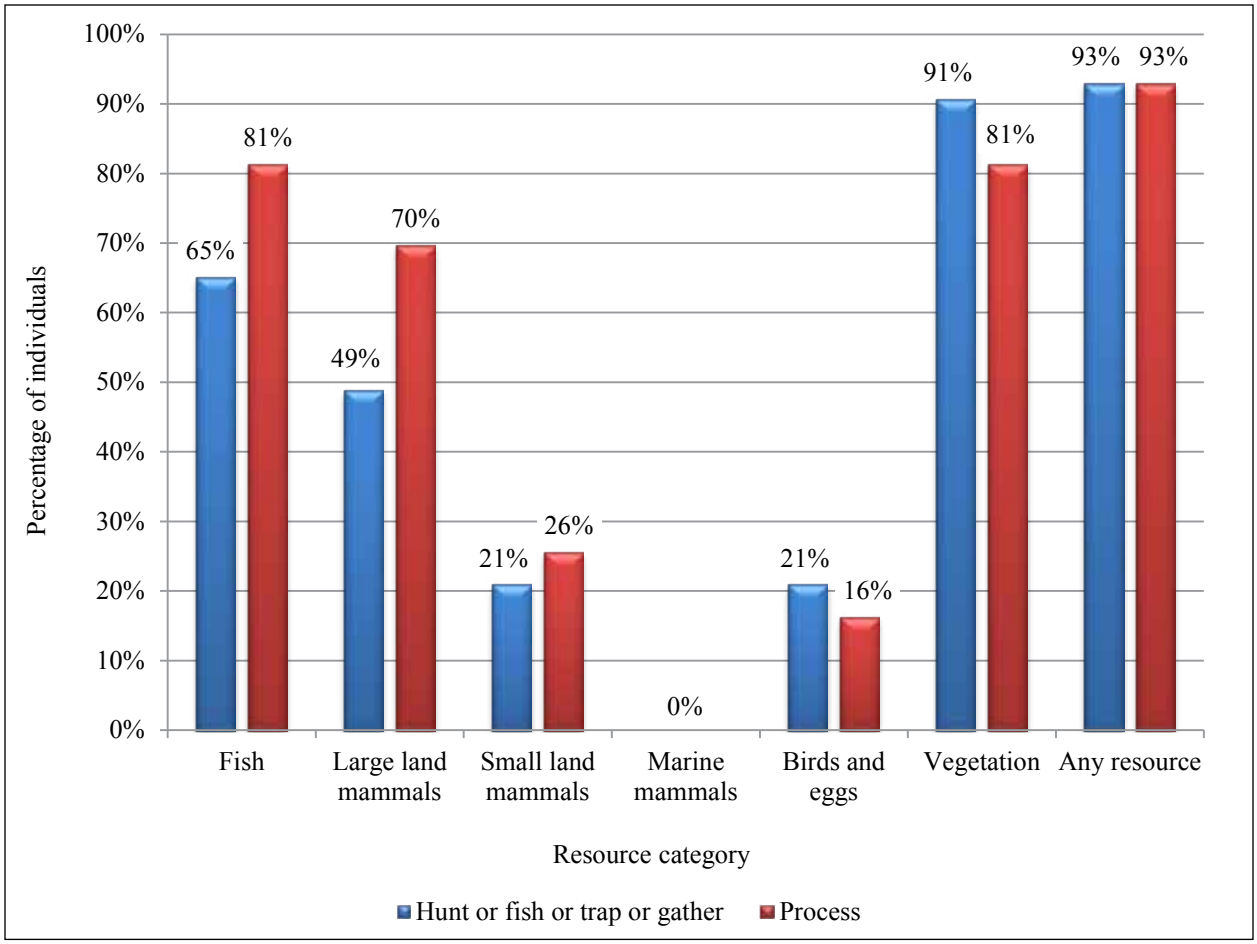


Figure 5-9.–Individual participation in subsistence harvesting and processing activities, Whale Pass, 2012.

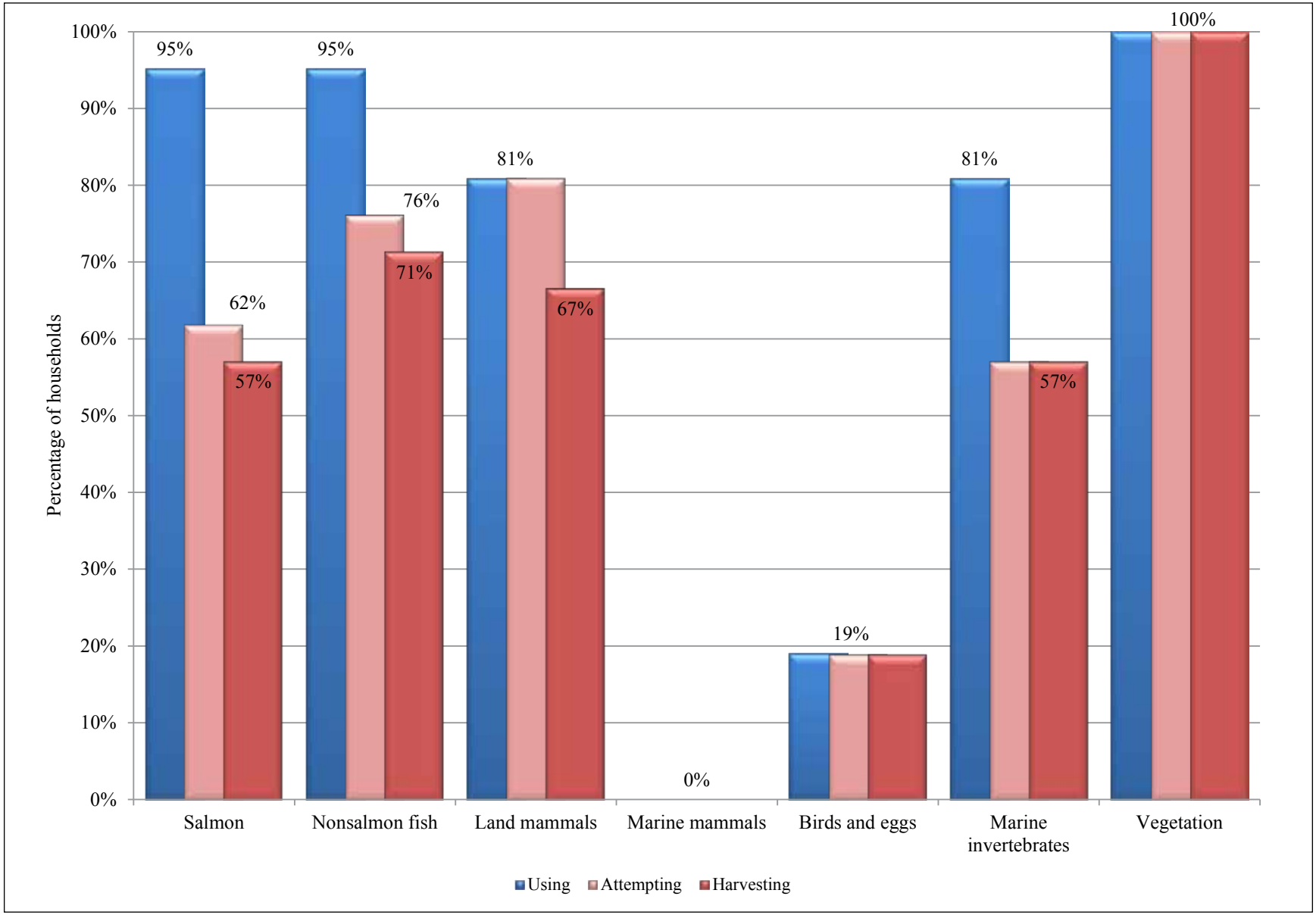


Figure 5-10.–Percentages of households using, attempting to harvest, and harvesting wild resources, by resource category, Whale Pass, 2012.

Table 5-12.–Resource harvest and use characteristics, Whale Pass, 2012.

Characteristic	
Mean number of resources used per household	**11.8**
Minimum	4
Maximum	26
95% confidence limit (±)	11.5%
Median	10
Mean number of resources attempted to harvest per household	**10.4**
Minimum	1
Maximum	26
95% confidence limit (±)	14.6%
Median	9
Mean number of resources harvested per household	**9.5**
Minimum	1
Maximum	26
95% confidence limit (±)	15.5%
Median	8
Mean number of resources received per household	**2.8**
Minimum	0
Maximum	13
95% confidence limit (±)	23.1%
Median	2
Mean number of resources given away per household	**2.1**
Minimum	0
Maximum	9
95% confidence limit (±)	23.1%
Median	2
Household harvest (pounds)	
Minimum	0.0
Maximum	2,085.9
Mean	505.8
Median	280
Total harvest weight (lb)	13,656.3
Community per capita harvest (lb)	247.0
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	76.2%
Percentage giving away any resource	66.7%
Number of households in sample	21
Number of resources asked about and identified voluntarily by respondents	172

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

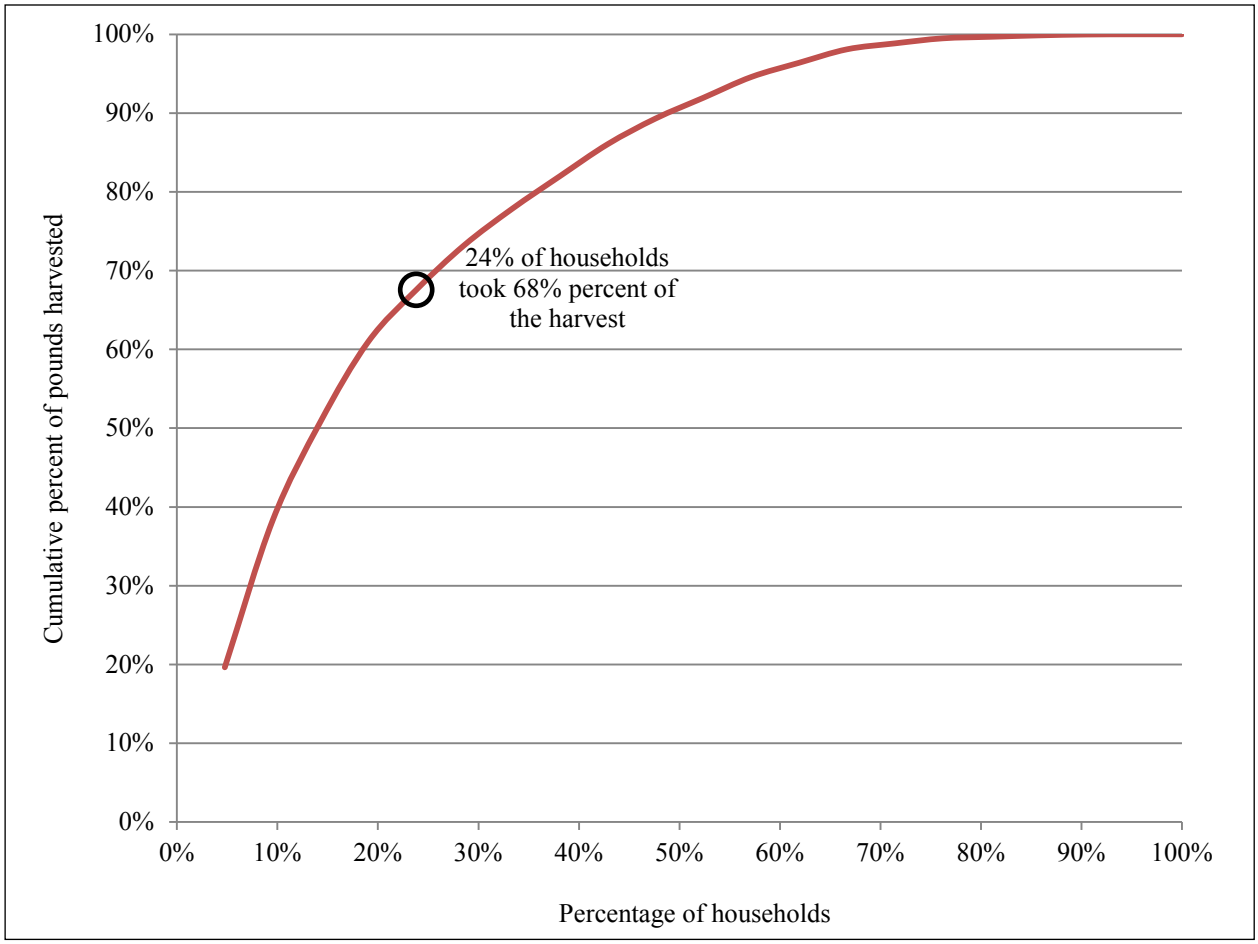


Figure 5-11.–Household specialization, Whale Pass, 2012.

Sharing of Wild Resources

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 5-11, in the 2012 study year in Whale Pass, about 68% of the harvests of wild resources as estimated in usable pounds were harvested by 24% of the community's households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Whale Pass and the other study communities.

Harvest Quantities and Composition

Table 5-13 reports estimated wild resource harvests and uses by Whale Pass residents in 2012 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors[3]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as firewood are included because they are an important part of the subsistence way of life. Differences between harvest and use percentages reflect sharing among households, which results in a wider distribution of wild foods.

The total community harvest in pounds usable weight was 13,656 lb (Table 5-13). The composition of the harvest was dominated by 3 resource categories: large land mammals accounted for 32% of the total harvest (4,405 lb; 80 lb per capita), nonsalmon fish represented 31% of the harvest (4,182 lb; 76 lb per capita), and salmon represented 21% (2,868 lb; 52 lb per capita) (Figure 5-12). The remaining 16% of the harvest amount was divided among the resource categories marine invertebrates at 10% of the harvest (1,316 lb; 24 lb per capita), birds and eggs at 5% (717 lb; 13 lb per capita), vegetation at 1% (166 lb; 3 lb per capita), and small land mammals at less than 1% (4 lb; 0.1 lb per capita).

Seasonal Round

Mapped survey data and in-depth surveys with several residents in Whale Pass describe a seasonal round of harvesting activities that residents engage in where they harvest a variety of species throughout a year. While some species, such as shellfish and other marine invertebrates, may be available throughout the year, the majority of species have a season when and location where they are accessible to Whale Pass residents. Most harvesting activities occur in the general vicinity of Whale Pass and the northern end of Prince of Wales Island. In the spring, residents start rod and reel fishing for Pacific halibut, Pacific herring, and rockfish in the near-shore marine waters. Trout are also available at this time in local streams. Fishing for Chinook (king) salmon also occurs, but as spring gives way to summer, salmon fishing begins in earnest. Chinook salmon are the earliest running species targeted, while coho salmon runs begin a little later in the summer and continue through the fall. Although sockeye salmon is not a primary species targeted by residents of Whale Pass, sockeye salmon fishing occurs in late summer and early fall. Starting in May, beach asparagus can be harvested. Also on land, berry picking begins during the summer and continues through the fall, with residents targeting berry species as they ripen through the months. Summer is a time for increased Dungeness crab fishing right off the coast of the community. As summer winds down and cooler weather sets in, the time for hunting begins. Deer are hunted throughout the extensive road system of northern Prince of Wales Island. Some residents will take their boats to areas around the Stikine River or on Kupreanof Island for moose or mountain goat hunting. Bird hunting occurs during these fall months for ducks and other migratory waterfowl, as well as for ptarmigan and grouse. Berries are still ripening through the early fall. Another land-based resource gathered by residents during this time is mushrooms. In the water, cutthroat trout are available in local streams, as are the last of the coho salmon. Rockfish, Pacific halibut, and groundfish are still harvested through the early fall. At the end of hunting season and the onset of winter, some residents turn to trapping small furbearers such as mink and marten; this occurs mainly in December and January. Some residents will also pursue Chinook salmon and crab and other shellfish during these winter months, but harvesting activity slows down until the spring returns.

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 5-13.–Estimated uses and harvests of fish, game, and vegetation resources, Whale Pass, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	confidence limit (±) harvest
All resources	**100.0**	**100.0**	**100.0**	**76.2**	**66.7**	**13,656.3**	**505.8**	**247.0**				**26.3**
Salmon	**95.2**	**61.9**	**57.1**	**57.1**	**47.6**	**2,867.7**	**106.2**	**51.9**				**27.9**
Chum salmon	4.8	0.0	0.0	4.8	4.8	0.0	0.0	0.0	0.0	ind	0.0	0.0
Coho salmon	76.2	52.4	47.6	38.1	42.9	2,168.9	80.3	39.2	452.6	ind	16.8	30.0
Chinook salmon	57.1	28.6	23.8	33.3	14.3	398.4	14.8	7.2	42.4	ind	1.6	57.9
Pink salmon	9.5	9.5	9.5	0.0	4.8	50.3	1.9	0.9	19.3	ind	0.7	80.1
Sockeye salmon	9.5	9.5	9.5	0.0	0.0	250.1	9.3	4.5	54.0	ind	2.0	74.3
Unknown salmon	4.8	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Nonsalmon fish	**95.2**	**76.2**	**71.4**	**52.4**	**38.1**	**4,181.5**	**154.9**	**75.6**				**24.3**
Pacific herring	42.9	42.9	42.9	0.0	4.8	433.3	16.0	7.8	72.2	gal	2.7	40.8
Pacific herring roe/unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring sac roe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring spawn on kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hair seaweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hemlock branches	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Eulachon (hooligan, candlefish)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Silver smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific (gray) cod	4.8	9.5	4.8	0.0	0.0	4.1	0.2	0.1	1.3	ind	0.0	98.3
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	4.8	4.8	4.8	0.0	0.0	3.9	0.1	0.1	1.3	ind	0.0	98.3
Flounder	4.8	4.8	0.0	4.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Kelp greenling	4.8	4.8	4.8	0.0	0.0	2.6	0.1	0.0	2.6	ind	0.1	98.3
Lingcod	23.8	23.8	14.3	9.5	0.0	89.1	3.3	1.6	14.1	ind	0.5	66.8
Unknown greenling	4.8	4.8	4.8	0.0	0.0	3.9	0.1	0.1	3.9	ind	0.1	98.3
Pacific halibut	90.5	61.9	52.4	42.9	38.1	3,077.1	114.0	55.7	3,077.1	lb	114.0	31.6
Black rockfish	9.5	9.5	9.5	0.0	4.8	56.6	2.1	1.0	28.3	ind	1.0	89.4
Yelloweye rockfish	42.9	28.6	23.8	19.0	0.0	30.9	1.1	0.6	10.3	ind	0.4	51.9
Quillback rockfish	4.8	4.8	4.8	0.0	0.0	27.0	1.0	0.5	9.0	ind	0.3	98.3
Brown rockfish	4.8	9.5	4.8	0.0	0.0	7.7	0.3	0.1	2.6	ind	0.1	98.3
Unknown rockfish	9.5	9.5	9.5	0.0	0.0	57.9	2.1	1.0	19.3	ind	0.7	67.9
Sablefish (black cod)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Buffalo sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red Irish lord	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shark	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 5-13.–Page 2 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Nonsalmon fish, continued												
Skates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dolly Varden	4.8	4.8	4.8	0.0	0.0	15.4	0.6	0.3	5.1	ind	0.2	98.3
Cutthroat trout	33.3	33.3	33.3	0.0	4.8	372.2	13.8	6.7	248.1	ind	9.2	53.9
Rainbow trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steelhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Large land mammals	**76.2**	**76.2**	**57.1**	**19.0**	**23.8**	**4,404.9**	**163.1**	**79.7**				**31.6**
Black bear	4.8	0.0	0.0	4.8	4.8	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Deer	76.2	76.2	57.1	19.0	19.0	4,011.4	148.6	72.6	50.1	ind	1.9	30.2
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mountain goat	14.3	14.3	14.3	0.0	4.8	393.4	14.6	7.1	3.9	ind	0.1	53.9
Moose	0.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals	**33.3**	**33.3**	**33.3**	**4.8**	**0.0**	**3.9**	**0.1**	**0.1**				**67.8**
Beaver	4.8	4.8	4.8	0.0	0.0	0.0	0.0	0.0	12.9	ind	0.5	98.3
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
North American river (land) otter	9.5	14.3	9.5	0.0	0.0	0.0	0.0	0.0	23.1	ind	0.9	92.8
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	23.8	23.8	23.8	0.0	0.0	0.0	0.0	0.0	90.0	ind	3.3	50.3
Mink	28.6	28.6	28.6	0.0	0.0	0.0	0.0	0.0	212.1	ind	7.9	65.6
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red (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
Northern flying squirrel	14.3	14.3	14.3	0.0	0.0	3.9	0.1	0.1	7.7	ind	0.3	67.8
Least weasel	14.3	14.3	14.3	0.0	0.0	0.0	0.0	0.0	15.4	ind	0.6	58.9
Gray wolf	4.8	4.8	4.8	4.8	0.0	0.0	0.0	0.0	6.4	ind	0.2	98.3

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Table 5-13.–Page 3 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Small land mammals, continued												
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**				**0.0**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**19.0**	**19.0**	**19.0**	**0.0**	**4.8**	**716.5**	**26.5**	**13.0**				**65.5**
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	19.0	19.0	19.0	0.0	4.8	83.6	3.1	1.5	83.6	ind	3.1	54.8
Long-tailed duck	9.5	9.5	9.5	0.0	4.8	144.7	5.4	2.6	108.0	ind	4.0	93.5
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
Scaup	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Teal	4.8	4.8	4.8	0.0	0.0	2.7	0.1	0.0	5.1	ind	0.2	98.3
Wigeon	4.8	4.8	4.8	0.0	0.0	16.8	0.6	0.3	12.9	ind	0.5	98.3
Unknown ducks	9.5	9.5	9.5	0.0	0.0	73.6	2.7	1.3	68.1	ind	2.5	92.7
Unknown Canada/cackling geese	14.3	19.0	14.3	0.0	4.8	369.4	13.7	6.7	108.0	ind	4.0	67.8
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Grouse	9.5	9.5	9.5	0.0	0.0	15.4	0.6	0.3	15.4	ind	0.6	67.8
Ptarmigan	9.5	9.5	9.5	0.0	0.0	10.3	0.4	0.2	10.3	ind	0.4	76.6
Mallard 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 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
Unknown Canada/cackling 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
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 5-13.–Page 4 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs, continued												
Unknown swan eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher 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 shorebird eggs – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebird eggs – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Glaucous-winged 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 loon 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 tern 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 seabird 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 grouse 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 ptarmigan 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	**81.0**	**57.1**	**57.1**	**47.6**	**14.3**	**1,316.3**	**48.8**	**23.8**				**35.7**
Abalone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red (large) chitons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Black (small) chitons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Butter clams	4.8	4.8	4.8	0.0	0.0	137.3	5.1	2.5	30.9	gal	1.1	98.3
Horse clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific littleneck clams (steamers)	19.0	9.5	9.5	9.5	0.0	38.6	1.4	0.7	12.9	gal	0.5	67.8
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Basket cockles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Heart cockles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Dungeness crab	71.4	52.4	52.4	38.1	9.5	784.1	29.0	14.2	594.0	ind	22.0	44.1
Blue king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Brown king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red king crab	9.5	9.5	9.5	0.0	0.0	20.8	0.8	0.4	3.9	ind	0.1	71.8
Tanner crab	4.8	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Geoducks	4.8	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Limpets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mussels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Octopus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	lb	0.0	0.0

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Table 5-13.–Page 5 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Marine invertebrates, continued												
Weathervane scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Rock scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sea cucumber	9.5	9.5	9.5	0.0	0.0	147.9	5.5	2.7	73.9	gal	2.7	93.9
Green sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Purple sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Shrimp	52.4	42.9	42.9	19.0	4.8	187.7	7.0	3.4	93.9	gal	3.5	33.3
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**	**14.3**	**23.8**	**165.5**	**6.1**	**3.0**				**29.9**
Blueberry	47.6	47.6	47.6	0.0	4.8	43.9	1.6	0.8	11.0	gal	0.4	34.7
Lowbush cranberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Highbush cranberry	19.0	19.0	19.0	0.0	0.0	10.8	0.4	0.2	2.7	gal	0.1	56.1
Elderberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Gooseberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Currants	4.8	4.8	4.8	0.0	0.0	5.1	0.2	0.1	1.3	gal	0.0	98.3
Huckleberry	28.6	28.6	28.6	4.8	0.0	19.2	0.7	0.3	4.8	gal	0.2	58.6
Cloudberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Nagoonberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Raspberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Salmonberry	9.5	9.5	9.5	0.0	0.0	6.4	0.2	0.1	1.6	gal	0.1	80.1
Soapberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Strawberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Thimbleberry	4.8	4.8	4.8	0.0	0.0	5.1	0.2	0.1	1.3	gal	0.0	98.3
Twisted stalk berry (watermelon berry)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Beach asparagus	33.3	33.3	33.3	0.0	9.5	26.0	1.0	0.5	26.0	gal	1.0	52.7
Goose tongue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild rhubarb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Devil's club	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Fiddlehead ferns	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Nettle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

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Table 5-13.–Page 6 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Vegetation, continued												
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
Indian rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Salmonberry shoots	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Skunk cabbage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sourdock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Spruce tips	9.5	9.5	9.5	0.0	0.0	6.4	0.2	0.1	6.4	gal	0.2	80.1
Wild celery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild parsley	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild rose hips	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Other wild greens	4.8	4.8	4.8	0.0	4.8	1.3	0.0	0.0	1.3	gal	0.0	98.3
Unknown mushrooms	19.0	14.3	14.3	4.8	0.0	41.2	1.5	0.7	41.2	gal	1.5	92.0
Black seaweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Bull kelp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red seaweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sea ribbons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Giant kelp (*macrocystis*)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Alaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown seaweed	4.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wood	85.7	85.7	85.7	9.5	14.3	0.0	0.0	0.0	143.1	cord	5.3	15.0

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

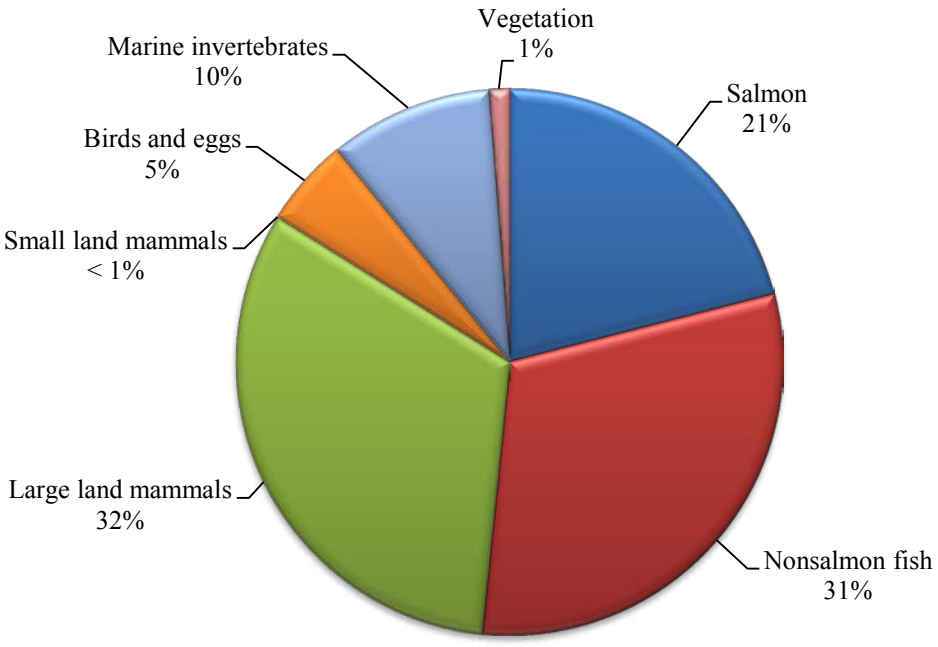
Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

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

Note "Unknown" means "unspecified" resources (i.e., respondents may have known the specific resource harvested, but that information was not collected during the survey).

Note For all types of seaweed, amounts harvested include amounts used for fertilizer; these harvests were not converted into usable pounds.

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



Note Categories having 0 lb of edible weight are not included.

Figure 5-12.–Composition of harvest by resource category in pounds usable weight, Whale Pass, 2012.

Table 5-14.–Top ranked resources used by households, Whale Pass, 2012.

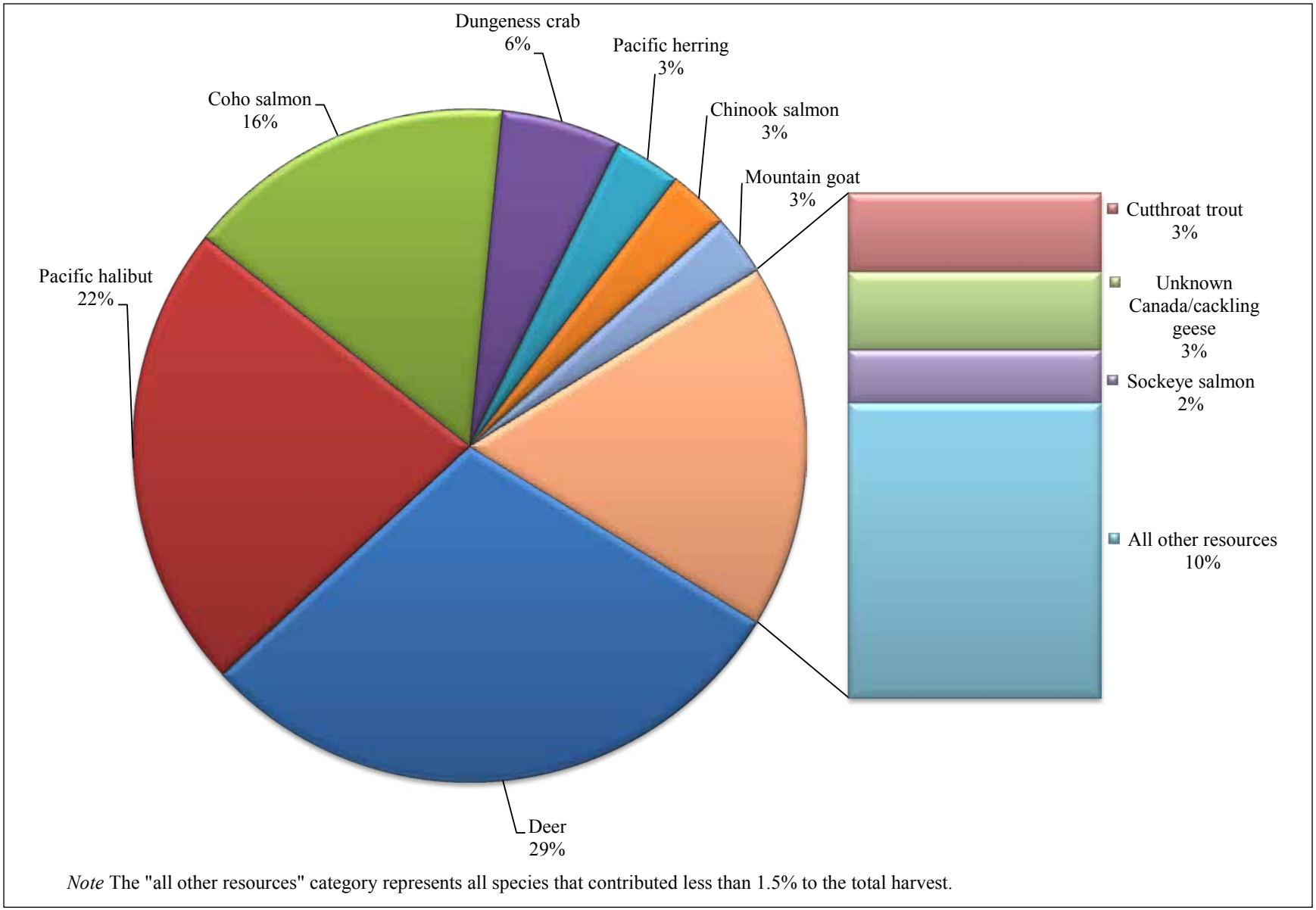
Rank[a]	Resource	Percentage of households using
1.	Pacific halibut	90.5%
2.	Coho salmon	76.2%
2.	Deer	76.2%
4.	Dungeness crab	71.4%
5.	Chinook salmon	57.1%
6.	Shrimp	52.4%
7.	Blueberry	47.6%
8.	Pacific herring	42.9%
8.	Yelloweye rockfish	42.9%
10.	Cutthroat trout	33.3%
10.	Beach asparagus	33.3%

Source ADF&G Division of Subsistence household surveys, 2013.
a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.

Use and Harvest Characteristics by Resource Category

Table 5-13 presents the estimated wild resource harvests and uses by Whale Pass residents in 2012 and includes information about sharing (e.g., giving, receiving) of wild resources. Generally, Whale Pass residents participate in the sharing of wild resources: 67% of households gave away some resource during the study year and 76% received a resource during the study period. Salmon, in particular, was widely shared, with 48% of households giving salmon away and 57% of households receiving salmon. Nonsalmon fish were also frequently shared, with 38% of households giving to other households and 52% receiving. Small land mammals and birds were the least shared: 5% of households received small land mammals but none gave any away, and 5% of households gave some bird harvest away, but no Whale Pass households received any bird harvests.

Table 5-14 lists the top 10 ranked resources used by households and Figure 5-13 shows the species with the highest harvests during the 2012 study year. Pacific halibut was the most widely used resource in Whale Pass (used by 91% of households) followed by coho salmon, deer, and Dungeness crab. Of the top 10 used resources, 7 of them come from the sea, while only deer, blueberries, and beach asparagus were the most used land-based resources. Land-based resources are important, but this ranking reflects the general focus by Southeast Alaska communities on the water and the resources to be gathered there. Turning to the top resources harvested in terms of pounds usable weight, it can be seen that no one resource category dominates. Deer and Pacific halibut were the highest harvested species (29% and 22%, respectively) followed by coho salmon (16%) (Figure 5-13). These are also among the top resources used by households. Similar to what was seen in the top resources used, all the top harvested resources are found in the water, except for deer, mountain goat, and geese.



Note The "all other resources" category represents all species that contributed less than 1.5% to the total harvest.

Figure 5-13.–Top species harvested by percentage of total harvest in pounds usable weight, Whale Pass, 2012.

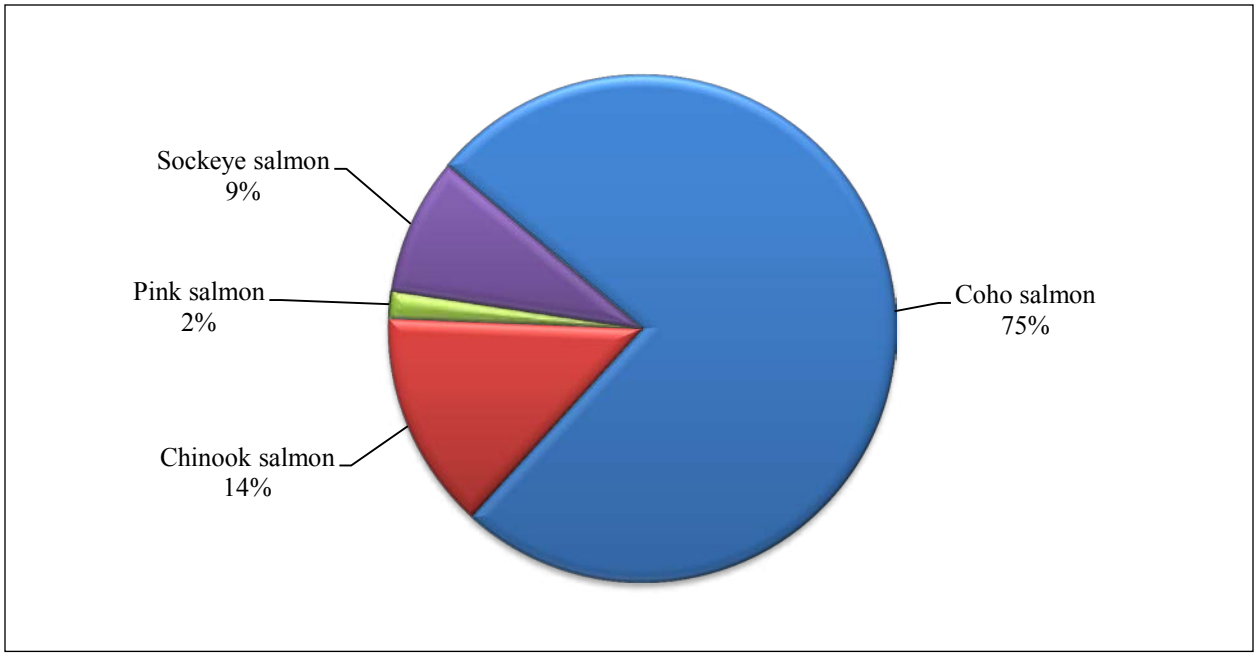


Figure 5-14.–Composition of salmon harvest in pounds usable weight, Whale Pass, 2012.

Salmon

An estimated total of 2,868 lb of salmon was harvested by Whale Pass households in 2012 (Table 5-13). Almost all households used salmon (95%), and a majority harvested salmon (57%). Salmon was highly shared, with 48% of households giving and 57% receiving salmon. Regarding sharing by species, 38% of households received coho salmon and 33% received Chinook salmon; all other species were received by less than 5% of households. By far the most important salmon species in Whale Pass was coho salmon, which was used by 76% of households in the community and constituted 75% of the overall salmon harvest (Table 5-13; Figure 5-14). A total of 2,169 lb of coho salmon were harvested in 2012 (39 lb per capita). A distant second in harvest composition was Chinook salmon (14% of the salmon harvest; 398 lb, or 7 lb per capita), followed by sockeye salmon (9% of salmon harvest), and pink salmon (2% of salmon harvest). No chum salmon were harvested by any household in Whale Pass in 2012. This reliance on coho salmon likely reflects the presence of a hatchery at Neck Lake that produces only coho salmon.

An estimated 482 salmon (2,260 lb) were taken using rod and reel gear (Table 5-15). An additional 86 salmon (608 lb) were taken by trolling. No salmon were removed from commercial harvests for home use. Figure 5-15 is a visual representation of the pounds of salmon harvested by gear type. As estimated in pounds usable weight, 79% of the salmon harvest was caught using rod and reel (Table 5-16). For most species of salmon harvested, rod and reel gear was the most commonly used harvest method: 90% of coho salmon, 100% of pink salmon, and 100% of sockeye salmon. Coho salmon were also harvested with troll gear (10%). For Chinook salmon, trolling was the only harvest method used.

Table 5-15.–Estimated harvest of salmon by gear type and resource, Whale Pass, 2012.

	Removed from commercial catch		Subsistence methods													
			Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Trolling		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**86.1**	**607.9**	**482.1**	**2,259.9**	**568.3**	**2,867.7**
Chum salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coho salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.7	209.5	408.9	1,959.4	452.6	2,168.9
Chinook salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.4	398.4	0.0	0.0	42.4	398.4
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3	50.3	19.3	50.3
Sockeye salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.0	250.1	54.0	250.1
Unknown salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Note The harvested number of salmon is represented as individual fish harvested.

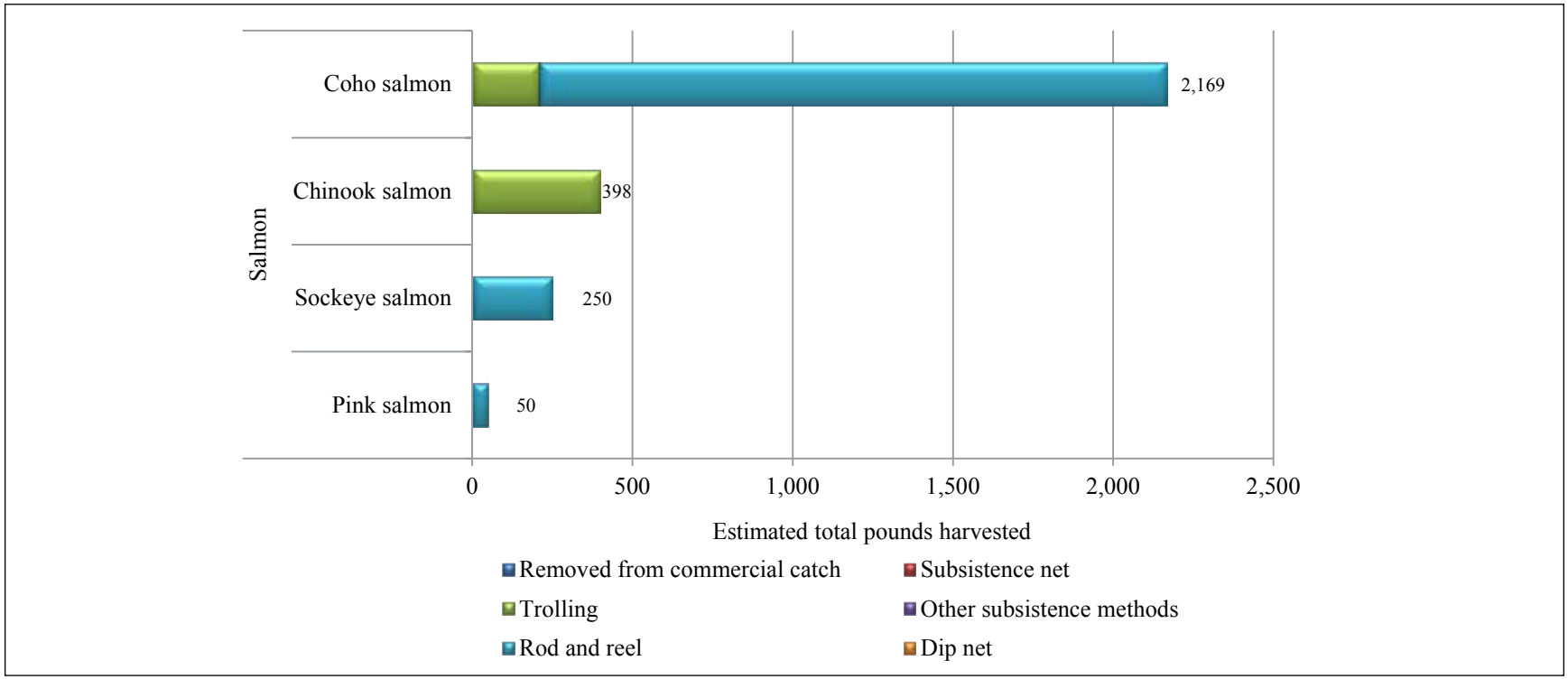


Figure 5-15.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Whale Pass, 2012.

Table 5-16.–Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Whale Pass, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Trolling	Rod and reel	Any method
			Gillnet or seine	Dip net	Other	Subsistence gear, any method			
Salmon	**Gear type**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**21.2%**	**78.8%**	**100.0%**
	Total	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**21.2%**	**78.8%**	**100.0%**
Chum salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coho salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	34.5%	86.7%	75.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	9.7%	90.3%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	68.3%	75.6%
Chinook salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	65.5%	0.0%	13.9%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	13.9%	0.0%	13.9%
Pink salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	1.8%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	1.8%
Sockeye salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	8.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.7%	8.7%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

Generally, Whale Pass residents fished for salmon in the waters near the community.[4] Rod and reel fishing for coho salmon mainly occurred right in town at the outlet of Neck Lake (Figure 5-16). Trolling for coho salmon occurred from the dock at Whale Pass out into Whale Passage along the northern end of Thorne Island and out into the more open water offshore. Trolling for Chinook salmon occurred in the same locations as coho salmon trolling, with the addition of areas in Whale Passage to the south of Thorne Island (Figure 5-17). Pink salmon fishing occurred in the same areas as rod and reel coho salmon fishing, while rod and reel fishing for sockeye salmon occurred some distance from town to the north (near the outlet of Red Lake) and to the south (in the vicinity of Sweetwater Lake). Maps showing fishing and harvest locations for pink and sockeye salmon can be found in Appendix D.

Nonsalmon Fish

An estimated total of 4,182 lb of nonsalmon fish, equal to about 76 lb of nonsalmon fish per capita, were harvested by Whale Pass residents in 2012 (Table 5-13). Pacific halibut made up the majority of the nonsalmon fish harvest by weight at 74% of the harvest, followed distantly by Pacific herring (10%), cutthroat trout (9%), and lingcod (2%) (Figure 5-18). The remainder of nonsalmon fish harvested together composed 5% of the total nonsalmon fish harvest. Nonsalmon fish were used by a majority of households (95%) and more households attempted to harvest (76%) and successfully harvested (71%) nonsalmon fish than salmon (Table 5-13). Salmon was more highly shared, however, since only 38% of households gave away nonsalmon fish and 52% of households received these species. Unsurprisingly, since Pacific halibut was responsible for the majority of the nonsalmon fish harvest, it was harvested by the highest percentage of households (52%) and shared widely through the community (43% of households received Pacific halibut and 38% gave it away). A total of 3,077 lb of Pacific halibut was harvested, which is about 56 lb per capita. About one-third of households harvested cutthroat trout at a rate of about 9 trout per household. Trout was not highly shared, however, with only 5% of households giving and no households receiving trout. Pacific herring was used and harvested by about 43% of households, with only 5% of households giving away and none receiving Pacific herring. Besides Pacific halibut, no other nonsalmon fish was shared by more than 5% of households. Yelloweye rockfish was also used by about 43% of households, but only 24% of households harvested yelloweye rockfish and none gave any away; however about 19% of households received yelloweye rockfish.

4. Because not every household in Whale Pass was surveyed for this study, the maps presented for the harvest of each wild resource may not show the full extent of harvest areas used by the community during 2012. In addition, resource harvest areas change over time, so areas not used in 2012 might be used in other years.

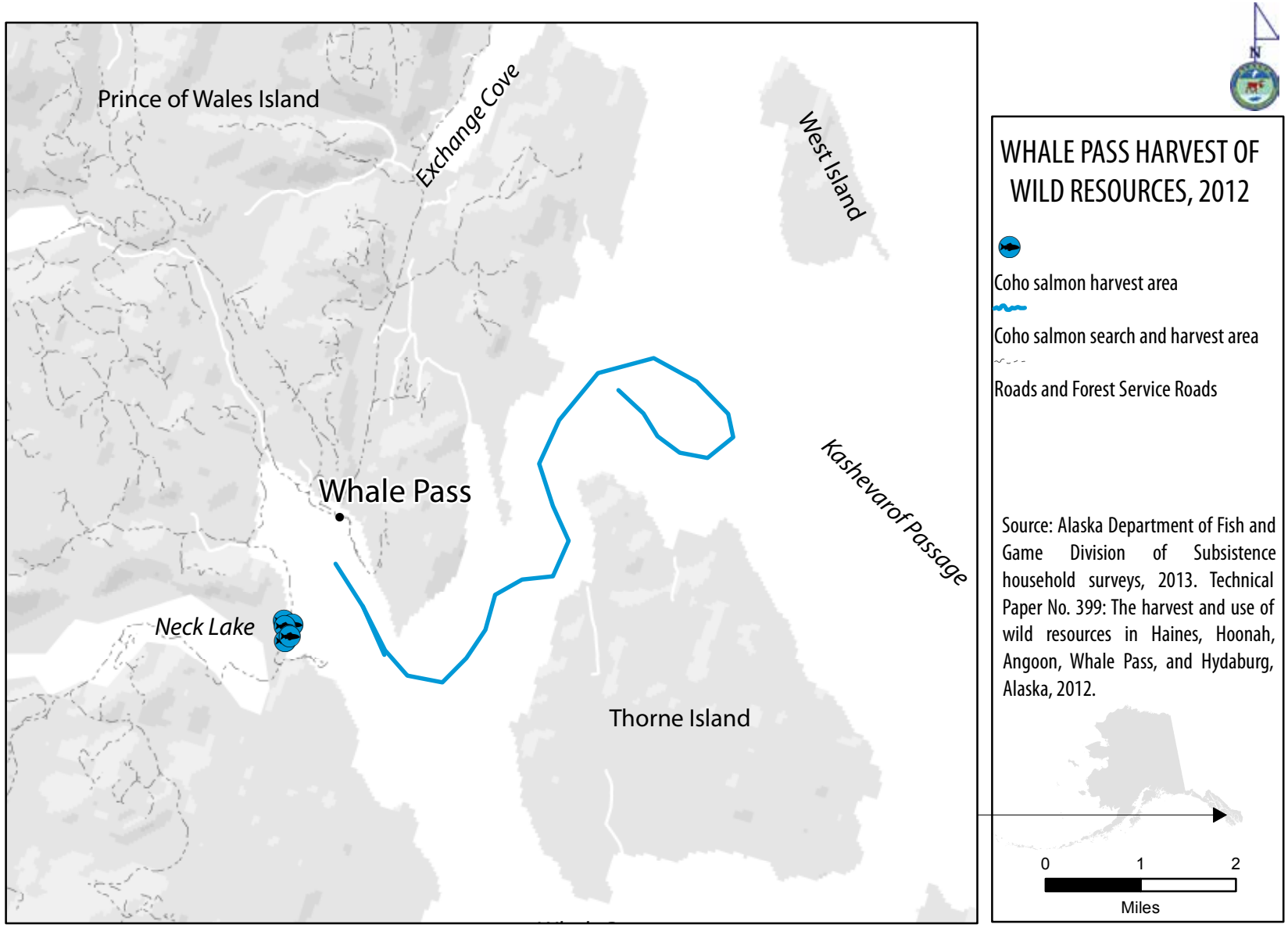


Figure 5-16.–Fishing and harvest locations of coho salmon, Whale Pass, 2012.

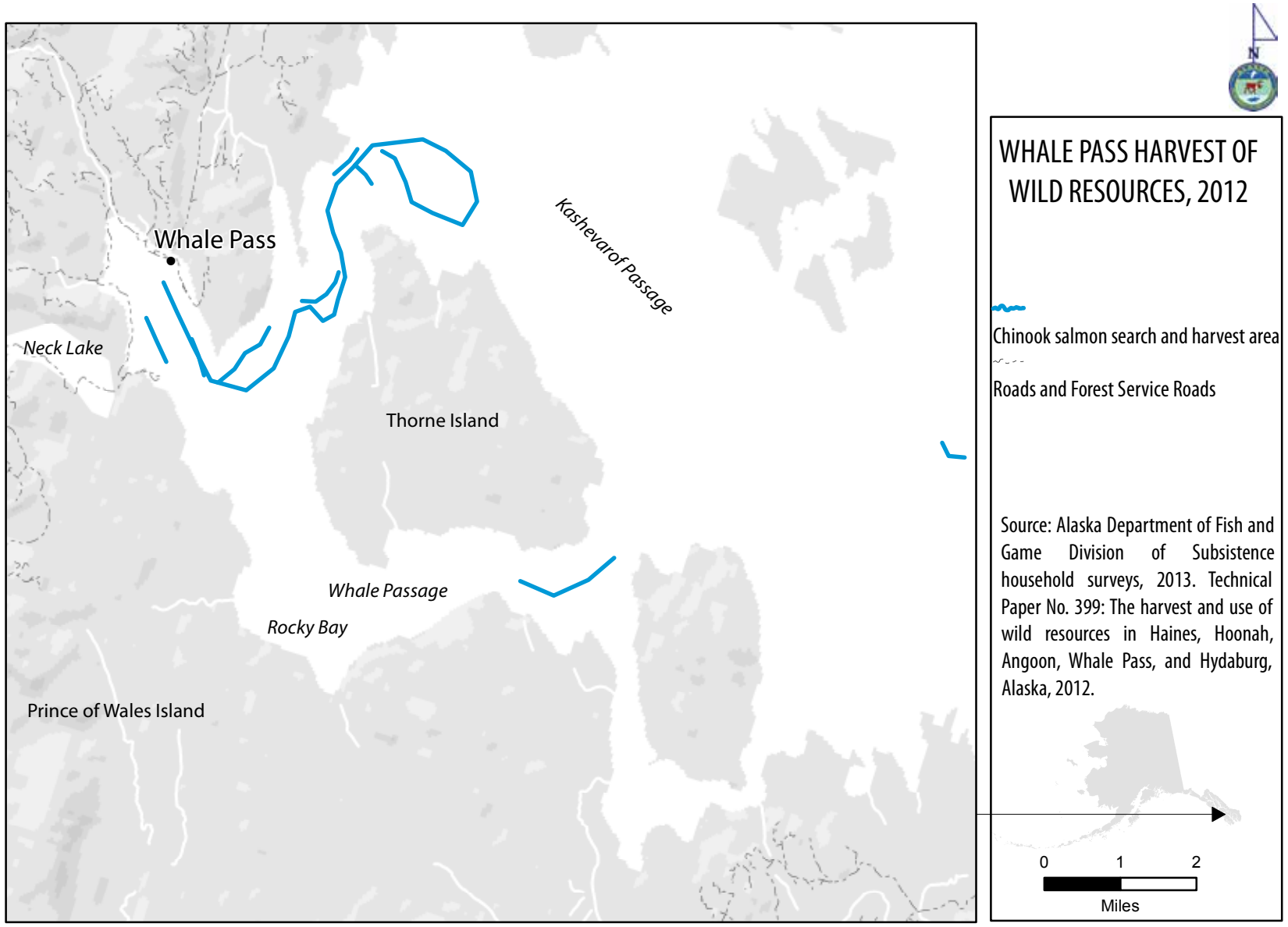
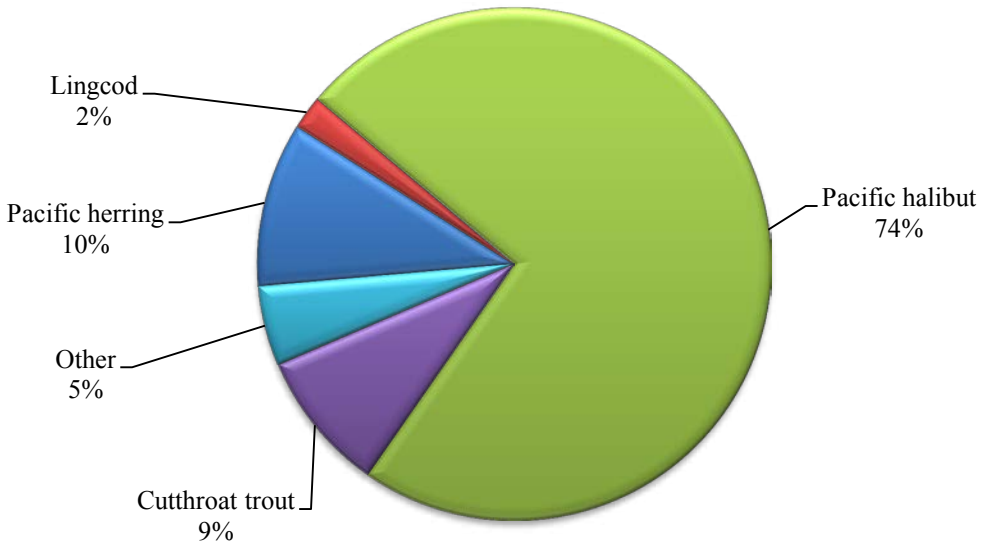


Figure 5-17.–Fishing and harvest locations of Chinook salmon, Whale Pass, 2012.



Note The "other" category represents all resources that contributed less than 2% to the nonsalmon fish harvest.

Figure 5-18.–Composition of nonsalmon fish harvest in pounds usable weight, Whale Pass, 2012.

An estimated 2,791 lb of nonsalmon fish were caught using rod and reel gear, and 1,390 lb of nonsalmon fish were harvested using a longline or skate (Table 5-17). Figure 5-19 is a visual representation of the pounds of nonsalmon fish harvested by gear type. As estimated in total pounds of fish, 67% of the nonsalmon fish harvest was caught using rod and reel gear (Table 5-18). For all nonsalmon fish species, rod and reel gear was the most commonly used harvest method, accounting for 100% of the harvests except for Pacific halibut. For Pacific halibut, rod and reel gear accounted for 55% of the total harvest by weight and longline or skate accounted for the other 45% of the harvest.

Whale Pass residents generally fished for nonsalmon fish in the waters around the northern section of Prince of Wales Island. Fishing for Pacific halibut occurred in the widest variety of areas. The waters around Whale Pass, including Whale Passage and Exchange Cove were used, as were areas farther away, such as along the coast of Zarembo Island, on the west side of Prince of Wales Island in Sea Otter Sound, and Shakan Strait (Figure 5-20). Pacific herring was harvested just off the community dock (Figure 5-21). Households fished for cutthroat trout in Neck Lake (Figure 5-22). Lingcod, rockfish, and other nonsalmon fish were fished for in many of the same locations as Pacific halibut. While some households target these fish, they are also an incidental harvest when Pacific halibut fishing. Search and harvest areas for these fish can be found in Appendix D.

Table 5-17.–Estimated harvest of nonsalmon fish by gear type and resource, Whale Pass, 2012.

		Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Longline and skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
Resource	Unit[a]	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds
Nonsalmon fish			**0.0**		**0.0**		**1,390.2**		**0.0**		**1,390.2**		**2,791.3**		**4,181.5**
Pacific herring	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.2	433.3	72.2	433.3
Pacific herring roe/unspecified	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring sac roe	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring spawn on kelp	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe on hair seaweed	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe on hemlock branches	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eulachon (hooligan, candlefish)	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Silver smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific (gray) cod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	4.1	1.3	4.1
Pacific tomcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown cod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.9	1.3	3.9
Flounder	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kelp greenling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.6	2.6
Lingcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.1	89.1	14.1	89.1
Unknown greenling	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.9	3.9	3.9
Pacific halibut	lb	0.0	0.0	0.0	0.0	1,390.2	1,390.2	0.0	0.0	1,390.2	1,390.2	1,686.9	1,686.9	3,077.1	3,077.1
Black rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.3	56.6	28.3	56.6
Yelloweye rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	30.9	10.3	30.9
Quillback rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	27.0	9.0	27.0
Brown rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	7.7	2.6	7.7
Unknown rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3	57.9	19.3	57.9
Sablefish (black cod)	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buffalo sculpin	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Irish lord	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown shark	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skates	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sole	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	15.4	5.1	15.4
Cutthroat trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	248.1	372.2	248.1	372.2
Rainbow trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steelhead	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Note The summary row that incliudes incompatible units of measure for harvest number has been left blank.

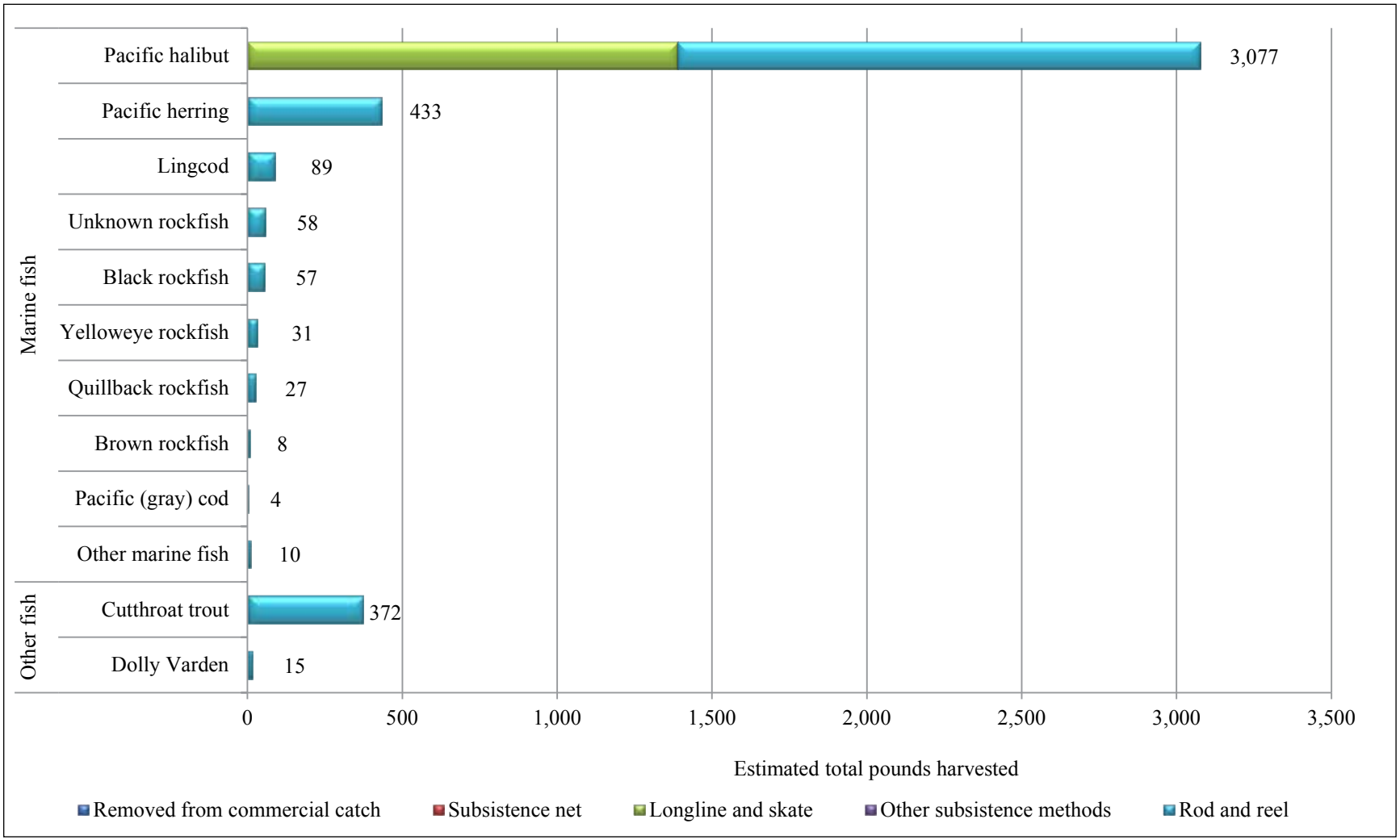


Figure 5-19.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Whale Pass, 2012.

Table 5-18.–Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Whale Pass, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Rod and reel	Any method
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method		
Nonsalmon fish	**Gear type**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**0.0%**	**33.2%**	**0.0%**	**33.2%**	**66.8%**	**100.0%**
	Total	**0.0%**	**0.0%**	**33.2%**	**0.0%**	**33.2%**	**66.8%**	**100.0%**
Pacific herring	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	15.5%	10.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	10.4%	10.4%
Pacific herring roe/unspecified	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring sac roe	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring spawn on kelp	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe on hair seaweed	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe on hemlock branches	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Silver smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific (gray) cod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%

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Table 5-18.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Flounder	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kelp greenling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Lingcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	2.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	2.1%
Unknown greenling	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Pacific halibut	Gear type	0.0%	0.0%	100.0%	0.0%	100.0%	60.4%	73.6%
	Resource	0.0%	0.0%	45.2%	0.0%	45.2%	54.8%	100.0%
	Total	0.0%	0.0%	33.2%	0.0%	33.2%	40.3%	73.6%
Black rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	1.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%
Yelloweye rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.7%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%
Quillback rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.6%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.6%

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Table 5-18.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Brown rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Unknown rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	1.4%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%
Sablefish (black cod)	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Buffalo sculpin	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Red Irish lord	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Unknown shark	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skates	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sole	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

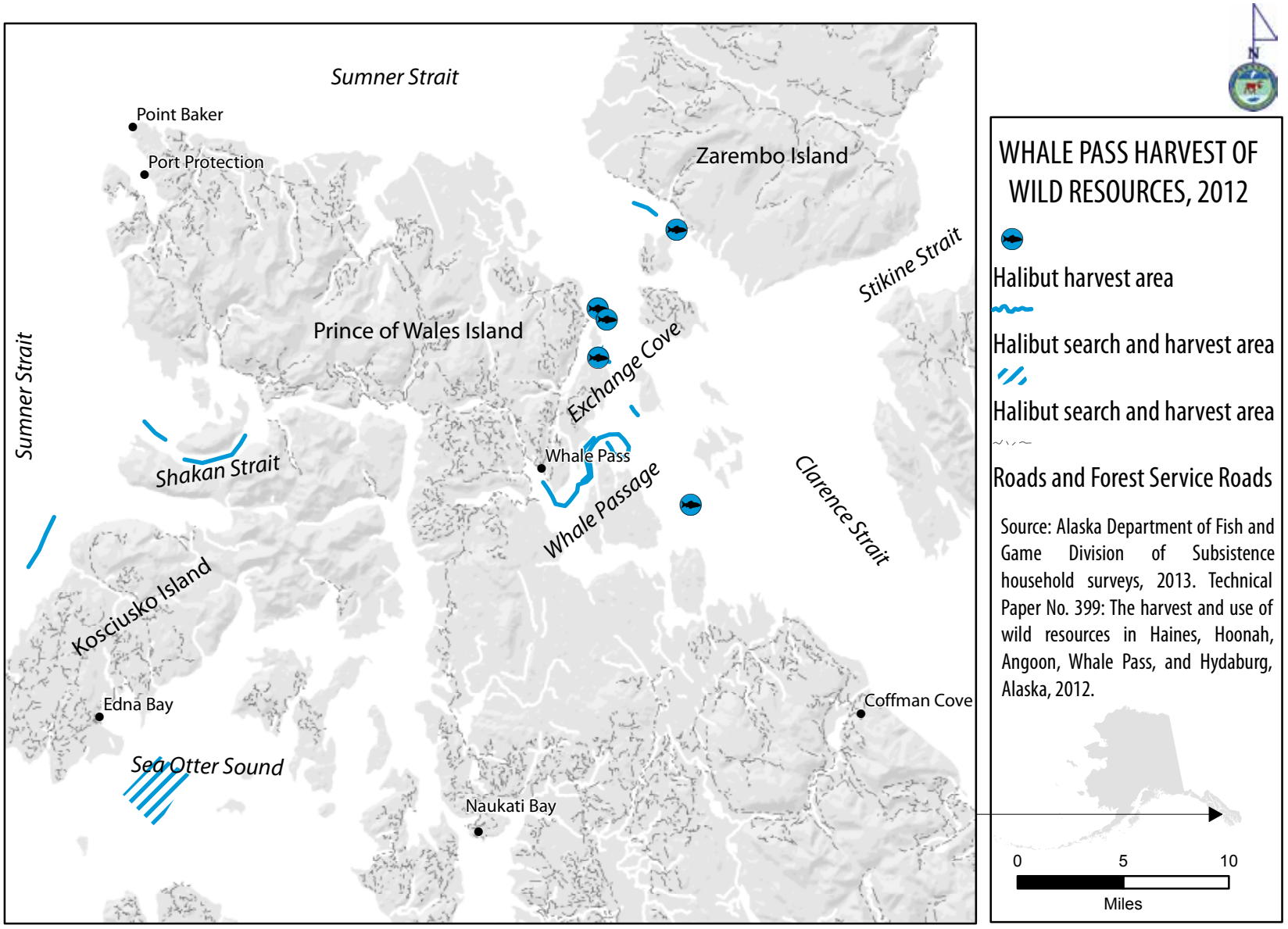


Figure 5-20.–Fishing and harvest locations of Pacific halibut, Whale Pass, 2012.



Figure 5-21.–Fishing and harvest locations of Pacific herring, Whale Pass, 2012.

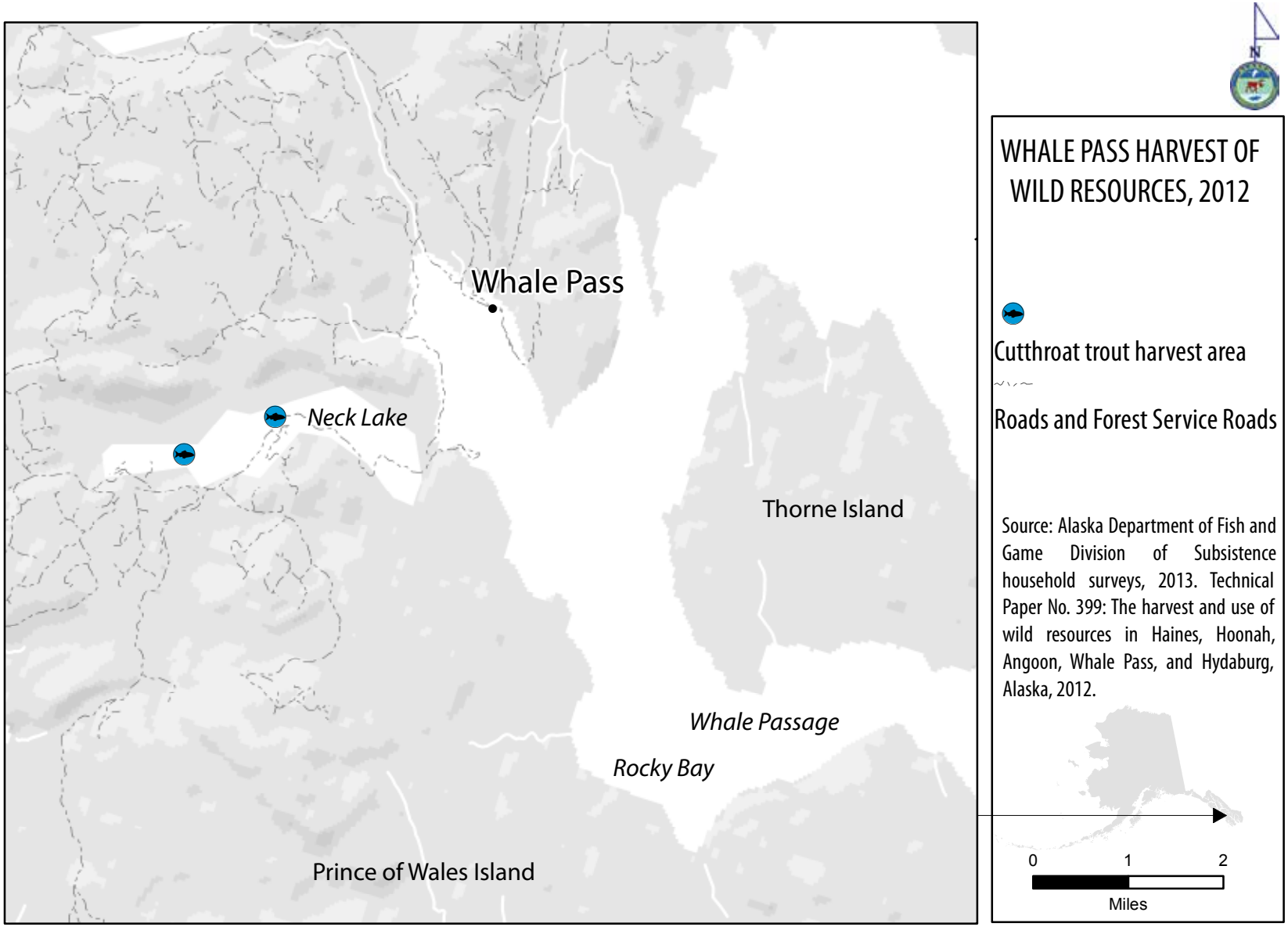


Figure 5-22.–Fishing and harvest locations of cutthroat trout, Whale Pass, 2012.

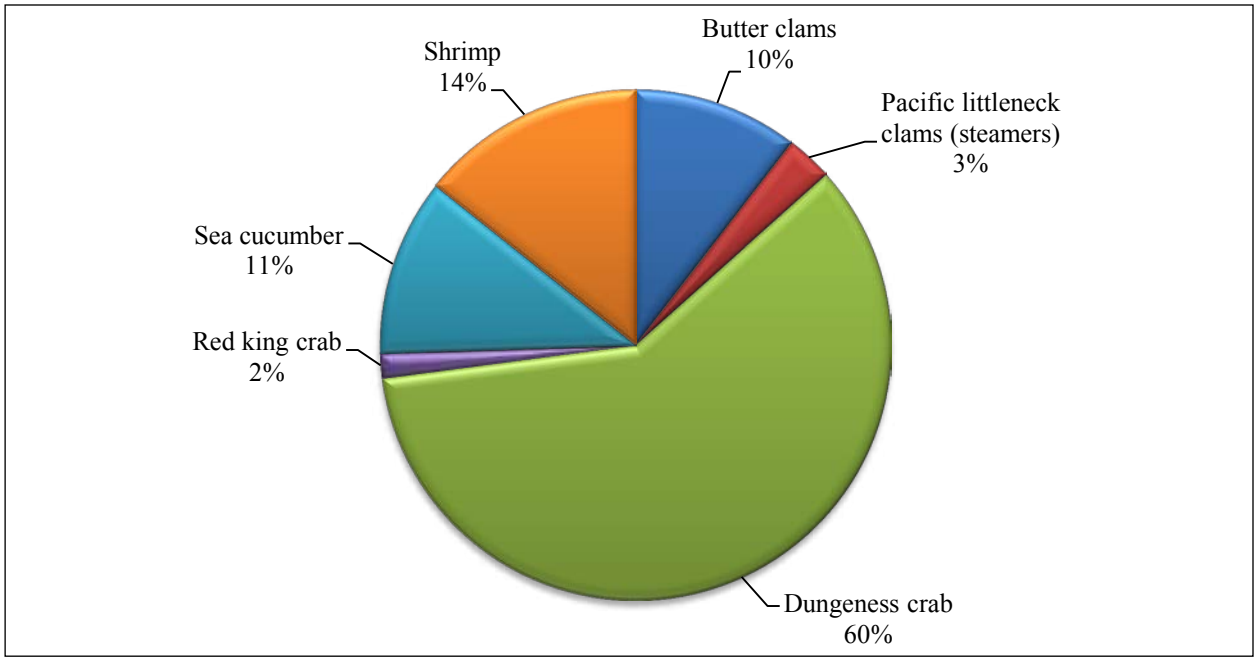


Figure 5-23.–Composition of marine invertebrate harvest in pounds usable weight, Whale Pass, 2012.

Marine Invertebrates

Residents of Whale Pass harvested an estimated 1,316 lb (24 lb per capita) of marine invertebrates in 2012 (Table 5-13). More than one-half of the marine invertebrates harvest, by weight, was Dungeness crab (60%; 22 crabs per household, or 14 lb per capita), followed by shrimp (14%; 3 lb per capita), sea cucumber (11%; 3 lb per capita), and butter clams (10%; 3 lb per capita) (Figure 5-23). Rounding out the harvest were Pacific littleneck clams (3%) and red king crab (2%). Marine invertebrates were used by 81% of households in the community, although only 57% harvested these kinds of resources (Table 5-13). Almost 48% of households received marine invertebrates, but only 14% gave away these resources. Dungeness crab and shrimp were the most highly used resources, by 71% and 52% of households, respectively. These were also the only marine invertebrates shared within the community, with 10% of households giving away Dungeness crab and 5% giving away shrimp; 38% of households received crab and 19% received shrimp. No other marine invertebrates were given away, and only Pacific littleneck clams were also received by 10% of households.

The harvests of marine invertebrates generally occurred within Whale Passage (Figure 5-24). The majority of the Dungeness crab harvest occurred in the protected waters directly offshore from the community while shrimp pots were set a little farther from the community and closer to Thorne Island. Other marine invertebrate harvest locations were in Whale Passage, Rocky Bay, and in El Capitan Passage.

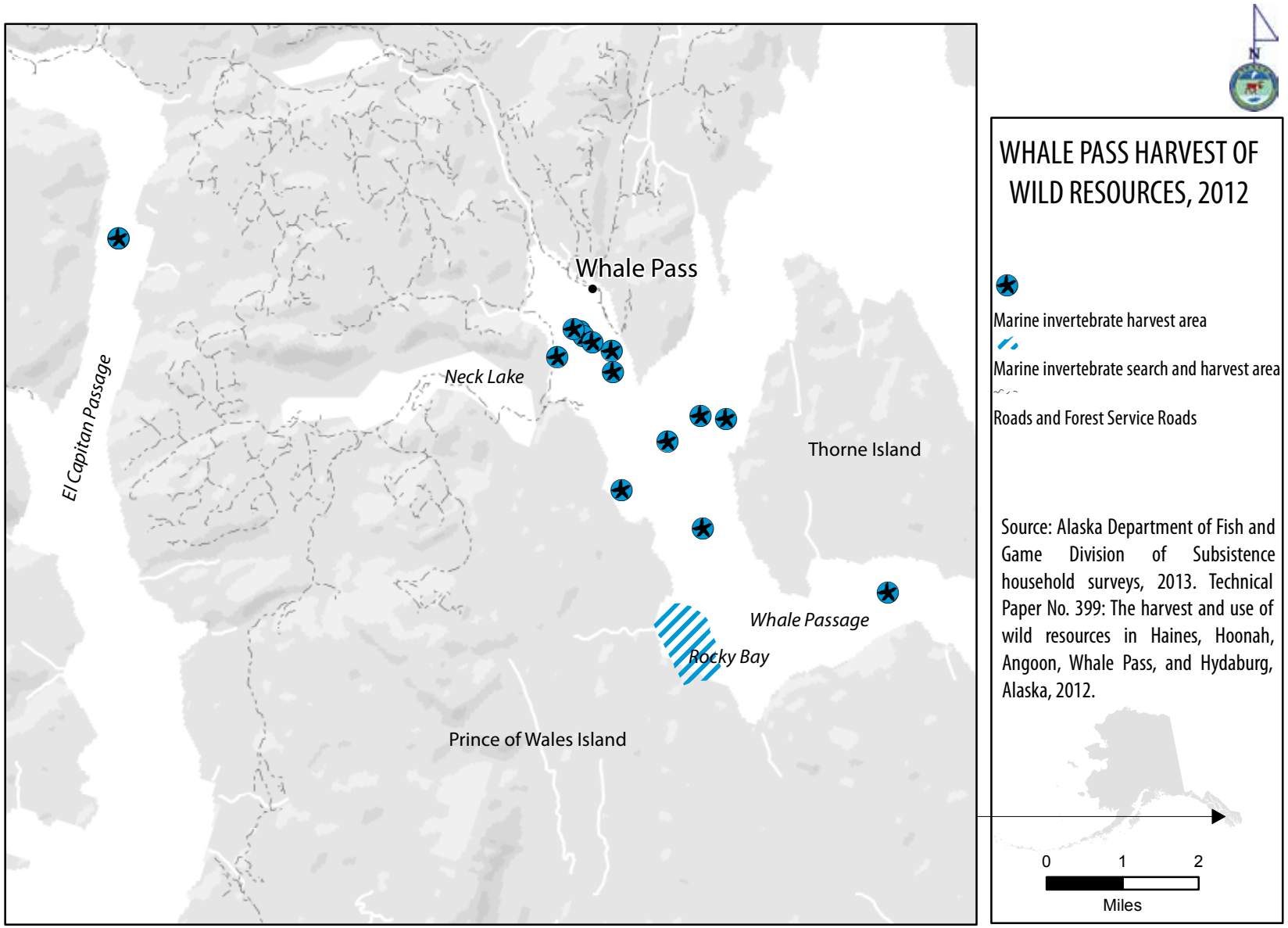


Figure 5-24.–Fishing and harvest locations of marine invertebrates, Whale Pass, 2012.

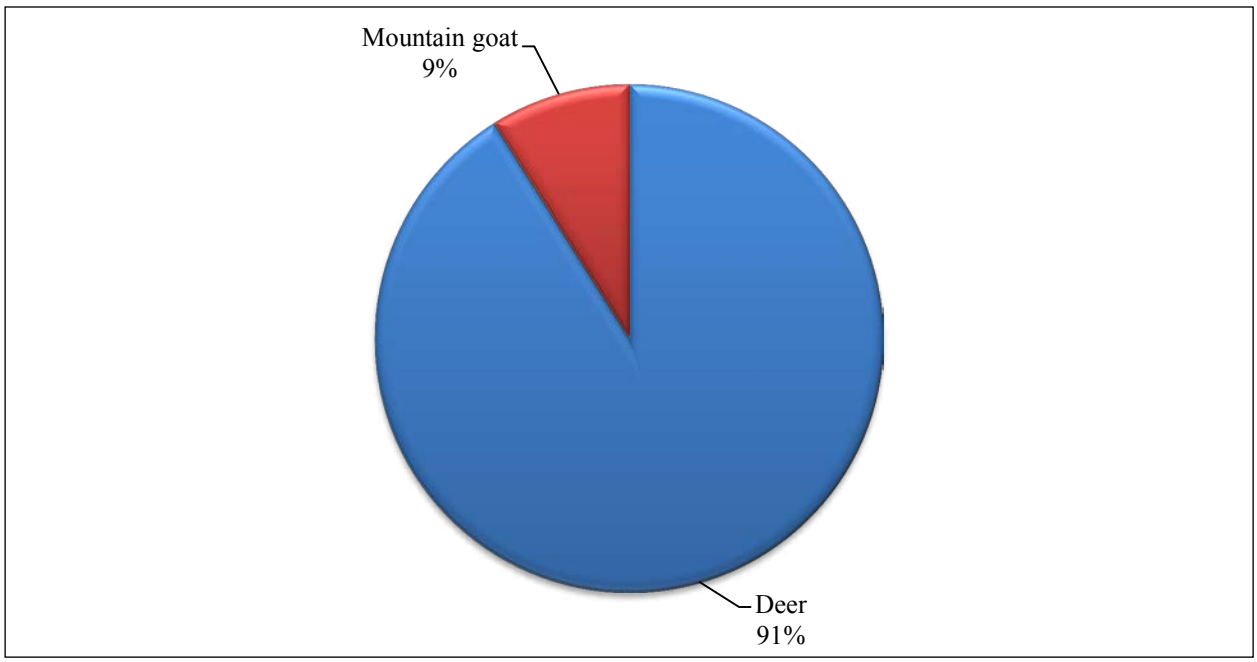


Figure 5-25.–Composition of large land mammal harvest in pounds usable weight, Whale Pass, 2012.

Large Land Mammals

Large land mammals were harvested by the community in 2012. The total harvest was estimated at 4,405 lb (approximately 80 lb per capita), the vast majority of which was deer (Table 5-13; Figure 5-25). Deer are locally the most abundant large land mammal on Prince of Wales Island; for the overall large land mammal harvest, 91% was deer (4,011 lb; 73 lb per capita). Mountain goat harvests, although not a species found on Prince of Wales Island, composed the remainder of the large land mammal harvest at 9% (393 lb; 7 lb per capita). An estimated total of 50 deer, almost entirely bucks, were harvested in 2012 throughout the months of July–December (Table 5-19). The majority of deer were taken in August and September. Approximately 4 mountain goats, 1 billy and 3 nannies, were harvested in September and October. No moose were harvested in 2012, but 10% of households attempted to harvest a moose (Table 5-13). Moose are also not available on Prince of Wales Island, so harvesters who hunted for this species had to travel off of the island.

An estimated 76% of households in Whale Pass used and tried to harvest deer, but 57% of households in Whale Pass were successful at harvesting this resource. Only 14% of households used, attempted to harvest, or harvested mountain goat. Compared to fish resources, large land mammals in general were not highly shared; deer was shared by 19% of households both receiving and giving away this resource, and 5% of households gave away mountain goat but no households received it. Black bear was not harvested by any household in the community, but it was used by 5% of the households. The same percentage of households received and gave away black bear. No Whale Pass household reported using or attempting to harvest any other large land mammal species in 2012.

Harvests of large land mammals occurred throughout the northern end of Prince of Wales Island, along Kupreanof Island, and in LeConte Bay. Deer were harvested on the mainland of Prince of Wales Island from the northern tip of the island as far south as Sarkar Cove (Figure 5-26). Deer were also harvested on Thorne Island and Kosciusko Island. Moose and mountain goat do not exist on Prince of Wales Island, so households hunting these species had to go off the island. Search area maps for these large land mammals can be found in Appendix D.

Table 5-19.–Estimated large land mammal harvests by month and sex, Whale Pass, 2012.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All large land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.9**	**14.1**	**12.9**	**9.0**	**6.4**	**2.6**	**5.1**	**54.0**
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Deer	0.0	0.0	0.0	0.0	0.0	0.0	3.9	14.1	11.6	6.4	6.4	2.6	5.1	**50.1**
Deer, male	0.0	0.0	0.0	0.0	0.0	0.0	3.9	14.1	11.6	6.4	6.4	2.6	0.0	**45.0**
Deer, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Deer, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	**5.1**
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.6	0.0	0.0	0.0	**3.9**
Mountain goat, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	**1.3**
Mountain goat, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	0.0	0.0	**2.6**
Mountain goat, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

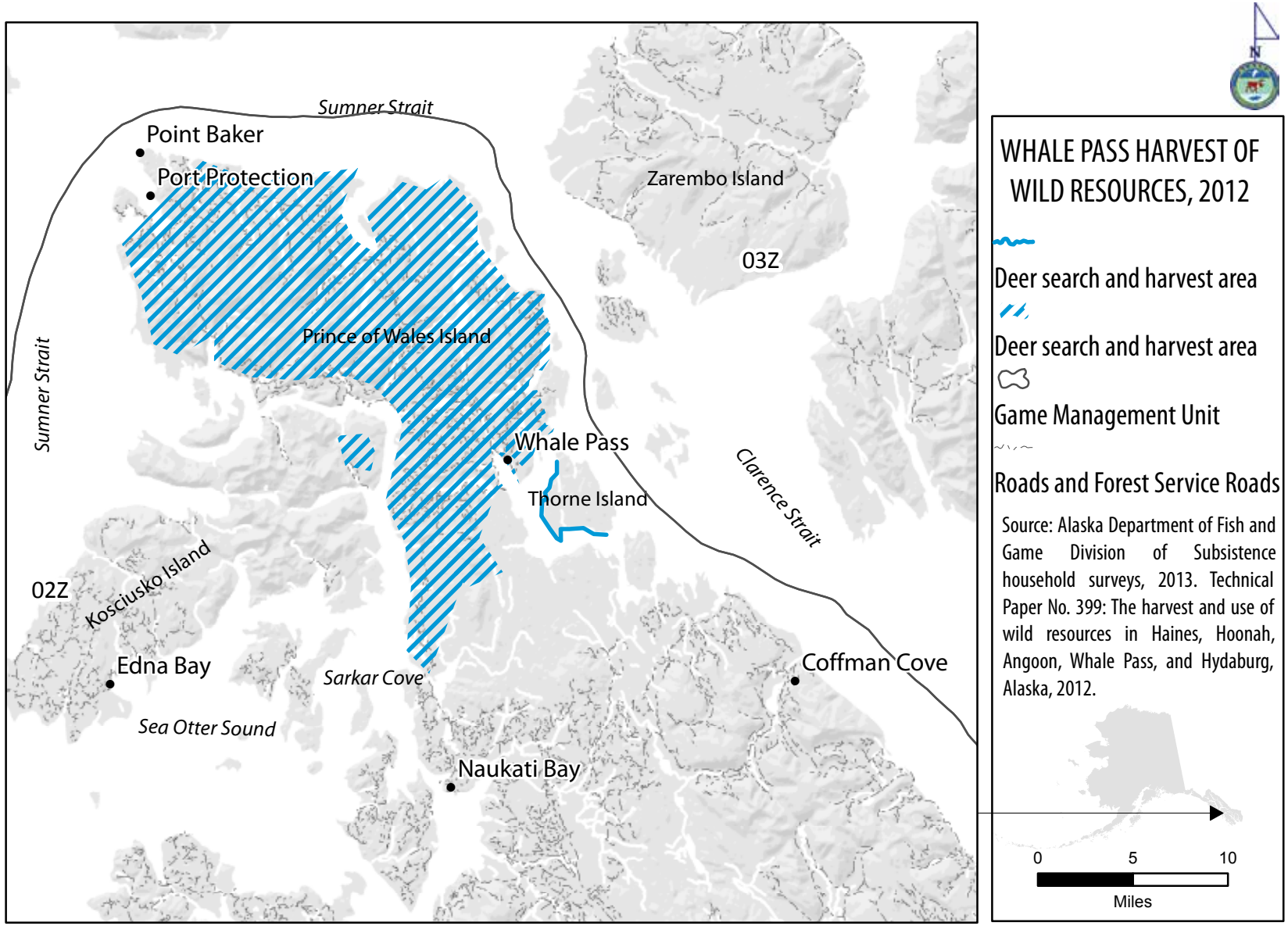


Figure 5-26.–Hunting locations of deer, Whale Pass, 2012.

Marine Mammals

No marine mammals were used or harvested by residents of Whale Pass in 2012. There were no Alaska Native residents of the community, and under the provisions of the Marine Mammal Protection Act (MMPA), only Alaska Natives may hunt marine mammals.

Small Land Mammals/Furbearers

The small land mammal/furbearer harvest (by individual animals harvested) comprised mink (58%), marten (24%), North American river (land) otter (6%), beaver (4%), least weasel (4%), gray wolf (2%), and northern flying squirrel (2%) (Figure 5-27). Almost all animals harvested in this resource category were used for fur only and not eaten. Species that are not eaten are given a conversion factor of zero (0) in Table 5-13 and are not added to the total estimated harvest weight for the community. There were only 4 lb harvested of edible food, all of which was northern flying squirrel (Table 5-13). Mink and marten were harvested during December and January and composed the majority of the harvest during those months (Table 5-20). The rest of the small land mammals/furbearers were harvested from December through April.

Approximately one-third of households used or harvested small land mammals/furbearers (Table 5-13). In general, for each species, attempted harvests were successful with the exception of North American river otter; 14% of Whale Pass households attempted to harvest river otters and 10% of households harvested this species. Small land mammals/furbearers were generally not shared; 5% of households reported receiving gray wolf and no other species was given or received.

All small land mammals/furbearers were harvested along the road system northwest of Whale Pass toward Port Protection and southwest of town to Sarkar Cove (Figure 5-28). All species in this category were taken on a trapline.

Birds and Eggs

Seven categories of birds composed the bird harvest for Whale Pass in 2012: Canada/cackling geese contributed 52% to the overall bird harvest, followed by long-tailed ducks (20%), mallards (12%), unknown ducks (10%), wigeons (2%), grouse (2%), and other birds (2%; this category includes ptarmigan and teal) (Figure 5-29). No bird eggs were harvested or used by Whale Pass households; under federal regulations, residents of Whale Pass are not eligible to harvest migratory bird eggs. In terms of total pounds harvested and total number of birds, Canada geese accounted for the highest harvest amount with 369 lb harvested (108 individuals; 7 lb per capita), followed by long-tailed ducks with 145 lb harvested (108 individuals; 3 lb per capita), and mallards with 84 lb harvested (84 individuals; 2 lb per capita) (Table 5-13). Mallards and Canada geese were used by the highest percentage of households (19% and 14%, respectively). Long-tailed ducks, though ranked second in terms of overall harvest weight, were used and harvested by a lower percentage of households (10%), similar to other species harvested in much smaller quantities. Birds were not highly shared among community households. An estimated 5% of households gave away mallards, long-tailed ducks, and Canada geese; no other species was given away or received.

All birds were harvested in the fall or winter season, with the majority (73%) of the harvests occurring in the fall (Table 5-21). The open season for migratory waterfowl runs from mid-September through the end of December. Mallards were harvested in equal amounts during the fall and winter seasons, while long-tailed ducks were predominately (95%) harvested during the fall season and Canada geese were taken mostly (62%) in the winter.

Upland game birds, such as ptarmigan or grouse, were mainly hunted on foot, along the road system, in the hills north of Whale Pass (Figure 5-30). Migratory waterfowl were hunted mainly by boat around Thorne Island, in Exchange Cove, and around Salmon Bay. Some waterfowl was also harvested on foot along the shores of the inlet where Whale Pass is situated.

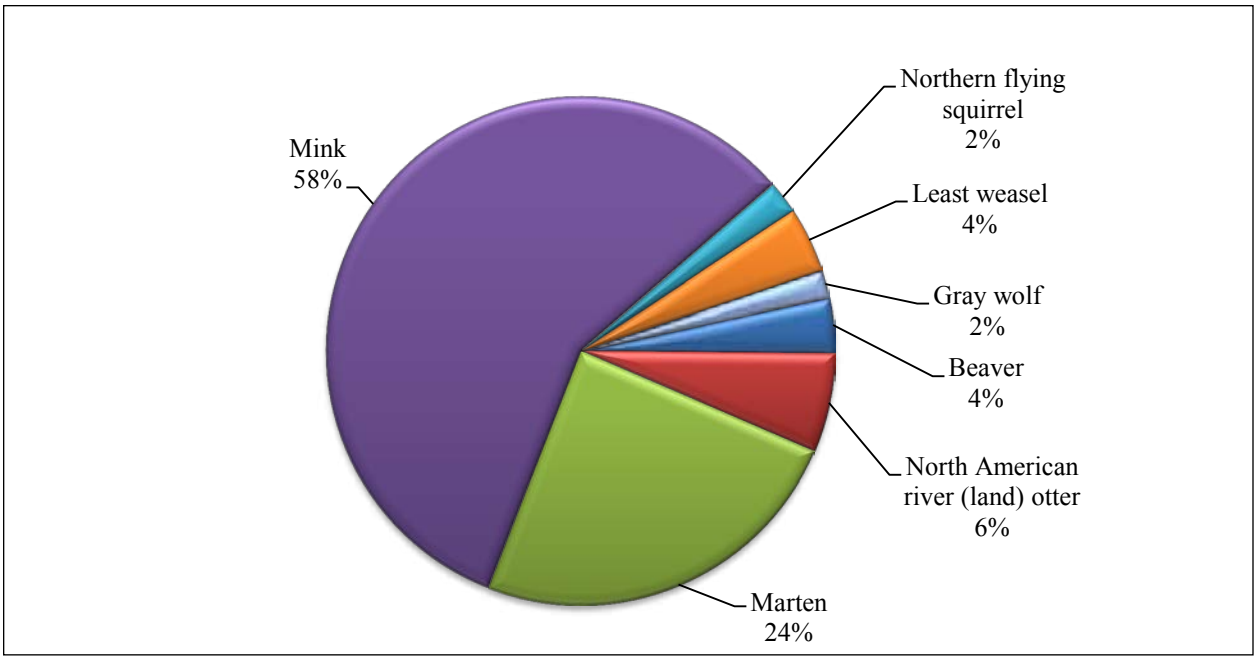


Figure 5-27.–Composition of small land mammal/furbearer harvest by individual animals harvested, Whale Pass, 2012.

Table 5-20.–Estimated small land mammal harvests by month, Whale Pass, 2012.

	Estimated harvest by month													
Resource	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All small land mammals	**77.1**	**3.9**	**2.6**	**1.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**282.9**	**0.0**	**367.7**
Beaver	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**12.9**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.1	0.0	**23.1**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.4	0.0	**90.0**
Mink	43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	168.4	0.0	**212.1**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern flying squirrel	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	**7.7**
Least weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	0.0	**15.4**
Gray wolf	0.0	3.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**6.4**
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, 2013.

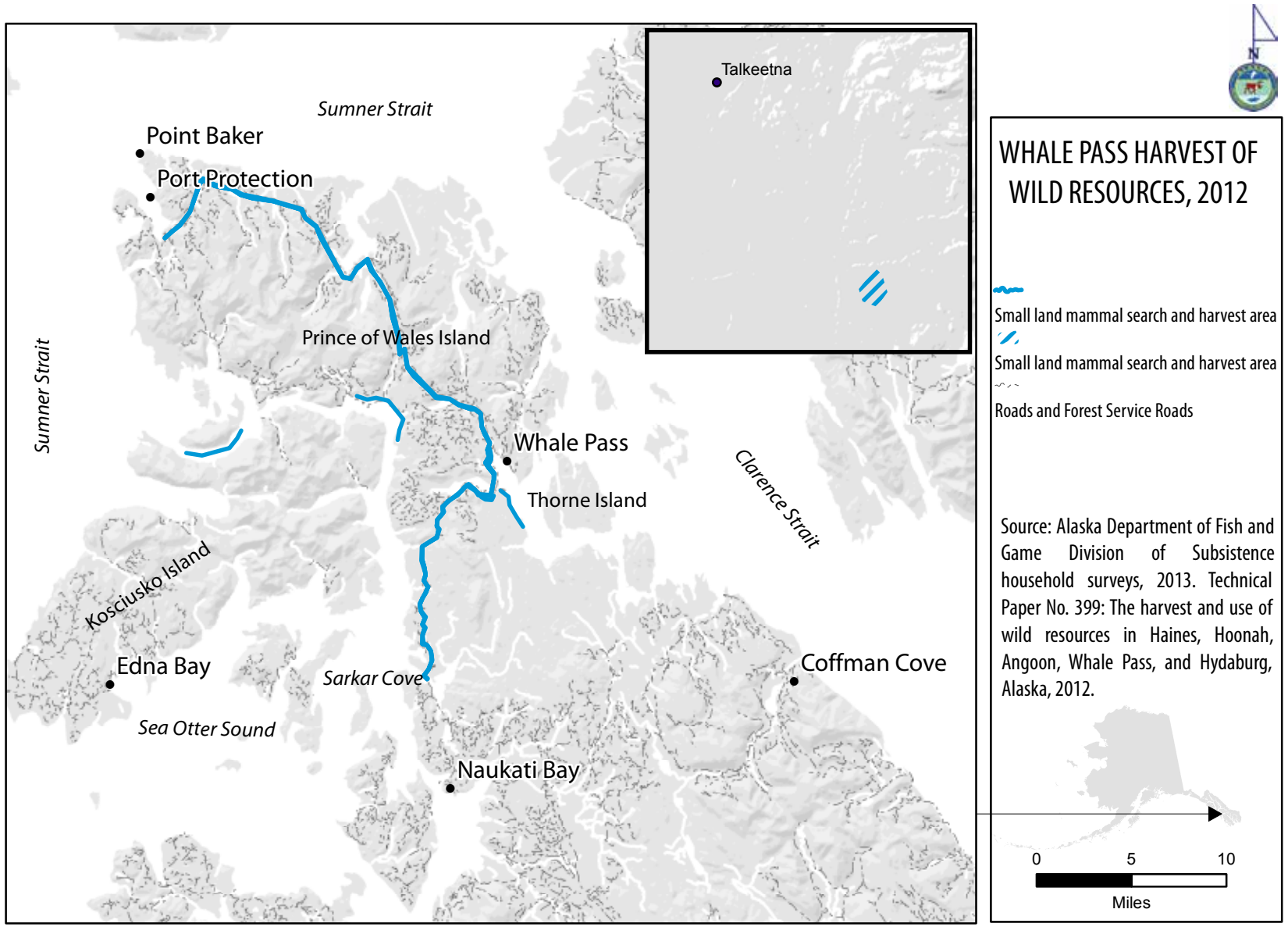
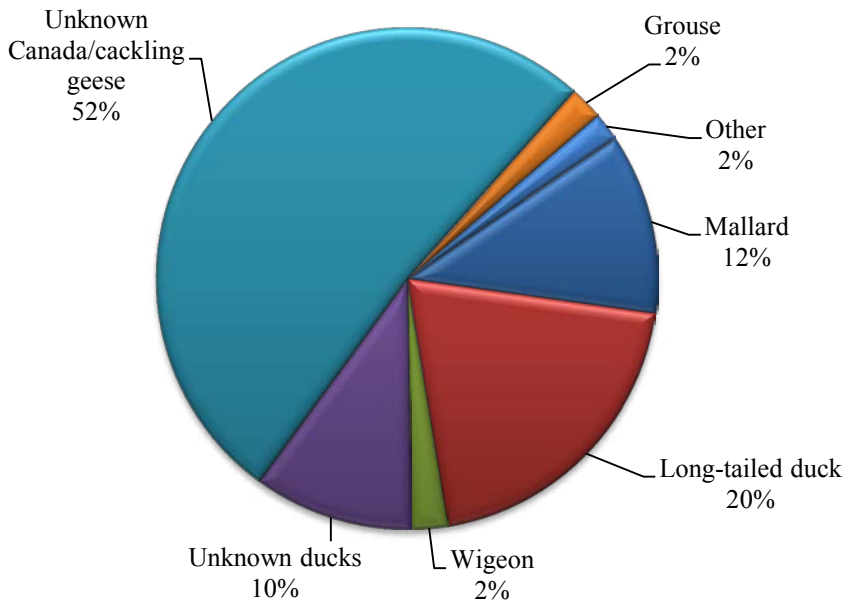


Figure 5-28.–Hunting and trapping locations of small land mammals/furbearers, Whale Pass, 2012.



Note No bird eggs were harvested. The "other" category represents all bird species that contributed less than 1.5% to the total birds harvest.

Figure 5-29.–Composition of bird and bird egg harvest in pounds usable weight, Whale Pass, 2012.

Table 5-21.–Estimated bird harvests by season, Whale Pass, 2012.

	Estimated harvest by season					
Resource	Winter	Spring	Summer	Fall	Season unknown	**Total**
All birds	**113.1**	**0.0**	**0.0**	**298.3**	**0.0**	**411.4**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	41.1	0.0	0.0	42.4	0.0	**83.6**
Long-tailed duck	5.1	0.0	0.0	102.9	0.0	**108.0**
Northern pintail	0.0	0.0	0.0	0.0	0.0	**0.0**
Scaup	0.0	0.0	0.0	0.0	0.0	**0.0**
Teal	0.0	0.0	0.0	5.1	0.0	**5.1**
Wigeon	0.0	0.0	0.0	12.9	0.0	**12.9**
Unknown ducks	0.0	0.0	0.0	68.1	0.0	**68.1**
Unknown Canada/cackling geese	66.9	0.0	0.0	41.1	0.0	**108.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown swans	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–small	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–large	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown loon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	**0.0**
Grouse	0.0	0.0	0.0	15.4	0.0	**15.4**
Ptarmigan	0.0	0.0	0.0	10.3	0.0	**10.3**

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

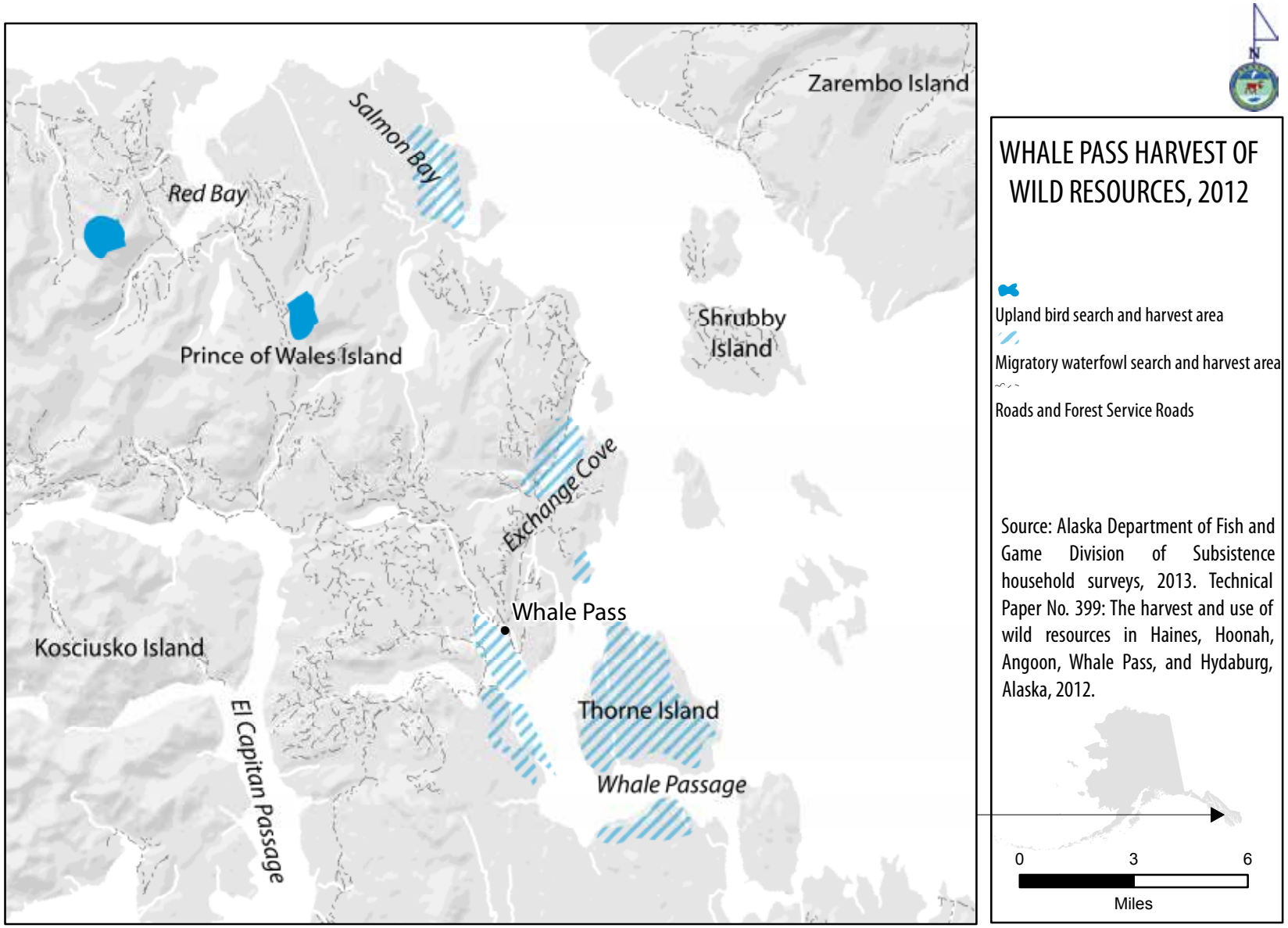


Figure 5-30.–Hunting and harvest locations of upland game birds and migratory waterfowl, Whale Pass, 2012.

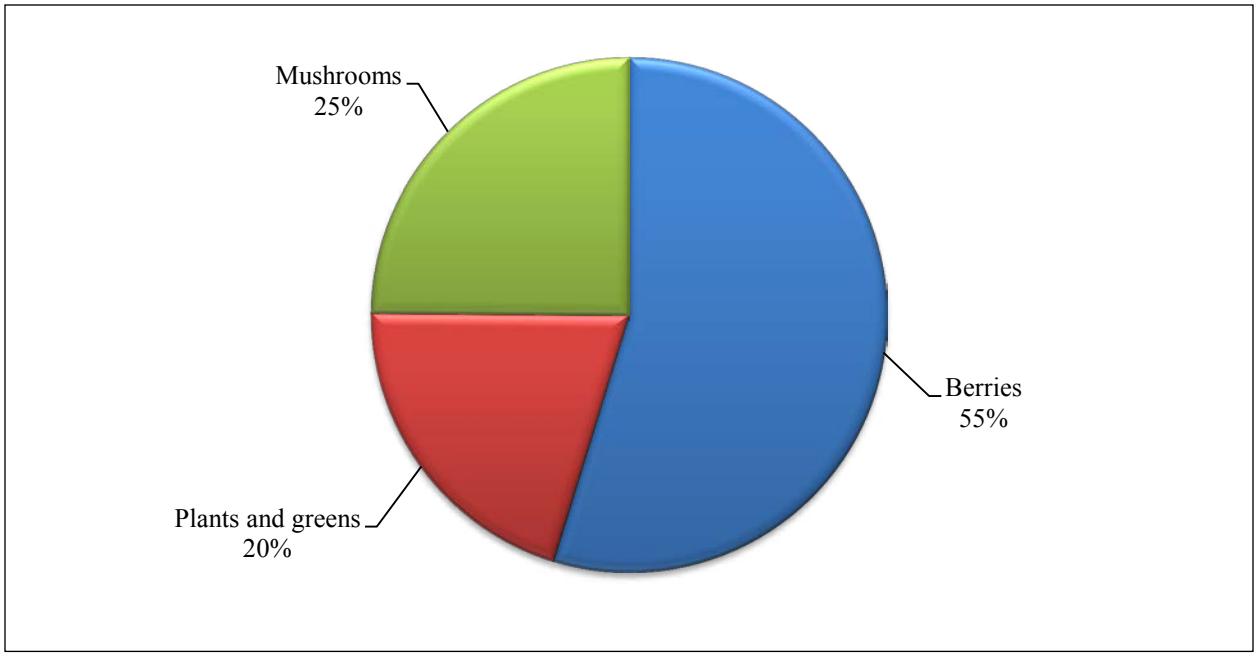


Figure 5-31.–Composition of vegetation harvest by type and pounds usable weight, Whale Pass, 2012.

Vegetation

Vegetation accounted for an estimated 166 lb (3 lb per capita) of the overall harvest of Whale Pass residents in 2012 (Table 5-13). By weight and vegetation category, the harvest consisted of berries (55%), mushrooms (25%), and plants and greens (20%) (Figure 5-31). With the exception of firewood, blueberries were used by the largest number of households (48%) and harvested in the highest amount (44 lb; 1 lb per capita) (Table 5-13). Other important berries were huckleberries (19 lb total), and highbush cranberries (11 lb total). Few wild greens were harvested, but the most important of them was beach asparagus, with 33% of households using and harvesting the resource and a total harvest amount of 26 lb. Information on specific species of mushrooms harvested was not collected during this survey; all mushrooms harvested were combined into a general mushroom category: 19% of households used mushrooms and 14% harvested a total of 41 lb of mushrooms (approximately 1 lb per capita).

Plants, berries, and mushrooms were not highly shared: 10% of households gave away beach asparagus; no households received any. For the remaining harvested species, no more than 5% of households reported giving or receiving resources.

Wood was also harvested by residents of Whale Pass for home heating; 143 cords of wood were harvested and used by 86% of the households (an average of 5.3 cords per household). There was some sharing of firewood: 14% of households gave away firewood and 10% of households received it. No seaweed was harvested by Whale Pass households, but 5% of households received some during the study year.

Most vegetation was gathered in the vicinity of Whale Pass (Figure 5-32). Berries were gathered along the U.S. Forest Service road system on the northern end of Prince of Wales Island, from Whale Pass north toward Exchange Cove and Port Protection as well as around the community. Beach greens were gathered along the shore by the community and along the northern edge of El Capitan Passage. Other terrestrial greens were harvested around the community, along the road system south toward Naukati Bay, as well as on Kupreanof Island. Firewood was harvested along the road system north and south of Whale Pass, as well as on Kosciusko Island (Figure 5-33).

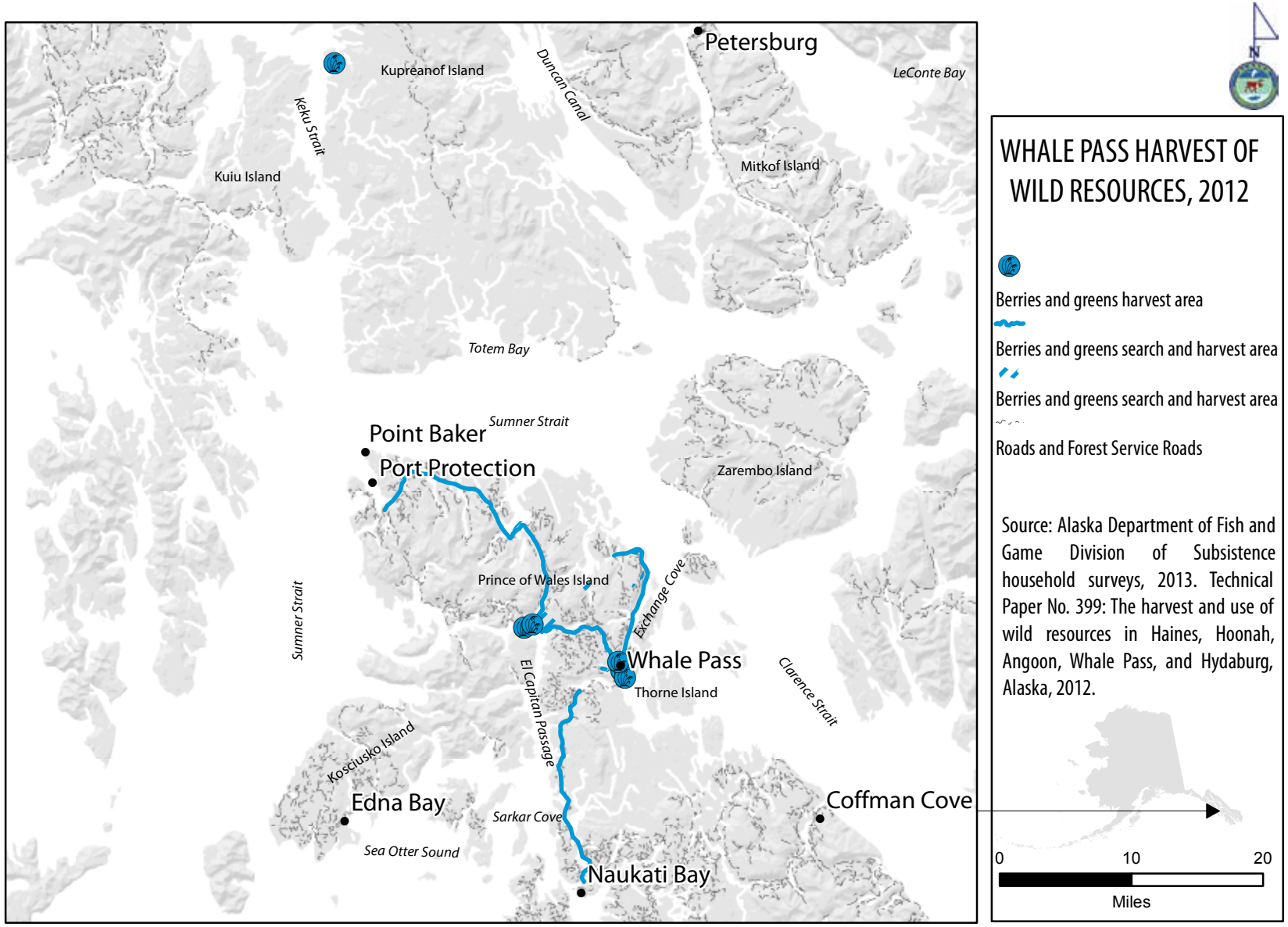


Figure 5-32.–Gathering and harvest locations of berries and plants, greens, and mushrooms, Whale Pass, 2012.

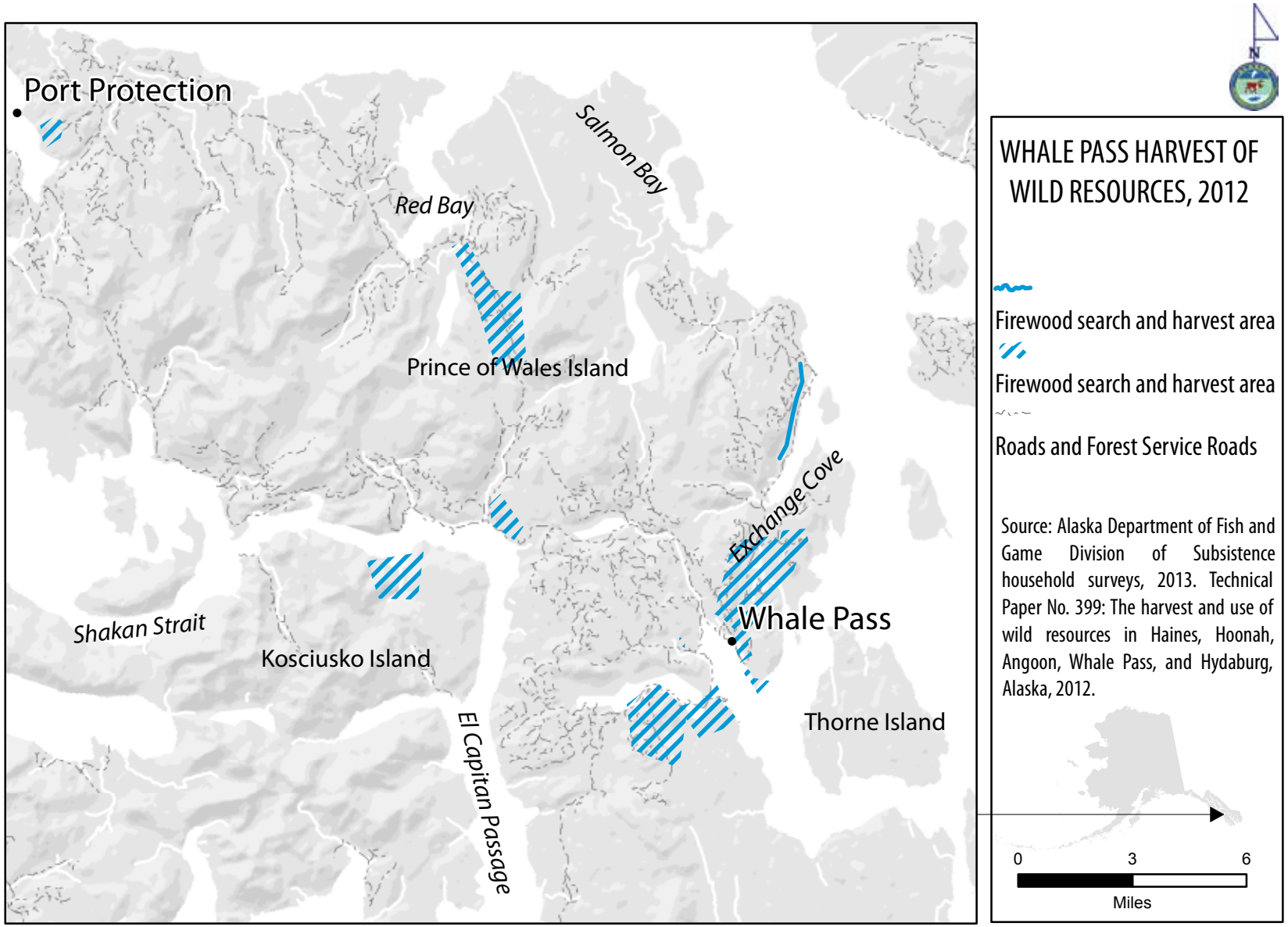


Figure 5-33.–Gathering and harvest locations of firewood , Whale Pass, 2012.

Comparing Harvests and Uses in 2012 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their own harvests in 2 ways: whether they got more, less, or about the same amount of 12 resource categories in 2012 as in the past 5 years, and whether they got "enough" of each of the 12 resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

Together, Table 5-22, Figure 5-34, and Figure 5-35 provide a broad overview of households' assessments of their harvests in 2012. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

Large land mammals is one of the most harvested of all subsistence resource categories used by Whale Pass households: 25% of responding households explained that they used the same amount of large land mammals in 2012 as they did in previous years, 60% reported that they used less, and 15% said they used more (Table 5-22; Figure 5-34). When asked why they used less, 55% of respondents reported that they did so because the resource was less available (Table 5-23). For those households that used more large game in the study year, 33% of respondents reported that they did so due to increased effort, 33% reported it was due to decreased need, and 33% reported it was due to using more deer instead of other resources (Table 5-24). In Whale Pass, 48% of respondents stated that they did not get enough large game (Figure 5-35). When asked to evaluate the impact of not getting enough large game, 60% described the impact as minor, 30% explained that not getting enough large land mammals had a major effect on their household, and 10% stated that the impact was severe (Table 5-25). Households that did not get enough large land mammal resources adapted by using more commercial foods (Table 5-26).

Nonsalmon fish is also among the most harvested of all subsistence resource categories used by Whale Pass households. Assessment questions for nonsalmon fish were broken down into 3 separate assessments—one for Pacific herring roe (eggs), one for rockfish, and one for all other nonsalmon fish. Rockfish and Pacific herring eggs will be discussed after other nonsalmon fish. Regarding nonsalmon fish, 30% of responding households explained that they used the same amount in 2012 as they did in previous years, 45% reported that they used less, and 25% said they used more (Table 5-22; Figure 5-34). When asked why they used less, 44% of respondents reported that they did so because they were working or did not have enough time (Table 5-23). For those households that used more nonsalmon fish in the study year, 40% of respondents reported that they did so due to an increased harvest effort (Table 5-24). In Whale Pass, 10% of respondents stated that they did not get enough nonsalmon fish (Figure 5-35). When asked to evaluate the impact of not getting enough nonsalmon fish, 50% described it as minor and 50% did not provide a response (Table 5-25). One household that did not get enough nonsalmon fish and providing a response indicated using more commercial foods (Table 5-26).

Rockfish and Pacific herring eggs were subcategories of nonsalmon fish about which assessment questions were asked. No Whale Pass households reported use of Pacific herring eggs. Regarding rockfish, 15% of responding households explained that they used the same amount in 2012 as they did in previous years, 45% reported that they used less, 20% said they used more, and 20% said they did not use rockfish (Table 5-22; Figure 5-34). When asked why they used less, 33% of respondents reported that they did so because they were working or otherwise did not have enough time (Table 5-23). Other stated reasons for using less rockfish included a lack of effort and less sharing. For those households that used more rockfish in the study year, 50% of respondents reported they did so due to an increased harvest effort (Table 5-24). No further assessment questions were asked about rockfish.

Table 5-22.–Changes in household uses of resources compared to recent years, Whale Pass, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Total households Number	Total households Percentage	Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage	Households not using Number	Households not using Percentage
Any resource	21	21	21	100.0%	19	90.5%	17	81.0%	12	57.1%	21	100.0%
All resources	**21**	**21**	**21**	**100.0%**	**12**	**57.1%**	**6**	**28.6%**	**3**	**14.3%**	**0**	**0.0%**
Salmon	21	20	19	95.0%	7	35.0%	6	30.0%	6	30.0%	1	5.0%
Pacific herring roe	21	20	0	0.0%	0	0.0%	0	0.0%	0	0.0%	20	100.0%
Rockfish	21	20	16	80.0%	9	45.0%	3	15.0%	4	20.0%	4	20.0%
All other fish	21	20	20	100.0%	9	45.0%	6	30.0%	5	25.0%	0	0.0%
Large land mammals	21	20	20	100.0%	12	60.0%	5	25.0%	3	15.0%	0	0.0%
Small land mammals	21	21	7	33.3%	1	4.8%	4	19.0%	2	9.5%	14	66.7%
Marine mammals	21	21	0	0.0%	0	0.0%	0	0.0%	0	0.0%	21	100.0%
Other birds	21	21	4	19.0%	1	4.8%	2	9.5%	1	4.8%	17	81.0%
Bird eggs	21	21	0	0.0%	0	0.0%	0	0.0%	0	0.0%	21	100.0%
Marine invertebrates	21	21	17	81.0%	13	61.9%	2	9.5%	2	9.5%	4	19.0%
Vegetation	21	20	20	100.0%	7	35.0%	11	55.0%	2	10.0%	0	0.0%
Seaweed	21	21	1	4.8%	0	0.0%	1	4.8%	0	0.0%	20	95.2%

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

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

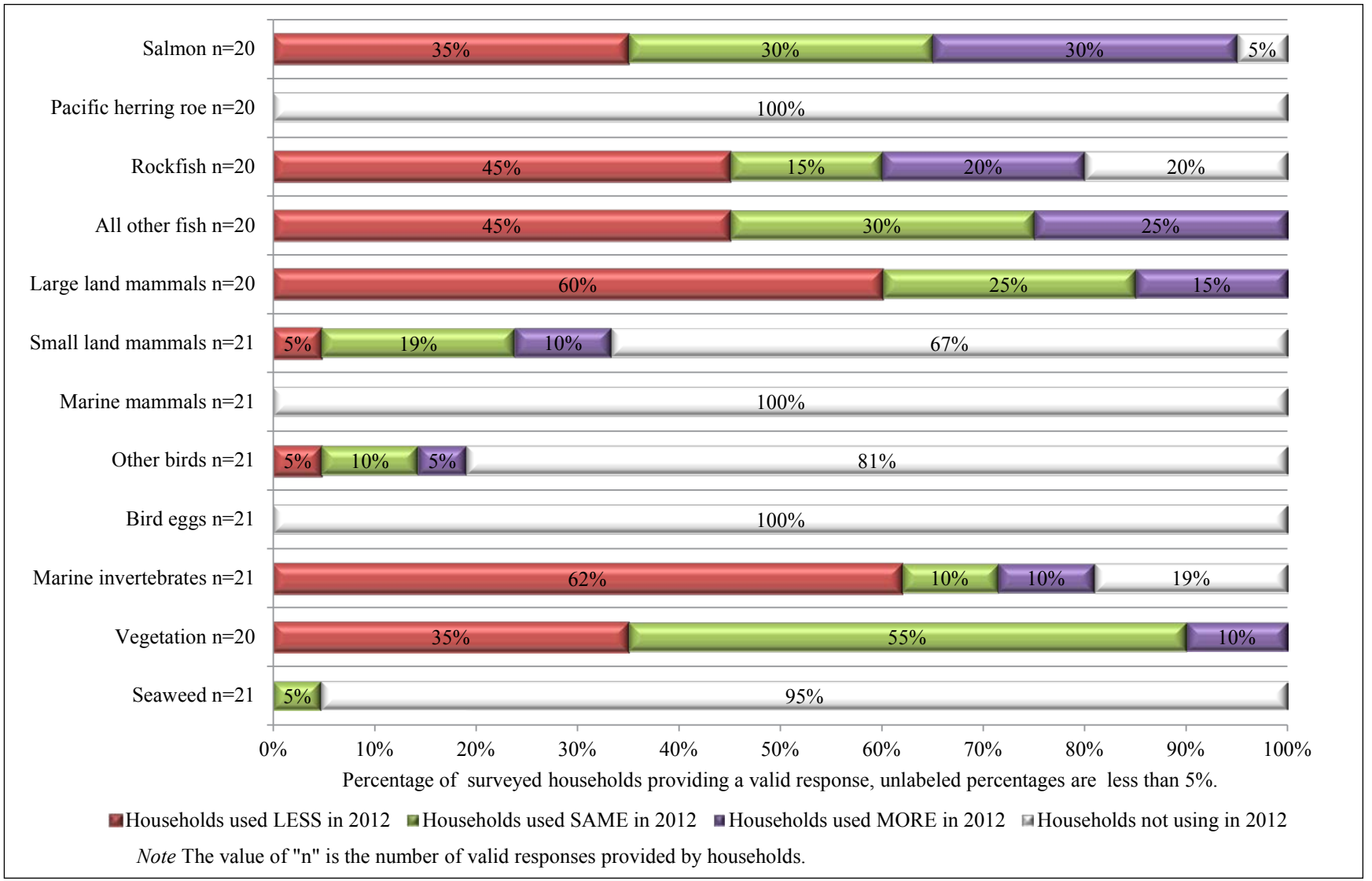


Figure 5-34.–Changes in household uses of resources compared to recent years, Whale Pass, 2012.

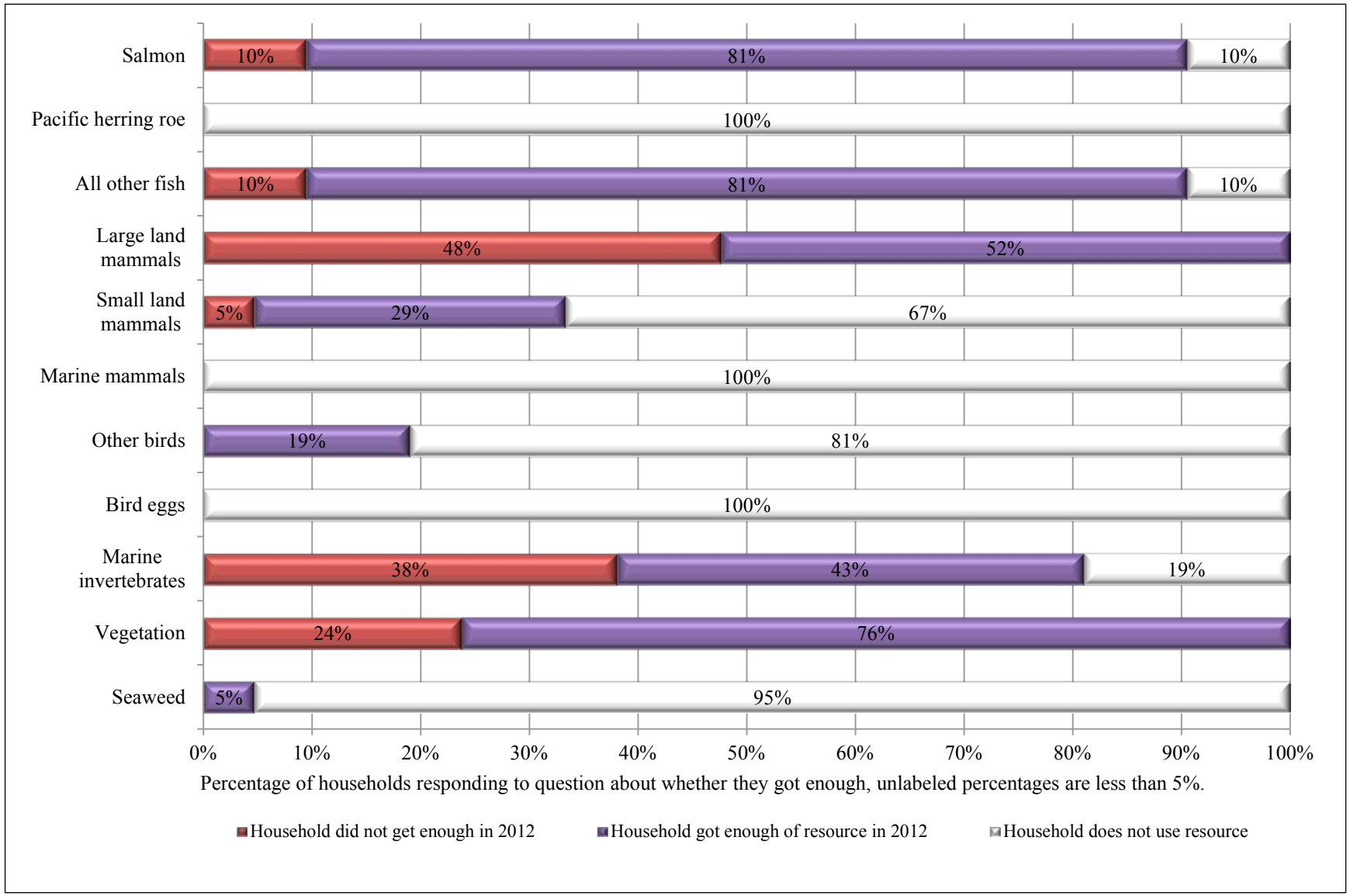


Figure 5-35.–Percentage of sampled households reporting whether they had enough resources, by resource category, Whale Pass, 2012.

Table 5-23.–Reasons for less household uses of resources compared to recent years, Whale Pass, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	21	19	3	15.8%	12	63%	0	0.0%	1	5%	2	11%	8	42%	3	15.8%	0	0.0%
All resources	**21**	**12**	**3**	**25.0%**	**3**	**25%**	**0**	**0.0%**	**1**	**8%**	**1**	**8%**	**1**	**8%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	20	7	1	14.3%	0	0%	0	0.0%	1	14%	0	0%	1	14%	1	14.3%	0	0.0%
Pacific herring roe	20	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Rockfish	20	9	1	11.1%	0	0%	0	0.0%	0	0%	2	22%	2	22%	1	11.1%	0	0.0%
All other fish	20	9	1	11.1%	0	0%	0	0.0%	1	11%	1	11%	2	22%	1	11.1%	0	0.0%
Large land mammals	20	11	1	9.1%	6	55%	0	0.0%	0	0%	1	9%	1	9%	1	9.1%	0	0.0%
Small land mammals	21	1	0	0.0%	1	100%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine mammals	21	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Other birds	21	1	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	1	100%	0	0.0%	0	0.0%
Bird eggs	21	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine invertebrates	21	13	1	7.7%	4	31%	0	0.0%	0	0%	2	15%	2	15%	0	0.0%	0	0.0%
Vegetation	20	7	1	14.3%	3	43%	0	0.0%	0	0%	0	0%	1	14%	0	0.0%	0	0.0%
Seaweed	21	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 5-23.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	21	19	3	16%	5	26.3%	0	0.0%	0	0.0%	1	5.3%	6	31.6%	1	5.3%	0	0.0%
All resources	**21**	**12**	**1**	**8%**	**3**	**25.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**8.3%**	**0**	**0.0%**
Salmon	20	7	1	14%	1	14.3%	0	0.0%	0	0.0%	1	14.3%	1	14.3%	0	0.0%	0	0.0%
Pacific herring roe	20	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	20	9	0	0%	3	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	20	9	1	11%	4	44.4%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	0	0.0%
Large land mammals	20	11	0	0%	1	9.1%	0	0.0%	0	0.0%	0	0.0%	1	9.1%	0	0.0%	0	0.0%
Small land mammals	21	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	21	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	21	1	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	21	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	21	13	1	8%	3	23.1%	0	0.0%	0	0.0%	0	0.0%	2	15.4%	0	0.0%	0	0.0%
Vegetation	20	7	1	14%	2	28.6%	0	0.0%	0	0.0%	0	0.0%	3	42.9%	0	0.0%	0	0.0%
Seaweed	21	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

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

Table 5-24.–Reasons for more household uses of resources compared to recent years, Whale Pass, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	21	12	2	16.7%	1	8.3%	1	8.3%	1	8.3%	5	41.7%	5	41.7%	0	0.0%
All resources	**21**	**3**	**1**	**33.3%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**33.3%**	**0**	**0.0%**	**2**	**66.7%**	**0**	**0.0%**
Salmon	20	6	1	16.7%	0	0.0%	0	0.0%	0	0.0%	3	50.0%	1	16.7%	0	0.0%
Pacific herring roe	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	20	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%	0	0.0%
All other fish	20	5	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	2	40.0%	0	0.0%
Large land mammals	20	3	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
Small land mammals	21	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Marine mammals	21	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	21	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Bird eggs	21	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	21	2	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Seaweed	21	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 5-24.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	21	12	0	0.0%	0	0.0%	0	0.0%	1	8.3%	1	8.3%	1	8.3%	1	8.3%
All resources	**21**	**3**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	20	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%
Pacific herring roe	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	20	4	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	1	25.0%
All other fish	20	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	1	20.0%
Large land mammals	20	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
Small land mammals	21	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%
Marine mammals	21	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	21	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	21	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	21	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%
Vegetation	20	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Seaweed	21	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

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

Table 5-25.–Reported impact to households reporting that they did not get enough of a type of resource, Whale Pass, 2012.

Resource category	Sample households	Households not getting enough _____ . Valid responses[a] Number	Valid responses[a] Percentage[b]	Did not get enough Number	Did not get enough Percentage[b]	Impact to those not getting enough _____ . No response Number	No response Percentage[c]	Minor Number	Minor Percentage[c]	Major Number	Major Percentage[c]	Severe Number	Severe Percentage[c]
All resources	**21**	**21**	**100.0%**	**8**	**38.1%**	**1**	**12.5%**	**4**	**50.0%**	**2**	**25.0%**	**1**	**12.5%**
Salmon	21	19	90.5%	2	9.5%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Pacific herring roe	21	0	0.0%	–	–	–	–	–	–	–	–	–	–
All other fish	21	19	90.5%	2	9.5%	1	50.0%	1	50.0%	0	0.0%	0	0.0%
Large land mammals	21	21	100.0%	10	47.6%	0	0.0%	6	60.0%	3	30.0%	1	10.0%
Small land mammals	21	7	33.3%	1	4.8%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Marine mammals	21	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	21	4	19.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	21	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	21	17	81.0%	8	38.1%	0	0.0%	5	62.5%	2	25.0%	1	12.5%
Vegetation	21	21	100.0%	5	23.8%	0	0.0%	4	80.0%	0	0.0%	1	20.0%
Seaweed	21	1	4.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

Note "–" indicates data are not available because the question was not asked for the resource.

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

b. Computed as the percentage of sampled households.

c. Computed as the percentage of households reporting "did not get enough."

Table 5-26.–Things households reported doing differently as the result of not getting enough of a resource, Whale Pass, 2012.

Resource category	Valid responses	Bought/bartered		Used more commercial foods		Replaced with other subsistence foods		Asked others for help		Made do without	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**7**	**0**	**0.0%**	**7**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%
All other fish	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	9	0	0.0%	9	100.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
Seaweed	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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Table 5-26.–Continued.

Resource category	Valid responses	Increased effort to harvest		Obtained food from other sources		Got a job		Got public assistance		Other reasons	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**7**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Seaweed	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

Note The sum of the percentages may not add to 100% since households may give more than one response.

Salmon is the third most harvested of all subsistence resource categories used by Whale Pass households (Figure 5-12). Thirty percent of responding households explained that they used the same amount of salmon in 2012 as they did in previous years, 35% reported that they used less, 30% said they used more, and 5% reported they did not use salmon (Table 5-22; Figure 5-34). When asked why they used less, equal numbers of respondents reported that they did so due to family/personal reasons, lack of necessary equipment, lack of effort, unsuccessful effort, working/no time to harvest, did not need, or just did not get enough (Table 5-23). For those households that used more salmon in the study year, 50% of respondents reported that they did so due to an increased need for salmon (Table 5-24). Other reasons for more use included increased availability, increased effort, and new/repaired equipment. In Whale Pass, 10% of respondents stated that they did not get enough salmon (Figure 5-35). When asked to evaluate the impact of not getting enough salmon, 100% described it as minor (Table 5-25). Households that did not get enough salmon adapted by using more commercial foods and replacing salmon with other subsistence foods (Table 5-26).

Marine invertebrates is another highly harvested subsistence resource category used by Whale Pass households. Ten percent of responding households explained that they used the same amount of marine invertebrates in 2012 as they did in previous years, 62% reported that they used less, 10% said they used more, and 19% reported they did not use marine invertebrates (Table 5-22; Figure 5-34). When asked why they used less, 31% of respondents reported that they did so because the resources were less available (Table 5-23). Other stated reasons for using less marine invertebrates included working/no time to harvest, no need, lack of harvesting effort, and less sharing. For those households that used more marine invertebrates in the study year, 50% of respondents reported that they did so due to increased availability of the resource, 50% reported that it was due to favorable weather, and 50% indicated it was because of new or fixed equipment (Table 5-24). In Whale Pass, 38% of respondents stated that they did not get enough marine invertebrates (Figure 5-35). When asked to evaluate the impact of not getting enough marine invertebrates, 63% described the impact as minor, 25% explained that not getting enough marine invertebrates had a major effect on their household, and 13% stated that the impact was severe (Table 5-25). Households that did not get enough marine invertebrates adapted by using more commercial foods (Table 5-26).

Vegetation is used by all households in Whale Pass (Table 5-13). Excluding seaweed, 55% of responding households explained that they used the same amount of vegetation in 2012 as they did in previous years, 35% reported that they used less, and 10% said they used more (Table 5-22; Figure 5-34). When asked why they used less, 43% of respondents reported that they did so because the resource was less available or not needed (Table 5-23). Other stated reasons for using less vegetation included working/no time to harvest, lack of harvest effort, and family/personal reasons. For those households that used more vegetation in the study year, 100% of respondents reported that they did so due to an increased need for the resource (Table 5-24). In Whale Pass, 24% of respondents stated that they did not get enough vegetation (Figure 5-35). When asked to evaluate the impact of not getting enough vegetation, 80% described the impact as minor and 20% stated that the impact was severe (Table 5-25). Households that did not get enough vegetation adapted by using more commercial foods (Table 5-26).

Seaweed is not used by most households in Whale Pass, but 5% of responding households explained that they used the same amount of seaweed in 2012 as they did in previous years; the other 95% of respondents said they did not use seaweed (Table 5-22; Figure 5-34). In Whale Pass, no respondents stated that they did not get enough seaweed (Figure 5-35).

Small land mammals/furbearers is one of the least harvested or used of all subsistence resource categories used by Whale Pass households. Nineteen percent of responding households explained that they used the same amount of small land mammals/furbearers in 2012 as they did in previous years, 5% reported that they used less, 10% said they used more, and 67% reported that they did not use the resource (Table 5-22; Figure 5-34). When asked why they used less, 100% of respondents reported that they did so because the resources were less available (Table 5-23). For those households that used more small land mammals/furbearers in the study year, 50% of respondents reported that they did so due to an increased harvest effort, and 50% reported that it was due to getting or fixing needed equipment (Table 5-24). In Whale Pass, less than 5% of respondents stated that they did not get enough small land mammals/furbearers (Figure 5-35). When asked to evaluate the impact of not getting enough of these resources, 100% described it as minor (Table 5-25).

Birds is also one of the least harvested or used of all subsistence resource categories used by Whale Pass households. Ten percent of responding households explained that they used the same amount of birds in 2012 as they did in previous years, 5% reported that they used less, 5% said they used more, and 81% reported that they did not use the resource (Table 5-22; Figure 5-34). When asked why they used less, 100% of respondents reported that they did so due to lack of harvest effort (Table 5-23). For those households that used more birds in the study year, 100% of respondents reported that they did so due to an increased harvest effort (Table 5-24). In Whale Pass, no respondents stated that they did not get enough birds (Figure 5-35).

In assessing use of all wild resources overall, 29% of responding households explained that they used the same amount in 2012 as they did in previous years, 57% reported that they used less, and 14% said they used more (Table 5-22). When asked why they used less, 25% of respondents reported that they did so because resources were less available, 25% stated it was due to family/personal issues, and 25% stated it was due to working/no time to harvest (Table 5-23). Other stated reasons for using less of all resources included a lack of equipment, less sharing, a lack of harvesting effort, and equipment problems or the cost of fuel. For those households that used more of all resources in the study year, 67% reported that they used more due to increased harvesting effort (Table 5-24). Other stated reasons for using more of all resources included increased resource availability and receiving more resources. In Whale Pass, 38% of respondents stated that they did not get enough of all resources overall (Table 5-25). When asked to evaluate the impact of not getting enough of all resources, 50% described the impact as minor, 25% explained that not getting enough of all resources overall had a major effect on their household, and 13% stated that the impact was severe. Households that did not get enough of all resources overall adapted by using more commercial foods (Table 5-26).

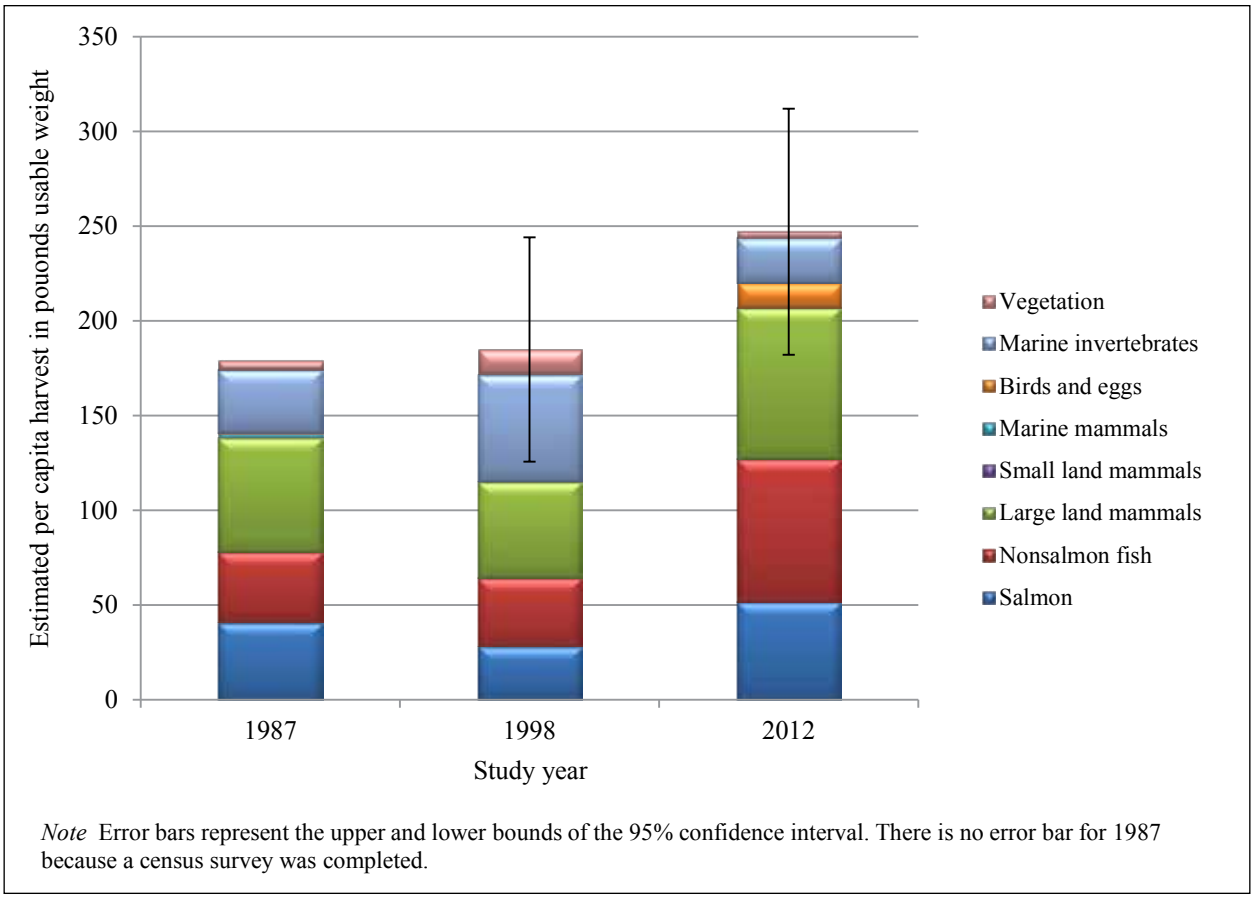
Households that reported not having enough resources were asked which resources they needed. Responses to these questions are presented in Table 5-27. Deer was the resource needed by the most households (37%), followed by shrimp (22%), crabs (15%) and berries (15%). No other resources were reported as being needed by more than 3 households.

Table 5-27.–Resources that households reported needing, Whale Pass, 2012.

Resource	Households needing	Percentage of households [a]
Chinook salmon	2	9.5%
Lingcod	1	4.8%
Pacific halibut	3	14.3%
Yelloweye rockfish	1	4.8%
Deer	10	47.6%
Elk	1	4.8%
Moose	2	9.5%
Marten	1	4.8%
Mink	1	4.8%
Crabs	4	19.0%
Dungeness crab	3	14.3%
Geoducks	1	4.8%
Shrimp	6	28.6%
Berries	4	19.0%
Blueberry	1	4.8%
Highbush cranberry	1	4.8%
Huckleberry	1	4.8%
Beach asparagus	1	4.8%
Wood	1	4.8%

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

a. Computed as the percentage of sampled households.



Note Error bars represent the upper and lower bounds of the 95% confidence interval. There is no error bar for 1987 because a census survey was completed.

Figure 5-36.–Composition of harvest by resource category in pounds usable weight, Whale Pass, 1987, 1998, and 2012.

Harvest Data

Changes in the harvest of resources by Whale Pass residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Whale Pass for 1987 and 1998.[5] All 3 harvest surveys used the same geographical extents to define Whale Pass, but the definition of the harvest year differed. The 2012 survey used the calendar year as the study period. The surveys for the 1998 study year covered a period of time from October 1, 1998–September 30, 1999. The 1987 survey covered the 1987 calendar year.

As can be seen in Figure 5-36 and Table 5-28, per capita harvests in Whale Pass in 2012 (247 lb per capita [± 26%]) are higher than the previous survey results in 1998 (185 lb per capita [± 32%]) and 1987 (179 lb per capita). In particular, the per capita harvests of salmon and nonsalmon fish species have almost doubled from 1998 to 2012 (Table 5-28). The harvest of birds was nearly nonexistent in 1998, but increased from the low that year of 0.1 lb per capita to 13 lb per capita in 2012. After rising in the late 1990s, the harvest of marine invertebrates has fallen to below the estimated per capita weight for 1987. Large game harvests have also fluctuated over the study years, but not to the same extent as other resource categories. Small land mammals/furbearers have made up a very small proportion of the harvest in terms of edible weight during each of the survey years. The harvest of berries, greens, and mushrooms in 2012 is the lowest estimated per capita harvest; the 1998 estimate was the highest per capita harvest for this category. There has been

5. Results for both previous comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): http://www.adfg.alaska.gov/sb/CSIS/.

Table 5-28.–Estimated per capita harvest in pounds usable weight, Whale Pass, 1987, 1998, and 2012.

	Estimated harvest in pounds usable weight								
	1987			1998			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All resources	**9,134.0**	**179.1**	**0.0%**	**10,111.0**	**185.0**	**32.0%**	**13,656.3**	**247.0**	**26.3%**
Salmon	2,096.0	41.1		1,550.0	28.4		2,867.7	51.9	
Nonsalmon fish	1,901.0	37.3		1,979.0	36.2		4,181.5	75.6	
Large land mammals	3,076.0	60.3		2,773.0	50.7		4,404.9	79.7	
Small land mammals	-	0.0		12.0	0.2		3.9	0.1	
Marine mammals	84.0	1.7		-	0.0		-	0.0	
Birds and eggs	39.0	0.8		3.0	0.1		716.5	13.0	
Marine invertebrates	1,702.0	33.4		3,092.0	56.6		1,316.3	23.8	
Vegetation	237.0	4.7		702.0	12.8		165.5	3.0	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.

Table 5-29.–Estimated total and per capita harvests of Pacific halibut, clams, Chinook salmon, and coho salmon, in pounds usable weight, Whale Pass, 1987, 1998, and 2012.

	Estimated harvest in pounds usable weight					
	1987		1998		2012	
Resource	Total	Per capita	Total	Per capita	Total	Per capita
Pacific halibut	1076.0	21.1	1493.0	27.3	3077.1	55.7
Clams	917.0	18.0	513.0	9.4	175.8	3.2
Chinook salmon	1193.0	23.4	224.0	4.1	398.4	7.2
Coho salmon	501.0	9.8	1211.0	22.1	2168.9	39.2

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2014.

no marine mammal harvest documented during a survey since 1987; this is most likely due to the fact that there have been no Alaska Natives living in Whale Pass during any survey year but 1987. As stated above, federal regulations prohibit anyone who is not Alaska Native from hunting marine mammals.

While the 2012 study estimated higher per capita harvests compared to 1998, the difference may not be that notable given the wide and overlapping confidence intervals. However, there are a variety of external factors, including regulatory changes, resource availability, and ecosystem changes, that may have affected subsistence harvests in Whale Pass during the last 15 years. One of the major regulatory changes that occurred between 1998 and 2012 was the creation of a subsistence fishery for Pacific halibut. Prior to 2003, only sport fishing was allowed for Pacific halibut. During the study year, state sport fish regulations limited the harvest of Pacific halibut to 2 per day. Under federal subsistence regulations, 20 Pacific halibut per day are allowed per vessel and in possession. Subsistence harvests accounted for approximately one-half of the total halibut harvest in 2012 (Table 5-18). In 2012, the per capita harvest of Pacific halibut was 56 lb, compared to 1998 where the per capita harvest was 27 lb, and 1987 when it was only 21 lb (Table 5-29; Figure 5-37).

Changes in resource availability due to short-term factors such as weather, as well as longer-term issues associated with ecosystem change, are also likely responsible for some of the changes in per capita harvests. Harvests of berries, plants, and other vegetation were similar in 2012 to 1987, but 1998 was an estimated very high harvest year. Year-to-year variability in temperature and rainfall can drastically influence the productivity of berry bushes. At a larger scale, logging and its associated effects, as well as reduction in logging, can affect the productivity of berries. Newly logged areas open up space for berry bushes to come in and thrive. As time goes on and the landscape returns to a forested state, some of these productive berry patches may cease to exist. Also, in considering the larger ecosystem scale, the marine invertebrate harvest reduction estimated in 2012 may well be the result of the reintroduction of sea otters to Southeast Alaska in the 1960s. Surveyors heard from many survey respondents about the drastic increase in sea otter populations around Prince of Wales Island in recent years and the devastating effect they are having on local beaches used for shellfish harvesting. Although sea otters were reintroduced about 40 years ago, this species has only recently been reported sighted around the areas of Prince of Wales Island used by Whale Pass residents for marine invertebrate harvests. About 18 lb per capita of clams were harvested by the community in 1987, whereas in 1998 9 lb per capita were harvested and in 2012 the per capita harvest was only 3 lb (Table 5-29; Figure 5-37).

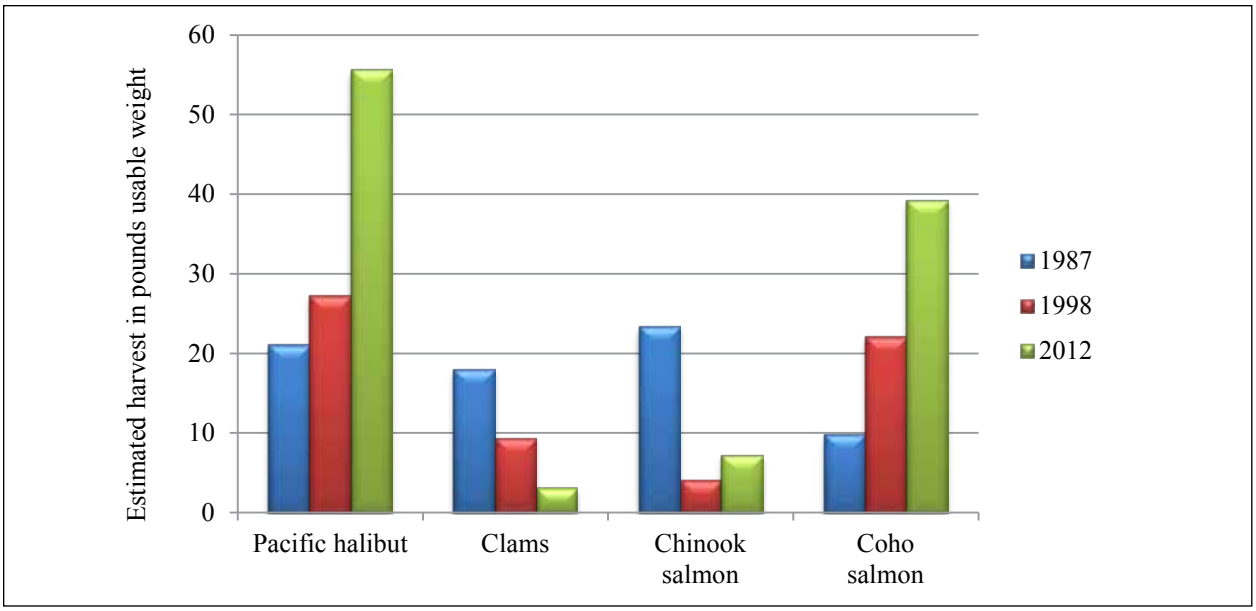


Figure 5-37.–Estimated per capita harvest of Pacific halibut, clams, Chinook salmon, and coho salmon in pounds usable weight, Whale Pass, 1987, 1998, and 2012.

Another change in the harvests of Whale Pass residents can be seen in the salmon harvest. More salmon were harvested per capita in 2012 than in 1998 or 1987, but more interestingly the composition of the harvest has changed (Figure 5-37). Chinook salmon was the most heavily harvested salmon species in 1987, but in 1998 and 2012, this changed so that coho salmon were most harvested, followed distantly by Chinook salmon. The Neck Lake hatchery saw its first coho salmon return in 1998, but the salmon harvest recorded on the 1998 survey were actually from the summer of 1999, which was the second year of returns. In 2012, the hatchery is still producing strong runs of coho salmon, while Chinook salmon stocks across the state have been declining in productivity (ADF&G Chinook Salmon Research Team 2013)

Current and Historical Harvest Areas

Each of the 3 comprehensive harvest surveys of Whale Pass residents have included a mapping component, however the methods of the mapping differed each year. For the 1987 survey, respondents were asked to map all the areas ever used (while living in Whale Pass) for hunting, fishing, and gathering resources. For the 1998 survey, respondents were asked to map all the general use areas for hunting, fishing, and gathering resources used in the last 5 years. For the 2012 survey, respondents were asked to map the areas where they hunted, fished, or gathered resources during the study year only. It may be expected that the first 2 studies would show a larger harvest and use area than the 2012 study since households likely use more areas over multiple years than they would use in just 1 year. To some extent, this is what is seen when comparing the study years (Figure 5-38). In general, Whale Pass households hunt, fish, and gather resources in areas near Whale Pass, concentrating mainly on the northern end of Prince of Wales Island. Compared to 1987, in 1998 respondents mapped a broader area than had been used for resource harvesting, extending south of Whale Pass to Thorne Bay and Klawock, as well as into the land and waters around Hollis on the southeast side of the island. Respondents also mapped waters farther offshore, extending out to Zarembo and Etolin islands to the east and Kosciusko and surrounding islands to the west. In 2012, resource harvest areas contracted significantly from what was mapped in 1998 and more closely resembled the mapped areas of 1987.

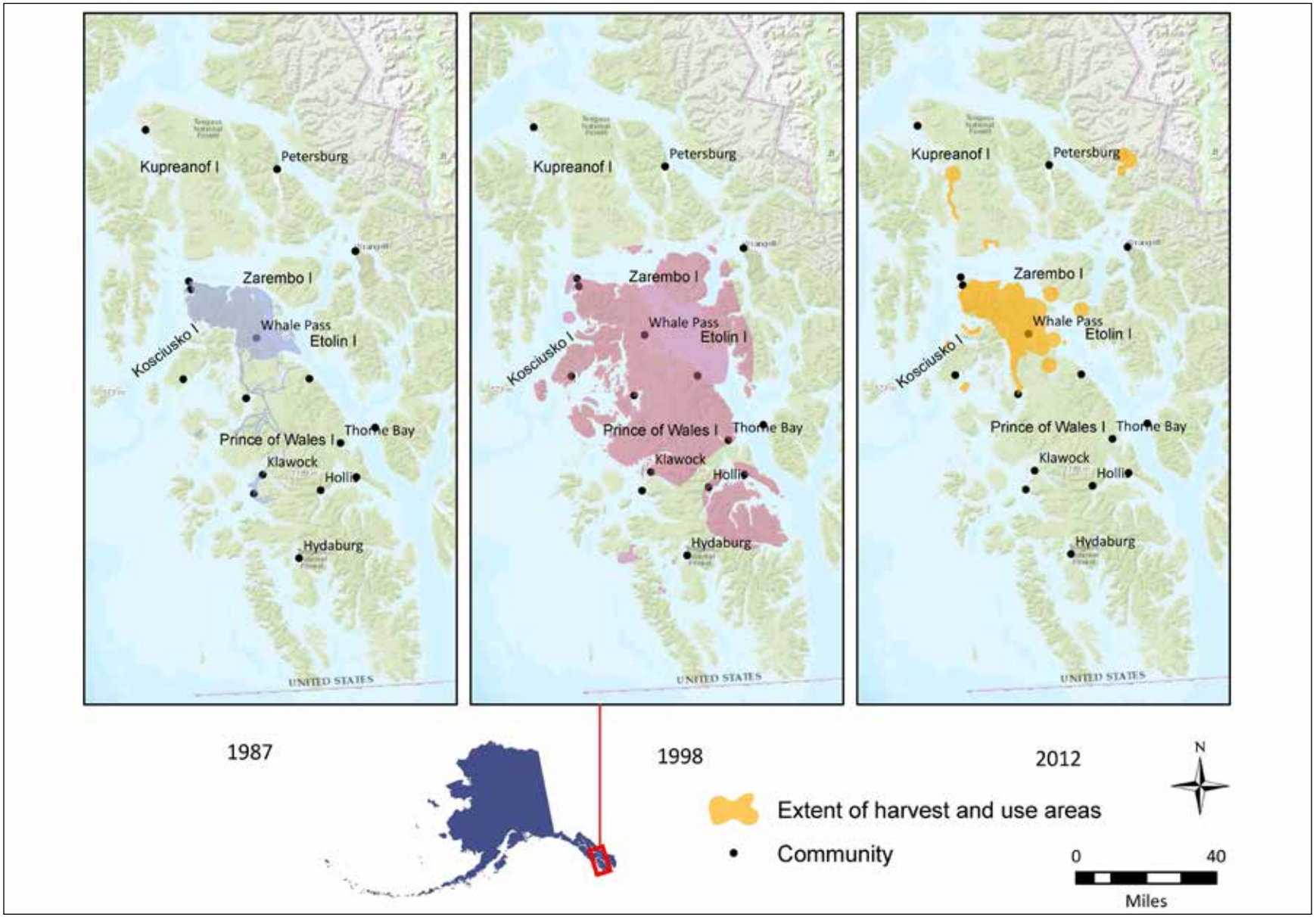


Figure 5-38.–Comparison of wild resources search and harvest areas, Whale Pass, 1987, 1998, and 2012.

Apart from the differences resulting from divergent mapping methods, the changes in harvest and use areas can be ascribed in part to changes in social and ecological factors. The timber industry has been the major driving factor on Prince of Wales Island for decades, in terms of the economy and effects on landscape. Timber sales on the island have 2 consequences of note for this study; new roads are built, which can increase access to resources once the roads are not being used for logging, and the clearcutting of forested land changes the abundance and availability of deer in both the short term and the long term (Ellanna and Sherrod 1987). In regard to social factors, the cost of fuel has increased dramatically since the mid-1990s. This puts more pressure on a subsistence user to have a successful hunt, but also may restrict how far the hunter or fisher will travel to harvest. If there are resources accessible closer to home, those may be more depended on since the cost of fuel becomes increasingly prohibitive. While a logging road was completed to Whale Pass in the early 1980s, that road has only recently been paved and has become more accessible. This may also account for changes in where Whale Pass residents harvest wild resources.

Local Comments and Concerns

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

The majority of comments and concerns offered during the survey had to do with deer hunting in the area. Many residents were concerned about the deer population in the area for a number of reasons. Hunting deer in violation of local regulations, mainly hunting deer at night and "spotlighting," was seen to be a problem. Not only does this reduce the deer population, it makes it harder for hunters to find deer during the day after they have been hunted all night. This was a problem seen mainly with hunters from outside of Whale Pass. Poaching seems to have gotten worse over the last few years, which was attributed to a decline in deer populations elsewhere and increasing fuel prices and a worsening economy. With a healthy population of deer on Prince of Wales Island and extensive road systems, as deer populations are depressed elsewhere, more people come to Prince of Wales Island to hunt. The poor economy as well as increasing fuel prices put more pressure on hunters to have a successful deer hunt when they come to Prince of Wales, perhaps at the expense of following regulations. Respondents offered suggestions on how to curb what they saw as a declining local deer population, including ending the doe season, increasing antler restrictions to protect breeding bucks, increasing penalties for hunting violations and increasing enforcement locally, as well as reducing ferry service to the island during the hunting season, and working with the U.S. Forest Service to increase timber sales locally. While deer garnered the most amount of comments about large land mammals, it was also offered that bear hunting should require a guide, which would allow more control over who was coming in from off-island to hunt bears.

Small Land Mammals/Furbearers

Few comments were offered about small land mammals/furbearers. The wolf population was seen to be increasing around the northern areas of Whale Pass. It was also noted that there should be better communication between ADF&G and trappers in terms of sharing the results of trapper surveys and other research done locally.

Marine Invertebrates

Besides deer, marine invertebrates—in particular crab—garnered the most comments from respondents. Many households were concerned about a declining Dungeness crab population locally. Most households use the area right offshore of Whale Pass to set their subsistence crab pots, but commercial crabbers also use this area. The increase in commercial crab pots, and the lack of any limit to keep them from setting their pots right up to the dock in town, is seen as causing a decrease in the populations of Dungeness crab as well hardship for local boaters and planes trying to navigate the sheer number of pots in the cove. In

addition, sport crabbers from other areas come into the cove and set their pots. Some solutions suggested to alleviate this problem were to reinstate a protected area right around Whale Pass where commercial crabbers could not set their pots and to increase the minimum size restriction for commercial crabbers to 1/8 inch larger than the restriction for subsistence crabbers. Another concern about the crab population and marine invertebrates in general was the increase in sea otters, especially in Exchange Cove. An increasing sea otter population is seen to be consuming many of the subsistence shellfish resources that Whale Pass households had depended on in the past.

Vegetation

Very few comments were offered concerning vegetation; that 2012 was a poor berry year was the subject of the only comment offered.

Food Safety and Access Concerns

The tsunami and consequent breakdown of the Fukushima nuclear power plant in Japan in March 2011 was an issue that was brought up as a concern. In particular, some residents of Whale Pass were concerned about the effects of radiation from the Fukushima accident on local resources. Additionally, there was concern about debris from the tsunami washing up on local shores, and more generally, ocean trash, and the effects that plastics and other debris have as they break down and enter the food system. Debris from the tsunami has been found on Alaska shores, but its link, if any, to the food system has not been explicitly studied.

An additional concern voiced was that the U.S. Forest Service has been actively closing some roads and blocking access to them. These roads are used by Whale Pass residents to reach berry harvest areas, hunting areas, and firewood collection spots. Closing the roads is reducing their access to these resources.

ACKNOWLEDGMENTS

Thanks are extended to the community of Whale Pass for members' participation and support of the project. In particular, thanks to the Whale Pass Community Association for facilitating project logistics and to Connie Plante for helping researchers locate and set up surveys with residents. Thanks also to all the individuals who took time to not only answer survey questions, but welcomed researchers into their homes and talked about wild food harvesting and changes over time in the community.

6. HYDABURG

Rosalie A. Grant and Lauren A. Sill

Community Background

Hydaburg is a small town in Southeast Alaska located on the southwest shore of Prince of Wales Island between the northern end of Sukkwan Strait and the edge of Natzuhini Bay. On the western edge of Prince of Wales Island, Hydaburg is sheltered from the ocean by a system of islands, including long fjord-riddled Dall Island, Sumez and Long islands, and dominant Sukkwan Island. This system of large and small islands on the edge of the Pacific Ocean contains numerous salmon streams and forms a web of both deep and shallow tidal channels, bays, and inlets. The islands are extremely mountainous and contain a variety of habitats of old and new forests, streams, lakes, bog muskegs, meadows, alpine tundra, and exposed rock. In short, Hydaburg is located in a setting perfect for an abundant variety of marine life, land-based wildlife, and plant life. A testament to the area's natural abundance is that the area has supported rich cultures and a history of trade for thousands of years for the Tlingit and Haida people (Victor-Howe 2008).

Archaeological sites date back 9,000 years on Prince of Wales Island, to the end of the last ice age. In the late 1700s and early 1800s, the *Kaigani* Haida migrated to southern Prince of Wales Island from Langara Island, one of the Haida Gwaii (Queen Charlotte) Islands in British Columbia. Before their arrival the area was traditionally occupied by the Tlingit Indians. According to Tlingit oral history, one spring a group of Tlingit Indians traveled from their winter homes to their spring fishing and hunting grounds only to discover that their summer site at Kaigani was occupied by "strangers." Before the migration of Haida to Prince of Wales Island the 3 major Tlingit settlements on Prince of Wales Island were Shakan, Tuxekan, and Klawock. "Kaigani" or "crabapple town" was the Tlingit name for the village on the southern end of Dall Island where the Haida settled. Through processes of diplomacy and war the Kaigani Haida established settlements around the southern half of Prince of Wales Island and the boundaries between Haida lands and Tlingit lands were regularly negotiated between the 2 peoples. The Haida had been traders for centuries; their trade extended far north to the Aleutians and south down to California. In southern Prince of Wales Island the Kaigani expanded their trade into the Russian-European fur market and flourished. In 1862 a small pox epidemic broke out among the Northwest Coast tribes who consequently suffered tremendous losses. In 1835, the Kaigani Haida were estimated at 1,735 residents, after the 1862 outbreak the population was reduced to around 600 (Victor-Howe 2008). Of the many sites the Kaigani Haida occupied and settled on and around Prince of Wales Island in the 1800s, Hydaburg was not one of them. Hydaburg was not founded until 1911 when the Kaigani Haida living in the villages of Howkan, Klinkwan, Sukkwan, and Koianglas consolidated and moved to Hydaburg's current location (Victor-Howe 2008). This unification and move occurred after suggestions and pressures from the federal government and the Presbyterian Church. The Hydaburg site was intended to facilitate better schooling and social and institutional changes.

In 1912, a 7,800-acre land and water reserve around Hydaburg was established by the federal government "for the use of the Haida tribe of Indians." This reserve was revoked in 1926. The following year 189 acres were reserved for Hydaburg town sites. In 1945 the federal government offered Hydaburg a reserve land grant in excess of 77,000 acres, which they accepted in 1949. In 1951 the courts nullified the reserve, ruling that it had been improperly established. In 1972, Hydaburg was incorporated as a first-class city (Mathews et al. 1990).

Hydaburg developed an economy based on natural resources; in 1911, in return for the Kaigani Haida's acceptance of their relocation to Hydaburg, the U.S. Bureau of Education financially supported the purchase of a sawmill for Hydaburg (Victor-Howe 2008). In 1917 the Hydaburg Trading Company financed the initial construction of a salmon cannery. However, the cannery was plagued with problems spanning from poor fishing years to influenza outbreaks to poor timing in conjunction with World War I, but a local fishing fleet continued on through it all. In 1937, Hydaburg residents became involved with the Indian Reorganization Act (IRA) program with the promise of federal funding for a modern salmon cannery. In

1938, the Hydaburg Cooperative Association was created and a salmon cannery was built. This second salmon cannery also faced many problems due to poor market timing and salmon abundance. Eventually, the cannery closed in 1984.

Despite past and present struggles and pressure to conform to traditional Euro-American customs after colonization by the United States, Hydaburg is a town that maintains close cultural ties to its Haida roots. The people of Hydaburg still have a rich culture of trade and harvest the abundance of wild resources for food and supplies. The following report of the survey findings summarizes details of this harvest. The composition of the harvest and the way it is shared throughout the community demonstrates that Hydaburg residents still practice the same harvest of foods that is a part of their traditions and Haida culture. Today the community is a pretty shoreline town with stunning water and mountain views boasting several tribal community buildings, including a dedicated totem carving shed, and one of the largest collections of totems displaying the matrilineal heritage of the people of Hydaburg.

The town is connected to other communities on Prince of Wales Island via the Hydaburg Highway. Daily bus service operated by the local tribal organization runs from Hydaburg to the town of Craig, the largest town on Prince of Wales Island. Daily floatplane flights to and from Ketchikan are available; daily ferry service through Hollis to Ketchikan also connects Hydaburg to other communities off the island. From the main port of Ketchikan, daily commercial Alaska Airlines flights connect to the rest of Alaska and the continental United States. Hydaburg has a small grocery store, post office, schools (elementary to high school), tribal community hall, local and tribal government offices and services, and a small boat harbor that houses its commercial, sport, and subsistence fleet.

Population Estimates and Demographic Information

Population, demographics, history, and economics play an important role in the harvest of wild foods in a community. This section highlights some of the findings from the 2012 survey. A total of 48 households were surveyed for the 2012 comprehensive harvest survey, which represents 40% of the total households in Hydaburg (Table 6-1).

Table 6-1.–Sample achievement, Hydaburg, 2012.

	Community
	Hydaburg
Number of dwelling units	119
Interview goal	119
Households interviewed	48
Households failed to be contacted	45
Households declined to be interviewed	7
Households moved or occupied by nonresident	3
Total households attempted to be interviewed	55
Refusal rate	12.7%
Final estimate of permanent households	119
Percentage of total households interviewed	40.3%
Interview weighting factor	2.48
Sampled population	134
Estimated population	332.2

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

This 2012 survey estimated the population of Hydaburg to be 332 residents (Table 6-2). This estimate is less than both the 2010 U.S. Census estimate of 376 residents and the American Community Survey estimate of 411 residents for a 5-year average population. This variation is likely the result of differences in survey methods, seasonal differences in the timing of the survey, a decrease in population, or a combination of factors. According to the U.S. Census and Alaska Department of Labor population estimates, Hydaburg's population dipped in the 1970s then peaked in the 1980s; the data show that from 1990 onward the population has fluctuated in an overall downward trend (Figure 6-1). The current population estimate is slightly less than the 1950 population estimate. A steady decrease in population during the past 10 years has been present in many of the smaller communities across Southeast Alaska (Gilbertsen 2004; Hunsinger et al. 2012). The Alaska Native population remains high in Hydaburg. At the time of the survey, 92% of the households and 93% of the general population identified as Alaska Native (Table 6-3; Table 6-2). The survey asked for people to self-identify as either Alaska Native or not. No further distinctions were made to identify the percentage of Haida or other Alaska Native heritage in the town (Appendix A).

The mean household size in Hydaburg was 2.8 individuals, with a minimum of 1 and a maximum of 5 individuals (Table 6-3). The mean age was 34 years old with a maximum age of 84 years old. The mean length of residency was 27 years for the general population and 37 years for the heads of household. The male population was slightly greater than the female population, with 179 men compared to 154 women; the 50–54 age cohort had the greatest number of men in the community while the 5–9 age cohort had the most women (Table 6-4; Figure 6-2). The age structure of the community shows that more than one-half the population is within their prime wage-earning years: 31% of the population was between the ages of 0 and 19 years old, 52% of the population was between the ages of 20 and 64 years old, and 13% of the population was 65 years or older.

The birthplaces of the general population and the heads of households demonstrate that this is a very local Alaska community: 72% of the population and 66% of the heads of households were Alaska born; 61% of the general population was born in Hydaburg, and 11% was born in other Southeast Alaska communities (Table 6-5; Table 6-6).

Table 6-2.–Population estimates, Hydaburg, 2010 and 2012.

	Census (2010)	5-year American Community Survey (2008–2012)	This study (2012)
Total population			
Households	128	160	119.0
Population	376	411	332.2
Alaska Native			
Population	324	368	307.4
Percentage	86.2%	89.5%	92.5%

Sources U.S. Census Bureau (2011) for 2010 estimate; U.S. Census Bureau for American Community Survey 5-year survey estimate; and ADF&G Division of Subsistence household surveys, 2013, for 2012 estimate.

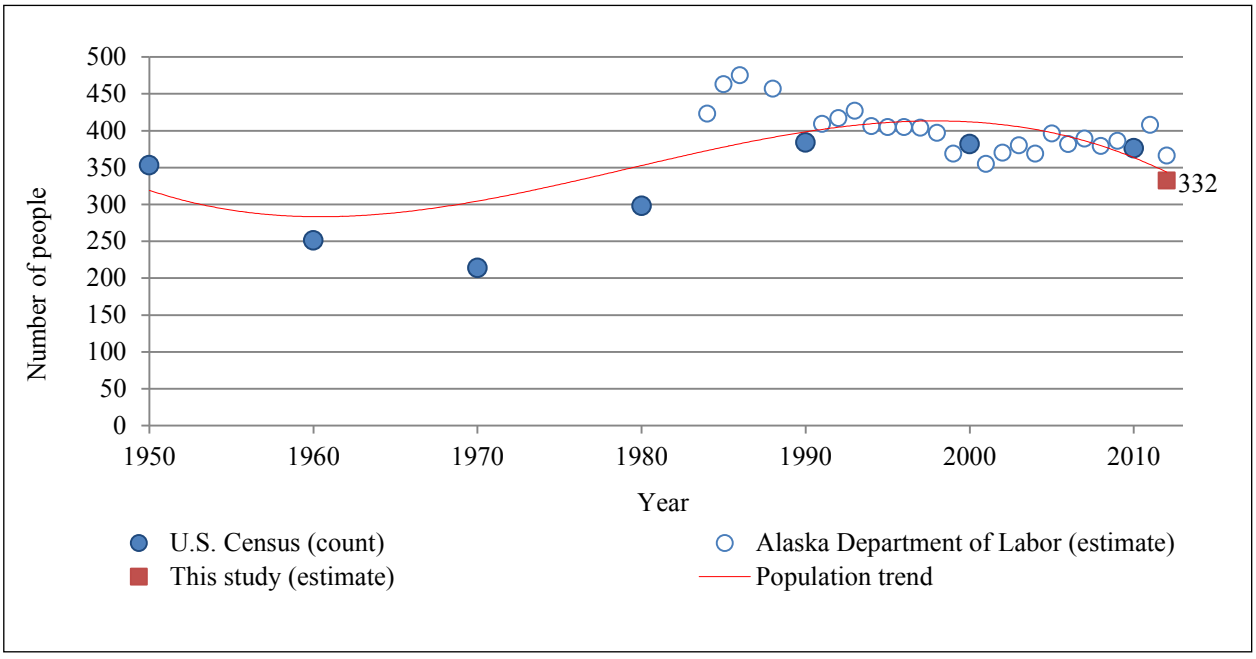


Figure 6-1.–Historical population estimates, Hydaburg, 1950–2012.

Table 6-3.–Demographic characteristics, Hydaburg, 2012.

Characteristics	Community Hydaburg
Household size	
Mean	2.8
Minimum	1
Maximum	5
Age	
Mean	34.0
Minimum[a]	0
Maximum	84
Median	30
Length of residency	
Total population	
Mean	27.3
Minimum[a]	0
Maximum	80
Heads of household	
Mean	36.6
Minimum[a]	1
Maximum	80
Alaska Native households[b]	
Number	109.1
Percentage	91.7%

Source ADF&G Division of Subsistence household surveys, 2013.
a. A minimum age of 0 (zero) is used for infants who are less than 1 year of age.
b. The estimated number of households in which at least 1 head of household is Alaska Native.

Table 6-4.–Population profile, Hydaburg, 2012.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	9.9	5.6%	5.6%	14.9	9.7%	9.7%	24.8	7.5%	7.5%
5–9	14.9	8.3%	13.9%	17.4	11.3%	21.0%	32.2	9.7%	17.2%
10–14	12.4	6.9%	20.8%	12.4	8.1%	29.0%	24.8	7.5%	24.6%
15–19	14.9	8.3%	29.2%	5.0	3.2%	32.3%	19.8	6.0%	30.6%
20–24	14.9	8.3%	37.5%	12.4	8.1%	40.3%	27.3	8.2%	38.8%
25–29	9.9	5.6%	43.1%	12.4	8.1%	48.4%	22.3	6.7%	45.5%
30–34	14.9	8.3%	51.4%	7.4	4.8%	53.2%	22.3	6.7%	52.2%
35–39	9.9	5.6%	56.9%	9.9	6.5%	59.7%	19.8	6.0%	58.2%
40–44	2.5	1.4%	58.3%	9.9	6.5%	66.1%	12.4	3.7%	61.9%
45–49	12.4	6.9%	65.3%	12.4	8.1%	74.2%	24.8	7.5%	69.4%
50–54	19.8	11.1%	76.4%	5.0	3.2%	77.4%	24.8	7.5%	76.9%
55–59	5.0	2.8%	79.2%	5.0	3.2%	80.6%	9.9	3.0%	79.9%
60–64	7.4	4.2%	83.3%	0.0	0.0%	80.6%	7.4	2.2%	82.1%
65–69	7.4	4.2%	87.5%	7.4	4.8%	85.5%	14.9	4.5%	86.6%
70–74	0.0	0.0%	87.5%	7.4	4.8%	90.3%	7.4	2.2%	88.8%
75–79	14.9	8.3%	95.8%	5.0	3.2%	93.5%	19.8	6.0%	94.8%
80–84	2.5	1.4%	97.2%	0.0	0.0%	93.5%	2.5	0.7%	95.5%
85–89	0.0	0.0%	97.2%	0.0	0.0%	93.5%	0.0	0.0%	95.5%
90–94	0.0	0.0%	97.2%	0.0	0.0%	93.5%	0.0	0.0%	95.5%
95–99	0.0	0.0%	97.2%	0.0	0.0%	93.5%	0.0	0.0%	95.5%
100–104	0.0	0.0%	97.2%	0.0	0.0%	93.5%	0.0	0.0%	95.5%
Missing	5.0	2.8%	100.0%	9.9	6.5%	100.0%	14.9	4.5%	100.0%
Total	**178.5**	**100.0%**	**100.0%**	**153.7**	**100.0%**	**100.0%**	**332.2**	**100.0%**	**100.0%**

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

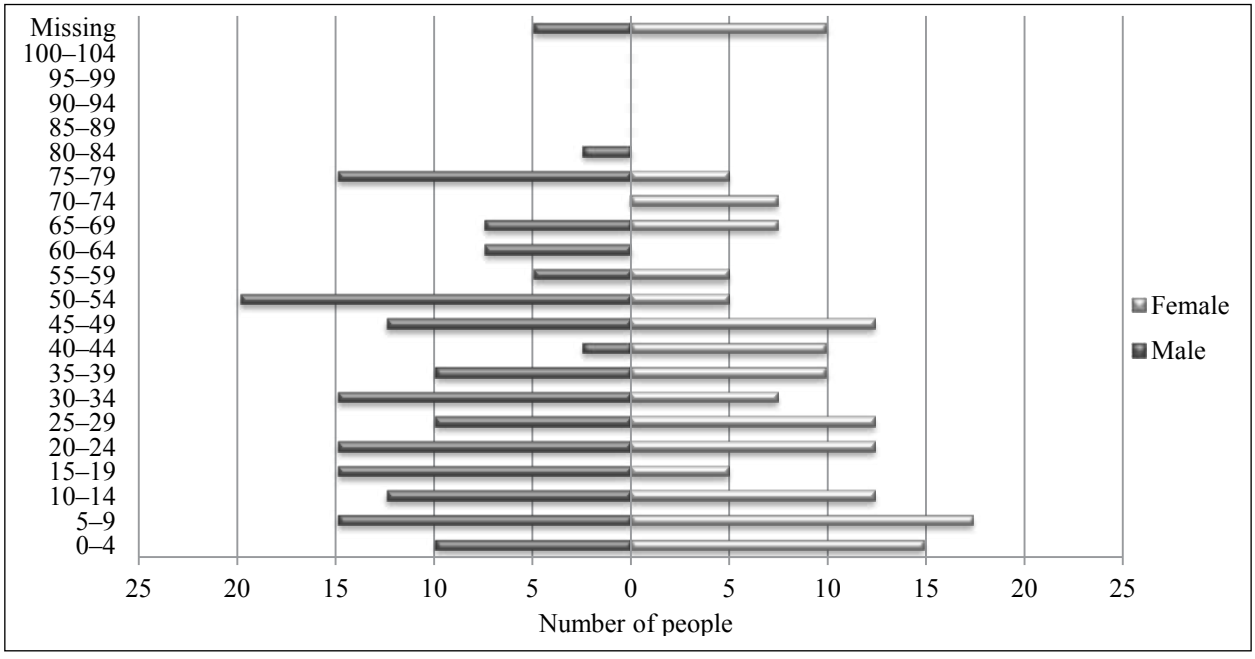


Figure 6-2.–Population profile, Hydaburg, 2012.

Table 6-5.–Birthplaces of population, Hydaburg, 2012.

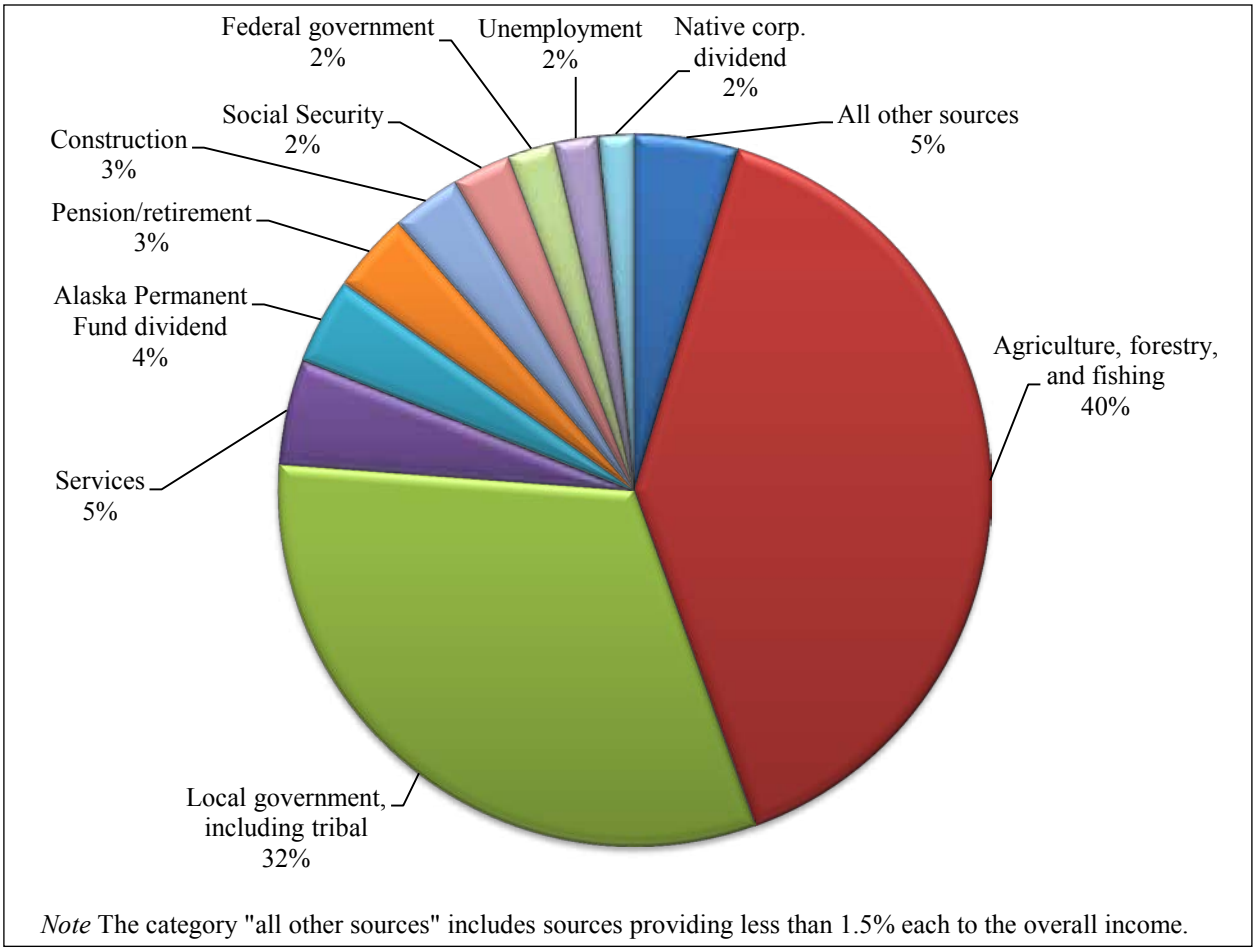
Birthplace	Percentage
Craig	0.7%
Hydaburg	61.2%
Kasaan	0.7%
Kasigluk	2.2%
Ketchikan	3.0%
Klawock	3.0%
Howkan	0.7%
Kulak	0.7%
Missing	15.7%
Other U.S.	11.2%
Foreign	0.7%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 6-6.–Birthplaces of household heads, Hydaburg, 2012.

Birthplace	Percentage
Hydaburg	53.4%
Kasaan	1.4%
Kasigluk	1.4%
Ketchikan	4.1%
Klawock	2.7%
Howkan	1.4%
Kulak	1.4%
Missing	15.1%
Other U.S.	17.8%
Foreign	1.4%

Source ADF&G Division of Subsistence household surveys, 2013.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.



Note The category "all other sources" includes sources providing less than 1.5% each to the overall income.

Figure 6-3.–Top income sources, Hydaburg, 2012.

Income and Cash Employment

The highest source of income by category in Hydaburg was agriculture, forestry, and fishing industry jobs, which composed 40% ($1.8 million) of the total community income (Figure 6-3; Table 6-7). This is likely because of the small but active commercial fishing fleet in Hydaburg. The second highest source of income by category was local government jobs, which totaled 32% ($1.4 million) of the community income. The remaining 28% of community income came from multiple sources of wage-based or other types of income, none of which exceeded 5% of the total income.

The total earned income for 2012 was estimated at $3.7 million (84% of the total community income) (Table 6-7). Other income—such as Alaska Permanent Fund dividends, unemployment, and public assistance—provided 16% of the community's total income. Alaska Permanent Fund dividends provided 4% of the community income, which was the largest source of other income in 2012. The second highest other income source came from pensions and retirement payments, which composed just under 4% of the total community income. The third highest other income source was Social Security benefits, which contributed 3% to the total community income.

Table 6-7.–Estimated earned and other income, Hydaburg, 2012.

Income source	Number of people	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Agriculture, forestry, and fishing	13.0	54.9	$1,756,163	$413,669 – $4,626,256	$14,758	39.8%
Local government, including tribal	14.0	54.9	$1,400,182	$541,230 – $2,841,226	$11,766	31.7%
Services	5.0	18.3	$211,508	$33,997 – $587,578	$1,777	4.8%
Construction	1.0	4.6	$138,970	$41,332 – $414,258	$1,168	3.1%
Federal government	1.0	4.6	$94,776	$31,224 – $248,733	$796	2.1%
Manufacturing	1.0	4.6	$56,948	$8,622 – $210,732	$479	1.3%
Transportation, communication, and utilities	1.0	4.6	$39,274	$24,188 – $86,467	$330	0.9%
Retail trade	1.0	4.6	$3,021	$1,866 – $6,511	$25	0.1%
Earned income subtotal	**33.0**	**119.0**	**$3,700,843**	**$2,075,406 – $7,010,960**	**$31,100**	**83.8%**
Other income						
Alaska Permanent Fund dividend		84.3	$171,930	$126,175 – $224,439	$1,445	3.9%
Pension/retirement		7.4	$159,511	$64,340 – $531,702	$1,340	3.6%
Social Security		17.4	$117,003	$10,908 – $293,064	$983	2.6%
Unemployment		19.8	$85,370	$24,792 – $183,909	$717	1.9%
Native corp. dividend		79.6	$73,007	$41,594 – $115,345	$614	1.7%
Workers' compensation/insurance		5.0	$59,500	$24,000 – $119,000	$500	1.3%
Food stamps		7.4	$32,725	$13,200 – $74,375	$275	0.7%
Heating assistance		12.4	$7,707	$1,772 – $17,187	$65	0.2%
Longevity bonus		5.0	$6,136	$2,475 – $18,408	$52	0.1%
TANF (temporary cash assistance for needy families)		2.5	$2,479	$1,000 – $4,958	$21	0.1%
Other		2.5	$199	$80 – $893	$2	0.0%
Adult public assistance (OAA, APD)		0.0	$0	$0 – $0	$0	0.0%
Supplemental Security income		0.0	$0	$0 – $0	$0	0.0%
Disability		0.0	$0	$0 – $0	$0	0.0%
Veterans assistance		0.0	$0	$0 – $0	$0	0.0%
Child support		0.0	$0	$0 – $0	$0	0.0%
Foster care		0.0	$0	$0 – $0	$0	0.0%
CITGO fuel voucher		0.0	$0	$0 – $0	$0	0.0%
Meeting honoraria		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**17.4**	**$715,566**	**$437,094 – $1,133,375**	**$6,013**	**16.2%**
Community income total			**$4,416,409**	**$2,854,524 – $7,685,053**	**$37,113**	**100.0%**

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

Table 6-8.–Employment by industry, Hydaburg, 2012.

Industry	Jobs	Households	Individuals	Percentage of wage earnings
Estimated total number	**213.1**	**119.0**	**185.1**	
Federal government	**2.6%**	**3.8%**	**3.0%**	**2.6%**
Military occupations	2.6%	3.8%	3.0%	2.6%
Local government, including tribal	**36.8%**	**46.2%**	**42.4%**	**37.8%**
Executive, administrative, and managerial	13.2%	19.2%	15.2%	15.8%
Social scientists, social workers, religious workers, and lawyers	2.6%	3.8%	3.0%	6.1%
Teachers, librarians, and counselors	5.3%	7.7%	6.1%	1.9%
Writers, artists, entertainers, and athletes	2.6%	3.8%	3.0%	1.6%
Health technologists and technicians	5.3%	3.8%	6.1%	3.7%
Technologists and technicians, except health	2.6%	3.8%	3.0%	2.6%
Precision production occupations	2.6%	3.8%	3.0%	2.4%
Handlers, equipment cleaners, helpers, and laborers	2.6%	3.8%	3.0%	3.8%
Agriculture, forestry, and fishing	**36.8%**	**46.2%**	**39.4%**	**47.5%**
Agricultural, forestry, and fishing occupations	36.8%	46.2%	39.4%	47.5%
Construction	**2.6%**	**3.8%**	**3.0%**	**3.8%**
Handlers, equipment cleaners, helpers, and laborers	2.6%	3.8%	3.0%	3.8%
Manufacturing	**2.6%**	**3.8%**	**3.0%**	**1.5%**
Writers, artists, entertainers, and athletes	2.6%	3.8%	3.0%	1.5%
Transportation, communication, and utilities	**2.6%**	**3.8%**	**3.0%**	**1.1%**
Transportation and material moving occupations	2.6%	3.8%	3.0%	1.1%
Retail trade	**2.6%**	**3.8%**	**3.0%**	**0.1%**
Service occupations	2.6%	3.8%	3.0%	0.1%
Services	**13.2%**	**15.4%**	**15.2%**	**5.7%**
Executive, administrative, and managerial	5.3%	7.7%	6.1%	1.3%
Social scientists, social workers, religious workers, and lawyers	2.6%	3.8%	3.0%	0.2%
Health technologists and technicians	2.6%	3.8%	3.0%	1.6%
Occupation not indicated	2.6%	3.8%	3.0%	2.6%

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

The jobs worked in 2012 represent the seasonal nature of the different industries in Hydaburg; most of the jobs held by residents were in the agriculture, forestry, and fishing category or the local government category (37% of jobs, each), both of which can be highly seasonal (Table 6-8). The mean number of weeks of employment for all adults (working age 16 or older) was 13 weeks per year (Table 6-9). Of the 185 employed adults only 23% of them were employed year-round. The job schedules were also highly varied: 55% of jobs were full-time, 13% jobs were part-time, and 32% were on-call (occasional) (Table 6-10). Though seasonal in nature, jobs were widespread throughout the households with an average of 1.8 jobs per household and 100% of the households had employed adults (Table 6-9). An estimated 79% of the total population of adults was employed in 2012; however, 13% of adults in Hydaburg were over the age of 65 and 52% were between the average working ages of 20 and 64 years old (Table 6-4).

Despite all households being employed at some point during the year, the average income in Hydaburg was relatively low. The per capita income in 2012 was $13,294 (Table 1-9). The median household income was estimated at $29,731 for 2012; this is $40,186 less than the 2012 statewide median income of $69,917 (Figure 6-4).

Table 6-9.–Employment characteristics, Hydaburg, 2012.

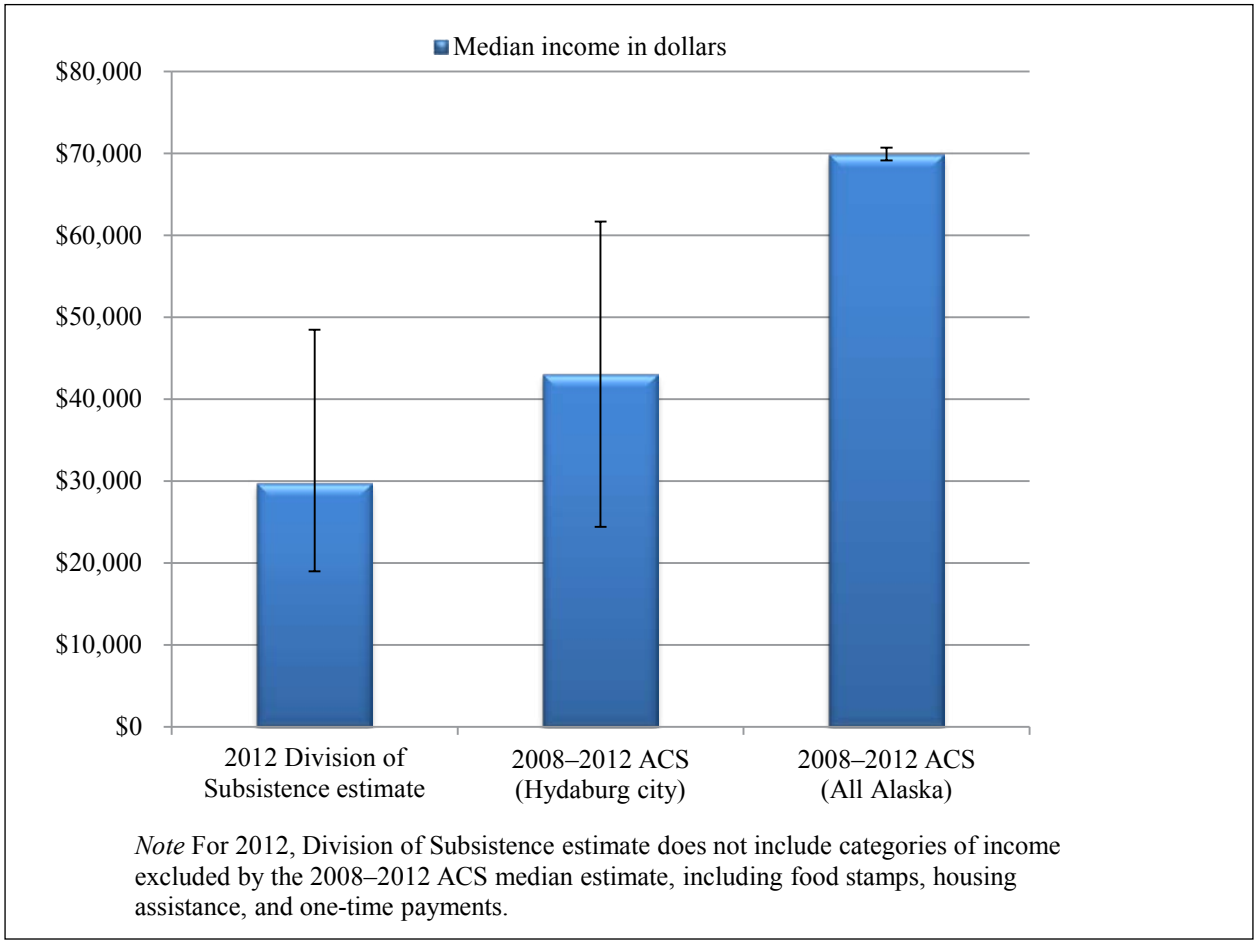
Characteristic	Community Hydaburg
All adults	
Number	233.0
Mean weeks employed	12.8
Employed adults	
Number	185.1
Percentage	79.4%
Jobs	
Number	213.1
Mean	1.2
Minimum	1
Maximum	2
Months employed	
Mean	3.7
Minimum	1
Maximum	12
Percentage employed year-round	22.8%
Mean weeks employed	16.1
Households	
Number	119
Employed	
Number	119.0
Percentage	100.0%
Jobs per employed household	
Mean	1.8
Minimum	1
Maximum	3
Employed adults	
Mean	
Employed households	1.6
Total households	1.6
Minimum	1
Maximum	2
Mean person-weeks of employment	20.3

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

Table 6-10.–Reported job schedules, Hydaburg, 2012.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full-time	117.8	55.3%	106.5	57.6%	73.2	61.5%
Part-time	28.0	13.2%	28.0	15.2%	22.9	19.2%
Shift	0.0	0.0%	0.0	0.0%	0.0	0.0%
On-call (occasional)	67.3	31.6%	61.7	33.3%	41.2	34.6%
Part-time shift	0.0	0.0%	0.0	0.0%	0.0	0.0%
Schedule not reported	0.0	0.0%	0.0	0.0%	0.0	0.0%

Source ADF&G Division of Subsistence household surveys, 2013.
Note Respondents who had more than 1 job in the study year could provide multiple responses, so the percentages may sum to more than 100%.



Note For 2012, Division of Subsistence estimate does not include categories of income excluded by the 2008–2012 ACS median estimate, including food stamps, housing assistance, and one-time payments.

Figure 6-4.–Comparison of median household income estimates, Hydaburg, 2012.

Food Security

Survey respondents were asked a set of questions intended to assess their household's food security, defined as, "access by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2012). The food security questions were modeled after those developed by the U.S. Department of Agriculture (USDA) but modified by ADF&G to account for differences in access to subsistence and store-bought foods. The food security status of households is based on the aggregated number of affirmative responses to questions about experiencing food insecure conditions. Food security status is characterized by 4 ranges:

1. High food security;
2. Marginal food security;
3. Low food security; and
4. Very low food security.

For reporting purposes, households with high or marginal food security were broadly categorized as being food secure, and households with low or very low food security were broadly categorized as being food insecure following a USDA protocol (Bickel et al. 2000).[1]

Households with a high or marginal level of food security reported 1 or 2 instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Core questions and responses from Hydaburg residents are summarized in Figure 6-5. A comparison of food security results for Hydaburg, the state of Alaska, and the United States appears in Figure 6-6. Hydaburg's percentage of food insecure households was almost twice the state's average with 21% of Hydaburg households experiencing food insecure conditions in 2012 compared to the 12% and 15% of the state and national households, respectively (Figure 6-6). Very low food security conditions in Hydaburg were also greater than the state and national average. Some of the low food secure conditions experienced by Hydaburg households were worrying about having enough food, lacking the resources to get food for both store-bought and subsistence foods, and running out of food (Figure 6-5). "Lack of resources" was defined as "…we mean your household did NOT have what you needed to hunt, fish, gather or buy food." In Hydaburg, adults in 3% of households indicated losing weight because of a lack of food, 3% at one point did not eat for a whole day because of a lack of food, and 3% at some point in the year ate less than they felt should have because of a lack of food. More than twice as many households experienced times where subsistence foods did not last in comparison to times when store-bought food did not last.

Figure 6-7 portrays the mean number of food insecure conditions per household by food security category by month. Figure 6-8 shows which month or months households reported foods not lasting. An overall trend is apparent in these 2 graphs: the majority of food insecure conditions occur in the winter months. There are some fluctuations over the year between months, but in general the months in and around summer show higher food security than the months during the winter. Given the seasonal availability of subsistence foods and employment in the area it seems reasonable that food insecure conditions increase during the months when subsistence harvests and employment are low.

1. U.S. Department of Agriculture, Economic Research Service. 2015. "Food Security in the U.S.: Measurement," http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx (accessed Nov. 2016).

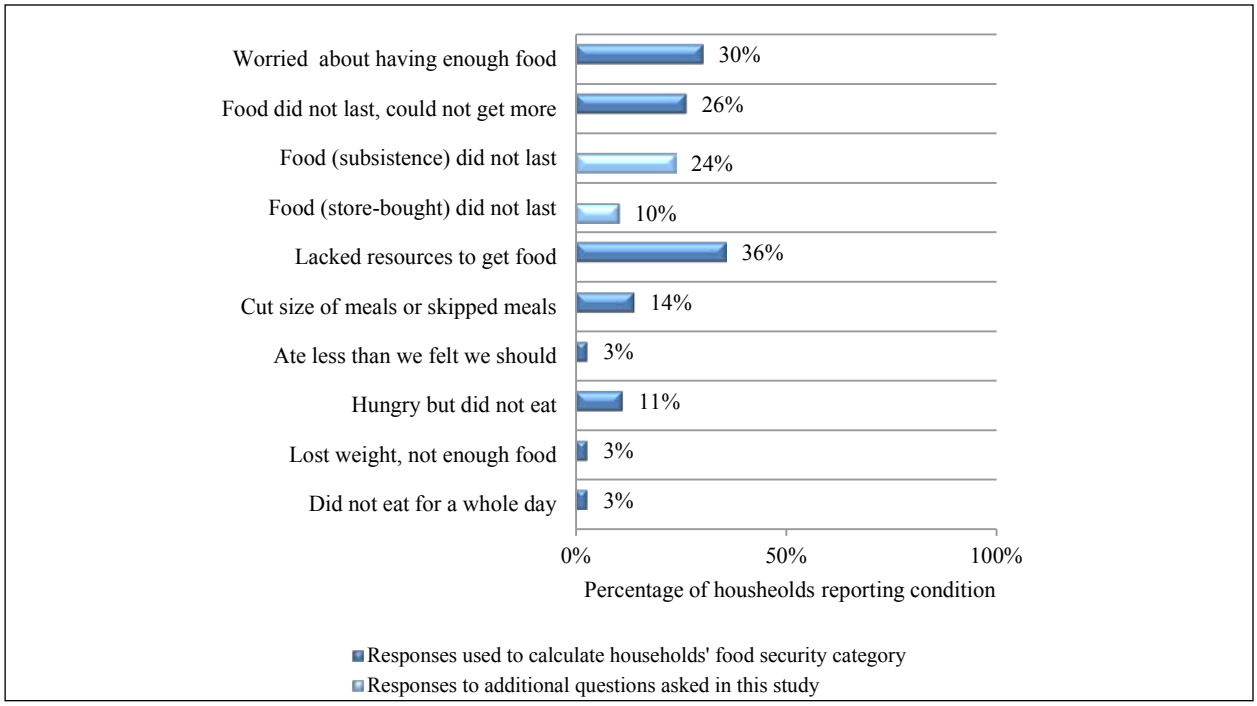


Figure 6-5.–Responses to questions about food insecure conditions, Hydaburg, 2012.

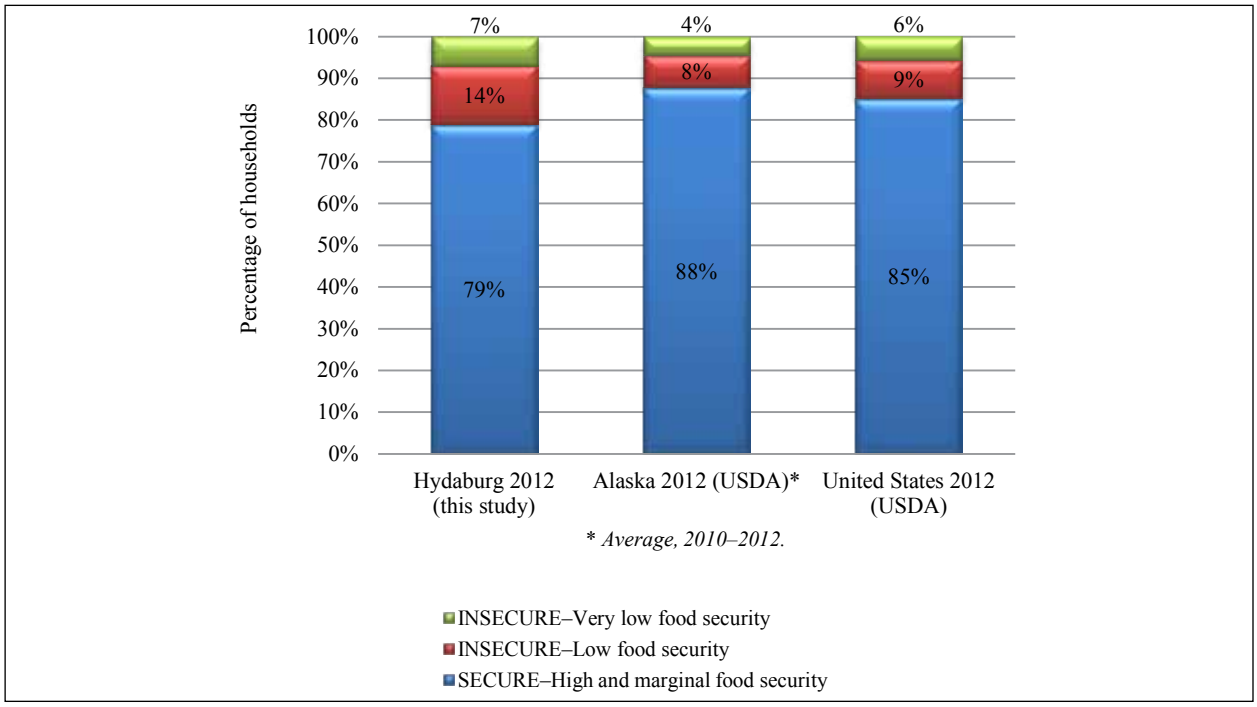


Figure 6-6.–Comparison of food security categories, Hydaburg, Alaska, and United States, 2012.

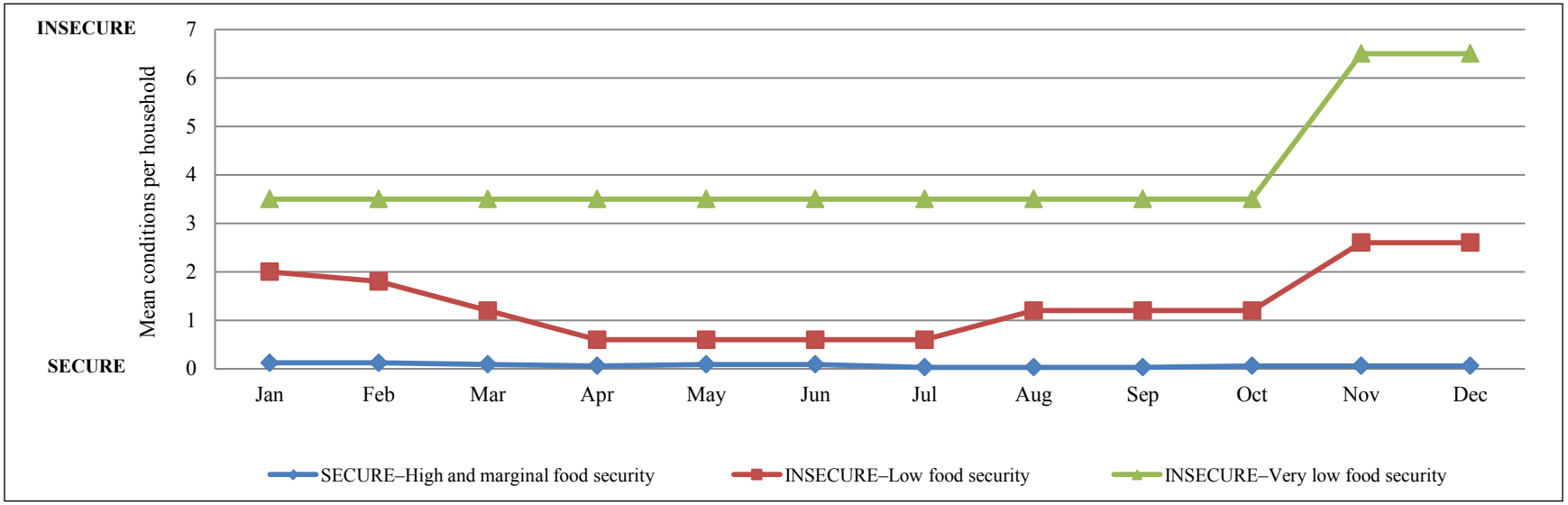


Figure 6-7.–Mean number of food insecure conditions by month and by household food security category, Hydaburg, 2012.

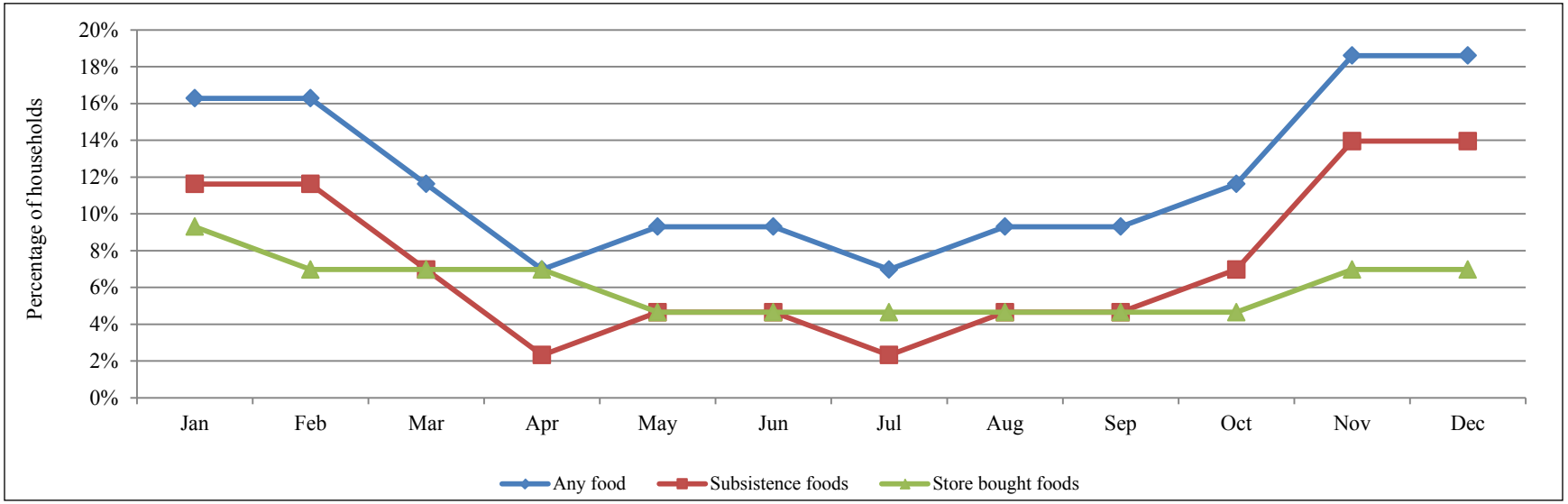


Figure 6-8.–Comparison of months when food did not last, Hydaburg, 2012.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Table 6-11 and Figure 6-9 report the expanded levels of individual participation in the harvest and processing of wild resources by all Hydaburg residents in 2012. The wild resources harvested include inedible resources such as firewood and furs in addition to the wild edible foods harvested. The majority of Hydaburg residents participated in the harvest of resources in 2012: 84% participated in processing wild foods/resources and 83% participated in gathering, hunting, fishing, or trapping wild foods and resources. The resource categories of vegetation, fish, and large land mammals showed the highest participation levels, all with approximately one-half or more of the population participating in the harvest or processing. In comparison, the resource categories of small mammals, marine mammals, and birds/bird eggs had much less participation, with only 2% to 11% of individuals taking part in harvesting or processing.

The harvest of vegetation had the highest participation levels at 79% of individuals processing and 76% harvesting. Little difference between harvesting and processing with vegetation is not unexpected since the majority of vegetation harvests require little processing and are often just cleaned and then frozen fresh. The resource category of fish had the second highest level of participation. In this category there is a greater difference between participation in processing and harvesting: 63% of individuals fished and 76% of individuals participated in processing fish. There is higher participation in the processing of fish because of the number of fish or shellfish that can be harvested at a time; typically extra help is needed to process the harvest before it spoils. In the resource category of large land mammals 44% of residents hunted and 58% processed the harvest. Large land mammals like deer require a large amount of effort to process because of the large size of the animal. These latter 2 categories demonstrate the different skills and the time it takes to process resources for each category.

Harvest and Use of Wild Resources at the Household Level

Organized by resource category, Figure 6-10 shows the percentages of households that used, attempted to harvest, and harvested wild resources. Nearly all Hydaburg households used salmon, nonsalmon fish, marine invertebrates, and vegetation, and nearly 90% of households used large land mammals. More than one-half of the households in Hydaburg harvested these resources in 2012. Marine mammals, as well as birds and bird eggs, were used and harvested the least. Only 27% of Hydaburg households used birds or bird eggs while 10% of households harvested them.

The small difference between percentages of households that harvested and attempted to harvest in almost all categories suggests that Hydaburg households are highly successful at gathering wild resources. Marine invertebrates, salmon, vegetation, and marine mammals show no difference between harvest and attempted harvest percentages, thus suggesting that nearly all harvesting efforts were successful. The large land mammal category shows the largest difference between the percentages of households that attempted to harvest versus those that successfully harvested an animal. This gap is not surprising. Large land mammals are highly mobile and agile, enabling them to cover long distances over land with speed. Their senses of sight and smell are acute. Unlike salmon, deer, moose, and other large land mammals commonly hunted by Southeast Alaska households rarely gather into large concentrated groups in specific areas. These characteristics make them a challenging resource to harvest. Most resource categories show a large difference between harvest and use, demonstrating the sharing of resources between households within the community. For vegetation, the gap between harvest and use is small—around 6%. Vegetation is generally easily accessible in and around town and requires little specialized equipment beyond a small portable container and a moderately agile person to gather.

The percentages were the same for households that used, harvested, and hunted marine mammals, with 15% of households participating in each activity. Seals and sea lions are very large, and, once they are harvested, often are labor-intensive to process. Most are harvested for multiple products from the fatty tissue, meats, hides, and bones. To process animals into these products requires multiple skill sets.

Table 6-11.–Individual participation in subsistence harvesting and processing activities, Hydaburg, 2012.

Total number of people	**332.2**
Fish	
Fish	
Number	207.9
Percentage	62.6%
Process	
Number	251.1
Percentage	75.6%
Large land mammals	
Hunt	
Number	144.5
Percentage	43.5%
Process	
Number	192.7
Percentage	58.0%
Small land mammals	
Hunt or trap	
Number	5.1
Percentage	1.5%
Process	
Number	7.6
Percentage	2.3%
Marine mammals	
Hunt	
Number	10.1
Percentage	3.1%
Process	
Number	12.7
Percentage	3.8%
Birds and eggs	
Hunt/gather	
Number	20.3
Percentage	6.1%
Process	
Number	35.5
Percentage	10.7%
Vegetation	
Gather	
Number	253.6
Percentage	76.3%
Process	
Number	261.2
Percentage	78.6%
Any resource	
Attempt harvest	
Number	275.2
Percentage	82.8%
Process	
Number	280.1
Percentage	84.3%

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

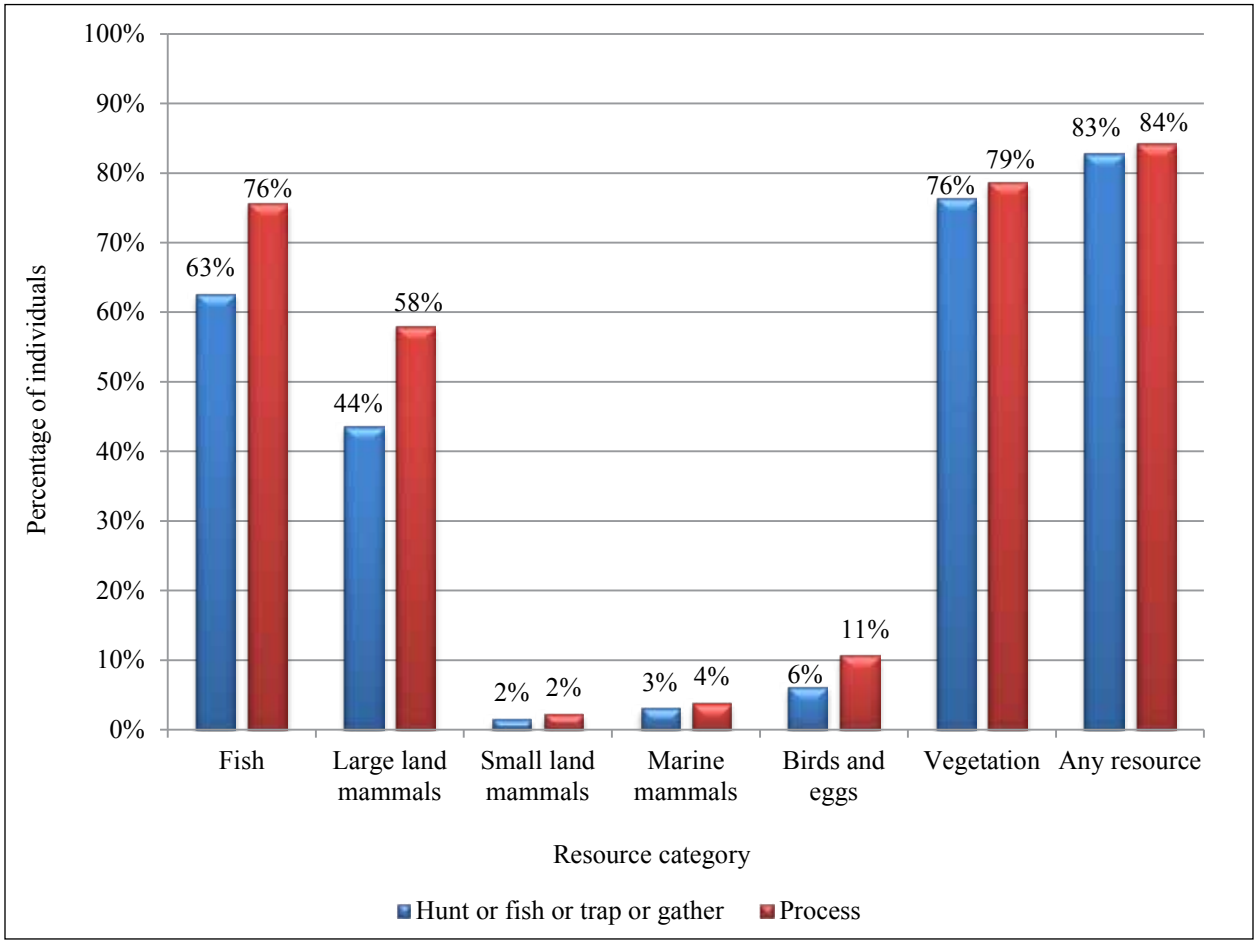


Figure 6-9.–Individual participation in subsistence harvesting and processing activities, Hydaburg, 2012.

Table 6-12 summarizes the 2012 harvest and use characteristics at the household level. The average harvest was 1,482 lb usable weight per household with a minimum of 0 lb and a maximum of 6,313 lb harvested. The per capita harvest was 531 lb. Hydaburg households harvested on average 13 resources and used an average of 21 resources. This was the highest average number of resources used by household in comparison to all 4 other communities surveyed as part of this study (Table 1-9). In addition, households gave away an average of 11 resources and received 13 resources. Overall, as many as 170 species were available for households to harvest in the study area; this included species that survey respondents identified but were not asked about in the survey instrument.

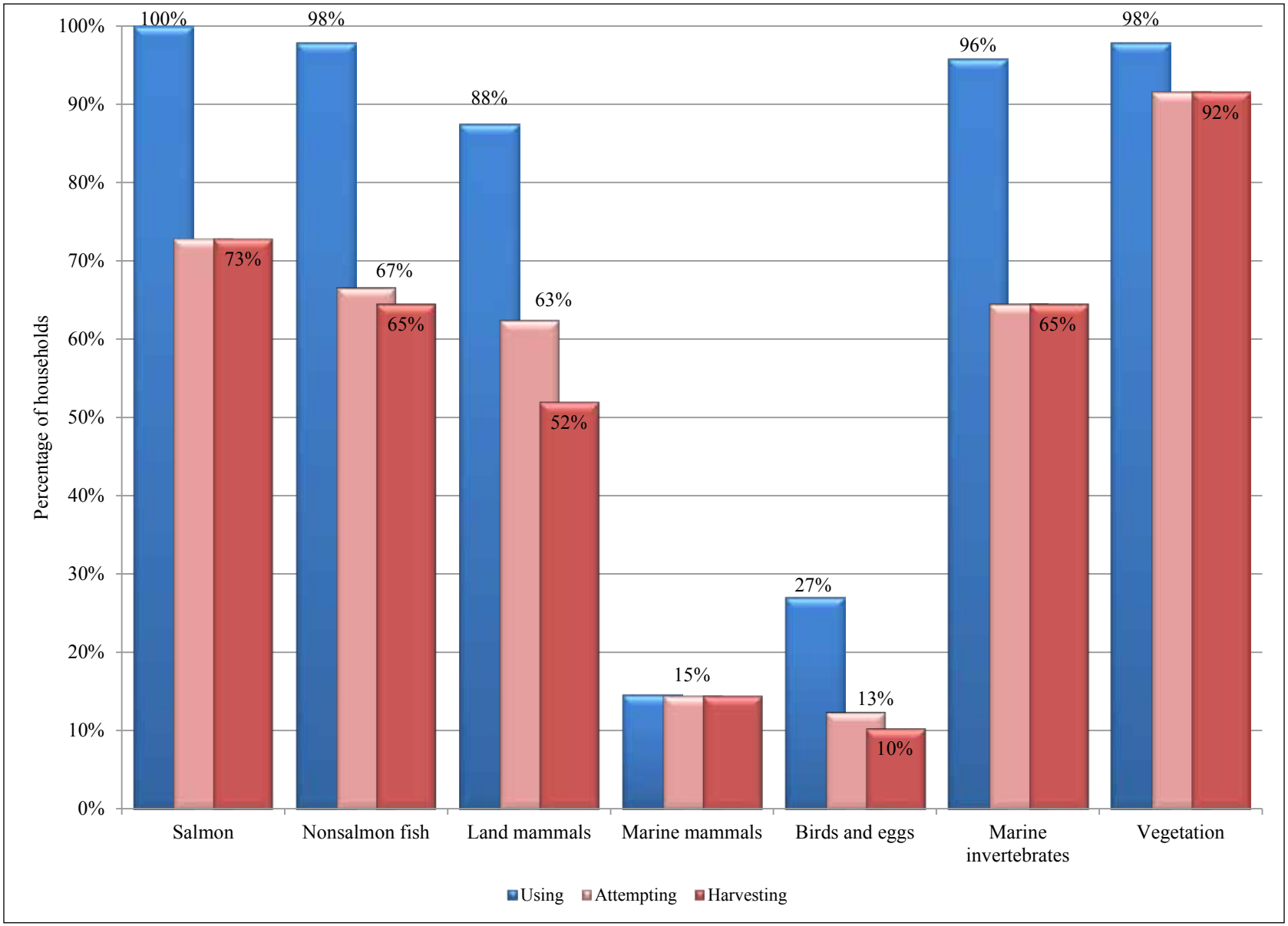


Figure 6-10.–Percentages of households using, attempting to harvest, and harvesting wild resources, by resource category, Hydaburg, 2012.

Table 6-12.–Resource harvest and use characteristics, Hydaburg, 2012.

Characteristic	
Mean number of resources used per household	**21.3**
Minimum	6
Maximum	42
95% confidence limit (±)	9.9%
Median	21
Mean number of resources attempted to harvest per household	**13.1**
Minimum	0
Maximum	37
95% confidence limit (±)	15.0%
Median	10.5
Mean number of resources harvested per household	**12.7**
Minimum	0
Maximum	36
95% confidence limit (±)	15.3%
Median	10.5
Mean number of resources received per household	**13.4**
Minimum	0
Maximum	40
95% confidence limit (±)	13.8%
Median	11
Mean number of resources given away per household	**11.2**
Minimum	0
Maximum	30
95% confidence limit (±)	17.8%
Median	8
Household harvest (pounds)	
Minimum	0.0
Maximum	6,312.7
Mean	1,481.6
Median	991
Total harvest weight (lb)	176,309.7
Community per capita harvest (lb)	530.7
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	97.9%
Percentage harvesting any resource	97.9%
Percentage receiving any resource	97.9%
Percentage giving away any resource	89.6%
Number of households in sample	48
Number of resources asked about and identified voluntarily by respondents	170

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

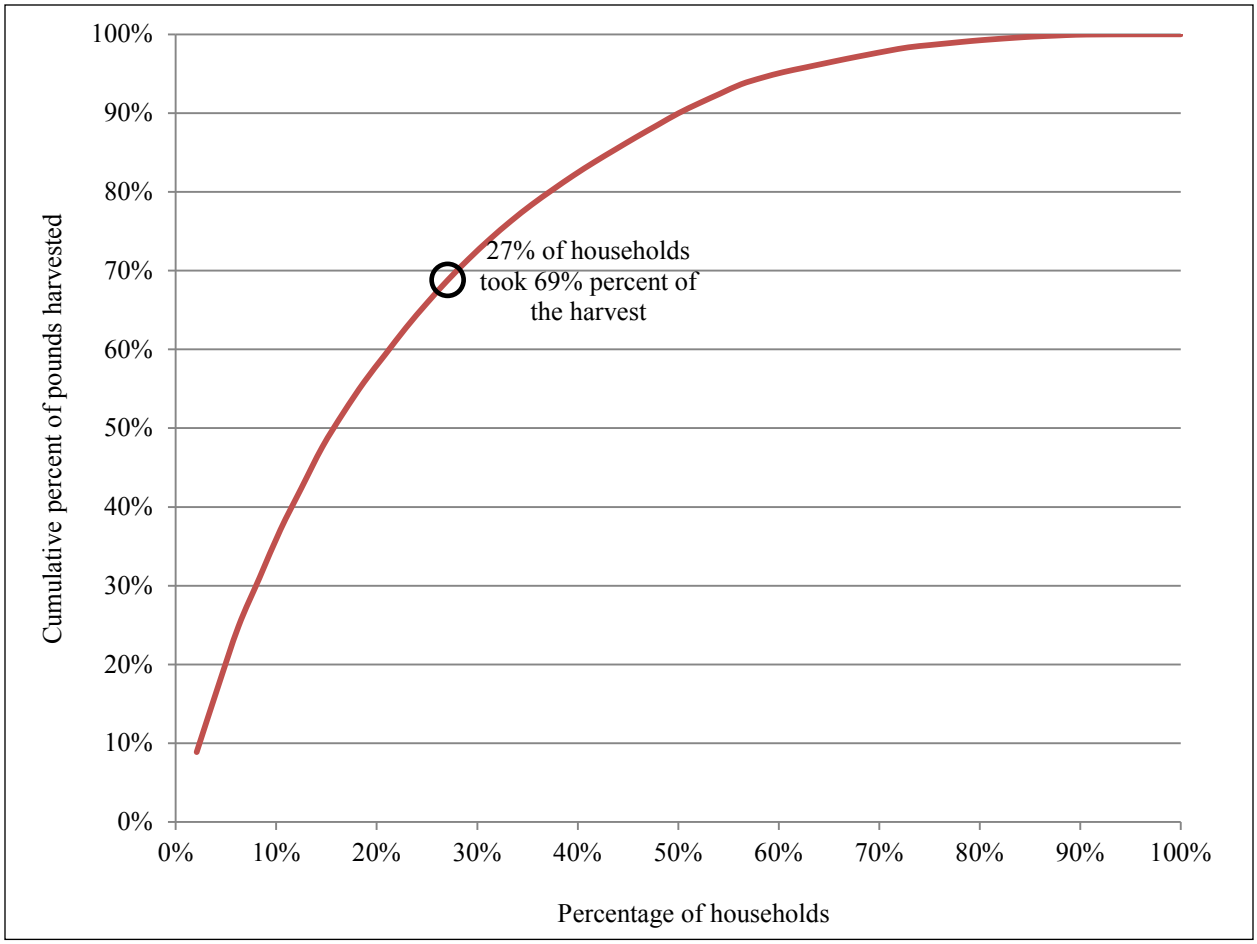


Figure 6-11.–Household specialization, Hydaburg, 2012.

Sharing of Wild Resources

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 6-11, about 69% of the harvests of wild resources as estimated in usable pounds were harvested by 27% of Hydaburg households. Further analysis of the study findings, beyond the scope of this report, might identify characteristics of the highly productive households in Hydaburg and the other study communities.

Harvest Quantities and Composition

Table 6-13 reports estimated wild resource harvests and uses by Hydaburg residents in 2012. It is organized first by general resource category and then by species. All edible resources are reported in pounds usable weight (see Appendix C for conversion factors[2]). The harvest categories include 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.

A total of 176,310 lb of usable weight was harvested. Figure 6-12 shows by category the composition of total usable weight harvested in 2012. The majority of the harvest was salmon (40%), with a total of 71,235 lb harvested, which equates to 214 lb per capita (Figure 6-12; Table 6-13). Nonsalmon fish composed the second highest harvest proportion (25%) with 44,197 lb, or 133 lb per capita, harvested by Hydaburg households in 2012. Marine invertebrates were the third highest harvested category (16%) with 27,630 lb, or 83 lb per capita harvested. The fourth highest harvest was the category of large land mammals (13%) with 22,610 lb harvested, or 68 lb per capita. Vegetation composed 5% of the harvest (8,835 lb; 27 lb per capita), marine mammals composed 1% (1,666 lb; 5 lb per capita), and birds and bird eggs composed less than 1% of the total usable weight harvested (138 lb; 0.4 lb per capita).

Seasonal Round

Hydaburg is set away from other communities on Prince of Wales Island yet is still very connected via the Hydaburg Highway, which extends from Hydaburg to the Klawock-Hollis Highway and the rest of the Prince of Wales Island road system. The marine and terrestrial environments are highly varied in the area, providing diverse habitats. The nearby open ocean provides an abundance of nutrients to support a wide variety of seafood. The collection of islands around Hydaburg provide protection for the smaller boats used by Hydaburg residents for gathering wild resources. Being located in Southeast Alaska, Hydaburg is surrounded by a temperate rainforest, and is located in the Tongass National Forest. Since the majority of the land in Southeast Alaska is part of the Tongass National Forest, much of the land has been kept free from development. Former logging roads provide trails into the forest, generally allowing for easier access to wild resources than just walking through the undeveloped forest.

Opportunities to harvest wild resources are available all year in Southeast Alaska. However, harsh weather conditions and the seasonal availability of most species make the winter months the least productive months to harvest. Spring weather brings fresh shoots of salmonberry bushes, Pacific herring roe (eggs), and eulachon to the mainland streams and rivers; also, spring runs of steelhead arrive and berry plants bloom. During summer the majority of species are available to harvest—the salmon return to the streams, berries ripen, Pacific halibut return to shallow inland waters, and crab come back to shallower waters as well. Summertime is also the time when most jobs are available in the local economy, leading to a shortage of time to dedicate to harvest activities while focusing on making money for the year. Fall is the season for harvesting large land mammals. Winter provides for some harvest opportunities for deer and shellfish, but the shorter daylight hours and harsh weather conditions limit many harvest activities.

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 6-13.–Estimated uses and harvests of fish, game, and vegetation resources, Hydaburg, 2012.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95%
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	confidence limit (±) harvest
All resources	**100.0**	**97.9**	**97.9**	**97.9**	**89.6**	**176,309.7**	**1,481.6**	**530.7**				**25.1**
Salmon	**100.0**	**72.9**	**72.9**	**89.6**	**70.8**	**71,234.6**	**598.6**	**214.4**				**29.7**
Chum salmon	25.0	18.8	16.7	12.5	16.7	4,786.1	40.2	14.4	711.5	ind	6.0	109.1
Coho salmon	58.3	41.7	41.7	31.3	35.4	10,643.0	89.4	32.0	2,220.8	ind	18.7	47.9
Chinook salmon	87.5	45.8	45.8	66.7	45.8	6,540.7	55.0	19.7	696.6	ind	5.9	40.1
Pink salmon	20.8	16.7	16.7	8.3	8.3	4,005.8	33.7	12.1	1,537.1	ind	12.9	79.0
Sockeye salmon	97.9	62.5	62.5	62.5	64.6	45,259.1	380.3	136.2	9,779.5	ind	82.2	31.6
Salmon roe	8.3	4.2	0.0	4.2	2.1	0.0	0.0	0.0	0.0	gal	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	**97.9**	**66.7**	**64.6**	**95.8**	**75.0**	**44,197.2**	**371.4**	**133.0**				**29.6**
Pacific herring	12.5	4.2	2.1	12.5	2.1	185.9	1.6	0.6	31.0	gal	0.3	155.4
Pacific herring roe/unspecified	6.3	2.1	0.0	4.2	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring sac roe	10.4	4.2	4.2	6.3	4.2	277.7	2.3	0.8	39.7	gal	0.3	112.2
Pacific herring spawn on kelp	83.3	29.2	29.2	75.0	37.5	7,491.0	62.9	22.5	1,070.1	gal	9.0	76.7
Pacific herring roe on hair seaweed	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hemlock branches	77.1	22.9	22.9	72.9	35.4	3,968.8	33.4	11.9	567.0	gal	4.8	55.2
Eulachon (hooligan, candlefish)	43.8	2.1	2.1	43.8	10.4	5.0	0.0	0.0	0.6	gal	0.0	155.4
Silver smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific (gray) cod	2.1	0.0	0.0	2.1	2.1	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific tomcod	2.1	0.0	0.0	2.1	2.1	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	ind	0.0	0.0
Lingcod	35.4	22.9	22.9	22.9	20.8	1,064.3	8.9	3.2	168.9	ind	1.4	54.0
Pacific halibut	97.9	52.1	50.0	81.3	62.5	24,394.2	205.0	73.4	24,394.2	lb	205.0	40.3
Black rockfish	8.3	8.3	8.3	4.2	8.3	1,209.8	10.2	3.6	604.9	ind	5.1	127.8
Yelloweye rockfish	68.8	39.6	37.5	50.0	39.6	4,031.1	33.9	12.1	1,343.7	ind	11.3	41.5
Quillback rockfish	2.1	2.1	0.0	2.1	2.1	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sablefish (black cod)	12.5	6.3	6.3	8.3	4.2	119.0	1.0	0.4	29.8	ind	0.3	93.5
Buffalo sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red Irish lord	2.1	0.0	0.0	2.1	2.1	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shark	2.1	2.1	2.1	0.0	0.0	124.0	1.0	0.4	13.8	ind	0.1	155.4
Skates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sole	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dolly Varden	18.8	10.4	10.4	10.4	10.4	587.6	4.9	1.8	195.9	ind	1.6	101.6
Cutthroat trout	4.2	2.1	2.1	2.1	2.1	22.3	0.2	0.1	14.9	ind	0.1	155.4
Rainbow trout	6.3	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 6-13.–Page 2 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Nonsalmon fish, continued												
Steelhead	33.3	16.7	16.7	16.7	10.4	716.5	6.0	2.2	84.3	ind	0.7	64.0
Large land mammals	**87.5**	**62.5**	**52.1**	**54.2**	**54.2**	**22,610.0**	**190.0**	**68.1**				**34.9**
American (plains) bison	2.1	0.0	0.0	2.1	2.1	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black bear	0.0	0.0	0.0	0.0	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	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Deer	87.5	62.5	52.1	54.2	54.2	22,610.0	190.0	68.1	282.6	ind	2.4	34.9
Elk	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	4.2	0.0	0.0	4.2	2.1	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals	**2.1**	**2.1**	**2.1**	**0.0**	**2.1**	**0.0**	**0.0**	**0.0**				**0.0**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mink	2.1	2.1	2.1	0.0	2.1	0.0	0.0	0.0	2.5	ind	0.0	155.4
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red (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
Least weasel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marine mammals	**14.6**	**14.6**	**14.6**	**6.3**	**10.4**	**1,666.0**	**14.0**	**5.0**				**118.9**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	6.3	6.3	6.3	6.3	2.1	1,666.0	14.0	5.0	19.8	ind	0.2	118.9
Sea otter	8.3	8.3	8.3	0.0	8.3	0.0	0.0	0.0	64.5	ind	0.5	106.0
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 6-13.–Page 3 of 6.

Resource	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
Birds and eggs	**27.1**	**12.5**	**10.4**	**18.8**	**12.5**	**137.6**	**1.2**	**0.4**				**82.0**
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	2.1	2.1	2.1	0.0	2.1	5.0	0.0	0.0	5.0	ind	0.0	155.4
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern pintail	2.1	2.1	2.1	0.0	2.1	7.4	0.1	0.0	7.4	ind	0.1	155.4
Scaup	2.1	2.1	2.1	0.0	2.1	5.0	0.0	0.0	5.0	ind	0.0	155.4
Teal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Wigeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown ducks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown Canada/cackling geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebirds – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown loon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Grouse	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Ptarmigan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard 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 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
Unknown Canada/cackling 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
Unknown goose eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown swan eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black oystercatcher 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 shorebird eggs – small	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown shorebird eggs – large	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Glaucous-winged gull eggs	25.0	10.4	8.3	18.8	10.4	120.2	1.0	0.4	481.0	ind	4.0	91.9
Unknown loon 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 tern 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 seabird eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

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Table 6-13.–Page 4 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Birds and eggs, continued												
Unknown grouse 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 ptarmigan 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	**95.8**	**64.6**	**64.6**	**83.3**	**62.5**	**27,629.6**	**232.2**	**83.2**				**39.2**
Abalone	16.7	10.4	10.4	6.3	6.3	394.9	3.3	1.2	188.1	gal	1.6	102.5
Red (large) chitons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Black (small) chitons	33.3	22.9	22.9	14.6	22.9	1,388.3	11.7	4.2	185.1	gal	1.6	85.6
Butter clams	64.6	41.7	41.7	41.7	37.5	3,386.9	28.5	10.2	761.1	gal	6.4	42.4
Horse clams	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific littleneck clams (steamers)	12.5	8.3	8.3	8.3	8.3	38.8	0.3	0.1	12.9	gal	0.1	124.8
Razor clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Basket cockles	50.0	31.3	31.3	29.2	22.9	952.2	8.0	2.9	306.2	gal	2.6	52.1
Heart cockles	4.2	4.2	4.2	2.1	4.2	539.7	4.5	1.6	173.5	gal	1.5	134.6
Dungeness crab	83.3	37.5	37.5	81.3	43.8	5,045.4	42.4	15.2	3,822.3	ind	32.1	48.3
Blue king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Brown king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red king crab	43.8	14.6	14.6	41.7	20.8	2,595.4	21.8	7.8	482.4	ind	4.1	84.8
Tanner crab	2.1	0.0	0.0	2.1	2.1	0.0	0.0	0.0	0.0	ind	0.0	0.0
Geoducks	4.2	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Limpets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mussels	4.2	2.1	2.1	4.2	2.1	18.6	0.2	0.1	12.4	gal	0.1	155.4
Octopus	16.7	12.5	12.5	8.3	8.3	537.0	4.5	1.6	537.0	lb	4.5	88.1
Weathervane scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Rock scallops	12.5	8.3	8.3	6.3	4.2	106.2	0.9	0.3	65.1	gal	0.5	146.7
Sea cucumber	20.8	16.7	16.7	6.3	8.3	637.7	5.4	1.9	318.8	gal	2.7	121.0
Green sea urchin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Red sea urchin	6.3	6.3	6.3	0.0	4.2	159.7	1.3	0.5	93.9	gal	0.8	97.1
Purple sea urchin	6.3	4.2	4.2	2.1	2.1	109.1	0.9	0.3	64.2	gal	0.5	124.4
Shrimp	79.2	35.4	35.4	68.8	52.1	11,719.7	98.5	35.3	5,859.9	gal	49.2	51.4
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	**97.9**	**91.7**	**91.7**	**83.3**	**83.3**	**8,834.7**	**74.2**	**26.6**				**21.7**
Blueberry	85.4	72.9	72.9	35.4	45.8	2,134.4	17.9	6.4	533.6	gal	4.5	36.6
Lowbush cranberry	2.1	2.1	2.1	0.0	0.0	9.9	0.1	0.0	2.5	gal	0.0	155.4

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Table 6-13.–Page 5 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Vegetation, continued												
Highbush cranberry	4.2	4.2	4.2	0.0	0.0	16.1	0.1	0.0	4.0	gal	0.0	111.7
Elderberry	4.2	2.1	2.1	4.2	2.1	19.8	0.2	0.1	5.0	gal	0.0	155.4
Gooseberry	8.3	6.3	6.3	2.1	0.0	37.2	0.3	0.1	9.3	gal	0.1	125.8
Currants	6.3	4.2	4.2	2.1	0.0	33.5	0.3	0.1	8.4	gal	0.1	138.8
Huckleberry	72.9	58.3	58.3	33.3	41.7	922.3	7.8	2.8	230.6	gal	1.9	27.9
Cloudberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Nagoonberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Raspberry	4.2	4.2	4.2	0.0	0.0	20.3	0.2	0.1	5.1	gal	0.0	153.8
Salmonberry	72.9	64.6	64.6	23.4	36.2	1,456.5	12.2	4.4	364.1	gal	3.1	26.5
Soapberry	4.2	2.1	2.1	2.1	2.1	2.5	0.0	0.0	0.6	gal	0.0	155.4
Strawberry	12.5	12.5	12.5	2.1	6.3	54.5	0.5	0.2	13.6	gal	0.1	77.3
Thimbleberry	50.0	41.7	41.7	20.8	20.8	277.7	2.3	0.8	69.4	gal	0.6	58.9
Twisted stalk berry (watermelon berry)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Other wild berry	22.9	16.7	16.7	8.3	4.2	174.5	1.5	0.5	43.6	gal	0.4	60.2
Beach asparagus	72.9	52.1	52.1	25.0	43.8	328.5	2.8	1.0	328.5	gal	2.8	38.4
Goose tongue	8.3	6.3	6.3	4.2	4.2	17.1	0.1	0.1	17.1	gal	0.1	137.4
Wild rhubarb	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Other beach greens	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Devil's club	14.6	8.3	8.3	6.3	8.3	113.9	1.0	0.3	113.9	gal	1.0	90.2
Fiddlehead ferns	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Nettle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Hudson's Bay (Labrador) tea	37.5	25.0	25.0	12.5	16.7	115.3	1.0	0.3	115.3	gal	1.0	59.8
Indian rice	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Mint	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Salmonberry shoots	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Skunk cabbage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Sourdock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Spruce tips	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild celery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild parsley	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wild rose hips	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

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Table 6-13.–Page 6 of 6.

Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Vegetation, continued												
Other wild greens	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown mushrooms	2.1	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Black seaweed	89.6	54.2	54.2	54.2	58.3	2,829.3	23.8	8.5	1,124.3	gal	9.4	28.5
Bull kelp	6.3	6.3	6.3	2.1	0.0	55.7	0.5	0.2	13.9	gal	0.1	140.2
Red seaweed	4.2	2.1	2.1	2.1	0.0	29.8	0.3	0.1	9.9	gal	0.1	155.4
Sea ribbons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Giant kelp (*macrocystis*)	2.1	2.1	2.1	2.1	2.1	185.9	1.6	0.6	62.0	gal	0.5	155.4
Alaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Unknown seaweed	2.1	2.1	2.1	0.0	0.0	0.0	0.0	0.0	24.8	gal	0.2	155.4
Wood	62.5	58.3	58.3	43.8	37.5	0.0	0.0	0.0	867.2	cord	7.3	28.0

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

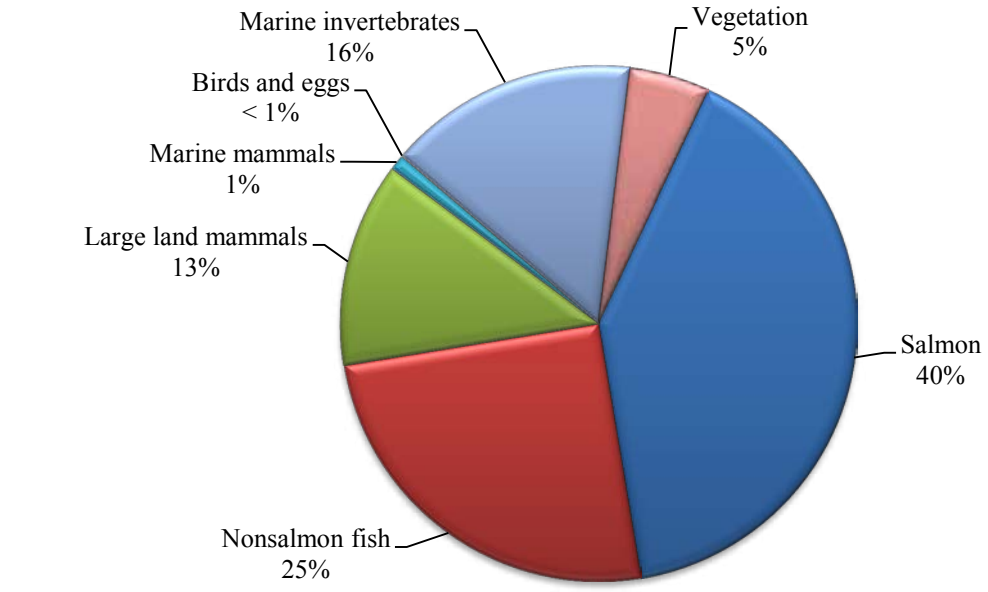
Note Resources where the percentage using is greater than the combined received and harvest indicate use from resources obtained during a previous year.

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

Note "Unknown" means "unspecified" resources (i.e., respondents may have known the specific resource harvested, but that information was not collected during the survey).

Note For all types of seaweed, amounts harvested include amounts used for fertilizer; these harvests were not converted into usable pounds.

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



Note Categories having 0 lb of edible weight are not included.

Figure 6-12.–Composition of harvest by resource category in pounds usable weight, Hydaburg, 2012.

Use and Harvest Characteristics by Resource Category

Table 6-13 shows the estimated harvests and uses of wild resources by Hydaburg residents in 2012 and includes information about sharing (e.g., giving and receiving). Overall, Hydaburg households share many wild resources that they harvest. Nearly 90% of households gave away a resource and 98% of households received a resource during 2012. The survey instrument does not collect specific information of how much was shared, to whom, or whether or not a resource was given to households outside the community, but the data indicate sharing and receiving resources is common. Within the main resource categories harvested, nonsalmon fish in particular was widely shared: 75% of households shared their catch with others and 96% of households received nonsalmon fish. Salmon was also frequently shared: 71% of households gave away salmon and 90% of households received salmon from other households. Marine mammals and small land mammals showed the lowest percentages of sharing: 10% of households gave away marine mammals (harbor seal and sea otter) to other households and 6% of households received marine mammals (harbor seal), and 2% of households gave away small land mammals but no households in Hydaburg received small land mammal species. For clarification, it should be noted that instances of hospitality were not included as "sharing" or "giving" a resource. For example, sharing a meal with someone from another household was not included as sharing but an instance where someone gave away a fillet of salmon to a person in a different household did count as sharing.

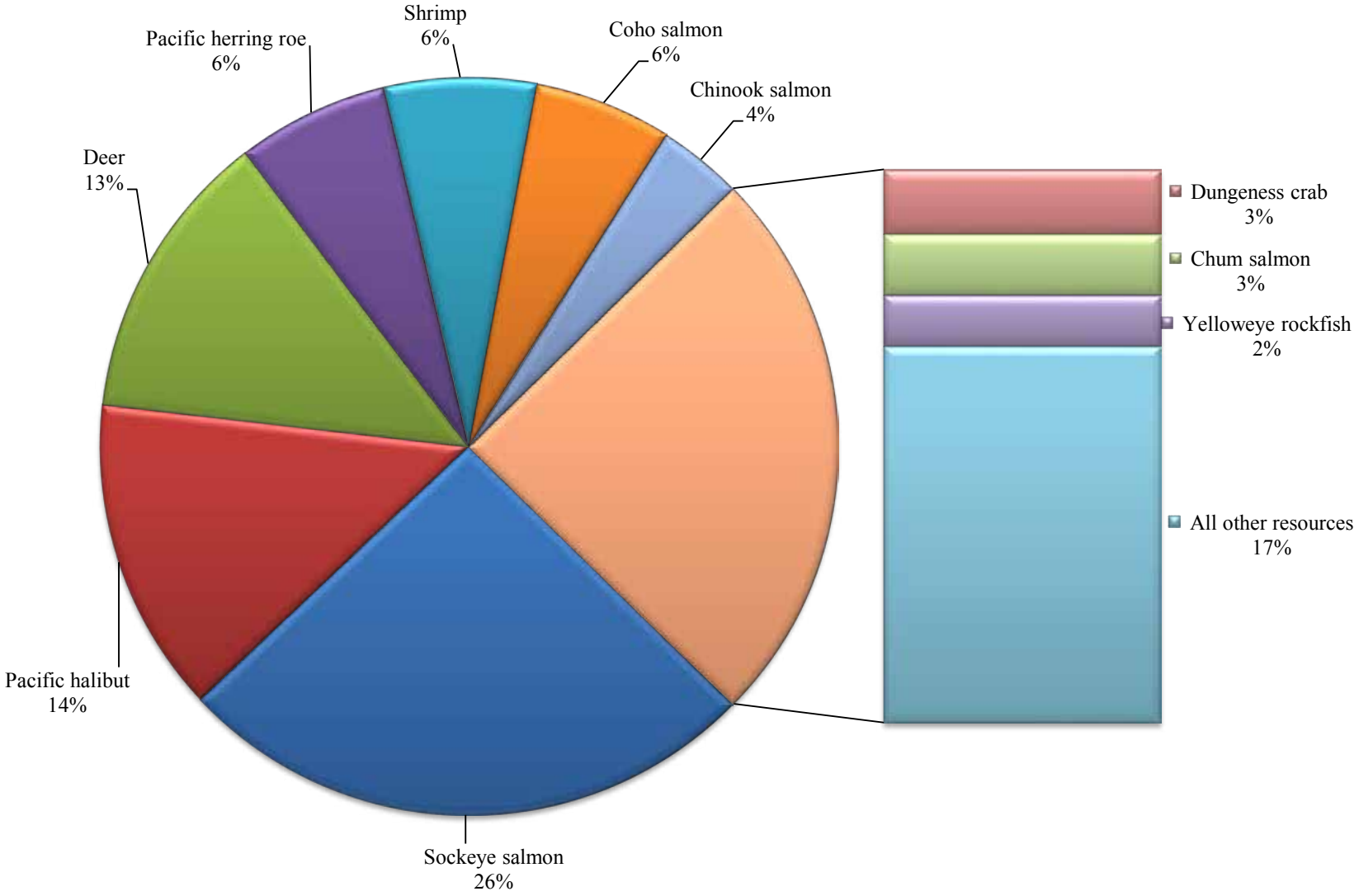
Table 6-14.–Top ranked resources used by households, Hydaburg, 2012.

Rank[a]	Resource	Percentage of households using
1.	Sockeye salmon	97.9%
1.	Pacific halibut	97.9%
3.	Pacific herring roe	89.6%
3.	Black seaweed	89.6%
5.	Chinook salmon	87.5%
5.	Deer	87.5%
7.	Blueberry	85.4%
8.	Dungeness crab	83.3%
9.	Shrimp	79.2%
10.	Huckleberry	72.9%

Source ADF&G Division of Subsistence household surveys, 2013.
a. Resources used by the same percentage of households share the highest rank value instead of having sequential rank values.

Table 6-14 lists the top ranked resources used by Hydaburg households in 2012. In terms of use, top ranked resources were seafood, with the exception of deer, blueberries, and huckleberries (Table 6-14). Hydaburg's shoreside location within inside water passages adjacent to nutrient-rich open ocean waters is reflected in the household use levels. The top ranked resources used are found from a wide variety of habitats in marine environments, as well as the terrestrial environment, starting on the bottom of the seafloor with demersal Pacific halibut to pelagic Chinook salmon and moving to shallower water close to shore for Dungeness crab, then into the intertidal zone for black seaweed, and to the forest for berries and deer. Herring eggs on any substrate rank third on this list, tied with black seaweed, demonstrating the importance of this small forage fish to the community. Herring eggs and black seaweed, another important food to Southeast Alaska Natives, rank higher than Chinook salmon in use. Almost all of the top ranked resources are used by more than three-quarters of the households in Hydaburg.

Figure 6-13 illustrates the top harvests by species for Hydaburg in 2012. The top harvested resources are similar in composition to the top ranked resources used by household. The only land-based species to contribute significantly to the harvest is deer. Sockeye salmon and Pacific halibut are the top 2 species in the harvest. Deer, Pacific halibut, and sockeye salmon composed 53% of the harvest. A little more than one-quarter of the harvest is composed of Pacific herring eggs, shrimp, coho salmon, Chinook salmon, Dungeness crab, chum salmon, and yelloweye rockfish. The remaining 17% of the harvest is the rest of the harvested resources combined, which includes vegetation, other types of fish not mentioned above, marine mammals, other marine invertebrates, other mammals, birds and bird eggs.



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

Figure 6-13.–Top species harvested by percentage of total harvest in pounds usable weight, Hydaburg, 2012.

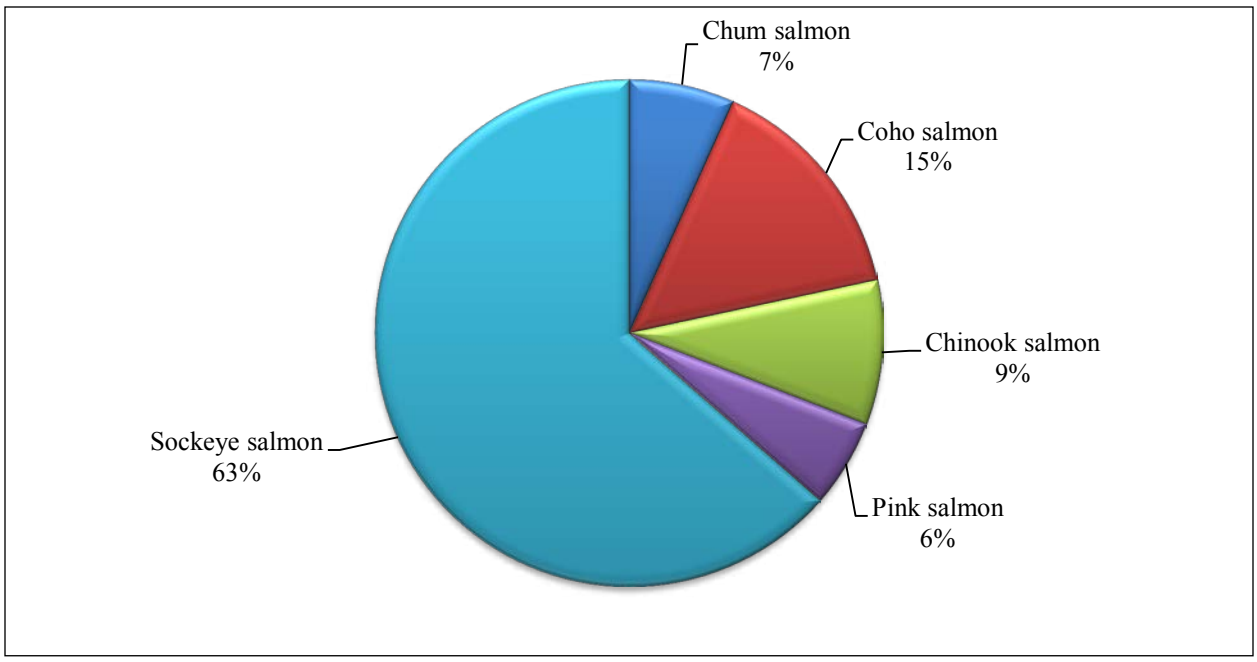


Figure 6-14.–Composition of salmon harvest in pounds usable weight, Hydaburg, 2012.

Salmon

Figure 6-14 illustrates the composition of the 2012 salmon harvest in Hydaburg. What is most notable about this figure is how it demonstrates that sockeye salmon composed the majority (63%) of the Hydaburg salmon harvest in 2012. Approximately 45,259 lb of sockeye salmon were harvested (Table 6-13). The total harvest of the other 4 species of salmon is much lower in comparison; Chinook, chum, coho, and pink salmon combined composed 37% of the total salmon harvest in 2012, contributing 78 lb per capita compared to sockeye salmon's 136 lb per capita (Figure 6-14; Table 6-13). Coho salmon contributed 15% to the total usable salmon harvest (10,643 lb; 32 lb per capita), Chinook salmon contributed 9% (6,541 lb; 20 lb per capita), chum salmon contributed 7% (4,786 lb; 14 lb per capita), then lastly pink salmon contributed 6% (4,006 lb; 12 lb per capita) of the usable weight harvested for salmon.

Salmon was used by all Hydaburg households in 2012. For all salmon species combined, 73% of households harvested, 90% received salmon from other households, and 71% of households gave some portion of their salmon to others (Table 6-13). Of all the salmon species harvested in 2012, sockeye salmon was the most harvested, used, and shared by Hydaburg households.[3] Sockeye salmon was the only salmon species that was used by nearly all Hydaburg households (98%). Approximately 63% of Hydaburg households harvested sockeye salmon, 63% received sockeye salmon, and 65% of Hydaburg households gave some portion of their sockeye salmon to others. Chinook salmon was the second most harvested salmon in 2012. An estimated 46% of Hydaburg households harvested Chinook salmon and 46% of Hydaburg households gave some away. More households received Chinook salmon (67%) than gave away this resource, which agrees with the comments respondents made that their salmon is shared with multiple households. Pink salmon was the least harvested and the least shared salmon species. This is most likely due to the general perception in Southeast Alaska that pink salmon is a less desirable fish. During the survey it was common for the respondents who gave away pink salmon to quickly clarify that it was given away for use as bait or that it was an exceptionally good quality pink salmon intended for canning.

3. Residents and community officials that attended the community review of this harvest data commented multiple times that the salmon species most harvested varied from year to year depending on the run strength of each species.

The methods used for salmon harvests show which are most important and efficient for the community to use according to the species targeted. The gear used for the 2012 salmon harvest was as follows: 13,226 salmon (60,787 lb) were caught using subsistence gear (primarily gillnets and seines); 999 salmon (5,305 lb) were caught using rod and reel gear; and 585 salmon (4,287 lb) were removed from commercial harvests for home use (Table 6-15). Figure 6-15 is a visual representation of pounds of salmon harvested by gear type; in this figure it is clear that sockeye salmon were almost completely harvested using subsistence gear. Of the 9,780 sockeye salmon harvested only 27 were caught using rod and reel and 74 were removed from commercial catches (Table 6-15).

As estimated in pounds of fish harvested, 77% of the salmon harvest was caught using gillnet or seine, 8% was caught using dip net, 7% was taken using rod and reel gear, 6% was removed from commercial catches, and 1% of the salmon was harvested using sport troll gear or unspecified subsistence gear (Table 6-16). For 3 species of salmon, gillnet or seine was the predominant harvest method: 52% of pink salmon, 74% of chum salmon, and 99% of sockeye salmon harvest weight. Coho salmon were also most harvested with gillnet or seines (32%), but dip nets were used to harvest almost as much of the coho salmon harvest (31%). For Chinook salmon, removal from commercial catches was the most used harvest method (48%), followed by rod and reel gear (26%).

Typically, for each species of salmon there is a commonly used harvest method based on fish behavior, size, habitat, and the availability of the most economical gear. The distribution of fishing methods used for the different species of salmon shown in Figure 6-15 comes as no surprise; for example, most sockeye salmon are caught using seine gear because sockeye salmon generally do not bite on lures and they arrive in abundance in good condition at local streams. In contrast, Chinook salmon will take lures and their condition is deteriorated by the time they return to Southeast Alaska streams. So, along with chum and pink salmon, Chinook salmon are typically caught in marine waters using troll gear when the meat is at its best quality. Chum and pink salmon are typically not harvested while spawning because the flesh quality significantly deteriorates during this time; yet when desired for their eggs they are harvested during their spawning season in streams using nets. Sockeye and coho salmon are harvested when in streams because their flesh does not deteriorate like the other salmon species. The most common methods of harvest also vary depending on which gear is the most available and affordable to the community. Harvest methods can change with fluctuations in economics and population.

The harvest area maps show the general areas and extent that residents in Hydaburg traveled for harvesting salmon in 2012.[4] The harvest areas correspond closely with the gear type use shown in Figure 6-15. Sockeye salmon harvests were concentrated around the main sockeye salmon creek systems relatively close to Hydaburg—Hetta and Eek lakes (Figure 6-16). Pink salmon were mostly harvested in these areas, too—usually as incidental catch while fishers targeted sockeye salmon. Chum salmon were harvested close to town, while Chinook salmon were harvested in marine waters over a larger area south of Hydaburg to Cordova Bay and Tlevak Strait. Coho salmon were harvested right around Hydaburg, in Sukkwan Strait, Natzuhini Bay, and South Pass. See Appendix D for maps of search and harvest areas of these species.

4. Because not every household in Hydaburg was surveyed for this study, the maps presented for the harvest of each wild resource may not show the full extent of harvest areas used by the community during 2012. In addition, resource harvest areas change over time, so areas not used in 2012 might be used in other years.

Table 6-15.–Estimated harvest of salmon by gear type and resource, Hydaburg, 2012.

	Removed from commercial catch		Subsistence methods													
			Gillnet or seine		Dip net		Other method		Subsistence gear, any method		Trolling		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**585.1**	**4,287.3**	**11,775.2**	**54,465.0**	**1,289.2**	**5,431.6**	**161.1**	**889.9**	**13,225.5**	**60,786.5**	**135.8**	**855.8**	**999.1**	**5,305.1**	**14,945.5**	**71,234.6**
Chum salmon	0.0	0.0	525.6	3,535.4	57.0	383.6	99.2	667.1	681.8	4,586.0	0.0	0.0	29.8	200.1	711.5	4,786.1
Coho salmon	148.8	712.9	709.0	3,398.1	681.8	3,267.4	5.0	23.8	1,395.8	6,689.2	91.1	436.8	585.1	2,804.0	2,220.8	10,643.0
Chinook salmon	337.2	3,165.6	74.4	698.3	49.6	465.5	7.4	69.8	131.4	1,233.6	44.6	419.0	183.5	1,722.5	696.6	6,540.7
Pink salmon	24.8	64.6	793.3	2,067.5	495.8	1,292.2	49.6	129.2	1,338.8	3,488.9	0.0	0.0	173.5	452.3	1,537.1	4,005.8
Sockeye salmon	74.4	344.2	9,672.9	44,765.7	5.0	22.9	0.0	0.0	9,677.9	44,788.7	0.0	0.0	27.3	126.2	9,779.5	45,259.1

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

Note The harvested number of salmon is represented as individual fish harvested.

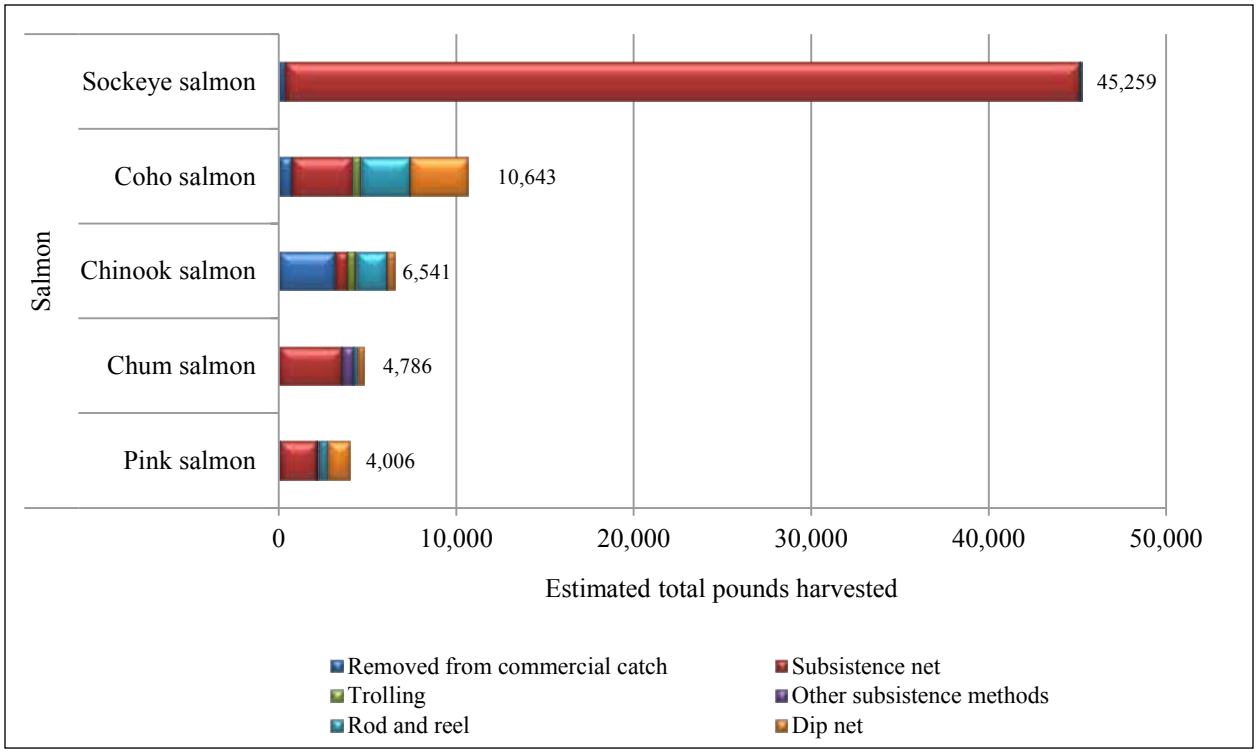


Figure 6-15.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Hydaburg, 2012.

Table 6-16.–Estimated percentages of salmon harvested by gear type, resource, and total salmon harvest, Hydaburg, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods				Trolling	Rod and reel	Any method
			Gillnet or seine	Dip net	Other	Subsistence gear, any method			
Salmon	**Gear type**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**6.0%**	**76.5%**	**7.6%**	**1.2%**	**85.3%**	**1.2%**	**7.4%**	**100.0%**
	Total	**6.0%**	**76.5%**	**7.6%**	**1.2%**	**85.3%**	**1.2%**	**7.4%**	**100.0%**
Chum salmon	Gear type	0.0%	6.5%	7.1%	75.0%	7.5%	0.0%	3.8%	6.7%
	Resource	0.0%	73.9%	8.0%	13.9%	95.8%	0.0%	4.2%	100.0%
	Total	0.0%	5.0%	0.5%	0.9%	6.4%	0.0%	0.3%	6.7%
Coho salmon	Gear type	16.6%	6.2%	60.2%	2.7%	11.0%	51.0%	52.9%	14.9%
	Resource	6.7%	31.9%	30.7%	0.2%	62.9%	4.1%	26.3%	100.0%
	Total	1.0%	4.8%	4.6%	0.0%	9.4%	0.6%	3.9%	14.9%
Chinook salmon	Gear type	73.8%	1.3%	8.6%	7.8%	2.0%	49.0%	32.5%	9.2%
	Resource	48.4%	10.7%	7.1%	1.1%	18.9%	6.4%	26.3%	100.0%
	Total	4.4%	1.0%	0.7%	0.1%	1.7%	0.6%	2.4%	9.2%
Pink salmon	Gear type	1.5%	3.8%	23.8%	14.5%	5.7%	0.0%	8.5%	5.6%
	Resource	1.6%	51.6%	32.3%	3.2%	87.1%	0.0%	11.3%	100.0%
	Total	0.1%	2.9%	1.8%	0.2%	4.9%	0.0%	0.6%	5.6%
Sockeye salmon	Gear type	8.0%	82.2%	0.4%	0.0%	73.7%	0.0%	2.4%	63.5%
	Resource	0.8%	98.9%	0.1%	0.0%	99.0%	0.0%	0.3%	100.0%
	Total	0.5%	62.8%	0.0%	0.0%	62.9%	0.0%	0.2%	63.5%
Unknown salmon	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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

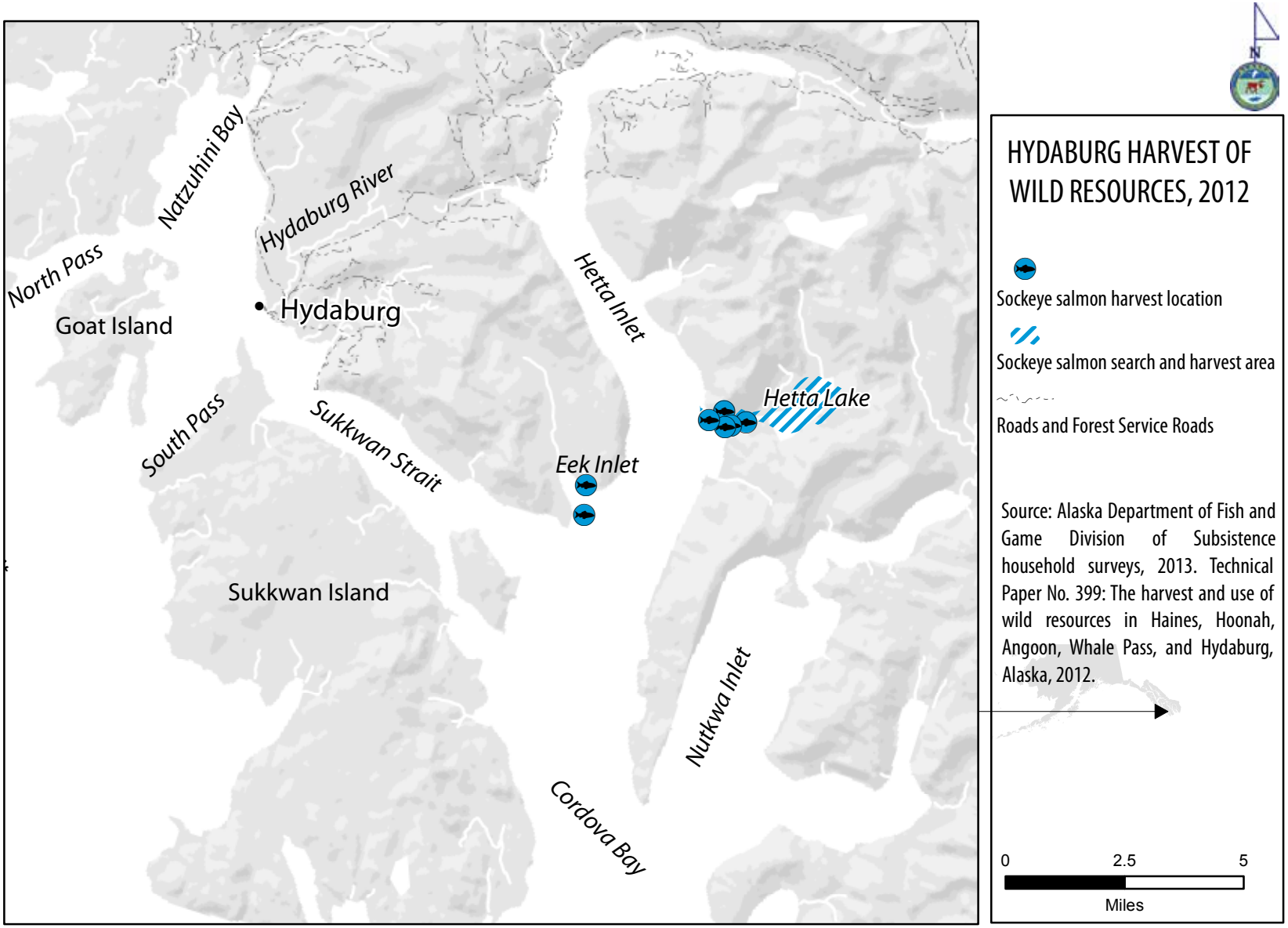
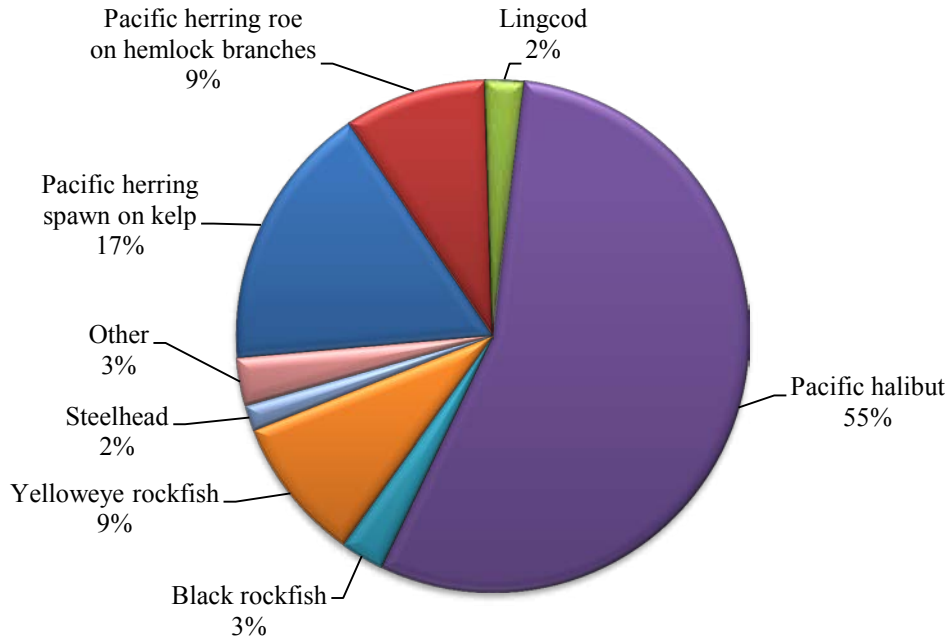


Figure 6-16.–Fishing and harvest locations of sockeye salmon, Hydaburg, 2012.



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

Figure 6-17.–Composition of nonsalmon fish harvest in pounds usable weight, Hydaburg, 2012.

Nonsalmon Fish

Figure 6-17 shows that Pacific halibut contributed a significant amount to the nonsalmon fish harvest in Hydaburg. In 2012, an estimated total of 24,394 lb were harvested, or 55% of the nonsalmon fish harvest was of Pacific halibut; this equates to 73 lb per capita (Table 6-13; Figure 6-17). Pacific herring spawn (eggs) was also a major contributor to the nonsalmon fish harvest in Hydaburg. Pacific herring eggs on hemlock branches and spawn on kelp combined composed 26% of the total nonsalmon fish harvest in 2012, which equates to 34 lb per capita (Table 6-13). Pacific halibut and herring eggs were both widely shared and harvested by households in Hydaburg. Approximately 50% of households harvested and 63% of households gave Pacific halibut to other households, which suggests that households that did not harvest further shared the same halibut that was shared with them. Approximately 81% of households received Pacific halibut from other households. Pacific herring eggs are shared in a different manner. Pacific herring eggs are only available during a short season in April or May that usually lasts between 1 and 2 weeks. During this short harvest season fishermen from Hydaburg go to spawning grounds outside of Hydaburg, Craig, and Sitka where they harvest for their extended families and community. Nearly one-third of the households harvest and share Pacific herring spawn on kelp or herring eggs on hemlock branches and then three-quarters of the Hydaburg households received herring eggs from other households.

The remaining 19% of nonsalmon fish harvested in 2012 was composed of 12% rockfish, 2% steelhead, 2% lingcod, and 3% all the other nonsalmon fish species caught (this includes eulachon, sablefish, shark, Dolly Varden, and cutthroat trout) (Figure 6-17). Eulachon (also called hooligan or candlefish) were used by 44% of households but only caught by 2% of Hydaburg households; only an estimated 5 lb were harvested by Hydaburg households (Table 6-13). However, eulachon are generally harvested from mainland rivers and streams, and because 44% of the households received eulachon compared to the 10% that gave it away, it can be assumed that most of the eulachon used was received from households outside of the community (Table 6-13).

The gear used for the 2012 nonsalmon fish harvest was as follows: 32,065 lb of nonsalmon fish were caught using subsistence gear, 7,794 lb were harvested using rod and reel gear, and 4,339 lb were removed from commercial catches (Table 6-17). Figure 6-18 is a visual representation of the catch by gear type; it illustrates the importance of different gear types for each species. Subsistence longline and skate gear were used to catch the majority of the Pacific halibut harvested. The commercial fleet is responsible for much of the Pacific herring spawn-on-kelp harvest. Herring eggs on branches are primarily harvested using "other subsistence gear," which in this case is most likely hemlock branches set in saltwater right before the Pacific herring spawn.

As estimated in pounds of fish, 55% of the nonsalmon fish harvest was caught using longline or skate gear, 18% was caught using rod and reel gear, 15% was caught using other subsistence gear, 10% was removed from commercial catches, and 2% was caught using gillnet or seine gear (Table 6-18). Removal from commercial catches was the most commonly used harvest method for herring spawn on kelp (58%). All of the Pacific herring were harvested using gillnet or seine. Longline or skate gear was the most commonly used harvest method for sablefish (100%), Pacific halibut (91%), and lingcod (51%), as well as for sharks (100%; approximately 14 sharks). For 3 species, other subsistence gear was the most commonly used harvest method: 63% of herring sac roe, 91% of herring eggs on hemlock branches, and 100% of eulachon. Rod and reel gear was the predominant harvest method for black rockfish, yelloweye rockfish, Dolly Varden, rainbow trout, steelhead (Table 6-18).

Most fishing areas for nonsalmon fish are relatively close to Hydaburg and in marine environments, with the exception of a few steelhead harvest locations. The most harvested nonsalmon fish, Pacific halibut, has the largest search and harvest area of all fish within this category. In 2012, search and harvest areas extended from just north of Hydaburg, west to Tlevak Strait, and as far south as Cordova Bay (Figure 6-19). The large area covered to fish for Pacific halibut coincides with halibut habitat and the high harvest amount.

Pacific herring egg harvest areas show that the 2012 harvest was localized offshore from a small island, Fish Egg Island, which is located near Craig, Alaska (Figure 6-20). Fish Egg Island was granted to the Haida by the Tlingit to settle a dispute between clans after the death of a Haida man in the 1800s (Victor-Howe 2008). The harvest map shows that the island is still used by Haida. Many residents also harvest or receive Pacific herring eggs from the Sitka Sound herring spawning event (Sill and Lemons 2014). Harvest locations for other nonsalmon fish can be found in Appendix D.

Table 6-17.–Estimated harvest of nonsalmon fish by gear type and resource, Hydaburg, 2012.

Resource	Unit[a]	Removed from commercial catch		Subsistence methods											
				Gillnet or seine		Longline and skate		Other method		Subsistence gear, any method		Rod and reel		Any method	
		Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds	Number[a]	Pounds
Nonsalmon fish			**4,338.5**		**984.2**		**24,412.1**		**6,668.8**		**32,065.1**		**7,793.5**		**44,197.2**
Pacific herring	gal	0.0	0.0	31.0	185.9	0.0	0.0	0.0	0.0	31.0	185.9	0.0	0.0	31.0	185.9
Pacific herring roe/unspecified	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring sac roe	gal	0.0	0.0	14.9	104.1	0.0	0.0	24.8	173.5	39.7	277.7	0.0	0.0	39.7	277.7
Pacific herring spawn on kelp	gal	619.8	4,338.5	49.6	347.1	0.0	0.0	400.8	2,805.4	450.3	3,152.4	0.0	0.0	1,070.1	7,491.0
Pacific herring roe on hair seaweed	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific herring roe on hemlock branches	gal	0.0	0.0	49.6	347.1	0.0	0.0	517.4	3,621.7	567.0	3,968.8	0.0	0.0	567.0	3,968.8
Eulachon (hooligan, candlefish)	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.6	5.0	0.6	5.0	0.0	0.0	0.6	5.0
Silver smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific cod (gray)	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pacific tomcod	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flounder	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lingcod	ind	0.0	0.0	0.0	0.0	86.8	546.7	0.0	0.0	86.8	546.7	82.2	517.7	168.9	1,064.3
Pacific halibut	lb	0.0	0.0	0.0	0.0	22,068.0	22,068.0	0.0	0.0	22,068.0	22,068.0	2,326.2	2,326.2	24,394.2	24,394.2
Black rockfish	ind	0.0	0.0	0.0	0.0	29.8	59.5	0.0	0.0	29.8	59.5	575.2	1,150.3	604.9	1,209.8
Yelloweye rockfish	ind	0.0	0.0	0.0	0.0	498.3	1,494.9	0.0	0.0	498.3	1,494.9	845.4	2,536.2	1,343.7	4,031.1
Quillback rockfish	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sablefish (black cod)	ind	0.0	0.0	0.0	0.0	29.8	119.0	0.0	0.0	29.8	119.0	0.0	0.0	29.8	119.0
Buffalo sculpin	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Irish lord	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown shark	ind	0.0	0.0	0.0	0.0	13.8	124.0	0.0	0.0	13.8	124.0	0.0	0.0	13.8	124.0
Skates	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sole	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	195.9	587.6	195.9	587.6
Cutthroat trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9	22.3	14.9	22.3
Rainbow trout	ind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steelhead	ind	0.0	0.0	0.0	0.0	0.0	0.0	7.4	63.2	7.4	63.2	76.9	653.3	84.3	716.5

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

Note The summary row that incliudes incompatible units of measure for harvest number has been left blank.

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

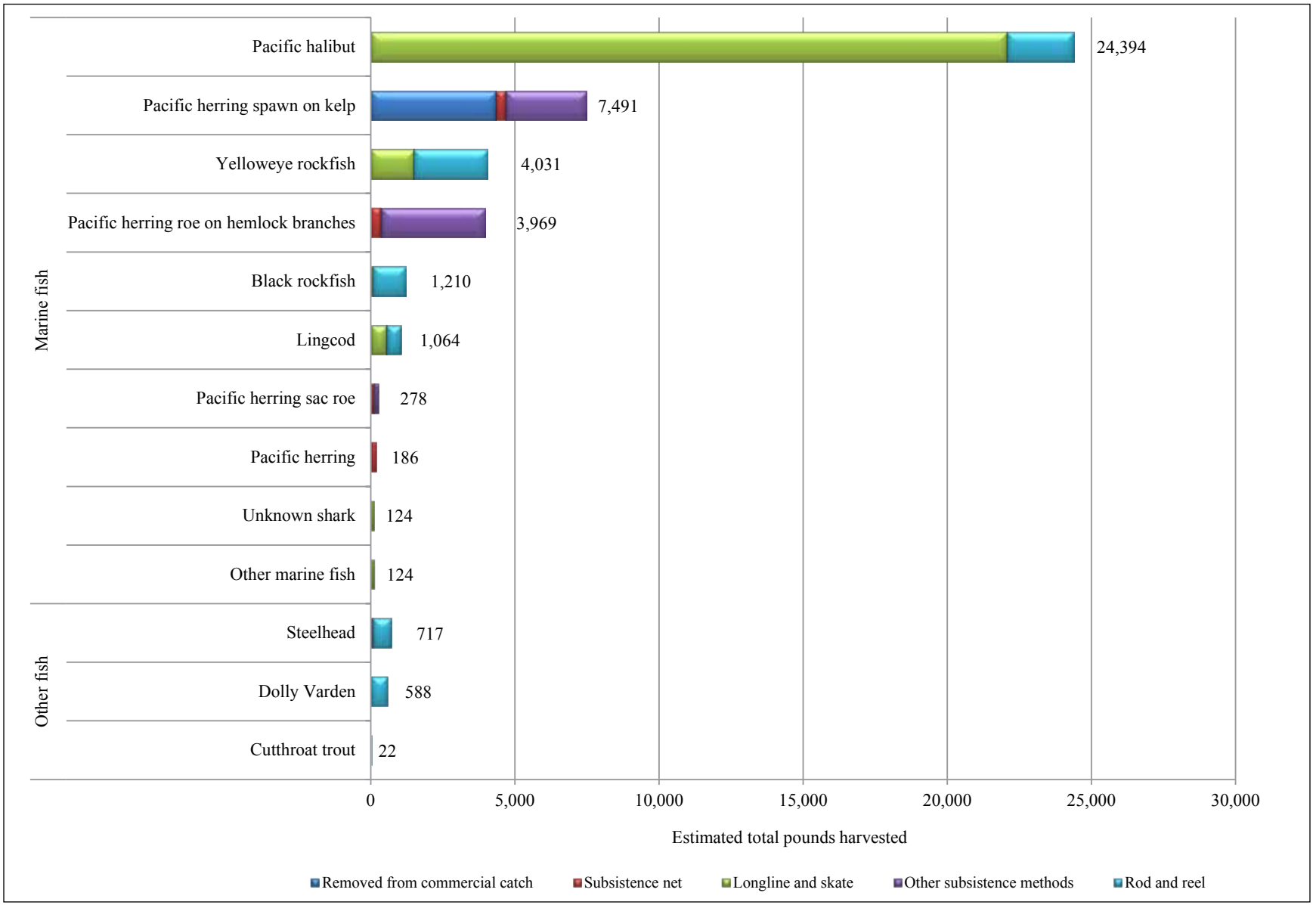


Figure 6-18.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Hydaburg, 2012.

Table 6-18.–Estimated percentages of nonsalmon fish harvested by gear type, resource, and total nonsalmon fish harvest, Hydaburg, 2012.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Nonsalmon fish	**Gear type**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**9.8%**	**2.2%**	**55.2%**	**15.1%**	**72.6%**	**17.6%**	**100.0%**
	Total	**9.8%**	**2.2%**	**55.2%**	**15.1%**	**72.6%**	**17.6%**	**100.0%**
Pacific herring	Gear type	0.0%	18.9%	0.0%	0.0%	0.6%	0.0%	0.4%
	Resource	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.4%	0.0%	0.0%	0.4%	0.0%	0.4%
Pacific herring roe/unspecified	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring sac roe	Gear type	0.0%	10.6%	0.0%	2.6%	0.9%	0.0%	0.6%
	Resource	0.0%	37.5%	0.0%	62.5%	100.0%	0.0%	100.0%
	Total	0.0%	0.2%	0.0%	0.4%	0.6%	0.0%	0.6%
Pacific herring spawn on kelp	Gear type	100.0%	35.3%	0.0%	42.1%	9.8%	0.0%	16.9%
	Resource	57.9%	4.6%	0.0%	37.4%	42.1%	0.0%	100.0%
	Total	9.8%	0.8%	0.0%	6.3%	7.1%	0.0%	16.9%
Pacific herring roe on hair seaweed	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pacific herring roe on hemlock branches	Gear type	0.0%	35.3%	0.0%	54.3%	12.4%	0.0%	9.0%
	Resource	0.0%	8.7%	0.0%	91.3%	100.0%	0.0%	100.0%
	Total	0.0%	0.8%	0.0%	8.2%	9.0%	0.0%	9.0%
Eulachon (hooligan, candlefish)	Gear type	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Silver smelt	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

-continued-

Table 6-18.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Pacific tomcod	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Flounder	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lingcod	Gear type	0.0%	0.0%	2.2%	0.0%	1.7%	6.6%	2.4%
	Resource	0.0%	0.0%	51.4%	0.0%	51.4%	48.6%	100.0%
	Total	0.0%	0.0%	1.2%	0.0%	1.2%	1.2%	2.4%
Pacific halibut	Gear type	0.0%	0.0%	90.4%	0.0%	68.8%	29.8%	55.2%
	Resource	0.0%	0.0%	90.5%	0.0%	90.5%	9.5%	100.0%
	Total	0.0%	0.0%	49.9%	0.0%	49.9%	5.3%	55.2%
Black rockfish	Gear type	0.0%	0.0%	0.2%	0.0%	0.2%	14.8%	2.7%
	Resource	0.0%	0.0%	4.9%	0.0%	4.9%	95.1%	100.0%
	Total	0.0%	0.0%	0.1%	0.0%	0.1%	2.6%	2.7%
Yelloweye rockfish	Gear type	0.0%	0.0%	6.1%	0.0%	4.7%	32.5%	9.1%
	Resource	0.0%	0.0%	37.1%	0.0%	37.1%	62.9%	100.0%
	Total	0.0%	0.0%	3.4%	0.0%	3.4%	5.7%	9.1%
Quillback rockfish	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (black cod)	Gear type	0.0%	0.0%	0.5%	0.0%	0.4%	0.0%	0.3%
	Resource	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%
Buffalo sculpin	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Red Irish lord	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

-continued-

Table 6-18.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence methods					
			Gillnet or seine	Longline or skate	Other	Subsistence gear, any method	Rod and reel	Any method
Unknown shark	Gear type	0.0%	0.0%	0.5%	0.0%	0.4%	0.0%	0.3%
	Resource	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%
Skates	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sole	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	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%	7.5%	1.3%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	1.3%
Cutthroat trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Resource	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Steelhead	Gear type	0.0%	0.0%	0.0%	0.9%	0.2%	8.4%	1.6%
	Resource	0.0%	0.0%	0.0%	8.8%	8.8%	91.2%	100.0%
	Total	0.0%	0.0%	0.0%	0.1%	0.1%	1.5%	1.6%

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

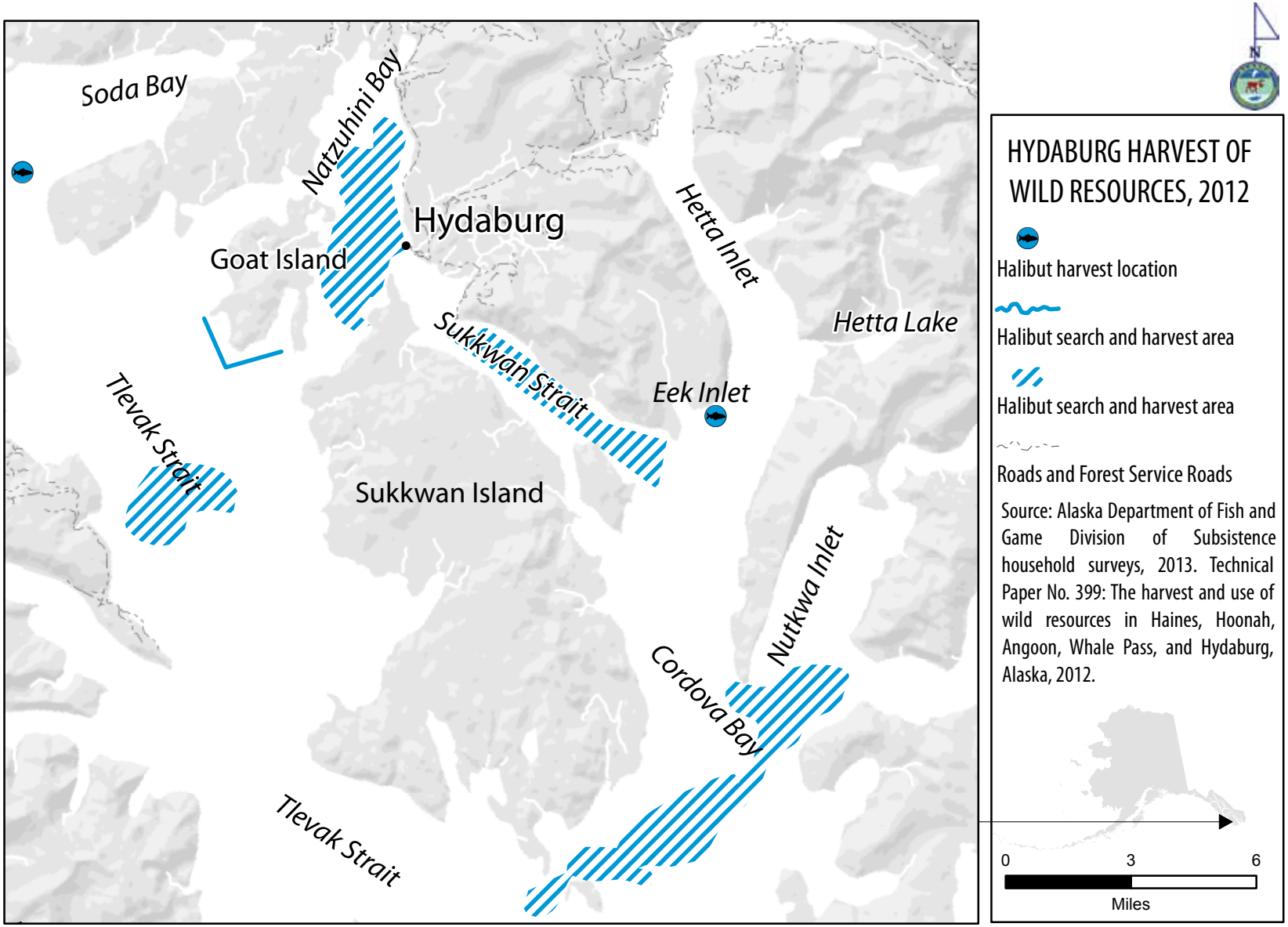


Figure 6-19.–Fishing and harvest locations of Pacific halibut, Hydaburg, 2012.

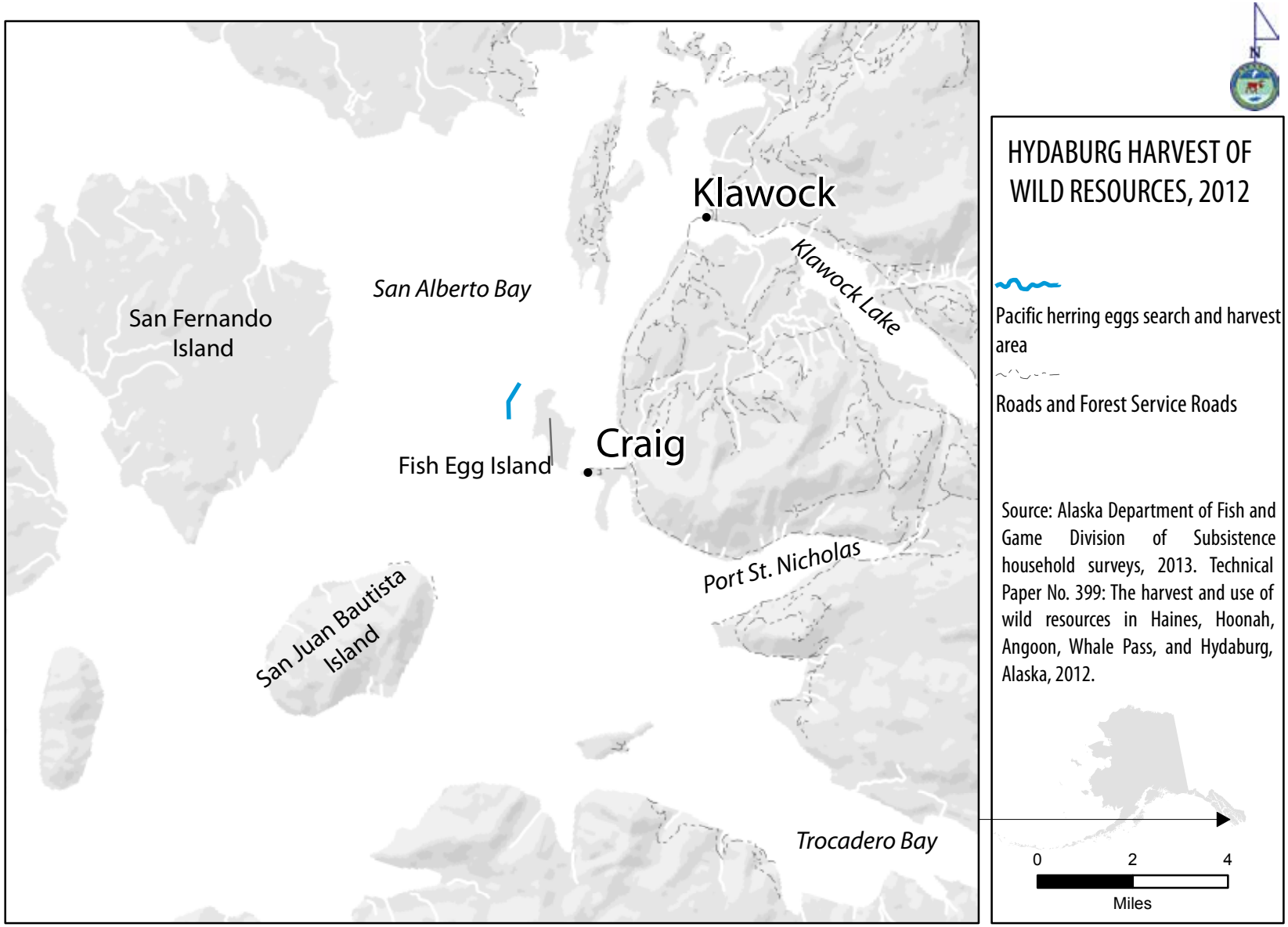
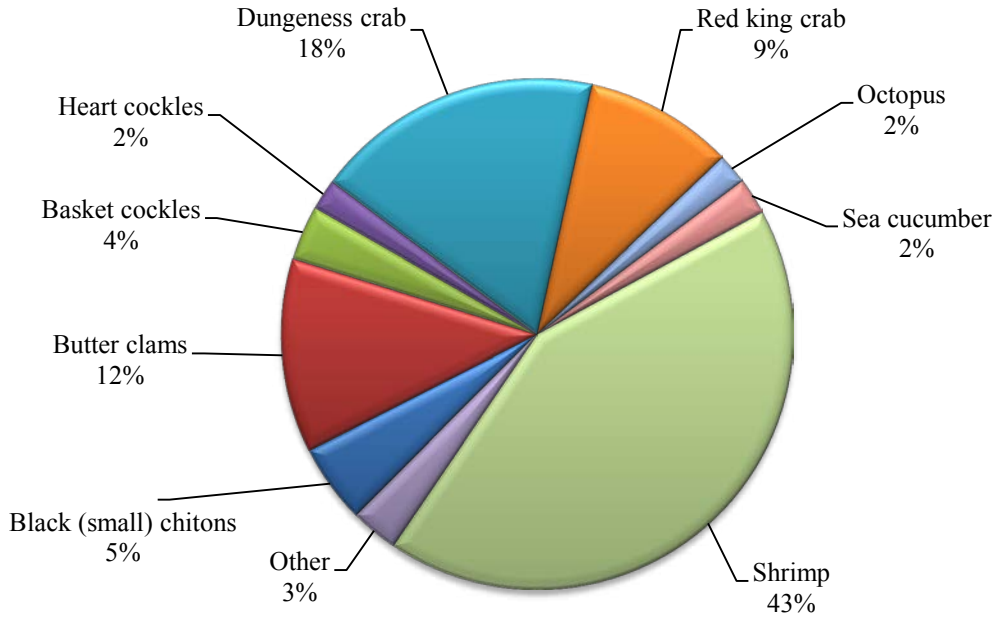


Figure 6-20.–Fishing and harvest locations of Pacific herring roe, Hydaburg, 2012.



Note The "other" category represents all resources that contributed less than 1.5% to the marine invertebrate harvest.

Figure 6-21.–Composition of marine invertebrate harvest in pounds usable weight, Hydaburg, 2012.

Marine Invertebrates

Hydaburg harvested 15 different types of marine invertebrates in 2012 for an estimated total of 27,630 lb (83 lb per capita) (Table 6-13). The majority of this was shrimp, crab, and clams. Shrimp composed 43% of the marine invertebrate harvest with 5,860 gallons harvested (Figure 6-21; Table 6-13). Heart cockles, basket cockles, butter clams, and black chitons combined accounted for 23% of the harvest (6,267 lb) and 27% of the harvest (7,641 lb) was Dungeness and red king crab. The other marine invertebrates harvested were abalones, littleneck clams, mussels, octopuses, sea cucumbers, red sea urchins, purple sea urchins, and rock scallops.

Marine invertebrates were used throughout most of the community; 96% of all households used some type of marine invertebrate during 2012 and 65% of households harvested marine invertebrates (Table 6-13). There were also high levels of sharing overall with 63% of households having shared marine invertebrates and 83% of households having received some. Dungeness crab was the most widely used species with 83% of Hydaburg households using Dungeness crab, but only 38% of the households harvested it. High percentages of sharing were reported: 44% of households gave Dungeness crab away and 81% of households received crab. Shrimp contributed most to the overall volume of the 2012 marine invertebrates harvest, but was the second most widely used resource in this category with 79% of Hydaburg households using and 35% of households having harvested it. However, shrimp was the most highly shared marine invertebrate: 52% of households gave away shrimp and 69% of households received it. Butter clams were the third most widely used marine invertebrate species (used by 65% of households), while 42% of households harvested the resource, which was the highest success rate documented for any marine invertebrate species. Sharing of butter clams was also common: 38% of respondents shared butter clams with another household and 42% of households received butter clams.

Figure 6-22 shows the harvest areas of marine invertebrates. The harvest areas are located near the town and within protected inlets and coves, which corresponds with methods of harvest and the location of invertebrate habitats.

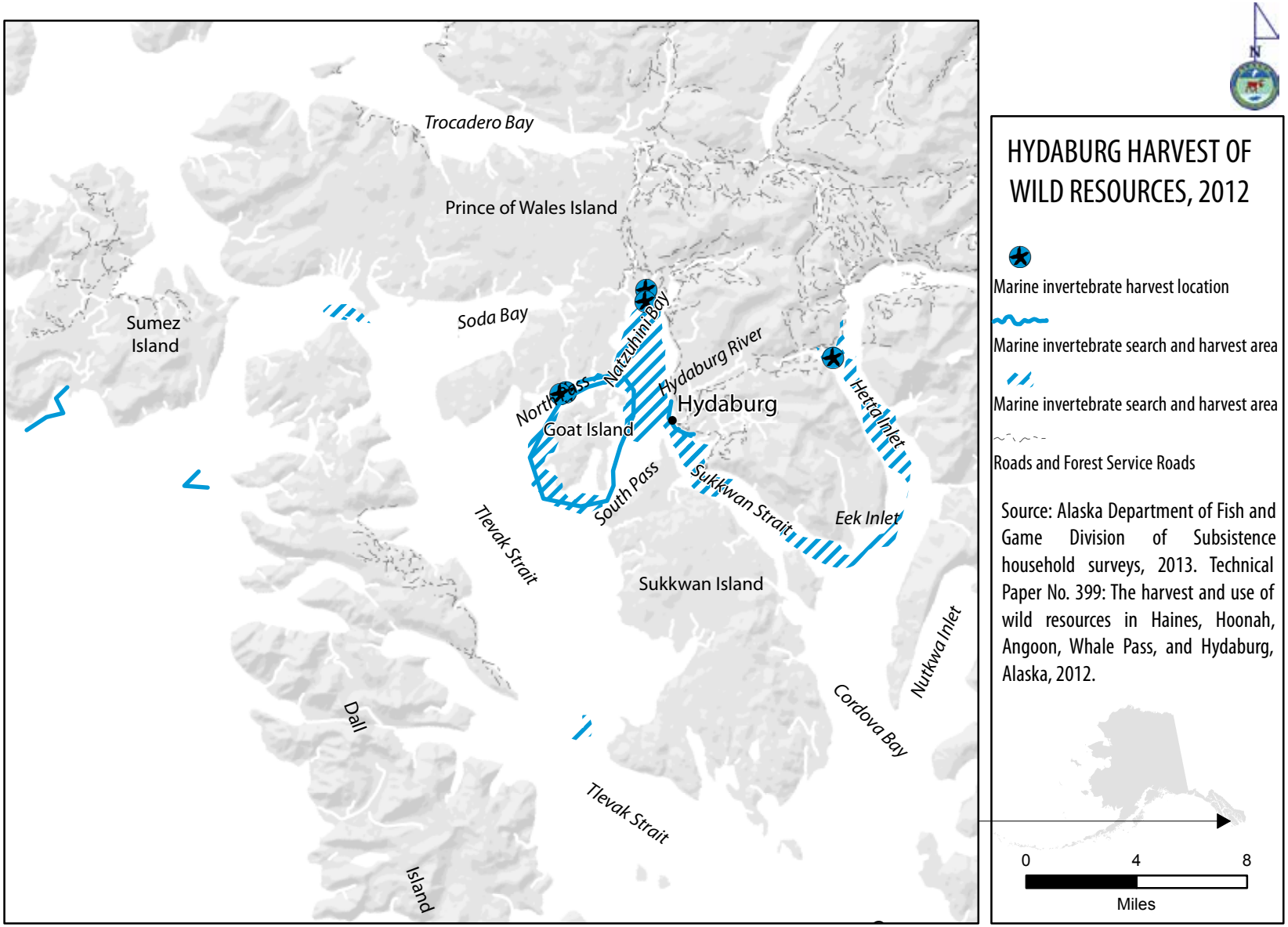


Figure 6-22.–Fishing and harvest locations of marine invertebrates, Hydaburg, 2012.

Large Land Mammals

Large land mammals were used by 88% of Hydaburg households and an estimated total of 22,610 lb (68 lb per capita) was harvested (Table 6-13). All of the harvest was of deer. Some moose, bison, caribou, and elk were used and shared by less than 5% of the households in Hydaburg, but no one attempted to harvest any species but deer. Deer was hunted by 63% of the households, but only 52% of households in Hydaburg successfully harvested deer. It was also widely shared and received with more than one-half the households giving or receiving deer meat.

The harvests of deer began in June with a general increase until November, which showed the highest amounts harvested (Table 6-19). The majority of the harvest was bucks; 250 of the 282 deer harvested were male. One female deer is allowed under federal subsistence regulations. The state general hunt allows only for bucks to be harvested. The general hunt season for 2012 ran from August 1 to December 31. The federal subsistence hunt generally runs from July through December.

The search areas for deer are almost exclusively located along roadsides and shorelines (Figure 6-23). The easy access and ability to cover more territory plus visibility of deer on open roadsides and shorelines makes this approach the most sensible and time-efficient method. Also, most of the deer hunting season is during cold and wet weather, so the ability to stay warmer and dryer in a vehicle or boat is more appealing than a wet hike through dense forest.

Table 6-19.–Estimated large land mammal harvests by month and sex, Hydaburg, 2012.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All large land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**14.9**	**27.3**	**14.9**	**17.4**	**114.0**	**74.4**	**19.8**	**0.0**	**282.6**
American (plains) bison	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Black bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Brown bear, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Deer	0.0	0.0	0.0	0.0	0.0	14.9	27.3	14.9	17.4	114.0	74.4	19.8	0.0	**282.6**
Deer, male	0.0	0.0	0.0	0.0	0.0	9.9	7.4	14.9	17.4	114.0	69.4	17.4	0.0	**250.4**
Deer, female	0.0	0.0	0.0	0.0	0.0	5.0	19.8	0.0	0.0	0.0	5.0	2.5	0.0	**32.2**
Deer, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Elk, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mountain goat, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Dall sheep, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

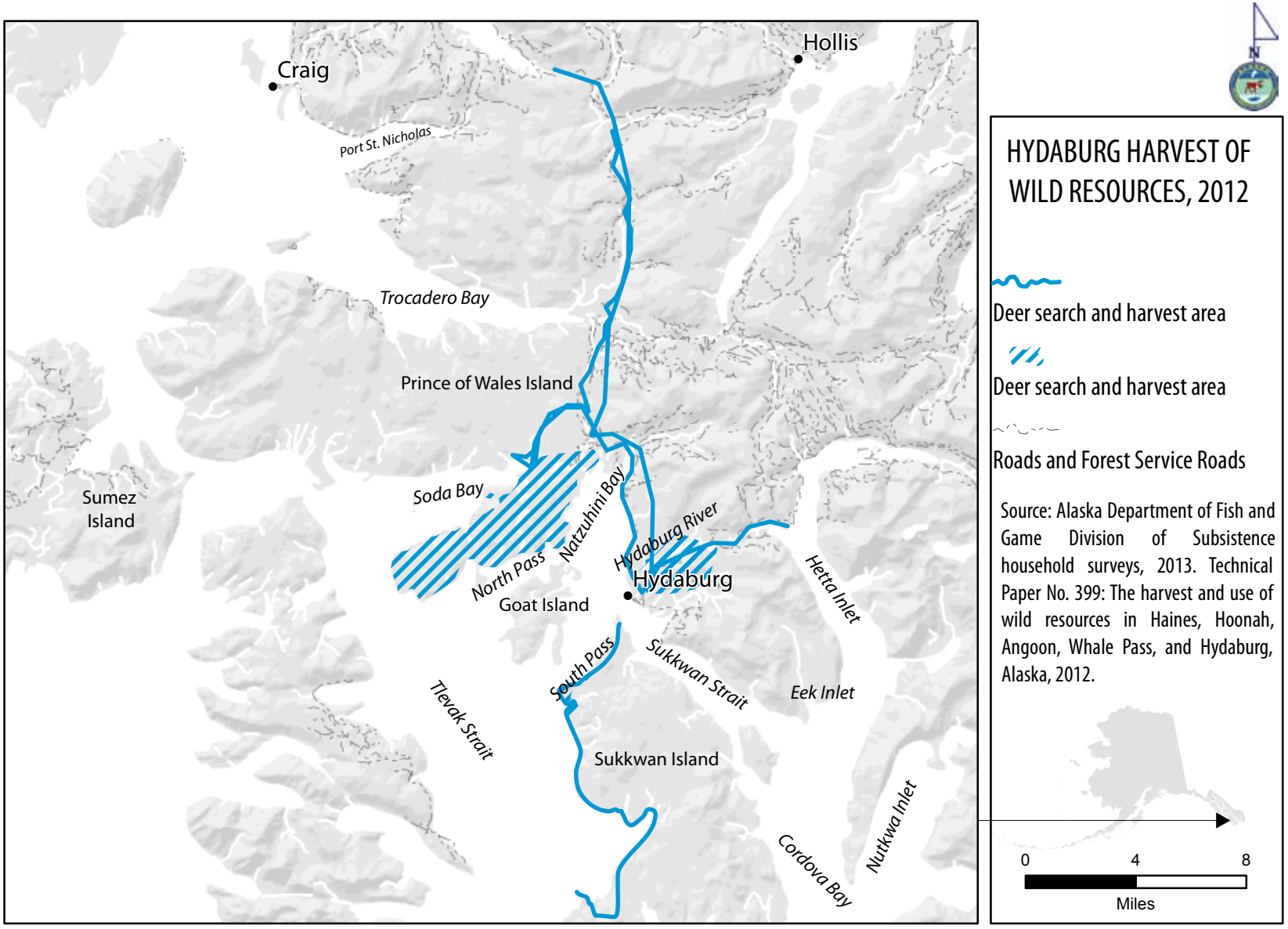


Figure 6-23.–Hunting locations of deer, Hydaburg, 2012.

Marine Mammals

The only marine mammals reported as harvested, used, or shared in 2012 were harbor seals and sea otters (Table 6-13). An estimated total of approximately 20 harbor seals were harvested. Only 6% of Hydaburg households participated in hunting harbor seals, using seals, or receiving seals, which is a fairly small amount of households in comparison to Hydaburg's participation in other harvesting activities. During previous comprehensive harvest surveys and marine mammal harvest surveys conducted since the 1990s, Hydaburg has consistently demonstrated relatively low use of seals and low participation rates in seal hunting (Wolfe et al. 2013). A total of 1,666 lb (5 lb per capita) was harvested in 2012. The sea otter harvest had slightly higher household participation with 8% of Hydaburg households using sea otters. Since sea otters are used for their hides and are not eaten, they are not included in the edible weight total. The marine mammal harvest had the smallest percentage of the overall harvest of wild resources and this is reflected in the low percentage of households participating in hunting marine mammals and using these species.

Harbor seals were harvested in January, February, and August (Table 6-20). The majority (47 of 64) sea otters harvested were taken in March, while 12 were harvested in April and approximately 5 were harvested in November. Due to a small number of marine mammal harvest areas documented, no harvest map is presented.

Small Land Mammals/Furbearers

The only species reported as harvested or used in the small land mammal/furbearers category was mink (Table 6-13). An estimated 2 to 3 mink were harvested in the month of December (Table 6-21). The low number of animals harvested corresponds to the low number of households participating in the trapping of mink. Only 2% of households used, harvested, or shared mink. Due to the small number of small mammal harvest areas documented, no harvest map is presented.

Birds and Eggs

In 2012 in Hydaburg, bird eggs were harvested in greater amounts than birds (Figure 6-24). Only 2% of Hydaburg households participated in hunting birds, using birds, or sharing them (Table 6-13). The bird species harvested were mallard, northern pintail, and scaup, for a harvest of approximately 17 birds. All were harvested during the winter months (Table 6-22). Glaucous-winged gull eggs were the only type of bird eggs harvested; used by one-quarter of the community but harvested by only 8% of households, gull eggs were given by 10% of households and received by 19% of the households. Approximately 481 eggs were harvested for an estimated total of 120 lb, or 0.4 lb per capita.

Due to the small number of harvest areas documented for birds or bird eggs, no harvest map is presented.

Table 6-20.–Estimated marine mammal harvests by month and sex, Hoonah, 2012.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All marine mammals	**7.4**	**7.4**	**47.1**	**12.4**	**0.0**	**0.0**	**0.0**	**2.5**	**0.0**	**0.0**	**5.0**	**0.0**	**2.5**	**84.3**
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Fur seal, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Harbor seal	7.4	7.4	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	2.5	**19.8**
Harbor seal, male	7.4	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	**17.4**
Harbor seal, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Harbor seal, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	**2.5**
Sea otter	0.0	0.0	47.1	12.4	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	**64.5**
Steller sea lion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller sea lion, sex unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

Table 6-21.–Estimated small land mammal harvests by month, Hydaburg, 2012.

Resource	Estimated harvest by month													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
All small land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2.5**	**0.0**	**2.5**
Beaver	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Snowshoe hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
North American river (land) otter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	0.0	0.0	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	2.5	0.0	**2.5**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red (tree) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Least 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**
Gray wolf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Wolverine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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

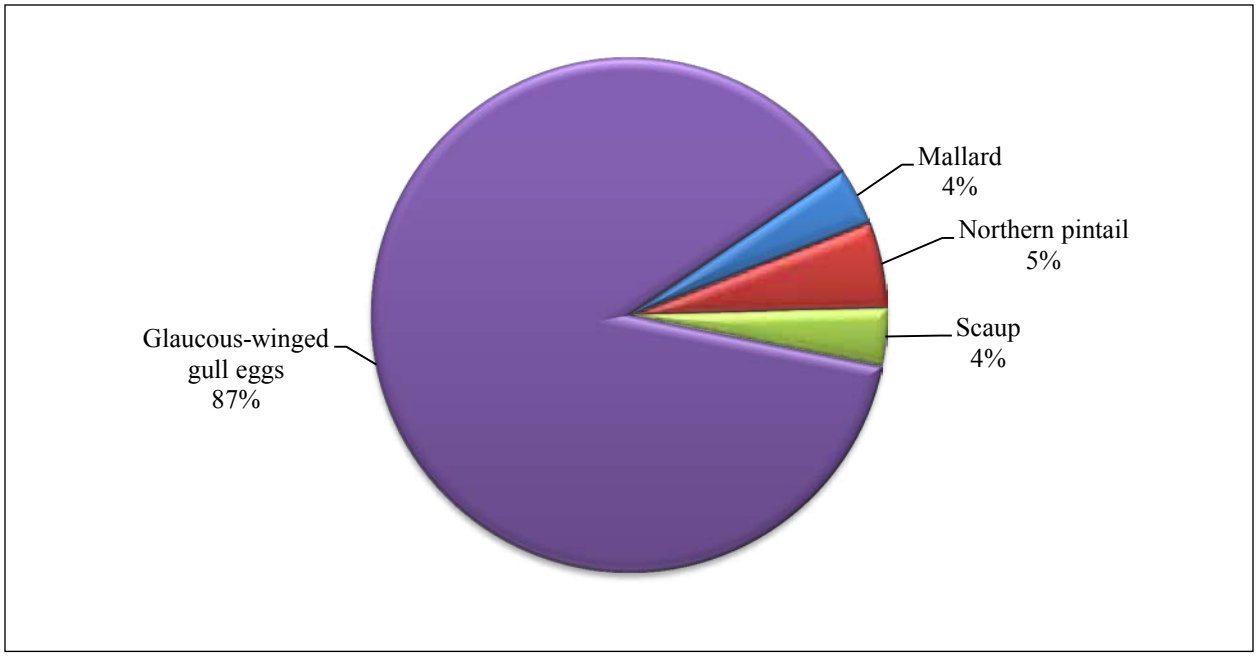


Figure 6-24.–Composition of bird and bird egg harvest in pounds usable weight, Hydaburg, 2012.

Table 6-22.–Estimated bird harvests by season, Hydaburg, 2012.

	Estimated harvest by season					
Resource	Winter	Spring	Summer	Fall	Season unknown	**Total**
All birds	**17.4**	**0.0**	**0.0**	**0.0**	**0.0**	**17.4**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	5.0	0.0	0.0	0.0	0.0	**5.0**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	7.4	0.0	0.0	0.0	0.0	**7.4**
Scaup	5.0	0.0	0.0	0.0	0.0	**5.0**
Teal	0.0	0.0	0.0	0.0	0.0	**0.0**
Wigeon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown ducks	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown Canada/cackling geese	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown swans	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	0.0	0.0	0.0	0.0	**0.0**
Black oystercatcher	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–small	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown shorebirds–large	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown loon	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown seabirds	0.0	0.0	0.0	0.0	0.0	**0.0**
Grouse	0.0	0.0	0.0	0.0	0.0	**0.0**

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

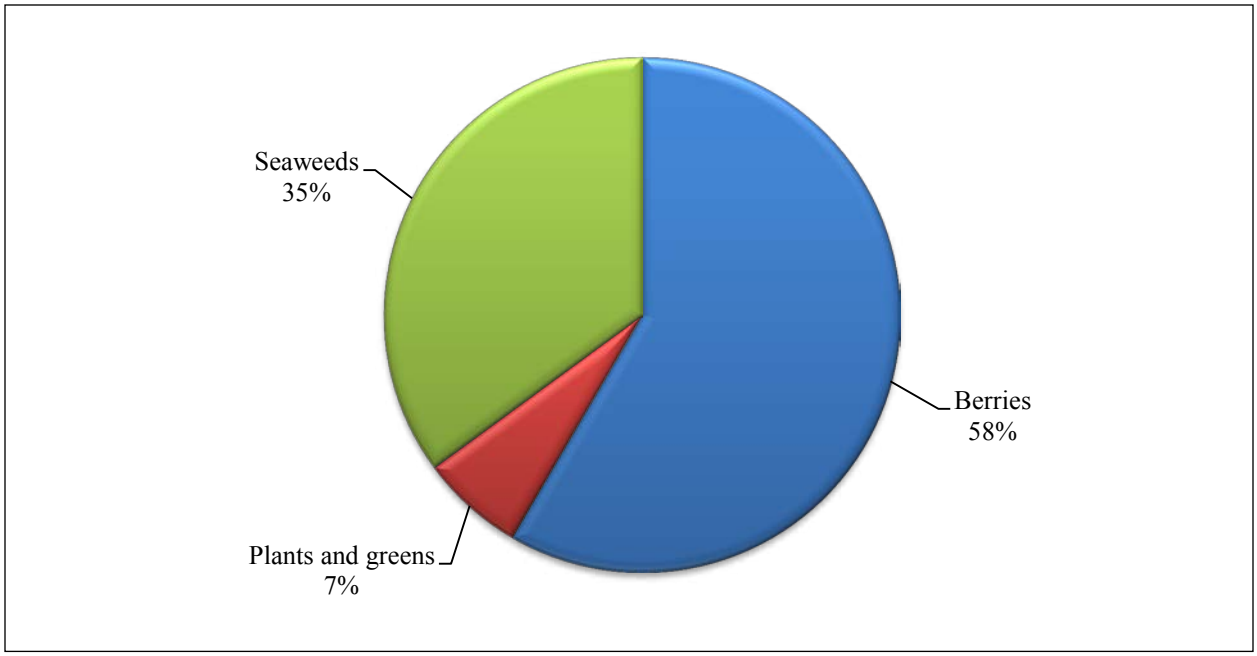


Figure 6-25.–Composition of vegetation harvest by type and pounds usable weight, Hydaburg, 2012.

Vegetation

In 2012, at least 20 types of vegetation were harvested by Hydaburg households for an estimated total harvest of 8,835 lb, or 27 lb per capita (Table 6-13). Vegetation was used by 98% of Hydaburg households, harvested by 92% of Hydaburg households, and shared by 83%. Wood is the only non-edible vegetation recorded in the harvest survey results. Of the edible kinds of vegetation harvested, 12 types of identified berries were harvested and 4 types of identified seaweeds were harvested, as well as 4 identified types of wild greens.

Berries composed 58% of the total vegetation harvest by weight with approximately 16 lb of berries harvested per capita (Figure 6-25; Table 6-13). Blueberries were by far the most harvested; an estimated 2,134 lb of blueberries were harvested, which calculates to more than 6 lb of blueberries per capita. Almost 73% of households harvested blueberries and 85% of households used them. Salmonberries follow as a close second; 73% of households used salmonberries with a total of 1,457 lb of salmonberries harvested by 65% of households. The same percentage of households used huckleberries, but fewer pounds were harvested (922 lb) by fewer households (58%). Thimbleberry was also used by one-half of the households and harvested by 42% of households for a total of 278 lb gathered. The other berries harvested in 2012 were used by less than 15% of the households, including: lowbush cranberry, highbush cranberry, elderberry, gooseberry, currants, raspberry, soapberry, strawberry, and other wild berries (such as salal berry) (Table 6-13).

Seaweeds were also widely used by the community and composed 35% of the total vegetation harvest by weight (Figure 6-25). Seaweed is usually dried and processed for use as a snack or to be mixed into other dishes. The majority of the seaweed harvest was black seaweed (2,829 lb; 9 lb per capita); 90% of households used black seaweed and more than one-half harvested it (Table 6-13). Black seaweed was given by 58% of households and received by 54%. The other types of seaweeds reported harvested were: bull kelp, red seaweed, giant kelp, and unknown seaweeds. All of these seaweeds were used and harvested by 10% or fewer households.

Wild greens composed the smallest group of vegetation harvested (7% of the total vegetation harvest) (Figure 6-25). However, comparisons of edible weight and harvest volume are difficult because of the light weight of the wild greens, and vegetation in general. Though wild greens may not weigh much, their volume and nutrient value may be a significant part of the wild food harvest in a community. Ten types of wild greens (including mushrooms) were used by households in Hydaburg (Table 6-13). The most widely used was beach asparagus, with 73% of households using it and more than one-half the households harvesting a total of 329 gallons (1 lb per capita). Beach asparagus was the most highly shared, with 25% of households indicating receipt and 44% sharing it. Hudson's Bay tea was the second most used wild green at 38% of households using it with a total of 115 gallons harvested (0.3 lb per capita).

Wood is important for use as a fuel for cooking and preserving wild foods; additionally, its use as a source of heat in homes is, in Alaska, essential to the rural subsistence way of life. An estimated total of 867 cords of wood were harvested in 2012 (this does not include firewood that was purchased) (Table 6-13). Wood was harvested by 58% of the households and shared by 38% of the households.

The harvest areas for berries, plants, and seaweed featured in Figure 6-26 and Figure 6-27 are located around and near the road system and shorelines. Most harvest areas for land-based vegetation are less than a mile from current roads or old closed roads, extending from south of Hydaburg all the way north to Klawock. Seaweeds are harvested from the shoreline. The majority of the seaweed harvest locations were very close to town. Although a significant amount of seaweed was harvested in 2012, the seaweeds replenish enough throughout the year that residents do not have to go far to harvest. Figure 6-28 shows the areas for firewood harvests. Similar to other vegetation, the areas used for gathering firewood are along the sides of roads systems. Cutting heavy trees and hauling them out of the forest is arduous work and locations close to a road make the harvest of trees possible.

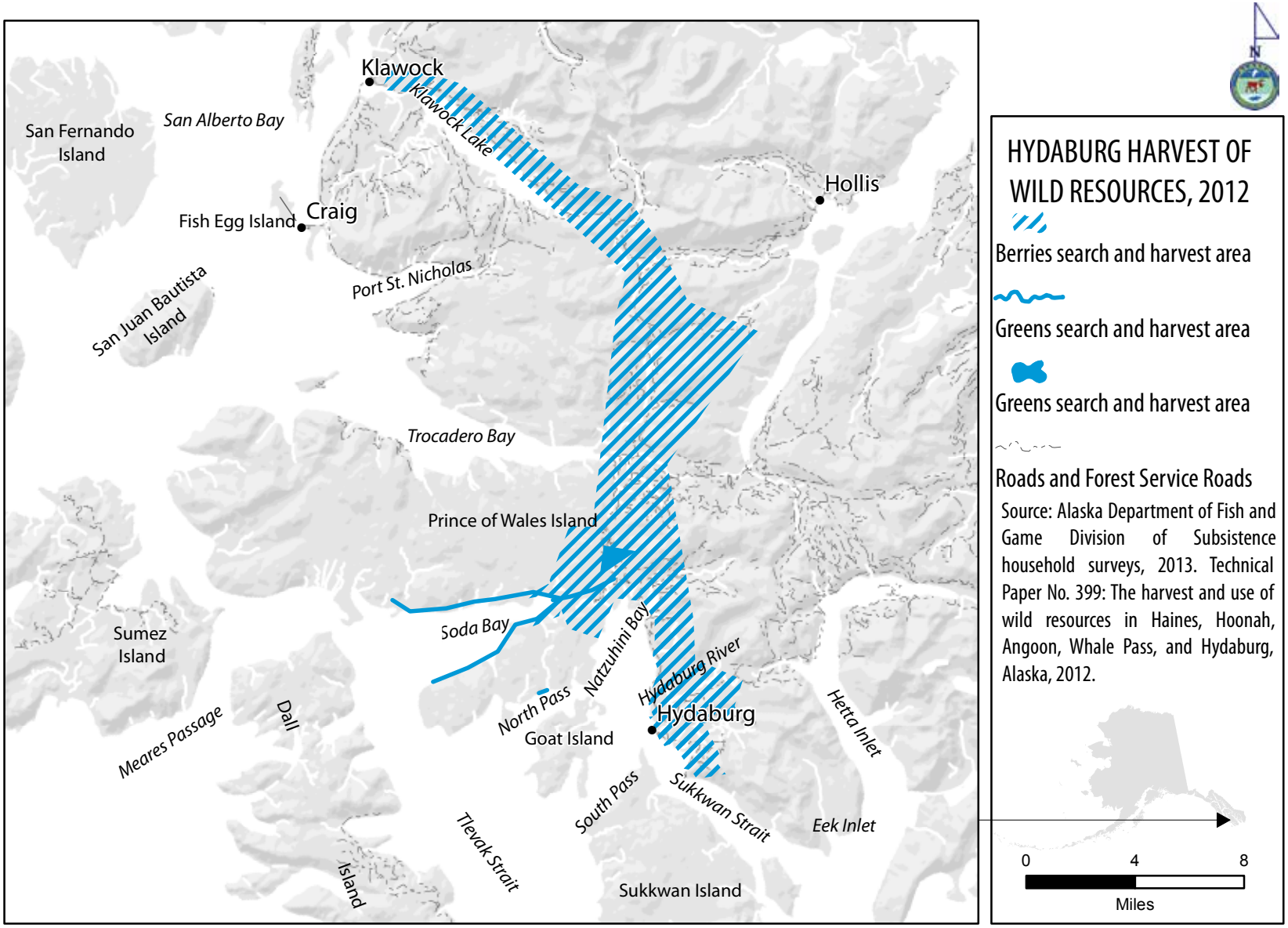


Figure 6-26.–Gathering and harvest locations of berries, plants, and greens, Hydaburg, 2012.

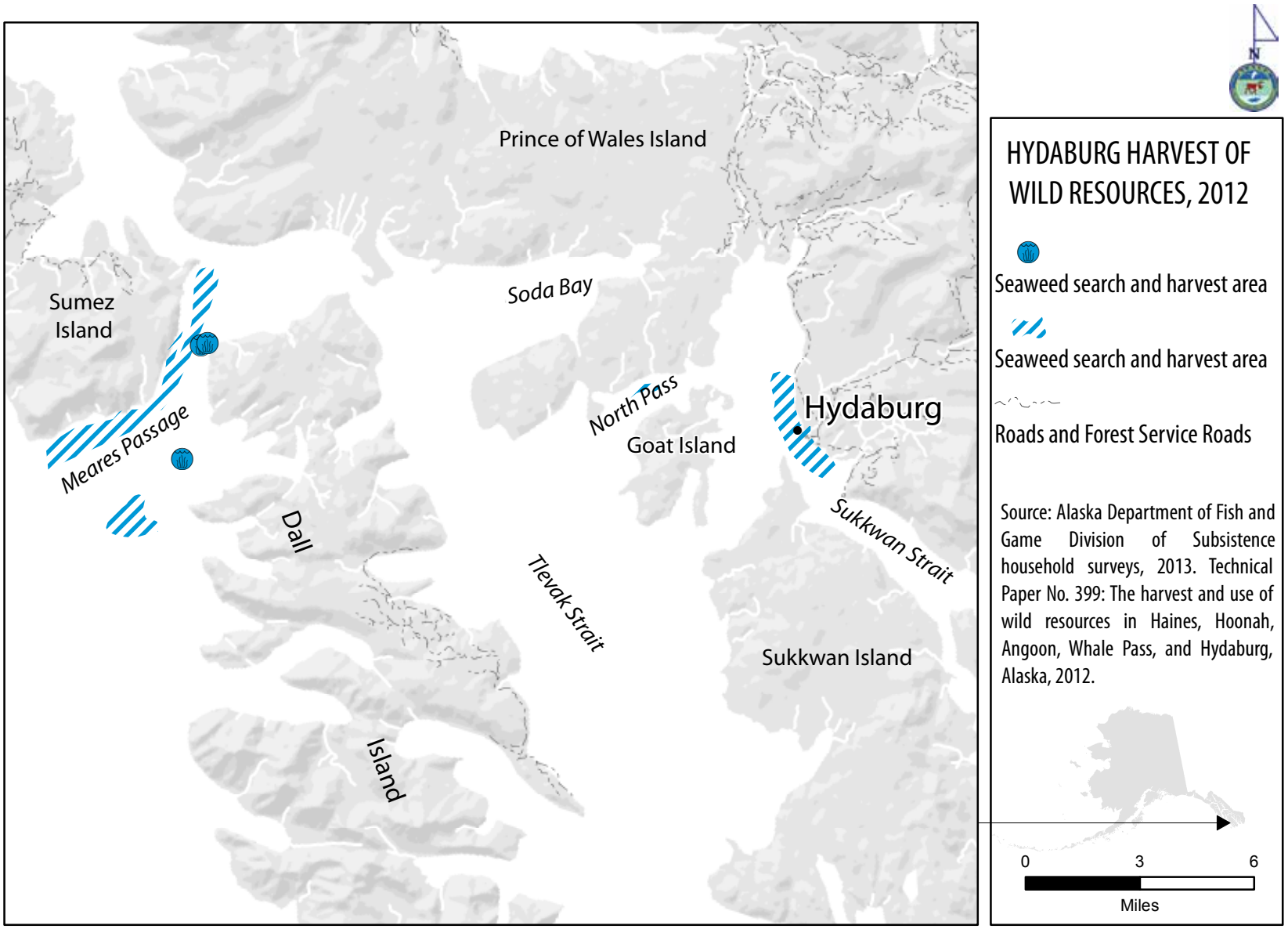


Figure 6-27.–Gathering and harvest locations of seaweed, Hydaburg, 2012.

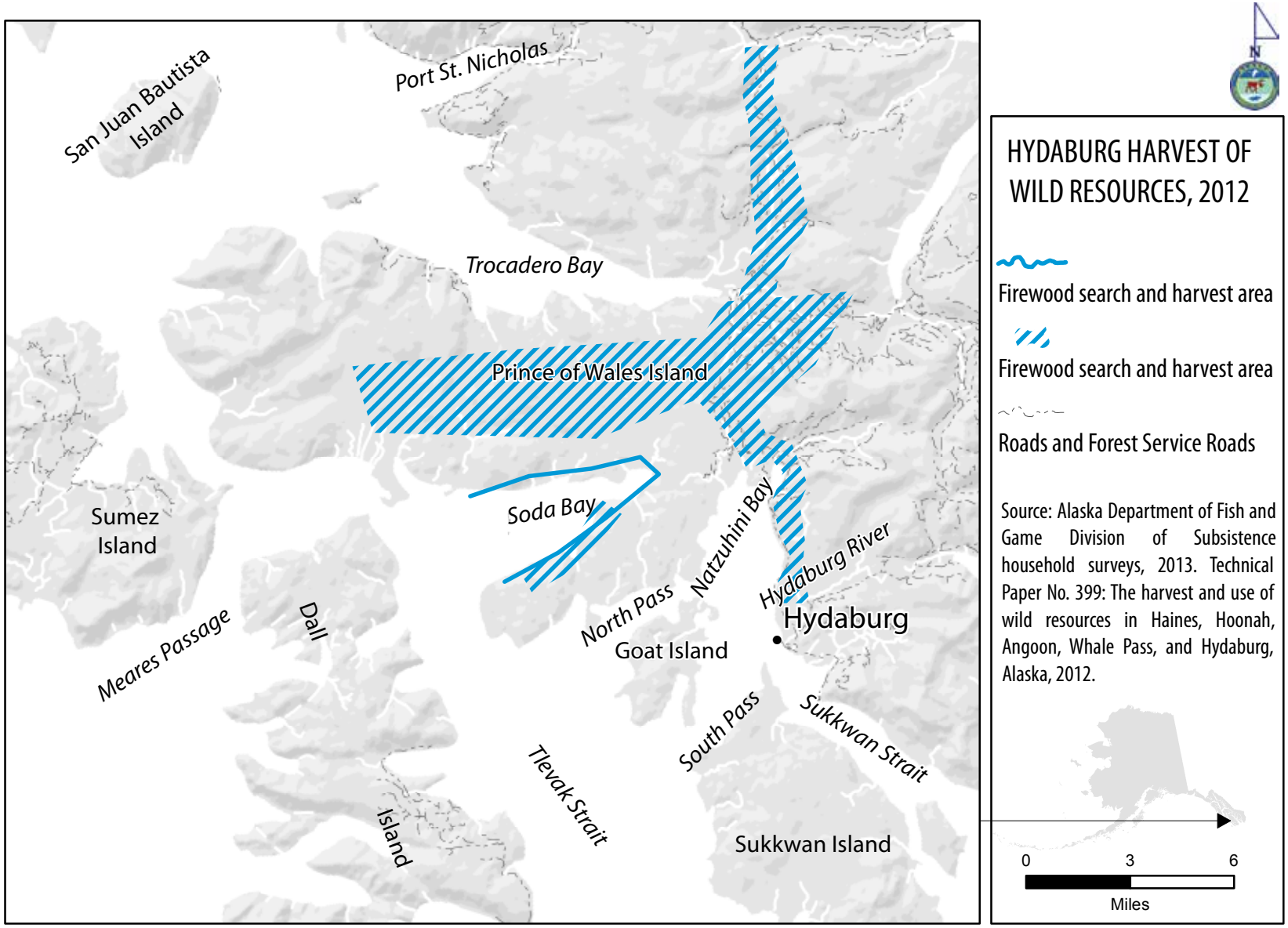


Figure 6-28.–Gathering and harvest locations of firewood , Hydaburg, 2012.

Comparing Harvests and Uses in 2012 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their own harvests in 2 ways: whether they got more, less, or about the same amount of 12 resource categories in 2012 as in the past 5 years, and whether they got "enough" of each of the 12 resource categories. Households also were asked to provide reasons if their use was different or if they were unable to get enough of a resource. If they did not get enough of a resource, they were asked to evaluate the severity of the impact to their household as a result of not getting enough. They were further asked whether they did anything differently (such as supplement with store-bought food or switch to a different subsistence resource) because they did not get enough. This section discusses responses to those questions.

Together, Table 6-23, Figure 6-29, and Figure 6-30 provide a broad overview of households' assessments of their harvests in 2012. Because not everyone uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply did not answer questions.

Salmon is the most harvested of all subsistence resource categories and used by all Hydaburg households (Table 6-13). When asked to assess use, 50% of responding households explained that they used the same amount of salmon in 2012 as they did in previous years, 35% reported that they used less, and 15% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 29% of respondents reported that they did so due to working/no time (Table 6-24). Other stated reasons for using less salmon included lack of effort (18%), and equipment/fuel expense and other reasons (12%). For those households that used more salmon in 2012, 43% of respondents reported that they did so because they needed more, usually because the respondent had more people in the family or needed to supplement their store-bought foods (Table 6-25). In Hydaburg, 19% of respondents stated that they did not get enough salmon (Figure 6-30). When asked to evaluate the impact of not getting enough salmon, 22% described the impact as minor, 44% explained that not getting enough salmon had a major effect on their household, and 22% stated that the impact was severe (Table 6-26). Households that did not get enough salmon adapted by using more commercial foods and supplementing with other subsistence foods (Table 6-27).

Vegetation is one of the most harvested and used of all subsistence resource categories (Table 6-13). In Hydaburg, 66% of responding households explained that they used the same amount of vegetation in 2012 as they did in previous years, 19% reported that they used less, and 13% said they used more (Table 6- 23; Figure 6-29). When asked why they used less, 56% of respondents reported that they did so due to resources being less available (Table 6-24). Other stated reasons for using less vegetation included working/no time, family/personal reasons, lack of effort, and weather/environment factors. For those households that used more vegetation in the study year, 100% said they needed more and 33% cited store-bought expenses as a reason (Table 6-25). In Hydaburg, 15% of respondents stated that they did not get enough vegetation (Figure 6-30). When asked to evaluate the impact of not getting enough vegetation, 57% described the impact as minor, 29% explained that not getting enough vegetation had a major effect on their household, and 14% stated that the impact was severe (Table 6-26). Households that did not get enough vegetation adapted by using more commercial foods and by using other subsistence foods as a substitute, or getting public assistance (Table 6-27).

Seaweed is also one of the most used subsistence resources in Hydaburg, and 67% of responding households explained that they used the same amount of seaweed in 2012 as they did in previous years, 19% reported that they used less, and 8% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 29% of respondents reported that they did so due to family or personal reasons, lack of equipment, less sharing, and working or having no time (Table 6-24). Another stated reason for using less seaweed was that resources were less available (14%). For those households that used more seaweed in the study year, 33% said it was because their household needed more, increased harvest effort, and had more harvest success (Table 6-25). In Hydaburg, 15% of respondents stated that they did not get enough seaweed (Figure 6-30). When asked to evaluate the impact of not getting enough seaweed, 86% described the impact as

minor, and 14% explained that not getting enough seaweed had a major effect on their household (Table 6-26). Households that did not get enough seaweed adapted by making do without seaweed, using more commercial foods, and using other subsistence foods (Table 6-27).

Nonsalmon fish is another subsistence resource category that is highly used by Hydaburg households. Assessment questions for nonsalmon fish were broken down into 3 separate assessments—one for Pacific herring eggs, one for rockfish, and one for all other nonsalmon fish. Rockfish and herring eggs will be discussed after other nonsalmon fish. In Hydaburg, 72% of responding households explained that they used the same amount of nonsalmon fish in 2012 as they did in previous years, 17% reported that they used less, and 9% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 25% reported that they did so due to less sharing, lack of effort, and also due to family or personal reasons (Table 6-24). Other stated reasons for using less nonsalmon fish included lack of equipment and resources were less available (13%). For those households that used more nonsalmon fish in the study year, 50% said they needed more, 25% said they increased their effort, and 25% noted other reasons for more use (Table 6-25). In Hydaburg, 17% of respondents stated that they did not get enough nonsalmon fish (Figure 6-30). When asked to evaluate the impact of not getting enough nonsalmon fish, 50% described the impact as minor, 25% explained that not getting enough nonsalmon fish had a major effect on their household, and 13% stated that the impact was severe (Table 6-26). Households that did not get enough nonsalmon fish adapted by using more commercial foods and replacing nonsalmon fish with other subsistence foods (Table 6-27).

In the survey, Pacific herring eggs and rockfish had their own assessment questions. In Hydaburg, 48% of responding households explained that they used the same amount of herring eggs in 2012 as they did in previous years, 38% reported that they used less, and 8% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 41% of respondents reported that they did so due to less sharing (Table 6-24). Other stated reasons for using less herring eggs included that the resource was less available (24%), and 12% of respondents indicated it was due to family or personal reasons, lack of equipment, and lack of effort. For those households that used more herring eggs in the study year, 50% of respondents reported they received more, 50% said they needed more, and 25% said they increased their harvesting efforts (Table 6-25). In Hydaburg, 35% of respondents stated that they did not get enough herring eggs (Figure 6-30). No further assessment questions were asked about herring eggs.

Rockfish are utilized by more than one-half of Hydaburg households (Table 6-13). Based on survey responses, 40% of households explained that they used the same amount of rockfish in 2012 as they did in previous years, 28% reported that they used less, and 5% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 33% of respondents reported that they did so due to not getting enough (Table 6-24). Other stated reasons for using less rockfish included lack of effort or that the household did not need any. For those households that used more rockfish in the study year, 50% said they needed more and 50% said they increased effort to harvest (Table 6-25). No further assessment questions were asked about rockfish.

Marine invertebrates were harvested by more than one-half of Hydaburg households in 2012, and 55% of responding households explained that they used the same amount of marine invertebrates in 2012 as they did in previous years, 30% reported that they used less, and 13% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 31% of respondents reported that they did so due to no time/working (Table 6-24). Other stated reasons for using less marine invertebrates included resources were less available and less sharing. For those households that used more marine invertebrates in the study year, 50% said they needed more and 33% increased their effort to harvest (Table 6-25). In Hydaburg, 25% of respondents stated that they did not get enough marine invertebrates (Figure 6-30). When asked to evaluate the impact of not getting enough marine invertebrates, 58% described the impact as minor, 17% explained that not getting enough marine invertebrates had a major effect on their household, and 25% stated that the impact was severe (Table 6-26). Households that did not get enough marine invertebrates adapted by using more commercial foods and using other subsistence foods (Table 6-27).

Deer was the large land mammal harvested by Hydaburg households and used by most (88%) households. In Hydaburg, 53% of responding households explained that they used the same amount of large land mammal

resources in 2012 as they did in previous years, 30% reported that they used less, and 11% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 29% of respondents reported that they did so due to less sharing (Table 6-24). Other stated reasons for using less included working/no time, family/ personal reasons, and lack of effort to harvest or did not need the resource. For those households that used more large land mammals in the study year, reasons for doing so included they needed more, received more, and an increased availability of the resource (Table 6-25). In Hydaburg, 31% of respondents stated that they did not get enough large land mammal resources (Figure 6-30). When asked to evaluate the impact of not getting enough large game, 67% described the impact as minor, 20% explained that not getting enough large land mammals had a major effect on their household, and 13% stated that the impact was severe (Table 6-26). Households that did not get enough large game adapted by using more commercial foods and using other subsistence food as a substitute, or increased harvest effort (Table 6-27).

Small land mammals is one of the least harvested of all subsistence resource categories used by Hydaburg households; 2% of responding households explained that they used more small land mammals in 2012 as they did in previous years and no households reported the same or less use (Table 6-23; Figure 6-29). For those households that used more small game in the study year, 100% stated that they had increased their efforts to harvest small mammals (Table 6-25). No households reported not getting enough small game during the study year (Figure 6-30).

Marine mammals is another of the least harvested subsistence resource categories used by Hydaburg households; 10% of responding households explained that they used the same amount of marine mammals in 2012 as they did in previous years, 4% reported that they used less, and 2% said they used more (Table 6-23; Figure 6-29). When asked why they used less, 50% of respondents reported that they did so due to lack of effort and 50% due to family/personal reasons (Table 6-24). For those households that used more marine mammals in the study year, respondents said it was because they needed less (Table 6-25). In Hydaburg, 4% of respondents stated that they did not get enough marine mammals (Figure 6-30). When asked to evaluate the impact of not getting enough marine mammals, 100% described the impact as minor (Table 6-26). The household that provided an answer about adapting to not having enough marine mammals indicated using more commercial foods (Table 6-27).

Birds are also one of the least harvested subsistence resource categories used by Hydaburg households; 2% of responding households explained that they used more other birds in 2012 as they did in previous years and no household reported the same or less use (Table 6-23; Figure 6-29). For those households that used more birds in the study year, 100% said it was due to increased effort (Table 6-25). No household reported not getting enough birds during the study year (Figure 6-30).

Bird eggs were used by one-quarter of Hydaburg households in 2012; 22% of responding households explained that they used the same amount of bird eggs in 2012 as they did in previous years, 7% reported that they used less, and none said they used more (Table 6-23; Figure 6-29). When asked why they used less, 67% of respondents reported that they did so due to lack of effort and 33% due to resources being less available (Table 6-24). In Hydaburg, 4% of respondents stated that they did not get enough bird eggs (Figure 6-30). When asked to evaluate the impact of not getting enough bird eggs, 100% described the impact as minor (Table 6-26). The household that provided an answer about adapting to not having enough bird eggs indicated using more commercial foods (Table 6-27).

Hydaburg households were asked to evaluate their overall harvest of all subsistence resources; 53% of responding households explained that they used the same amount of all subsistence resources in 2012 as they did in previous years, 38% reported that they used less, and 9% said they used more (Table 6-23). When asked why they used less, 22% of respondents reported that they did so due to equipment or fuel expenses and 22% due to not having time/working (Table 6-24). Other stated reasons for using less of all subsistence resources were family/personal reasons, that resources were less available, and lack of equipment (17%). For those households that used more subsistence resources in the study year, 67% said they did so because their household needed more and 33% reported it was due to increased effort (Table 6-25). In Hydaburg, 29% of respondents stated that they did not get enough all subsistence resources (Table 6-26). When asked to evaluate the impact of not getting enough of all subsistence resources, 50% described the impact as minor,

21% explained that not getting enough subsistence resources had a major effect on their household, and 14% stated that the impact was severe (Table 6-26). Households that did not get enough of all subsistence resources adapted by using more commercial foods and using other subsistence foods (Table 6-27).

Households that reported not getting enough resources were asked which resources they needed more of. Responses to these questions are presented in Table 6-28. Deer was the resource needed by the most households (35%), followed by sockeye salmon (17%) and Pacific halibut (13%). Respondents needed other subsistence resources that covered a range of predominately marine resources and vegetation, as well as gull eggs and elk; no more than 10% of households cited a need for the remaining listed resources.

Table 6-23.–Changes in household uses of resources compared to recent years, Hydaburg, 2012.

Resource category	Sampled households	Valid responses[a]	Households reporting use: Total households Number	Total households Percentage	Less Number	Less Percentage	Same Number	Same Percentage	More Number	More Percentage	Households not using Number	Households not using Percentage
Any resource	48	48	48	100.0%	41	85.4%	45	93.8%	22	45.8%	48	100.0%
All resources	**48**	**47**	**47**	**100.0%**	**18**	**38.3%**	**25**	**53.2%**	**4**	**8.5%**	**0**	**0.0%**
Salmon	48	48	48	100.0%	17	35.4%	24	50.0%	7	14.6%	0	0.0%
Pacific herring roe	48	48	45	93.8%	18	37.5%	23	47.9%	4	8.3%	3	6.3%
Rockfish	48	43	31	72.1%	12	27.9%	17	39.5%	2	4.7%	12	27.9%
All other fish	48	46	45	97.8%	8	17.4%	33	71.7%	4	8.7%	1	2.2%
Large land mammals	48	47	44	93.6%	14	29.8%	25	53.2%	5	10.6%	3	6.4%
Small land mammals	48	48	1	2.1%	0	0.0%	0	0.0%	1	2.1%	47	97.9%
Marine mammals	48	48	8	16.7%	2	4.2%	5	10.4%	1	2.1%	40	83.3%
Other birds	48	48	1	2.1%	0	0.0%	0	0.0%	1	2.1%	47	97.9%
Bird eggs	48	46	13	28.3%	3	6.5%	10	21.7%	0	0.0%	33	71.7%
Marine invertebrates	48	47	46	97.9%	14	29.8%	26	55.3%	6	12.8%	1	2.1%
Vegetation	48	47	46	97.9%	9	19.1%	31	66.0%	6	12.8%	1	2.1%
Seaweed	48	48	45	93.8%	9	18.8%	32	66.7%	4	8.3%	3	6.3%

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

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

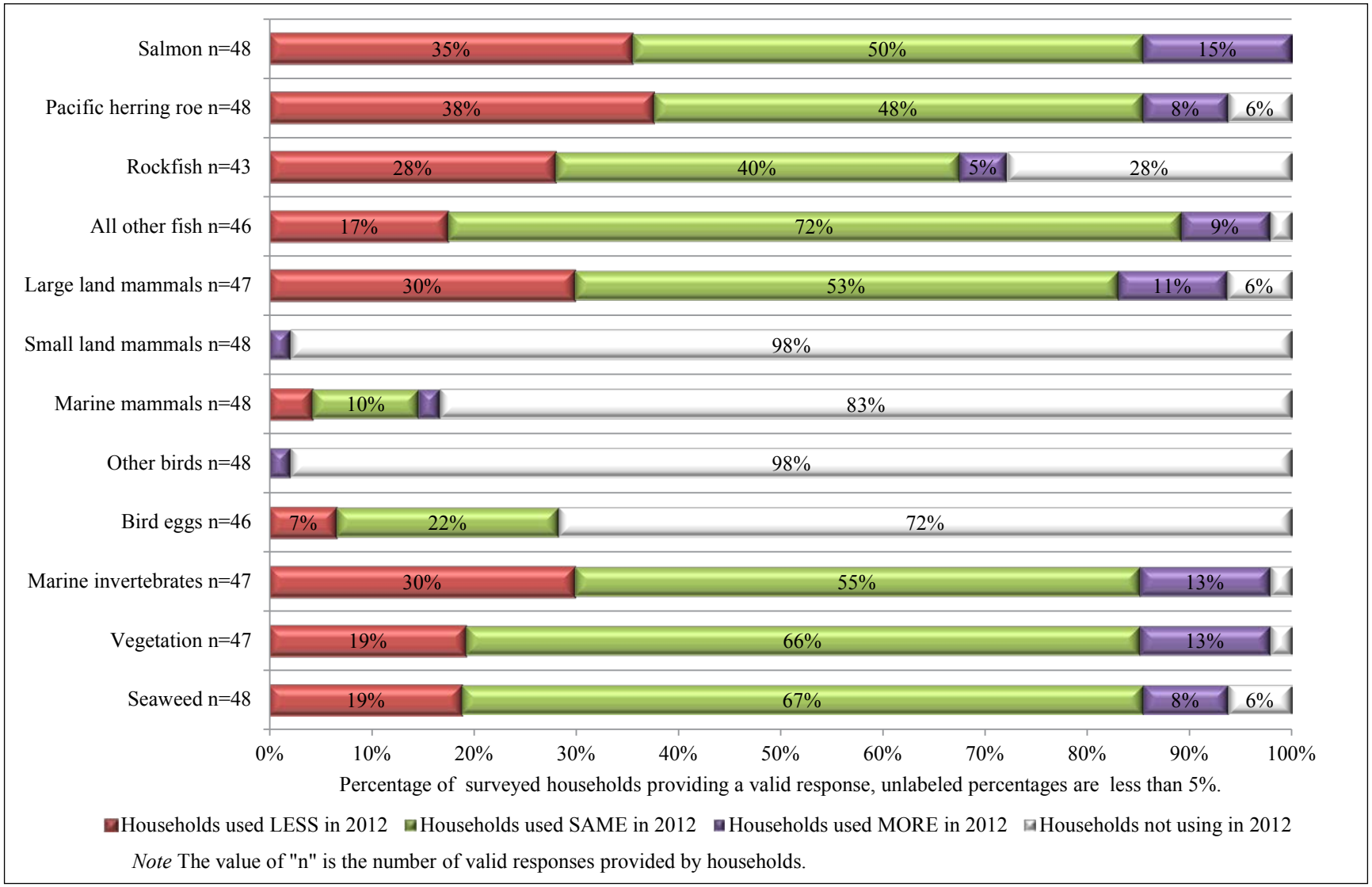


Figure 6-29.–Changes in household uses of resources compared to recent years, Hydaburg, 2012.

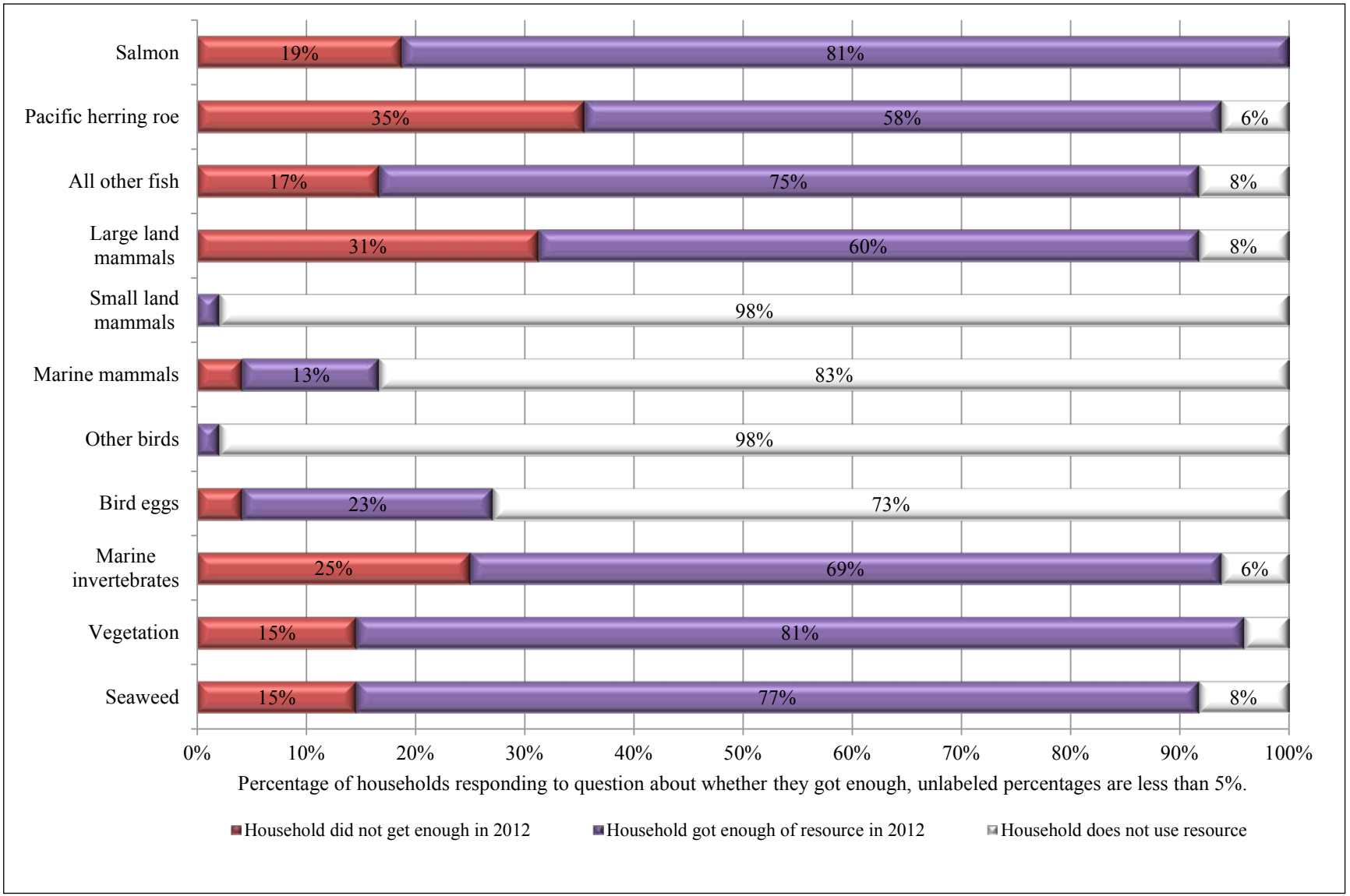


Figure 6-30.–Percentage of sampled households reporting whether they had enough resources, by resource category, Hydaburg, 2012.

Table 6-24.–Reasons for less household uses of resources compared to recent years, Hydaburg, 2012.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Resources less available		Too far to travel		Lack of equipment		Less sharing		Lack of effort		Unsuccessful		Weather/ environment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	48	40	7	17.5%	15	38%	0	0.0%	7	18%	13	33%	13	33%	1	2.5%	1	2.5%
All resources	**47**	**18**	**3**	**16.7%**	**3**	**17%**	**0**	**0.0%**	**3**	**17%**	**1**	**6%**	**2**	**11%**	**0**	**0.0%**	**1**	**5.6%**
Salmon	48	17	1	5.9%	1	6%	0	0.0%	1	6%	1	6%	3	18%	0	0.0%	0	0.0%
Pacific herring roe	48	17	2	11.8%	4	24%	0	0.0%	2	12%	7	41%	2	12%	0	0.0%	0	0.0%
Rockfish	43	12	1	8.3%	0	0%	0	0.0%	1	8%	1	8%	3	25%	0	0.0%	0	0.0%
All other fish	46	8	2	25.0%	1	13%	0	0.0%	1	13%	2	25%	2	25%	0	0.0%	0	0.0%
Large land mammals	47	14	2	14.3%	1	7%	0	0.0%	1	7%	4	29%	2	14%	1	7.1%	0	0.0%
Small land mammals	48	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Marine mammals	48	2	1	50.0%	0	0%	0	0.0%	0	0%	0	0%	1	50%	0	0.0%	0	0.0%
Other birds	48	0	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%
Bird eggs	46	3	0	0.0%	1	33%	0	0.0%	0	0%	0	0%	2	67%	0	0.0%	0	0.0%
Marine invertebrates	47	13	1	7.7%	3	23%	0	0.0%	1	8%	2	15%	1	8%	0	0.0%	0	0.0%
Vegetation	47	9	1	11.1%	5	56%	0	0.0%	0	0%	0	0%	1	11%	0	0.0%	1	11.1%
Seaweed	48	7	2	28.6%	1	14%	0	0.0%	2	29%	2	29%	0	0%	0	0.0%	0	0.0%

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Table 6-24.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Other reasons		Working/ no time		Regulations		Small/ diseased animals		Did not get enough		Did not need		Equipment/ fuel expense		Used other resources	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	48	40	4	10%	14	35.0%	1	2.5%	2	5.0%	5	12.5%	5	12.5%	5	12.5%	1	2.5%
All resources	**47**	**18**	**0**	**0%**	**4**	**22.2%**	**1**	**5.6%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**11.1%**	**4**	**22.2%**	**0**	**0.0%**
Salmon	48	17	2	12%	5	29.4%	0	0.0%	0	0.0%	0	0.0%	1	5.9%	2	11.8%	1	5.9%
Pacific herring roe	48	17	1	6%	0	0.0%	0	0.0%	0	0.0%	1	5.9%	0	0.0%	0	0.0%	0	0.0%
Rockfish	43	12	0	0%	0	0.0%	0	0.0%	0	0.0%	4	33.3%	2	16.7%	0	0.0%	0	0.0%
All other fish	46	8	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	47	14	0	0%	3	21.4%	0	0.0%	1	7.1%	0	0.0%	2	14.3%	1	7.1%	0	0.0%
Small land mammals	48	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	48	2	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	48	0	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	46	3	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	47	13	0	0%	4	30.8%	0	0.0%	1	7.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	47	9	1	11%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Seaweed	48	7	0	0%	2	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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

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

Table 6-25.–Reasons for more household uses of resources compared to recent years, Hydaburg, 2012.

Resource category	Valid responses[a]	Households reporting reasons for more use	Increased availability		Used other resources		Favorable weather		Received more		Needed more		Increased effort		Had more help	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	48	21	2	9.5%	1	4.8%	0	0.0%	5	23.8%	11	52.4%	5	23.8%	0	0.0%
All resources	**47**	**3**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**66.7%**	**1**	**33.3%**	**0**	**0.0%**
Salmon	48	7	1	14.3%	0	0.0%	0	0.0%	1	14.3%	3	42.9%	0	0.0%	0	0.0%
Pacific herring roe	48	4	0	0.0%	0	0.0%	0	0.0%	2	50.0%	2	50.0%	1	25.0%	0	0.0%
Rockfish	43	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%
All other fish	46	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%	1	25.0%	0	0.0%
Large land mammals	47	5	1	20.0%	0	0.0%	0	0.0%	2	40.0%	3	60.0%	0	0.0%	0	0.0%
Small land mammals	48	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Marine mammals	48	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	48	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Bird eggs	46	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	47	6	0	0.0%	1	16.7%	0	0.0%	0	0.0%	3	50.0%	2	33.3%	0	0.0%
Vegetation	47	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%	0	0.0%	0	0.0%
Seaweed	48	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	1	33.3%	0	0.0%

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Table 6-25.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Other		Regulations		Traveled farther		More success		Needed less		Store-bought expense		Got/ fixed equipment	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	48	21	1	4.8%	0	0.0%	0	0.0%	1	4.8%	1	4.8%	3	14.3%	0	0.0%
All resources	**47**	**3**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	48	7	1	14.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%
Pacific herring roe	48	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Rockfish	43	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	46	4	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	47	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	48	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	48	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Other birds	48	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	46	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	47	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	47	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	33.3%	0	0.0%
Seaweed	48	3	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%

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

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

Table 6-26.–Reported impact to households reporting that they did not get enough of a type of resource, Hydaburg, 2012.

		Households not getting enough _____ .				Impact to those not getting enough _____ .									
		Valid responses[a]		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	Sample households	Number	Percentage[b]	Number	Percentage[b]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]	Number	Percentage[c]
All resources	**48**	**47**	**97.9%**	**14**	**29.2%**	**2**	**14.3%**	**0**	**0.0%**	**7**	**50.0%**	**3**	**21.4%**	**2**	**14.3%**
Salmon	48	48	100.0%	9	18.8%	1	11.1%	0	0.0%	2	22.2%	4	44.4%	2	22.2%
Pacific herring roe	48	45	93.8%	17	35.4%	–	–	–	–	–	–	–	–	–	–
All other fish	48	44	91.7%	8	16.7%	1	12.5%	0	0.0%	4	50.0%	2	25.0%	1	12.5%
Large land mammals	48	44	91.7%	15	31.3%	0	0.0%	0	0.0%	10	66.7%	3	20.0%	2	13.3%
Small land mammals	48	1	2.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	48	8	16.7%	2	4.2%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Other birds	48	1	2.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	48	13	27.1%	2	4.2%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Marine invertebrates	48	45	93.8%	12	25.0%	0	0.0%	0	0.0%	7	58.3%	2	16.7%	3	25.0%
Vegetation	48	46	95.8%	7	14.6%	0	0.0%	0	0.0%	4	57.1%	2	28.6%	1	14.3%
Seaweed	48	44	91.7%	7	14.6%	0	0.0%	0	0.0%	6	85.7%	1	14.3%	0	0.0%

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

Note "–" indicates data are not available because the question was not asked for the resource.

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

b. Computed as the percentage of sampled households.

c. Computed as the percentage of households reporting "did not get enough."

Table 6-27.–Things households reported doing differently as the result of not getting enough of a resource, Hydaburg, 2012.

Resource category	Valid responses	Bought/bartered		Used more commercial foods		Replaced with other subsistence foods		Asked others for help		Made do without	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**9**	**0**	**0.0%**	**8**	**88.9%**	**1**	**11.1%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	6	0	0.0%	4	66.7%	2	33.3%	0	0.0%	0	0.0%
All other fish	6	0	0.0%	5	83.3%	1	16.7%	0	0.0%	0	0.0%
Large land mammals	12	0	0.0%	10	83.3%	2	16.7%	0	0.0%	0	0.0%
Small land mammals	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	8	0	0.0%	7	87.5%	2	25.0%	0	0.0%	0	0.0%
Vegetation	6	0	0.0%	4	66.7%	1	16.7%	0	0.0%	0	0.0%
Seaweed	4	0	0.0%	1	25.0%	1	25.0%	0	0.0%	2	50.0%

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Table 6-27.–Continued.

Resource category	Valid responses	Increased effort to harvest		Obtained food from other sources		Got a job		Got public assistance		Other reasons	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	**9**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Salmon	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
All other fish	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large game	12	1	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small game	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other birds	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	8	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	6	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
Seaweed	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

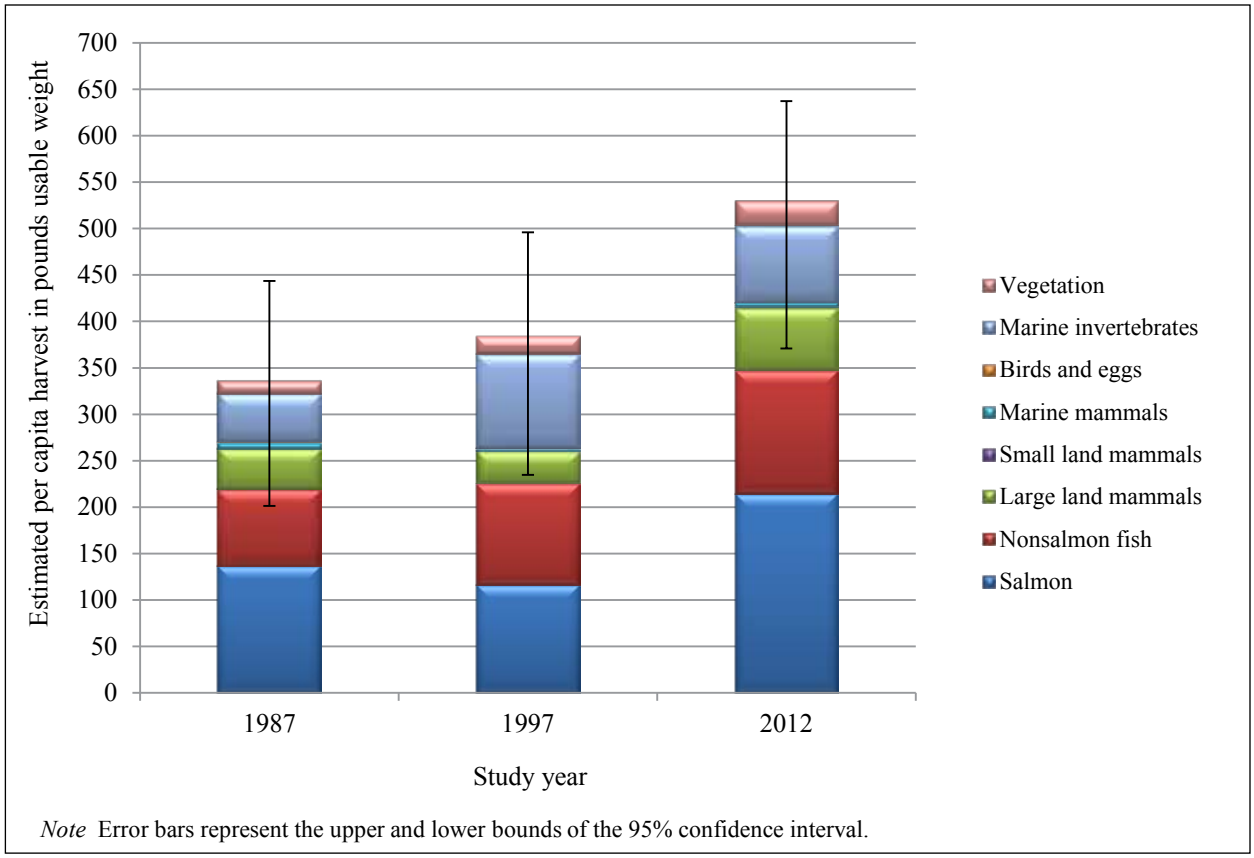
Source ADF&G Division of Subsistence household surveys, 2013.

Table 6-28.–Resources that households reported needing, Hydaburg, 2012.

Resource	Households needing	Percentage of households
All resources	**1**	**2.1%**
Fish	2	4.2%
Salmon	4	8.3%
Coho salmon	2	4.2%
Chinook salmon	2	4.2%
Sockeye salmon	8	16.7%
Nonsalmon fish	1	2.1%
Pacific herring roe	1	2.1%
Pacific halibut	6	12.5%
Deer	17	35.4%
Elk	1	2.1%
Seal	1	2.1%
Sea otter	1	2.1%
Gull eggs	2	4.2%
Marine invertebrates	4	8.3%
Abalone	2	4.2%
Clams	3	6.3%
Basket cockles	1	2.1%
Crabs	2	4.2%
Dungeness crab	3	6.3%
King crab	1	2.1%
Red king crab	1	2.1%
Shrimp	3	6.3%
Berries	5	10.4%
Blueberry	2	4.2%
Huckleberry	1	2.1%
Raspberry	1	2.1%
Salmonberry	4	8.3%
Other wild berry	1	2.1%
Plants, greens, and mushrooms	1	2.1%
Beach asparagus	1	2.1%
Seaweed/kelp	2	4.2%
Black seaweed	5	10.4%
Sea ribbons	1	2.1%
Wood	2	4.2%

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

a. Computed as the percentage of sampled households.



Note Error bars represent the upper and lower bounds of the 95% confidence interval.

Figure 6-31.–Composition of harvest by resource category in pounds usable weight, Hydaburg, 1987, 1997, and 2012.

Harvest Data

Changes in harvest patterns by Hydaburg residents can also be discerned through comparisons with findings from previous surveys. Comprehensive subsistence harvest surveys were conducted in Hydaburg in 1987 and 1997 by the Alaska Department of Fish and Game Division of Subsistence.[5] The survey population of Hydaburg was defined the same way for each study, but the definition of a study year varied. In 1987, the study year was defined as the 1987 calendar year. The 1997 study year was defined from February 1, 1997 to January 31, 1998. The 2012 study year was the 2012 calendar year. The following discussion is based on per capita harvests documented during those surveys. Since populations fluctuate, per capita harvest levels are the most informative reflection of changes over time.

The overall per capita harvest of wild foods by Hydaburg residents has over the years steadily increased. In 2012 the per capita harvest was 531 lb (± 25%) of wild harvested foods, which is 195 lb more than the per capita harvest in 1987 and 147 lb more than the per capita harvest in 1997 (Figure 6-31). In all 3 study years, the majority of the harvest has come from marine invertebrates, large land mammals, nonsalmon fish, and salmon (Table 6-29). Vegetation, birds, bird eggs, marine mammals, and small land mammals have remained, throughout the study years, a small portion of the overall harvest.

5. Results for both previous comprehensive subsistence harvest and use surveys are available online; see the ADF&G Community Subsistence Information System (CSIS): http://www.adfg.alaska.gov/sb/CSIS/.

Table 6-29.–Estimated per capita harvest in pounds usable weight, Hydaburg, 1987, 1997, and 2012.

	Estimated harvest in pounds usable weight								
	1987			1997			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All resources	**127,503.0**	**336.4**	**36.0%**	**154,874.0**	**384.1**	**34.0%**	**176,309.7**	**530.7**	**25.1%**
Salmon	52,094.0	137.4		47,134.0	116.9		71,234.6	214.4	
Nonsalmon fish	31,388.0	82.8		43,990.0	109.1		44,197.2	133.0	
Large land mammals	16,320.0	43.1		13,973.0	34.7		22,610.0	68.1	
Small land mammals	0.0	0.0		0.0	0.0		0.0	0.0	
Marine mammals	2,622.0	6.9		1,224.0	3.0		1,666.0	5.0	
Birds and eggs	292.0	0.8		289.0	0.7		137.6	0.4	
Marine invertebrates	19,512.0	51.5		40,694.0	100.9		27,629.6	83.2	
Vegetation	5,275.0	13.9		7,570.0	18.8		8,834.7	26.6	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.

Total harvest amounts have increased since 1987 in almost all resource categories but the overall composition of the harvest has remained relatively consistent (Figure 6-31; Table 6-29). The only harvest categories that showed a decline in harvests since 1987 were birds and eggs and marine mammals. The per capita salmon harvest has nearly doubled from 137 lb in 1987 to 214 lb in 2012 (Table 6-29). The composition of the salmon harvest has remained relatively consistent across all 3 survey years; sockeye salmon composed the majority of the catch each study year. In 1987 and 2012, coho salmon and Chinook salmon were the next most harvested salmon species; however, in 1997, following coho salmon the next most harvested species were chum salmon and then Chinook salmon (Figure 6-32; Table 6-30).

The per capita harvest of nonsalmon fish showed a similar increase as salmon from 83 lb in 1987 to 133 lb per capita in 2012 (Figure 6-31; Table 6-29). The per capita harvest of vegetation also nearly doubled from 14 lb in 1987 to 27 lb in 2012. The 2012 per capita large land mammal harvest increased overall from the 1987 and 1997 per capita harvests. Birds and bird eggs is the only resource category to show a steady decrease in harvest amounts over the study years (0.8 lb per capita in 1987 to 0.7 lb per capita in 1997 to 0.4 lb per capita in 2012). The harvest of marine mammals in 2012 (5 lb per capita) has overall declined compared to the 1987 harvest (7 lb per capita). Marine invertebrates also showed variable per capita harvests over the study years; in 1987 harvests of marine invertebrates totaled 52 lb per capita, which increased to 101 lb per capita in 1997 before a decrease to 83 lb per capita in 2012.

Because of the wide margins of error in the total per capita harvest estimates for each year of study, the estimates are likely not significantly different. However, even maintaining a similar harvest over the past 30 years seems positive and encouraging. The health and cultural benefits are of great importance to rural Alaska communities. Wild food harvests in rural Alaska provide a significant amount of protein (generally more than 100% of a population's requirements) and the replacement value to rural communities is also very high (Fall 2014).

Current and Historical Harvest Areas

Each comprehensive harvest survey conducted in Hydaburg included a mapping component. Mapping methods varied among the study years and mapped results from the 1997 study year are unavailable. In 1987, survey respondents were asked to map all the areas ever used for hunting, fishing, and gathering resources. In 2012, respondents were asked only to indicate areas used during the study period. Figure 6-33 presents these harvest and search areas of Hydaburg residents. As would be expected, the extent of harvest areas in 1987 is much larger than in 2012. Because 2012 is simply a snapshot of 1 year of harvesting activities, a smaller harvest area was documented. However, many of the comments made during the survey interviews and during the community review meeting had a common theme that fuel expenses had changed harvest patterns and many people no longer could afford to harvest or to go as far for the harvest. The community members have worked hard to resolve this issue. Comments from the community members at meetings and during the surveys show that they have adapted in different ways to accommodate for the shortage of time and the expense of fuel by maximizing each harvest trip and harvesting as many resources as possible in a single trip. The local tribal organization, the Hydaburg Cooperative Association, has worked with the community to provide support and a boat for harvesting food. They have also worked within the regulatory process to change regulations to accommodate for this change in harvest logistics.

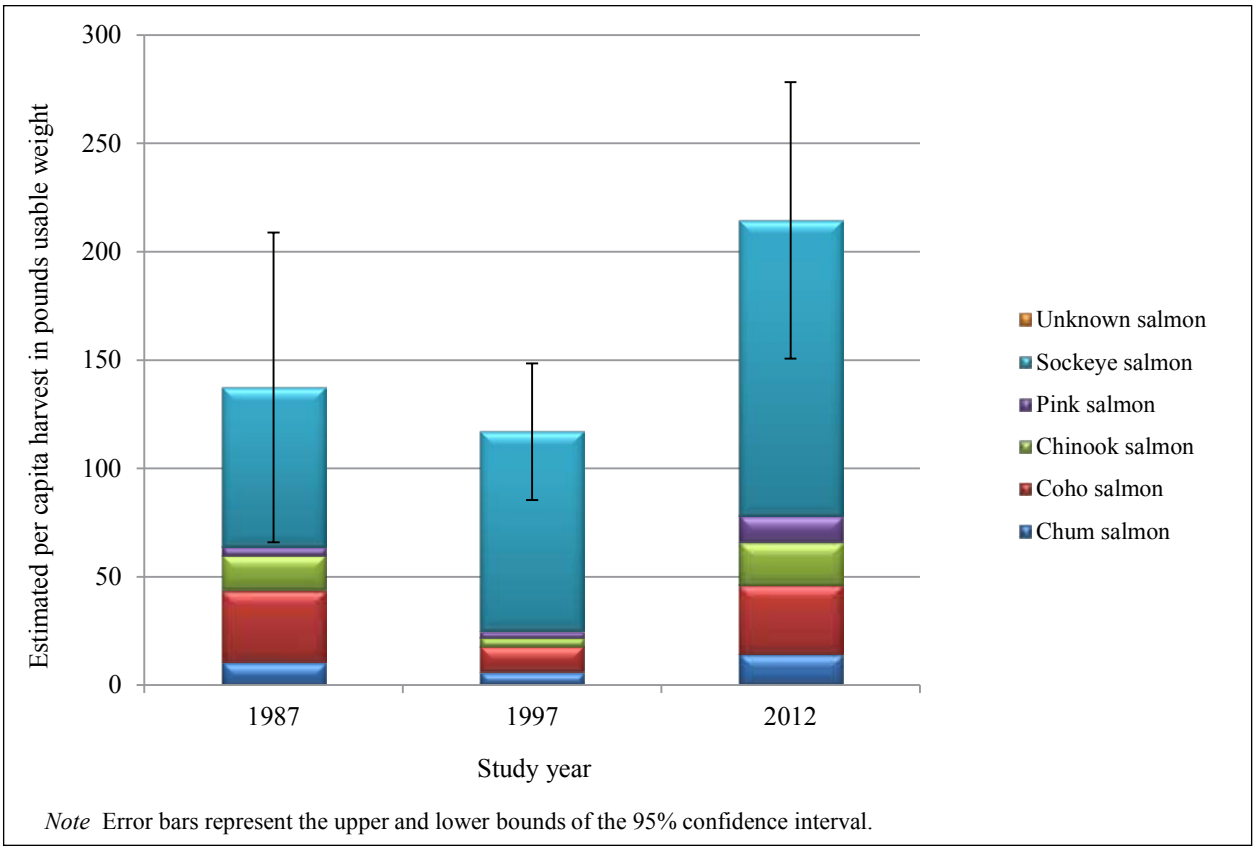


Figure 6-32.–Composition of salmon harvest by species in pounds usable weight, Hydaburg, 1987, 1997, and 2012.

Table 6-30.–Estimated per capita harvest of salmon by species, in pounds usable weight, Hydaburg, 1987, 1997, and 2012.

	Estimated harvest in pounds usable weight								
	1987			1997			2012		
Resource	Total	Per capita	CIP	Total	Per capita	CIP	Total	Per capita	CIP
All salmon	**52,094.0**	**137.4**	**52.0%**	**47,134.0**	**116.9**	**27.0%**	**71,234.6**	**214.4**	**29.7%**
Chum salmon	4,096.0	10.8		2,400.0	6.0		4,786.1	14.4	
Coho salmon	12,568.0	33.2		4,751.0	11.8		10,643.0	32.0	
Chinook salmon	5,985.0	15.8		1,694.0	4.2		6,540.7	19.7	
Pink salmon	1,593.0	4.2		1,204.0	3.0		4,005.8	12.1	
Sockeye salmon	27,852.0	73.5		37,086.0	92.0		45,259.1	136.2	
Unknown salmon	ND	ND		0.0	0.0		0.0	0.0	

Sources For 2012, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2013.
Note "ND" indicates data are not available for that resource.

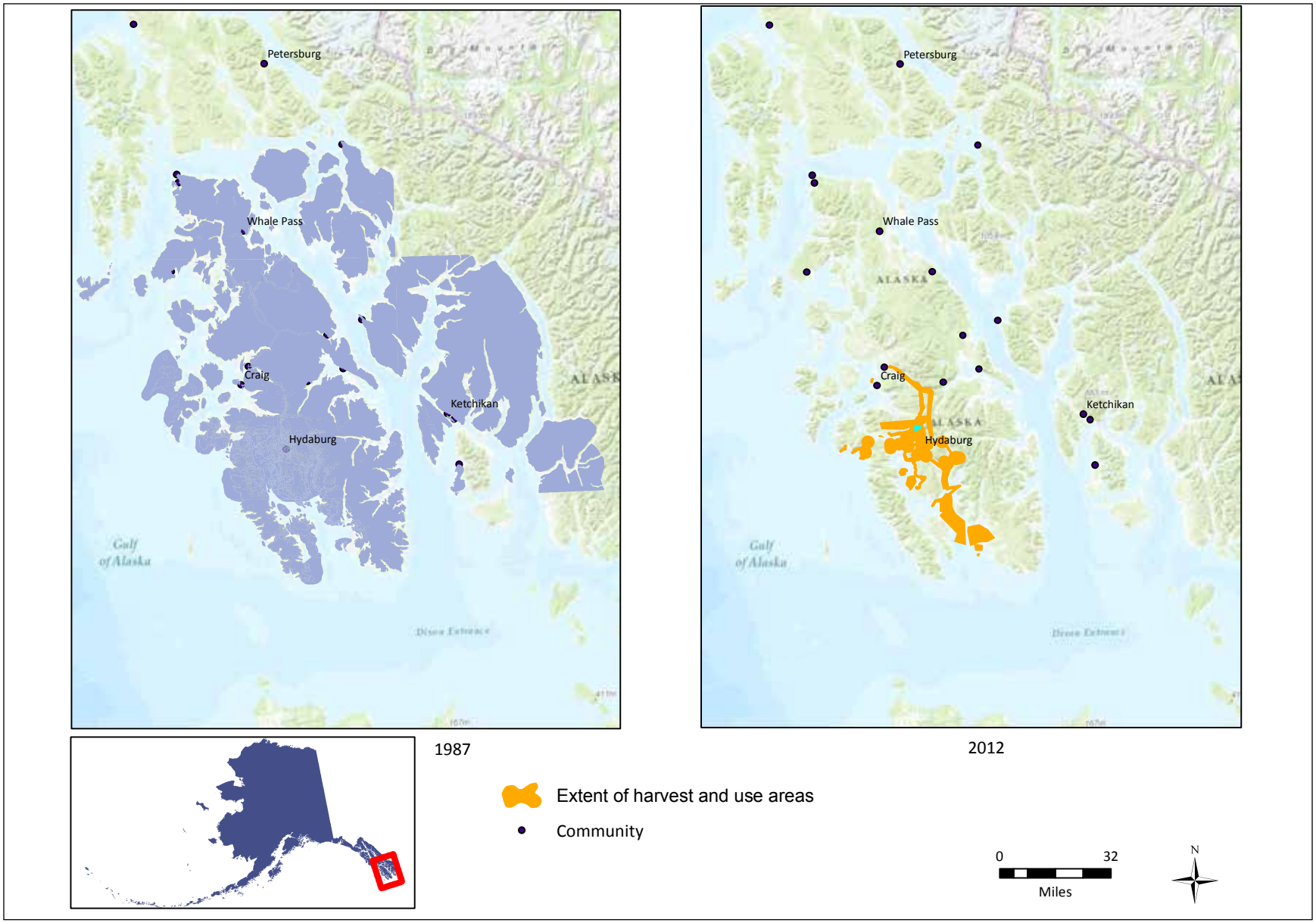


Figure 6-33.–Comparison of wild resources search and harvest areas, Hydaburg, 1987 and 2012.

Local Comments and Concerns

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

Most interviews began with an expression of concern from the respondent that the information gathered might be used against them in the regulatory process. The interviewers addressed this concern at the beginning of every survey through a discussion of the confidentiality of the survey, the voluntary nature of the survey, a willingness to explain any part of the survey, and examples of how the data are used. Often, these concerns were aired again at the end of the survey when respondents were asked for any questions, comments, or concerns. It was strongly felt throughout the community that the present and future of Hydaburg is closely tied to the subsistence harvest of food. This was often spoken about as something that was a given without need of explanation. Most of the following concerns are rooted in this foundational belief that the community's harvest of wild foods (whether through subsistence or other methods) is a major part of the community's identity and is a key indicator of how well the community is doing as a whole.

Fish

"It's not cost effective to go for a 20 salmon per day limit," was the comment of one respondent, but it was an opinion that was expressed many times in many of the interviews. Most comments about fish were about some regulations not fitting the logistics and way of life within the Hydaburg area. The increasing cost of gas was the reason for most of the disagreement with fishing regulations. High fuel costs can make it economically impossible for some residents to go out to the fishing grounds, especially if multiple trips are necessary to harvest enough fish to meet a household's needs for the year. In these cases, a person with the means to get to the fishing grounds will fish for several community members. This action, though meant for the good of community members and still within the catch limits per person, is not legal under the current regulations. Many of the respondents asked that regulations be changed so that a designated fisher may take another's permit to fish in their stead. Also mentioned were concerns about the growing complexity of harvest regulations. One respondent expressed their frustration with trying to get enough fish for their family, "Regulations like with finfish, harvest limits, and certain things like how to clean a fish is ridiculous.[6] They should be able to harvest and process in a traditional manner. I really get nervous about breaking laws. You never know if you are doing something illegal." Another comment: "Fish and Game enforcement [U.S. Fish and Wildlife troopers] comes down to bother us on good weather days. They always find something to ticket them. They should let them fish because they are fishing for the community."

Large Land Mammals

"People here don't often get enough. Not many jobs. People really depend on the deer. Out-of-state, Ketchikan, and people from elsewhere in the state take truckloads of deer [from Prince of Wales Island]." Concerns about competition with hunters from more affluent areas were voiced frequently during the surveys.

Birds and Eggs

One elder in the community—while surrounded by his log books of daily weather and temperature, bird sightings, and observations about berries—commented, "There are lots of new species of song birds in the

6. This is likely a reference to the regulation that subsistence fishermen must immediately remove the dorsal fin of all salmon when taken. This practice exposes the salmon flesh to the environment and some respondents have commented they have to change their cleaning methods when the dorsal fin is removed first.

area that were never here before. There are different species of little birds here. Little guys that I see and don't know who they are."

Marine Invertebrates

Almost all comments were about there being much fewer abalones in the area. One respondent commented "…used to be abalone around here, but now they are almost completely gone. Commercial fishing wiped them out. Rock scallops used to be more around here. Now there are less. Lots of weathervane scallops … abalone was mismanaged by the state." Another respondent commented: "Abalone are hard to get now. It used to be easy to get enough abalone but now they are scarce. A lot of shellfish has declined in the area. It might be because of sea otters."

Other

The other comments centered on themes about concerns for the future of the availability of subsistence foods, competition with other outside influences such as timber industry, commercial fishing, and a regulatory process that they have little control over. Many of these concerns were expressed in conjunction with discussion on the lack of clarity on the roles the different government entities play in the management of subsistence resources. Changes in the environment were also commented on. Some examples included warmer weather in the winter, sockeye returning later in the season than normal, the earlier mention of different bird species present, and stronger storms and more intense weather changes. Through all these different concerns what was evident was the belief in the importance of harvesting wild foods to Hydaburg.

ACKNOWLEDGMENTS

The Division of Subsistence would like to thank the residents of Hydaburg for the generous donation of their time and sharing their thoughts on the harvest of wild foods and subsistence harvests, a topic that was plainly very important to them on a many levels: political, personal, economically, and culturally. Without all the time they spent with research staff, this report would not be possible, so for that we are truly grateful. We also extend great appreciation to Mona Peratrovich, Joey Adams, and Jodi Sanderson, without whom we could not have completed these surveys. We hope that the information gathered will be beneficial to the community of Hydaburg and to the people of the state of Alaska.

7. DISCUSSION AND CONCLUSIONS

Lauren A. Sill

Overview of Findings for the Study Communities, 2012

This report documented the harvest and use of wild resources in 5 communities of Southeast Alaska. While these communities represent a broad range of community types with diverse demographics and economics, they offer only a glimpse into the diversity of Southeast Alaska. From these communities, however, a few general patterns stand out. Southeast Alaska is geographically, culturally, and environmentally distinct from the rest of the state of Alaska. The historical and continuing importance of the marine environment to residents and communities of Southeast Alaska, and the diversity of marine resources, is unparalleled elsewhere. The island geography of the region shapes the way residents travel and live. The rainforest environment that surrounds each of these communities and the close proximity to marine waters are relied upon for travel, for fishing, gathering shellfish and greens, and nourishing the land species that are hunted and used. Changes to climate and habitats, species population fluctuations, and man-made infrastructure and technology are causing residents to adjust their harvest activities. In many communities, the growing presence of sea otters is either becoming a potential threat to subsistence resources or an active problem that residents strive to manage. The proportion of salmon in overall community harvests has generally declined in these communities as the proportion of nonsalmon harvests have increased. Local weather events can have long-lasting implications on local resources; harsh winters can depress deer populations for years, or a too-wet or too-dry spring or summer can ruin a berry harvest. While most communities are isolated from other towns, where road systems exist (usually as a result of past logging practices) the roads play a major role in the harvest of wild resources. As logging is reduced and some of these roads are closed, residents feel a direct negative effect to their ability to access hunting and gathering areas. Despite these changes, these communities still exemplify mixed subsistence-market socioeconomic systems; there are high levels of subsistence harvests, specialization in the production of wild foods, family-based harvesting groups, widespread sharing, and an important cash economic sector.

In the 2012 study year, most residents of all communities participated in wild resource hunting, fishing, or gathering. More than 98% of households in every community used wild resources and at least 90% of households in each community engaged in harvesting activities of some kind—hunting, fishing, or gathering (Figure 7-1). As estimated in pounds of usable weight, household harvests averaged from a low of 318 lb in Haines to a high of 1,482 lb in Hydaburg: per capita harvests ranged from 135 lb in Haines to 531 lb in Hydaburg (Table 1-9). The average number of resources harvested per household was similar in all communities, with a low in Haines and Angoon of 8 resources and a high in Hydaburg of 13. The average number of resources used per household was greater than that harvested in each community. Whale Pass used the lowest number of resources (12) while Hydaburg used the most (21). The difference between number of resources used and harvested was greatest in Hoonah and Hydaburg and least in Haines and Whale Pass. Comparing the composition of community harvests, it can be seen that salmon harvests dominated the harvest in Haines and Hydaburg in terms of pounds per capita harvested (Figure 7-2). In Angoon and Hoonah, nonsalmon fish harvests were predominant. Only Whale Pass showed a highest per capita harvest amount coming from large land mammals. Fish and large land mammals composed more than 70% of the entire harvest of each community as measured in pounds per capita (Table 7-1).

The average per capita harvest of these 5 communities in 2012 was 288 lb (Table 7-1). The statewide average per capita harvest of wild resources in rural areas of Alaska in 2012 was 295 lb and 200 lb in rural Southeast Alaska (Fall 2014). Statewide in rural areas, salmon and other fish harvests compose 53% of the harvest, land mammals 23%, marine mammals 14%, plants 4%, shellfish 3%, and birds and eggs 3% (Fall 2014). Compared to these averages, the 5 study communities have a slightly higher average harvest of fish, marine invertebrates, and vegetation and a slightly lower average harvest of land and marine mammals, as well as birds and eggs. The accessibility of Pacific halibut and other marine fishes, as well as the generally smaller size of deer in comparison to moose or caribou, are likely contributing factors to these differences. Birds and eggs, marine mammals, and small land mammals all compose a smaller percentage of the overall harvest than is average for rural Alaska, which is likely due to a variety of factors, including regulations, economics, and generational changes.

As would be expected in these subsistence communities, the sharing of wild resources was prevalent; in most communities, more than 90% of all households received wild resources (the exception being Whale Pass) (Figure 7-1). Fewer households gave away resources than received, but still more than 60% of households in every community shared part of their harvest of wild resources. In Angoon, Hoonah, and Hydaburg, more than 80% of households gave away resources. Prior research in rural Alaska communities found that approximately 30% of households in subsistence economies generally account for 70% of that community's harvest (Wolfe et al. 2010). These Southeast Alaska study communities reflect this finding. The communities show approximately 20% of households accounting for 70% of the harvest (Table 1-9). The top 25% ranked households harvested the most in Hoonah and Haines at 77% and the least in Hydaburg, with 66%. Hydaburg appears to have a greater percentage of their harvest spread among more households; the lowest ranked 50% of households harvested double the percentage of similar households in other communities. In Hoonah, Haines, and Angoon, the lowest ranked 50% of households harvested 5% of the total community harvest. Whale Pass used the fewest resources (12) and Hydaburg used the most resources (21) per household, on average (Table 1-9). The high harvesting households in each community used significantly more resources than the average household. Compared to the lowest-ranked 50% of households, the high harvesters (the top 25% ranked households) used almost double the number of resources in each community, except Hoonah where the top households used almost 3 times as many resources as the lowest ranked ones. Comparing harvests of specific resource categories reveals more trends among these communities.

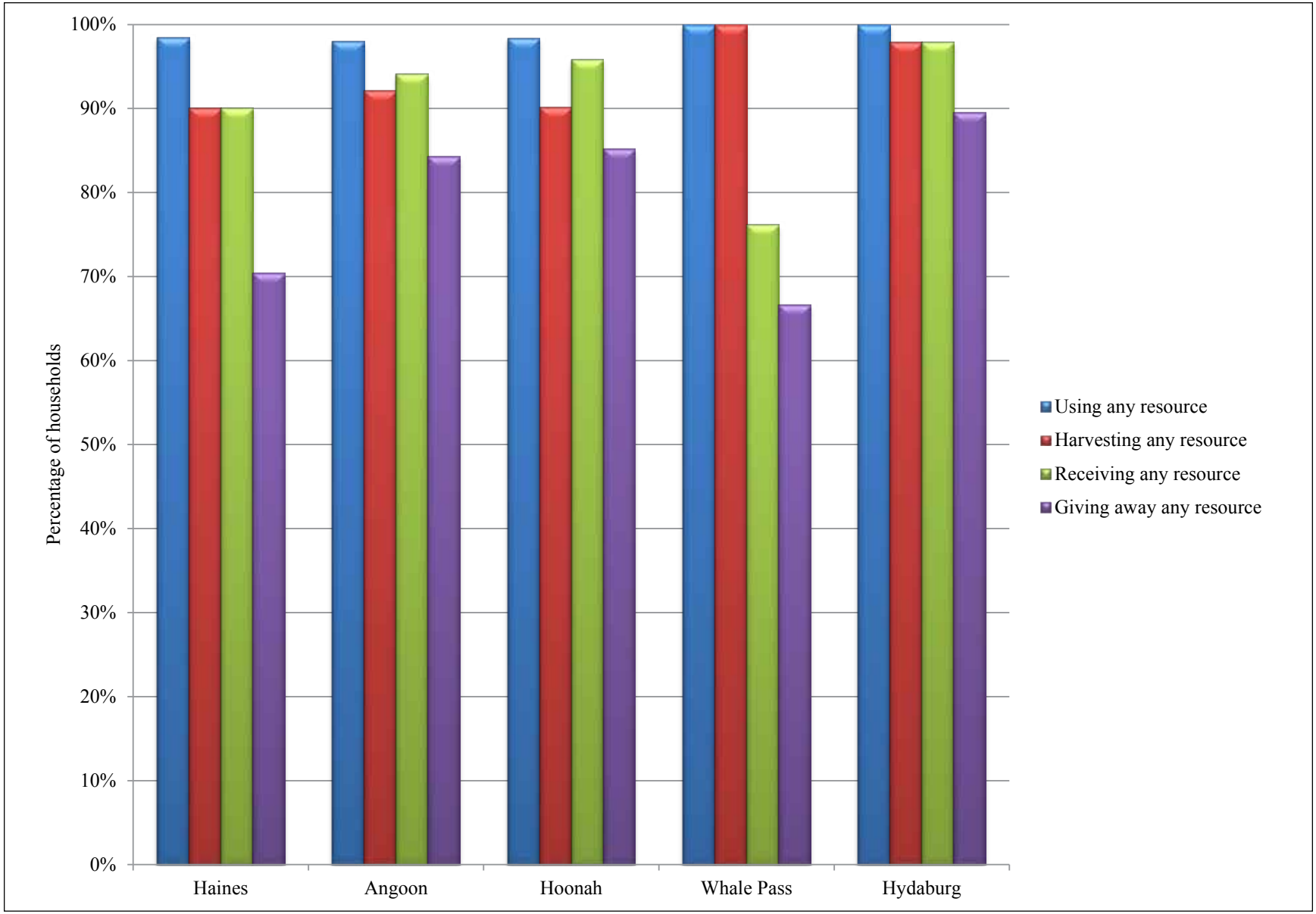


Figure 7-1.–Percentages of households using, harvesting, receiving, and giving away wild resources, study communities, 2012.

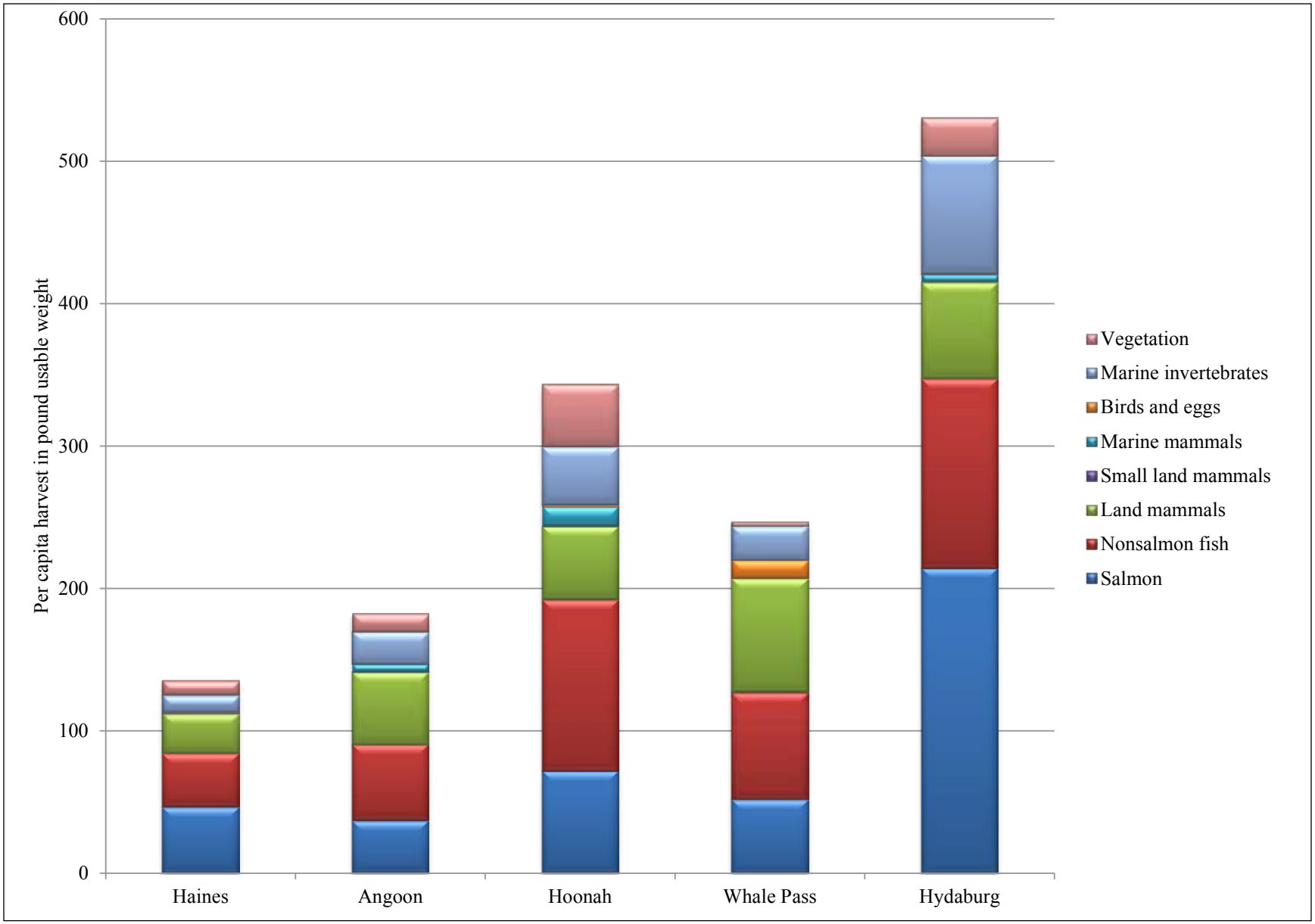


Figure 7-2.–Composition of harvest by resource category in pounds usable weight, study communities, 2012.

Table 7-1.–Estimated per capita harvest by resource category in pounds usable weight, and proportion of total harvest, study communities, 2012.

	Haines		Angoon		Hoonah		Whale Pass		Hydaburg	
Resource	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest
Salmon	46.6	34.4%	37.2	20.4%	72.0	21.0%	51.9	21.0%	214.4	40.4%
Nonsalmon fish	37.8	27.9%	53.4	29.2%	120.4	35.1%	75.6	30.6%	133.0	25.1%
Large land mammals	28.0	20.7%	51.0	28.0%	51.3	14.9%	79.7	32.3%	68.1	12.8%
Small land mammals	0.2	0.1%	0.0	0.0%	0.3	0.1%	0.1	0.0%	0.0	0.0%
Marine mammals	0.0	0.0%	5.3	2.9%	13.4	3.9%	0.0	0.0%	5.0	0.9%
Birds and eggs	0.9	0.7%	0.4	0.2%	1.6	0.5%	13.0	5.2%	0.4	0.1%
Marine invertebrates	11.9	8.8%	22.4	12.3%	40.7	11.9%	23.8	9.6%	83.2	15.7%
Vegetation	10.0	7.4%	12.9	7.1%	43.6	12.7%	3.0	1.2%	26.6	5.0%
All resources	**135.3**	**100.0%**	**182.5**	**100.0%**	**343.3**	**100.0%**	**247.0**	**100.0%**	**530.7**	**100.0%**

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

Salmon

Salmon is an important resource in all of the study communities, composing from 20% to 40% of overall harvests (Table 7-1; Figure 7-2). While all 5 communities are situated in close proximity to salmon runs, the amount of salmon harvested per capita ranged from 37 lb in Angoon to 214 lb in Hydaburg (Table 7-1; Figure 7-3). Compared to past comprehensive harvest surveys, the per capita amount of salmon harvested and proportion of harvest has remained relatively stable or has increased, except in Hoonah and Angoon, which show a marked decrease from the last survey conducted in 1996 (tables 2-28, 3-29, 4-29, 5-28, and 6-29). The composition of salmon species contributing to the salmon harvest has also changed (Table 7-2). Estimated sockeye salmon harvests contributed more to total salmon harvests in every community in 2012 as compared to 1987, while Chinook salmon harvests contributed a smaller proportion in every community. Chum salmon harvests composed a smaller proportion of the overall harvest in all communities except Haines. Some changes in harvest proportions can be attributed to changes in stock abundance, but other factors, such as available equipment/gear, demand, and substitute resources, also likely play a role. Chinook salmon populations have experienced statewide decreases (ADF&G Chinook Salmon Research Team 2013), but in contrast chum salmon populations have not been decreasing; in fact, harvests in 2012 by the commercial sector was one of the highest on record (Conrad and Davidson 2013). During interviews in each of these communities, concerns for the health and sustainability of local salmon populations were voiced; many people noted that run sizes seemed smaller and it was more difficult to harvest enough salmon to meet their needs.

While it is possible to compare point estimates of salmon harvests from surveyed years, understanding trends in salmon harvests for home use in Southeast Alaska is more challenging. Door-to-door subsistence household surveys are done infrequently, so the decreased contribution of Chinook or chum salmon harvests to total salmon harvests in most communities from 1987 to 2012 may be indicative of a trend, but with such a large time gap between surveys it may also simply indicate a singular event. Including the additional point estimate of the 1990s survey data highlights this concern; only Hoonah survey data demonstrate a consistent decrease in the proportion of chum salmon harvests, and only Hoonah and Angoon show a consistent decrease in Chinook salmon harvest proportions. In all other communities, 1990s survey estimates demonstrate a high or low point in harvest estimates (Table 7-2). While subsistence salmon permit data are available annually and over a relatively long time period, these data provide an incomplete picture. Except for sockeye salmon, much of the salmon harvested for home use in Southeast Alaska is harvested under state sport or commercial regulations. Rod and reel gear is generally not recognized as legal subsistence gear in Southeast Alaska under state regulations, so Chinook, coho, chum, and pink salmon harvested with this gear would not be recorded on the permits. As an example, in Whale Pass, 100% of the salmon harvest was taken with rod and reel or by trolling (Table 5-16). In communities with commercial fishing fleets, removals from the commercial catch can contribute significantly to the overall harvest for home use. For communities that have experienced a decline in commercial participation, such as Angoon (Table 4-31), the effect on their salmon harvests for home use appears to have been substantial.

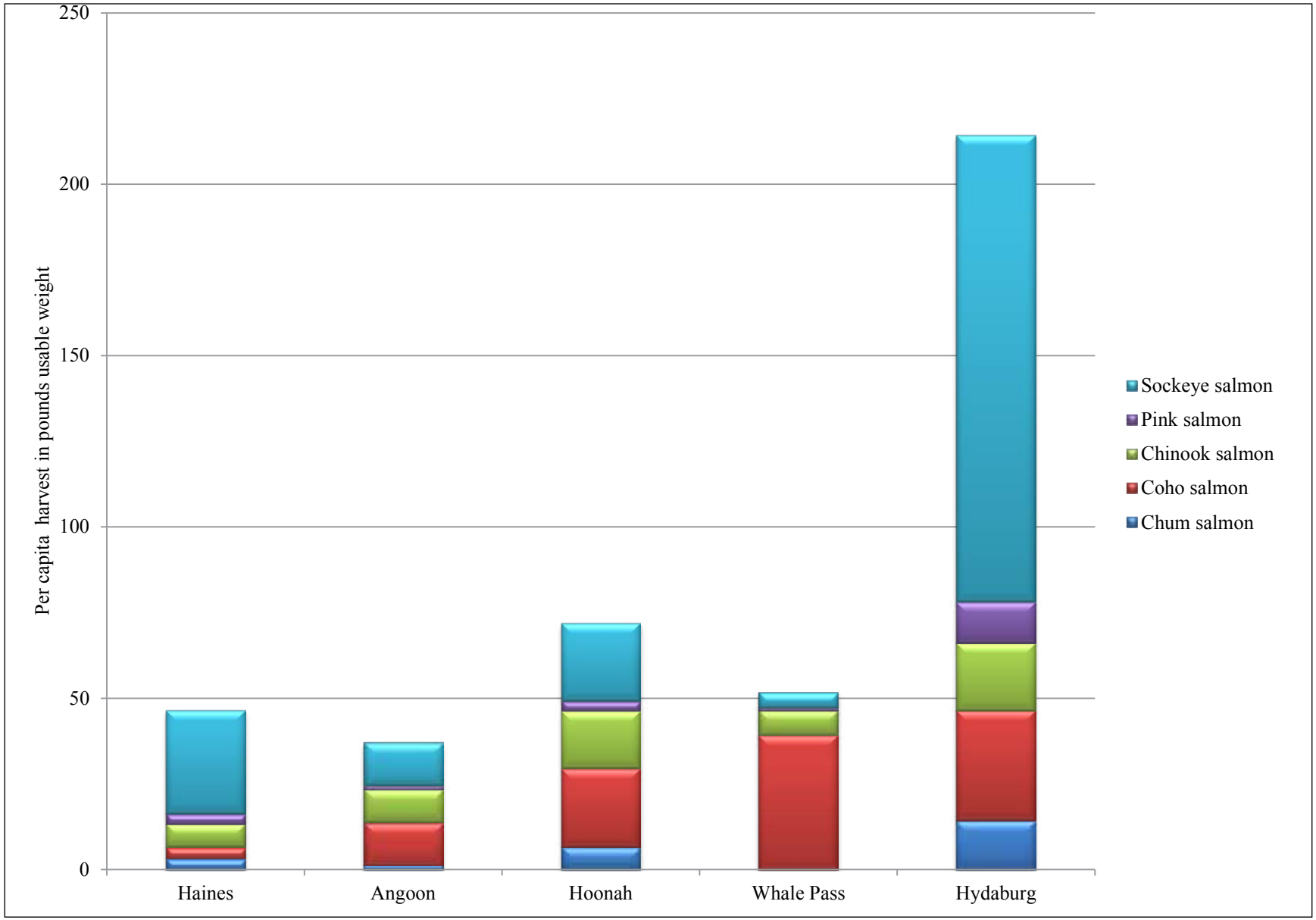


Figure 7-3.–Composition of salmon harvest by species in pounds usable weight, study communities, 2012.

Table 7-2.–Estimated per capita harvest of salmon by species, and proportion of total salmon harvest, Haines, 1983, 1987, 1996, and 2012; Hoonah, 1985, 1987, 1996, and 2012; Angoon, 1984, 1987, 1996, and 2012; Whale Pass, 1987, 1998, and 2012; and Hydaburg, 1987, 1997, and 2012.

	Haines							
	1983		1987		1996		2012	
Resource	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest
Chum salmon	12.0	26.4%	2.0	7.1%	9.5	16.3%	3.2	7.0%
Coho salmon	4.4	9.7%	2.7	9.6%	9.5	16.3%	3.3	7.1%
Chinook salmon	11.0	24.2%	11.0	40.0%	8.2	14.1%	6.7	14.4%
Pink salmon	2.4	5.2%	0.4	1.3%	1.3	2.2%	3.1	6.7%
Sockeye salmon	15.8	34.6%	11.6	42.0%	29.8	51.1%	30.1	64.6%
Unknown salmon	ND	ND	ND	ND	0	0.0%	0.2	0.3%

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	Hoonah							
	1985		1987		1996		2012	
Resource	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest
Chum salmon	10.7	22.8%	31.2	31.1%	21.9	19.4%	6.6	9.2%
Coho salmon	12.4	26.2%	22.3	22.2%	25.3	22.3%	22.8	31.7%
Chinook salmon	18.4	39.0%	35.8	35.7%	29.5	26.0%	16.8	23.4%
Pink salmon	2.0	4.3%	3.8	3.8%	4.0	3.5%	3.0	4.1%
Sockeye salmon	3.6	7.7%	7.3	7.3%	32.3	28.5%	22.7	31.6%
Unknown salmon	ND	ND	ND	ND	0.3	0.2%	0.0	0.0%

-continued-

	Angoon							
	1984		1987		1996		2012	
Resource	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest
Chum salmon	11.8	16.0%	4.0	5.6%	8.7	10.7%	1.3	3.6%
Coho salmon	19.5	26.6%	20.3	28.7%	30.0	36.7%	12.5	33.7%
Chinook salmon	21.3	28.9%	28.9	40.8%	20.7	25.2%	9.6	25.9%
Pink salmon	7.4	10.1%	4.9	7.0%	1.7	2.0%	1.2	3.3%
Sockeye salmon	13.5	18.4%	12.7	17.9%	20.8	25.4%	12.5	33.5%
Unknown salmon	ND	ND	ND	ND	0.0	0.0%	0.0	0.0%

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Table 7-2.–Page 2 of 2.

	Whale Pass					
	1987		1998		2012	
Resource	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest
Chum salmon	1.9	4.7%	0.0	0.0%	0.0	0.0%
Coho salmon	9.8	23.9%	22.1	78.1%	39.2	75.6%
Chinook salmon	23.4	56.9%	4.1	14.5%	7.2	13.9%
Pink salmon	3.2	7.7%	1.0	3.6%	0.9	1.8%
Sockeye salmon	2.8	6.8%	1.1	3.9%	4.5	8.7%
Unknown salmon	ND	ND	0.0	0.0%	0.0	0.0%

-continued-

	Hydaburg					
	1987		1997		2012	
Resource	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest	Per capita harvest (lb)	Percentage of harvest
Chum salmon	10.81	7.9%	5.95	5.1%	14.4	6.7%
Coho salmon	33.15	24.1%	11.78	10.1%	32.0	14.9%
Chinook salmon	15.79	11.5%	4.2	3.6%	19.7	9.2%
Pink salmon	4.2	3.1%	2.99	2.6%	12.1	5.6%
Sockeye salmon	73.47	53.5%	91.96	78.7%	136.2	63.5%
Unknown salmon	ND	ND	0.0	0.0%	0.0	0.0%

Sources For 2012 data, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2016.

Note "ND" indicates data are not available because the resource was not included in the survey.

Nonsalmon Fish

Nonsalmon fish harvests composed approximately 21% of the wild food harvest by rural Alaskans in 2012 (Fall 2014). In the 5 study communities, nonsalmon fish harvests accounted for 25–35% of overall harvests (Table 7-1). Based on the comprehensive surveys conducted in 1987 and in the 1990s in these communities, nonsalmon fish have made up anywhere from 14–41% of the overall harvest as measured in per capita pounds harvested. Per capita harvests of nonsalmon fish in all communities in 2012 were the same as or greater than those estimated in the 1987 survey, except in Haines (Table 7-3). In 2012, it is estimated that 1 or 2 species made up the majority (at least 70%) of the nonsalmon fish harvest for each study community; by weight, the largest contributor was Pacific halibut, accounting for 36–74% of overall nonsalmon fish harvests (Figure 7-4). The second most harvested resource by weight in a community was usually a more localized species, such as eulachon in Haines or Pacific herring eggs in Hoonah or Hydaburg.

Pacific halibut are abundant throughout Southeast Alaska. Halibut are brought into the home through commercial fish removals, subsistence fishing under federal regulations, and sport fishing under state regulations. Beginning in 2003, federal regulations allowed for a subsistence halibut fishery with the acquisition of a Subsistence Halibut Registration Card (SHARC). Statewide, Southeast Alaska accounts for more than one-half the total subsistence halibut harvest (Fall and Koster 2014). Subsistence catches of halibut accounted for the highest proportion of the halibut harvest documented in most of the study communities (in Whale Pass rod and reel were used to catch more halibut) (tables 2-18, 3-18, 4-18, 5-18, and 6-18). The predominant harvests by subsistence gear were followed by rod and reel sport fishing harvests, and then commercial removals in Haines and Hoonah. The federal subsistence fishery has more liberal harvest regulations and allows for more efficient gear, such as longlines, than the state sport fishery. The creation of the federal subsistence fishery likely contributed to the increase in nonsalmon fish harvests seen since the previous comprehensive subsistence harvest survey in the 1990s.

Large Land Mammals

Deer are the most locally available large land mammal in Southeast Alaska. Deer were harvested in every community in 2012, from an estimated 50 deer in Whale Pass to 470 deer in Hoonah (tables 2-13, 3-13, 4-13, 5-13, and 6-13). While other large land mammals were used in these 5 communities, only Whale Pass and Haines harvested any other species. Haines, being situated on the road system to the rest of Alaska and Canada, has easier access to a wider variety of large land mammals, such as moose, mountain goat, or caribou. Moose, elk, or mountain goat can be found in select areas of Southeast Alaska, none of which are in proximity to the study communities. Statewide, large land mammals account for 23% of rural residents' subsistence harvests (Fall 2014). In the study communities in 2012, large land mammal harvests constituted 13–32% of the overall harvest (Table 7-1). The lowest estimated deer harvests, by percentage of total harvest, were at Hoonah and Hydaburg, while Whale Pass showed the highest. There were no consistent trends exhibited among the study communities' deer harvests over time. Some communities documented a similar harvest to the previous comprehensive survey (Angoon and Haines), others a decrease (Hoonah), and still others an increase (Hydaburg and Whale Pass) (tables 2-28, 3-29, 4-29, 5-28, and 6-29). This is not surprising given the reliance on local areas for deer hunting and the effect weather has on populations of deer.

Deer populations in Southeast Alaska experience periodic declines attributable to severe winter weather and deep snow (Harper 2013). The winters of 2006–2007 and 2011–2012 were harsh, with record snowfall through much of Southeast Alaska, which led to dramatic declines in deer populations. The northern portion of Game Management Unit (GMU) 4, where Hoonah is located, experienced particularly high deer mortality during these years. Although populations of deer in this area have been rebounding since 2008, the doe harvest was restricted for 2010 and 2011. The study year was the first where the doe season was open again. In GMU 2, where Hydaburg and Whale Pass are located, mild winters that followed the severe years and low deer mortality from bears and wolves have resulted in an abundance of deer. Coupled with an extensive road system throughout Prince of Wales Island and favorable hunting weather, harvests in these communities increased compared to the previous survey in the 1990s.

Table 7-3.–Estimated per capita harvest of nonsalmon fish, and proportion of total harvest, Haines, 1983, 1987, 1996, and 2012; Hoonah, 1985, 1987, 1996, and 2012; Angoon, 1984, 1987, 1996, and 2012; Whale Pass, 1987, 1998, and 2012; and Hydaburg, 1987, 1997, and 2012.

	Haines		Hoonah		Angoon		Whale Pass		Hydaburg	
Study year	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest
1983	33.3	26.4%	–	–	–	–	–	–	–	–
1984	–	–	–	–	46.1	21.3%	–	–	–	–
1985	–	–	33.5	16.0%	–	–	–	–	–	–
1987	36.8	37.9%	78.3	20.3%	34.8	14.2%	37.3	20.8%	82.8	24.6%
1996	80.8	41.7%	66.9	18.0%	47.6	21.2%	–	–	–	–
1997	–	–	–	–	–	–	–	–	110.5	28.4%
1998	–	–	–	–	–	–	36.2	19.6%	–	–
2012	37.8	27.9%	120.4	35.1%	53.4	29.2%	75.6	30.6%	133.0	25.1%

Sources For 2012 data, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2016.

Note "–" indicates that no survey was completed for that study year.

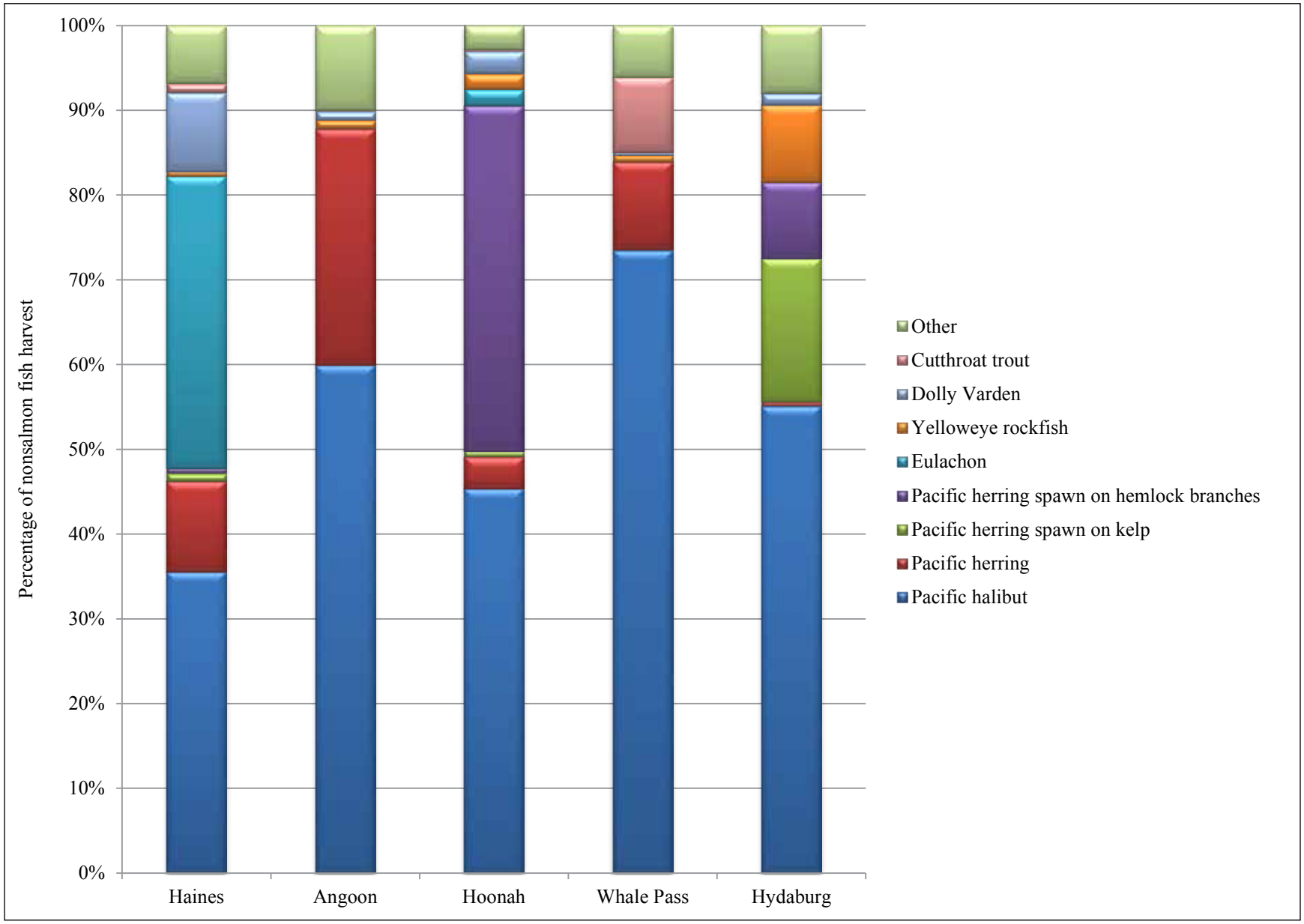


Figure 7-4.–Composition of nonsalmon fish harvest, study communities, 2012.

Marine Invertebrates

Statewide, marine invertebrates compose only 3% of rural residents' subsistence harvests (Fall 2014). Southeast Alaska has a long history of reliance on and use of marine invertebrates, however. In the 5 study communities, marine invertebrates contributed anywhere from 9–16% to the overall subsistence harvest in 2012 (Table 7-1). The abundance of shorelife has long been a mainstay of the diet in Southeast Alaska communities. With the exception of Dungeness crab, which is heavily harvested in every community, the marine invertebrate species harvested varied widely between communities (Figure 7-5; Table 7-4). Hoonah harvested the widest diversity of marine invertebrates (25 species), while Haines (6 species) and Whale Pass (6 species) harvested the fewest (tables 2-13, 3-13, 4-13, 5-13, and 6-13).

Except for Haines, all communities experienced a decline in marine invertebrate harvests from the mid-1990 household surveys (Table 7-4). Resource availability of shellfish was a concern voiced in most communities, especially because of increasing sea otter populations and competition with commercial harvesting. Sea otters were reintroduced to Southeast Alaska during the 1960s and the population has been growing quickly. The current population size is double what was estimated in 2003 (U.S. Fish and Wildlife Service 2014rev.). As sea otters consume the same marine invertebrates that humans depend upon, when they forage in the same areas the communities have historically used, they are seen as locally depleting these resources, especially crabs, clams, and cockles. This problem appears particularly acute in Whale Pass and Hydaburg, according to comments received during surveys, which is likely because the southern portion of Southeast Alaska currently has a greater abundance of sea otters. As sea otters continue expanding throughout Southeast Alaska, it is likely that the more northerly communities may also experience more effects.

Competition from commercial harvesters was another concern voiced in the communities with regard to marine invertebrate harvests, especially Dungeness crab. According to comments received during the surveys, commercial Dungeness crab vessels were placing their pots close to many of the communities, and in areas that residents consider their subsistence/personal use areas for crabbing. The commercial pots were seen as problematic either because of a negative effect on the resource or because the prevalence of the pots made it difficult for residents to set their own pots, navigate boats through the buoys, or land aircraft at floatplane docks. That all 5 communities submitted proposals to the 2015 Board of Fisheries shellfish meeting that would close small areas to commercial crabbing is evidence of the perceived severity of this problem.

In addition, there have been fears of paralytic shellfish poisoning (PSP), which have restricted harvest efforts for species such as clams in some households. The extent to which PSP concerns have negatively affected marine invertebrate harvests is difficult to quantify from the present survey. However, it would be worthwhile to further explore the dynamics of contamination of shellfish resources and effects on household harvests.

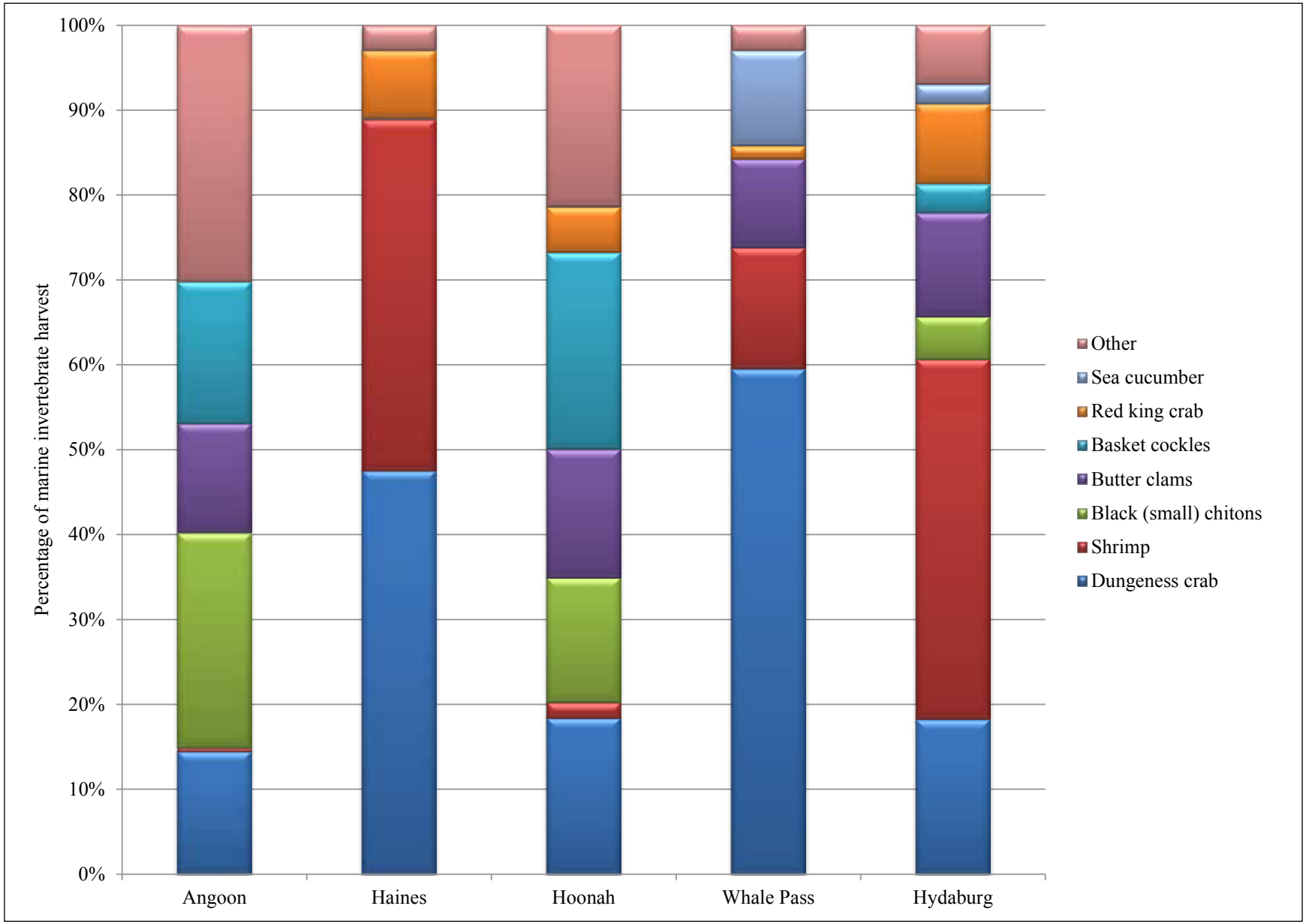


Figure 7-5.–Composition of marine invertebrate harvest, study communities, 2012.

Table 7-4.–Estimated per capita harvest of marine invertebrates, and proportion of total harvest, Haines, 1983, 1987, 1996, and 2012; Hoonah, 1985, 1987, 1996, and 2012; Angoon, 1984, 1987, 1996, and 2012; Whale Pass, 1987, 1998, and 2012; and Hydaburg, 1987, 1997, and 2012.

	Haines		Hoonah		Angoon		Whale Pass		Hydaburg	
Study year	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest	Per capita harvest (lb)	Percentage of total harvest
1983	2.8	2.2%	–	–	–	–	–	–	–	–
1984	–	–	–	–	13.0	6.0%	–	–	–	–
1985	–	–	22.4	10.7%	–	–	–	–	–	–
1987	4.0	4.2%	49.4	12.8%	25.9	10.6%	33.4	18.6%	51.5	15.3%
1996	10.4	5.4%	58.3	15.7%	30.1	13.4%	–	–	–	–
1997	–	–	–	–	–	–	–	–	102.2	26.3%
1998	–	–	–	–	–	–	56.5	30.6%	–	–
2012	11.9	8.8%	40.7	11.9%	22.4	12.3%	23.8	9.6%	83.2	15.7%

Sources For 2012 data, ADF&G Division of Subsistence household surveys, 2013; for previous study years, ADF&G Division of Subsistence Community Subsistence Information System (CSIS), accessed 2016.

Note "–" indicates that no survey was completed for that study year.

Overall Resource Use

When asked about overall resource use, few households in any community reported using more resources in 2012 than in recent years. The main reasons given for using fewer resources were generally the same in each community: less resource availability and no available time to harvest due to work or other commitments. Other reasons given in some communities were less sharing and family or personal issues. For those households that did report using more resources in 2012, the main reasons given were also similar in all communities, including increased effort, greater need, and more resources received. The similarity in reasons given for less or more use of resources speaks directly to the nature of subsistence harvesting and subsistence communities. As has been seen, within a community there are harvesting households and non-harvesting households. Those that do not harvest either do not use the resource, or depend on others to provide. Less sharing, which could occur for any number of reasons, would affect non-harvesting households' use the most. To harvest subsistence resources, a household must have available time, knowledge, and cash resources (in the form of fuel and equipment). A significant problem can occur in that to have those cash resources requires income-producing activity, which is not necessarily compatible with the needs of subsistence harvesting. Households can be faced with the dilemma of needing to work in order to produce income to assist with subsistence harvests, but this work then reduces the amount of time the household has to go and harvest these resources.

Demographics, Employment, and Income

As just discussed, the study communities share commonalities in resource harvest and use, and yet they are also diverse. This is true of population and wage employment as well. Haines has the largest population of the communities, while Whale Pass has the smallest (1,921 and 55 people, respectively) (Table 1-1). These 2 communities also have the smallest percentage of Alaska Native households. Angoon and Hydaburg are similarly sized with a similar percentage of Alaska Native population, while Hoonah is larger, but still substantially smaller than Haines. Whale Pass and Haines also have the lowest percentage of households with an Alaska-born head of household, while Angoon has the largest such percentage (Table 1-9).

In terms of wage employment and cash income, all 5 communities are quite similar to each other, though not to the rest of the state. The per capita income in Alaska in study year 2012 was $49,906 and in the nation was $44,200 (Fried 2015). Per capita incomes in the study community ranged from $9,161 in Angoon to $26,313 in Haines (Table 1-9). Comparing median household income, the picture does not change too drastically. The median household income in Alaska averaged over 2008–2012 was $69,917[1] and nationwide was $53,046[2]. Median incomes in the study communities ranged from $18,780 in Angoon to $59,722 in Haines (figures 2-4, 3-4, 4-4, 5-4, and 6-4). In general, rural Alaska has lower per capita and household incomes than the urban areas of the state due to limited employment opportunities. Outside of public sector jobs, most of the employment opportunities in the study communities are seasonal, dependent on the tourism sector or the agricultural (fishing and forestry) sector. Among the study communities, Haines has the largest per capita and average household income of the 5 communities, the second highest percentage of adults who work year-round, and the second highest average number of months employed (Table 1-9). In contrast, Angoon is similar to the other study communities in the average number of months employed and percentage of adults employed year–round (with the exception of Whale Pass), but Angoon has the lowest per capita and average household income; these incomes were considerably lower compared to the 4 other the study communities. These differences may be a reflection of the types of jobs that are available. The majority of earned income

1. American Community Survey. "Selected Economic Characteristics: 2008-2012 American Community Survey 5-Year Estimates—Alaska." U.S. Census Bureau American FactFinder dataset "2012 ACS 5-year estimates": http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_DP03&prodType=table (accessed October 2015).
2. American Community Survey. "Median Household Income in the Past 12 Months (In 2012 Inflation-Adjusted Dollars) Universe: Households: 2008-2012 American Community Survey 5-Year Estimates." U.S. Census Bureau American FactFinder dataset "2012 ACS 5-year estimates": http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_B19013&prodType=table (accessed October 2015).

in Angoon comes from the local government (such as schools, tribal organizations, and city government) as well as from services. This is in comparison to the other communities, like Haines, where the agricultural sector (fishing and forestry) or services (tourism) are the top sources of income.

Conclusions

This study documented the continuing importance of wild resources to the residents of the 5 Southeast Alaska communities of Haines, Angoon, Hoonah, Whale Pass, and Hydaburg. Harvest levels, as estimated in pounds usable weight per person, varied among the communities, but on average were higher than average harvest levels for all of rural Southeast Alaska and were about the same for statewide rural harvest levels. Most households used and harvested wild resources during the study year. Individual participation rates in the harvest and processing of wild resources were also significant with a majority of people in all communities participating to some extent. Harvests in these communities were diverse. For all communities combined, salmon, nonsalmon fish, and deer were the primary components of the harvest in terms of harvest weight. However, use and harvest of marine invertebrates—particularly Dungeness crab, shrimp, cockles, and clams—as well as vegetation—especially berries and seaweed—were high and harvests of these and other resources were important components of the overall harvest. In addition to their own harvests, most households also received wild resources and most households shared some of their own harvest through sharing networks.

While a long-term pattern of the harvest and use of wild resources in these communities can be discerned through the multiple comprehensive harvest surveys conducted throughout the last 30 years, many respondents reported that their use and harvest of wild resources has changed over their lifetimes and within the past 5 years. The southern communities of Hydaburg and Whale Pass show an overall increasing trend in per capita harvests since the 1980s, while the more centrally located communities of Angoon and Hoonah show a general decrease or flat trend in per capita harvests since 1987. The northernmost community of Haines shows the most variability in its per capita harvests. Regardless of these trends in overall harvests, each community has shown a change in the composition of their harvests. Generally the communities have shown less reliance on salmon and a growing usage of nonsalmon fish to meet subsistence needs over the course of the comprehensive surveys. Harvests of deer have generally decreased as well, while harvests of vegetation have grown in almost every community. Overall, the use of wild foods remains an important component of community life in Southeast Alaska.

REFERENCES CITED

Abrahamson, M.
2012 *Prince of Wales: Area redefines its economy after the timber decline*. Alaska Economic Trends 32(8), pages 10–13.

Ackerman, R.E.
1968 *The Archeology of the Glacier Bay Region, Southeastern Alaska, Final Report of the Archaeological Survey of the Glacier Bay National Monument. Report of Investigations, No. 44*. Washington State University: Pullman, WA.

ADF&G Chinook Salmon Research Team
2013 *Chinook salmon stock assessment and research plan, 2013*. Alaska Department of Fish and Game, Special Publication No. 13-01: Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/SP13-01.pdf

Alaska Consultants, Inc.
1976 *Angoon comprehensive development plan*. City of Angoon: Anchorage. https://www.commerce.alaska.gov/dcra/DCRARepoExt/RepoPubs/Plans/Angoon-CP-1976.pdf

Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs, Research and Analysis Section
2013 *Alaska fuel price report: current community conditions (January 2013)*. Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs, Research and Analysis Section: n.p. https://www.commerce.alaska.gov/web/Portals/4/pub/Fuel_Report_2013_January.pdf

Association of Canadian Universities for Northern Studies
2003 *Ethical principles for the conduct of research in the North*. The Association = L'Association: Ottawa. ISBN 0-921421-10-9

Bednarski, J., D.K. Harris, and S.C. Heinl
2014 *Northern Chatham Strait sockeye salmon: 2014 updated stock status, fishery management, and subsistence fisheries*. Alaska Department of Fish and Game Division of Commercial Fisheries, Regional Information Report No. 1J14-10: Douglas. http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2014.10.pdf

Bickel, G., M. Nord, C. Price, W. Hamilton, and J. Cook
2000 *Guide to Measuring Household Food Security, Revised 2000*. U.S. Department of Agriculture, Food and Nutrition Service: Alexandria, VA.

Black, L.
2004 *Russians in Alaska, 1732-1867*. University of Alaska Fairbanks: Fairbanks. ISBN 1-889963-04-6

Catton, T.
1985 *Land reborn: a history of administration and visitor use in Glacier Bay National Park and Preserve*. National Park Service: Anchorage. http://www.nps.gov/parkhistory/online_books/glba/adhi/

Coates, J.
2004 *Experience and expression of food security across cultures: practical implications for valid measurement*. Food and Nutrition Technical Assistance Project, FHI 360: Washington, D.C.

Coates, J., E.A. Frongillo, B.L. Rogers, P. Webb, P.E. Wilde, and R. Houser
2006 *Commonalities in the experience of household food insecurity across cultures: what are measures missing?* Journal of Nutrition 136(5), page 1438S–1448S.

Cobb, J.N.
1930 *Pacific Salmon Fisheries*. Government Printing Office: Washington, D.C.

Cochran, W.G.
1977 *Sampling techniques*, 3rd edition. John Wiley & Sons: New York.

Coleman-Jensen, A., M. Nord, M. Andrews, and S. Carlson
2012 *Household food security in the United States, 2011*. U.S. Department of Agriculture, Economic Research Service, Economic Research Report No. 141: Washington, D.C. http://www.ers.usda.gov/media/884525/err141.pdf

Conrad, S. and W. Davidson
2013 *Overview of the 2012 southeast Alaska and Yakutat commercial, personal use, and subsistence salmon fisheries*. Alaska Department of Fish and Game Division of Commercial Fisheries, Fishery Management Series Report No. 13-03: Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMR13-03.pdf

Dauenhauer, N. and R. Dauenhauer, editors
1987 *Haa shuká, our ancestors: Tlingit oral narratives*, v. 1 book in the Classics of Tlingit oral literature. University of Washington Press: Seattle. ISBN 0-295-96494-4

Ellanna, L.J. and G.K. Sherrod
1987 *Timber management and fish and wildlife use in selected Southeastern Alaska communities: Klawock, Prince of Wales Island, Alaska.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 126: Douglas. http://www.adfg.alaska.gov/techpap/tp126.pdf

Emmons, G.T.
1991 *The Tlingit Indians*, Edited with additions by Frederica de Laguna. Seattle: The University of Washington Press; New York: The American Museum of Natural History.

Fall, J.A.
2014 *Subsistence in Alaska: a year 2012 update*. Alaska Department of Fish and Game Division of Subsistence: Anchorage. http://www.adfg.alaska.gov/static/home/subsistence/pdfs/subsistence_update_2012.pdf

Fall, J.A. and D.S. Koster
2014 *Subsistence harvests of Pacific halibut in Alaska, 2012*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 388: Anchorage. http://www.adfg.alaska.gov/techpap/TP388.pdf

Fried, N.
2012 *Household and personal income: recent release covers range of rural areas*. Alaska Economic Trends 32(8), pages 14–15.

2015 *Per capita income tops $50,000*. Alaska Economic Trends 35(3), pages 16–19.

Frongillo, E.A. and S. Nanama
2006 *Development and validation of an experience-based measure of household food insecurity within and across seasons in northern Burkina Faso*. Journal of Nutrition 136(5), page 1409s–1419s.

Gilbertsen, N.
2004 *Southeast Alaska: a tale of two economies*. Alaska Economic Trends 24(3), pages 3–16.

Goldschmidt, W. and T.H. Haas
1998 *Haa aaní = Our land: Tlingit and Haida land rights and use*. University of Washington Press; Sealaska Heritage Foundation: Seattle : Juneau. ISBN 0-295-97640-3

Harper, P., editor
2013 *Deer management report of survey-inventory activities 1 July 2010–30 June 2012*. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2013-1: Juneau. https://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/mgt_rpts/deer_2013.pdf

Heaton, T.H.
2002 *On Your Knees Cave*. http://apps.usd.edu/esci/alaska/oykc.html

Hunn, E.S., D.R. Johnson, P.N. Russell, and T.F. Thornton
2002 *A study of traditional use of birds' eggs by the Huna Tlingit*. National Park Service, Pacific Northwest Cooperative Ecosystem Studies Unit, University of Washington College of Forest Resources, Technical Report NPS/CCSOU/NRTR-2002-02, NPS D-113: Seattle, WA. http://www.cfr.washington.edu/research.cesu/reports/j9w88050018_tech_report.pdf

Hunsinger, E., D. Howell, and E. Sandberg
2012 *Alaska's highly migratory population: annual moves to, from, and across the state*. Alaska Economic Trends 32(4), pages 4–13.

James, S.
1987 "*Glacier Bay History*" [in] *Haa shuká, our ancestors: Tlingit oral narratives*. University of Washington Press: Seattle, WA.

de Laguna, F.
1960 *The story of a Tlingit community: a problem in the relationship between archeological, ethnological, and historical methods*, Smithsonian Institution, Bureau of American Ethnology Bulletin 172. U.S. Government Printing Office: Washington, D.C.

Langdon, S.J.
1977 *Technology, ecology, and economy: fishing systems in Southeast Alaska*. PhD diss., Stanford University: Stanford, CA.

Mackovjak, J.R.
2010 *Tongass timber: a history of logging & timber utilization in southeast Alaska*. Forest History Society: Durham, NC. ISBN 978-0-89030-074-9

Marvin, A.
1987 "*Glacier Bay History*" [in] *Haa shuká, our ancestors: Tlingit oral narratives*. University of Washington Press: Seattle, WA.

Mathews, V., M. Kookesh, and R. Bosworth
1990 *Subsistence harvest and use of sea cucumber in Southeast Alaska. With specific reference to sea cucumber harvest and use by residents of Craig, Klawock and Hydaburg.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 190: n.p. http://www.subsistence.adfg.state.ak.us/TechPap/tp190.pdf

Melgar-Quinonez, H.R., A.C. Zubieta, B. MkNelly, A. Nteziyaremye, M.F.D. Gerardo, and C. Dunford
2006 *Household Food Insecurity and Food Expenditure in Bolivia, Burkina Faso, and the Philippines*. Journal of Nutrition 136(5), page 1431S–1437S.

Mills, D., V. Sumida, G. George, and M. Kookesh
1984 *Salmon use by the residents of the Chilkat and Chilkoot river drainages, 1983.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 95: Juneau. http://www.adfg.alaska.gov/techpap/tp095.pdf

Moser, J.F.
1899 *The Salmon and Salmon Fisheries of Alaska: Report of the Operations of the United States Fish Commission Steamer Albatross for the Year Ending June 30, 1898*. Government Printing Office: Washington, D.C.

Muir, J.
1993 *Letters from Alaska*. University of Wisconsin Press: Madison, WI. ISBN 978-0-299-13950-6

Nord, M., M. Andrews, and S. Carlson.
2008 *Household food security in the United States, 2007*. Department of Agriculture, Economic Research Service, ERR-66: Washington, D.C.

Orth, D.J.
1971rep. *[1967] Dictionary of Alaska Place Names*. United States Government Printing Office: Washington, D.C.

Oswalt, W.H.
1978 *This land was theirs: a study of North American Indians*, 3rd edition. Wiley: New York. ISBN 0-471-02342-6

Paul, O.E.
2009rev. *[1973] Game Transplants in Alaska*. Alaska Department of Fish and Game Division of Wildlife Conservation, Technical Bulletin No. 4, second edition: Juneau. http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/game_transplants_alaska.pdf

Pérez-Escamilla, R., A.M. Segall-Corrêa, L.K. Maranha, M. de F.A. Sampaio, L. Marín-León, and G. Panigassi
2004 *An adapted version of the U.S. Department of Agriculture food insecurity module is a valid tool for assessing household food insecurity in Campinas, Brazil*. Journal of Nutrition 134(8), pages 1923–1928.

Price, R.E.
1990 *The Great Father in Alaska : the case of the Tlingit and Haida salmon fishery*. First Street Press: Douglas.

Schroeder, R.F. and M. Kookesh
1990 *Subsistence harvest and use of fish and wildlife resources and the effects of forest management in Hoonah, Alaska.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 142: Juneau. http://www.adfg.alaska.gov/techpap/tp142.pdf

Sill, L.A. and T. Lemons
2014 *The subsistence harvest of Pacific herring spawn in Sitka Sound, Alaska, 2012*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 392: Juneau. http://www.adfg.alaska.gov/techpap/TP392.pdf

Swanton, J.R.
1908 *Social Condition, Beliefs, and Linguistic Relationship of the Tlingit Indians. Twenty-sixth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution.* Government Printing Office: Washington, D.C.

Swindale, A. and P. Bilinsky
2006 *Development of a universally applicable household food insecurity measurement tool: process, current status, and outstanding issues*. Journal of Nutrition 136(5), page 1449S–1452S.

Thornton, T.F., V. Butler, F. Funk, M. Moss, J. Hebert, and T. Elder
2010 *Herring synthesis: documenting and modeling herring spawning areas within socio-ecological systems over time in the southeastern Gulf of Alaska*. North Pacific Research Board, Final Report: Project No. 728: n.p. http://herringsynthesis.research.pdx.edu/final_docs/HerringSynthesisFINAL102710.pdf

Thornton, T.F., R.F. Schroeder, and R.G. Bosworth
1990 *Use of Sockeye Salmon at Sitkoh Bay, Alaska*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 174: Douglas. http://www.adfg.alaska.gov/techpap/tp174.pdf

Tikhmenev, P.A.
1978 *A history of the Russian-American Company*. University of Washington Press: Seattle, WA.

U.S. Census Bureau
n.d. *2010 Decennial Census and American Community Survey data*. U.S. Census Bureau American FactFinder Homepage: Washington, D.C. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

2011 *2010 census*. U.S. Census Bureau: Washington, D.C. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

U.S. Fish and Wildlife Service
2014rev. *Northern sea otter (Enhydra lutris kenyoni): Southeast Alaska stock*. U.S. Fish and Wildlife Service: n.p. http://www.fws.gov/alaska/fisheries/mmm/stock/Revised_April_2014_Southeast_Alaska_Sea_Otter_SAR.pdf

Victor-Howe, A.-M.
2008 *Subsistence harvests and trade of Pacific herring spawn on Macrocystis kelp in Hydaburg, Alaska.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 225: Juneau. http://www.adfg.alaska.gov/techpap/tp225.pdf

Villalobos Melendez, A. and G. Fay
2012 *Energizing Alaska: electricity around the state*, Research Summary No. 73. Institute of Social and Economic Research, University of Alaska Anchorage: Anchorage. http://www.iser.uaa.alaska.edu/Publications/2012_07-RS-EnergizingAlaska.pdf

Webb, P., J. Coates, E.A. Frongillo, B.L. Rogers, A. Swindale, and P. Bilinsky
2006 *Measuring household food insecurity: why it's so important and yet so difficult to do*. Journal of Nutrition 136(5), page 1404s–1408s.

Whale Pass Community Action Team
1997 *Whale Pass Economic Recovery Plan and Action Plan*. Whale Pass Community Action Team: Whale Pass. https://www.commerce.alaska.gov/dcra/DCRARepoExt/RepoPubs/Plans/WhalePass-OT-1997.pdf

Wolfe, R.J.
1987 *The super-household: specialization in subsistence economies*. Paper presented at the 14th annual meeting of the Alaska Anthropological Association, March 1987, Anchorage, Alaska. Alaska Department of Fish and Game Division of Subsistence: Juneau.

Wolfe, R.J., J. Bryant, L. Hutchinson-Scarbrough, and M. Kookesh
2013 *The subsistence harvest of harbor seals and sea lions in Southeast Alaska in 2012*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 383: Anchorage. http://www.adfg.alaska.gov/techpap/TP%20383.pdf

Wolfe, R.J., C.L. Scott, W.E. Simeone, C.J. Utermohle, and M.C. Pete.
2010 *The "super-household" in Alaska Native subsistence economies*. Final Report to the National Science Foundation, Project ARC 0352611.

Wunderlich, G.S. and J.L. Norwood.
2006 *Food insecurity and hunger in the United States: an assessment of the measure. Panel to review the U.S. Department of Agriculture's measurement of food insecurity and hunger*. Committee on National Statistics, Division of Behavioral and Social Sciences and Education, the National Academies Press: Washington, D.C.

APPENDIX A–SURVEY

COMPREHENSIVE WILD FOOD HARVEST SURVEY

HOONAH, ALASKA

January to December, 2012

This survey is used to estimate harvests of wild foods and to describe community subsistence economies. We will publish a summary report, and send it to all households in your community. We share 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:	**HOONAH**	**160**
RESPONDENT ID:		
INTERVIEWER:		
INTERVIEW DATE:		
START TIME:		
STOP TIME:		
DATA CODED BY:		
DATA ENTERED BY:		
SUPERVISOR:		



COOPERATING ORGANIZATIONS

DIVISION OF SUBSISTENCE
ALASKA DEPT OF FISH & GAME
1255 W 8TH STREET
JUNEAU, AK 99801

907-465-3617

HOUSEHOLD MEMBERS

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2012…
…who lived in your household?

ID#	IS THIS PERSON ANSWERING QUESTIONS *ON THIS SURVEY?* (circle)	MALE OR FEMALE? (circle)	ALASKA NATIVE? (circle)	IN WHAT YEAR WAS THIS PERSON BORN? (year)	WHERE WERE PARENTS LIVING WHEN THIS PERSON WAS BORN? (ak city or state)	HOW IS THIS PERSON RELATED TO HOUSEHOLD HEAD 1? (relation)	HOW MANY YEARS HAS THIS PERSON LIVED IN HOONAH? (number)
HEAD 1	Y N	M F	Y N				YRS
01							
Enter spouse or partner next. If household has a SINGLE HEAD, leave HEAD 2 blank.							
HEAD 2	Y N	M F	Y N				YRS
02							
Enter children (oldest to youngest), grandchildren, grandparents, brothers, sisters, or anyone else living full-time in this household.							
03	Y N	M F	Y N				YRS
04	Y N	M F	Y N				YRS
05	Y N	M F	Y N				YRS
06	Y N	M F	Y N				YRS
07	Y N	M F	Y N				YRS
08	Y N	M F	Y N				YRS
09	Y N	M F	Y N				YRS
10	Y N	M F	Y N				YRS
11	Y N	M F	Y N				YRS
12	Y N	M F	Y N				YRS
13	Y N	M F	Y N				YRS
14	Y N	M F	Y N				YRS
15	Y N	M F	Y N				YRS

PERMANENT HH MEMBERS: 01 **HOONAH: 160**

HOUSEHOLD MEMBER PARTICIPATION

HOUSEHOLD ID

Between JANUARY and DECEMBER, 2012…
…did this person...

PERSON	Fish		Large Land Mammals		Marine Mammals		Small Land Mammals Furbearers		Birds & Eggs		Plants/Berries/Wood	
ID# FROM	Fish	Process	Hunt	Process	Hunt	Process	Hunt/Trap	Process	Hunt/Gather	Process	Gather	Process
Page 2	*(circle)*	*(circle)*	*(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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	Y N	Y N

PERMANENT HH MEMBERS: 01 **HOONAH: 160**

FISHERY PARTICIPATION **HOUSEHOLD ID**

SALMON

Do members of your household USUALLY fish for SALMON for subsistence?..... Y N

If YES, continue this section. If NO go to PARTICIPATION questions below…

Last year, did your household get a subsistence salmon permit?..... Y N

If YES …how many members of your household were listed on the permit? (#)

…were there other people outside of your household listed on the permit?..... Y N

…if yes how many people besides those in your household were listed on the permit? (#)

…did you share your net with another household?..... Y N

... if yes how many other households? (#)

If NO …were you listed on another household's permit?..... Y N

Permit Number..... (#)

(write permit number above)

Does your household own a net for harvesting salmon?..... Y N

Does your household use the same location each year to harvest salmon?..... Y N

If yes, how long has your family used your current fishing location?..... (#)

If no, why has this changed over time? _____

PARTICIPATION IN FISHERIES AND COMMUNITY

Does your household own a boat?..... Y N

If YES, is it a commercial boat? Y N

If NO, what is the length of the boat in feet? 1. Less than 20' 2. From 20' to 24' 3. Greater than 24'

4. Other _____

What are the top 3 most important fish eaten in your household?

1 _____

2 _____

3 _____

Has a member of your household **ever** participated in a commercial fishery?..... Y N

Does the household member **currently** participate in a commercial fishery? Y N

If no longer participating, why not? _____

How much of your household income comes from commercial fishing?

0%	1-25%	26-50%	50-75%	76-100%
0	1	2	3	4

HARVESTS: COMMERCIAL SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household participate in commercial salmon fishing?..... Y N

IF NO, go to the next harvest page.

If YES, continue on this page…

Please estimate the number of salmon ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST FOR PERSONAL USE OR SHARING in 2012. INCLUDE the fish you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…		IN 2012, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2012, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
CHINOOK (KING) SALMON	Y N	Y N	IND	IND	IND		
113000000							
SOCKEYE (RED) SALMON	Y N	Y N	IND	IND	IND		
115000000							
COHO (SILVER) SALMON	Y N	Y N	IND	IND	IND		
112000000							
PINK (HUMPIES) SALMON	Y N	Y N	IND	IND	IND		
114000000							
CHUM (DOG) SALMON	Y N	Y N	IND	IND	IND		
111000000							
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		
	Y N	Y N	IND	IND	IND		

COMMERCIAL SALMON FISHING: 03 **HOONAH: 160**

HARVESTS: COMMERCIAL NON-SALMON FISHING

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL NON-SALMON FISHING ?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household participate in commercial non-salmon fishing?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate the number of commercially harvested non-salmon fish ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST FOR PERSONAL USE OR SHARING in 2012. INCLUDE the fish you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…		IN 2012, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2012, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
HALIBUT	Y N	Y N	LBS	LBS	LBS		
121800000							
BLACK ROCKFISH	Y N	Y N	IND	IND	IND		
122602000							
YELLOW EYE ROCKFISH	Y N	Y N	IND	IND	IND		
122606000							
PACIFIC COD	Y N	Y N	IND	IND	IND		
121004000							
TOM COD	Y N	Y N	IND	IND	IND		
121008000							
SABLEFISH *Black Cod*	Y N	Y N	IND	IND	IND		
122800000							
FLOUNDER	Y N	Y N	IND	IND	IND		
121400000							
LINGCOD	Y N	Y N	IND	IND	IND		
121606000							
HERRING	Y N	Y N	IND	IND	IND		
120200000							
HERRING SAC ROE	Y N	Y N	IND	IND	IND		
120304000							
HERRING SPAWN ON KELP	Y N	Y N	GAL	GAL	GAL		
120306000							
	Y N	Y N	IND	IND	IND		

COMMERCIAL NON-SALMON FISHING: 03 **HOONAH: 160**

HARVESTS: COMMERCIAL MARINE INVERTEBRATE HARVEST

HOUSEHOLD ID

Do members of your household USUALLY participate in COMMERCIAL MARINE INVERTEBRATE HARVEST ?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household participate in commercial marine invertebrate harvest?..... Y N

IF NO, go to the next harvest page.

If YES, continue on this page…

Please estimate the commercially harvested marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD REMOVED FROM COMMERCIAL HARVEST in 2012. INCLUDE the marine invertebrates you gave away, ate fresh, fed to dogs, lost to spoilage, caught as incidental catch while fishing for another species, or got by helping others. If harvested with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…		IN 2012, HOW MANY _____ WERE REMOVED FOR YOUR OWN USE?	IN 2012, HOW MANY _____ DID YOU REMOVE FROM THE CATCH & GIVE AWAY TO CREW OR OTHERS?		ID NUMBER FROM PAGE 2	
	COMMERCIAL FISH FOR _____?	CATCH AS INCIDENTAL CATCH _____?		CREW	OTHERS	PERMIT HOLDER	CREW
	(circle)	*(circle)*	*(number)*	*(number)*		*(number)*	*(number)*
DUNGENESS CRAB	Y N	Y N	IND	IND	IND		
501004000							
RED KING CRAB	Y N	Y N	IND	IND	IND		
501008080							
BROWN KING CRAB	Y N	Y N	IND	IND	IND		
501008040							
BLUE KING CRAB	Y N	Y N	GAL	GAL	GAL		
501008020							
TANNER CRAB	Y N	Y N	IND	IND	IND		
501012020							
SHRIMP	Y N	Y N	LBS	LBS	LBS		
503400000							
SEA CUCUMBER *Yein*	Y N	Y N	LBS	LBS	LBS		
503004000							
GEODUCKS	Y N	Y N	GAL	GAL	GAL		
501200000							
WEATHERVANE SCALLOPS	Y N	Y N	GAL	GAL	GAL		
502602000							
RED SEA URCHIN	Y N	Y N	GAL	GAL	GAL		
503204000							
OCTOPUS	Y N	Y N	LBS	LBS	LBS		
502200000							
	Y N	Y N					

During the last year, did your household fish COMMERCIALLY for any other kind of fish or seaweed?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

COMMERCIAL MARINE INVERTEBRATE HARVEST: 03 **HOONAH: 160**

HARVESTS: SALMON (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest SALMON for customary and traditional use ?.....Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST salmon?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many salmon ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012, including with a rod and reel. INCLUDE salmon you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD…					
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…HARVEST WITH A GILL NET OR SEINE?	…HARVEST WITH A DIPNET	…HARVEST BY TROLLING?	…HARVEST WITH ROD AND REEL?	…HARVEST WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*					*(ind, lbs)*
CHINOOK (KING) SALMON	Y N	Y N	Y N	Y N	Y N						IND
113000000											
SOCKEYE (RED) SALMON	Y N	Y N	Y N	Y N	Y N						IND
115000000											
COHO (SILVER) SALMON	Y N	Y N	Y N	Y N	Y N						IND
112000000											
PINK (HUMPIES) SALMON	Y N	Y N	Y N	Y N	Y N						IND
114000000											
CHUM (DOG) SALMON	Y N	Y N	Y N	Y N	Y N						IND
111000000											
UNKNOWN SALMON	Y N	Y N	Y N	Y N	Y N						IND
119000000											

These columns should include all the harvests: salmon HARVESTED by members of this household in 2012.

ASSESSMENTS: SALMON

Between JANUARY and DECEMBER, 2012…

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

Last year…
…did your household use LESS, SAME, or MORE salmon than in recent years?..... X L S M

X = do not use

If LESS or MORE…
WHY was your use different?..... 1 _____
2 _____

Last year…
…did your household GET ENOUGH salmon?..... Y N

If NO…
What KIND of salmon did you need?..... _____

How would you describe the impact to your household of not getting enough salmon last year?..... …minor? (1) …major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough salmon?..... Y N

IF YES…
What did your household do differently?..... 1 _____
2 _____

SALMON :04 **HOONAH: 160**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID

Do members of your household USUALLY harvest OTHER FISH ?.....Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST other fish?.....Y N

IF NO to both questions, go to the next harvest page.

If YES, continue on this page…

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012, including with a rod and reel. INCLUDE other fish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD…				
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…HARVEST WITH GILL NET OR SEINE?	…HARVEST WITH ROD AND REEL?	… HARVEST WITH LONGLINE OR SKATE?	… HARVEST WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*				*(ind, lbs)*
HALIBUT	Y N	Y N	Y N	Y N	Y N					LBS
121800000										
BLACK ROCKFISH	Y N	Y N	Y N	Y N	Y N					IND
122602000										
YELLOW EYE ROCKFISH	Y N	Y N	Y N	Y N	Y N					IND
122606000										
SABLEFISH *Black Cod*	Y N	Y N	Y N	Y N	Y N					IND
122800000										
PACIFIC COD	Y N	Y N	Y N	Y N	Y N					IND
121004000										
TOM COD	Y N	Y N	Y N	Y N	Y N					IND
121008000										
FLOUNDER	Y N	Y N	Y N	Y N	Y N					IND
121400000										
SOLE	Y N	Y N	Y N	Y N	Y N					IND
123600000										
LINGCOD	Y N	Y N	Y N	Y N	Y N					IND
121606000										
BUFFALO SCULPIN	Y N	Y N	Y N	Y N	Y N					IND
123002000										
RED IRISH LORD	Y N	Y N	Y N	Y N	Y N					IND
123006020										
SHARK	Y N	Y N	Y N	Y N	Y N					IND
123200000										

Continue on next page

These columns should include all the harvests: other fish HARVESTED by members of this household in 2012.

OTHER FISH: 06 **HOONAH: 160**

HARVESTS: OTHER FISH (NON-COMMERCIAL)

HOUSEHOLD ID [ ] DON

…continued

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012, including with a rod and reel. INCLUDE other fish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch. Do not include fish caught and released

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD…			
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	…HARVEST WITH GILL NET OR SEINE?	…HARVEST WITH ROD AND REEL?	…HARVEST WITH OTHER GEAR?	UNITS
	(circle)					*(number taken by each gear type)*			*(ind, lbs)*
SKATES	Y N	Y N	Y N	Y N	Y N				IND
123400000									
HERRING	Y N	Y N	Y N	Y N	Y N				GAL
120200000									
HERRING EGGS ON BRANCHES	Y N	Y N	Y N	Y N	Y N				GAL
120310000									
HERRING SPAWN ON KELP	Y N	Y N	Y N	Y N	Y N				GAL
120306000									
HERRING EGGS ON HAIR SEAWEED	Y N	Y N	Y N	Y N	Y N				GAL
120308000									
HERRING EGGS ON OTHER	Y N	Y N	Y N	Y N	Y N				GAL
120302000									
HOOLIGAN	Y N	Y N	Y N	Y N	Y N				GAL
120404000									
SILVER SMELT	Y N	Y N	Y N	Y N	Y N				GAL
120410000									
DOLLY VARDEN	Y N	Y N	Y N	Y N	Y N				IND
125006000									
RAINBOW TROUT	Y N	Y N	Y N	Y N	Y N				IND
126204000									
STEELHEAD	Y N	Y N	Y N	Y N	Y N				IND
126206000									
	Y N	Y N	Y N	Y N	Y N				IND
	Y N	Y N	Y N	Y N	Y N				IND
	Y N	Y N	Y N	Y N	Y N				IND

Continue on next page

These columns should include all the harvests: other fish HARVESTED by members of this household in 2012.

During the last year, did your household use any other kind of other fish?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

…continued

Between JANUARY and DECEMBER, 2012…

Last year…
…did your household use LESS, SAME, or MORE herring eggs than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... 1
2

Last year…
…did your household GET ENOUGH herring eggs?..... Y N

...where did your herring eggs come from?.....

Last year…
…did your household use LESS, SAME, or MORE rockfish than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... 1
2

To conclude our other fish section, I am going to ask a few general questions about other fish.
Last year…
…did your household use LESS, SAME, or MORE other fish than in recent years?..... X L S M
If LESS or MORE… *X = do not use*
WHY was your use different?..... 1
2

Last year…
…did your household GET ENOUGH other fish?..... Y N
If NO…
What KIND of other fish did you need?.....

How would you describe the impact to your household
of not getting enough other fish last year?..... …minor? (1) …major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough other fish?..... Y N
IF YES…
What did your household do differently?..... 1
2

HARVESTS: MARINE INVERTEBRATES/SHELLFISH

HOUSEHOLD ID

Do members of your household USUALLY harvest MARINE INVERTEBRATES/SHELLFISH ?.....Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST marine invertebrates/shellfish ?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many marine invertebrates/shellfish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE marine invertebrates/shellfish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST?	UNITS
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number taken)*	*(ind, lbs,gal)*
DUNGENESS CRAB	Y N	Y N	Y N	Y N	Y N		IND
501004000							
RED KING CRAB	Y N	Y N	Y N	Y N	Y N		IND
501008080							
BROWN KING CRAB	Y N	Y N	Y N	Y N	Y N		IND
501008040							
BLUE KING CRAB	Y N	Y N	Y N	Y N	Y N		IND
501008020							
TANNER CRAB	Y N	Y N	Y N	Y N	Y N		IND
501012020							
ABALONE	Y N	Y N	Y N	Y N	Y N		GAL
500200000							
RED (LARGE) CHITONS	Y N	Y N	Y N	Y N	Y N		GAL
500404000							
BLACK (SMALL) CHITONS	Y N	Y N	Y N	Y N	Y N		GAL
500408000							
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		
						These columns should include all the harvests: marine invertebrates/shellfish HARVESTED by members of this household in 2012.	

Continue on next page

MARINE INVERTEBRATES/SHELLFISH: 08 **HOONAH: 160**

HARVESTS: MARINE INVERTEBRATES/SHELLFISH

HOUSEHOLD ID

…continued

Please estimate how many marine invertebrates/shellfish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE marine invertebrates/shellfish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH					IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST?	UNITS
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number taken)*	*(ind, lbs,gal)*
BUTTER CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
500602000							
HORSE CLAMS (GAPER)	Y N	Y N	Y N	Y N	Y N		GAL
500606000							
LITTLENECK CLAMS *Steamers*	Y N	Y N	Y N	Y N	Y N		GAL
500608000							
RAZOR CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
500612000							
GEODUCKS	Y N	Y N	Y N	Y N	Y N		GAL
501200000							
UNKNOWN CLAMS	Y N	Y N	Y N	Y N	Y N		GAL
500699000							
BASKET COCKLES	Y N	Y N	Y N	Y N	Y N		GAL
500802000							
HEART COCKLES	Y N	Y N	Y N	Y N	Y N		GAL
500804000							
LIMPETS	Y N	Y N	Y N	Y N	Y N		GAL
501800000							
MUSSELS	Y N	Y N	Y N	Y N	Y N		GAL
502000000							
WEATHERVANE SCALLOPS	Y N	Y N	Y N	Y N	Y N		GAL
502602000							
ROCK SCALLOPS	Y N	Y N	Y N	Y N	Y N		GAL
502604000							
SHRIMP	Y N	Y N	Y N	Y N	Y N		LBS
503400000							
	Y N	Y N	Y N	Y N	Y N		
						These columns should include all the harvests: marine invertebrates/shellfish HARVESTED by members of this household in 2012.	

Continue on next page

…continued

Please estimate how many marine invertebrates/shellfish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE marine invertebrates/shellfish you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If fishing with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2012, HOW MANY _____ DID YOUR HOUSEHOLD HARVEST?	UNITS
	(circle)					*(number taken)*	*(ind, lbs,gal)*
OCTOPUS	Y N	Y N	Y N	Y N	Y N		LBS
502200000							
SQUID	Y N	Y N	Y N	Y N	Y N		LBS
503800000							
SEA CUCUMBER *Yein*	Y N	Y N	Y N	Y N	Y N		LBS
503004000							
GREEN SEA URCHIN	Y N	Y N	Y N	Y N	Y N		GAL
503202000							
RED SEA URCHIN	Y N	Y N	Y N	Y N	Y N		GAL
503204000							
PURPLE SEA URCHIN	Y N	Y N	Y N	Y N	Y N		GAL
503206000							
						These columns should include all the harvests: marine invertebrates/shellfish HARVESTED by members of this household in 2012.	

During the last year, did your household use any other kind of marine invertebrates/shellfish ?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

MARINE INVERTEBRATES/SHELLFISH

Between JANUARY and DECEMBER, 2012…

To conclude our marine invertebrates/shellfish section, I am going to ask a few general questions about marine invertebrates/shellfish

Last year…

…did your household use LESS, SAME, or MORE marine invertebrates/shellfish than in recent years?..... X L S M

X = do not use

If LESS or MORE…

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH marine invertebrates/shellfish?..... Y N

If NO…

What KIND of marine invertebrates/shellfish did you need?..... _____

How would you describe the impact to your household of not getting enough marine invertebrates/shellfish last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough marine invertebrates/shellfish?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID ____

Do members of your household USUALLY hunt for LARGE LAND MAMMALS?.....Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST large land mammals?.....Y N

IF NO to both questions, go to the next harvest page.

If YES, continue on this page…

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE large land mammals you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…						IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)						*(enter number by sex and month of take)*													*(ind)*
DEER	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
211200000						?														
211200001						M														
211200002						F														
211200009						?														
BLACK BEAR	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
210600000						?														
210600001						M														
210600002						F														
210600009						?														
BROWN BEAR	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
210800000						?														
210800001						M														IND
210800002						F														
210800009						?														
GOAT	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
211600000						?														
211600001						M														IND
211600002						F														
211600009						?														
MOOSE	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
211800000						?														
211800001						M														IND
211800002						F														
211800009						?														
	Y N	Y N	Y N	Y N	Y N	M														IND
						F														
						?														
						M														IND
						F														
						?														

Continue on next page

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

…continued

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE large land mammals you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH						IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS
	(circle)						*(enter number by sex and month of take)*													*(ind)*
ELK	Y N	Y N	Y N	Y N	Y N	M														
						F														IND
211400000						?														
211400002						M														
211400001						F														
211400009						?														
CARIBOU	Y N	Y N	Y N	Y N	Y N	M														
						F														IND
211000000						?														
211000001						M														
211000002						F														
211000009						?														
DALL SHEEP	Y N	Y N	Y N	Y N	Y N	M														
						F														IND
212200000						?														
212200001	Y N	Y N	Y N	Y N	Y N	M														
212200002						F														IND
212200009						?														
	Y N	Y N	Y N	Y N	Y N	M														
						F														IND
						?														

During the last year, did your household use any other kind of large land mammals?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

LARGE LAND MAMMALS

Between JANUARY and DECEMBER, 2012…

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

Last year…

…did your household use LESS, SAME, or MORE large land mammals than in recent years?..... X L S M

X = do not use

If LESS or MORE…

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH large land mammals?..... Y N

If NO…

What KIND of large land mammals did you need?..... _____

How would you describe the impact to your household of not getting enough large land mammals last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough large land mammals?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

LARGE LAND MAMMALS: 10 **HOONAH: 160**

HARVESTS: MARINE MAMMALS

HOUSEHOLD ID

Do members of your household USUALLY hunt for MARINE MAMMALS for subsistence?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST marine mammals?..... Y N

IF NO, go to the next harvest page.
If YES, continue on this page…

Please estimate how many marine mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVEST for subsistence use this year. INCLUDE marine mammals you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?														
	USE?	TRY TO HARVEST?	RECEIVE?	GIVE AWAY?	SEX	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS	HOW MANY ____ WERE USED FOR HIDE ONLY?	WERE LESS, SAME, OR MORE _____ AVAILABLE IN 2012, THAN IN RECENT YEARS?
	(circle)					*(enter number by sex and month of take)*													*(ind)*	*(#)*	*(circle)*
HARBOR SEAL	Y N	Y N	Y N	Y N	M														IND		L S M ?
300806040					F																
300806042					?																
300806041					M																
300806049					F																
STELLER SEA LION	Y N	Y N	Y N	Y N	?																
301200000					M														IND		L S M ?
301200002					F																
301200001					?																
301200009					M																
SEA OTTER	Y N	Y N	Y N	Y N	F																
301000000					?														IND		L S M ?
301000002					M																
301000001					F																
301000009					?																
FUR SEAL	Y N	Y N	Y N	Y N	M																
300804000					F														IND		L S M ?
300804001					?																
300804002					M																
300804009					F																
					?																
																					" ? " means "I don't know"

During the last year, did your household use any other kind of marine mammals?..... Y N
IF YES, enter the name in a blank row above, and answer the questions in that row.

MARINE MAMMALS

Between JANUARY and DECEMBER, 2012…

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

Last year…
…did your household use LESS, SAME, or MORE marine mammals than in recent years?..... X L S M
X = do not use
If LESS or MORE…
WHY was your use different?..... 1
2

Last year…
…did your household GET ENOUGH marine mammals?..... Y N
If NO…
What KIND of marine mammals did you need?.....

How would you describe the impact to your household of not getting enough 4 last year?..... ...minor? (1) ...major? (2) ...severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough ?..... Y N
IF YES…
What did your household do differently?..... 1
2

MARINE MAMMALS: 12 **HOONAH: 160**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

Do members of your household USUALLY hunt or trap for SMALL LAND MAMMALS OR FURBEARERS for subsistence?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST small land mammals or furbearers?..... Y N

IF NO to both questions, go to the next harvest page.

If YES, continue on this page…

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE small land mammals or furbearers you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												HOW MANY _____ WERE USED FOR FUR ONLY?	UNITS
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN		
	(circle)					*(enter number by month of take)*														*(ind)*
BEAVER	Y N	Y N	Y N	Y N	Y N															IND
220200000																				
COYOTE	Y N	Y N	Y N	Y N	Y N															IND
220400000																				
MARMOT	Y N	Y N	Y N	Y N	Y N															IND
221800000																				
MUSKRAT	Y N	Y N	Y N	Y N	Y N															IND
222400000																				
PORCUPINE	Y N	Y N	Y N	Y N	Y N															IND
222600000																				
SNOWSHOE HARE	Y N	Y N	Y N	Y N	Y N															IND
221004000																				
TREE SQUIRREL	Y N	Y N	Y N	Y N	Y N															IND
222804000																				
	Y N	Y N	Y N	Y N	Y N															IND
	Y N	Y N	Y N	Y N	Y N															IND
	Y N	Y N	Y N	Y N	Y N															IND

Continue on next page

SMALL LAND MAMMALS: 14 **HOONAH: 160**

HARVESTS: SMALL LAND MAMMALS OR FURBEARERS

HOUSEHOLD ID

…continued

Please estimate how many small land mammals or furbearers ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE small land mammals or furbearers you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?												HOW MANY _____ WERE USED FOR FUR ONLY?	UNITS
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN		
	(circle)					*(enter number by month of take)*														*(ind)*
WOLF	Y N	Y N	Y N	Y N	Y N															IND
223200000																				
MARTEN	Y N	Y N	Y N	Y N	Y N															IND
222000000																				
WEASEL	Y N	Y N	Y N	Y N	Y N															IND
223000000																				
LAND OTTER	Y N	Y N	Y N	Y N	Y N															IND
221200000																				
LYNX	Y N	Y N	Y N	Y N	Y N															IND
221600000																				
MINK	Y N	Y N	Y N	Y N	Y N															IND
222200000																				
WOLVERINE	Y N	Y N	Y N	Y N	Y N															IND
223400000																				
RED FOX	Y N	Y N	Y N	Y N	Y N															IND
220804000																				

During the last year, did your household use any other kind of small land mammals?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

SMALL LAND MAMMALS OR FURBEARERS

Between JANUARY and DECEMBER, 2012…

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

Last year…

…did your household use LESS, SAME, or MORE small land mammals than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH small land mammals?..... Y N

If NO…

What KIND of small land mammals did you need?..... _____

How would you describe the impact to your household of not getting enough small land mammals last year?..... ...minor? (1) ...major? (2) severe? (3)

SMALL LAND MAMMALS: 00 **HOONAH: 16**

HARVESTS: BIRDS

HOUSEHOLD ID

Do members of your household USUALLY hunt for BIRDS?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST birds?..... Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many birds ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE birds you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD ? *(Number of birds)*											
						Winter			Spring			Summer		Fall		Winter	
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
	(circle)																	
MALLARD	Y N	Y N	Y N	Y N	Y N													
410214000																		
TEAL	Y N	Y N	Y N	Y N	Y N													
410232990																		
NORTHERN PINTAIL	Y N	Y N	Y N	Y N	Y N													
410220000																		
LONG-TAILED DUCK (OLDSQUAW)	Y N	Y N	Y N	Y N	Y N													
410218000																		
GOLDENEYE	Y N	Y N	Y N	Y N	Y N													
410210990																		
SCAUP (BLUE-BILL)	Y N	Y N	Y N	Y N	Y N													
410226990																		
WIGEON	Y N	Y N	Y N	Y N	Y N													
410236020																		
DUCKS	Y N	Y N	Y N	Y N	Y N													
410200000																		
CANADA GOOSE	Y N	Y N	Y N	Y N	Y N													
410404990																		
WHITE-FRONTED GEESE	Y N	Y N	Y N	Y N	Y N													
410410000																		
GEESE	Y N	Y N	Y N	Y N	Y N													
410400000																		
SWAN	Y N	Y N	Y N	Y N	Y N													
410699000																		
CRANE	Y N	Y N	Y N	Y N	Y N													
410802000																		

During the last year, did your household use any other kind of birds?..... Y N
IF YES, enter the name in a blank row above, and answer the questions in that row.

HARVESTS: BIRDS (CONT...)

HOUSEHOLD ID

IF NO to both questions, go to the next harvest page.
If YES, continue on this page...

Please estimate how many birds (cont...) ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE birds (cont...) you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH...					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST? *(number of birds)*												
						Winter			Spring			Summer		Fall		Winter		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN
	(circle)																	
PTARMIGAN	Y N	Y N	Y N	Y N	Y N													
421804000																		
GROUSE	Y N	Y N	Y N	Y N	Y N													
421802000																		
SEABIRDS	Y N	Y N	Y N	Y N	Y N													
411299000																		
BLACK OYSTERCATCHER	Y N	Y N	Y N	Y N	Y N													
411004000																		
LARGE SHOREBIRD	Y N	Y N	Y N	Y N	Y N													
411099020																		
SMALL SHOREBIRD	Y N	Y N	Y N	Y N	Y N													
411099010																		
LOONS	Y N	Y N	Y N	Y N	Y N													
411216000																		
	Y N	Y N	Y N	Y N	Y N													
	Y N	Y N	Y N	Y N	Y N													

During the last year, did your household use any other kind of bird eggs?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

OTHER BIRDS

Between JANUARY and DECEMBER, 2012...

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

Last year...

...did your household use LESS, SAME, or MORE other birds than in recent years?..... X L S M

If LESS or MORE... *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year...

...did your household GET ENOUGH other birds?..... Y N

If NO...

What KIND of other birds did you need?..... _____

How would you describe the impact to your household of not getting enough other birds last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough other birds?..... Y N

IF YES...

What did your household do differently?..... _____ 1

_____ 2

HARVESTS: BIRD EGGS

HOUSEHOLD ID

Do members of your household USUALLY look for BIRD EGGS?.....Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO GATHER bird eggs?.....Y N

IF NO to both questions, go to the next harvest page.
If YES, continue on this page…

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD GATHERED in 2012. INCLUDE bird eggs you gave away, ate fresh, lost to spoilage, or got by helping others. If looking with others, report ONLY YOUR SHARE of the eggs.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number)*	*(each, gallons, buckets, etc.)*
MALLARD EGGS	Y N	Y N	Y N	Y N	Y N		
430214000							
DUCK EGGS	Y N	Y N	Y N	Y N	Y N		
430299000							
CANADA GOOSE EGGS	Y N	Y N	Y N	Y N	Y N		
430404990							
GOOSE EGGS	Y N	Y N	Y N	Y N	Y N		
430499000							
SWAN EGGS	Y N	Y N	Y N	Y N	Y N		
430699000							
CRANE EGGS	Y N	Y N	Y N	Y N	Y N		
430802000							
PTARMIGAN EGGS	Y N	Y N	Y N	Y N	Y N		
431804990							
UNKNOWN GROUSE EGGS	Y N	Y N	Y N	Y N	Y N		
431802990							
GLAUCOUS WINGED GULL EGGS	Y N	Y N	Y N	Y N	Y N		
431212040							
TERN EGGS	Y N	Y N	Y N	Y N	Y N		
431226990							

BIRD EGGS: 15 **HOONAH: 160**

HARVESTS: BIRD EGGS

HOUSEHOLD ID

…continued

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD GATHERED in 2012. INCLUDE bird eggs you gave away, ate fresh, lost to spoilage, or got by helping others. If looking with others, report ONLY YOUR SHARE of the eggs.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number)*	*(each, gallons, buckets, etc.)*
SEABIRD EGGS	Y N	Y N	Y N	Y N	Y N		
431299000							
BLACK OYSTERCATCHER EGGS	Y N	Y N	Y N	Y N	Y N		
431004000							
LARGE SHOREBIRD EGGS	Y N	Y N	Y N	Y N	Y N		
431099020							
SMALL SHOREBIRD EGGS	Y N	Y N	Y N	Y N	Y N		
431099010							
LOON EGGS	Y N	Y N	Y N	Y N	Y N		
431216990							
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		

During the last year, did your household use any other kind of bird eggs?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

EGGS

Between JANUARY and DECEMBER, 2012…

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

Last year…

…did your household use LESS, SAME, or MORE eggs than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH eggs?..... Y N

If NO…

What KIND of eggs did you need?..... _____

How would you describe the impact to your household of not getting enough eggs last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough eggs?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

HARVESTS: PLANTS AND BERRIES INCLUDING WOOD

HOUSEHOLD ID _____

Do members of your household USUALLY harvest PLANTS AND BERRIES INCLUDING WOOD?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST plants and berries including wood?..... Y N

IF NO to both questions, go to the next harvest page.

If YES, continue on this page…

Please estimate how many plants and berries including wood ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2012. INCLUDE plants and berries including wood you gave away, ate fresh, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the catch.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2011, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number)*	*(each, gallons, buckets, etc.)*
BLUEBERRY	Y N	Y N	Y N	Y N	Y N		
601002000							
CLOUD BERRY	Y N	Y N	Y N	Y N	Y N		
601016000							
LOW BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		
601004000							
HIGH BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		
601006000							
CURRANTS	Y N	Y N	Y N	Y N	Y N		
601012000							
ELDERBERRY	Y N	Y N	Y N	Y N	Y N		
601008000							
GOOSEBERRY	Y N	Y N	Y N	Y N	Y N		
601010000							
HUCKLEBERRY	Y N	Y N	Y N	Y N	Y N		
601014000							
NAGOONBERRY	Y N	Y N	Y N	Y N	Y N		
601018000							
RASPBERRY	Y N	Y N	Y N	Y N	Y N		
601020000							
SALMONBERRY	Y N	Y N	Y N	Y N	Y N		
601022000							
SOAPBERRY	Y N	Y N	Y N	Y N	Y N		
601024000							
STRAWBERRY	Y N	Y N	Y N	Y N	Y N		
601026000							
THIMBLEBERRY	Y N	Y N	Y N	Y N	Y N		
601028000							
WATERMELON BERRY *Twisted Stalk Berry*	Y N	Y N	Y N	Y N	Y N		
601032000							

Continued on next page.

HARVESTS: PLANTS AND BERRIES INCLUDING WOOD

HOUSEHOLD ID

…continued

Please estimate how many plants and berries including wood ALL MEMBERS OF YOUR HOUSEHOLD HARVESTING in 2012. INCLUDE plants and berries including wood you gave away, ate fresh, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?		
	(circle)					*(number)*	*(each, gallons, buckets, etc.)*
BEACH ASPARAGUS	Y N	Y N	Y N	Y N	Y N		
602002000							
GOOSE TONGUE	Y N	Y N	Y N	Y N	Y N		
602004000							
DEVILS CLUB	Y N	Y N	Y N	Y N	Y N		
602012000							
FIDDLEHEAD FERNS	Y N	Y N	Y N	Y N	Y N		
602014000							
LABRADOR TEA *(Hudson Bay Tea)*	Y N	Y N	Y N	Y N	Y N		
602018000							
INDIAN RICE *(Chocolate Lily)*	Y N	Y N	Y N	Y N	Y N		
602020000							
MINT	Y N	Y N	Y N	Y N	Y N		
602022000							
NETTLE	Y N	Y N	Y N	Y N	Y N		
602016000							
SALMONBERRY SHOOTS	Y N	Y N	Y N	Y N	Y N		
602024000							
SKUNK CABBAGE	Y N	Y N	Y N	Y N	Y N		
602026000							
SOURDOCK	Y N	Y N	Y N	Y N	Y N		
602028000							
SPRUCE TIPS	Y N	Y N	Y N	Y N	Y N		
602030000							
WILD CELERY	Y N	Y N	Y N	Y N	Y N		
602032000							
WILD PARSLEY	Y N	Y N	Y N	Y N	Y N		
602034000							
WILD ROSE HIPS	Y N	Y N	Y N	Y N	Y N		
602036000							

Continued on next page.

PLANTS AND BERRIES: 17 **HOONAH: 160**

HARVESTS: PLANTS AND BERRIES INCLUDING WOOD

HOUSEHOLD ID

…continued

Please estimate how many plants and berries including wood ALL MEMBERS OF YOUR HOUSEHOLD HARVESTING in 2012. INCLUDE plants and berries including wood you gave away, ate fresh, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	IN 2012 DID MEMBERS OF YOUR HH… USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	IN 2012, HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	UNITS/NOTES
	(circle)					*(number)*	*(each, gallons, buckets, etc.)*
WILD RHUBARB	Y N	Y N	Y N	Y N	Y N		
602006000							
WILD SWEET POTATO	Y N	Y N	Y N	Y N	Y N		
602008000							
UNKNOWN GREENS FROM LAND	Y N	Y N	Y N	Y N	Y N		
602048000							
UNKNOWN MUSHROOMS	Y N	Y N	Y N	Y N	Y N		
602040000							
BARK	Y N	Y N	Y N	Y N	Y N		
604002000							
ROOTS	Y N	Y N	Y N	Y N	Y N		
604004000							
WOOD *(Firewood)*	Y N	Y N	Y N	Y N	Y N		
604000000							
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		
	Y N	Y N	Y N	Y N	Y N		

During the last year, did your household use any other kind of plants and berries?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

PLANTS AND BERRIES

Between JANUARY and DECEMBER, 2012…

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

Last year…

…did your household use LESS, SAME, or MORE plants and berries than in recent years?..... X L S M

If LESS or MORE… *X = do not use*

WHY was your use different?..... _____ 1

_____ 2

Last year…

…did your household GET ENOUGH plants and berries?..... Y N

If NO…

What KIND of plants and berries did you need?..... _____

How would you describe the impact to your household of not getting enough plants and berries last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough plants and berries?..... Y N

IF YES…

What did your household do differently?..... _____ 1

_____ 2

PLANTS AND BERRIES: 17 **HOONAH: 160**

HARVESTS: SEAWEED

HOUSEHOLD ID

Do members of your household USUALLY harvest SEAWEED?..... Y N

Between JANUARY and DECEMBER, 2012…
…Did members of your household USE or TRY TO HARVEST seaweed?..... Y N

IF NO to both questions, go to the next harvest page.

If YES, continue on this page…

Please estimate how much seaweed ALL MEMBERS OF YOUR HOUSEHOLD HARVESTING in 2012. INCLUDE seaweed you gave away, ate fresh, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	IN 2012 DID MEMBERS OF YOUR HH…					IN 2012, HOW MUCH _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST?	IN 2012, HOW MUCH _____ WAS USED FOR FERTELIZER ONLY?	UNITS/NOTES
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	*(number)*	*(number)*	*(ea. Gal. bckt. Etc…)*
	(circle)							
BLACK SEAWEED	Y N	Y N	Y N	Y N	Y N			
603002000								
BULL KELP	Y N	Y N	Y N	Y N	Y N			
603004000								
RED SEAWEED	Y N	Y N	Y N	Y N	Y N			
603006000								
SEA RIBBONS	Y N	Y N	Y N	Y N	Y N			
603008000								
GIANT KELP (MACROCYSTIS)	Y N	Y N	Y N	Y N	Y N			
603010000								
ALARIA	Y N	Y N	Y N	Y N	Y N			
603012000								
UNKNOWN SEAWEED	Y N	Y N	Y N	Y N	Y N			
603099000								
	Y N	Y N	Y N	Y N	Y N			

During the last year, did your household use any other kind of seaweed?..... Y N

IF YES, enter the name in a blank row above, and answer the questions in that row.

SEAWEED

Between JANUARY and DECEMBER, 2012…

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

Last year…
…did your household use LESS, SAME, or MORE seaweed than in recent years?..... X L S M

X = do not use

If LESS or MORE…
WHY was your use different?..... _____ 1
_____ 2

Last year…
…did your household GET ENOUGH seaweed?..... Y N

If NO…
What KIND of seaweed did you need?..... _____

How would you describe the impact to your household of not getting enough seaweed last year?..... ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough seaweed?..... Y N

IF YES…
What did your household do differently?..... _____ 1
_____ 2

PLANTS AND BERRIES: 17 **HOONAH: 160**

ASSESMENTS

HOUSEHOLD ID

SUBSISTENCE ASSESSMENTS: ALL RESOURCES

To conclude our subsistence harvest section, I am going to ask a few general questions about ALL SUBSISTENCE RESOURCES.

Last year…

…did your household use LESS, SAME, or MORE subsistence resources than in recent years?..... X L S M

X = do not use

If LESS or MORE…

WHY was your use different?..... 1 _____

2 _____

Last year…

…did your household GET ENOUGH subsistence resources?..... Y N

If NO…

What KIND of subsistence resources did you need?..... _____

Overall why do you think you did not get enough subsistence foods?..... 1 _____

2 _____

How would you describe the impact to your household of not getting enough all resources last year?..... ...not noticable? (0) ...minor? (1) ...major? (2) severe? (3)

Did your household do anything DIFFERENTLY because you did NOT get enough all resources?..... Y N

IF YES…

What did your household do differently?..... 1 _____

2 _____

HEALTH IMPACT ASSESSMENTS

Now I am going to ask about the foods members of your household normally EAT. Our purposes are:

…to identify subsistence foods most commonly eaten, AND

…to identify other foods most commonly eaten IF people cannot get subsistence foods.

(circle ONE response)

In a normal week, how many times a day on average are subsistence foods such as salmon, non-salmon fish, moose, caribou, birds, etc. served in your household?	NONE Don't use (0)	LESS than once a day (1)	About ONCE a day (2)	2 OR 3 times a day (3)	3 OR MORE times a day (4)

If this household does NOT USE subsistence foods, go to the next page.

Otherwise, continue below…

Please list the TOP FIVE SUBSISTENCE FOODS members of your household eat on a regular basis. Include subsistence foods that may not be available now, but are important at other times of the year. Please list most important foods first.

	Subsistence Food 1	*Subsistence Food 2*	*Subsistence Food 3*	*Subsistence Food 4*	*Subsistence Food 5*
TOP FIVE SUBSISTENCE FOODS					

If your household CANNOT GET SUBSISTENCE FOODS, what do members of your household eat instead? Include alternate foods that may not be available now, but are important at other times of the year. Please list most important alternative foods first.

	Other Food	*Other Food*	*Other Food*	*Other Food*	*Other Food*
OTHER FOODS (1 TO 5)					
OTHER FOODS (6 TO 10)					

ADDITIONAL ASSESSMENTS

Have you noticed personally, or heard elders speak of…____...during your lifetime?

…changes in the **CYCLES OF ANIMALS**… Y N

If YES, what changes? _____

When did you (or others) begin noticing these changes? _____

…changes in **ENVIRONMENTAL PATTERNS**… Y N

If YES, what changes? _____

When did you (or others) begin noticing these changes? _____

ASSESSMENTS: 66 **HOONAH: 160**

FOOD SECURITY

HOUSEHOLD ID

The questions on this page have been asked all over the United States to find out if Americans have enough to eat. We would like to know if people in your community have enough to eat. I am going to read you FIVE statements about different food situations. Please tell me whether EACH statement was true for your household (HH) in the last 12 months.

Think about all your household's food, both subsistence and store-bought…

STATEMENT 1. We WORRIED that our household would not have ENOUGH FOOD.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... **[1]** Often True
[2] Sometimes True
[3] Never True — HH2 — if Y

STATEMENT 2. The food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... **[1]** Often True
[2] Sometimes True
[3] Never True — HH3 — if Y

STATEMENT 3. We could not get the foods we wanted to eat because of a LACK OF RESOURCES.

By "lack of resources," we mean your household did NOT have what you needed to hunt, fish, gather, or buy food.

In the last 12 months, was this OFTEN true, SOMETIMES true, or NEVER true for your household?..... **[1]** Often True
[2] Sometimes True
[3] Never True — HH4 — if Y

Now, think just about your household's SUBSISTENCE food…

STATEMENT 4. The SUBSISTENCE food we had just did not last, and we could not get more.

In the last 12 months, was this ever true for your household?..... N Y ?

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

Now, think just about your household's STORE-BOUGHT food…

STATEMENT 5. The STORE-BOUGHT food we had just did not last, and we could not get more.

In the last 12 months, was this ever true for your household?..... N Y ?

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

If Statements 1, 2, AND 3 were ALL "NO," go to the next page.

If any ONE of Statements 1, 2, OR 3 was "YES," continue on this page…

In the last 12 months, did you or other adults in your household ever CUT THE SIZE OF YOUR MEALS OR SKIP MEALS because the HH could not get the food that was needed?..... N Y ? — AD1

If YES, how often did this happen?..... **[1]** Almost every month
[2] Some months…
[3] Only 1 or 2 months

In the last 12 months, did you or other adults in your household ever EAT LESS THAN YOU FELT YOU SHOULD because the HH could not get the food that was needed?..... N Y ? — AD2

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

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

In the last 12 months, did you or other adults in your household ever NOT EAT FOR A WHOLE DAY because there was not enough food?..... N Y ? — AD5

If YES, how often did this happen?..... **[1]** Almost every month
[2] Some months…
[3] Only 1 or 2 months

FOOD SECURITY: 201 **HOONAH: 160**

EMPLOYMENT — FOR EACH PERSON IN THE HOUSEHOLD, 16 YEARS OLD AND OLDER — HOUSEHOLD ID

Between JANUARY and DECEMBER, 2012…
…Did any members of your household earn money from a JOB or from SELF EMPLOYMENT?..... Y N

For each member of this household born before 1997, please list EACH JOB held between JANUARY and DECEMBER, 2012.
For household members who did not have a job, write: "RETIRED," "UNEMPLOYED," "STUDENT," "HOMEMAKER," etc.
There should be at least ONE ROW for each member of this household born BEFORE 1997.

We ask about jobs and income because we are trying to understand all parts of the community economy. Many people use wages from jobs to support subsistence activities. If one person has more than one job, list each job on a separate line. (One person may have several lines.)

REMEMBER COMMERCIAL FISHING & TRAPPING 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 2012, 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 2012, HOW MUCH DID HE/SHE EARN IN THIS JOB?
	person	*job title*	*employer, SIC*	*community*	*circle each month worked*	*circle one*					*gross income*
1ST JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
1 6		SOC	SIC			SCHEDULE					
2ND JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
2 6		SOC	SIC			SCHEDULE					
3RD JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
3 6		SOC	SIC			SCHEDULE					
4TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
4 6		SOC	SIC			SCHEDULE					
5TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
5 6		SOC	SIC			SCHEDULE					
6TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
6 6		SOC	SIC			SCHEDULE					
7TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
7 6		SOC	SIC			SCHEDULE					
8TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
8 6		SOC	SIC			SCHEDULE					
9TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
9 6		SOC	SIC			SCHEDULE					
10TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
10 6		SOC	SIC			SCHEDULE					
11TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
11 6		SOC	SIC			SCHEDULE					
12TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
12 6		SOC	SIC			SCHEDULE					

If a person is SELF-EMPLOYED (selling carvings, crafts, bread, etc), list that as a separate job. Enter "sewer," "carver," "baker," etc. as JOB TITLE. Work schedule usually will be "ON CALL." For gross income from self employment ("profit"), enter revenue MINUS expenses.

If a person is UNEMPLOYED, specify retired, unemployed, disabled, student, or homemaker as the JOB TITLE.

TRAPPING for barter or sale IS a job.
COMMERCIAL FISHING is recorded as "ON-CALL, VARIES" for work schedule.

WORK SCHEDULE
1 - Fulltime (35+ hours/week)
2 - Parttime (<35 hours/week)
3 - Shift (2 wks on/2 off, etc.)

GROSS INCOME is the same as TAXABLE INCOME on a W-2 form.

EMPLOYMENT: 23 **HOONAH: 160**

OTHER INCOME

THIS PAGE IS ONLY FOR INCOME THAT IS NOT EARNED FROM WORKING **HOUSEHOLD ID** _____

Between JANUARY and DECEMBER, 2012…
…Did any members of your household receive a dividend from the Permanent Fund or a Native Corporation?..... Y N

IF NO, go to the next section on this page.
If YES, continue below…

		Did anyone in your household receive income from _____ in 2012? *circle one*	TOTAL amount all members of your household received from _____ in 2012. *dollars*
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND	Y N	$ /YR
	32		
	NATIVE CORPORATION DIVIDENDS	Y N	$ /YR
	13		

Alaska PFD IN 2012
1 PFD = $878
2 PFDs = $1,756
3 PFDs = $2,634
4 PFDs = $3,512
5 PFDs = $4,390
6 PFDs = $5,268
7 PFDs = $6,146
8 PFDs = $7,024
9 PFDs = $7,902
10 PFDs = $8,780
11 PFDs = $9,658
12 PFDs = $10,536

Regional Corporations	***Dividend***
*Sealaska (**April**)*	
Urban & At-Large……..	*$ 8.45*
Village Stock……	*$ 1.25*
Life Estate Stock: Left out Descendent, Elder…….	*$ 1.25*
*Sealaska (**December**)*	
Urban & At-Large……..	*$ 7.72*
Village Stock……	*$ 0.96*
Life Estate Stock: Left out Descendent, Elder…….	*$ 0.96*
Village Corporation(s)	***Dividend***

Between JANUARY and DECEMBER, 2012…
…Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next page.
If YES, continue below…

		Received? *circle one*	Total Amount? *dollars*
EMPLOYMENT RELATED	UNEMPLOYMENT	Y N	$ /YR
	12		
	WORKERS' COMP	Y N	$ /YR
	8		
	SOCIAL SECURITY	Y N	$ /YR
	7		
	PENSION & RETIREMENT	Y N	$ /YR
	5		
	DISABILITY	Y N	$ /YR
	31		
	VETERANS ASSISTANCE	Y N	$ /YR
	35		
ENTITLEMENTS	FOOD STAMPS (QUEST CARD)	Y N	$ /YR
	11		
	ADULT PUBLIC ASSISTANCE	Y N	$ /YR
	3		
	SUPPLEMENTAL SECURITY INCOME (SSI)	Y N	$ /YR
	10		
STATE BENEFITS	ENERGY ASSISTANCE	Y N	$ /YR
	9		
	ALASKA SENIOR BENEFITS (LONGEVITY)	Y N	$ /YR
	6		

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

** per diem covers travel expenses, and is not counted as income.*

Scratch paper for calculations

for _____ weeks =
for _____ months =

for _____ weeks =
for _____ months =

Senior benefits of $125 per month for 12 months = $1,500 per elder
Senior benefits of $175 per month for 12 months = $2,100 per elder
Senior benefits of $250 per month for 12 months = $3,000 per elder

OTHER INCOME: 24 **HOONAH: 160**

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 **HOONAH: 160**

APPENDIX B–COOPERATIVE AGREEMENT LETTERS

COOPERATIVE AGREEMENT

COOP-13-063

Between

Alaska Department of Fish and Game
Division of Subsistence

And

Hydaburg Cooperative Association

This agreement is made and entered into by and between the Alaska Department of Fish and Game (ADF&G) Division of Subsistence, 802 3rd Street, Douglas, Alaska 99824-5412 and the Hydaburg Cooperative Association, 8th Street Extension, P.O. Box 349, Hydaburg, Alaska, 99922 to assist in the implementation of comprehensive subsistence household surveys.

ADF&G enters into this agreement under authority of AS 16.05.050(12) and AS 36.30.850(C).

I. PURPOSE OF THE AGREEMENT

ADF&G Division of Subsistence is responsible for providing comprehensive information on the customary and traditional uses of wild resources in Alaska. The Division furnishes information to meet resource management goals, aid regulation development, facilitate collaborative agreements, and describe the unique role of wild resources in the lives, communities and cultures of Alaskans. ADF&G Division of Subsistence has funding available to update subsistence information in Southeast Alaska for the calendar year 2012. ADF&G will enter into an agreement with the Hydaburg Cooperative Association (HCA) to assist in the collection of data in Hydaburg. The project leader for ADF&G Division of Subsistence is Lauren Sill (P.O. Box 110024, Juneau, Alaska, 99811; 907-465-3617).

II. OBJECTIVES

STATEMENT OF GENERAL UNDERSTANDING AND AGREEMENT

ADF&G Division of Subsistence agrees to collaborate with HCA in the surveying of households in Hydaburg about the harvest of wild resources. Under this agreement, ADF&G will provide funds for the salary of locally hired staff. Local hires will assist ADF&G staff in data collection, conducting 51 face-to-face and telephone interviews.

III. SPECIFIC CONDITIONS AND EXPECTATIONS OF THE AGREEMENT

To accomplish the objectives, ADF&G will complete the following tasks:

1. Three ADF&G Subsistence Resource Specialists will travel to Hydaburg in March 2013 upon commencement of this agreement. The purpose of the trip will be to consult with the HCA staff, review the project objectives, methods, and expectations, and begin surveys.

2. One ADF&G specialist will be available telephonically after the initial survey period to provide advice and assistance to the HCA staff.

The Hydaburg Cooperative Association will complete the following tasks:

1. Provide at least three research assistants, preferably with survey experience, to assist the ADF&G specialists. The project will be conducted based on the following schedule:

    a) March 4, 2013 – Attend a survey and mapping training session
    b) By March 5, 2013 – Begin face-to-face surveys, including mapping
    c) By March 14, 2013 – complete 51 household surveys and maps

2. Provide a report on progress of the work, and billing for services to the Division of Subsistence, Alaska Department of Fish and Game, P.O. Box 110024, Juneau Alaska, 99811-5526 promptly at the end of each period.

3. Provide by April 30, 2013 a final billing and project performance report.

IV. QUALIFICATIONS

It is mutually agreed that:

a. Nothing in this agreement shall obligate either party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.

b. Each party agrees that it will be responsible for its own acts and omissions including those of its officers, agents, and employees, and each party shall indemnify, defend and hold harmless the other, to the maximum extent allowed by law, from any claim or liability, of whatever kind, including attorney fees, for damages to property or injury to persons occasioned by each party's own acts or omissions in connection with the terms of this agreement.

c. Each party will comply with all applicable laws, regulations, and executive orders relative to the Equal Employment Opportunity and the Americans with Disabilities Act of 1990.

d. Nothing herein is intended to conflict with federal, state, or local laws or regulations. If there are conflicts, this agreement will be amended at the first opportunity to bring it into conformance with conflicting laws or regulations.

e. Policy and position announcements relating specifically to this cooperative program may be made only by mutual consent of the agencies.

f. The effective date of this agreement shall be March 1, 2013.

g. The termination of this agreement shall be March 31, 2013. However, either signatory agency may terminate its participation in this agreement by providing to the other party notice in writing 30 days in advance of the date on which its termination becomes effective.

h. Any material published or data released as a result of this cooperative agreement may be reproduced, with credit given to the agency responsible for the development of the material.

i. A free exchange of research and assessment of data among organizations is encouraged and is necessary to insure the success of these cooperative studies.

j. This agreement may be revised with mutual consent by issuance of a written amendment signed and dated by both parties.

k. This agreement is governed by the laws of the State of Alaska. By signature, all parties acknowledge this governance and waive any and all implied or expressed sovereignty. All actions concerning this agreement shall be brought in the Superior Court of the State of Alaska.

l. Agents and employees of the Hydaburg Cooperative Association act in an independent capacity and are not officers, employees, or agents of the State of Alaska in the performance of this agreement.

V. PAYMENT

HCA will be paid for assisting ADF&G researchers in surveying households in Hydaburg, including HCA researchers attending a paid training session and completing 51 surveys and maps, not more than a total of $2,898. Payment is based on a cost of $100 training stipend and $40/survey for personnel conducting the survey plus 20% HCA administrative costs.

HCA will submit a breakdown of expenses and justification for expenditures along with monthly progress reports at the end of each collection period to the ADF&G, who will remit payment within 30 days of receipt of the invoice. Actual expenses submitted will not exceed $2,898.

VI. BUDGET

Line 100 (Personnel)	
Survey implementation (51 surveys at $40/survey)	$2,040.00
Survey quality assurance ($25/researcher)	$75.00
Training stipend ($100/researcher)	$300.00
Subtotal	$2,415.00
Administrative fee (20%)	$483.00
Total	**$2,898.00**

VII. APPROVING SIGNATURES

Hydaburg Cooperative Association

President

3-5-13
Date

Alaska Department of Fish and Game

for Hazel Nelson, Director
Division of Subsistence

3 | 12 | 2013
Date

Sunny Haight
Director
Division of Administrative Services

3/15/13
Date

Hoonah Indian Association
P.O. Box 602
Hoonah, AK 99829-0602
Phone (907) 945-3545 Fax (907) 945-3703

September 16, 2011

Meredith Marchioni
Subsistence Resource Specialist III
Division of Subsistence
Alaska Department of Fish and Game
333 Raspberry Road
Anchorage, AK 99518-1599

Re: subsistence research project proposal

Dear Ms. Marchioni,

Hoonah Indian Association would very much like to participate in the proposed subsistence research project that the Division of Subsistence of the Alaska Department of Fish and Game would like to begin in fall 2012 in our community. The proposed survey updating subsistence use in Hoonah would be of tremendous benefit to the community, especially as changes in demography, transportation technology, ecology and other cultural, social, and economic factors continue to place competing demands on the finite resources.

As we understand the goal of proposed study, it will provide an up to date, descriptive analysis of historic and contemporary subsistence salmon harvests by residents of Hoonah and a description of the human and ecological variables affecting these subsistence fisheries. Hoonah Indian Association can assist in the interview and survey process to be conducted with community residents. The tribes' participation will improve participant receptivity to the sharing information regarding their subsistence harvest of sockeye salmon, harvest and use areas, and resource ecology observations.

Hoonah Indian Association is prepared to assist the project be successful by providing input into topics covered in the household surveys; as well as locating and coordinating local researchers to help with the project during the relatively short two (2) week window in April 2013. Hoonah Indian Association looks forward to working together with Alaska Department of Fish and Game Division of Subsistence on this important data collection project. Please advise how we might facilitate the project in our community

Sincerely

Robert Starbard

Digitally signed by Robert Starbard
DN: cn=Robert Starbard, o=Hoonah Indian Association, ou=Tribal Administrator, email=rstarbard@hiatribe.org, c=US
Date: 2011.09.27 09:13:30 -08'00'

Robert Starbard
Tribal Administrator

APPENDIX C–CONVERSION FACTORS

The following table presents the conversion factors used in determining how many pounds were harvested of each resource. For instance, if respondents reported harvesting 3 gal of silver smelt, the quantity would be multiplied by the appropriate conversion factor (in this case 9) to show a harvest of 27 lb of silver smelt.

Resource name	Reported units	Conversion to pounds
Chum salmon	Individual	6.73
Coho salmon	Individual	4.79
Chinook salmon	Individual	9.39
Pink salmon	Individual	2.61
Sockeye salmon	Individual	4.63
Unknown salmon	Individual	5.02
Pacific herring	Gallons	6.00
Pacific herring roe (eggs)/unspecified	Gallons	7.00
Pacific herring sac roe	Gallons	7.00
Pacific herring spawn (eggs) on kelp	Gallons	7.00
Pacific herring roe (eggs) on hair seaweed	Gallons	7.00
Pacific herring roe (eggs) on hemlock branches	Gallons	7.00
Eulachon (hooligan, candlefish)	Gallons	9.00
Silver smelt	Gallons	9.00
Sea bass	Individual	1.00
Pacific (gray) cod	Individual	3.20
Pacific tomcod	Individual	0.50
Unknown cod	Individual	3.00
Flounder	Individual	3.00
Kelp greenling	Individual	1.00
Lingcod	Individual	6.30
Unknown greenling	Individual	1.00
Pacific halibut	Pounds	1.00
Black rockfish	Individual	2.00
Yelloweye rockfish	Individual	3.00
Quillback rockfish	Individual	3.00
Brown rockfish	Individual	3.00
Unknown rockfish	Individual	3.00
Sablefish (black cod)	Individual	4.00
Bullhead sculpin	Individual	1.00
Buffalo sculpin	Individual	1.00
Red Irish lord	Individual	1.00
Unknown shark	Individual	9.00
Skates	Individual	5.00
Sole	Individual	1.00
Arctic char	Individual	2.70
Dolly Varden	Individual	3.00

-continued-

Conversion factors.–Page 2 of 5.

Resource name	Reported units	Conversion to pounds
Arctic grayling	Individual	1.00
Cutthroat trout	Individual	1.50
Rainbow trout	Individual	2.00
Steelhead	Individual	8.50
Unknown trout	Individual	1.63
Black bear	Individual	58.00
Brown bear	Individual	150.00
Caribou	Individual	130.00
Deer	Individual	80.00
Elk	Individual	225.00
Mountain goat	Individual	102.00
Moose	Individual	400.00
Dall sheep	Individual	104.00
Beaver	Individual	8.75
Coyote	Individual	20.00
Red fox	Individual	0.00
Snowshoe hare	Individual	2.00
North American river (land) otter	Individual	0.00
Lynx	Individual	4.00
Marmot	Individual	1.50
Marten	Individual	0.50
Mink	Individual	0.00
Muskrat	Individual	2.40
Porcupine	Individual	6.00
Red (tree) squirrel	Individual	0.50
Northern flying squirrel	Individual	0.50
Least weasel	Individual	0.00
Gray wolf	Individual	0.00
Wolverine	Individual	0.00
Fur seal	Individual	0.00
Harbor seal	Individual	84.00
Sea otter	Individual	19.50
Steller sea lion	Individual	200.00
Bufflehead	Individual	0.40
Canvasback	Individual	2.00
Goldeneye	Individual	0.80
Mallard	Individual	1.00
Long-tailed duck	Individual	1.34
Northern pintail	Individual	1.00
Scaup	Individual	1.00
Surf scoter	Individual	1.58
Unknown scoter	Individual	1.58
Teal	Individual	0.52
Wigeon	Individual	1.31

-continued-

Conversion factors.–Page 3 of 5.

Resource name	Reported units	Conversion to pounds
Unknown duck	Individual	1.08
Unknown Canada/cackling goose	Individual	3.42
White-fronted goose	Individual	4.24
Unknown geese	Individual	3.43
Unknown swan	Individual	8.00
Sandhill crane	Individual	8.40
Black oystercatcher	Individual	0.57
Unknown shorebirds – small	Individual	0.10
Unknown shorebirds – large	Individual	0.50
Unknown loon	Individual	5.44
Unknown seabird	Individual	0.50
Grouse	Individual	1.00
Ptarmigan	Individual	1.00
Duck eggs	Individual	0.30
Mallard eggs	Individual	0.12
Unknown duck eggs	Individual	0.11
Unknown Canada/cackling goose eggs	Individual	0.27
Unknown goose eggs	Individual	0.28
Unknown swan eggs	Individual	0.60
Sandhill crane eggs	Individual	0.63
Black oystercatcher eggs	Individual	0.10
Unknown shorebird eggs – small	Individual	0.05
Unknown shorebird eggs – large	Individual	0.10
Glaucous-winged gull eggs	Individual	0.25
Unknown gull eggs	Individual	0.25
Unknown loon eggs	Individual	0.30
Unknown tern eggs	Individual	0.04
Unknown seabird eggs	Individual	0.30
Unknown grouse eggs	Individual	0.05
Unknown ptarmigan eggs	Individual	0.05
Abalone	Gallons	2.10
Red (large) chitons	Gallons	3.00
Black (small) chitons	Gallons	7.50
Unknown chitons	Gallons	6.18
Butter clams	Gallons	4.45
Horse clams	Gallons	4.45
Pacific littleneck clams (steamers)	Gallons	3.00
Pinkneck clams	Gallons	3.00
Razor clams	Gallons	4.00
Unknown clams	Gallons	4.24
Basket cockles	Gallons	3.11
Heart cockles	Gallons	3.11
Unknown cockles	Gallons	3.11
Dungeness crab	Individual	1.32

-continued-

Conversion factors.–Page 4 of 5.

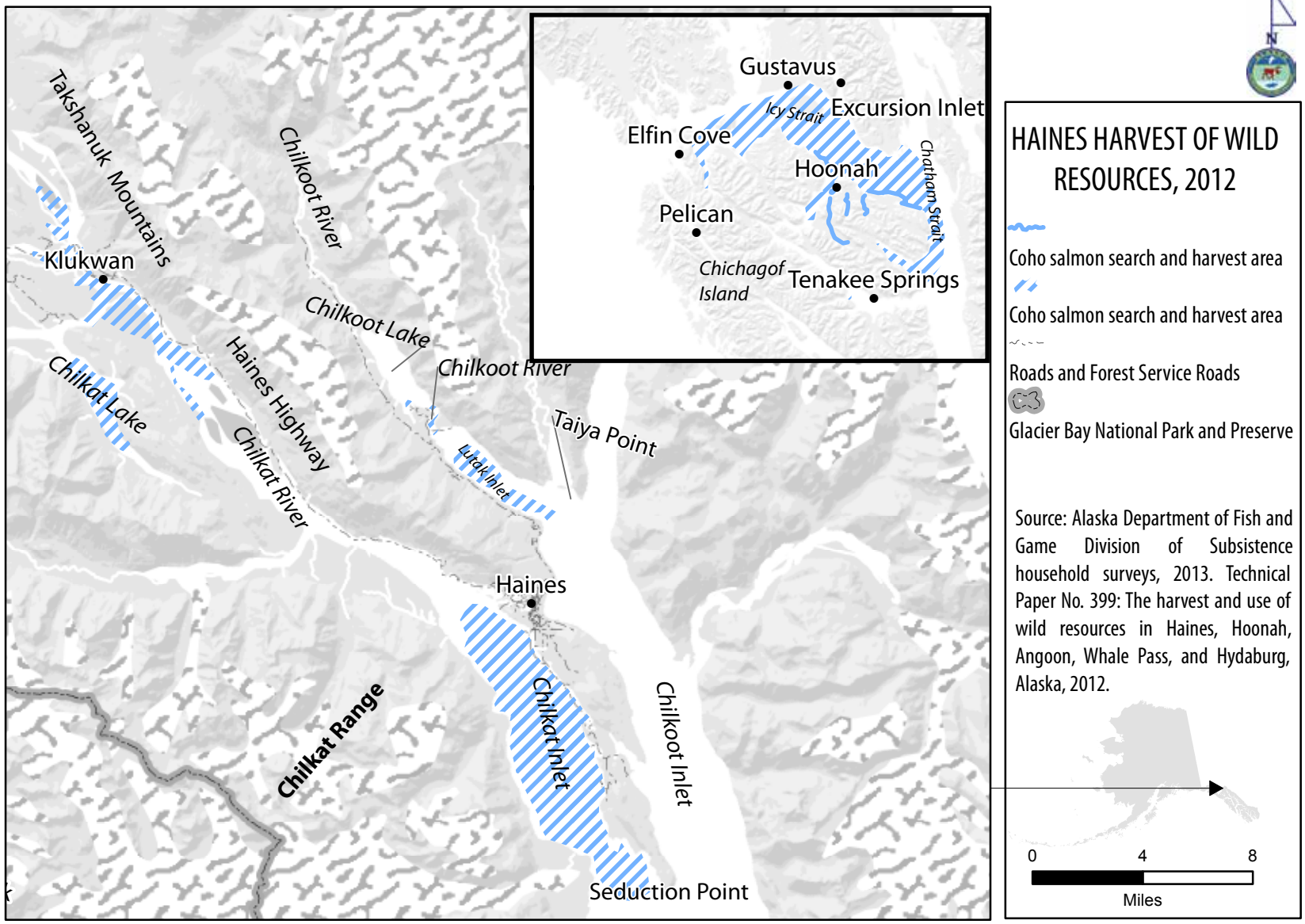
Resource name	Reported units	Conversion to pounds
Blue king crab	Individual	5.37
Brown king crab	Individual	5.38
Red king crab	Individual	5.38
Tanner crab	Individual	2.00
Geoducks	Gallons	3.00
Limpets	Gallons	1.50
Mussels	Gallons	1.50
Octopus	Pounds	1.00
Weathervane scallops	Gallons	1.65
Rock scallops	Gallons	1.63
Unknown scallops	Gallons	1.63
Sea cucumber	Gallons	2.00
Green sea urchin	Gallons	2.00
Red sea urchin	Gallons	1.70
Purple sea urchin	Gallons	1.70
Shrimp	Gallons	2.00
Squid	Gallons	8.00
Blueberry	Gallons	4.00
Lowbush cranberry	Gallons	4.00
Highbush cranberry	Gallons	4.00
Crowberry	Gallons	4.00
Elderberry	Gallons	4.00
Gooseberry	Gallons	4.00
Currants	Gallons	4.00
Huckleberry	Gallons	4.00
Cloudberry	Gallons	4.00
Nagoonberry	Gallons	4.00
Raspberry	Gallons	4.00
Salmonberry	Gallons	4.00
Soapberry	Gallons	4.00
Strawberry	Gallons	4.00
Thimbleberry	Gallons	4.00
Twisted stalk berry (watermelon berry)	Gallons	4.00
Other wild berry	Gallons	4.00
Beach asparagus	Gallons	1.00
Goose tongue	Gallons	1.00
Wild rhubarb	Gallons	1.00
Wild potato	Gallons	1.00
Other beach greens	Gallons	1.00
Devil's club	Gallons	1.00
Fiddlehead ferns	Gallons	1.00
Nettle	Gallons	1.00
Hudson's Bay (Labrador) tea	Gallons	1.00
Indian rice	Gallons	1.00

-continued-

Conversion factors.–Page 5 of 5.

Resource name	Reported units	Conversion to pounds
Mint	Gallons	1.00
Salmonberry shoots	Gallons	1.00
Skunk cabbage	Gallons	1.00
Dandelion greens	Gallons	1.00
Sourdock	Gallons	1.00
Spruce tips	Gallons	1.00
Wild celery	Gallons	1.00
Wild parsley	Gallons	1.00
Wild rose hips	Gallons	4.00
Yarrow	Gallons	1.00
Other wild greens	Gallons	1.00
Unknown mushrooms	Gallons	1.00
Sorrel	Gallons	1.00
Fireweed	Gallons	1.00
Plantain	Gallons	1.00
Black seaweed	Gallons	2.50
Bull kelp	Gallons	4.00
Red seaweed	Gallons	3.00
Sea ribbons	Gallons	3.00
Giant kelp	Gallons	4.00
Alaria	Gallons	3.00
Red laver (dulse)	Gallons	3.00
Bladder wrack	Gallons	3.00
Seaweed/kelp used for fertilizer	Gallons	0.00
Unknown seaweed	Gallons	3.00
Wood	Cord	0.00
Spruce pitch	Gallons	0.00
Spruce	Cord	0.00
Cottonwood	Cord	0.00
Alder	Cord	0.00

APPENDIX D–MAPS OF SEARCH AND HARVEST LOCATIONS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Haines
Chilkat Range
Chilkat Inlet
Chilkoot Inlet
Seduction Point
Gustavus
Icy Strait
Excursion Inlet
Elfin Cove
Hoonah
Chatham Strait
Pelican
Chichagof Island
Tenakee Springs
N
HAINES HARVEST OF WILD RESOURCES, 2012
Coho salmon search and harvest area
Coho salmon search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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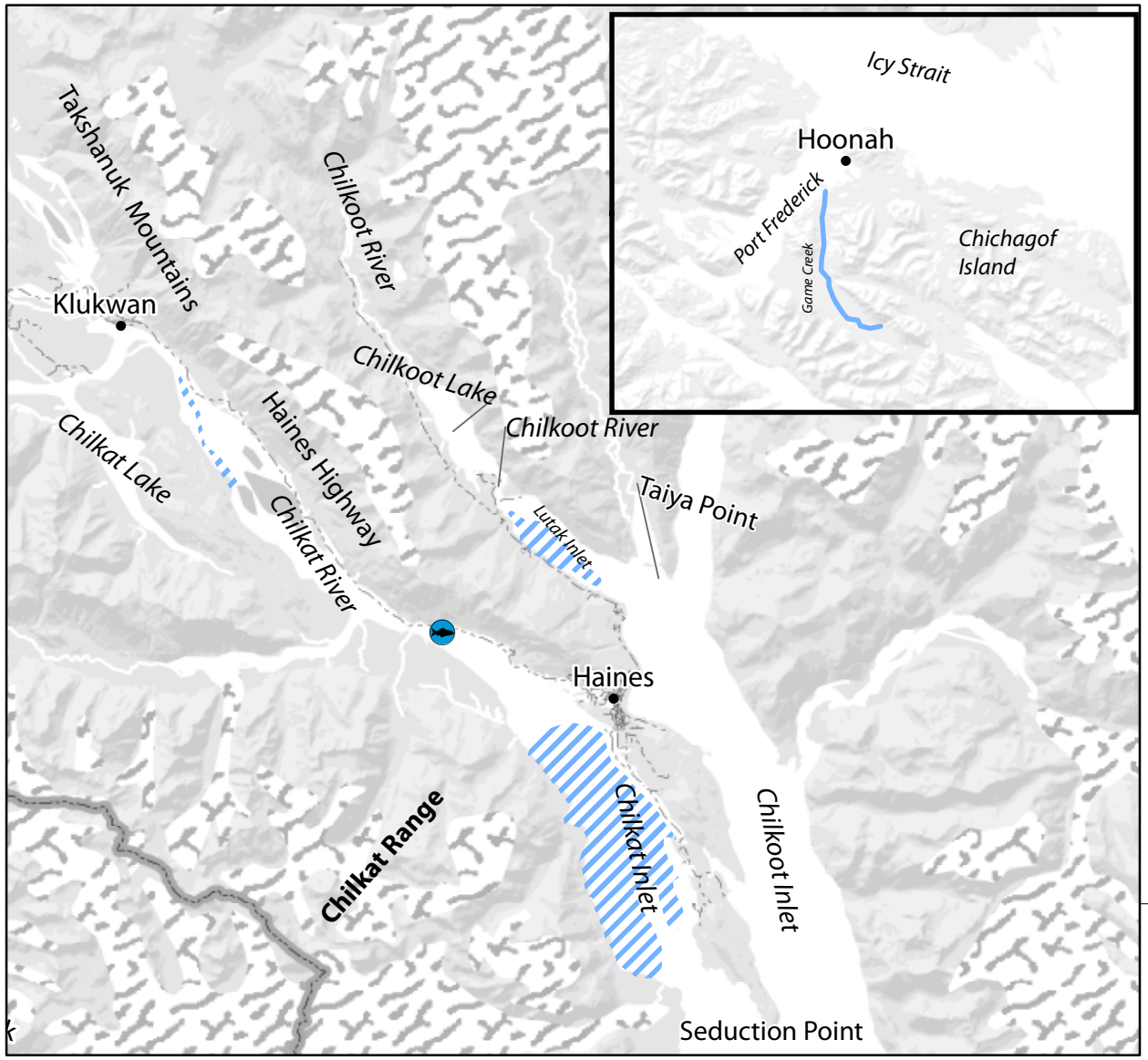


HAINES HARVEST OF WILD RESOURCES, 2012

Chum salmon harvest area

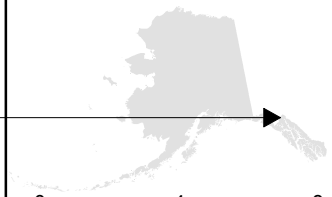
Chum salmon search and harvest area

Chum salmon search and harvest area

Roads and Forest Service Roads

Glacier Bay National Park and Preserve

Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.



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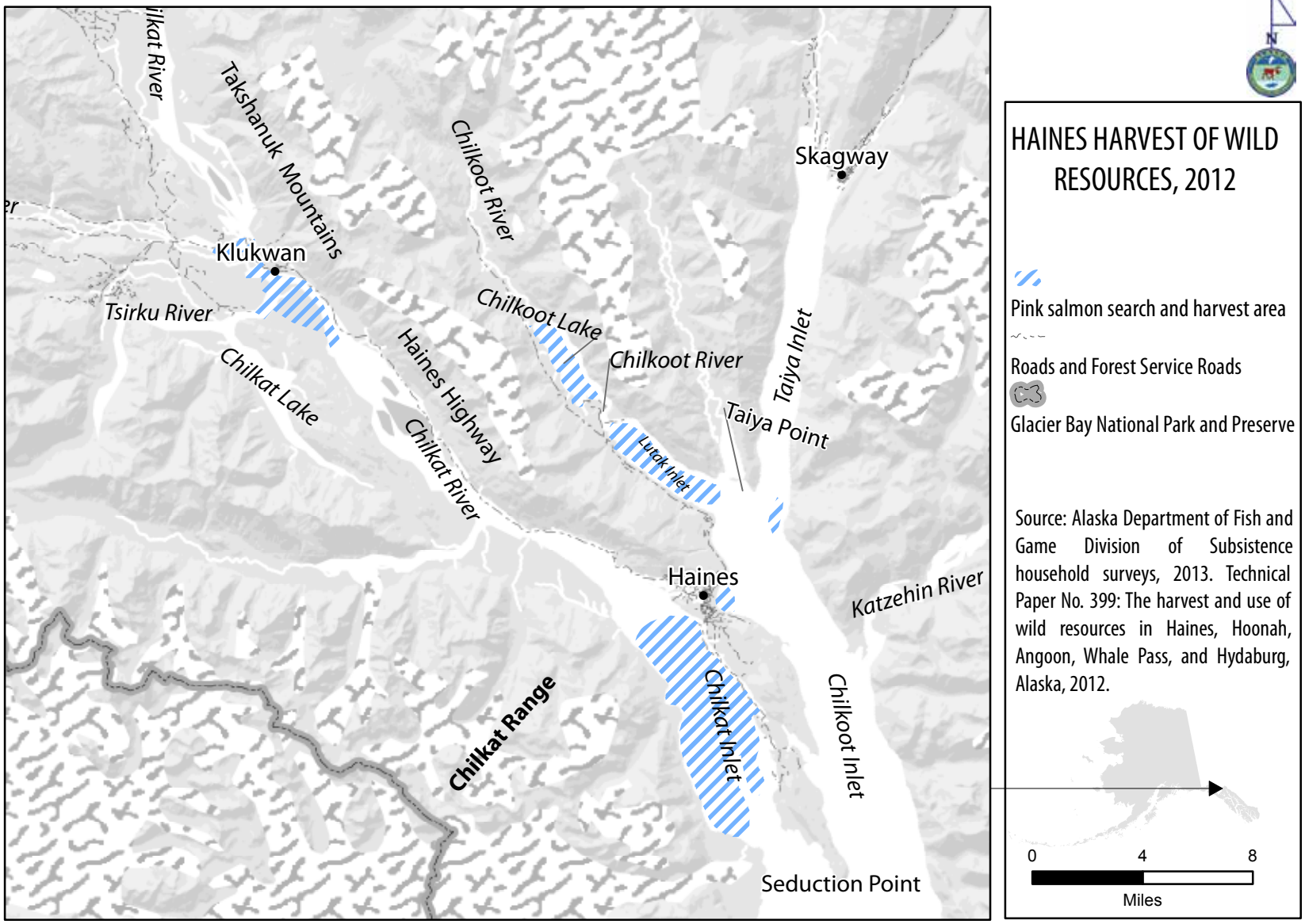
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Klukwan
Tsirku River
Chilkoot Lake
Chilkoot River
Taiya Inlet
Haines Highway
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Chilkat River
Lutak Inlet
Taiya Point
Haines
Katzehin River
Chilkat Range
Chilkat Inlet
Chilkoot Inlet
Seduction Point
HAINES HARVEST OF WILD RESOURCES, 2012
Pink salmon search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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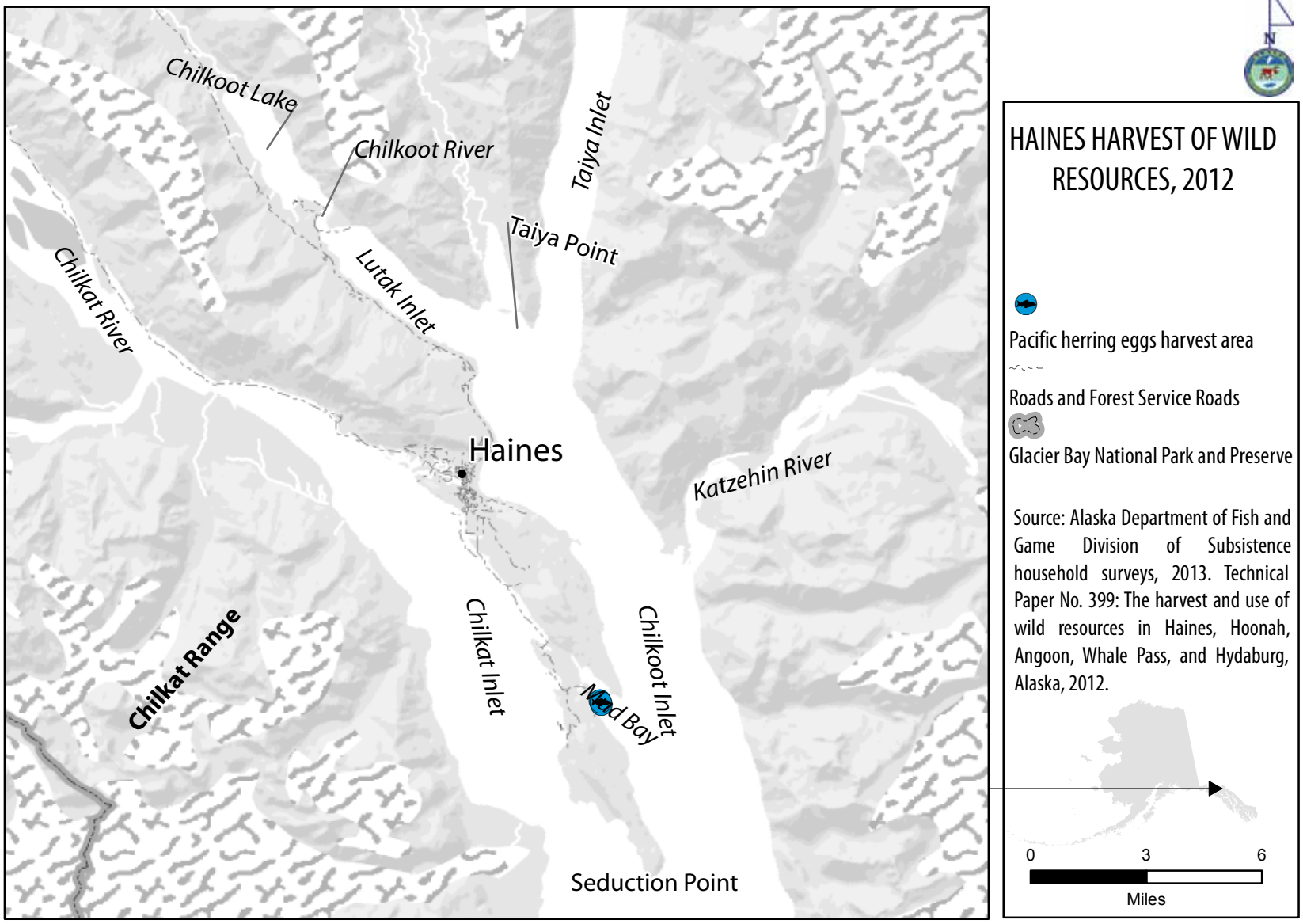
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Katzehin River
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Chilkat Inlet
Chilkoot Inlet
Mud Bay
Seduction Point
HAINES HARVEST OF WILD RESOURCES, 2012
Pacific herring eggs harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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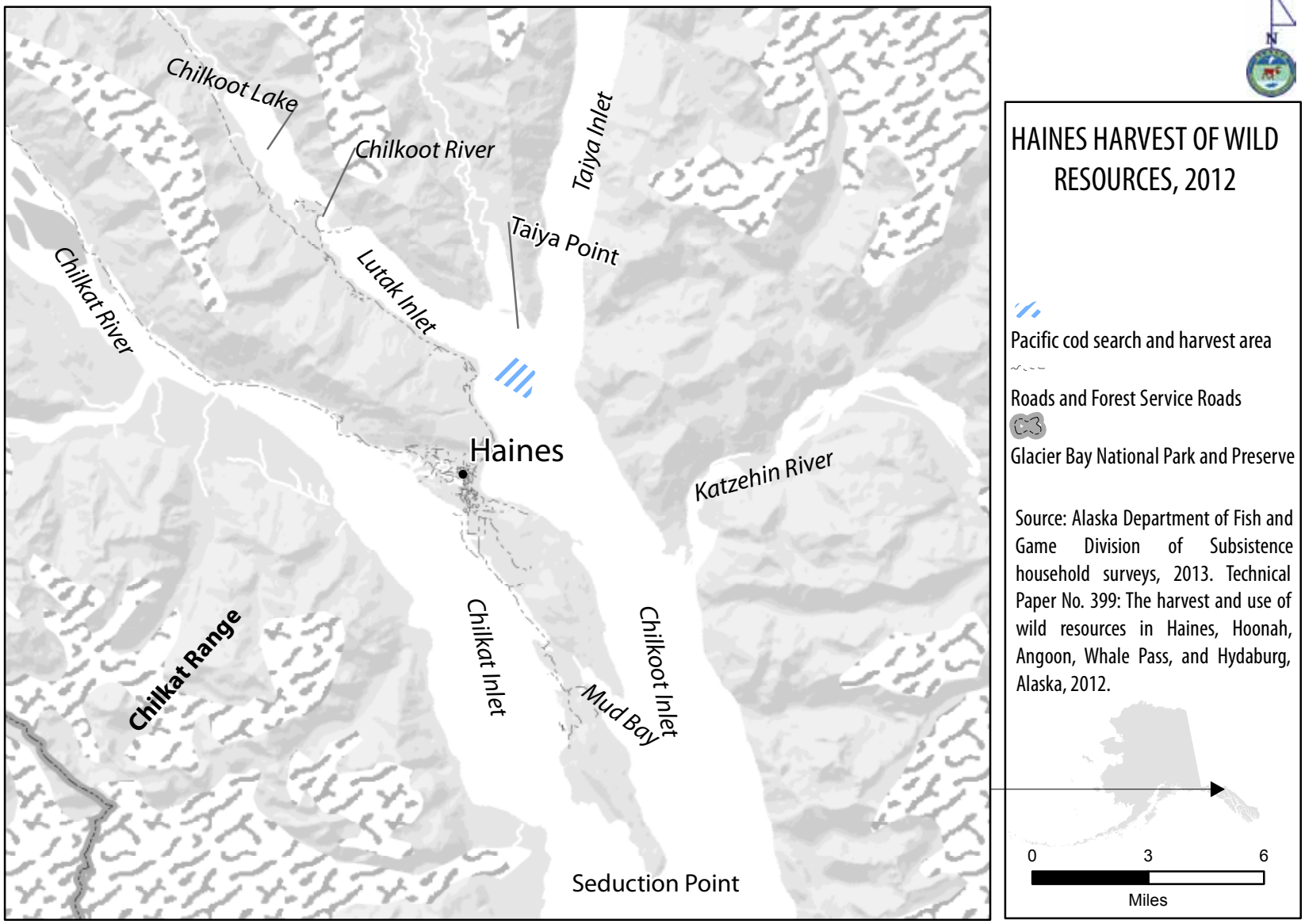
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Chilkoot Inlet
Mud Bay
Seduction Point
HAINES HARVEST OF WILD RESOURCES, 2012
Pacific cod search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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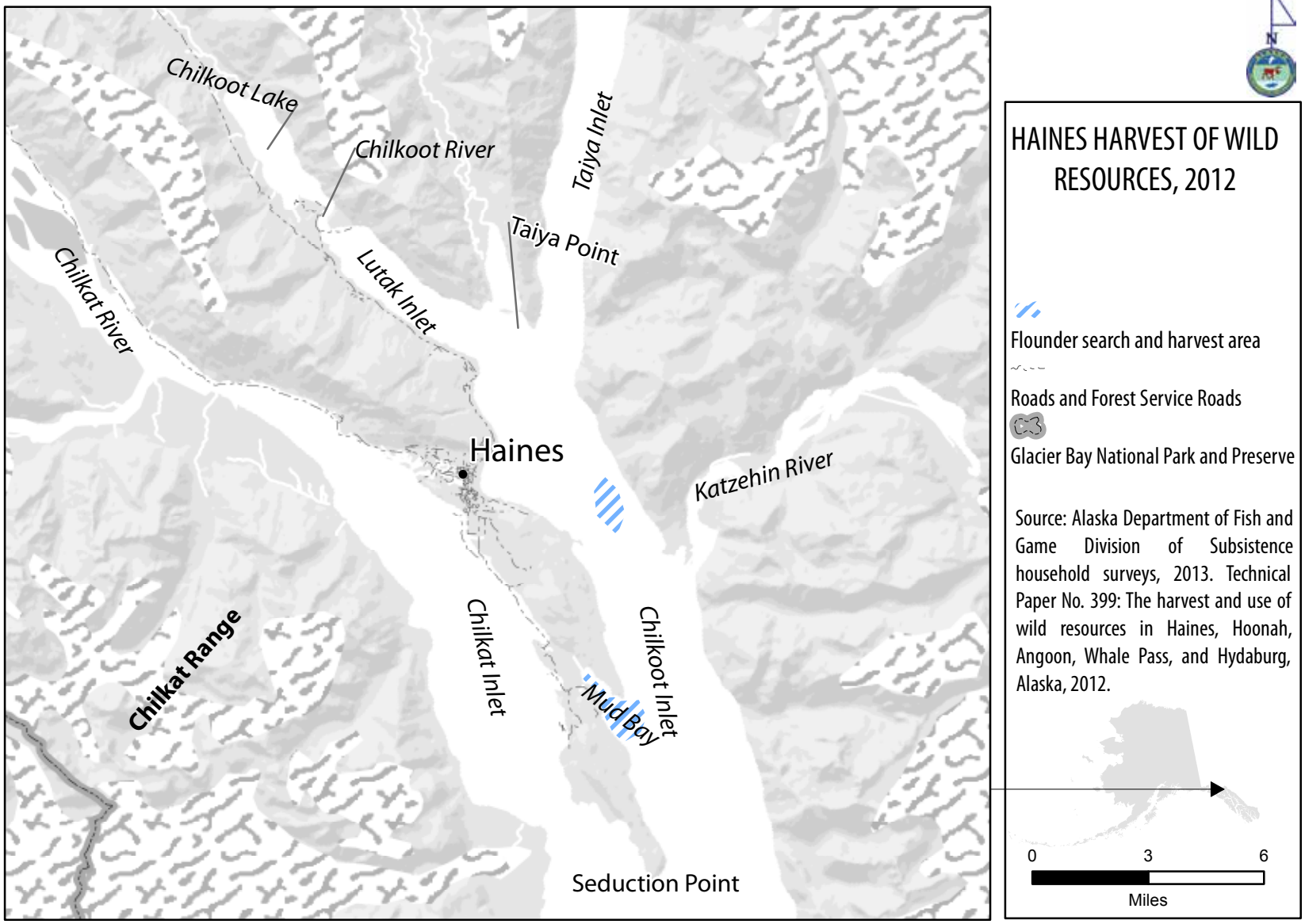
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Katzehin River
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Chilkat Inlet
Chilkoot Inlet
Mud Bay
Seduction Point
HAINES HARVEST OF WILD RESOURCES, 2012
Flounder search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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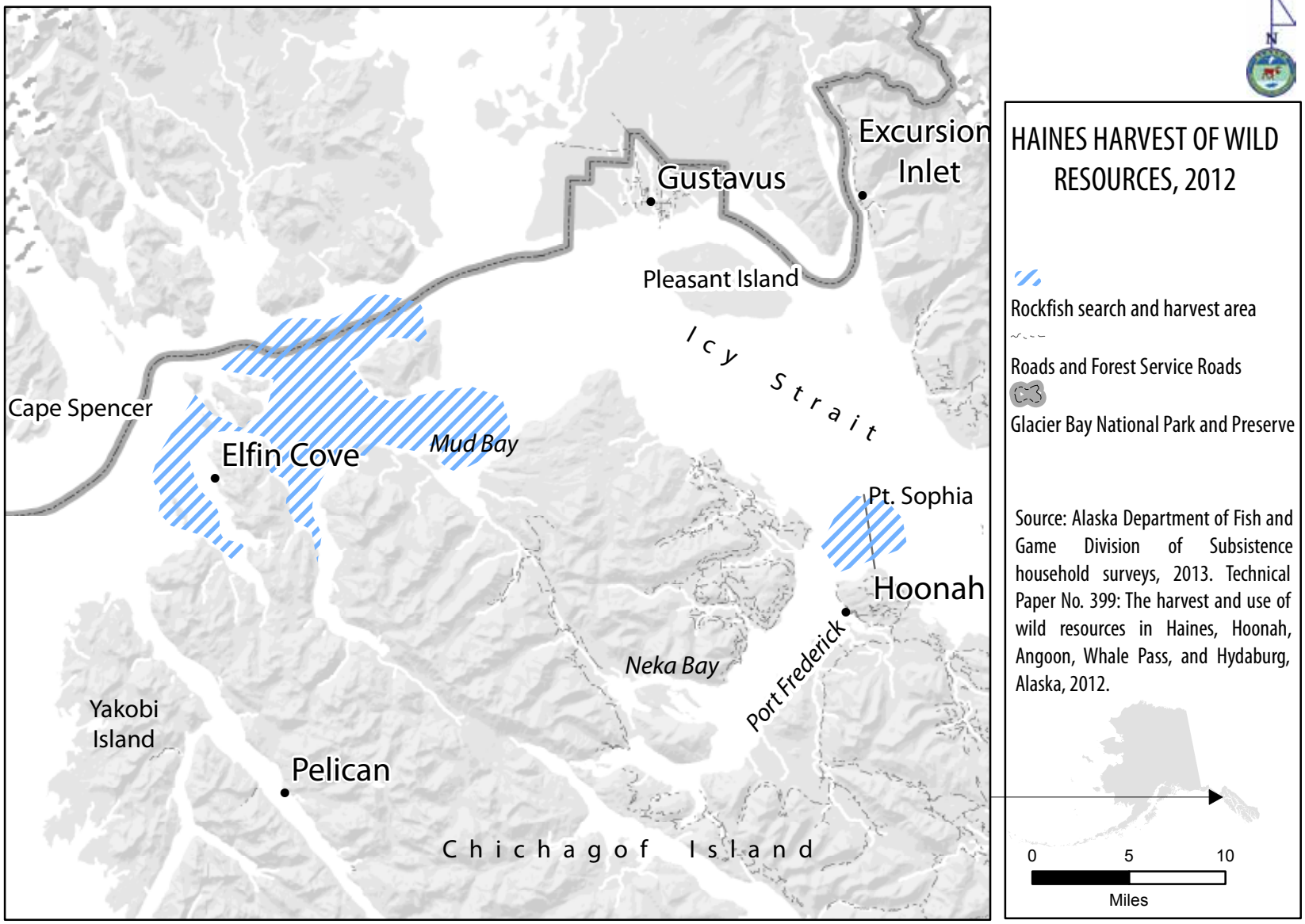
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Excursion Inlet
Pleasant Island
Icy Strait
Cape Spencer
Elfin Cove
Mud Bay
Pt. Sophia
Hoonah
Port Frederick
Neka Bay
Yakobi Island
Pelican
Chichagof Island
HAINES HARVEST OF WILD RESOURCES, 2012
Rockfish search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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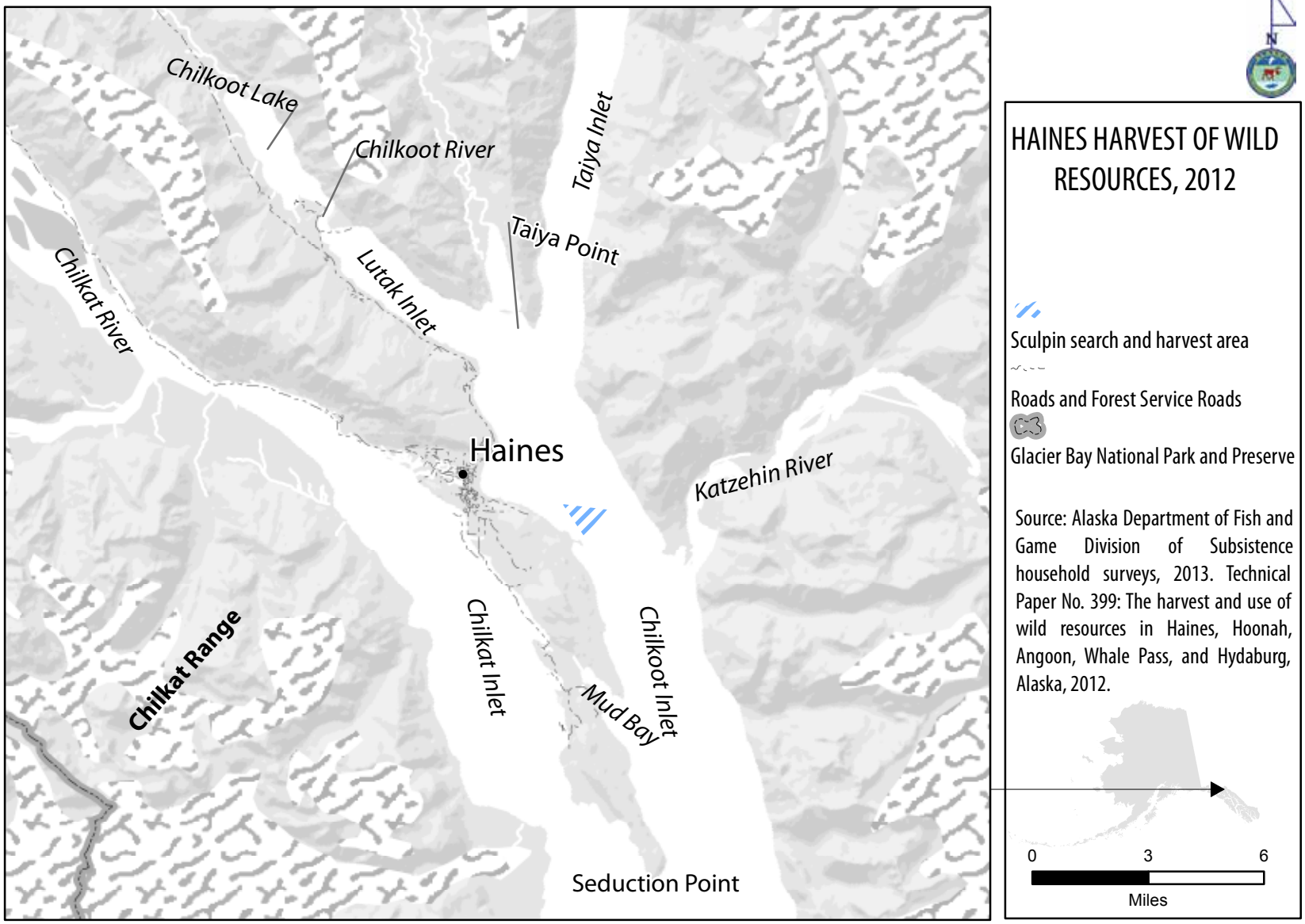
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Lutak Inlet
Chilkat River
Haines
Katzehin River
Chilkat Range
Chilkat Inlet
Chilkoot Inlet
Mud Bay
Seduction Point
HAINES HARVEST OF WILD RESOURCES, 2012
Sculpin search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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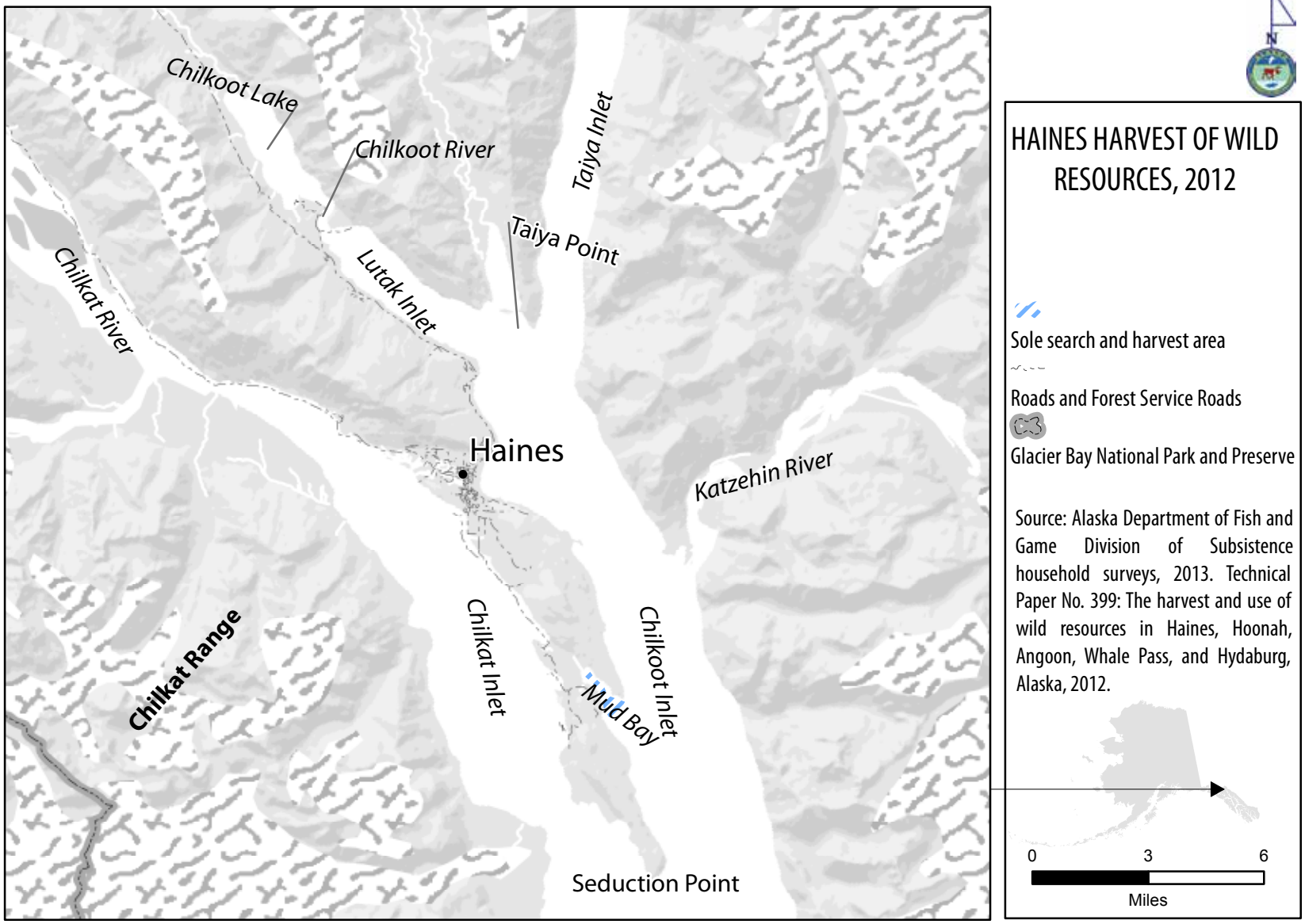
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Mud Bay
Seduction Point
HAINES HARVEST OF WILD RESOURCES, 2012
Sole search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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Chilkat River
Takshanuk Mountains
Chilkoot River
Angoon
Klukwan
Tsirku River
Chilkat Lake
Chilkat River
Taiya Inlet
Haines
Katzehin River
Chilkat Range
Chilkat Inlet
Chilkoot Inlet
HAINES HARVEST OF WILD RESOURCES, 2012
Trout harvest area
Trout search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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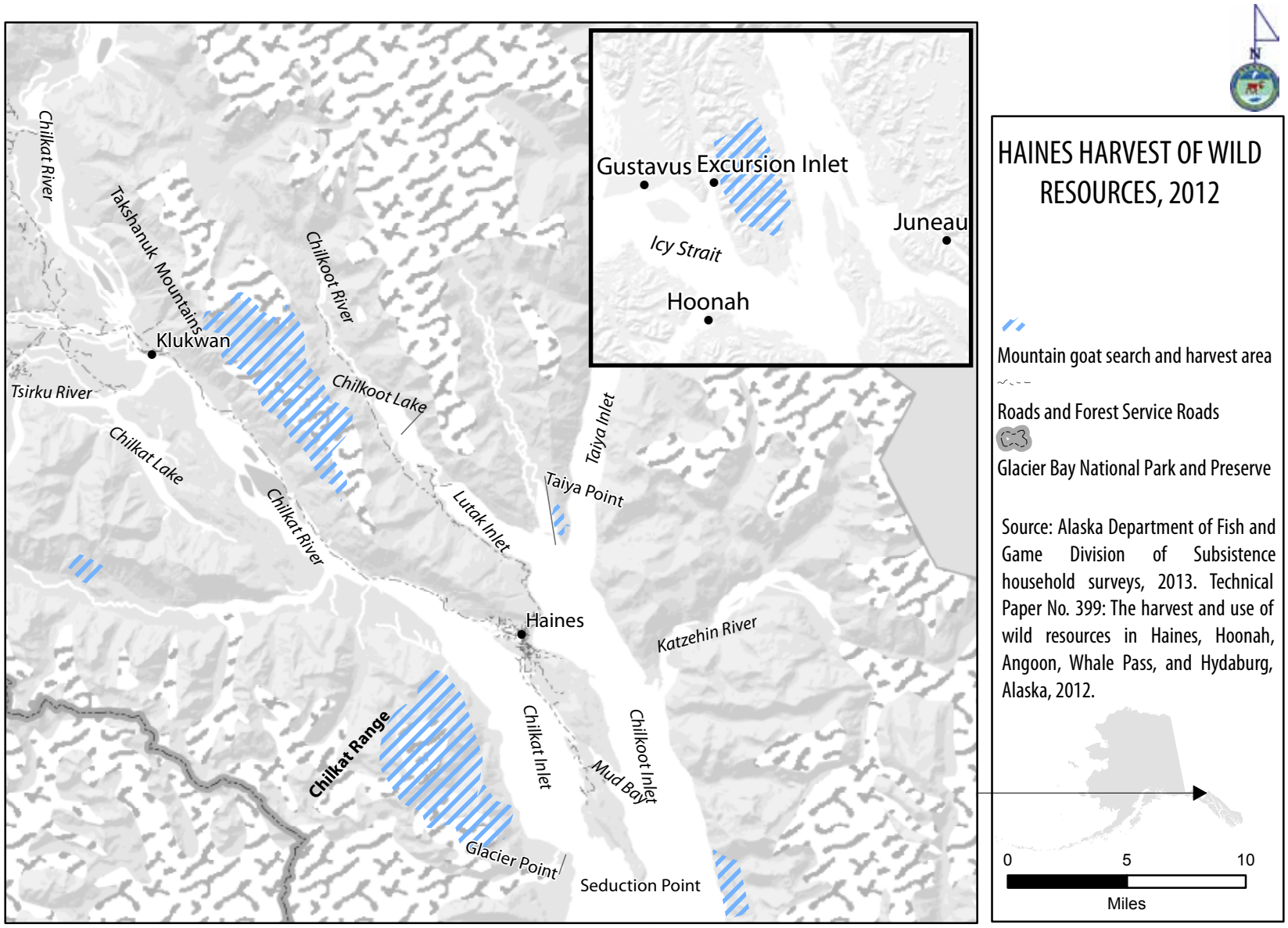
HAINES HARVEST OF WILD RESOURCES, 2012
Mountain goat search and harvest area
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Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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Hoonah
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Takshanuk Mountains
Klukwan
Chilkoot River
Tsirku River
Chilkoot Lake
Chilkat Lake
Chilkat River
Lutak Inlet
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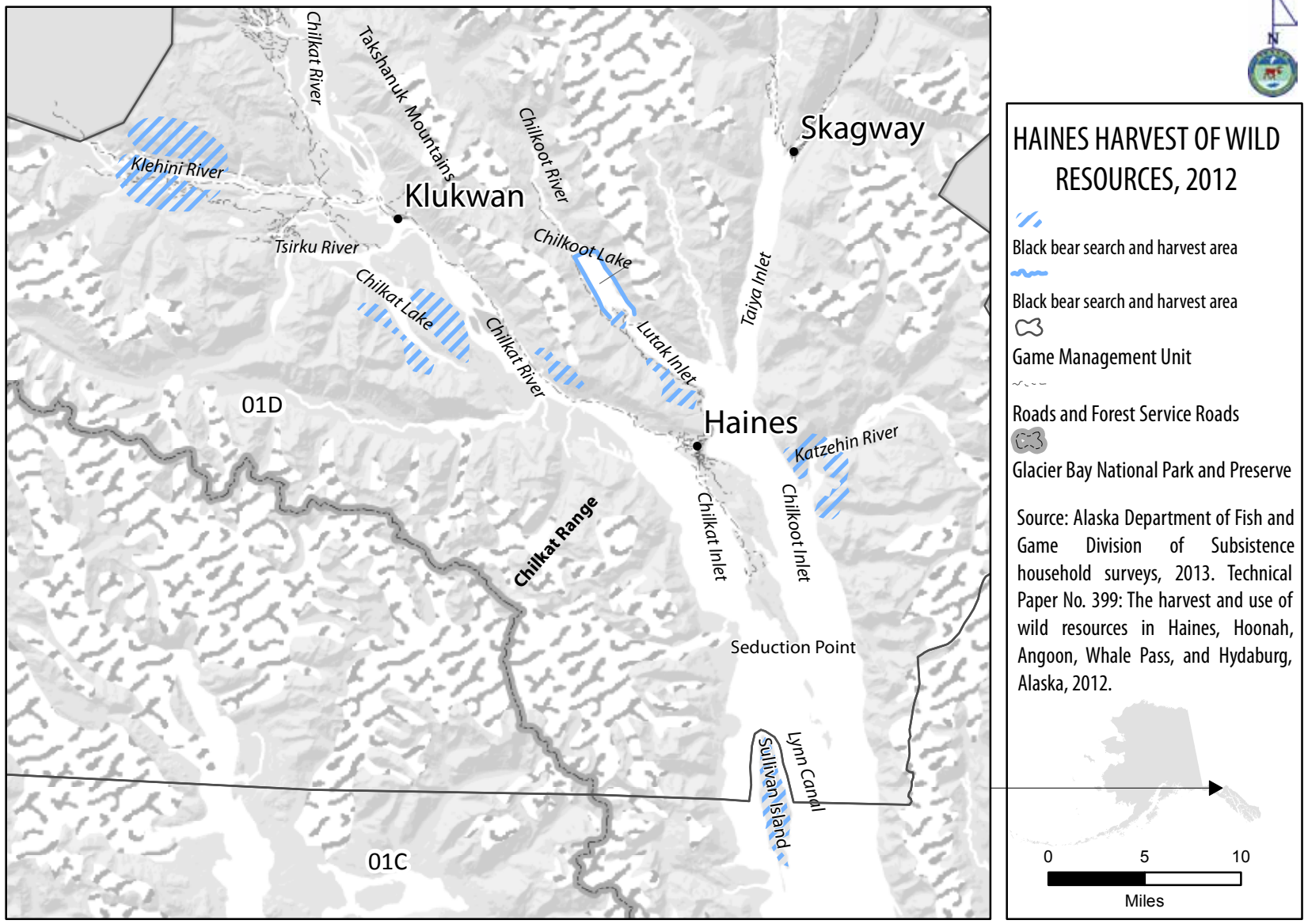
Glacier Point
Seduction Point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Chilkat River
Lutak Inlet
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Haines
Katzehin River
Chilkat Range
Chilkat Inlet
Chilkoot Inlet
Seduction Point
Lynn Canal
Sullivan Island
01C
HAINES HARVEST OF WILD RESOURCES, 2012
Black bear search and harvest area
Black bear search and harvest area
Game Management Unit
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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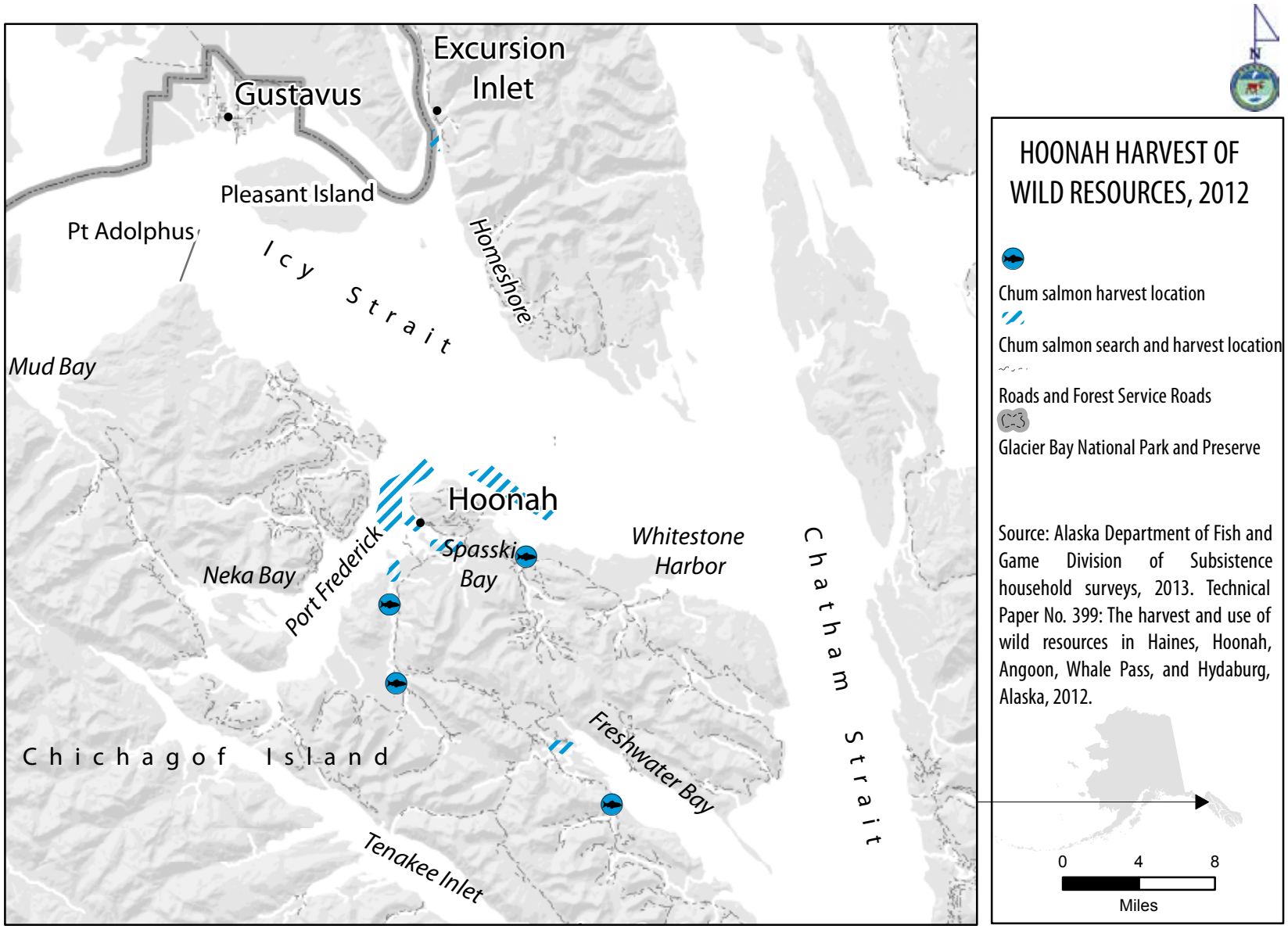
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Gustavus
Pleasant Island
Pt Adolphus
Icy Strait
Homeshore
Mud Bay
Hoonah
Spasski Bay
Whitestone Harbor
Neka Bay
Port Frederick
Chatham Strait
Chichagof Island
Freshwater Bay
Tenakee Inlet
HOONAH HARVEST OF WILD RESOURCES, 2012
Chum salmon harvest location
Chum salmon search and harvest location
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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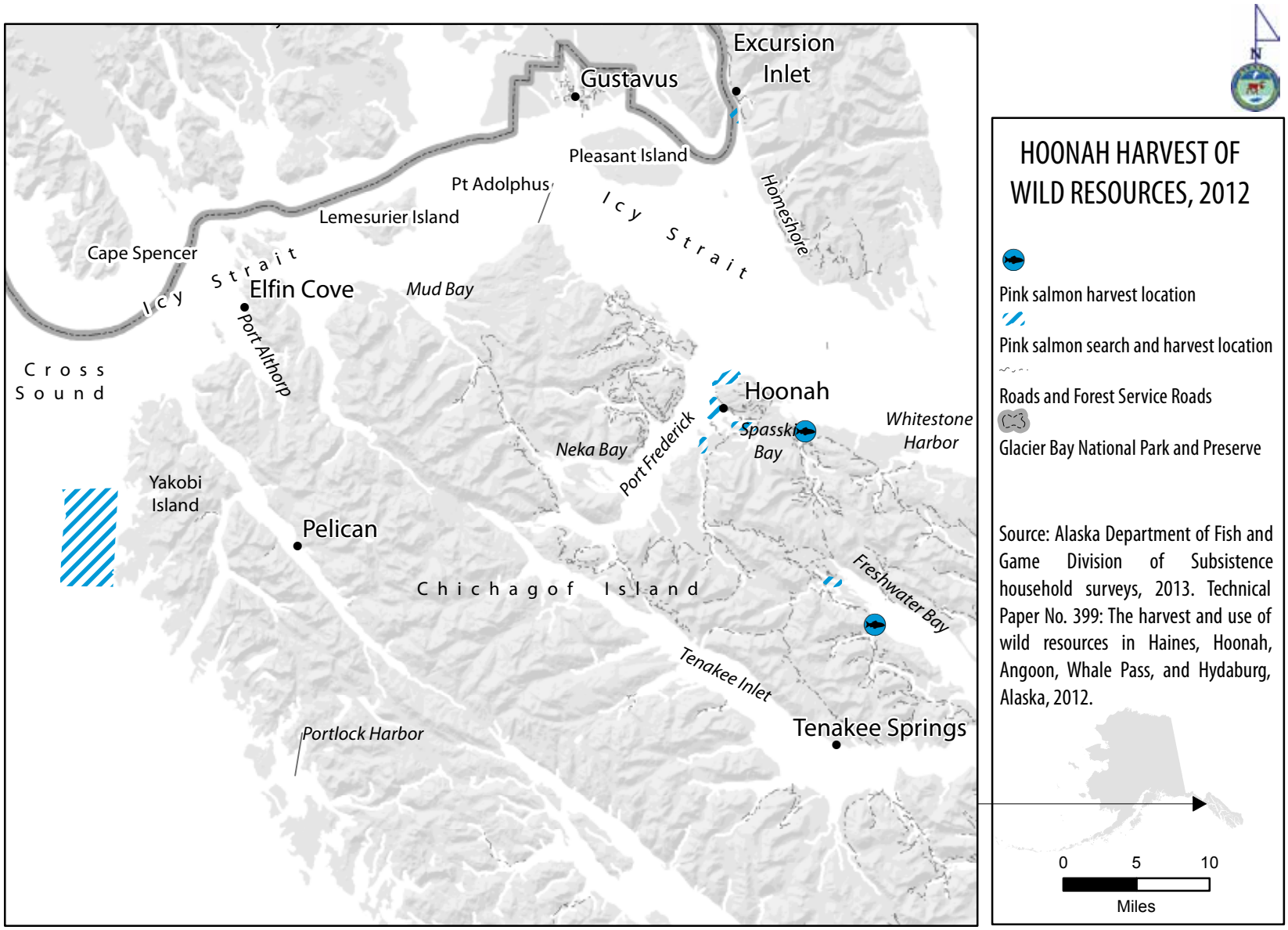
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Pleasant Island
Pt Adolphus
Lemesurier Island
Icy Strait
Homeshore
Cape Spencer
Icy Strait
Elfin Cove
Mud Bay
Port Althorp
Cross Sound
Hoonah
Whitestone Harbor
Spasski Bay
Neka Bay
Port Frederick
Yakobi Island
Pelican
Chichagof Island
Freshwater Bay
Tenakee Inlet
Portlock Harbor
Tenakee Springs
HOONAH HARVEST OF WILD RESOURCES, 2012
Pink salmon harvest location
Pink salmon search and harvest location
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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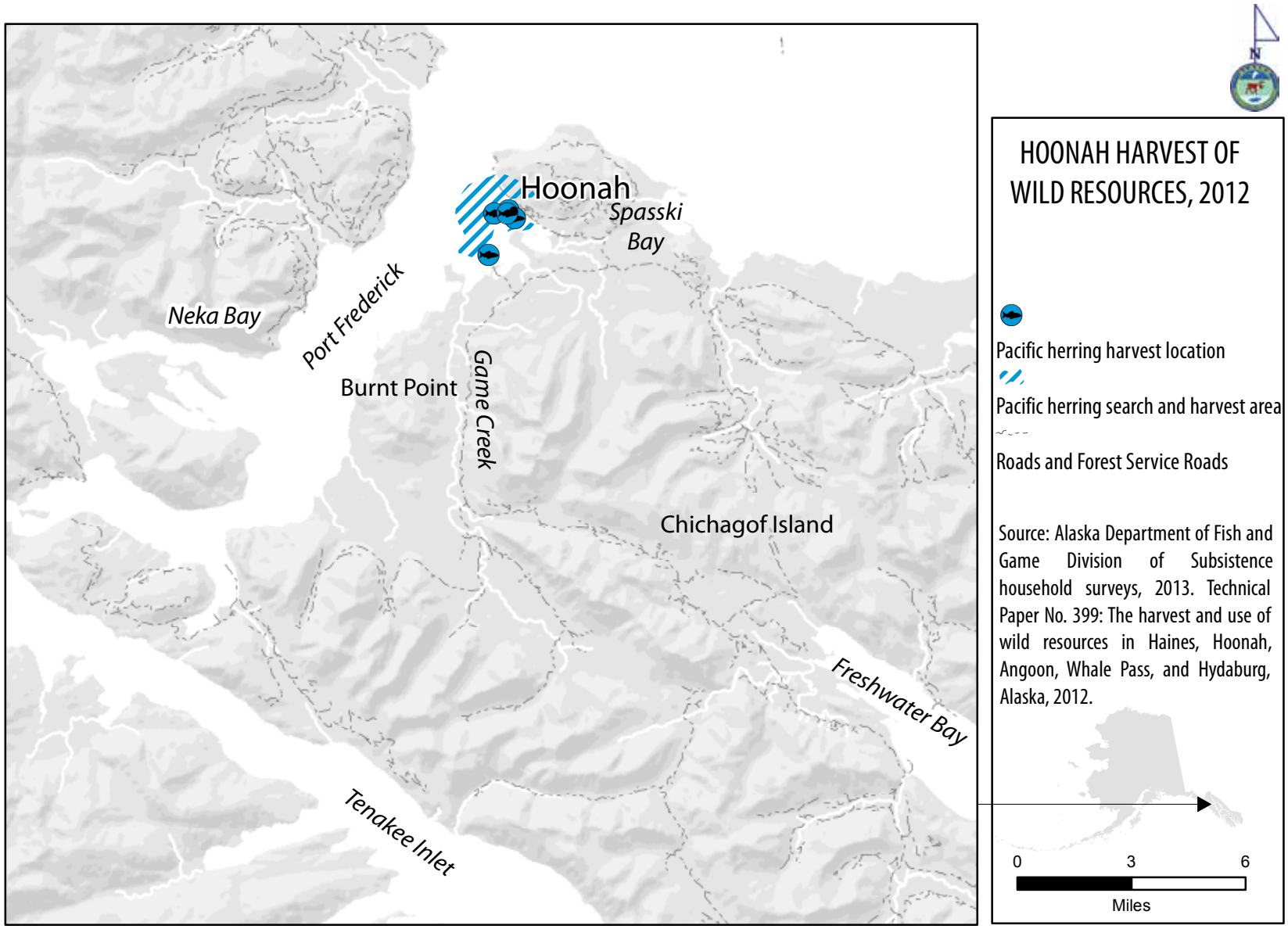
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Neka Bay
Port Frederick
Burnt Point
Game Creek
Chichagof Island
Freshwater Bay
Tenakee Inlet
HOONAH HARVEST OF WILD RESOURCES, 2012
Pacific herring harvest location
Pacific herring search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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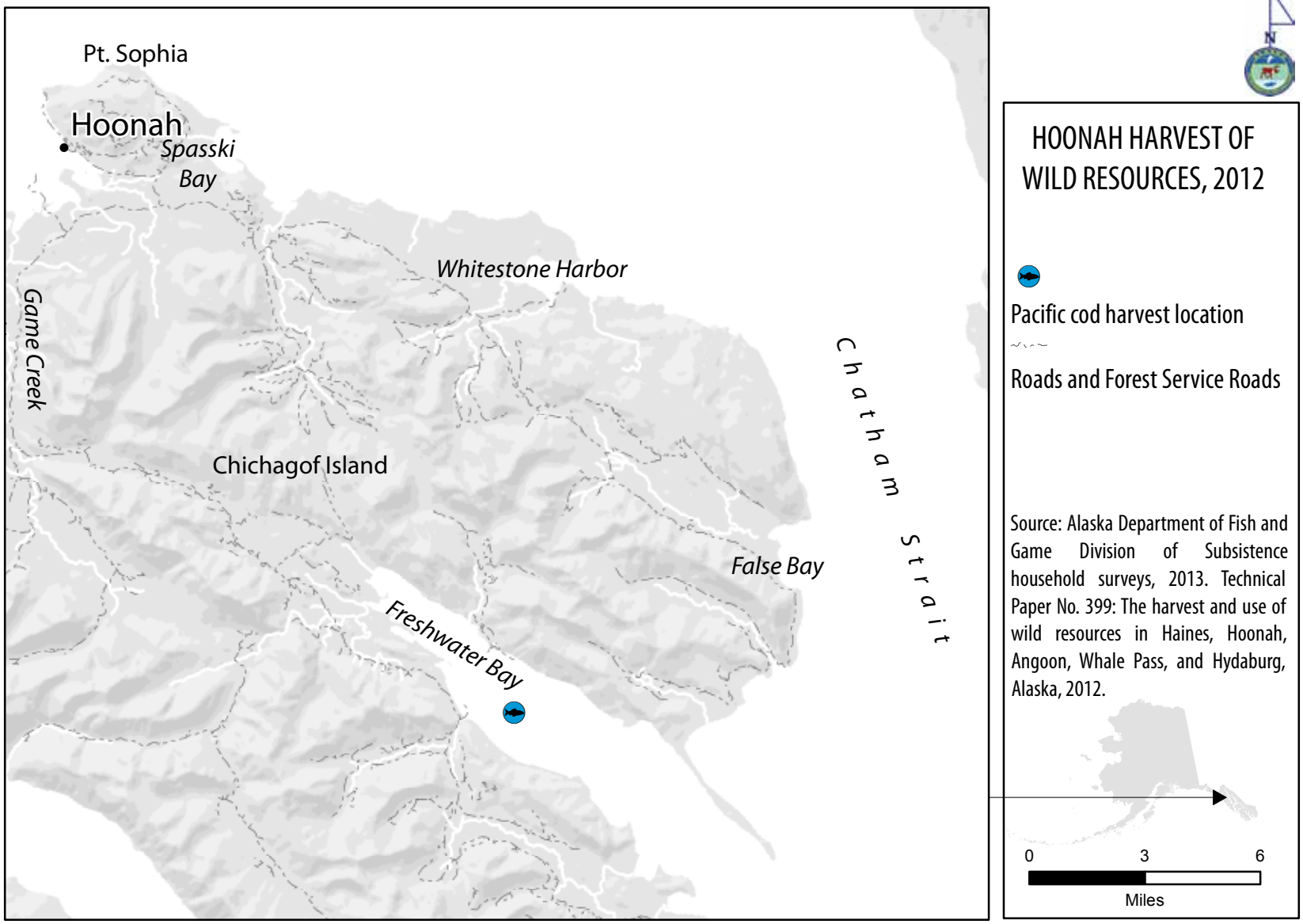
Pt. Sophia
Hoonah
Spasski Bay
Whitestone Harbor
Game Creek
Chichagof Island
False Bay
Freshwater Bay
Chatham Strait
HOONAH HARVEST OF WILD RESOURCES, 2012
Pacific cod harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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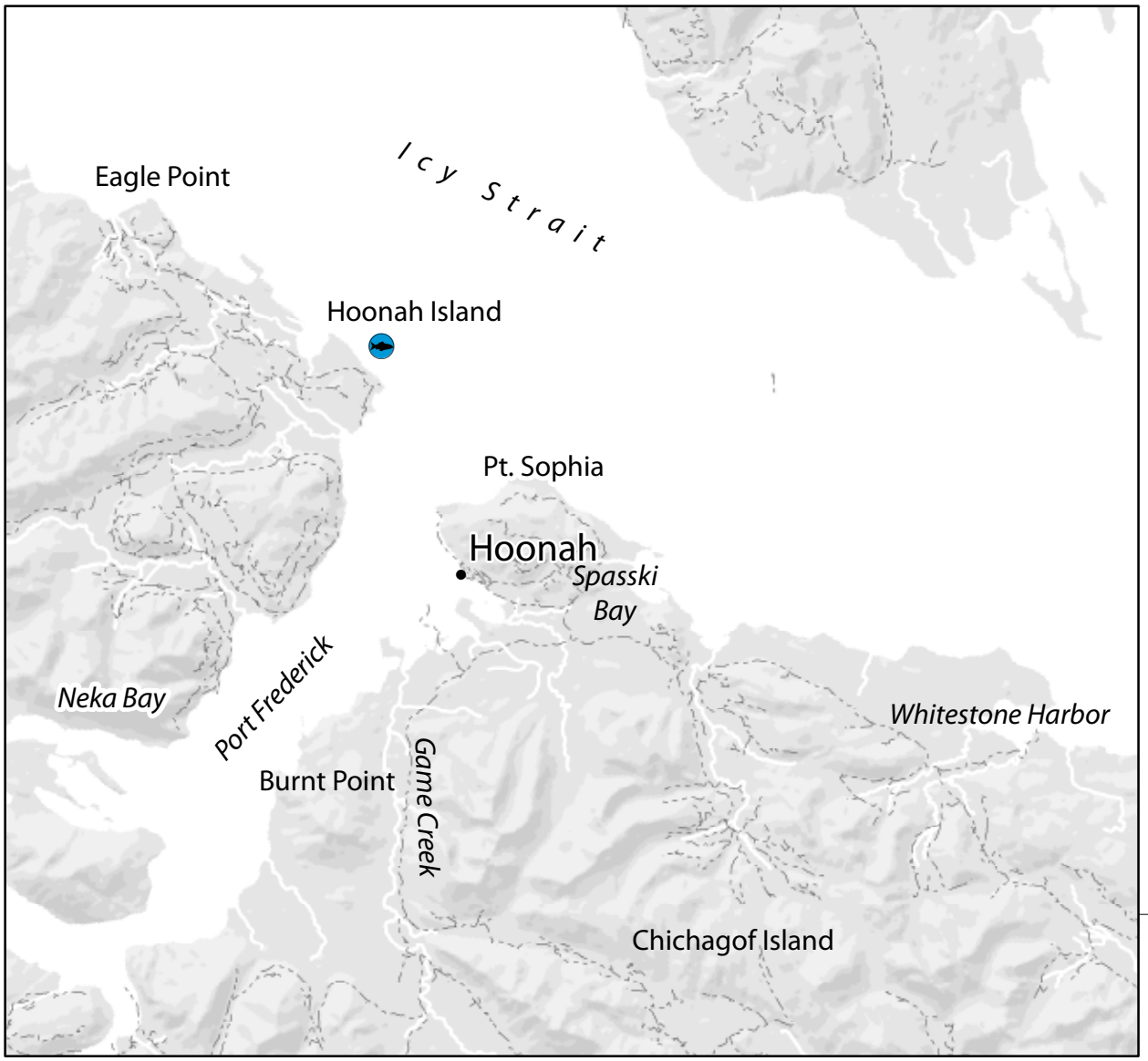

HOONAH HARVEST OF WILD RESOURCES, 2012

Greenling harvest location

Roads and Forest Service Roads

Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.

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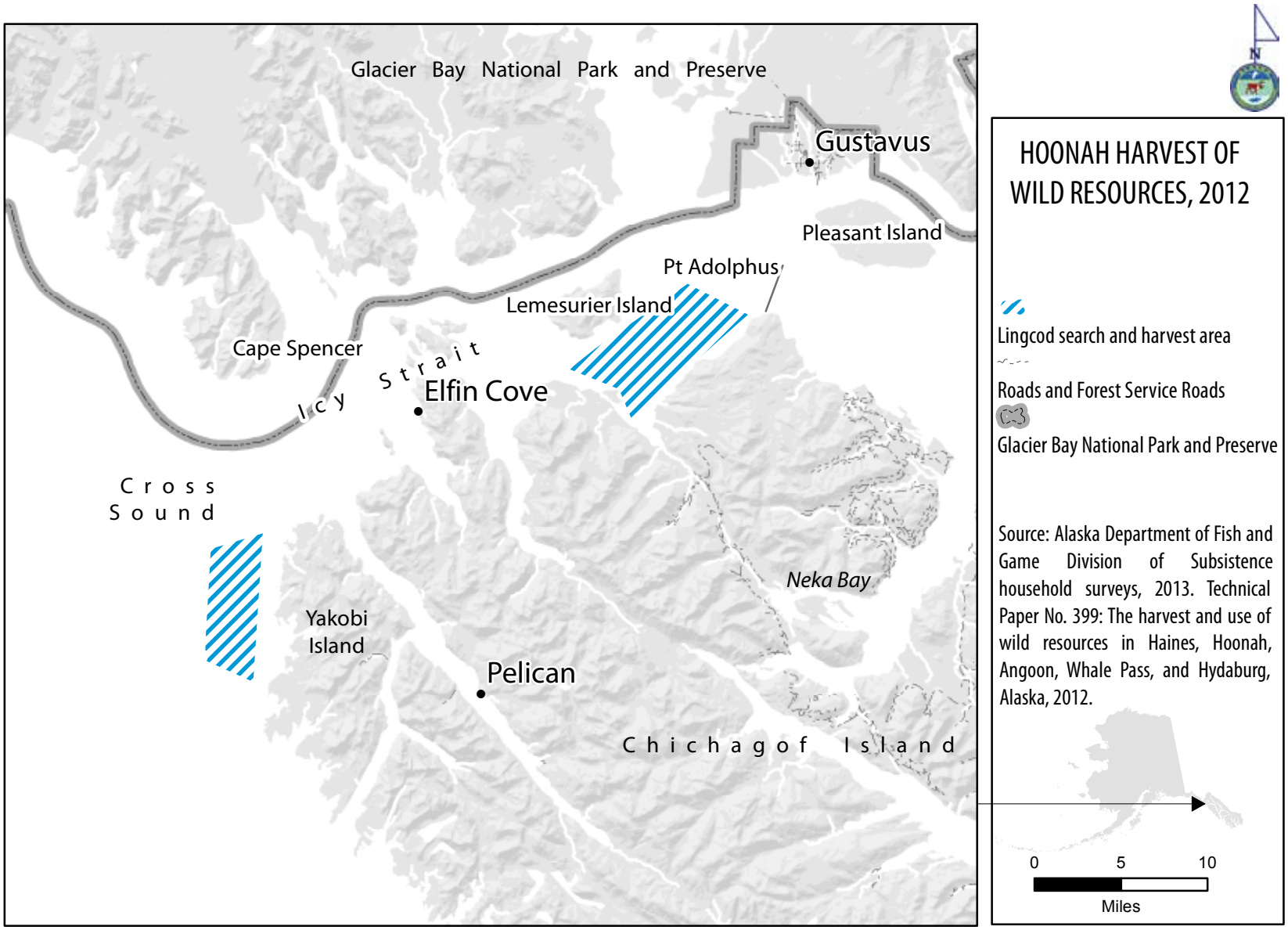
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Pleasant Island
Pt Adolphus
Lemesurier Island
Cape Spencer
Icy Strait
Elfin Cove
Cross Sound
Yakobi Island
Neka Bay
Pelican
Chichagof Island
HOONAH HARVEST OF WILD RESOURCES, 2012
Lingcod search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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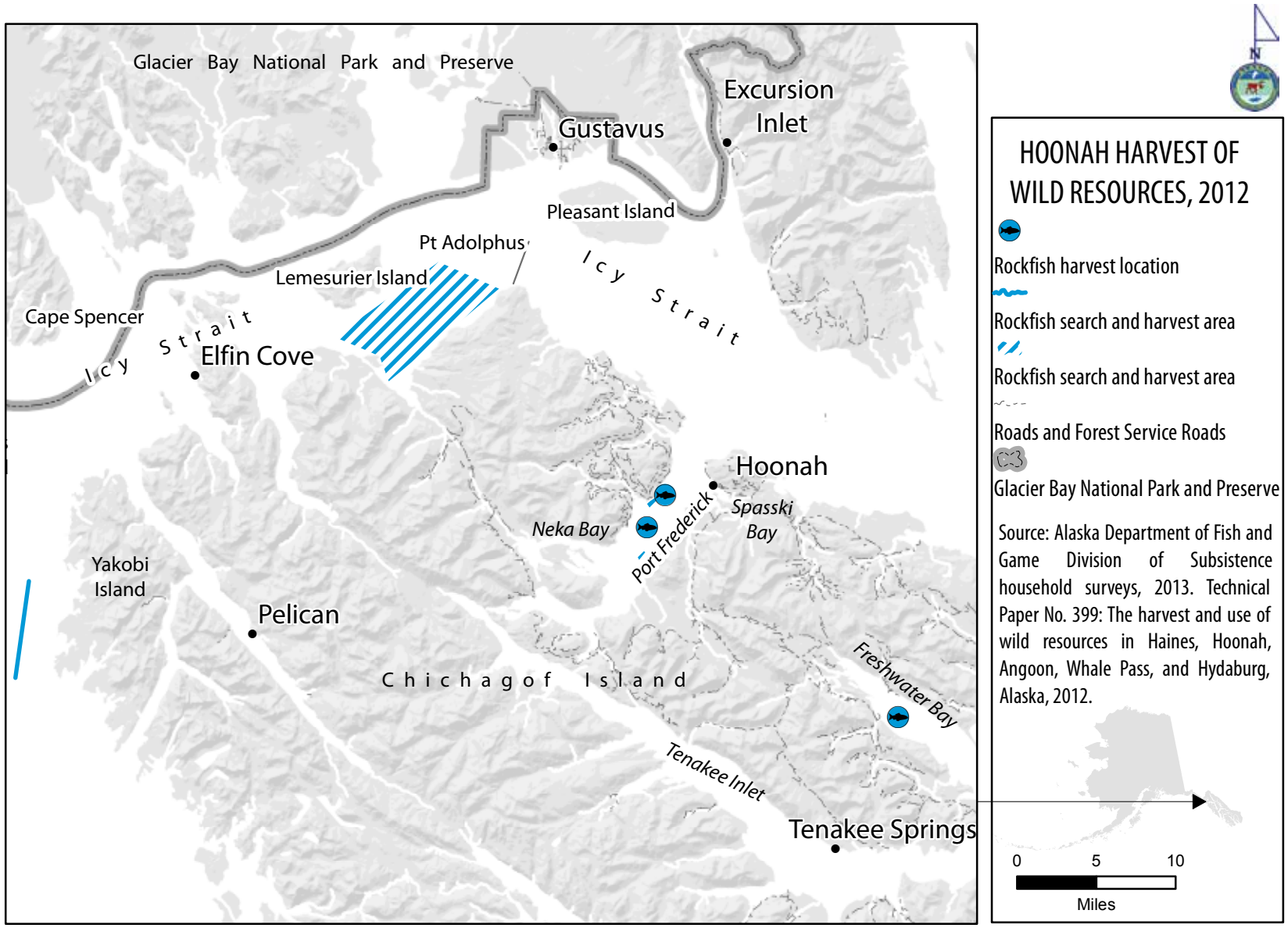
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Pleasant Island
Pt Adolphus
Icy Strait
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Cape Spencer
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Elfin Cove
Hoonah
Neka Bay
Port Frederick
Spasski Bay
Yakobi Island
Pelican
Chichagof Island
Freshwater Bay
Tenakee Inlet
Tenakee Springs
HOONAH HARVEST OF WILD RESOURCES, 2012
Rockfish harvest location
Rockfish search and harvest area
Rockfish search and harvest area
Roads and Forest Service Roads
Glacier Bay National Park and Preserve
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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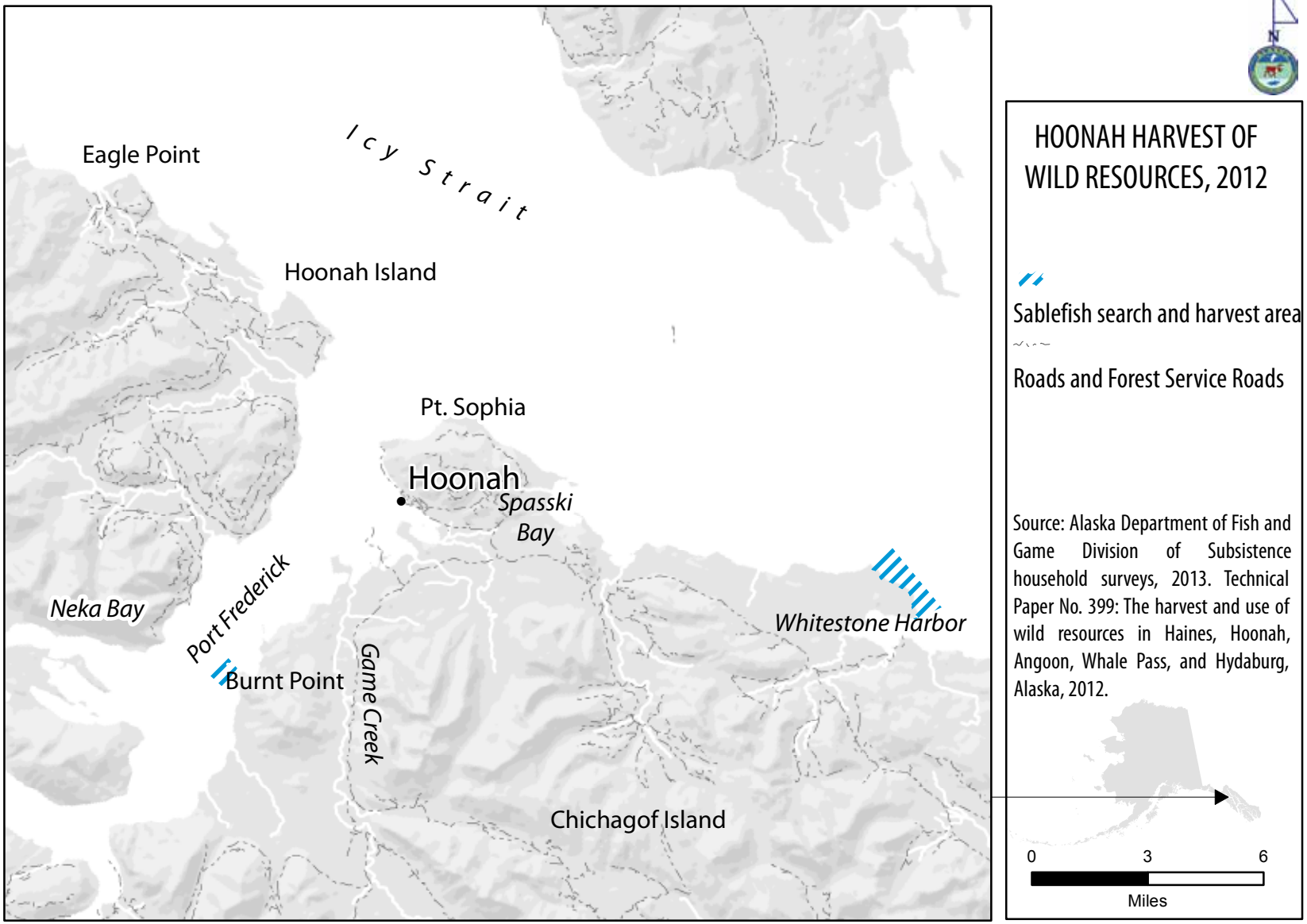
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Hoonah Island
Pt. Sophia
Hoonah
Spasski Bay
Neka Bay
Port Frederick
Burnt Point
Game Creek
Whitestone Harbor
Chichagof Island
HOONAH HARVEST OF WILD RESOURCES, 2012
Sablefish search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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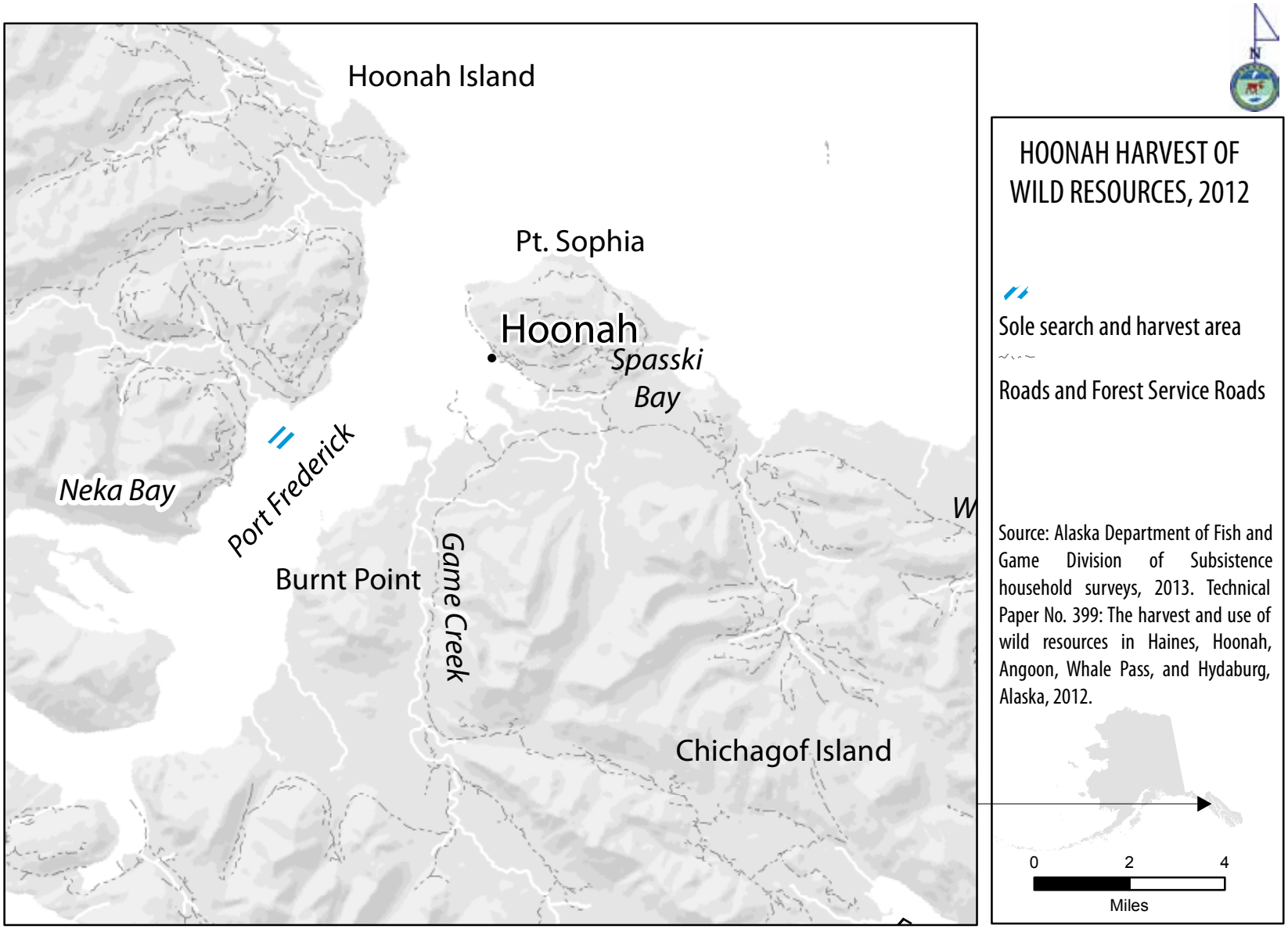
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Hoonah
Spasski
Bay
Neka Bay
Port Frederick
Burnt Point
Game Creek
Chichagof Island
HOONAH HARVEST OF
WILD RESOURCES, 2012
Sole search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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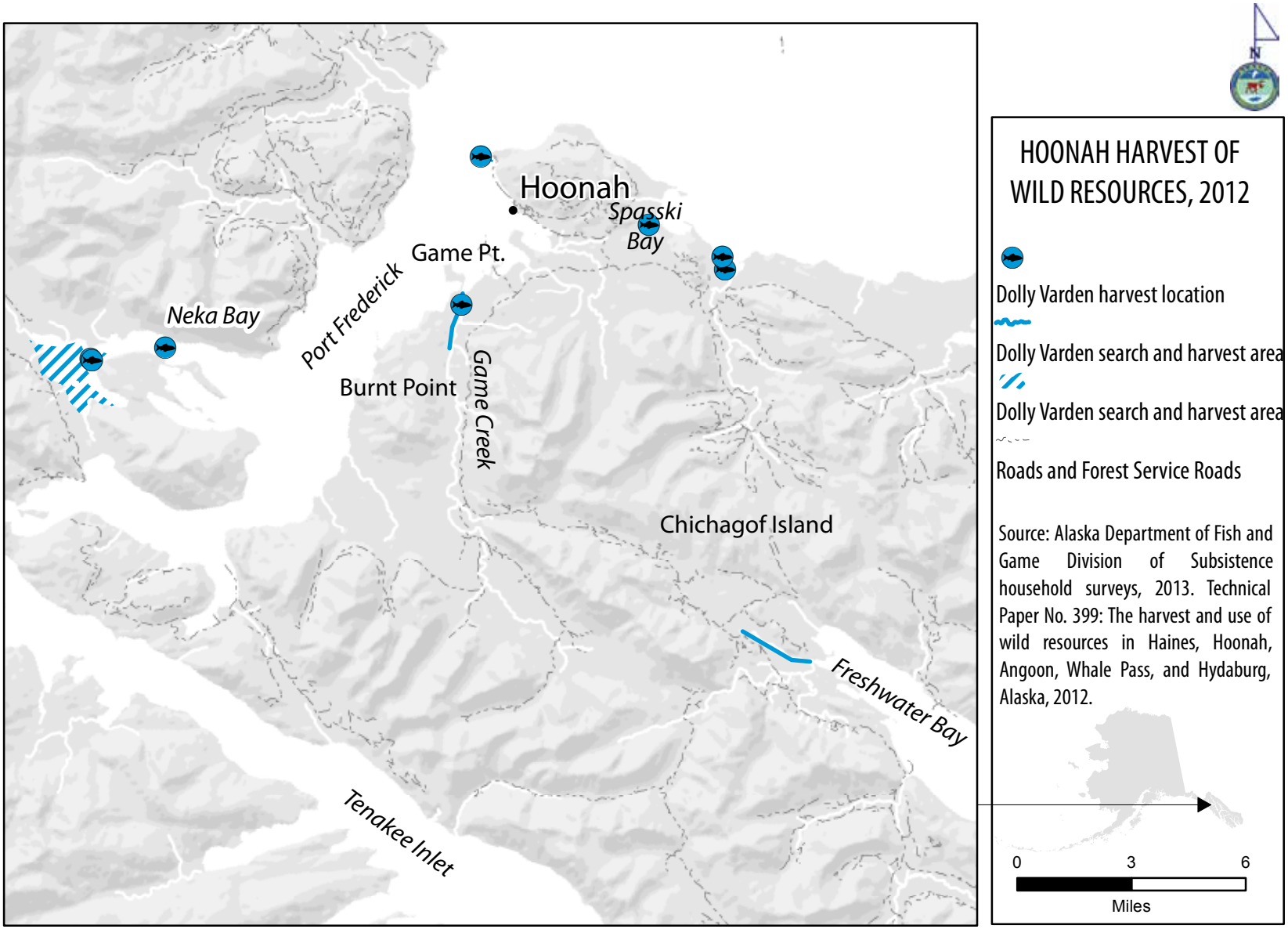
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Game Pt.
Port Frederick
Neka Bay
Burnt Point
Game Creek
Chichagof Island
Freshwater Bay
Tenakee Inlet
HOONAH HARVEST OF WILD RESOURCES, 2012
Dolly Varden harvest location
Dolly Varden search and harvest area
Dolly Varden search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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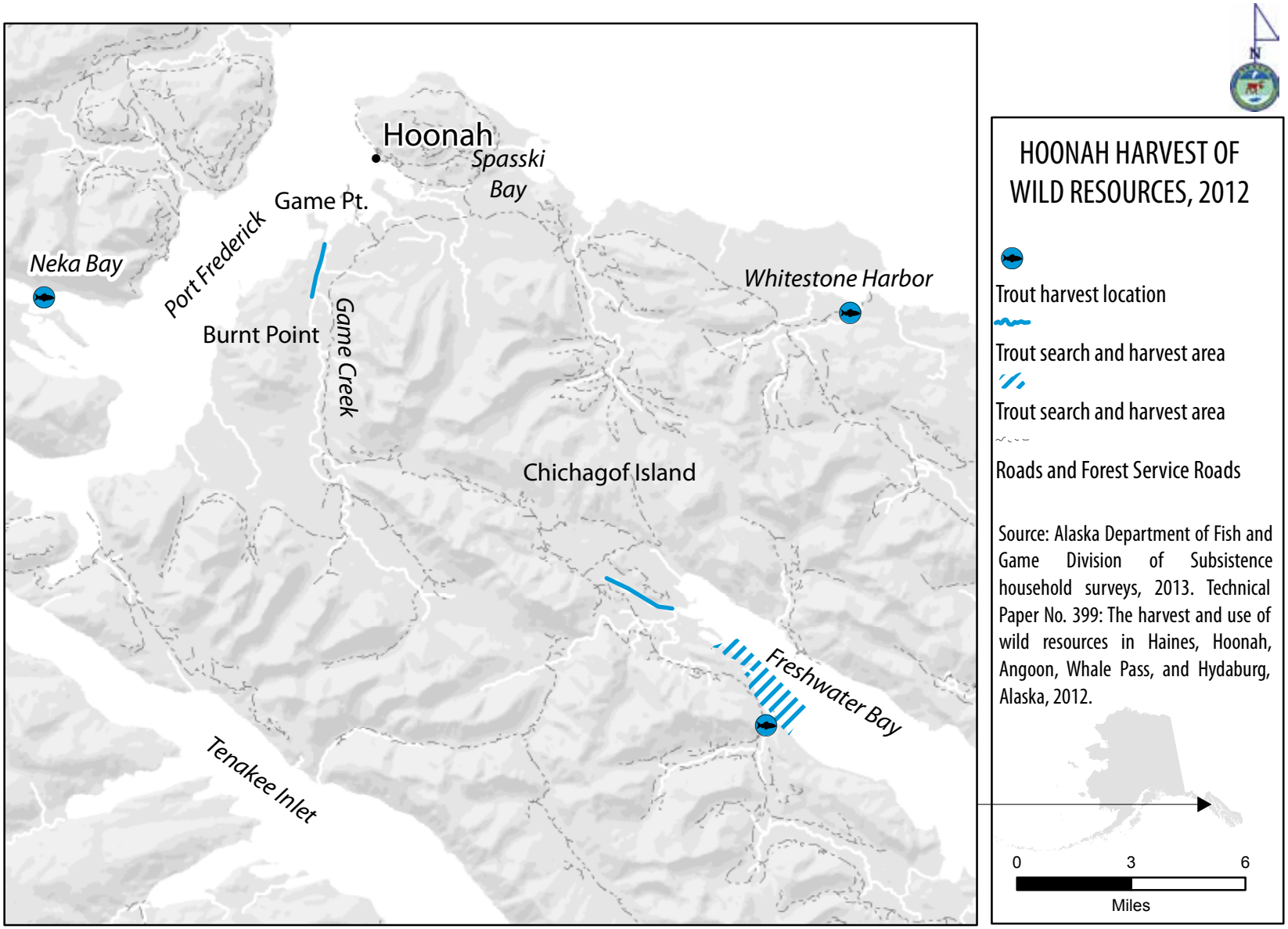
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Spasski Bay
Game Pt.
Port Frederick
Neka Bay
Burnt Point
Game Creek
Whitestone Harbor
Chichagof Island
Freshwater Bay
Tenakee Inlet
HOONAH HARVEST OF WILD RESOURCES, 2012
Trout harvest location
Trout search and harvest area
Trout search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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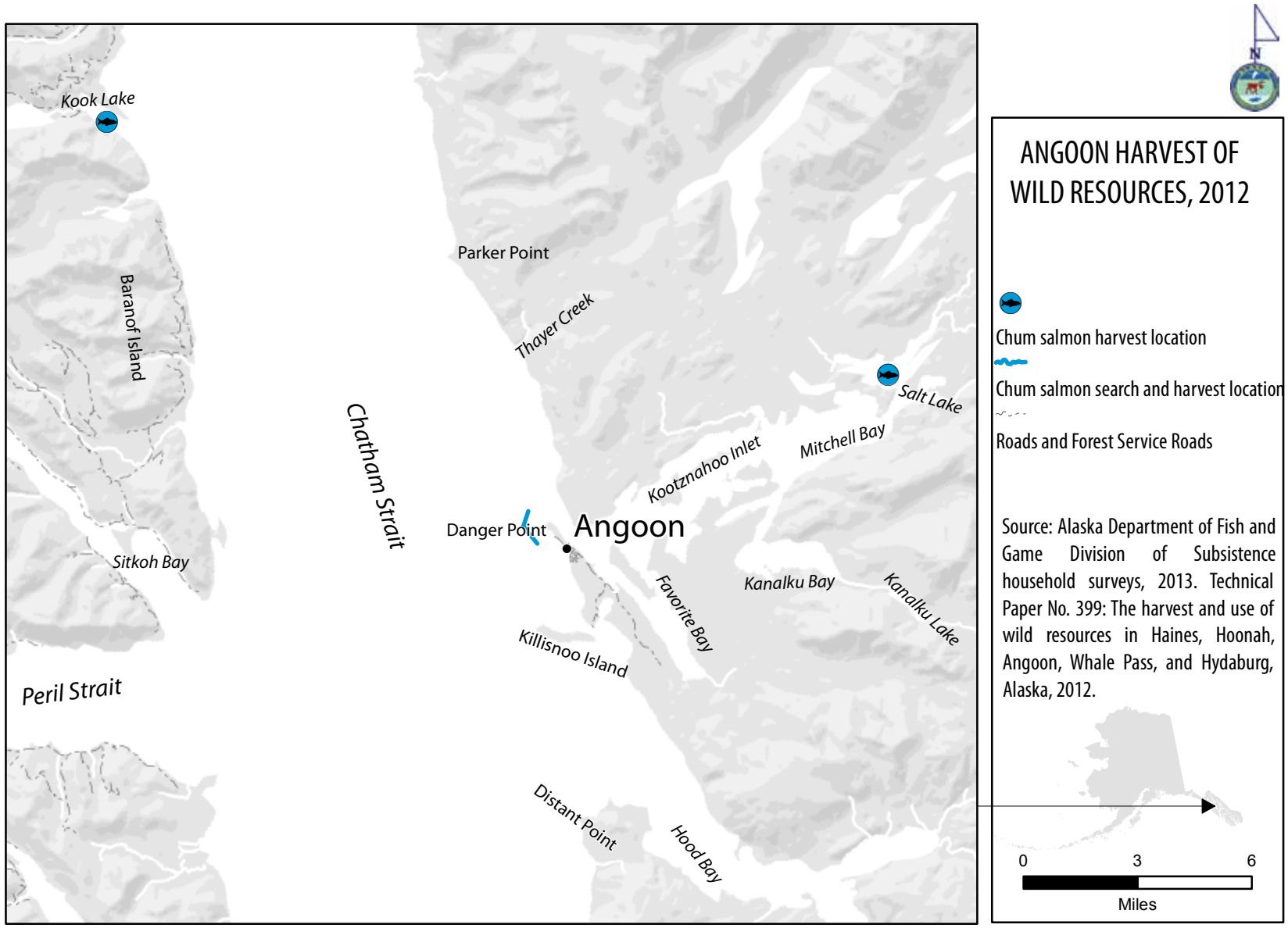
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Chatham Strait
Kootznahoo Inlet
Mitchell Bay
Danger Point
Angoon
Sitkoh Bay
Favorite Bay
Kanalku Bay
Kanalku Lake
Killisnoo Island
Peril Strait
Distant Point
Hood Bay
N
ANGOON HARVEST OF WILD RESOURCES, 2012
Chum salmon harvest location
Chum salmon search and harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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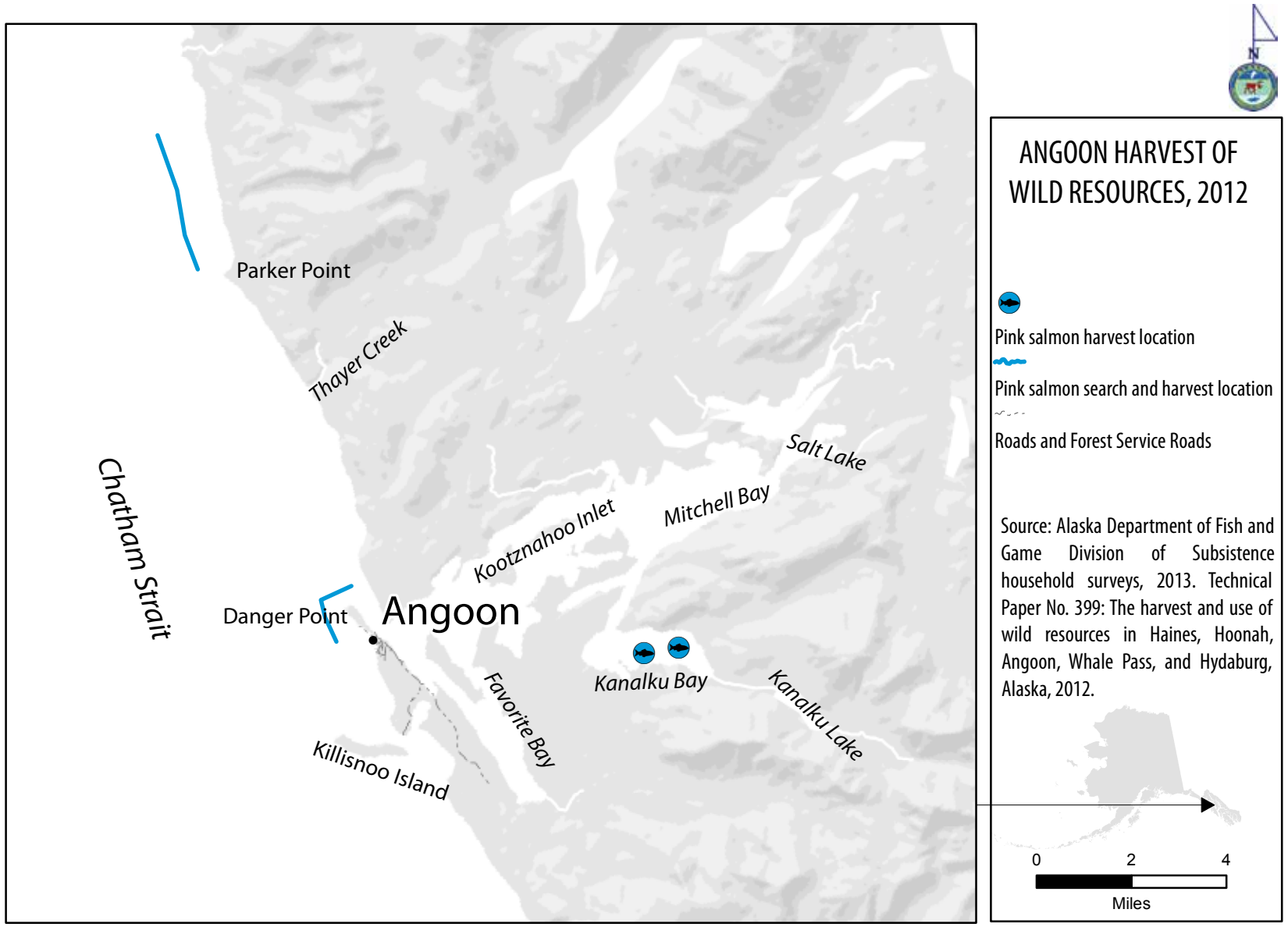
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Thayer Creek
Chatham Strait
Salt Lake
Mitchell Bay
Kootznahoo Inlet
Danger Point
Angoon
Kanalku Bay
Kanalku Lake
Favorite Bay
Killisnoo Island
ANGOON HARVEST OF WILD RESOURCES, 2012
Pink salmon harvest location
Pink salmon search and harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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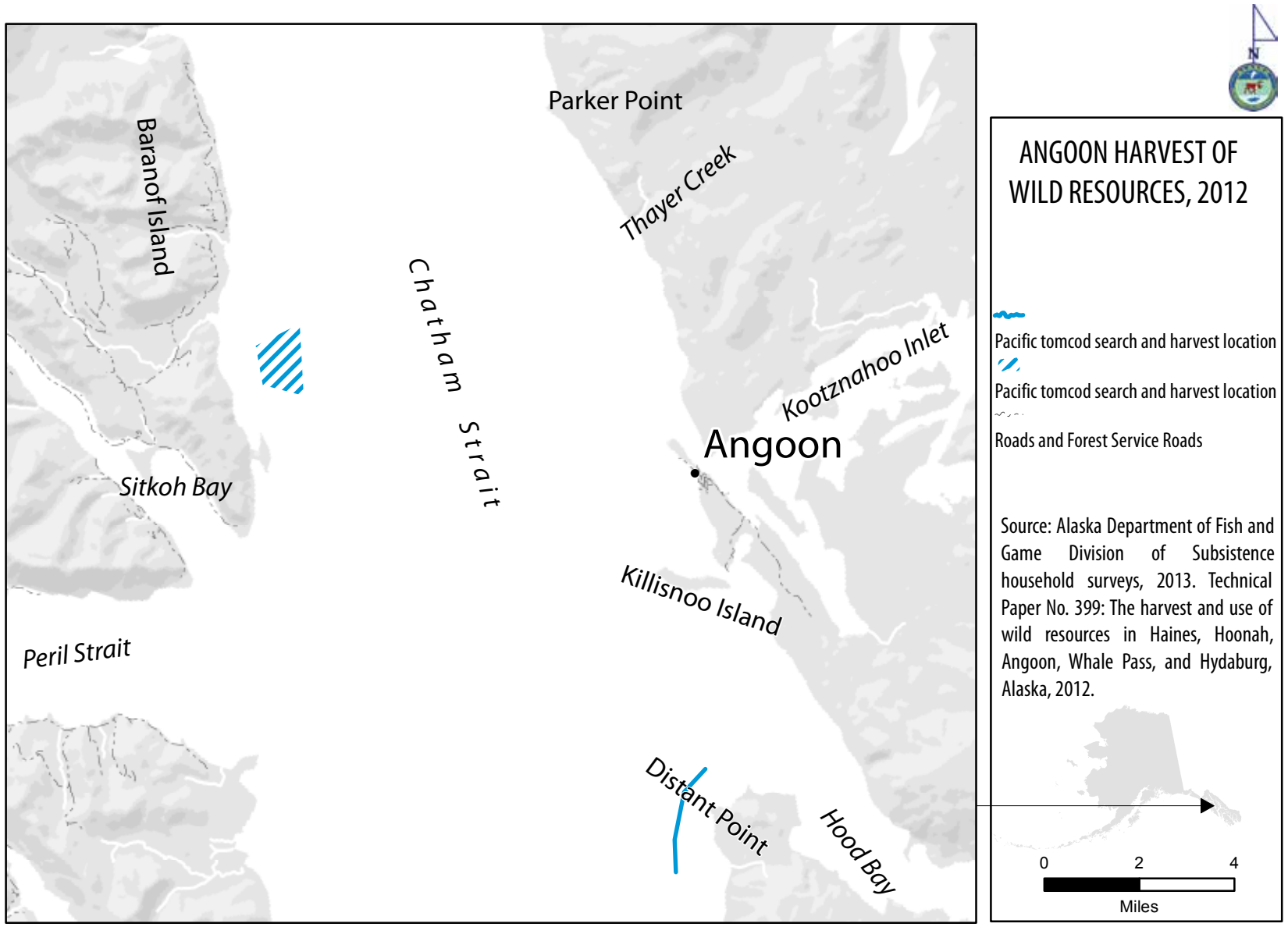
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Baranof Island
Chatham Strait
Kootznahoo Inlet
Angoon
Sitkoh Bay
Killisnoo Island
Peril Strait
Distant Point
Hood Bay
ANGOON HARVEST OF WILD RESOURCES, 2012
Pacific tomcod search and harvest location
Pacific tomcod search and harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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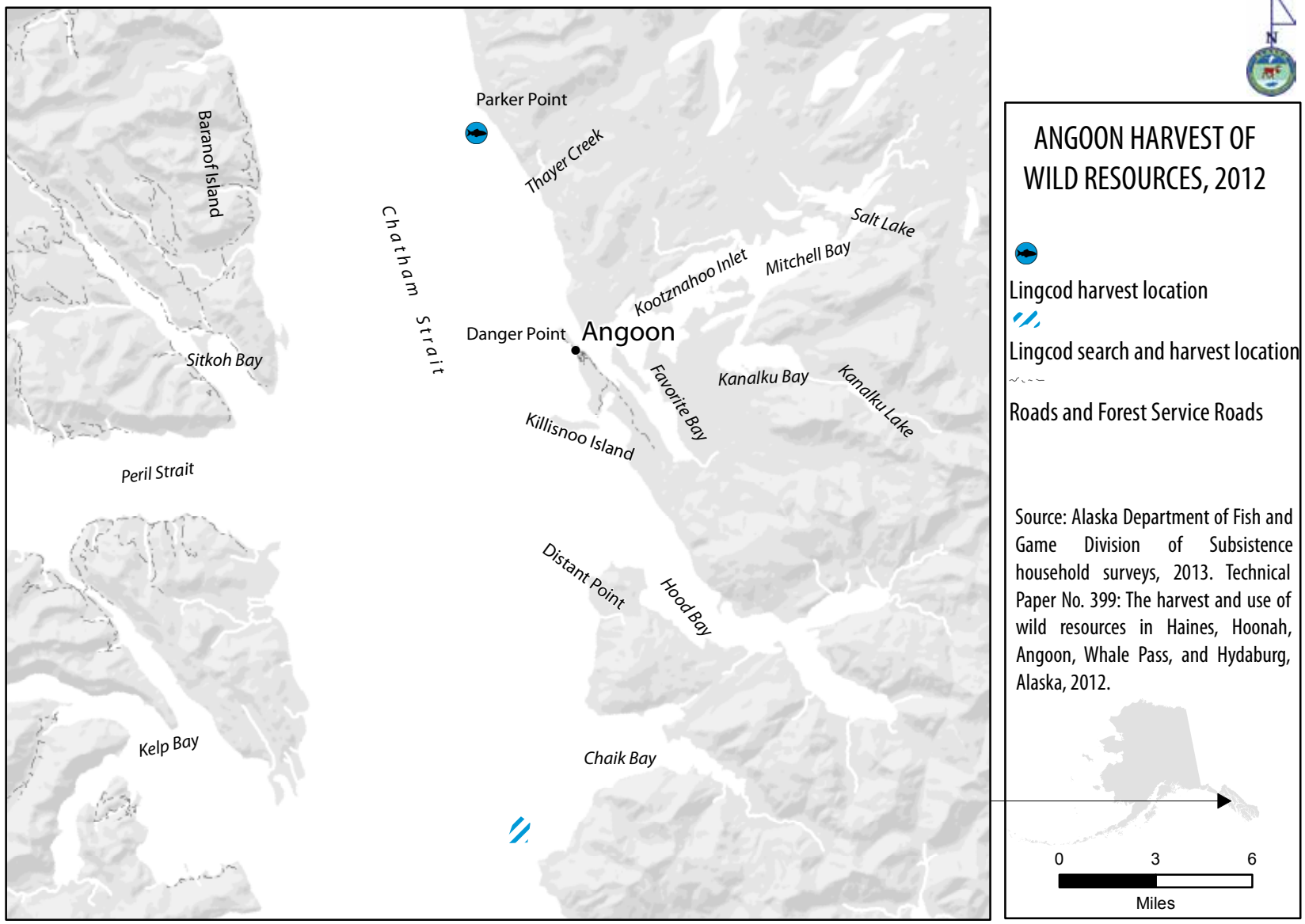
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Thayer Creek
Baranof Island
Chatham Strait
Salt Lake
Mitchell Bay
Kootznahoo Inlet
Danger Point
Angoon
Sitkoh Bay
Favorite Bay
Kanalku Bay
Kanalku Lake
Killisnoo Island
Peril Strait
Distant Point
Hood Bay
Kelp Bay
Chaik Bay
N
ANGOON HARVEST OF WILD RESOURCES, 2012
Lingcod harvest location
Lingcod search and harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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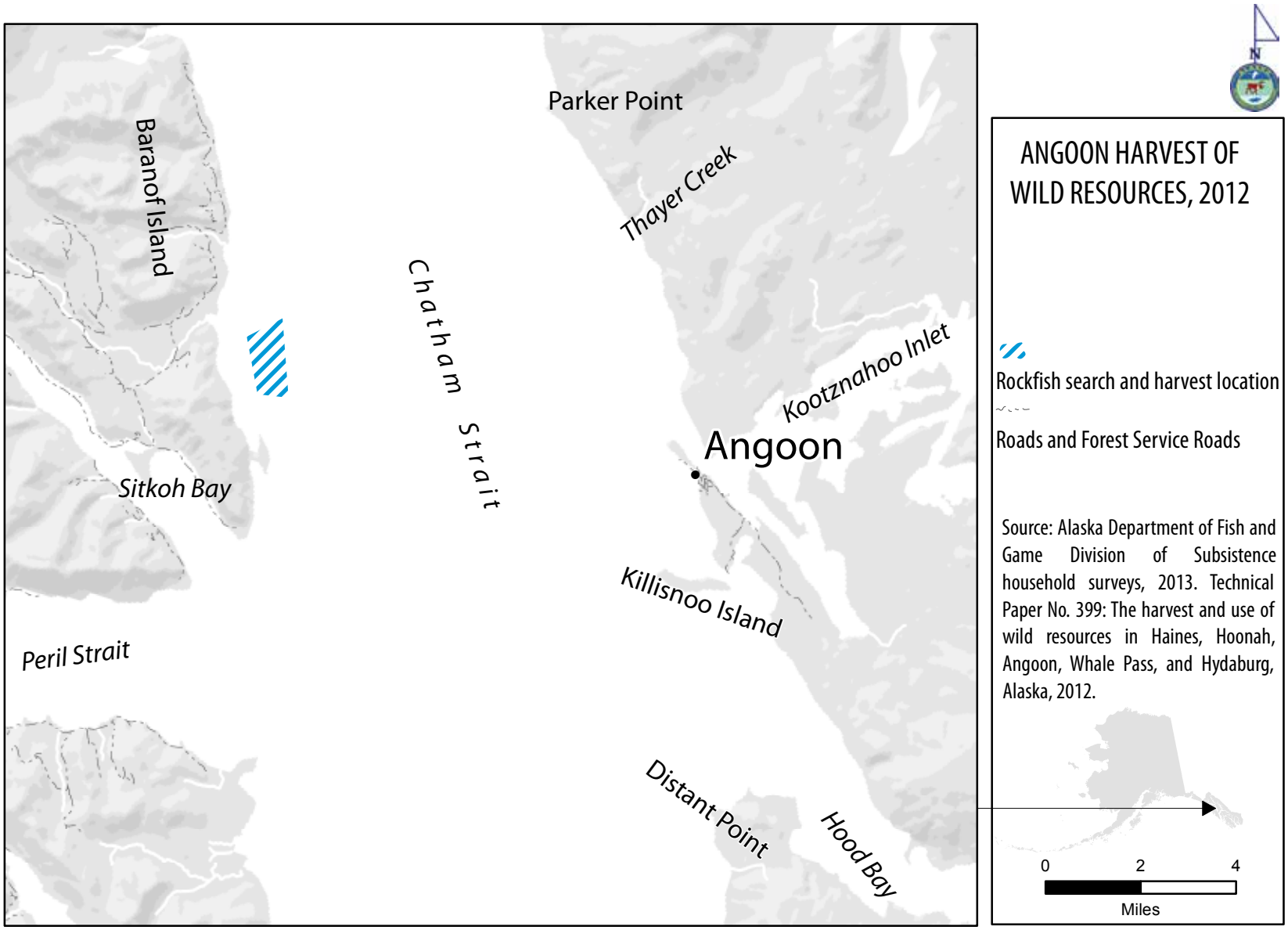
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Baranof Island
Chatham Strait
Kootznahoo Inlet
Angoon
Sitkoh Bay
Killisnoo Island
Peril Strait
Distant Point
Hood Bay
ANGOON HARVEST OF WILD RESOURCES, 2012
Rockfish search and harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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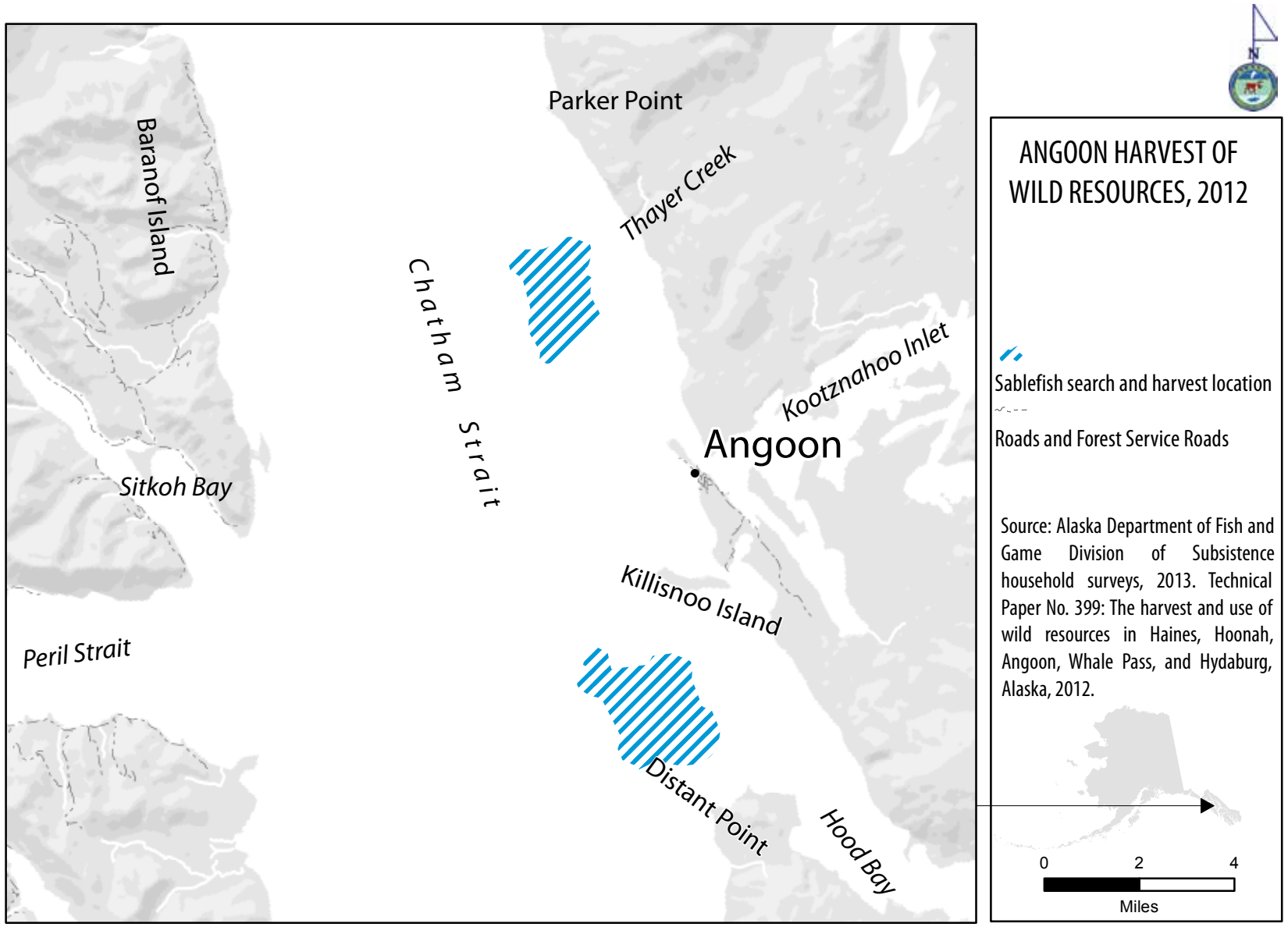
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Chatham Strait
Kootznahoo Inlet
Angoon
Sitkoh Bay
Killisnoo Island
Peril Strait
Distant Point
Hood Bay
ANGOON HARVEST OF WILD RESOURCES, 2012
Sablefish search and harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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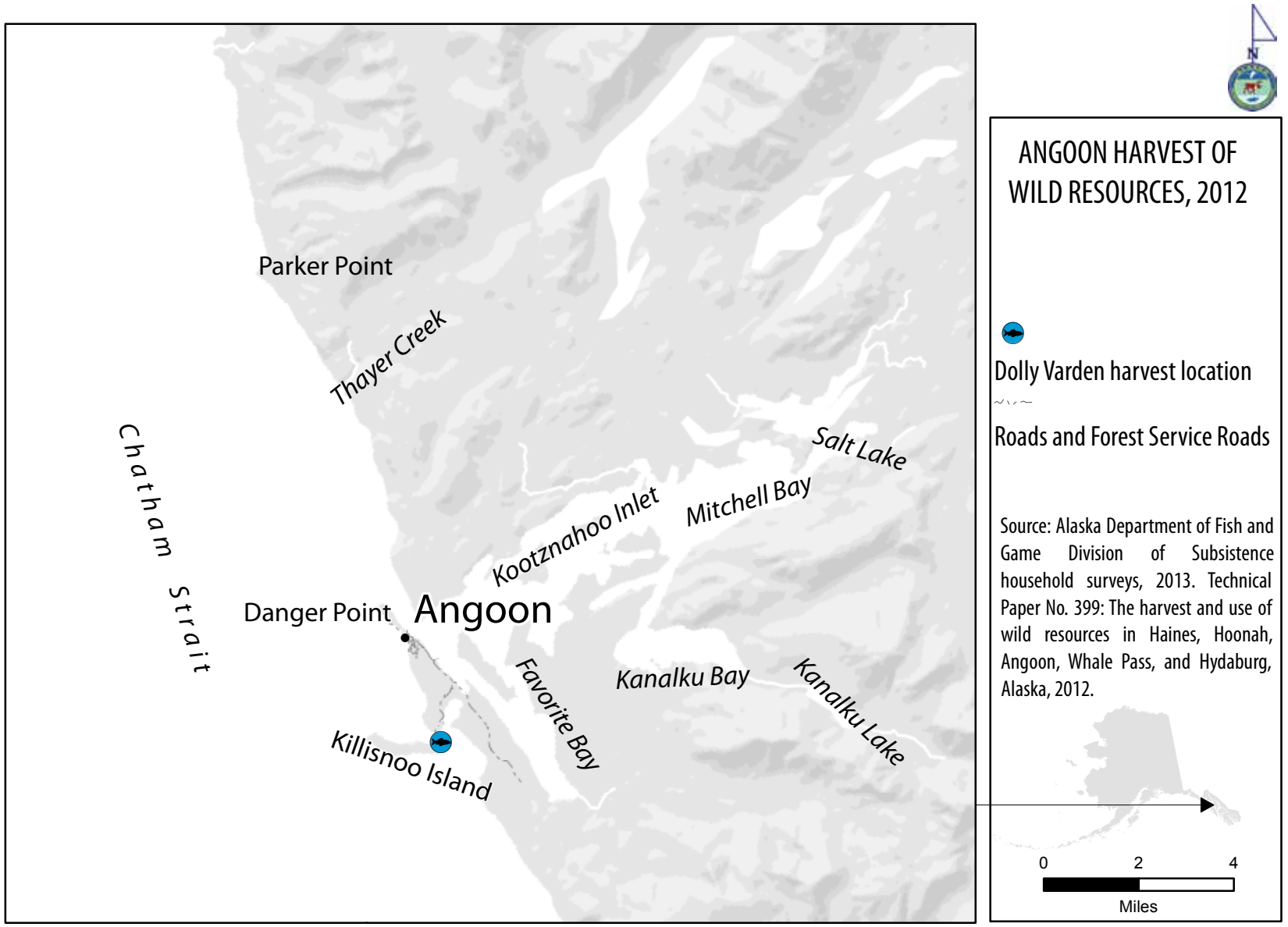
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Chatham Strait
Salt Lake
Kootznahoo Inlet
Mitchell Bay
Danger Point
Angoon
Favorite Bay
Kanalku Bay
Kanalku Lake
Killisnoo Island
ANGOON HARVEST OF WILD RESOURCES, 2012
Dolly Varden harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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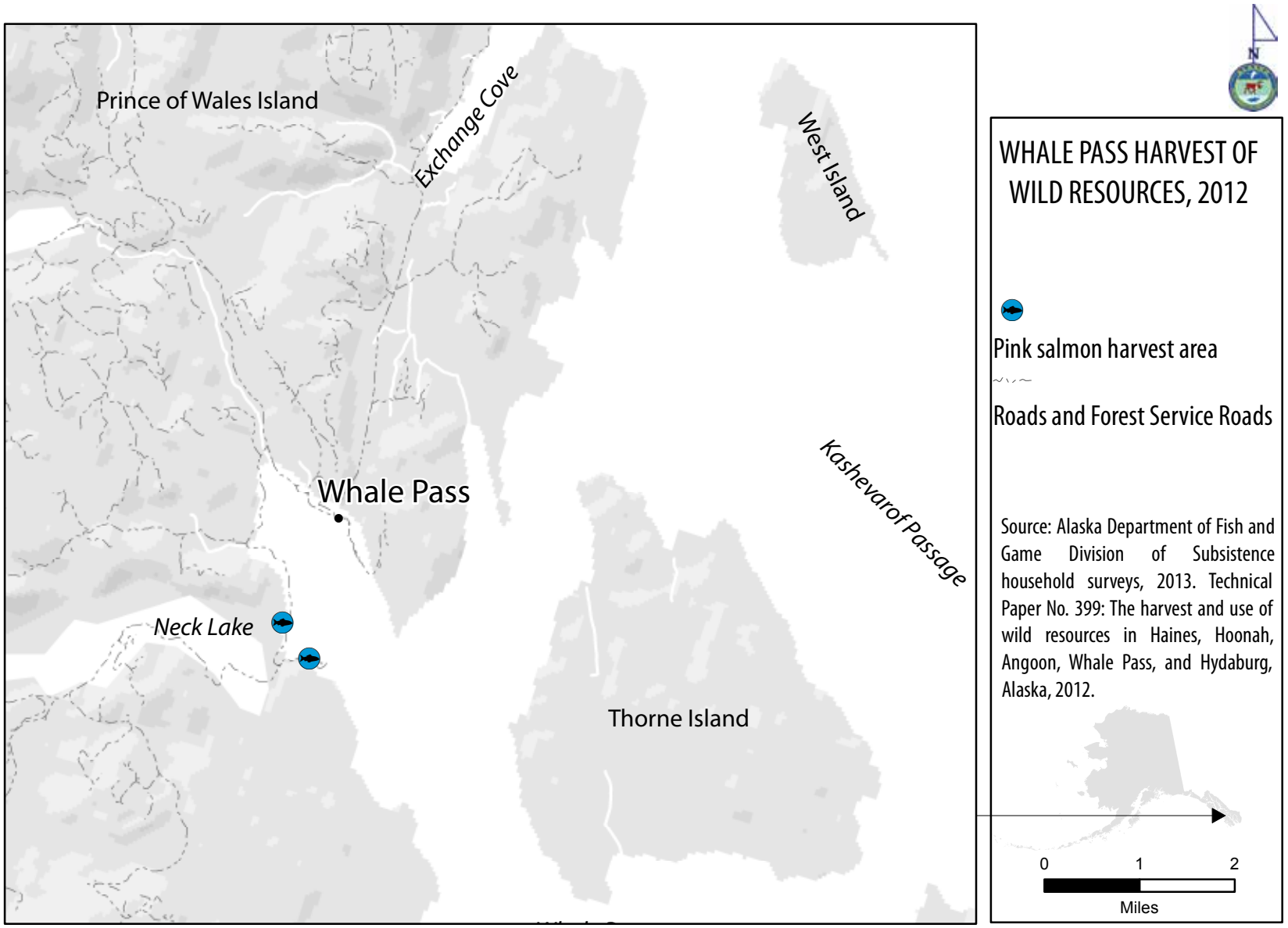
Prince of Wales Island
Exchange Cove
West Island
Whale Pass
Kashevarof Passage
Neck Lake
Thorne Island
N
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Pink salmon harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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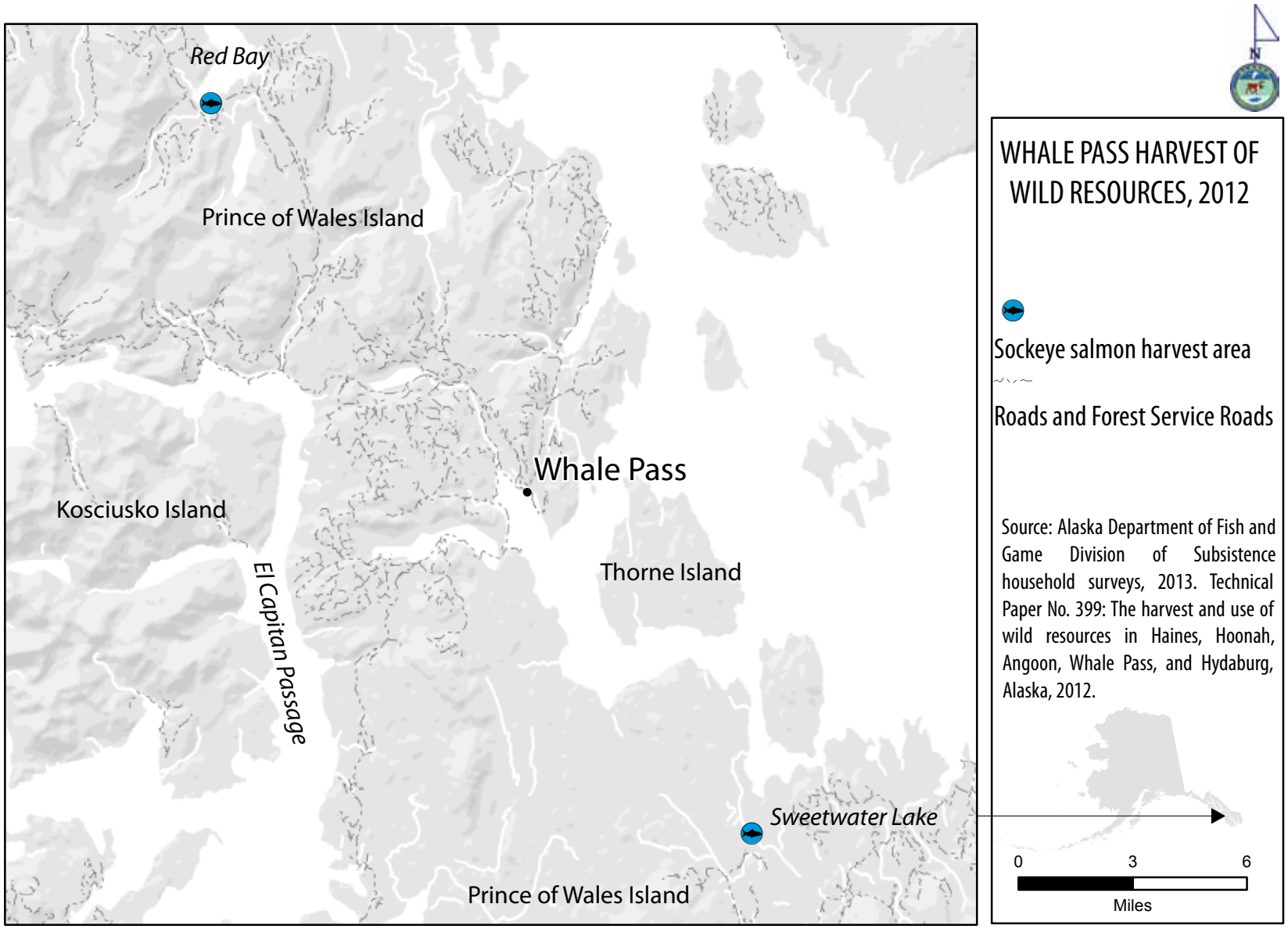
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Prince of Wales Island
Whale Pass
Kosciusko Island
El Capitan Passage
Thorne Island
Sweetwater Lake
Prince of Wales Island
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Sockeye salmon harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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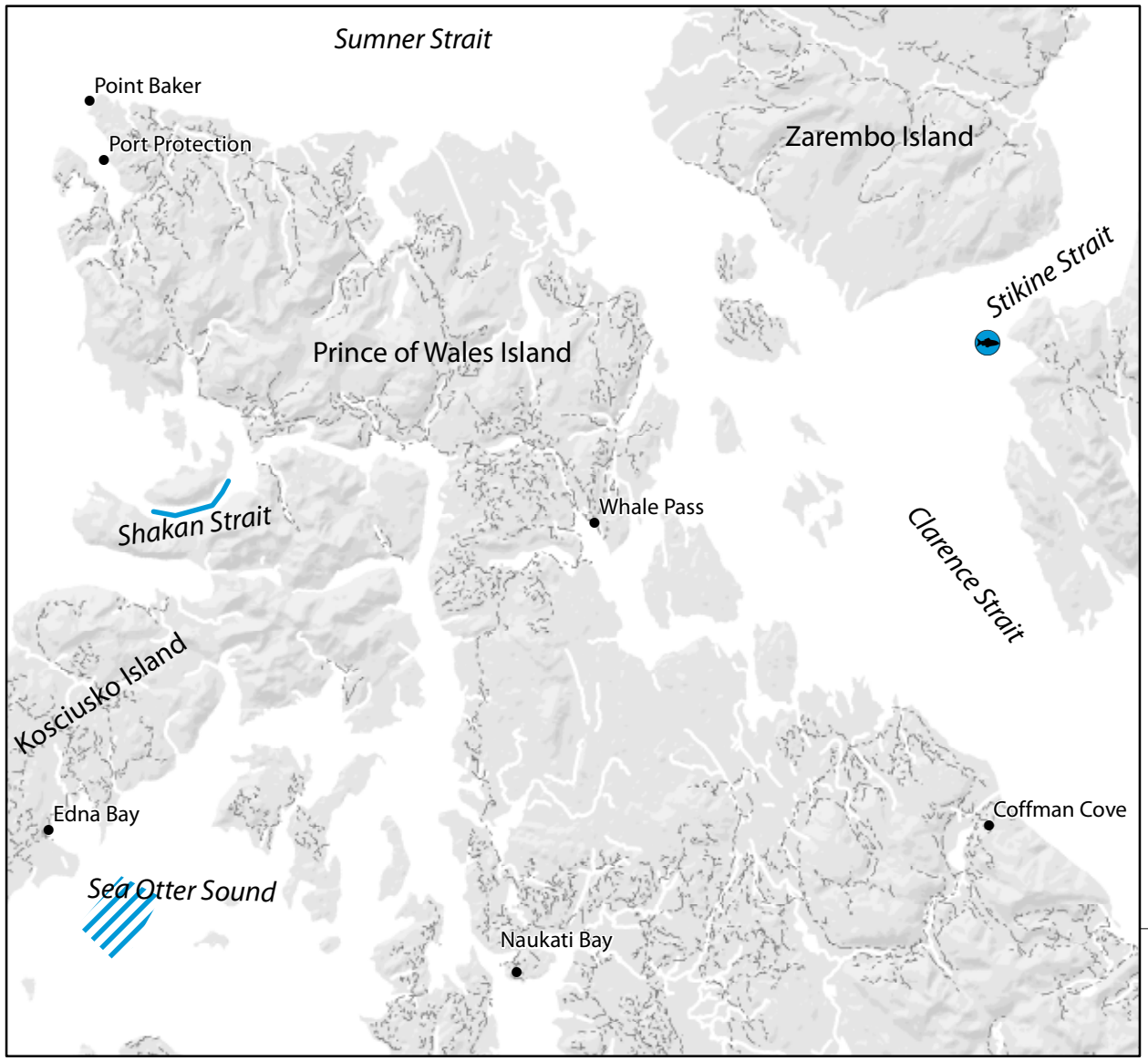




WHALE PASS HARVEST OF WILD RESOURCES, 2012

Lingcod harvest area

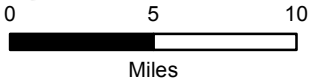
Lingcod search and harvest area

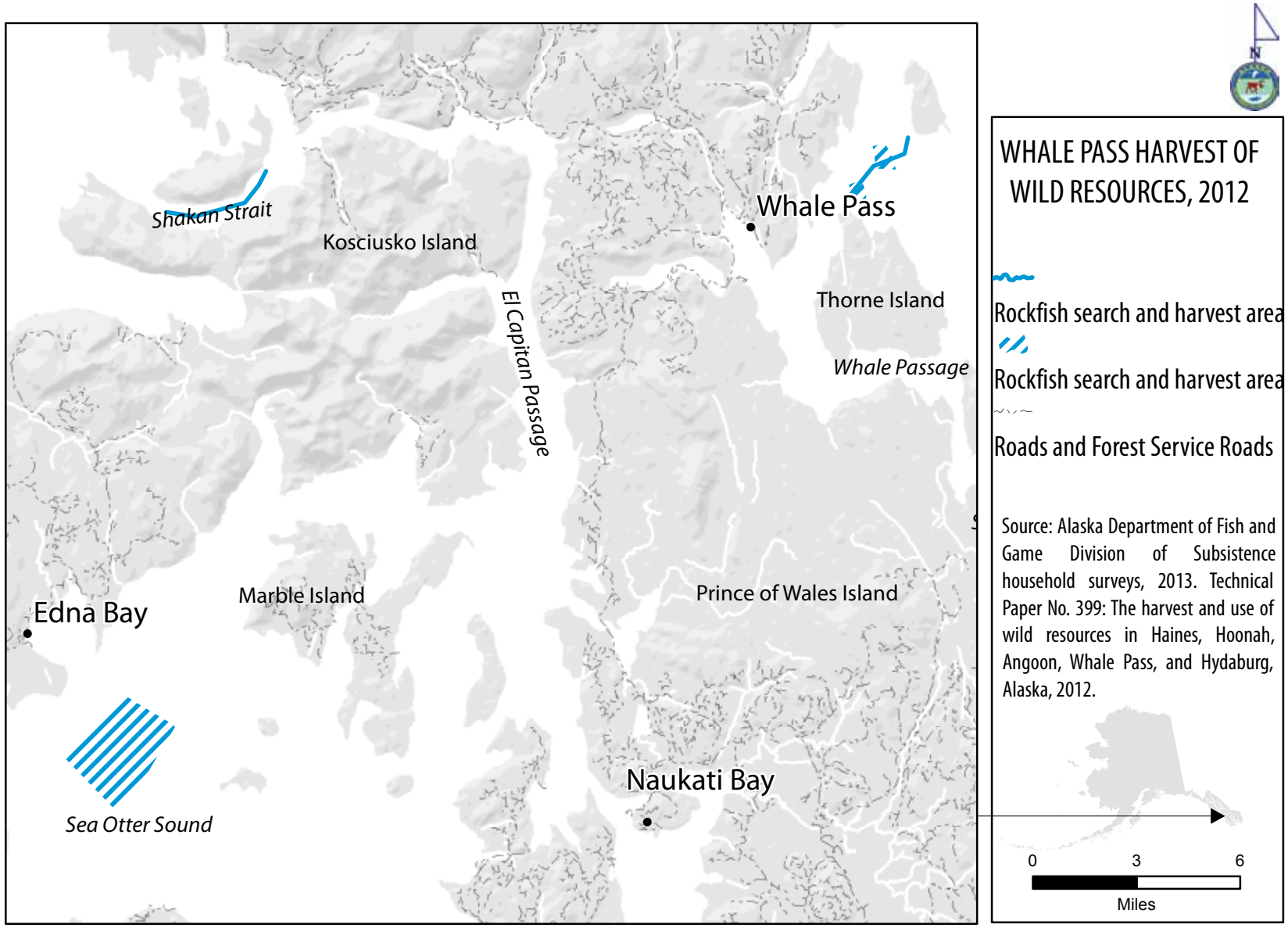
Lingcod search and harvest area

Roads and Forest Service Roads

Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.






Shakan Strait
Kosciusko Island
Whale Pass
Thorne Island
El Capitan Passage
Whale Passage
Marble Island
Edna Bay
Prince of Wales Island
Naukati Bay
Sea Otter Sound
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Rockfish search and harvest area
Rockfish search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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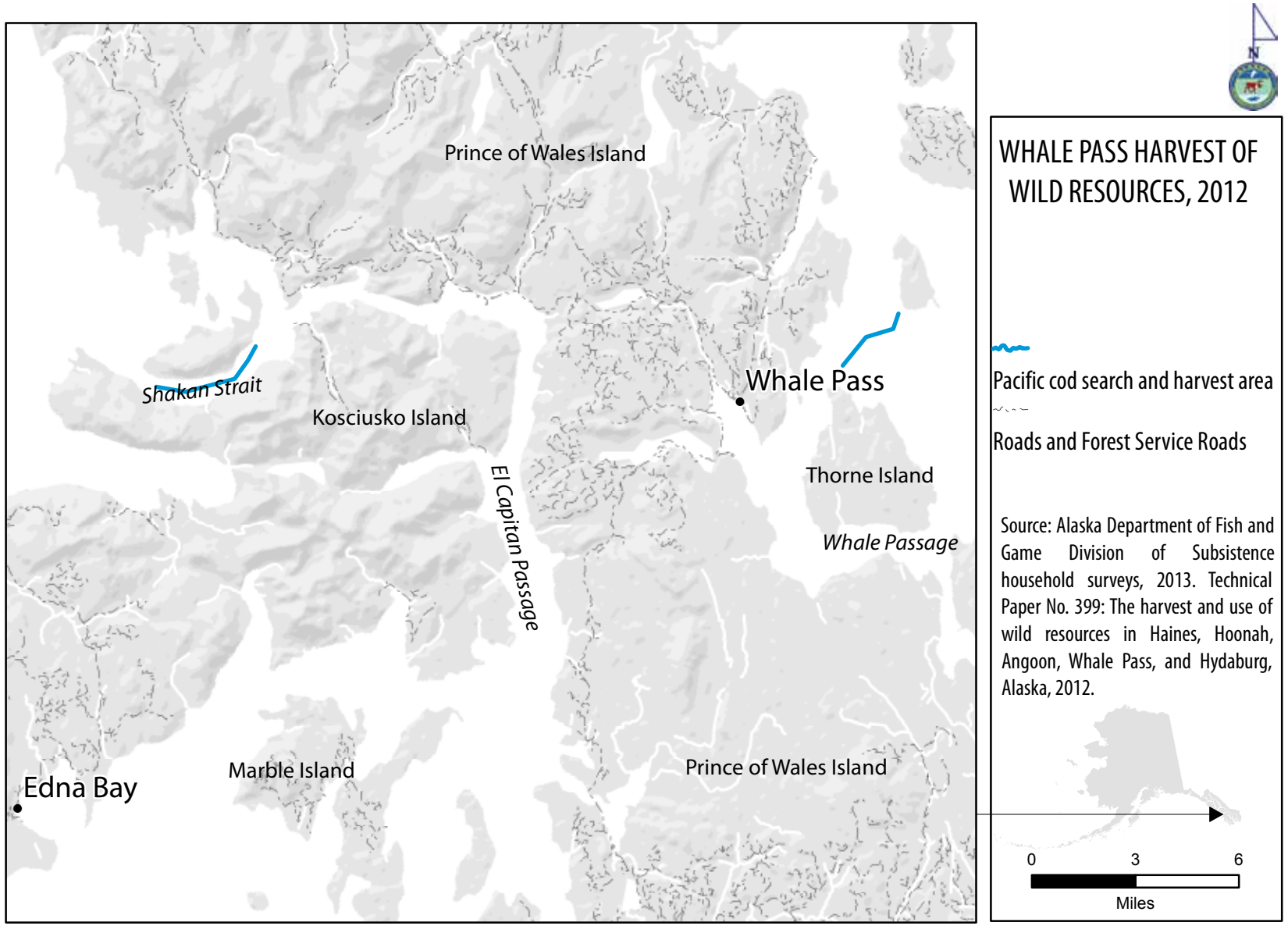
Prince of Wales Island
Shakan Strait
Kosciusko Island
Whale Pass
Thorne Island
El Capitan Passage
Whale Passage
Marble Island
Edna Bay
Prince of Wales Island
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Pacific cod search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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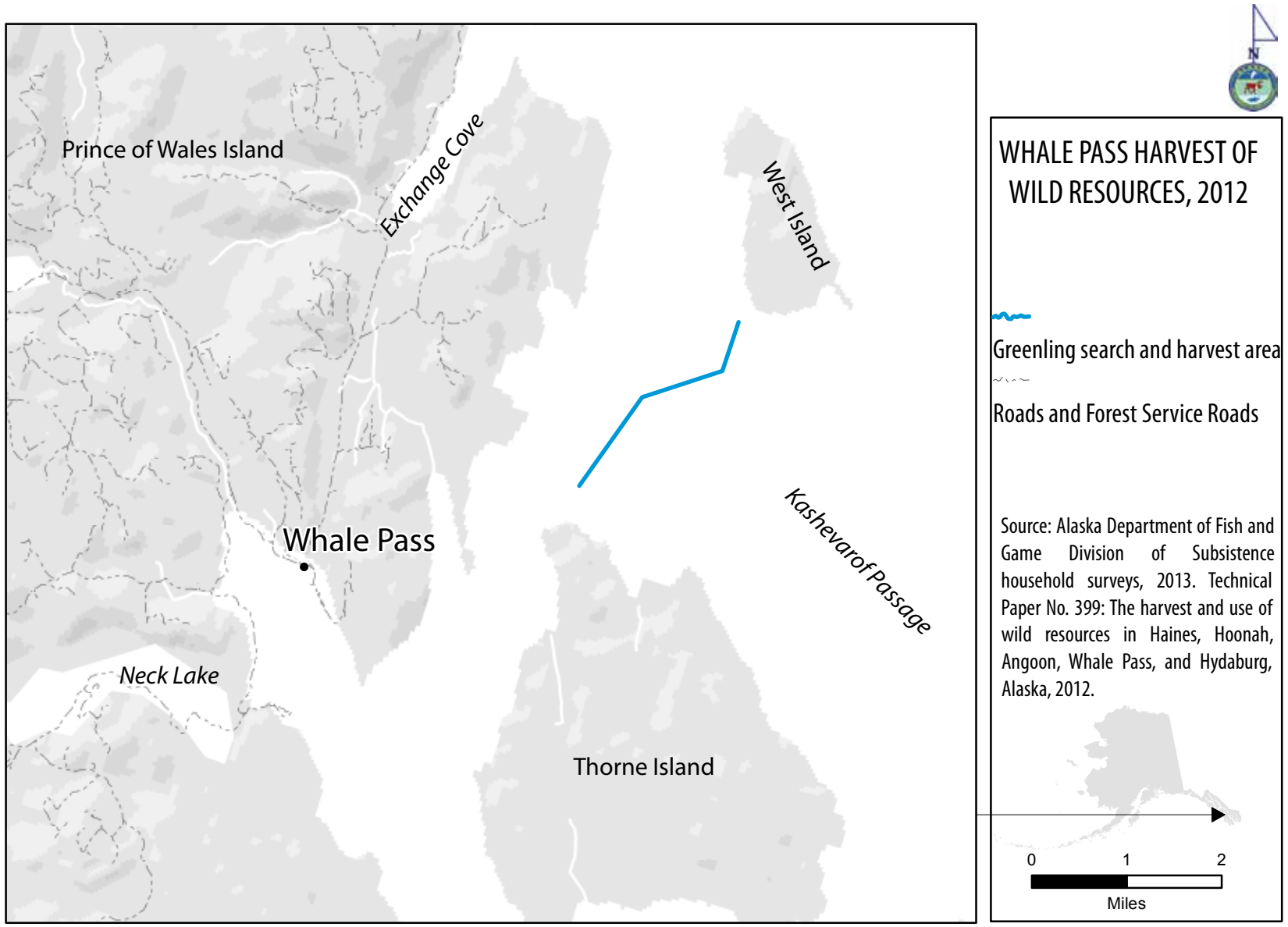
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West Island
Whale Pass
Kashevarof Passage
Neck Lake
Thorne Island
N
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Greenling search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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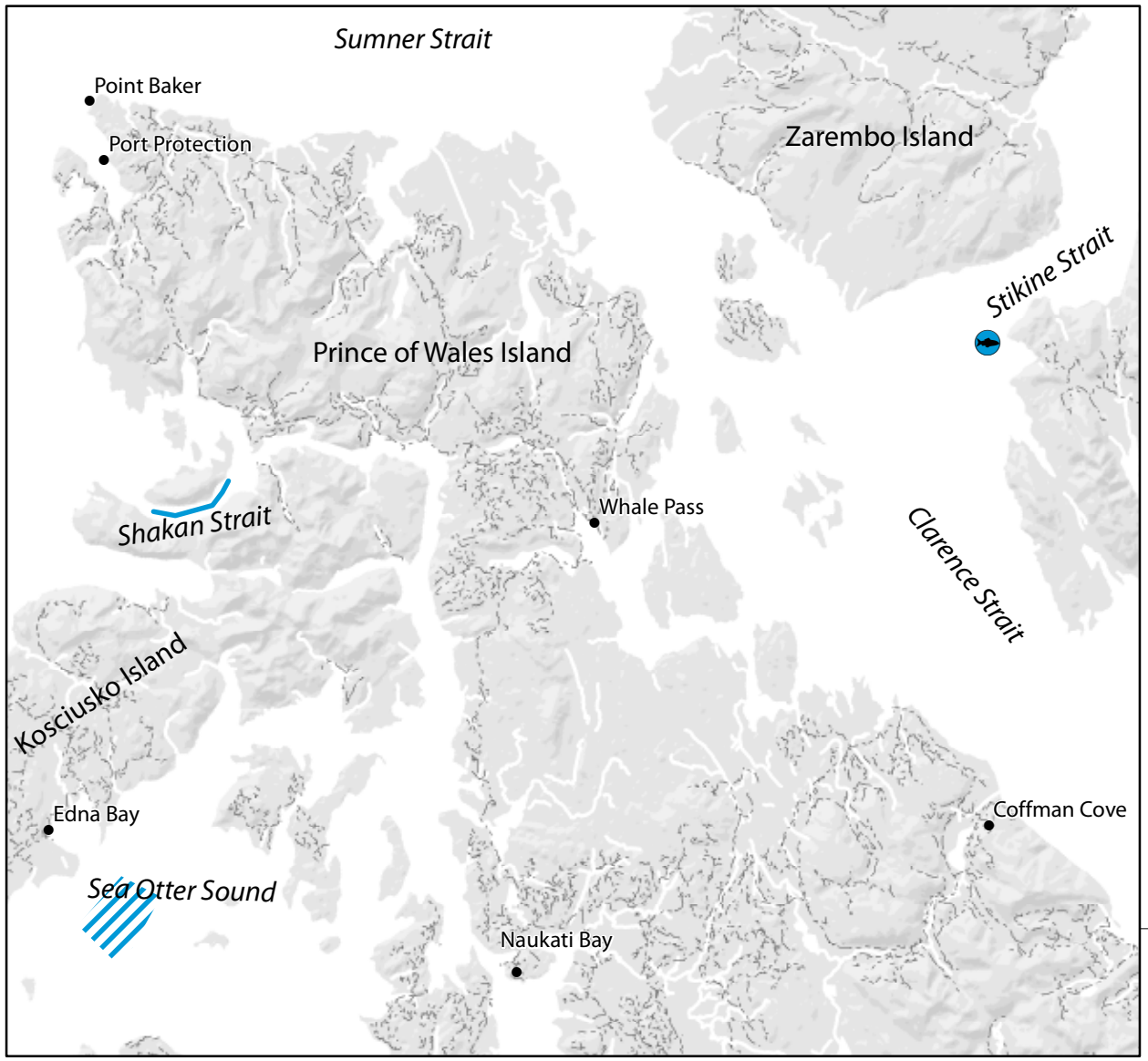




WHALE PASS HARVEST OF WILD RESOURCES, 2012

Lingcod harvest area

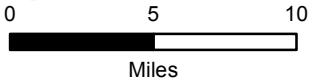
Lingcod search and harvest area

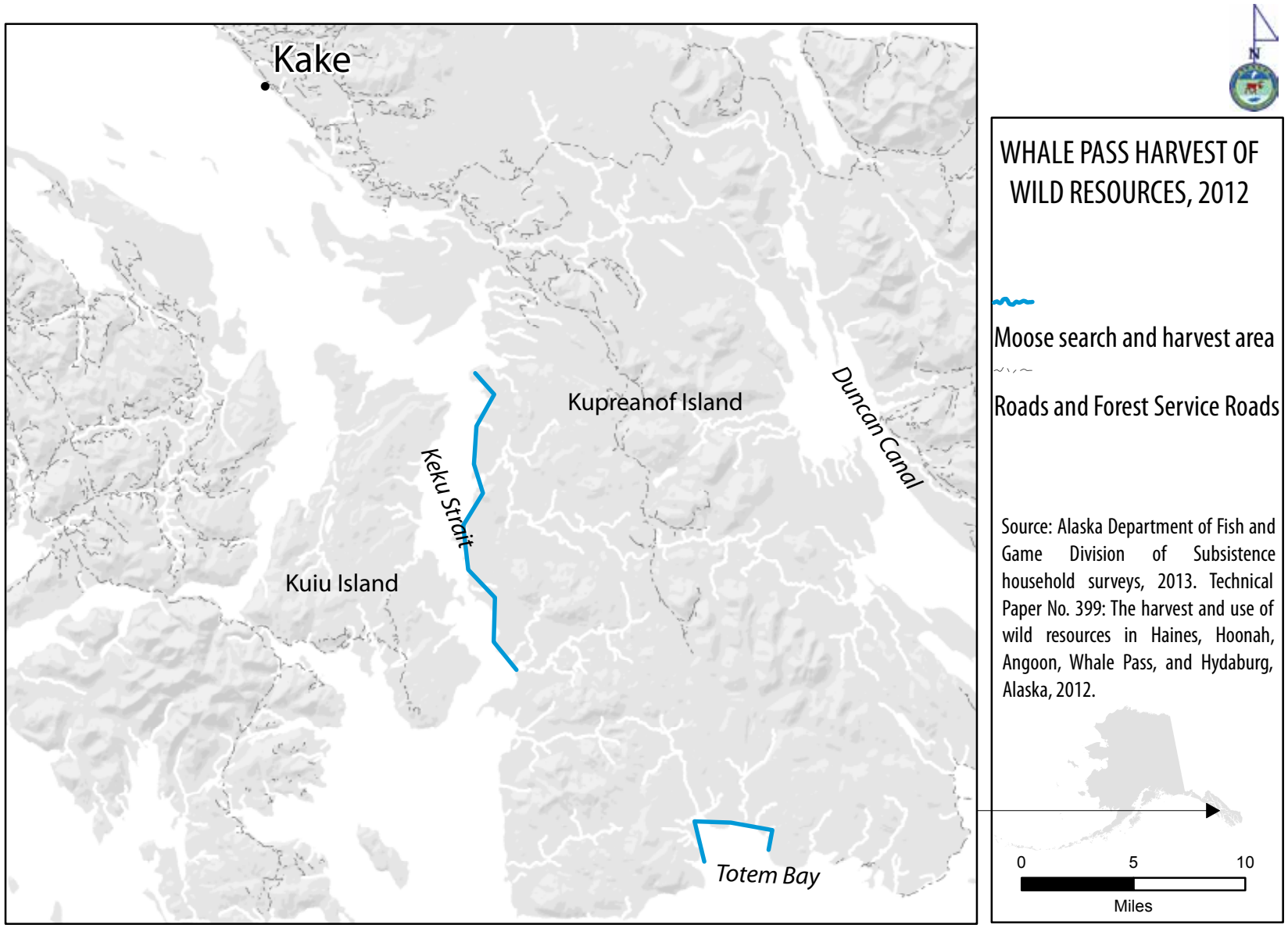
Lingcod search and harvest area

Roads and Forest Service Roads

Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.






Kake
Kupreanof Island
Duncan Canal
Keku Strait
Kuiu Island
Totem Bay
N
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Moose search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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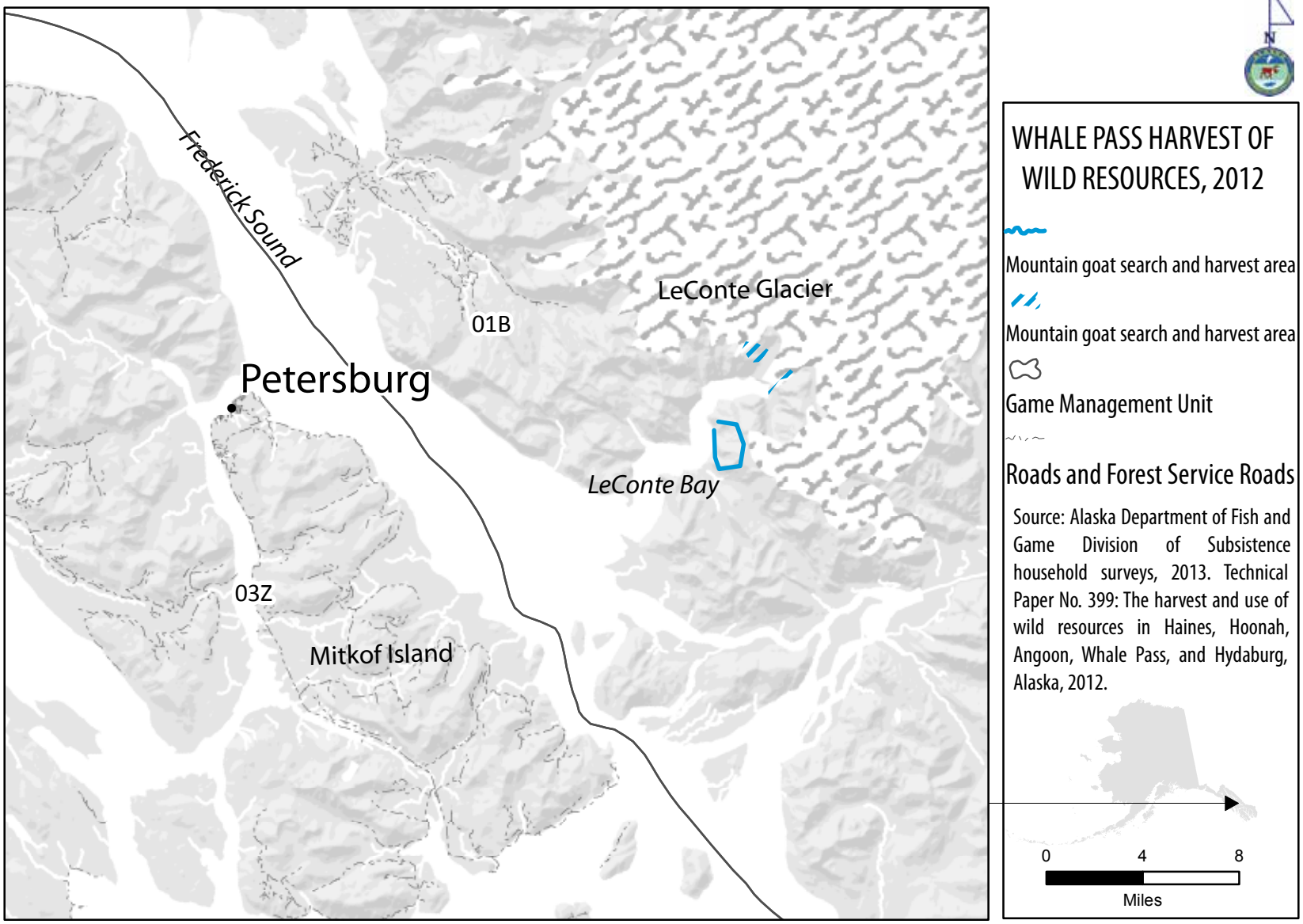
Frederick Sound
LeConte Glacier
01B
Petersburg
LeConte Bay
03Z
Mitkof Island
WHALE PASS HARVEST OF WILD RESOURCES, 2012
Mountain goat search and harvest area
Mountain goat search and harvest area
Game Management Unit
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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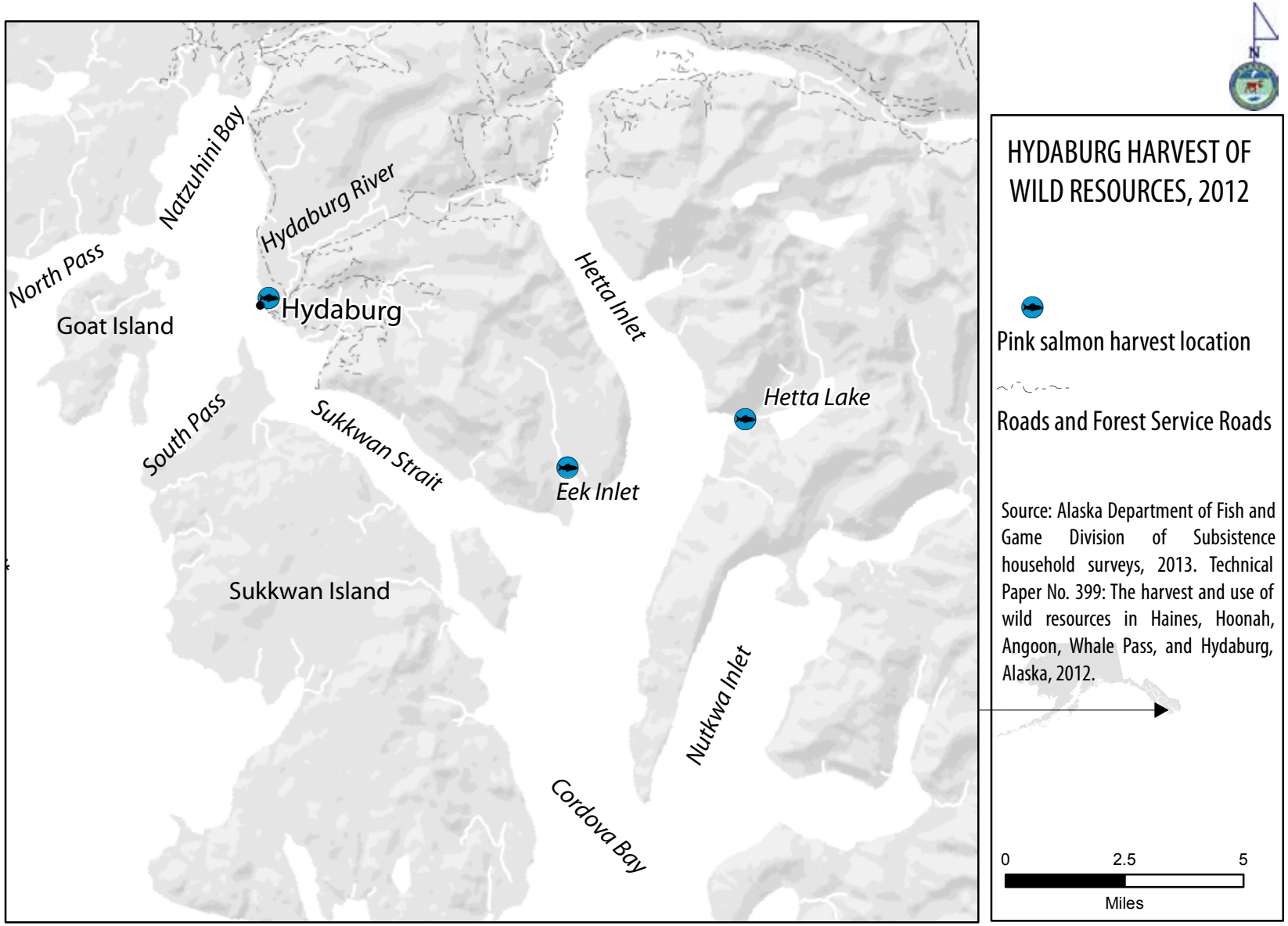
HYDABURG HARVEST OF WILD RESOURCES, 2012
Pink salmon harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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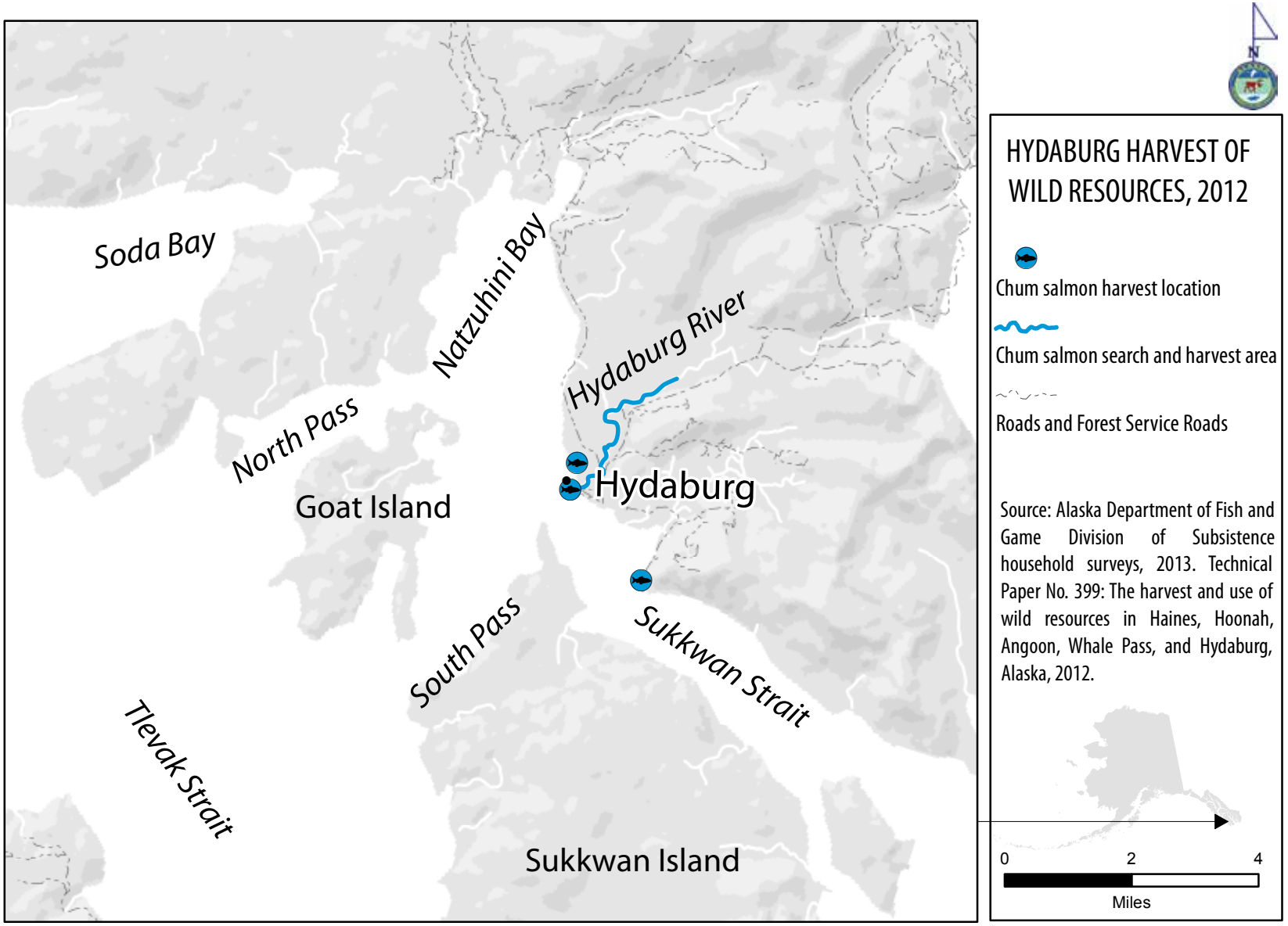
Natzuhini Bay
Hydaburg River
North Pass
Hydaburg
Goat Island
Hetta Inlet
Hetta Lake
South Pass
Sukkwan Strait
Eek Inlet
Sukkwan Island
Nutkwa Inlet
Cordova Bay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Natzuhini Bay
Hydaburg River
North Pass
Goat Island
Hydaburg
South Pass
Sukkwan Strait
Tlevak Strait
Sukkwan Island
HYDABURG HARVEST OF WILD RESOURCES, 2012
Chum salmon harvest location
Chum salmon search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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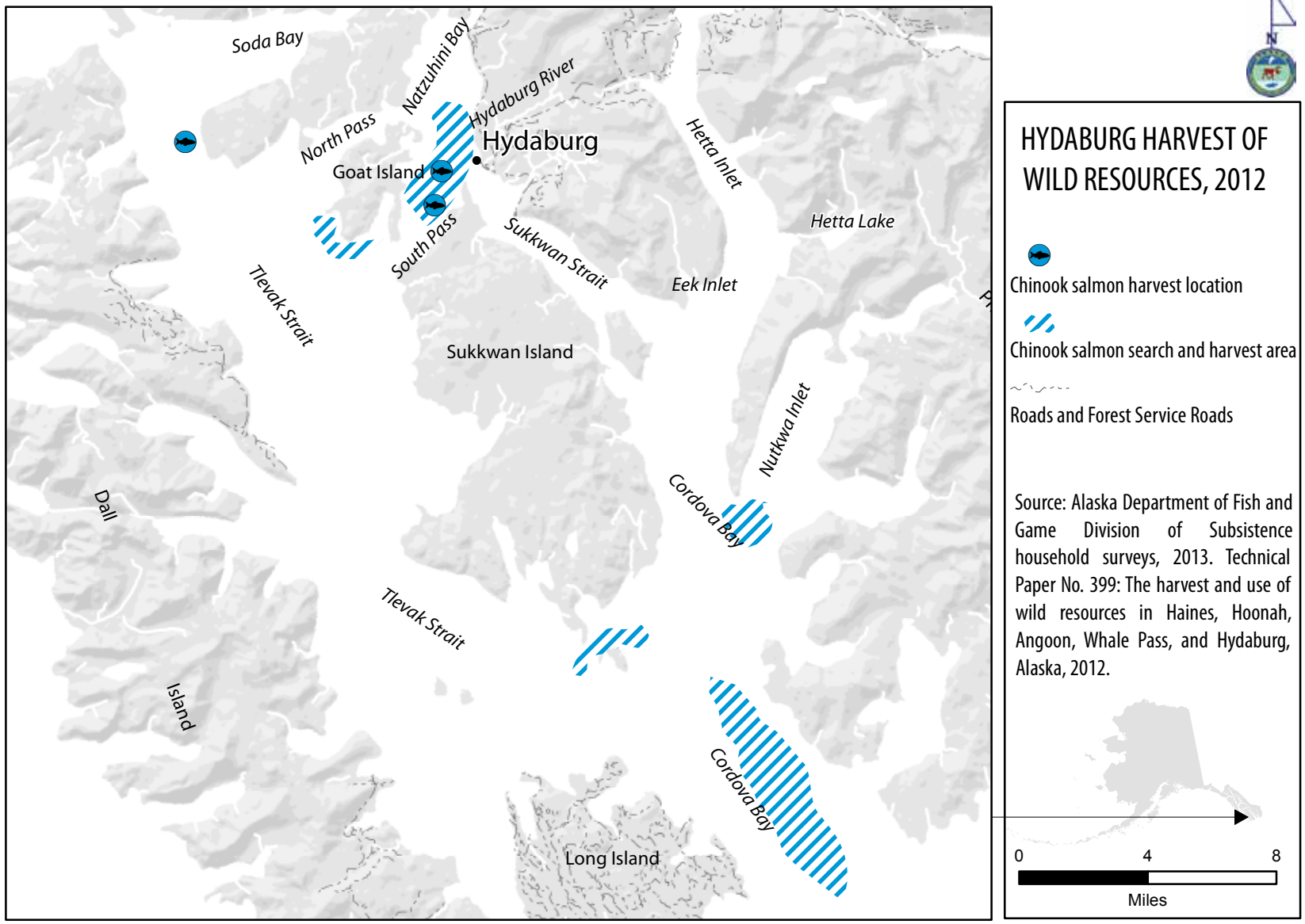
Soda Bay
Natzuhini Bay
Hydaburg River
North Pass
Hydaburg
Goat Island
Hetta Inlet
Hetta Lake
South Pass
Sukkwan Strait
Tlevak Strait
Eek Inlet
Sukkwan Island
Nutkwa Inlet
Cordova Bay
Dall
Tlevak Strait
Island
Cordova Bay
Long Island
N
HYDABURG HARVEST OF WILD RESOURCES, 2012
Chinook salmon harvest location
Chinook salmon search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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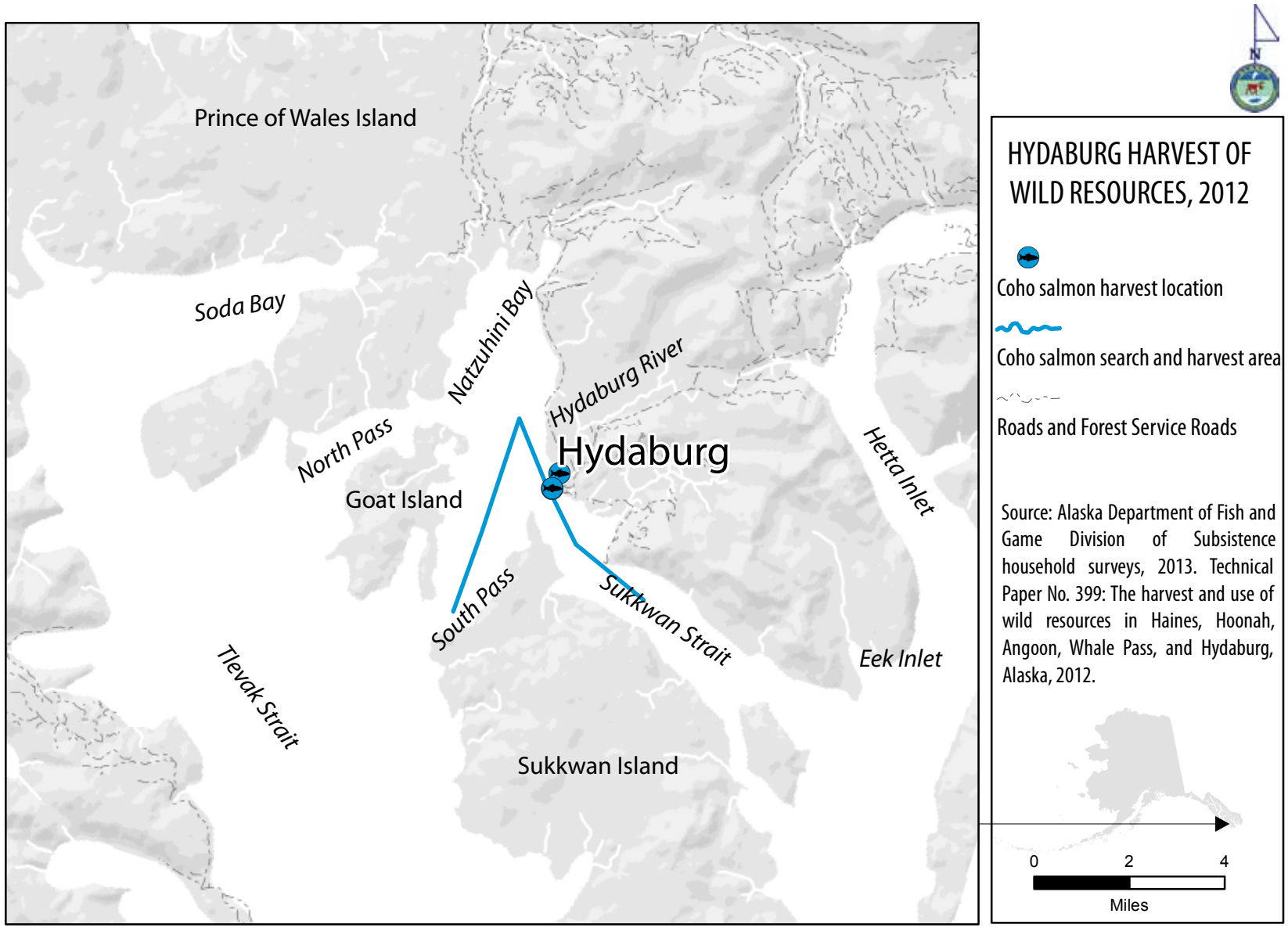
Prince of Wales Island
Soda Bay
Natzuhini Bay
Hydaburg River
North Pass
Hydaburg
Goat Island
Hetta Inlet
South Pass
Sukkwan Strait
Eek Inlet
Tlevak Strait
Sukkwan Island
HYDABURG HARVEST OF WILD RESOURCES, 2012
Coho salmon harvest location
Coho salmon search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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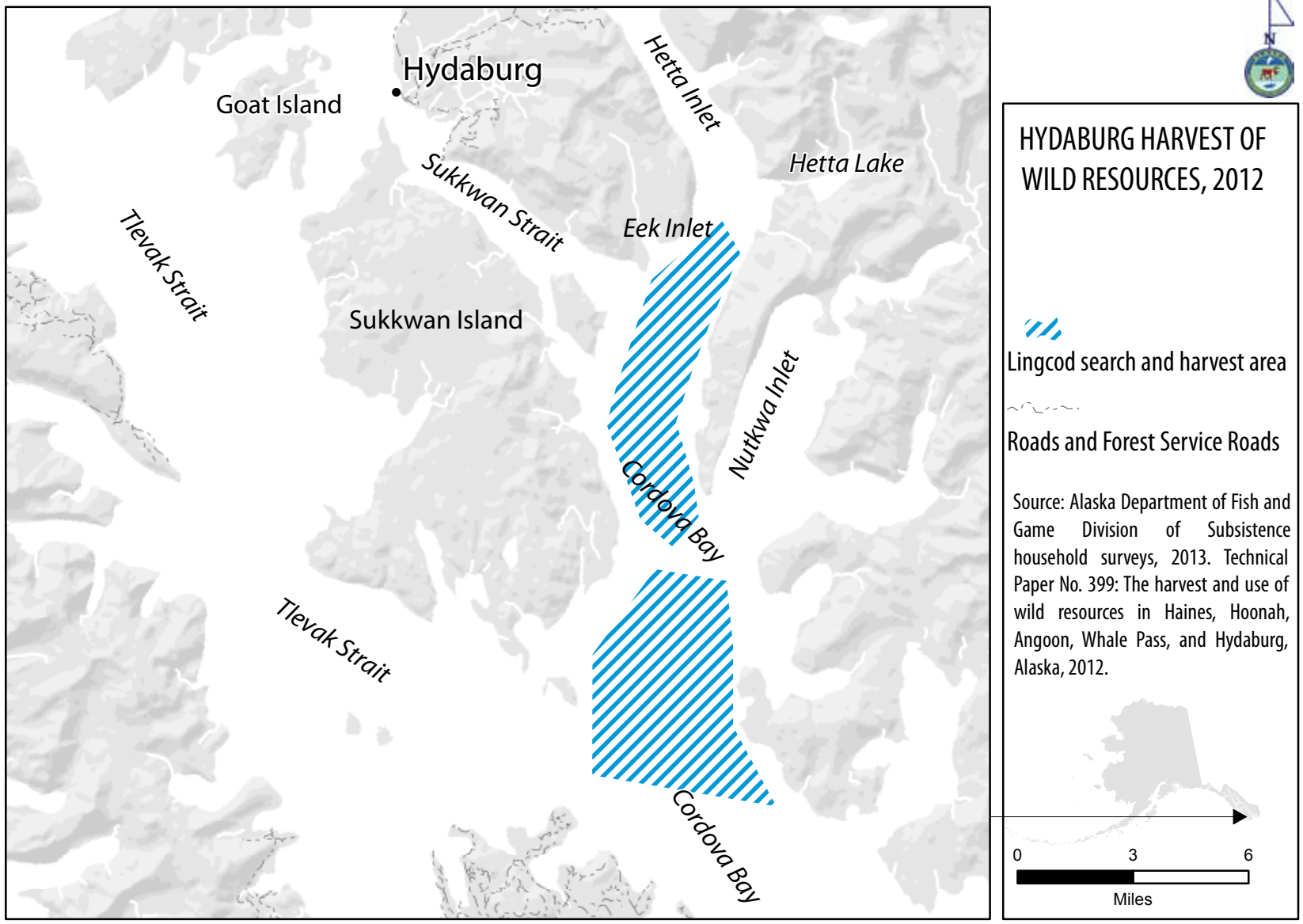
Hydaburg
Goat Island
Hetta Inlet
Hetta Lake
Sukkwan Strait
Eek Inlet
Tlevak Strait
Sukkwan Island
Nutkwa Inlet
Cordova Bay
Tlevak Strait
Cordova Bay
N
HYDABURG HARVEST OF WILD RESOURCES, 2012
Lingcod search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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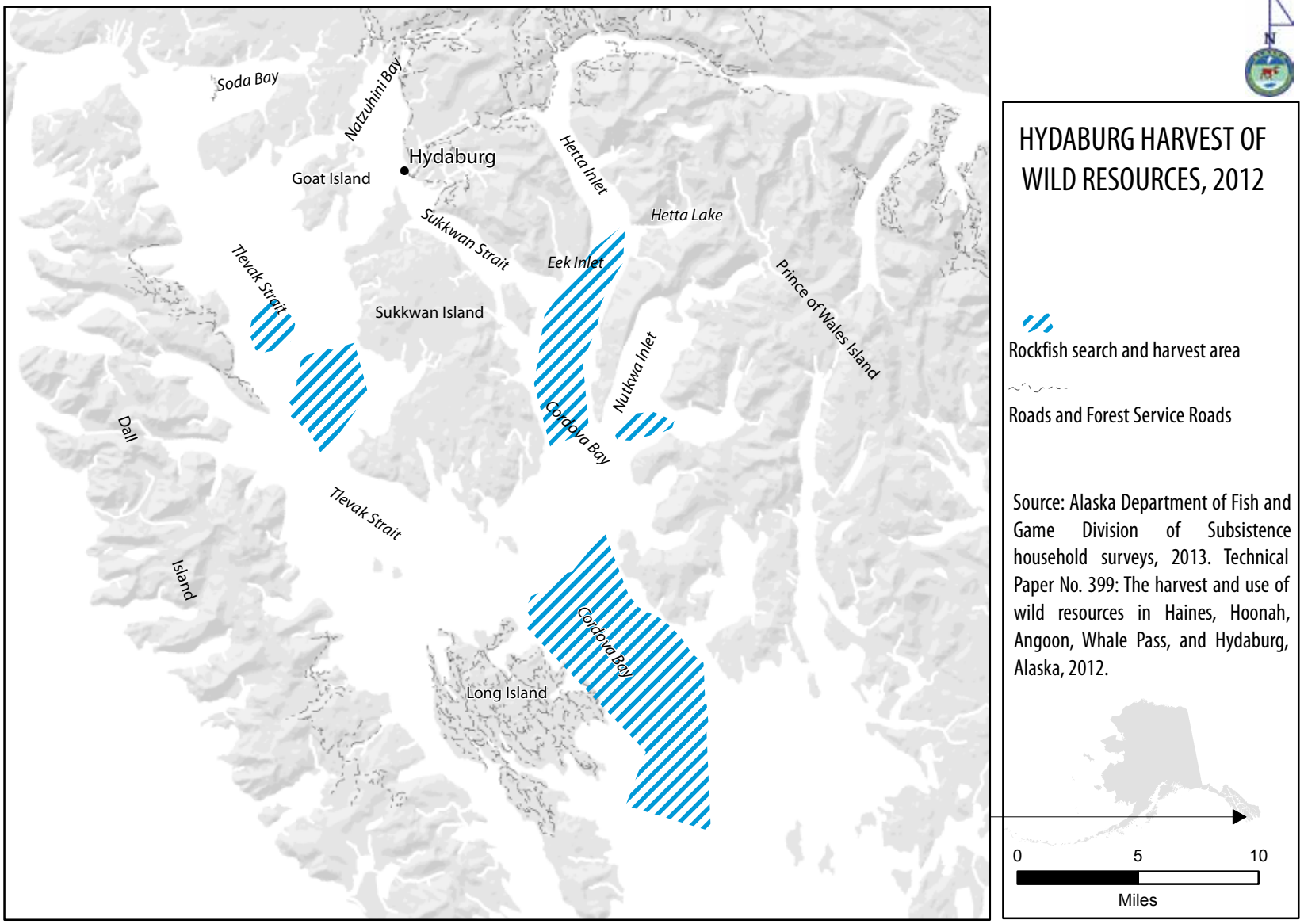
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Hydaburg
Goat Island
Hetta Inlet
Hetta Lake
Sukkwan Strait
Eek Inlet
Tlevak Strait
Sukkwan Island
Prince of Wales Island
Nutkwa Inlet
Cordova Bay
Dall
Tlevak Strait
Island
Cordova Bay
Long Island
N
HYDABURG HARVEST OF WILD RESOURCES, 2012
Rockfish search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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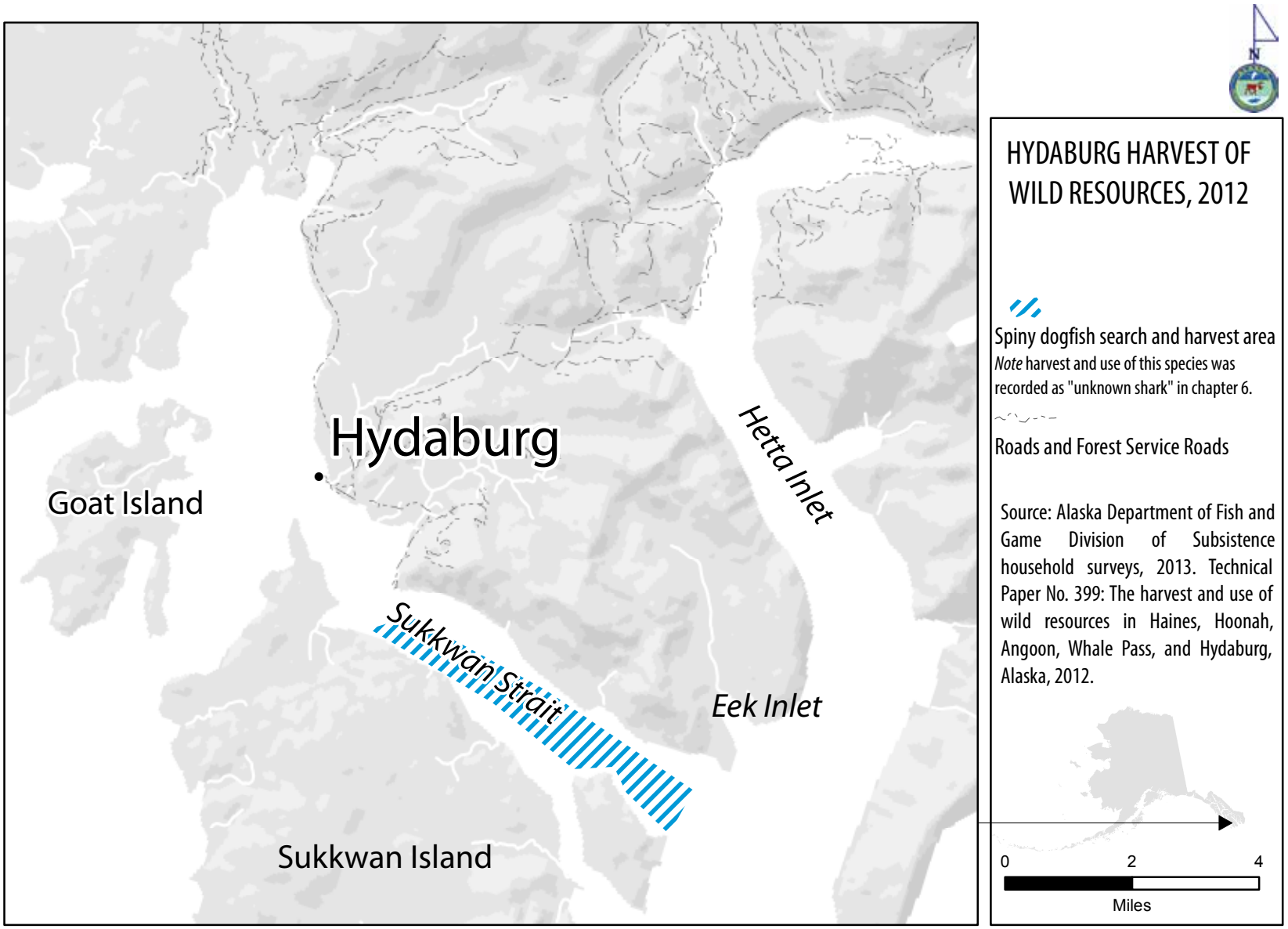
Hydaburg
Goat Island
Hetta Inlet
Sukkwan Strait
Eek Inlet
Sukkwan Island
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HYDABURG HARVEST OF WILD RESOURCES, 2012
Spiny dogfish search and harvest area
Note harvest and use of this species was recorded as "unknown shark" in chapter 6.
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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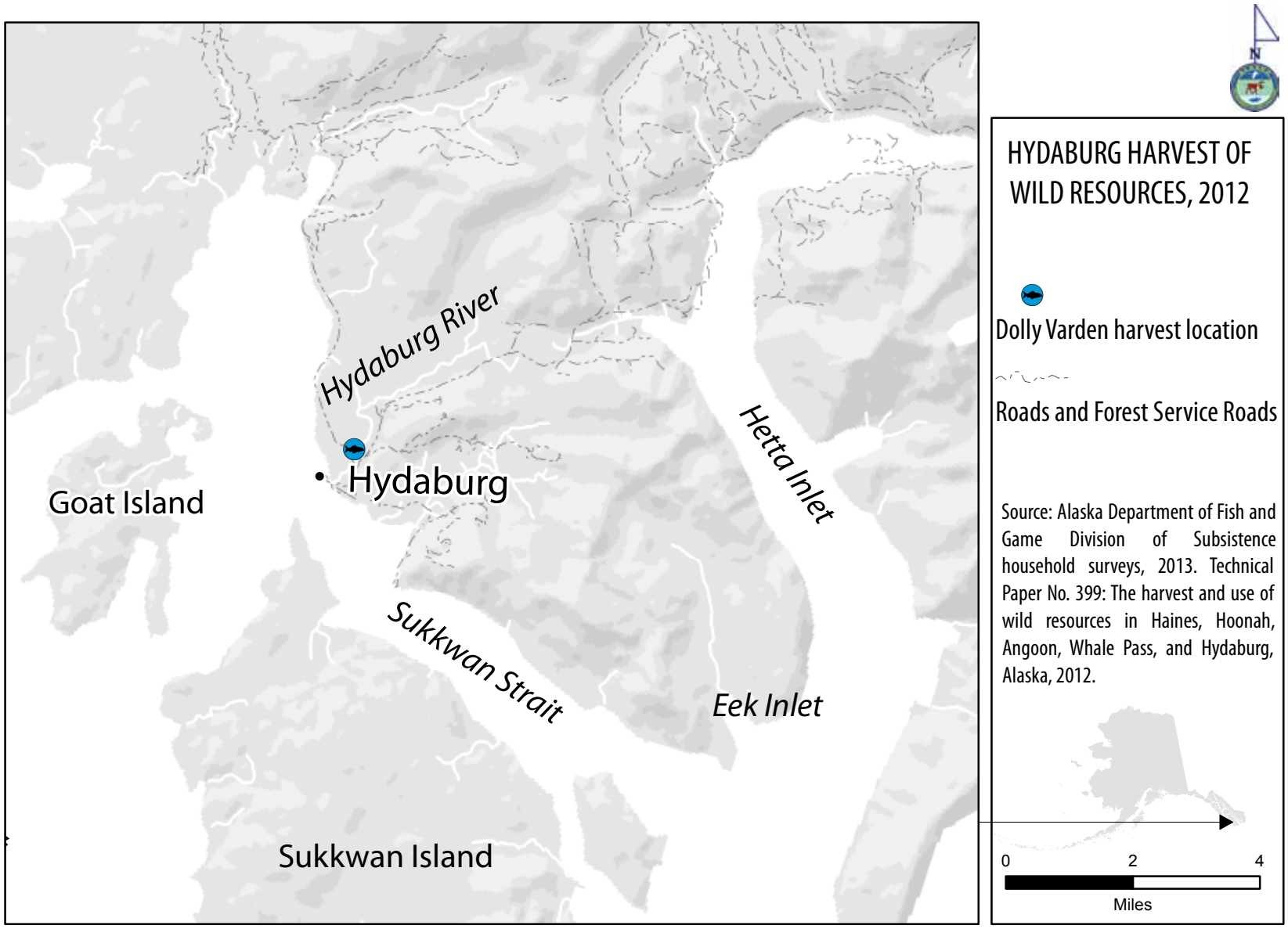
Hydaburg River
Hydaburg
Goat Island
Hetta Inlet
Sukkwan Strait
Eek Inlet
Sukkwan Island
N
HYDABURG HARVEST OF WILD RESOURCES, 2012
Dolly Varden harvest location
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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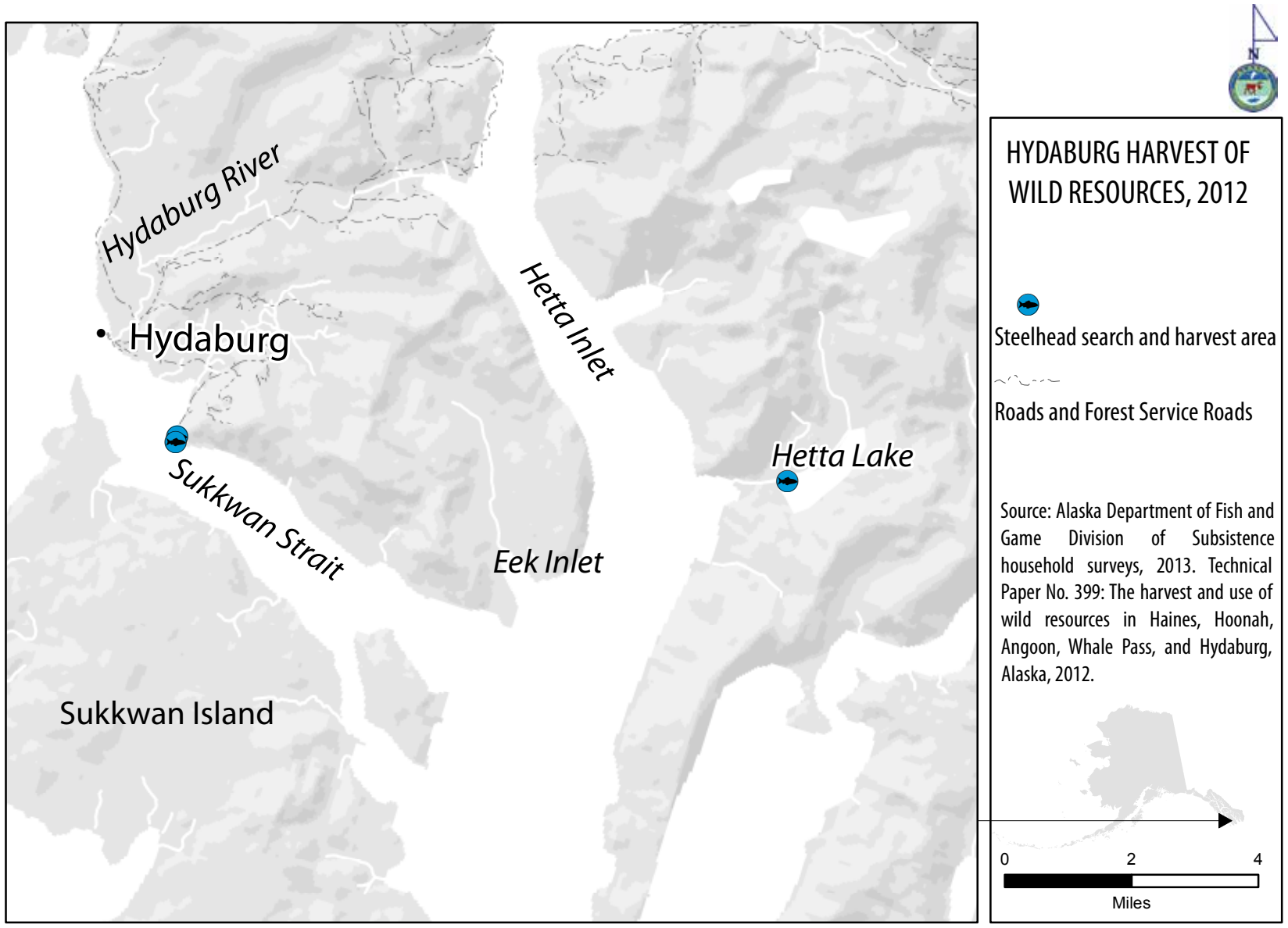
Hydaburg River
Hydaburg
Hetta Inlet
Sukkwan Strait
Eek Inlet
Hetta Lake
Sukkwan Island
HYDABURG HARVEST OF WILD RESOURCES, 2012
Steelhead search and harvest area
Roads and Forest Service Roads
Source: Alaska Department of Fish and Game Division of Subsistence household surveys, 2013. Technical Paper No. 399: The harvest and use of wild resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.
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APPENDIX E–PROJECT SUMMARIES

Note that page 4 for the Haines project summary was included as page 4 for the summaries for Hoonah, Angoon, Whale Pass, and Hydaburg, but is depicted in this appendix only for the Haines summary to avoid repetition.



Executive Summary - Technical Paper No. 399

HAINES

Subsistence Harvests in 2012

In Haines, 132 surveyed households reported harvesting a variety of fish, wildlife, and plants. Expanding for 686 unsurveyed households, Haines's total estimated harvest was 259,956 lb. Harvests averaged 318 lb per household and 135 lb per person.

In April 2013, ADF&G Division of Subsistence staff conducted a comprehensive wild foods harvest survey in Haines. Residents who participated in the study answered detailed questions about their household's harvest and use of wild resources—including fish, wildlife, and plants and berries—during the 2012 calendar year. Households were asked whether they harvested wild resources and, if so, details about those harvests, such as how much they harvested, where, when, and whether they gave away or received resources from other households.

Ninety-nine percent of households in Haines used at least one kind of wild resource and 90% of households harvested a resource. Salmon was the most widely used resource category (by 92% of households), followed by vegetation (89%), nonsalmon fish (84%), marine invertebrates (74%), land mammals (68%), birds and eggs (19%), and marine mammals (4%). Figure 1 shows the top 10 species harvested by weight.

Figure 2 shows the estimated usable pounds harvested by category. Fish dominated the harvest with 162,061 lb harvested; about 55% of the fish harvest was salmon, and the remainder was nonsalmon fish species (Table 1). Land mammals contributed the next greatest amount with 54,183 lb harvested, followed by marine invertebrates and vegetation with 22,837 lb and 19,136 lb harvested, respectively. Lastly, birds and eggs contributed 1,739 lb to the overall estimated harvest.

Respondents were asked to show on a map where they searched for the wild foods they harvested (Figure 3). In 2012, Haines residents used 3,000 square miles for the harvest of wild foods. Most harvests occurred within 30 miles of the community north into Canada, as well as in the vicinity of Hoonah and Icy Strait.

While most households in Haines participated in the harvest of wild resources, sharing among households was also prevalent. Seventy-one percent of households gave away some of their harvest while 90% of households received wild resources from other households. These high rates of exchange emphasize the importance of sharing and the cooperative nature of wild resource harvesting activities in Haines.

This survey was conducted by the Division of Subsistence of the Alaska Department of Fish and Game. Local researchers were Rebecca Wilson, Laurie Mastrella, Melina Shields, Gina St. Clair, Michelle Webb, Jedediah Blum-Evitts, Arthur Woodard, and Stanley Hotch.

Source for this information

Sill, L. A. and D. Koster, editors. 2017. *The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 399: Douglas.

Electronic copy of this report

http://www.adfg.alaska.gov/techpap/TP399.pdf

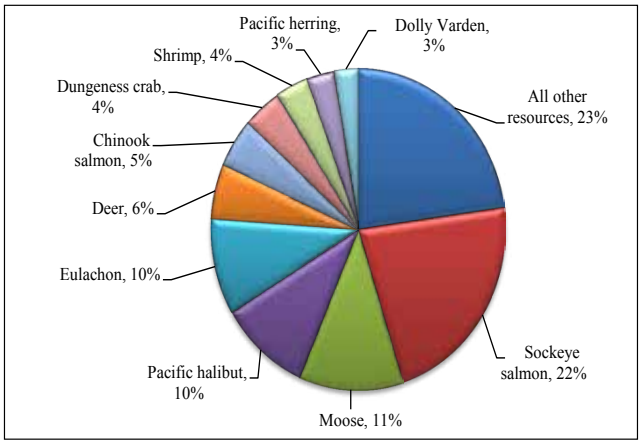

Figure 1.–Top 10 wild foods harvested by usable weight, 2012.

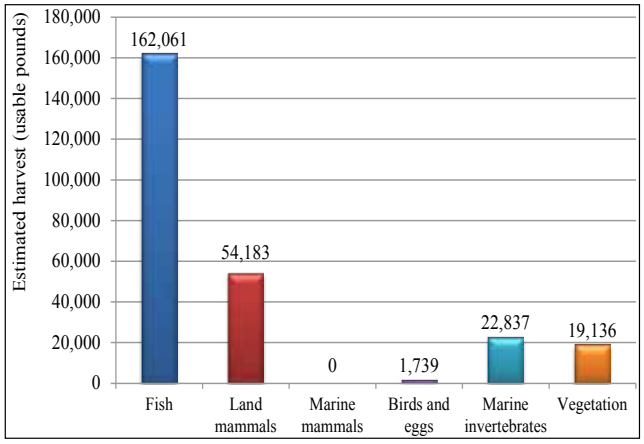

Figure 2.–Estimated harvest by category, 2012.

Table 1.–Estimated harvests of wild foods, Haines, 2012.

Resource	Percentage of households		Estimated pounds harvested			Total estimated amount harvested by community		95% confidence limit
	Using	Harvesting	Total for community	Average per household	Average per person			
Fish								
Chum salmon	26.5%	19.7%	6,198.2 lb	7.6 lb	3.2 lb	921.4	ind	± 48.1%
Coho salmon	37.1%	28.0%	6,254.6 lb	7.6 lb	3.3 lb	1,305.1	ind	± 37.7%
Chinook salmon	57.6%	35.6%	12,958.8 lb	15.8 lb	6.7 lb	1,380.2	ind	± 51.6%
Pink salmon	31.1%	28.0%	5,915.9 lb	7.2 lb	3.1 lb	2,270.0	ind	± 43.0%
Sockeye salmon	81.8%	53.8%	57,887.2 lb	70.8 lb	30.1 lb	12,496.2	ind	± 33.4%
Unknown salmon	5.3%	0.8%	311.3 lb	0.4 lb	0.2 lb	62.0	ind	± 181.2%
Pacific herring	17.4%	13.6%	7,758.6 lb	9.5 lb	4.0 lb	1,293.1	gal	± 72.8%
Pacific herring spawn on kelp	1.5%	0.8%	650.7 lb	0.8 lb	0.3 lb	93.0	gal	± 181.2%
Pacific herring roe on hemlock branches	15.2%	0.8%	433.8 lb	0.5 lb	0.2 lb	62.0	gal	± 181.2%
Eulachon (hooligan, candlefish)	31.1%	17.4%	25,020.3 lb	30.6 lb	13.0 lb	2,780.0	gal	± 122.0%
Cods	7.6%	6.8%	445.6 lb	0.5 lb	0.2 lb	445.6	lb	± 77.8%
Flounder	1.5%	1.5%	520.5 lb	0.6 lb	0.3 lb	173.5	ind	± 162.8%
Greenling	5.3%	3.0%	858.9 lb	1.1 lb	0.4 lb	858.9	lb	± 117.0%
Pacific halibut	71.2%	26.5%	25,834.7 lb	31.6 lb	13.4 lb	25,834.7	lb	± 41.3%
Rockfishes	15.9%	7.6%	886.2 lb	1.1 lb	0.5 lb	886.2	lb	± 62.4%
Sablefish (black cod)	4.5%	1.5%	124.9 lb	0.2 lb	0.1 lb	31.2	ind	± 179.8%
Sculpins	1.5%	1.5%	24.8 lb	- lb	- lb	24.8	lb	± 127.6%
Sole	0.8%	0.8%	93.0 lb	0.1 lb	- lb	93.0	ind	± 181.2%
Arctic char	0.8%	0.8%	100.4 lb	0.1 lb	0.1 lb	37.2	ind	± 181.2%
Dolly Varden	30.3%	25.0%	6,789.1 lb	8.3 lb	3.5 lb	2,263.0	ind	± 44.0%
Arctic grayling	1.5%	0.8%	309.8 lb	0.4 lb	0.2 lb	309.8	ind	± 181.2%
Trouts	18.2%	15.2%	2,683.3 lb	3.3 lb	1.4 lb	2,683.3	lb	± 59.7%
Subtotal, fish	*95.5%*	*67.4%*	*162,060.5 lb*	*198.1 lb*	*84.4 lb*	*162,060.5*	*lb*	*± 33.1%*
Land mammals								
Black bear	12.9%	3.8%	2,516.0 lb	3.1 lb	1.3 lb	43.4	ind	± 84.7%
Caribou	10.6%	2.3%	4,028.0 lb	4.9 lb	2.1 lb	31.0	ind	± 119.6%
Deer	29.5%	7.6%	14,377.0 lb	17.6 lb	7.5 lb	179.7	ind	± 64.1%
Mountain goat	10.6%	3.8%	3,160.5 lb	3.9 lb	1.6 lb	31.0	ind	± 79.8%
Moose	55.3%	8.3%	29,745.5 lb	36.4 lb	15.5 lb	74.4	ind	± 54.4%
Beaver	1.5%	0.8%	216.9 lb	0.3 lb	0.1 lb	24.8	ind	± 181.2%
Snowshoe hare	1.5%	1.5%	62.0 lb	0.1 lb	- lb	31.0	ind	± 130.2%
Marten	3.0%	2.3%	- lb	- lb	- lb	241.7	ind	± 112.4%
Mink	0.8%	0.8%	- lb	- lb	- lb	18.6	ind	± 181.2%
Porcupine	0.8%	0.8%	37.2 lb	- lb	- lb	6.2	ind	± 181.2%
Squirrel	2.3%	2.3%	40.3 lb	- lb	- lb	40.3	lb	± 167.7%
Subtotal, land mammals	*68.2%*	*24.2%*	*54,183.2 lb*	*66.2 lb*	*28.2 lb*	*54,183.2*	*lb*	*± 37.2%*
Birds and eggs								
Ducks	8.3%	7.6%	990.0 lb	1.2 lb	0.5 lb	990.0	lb	± 117.4%
Geese	2.3%	2.3%	296.8 lb	0.4 lb	0.2 lb	296.8	lb	± 144.9%
Upland game birds	13.6%	12.1%	452.4 lb	0.6 lb	0.2 lb	452.4	lb	± 53.5%
Subtotal, birds and eggs	*18.9%*	*17.4%*	*1,739.2 lb*	*2.1 lb*	*0.9 lb*	*1,739.2*	*lb*	*± 97.3%*
Marine invertebrates								
Cockles	1.5%	0.8%	19.3 lb	- lb	- lb	19.3	lb	± 181.2%
Crabs	62.9%	34.1%	13,225.4 lb	16.2 lb	6.9 lb	13,225.4	lb	± 33.7%
Mussels	1.5%	1.5%	139.4 lb	0.2 lb	0.1 lb	93.0	gal	± 134.6%
Shrimp	50.8%	22.7%	9,452.7 lb	11.6 lb	4.9 lb	4,726.3	gal	± 119.1%
Subtotal, marine invertebrates	*74.2%*	*39.4%*	*22,836.8 lb*	*27.9 lb*	*11.9 lb*	*22,836.8*	*lb*	*± 60.0%*
Vegetation								
Berries	78.8%	73.5%	13,583.1 lb	16.6 lb	7.1 lb	13,583.1	lb	± 22.6%
Plants/greens/mushrooms	42.4%	40.2%	2,784.3 lb	3.4 lb	1.4 lb	2,784.3	lb	± 43.5%
Seaweed/kelp	37.9%	29.5%	2,768.6 lb	3.4 lb	1.4 lb	2,768.6	lb	± 53.4%
Wood	61.4%	56.8%	- lb	- lb	- lb	2,254.8	cord	± 26.9%
Subtotal, vegetation	*88.6%*	*86.4%*	*19,136.0 lb*	*23.4 lb*	*10.0 lb*	*19,136.0*	*lb*	*± 22.4%*
All resources	**98.5%**	**90.2%**	**259,955.7 lb**	**317.8 lb**	**135.3 lb**	**259,955.7**	**lb**	**± 26.0%**

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

Note "-" indicates either: a) the resource is not typically eaten and shows a non-zero harvest amount with a zero harvest weight, or b) the estimated value is too small to be represented to the tenth decimal place.

Figure 3.–Wild food search and harvest areas, Haines, 2012.

Subsistence Harvests in Southeast Alaska, 2012

Current comprehensive estimates of the harvest of wild foods are available for 5 Southeast Alaska communities. In these communities, the average wild food harvests provided approximately 288 lb of wild food per person in the 2012 study year. This compares to an average for 2014 of 189 lb per person for all of rural Southeast Alaska and 275 lb per person for all of rural Alaska.[1]

1. Fall, J. A. 2016. *Subsistence in Alaska: A Year 2014 Update.* Alaska Department of Fish and Game Division of Subsistence: Anchorage. http://www.adfg.alaska.gov/static/home/subsistence/pdfs/subsistence_update_2014.pdf

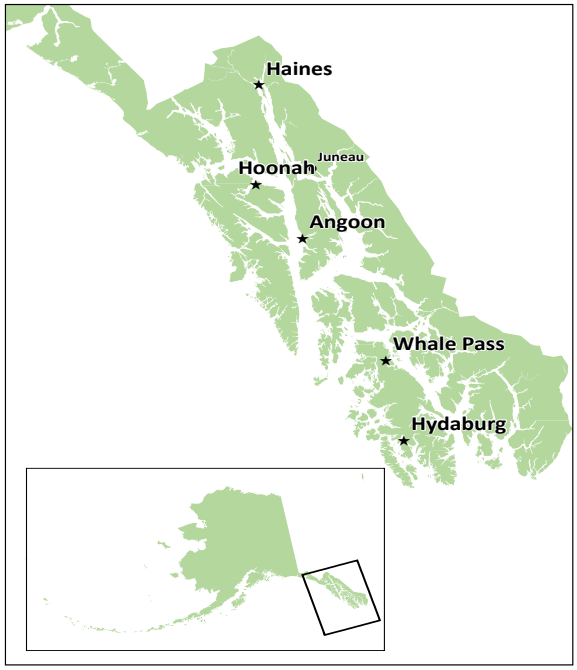

Figure 4.–Location of study communities, 2012.

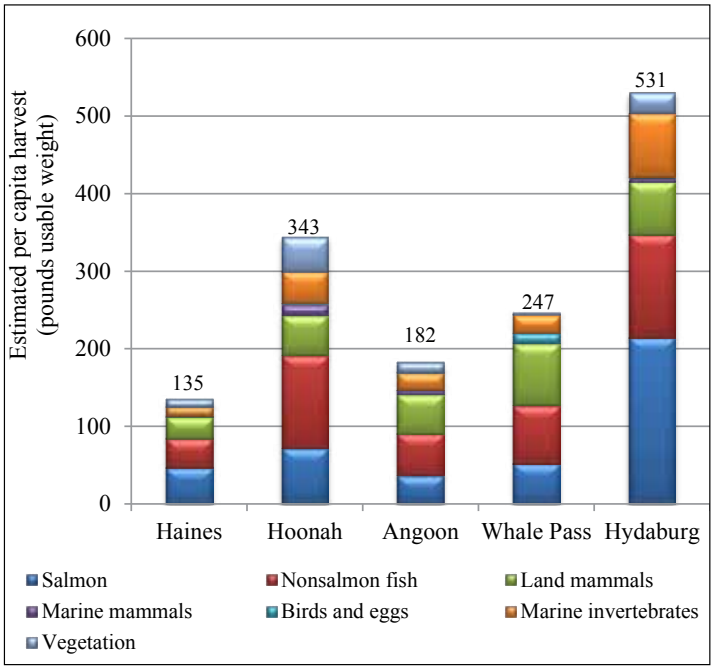

Figure 5.–Estimated wild foods harvested, usable pounds per person, 5 Southeast Alaska communities, 2012.

Funded by the Alaska Legislature, this study updates current harvest and use estimates of wild resources for 5 Southeast Alaska communities (Figure 4). The study period covered January 1 to December 31, 2012. The effort to collect this updated information was part of a project to develop and implement a program to monitor subsistence harvests of fish and wildlife in all areas of the state through a system of index communities. The primary data gathering method was a systematic household survey that collected quantitative and qualitative harvest information, including mapping harvest areas.

Figure 5 shows the harvest of wild resources in each study community as estimated in pounds usable weight per person. Harvests of wild foods ranged from 135 lb per person in Haines to 531 lb per person in Hydaburg. For Haines and Hydaburg, salmon was the top resource category harvested. For Angoon, Hoonah, and Sitka, nonsalmon fish was the top harvested resource category. Only in Whale Pass was large land mammals the top harvested category.

These harvest patterns mirror historical patterns of a heavy reliance on the marine environment. The overall contribution of salmon and nonsalmon fish changed the most compared to prior harvest updates; in most communities, nonsalmon fish are now harvested in greater amounts than salmon. Residents of these Southeast Alaska communities mainly used the lands and waters in the vicinity of their respective communities for harvesting wild resources. While it is difficult to compare existing harvest and use area maps that depict multiple years of harvest to this study and its single year of focus, it appears that the harvest areas of most of these Southeast Alaska communities have decreased in size. Area residents provided numerous reasons for changes to their harvest areas, including the price of gas, competition for resources, and changes in distributions of populations.

Households across the region reported diverse harvests and high levels of participation in harvesting and processing activities. Extensive sharing of wild resources within and among communities was documented. In sum, the use of wild foods remains an important component of community life in Southeast Alaska.



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HOONAH

Subsistence Harvests in 2012

In Hoonah, 122 surveyed households reported harvesting a variety of fish, wildlife, and plants. Expanding for 158 unsurveyed households, Hoonah's total estimated harvest was 251,365 lb. Harvests averaged 898 lb per household and 343 lb per person.

In February 2013, ADF&G Division of Subsistence staff, in collaboration with the Hoonah Indian Association, conducted a comprehensive wild foods harvest survey in Hoonah. Residents who participated in the study answered detailed questions about their household's harvest and use of wild resources—including fish, wildlife, and plants and berries—during the 2012 calendar year. Households were asked whether they harvested wild resources and, if so, details about those harvests, such as how much they harvested, where, when, and whether they gave away or received resources from other households.

Ninety-eight percent of households in Hoonah used at least one kind of wild resource and 90% of households harvested a resource. Nonsalmon fish was the most widely used resource category (by 94% of households), followed by vegetation (93%), salmon (89%), marine invertebrates (84%), land mammals (77%), marine mammals (34%), and birds and eggs (18%). Figure 1 shows the top 10 species harvested by weight.

Fish dominated the harvest with 140,828 lb harvested (Figure 2); more than 60% of the fish harvest was of nonsalmon fish, and the remainder was salmon species (Table 1). Land mammals and vegetation contributed the next greatest amounts to the overall harvest with 37,783 lb of land mammals and 31,913 lb of vegetation harvested. Marine invertebrates followed with a harvest of 29,803 lb. Lastly, marine mammals accounted for 9,832 lb and birds and eggs contributed 1,206 lb.

In 2012, Hoonah residents used a total of 1,042 square miles for the harvest of wild foods (Figure 3). Harvests occurred mainly within 25 miles of the community, but residents traveled to the western coast of Chichagof Island as well as into Glacier Bay. Some residents traveled as far north as the waters near Haines and as far south as Dall Island. The road system of northeast Chichagof Island and coastline were used to hunt, fish, pick berries, collect beach greens and shellfish, and gather plants and mushrooms.

While every household participated in the harvest of wild resources, sharing among households was also prevalent. Eighty-five percent of households gave away some of their harvest while 96% of households received wild resources from other households. These high rates of exchange emphasize the importance of sharing and the cooperative nature of wild resource harvesting activities in Hoonah.

This survey was conducted by the Division of Subsistence of the Alaska Department of Fish and Game in cooperation with the Hoonah Indian Association. Local researchers were Kathy Marvin, Myron Murphy, Mike Williams, Jamieson Williams, Archie Brown, III, Jay Erickson, and Geri Cheslock.

Source for this information

Sill, L. A. and D. Koster, editors. 2017. *The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 399: Douglas.

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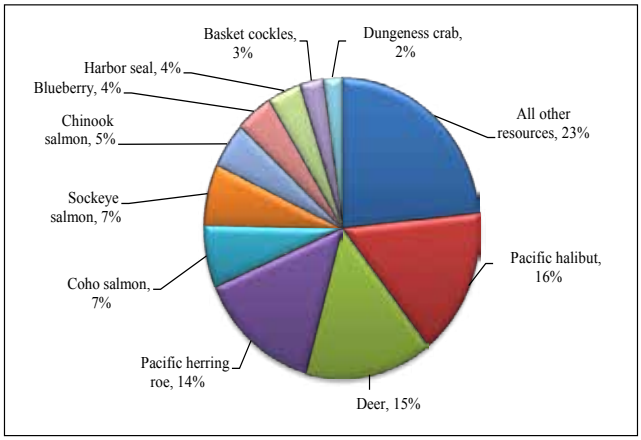

Figure 1.–Top 10 wild foods harvested by usable weight, 2012.

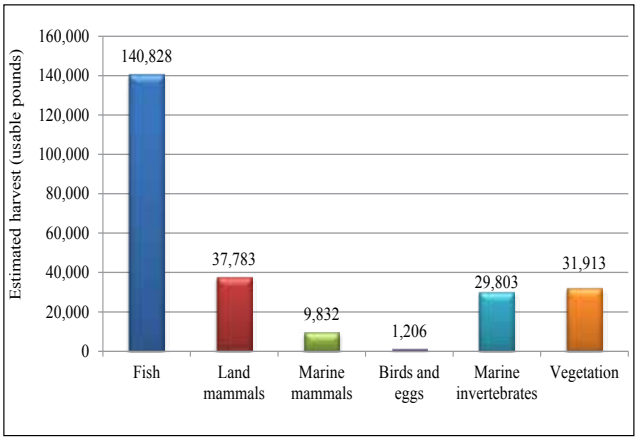

Figure 2.–Estimated harvest by category, 2012.

Table 1.–Estimated harvests of wild foods, Hoonah, 2012.

Resource	Percentage of households: Using	Percentage of households: Harvesting	Estimated pounds harvested: Total for community	Estimated pounds harvested: Average per household	Estimated pounds harvested: Average per person	Total estimated amount harvested by community	95% confidence limit
Fish							
Chum salmon	29.5%	20.5%	4,861.5 lb	17.4 lb	6.6 lb	722.7 ind	± 49.1%
Coho salmon	72.1%	51.6%	16,721.9 lb	59.7 lb	22.8 lb	3,489.2 ind	± 25.2%
Chinook salmon	69.7%	36.9%	12,310.1 lb	44.0 lb	16.8 lb	1,311.1 ind	± 56.6%
Pink salmon	28.7%	22.1%	2,169.3 lb	7.7 lb	3.0 lb	832.4 ind	± 41.1%
Sockeye salmon	51.6%	22.1%	16,639.6 lb	59.4 lb	22.7 lb	3,592.0 ind	± 53.0%
Pacific herring	27.9%	19.7%	3,317.5 lb	11.8 lb	4.5 lb	552.9 gal	± 42.9%
Pacific herring spawn on kelp	9.0%	2.5%	592.4 lb	2.1 lb	0.8 lb	84.6 gal	± 119.4%
Pacific herring roe on hair seaweed	5.7%	2.5%	233.3 lb	0.8 lb	0.3 lb	33.3 gal	± 147.5%
Pacific herring roe on hemlock branches	68.0%	6.6%	35,909.6 lb	128.2 lb	49.0 lb	5,129.9 gal	± 144.3%
Eulachon (hooligan, candlefish)	13.1%	3.3%	1,735.5 lb	6.2 lb	2.4 lb	192.8 gal	± 93.7%
Sea bass	0.8%	0.8%	6.9 lb	- lb	- lb	6.9 ind	± 148.7%
Cods	6.6%	2.5%	301.6 lb	1.1 lb	0.4 lb	301.6 lb	± 116.6%
Flounder	0.8%	0.8%	34.4 lb	0.1 lb	- lb	11.5 ind	± 148.7%
Greenling	13.1%	6.6%	717.7 lb	2.6 lb	1.0 lb	717.7 lb	± 98.4%
Pacific halibut	85.2%	47.5%	39,996.9 lb	142.8 lb	54.6 lb	39,996.9 lb	± 26.5%
Rockfishes	31.1%	11.5%	2,089.9 lb	7.5 lb	2.9 lb	2,089.9 lb	± 82.0%
Sablefish (black cod)	9.0%	2.5%	190.5 lb	0.7 lb	0.3 lb	47.6 ind	± 107.4%
Sole	0.8%	0.8%	2.3 lb	- lb	- lb	2.3 ind	± 148.7%
Dolly Varden	25.4%	23.8%	2,332.2 lb	8.3 lb	3.2 lb	777.4 ind	± 39.7%
Trouts	12.3%	12.3%	664.8 lb	2.4 lb	0.9 lb	664.8 lb	± 69.7%
Subtotal, fish	*94.3%*	*68.9%*	*140,827.7 lb*	*503.0 lb*	*192.4 lb*	*140,827.7 lb*	*± 44.1%*
Land mammals							
Deer	77.0%	47.5%	37,558.4 lb	134.1 lb	51.3 lb	469.5 ind	± 22.1%
Beaver	0.8%	0.8%	40.2 lb	0.1 lb	0.1 lb	4.6 ind	± 148.7%
Coyote	0.8%	0.8%	183.6 lb	0.7 lb	0.3 lb	9.2 ind	± 148.7%
Marten	2.5%	2.5%	- lb	- lb	- lb	53.2 ind	± 130.1%
Mink	1.6%	1.6%	- lb	- lb	- lb	2.3 ind	± 148.1%
Squirrel	0.8%	0.8%	1.1 lb	- lb	- lb	1.1 lb	± 0.0%
Least weasel	0.8%	0.8%	- lb	- lb	- lb	2.3 ind	± 148.7%
Subtotal, land mammals	*77.0%*	*47.5%*	*37,783.3 lb*	*134.9 lb*	*51.6 lb*	*37,783.3 lb*	*± 22.0%*
Marine mammals							
Harbor seal	34.4%	13.9%	9,832.1 lb	35.1 lb	13.4 lb	117.0 ind	± 50.5%
Sea otter	3.3%	2.5%	- lb	- lb	- lb	18.4 ind	± 107.7%
Subtotal, marine mammals	*34.4%*	*13.9%*	*9,832.1 lb*	*35.1 lb*	*13.4 lb*	*9,832.1 lb*	*± 50.5%*
Birds and eggs							
Ducks	7.4%	4.9%	107.5 lb	0.4 lb	0.1 lb	107.5 lb	± 96.6%
Geese	4.1%	3.3%	39.6 lb	0.1 lb	0.1 lb	39.6 lb	± 87.9%
Upland game birds	4.1%	3.3%	53.2 lb	0.2 lb	0.1 lb	53.2 lb	± 98.6%
Bird eggs	10.7%	4.1%	1,005.8 lb	3.6 lb	1.4 lb	1,005.8 lb	± 98.1%
Subtotal, birds and eggs	*18.0%*	*10.7%*	*1,206.2 lb*	*4.3 lb*	*1.6 lb*	*1,206.2 lb*	*± 82.4%*
Marine invertebrates							
Abalone	0.8%	0.8%	0.9 lb	- lb	- lb	0.4 gal	± 148.7%
Chitons (bidarkis, gumboots)	24.6%	17.2%	4,688.2 lb	16.7 lb	6.4 lb	4,688.2 lb	± 109.3%
Clams	50.8%	35.2%	6,825.5 lb	24.4 lb	9.3 lb	6,825.5 lb	± 40.4%
Cockles	55.7%	41.8%	8,876.6 lb	31.7 lb	12.1 lb	8,876.6 lb	± 33.8%
Crabs	69.7%	33.6%	8,022.4 lb	28.7 lb	11.0 lb	8,022.4 lb	± 33.2%
Geoducks	1.6%	1.6%	51.6 lb	0.2 lb	0.1 lb	17.2 gal	± 110.5%
Limpets	0.8%	0.8%	3.4 lb	- lb	- lb	2.3 gal	± 148.7%
Mussels	2.5%	1.6%	17.2 lb	0.1 lb	- lb	11.5 gal	± 106.8%
Octopus	12.3%	6.6%	620.7 lb	2.2 lb	0.8 lb	620.7 lb	± 77.3%
Scallops	2.5%	1.6%	123.0 lb	0.4 lb	0.2 lb	123.0 lb	± 137.8%
Sea cucumber	3.3%	2.5%	13.1 lb	- lb	- lb	6.5 gal	± 131.1%
Sea urchin	2.5%	1.6%	0.1 lb	- lb	- lb	0.1 lb	± 147.5%
Shrimp	19.7%	9.0%	560.3 lb	2.0 lb	0.8 lb	280.1 gal	± 93.9%
Subtotal, marine invertebrates	*84.4%*	*51.6%*	*29,802.9 lb*	*106.4 lb*	*40.7 lb*	*29,802.9 lb*	*± 28.3%*
Vegetation							
Berries	86.9%	77.0%	24,048.3 lb	85.9 lb	32.8 lb	24,048.3 lb	± 30.9%
Plants/greens/mushrooms	54.1%	40.2%	2,661.8 lb	9.5 lb	3.6 lb	2,661.8 lb	± 59.8%
Seaweed/kelp	58.2%	22.1%	5,202.5 lb	18.6 lb	7.1 lb	5,202.5 lb	± 37.2%
Wood	55.7%	45.1%	- lb	- lb	- lb	2,042.7 cord	± 42.6%
Subtotal, vegetation	*93.4%*	*82.8%*	*31,912.6 lb*	*114.0 lb*	*43.6 lb*	*31,912.6 lb*	*± 26.5%*
All resources	**98.4%**	**90.2%**	**251,364.9 lb**	**897.7 lb**	**343.3 lb**	**251,364.9 lb**	**± 29.2%**

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

Note "-" indicates either: a) the resource is not typically eaten and shows a non-zero harvest amount with a zero harvest weight, or b) the estimated value is too small to be represented to the tenth decimal place.

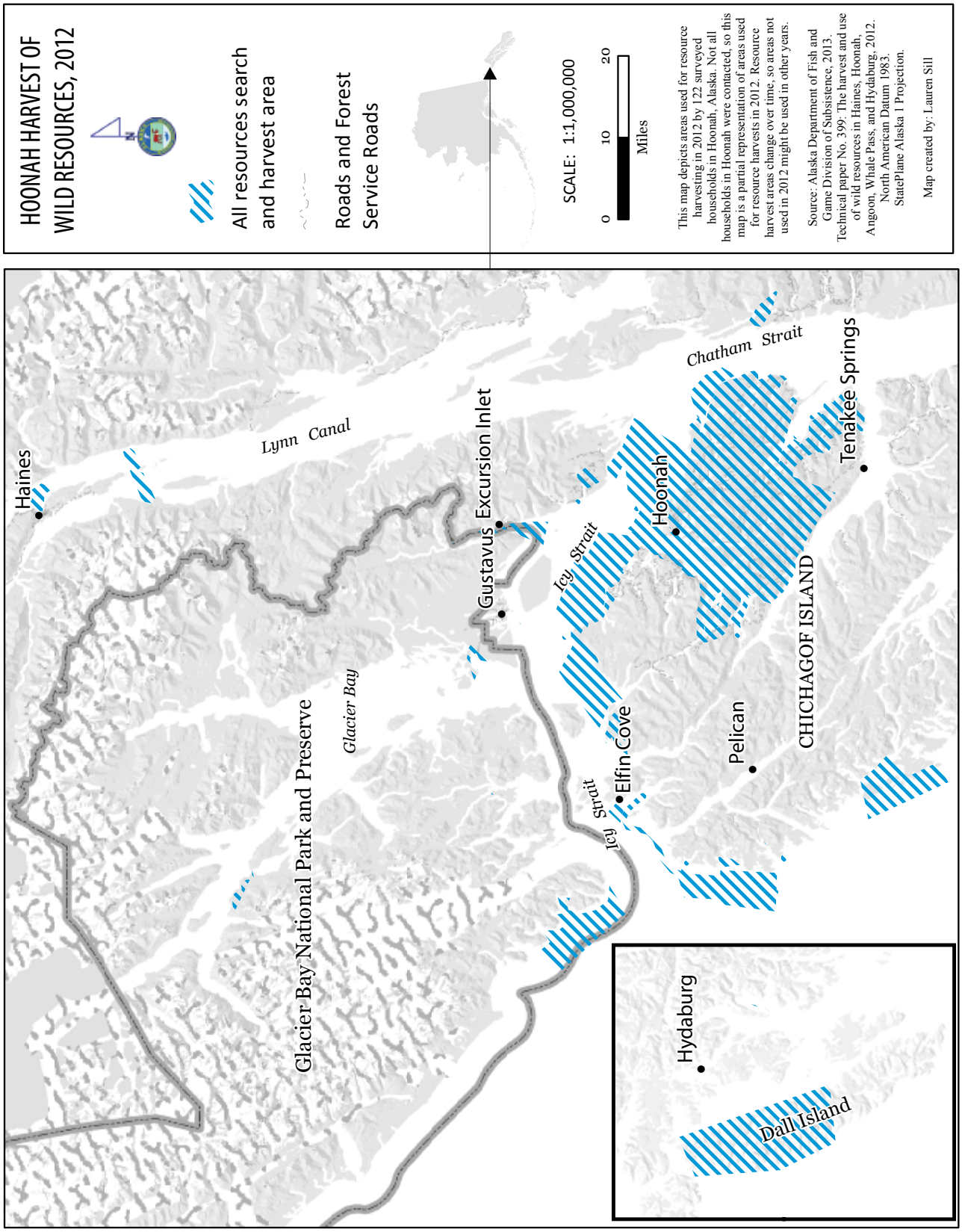

Figure 3.–Wild food search and harvest areas, Hoonah, 2012.



Executive Summary - Technical Paper No. 399

ANGOON

Subsistence Harvests in 2012

In Angoon, 51 surveyed households reported harvesting a variety of fish, wildlife, and plants. Expanding for 71 unsurveyed households, Angoon's total estimated harvest was 62,416 lb. Harvests averaged 512 lb per household and 183 lb per person.

In February 2013, ADF&G Division of Subsistence staff conducted a comprehensive wild foods harvest survey in Angoon. Residents who participated in the study answered detailed questions about their household's harvest and use of wild resources—including fish, wildlife, and plants and berries—during the 2012 calendar year. Households were asked whether they harvested wild resources and, if so, details about those harvests, such as how much they harvested, where, when, and whether they gave away or received resources from other households.

Ninety-eight percent of households in Angoon used at least one kind of wild resource and 92% of households harvested a resource. Salmon and vegetation were the most widely used resources (by 92% of households), followed by nonsalmon fish (86%), land mammals (84%), marine invertebrates (82%), marine mammals (41%), and birds and eggs (4%). Figure 1 shows the top 10 species harvested by weight.

Figure 2 shows the estimated usable pounds harvested by category. Fish dominated the harvest with 30,960 lb harvested; about 60% of the fish harvest was of nonsalmon fish, and the remainder was salmon species (Table 1). Land mammals, mostly deer, contributed the next greatest amount with 17,452 lb harvested, followed by marine invertebrates and vegetation with 7,671 lb and 4,404 lb harvested, respectively. Lastly, marine mammals accounted for 1,808 lb and birds and eggs contributed 121 lb to the overall estimated harvest.

Respondents were asked to show on a map where they searched for the wild foods they harvested (Figure 3). In 2012, Angoon residents used a total of 269 square miles for the harvest of wild foods. Harvests occurred within 30 miles of the community. The protected waters of Mitchell and Favorite bays were used the most to harvest all resources. The coastline of Chatham and Peril straits were used to hunt deer and fish.

While most households in Angoon participated in the harvest of wild resources, sharing among households was also prevalent. Eighty-four percent of households gave away some of their harvest while 94% of households received wild resources from other households. These high rates of exchange emphasize the importance of sharing and the cooperative nature of wild resource harvesting activities in Angoon.

This survey was conducted by the Division of Subsistence of the Alaska Department of Fish and Game in cooperation with the City of Angoon. Local researchers were Curtis Lane, Alberta Saleem, and Kirk Sharp.

Source for this information

Sill, L. A. and D. Koster, editors. 2017. *The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 399: Douglas.

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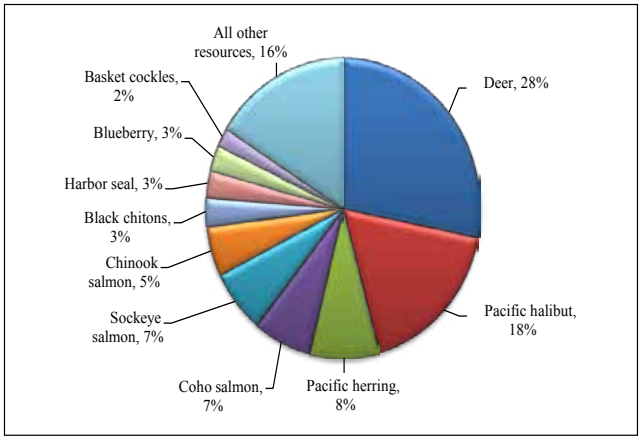

Figure 1.–Top 10 wild foods harvested by usable weight, 2012.

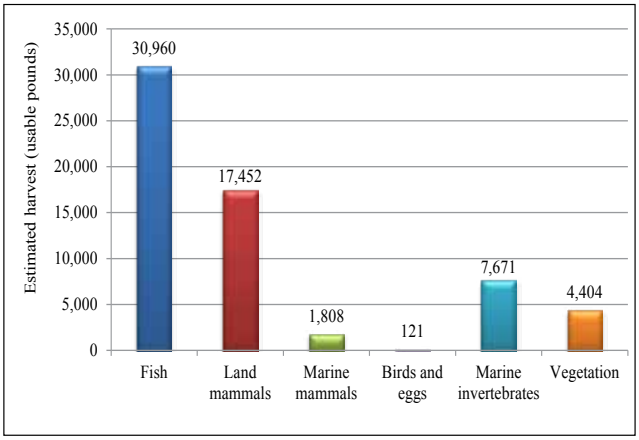

Figure 2.–Estimated harvest by category, 2012.

Table 1.–Estimated harvests of wild foods, Angoon, 2012.

Resource	Percentage of households: Using	Percentage of households: Harvesting	Estimated pounds harvested: Total for community	Estimated pounds harvested: Average per household	Estimated pounds harvested: Average per person	Total estimated amount harvested by community	95% confidence limit
Fish							
Chum salmon	31.4%	21.6%	453.8 lb	3.7 lb	1.3 lb	67.5 ind	± 52.8%
Coho salmon	60.8%	45.1%	4,279.4 lb	35.1 lb	12.5 lb	892.9 ind	± 58.6%
Chinook salmon	76.5%	35.3%	3,288.7 lb	27.0 lb	9.6 lb	350.3 ind	± 56.7%
Pink salmon	25.5%	17.6%	424.3 lb	3.5 lb	1.2 lb	162.8 ind	± 70.2%
Sockeye salmon	74.5%	37.3%	4,262.9 lb	34.9 lb	12.5 lb	920.2 ind	± 45.2%
Pacific herring	43.1%	37.3%	5,084.2 lb	41.7 lb	14.9 lb	847.4 gal	± 88.7%
Pacific (gray) cod	15.7%	9.8%	696.6 lb	5.7 lb	2.0 lb	696.6 lb	± 97.4%
Greenling	7.8%	5.9%	150.7 lb	1.2 lb	0.4 lb	150.7 lb	± 87.6%
Pacific halibut	80.4%	39.2%	10,957.5 lb	89.8 lb	32.0 lb	10,957.5 lb	± 41.3%
Rockfishes	19.6%	9.8%	935.3 lb	7.7 lb	2.7 lb	935.3 lb	± 118.7%
Sablefish (black cod)	7.8%	2.0%	191.4 lb	1.6 lb	0.6 lb	47.8 ind	± 153.2%
Red Irish lord	2.0%	2.0%	9.6 lb	0.1 lb	- lb	9.6 lb	± 153.2%
Dolly Varden	13.7%	13.7%	190.3 lb	1.6 lb	0.6 lb	63.4 ind	± 71.3%
Trouts	7.8%	5.9%	35.9 lb	0.3 lb	0.1 lb	35.9 lb	± 90.3%
Subtotal, fish	*98.0%*	*70.6%*	*30,960.5 lb*	*253.8 lb*	*90.5 lb*	*30,960.5 lb*	*± 42.2%*
Land mammals							
Deer	84.3%	45.1%	17,451.7 lb	143.0 lb	51.0 lb	218.1 ind	± 32.6%
North American river (land) otter	2.0%	2.0%	- lb	- lb	- lb	4.8 ind	± 153.2%
Marten	2.0%	2.0%	- lb	- lb	- lb	7.2 ind	± 153.2%
Mink	2.0%	2.0%	- lb	- lb	- lb	4.8 ind	± 153.2%
Subtotal, land mammals	*84.3%*	*45.1%*	*17,451.7 lb*	*143.0 lb*	*51.0 lb*	*17,451.7 lb*	*± 32.6%*
Marine mammals							
Harbor seal	41.2%	9.8%	1,808.5 lb	14.8 lb	5.3 lb	21.5 ind	± 71.7%
Subtotal, marine mammals	*41.2%*	*9.8%*	*1,808.5 lb*	*14.8 lb*	*5.3 lb*	*1,808.5 lb*	*± 71.7%*
Birds and eggs							
Ducks	3.9%	3.9%	39.9 lb	0.3 lb	0.1 lb	39.9 lb	± 107.3%
Geese	3.9%	3.9%	40.9 lb	0.3 lb	0.1 lb	40.9 lb	± 109.5%
Sandhill crane	2.0%	2.0%	40.2 lb	0.3 lb	0.1 lb	40.2 lb	± 153.2%
Subtotal, birds and eggs	*3.9%*	*3.9%*	*120.9 lb*	*1.0 lb*	*0.4 lb*	*120.9 lb*	*± 110.7%*
Marine invertebrates							
Chitons (bidarkis, gumboots)	66.0%	41.2%	2,664.8 lb	21.8 lb	7.8 lb	2,664.8 lb	± 49.6%
Clams	51.0%	33.3%	1,739.3 lb	14.3 lb	5.1 lb	1,739.3 lb	± 43.6%
Cockles	60.8%	31.4%	1,388.3 lb	11.4 lb	4.1 lb	1,388.3 lb	± 62.5%
Crabs	51.0%	21.6%	1,647.5 lb	13.5 lb	4.8 lb	1,647.5 lb	± 99.2%
Geoducks	2.0%	2.0%	71.8 lb	0.6 lb	0.2 lb	23.9 gal	± 153.2%
Mussels	2.0%	2.0%	17.9 lb	0.1 lb	0.1 lb	12.0 gal	± 153.2%
Octopus	7.8%	7.8%	109.3 lb	0.9 lb	0.3 lb	109.3 lb	± 86.8%
Shrimp	13.7%	7.8%	31.9 lb	0.3 lb	0.1 lb	15.9 gal	± 119.4%
Subtotal, marine invertebrates	*82.4%*	*51.0%*	*7,670.8 lb*	*62.9 lb*	*22.4 lb*	*7,670.8 lb*	*± 50.8%*
Vegetation							
Berries	78.4%	68.6%	3,140.3 lb	25.7 lb	9.2 lb	3,140.3 lb	± 63.8%
Plants/greens/mushrooms	45.1%	35.3%	180.8 lb	1.5 lb	0.5 lb	180.8 lb	± 79.4%
Seaweed/kelp	64.7%	31.4%	1,082.8 lb	8.9 lb	3.2 lb	1,082.8 lb	± 51.8%
Wood	51.0%	47.1%	- lb	- lb	- lb	386.3 cord	± 39.8%
Subtotal, vegetation	*92.2%*	*84.3%*	*4,403.9 lb*	*36.1 lb*	*12.9 lb*	*4,403.9 lb*	*± 50.7%*
All resources	**98.0%**	**92.2%**	**62,416.3 lb**	**511.6 lb**	**182.5 lb**	**62,416.3 lb**	**± 31.6%**

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

Note "-" indicates either: a) the resource is not typically eaten and shows a non-zero harvest amount with a zero harvest weight, or b) the estimated value is too small to be represented to the tenth decimal place.

Figure 3.–Wild food search and harvest areas, Angoon, 2012.



Executive Summary - Technical Paper No. 399

Whale Pass

Subsistence Harvests in 2012

In Whale Pass, 21 surveyed households reported harvesting a variety of fish, wildlife, and plants. Expanding for 6 unsurveyed households, Whale Pass's total estimated harvest was 13,656 lb. Harvests averaged 506 lb per household and 247 lb per person.

In January 2013, ADF&G Division of Subsistence staff conducted a comprehensive wild foods harvest survey in Whale Pass. Residents who participated in the study answered detailed questions about their household's harvest and use of wild resources—including fish, wildlife, and plants and berries—during the 2012 calendar year. Households were asked whether they harvested wild resources and, if so, details about those harvests, such as how much they harvested, where, when, and whether they gave away or received resources from other households.

All households in Whale Pass used and harvested at least one kind of wild resource. Vegetation was the most widely used resource category (by 100% of households), followed by salmon and nonsalmon fish (95% each), marine invertebrates and land mammals (81% each), and birds (19%). Figure 1 shows the top 10 species harvested by weight.

Figure 2 shows the estimated usable pounds harvested by category. With 4,405 lb harvested, the large land mammals harvest was nearly tied with the nonsalmon fish harvest of 4,182 lb (Table 1). Salmon rounds out the major resource categories harvested at 2,868 lb. Marine invertebrates and birds and eggs contributed 1,316 lb and 717 lb, respectively. Vegetation followed birds and eggs with 166 lb harvested. Lastly, edible small land mammals accounted for just 4 lb.

Respondents were asked to show on a map where they searched for the wild foods they harvested (Figure 3). In 2012, Whale Pass used a total of 324 square miles for the harvest of wild foods. Most harvests occurred within 20 miles of Whale Pass throughout the northern end of Prince of Wales Island, but some households traveled elsewhere in Southeast Alaska or even into Interior Alaska in search of resources (see maps in Appendix D of Technical Paper No. 399). The road system was used to hunt, trap, pick berries, and gather plants and mushrooms. The coastline was used to fish, harvest shellfish, collect beach greens, as well as hunt for large game.

Although a high percentage of households in the community harvested wild foods, these resources were exchanged among Whale Pass residents and between communities. Sixty-seven percent of households gave away some of their harvest while 76% of households received wild resources from other households. These high rates of exchange emphasize the importance of sharing and the cooperative nature of wild resource harvesting activities in Whale Pass.

This survey was conducted by the Division of Subsistence of the Alaska Department of Fish and Game with assistance by local researcher Connie Plante.

Source for this information

Sill, L. A. and D. Koster, editors. 2017. *The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 399: Douglas.

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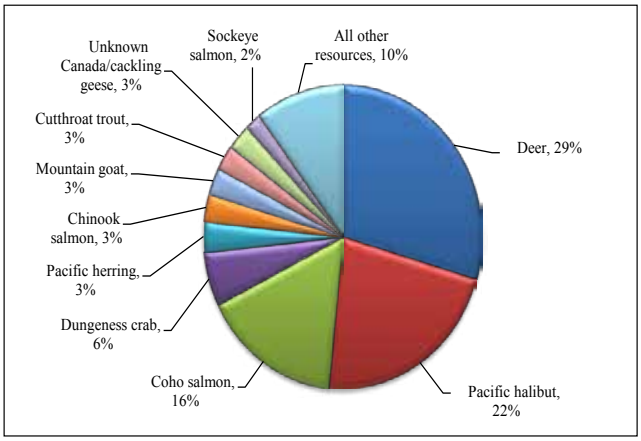

Figure 1.–Top 10 wild foods harvested by usable weight, 2012.

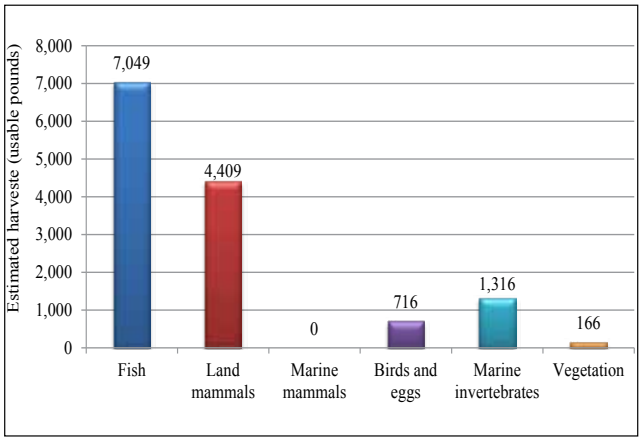

Figure 2.–Estimated harvest by category, 2012.

Table 1.–Estimated harvests of wild foods, Whale Pass, 2012.

Resource	Percentage of households		Estimated pounds harvested			Total estimated amount harvested by community		95% confidence limit
	Using	Harvesting	Total for community	Average per household	Average per person			
Fish								
Coho salmon	76.2%	47.6%	2,168.9 lb	80.3 lb	39.2 lb	452.6	ind	± 30.0%
Chinook salmon	57.1%	23.8%	398.4 lb	14.8 lb	7.2 lb	42.4	ind	± 57.9%
Pink salmon	9.5%	9.5%	50.3 lb	1.9 lb	0.9 lb	19.3	ind	± 80.1%
Sockeye salmon	9.5%	9.5%	250.1 lb	9.3 lb	4.5 lb	54.0	ind	± 74.3%
Pacific herring	42.9%	42.9%	433.3 lb	16.0 lb	7.8 lb	72.2	gal	± 40.8%
Cods	9.5%	9.5%	8.0 lb	0.3 lb	0.1 lb	8.0	lb	± 67.8%
Greenling	33.3%	23.8%	95.5 lb	3.5 lb	1.7 lb	95.5	lb	± 62.0%
Pacific halibut	90.5%	52.4%	3,077.1 lb	114.0 lb	55.7 lb	3,077.1	lb	± 31.6%
Rockfishes	52.4%	33.3%	180.0 lb	6.7 lb	3.3 lb	180.0	lb	± 39.4%
Dolly Varden	4.8%	4.8%	15.4 lb	0.6 lb	0.3 lb	5.1	ind	± 98.3%
Cutthroat trout	33.3%	33.3%	372.2 lb	13.8 lb	6.7 lb	372.2	lb	± 53.9%
Subtotal, fish	*100.0%*	*71.4%*	*7,049.2 lb*	*261.1 lb*	*127.5 lb*	*7,049.2*	*lb*	*± 24.3%*
Land mammals								
Deer	76.2%	57.1%	4,011.4 lb	148.6 lb	72.6 lb	50.1	ind	± 30.2%
Mountain goat	14.3%	14.3%	393.4 lb	14.6 lb	7.1 lb	3.9	ind	± 53.9%
Beaver	4.8%	4.8%	- lb	- lb	- lb	12.9	ind	± 98.3%
North American river (land) otter	9.5%	9.5%	- lb	- lb	- lb	23.1	ind	± 92.8%
Marten	23.8%	23.8%	- lb	- lb	- lb	90.0	ind	± 50.3%
Mink	28.6%	28.6%	- lb	- lb	- lb	212.1	ind	± 65.6%
Squirrel	14.3%	14.3%	3.9 lb	0.1 lb	0.1 lb	3.9	lb	± 67.8%
Least weasel	14.3%	14.3%	- lb	- lb	- lb	15.4	ind	± 58.9%
Gray wolf	4.8%	4.8%	- lb	- lb	- lb	6.4	ind	± 98.3%
Subtotal, land mammals	*81.0%*	*66.7%*	*4,408.7 lb*	*163.3 lb*	*79.7 lb*	*4,408.7*	*lb*	*± 31.5%*
Birds and eggs								
Ducks	19.0%	19.0%	321.4 lb	11.9 lb	5.8 lb	321.4	lb	± 80.2%
Geese	14.3%	14.3%	369.4 lb	13.7 lb	6.7 lb	369.4	lb	± 67.8%
Upland game birds	14.3%	14.3%	25.7 lb	1.0 lb	0.5 lb	25.7	lb	± 64.7%
Subtotal, birds and eggs	*19.0%*	*19.0%*	*716.5 lb*	*26.5 lb*	*13.0 lb*	*716.5*	*lb*	*± 65.5%*
Marine invertebrates								
Clams	23.8%	14.3%	175.9 lb	6.5 lb	3.2 lb	175.9	lb	± 77.1%
Crabs	76.2%	52.4%	804.8 lb	29.8 lb	14.6 lb	804.8	lb	± 43.4%
Sea cucumber	9.5%	9.5%	147.9 lb	5.5 lb	2.7 lb	73.9	gal	± 93.9%
Shrimp	52.4%	42.9%	187.7 lb	7.0 lb	3.4 lb	93.9	gal	± 33.3%
Subtotal, marine invertebrates	*81.0%*	*57.1%*	*1,316.3 lb*	*48.8 lb*	*23.8 lb*	*1,316.3*	*lb*	*± 35.7%*
Vegetation								
Berries	52.4%	52.4%	90.6 lb	3.4 lb	1.6 lb	90.6	lb	± 31.1%
Plants/greens/mushrooms	42.9%	42.9%	74.9 lb	2.8 lb	1.4 lb	74.9	lb	± 54.7%
Wood	85.7%	85.7%	- lb	- lb	- lb	143.1	cord	± 15.0%
Subtotal, vegetation	*100.0%*	*100.0%*	*165.5 lb*	*6.1 lb*	*3.0 lb*	*165.5*	*lb*	*± 29.9%*
All resources	**100.0%**	**100.0%**	**13,656.3 lb**	**505.8 lb**	**247.0 lb**	**13,656.3**	**lb**	**± 26.3%**

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

Note "-" indicates either: a) the resource is not typically eaten and shows a non-zero harvest amount with a zero harvest weight, or b) the estimated value is too small to be represented to the tenth decimal place.

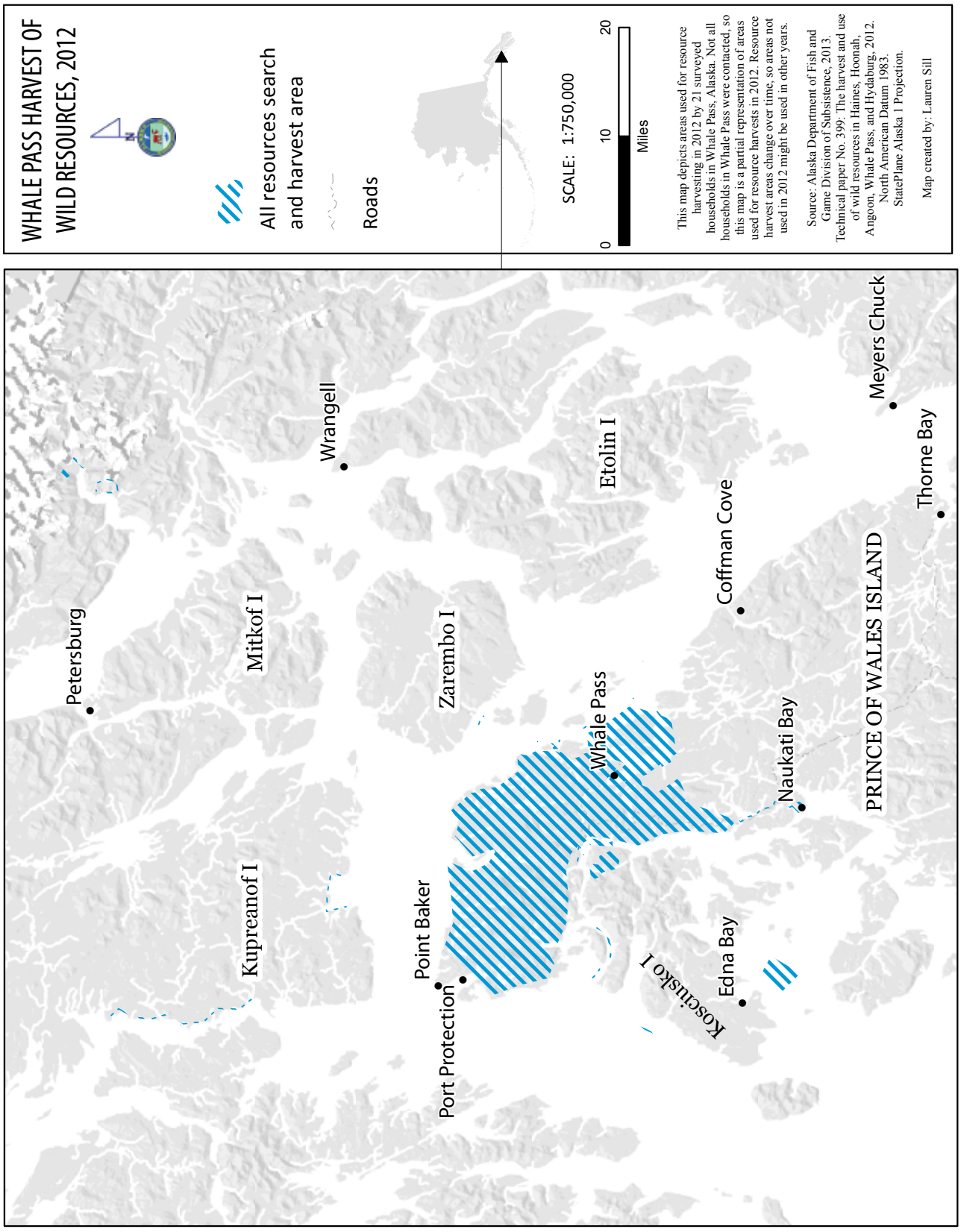

Figure 3.–Wild food search and harvest areas, Whale Pass, 2012.



Executive Summary - Technical Paper No. 399

HYDABURG

Subsistence Harvests in 2012

In Hydaburg, 48 surveyed households reported harvesting a variety of fish, wildlife, and plants. Expanding for 71 unsurveyed households, Hydaburg's total estimated harvest was 176,310 lb. Harvests averaged 1,482 lb per household and 531 lb per person.

In March 2013, ADF&G Division of Subsistence staff, in collaboration with the Hydaburg Cooperative Association, conducted a comprehensive wild foods harvest survey in Hydaburg. Residents who participated in the study answered detailed questions about their household's harvest and use of wild resources—including fish, wildlife, and plants and berries—during the 2012 calendar year. Households were asked whether they harvested wild resources and, if so, details about those harvests, such as how much they harvested, where, when, and whether they gave away or received resources from other households.

All households in Hydaburg used at least one kind of wild resource. Salmon was the most widely used resource category (by 100% of households), followed by nonsalmon fish and vegetation (98% each), marine invertebrates (96%), land mammals (88%), birds and eggs (27%), and marine mammals (15%). Figure 1 shows the top 10 species harvested by weight.

Fish dominated the harvest with 115,432 lb harvested (Figure 2); more than one-half of the fish harvest was of salmon, and the remainder was nonsalmon fish species (Table 1). Marine invertebrates and land mammals contributed the next greatest amounts to the overall harvest with 27,630 lb of marine invertebrates and 22,610 lb of land mammals harvested. Vegetation and marine mammals contributed 8,835 lb and 1,666 lb, respectively. Lastly, birds and eggs accounted for just 138 lb of the overall harvest.

Respondents were asked to show on a map where they searched for the wild foods they harvested (Figure 3). In 2012, Hydaburg residents used a total of 302 square miles for the harvest of wild foods. Harvests occurred on the southern end of Prince of Wales Island, from Klawock south to Cordova Bay, along the southern coast of Sumez Island, and in the protected waters alongside the islands. The road system was used to hunt, trap, pick berries, and gather plants and mushrooms. The coastline was used to fish, harvest shellfish, collect beach greens, as well as hunt for large game and marine mammals.

While nearly every household in Hydaburg participated in the harvest of wild resources, sharing among households was also prevalent. Ninety percent of households gave away some of their harvest while 98% of households received wild resources from other households. These high rates of exchange emphasize the importance of sharing and the cooperative nature of wild resource harvesting activities.

This survey was conducted by the Division of Subsistence of the Alaska Department of Fish and Game in cooperation with the Hydaburg Cooperative Association. Local researchers were Joey Adams, Mona Peratrovich, and Jodi Sanderson.

Source for this information

Sill, L. A. and D. Koster, editors. 2017. *The Harvest and Use of Wild Resources in Haines, Hoonah, Angoon, Whale Pass, and Hydaburg, Alaska, 2012.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 399: Douglas.

Electronic copy of this report

http://www.adfg.alaska.gov/techpap/TP399.pdf

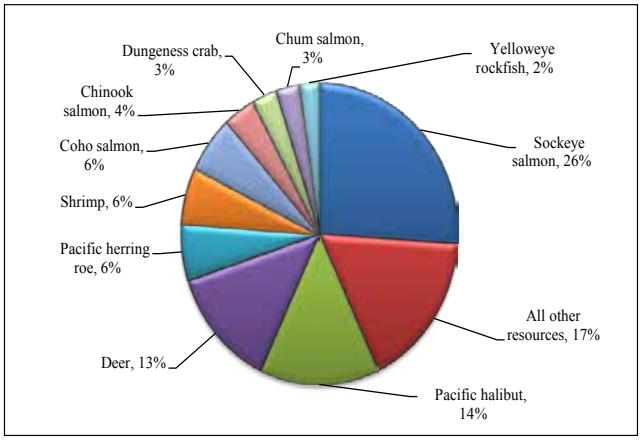

Figure 1.–Top 10 wild foods harvested by usable weight, 2012.

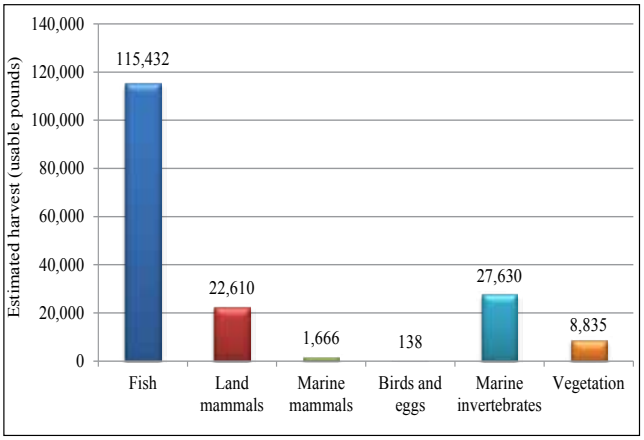

Figure 2.–Estimated harvest by category, 2012.

Table 1.–Estimated harvests of wild foods, Hydaburg, 2012.

Resource	Percentage of households: Using	Percentage of households: Harvesting	Estimated pounds harvested: Total for community	Estimated pounds harvested: Average per household	Estimated pounds harvested: Average per person	Total estimated amount harvested by community	95% confidence limit
Fish							
Chum salmon	25.0%	16.7%	4,786.1 lb	40.2 lb	14.4 lb	711.5 ind	± 109.1%
Coho salmon	58.3%	41.7%	10,643.0 lb	89.4 lb	32.0 lb	2,220.8 ind	± 47.9%
Chinook salmon	87.5%	45.8%	6,540.7 lb	55.0 lb	19.7 lb	696.6 ind	± 40.1%
Pink salmon	20.8%	16.7%	4,005.8 lb	33.7 lb	12.1 lb	1,537.1 ind	± 79.0%
Sockeye salmon	97.9%	62.5%	45,259.1 lb	380.3 lb	136.2 lb	9,779.5 ind	± 31.6%
Pacific herring	12.5%	2.1%	185.9 lb	1.6 lb	0.6 lb	31.0 gal	± 155.4%
Pacific herring sac roe	10.4%	4.2%	277.7 lb	2.3 lb	0.8 lb	39.7 gal	± 112.2%
Pacific herring spawn on kelp	83.3%	29.2%	7,491.0 lb	62.9 lb	22.5 lb	1,070.1 gal	± 76.7%
Pacific herring roe on hemlock branches	77.1%	22.9%	3,968.8 lb	33.4 lb	11.9 lb	567.0 gal	± 55.2%
Eulachon (hooligan, candlefish)	43.8%	2.1%	5.0 lb	- lb	- lb	0.6 gal	± 155.4%
Greenling	35.4%	22.9%	1,064.3 lb	8.9 lb	3.2 lb	1,064.3 lb	± 54.0%
Pacific halibut	97.9%	50.0%	24,394.2 lb	205.0 lb	73.4 lb	24,394.2 lb	± 40.3%
Rockfishes	68.8%	37.5%	5,241.0 lb	44.0 lb	15.8 lb	5,241.0 lb	± 53.6%
Sablefish (black cod)	12.5%	6.3%	119.0 lb	1.0 lb	0.4 lb	29.8 ind	± 93.5%
Shark	2.1%	2.1%	124.0 lb	1.0 lb	0.4 lb	124.0 lb	± 155.4%
Dolly Varden	18.8%	10.4%	587.6 lb	4.9 lb	1.8 lb	195.9 ind	± 101.6%
Trouts	33.3%	16.7%	738.8 lb	6.2 lb	2.2 lb	738.8 lb	± 62.3%
Subtotal, fish	*100.0%*	*79.2%*	*115,431.8 lb*	*970.0 lb*	*347.5 lb*	*115,431.8 lb*	*± 26.7%*
Land mammals							
Deer	87.5%	52.1%	22,610.0 lb	190.0 lb	68.1 lb	282.6 ind	± 34.9%
Mink	2.1%	2.1%	- lb	- lb	- lb	2.5 ind	± 155.4%
Subtotal, land mammals	*87.5%*	*52.1%*	*22,610.0 lb*	*190.0 lb*	*68.1 lb*	*22,610.0 lb*	*± 34.9%*
Marine mammals							
Harbor seal	6.3%	6.3%	1,666.0 lb	14.0 lb	5.0 lb	19.8 ind	± 118.9%
Sea otter	8.3%	8.3%	- lb	- lb	- lb	64.5 ind	± 106.0%
Subtotal, marine mammals	*14.6%*	*14.6%*	*1,666.0 lb*	*14.0 lb*	*5.0 lb*	*1,666.0 lb*	*± 118.9%*
Birds and eggs							
Ducks	2.1%	2.1%	17.4 lb	0.1 lb	0.1 lb	17.4 lb	± 155.4%
Bird eggs	25.0%	8.3%	120.2 lb	1.0 lb	0.4 lb	120.2 lb	± 91.9%
Subtotal, birds and eggs	*27.1%*	*10.4%*	*137.6 lb*	*1.2 lb*	*0.4 lb*	*137.6 lb*	*± 82.0%*
Marine invertebrates							
Abalone	16.7%	10.4%	394.9 lb	3.3 lb	1.2 lb	188.1 gal	± 102.5%
Chitons (bidarkis, gumboots)	33.3%	22.9%	1,388.3 lb	11.7 lb	4.2 lb	1,388.3 lb	± 85.6%
Clams	66.7%	43.8%	3,425.7 lb	28.8 lb	10.3 lb	3,425.7 lb	± 42.1%
Cockles	54.2%	35.4%	1,491.9 lb	12.5 lb	4.5 lb	1,491.9 lb	± 56.9%
Crabs	83.3%	37.5%	7,640.8 lb	64.2 lb	23.0 lb	7,640.8 lb	± 52.9%
Mussels	4.2%	2.1%	18.6 lb	0.2 lb	0.1 lb	12.4 gal	± 155.4%
Octopus	16.7%	12.5%	537.0 lb	4.5 lb	1.6 lb	537.0 lb	± 88.1%
Scallops	12.5%	8.3%	106.2 lb	0.9 lb	0.3 lb	106.2 lb	± 145.1%
Sea cucumber	20.8%	16.7%	637.7 lb	5.4 lb	1.9 lb	318.8 gal	± 121.0%
Sea urchin	8.3%	6.3%	268.7 lb	2.3 lb	0.8 lb	268.7 lb	± 104.4%
Shrimp	79.2%	35.4%	11,719.7 lb	98.5 lb	35.3 lb	5,859.9 gal	± 51.4%
Subtotal, marine invertebrates	*95.8%*	*64.6%*	*27,629.6 lb*	*232.2 lb*	*83.2 lb*	*27,629.6 lb*	*± 39.2%*
Vegetation							
Berries	89.6%	77.1%	5,159.1 lb	43.4 lb	15.5 lb	5,159.1 lb	± 24.2%
Plants/greens/mushrooms	75.0%	60.4%	574.9 lb	4.8 lb	1.7 lb	574.9 lb	± 41.3%
Seaweed/kelp	89.6%	54.2%	3,100.7 lb	26.1 lb	9.3 lb	3,100.7 lb	± 29.9%
Wood	62.5%	58.3%	- lb	- lb	- lb	867.2 cord	± 28.0%
Subtotal, vegetation	*97.9%*	*91.7%*	*8,834.7 lb*	*74.2 lb*	*26.6 lb*	*8,834.7 lb*	*± 21.7%*
All resources	**100.0%**	**97.9%**	**176,309.7 lb**	**1,481.6 lb**	**530.7 lb**	**176,309.7 lb**	**± 25.1%**

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

Note "-" indicates either: a) the resource is not typically eaten and shows a non-zero harvest amount with a zero harvest weight, or b) the estimated value is too small to be represented to the tenth decimal place.

Figure 3.–Wild food search and harvest areas, Hydaburg, 2012.