Technical Paper No. 487

The Harvest and Use of Wild Resources in Egegik, Pilot Point, and Ugashik, 2014

by
Lauren A. Sill,
Lisa Hutchinson-Scarbrough,
and
David Koster

June 2022

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

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in Division of Subsistence reports. All others, including deviations from definitions listed below, are noted in the text at first mention, in the titles or footnotes of tables, and in figures or figure captions.

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

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

TECHNICAL PAPER NO. 487

THE HARVEST AND USE OF WILD RESOURCES IN EGEGIK, PILOT POINT, AND UGASHIK, 2014

by

Lauren A. Sill
Alaska Department of Fish and Game Division of Subsistence, Douglas

and

Lisa Hutchinson-Scarbrough and David Koster
Alaska Department of Fish and Game Division of Subsistence, Anchorage

Alaska Department of Fish and Game
Division of Subsistence
PO Box 110024
Juneau, AK 99811

June 2022

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

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

Lauren A. Sill
Alaska Department of Fish and Game Division of Subsistence
PO Box 110024, Juneau, AK 99811-0024 USA

and
Lisa Hutchinson-Scarbrough and David Koster
Alaska Department of Fish and Game Division of Subsistence
333 Raspberry Road, Anchorage, AK 99518-1565 USA

This document should be cited as:
Sill, L. A., L. Hutchinson-Scarbrough, and D. Koster. 2022. The Harvest and Use of Wild Resources in Egegik, Pilot Point, and Ugashik, 2014. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 487, Douglas.

TABLE OF CONTENTS

Page

List of Tables vi

List of Figures ix

List of Plates xiii

List of Appendices xiii

Abstract xiv

1. Introduction 1

Project Background 1

Regulatory Context 6

Salmon 6

Large Land Mammals 10

Study Objectives 10

Research Methods 11

Ethical Principles for the Conduct of Research 11

Project Planning and Approvals 11

Systematic Household Surveys 12

Mapping Locations of Subsistence Hunting, Fishing, and Gathering Activities 14

Key Respondent Interviews 15

Household Survey Implementation 15

Egegik 15

Pilot Point 15

Ugashik 16

Data Analysis and Review 16

Survey Data Entry and Analysis 16

Population Estimates and Other Demographic Information 17

Map Data Entry and Analysis 17

Food Security Analysis 18

Community Review Meetings 18

Final Report Organization 19

TABLE OF CONTENTS CONTINUED

Page

2. Egegik 21

Community Background 21

Seasonal Round 22

Population Estimates and Demographic Information 24

Income and Cash Employment 30

Food Security 35

Summary of Harvest and Use Patterns 39

Individual Participation in the Harvesting and Processing of Wild Resources 39

Harvest and Use of Wild Resources at the Household Level 41

Sharing of Wild Resources 43

Household Specialization in Resource Harvesting 43

Harvest Quantities and Composition 44

Use and Harvest Characteristics by Resource Category 44

Salmon 53

Nonsalmon Fish 57

Large Land Mammals 64

Small Land Mammals/Furbearers 64

Marine Mammals 64

Birds and Eggs 69

Marine Invertebrates 72

Vegetation 73

Comparing Harvests and Uses in 2014 with Previous Years 75

Use Assessments 75

Harvest Data 84

Salmon 86

Large Land Mammals 90

Current and Historical Harvest Areas 93

Local Comments and Concerns 93

Fish 93

TABLE OF CONTENTS CONTINUED

Page

Large Land Mammals 93
Small Land Mammals/Furbearers 93
Birds and Eggs 93
Marine Invertebrates 94
Vegetation 94

3. Pilot Point 95

Community Background 95
Seasonal Round 96
Population Estimates and Demographic Information 99
Income and Cash Employment 104
Food Security 109
Summary of Harvest and Use Patterns 113
Individual Participation in the Harvesting and Processing of Wild Resources 113
Harvest and Use of Wild Resources at the Household Level 115
Sharing of Wild Resources 117
Household Specialization in Resource Harvesting 117
Harvest Quantities and Composition 118
Use and Harvest Characteristics by Resource Category 118
Salmon 126
Nonsalmon Fish 130
Large Land Mammals 137
Small Land Mammals/Furbearers 139
Marine Mammals 142
Birds and Eggs 144
Marine Invertebrates 147
Vegetation 149
Comparing Harvests and Uses in 2014 with Previous Years 151
Harvest Assessments 151
Harvest Data 160

TABLE OF CONTENTS CONTINUED

Page

Current and Historical Harvest Areas 169

Local Comments and Concerns 169

Fish 170

Large Land Mammals 170

Small Land Mammals/Furbearers 170

Vegetation 170

Economic and Environmental Factors 170

4. Ugashik 171

Community Background 171

Seasonal Round 172

Population Estimates and Demographic Information 173

Income and Cash Employment 179

Food Security 183

Summary of Harvest and Use Patterns 186

Individual Participation in the Harvesting and Processing of Wild Resources 186

Harvest and Use of Wild Resources at the Household Level 189

Sharing of Wild Resources 191

Household Specialization in Resource Harvesting 191

Harvest Quantities and Composition 191

Use and Harvest Characteristics by Resource Category 192

Salmon 200

Nonsalmon Fish 204

Large Land Mammals 211

Small Land Mammals/Furbearers 213

Marine Mammals 213

Birds and Eggs 216

Marine Invertebrates 219

Vegetation 221

Comparing Harvests and Uses in 2014 with Previous Years 223

TABLE OF CONTENTS CONTINUED

Page

Harvest Assessments....223
Harvest Data....231
Current and Historical Harvest Areas....239
Local Comments and Concerns....239
Fish....239
Large Land Mammals....239
5. Discussion and Conclusions....240
Overview of Findings for the Study Communities, 2014....240
Changes to Harvest Composition: Change Over Time....241
Land Mammals....246
Marine Mammals....248
Salmon....250
Subsistence Salmon Permit: Annual Harvest Assessment in Egegik and Ugashik Districts of Bristol Bay Management Area....253
2014 Harvest Assessment....253
Changes to Commercial Fishing Participation and Salmon Harvests for Home Use....259
Harvest and Sharing Patterns....260
Conclusions....263
Acknowledgments....264
References Cited....265

LIST OF TABLES

Table **Page**

1-1.–Resources used by study communities, 2014. 3
1-2.–Previous study years, study communities, 1984–2014. 5
1-3.–Community meetings for project overview and research approval, study communities, 2014. 12
1-4.–Project staff. 13
1-5.–Estimated households and sample achievement, study communities, 2014. 14
1-6.–Research staff and survey administration dates, study communities, 2014. 15
1-7.–Community data review meetings, study communities, 2014. 18
1-8.–Comparison of selected study findings, study communities, 2014. 20
2-1.–Population estimates, Egegik, 2010 and 2014. 25
2-2.–Sample and demographic characteristics, Egegik, 2014. 27
2-3.–Population profile, Egegik, 2014. 28
2-4.–Birthplaces of population, Egegik, 2014. 29
2-5.–Birthplaces of household heads, Egegik, 2014. 29
2-6.–Estimated earned and other income, Egegik, 2014. 31
2-7.–Employment by industry, Egegik, 2014. 33
2-8.–Job schedules, Egegik, 2014. 33
2-9.–Employment characteristics, Egegik, 2014. 34
2-10.–Households' assessments of food security conditions, Egegik, 2014. 36
2-11.–Individual participation in subsistence harvesting and processing activities, Egegik, 2014. 40
2-12.–Resource harvest and use characteristics, Egegik, 2014. 42
2-13.–Estimated use and harvest of fish, game, and vegetation resources, Egegik, 2014. 45
2-14.–Top ranked resources used by households, Egegik, 2014. 51
2-15.–Estimated harvest of salmon by gear type and resource, Egegik, 2014. 54
2-16.–Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Egegik, 2014. 55
2-17.–Estimated harvest of nonsalmon fish by gear type and resource, Egegik, 2014. 58
2-18.–Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Egegik, 2014. 60
2-19.–Estimated small land mammal/furbearer harvests by month, Egegik, 2014. 66
2-20.–Estimated bird harvests by season, Egegik, 2014. 70
2-21.–Changes in household uses of resources compared to recent years, Egegik, 2014. 76
2-22.–Reasons for less household uses of resources compared to recent years, Egegik, 2014. 78
2-23.–Reasons for more household uses of resources compared to recent years, Egegik, 2014. 79
2-24.–Reported impact to households reporting that they did not get enough of a type of resource, Egegik, 2014. 81
2-25.–Resources that households reported needing, Egegik, 2014. 83
2-26.–Comparison of estimated per capita harvests, by resource category, Egegik, 1984 and 2014. 85

LIST OF TABLES CONTINUED

Table **Page**

2-27.–Historical subsistence salmon harvests based on Bristol Bay Area permit returns, Egegik, 1983–2018. 87

2-28.–Comparison of estimated per capita harvests of salmon, by species and by gear type, Egegik, 1984, 2014, and 2016....88

2-29.–Estimated per capita harvests of moose and caribou, Egegik, 1984, 1994–1996, 2014, and 2016....90

3-1.–Population estimates, Pilot Point, 2010 and 2014. 99

3-2.–Sample and demographic characteristics, Pilot Point, 2014....101

3-3.–Birthplaces of population, Pilot Point, 2014....102

3-4.–Birthplaces of household heads, Pilot Point, 2014. 102

3-5.–Population profile, Pilot Point, 2014. 103

3-6.–Estimated earned and other income, Pilot Point, 2014....105

3-7.–Employment by industry, Pilot Point, 2014....107

3-8.–Job schedules, Pilot Point, 2014. 107

3-9.–Employment characteristics, Pilot Point, 2014....108

3-10.–Households' assessments of food security conditions, Pilot Point, 2014. 110

3-11.–Individual participation in subsistence harvesting and processing activities, Pilot Point, 2014. 114

3-12.–Resource harvest and use characteristics, Pilot Point, 2014....116

3-13.–Estimated use and harvest of fish, game, and vegetation resources, Pilot Point, 2014. 119

3-14.–Top ranked resources used by households, Pilot Point, 2014....124

3-15.–Estimated harvest of salmon by gear type and resource, Pilot Point, 2014....127

3-16.–Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Pilot Point, 2014. 128

3-17.–Estimated harvest of nonsalmon fish by gear type and resource, Pilot Point, 2014. 131

3-18.–Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Pilot Point, 2014. 133

3-19.–Estimated large land mammal harvests by month and sex, Pilot Point, 2014. 137

3-20.–Estimated small land mammal/furbearer harvests by month, Pilot Point, 2014....140

3-21.–Estimated marine mammal harvests by month and sex, Pilot Point, 2014....142

3-22.–Estimated bird harvests by season, Pilot Point, 2014. 145

3-23.–Changes in household uses of resources compared to recent years, Pilot Point, 2014. 153

3-24.–Reasons for less household uses of resources compared to recent years, Pilot Point, 2014. 155

3-25.–Reasons for more household uses of resources compared to recent years, Pilot Point, 2014. 156

3-26.–Reported impact to households reporting that they did not get enough of a type of resource, Pilot Point, 2014. 158

3-27.–Resources that households reported needing, Pilot Point, 2014....159

3-28.–Comparison of estimated per capita harvests, by resource category, Pilot Point, 1987 and 2014....162

LIST OF TABLES CONTINUED

Table **Page**

3-29.–Historical subsistence salmon harvests based on Bristol Bay Area permit returns, Pilot Point, 1983–2018. 167

3-30.–Comparison of estimated per capita harvests of salmon, by species and by gear type, Pilot Point, 1987 and 2014....169

4-1.–Population estimates, Ugashik, 2010 and 2014. 175

4-2.–Sample and demographic characteristics, Ugashik, 2014. 176

4-3.–Birthplaces of population, Ugashik, 2014. 177

4-4.–Population profile, Ugashik, 2014. 178

4-5.–Estimated earned and other income, Ugashik, 2014. 180

4-6.–Employment by industry, Ugashik, 2014. 181

4-7.–Job schedules, Ugashik, 2014. 182

4-8.–Employment characteristics, Ugashik, 2014. 182

4-9.–Households' assessments of food security conditions, Ugashik, 2014....184

4-10.–Individual participation in subsistence harvesting and processing activities, Ugashik, 2014. 188

4-11.–Resource harvest and use characteristics, Ugashik, 2014....190

4-12.–Estimated use and harvest of fish, game, and vegetation resources, Ugashik, 2014. 193

4-13.–Top ranked resources used by households, Ugashik, 2014. 198

4-14.–Estimated harvest of salmon by gear type and resource, Ugashik, 2014. 201

4-15.–Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Ugashik, 2014. 202

4-16.–Estimated harvest of nonsalmon fish by gear type and resource, Ugashik, 2014....205

4-17.–Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Ugashik, 2014....207

4-18.–Estimated large land mammal harvests by month and sex, Ugashik, 2014....211

4-19.–Estimated small land mammal/furbearer harvests by month, Ugashik, 2014. 214

4-20.–Estimated bird harvests by season, Ugashik, 2014....217

4-21.–Changes in household uses of resources compared to recent years, Ugashik, 2014. 224

4-22.–Reasons for less household uses of resources compared to recent years, Ugashik, 2014. 226

4-23.–Reasons for more household uses of resources compared to recent years, Ugashik, 2014. 227

4-24.–Reported impact to households reporting that they did not get enough of a type of resource, Ugashik, 2014. 229

4-25.–Resources that households reported needing, Ugashik, 2014. 230

4-26.–Comparison of estimated per capita harvests, by resource category, Ugashik, 1987 and 2014. ..231

4-27.–Comparison of estimated per capita harvests of salmon, by species and by gear type, Ugashik, 1987 and 2014. 237

4-28.–Historical subsistence salmon harvests based on Bristol Bay Area permit returns, Ugashik, 1983–2018. 238

5-1.–Estimated proportion of total harvest weight, by resource category, study communities, 1973, 1984, 1987, and 2014....245

LIST OF FIGURES

Figure **Page**

1-1.–Map of study communities, 2014. 2
1-2.–Map of state commercial fishing area boundaries in part of the Westward Region. 7
1-3.–Bristol Bay Area subsistence salmon permit. 8
2-1.–Wild resources search and harvest areas, Egegik, 2014. 23
2-2.–Alaska Native and overall population estimates, Egegik, 2010 and 2014. 25
2-3.–Historical population estimates, Egegik, 1950–2014. 26
2-4.–Population profile, Egegik, 2014. 28
2-5.–Top income sources, Egegik, 2014. 30
2-6.–Comparison of median household income estimates, Egegik, 2014. 32
2-7.–Responses to questions about food insecure conditions, Egegik, 2014. 35
2-8.–Comparison of food security categories, Egegik, Alaska, and United States, 2014. 36
2-9.–Mean number of food insecure conditions by month and by household food security category, Egegik, 2014. 38
2-10.–Comparison of months when food did not last, Egegik, 2014. 38
2-11.–Individual participation in subsistence harvesting and processing activities, Egegik, 2014. 39
2-12.–Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Egegik, 2014. 41
2-13.–Household specialization, Egegik, 2014. 43
2-14.–Composition of harvest in pounds usable weight, by resource category, Egegik, 2014. 51
2-15.–Top resources harvested by percentage of total harvest in pounds usable weight, Egegik, 2014. 52
2-16.–Composition of salmon harvest in pounds usable weight, Egegik, 2014. 53
2-17.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Egegik, 2014. 54
2-18.–Fishing and harvest locations of salmon, Egegik, 2014. 56
2-19.–Composition of nonsalmon fish harvest in pounds usable weight, Egegik, 2014. 57
2-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Egegik, 2014. 59
2-21.–Fishing and harvest locations of nonsalmon fish, Egegik, 2014. 63
2-22.–Hunting locations of moose, Egegik, 2014. 65
2-23.–Composition of small land mammal/furbearer harvest by individual animals harvested, Egegik, 2014. 66
2-24.–Hunting and trapping locations of small land mammals/furbearers, Egegik, 2014. 67
2-25.–Hunting locations of marine mammals, Egegik, 2014. 68
2-26.–Composition of bird and bird egg harvest in pounds usable weight, Egegik, 2014. 69
2-27.–Hunting and harvest locations of birds and bird eggs, Egegik, 2014. 71
2-28.–Composition of marine invertebrate harvest in pounds usable weight, Egegik, 2014. 72

LIST OF FIGURES CONTINUED

Figure **Page**

2-29.–Composition of vegetation harvest by type in pounds usable weight, Egegik, 2014. 73

2-30.–Gathering and harvest locations of vegetation, Egegik, 2014. 74

2-31.–Changes in household uses of resources compared to recent years, Egegik, 2014. 77

2-32.–Percentage of sampled households reporting whether they had enough resources, Egegik, 2014. 80

2-33.–Composition of harvest in pounds per capita, by resource category, Egegik, 1984 and 2014. 85

2-34.–Comparison of estimated per capita harvests of salmon, by species, Egegik, 1984 and 2014..... 86

2-35.–Composition of salmon species harvest weight by gear type, Egegik, 1984, 2014, and 2016. 89

2-36.–Estimated harvests of moose, by individual animals, Egegik, 1984, 1994–1996, 2014, and 2016..... 91

2-37.–Estimated harvests of caribou, by individual animals, Egegik, 1984, 1994–1996, 2014, and 2016..... 92

3-1.–Wild resources search and harvest areas, Pilot Point, 2014..... 98

3-2.–Alaska Native and overall population estimates, Pilot Point, 2010 and 2014..... 100

3-3.–Historical population estimates, Pilot Point, 1950–2014. 100

3-4.–Population profile, Pilot Point, 2014. 103

3-5.–Top income sources, Pilot Point, 2014. 104

3-6.–Comparison of median household income estimates, Pilot Point, 2014. 106

3-7.–Responses to questions about food insecure conditions, Pilot Point, 2014..... 109

3-8.–Comparison of food security categories, Pilot Point, Alaska, and United States, 2014. 110

3-9.–Mean number of food insecure conditions by month and by household food security category, Pilot Point, 2014. 112

3-10.–Comparison of months when food did not last, Pilot Point, 2014..... 112

3-11.–Individual participation in subsistence harvesting and processing activities, Pilot Point, 2014. 113

3-12.–Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Pilot Point, 2014. 115

3-13.–Household specialization, Pilot Point, 2014..... 117

3-14.–Composition of harvest in pounds usable weight, by resource category, Pilot Point, 2014..... 124

3-15.–Top resources harvested by percentage of total harvest in pounds usable weight, Pilot Point, 2014. 125

3-16.–Composition of salmon harvest in pounds usable weight, Pilot Point, 2014. 126

3-17.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Pilot Point, 2014. 127

3-18.–Fishing and harvest locations of salmon, Pilot Point, 2014..... 129

3-19.–Composition of nonsalmon fish harvest in pounds usable weight, Pilot Point, 2014..... 130

3-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Pilot Point, 2014. 132

LIST OF FIGURES CONTINUED

Figure **Page**

3-21.–Fishing and harvest locations of nonsalmon fish, Pilot Point, 2014. 136
3-22.–Hunting locations of moose, Pilot Point, 2014. 138
3-23.–Composition of small land mammal/furbearer harvest by individual animals harvested, Pilot Point, 2014. 139
3-24.–Hunting and trapping locations of small land mammals/furbearers, Pilot Point, 2014. 141
3-25.–Hunting locations of marine mammals, Pilot Point, 2014. 143
3-26.–Composition of bird and bird egg harvest in pounds usable weight, Pilot Point, 2014. 144
3-27.–Hunting and harvest locations of birds and bird eggs, Pilot Point, 2014. 146
3-28.–Composition of marine invertebrate harvest in pounds usable weight, Pilot Point, 2014. 147
3-29.–Search and harvest locations of marine invertebrates, Pilot Point, 2014. 148
3-30.–Composition of vegetation harvest by type in pounds usable weight, Pilot Point, 2014. 149
3-31.–Gathering and harvest locations of vegetation, Pilot Point, 2014. 150
3-32.–Changes in household uses of resources compared to recent years, Pilot Point, 2014. 154
3-33.–Percentage of sampled households reporting whether they had enough resources, Pilot Point, 2014. 157
3-34.–Composition of harvest, by resource category, Pilot Point, 1987 and 2014. 162
3-35.–Percentage of households using and harvesting wild resources, by resource category, Pilot Point, 1987 and 2014 163
3-36.–Estimated harvests of caribou, by individual animals, Pilot Point, 1987, 1994–1996, and 2014 164
3-37.–Estimated harvests of moose, by individual animals, Pilot Point, 1987, 1994–1996, and 2014 165
3-38.–Comparison of estimated per capita harvests of salmon, by species, Pilot Point, 1987 and 2014. 166
3-39.–Composition of salmon species harvest weight by gear type, Pilot Point, 1987 and 2014. 168
4-1.–Wild resources search and harvest areas, Ugashik, 2014. 174
4-2.–Alaska Native and overall population estimates, Ugashik, 2010 and 2014. 175
4-3.–Historical population estimates, Ugashik, 1950–2014. 177
4-4.–Population profile, Ugashik, 2014. 178
4-5.–Top income sources, Ugashik, 2014. 179
4-6.–Comparison of median household income estimates, Ugashik, 2014. 181
4-7.–Responses to questions about food insecure conditions, Ugashik, 2014 183
4-8.–Comparison of food security categories, Ugashik, Alaska, and United States, 2014. 184
4-9.–Mean number of food insecure conditions by month and by household food security category, Ugashik, 2014. 185
4-10.–Comparison of months when food did not last, Ugashik, 2014. 185
4-11.–Individual participation in subsistence harvesting and processing activities, Ugashik, 2014. 187

LIST OF FIGURES CONTINUED

Figure **Page**

4-12.–Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Ugashik, 2014. 189

4-13.–Household specialization, Ugashik, 2014. 191

4-14.–Composition of harvest in pounds usable weight, by resource category, Ugashik, 2014. 198

4-15.–Top resources harvested by percentage of total harvest in pounds usable weight, Ugashik, 2014. 199

4-16.–Composition of salmon harvest in pounds usable weight, Ugashik, 2014. 200

4-17.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Ugashik, 2014. 201

4-18.–Fishing and harvest locations of salmon, Ugashik, 2014. 203

4-19.–Composition of nonsalmon fish harvest in pounds usable weight, Ugashik, 2014. 204

4-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Ugashik, 2014. 206

4-21.–Fishing and harvest locations of nonsalmon fish, Ugashik, 2014. 210

4-22.–Hunting locations of moose, Ugashik, 2014. 212

4-23.–Composition of small land mammal/furbearer harvest by individual animals harvested, Ugashik, 2014. 213

4-24.–Hunting and trapping locations of small land mammals/furbearers, Ugashik, 2014. 215

4-25.–Composition of bird and bird egg harvest in pounds usable weight, Ugashik, 2014. 216

4-26.–Hunting and harvest locations of birds and bird eggs, Ugashik, 2014. 218

4-27.–Composition of marine invertebrate harvest in pounds usable weight, Ugashik, 2014. 219

4-28.–Search and harvest locations of marine invertebrates, Ugashik, 2014. 220

4-29.–Composition of vegetation harvest by type in pounds usable weight, Ugashik, 2014. 221

4-30.–Gathering and harvest locations of vegetation, Ugashik, 2014. 222

4-31.–Changes in household uses of resources compared to recent years, Ugashik, 2014. 225

4-32.–Percentage of sampled households reporting whether they had enough resources, Ugashik, 2014. 228

4-33.–Estimated harvests of moose, by individual animals, Ugashik, 1987, 1994–1996, and 2014. 232

4-34.–Estimated harvests of caribou, by individual animals, Ugashik, 1987, 1994–1996, and 2014. 233

4-35.–Composition of harvest, by resource category, Ugashik, 1987 and 2014. 234

4-36.–Comparison of estimated per capita harvests of salmon, by species, Ugashik, 1987 and 2014. 235

4-37.–Composition of salmon species harvest weight by gear type, Ugashik, 1987 and 2014. 236

5-1.–Estimated per capita harvest, in pounds, study communities, 1973, 1984, 1987, and 2014. 241

5-2.–Comparison of select household resource harvest and use characteristics, study communities, 1984, 1987, and 2014. 243

5-3.–Comparison of total harvest composition in pounds, by resource category, study communities, 1973, 1984, 1987, and 2014. 244

LIST OF FIGURES CONTINUED

Figure **Page**

5-4.–Estimated harvests of harbor seals, Egegik and Pilot Point, 1984, 1987, 1992–1998, 2000–2008, and 2014.....249

5-5.–Percentage of households using and harvesting wild resources, by resource category, Egegik, 1984 and 2014 250

5-6.–Percentage of households using and harvesting wild resources, by resource category, Pilot Point, 1987 and 2014.....251

5-7.–Percentage of households using and harvesting wild resources, by resource category, Ugashik, 1987 and 2014 251

5-8.–Composition of salmon harvest in pounds usable weight, study communities, 1984, 1987, and 2014.....252

5-9.–Composition of subsistence salmon harvest, by individual fish, based on Bristol Bay Area permit returns, Pilot Point, 1983–2018.....255

5-10.–Composition of subsistence salmon harvest, by individual fish, based on Bristol Bay Area permit returns, Ugashik, 1983–2018. 256

5-11.–Composition of subsistence salmon harvest, by individual fish, based on Bristol Bay Area permit returns, Egegik, 1983–2018. 257

5-12.–Estimated total salmon harvests based on Bristol Bay Area permit returns, 1983–2018, and from household surveys, 1984, 1987, 2014, and 2016, study communities. 258

5-13.–Comparison of the percentages of households receiving and giving all resources, study communities, 1984, 1987, and 2014. 261

LIST OF PLATES

Plate **Page**

2-1.–Community of Egegik. 22

3-1.–Community of Pilot Point. 96

4-1.–A view of the Ugashik River downstream from the community of Ugashik. 172

LIST OF APPENDICES

Appendix **Page**

A–Survey Form.....270

B–Conversion Factors.....300

ABSTRACT

This publication reports results from research to update information about the harvests and uses of fish, wildlife, and wild plant resources by households in the communities of Egegik, Pilot Point, and Ugashik. Household surveys were conducted in February 2015 about harvests and uses of wild resources in the 2014 calendar year. The study communities are located on the Bristol Bay coast of the Alaska Peninsula. Researchers surveyed 75% of all eligible households in the study communities. The majority of residents in each study community are Alaska Native: 60% in Ugashik, 70% in Egegik, and 85% in Pilot Point. Employment by the local government provided the majority of jobs in Egegik and Pilot Point, and the commercial fisheries sector provided the most jobs for Ugashik households.

During the 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. Sharing of subsistence resources remains integral to these communities, with more than one-half of the households in each community giving away and receiving resources. Overall, the per capita harvests of wild resources ranged from 155 lb in Egegik to 943 lb in Ugashik. In each community, households harvested more salmon than any other resource: salmon composed from 74% of the harvest weight in Pilot Point to 84% in Ugashik and 92% in Egegik. Most households engaged in harvesting activities on the proximate land and waters surrounding the study communities according to spatial data collected during survey administration.

Compared to previous subsistence harvest studies conducted in 1984 (Egegik) and 1987 (Pilot Point and Ugashik), per capita harvests declined in Egegik and Pilot Point but increased in Ugashik. The composition of the harvest also changed. In each community, salmon harvests composed a larger percentage of the harvest, increasing from approximately 25% of each community's harvest in the 1980s. Conversely, harvests of large land mammals decreased substantially between the 1980s and 2014 study years. Large land mammals composed one-half the harvest weight or more in the 1980s, but in 2014 there was no harvest of large land mammals in Egegik and the harvest in Pilot Point and Ugashik composed only 6%–11% of the total harvest weight. The decline in the population of the Northern Alaska Peninsula caribou herd and regulations restricting hunting are likely driving factors of this change.

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. Alaska Department of Fish and Game (ADF&G) Division of Subsistence research staff carried out the project with support from Egegik Village, Native Village of Pilot Point, and Ugashik Village.

Key words: subsistence fishing, subsistence hunting, Alaska Peninsula, demography, food security, wild resources, Egegik, Pilot Point, Ugashik

1. INTRODUCTION

This report provides information about the harvests of fish, wildlife, and wild plant resources by the communities of Egegik, Pilot Point, and Ugashik (Figure 1-1). A household survey was administered to these communities between February 2 and 22, 2015, for the 2014 study year. The size of the study communities spans a wide range, but only Pilot Point had a predominantly Alaska Native population according to the five-year (2010–2014) American Community Survey (ACS) estimates (U.S. Census Bureau n.d.). This five-year range encompasses the 2010 decennial federal census through 2014, the study year for which research was conducted for every study community. Pilot Point (pop. 47) had 96% Alaska Native residents. Egegik had the highest population overall (pop. 74) and 47% Alaska Native population, and Ugashik (pop. 19) was the least populated study community and had the smallest proportion of Alaska Native residents (37%). Population estimates based on the survey results by the Division of Subsistence will be discussed in more detail in individual community chapters featuring survey results. Harvest information was collected by staff of the Alaska Department of Fish and Game (ADF&G) Division of Subsistence. Table 1-1 presents a list, including the Linnaean taxonomic names, of resources used in 2014 by the surveyed households. As Table 1-1 reflects, residents of these study communities support their subsistence way of life by drawing from a variety of wild resources; considering all three communities combined, households sought or used species from every resource category. The Division of Subsistence scientifically quantifies harvests of wild resources by Alaska residents to assist the Alaska Board of Fisheries (BOF) and the Board of Game (BOG) in determining the amounts reasonably necessary for subsistence for each game population or fish stock with a positive customary and traditional (C&T) use finding and setting regulations that provide subsistence harvest opportunity. The information collected by the Division of Subsistence is also used in resource planning and environmental reviews of development projects.

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 for several reasons. In addition to the remoteness and diverse use of natural resources of Alaska's rural communities, the large number of communities (approximately 300) and the high cost of conducting research challenge the feasibility 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 harvests in the regional area that the index communities represent, based on relationships between regional villages and the index community. The first step in the development of this program was to update information from communities in different regions around the state that were out of date. Comprehensive surveys were conducted in communities in the lower and middle Yukon River areas for the 2010 study year; the selected index communities were Mountain Village, Marshall, Nulato, Galena, and Ruby (Brown et al. 2015). Also, Southeast Alaska communities were identified for obtaining updated comprehensive survey data: Haines, Hoonah, Angoon, Whale Pass, and Hydaburg (study year 2012) and Sitka (study year 2013) (Sill and Koster 2017a; 2017b). According to data published in the Division of Subsistence Community Subsistence Information System (CSIS[1]), the last comprehensive harvest update in some Alaska Peninsula communities took place during the 1980s. For many Alaska Peninsula communities, the harvest information is more than 30 years old. Table 1-2 identifies what types of surveys have been done by year in the selected index project communities of the Alaska Peninsula.

1. ADF&G Community Subsistence Information System: http://www.adfg.alaska.gov/sb/CSIS/ (hereinafter cited as CSIS).

Figure 1-1.–Map of study communities, 2014.

Table 1-1.–Resources used by study communities, 2014.

Resource	Scientific name
Chum salmon	*Oncorhynchus keta*
Coho salmon	*Oncorhynchus kisutch*
Chinook salmon	*Oncorhynchus tshawytscha*
Pink salmon	*Oncorhynchus gorbuscha*
Sockeye salmon	*Oncorhynchus nerka*
Spawning coho salmon	*Oncorhynchus kisutch*
Spawning sockeye salmon	*Oncorhynchus nerka*
Pacific herring spawn on kelp	*Clupea pallasi*
Pacific herring roe on hemlock branches	*Clupea pallasi*
Smelt	
Starry flounder	*Platichthys stellatus*
Pacific halibut	*Hippoglossus stenolepis*
Yellowfin sole	*Limanda aspera*
Burbot	*Lota lota*
Dolly Varden–freshwater	*Salvelinus malma*
Dolly Varden–saltwater	*Salvelinus malma*
Northern pike	*Esox lucius*
Rainbow trout	*Oncorhynchus mykiss*
Humpback whitefish	*Coregonus pidschian*
Unknown whitefishes	
Bison	*Bison bison*
Caribou	*Rangifer tarandus*
Moose	*Alces alces*
Beaver	*Castor canadensis*
Red fox–red phase	*Vulpes vulpes*
North American river (land) otter	*Lontra canadensis*
Muskrat	*Ondatra zibethicus*
Porcupine	*Erethizon dorsatum*
Gray wolf	*Canis lupus*
Wolverine	*Gulo gulo*
Harbor seal	*Phoca vitulina*
Unknown seal	
Sea otter	*Enhydra lutris*
Beluga whale	*Delphinapterus leucas*
Gadwall	*Anas strepera*
Mallard	*Anas platyrhynchos*
Northern pintail	*Anas acuta*
Black scoter	*Melanitta nigra*
Northern shoveler	*Anas clypeata*
Green-winged teal	*Anas crecca*
Wigeon	*Anas spp.*
Unknown ducks	
Brant	*Branta bernicla*
Canada/cackling goose	*Branta spp.*
Canada goose	*Branta canadensis parvipes*
Emperor goose	*Chen canagica*
White-fronted goose	*Anser albifrons*
Unknown geese	
Sandhill crane	*Grus canadensis*

-continued-

Table 1-1.–Page 2 of 2.

Resource	Scientific name
Ptarmigan	*Lagopus spp.*
Duck eggs	
Goose eggs	
Gull eggs	
Tern eggs	
Black (small) chitons	*Katherina tunicata*
Unknown chitons	
Butter clams	*Saxidomus gigantea*
Horse clams	*Simomactra planulata*
Pacific littleneck clams (steamers)	*Protothaca staminea*
Razor clams	*Siliqua spp.*
Softshell clams	*Mya arenaria*
Cockles	
Dungeness crab	*Cancer magister*
Sea urchin	*Strongylocentrotus spp.*
Blueberry	*Vaccinium uliginosum alpinum*
Lowbush cranberry	*Vaccinum vitis-idaea minus*
Highbush cranberry	*Viburnum edule*
Crowberry	*Empetrum nigrum*
Nagoonberry	*Rubus arcticus spp.*
Raspberry	*Rubus idaeus*
Salmonberry	*Rubus spectabilis*
Wild rhubarb	*Polygonum alaskanum*
Other beach greens	
Hudson's Bay (Labrador) tea	*Ledum palustre*
Sourdock	*Rumex fenestratus*
Wild parsley	*Pastinaca sativa*
Yarrow	*Achillea spp.*
Other wild greens	
Fireweed	*Epilobium angustifolium*
Unknown seaweed	
Wood	

Source ADF&G Division of Subsistence household surveys, 2015.

Table 1-2.–Previous study years, study communities, 1984–2014.

Community	Estimated number of households (2010)[a]	1984	1987	1994	1995	1996	1997	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2014
Egegik	29	All		LLM	LLM MM	LLM MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	All
Pilot Point	27		All	LLM	LLM MM	LLM MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	All
Ugashik	7		All	LLM	LLM	LLM												All

Source ADF&G Division of Subsistence Community Subsistence Information System: http://www.adfg.alaska.gov/sb/CSIS/
Note The key for the table is:
All = "comprehensive" baseline survey of all resources used for subsistence purposes.
LLM = large land mammals.
MM = marine mammals.
a. *Source* U.S. Census Bureau (n.d.)

Regulatory Context

Subsistence hunting and fishing in Alaska is managed under both state and federal regulations. In addition to subsistence activities, many Alaskans bring home fish from their commercial catches (permissible according to 5 AAC 39.010) or by harvesting under sport fishing regulations. Near the study communities on the Alaska Peninsula, federal regulations apply to land and waters within or adjacent to Becharof National Wildlife Refuge and Alaska Peninsula National Wildlife Refuge (U.S. Fish and Wildlife Service, Office of Subsistence Management 2019). In marine waters, the state manages most subsistence fisheries, including salmon and crab, but the harvest of Pacific halibut is regulated by the National Marine Fisheries Service (NMFS). For marine mammals locally available, subsistence uses are managed by either the National Oceanic and Atmospheric Administration (harbor seals and beluga whales) or U.S. Fish and Wildlife Service (USFWS) (sea otters). Residents of the study communities can harvest birds and bird eggs in the spring and summer under federal subsistence regulations promulgated by the USFWS (AMBCC 2020). The remainder of this section will focus on regulations guiding harvests of salmon and large land mammals because of their importance to the study communities.

Salmon

For management purposes, the study communities are all within the Bristol Bay Area, which comprises all waters of Bristol Bay including drainages enclosed by a line from Cape Newenham to Cape Menshikof. Districts within Bristol Bay are described in 5 AAC 06.200 (Figure 1-2). The BOF has made a positive C&T determination for all finfish in the Bristol Bay Area and has also determined that 157,000–172,171 salmon are reasonably necessary for subsistence uses (5 AAC 01.336).

A permit is required to harvest salmon for subsistence purposes in Bristol Bay, and only one permit may be issued to a household per year (5 AAC 01.330) (see Figure 1-3). Permits are available through local vendors, or area ADF&G offices, or the Anchorage ADF&G office. In the Bristol Bay Area, the subsistence regulations are specific to different areas and are varied; however, regulations that are most relevant to Egegik, Pilot Point, and Ugashik households are summarized here. Unless closed by emergency order, restricted in 5 AAC 01.310 or 5 AAC 01.325, or restricted by the terms of a subsistence permit, subsistence salmon fishing is open in the Bristol Bay Area. Within commercial salmon districts, generally subsistence fishing is limited by time: during the months of May and October, subsistence fishing is permitted from 9:00 am Monday to 9:00 am Friday; and between June 1 and September 30, subsistence fishing may only occur during open commercial fishing periods (5 AAC 01.310(b)). There are no bag or possession limits for the harvest of salmon under a Bristol Bay subsistence permit except in the Naknek District (5 AAC 01.345(a)). In the waters around the study communities, subsistence fishers were limited to the use of set and drift gillnets (5 AAC 01.320(a)); note that set gillnets could not exceed 10 fathoms in length in the Egegik or Ugashik rivers (5 AAC 01.320(c)(1)(A)). In 2014, subsistence fishing was limited to several fishing periods per week during the peak of the sockeye salmon run.[2]

Federal subsistence fisheries are authorized in portions of Bristol Bay for federally qualified subsistence users. There is no separate federal subsistence permit; a state permit is required for subsistence fishing under the federal regulations. In the federal waters around Egegik and Ugashik, there is no harvest limit for salmon. Salmon fishing may occur under federal regulations year-round, except that in the Egegik River fishing periods are restricted to 9:00 am Tuesday to 9:00 am Wednesday and 9:00 am Saturday to 9:00 am Sunday between June 23 and July 17.

2. For a list of 2014 commercial fishing emergency orders for Bristol Bay in commercial districts, see Table 6 in Elison et al. (2015).

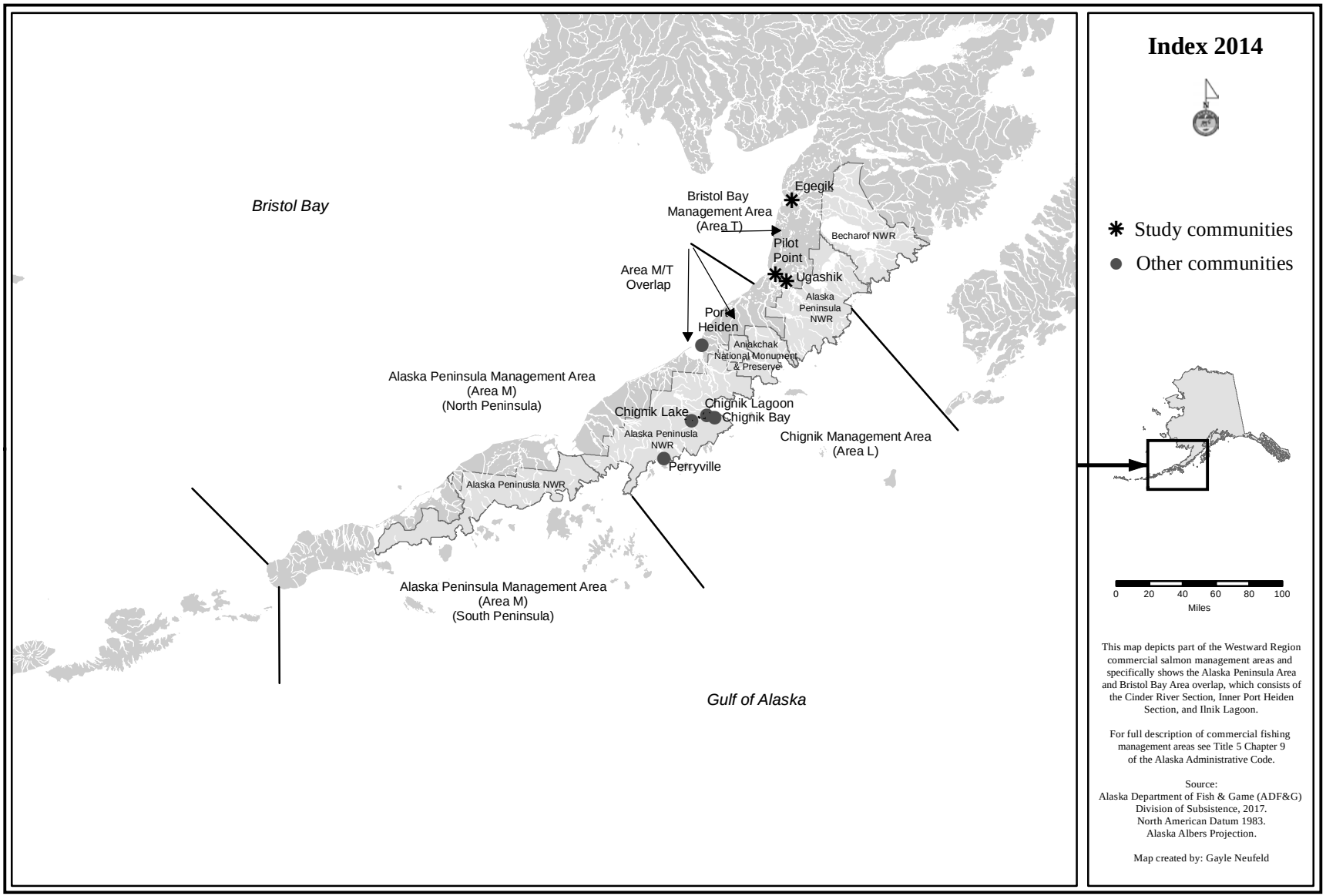


Figure 1-2.–Map of state commercial fishing area boundaries in part of the Westward Region.

Alaska Department of Fish & Game

Bristol Bay Subsistence Salmon Fishery Permit

ALASKA RESIDENTS ONLY

Community _____

Permit No. _____

Year _____

First Name | Initial | Last Name

Permanent Mailing Address | City

State | Zip Code | Phone number

Number of year-round residents in household ▸

Names of household members who will assist in operation of subsistence net:

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____

Drainage to be fished: Naknek ☐ Kvichak ☐ Egegik ☐ Ugashik ☐

Nushagak ☐ Togiak ☐ Other _____

Primary fishing location (specific): _____

Number of fathoms allowed at this site: 10 ☐ 25 ☐ Gear type: _____

Please specify set gear, drift gear, spear, or dip net.

I understand that I am applying for a subsistence fishing permit for my household in accordance with current regulations and hereby swear the information contained on this application is a true statement as witnessed by my signature below; and that I have been an Alaska resident for the last calendar year.

Applicant's signature _____ Date _____

TO BE COMPLETED BY ISSUING OFFICER ONLY

The above-named person and designated household members are authorized to fish for salmon for subsistence purposes in the Bristol Bay Area during the calendar year of _____ according to current laws and regulations of the State of Alaska.

Authorizing Officer _____ Date _____

1. Only one subsistence salmon fishing permit may be issued to each household per year. People using the net/site and not of this household are required to have their own permit and file a separate report of their harvest.
2. Fish caught for subsistence uses may not be sold or allowed to enter commercial use.
3. An accurate record of fish taken under authority of this permit must be returned to the Alaska Department of Fish and Game when the permit expires. Failure to return subsistence catch records is grounds for denial of future permit privileges.

NOTE: Commercially-caught salmon may also be utilized for subsistence purposes and must be reported on the back of this form as well as a Commercial Fish ticket.

Return form to: (fax) 907-267-2450/ (email) dfg.sub.permits@alaska.gov/ or
Division of Subsistence, ADF&G, 333 Raspberry Rd, Anchorage, AK 99518

Figure 1-3.–Bristol Bay Area subsistence salmon permit.

Figure 1-3.–Page 2 of 2.

DAILY SUBSISTENCE SALMON CATCH TOTALS

Please record the dates and locations fished.

Please report spawned-out (red fish) by date and location in the "red" column.

Community _____

Permit No. _____

Year _____

DID NOT FISH ☐ **NAME** _____

Date	Specific location	Method*	Red	King	Chum	Pink	Coho	Date	Specific location	Method*	Red	King	Chum	Pink	Coho

TOTAL SUBSISTENCE HARVEST

What was your total SUBSISTENCE harvest? ▶

Red	King	Chum	Pink	Coho

Did you COMMERCIAL fish? YES ☐ **or NO** ☐

*TOTAL SALMON RETAINED FROM **COMMERCIAL CATCH** FOR SUBSISTENCE USE*

Record additional salmon taken from the COMMERCIAL CATCH for home use here: ▶

Red	King	Chum	Pink	Coho

Large Land Mammals

Caribou, in particular the Northern Alaska Peninsula caribou herd (located in Game Management Units 9C and 9E), has historically been the most widely used and harvested large land mammal species in the study communities (Fall 1993). Subsistence caribou harvest areas for the study communities have historically been found around the communities (Fall 1993). Spatial data collected by the division in 1981 and 1982 show that each community or group of communities used fairly distinct areas for caribou hunting with Egegik households hunting exclusively in the Egegik River drainage and hunters in Ugashik and Pilot Point using mainly the Ugashik River drainage and the portion of the Alaska Peninsula to the south as far as the Cinder River (Fall 1993:5). While it is not the intent of this report to provide detailed historical population trends for this herd, the population of the Northern Alaska Peninsula caribou herd and subsequent hunting regulation changes are important facets to the hunting opportunities available to residents in the study communities and are therefore covered briefly. Historical herd data indicate that the herd most recently peaked around 20,000 animals in 1984 (Doherty 2015; Hicks 1997). Subsequent large declines in the herd occurred as a result of several factors, including hunting pressure and a shared habitat with the Mulchatna caribou herd (Doherty 2015; Hicks 1997). In 1993, the herd declined to 15,000 animals, right at the lower bound of the population management objective. By 1994, the population dropped to 12,000 (Hicks 1997); this development affected the local resource harvest opportunity for residents in the study communities. In March 1999, the BOG reviewed the status of the herd and initiated a Tier II permit hunt (Healy 2001:42). 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.[3] As a result of continued herd decline, in 2005 both the state and federal caribou hunts closed. The caribou population fell to a low of 2,000 animals in 2006 (Doherty 2015). Over the next decade measures were implemented to help rebuild the herd and Tier II permits were not available during the study year. In regulatory year 2016–2017, the herd increased to the point that 198 Tier II permits were issued.[4] Regulations currently allow for three Tier II permits per household, and no individual may hold more than one Tier II permit per species (Doherty 2015).

To a lesser degree, moose have also been important to these communities. Moose populations were not present in the area until the middle of the 1900s (Crowley 2017). The moose populations declined during the late 1900s and are considered stable at low density. State of Alaska regulations, including open seasons, permit requirements, and game limits for other large land mammal species relevant to the study communities can be found in the annually published hunting regulations; the current regulatory year is available at ADF&G offices or online.[5] Federal regulations and other information about hunting on federal lands can be found in the biannual federal wildlife regulations booklet, which is also available online.[6]

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.

---

3. 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.
4. *Caribou Hunting in Alaska: Harvest Statistics*, s.v. "[Year] 2016; [Hunt] Tier II; Hunt # TC505" (by Alaska Department of Fish and Game), http://www.adfg.alaska.gov/index.cfm?adfg=caribouhunting.harvest (accessed November 2019).
5. Alaska Department of Fish and Game, "Alaska Hunting Regulations: Hunting Regulations Book," http://www.adfg.alaska.gov/index.cfm?adfg=wildliferegulations.hunting (accessed September 24, 2019).
6. U.S. Department of the Interior, Federal Subsistence Management Program, "Wildlife," https://www.doi.gov/subsistence/wildlife (accessed September 24, 2019).

- Provide a project introduction letter and project overview to the governing bodies in the study communities and obtain approval from tribal village councils to conduct the research in each study community.
- Host a community meeting to provide a project overview at the commencement of data collection in each study community.
- Train local research assistants (LRAs) in administration of the systematic household survey.
- Conduct in-person household surveys to record the following information:
  - Demographic characteristics.
  - 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.
  - Employment and cash income characteristics.
  - Assessments of changes in wild resource harvest and use patterns compared to the past five years.
  - Locations of fishing, hunting, and gathering activities in the study year.
- Collaboratively review and interpret study findings with the study communities.
- Produce a final report.

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*[7] and by the *Principles for the Conduct of Research in the Arctic* (Social Science Task Force, U.S. Interagency Arctic Research Policy Committee 1995), 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 many communities in the Alaska Peninsula needed updated harvest assessments at the time the index study project was being planned, 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 the area. Final project approval was granted by the Division of Subsistence Southern Regional Program Manager and the Statewide Research Director to use general funds for this research. There were not sufficient funds available to allow for an initial project information meeting in the study communities; however, in January 2015, a letter containing project overview information and a draft survey instrument were sent to the Egegik Village Council, Pilot Point Tribal Council, Ugashik Traditional Council, and also to the City of Egegik to inform community leaders of the project and seek approval for the Division of Subsistence to conduct the research. While letters of support from the councils were desired, verbal or email approvals were provided from each of the communities prior to commencement of the research. Once researchers arrived in the communities to conduct the surveys, a public meeting was held in which a project overview presentation was shared with

7. Alaska Federation of Natives. "Alaska Federation of Natives Guidelines for Research," Alaska Native Knowledge Network, http://ankn.uaf.edu/IKS/afnguide.html (last modified August 15, 2006, accessed February 2014).

Table 1-3.–Community meetings for project overview and research approval, study communities, 2014.

Community	Project overview and community approval meeting[a]	Staff attendees	Number of community attendees
Egegik	Feb. 2, 2015	Hutchinson-Scarbrough, Krieg, Nelson	8
Pilot Point	Feb. 19, 2015	Hutchinson-Scarbrough, Cunningham	5
Ugashik	Feb. 22, 2015	Hutchinson-Scarbrough, Cunningham	5

Source ADF&G Division of Subsistence, 2015.

a. Community approvals were obtained by telephone and also by email communication with tribal council administrators before community project overview meetings occurred. Community project overview meetings were held in each community prior to field research starting.

attending council members and other community residents (Table 1-3). Researchers opened the meeting to discussion about the project and answered questions and addressed concerns voiced by community members who attended. There were no objections to conducting the research in the study communities. Tribal council administrators recommended LRAs in each community who were then hired and trained by ADF&G research staff to assist with administering the surveys (Table 1-4).

Systematic Household Surveys

The primary method for collecting subsistence harvest and use information in this project was a systematic household survey. ADF&G finalized the survey instrument in January 2015 (Egegik) or early February 2015 (Pilot Point and Ugashik). A key goal was to structure the survey instrument to collect demographic, resource harvest and use, and other economic data that are comparable with information collected in other household surveys in the study communities and with data in the CSIS. Appendix A is an example of the survey instrument used in this project. Of note, during the development of the survey form, the Division of Subsistence coordinated with the Alaska Department of Health and Social Services (DHSS) to add questions concerning health impact assessments at the request of researchers with DHSS. Incorporating those questions for DHSS helped to prevent duplicate survey efforts or increased interviewee fatigue in the rural Alaska communities participating in the index project. DHSS was responsible for reporting results from that component of the survey.

A census survey was attempted for each study community. The ADF&G researchers asked the tribal council administrators and LRAs to create a list of all eligible households. Eligible households were defined as those having at least one member who lived within the community for at least nine months in study year 2014 and during the survey administration period in early 2015. Surveys were conducted in person in households or other public locations in the study communities by teams of two: one ADF&G researcher and one LRA. Sample achievement was highest in Egegik (80%), followed by Pilot Point (74%), and then Ugashik (57%) (Table 1-5). A contributing factor to the lower sample achievement in Ugashik was the relatively high proportion of households that could not be contacted among the small number of total households. Staff contacted households to attempt a survey at least three times—including on different days and at different times—and, after a reasonable effort was made to contact a household, a household that was not available was assigned the survey disposition “no contact.” Other dispositions included “surveyed” or “refused.” Overall, 41 households were surveyed in the communities of Egegik, Pilot Point, and Ugashik combined, representing 75% of all eligible households.

Table 1-4.–Project staff.

Task	Name	Years	Community	Organization
Project design and management	James A. Fall	2014–2020		ADF&G Division of Subsistence
	Davin Holen	2014–2015		ADF&G Division of Subsistence
Southern Regional Program Manager	Davin Holen	2014–2015		ADF&G Division of Subsistence
	Brian Davis	2015–2018		ADF&G Division of Subsistence
	Robin Dublin	2019–2021		ADF&G Division of Subsistence
Principal Investigator	Lisa Hutchinson-Scarbrough	2014–2021	Egegik, Pilot Point, Ugashik	ADF&G Division of Subsistence
	Theodore M. Krieg	2014–2016	Egegik	ADF&G Division of Subsistence
Administrative support	Jennifer Bond	2014		ADF&G Division of Subsistence
	Maegan Smith	2014–2016		ADF&G Division of Subsistence
	Theresa Quiner	2014–2015		ADF&G Division of Subsistence
	Vanessa Oquendo	2015–2016		ADF&G Division of Subsistence
Data management lead	Megan Hellenthal	2014–2015		ADF&G Division of Subsistence
	David Koster	2015–2021		ADF&G Division of Subsistence
Programmer	Megan Hellenthal	2014–2015		ADF&G Division of Subsistence
	David Koster	2015–2021		ADF&G Division of Subsistence
Data entry	Margaret Cunningham	2015	Egegik, Pilot Point, Ugashik	ADF&G Division of Subsistence
	Kayla Schommer	2015	Egegik, Ugashik	College intern, ADF&G Division of Subsistence
	Nicholas Jackson	2015	Pilot Point	College intern, ADF&G Division of Subsistence
	Vanessa Oquendo	2015	Pilot Point	ADF&G Division of Subsistence
Data cleaning/validation	Margaret Cunningham	2015		ADF&G Division of Subsistence
Data analysis	Megan Hellenthal	2015		ADF&G Division of Subsistence
	David Koster	2016–2021		ADF&G Division of Subsistence
Cartography	Terri Lemons	2016		ADF&G Division of Subsistence
Field research staff	Lisa Hutchinson-Scarbrough	2015	Egegik, Pilot Point, Ugashik	ADF&G Division of Subsistence
	Theodore M. Krieg	2015	Egegik	ADF&G Division of Subsistence
	Hazel Nelson	2015	Egegik	ADF&G Division of Subsistence
	Margaret Cunningham	2015	Pilot Point, Ugashik	ADF&G Division of Subsistence
Data review staff	Lisa Hutchinson-Scarbrough	2016	Egegik, Pilot Point, Ugashik	ADF&G Division of Subsistence
	Amy Wiita	2016	Egegik, Pilot Point, Ugashik	ADF&G Division of Subsistence
	Cody Larson	2016	Egegik, Pilot Point, Ugashik	Bristol Bay Native Association
Local Research Assistants	Justin Alto	2015	Egegik	
	Tim Olsen	2015	Egegik	
	Monica Etuckmelra	2015	Pilot Point	
	Joe Kalmakoff	2015	Pilot Point	
	Mike Enright	2015	Ugashik	
Editorial review lead	Mary Lamb	2016–2021		ADF&G Division of Subsistence

Table 1-5.–Estimated households and sample achievement, study communities, 2014.

Sample information	Community		
	Egegik	Pilot Point	Ugashik
Number of dwelling units	27	26	7
Interview goal	25	23	7
Households interviewed	20	17	4
Households failed to be contacted	1	2	3
Households declined to be interviewed	4	4	0
Households moved or occupied by nonresident	2	3	0
Total households attempted to be interviewed	25	23	7
Refusal rate	16.7%	19.0%	0.0%
Final estimate of permanent households	25	23	7
Percentage of total households interviewed	80.0%	73.9%	57.1%
Interview weighting factor	1.25	1.35	1.75
Sampled population	57	47	5
Estimated population	71.3	63.6	8.8

Source ADF&G Division of Subsistence household surveys, 2015.

Mapping Locations of Subsistence Hunting, Fishing, and Gathering Activities

During household interviews, the researchers asked respondents to indicate the locations of their fishing, hunting, 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 moose. Some lines were also drawn in order to depict when the harvesting activity did not occur at a specific point; for example, lines were used to depict traplines or when a boat was used as a means of transportation to find moose while hunting.

Harvest locations and fishing, hunting, and gathering areas were documented on iPads[8] using a data collection application developed by HDR, Inc., an environmental research firm located in Anchorage, using ArcGIS Runtime SDK for iOS. The point, polygon, or line was drawn on a U.S. Geological Survey topographic relief map downloaded on the iPad. The iPad allowed the user to zoom in and out to the appropriate scale, and the ability to document search and harvest activities wherever they occurred in the state of Alaska. Once a feature was input, an attribute box was filled out by the researcher that noted the species harvested, amount harvested, method of access to the resource, and month(s) of harvest. The data were uploaded to a server using WiFi. Once data collection was complete, the data were downloaded into an ArcGIS file geodatabase. Paper maps were also available, upon which respondents, LRAs, or an ADF&G researcher could mark responses during the survey. These maps were 11x17-inches and were produced at various scales: to document the local study area on the Alaska Peninsula, maps were produced at scales of 1:100,000, 1:500,000, 1:550,000, and 1:800,000. To document farther locations, a scale of 1:1,131,107 was used. If paper maps were used, ADF&G staff digitized paper map markings using the iPad application; this effort occurred both in the field during the trip to administer surveys and later at the ADF&G office in Anchorage. Once a survey was complete, researchers conducted a quality control exercise by matching the map data to the survey form to ensure all map data had been documented.

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

Table 1-6.–Research staff and survey administration dates, study communities, 2014.

Community	Data collection	Staff
Egegik	Feb. 2–5, 2015	Hutchinson-Scarbrough, Krieg, Nelson
Pilot Point	Feb. 19–21, 2015	Hutchinson-Scarbrough, Cunningham
Ugashik	Feb. 22–25, 2015	Hutchinson-Scarbrough, Cunningham

Source ADF&G Division of Subsistence, 2015.

Key Respondent Interviews

While researchers were in the study communities, key respondent interviews occurred to capitalize on the opportunity to collect local traditional knowledge from study community residents. A total of 13 interviews were conducted: six in Egegik, four in Pilot Point, and three in Ugashik. Note that this was an additional research method employed by researchers during fieldwork, and as such the project budget did not accommodate analysis of these interviews. However, audio recordings and field notes are maintained by the Division of Subsistence and available upon request, and analysis may occur in the future to be used for the purpose of evaluating changes as part of later research.

Household Survey Implementation

Table 1-6 depicts the dates field research occurred in each study community, as well as the names of project staff who participated in each field research trip. Fieldwork timing and household survey sample achievement are summarized below for each study community. LRA efforts contributed to attaining generally high sample achievement. Unless otherwise noted, before leaving a community, surveys were reviewed in the field for completeness and clarity by researchers who then coded surveys in preparation for data entry.

Egegik

During February 2–5, 2015, two research staff and the Director of the Division of Subsistence conducted field research in Egegik (Table 1-6). The project overview community meeting was hosted by ADF&G at the village tribal council's office conference room on February 2: eight residents attended (Table 1-3). Two LRAs were suggested by the tribal council administrator, and ADF&G hired and trained the LRAs to help with data collection. Each ADF&G researcher worked with an LRA to contact households and conduct the household surveys (Table 1-4). The survey effort moved forward efficiently and was well received in the community. Out of a total of 25 eligible households, 20 were surveyed (80%); also, four households (17%) declined to be surveyed and one household could not be contacted.

Pilot Point

During February 19–21, 2015, two research staff with the Division of Subsistence conducted field research in Pilot Point (Table 1-6). ADF&G researchers hosted the community project overview meeting at the tribal council building on February 19, which five community members attended (Table 1-3). The tribal council president recommended two LRAs whom ADF&G hired and trained to assist with the household surveys (Table 1-4). Each researcher worked with an LRA to contact households and conduct the surveys. The survey effort went well and surveys were conducted in individual households as well as in the tribal council building. A total of 23 households were identified as eligible for the survey and 17 (74%) were surveyed. There were four households (19%) that declined to participate, which was the highest refusal rate of the three study communities and two households were not contacted after multiple attempts. A few households that were surveyed remarked that they felt uncomfortable answering the food security questions included in the survey form. Researchers believed that concerns about answering the food security portion of the survey may have contributed to why some households declined to be surveyed.

Ugashik

From February 22–25, 2015, two Division of Subsistence staff conducted field research in Ugashik (Table 1-6). Immediately upon arrival in Ugashik on February 22, a community project overview meeting was held, which five residents attended (Table 1-3). One LRA was hired and trained by ADF&G to contact households to be surveyed and helped researchers conduct surveys. Only seven households were identified as eligible year-round households. Four households were surveyed (57%), one household was unable to be contacted because they were staying upriver in a home near Ugashik lakes without a telephone, and two other households were out of town during the time the survey effort was conducted. The LRA identified an additional 15 households that typically return in the summer during the fishing season, but these households were not included in the community sample and resulting harvest and use estimates since they were not in the community at least nine months during the 2014 study year.

Data Analysis and Review

Survey Data Entry and Analysis

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

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

ADF&G staff also used SPSS for analyzing the survey information. 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:

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

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

where:

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

$\bar{h}_i =$ the mean harvest of returned surveys,

$h_i =$ the total harvest reported in returned surveys,

$n_i =$ the number of returned surveys, and

$S_i =$ the number of households in a community.

As an interim step, the standard deviation (SD) (or variance [V], which is the SD squared) was also calculated with the raw, unexpanded data. The standard error (SE), or SD of the mean, was also calculated 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 value of the constant is derived from the student's *t* distribution, and varies slightly depending upon the size of the community. Though there are numerous ways to express the formula below, it contains the components of a SD, V, and SE:

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

where:

$s =$ sample standard deviation,

$n =$ sample size,

$N =$ population size,

$t_{\alpha/2} =$ student's *t* statistic for alpha level (α=0.95) 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 each study community. For this study, "year-round" was defined as being domiciled in the community when the surveys took place and for at least nine months during the study year 2014. 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, the U.S. Census Bureau's American Community Survey, and the Alaska Department of Labor and Workforce Development (ADLWD 2019; U.S. Census Bureau n.d.). Sampling of households, timing of survey implementation, or eligibility criteria may explain differences in the population estimates.

Map Data Entry and Analysis

Upon return to the office from survey administration trips, and after ensuring all spatial data were accurately captured on an iPad and uploaded to the server, ADF&G staff downloaded the ArcGIS file geodatabase from the server. Maps showing harvest locations for each species were created in ArcGIS using a standard template for reports. Maps show community harvest locations for fish species, and harvest areas for plants, berries, and birds and bird eggs. To ensure confidentiality, harvest locations for large land mammals are

Table 1-7.–Community data review meetings, study communities, 2014.

Community	Data review meeting	Staff	Number of community attendees
Egegik	Dec. 15, 2016	Hutchinson-Scarbrough, Wiita, Larson	8
Pilot Point	Dec. 13, 2016	Hutchinson-Scarbrough, Wiita, Larson	8
Ugashik	Dec. 14, 2016	Hutchinson-Scarbrough, Wiita, Larson	5

Source ADF&G Division of Subsistence, 2016.

not produced for the report but hunting areas for land mammals are depicted. Maps were reviewed at a community review meeting to ensure accuracy.

Food Security Analysis

The "food security" section of the survey used a modified version of a standard national questionnaire to assess whether or not the household had enough food to eat, whether from subsistence sources or from market sources. The protocol 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 2012–2014, an annual average of 128,957 U.S. households were interviewed, including 1,519 in Alaska (Coleman-Jensen et al. 2015:20). From CPS data, the USDA prepares an annual report on food security in the United States. From 2012 to 2014, the USDA estimated that on average 86% of U.S. households were food secure, while on average 88% of Alaska households were food secure.

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.

For this study, several questions were added to the food security protocol 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

In accordance with the ethical principles of research identified earlier, the Division of Subsistence arranged for community review meetings of draft study findings from household surveys. Two ADF&G staff and one staff from the Natural Resources Division of the Bristol Bay Native Association hosted community data review meetings in the study communities. Table 1-7 shows when a community review meeting occurred in each study community and how many residents attended. ADF&G scheduled these meetings with administrators of each village tribal council, and also in Egegik with the mayor. To coordinate the meetings, each community was provided with flyers that were posted to announce the date, location, and subject of the meeting. There were no weather delays, and the meetings occurred on schedule.

In Egegik, the tribal council administrator helped arrange the meeting, held on December 15, 2016, in the conference room of the Egegik Village Council building; eight residents attended this meeting. In Pilot Point, the tribal council administrator helped arrange the meeting, held on December 13, 2016, at the tribal council building, and it was attended by eight residents. In Ugashik, the tribal council administrator helped arrange the meeting, held on December 14, 2016, at the village council office building, and it was attended by five residents. At each meeting, researchers showed a Microsoft PowerPoint presentation to present draft results of the project, including data from the harvest survey and harvest area maps. Researchers also

provided hard-copy handouts of the data to those in attendance. The data from 2014 were compared to the last comprehensive survey data from research conducted in these communities in 1984 (Egegik and Ugashik) and 1987 (Pilot Point). The meetings were an opportunity for community members to provide feedback about the results, highlight interesting or puzzling findings, and discuss the next steps of the project. There were some logic errors noted by residents and ADF&G staff at the time of the data review meetings; these data issues were brought to the attention of a research analyst from IM, data were reanalyzed, and errors were corrected. The updated tables and figures were sent to each of the tribal councils in spring 2017 for further review. No comments were received from the communities regarding the updated data analysis. No comments or issues were noted with the mapping data other than some areas were noted by people as used for harvesting a particular resource but was missing from mapping data. ADF&G research staff reminded those attending meetings that the maps depicted combined harvest locations provided by only households that were surveyed, and only the areas used in 2014; as such, other areas used for subsistence in other years or by households not surveyed would not be depicted.

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, and also harvest and use trends over time. Table 1-8 shows selected study findings for all the study communities and will be referenced in later discussions of survey results. The final chapter of the report provides a short, general overview of the harvests and uses of wild resources in the study communities, followed by a discussion of changes to subsistence harvests and sharing patterns over time.

ADF&G will provide a copy of this report to each Village or Tribal Council in Egegik, Pilot Point and Ugashik, as well as to the Natural Resources Division of Bristol Bay Native Association.

Table 1-8.–Comparison of selected study findings, study communities, 2014.

Category	Community		
	Egegik	Pilot Point	Ugashik
Demography			
Population	71.3	63.6	8.8
Percentage of population that is Alaska Native	70.2%	84.8%	60.0%
Percentage of household heads born in Alaska	64.7%	80.6%	80.0%
Average length of residency of household heads (year)	27.3	33.0	45.4
Cash economy			
Average number of months employed	6.2	6.8	8.6
Percentage of employed adults working year-round	41.2%	58.3%	60.0%
Percentage of income from sources other than employment	12.7%	23.9%	28.3%
Average household income[a]	$53,572	$62,117	$37,217
Per capita income[a]	$18,797	$22,468	$29,774
Resource harvest and use			
Per capita harvest, pounds usable weight	155.2	210.5	943.0
Average household harvest, pounds usable weight	442.2	582.0	1,178.8
Number of resources used by 50% or more households	2.0	7.0	6.0
Average number of resources used per household	7.0	11.4	12.8
Average number of resources attempted to be harvested per household	7.1	7.3	18.0
Average number of resources harvested per household	5.4	6.8	12.0
Average number of resources received per household	2.2	5.5	1.3
Average number of resources given away per household	2.2	3.5	5.0
Percentage of total harvest taken by top 25% ranked households	81.3%	84.3%	40.3%
Percentage of households that harvested 70% of harvest	15.0%	17.6%	50.0%
Per capita harvest by lowest ranked 50% of households	8.7	6.7	562.6
Percentage of total harvest taken by lowest ranked 50% of harvesting households	5.6%	3.2%	59.7%
Average number of resources used by lowest ranked 50% of households	4.6	6.9	13.7
Average number of resources used by top 25% ranked households	11.8	20.0	10.0

Source ADF&G Division of Subsistence household surveys, 2015.

a. Includes income from sources other than employment.

2. EGEGIK

Community Background

Egegik sits on the southern shore of the Egegik River where it empties into Bristol Bay on the north side of the Alaska Peninsula (Plate 2-1). The Aleutian Range separates the part of the peninsula that drains into the Pacific Ocean to the southeast from the remainder that is located in the Bristol Bay watershed. The north side of the peninsula is a broad, flat plain that slopes gently to the sea. There are few breaks in the northern coastline except for bays at the mouths of the large rivers, including the Egegik River. There are many small lakes throughout the area, as well as the second-largest lake in Alaska, Lake Becharof, from which the Egegik River flows. The landscape is predominantly treeless tundra, supporting hardy vegetation such as mosses and sedges, as well as lichens and patches of willow, alder, and cottonwood trees along streambanks. The many lakes, rivers, bays, and estuaries of the coastal plain provide abundant habitat for migratory waterfowl and have traditionally supported large salmon runs. Freshwater fish species also inhabit the area's lakes and streams. Caribou, moose, and brown bears range throughout the area. The climate of Egegik is best described as transitional between maritime and continental climates. Common local weather conditions include protracted cloud cover, fog, and drizzle. Winter winds blow predominantly from the north and the summer winds are from the southeast. Temperatures generally range from -20° Fahrenheit in winter to mid-60° Fahrenheit in the summer. Precipitation averages around 20 inches per year.

The earliest evidence of human habitation in the Bristol Bay side of the Alaska Peninsula dates to approximately 7000 B.C. at Ugashik. The first peoples there were hunters of land mammals, especially caribou. Egegik was likely a traditional fish camp for many years, but there is very little information about the population of the study area at the time of Europeans arriving in the late 18th and early 19th centuries. According to Oswalt (1967), the inhabitants were "Peninsular Eskimos" speaking an unknown dialect of Yupik. Dumond (1981) categorizes Egegik as the southernmost village in the Yupik Eskimo-speaking area. Like other inhabitants of the Bering Sea coast, these people probably had a diversified foraging economy based on marine mammal hunting, caribou hunting, and salmon fishing. There was a portage from Kanatak on the Gulf of Alaska coast to Becharof Lake, from which people would hike or kayak to Egegik Bay areas for summer fish camps. Russians arrived in the Aleutian Islands and Alaska Peninsula in the mid-18th century, establishing a fur trade. The British Captain James Cook led the first known European exploration of Bristol Bay in 1778. In 1790, a Russian explorer, Dmitri Bocharov, traveled the north coast of the Alaska Peninsula from Unimak Island to the Kvichak River, and then portaged across the peninsula to the Pacific Ocean (Fall and Morris 1987:16). Following this, the Russians established a fur trade in the Bristol Bay and northern Alaska Peninsula areas. A Russian Orthodox mission grew out of a Russian post at Nushagak Bay, drawing Alaska Natives into the fur trade and converting them to the Russian Orthodox faith.

After Alaska passed into American ownership in 1867, the next major development in Bristol Bay was the commercial salmon fishing industry. A salmon saltery was established in 1895 at Egegik, followed soon after by several canneries, and these set the stage for the contemporary community (Morris 1987). The cannery attracted Alaska Natives from the region, as well as workers from the contiguous United States, for employment as fishermen and cannery workers. As in the rest of the region, the influenza epidemic of 1918–1919 caused upheaval in the community. Residents reported that the community moved from the north bank of the Egegik River to the south in an attempt to isolate themselves from the disease (Morris 1987). Some residents of other communities that survived the epidemic consolidated in Egegik. The community first appeared in the U.S. Census Bureau's decennial census in 1880, listed as Igagik. The community appeared in 1890 and 1900 as Igagik, and then returned to the census list in 1920 as Egegik.

Egegik incorporated as a second-class city in 1995 and is part of the Lake and Peninsula Borough. At the time of the study, in addition to a post office, the community had a community center, tribal and city offices, a health clinic staffed by an itinerant health aide, two churches (Russian Orthodox and Baptist), and a bulk fuel storage facility. In addition, there were closed retailers that previously sold groceries and general supplies or liquor, and a pre-K–12 school that fieldwork staff noted was not operating when research was

Plate 2-1.–Community of Egegik.

conducted in February 2015, which closed[1] later in 2015. To support Bristol Bay commercial fishing, there were five onshore processors located in the community. There was a vacant Village Public Safety Officer (VPSO) position in Egegik, with a VPSO stationed in nearby King Salmon, as well as a volunteer fire department. A State-owned gravel runway accommodated regularly scheduled flights from King Salmon and a city dock was available for receiving fuel and freight. Residents relied on seasonal barge service and year-round air service for food, fuel, and supplies. Water came from community wells and water storage tanks; there was a washeteria in town. There was also a piped sewer system, treatment plant, and sewage lagoon. The community operated a greenhouse and raised chickens.

Seasonal Round

Seasonal rounds are descriptions of resource harvesting patterns by residents of a particular geographic location that follow a generally predictable yearly cycle of activities. These activities, and the timing, vary slightly from year to year because of environmental factors like weather and resource availability, or non-environmental factors like changes in regulations or land ownership. The following information on the seasonal round in Egegik draws heavily from work done by Judith Morris in the early 1980s (Morris 1987), with updated information from the present study where relevant.

Early in the spring, as daylight lengthens and tides become bigger, clam digging and sea urchin harvests occur and continue through May. Some clams are available locally, but residents have also always traveled to the Pacific side of the peninsula to harvest razor clams. In the past, waterfowl hunting was a traditional spring activity, but in part because of regulations[2] prohibiting spring and summer waterfowl hunting, the practice diminished and has largely ceased. However, gathering wild bird eggs during late spring months still occurs, though in lesser amounts than in the past. Multiple types of bird eggs are gathered, mostly gull eggs, but also duck, goose, and tern eggs. Eggs have historically been harvested on Egg Island, located in the Egegik River, or on spits near Bristol Bay.

1. Bendinger, Dave. "Egegik School to Close, says LPSD." *KDLG*, Aug. 14, 2015. https://www.kdlg.org/post/egegik-school-close-says-lpsd#stream/0 (accessed July 2021).
2. See Naves (2010:1) for background information on how the 1918 Migratory Bird Treaty Act restricted migratory bird hunting and subsequent amendments opened spring and summer hunting in 2003.

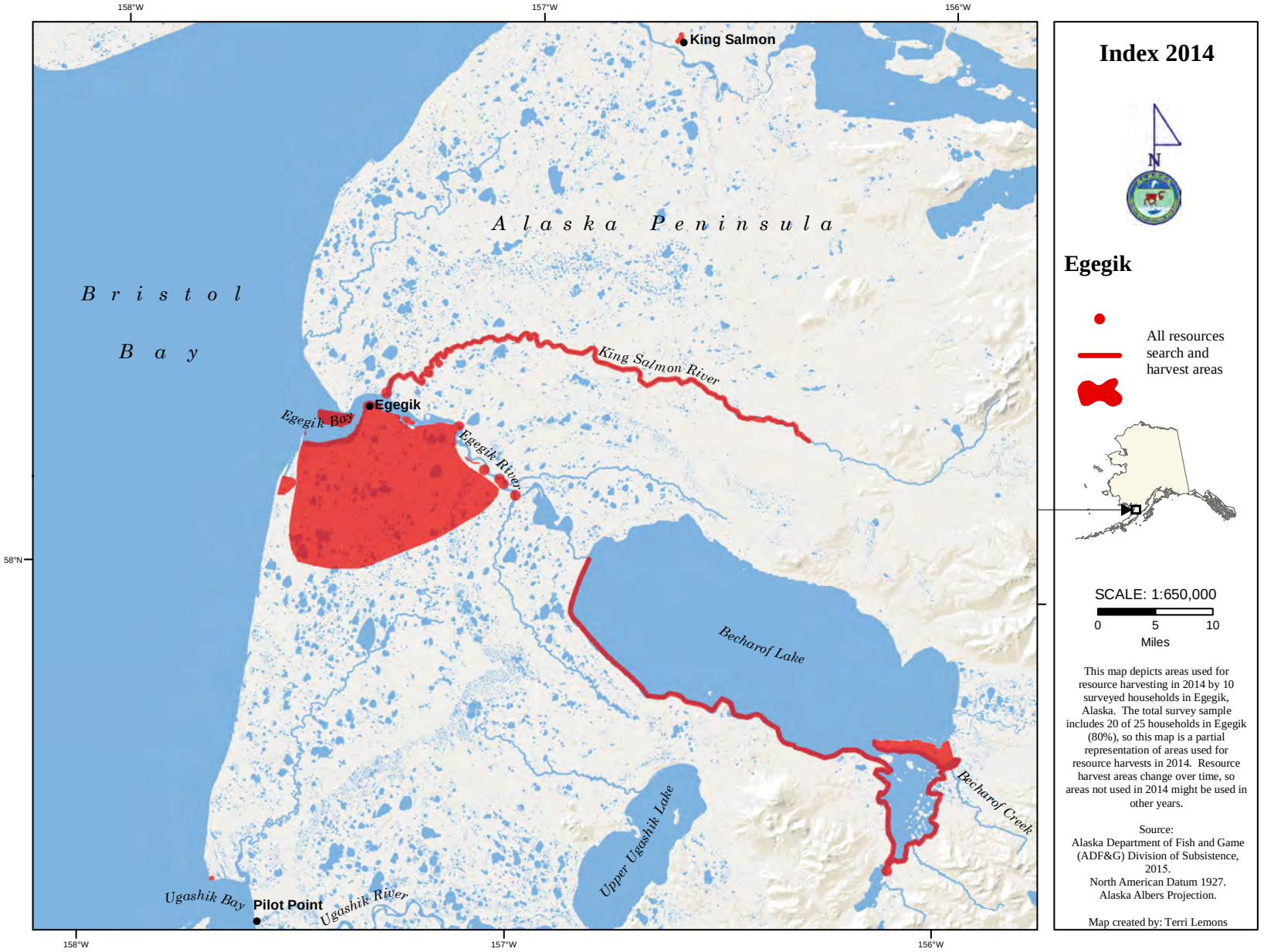


Figure 2-1.–Wild resources search and harvest areas, Egegik, 2014.

As spring gives way to summer, the first of the five species of Pacific salmon found in Alaska returns to the Egegik River. As early as May, but more usually in June, Chinook salmon are caught in gillnets. Those households engaged in commercial fishing focus on that endeavor, and only secondarily on subsistence harvesting salmon. Some commercial fishing families harvest subsistence salmon during closed periods of the commercial fishery, and others bring home retained commercial catches to put up for the year. Any salmon can be brought home from commercial catches, but most commonly sockeye salmon are brought home. In the past, harbor seals were also occasionally harvested concurrent with commercial fishing, in part because they were considered a menace to that activity, but marine mammals are not particularly harvested in Egegik contemporarily. As commercial fishing effort slacks off later in the summer, more effort is put into subsistence fishing, especially for coho salmon, which arrive during the month of August. Late summer is also the time for picking berries and other plants. Residents fish for freshwater species like Arctic grayling and rainbow trout after the salmon season is over, heading up the Egegik or King Salmon rivers in skiffs (Figure 2-1).

As summer gives way to fall, subsistence activities turn more toward hunting. The caribou season opens in August, and in the past when caribou were more locally available, that marked an important harvesting period. Moose season is open for a few weeks in early September and again in December. Traveling up to Becharof Lake or along the King Salmon and Egegik rivers, moose hunters exert considerable effort in pursuit of game; incidental harvests of small game or birds also occur during these trips. In late fall, some residents travel up the Egegik River to near the outlet of Becharof Lake to harvest spawned-out sockeye salmon. Other fall harvest activities by community residents include waterfowl hunting and berry picking. Late fall berries include cranberries, blackberries (crowberries), and blueberries. As weather conditions become consistently colder as winter sets in and rivers turn impossible to negotiate with skiffs, there is an in-between time where safe travel is not possible with skiffs but the ice has not frozen solid enough to be safe for land travel. These conditions factor into residents' decisions about pursuing harvesting activities, especially the December moose-hunting opportunity.

In the wintertime, harvest activities depend upon the use of land vehicles or airplanes. If conditions permit, hunting large land mammals continues; small game may be taken opportunistically on these trips. When the ice freezes, people will fish through the ice for smelt or freshwater fish. Trapping furbearers occurs beginning in November and continues through March.

As daylight hours lengthen in February and March, harvesting activities increase; however, when breakup occurs, subsistence harvesting activities decrease slightly because travel is again difficult, and resources are less readily available. When travel on the rivers becomes possible, some freshwater fishing may occur, and as the low tides and daylight hours converge, residents dig for clams. Much of this time, though, is spent in preparation for the return of the salmon and the beginning of a new cycle.

Population Estimates and Demographic Information

An estimated 71 individuals lived in 25 households in Egegik during 2014; 70% of the estimated population identified as Alaska Native (Table 2-1). This study's estimate is comparable to the five-year American Community Survey estimate from 2010–2014 of 74 individuals but indicates a smaller population than the 2010 decennial census. Interestingly, all three sources estimate a similar number of households and number of Alaska Native residents (Table 2-1; Figure 2-2). Egegik was historically a predominantly Alaska Native village. The contemporary economy is based on commercial fishing and fish processing, bringing an annual influx of non-residents and non-local Alaska residents. Following the census of Egegik in 1950, the population peaked in 1960 at around 150 residents and remained at a similar population during the 1970 census (Figure 2-3). The population of Egegik plummeted during the 1980 census before increasing back to the 1950 level. Since 1990, the population has been on a slight downward trajectory. A lack of year-round employment has likely contributed to the fluctuations in population over time. Families that no longer live in Egegik year round often return in the summer to fish and stay in homes they own or with relatives in the community, a practice that has been going on since at least the 1980s (Morris 1987). With few employment options and declines in availability of local caribou herds, more families have moved away. The local pre-K–12 school closed during the study year, likely contributing to the low population estimate by this survey.

Table 2-1.–Population estimates, Egegik, 2010 and 2014.

	Census (2010)	5-year American Community Survey (2010–2014)		This study (2014)	
		Estimate	Range[a]	Estimate	Range[b]
Total population					
Households	29	22.0	13 – 31	25.0	
Population	109	74.0	48 – 100	71.3	63 – 80
Alaska Native					
Population	51	35.0	20 – 50	50.0	42 – 58
Percentage	46.8%	47.3%	27.0% – 67.6%	70.2%	58.5% – 81.9%

Sources U.S. Census Bureau (n.d.) for decennial census data, and for American Community Survey (ACS) 2014 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2015, for 2014 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

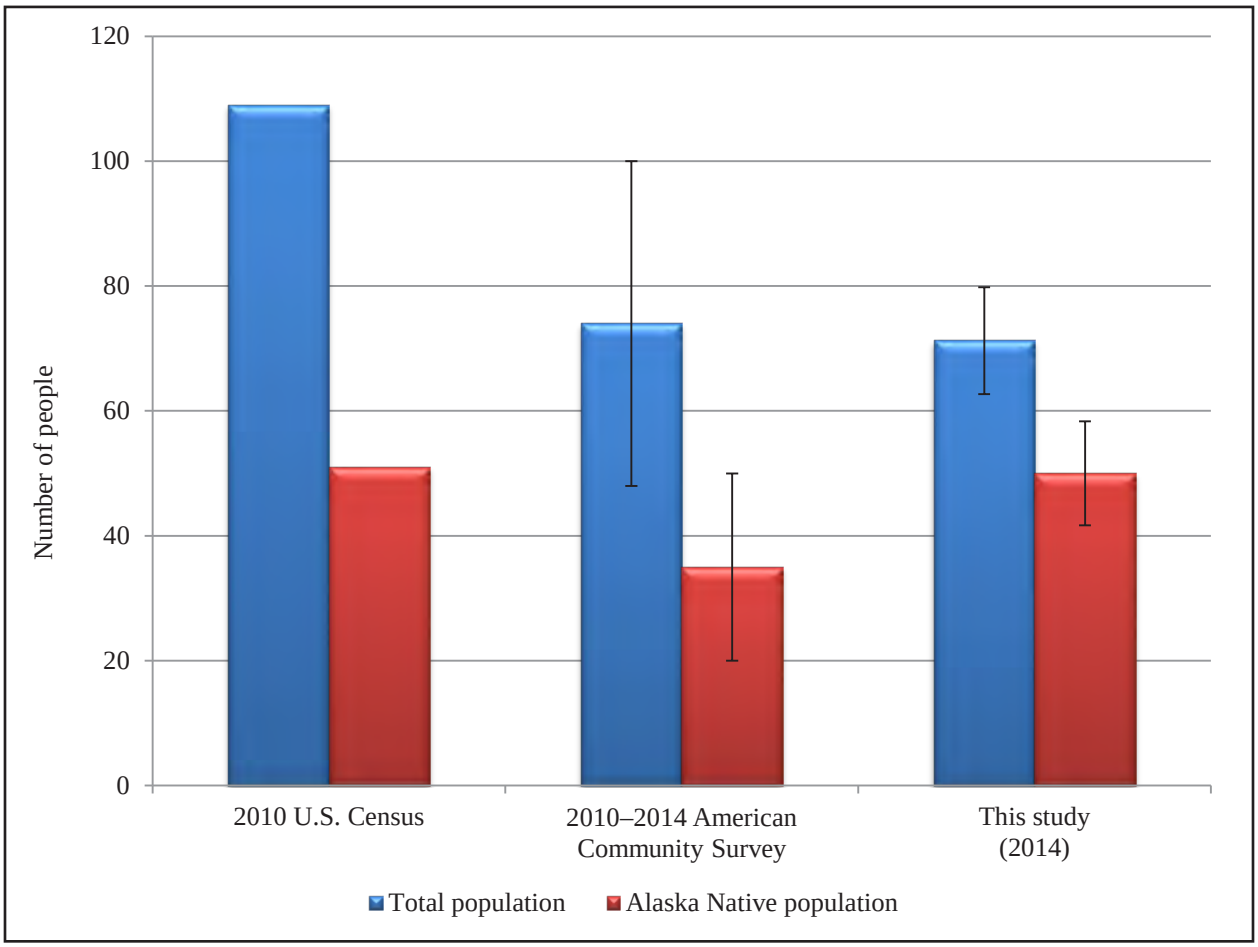


Figure 2-2.–Alaska Native and overall population estimates, Egegik, 2010 and 2014.

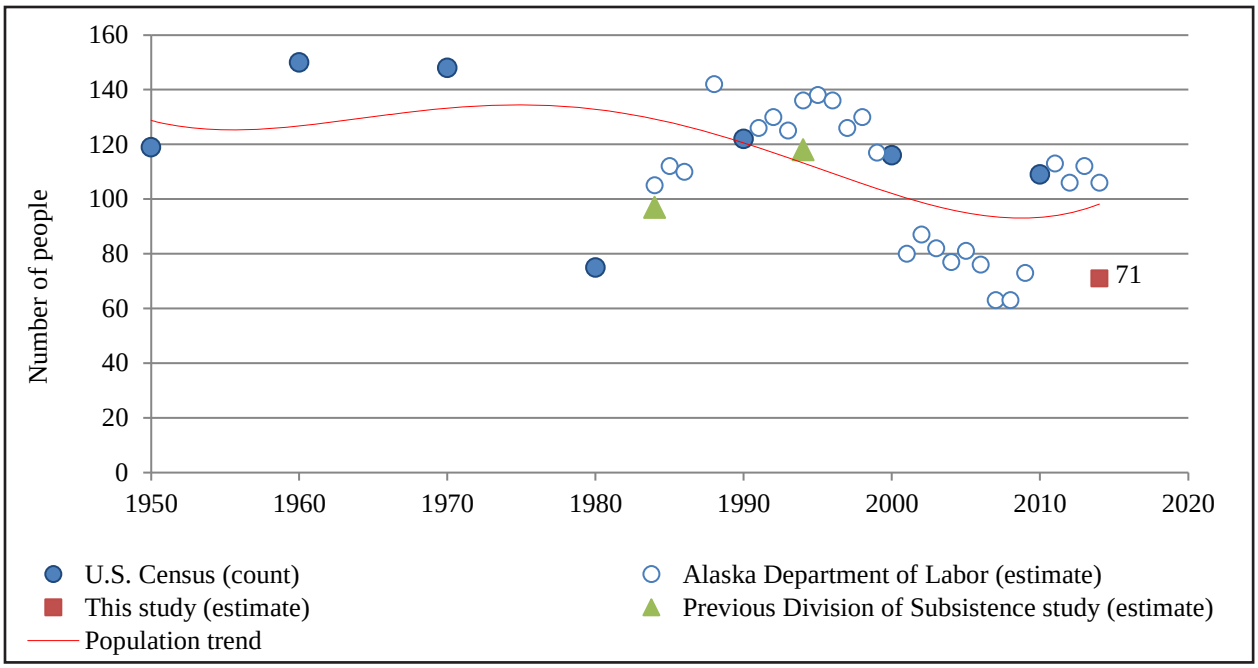


Figure 2-3.–Historical population estimates, Egegik, 1950–2014.

Twenty of 25 households (80%) were surveyed for this study (Table 2-2). Based on this sample, households ranged in size from one to six people with an average size of three. The average age of residents was 36; the youngest resident of any household was less than 1 year old and the oldest was 82 years old. One-third of the population in 2014 was 19 years old or younger, while slightly more than one-third (35%) was 40 to 59 years of age, which may explain some of the subsistence harvest patterns in the community (Table 2-3; Figure 2-4). In comparison, in 1984, 79% of the sampled population was 40 years old or younger (Morris 1987:27). The average resident of Egegik in 2014 had lived in the community for 20 years; among heads of households, the average length of residency was slightly higher at 27 years (Table 2-2). Thirty-three percent of Egegik residents were born in Egegik, 30% of residents were born in another U.S. state, 12% of residents were born in Anchorage, and smaller percentages came from other Alaska communities or another country (Table 2-4). Birthplace locations for household heads were distributed similarly; Egegik and a different U.S. state were listed equally (32%) as the birthplaces of household heads (Table 2-5). In 2014, there were more men living in Egegik than women, but the distribution of genders among the age cohorts was similar (Table 2-3; Figure 2-4). There were no girls younger than 10 living in the community, and no women between the ages of 30–34 or 75 and older.

Table 2-2.–Sample and demographic characteristics, Egegik, 2014.

Characteristics	Community Egegik
Sampled households	20
Eligible households	25
Percentage sampled	80.0%
Sampled population	57
Estimated community population	71.3
Household size	
Mean	2.9
Minimum	1
Maximum	6
Age	
Mean	36.1
Minimum[a]	0
Maximum	82
Median	37
Length of residency	
Total population	
Mean	20.1
Minimum[a]	0
Maximum	82
Heads of household	
Mean	27.3
Minimum[a]	1
Maximum	82
Alaska Native	
Estimated households[b]	
Number	20.0
Percentage	80.0%
Estimated population	
Number	50.0
Percentage	70.2%

Source ADF&G Division of Subsistence household surveys, 2015.

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 one head of household is Alaska Native.

Table 2-3.–Population profile, Egegik, 2014.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	3.8	8.6%	8.6%	0.0	0.0%	0.0%	3.8	5.3%	5.3%
5–9	2.5	5.7%	14.3%	0.0	0.0%	0.0%	2.5	3.5%	8.8%
10–14	1.3	2.9%	17.1%	3.8	13.6%	13.6%	5.0	7.0%	15.8%
15–19	8.8	20.0%	37.1%	3.8	13.6%	27.3%	12.5	17.5%	33.3%
20–24	2.5	5.7%	42.9%	2.5	9.1%	36.4%	5.0	7.0%	40.4%
25–29	2.5	5.7%	48.6%	1.3	4.5%	40.9%	3.8	5.3%	45.6%
30–34	1.3	2.9%	51.4%	0.0	0.0%	40.9%	1.3	1.8%	47.4%
35–39	1.3	2.9%	54.3%	1.3	4.5%	45.5%	2.5	3.5%	50.9%
40–44	1.3	2.9%	57.1%	2.5	9.1%	54.5%	3.8	5.3%	56.1%
45–49	6.3	14.3%	71.4%	5.0	18.2%	72.7%	11.3	15.8%	71.9%
50–54	2.5	5.7%	77.1%	1.3	4.5%	77.3%	3.8	5.3%	77.2%
55–59	3.8	8.6%	85.7%	2.5	9.1%	86.4%	6.3	8.8%	86.0%
60–64	2.5	5.7%	91.4%	1.3	4.5%	90.9%	3.8	5.3%	91.2%
65–69	1.3	2.9%	94.3%	1.3	4.5%	95.5%	2.5	3.5%	94.7%
70–74	1.3	2.9%	97.1%	1.3	4.5%	100.0%	2.5	3.5%	98.2%
75–79	0.0	0.0%	97.1%	0.0	0.0%	100.0%	0.0	0.0%	98.2%
80–84	1.3	2.9%	100.0%	0.0	0.0%	100.0%	1.3	1.8%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**43.8**	**100.0%**	**100.0%**	**27.5**	**100.0%**	**100.0%**	**71.3**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2015.

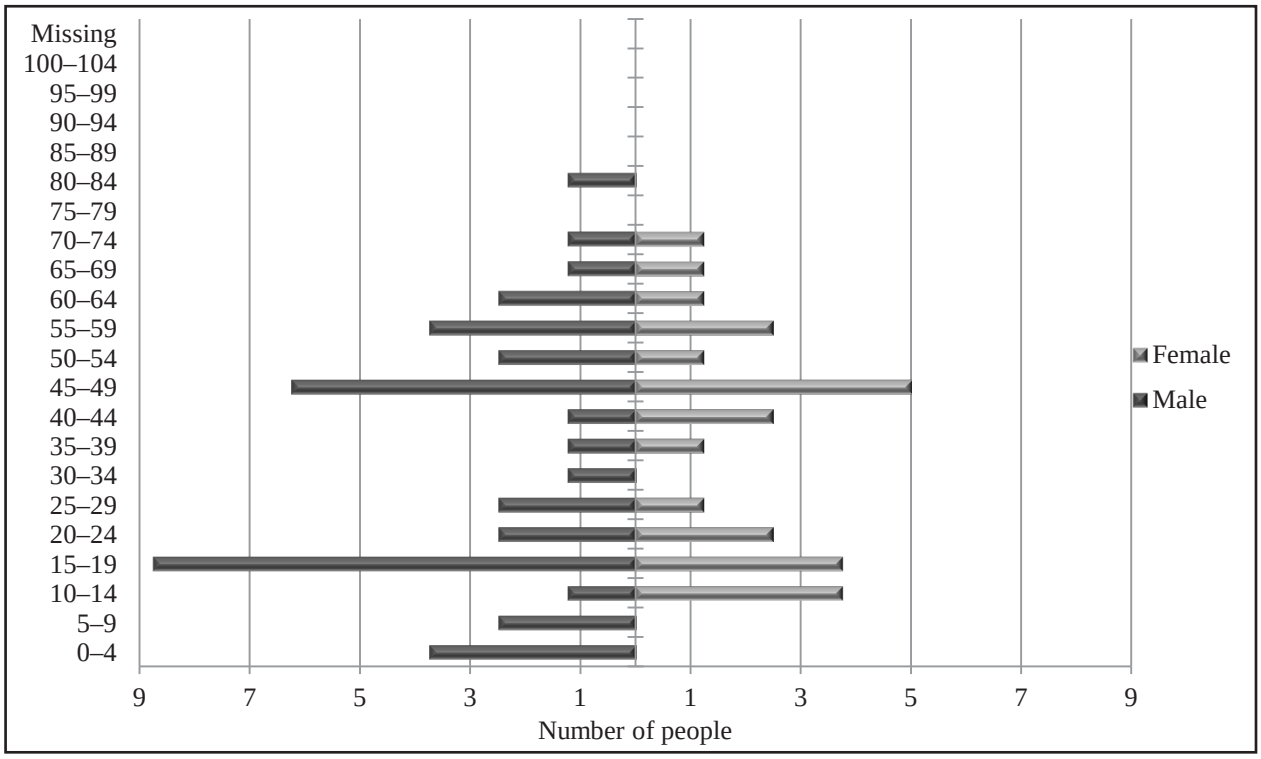


Figure 2-4.–Population profile, Egegik, 2014.

Table 2-4.–Birthplaces of population, Egegik, 2014.

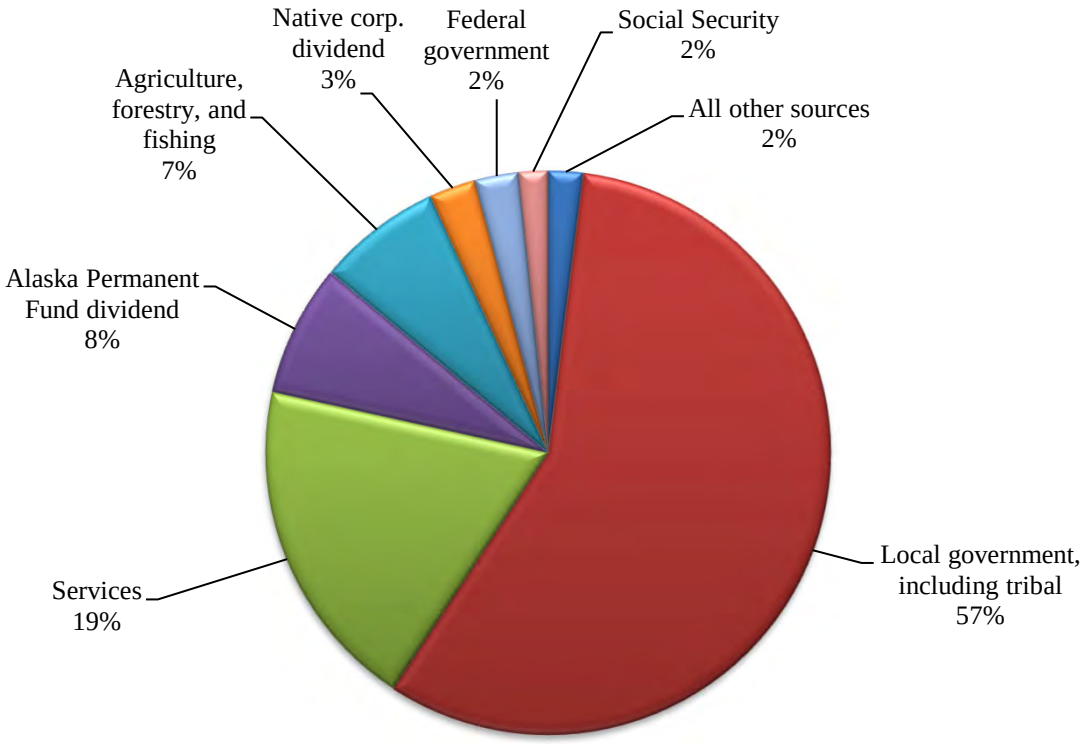
Birthplace	Percentage
Aleknagik	1.8%
Anchorage	12.3%
Dillingham	7.0%
Egegik	33.3%
Kodiak City	1.8%
Naknek	1.8%
Pilot Point	1.8%
Soldotna	3.5%
Unalakleet	1.8%
Nushagak Point	1.8%
Kanatak	1.8%
Other U.S.	29.8%
Foreign	1.8%

Source ADF&G Division of Subsistence household surveys, 2015.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 2-5.–Birthplaces of household heads, Egegik, 2014.

Birthplace	Percentage
Aleknagik	2.9%
Anchorage	5.9%
Dillingham	5.9%
Egegik	32.4%
Kodiak City	2.9%
Naknek	2.9%
Pilot Point	2.9%
Unalakleet	2.9%
Nushagak Point	2.9%
Kanatak	2.9%
Other U.S.	32.4%
Foreign	2.9%

Source ADF&G Division of Subsistence household surveys, 2015.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.



Note "All other sources" is the sum of every income source that provided less than 1% to the total community income.

Figure 2-5.–Top income sources, Egegik, 2014.

Income and Cash Employment

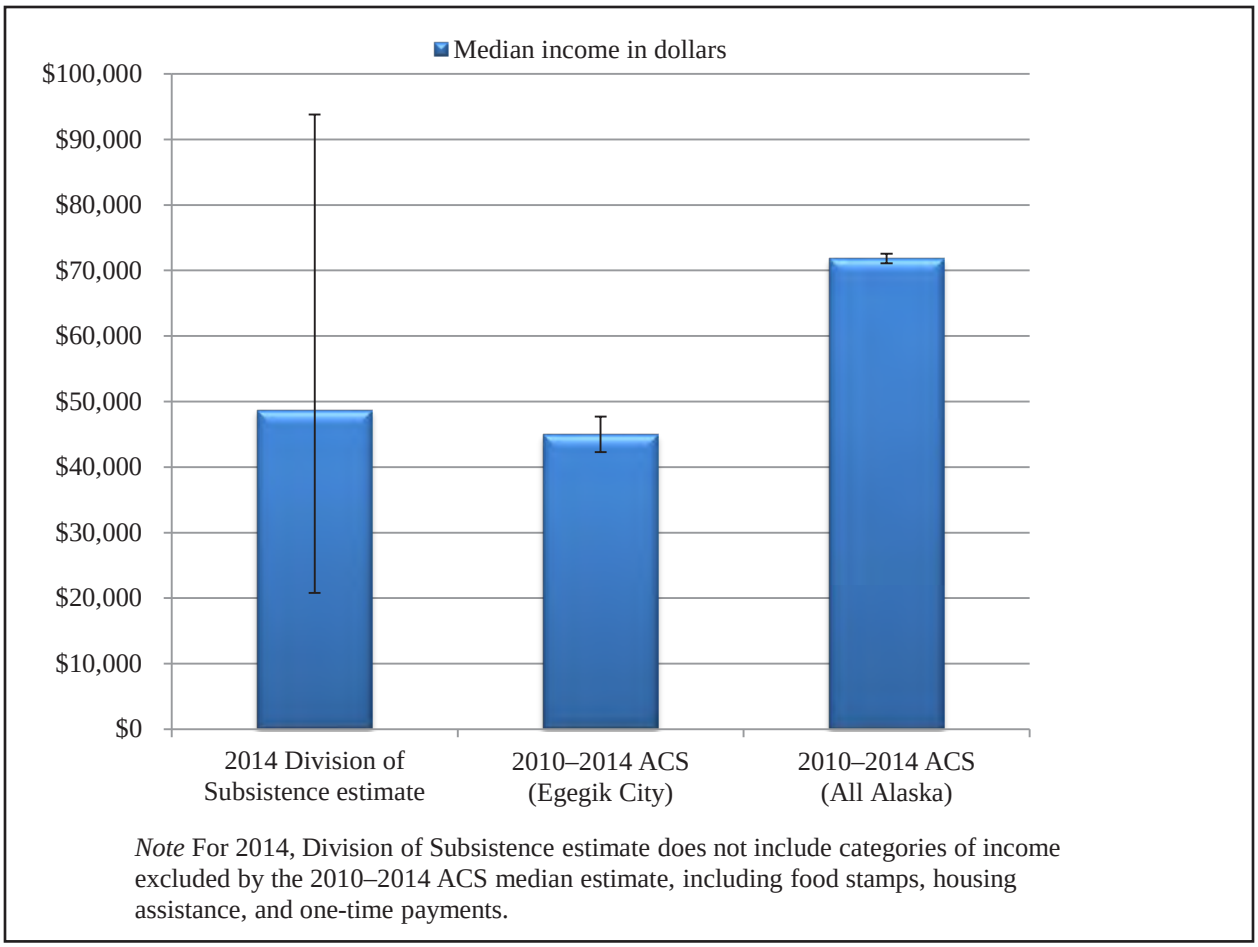
During the study period, the majority of income in Egegik came through the local government sector (57%) (Figure 2-5). Service sector jobs; Alaska Permanent Fund dividends; and agriculture, forestry, and fishing jobs accounted for an additional one-third of total community income. Total community income was split between earned income (87%) and other sources (13%) (Table 2-6). Compared to the other study communities, more of Egegik's total income came through earned income (Table 1-8). Alaska Permanent Fund dividends, the largest contributor to the other income sources, paid $1,884 per person in 2014.[3] Dividends from Native corporations and Social Security payments were the only other sources of other income contributing more than 1% to the total income estimate (Table 2-6; Figure 2-5). The average household income in 2014 was $53,572 while the median household income was slightly lower at $48,715 (Table 2-6; Figure 2-6). At the individual level, per capita income in Egegik was $18,797 in 2014, which was less than in Ugashik and Pilot Point (Table 1-8).

3. Alaska Department of Revenue, Permanent Fund Dividend Division, "Summary of Dividend Applications & Payments," https://pfd.alaska.gov/Division-Info/Summary-of-Applications-and-Payments (accessed March 2020).

Table 2-6.–Estimated earned and other income, Egegik, 2014.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal	29.8	16.3	$766,661	$400,103 – $1,161,628	$30,666	57.2%
Services	5.2	3.8	$257,557	$38,962 – $722,267	$10,302	19.2%
Agriculture, forestry, and fishing	16.8	12.5	$95,329	$38,291 – $173,395	$3,813	7.1%
Federal government	1.3	1.3	$33,449	$32,132 – $67,497	$1,338	2.5%
Transportation, communication, and utilities	3.9	3.8	$8,293	$1,670 – $40,012	$332	0.6%
Construction	1.3	1.3	$7,805	$7,512 – $15,568	$312	0.6%
Earned income subtotal	**45.3**	**25.0**	**$1,169,093**	**$782,600 – $1,675,838**	**$46,764**	**87.3%**
Other income						
Alaska Permanent Fund dividend		21.3	$101,299	$65,940 – $138,979	$4,052	7.6%
Native corp. dividend		13.9	$35,817	$18,030 – $56,636	$1,433	2.7%
Social Security		1.3	$22,500	$18,000 – $45,000	$900	1.7%
Per diem/public meeting		1.3	$4,200	$3,360 – $8,400	$168	0.3%
Unemployment		1.3	$3,125	$2,500 – $6,250	$125	0.2%
Heating assistance		1.3	$2,000	$1,600 – $4,000	$80	0.1%
Food stamps		1.3	$399	$320 – $1,644	$16	0.0%
Disability		1.3	$399	$320 – $1,485	$16	0.0%
Child support		1.3	$234	$187 – $846	$9	0.0%
Fishing permit revenues		1.3	$234	$187 – $985	$9	0.0%
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%
Longevity bonus		0.0	$0	$0 – $0	$0	0.0%
Pension/retirement		0.0	$0	$0 – $0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0 – $0	$0	0.0%
Veterans assistance		0.0	$0	$0 – $0	$0	0.0%
Other		0.0	$0	$0 – $0	$0	0.0%
Foster care		0.0	$0	$0 – $0	$0	0.0%
Fuel voucher		0.0	$0	$0 – $0	$0	0.0%
Meeting honoraria		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**21.3**	**$170,207**	**$114,428 – $245,227**	**$6,808**	**12.7%**
Community income total			**$1,339,300**	**$918,326 – $1,843,167**	**$53,572**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2015.



Note For 2014, Division of Subsistence estimate does not include categories of income excluded by the 2010–2014 ACS median estimate, including food stamps, housing assistance, and one-time payments.

Figure 2-6.–Comparison of median household income estimates, Egegik, 2014.

Looking just at jobs and earned income, rather than total community income, Table 2-7 shows that the local government sector of the economy contributed the most (66%) to wage earnings in 2014. The services sector composed the next highest amount: 22% of wage earnings. The construction sector contributed the least to wage earnings at just 0.7%, or $7,805 total (Table 2-7; Table 2-6). Interestingly, while the fishing component contributed just 8% to total wage earnings, it accounted for 27% of the jobs in the community, second only to local government (Table 2-7). Jobs in the community tended to be either full time (44%) or on-call (27%), followed by part time (21%) (Table 2-8). Seventy-six percent of working-age adults (age 16 or older) and 100% of households were employed in 2014 (Table 2-9). On average, adults living in employed households worked 2.5 jobs combined; employed adults were employed for an average of 8 months of the year, with 41% of employed adults employed year-round.

Table 2-7.–Employment by industry, Egegik, 2014.

Industry	Jobs	Employed households	Employed individuals	Percentage of wage earnings
Estimated total number	**62.2**	**25.0**	**45.3**	
Federal government	**2.1%**	**5.0%**	**2.9%**	**2.9%**
Executive, administrative, and managerial	2.1%	5.0%	2.9%	2.9%
Local government, including tribal	**54.2%**	**65.0%**	**65.7%**	**65.6%**
Executive, administrative, and managerial	6.3%	15.0%	8.6%	19.3%
Teachers, librarians, and counselors	8.3%	20.0%	11.4%	14.1%
Marketing and sales occupations	2.1%	5.0%	2.9%	0.4%
Administrative support occupations, including clerical	4.2%	10.0%	5.7%	4.1%
Service occupations	12.5%	25.0%	17.1%	5.2%
Mechanics and repairers	2.1%	5.0%	2.9%	5.2%
Construction and extractive occupations	2.1%	5.0%	2.9%	0.9%
Handlers, equipment cleaners, helpers, and laborers	16.7%	40.0%	22.9%	16.4%
Agriculture, forestry, and fishing	**27.1%**	**50.0%**	**37.1%**	**8.2%**
Agricultural, forestry, and fishing occupations	27.1%	50.0%	37.1%	8.2%
Construction	**2.1%**	**5.0%**	**2.9%**	**0.7%**
Construction and extractive occupations	2.1%	5.0%	2.9%	0.7%
Transportation, communication, and utilities	**6.3%**	**15.0%**	**8.6%**	**0.7%**
Transportation and material moving occupations	2.1%	5.0%	2.9%	0.2%
Handlers, equipment cleaners, helpers, and laborers	4.2%	10.0%	5.7%	0.5%
Services	**8.3%**	**15.0%**	**11.4%**	**22.0%**
Social scientists, social workers, religious workers, and lawyers	4.2%	10.0%	5.7%	7.3%
Health technologists and technicians	4.2%	5.0%	5.7%	14.7%

Source ADF&G Division of Subsistence household surveys, 2015.

Table 2-8.–Job schedules, Egegik, 2014.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full time	27.2	43.8%	24.6	54.3%	17.5	70.0%
Part time	13.0	20.8%	13.0	28.6%	10.0	40.0%
Shift	2.6	4.2%	2.6	5.7%	2.5	10.0%
On-call (occasional)	16.8	27.1%	15.5	34.3%	11.3	45.0%
Schedule not reported	2.6	4.2%	2.6	5.7%	2.5	10.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Note Respondents who had more than one job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Table 2-9.–Employment characteristics, Egegik, 2014.

Characteristic	Community Egegik
All adults	
Number	60.0
Mean weeks employed	27.1
Employed adults	
Number	45.3
Percentage	75.6%
Jobs	
Number	62.2
Mean	1.4
Minimum	1
Maximum	3
Months employed	
Mean	8.3
Minimum	2
Maximum	12
Percentage employed year-round	41.2%
Mean weeks employed	35.8
Households	
Number	25.0
Employed	
Number	25.0
Percentage	100.0%
Jobs per employed household	
Mean	2.5
Minimum	1
Maximum	5
Employed adults	
Mean	
Employed households	1.8
Total households	1.8
Minimum	1
Maximum	4
Mean person-weeks of employment	65.0

Source ADF&G Division of Subsistence household surveys, 2015.

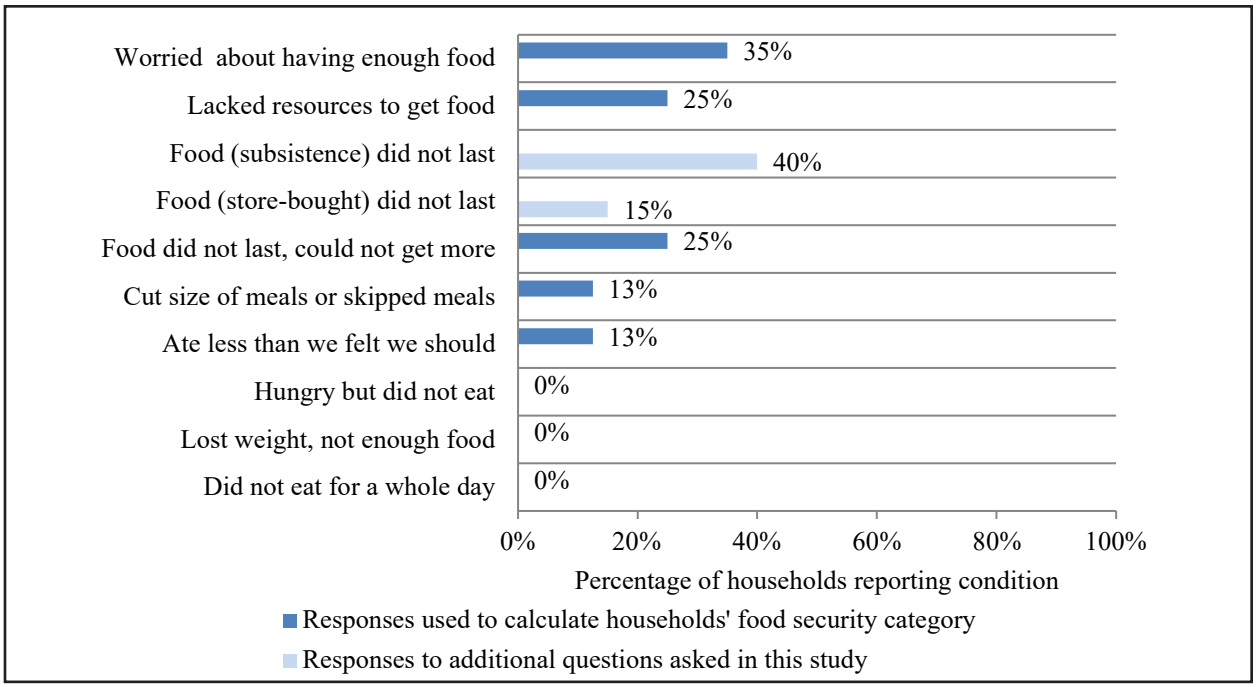


Figure 2-7.–Responses to questions about food insecure conditions, Egegik, 2014.

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). Based on their responses, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were broken down further into two subcategories—high or marginal food security. Food insecure households were also divided into two subcategories—low food security or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Figure 2-7 summarizes affirmative responses to food insecurity conditions experienced by Egegik households that did not have enough of the kinds of food they wanted to eat. The first five conditions described in the figure were asked about the overall household while the last five applied only to the adults in the household and were asked to ascertain the severity of food insecure conditions experienced by the household. The most common affirmative answer was in response to the question asking whether the subsistence food a household had did not last and the household could not get more (40%). The next most affirmative response was to the question asking whether the household worried about having enough food (35%). No households indicated not eating despite being hungry, losing weight because there was not enough food, or not eating for a whole day. While 40% of respondents indicated not having enough subsistence food, only 15% of households indicated this was true for store-bought food, and 25% of households responded that the household's food, whatever its source, did not last and more could not be obtained. These percentages speak to the importance of mixed food sources in overall household food security for the residents of Egegik.

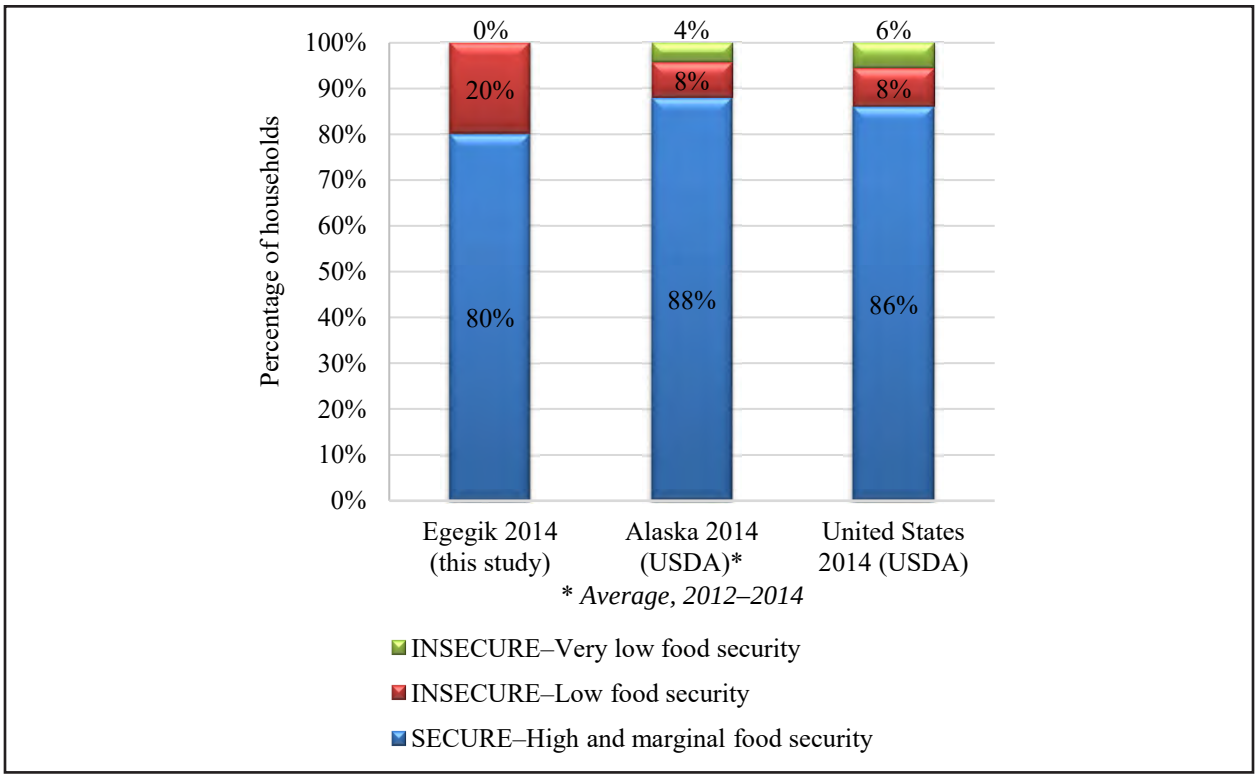


Figure 2-8.–Comparison of food security categories, Egegik, Alaska, and United States, 2014.

Table 2-10.–Households' assessments of food security conditions, Egegik, 2014.

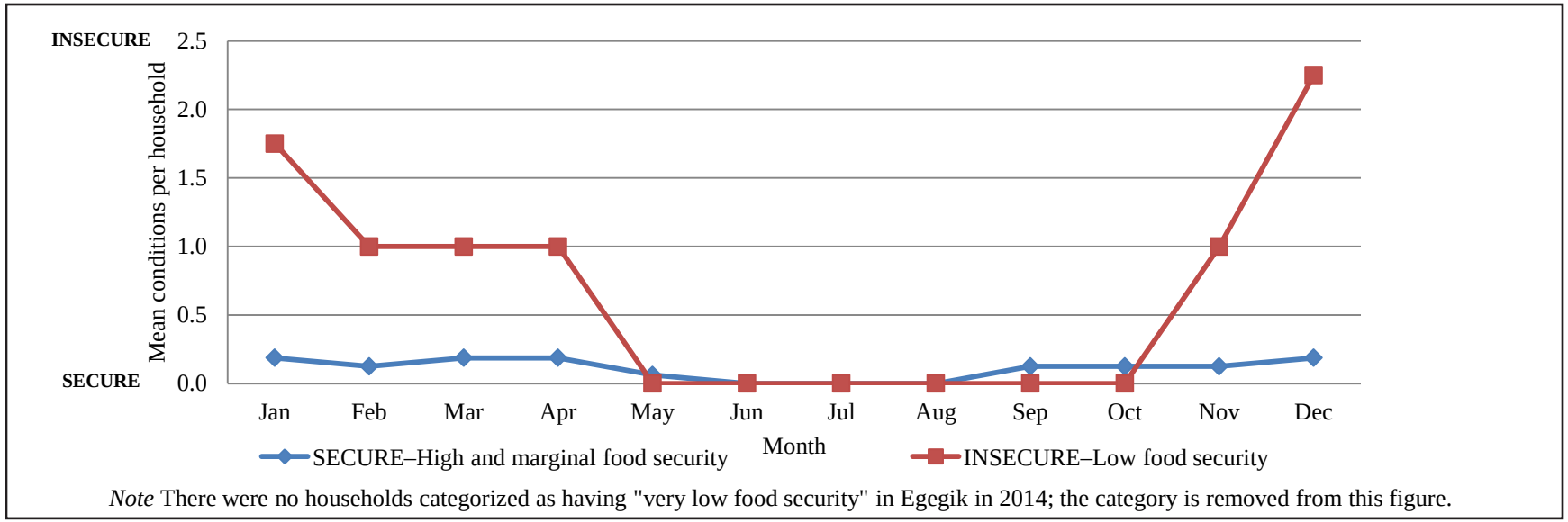
Statement	Percentage of households
Had enough of the kinds of food desired	25.0%
Had enough food, but not the desired kind	75.0%
Sometimes, or often, did not have enough food	0.0%
Missing/No response	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Store-bought food may be difficult to obtain because of the cost to purchase and ship items, or because desired foods may not be available in the community due to weather or other circumstances. Subsistence foods can be difficult to obtain because of the cost (e.g., equipment, transportation, fuel) to hunt or fish as well as because of a lack of locally available resources.

Food security results for surveys for Egegik, the state of Alaska, and the United States are summarized in Figure 2-8 and show that residents of Egegik experienced lower levels of food security than the state or nation. Overall, 80% of households were food secure in 2014, compared to 88% of households in Alaska and 86% across the country. While 20% of Egegik households were food insecure, no households experienced very low food security. The remote location of the community and consequent high prices of store-bought food that had to be ordered from a grocer in another community, coupled with changes in resource availability and access, may explain the community's food security profile.

Table 2-10 shows by percentage of sampled households the assessments results regarding eating desired types of food during the study year. According to study results, one-quarter of Egegik households had enough of desired foods, and the majority (75%) had enough food but not always the preferred kinds. Figure 2-9 portrays the mean number of food insecure conditions per household by food security category by month. Figure 2-10 shows which months households reported foods not lasting. Unsurprisingly, households with low food security experienced a greater number of food insecure conditions than those households termed food secure (Figure 2-9). A similar seasonal pattern is seen in both categories of households, whether secure or insecure: the fewest instances of food insecurity were during the summer months and the highest instances in the winter months of November through April. Summer months are usually when more wild resources are available and accessible and when weather is less likely to impede food shipments to stores. As depicted in Figure 2-10, fewer households experienced instances of both store-bought and subsistence foods not lasting in the summer months. Overall, a higher proportion of households experienced insecurity with subsistence foods than with store-bought foods.



Note There were no households categorized as having "very low food security" in Egegik in 2014; the category is removed from this figure.

Figure 2-9.–Mean number of food insecure conditions by month and by household food security category, Egegik, 2014.

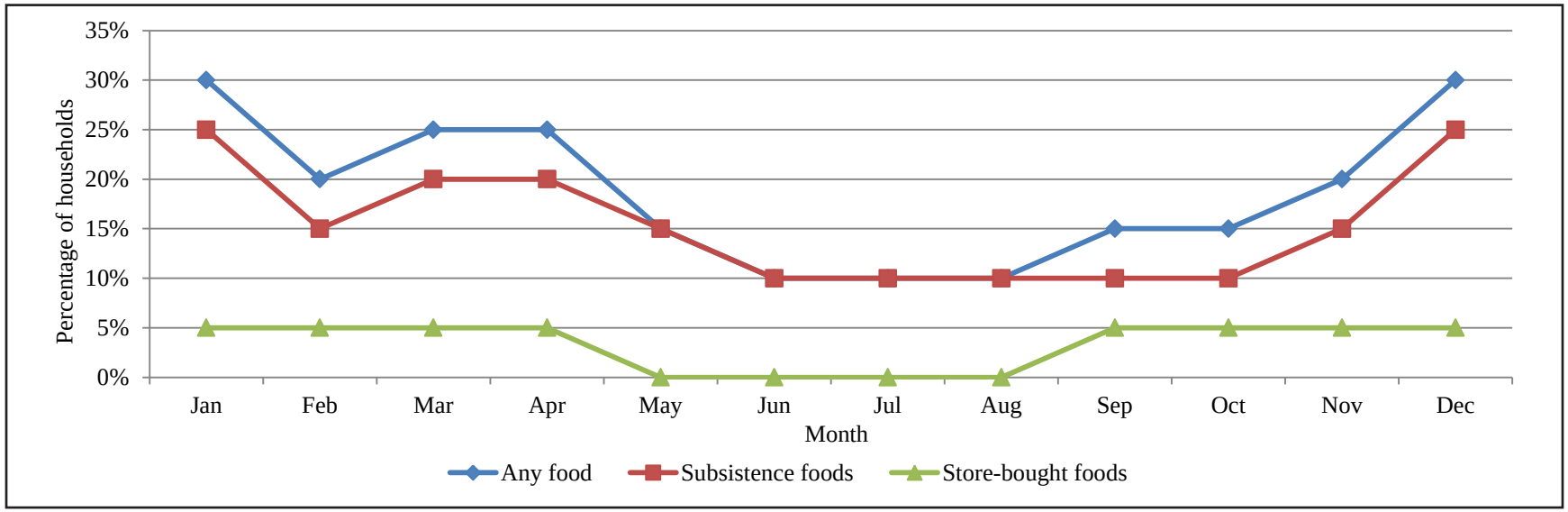


Figure 2-10.–Comparison of months when food did not last, Egegik, 2014.

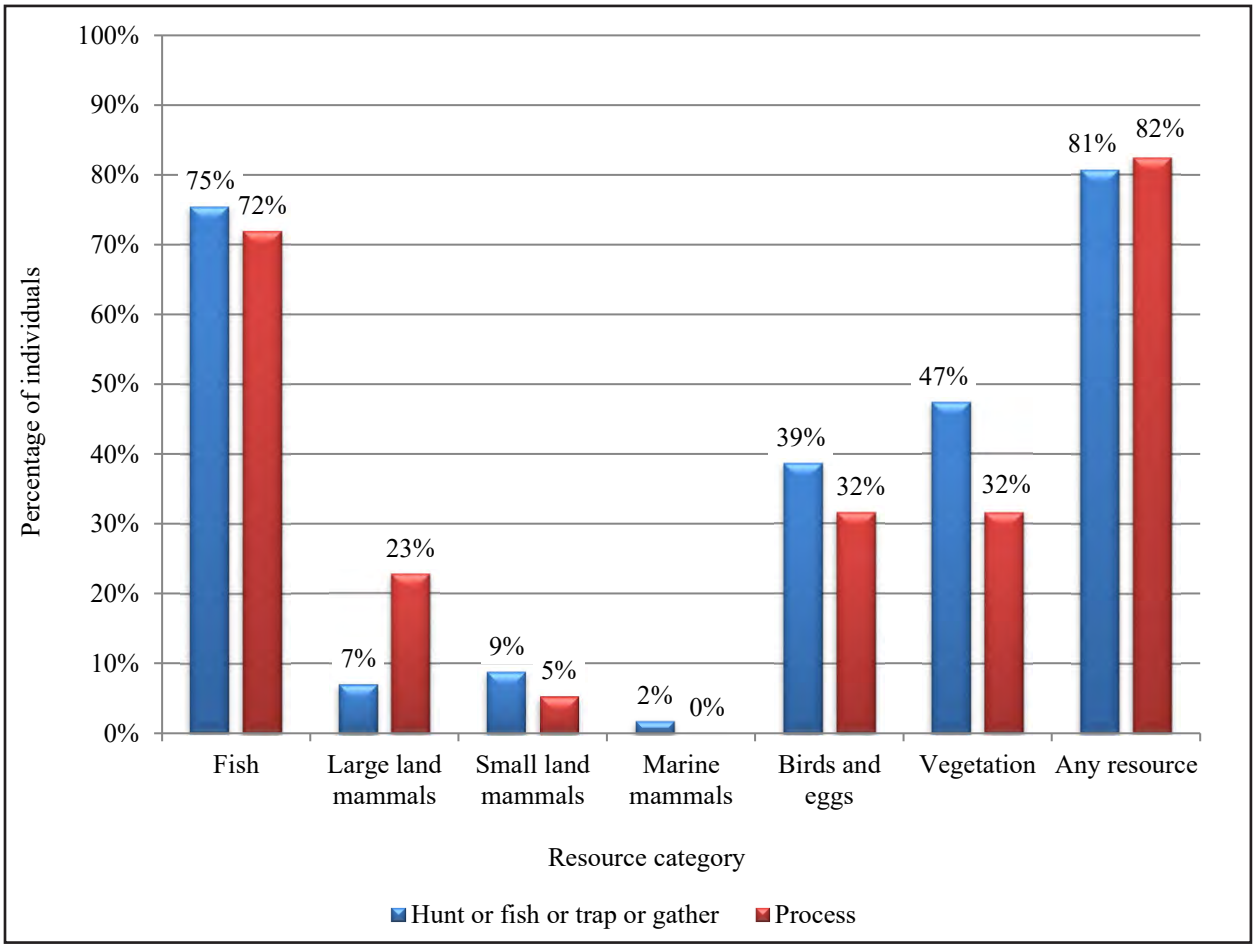


Figure 2-11.–Individual participation in subsistence harvesting and processing activities, Egegik, 2014.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 2-11 and Table 2-11 report the expanded levels of individual participation in the harvesting and processing of wild resources by all Egegik residents in 2014. Approximately 81% of residents hunted, fished, trapped, or gathered wild resources; a nearly equal percentage (83%) participated in processing these resources. The most residents (75%) fished, while 47% of residents gathered vegetation, and 39% hunted birds or gathered bird eggs. Smaller percentages of residents hunted or trapped small land mammals (9%), hunted large land mammals (7%), or hunted marine mammals (2%). More residents (72%) processed fish than any other resource. There were 32% of residents who processed vegetation or birds and eggs; more residents participated in harvesting these resources than with processing activities. Both gathering plants and berries as well as bird eggs tend to be a family affair, while the processing of these resources falls to just a few members of the household. In contrast, a significantly greater number of residents helped process large game than hunted, reflecting both the group effort that is required to process a harvested moose as well as the pattern of area sport hunting lodges sharing with community residents the animals, or parts of animals, that their clients do not take home.

Table 2-11.–Individual participation in subsistence harvesting and processing activities, Egegik, 2014.

Total number of people	**71.3**
Fish	
Fish	
Number	53.8
Percentage	75.4%
Process	
Number	51.3
Percentage	71.9%
Large land mammals	
Hunt	
Number	5.0
Percentage	7.0%
Process	
Number	16.3
Percentage	22.8%
Small land mammals	
Hunt or trap	
Number	6.3
Percentage	8.8%
Process	
Number	3.8
Percentage	5.3%
Marine mammals	
Hunt	
Number	1.3
Percentage	1.8%
Process	
Number	0.0
Percentage	0.0%
Birds and eggs	
Hunt/gather	
Number	27.5
Percentage	38.6%
Process	
Number	22.5
Percentage	31.6%
Vegetation	
Gather	
Number	33.8
Percentage	47.4%
Process	
Number	22.5
Percentage	31.6%
Any resource	
Attempt harvest	
Number	57.5
Percentage	80.7%
Process	
Number	58.8
Percentage	82.5%

Source ADF&G Division of Subsistence household surveys, 2015.

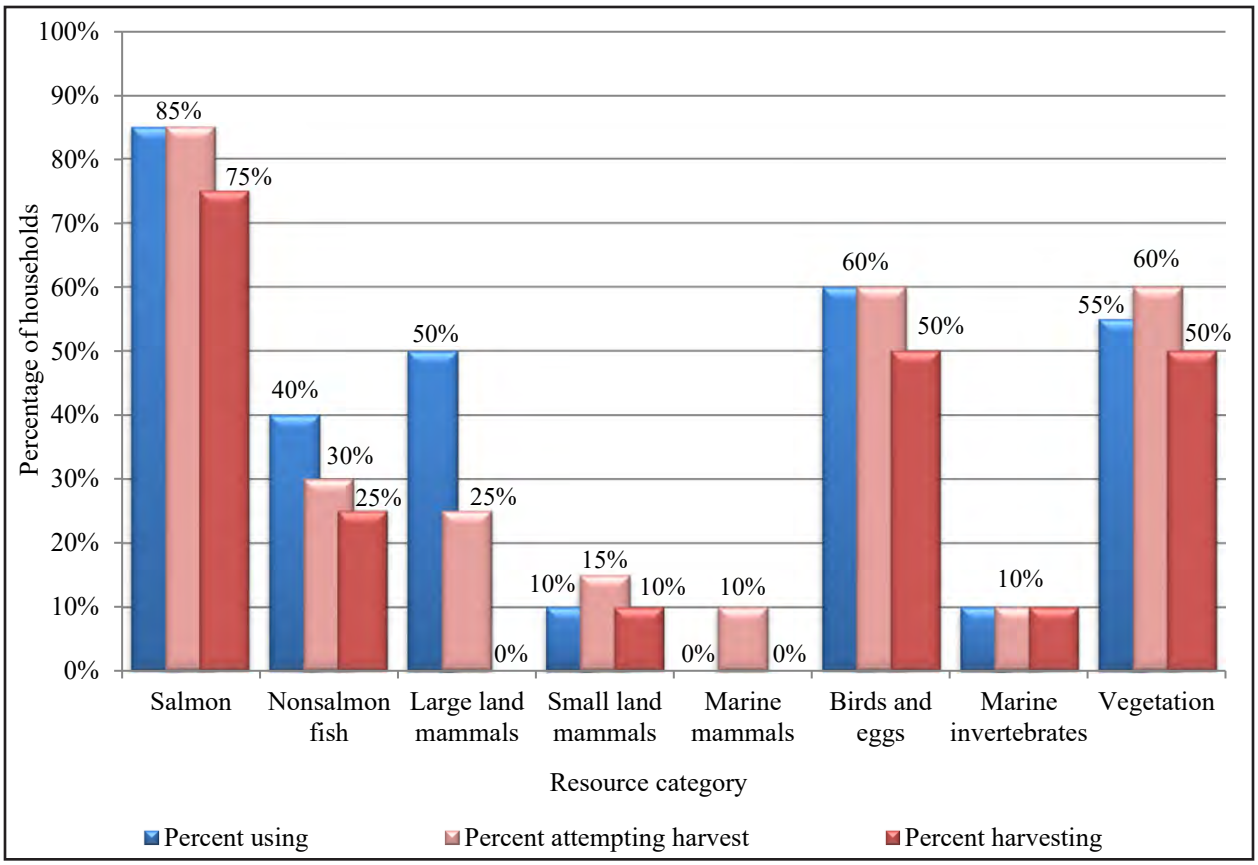


Figure 2-12.–Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Egegik, 2014.

Harvest and Use of Wild Resources at the Household Level

Figure 2-12 shows by resource category the percentages of households that used, attempted to harvest, and harvested wild resources. Salmon was the category used and harvested by more households in Egegik than any other wild resource category. More than one-half of households also used birds and eggs and vegetation, with similarly high percentages of households that attempted harvest and harvested resources from these categories. No surveyed[4] households successfully harvested large land mammals in 2014, although one-half of households in the community used large land mammals and one-quarter of households hunted for these species. Households were likewise unsuccessful in harvesting marine mammals, although 10% of households attempted to do so. Smaller percentages of households used or harvested nonsalmon fish, small land mammals, and marine invertebrates; marine invertebrates is the only resource category that shows equal percentages of attempting and successfully harvesting households.

Table 2-12 summarizes resource harvest and use characteristics for Egegik in 2014 at the household level. The average harvest was 442 lb usable weight per household and 155 lb per capita. During the study year, community households harvested an average of five kinds of resources and used an average of seven kinds of resources. The maximum number of resources used by any household was 19. In addition, households gave away an average of two kinds of resources.

4. The ADF&G Division of Wildlife Conservation harvest database, WinfoNet, also indicated no moose or caribou were harvested by Egegik residents in 2014 (database accessed July 2018).

Table 2-12.–Resource harvest and use characteristics, Egegik, 2014.

Characteristic	
Mean number of resources used per household	**7.0**
Minimum	0
Maximum	19
95% confidence limit (±)	14.9%
Median	6.5
Mean number of resources attempted to harvest per household	**7.1**
Minimum	0
Maximum	19
95% confidence limit (±)	15.2%
Median	5.5
Mean number of resources harvested per household	**5.4**
Minimum	0
Maximum	17
95% confidence limit (±)	18.5%
Median	5
Mean number of resources received per household	**2.2**
Minimum	0
Maximum	11
95% confidence limit (±)	27.7%
Median	1
Mean number of resources given away per household	**2.2**
Minimum	0
Maximum	10
95% confidence limit (±)	31.0%
Median	1
Household harvest (pounds)	
Minimum	0.0
Maximum	3,379.3
Mean	442.2
Median	158
Total harvest weight (lb)	11,056.2
Community per capita harvest (lb)	155.2
Percentage using any resource	90.0%
Percentage attempting to harvest any resource	90.0%
Percentage harvesting any resource	85.0%
Percentage receiving any resource	65.0%
Percentage giving away any resource	55.0%
Number of households in sample	20
Number of resources asked about and identified voluntarily by respondents	152

Source ADF&G Division of Subsistence household surveys, 2015.

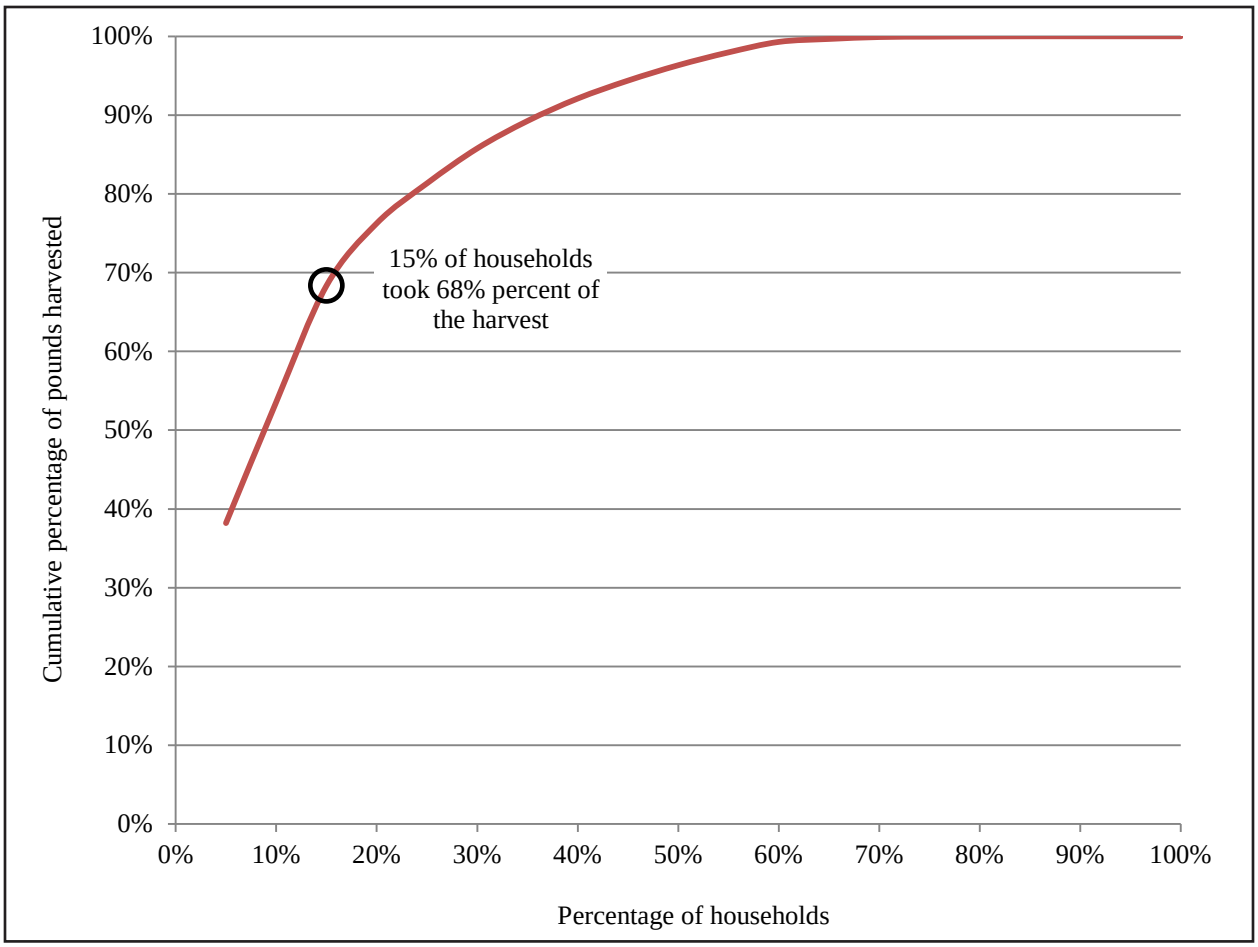


Figure 2-13.–Household specialization, Egegik, 2014.

Sharing of Wild Resources

Household Specialization in Resource Harvesting

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

Harvests in Egegik are concentrated in a smaller percentage of households than described above. As shown in Figure 2-13, in the 2014 study year in Egegik, about 68% of the harvests of wild resources as estimated in pounds usable weight were harvested by 15% of the community's households. Further analysis of the study findings, which is beyond the scope of this report, or future studies may identify characteristics of the highly productive households in Egegik.

Harvest Quantities and Composition

Table 2-13 reports estimated wild resource uses and harvests by Egegik residents in 2014 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix B for conversion factors[5]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as wood 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 2014, residents of Egegik harvested 11,056 lb of usable weight of wild resources, or 155 lb per capita (Table 2-13). With a harvest of 10,224 lb (144 lb per capita), the salmon harvest composed, by weight, nearly the entire (92%) community harvest of wild resources (Figure 2-14). Birds and eggs contributed 477 lb (4%; 7 lb per capita) to the harvest and vegetation added 184 lb (2%; 3 lb per capita). With a harvest of 1 lb per capita, nonsalmon fish (1%; 97 lb) and marine invertebrates (1%; 75 lb) complete the harvest totals. No large land mammals were harvested in 2014 and no small land mammals were harvested for food, only for fur.

Use and Harvest Characteristics by Resource Category

Sharing is an important characteristic of subsistence communities. Households typically use more resources than they harvest because of the prevalence of sharing within and between communities. Households may share resources with one or many other households, and within the community or beyond. Households within the community receive resources from one or many other households residing in the same community or from another community. While most resources are shared, the extent to which they are shared varies. In 2014, 90% of Egegik households used wild resources (Table 2-13). In Egegik, 55% of households gave wild resources and 65% of households received at least one wild resource. While Egegik households attempted to harvest large land mammals, none were successful, affecting the giving and receiving characteristics of this important resource category. Large land mammals was the most widely received resource category (50% receiving), but few households (10%) shared resources from this category. Salmon, nonsalmon fish, birds and eggs, and vegetation were all given and received by similar percentages of households: 40% of households gave salmon, 30% gave birds and eggs, 15% gave nonsalmon fish, and 10% of households gave vegetation resources; also, 45% of households received salmon, 20% received nonsalmon fish, 15% received birds and eggs, and 10% received vegetation. Marine invertebrates were given away by few households (5%), and no other Egegik households received those shared marine invertebrates. No households shared or received small land mammals or marine mammals; small land mammals were harvested and used in Egegik, but marine mammals were not.

Table 2-13 lists the top ranked resources used by households and Figure 2-15 shows the species with the highest harvests during the 2014 study year. Three salmon species composed 91% of the total community harvest weight (Figure 2-15). Two of these species, sockeye and coho salmon, were also the most used resources (Table 2-14). Moose was the third most used resource, with 50% of households using this species, despite the fact that no households in Egegik reported harvesting moose; as noted above, 50% of Egegik households received large land mammals. Apart from salmon, all the most used resources were terrestrial. Canada geese and duck eggs were included in the top resources used in Egegik but were not among the top species harvested. The top resources harvested were salmon, followed by two bird species, lowbush cranberries, Dolly Varden, and razor clams.

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

Table 2-13.–Estimated use and harvest of fish, game, and vegetation resources, Egegik, 2014.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	**90.0**	**90.0**	**85.0**	**65.0**	**55.0**	**11,056.2**	**442.2**	**155.2**	**11,056.2**	**lb**	**442.2**	**37.9**
Salmon	**85.0**	**85.0**	**75.0**	**45.0**	**40.0**	**10,223.9**	**409.0**	**143.5**	**10,223.9**	**lb**	**409.0**	**39.2**
Chum salmon	15.0	15.0	15.0	5.0	5.0	57.4	2.3	0.8	12.5	ind	0.5	53.5
Coho salmon	75.0	65.0	60.0	25.0	35.0	5,473.1	218.9	76.8	1,216.3	ind	48.7	35.6
Chinook salmon	45.0	40.0	35.0	20.0	10.0	1,099.6	44.0	15.4	102.5	ind	4.1	48.7
Pink salmon	15.0	15.0	15.0	5.0	5.0	35.1	1.4	0.5	13.8	ind	0.6	76.6
Sockeye salmon	80.0	75.0	60.0	35.0	30.0	3,408.4	136.3	47.8	822.5	ind	32.9	55.0
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Spawning sockeye salmon	10.0	10.0	10.0	0.0	5.0	150.2	6.0	2.1	36.3	ind	1.5	81.0
Nonsalmon fish	**40.0**	**30.0**	**25.0**	**20.0**	**15.0**	**96.5**	**3.9**	**1.4**	**96.5**	**lb**	**3.9**	**58.4**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring 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	5.0	0.0	0.0	5.0	5.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Capelin (grunion)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	15.0	15.0	10.0	5.0	5.0	14.2	0.6	0.2	4.4	gal	0.2	70.7
Pacific (gray) cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Starry flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	lb	0.0	0.0
Rockfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
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
Sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Salmon shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Yellowfin sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dolly Varden–freshwater	15.0	15.0	15.0	5.0	5.0	77.0	3.1	1.1	27.5	ind	1.1	67.3
Dolly Varden–saltwater	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

-continued-

Table 2-13.–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												
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Rainbow trout	5.0	5.0	5.0	0.0	0.0	5.3	0.2	0.1	3.8	ind	0.2	93.6
Steelhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Large land mammals	**50.0**	**25.0**	**0.0**	**50.0**	**10.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**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
Moose	50.0	25.0	0.0	50.0	10.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Small land mammals	**10.0**	**15.0**	**10.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**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
Arctic fox	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–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	5.0	10.0	5.0	0.0	0.0	0.0	0.0	0.0	2.5	ind	0.1	93.6
Snowshoe hare	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
North American river (land) otter	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	5.0	ind	0.2	64.4
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

-continued-

Table 2-13.–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												
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	5.0	10.0	5.0	0.0	0.0	0.0	0.0	0.0	2.5	ind	0.1	93.6
Marine mammals	**0.0**	**10.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**0.0**	**0.0**
Harbor porpoise	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown 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
Walrus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Beluga whale	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Birds and eggs	**60.0**	**60.0**	**50.0**	**15.0**	**30.0**	**476.8**	**19.1**	**6.7**	**476.8**	**lb**	**19.1**	**44.1**
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Common eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
King eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller's eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gadwall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	15.0	15.0	15.0	5.0	15.0	104.0	4.2	1.5	65.0	ind	2.6	58.7
Common merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red-breasted merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern shoveler	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

-continued-

Table 2-13.–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												
Green-winged teal	10.0	10.0	10.0	5.0	10.0	43.8	1.8	0.6	87.5	ind	3.5	80.6
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	5.0	5.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	20.0	15.0	15.0	5.0	10.0	52.5	2.1	0.7	18.8	ind	0.8	60.7
Emperor goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	5.0	5.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trumpeter swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	5.0	5.0	5.0	0.0	0.0	20.3	0.8	0.3	3.8	ind	0.2	93.6
Common snipe	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	50.0	45.0	45.0	15.0	15.0	179.0	7.2	2.5	223.8	ind	9.0	35.3
Duck eggs	20.0	20.0	20.0	0.0	15.0	5.3	0.2	0.1	50.0	ind	2.0	49.1
Goose eggs	5.0	5.0	5.0	0.0	5.0	7.5	0.3	0.1	30.0	ind	1.2	93.6
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
Gull eggs	40.0	45.0	30.0	10.0	20.0	63.3	2.5	0.9	210.8	ind	8.4	36.3
Murre eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tern eggs	5.0	10.0	5.0	0.0	0.0	1.3	0.1	0.0	32.5	ind	1.3	93.6
Marine invertebrates	**10.0**	**10.0**	**10.0**	**0.0**	**5.0**	**75.0**	**3.0**	**1.1**	**75.0**	**lb**	**3.0**	**82.1**
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
Pacific littleneck clams (steamers)	5.0	5.0	5.0	0.0	5.0	9.4	0.4	0.1	3.1	gal	0.1	93.6
Razor clams	5.0	5.0	5.0	0.0	0.0	65.6	2.6	0.9	21.9	gal	0.9	93.6

-continued-

Table 2-13.–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
Marine invertebrates, continued												
Softshell clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Limpets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Blue 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	ind	0.0	0.0
Scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	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
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Snails	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Whelk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Vegetation	**55.0**	**60.0**	**50.0**	**10.0**	**10.0**	**184.1**	**7.4**	**2.6**	**184.1**	**lb**	**7.4**	**71.8**
Blueberry	15.0	20.0	15.0	0.0	0.0	14.2	0.6	0.2	3.5	gal	0.1	67.5
Lowbush cranberry	25.0	30.0	15.0	10.0	0.0	81.3	3.3	1.1	20.3	gal	0.8	86.2
Crowberry	20.0	40.0	20.0	0.0	0.0	63.0	2.5	0.9	15.7	gal	0.6	74.5
Nagoonberry	5.0	5.0	5.0	0.0	0.0	2.5	0.1	0.0	0.6	gal	0.0	93.6
Raspberry	5.0	5.0	5.0	0.0	0.0	1.7	0.1	0.0	0.4	gal	0.0	93.6
Salmonberry	10.0	25.0	10.0	0.0	0.0	7.5	0.3	0.1	1.9	gal	0.1	68.3
Beach asparagus	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	5.0	5.0	5.0	0.0	0.0	2.5	0.1	0.0	2.5	gal	0.1	93.6
Hudson's Bay (Labrador) tea	5.0	5.0	5.0	0.0	0.0	1.3	0.1	0.0	1.3	gal	0.1	93.6
Lambs quarter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

-continued-

Table 2-13.–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												
Sourdock	5.0	5.0	5.0	0.0	0.0	1.3	0.1	0.0	1.3	gal	0.1	93.6
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
Beach rye grass	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	5.0	5.0	5.0	0.0	0.0	0.6	0.0	0.0	0.6	gal	0.0	93.6
Yarrow	5.0	5.0	5.0	0.0	0.0	6.3	0.3	0.1	6.3	gal	0.3	93.6
Other wild greens	5.0	5.0	5.0	0.0	0.0	1.3	0.1	0.0	1.3	gal	0.1	0.0
Fireweed	5.0	5.0	5.0	0.0	5.0	0.9	0.0	0.0	0.9	gal	0.0	93.6
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wood	30.0	30.0	30.0	0.0	5.0					cord		

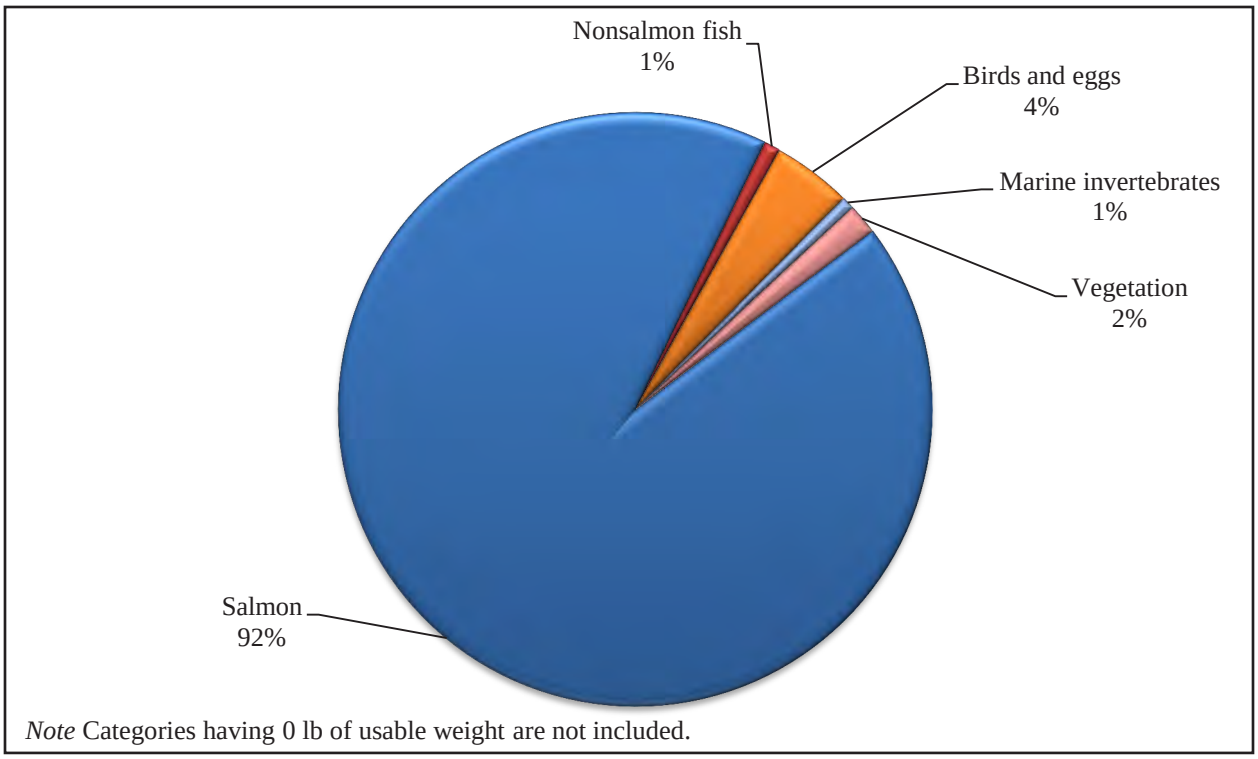
Source ADF&G Division of Subsistence household surveys, 2015.

Note Use of a resource obtained during a previous study year may be indicated when the sum of the percentage of households that received and harvested a resource is greater than the percentage of households that used the resource.

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 Blank cells indicate the survey did not collect harvest amount for the resource.

a. Summary rows have been converted to pounds usable weight.



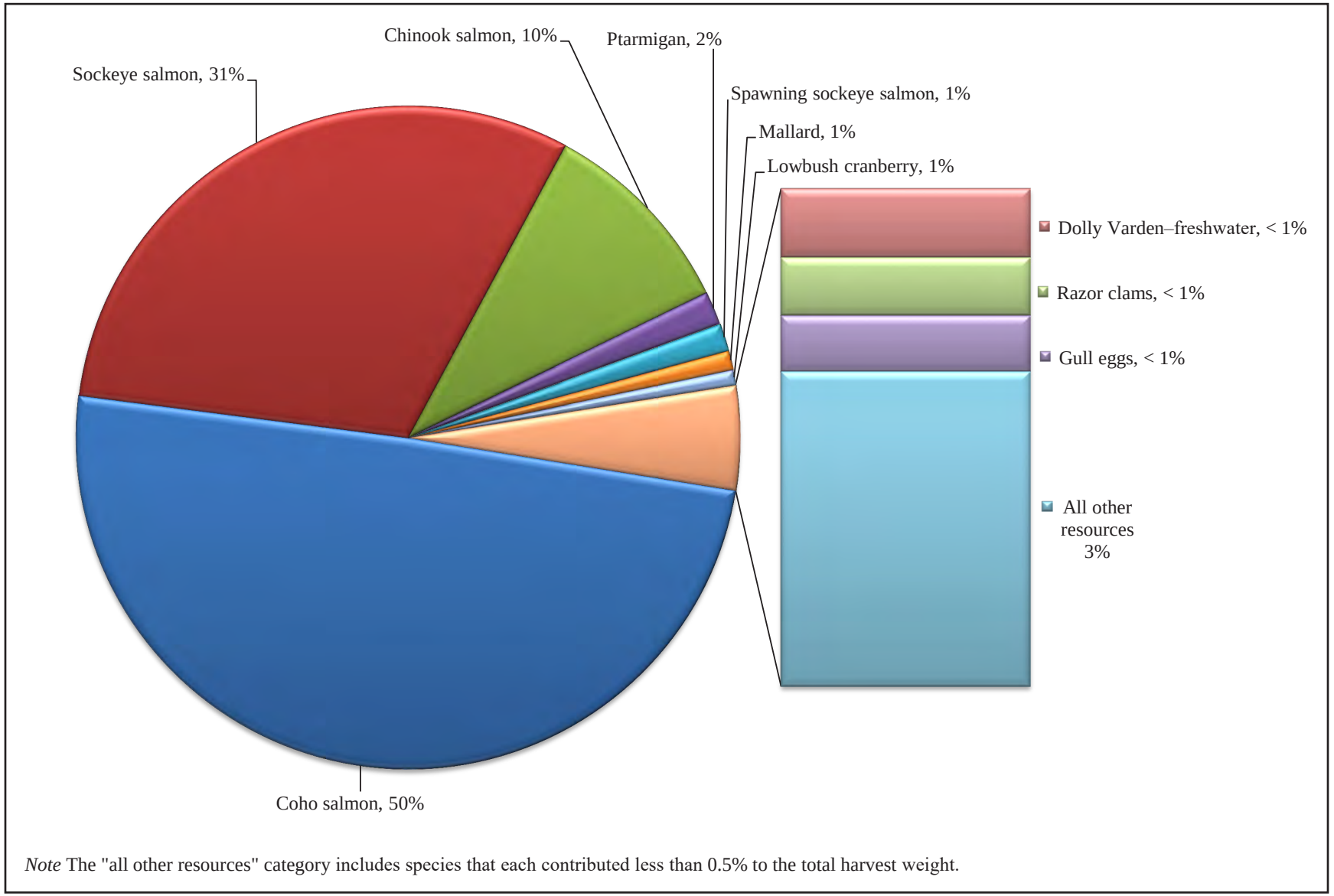
Note Categories having 0 lb of usable weight are not included.

Figure 2-14.–Composition of harvest in pounds usable weight, by resource category, Egegik, 2014.

Table 2-14.–Top ranked resources used by households, Egegik, 2014.

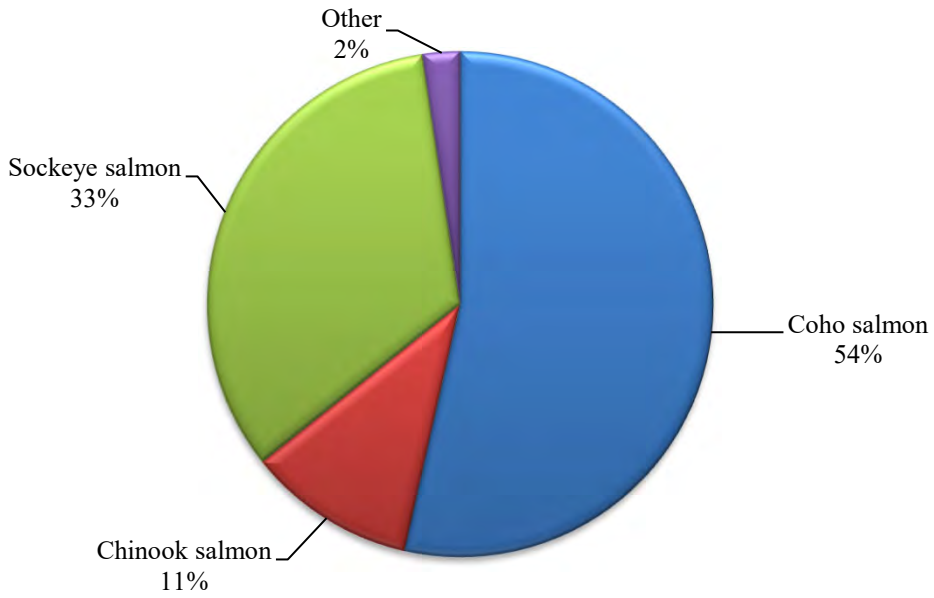
Rank[a]	Resource	Percentage of households using
1.	Sockeye salmon	80.0%
2.	Coho salmon	75.0%
3.	Moose	50.0%
3.	Ptarmigan	50.0%
5.	Chinook salmon	45.0%
6.	Gull eggs	40.0%
7.	Wood	30.0%
8.	Lowbush cranberry	25.0%
9.	Canada/cackling goose	20.0%
9.	Duck eggs	20.0%

Source ADF&G Division of Subsistence household surveys, 2015.
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 includes species that each contributed less than 0.5% to the total harvest weight.

Figure 2-15.–Top resources harvested by percentage of total harvest in pounds usable weight, Egegik, 2014.



Note The "other" category includes species that each contributed less than 1.5% to the total salmon harvest weight.

Figure 2-16.–Composition of salmon harvest in pounds usable weight, Egegik, 2014.

Salmon

Salmon was the most harvested resource category in Egegik in 2014. Overall, 85% of households used and attempted to harvest salmon, with generally good success (75% of households harvested) (Table 2-13). As seen in Figure 2-16, the salmon harvest comprised coho salmon (54% by weight), sockeye salmon (33%), Chinook salmon (11%), as well as pink, chum, and spawning sockeye salmon (altogether 2% of the salmon harvest). While coho salmon was the most harvested species, slightly more households used (80% versus 75%) and attempted to harvest (75% versus 65%) sockeye salmon (Table 2-13). For both species, 60% of households were successful at harvesting. More households shared coho salmon (35%) than any other species, but more households received sockeye salmon (35%) than any other. Chinook salmon were harvested by 35% of households, while 40% attempted to harvest, and 45% of households used Chinook salmon. Fewer households shared or received Chinook salmon than coho or sockeye salmon, with 10% and 20% of households, respectively, engaging in these activities.

Salmon were mainly harvested with subsistence gear and removed from commercial catches: 1,556 salmon (6,954 lb) were harvested with set gillnets and 643 salmon (3,250 lb) were removed from commercial harvests for home use (Table 2-15). Figure 2-17 is a visual representation of the salmon harvest weight caught by gear type. An estimated 68% of the salmon harvest weight was caught using subsistence gear (Table 2-16). For all salmon species except Chinook salmon, set gillnet was the most commonly used harvest method; pink salmon were harvested only by this method. Residents harvested 74% of their Chinook harvest weight through commercial removals. Sockeye salmon contributed the most weight (42%) to the harvest removed from commercial catches, followed by coho salmon (32%), then Chinook salmon (25%). The set gillnet harvest was predominantly coho salmon (64% of the harvest) and sockeye salmon (29%). Rod and reel was used only to harvest spawning sockeye salmon, which were also harvested by set gillnet and by other subsistence methods (note that, as identified by researchers during survey administration, this included salmon caught by hand).

Salmon fishing occurred in the fresh waters of the Egegik River and Becharof Lake, as well as at Paul's Beach and Church Hill Beach near Egegik (Figure 2-18).

Table 2-15.–Estimated harvest of salmon by gear type and resource, Egegik, 2014.

			Subsistence and personal use methods													
	Removed from commercial catch		Set gillnet		Seine		Dip net		Other method		Subsistence and personal use gear, any method		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**642.5**	**3,249.5**	**1,556.3**	**6,953.6**	**0.0**	**0.0**	**0.0**	**0.0**	**3.8**	**15.5**	**1,560.0**	**6,969.2**	**1.3**	**5.2**	**2,203.8**	**10,223.9**
Chum salmon	5.0	22.9	7.5	34.4	0.0	0.0	0.0	0.0	0.0	0.0	7.5	34.4	0.0	0.0	12.5	57.4
Coho salmon	232.5	1,046.3	983.8	4,426.9	0.0	0.0	0.0	0.0	0.0	0.0	983.8	4,426.9	0.0	0.0	1,216.3	5,473.1
Chinook salmon	76.3	818.0	26.3	281.6	0.0	0.0	0.0	0.0	0.0	0.0	26.3	281.6	0.0	0.0	102.5	1,099.6
Pink salmon	0.0	0.0	13.8	35.1	0.0	0.0	0.0	0.0	0.0	0.0	13.8	35.1	0.0	0.0	13.8	35.1
Sockeye salmon	328.8	1,362.3	493.8	2,046.1	0.0	0.0	0.0	0.0	0.0	0.0	493.8	2,046.1	0.0	0.0	822.5	3,408.4
Landlocked 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
Spawning sockeye salmon	0.0	0.0	31.3	129.5	0.0	0.0	0.0	0.0	3.8	15.5	35.0	145.0	1.3	5.2	36.3	150.2

Source ADF&G Division of Subsistence household surveys, 2015.
Note The harvested number of salmon is represented as individual fish harvested.

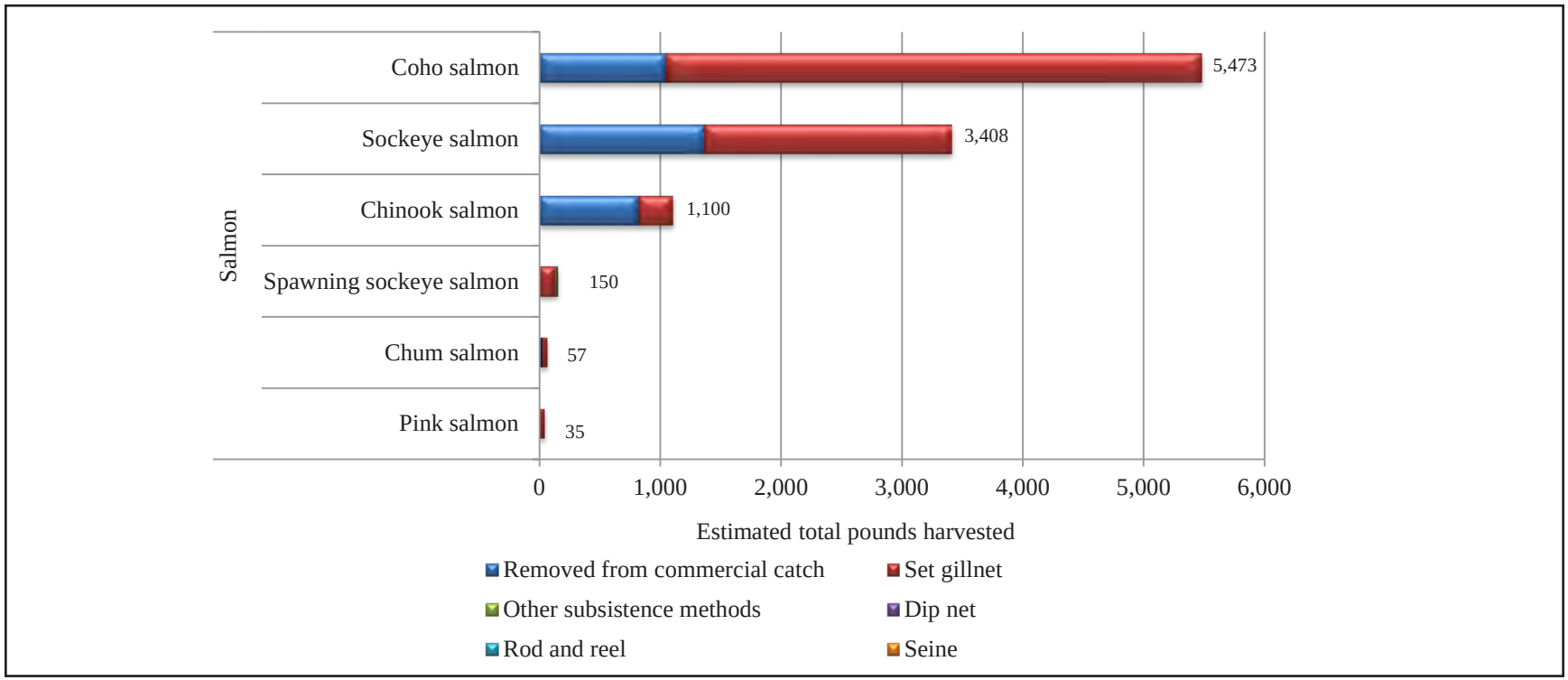


Figure 2-17.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Egegik, 2014.

Table 2-16.–Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Egegik, 2014.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Seine	Dip net	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Salmon	**Gear type**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**31.8%**	**68.0%**	**0.0%**	**0.0%**	**0.2%**	**68.2%**	**0.1%**	**100.0%**
	Total	**31.8%**	**68.0%**	**0.0%**	**0.0%**	**0.2%**	**68.2%**	**0.1%**	**100.0%**
Chum salmon	Gear type	0.7%	0.5%	0.0%	0.0%	0.0%	0.5%	0.0%	0.6%
	Resource	40.0%	60.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
	Total	0.2%	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.6%
Coho salmon	Gear type	32.2%	63.7%	0.0%	0.0%	0.0%	63.5%	0.0%	53.5%
	Resource	19.1%	80.9%	0.0%	0.0%	0.0%	80.9%	0.0%	100.0%
	Total	10.2%	43.3%	0.0%	0.0%	0.0%	43.3%	0.0%	53.5%
Chinook salmon	Gear type	25.2%	4.0%	0.0%	0.0%	0.0%	4.0%	0.0%	10.8%
	Resource	74.4%	25.6%	0.0%	0.0%	0.0%	25.6%	0.0%	100.0%
	Total	8.0%	2.8%	0.0%	0.0%	0.0%	2.8%	0.0%	10.8%
Pink salmon	Gear type	0.0%	0.5%	0.0%	0.0%	0.0%	0.5%	0.0%	0.3%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%
Sockeye salmon	Gear type	41.9%	29.4%	0.0%	0.0%	0.0%	29.4%	0.0%	33.3%
	Resource	40.0%	60.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
	Total	13.3%	20.0%	0.0%	0.0%	0.0%	20.0%	0.0%	33.3%
Landlocked 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%
Spawning sockeye salmon	Gear type	0.0%	1.9%	0.0%	0.0%	100.0%	2.1%	100.0%	1.5%
	Resource	0.0%	86.2%	0.0%	0.0%	10.3%	96.6%	3.4%	100.0%
	Total	0.0%	1.3%	0.0%	0.0%	0.2%	1.4%	0.1%	1.5%

Source ADF&G Division of Subsistence household surveys, 2015.

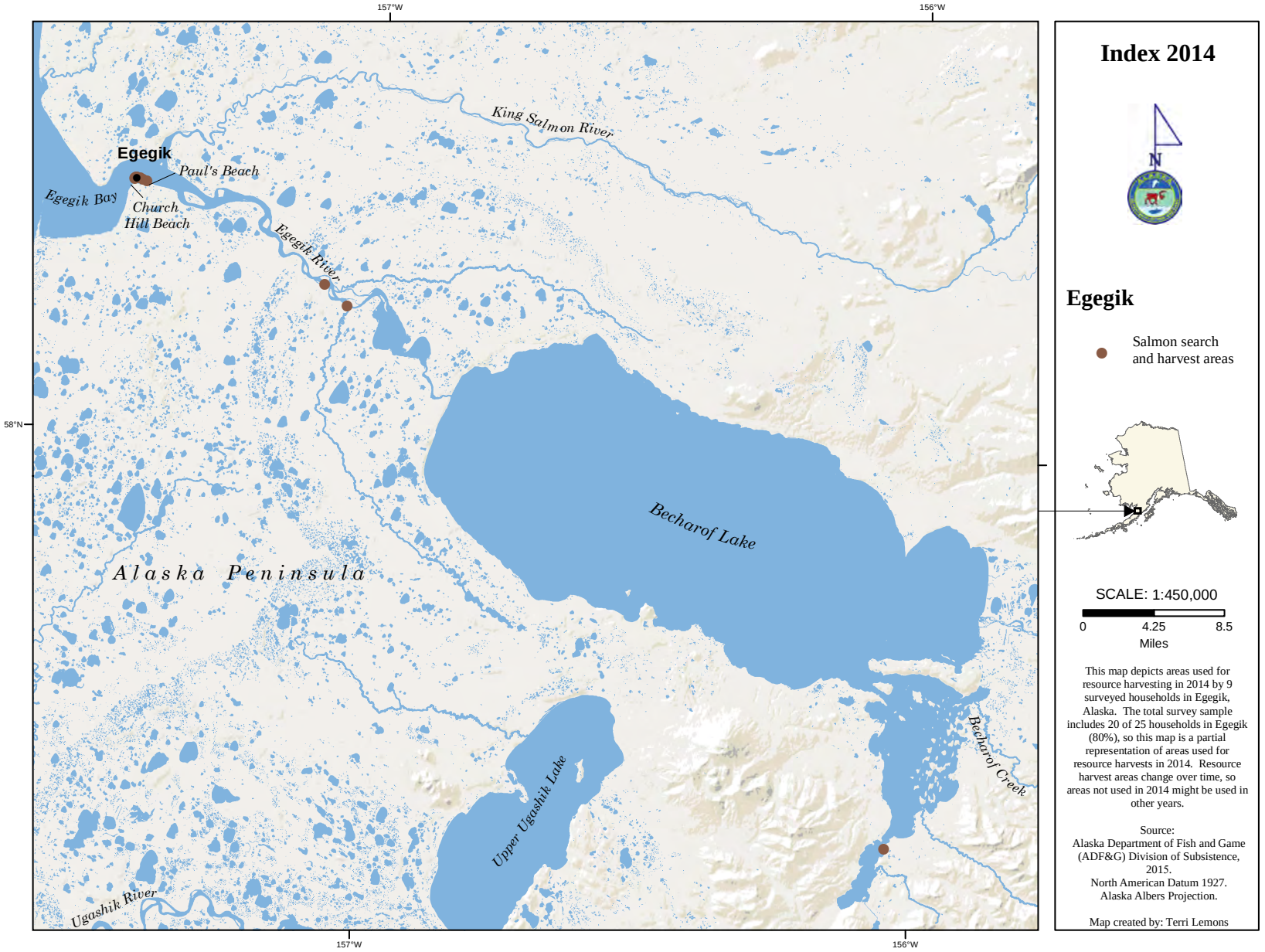


Figure 2-18.–Fishing and harvest locations of salmon, Egegik, 2014.

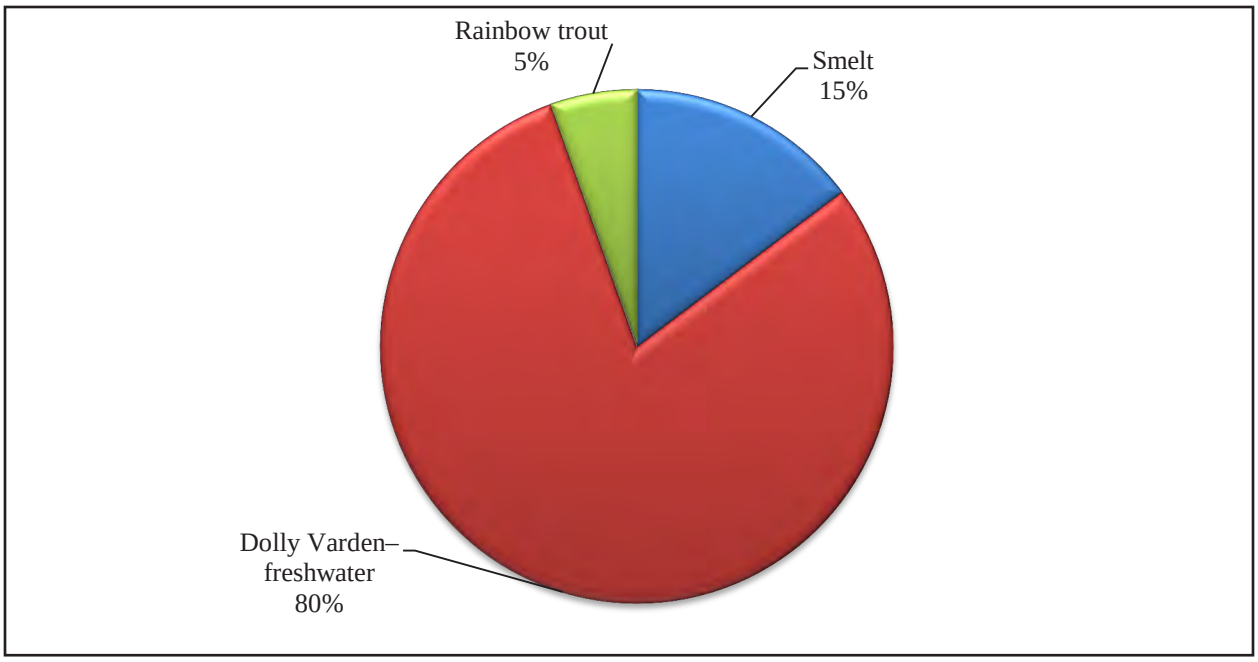


Figure 2-19.–Composition of nonsalmon fish harvest in pounds usable weight, Egegik, 2014.

Nonsalmon Fish

Few species of nonsalmon fish were harvested in 2014 (Figure 2-19). Overall, 25% of households harvested nonsalmon fish and 40% of households used these resources (Table 2-13). Dolly Varden contributed the most to the overall total with a harvest of 77 lb (1 lb per capita), followed distantly by smelt (14 lb) and rainbow trout (5 lb). These resources were used and harvested by 5%–15% of households. Residents indicated during the survey that they usually harvest more smelt by ice fishing but that the river did not freeze in 2014 to allow that harvest. No other nonsalmon fish resources were harvested in 2014. However, Pacific halibut and Pacific herring roe on kelp were both used by 5% of households. No households received or gave away rainbow trout and no households shared Pacific halibut. The remaining used resources—Dolly Varden, smelt, and Pacific herring roe on kelp—were each given away and received by 5% of households.

An estimated total of 58 lb of nonsalmon fish were harvested using rod and reel, and 39 lb were harvested using subsistence gear (Table 2-17). Figure 2-20 is a visual representation of the nonsalmon fish harvest weight caught by gear type. As estimated in total pounds of fish harvested, 60% of the nonsalmon fish harvest was caught using rod and reel gear (Table 2-18). Rod and reel was used to harvest 68% of the Dolly Varden and 100% of the rainbow trout harvest weight. Smelt were harvested solely with subsistence gear: 71% of the harvest was harvested with a set gillnet and the remainder weight was caught by jigging through the ice with a rod and reel. By weight, Dolly Varden composed 71% of the set gillnet harvest and 91% of the rod and reel harvest. Residents harvested nonsalmon fish along the Egegik River as well as at beaches around the community (Figure 2-21).

Table 2-17.–Estimated harvest of nonsalmon fish by gear type and resource, Egegik, 2014.

				Subsistence and personal use methods											
		Removed from commercial catch		Set gillnet		Dip net		Ice fishing		Other method		Subsistence and personal use 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	Number[a]	Pounds
Nonsalmon fish			**0.0**		**34.7**		**0.0**		**4.1**		**0.0**		**38.7**		**57.8**		**96.5**
Pacific herring	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	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	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	0.0	0.0
Capelin (grunion)	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	0.0	0.0
Smelt	gal	0.0	0.0	3.1	10.2	0.0	0.0	1.3	4.1	0.0	0.0	4.4	14.2	0.0	0.0	4.4	14.2
Pacific (gray) 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	0.0	0.0
Starry 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	0.0	0.0
Pacific halibut	lb	0.0	0.0	0.0	0.0	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	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	0.0	0.0
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	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	0.0	0.0
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	0.0	0.0
Salmon 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	0.0	0.0
Yellowfin 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	0.0	0.0
Alaska blackfish	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	0.0	0.0
Burbot	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	0.0	0.0
Dolly Varden–freshwater	ind	0.0	0.0	8.8	24.5	0.0	0.0	0.0	0.0	0.0	0.0	8.8	24.5	18.8	52.5	27.5	77.0
Dolly Varden–saltwater	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	0.0	0.0
Arctic grayling	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	0.0	0.0
Northern pike	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	0.0	0.0
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	3.8	5.3	3.8	5.3
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	0.0	0.0
Least cisco	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	0.0	0.0
Humpback whitefish	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	0.0	0.0
Round whitefish	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	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2015.

Note The summary row that includes 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.

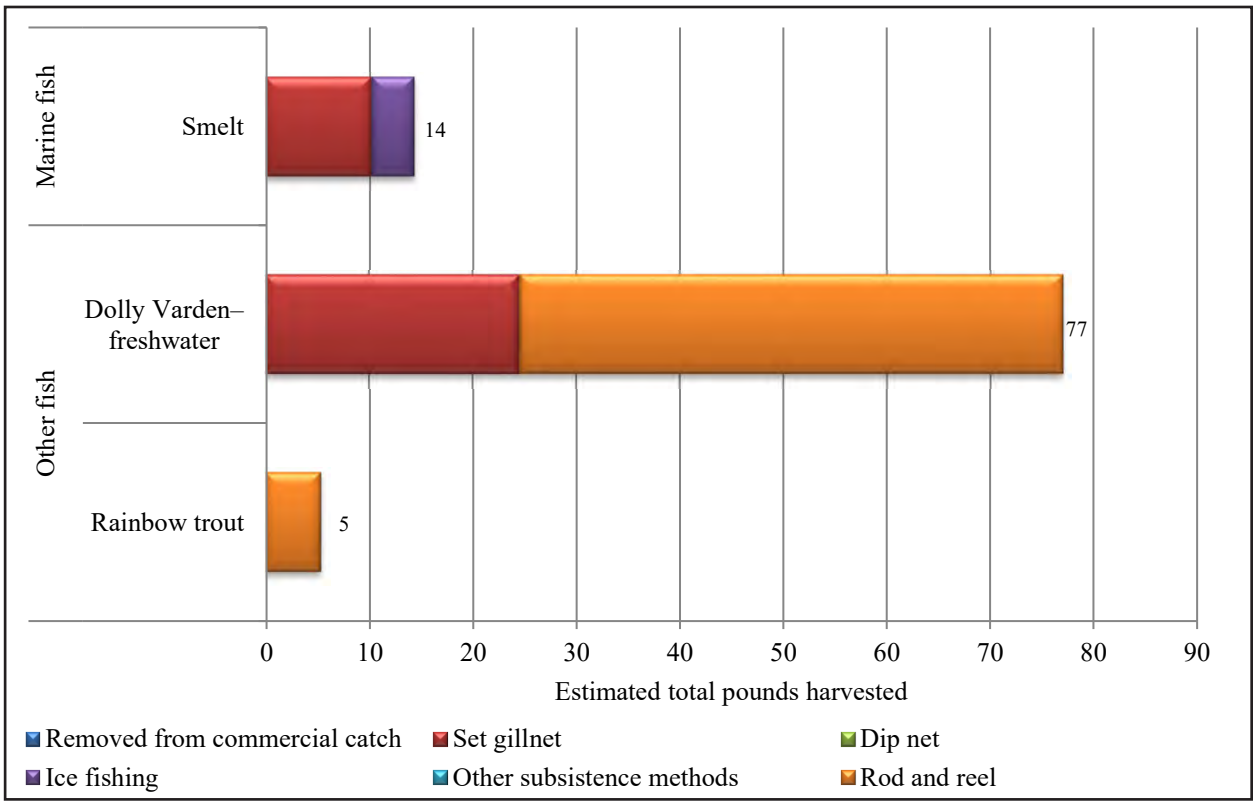


Figure 2-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Egegik, 2014.

Table 2-18.–Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Egegik, 2014.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Nonsalmon fish	**Gear type**	**0.0%**	**100.0%**	**0.0%**	**100.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**0.0%**	**35.9%**	**0.0%**	**4.2%**	**0.0%**	**40.1%**	**59.9%**	**100.0%**
	Total	**0.0%**	**35.9%**	**0.0%**	**4.2%**	**0.0%**	**40.1%**	**59.9%**	**100.0%**
Pacific herring	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%
Pacific herring sac roe	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%
Pacific herring spawn on kelp	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%
Capelin (grunion)	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%
Smelt	Gear type	0.0%	29.3%	0.0%	100.0%	0.0%	36.7%	0.0%	14.7%
	Resource	0.0%	71.4%	0.0%	28.6%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	10.5%	0.0%	4.2%	0.0%	14.7%	0.0%	14.7%
Pacific (gray) cod	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%
Starry flounder	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%
Pacific halibut	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%
Rockfish	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%
Sablefish (black cod)	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%

-continued-

Table 2-18.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Red Irish lord	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%
Sculpin	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%
Salmon shark	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%
Yellowfin sole	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%
Alaska blackfish	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%
Burbot	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%
Dolly	Gear type	0.0%	70.7%	0.0%	0.0%	0.0%	63.3%	90.9%	79.8%
Varden–freshwater	Resource	0.0%	31.8%	0.0%	0.0%	0.0%	31.8%	68.2%	100.0%
	Total	0.0%	25.4%	0.0%	0.0%	0.0%	25.4%	54.4%	79.8%
Dolly	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Varden–saltwater	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%
Arctic grayling	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%
Northern pike	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%

-continued-

Table 2-18.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Rainbow trout	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	5.4%
	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%	5.4%	5.4%
Steelhead	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%
Least cisco	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%
Humpback whitefish	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%
Round whitefish	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, 2015.

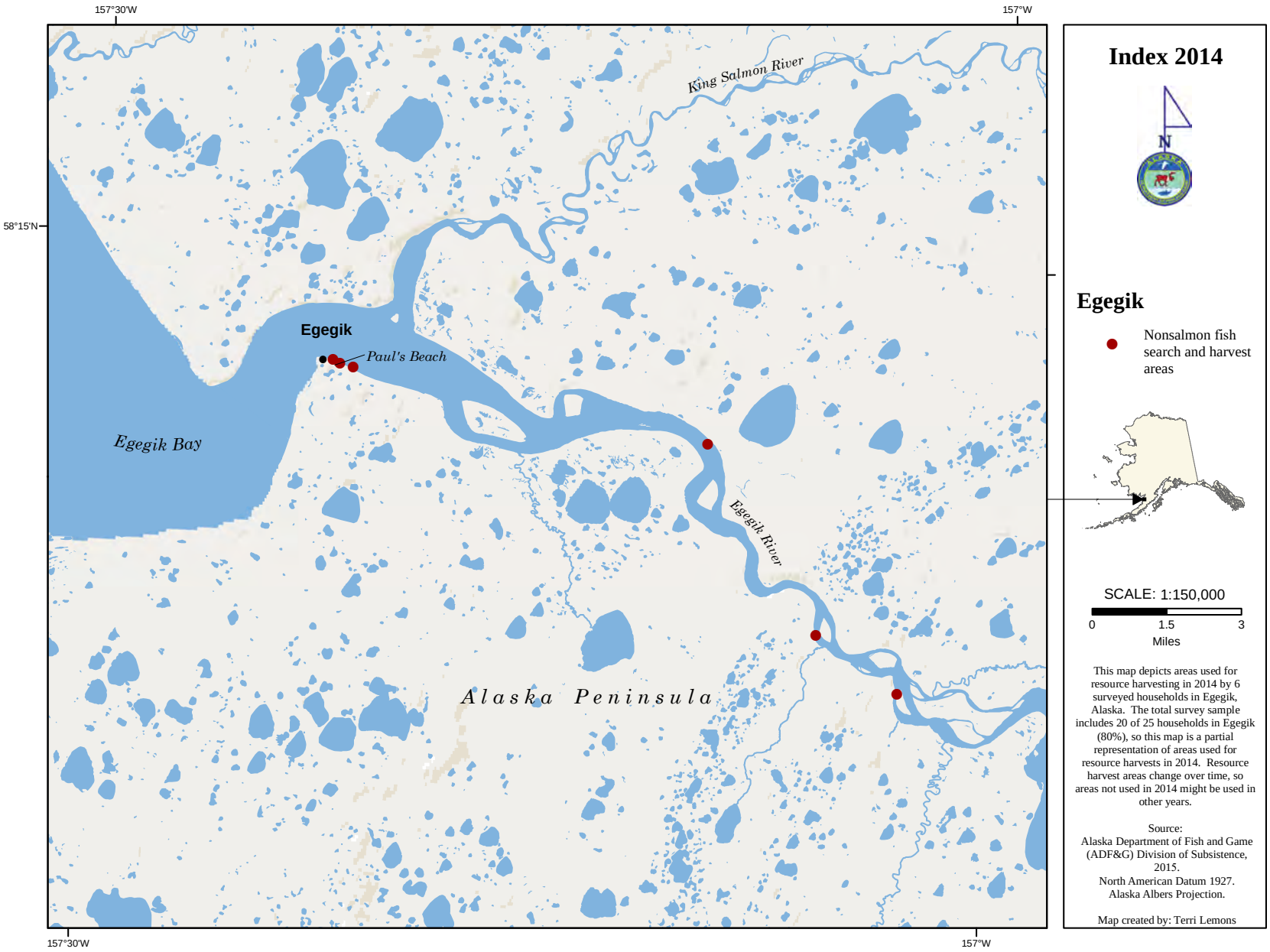


Figure 2-21.–Fishing and harvest locations of nonsalmon fish, Egegik, 2014.

Large Land Mammals

In 2014, 25% of Egegik households hunted moose but none were successful (Table 2-13). Despite this, 50% of households used moose through receipt of the resource and 10% of households further shared moose. No households hunted or used caribou or brown bears. Comments made during the survey indicated many challenges currently facing hunters. These challenges and the changing role of large land mammals in subsistence livelihoods will be further discussed in a later section comparing the harvest in 2014 to years past. Moose hunters traveled along the King Salmon River and the southern shores of Becharof Lake looking for moose (Figure 2-22).

Small Land Mammals/Furbearers

Three furbearers composed the harvest of small land mammals in 2014: river otters (50%, by number of animals harvested), wolverines (25%), and red foxes (25%) (Figure 2-23). These animals were not given a usable weight because they were not harvested for food (Table 2-13). Ten percent of households attempted to harvest each of these species: all successfully harvested river otters, and 5% of community households harvested the other two species. There was no giving or receiving of small land mammals. Historically, residents harvested and ate porcupines, but several respondents indicated during the survey that while porcupines used to be abundant, "they aren't seen here anymore." Five percent of households unsuccessfully hunted or laid traps for snowshoe hares.

Residents harvested small land mammals in November with an additional harvest of river otters occurring in an unknown month (Table 2-19). Residents searched for small land mammals immediately south of the Egegik River to the east of town as well as near the airport (Figure 2-24).

Marine Mammals

In the study year, 10% of households unsuccessfully hunted marine mammals; an estimated 5% of households hunted for harbor seals and 5% of households hunted beluga whales (Table 2-13). Households did not receive marine mammals either, so no use of marine mammals occurred in Egegik during the study year. Marine mammal hunting tends to be a specialized activity, engaged in by a select group of hunters. In Egegik, past marine mammals surveys have shown harvest of harbor seals in almost every year between 1992 and 2008 (Wolfe et al. 2009). In 2014, residents hunted marine mammals close to town and further offshore in Egegik Bay (Figure 2-25).

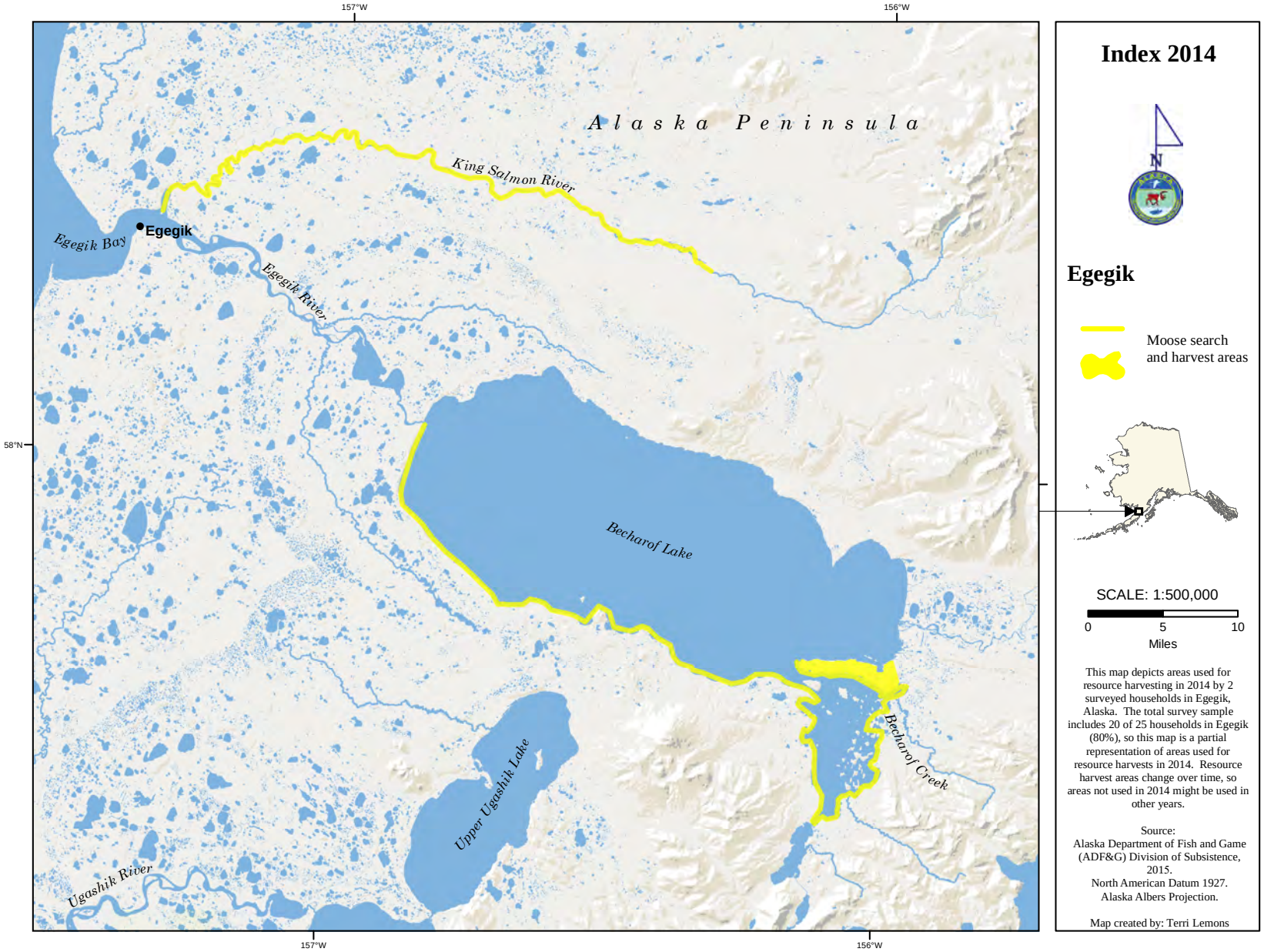


Figure 2-22.–Hunting locations of moose, Egegik, 2014.

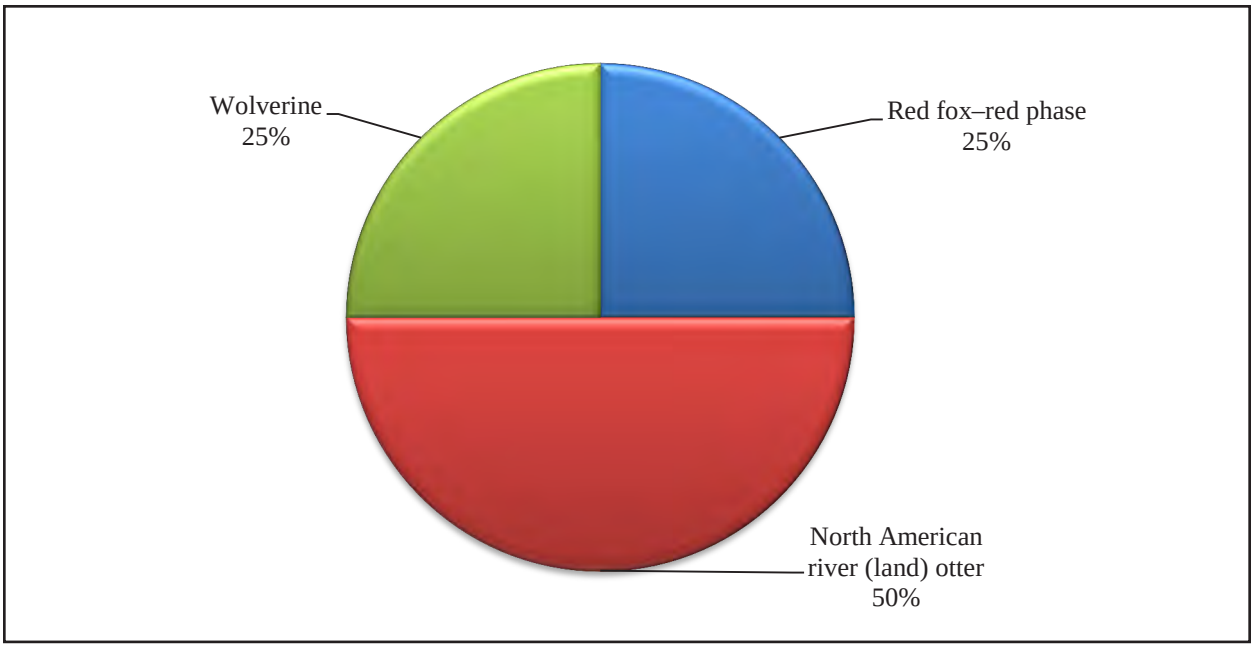


Figure 2-23.–Composition of small land mammal/furbearer harvest by individual animals harvested, Egegik, 2014.

Table 2-19.–Estimated small land mammal/furbearer harvests by month, Egegik, 2014.

	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**	**7.5**	**0.0**	**2.5**	**10.0**
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**
Arctic 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**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–red phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	**2.5**
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	2.5	0.0	2.5	**5.0**
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Mink	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
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	2.5	0.0	0.0	**2.5**

Source ADF&G Division of Subsistence household surveys, 2015.

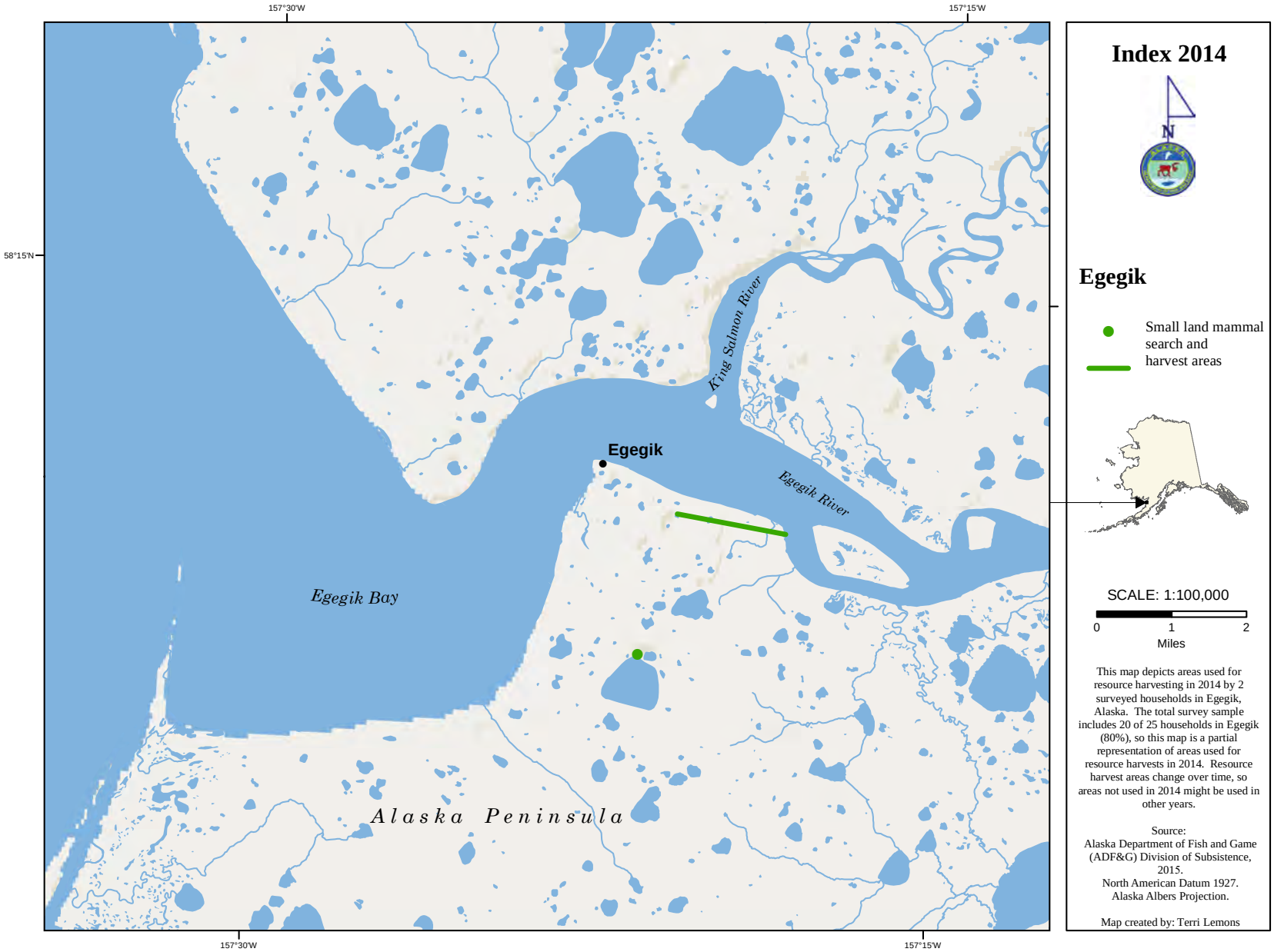


Figure 2-24.–Hunting and trapping locations of small land mammals/furbearers, Egegik, 2014.

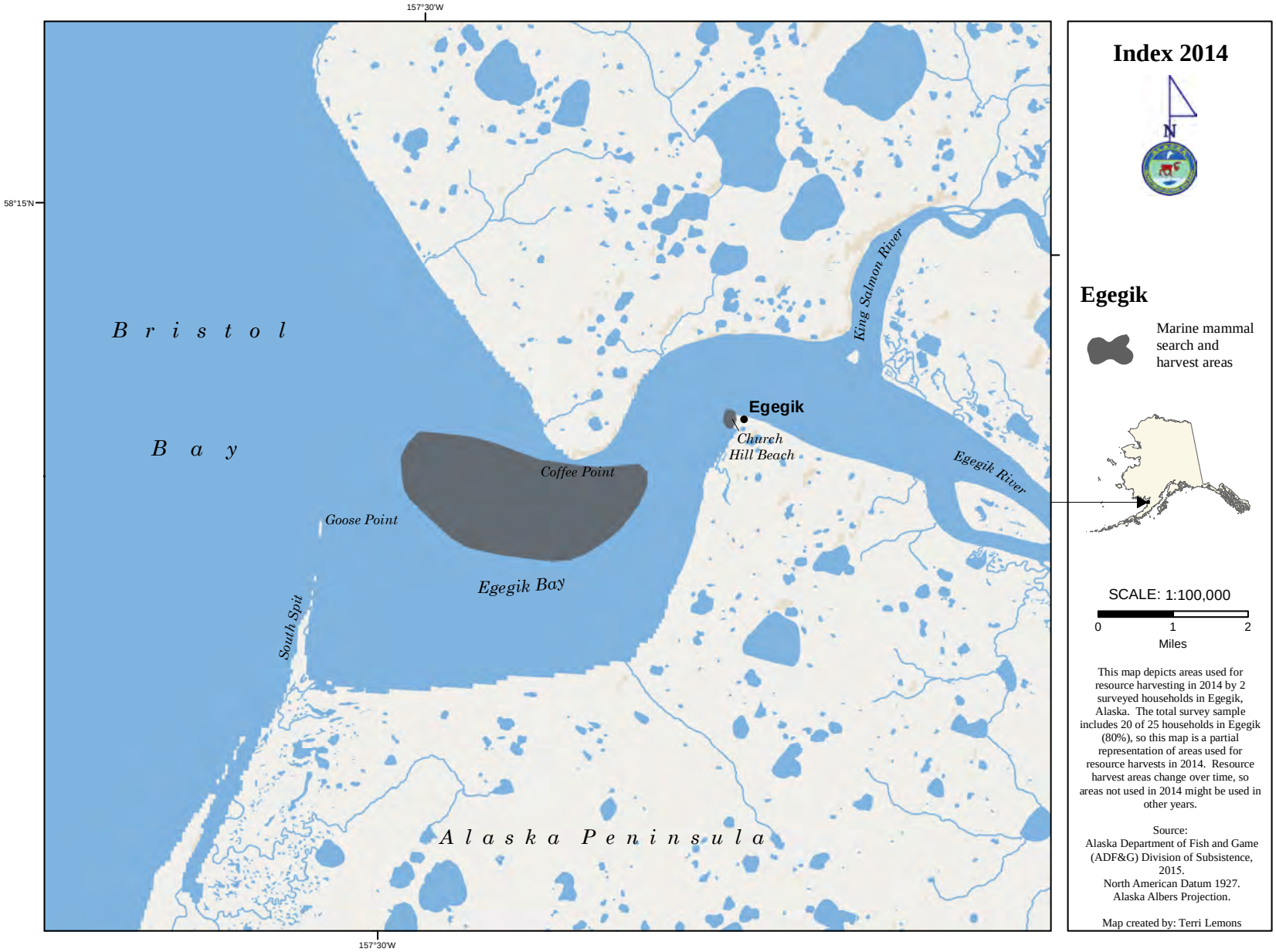
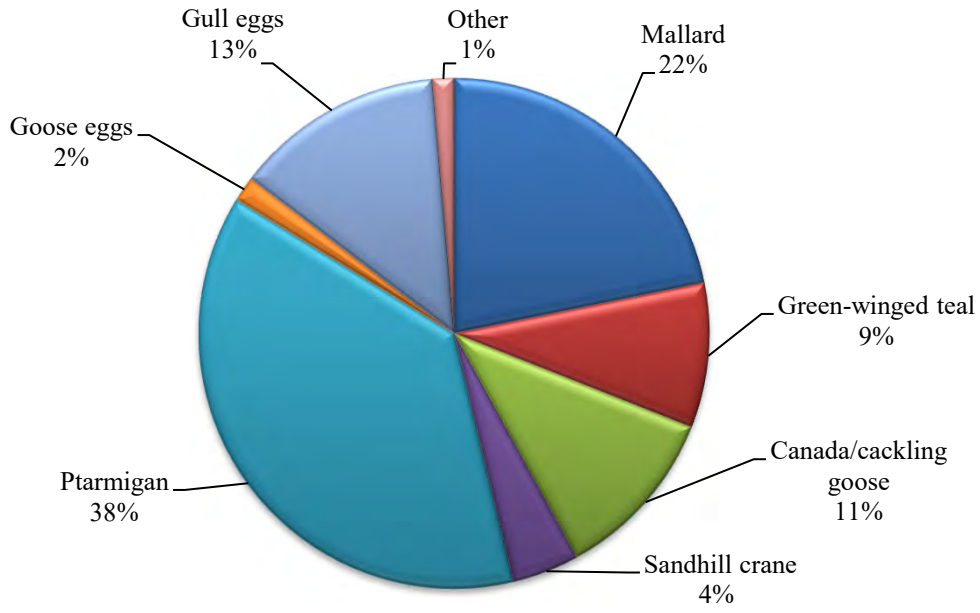


Figure 2-25.–Hunting locations of marine mammals, Egegik, 2014.



Note The "other" category includes species that each contributed less than 1.5% to the total birds and eggs harvest weight.

Figure 2-26.–Composition of bird and bird egg harvest in pounds usable weight, Egegik, 2014.

Birds and Eggs

Egegik residents harvested a variety of birds and eggs in 2014 (Figure 2-26). At 38%, ptarmigan composed the largest proportion of the overall bird and egg harvest by weight, followed by mallards at 22%. Gull eggs composed 13% of the total harvest, while green-winged teal and Canada/cackling geese accounted for much of the remainder; no other species contributed more than 5% to the total harvest. Approximately 477 lb of birds and bird eggs were harvested, or 7 lb per capita (Table 2-13). This harvest was disparately split between birds, at just less than 400 lb, and an egg harvest of approximately 77 lb. Residents harvested 179 lb of ptarmigan (224 birds; 3 lb per capita) and 104 lb of mallards (65 birds; 2 lb per capita). Among the bird egg harvest, gull eggs were the most harvested with 63 lb collected, or 1 lb per capita. All the other bird and bird egg harvests contributed less than 1 lb per capita. Other eggs harvested included goose eggs (30 eggs), duck eggs (50 eggs), and tern eggs (33 eggs).

Sixty percent of households used birds and eggs, with gull eggs and ptarmigan showing the highest use rates (40% and 50%, respectively) (Table 2-13). Cranes, other geese and ducks, goose eggs, and tern eggs were used by the fewest households (5% each). Households generally experienced success in harvesting, except for unspecified ducks and unspecified geese, white-fronted geese, and gull and tern eggs. For gull eggs, 45% of households attempted to harvest but only 30% of community households successfully harvested. An estimated 10% of households attempted to harvest tern eggs but one-half, or 5% of community households, were successful. Although no households were successful at harvesting unspecified ducks, unspecified geese, and white-fronted geese, 5% of households attempted to harvest these resources. From 10%–20% of households shared individual bird and bird egg resources that were harvested, except no households shared tern eggs or sandhill crane. Generally, only 5% of households received shared birds or eggs; no households received goose eggs or duck eggs, and 10% and 15% of households received gull eggs and ptarmigan, respectively.

Table 2-20.–Estimated bird harvests by season, Egegik, 2014.

Resource	Estimated harvest by season					
	Spring	Summer	Fall	Winter	Season unknown	**Total**
All birds	**0.0**	**76.3**	**228.8**	**93.8**	**0.0**	**398.8**
Bufflehead	0.0	0.0	0.0	0.0	0.0	**0.0**
Canvasback	0.0	0.0	0.0	0.0	0.0	**0.0**
Common eider	0.0	0.0	0.0	0.0	0.0	**0.0**
King eider	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller's eider	0.0	0.0	0.0	0.0	0.0	**0.0**
Gadwall	0.0	0.0	0.0	0.0	0.0	**0.0**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Harlequin duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	0.0	27.5	37.5	0.0	0.0	**65.0**
Common merganser	0.0	0.0	0.0	0.0	0.0	**0.0**
Red-breasted merganser	0.0	0.0	0.0	0.0	0.0	**0.0**
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**
Black scoter	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern shoveler	0.0	0.0	0.0	0.0	0.0	**0.0**
Green-winged teal	0.0	12.5	75.0	0.0	0.0	**87.5**
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**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Canada/cackling goose	0.0	8.8	10.0	0.0	0.0	**18.8**
Emperor goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	0.0	0.0	**0.0**
Trumpeter swan	0.0	0.0	0.0	0.0	0.0	**0.0**
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	3.8	0.0	0.0	0.0	**3.8**
Common snipe	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	23.8	106.3	93.8	0.0	**223.8**

Source ADF&G Division of Subsistence household surveys, 2015.

Birds were harvested predominantly in the fall (229 birds) but also in the winter (94 birds) and summer (76 birds) (Table 2-20).[6] Ducks and geese were harvested most often in the fall, though there were some harvests documented in the summer (defined as July through September on the survey) as well. Ptarmigan were harvested in the fall and winter (106 birds and 94 birds, respectively) but also in the summer (24 birds). Sandhill cranes were harvested solely during the months defined as summer on the survey.

Birds and bird eggs were harvested south and southeast of town (Figure 2-27). Ptarmigan were searched for over the largest area, extending throughout an area down the Bristol Bay coast and along the Egegik River. Ducks and geese were harvested along the southern shore of Egegik Bay, in a small area on the coast of Bristol Bay, and along the Swampy River. Bird eggs were harvested at Egg Island in Egegik River, and within a swath of land between the Egegik and Swampy rivers.

6. On the survey form, seasons of bird harvest were defined as follows: winter—January through April; spring—May and June; summer—July through September; and fall—October through December.

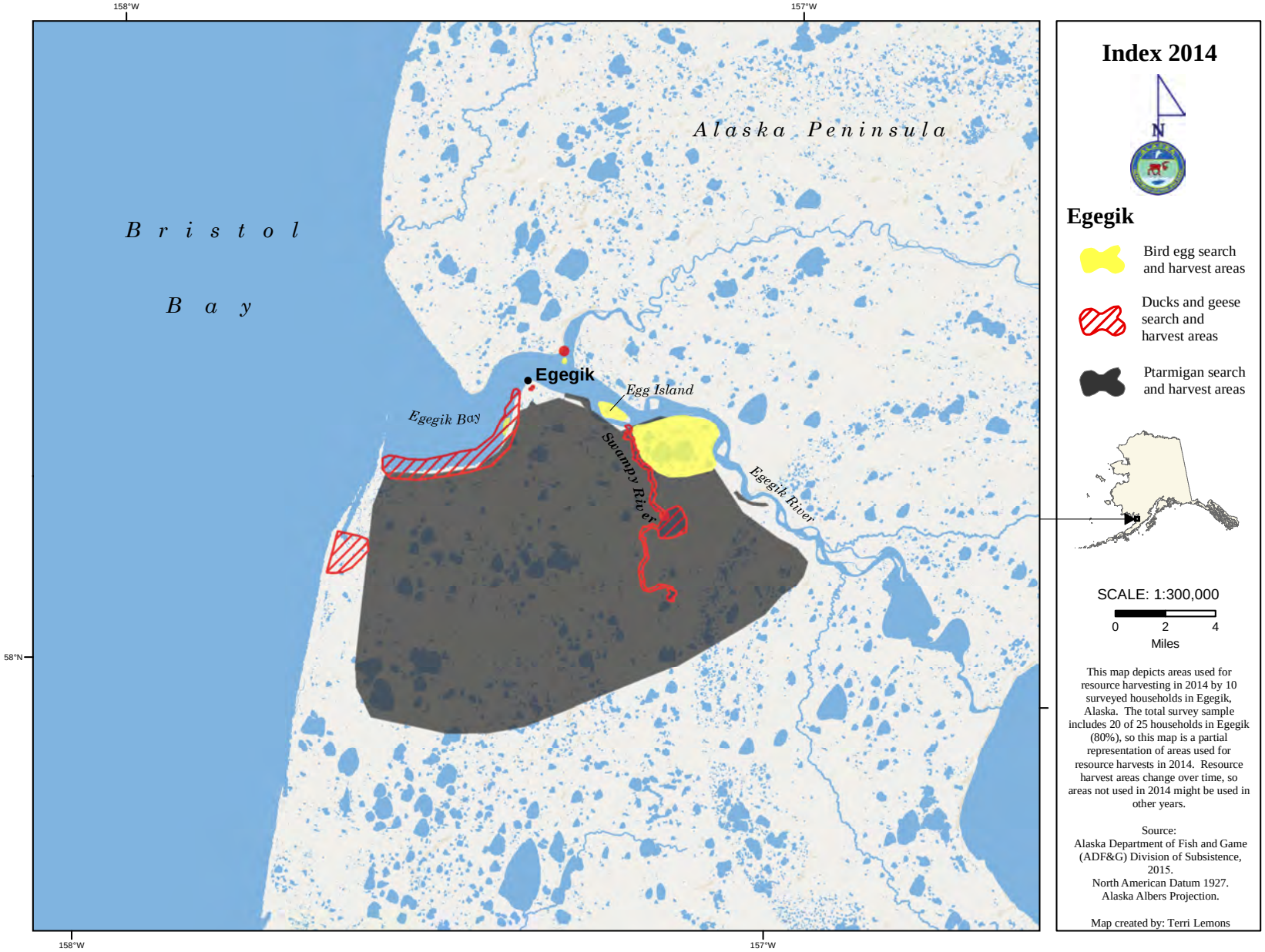


Figure 2-27.–Hunting and harvest locations of birds and bird eggs, Egegik, 2014.

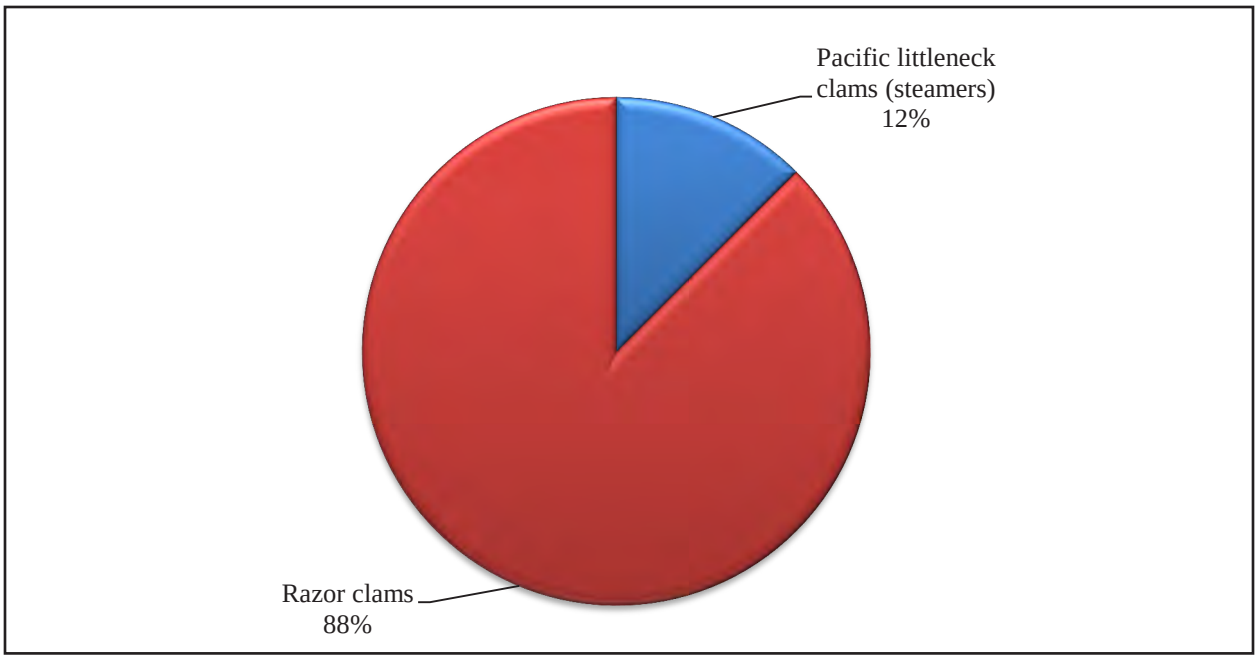


Figure 2-28.–Composition of marine invertebrate harvest in pounds usable weight, Egegik, 2014.

Marine Invertebrates

Egegik residents harvested few types of marine invertebrates in 2014. The harvest was comprised entirely of razor clams (88% of harvest weight) and Pacific littleneck clams (12%) (Figure 2-28). A total of 75 lb of marine invertebrates was harvested: 22 gallons of razor clams (66 lb; 1 lb per capita) and 3 gallons of Pacific littleneck clams (9 lb; less than 1 lb per capita) (Table 2-13). Five percent of households attempted to harvest, successfully harvested, and used both razor clams and Pacific littleneck clams. The latter species was also shared by 5% of households, though no surveyed households in Egegik reported receiving any. Households traveled to the entrance of Egegik Bay to harvest marine invertebrates, although no map is provided to depict the specific area. Respondents also noted during the survey that households would travel to the Pacific Ocean side of the peninsula to harvest razor clams.

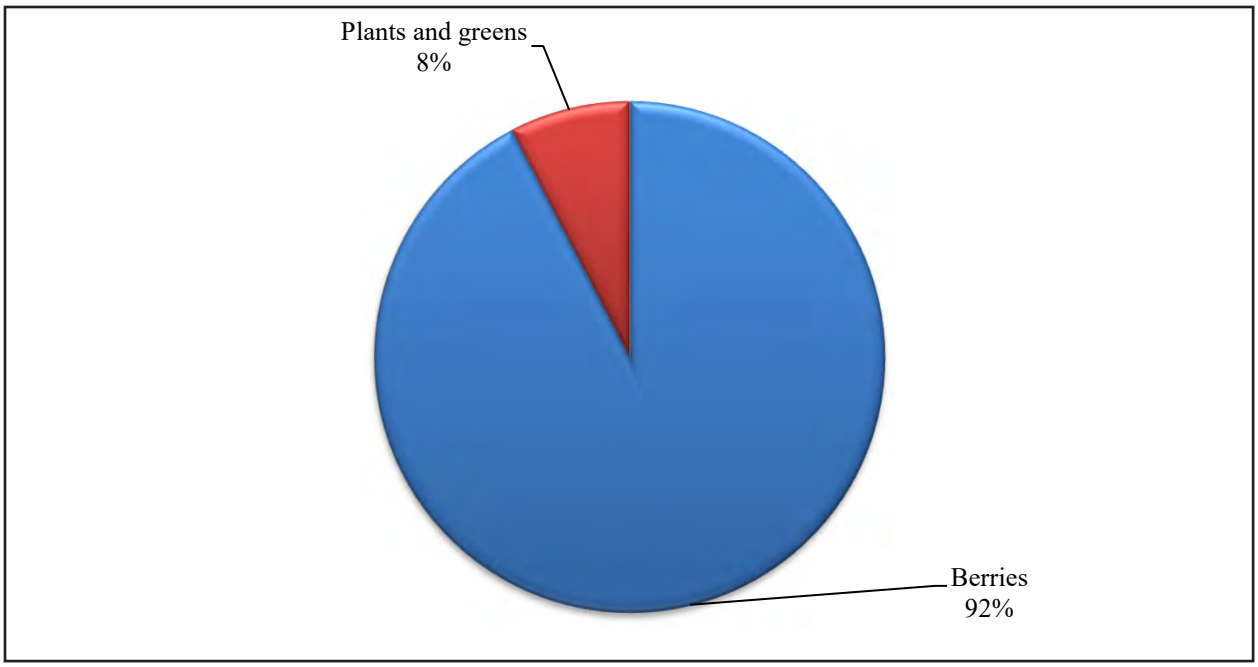


Figure 2-29.–Composition of vegetation harvest by type in pounds usable weight, Egegik, 2014.

Vegetation

In 2014, Egegik households harvested plants, greens, and berries to eat as well as wood for steam baths and saunas (Table 2-13). By weight, 92% of the edible vegetation harvest was berries (Figure 2-29). Several types of berries were harvested, but lowbush cranberries and blackberries (crowberries) were harvested in the greatest amounts; the third most harvested resource was blueberries, but by a comparably smaller volume of harvest (Table 2-13). A total of 81 lb (1 lb per capita; 20 gallons) of lowbush cranberries, 63 lb (1 lb per capita; 16 gallons) of crowberries, and 14 lb (less than 1 lb per capita; 4 gallons) of blueberries were harvested. Less than two gallons each of salmonberries, nagoonberries, and raspberries were also harvested. An estimated 5%–25% of households used or harvested berries. While 40% of households attempted to harvest crowberries, only 20% of households actually harvested crowberries. Several respondents noted that 2014 was a poor berry year. Berries were not widely shared, with only 10% of households receiving some lowbush cranberries. For plants, yarrow was harvested in the greatest amount (6 lb; less than 1 lb per capita), but wild rhubarb, Labrador tea, sourdock, fireweed, wild parsley, and other greens were also harvested. For each resource, 5% of households used, attempted to harvest, or harvested; also, 5% of households shared fireweed. In contrast, wood was harvested by 30% of households and used by the same proportion. Five percent of households also shared wood.

In 2014, Egegik residents harvested berries and greens just south of the community and along the coast of Egegik Bay, as well as near the community of King Salmon (Figure 2-30).

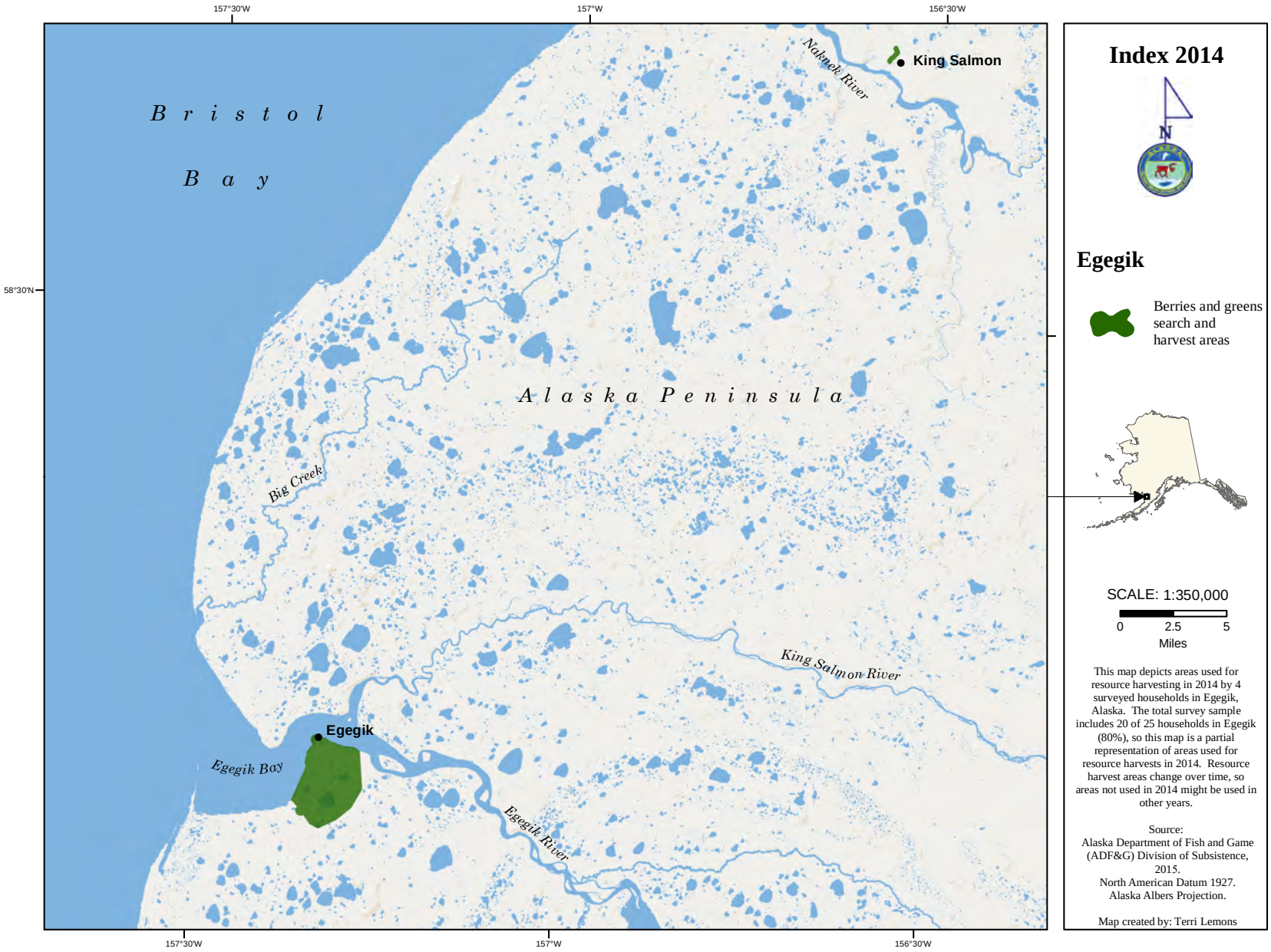


Figure 2-30.–Gathering and harvest locations of vegetation, Egegik, 2014.

Comparing Harvests and Uses in 2014 with Previous Years

Use Assessments

Researchers asked respondents to assess their own harvests in two ways: 1) whether they used more, less, or about the same amount of nine resource categories and all wild resources overall in 2014 as in the past five years, and 2) whether they got "enough" of each of the nine resource categories and all wild resources overall. 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 then asked to evaluate the severity of the impact to their household as a result of not getting enough. Because not every household uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply chose not to answer questions. This section discusses responses to those questions in order of the most to the least used resource category (Figure 2-12).

Salmon was the most used and harvested of all the subsistence resource categories included in the survey administered to Egegik households. Seventy percent of households explained that they used the same amount of salmon in 2014 as they did in previous years, 10% reported that they used less, 10% said they used more, and 10% did not normally use salmon (Table 2-21; Figure 2-31). When asked why, 50% of the respondents (one household) that used salmon less indicated that they did so due to less sharing, 50% stated family or personal reasons, and 50% needed less salmon in comparison to recent previous years (Table 2-22). For the two households that used more salmon in the study year, getting or fixing equipment, having more success, having more time, and having more help were the reasons provided (Table 2-23). In Egegik, 5% of sampled respondents (one household) stated that they did not get enough salmon (Figure 2-32). When asked to evaluate the impact of not getting enough salmon, the household described it as not noticeable (Table 2-24).

Birds and eggs was the second most used of all the subsistence resource categories included in the survey, but note that assessment questions were asked about birds and bird eggs separately. Twenty-six percent of responding households explained that they used the same amount of birds in 2014 as they did in previous years, 47% reported that they used less, and 5% said they used more (Table 2-21; Figure 2-31). For bird eggs, 20% of households explained that they used the same amount in 2014 as they did in previous years, 35% reported that they used less, and 10% said they used more. When asked why they used less birds, 44% of households indicated that they did so due to lack of effort. Only 14% indicated a lack of effort for using fewer bird eggs (Table 2-22). The most prominent reasons given for less use of bird eggs were unsuccessful (29%), resources less available (29%), and working/no time (29%); the latter two reasons were also cited by 22% of households that used birds less. Other stated reasons for using less birds and less bird eggs included lack of equipment and the weather. One household also indicated it was too far to travel to harvest birds. For the one household that used more birds and the two households that used more bird eggs in the study year, increased effort was the only reason provided (Table 2-23). In Egegik, 15% of sampled respondents stated that they did not get enough birds or bird eggs (Figure 2-32). When households that did not get enough birds were asked to evaluate the impact of not getting enough, 33% described the impact as minor and 33% stated that the impact was severe (Table 2-24). For households that did not get enough bird eggs, 67% described the impact to the household as not noticeable, and 33% stated the impact was minor.

Though not harvested in large amounts, vegetation was used by more than one-half of the households in Egegik. Fifteen percent of households explained that they used the same amount of vegetation in 2014 as they did in previous years, 55% reported that they used less, and 5% said they used more (Table 2-21; Figure 2-31). When asked why they used less, 73% of households indicated that they did so due to the resources being less available (Table 2-22). Other stated reasons for using less vegetation included weather/environment, family/personal reasons, and working/no time to harvest. The household that used more vegetation in the study year stated that it was because of family or personal reasons and that more vegetation resources were needed (Table 2-23). In Egegik, 50% of sampled respondents stated that they did not get enough vegetation (Figure 2-32). When households that did not get enough vegetation were asked to evaluate the impact of not getting enough, 10% described it as not noticeable, 40% described the impact as minor, and 30% explained that not getting enough vegetation had a major effect on their household (Table 2-24).

Table 2-21.–Changes in household uses of resources compared to recent years, Egegik, 2014.

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	**20**	**20**	**20**	**100.0%**	**16**	**80.0%**	**19**	**95.0%**	**7**	**35.0%**		
All resources	20	18	18	100.0%	6	33.3%	7	38.9%	5	27.8%	0	0.0%
Salmon	20	20	18	90.0%	2	10.0%	14	70.0%	2	10.0%	2	10.0%
Nonsalmon fish	20	19	14	73.7%	5	26.3%	8	42.1%	1	5.3%	5	26.3%
Large land mammals	20	19	14	73.7%	7	36.8%	5	26.3%	2	10.5%	5	26.3%
Small land mammals	20	17	4	23.5%	1	5.9%	1	5.9%	2	11.8%	13	76.5%
Marine mammals	20	20	2	10.0%	2	10.0%	0	0.0%	0	0.0%	18	90.0%
Birds	20	19	15	78.9%	9	47.4%	5	26.3%	1	5.3%	4	21.1%
Bird eggs	20	20	13	65.0%	7	35.0%	4	20.0%	2	10.0%	7	35.0%
Marine invertebrates	20	19	4	21.1%	2	10.5%	2	10.5%	0	0.0%	15	78.9%
Vegetation	20	20	15	75.0%	11	55.0%	3	15.0%	1	5.0%	5	25.0%

Source ADF&G Division of Subsistence household surveys, 2015.

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

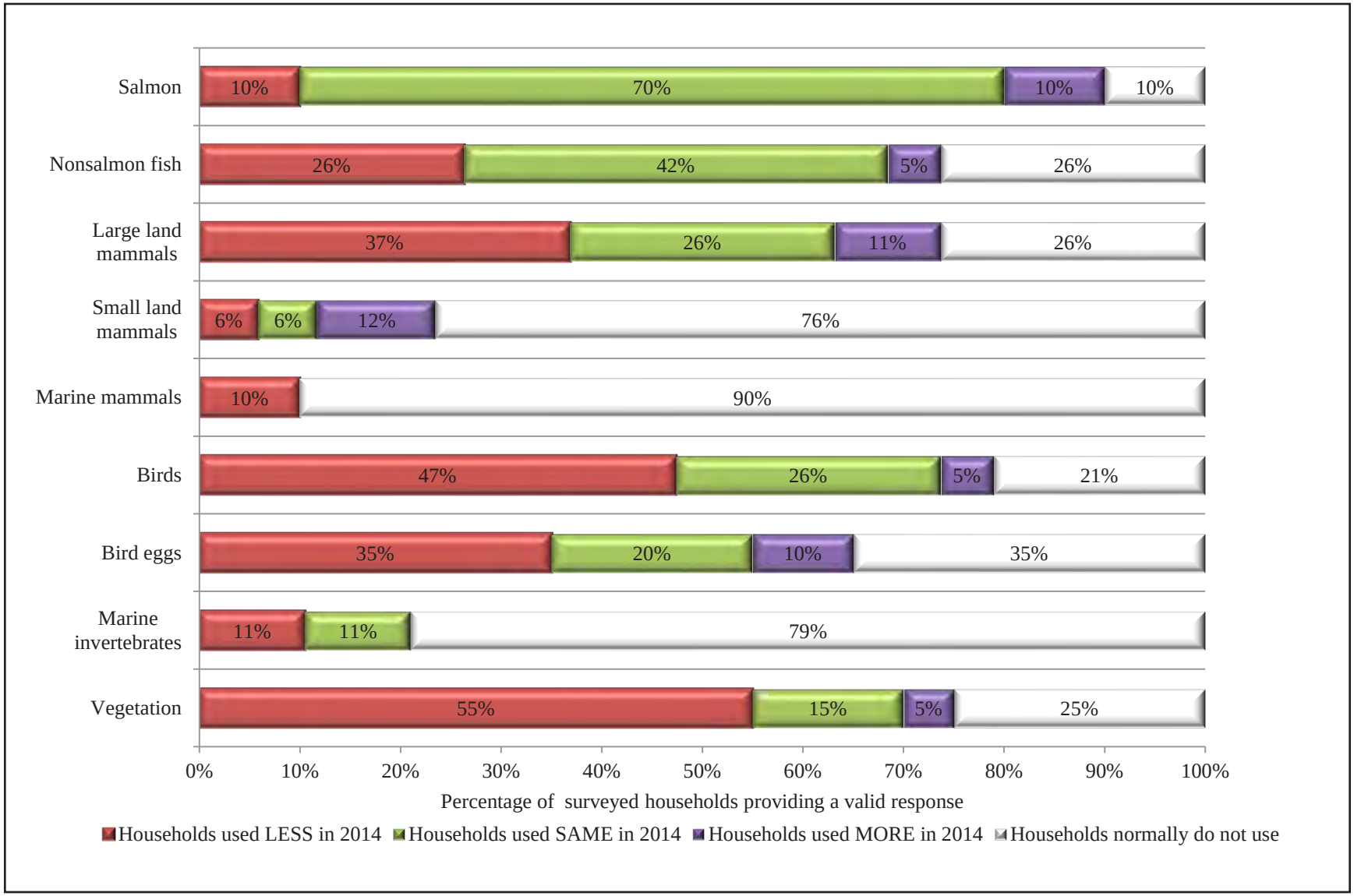


Figure 2-31.–Changes in household uses of resources compared to recent years, Egegik, 2014.

Table 2-22.–Reasons for less household uses of resources compared to recent years, Egegik, 2014.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Used other resources		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	Number	Percentage
Any resource	**20**	**16**	**4**	**25.0%**	**0**	**0%**	**12**	**75.0%**	**3**	**19%**	**3**	**19%**	**1**	**6%**	**4**	**25.0%**	**4**	**25.0%**	**9**	**56.3%**
All resources	18	6	1	16.7%	0	0%	3	50.0%	0	0%	0	0%	0	0%	2	33.3%	0	0.0%	1	16.7%
Salmon	20	2	1	50.0%	0	0%	0	0.0%	0	0%	0	0%	1	50%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	19	5	0	0.0%	0	0%	0	0.0%	0	0%	1	20%	0	0%	0	0.0%	0	0.0%	3	60.0%
Large land mammals	19	7	0	0.0%	0	0%	3	42.9%	2	29%	0	0%	1	14%	0	0.0%	1	14.3%	0	0.0%
Small land mammals	17	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	20	2	0	0.0%	0	0%	1	50.0%	0	0%	0	0%	0	0%	0	0.0%	1	50.0%	0	0.0%
Birds	19	9	0	0.0%	0	0%	2	22.2%	1	11%	2	22%	0	0%	4	44.4%	0	0.0%	1	11.1%
Bird eggs	20	7	0	0.0%	0	0%	2	28.6%	0	0%	1	14%	0	0%	1	14.3%	2	28.6%	1	14.3%
Marine invertebrates	19	2	0	0.0%	0	0%	0	0.0%	0	0%	0	0%	0	0%	2	100.0%	0	0.0%	0	0.0%
Vegetation	20	11	2	18.2%	0	0%	8	72.7%	0	0%	0	0%	0	0%	0	0.0%	0	0.0%	5	45.5%

-continued-

Table 2-22.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Working/ no time		Regulations		Resource small or diseased		Gas/equipment too expensive		Needed less		Competition		Had no help		Other reasons	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**20**	**16**	**3**	**19%**	**4**	**25.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**6.3%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
All resources	18	6	2	33%	2	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	20	2	0	0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	19	5	1	20%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	19	7	0	0%	2	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	17	1	1	100%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	20	2	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	19	9	2	22%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	20	7	2	29%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	19	2	0	0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	11	1	9%	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, 2015.

a. Valid responses do not include households that did not provide any response to the less, same, or more use assessment question.

Table 2-23.–Reasons for more household uses of resources compared to recent years, Egegik, 2014.

Resource category	Valid responses[a]	Households reporting reasons for more use	Family/ personal		Used other resources		Increased availability		Traveled farther		Got/ fixed equipment		Received more		Increased effort		More success	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**20**	**7**	**2**	**28.6%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**14.3%**	**2**	**28.6%**	**3**	**42.9%**	**2**	**28.6%**
All resources	18	5	2	40.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	40.0%	1	20.0%
Salmon	20	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%
Nonsalmon fish	19	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Large land mammals	19	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Small land mammals	17	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1	50.0%
Marine mammals	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	19	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Bird eggs	20	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Marine invertebrates	19	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

-continued-

Table 2-23.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Favorable weather		Had more time		Regulations		Store-bought too expensive		Needed more		Substitute for unavailable resource(s)		Had more help		Other reasons	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**20**	**7**	**1**	**14.3%**	**3**	**42.9%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**14.3%**	**0**	**0.0%**	**1**	**14.3%**	**0**	**0.0%**
All resources	18	5	0	0.0%	1	20.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	20	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Nonsalmon fish	19	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	19	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	17	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	20	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds	19	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bird eggs	20	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	19	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	20	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

a. Valid responses do not include households that did not provide any response to the less, same, or more use assessment question.

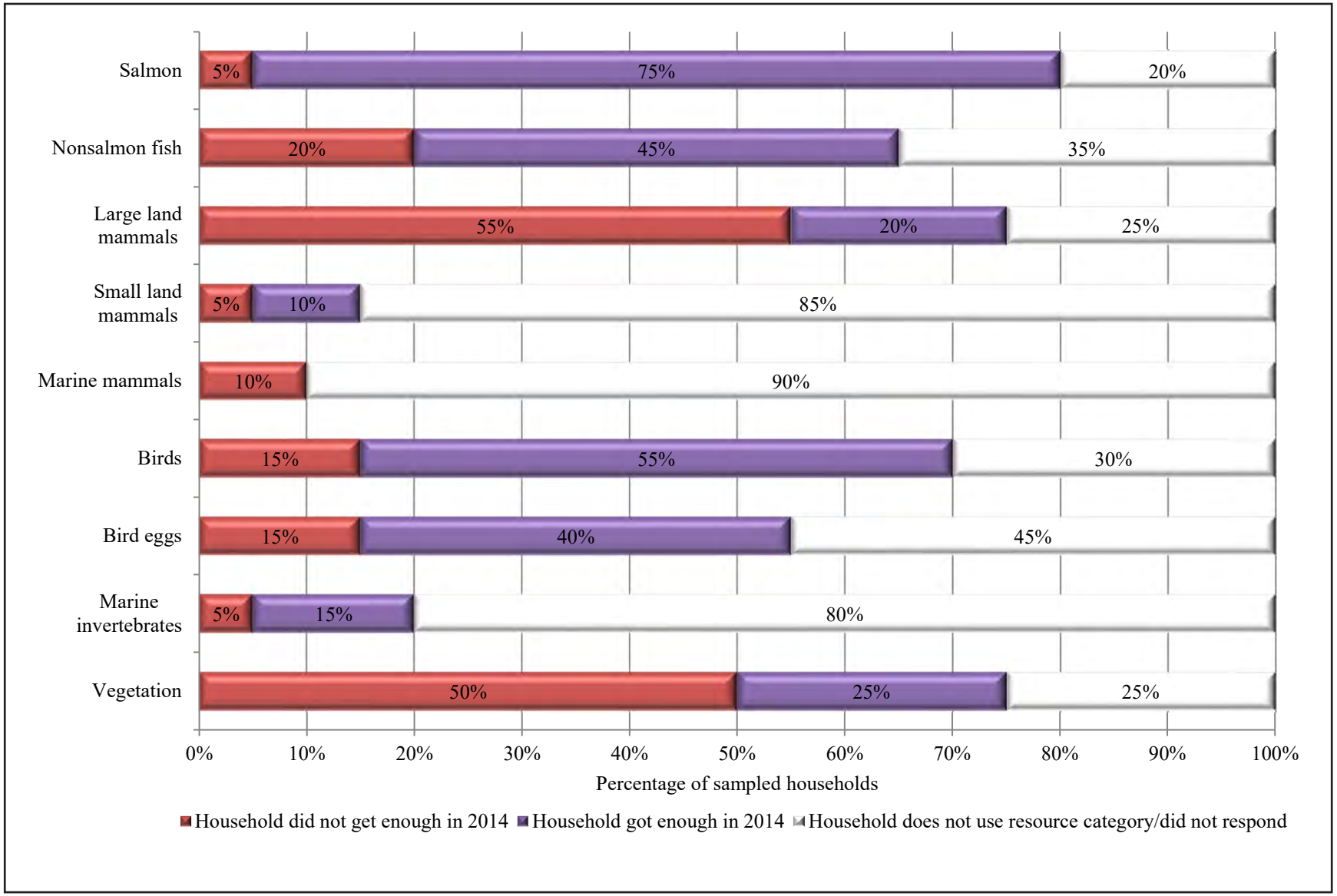


Figure 2-32.–Percentage of sampled households reporting whether they had enough resources, Egegik, 2014.

Table 2-24.–Reported impact to households reporting that they did not get enough of a type of resource, Egegik, 2014.

		Households not getting enough _____ .				Impact to those not getting enough _____ .									
	Sampled	Valid responses[a]		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	20	19	95.0%	10	52.6%	3	30.0%	1	10.0%	3	30.0%	2	20.0%	1	10.0%
Salmon	20	16	80.0%	1	6.3%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	20	13	65.0%	4	30.8%	1	25.0%	2	50.0%	1	25.0%	0	0.0%	0	0.0%
Large land mammals	20	15	75.0%	11	73.3%	1	9.1%	1	9.1%	6	54.5%	2	18.2%	1	9.1%
Small land mammals	20	3	15.0%	1	33.3%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Marine mammals	20	2	10.0%	2	100.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%
Birds	20	14	70.0%	3	21.4%	1	33.3%	0	0.0%	1	33.3%	0	0.0%	1	33.3%
Bird eggs	20	11	55.0%	3	27.3%	0	0.0%	2	66.7%	1	33.3%	0	0.0%	0	0.0%
Marine invertebrates	20	4	20.0%	1	25.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Vegetation	20	15	75.0%	10	66.7%	2	20.0%	1	10.0%	4	40.0%	3	30.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

a. Valid responses do not include households that did not provide any response and those households not using the resource category.

Large land mammals was the next most used subsistence resource category despite there being no harvest in 2014. Twenty-six percent of responding households explained that they used the same amount of large land mammals in 2014 as they did in previous years, 37% reported that they used less, and 11% said they used more (Table 2-21; Figure 2-31). When asked why, 43% of households indicated that large land mammals were used less due to the resources being less available; other stated reasons included too far to travel to get resources, there was less sharing, the hunters were unsuccessful, and regulations (Table 2-22). For those households that used more large land mammals in the study year, equal percentages of households stated that they used more because they received more, the weather was more favorable, and they had more time (Table 2-23). In Egegik, 55% of sampled respondents stated that they did not get enough large land mammals (Figure 2-32). When households that did not get enough large land mammals were asked to evaluate the impact of not getting enough, 9% described it as not noticeable, 55% described the impact as minor, 18% explained that not getting enough large land mammals had a major effect on their household, and 9% stated that the impact was severe (Table 2-24).

Nonsalmon fish was the next most used of all the subsistence resource categories. Forty-two percent of responding households explained that they used the same amount of nonsalmon fish in 2014 as they did in previous years, 26% reported that they used less, and 5% said they used more (Table 2-21; Figure 2-31). When asked why they used fewer nonsalmon fish, 60% of households indicated that they did so due to the weather/environment; other stated reasons included lack of equipment and working/no time (Table 2-22). The one household that used more nonsalmon fish in the study year indicated receiving more in 2014 (Table 2-23). In Egegik, 20% of sampled respondents stated that they did not get enough nonsalmon fish (Figure 2-32). When households that did not get enough nonsalmon fish were asked to evaluate the impact of not getting enough, 50% described it as not noticeable and 25% described the impact as minor (Table 2-24).

Small land mammals, marine invertebrates, and marine mammals were used and harvested by the smallest percentage of households in Egegik. Six percent of responding households explained that they used the same amount of small land mammals and 11% used the same amount of marine invertebrates in 2014 as they did in previous years (Table 2-21; Figure 2-31). The same percentages of households stated that they used less of those resources in 2014, while 10% of responding households also explained that they used fewer marine mammals. Twelve percent of responding households used more small land mammals in 2014 and no households used more marine mammals or marine invertebrates. When asked why they used less, 100% of households indicated that they used fewer marine invertebrates due to lack of effort and that they decreased use of small land mammals because of work/no time (Table 2-22). For marine mammals, 50% of households stated that the resources were less available, while 50% explained that they were unsuccessful in their harvest effort. For those households that used more small game in the study year, households explained that they either put more effort into harvesting or that they were more successful (Table 2-23). In Egegik, 5% of sampled respondents stated that they did not get enough small game or marine invertebrates, while 10% of sampled respondents did not get enough marine mammals (Figure 2-32). When households that did not get enough small game or marine invertebrates were asked to evaluate the impact of not getting enough, 100% described it as minor (Table 2-24). For marine mammals, 50% described the impact as minor and 50% explained that not getting enough marine mammals had a severe effect on their household.

Taking all subsistence resources combined that were used in the households over the year, 39% of responding households explained that they used the same amount of subsistence resources in 2014 as they did in recent previous years, 33% reported that they used less, and 28% said they used more (Table 2-21). When asked why they used less of all resources, 50% of households indicated that they did so due to resources being less available (Table 2-22). Equal percentages of households (33%) also stated lack of effort, working/no time, and regulations as the cause of using resources less in 2014 than in recent previous years. Additionally, one household cited family/personal reasons and one explained the weather was unfavorable. For those households that used more subsistence resources overall in the study year, family or personal reasons and increased effort were both given as the reason by 40% of households (two households) (Table 2-23). More success, more time to pursue resources, and needing more were reasons each cited by one household. In Egegik, one-half of sampled respondents stated that they did not get enough subsistence resources (Table 2-24). When households that did not get enough subsistence resources were asked to evaluate the impact of not getting enough, 10% described it as not noticeable, 30% described the impact as minor, 20% explained

Table 2-25.–Resources that households reported needing, Egegik, 2014.

Resource	Households needing resource	
	Number	Percentage
Moose	9	45.0%
Caribou	8	40.0%
Crowberry	7	35.0%
Berries	6	30.0%
Salmonberry	4	20.0%
Lowbush cranberry	3	15.0%
Smelt	2	10.0%
Ducks	2	10.0%
Geese	2	10.0%
All resources	1	5.0%
Fish	1	5.0%
Salmon	1	5.0%
Chinook salmon	1	5.0%
Nonsalmon fish	1	5.0%
Pacific halibut	1	5.0%
Small land mammals	1	5.0%
Beaver	1	5.0%
Spotted seal	1	5.0%
Beluga whale	1	5.0%
Migratory birds	1	5.0%
Mallard	1	5.0%
Canada goose	1	5.0%
Swans	1	5.0%
Sandhill crane	1	5.0%
Ptarmigan	1	5.0%
Gull eggs	1	5.0%
Razor clams	1	5.0%
Crabs	1	5.0%
Blueberry	1	5.0%
Wild parsley	1	5.0%

Source ADF&G Division of Subsistence household surveys, 2015.

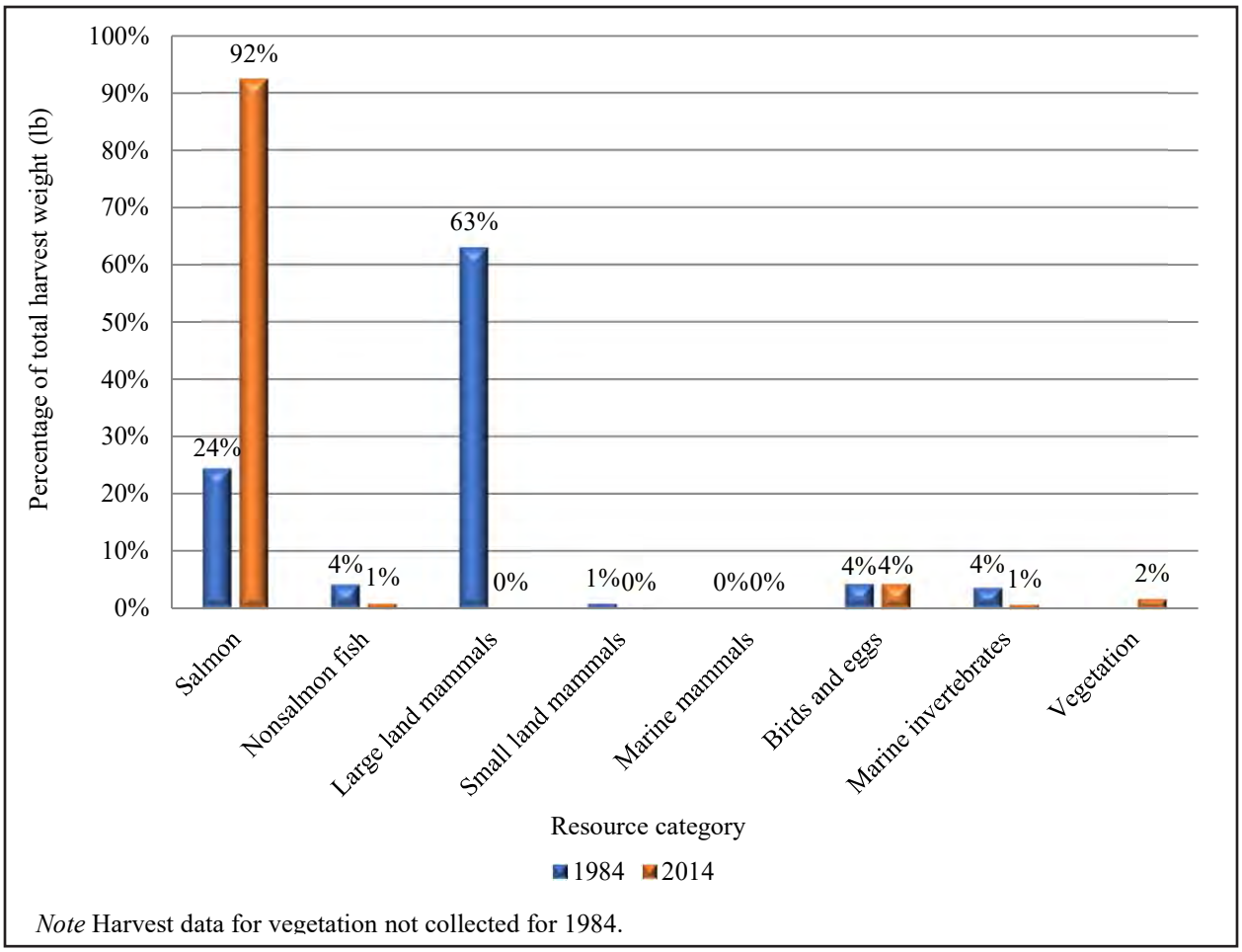
that not getting enough overall subsistence resources had a major effect on their household, and 10% stated that the impact was severe.

Table 2-25 lists the resources households needed in 2014. Large land mammals topped the list with 45% and 40% of households needing moose and caribou, respectively. There were 15%–35% of households that identified berries, generally, or a specific type of berry as being needed. Smelt, ducks, and geese were each listed as needed by 10% of households. No other resource was needed by more than 5% of households. Given information from respondents about the 2014 harvest year—that no surveyed household harvested a moose, it was a bad berry year, and the river did not freeze to allow the normal smelt harvest—this list of needed resources is not surprising. Salmon dominated the harvest by Egegik households and only 5% of households reported needing salmon in general or Chinook salmon specifically. The rest of the resource category harvests were small compared to that of salmon, and households remained in need of resources from each.

Harvest Data

Changes in the harvest of resources by Egegik residents can also be discerned through comparisons with findings from earlier study years. The only other comprehensive subsistence harvest surveys were conducted in Egegik for the study year 1984 (Morris 1987). That study surveyed 75% of year-round households residing in Egegik in the winter of 1984/1985 about their harvest and use of subsistence resources. However, several studies considered the harvest and use of specific resources or resource categories. Large land mammal harvest surveys were conducted for the 1994/1995, 1995/1996, and 1996/1997 regulatory years (Krieg et al. 1996; 1998). Marine mammal harvest surveys were conducted in Egegik every year from 1992 to 1998 and 2000 to 2008; Wolfe et al. (2009) presents harvest data for each of those study years. Additionally, although subsequent to this project, surveys were conducted in Egegik for the 2016 study year (Hutchinson-Scarbrough et al. 2020). That study surveyed 95% of year-round households in Egegik and asked about harvests and uses of salmon and large land mammals, and therefore results from 2016 will be briefly highlighted only for those resource categories.

Subsistence harvests in Egegik in 1984 were substantially different than in 2014 (Figure 2-33). Not only did per capita harvests decrease significantly—from 384 lb in 1984 to 155 lb in 2014—the composition of the total harvest was dramatically different (Table 2-26). In 1984, the harvest was dominated by large land mammals (63%) and salmon (24%), with smaller amounts (4%) of birds and eggs, nonsalmon fish, and marine invertebrates, as well as a minor small land mammals harvest (1%) (Figure 2-33). There were no documented harvests of marine mammals, and no harvest data collected for vegetation. In 2014, the harvest was composed almost entirely of salmon (92%). Birds and eggs contributed 4% to the harvest while nonsalmon fish and marine invertebrates each accounted for just 1%. No marine mammal harvests were documented but harvests of vegetation composed 2% of the overall harvest. Based on marine mammal surveys, there has been some harvest of harbor seals, ranging from zero to six between 1995 and 2007 (Wolfe et al. 2009:70–73). Salmon and large land mammal harvests changed the most dramatically, which will be explored further in the following sections.



Note Harvest data for vegetation not collected for 1984.

Figure 2-33.–Composition of harvest in pounds per capita, by resource category, Egegik, 1984 and 2014.

Table 2-26.–Comparison of estimated per capita harvests, by resource category, Egegik, 1984 and 2014.

	Estimated per capita harvest (lb)	
Resource category	1984	2014
Salmon	93.7	143.5
Nonsalmon fish	15.7	1.4
Large land mammals	242.1	0.0
Small land mammals	3.1	0.1
Marine mammals	0.0	0.0
Birds and eggs	16.1	6.7
Marine invertebrates	13.6	1.1
Vegetation		2.6
All resources	384.3	155.3

Source ADF&G Community Subsistence Information System database for 1984 and ADF&G Division of Subsistence household surveys, 2015, for 2014.

Note Harvest data for vegetation not collected for 1984.

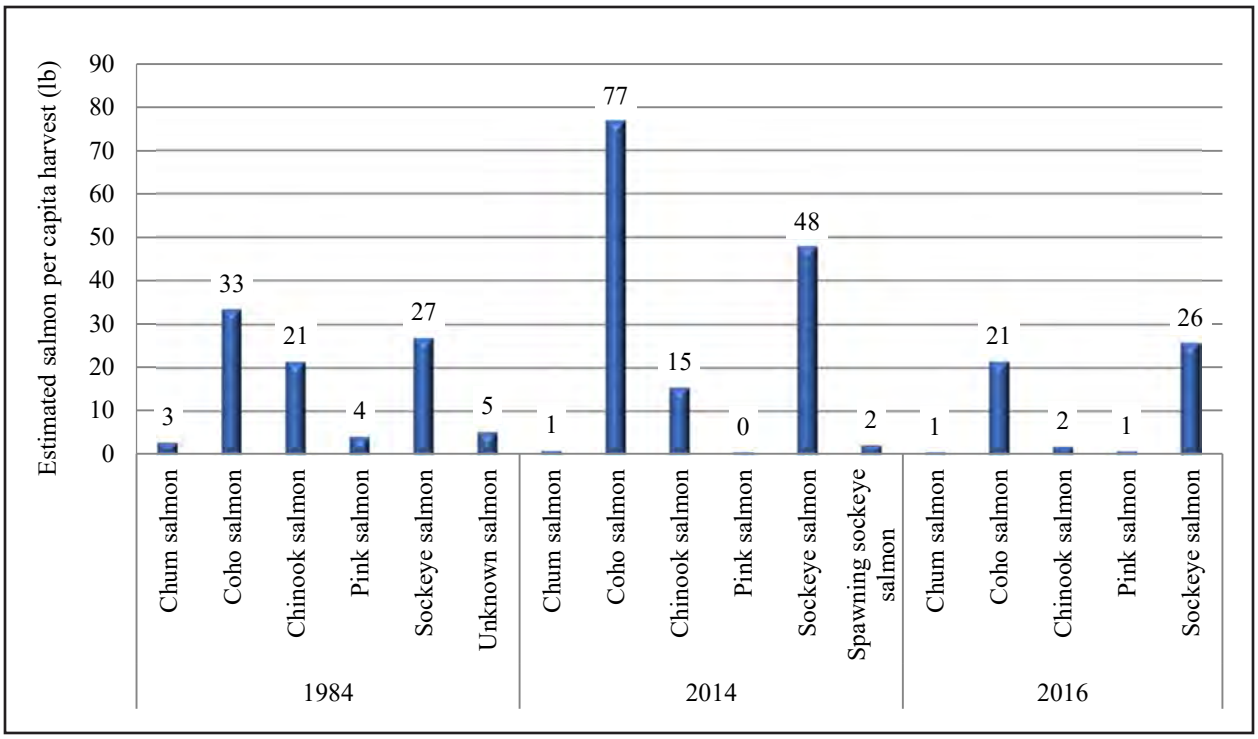


Figure 2-34.–Comparison of estimated per capita harvests of salmon, by species, Egegik, 1984 and 2014.

Salmon

Per capita salmon harvests increased from 94 lb in 1984 to 144 lb in 2014 and the total salmon harvest weight increased from 9,128 lb to 10,224 lb. In both 1984 and 2014, the salmon harvest was composed primarily of coho, sockeye, and Chinook salmon (Figure 2-34). In both years there were also small amounts of pink and chum salmon harvested. Egegik residents harvested similar amounts of Chinook salmon during both study years with a slight decrease from 21 lb per capita harvested in 1984 to 15 lb per capita in 2014. The estimated harvests of coho and sockeye salmon increased substantially between the two study years. In 1984, coho salmon harvests totaled 3,258 lb (33 lb per capita) and sockeye salmon harvests were 2,616 lb (27 lb per capita) (CSIS; Figure 2-34). In 2014, these totals were 5,473 lb (77 lb per capita) for coho salmon and 3,559 (50 lb per capita) for sockeye salmon (Table 2-13; Figure 2-34). Subsistence salmon permit data tell a slightly different story about salmon harvests. Based on permit data, there has been a decrease in the harvest of all species of salmon from 1983 through 2018 (Table 2-27). From 1983 until 1999, an estimated average 2,455 salmon were harvested each year; over the following 10 years, that average dropped to 1,205 salmon per year. From 2010 to 2018, the estimated average was 378 salmon, less than one-sixth the average for 1983–1999 based on permit data. The number of permits issued in Egegik has decreased over this timeframe as well. Further, the average number of harvested salmon per returned permit also declined, with 2009 marking the start of consistently lower average harvests. Sockeye and coho salmon dominated the harvest recorded on permits, as was also demonstrated through household surveys. Prior to 2000, sockeye salmon were harvested in greater amounts than coho salmon but beginning in 2000 the harvest estimates of coho and sockeye salmon became similar. The differences between the salmon harvests estimated through the permit system and through household surveys was not investigated during this research, but some likely influential factors include less-than-complete participation in the permit program and changes in the residency of individuals fishing in the Egegik area. Salmon harvesting methods also changed between the two study years. Commercial retention of salmon decreased from 67 lb per capita to 46 lb per capita, which coincided with an increase to subsistence gear harvests (27 lb per capita in 1984 to 98 lb per capita in 2014) (Table 2-28).

Table 2-27.–Historical subsistence salmon harvests based on Bristol Bay Area permit returns, Egegik, 1983–2018.

Year	Permits		Percentage of returned permits	Estimated salmon harvest						Average harvest per returned permit
	Issued	Returned		Chinook	Sockeye	Coho	Chum	Pink	**Total**	
1983	5	5	100.0%	1	463	10	0	0	**474**	95
1984	21	12	57.1%	52	501	481	33	75	**1,142**	95
1985	13	11	84.6%	12	552	146	7	9	**726**	66
1986	30	17	56.7%	68	796	277	38	8	**1,187**	70
1987	32	28	87.5%	94	1,145	282	127	2	**1,651**	59
1988	29	25	86.2%	73	1,167	325	55	44	**1,663**	67
1989	34	25	73.5%	56	1,167	434	35	0	**1,692**	68
1990	38	20	52.6%	93	1,124	342	123	46	**1,728**	86
1991	41	33	80.5%	70	3,364	422	126	31	**4,012**	122
1992	49	39	79.6%	103	2,349	607	284	51	**3,394**	87
1993	47	30	63.8%	127	3,284	980	148	19	**4,557**	152
1994	38	30	78.9%	195	2,984	822	55	135	**4,191**	140
1995	36	29	80.6%	80	2,030	659	188	105	**3,063**	106
1996	27	19	70.4%	111	1,867	487	90	82	**2,636**	139
1997	31	27	87.1%	252	2,047	962	55	32	**3,348**	124
1998	22	19	86.4%	76	2,310	652	191	273	**3,501**	184
1999	24	22	91.7%	142	1,726	864	44	2	**2,777**	126
2000	15	12	80.0%	11	319	233	9	0	**572**	48
2001	29	24	82.8%	50	951	899	39	14	**1,953**	81
2002	18	15	83.3%	12	468	406	13	4	**902**	60
2003	13	12	92.3%	20	517	340	11	1	**888**	74
2004	10	7	70.0%	101	950	1,356	381	86	**2,874**	411
2005	20	15	75.0%	35	963	439	216	0	**1,652**	110
2006	18	13	72.2%	36	503	514	17	0	**1,069**	82
2007	7	7	100.0%	118	198	260	57	25	**658**	94
2008	11	10	90.9%	45	629	320	25	3	**1,023**	102
2009	9	9	100.0%	10	280	163	3	5	**461**	51
2010	11	10	90.9%	21	364	273	42	8	**707**	71
2011	10	9	90.0%	36	378	320	14	2	**750**	83
2012	9	6	66.7%	0	66	104	0	0	**170**	28
2013	11	7	63.6%	0	442	124	3	0	**569**	81
2014	8	6	75.0%	12	285	85	3	1	**387**	64
2015	7	4	57.1%	5	189	81	23	9	**306**	77
2016	5	4	80.0%	15	181	29	4	0	**229**	57
2017	2	2	100.0%	0	27	63	1	1	**92**	46
2018	8	5	62.5%	5	51	134	0	0	**190**	38
5-year avg (2014–2018)	6	4	70.0%	7	147	78	6	2	**241**	57
10-year avg (2009–2018)	8	6	77.5%	10	226	138	9	3	**386**	62
Historical avg (1983–2018)	21	16	77.0%	59	1,018	414	68	30	**1,589**	101

Source ADF&G Division of Subsistence, ASFDB 2018 (ADF&G September 2020).

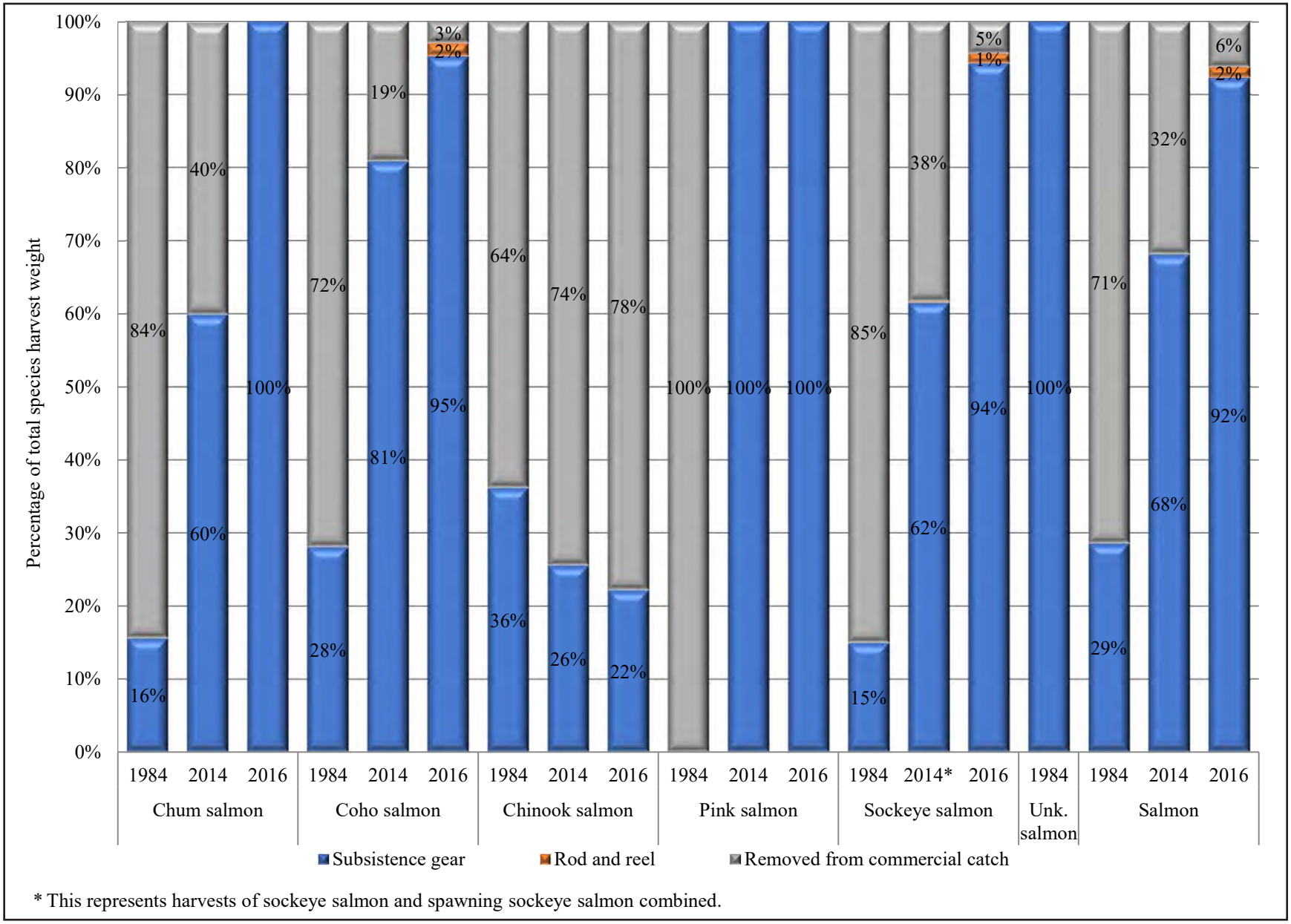
Table 2-28.–Comparison of estimated per capita harvests of salmon, by species and by gear type, Egegik, 1984, 2014, and 2016.

		Per capita harvest (lb)			
Year	Species	Subsistence gear	Rod and reel	Removed from commercial catch	Total
1984	Chum salmon	0.4	0.0	2.3	2.8
	Coho salmon	9.4	0.0	24.0	33.4
	Chinook salmon	7.7	0.0	13.6	21.3
	Pink salmon	0.0	0.0	4.1	4.1
	Sockeye salmon	4.0	0.0	22.8	26.9
	Unknown salmon	5.2	0.0	0.0	5.2
	Total salmon	**26.8**	**0.0**	**66.9**	**93.7**
2014	Chum salmon	0.5	0.0	0.3	0.8
	Coho salmon	62.1	0.0	14.7	76.8
	Chinook salmon	4.0	0.0	11.5	15.4
	Pink salmon	0.5	0.0	0.0	0.5
	Sockeye salmon	28.7	0.0	19.1	47.8
	Spawning sockeye salmon	2.0	0.1	0.0	2.1
	Total salmon	**97.8**	**0.1**	**45.6**	**143.5**
2016	Chum salmon	0.5	0.0	0.0	0.5
	Coho salmon	20.4	0.4	0.6	21.4
	Chinook salmon	0.4	0.0	1.4	1.7
	Pink salmon	0.7	0.0	0.0	0.7
	Sockeye salmon	24.2	0.3	1.1	25.7
	Total salmon	**46.2**	**0.7**	**3.1**	**50.1**

Source ADF&G Community Subsistence Information System database for 1984 and 2016 (see also Hutchinson-Scarbrough et al. [2020] for 2016); ADF&G Division of Subsistence household surveys, 2015, for 2014.

Changes in residents' participation in commercial fisheries changed how residents harvested fish to eat. In 1984, commercial removals accounted for approximately 71% of the salmon harvest while in 2014 this method accounted for just 32% of the harvest weight (Figure 2-35). This shift in harvest gear use was especially evident in the changing harvests by gear of sockeye and coho salmon but not Chinook salmon. Commercial removals brought in 85% of the sockeye salmon harvest in 1984 but only 38% in 2014. In 1984, 72% of the coho salmon harvest was removed from commercial catches while in 2014 an estimated 19% was obtained by this method. The losses of commercial catch contributions of coho and sockeye salmon were more than replaced with increased subsistence harvests: for both species, the per capita harvest increased in 2014 compared to 1984 and subsistence harvests contributed the majority of the harvest weight in 2014 (Figure 2-34; Figure 2-35). Chinook salmon harvesting methods changed to a lesser degree but increased from 64% removed from commercial catches in 1984 to 74% in 2014. Overall, commercial removals of Chinook salmon, as measured in pounds per capita, still decreased over this time period, as did harvests with subsistence gear (Table 2-28).

As mentioned previously, surveys that collected salmon harvest data were administered for the 2016 study year. Note that the overall total salmon per capita harvest was lowest in 2016 compared to 2014 and 1984. At the species level, per capita harvest estimates in 2016 were similar to, if lower than, the 1984 estimates for all salmon species except Chinook salmon. Estimated per capita harvests of Chinook salmon have



* This represents harvests of sockeye salmon and spawning sockeye salmon combined.

Figure 2-35.–Composition of salmon species harvest weight by gear type, Egegik, 1984, 2014, and 2016.

Table 2-29.–Estimated per capita harvests of moose and caribou, Egegik, 1984, 1994–1996, 2014, and 2016.

Year	Estimated per capita harvest (lb)	
	Moose	Caribou
1984	9.3	232.8
1994	34.8	186.3
1995	25.7	144.3
1996	27.6	85.7
2014	0.0	0.0
2016	0.0	0.0

Source ADF&G Community Subsistence Information System database for 1984, 1994–1996, and 2016 (see also Hutchinson-Scarbrough et al. [2020] for 2016); ADF&G Division of Subsistence household surveys, 2015, for 2014.

declined in each study year (Table 2-28). But, when considering the total salmon harvest by gear type, the decline in commercial removals between 1984 and 2014 continued into 2016 when only 6% of the salmon harvest weight was removed from commercial catches (Figure 2-35).

Large Land Mammals

Estimated harvests of large land mammals in 2014 were substantially lower than in 1984, which likely can be traced to changes in ungulate populations. Egegik residents have mainly harvested and used caribou and moose. Brown bears are occasionally hunted, but usually by fewer than 5% of households. For all study years, no harvest of bears was documented, and use was only documented in 1995 by 3% of households that received this resource (CSIS). Moose are more frequently hunted and used. Excluding 2014, over the five other study years spanning 1984–2016, an estimated 5%–27% of households hunted moose and 35%–50% of households used moose (CSIS). An estimated two moose were harvested in 1984, and the harvest increased dramatically to eight animals in 1994 (Figure 2-36). Estimated harvests in 1994 through 1996 averaged seven animals per year with an average per capita harvest over these years of 29 lb (Table 2-29; CSIS). In 2014 and again in 2016, no moose were harvested by residents of Egegik. Although no harvest was documented in 2014, 50% of households received moose, including from guided hunters, and 25% hunted unsuccessfully (Table 2-13).

Similar to the other study communities, the most notable characteristic of the 2014 large land mammal harvest was the total absence of hunting or using caribou. Caribou was a staple for Egegik households with households harvesting 151 caribou (233 lb per capita) in 1984 (Figure 2-37; Table 2-29). This harvest decreased steadily through the study years of the 1990s with an estimated 77 animals (86 lb per capita) harvested in 1996. Zero harvest was reported in 2014 and 2016. The Northern Alaska Peninsula caribou herd, the local herd Egegik residents depended upon, peaked in 1984 and began a steady decline (Doherty 2015). By 1999, the population was of a small enough size that a Tier II hunt was implemented, restricting participation in the hunt. By 2005, the herd was still in decline, and all state and federal hunts closed. After the study year, a Tier II hunt was again implemented in 2016, allowing Egegik residents some opportunity to harvest a caribou.[7]

7. According to the harvest database WinfoNet, no Tier II permits were issued to Egegik residents in 2016 despite the hunt being implemented (Galena Wilson, Analyst Programmer, ADF&G Division of Wildlife Conservation, Anchorage, May 17, 2022).

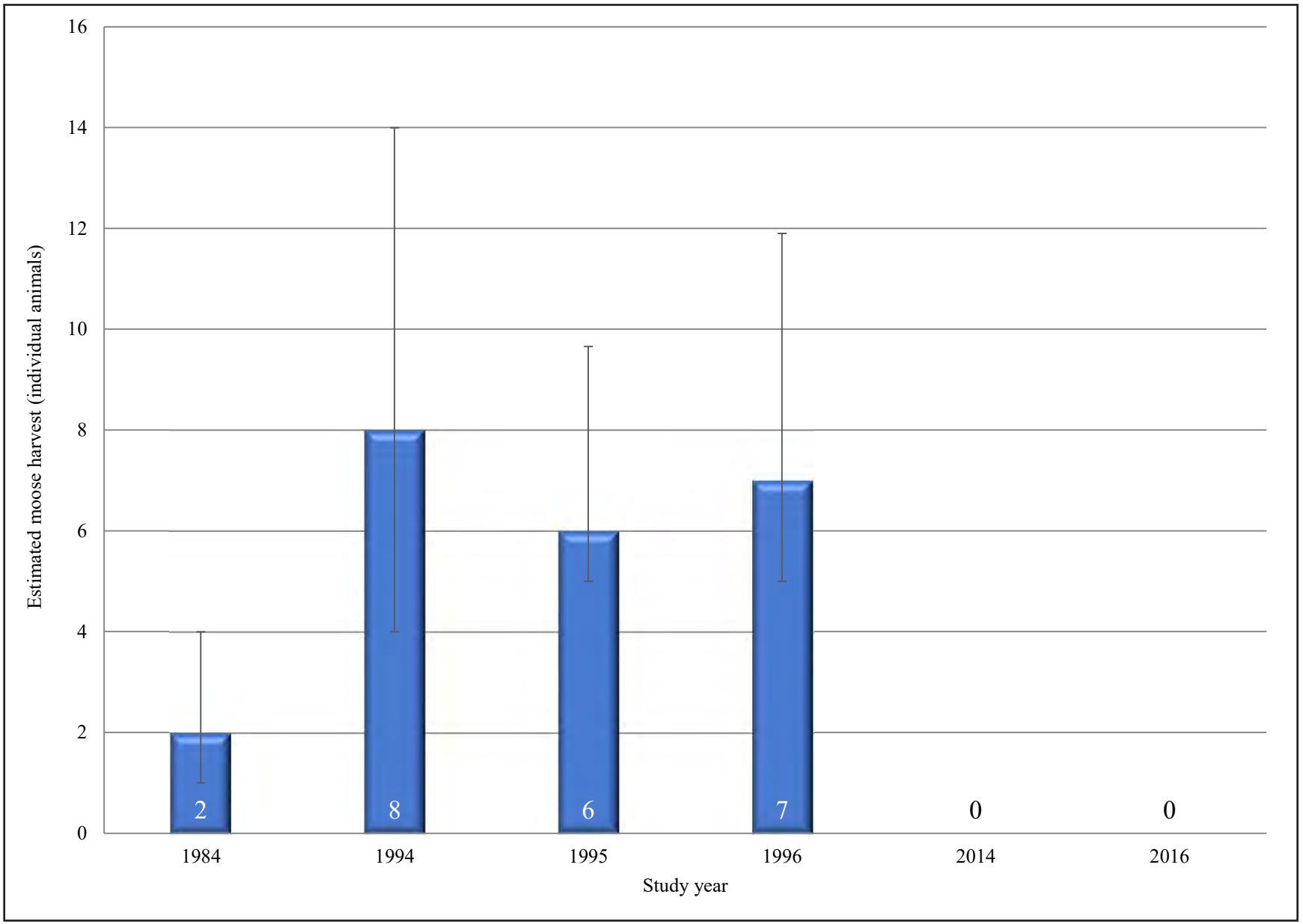


Figure 2-36.–Estimated harvests of moose, by individual animals, Egegik, 1984, 1994–1996, 2014, and 2016.

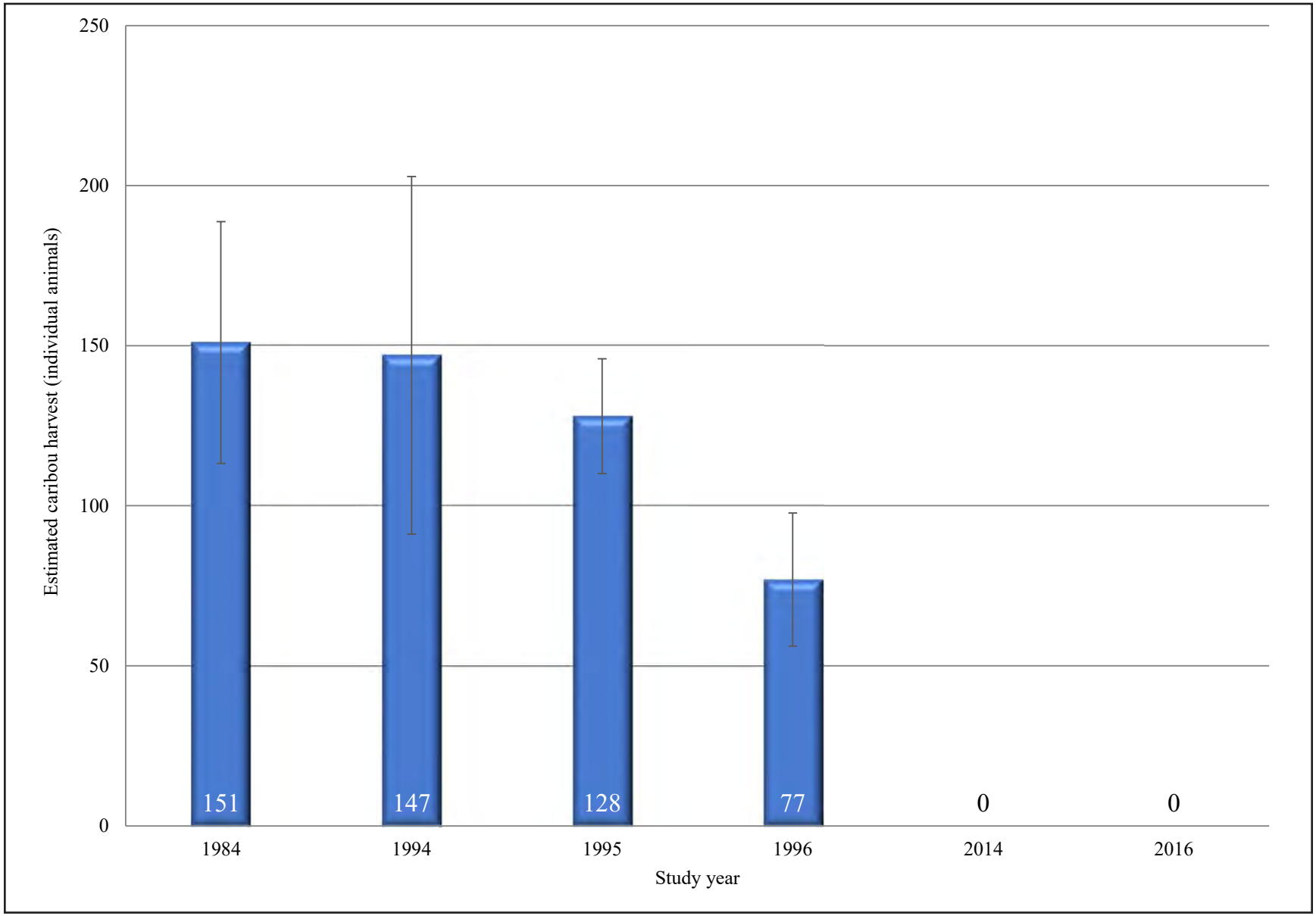


Figure 2-37.–Estimated harvests of caribou, by individual animals, Egegik, 1984, 1994–1996, 2014, and 2016.

Current and Historical Harvest Areas

The study done by Morris (1987) did not include a mapping component, instead relying on a mapping activity done with residents of Egegik for a Bristol Bay Cooperative Management Plan and the *Alaska Habitat Management Guide, Southwest Region* (see Wright et al. [1985] and ADF&G [1985a; 1985b; 1985c]). During that activity, respondents were asked to show where they had hunted (or fished, trapped, or gathered) various resource categories in the previous 20 years, or roughly from 1962–1982. A comparison of these resource harvest areas to those documented in 2014 is of limited value for several reasons. First, it is expected that households would use a larger area for harvesting activities over multiple years rather than in any single year as documented in 2014; also, the presence or absence of game populations would determine where people hunt, and as these game populations move, so too do the hunting areas. Finally, landscape change might also affect access to areas commonly used for subsistence. The areas documented in the 1987 study do show a wider range of areas used for resource harvesting activities, and include mapped areas of caribou and moose hunting, the former of which is lacking from this current study as is discussed above.

Local Comments and Concerns

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

Several comments and concerns were offered about the fish resources in Egegik. It was noted that Chinook salmon are not as big as they used to be. Climate was brought up several times in regard to salmon being affected by a warming climate in the bays where they feed and how usually people fish through the river ice for smelt, but the river did not freeze during the study year. Because of the proximity of the commercial fisheries, residents usually receive fish from commercial fishermen who give residents fish from a commercial harvest (known as home pack). Some residents felt that the restrictions and challenges to commercial fishing are negatively affecting them through less sharing.

Large Land Mammals

The loss of caribou hunting opportunity and competition with sport hunters for the moose resource were the main concerns voiced. A few respondents felt that the lack of hunting opportunities was keeping the next generation from learning how and where to hunt and to take care of the harvest. One respondent felt that the December moose hunt should be opened later or earlier to better take advantage of the weather; an earlier opening might allow travel on open waterways or, conversely, a later season might allow travel on frozen waterways. Other respondents commented on the decline of caribou, noting that in the 1960s hundreds of thousands of caribou could be seen crossing the river by the ADF&G camp. Economic opportunities were envisioned by a few residents based on hunting, including selling ADF&G-recovered horns and walrus ivory rather than letting it rot, and reindeer herding.

Small Land Mammals/Furbearers

The only comments offered under this category of harvests is that residents used to see abundant porcupines, but they are not seen any longer.

Birds and Eggs

Several respondents commented that during the study year there were not many ptarmigan around and suggested that 2014 was too warm for them. Another respondent commented that birds did not lay their eggs when they usually do.

Marine Invertebrates

Only one respondent commented on marine invertebrates and that was to note that butter clams are available around Egegik, but the respondent misses razor clams since they can only be found on the Pacific Ocean side of the peninsula.

Vegetation

The study year and several previous years had been poor berry harvest years. Several respondents attributed the lack of berries to low snow in the winters and less precipitation.

3. PILOT POINT

Community Background

Pilot Point is situated on a high bluff rising above Ugashik Bay (Plate 3-1). The bay is on the north side of the Alaska Peninsula, which stretches 475 miles southwest from Iliamna Lake to Unimak Island in the Aleutian Chain. The Aleutian Range separates the part of the peninsula that drains into the Pacific Ocean to the southeast from the remainder, which is located in the Bristol Bay watershed. The north side of the peninsula is a broad, flat plain that slopes gently to the sea; there are few breaks in this coastline except for bays at the mouths of the large rivers, including the Ugashik River. There are many small lakes throughout the area. The landscape is predominantly treeless tundra supporting hardy ground cover such as lichens, mosses, and sedges, as well as patches of willow, alder, and cottonwood trees along streambanks. The northern side of the peninsula is a transitional climate zone between maritime and continental climates. Fog, drizzle, clouds, and strong winds are common. Temperatures rarely rise above 60° Fahrenheit in the summer, though the temperature can drop to below 0° Fahrenheit in the winter.

The earliest evidence of human habitation in the Bristol Bay side of the Alaska Peninsula dates to approximately 7000 B.C. at Ugashik. The first peoples there were hunters of land mammals, especially caribou. The site of Pilot Point was probably a hunting, fishing, and trapping camp in the early 1800s, but there is very little information about the population of the study area at the time that Europeans arrived in the late 18th and early 19th centuries. According to Oswalt (1967), the inhabitants were "Peninsular Eskimos" speaking an unknown dialect of Yupik. Like other inhabitants of the Bering Sea coast, these people probably had a diversified foraging economy based on marine mammal hunting, caribou hunting, and salmon fishing. Russians arrived in the Aleutian Islands and Alaska Peninsula in the mid-18th century, establishing a fur trade. The British Captain James Cook led the first known European exploration of Bristol Bay in 1778. In 1790, a Russian explorer, Dmitri Bocharov, traveled the north coast of the Alaska Peninsula from Unimak Island to the Kvichak River, and then portaged across the peninsula to the Pacific Ocean (Fall and Morris 1987:16). Following this, the Russians established a fur trade in the Bristol Bay and northern Alaska Peninsula areas. A Russian Orthodox mission grew out of a Russian post at Nushagak Bay, drawing Alaska Natives into the fur trade and converting them to the Russian Orthodox faith.

After Alaska passed into American ownership in 1867, the next major development in Bristol Bay was the commercial salmon fishing industry. A salmon saltery was established in 1900 near the present-day site of Pilot Point. This was called "Pilot Station" after the river pilots who guided boats to the large cannery at Ugashik. The first school was built in the community in 1909. In 1918, the Alaska Packers Association built a three-line cannery. An influenza epidemic, which also occurred in 1918, decimated the local Alaska Native population: only one family survived out of 120 residents. In 1923, Inupiaq from Teller moved to Pilot Point in a failed attempt to establish a reindeer herd nearby. A U.S. post office was established in 1933, at which time the name of the community changed from Pilot Station to Pilot Point. The cannery ceased operations in 1958; since that time, fishermen in the district sell their catches to floating processors or to the canneries in Egegik, Naknek, South Naknek, and Dillingham.

In 1979, Pilot Point joined the new Lake and Peninsula Borough and in 1982 was incorporated as a second-class city. In 2014, the study year for this research, the community had a post office, a K–12 school, a small food and supply store, tribal and city offices, a health clinic, two churches (Russian Orthodox and Seventh Day Adventist), and a bulk fuel storage facility. A Village Public Safety Officer was stationed in the community. A State-owned gravel runway accommodated regularly scheduled flights from King Salmon and a dock was available at Dago Creek. Residents relied on seasonal barge service and year-round air service for food, fuel, and supplies. Water came from individual wells and cisterns while individual septic systems took care of sewage. Homes were heated by fuel oil and electricity was provided by a diesel power plant and a wind turbine. A former cannery and its buildings situated at the bottom of the bluff lining the community was in part being used for storage and seasonal camps for commercial salmon fishermen in the summer.

Plate 3-1.–Community of Pilot Point.

Seasonal Round

Seasonal rounds are descriptions of resource harvesting patterns by residents of a particular geographic location that follow a generally predictable yearly cycle of activities. These activities, and the timing, vary slightly from year to year because of environmental factors like weather and resource availability, or non-environmental factors like changes in regulations or land ownership. The following information on the seasonal round in Pilot Point draws heavily from work done by James Fall and Judith Morris in the early 1980s (Fall and Morris 1987), with updated information from the present study where relevant.

It is evident from Figure 3-1 that the harvesting activities engaged in throughout the year tend to remain concentrated on the lands and waters surrounding Pilot Point. The harvest year begins with the breakup of ice in the rivers and Ugashik Bay, usually in March or April. This is a time for hunting migratory waterfowl such as ducks, geese, and cranes.[1] Springtime is also the time for digging clams and cockles during the seasonal low tides. Households also search for the nests of ducks, gulls, and terns to collect eggs. Although no tern egg harvests were reported by surveyed Pilot Point households in 2014, bird egg harvest survey results from previous years indicate that tern eggs continued to be collected after research was conducted in the 1980s (Naves 2010:77, 149, 184–185). With the coming of summer, salmon return to Bristol Bay drainages, including the Ugashik River system. Households in Pilot Point begin focusing on preparation for the approaching subsistence and commercial fishing seasons. Chinook salmon are the first to arrive, usually in June. Local residents fish for Chinook salmon near the community with setnets and remove fish from their commercial catches. Commercial and subsistence fishing continues through July, concentrating on sockeye salmon with incidental harvests of Chinook, chum, and pink salmon. Starting toward the end of August, some commercial fishermen will harvest coho salmon, which can be a major source of salmon for

1. See Naves (2010:1) for background information on how the 1918 Migratory Bird Treaty Act restricted migratory bird hunting and subsequent amendments opened spring and summer hunting in 2003.

home use. Coho salmon are also taken in subsistence setnets. Several other resources, such as Dolly Varden, cod, or Pacific halibut, can be taken incidentally in subsistence setnets. During the height of the summer, the first berries ripen and are picked, often as a family activity. Berry picking continues through the summer.

In the fall, waterfowl hunting occurs as these birds pass through the region. When the caribou herds were in the region, fall was a good time to hunt because the bulls were fat and hunters could potentially use skiffs for transportation to hunting grounds. A disadvantage of hunting caribou in the fall was the difficulty of preserving the meat in warm weather, so sharing of caribou at this time of the year was very common. However, as described previously in Chapter 1, the Northern Alaska Peninsula caribou herd population became depressed in the late 1980s, spurring years of regulatory hunting restrictions in the local area, and caribou hunting has fallen out of the seasonal round for most residents. An early moose season provides hunting opportunity in September and some families fish for spawning sockeye salmon, locally referred to as "fall" or "red" fish, at this time.

As the weather turns cold and lakes and rivers freeze, households may jig through the ice for smelt and landlocked salmon through the winter. Some hunters search for moose during the December open season or trap furbearers. Winter activities continue until warmer weather arrives. When caribou were available and harvest was allowed, hunters would pursue caribou through the winter months and into the spring. In spring, a new round of resource harvesting activities begins.

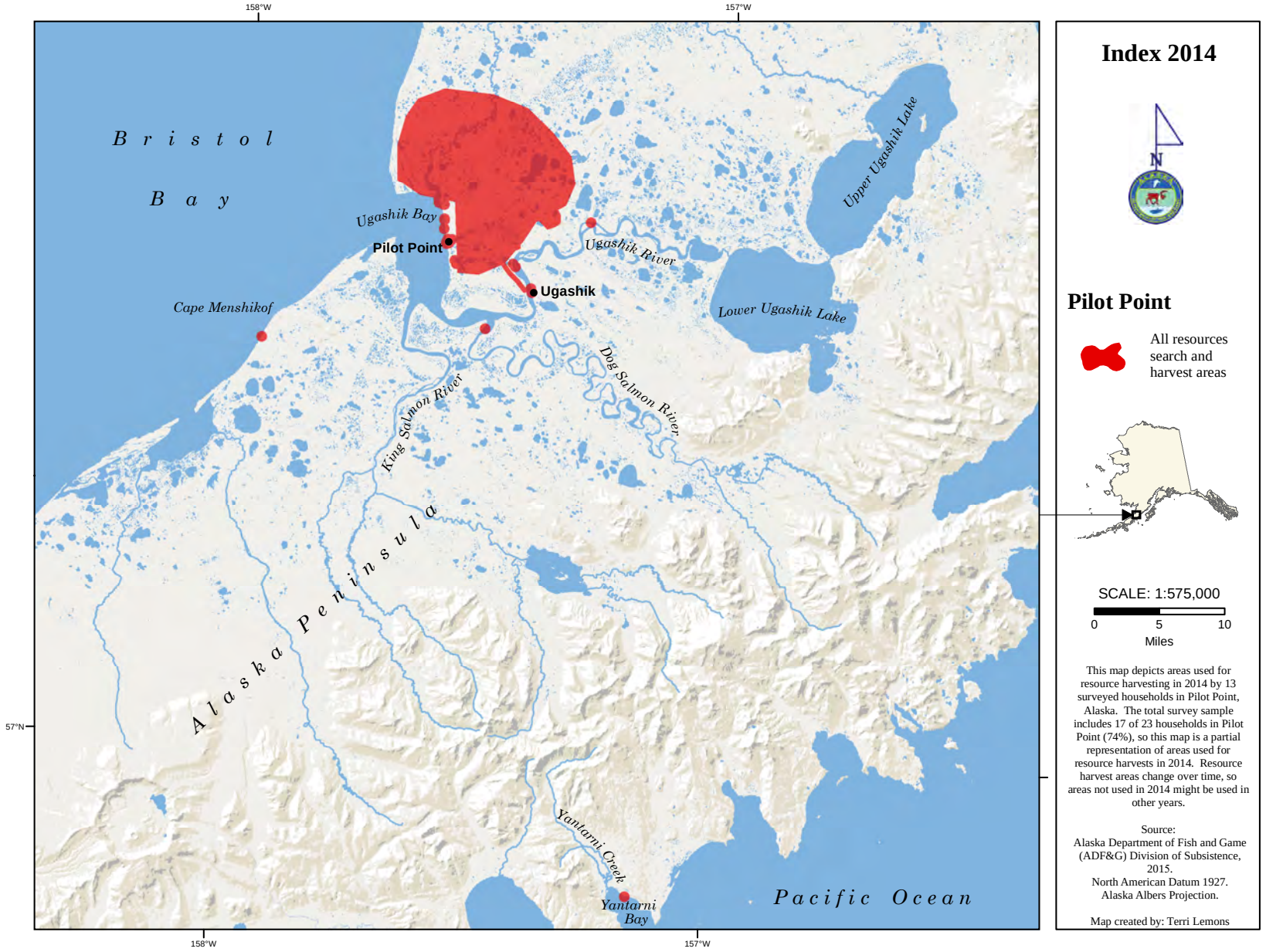


Figure 3-1.–Wild resources search and harvest areas, Pilot Point, 2014.

Table 3-1.–Population estimates, Pilot Point, 2010 and 2014.

	Census (2010)	5-year American Community Survey (2010–2014)		This study (2014)	
		Estimate	Range[a]	Estimate	Range[b]
Total population					
Households	27	25.0	18 – 32	23.0	
Population	68	47.0	32 – 62	63.6	52 – 75
Alaska Native					
Population	57	45.0	30 – 60	53.9	42 – 65
Percentage	83.8%	95.7%	63.8% – 100.0%	84.8%	66.7% – 100.0%

Sources U.S. Census Bureau (n.d.) for decennial census data, and for American Community Survey (ACS) 2014 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2015, for 2014 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.

Population Estimates and Demographic Information

This study estimated that 64 individuals lived in 23 Pilot Point households during 2014; 85% of the estimated population identified as Alaska Native (Table 3-1). These estimates of the overall population as well as the Alaska Native population are comparable to the five-year American Community Survey estimate from 2010–2014 and the 2010 decennial census estimate (Figure 3-2). Since 1950, the population of Pilot Point has remained relatively stable, fluctuating around 70 people (Figure 3-3).

Of the 23 year-round households in Pilot Point, 17, or 74%, were surveyed (Table 3-2). Based on this sample, there was an estimated average of three people living in a household during the study period, with a maximum number of eight occupants and a minimum of one. Residents averaged 36 years of age; the youngest resident of any surveyed household was less than 1 year old and the oldest was 76 years old. An average resident of Pilot Point had lived in the community for 23 years; household heads had generally lived longer in the community, with an average length of residency of 33 years. Members of the community were predominantly born in Pilot Point (43%) (Table 3-3). Other places of birth included another U.S. state, Russian Mission, Anchorage, and other Alaska communities. Fewer locations were identified as the birthplaces of household heads; the most common location was Pilot Point (35%), then another U.S. state (15%), followed equally by Anchorage, Port Heiden, Russian Mission, and Nondalton (Table 3-4). The age distribution of Pilot Point residents in 2014 was relatively equal with just less than one-half of the population being younger than 35 years old and one-half being 40 or older; no residents were between 35 and 39 years old (Table 3-5). There were slightly more men than women in 2014 and though the distribution of genders among the age cohorts were similar, there were several age groups that were exclusively one gender; the most notable cohorts in which this occurred were 0–4 and 55–59 (Table 3-5; Figure 3-4).

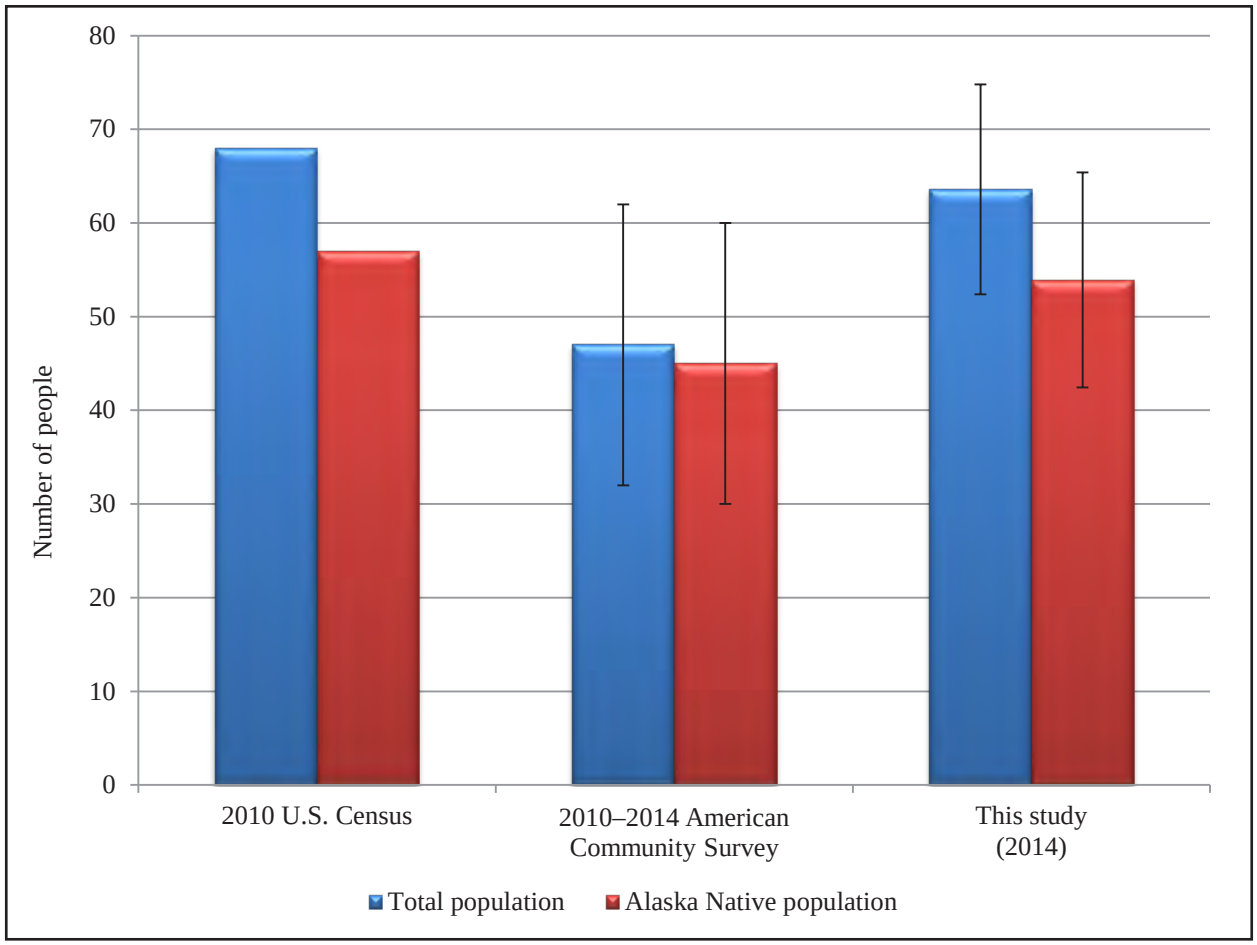


Figure 3-2.–Alaska Native and overall population estimates, Pilot Point, 2010 and 2014.

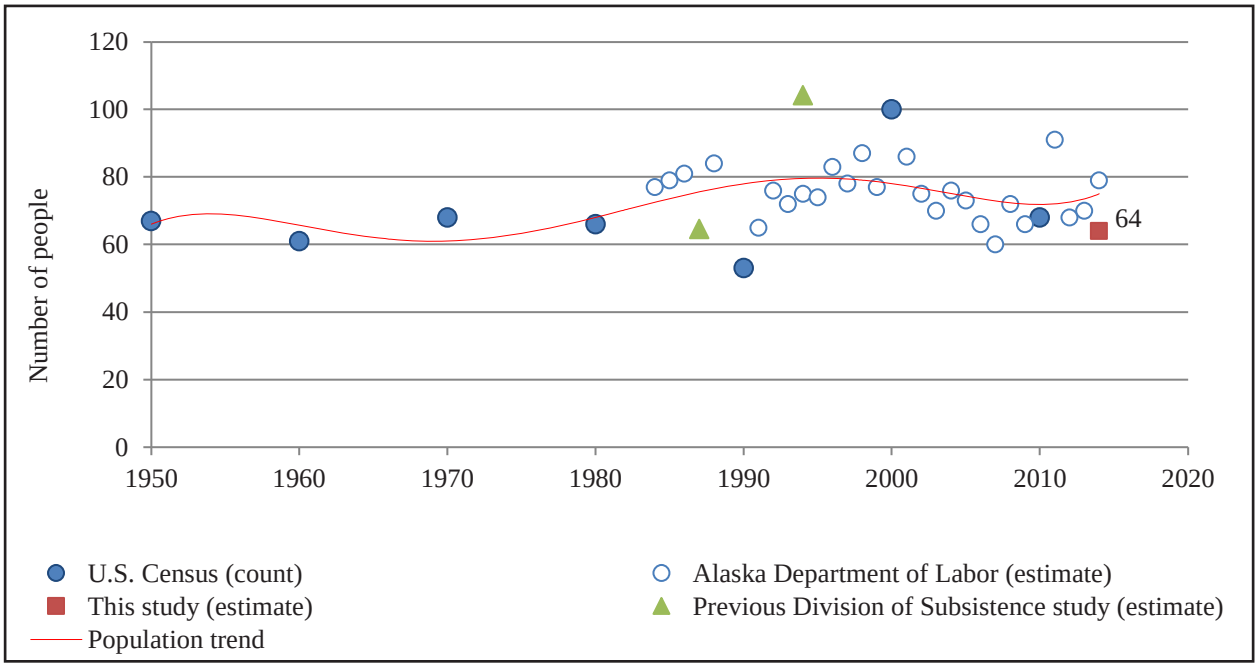


Figure 3-3.–Historical population estimates, Pilot Point, 1950–2014.

Table 3-2.–Sample and demographic characteristics, Pilot Point, 2014.

Characteristics	Community Pilot Point
Sampled households	17
Eligible households	23
Percentage sampled	73.9%
Sampled population	47
Estimated community population	63.6
Household size	
Mean	2.8
Minimum	1
Maximum	8
Age	
Mean	36.4
Minimum[a]	0
Maximum	76
Median	41.5
Length of residency	
Total population	
Mean	22.7
Minimum[a]	0
Maximum	70
Heads of household	
Mean	33.0
Minimum[a]	1
Maximum	70
Alaska Native	
Estimated households[b]	
Number	18.9
Percentage	82.4%
Estimated population	
Number	53.9
Percentage	84.8%

Source ADF&G Division of Subsistence household surveys, 2015.

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 one head of household is Alaska Native.

Table 3-3.–Birthplaces of population, Pilot Point, 2014.

Birthplace	Percentage
Aleknagik	2.1%
Anchorage	8.5%
Homer	4.3%
Juneau	2.1%
Kodiak City	4.3%
Manokotak	2.1%
Nondalton	4.3%
Pilot Point	42.6%
Port Heiden	4.3%
Russian Mission	8.5%
Ilnik	2.1%
Kanatak	2.1%
Other U.S.	10.6%
Missing	2.1%

Source ADF&G Division of Subsistence household surveys, 2015.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 3-4.–Birthplaces of household heads, Pilot Point, 2014.

Birthplace	Percentage
Anchorage	7.7%
Homer	3.8%
Manokotak	3.8%
Nondalton	7.7%
Pilot Point	34.6%
Port Heiden	7.7%
Russian Mission	7.7%
Ilnik	3.8%
Kanatak	3.8%
Other U.S.	15.4%
Missing	3.8%

Source ADF&G Division of Subsistence household surveys, 2015.
Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

Table 3-5.–Population profile, Pilot Point, 2014.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	5.4	15.4%	15.4%	0.0	0.0%	0.0%	5.4	8.5%	8.5%
5–9	1.4	3.8%	19.2%	4.1	14.3%	14.3%	5.4	8.5%	17.0%
10–14	1.4	3.8%	23.1%	1.4	4.8%	19.0%	2.7	4.3%	21.3%
15–19	2.7	7.7%	30.8%	0.0	0.0%	19.0%	2.7	4.3%	25.5%
20–24	2.7	7.7%	38.5%	5.4	19.0%	38.1%	8.1	12.8%	38.3%
25–29	1.4	3.8%	42.3%	0.0	0.0%	38.1%	1.4	2.1%	40.4%
30–34	0.0	0.0%	42.3%	4.1	14.3%	52.4%	4.1	6.4%	46.8%
35–39	0.0	0.0%	42.3%	0.0	0.0%	52.4%	0.0	0.0%	46.8%
40–44	2.7	7.7%	50.0%	2.7	9.5%	61.9%	5.4	8.5%	55.3%
45–49	2.7	7.7%	57.7%	2.7	9.5%	71.4%	5.4	8.5%	63.8%
50–54	1.4	3.8%	61.5%	1.4	4.8%	76.2%	2.7	4.3%	68.1%
55–59	5.4	15.4%	76.9%	0.0	0.0%	76.2%	5.4	8.5%	76.6%
60–64	2.7	7.7%	84.6%	2.7	9.5%	85.7%	5.4	8.5%	85.1%
65–69	1.4	3.8%	88.5%	2.7	9.5%	95.2%	4.1	6.4%	91.5%
70–74	0.0	0.0%	88.5%	1.4	4.8%	100.0%	1.4	2.1%	93.6%
75–79	2.7	7.7%	96.2%	0.0	0.0%	100.0%	2.7	4.3%	97.9%
80–84	0.0	0.0%	96.2%	0.0	0.0%	100.0%	0.0	0.0%	97.9%
85–89	0.0	0.0%	96.2%	0.0	0.0%	100.0%	0.0	0.0%	97.9%
90–94	0.0	0.0%	96.2%	0.0	0.0%	100.0%	0.0	0.0%	97.9%
95–99	0.0	0.0%	96.2%	0.0	0.0%	100.0%	0.0	0.0%	97.9%
100–104	0.0	0.0%	96.2%	0.0	0.0%	100.0%	0.0	0.0%	97.9%
Missing	1.4	3.8%	100.0%	0.0	0.0%	100.0%	1.4	2.1%	100.0%
Total	**35.2**	**100.0%**	**100.0%**	**28.4**	**100.0%**	**100.0%**	**63.6**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2015.

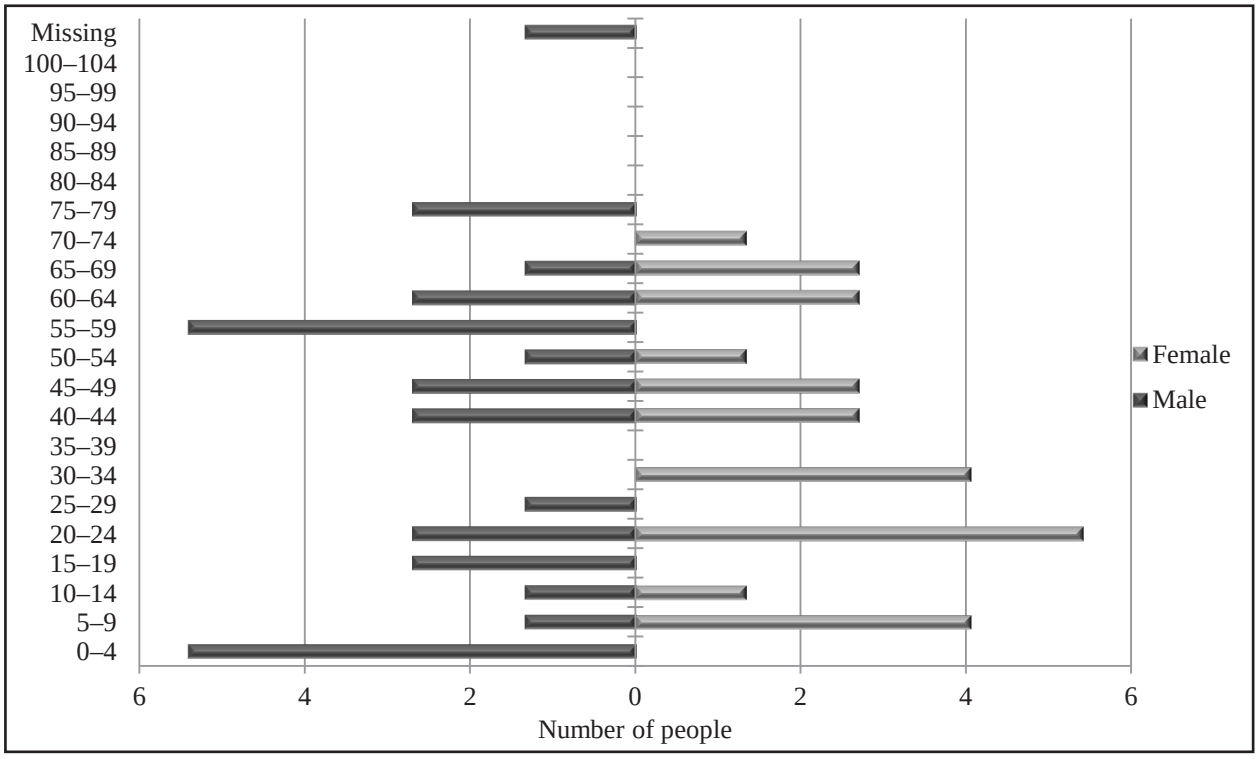
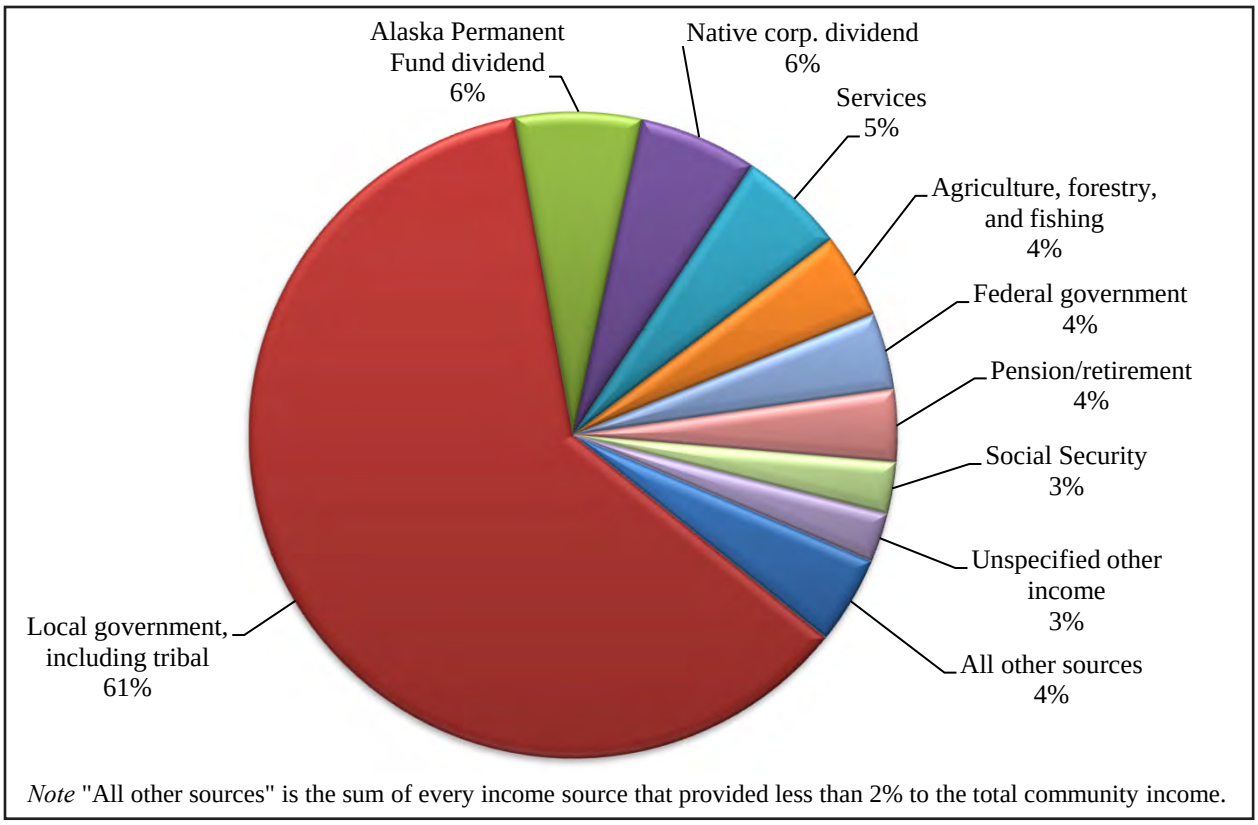


Figure 3-4.–Population profile, Pilot Point, 2014.



Note "All other sources" is the sum of every income source that provided less than 2% to the total community income.

Figure 3-5.–Top income sources, Pilot Point, 2014.

Income and Cash Employment

During the study period, the majority (61%) of income in Pilot Point originated in the local government sector (Figure 3-5). No other source contributed a significant amount of income more than another. Total community income was split between earned income (76%) and other sources (24%) (Table 3-6); this is about average in comparison to the other study communities (Table 2-6; Table 4-5). Alaska Permanent Fund dividends, the largest contributor to the other income sources, paid $1,884 per person in 2014.[2] Dividends from Native corporations, pension/retirement, Social Security, and unemployment were the other identified sources contributing more than 1% to the overall income estimate. The average household income in 2014 was $62,117 while the median household income was significantly lower at $29,916 (Table 3-6; Figure 3-6). At the individual level, per capita income in Pilot Point was $22,468 in 2014, which was slightly higher than per capita income in Egegik but lower than in Ugashik (Table 1-8).

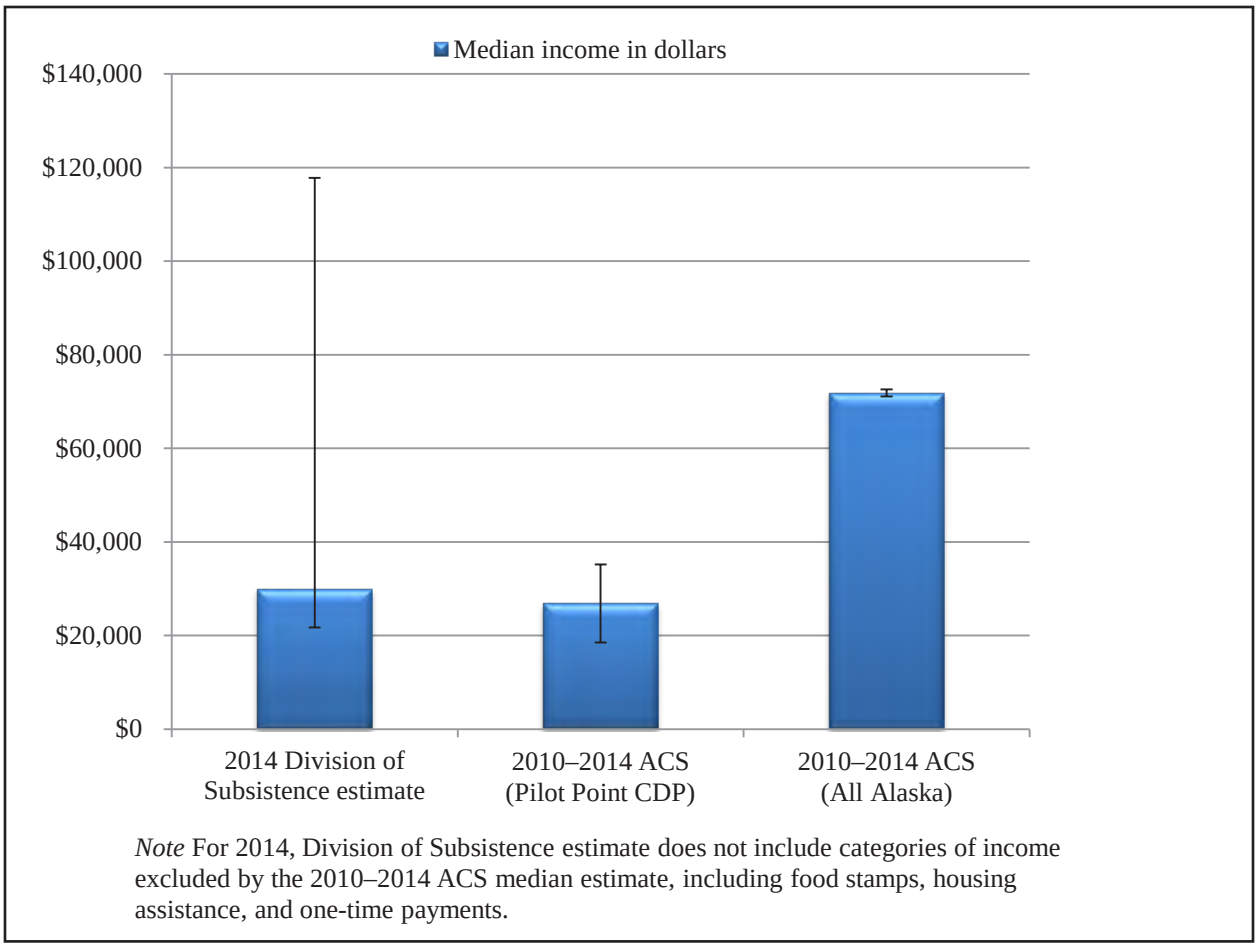
Looking just at jobs and earned income, rather than total community income, Table 3-7 shows that the local government sector of the economy contributed nearly 81% to wage earnings in 2014. Services sector jobs, fishing, and the federal government accounted for 5%–7% each. The federal government contributed more to wage earnings than the retail trade or transportation sectors but did not contribute more jobs or employ more households or individuals. Jobs in the community tended to be either part time (40%) or full time (33%), followed by on-call (23%) (Table 3-8). Seventy-four percent of working-age adults (age 16 or older) and 82% of households were employed in 2014 (Table 3-9). On average, adults living in employed households worked 3.5 jobs combined; employed adults were employed for an average of nine months of the year, with 58% of employed adults employed year-round.

2. Alaska Department of Revenue, Permanent Fund Dividend Division, "Summary of Dividend Applications & Payments," https://pfd.alaska.gov/Division-Info/Summary-of-Applications-and-Payments (accessed March 2020).

Table 3-6.–Estimated earned and other income, Pilot Point, 2014.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Local government, including tribal	26.0	14.9	$876,088	$424,734 – $1,579,622	$38,091	61.3%
Services	4.6	4.1	$76,074	$134 – $240,286	$3,308	5.3%
Agriculture, forestry, and fishing	12.2	8.1	$60,885	$10,270 – $134,661	$2,647	4.3%
Federal government	3.1	2.7	$54,682	$13,971 – $161,051	$2,377	3.8%
Transportation, communication, and utilities	3.1	2.7	$12,658	$3,434 – $33,113	$550	0.9%
Retail trade	3.1	2.7	$6,899	$507 – $19,947	$300	0.5%
Earned income subtotal	**36.7**	**18.9**	**$1,087,286**	**$568,811 – $1,810,000**	**$47,273**	**76.1%**
Other income						
Alaska Permanent Fund dividend		20.3	$90,487	$61,175 – $138,917	$3,934	6.3%
Native corp. dividend		20.3	$84,038	$56,302 – $117,674	$3,654	5.9%
Pension/retirement		2.7	$51,750	$38,250 – $155,250	$2,250	3.6%
Social Security		4.1	$36,823	$27,217 – $90,493	$1,601	2.6%
Other		2.7	$35,176	$26,000 – $102,824	$1,529	2.5%
Unemployment		2.7	$15,001	$11,088 – $42,028	$652	1.1%
Food stamps		2.7	$11,161	$8,249 – $35,714	$485	0.8%
Heating assistance		4.1	$7,619	$5,631 – $19,550	$331	0.5%
Meeting honoraria		1.4	$4,059	$3,000 – $8,118	$176	0.3%
Per diem/public meeting		1.4	$2,029	$1,500 – $4,059	$88	0.1%
Fuel voucher		5.4	$1,807	$1,336 – $3,614	$79	0.1%
Veterans assistance		1.4	$986	$729 – $3,910	$43	0.1%
Longevity bonus		2.7	$463	$342 – $2,351	$20	0.0%
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%
Workers' compensation/insurance		0.0	$0	$0 – $0	$0	0.0%
Disability		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%
Other income subtotal		**23.0**	**$341,400**	**$240,713 – $475,048**	**$14,843**	**23.9%**
Community income total			**$1,428,686**	**$869,745 – $2,219,179**	**$62,117**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2015.



Note For 2014, Division of Subsistence estimate does not include categories of income excluded by the 2010–2014 ACS median estimate, including food stamps, housing assistance, and one-time payments.

Figure 3-6.–Comparison of median household income estimates, Pilot Point, 2014.

Table 3-7.–Employment by industry, Pilot Point, 2014.

Industry	Jobs	Employed households	Employed individuals	Percentage of wage earnings
Estimated total number	**65.8**	**18.9**	**36.7**	
Federal government	**4.7%**	**14.3%**	**8.3%**	**5.0%**
Executive, administrative, and managerial	2.3%	7.1%	4.2%	3.6%
Technologists and technicians, except health	2.3%	7.1%	4.2%	1.4%
Local government, including tribal	**60.5%**	**78.6%**	**70.8%**	**80.6%**
Executive, administrative, and managerial	4.7%	7.1%	4.2%	3.2%
Teachers, librarians, and counselors	2.3%	7.1%	4.2%	3.5%
Writers, artists, entertainers, and athletes	2.3%	7.1%	4.2%	2.1%
Technologists and technicians, except health	2.3%	7.1%	4.2%	0.1%
Administrative support occupations, including clerical	9.3%	28.6%	16.7%	25.5%
Service occupations	20.9%	50.0%	33.3%	26.9%
Mechanics and repairers	2.3%	7.1%	4.2%	0.3%
Precision production occupations	2.3%	7.1%	4.2%	11.2%
Transportation and material moving occupations	7.0%	14.3%	8.3%	2.8%
Handlers, equipment cleaners, helpers, and laborers	7.0%	21.4%	12.5%	5.0%
Agriculture, forestry, and fishing	**18.6%**	**42.9%**	**33.3%**	**5.6%**
Agricultural, forestry, and fishing occupations	18.6%	42.9%	33.3%	5.6%
Transportation, communication, and utilities	**4.7%**	**14.3%**	**8.3%**	**1.2%**
Administrative support occupations, including clerical	2.3%	7.1%	4.2%	0.3%
Transportation and material moving occupations	2.3%	7.1%	4.2%	0.8%
Retail trade	**4.7%**	**14.3%**	**8.3%**	**0.6%**
Marketing and sales occupations	2.3%	7.1%	4.2%	0.6%
Service occupations	2.3%	7.1%	4.2%	0.1%
Services	**7.0%**	**21.4%**	**12.5%**	**7.0%**
Executive, administrative, and managerial	2.3%	7.1%	4.2%	0.6%
Health technologists and technicians	2.3%	7.1%	4.2%	6.4%
Service occupations	2.3%	7.1%	4.2%	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Table 3-8.–Job schedules, Pilot Point, 2014.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full time	21.4	32.6%	19.9	54.2%	13.5	71.4%
Part time	26.0	39.5%	15.3	41.7%	12.2	64.3%
On-call (occasional)	15.3	23.3%	12.2	33.3%	8.1	42.9%
Schedule not reported	3.1	4.7%	3.1	8.3%	1.4	7.1%

Source ADF&G Division of Subsistence household surveys, 2015.

Note Respondents who had more than one job in the study year could provide multiple responses, so the percentages may sum to more than 100%.

Table 3-9.–Employment characteristics, Pilot Point, 2014.

Characteristic	Community Pilot Point
All adults	
Number	49.8
Mean weeks employed	29.3
Employed adults	
Number	36.7
Percentage	73.8%
Jobs	
Number	65.8
Mean	1.8
Minimum	1
Maximum	5
Months employed	
Mean	9.2
Minimum	2
Maximum	12
Percentage employed year-round	58.3%
Mean weeks employed	39.7
Households	
Number	23.0
Employed	
Number	18.9
Percentage	82.4%
Jobs per employed household	
Mean	3.5
Minimum	1
Maximum	7
Employed adults	
Mean	
Employed households	1.9
Total households	1.6
Minimum	1
Maximum	4
Mean person-weeks of employment	63.5

Source ADF&G Division of Subsistence household surveys, 2015.

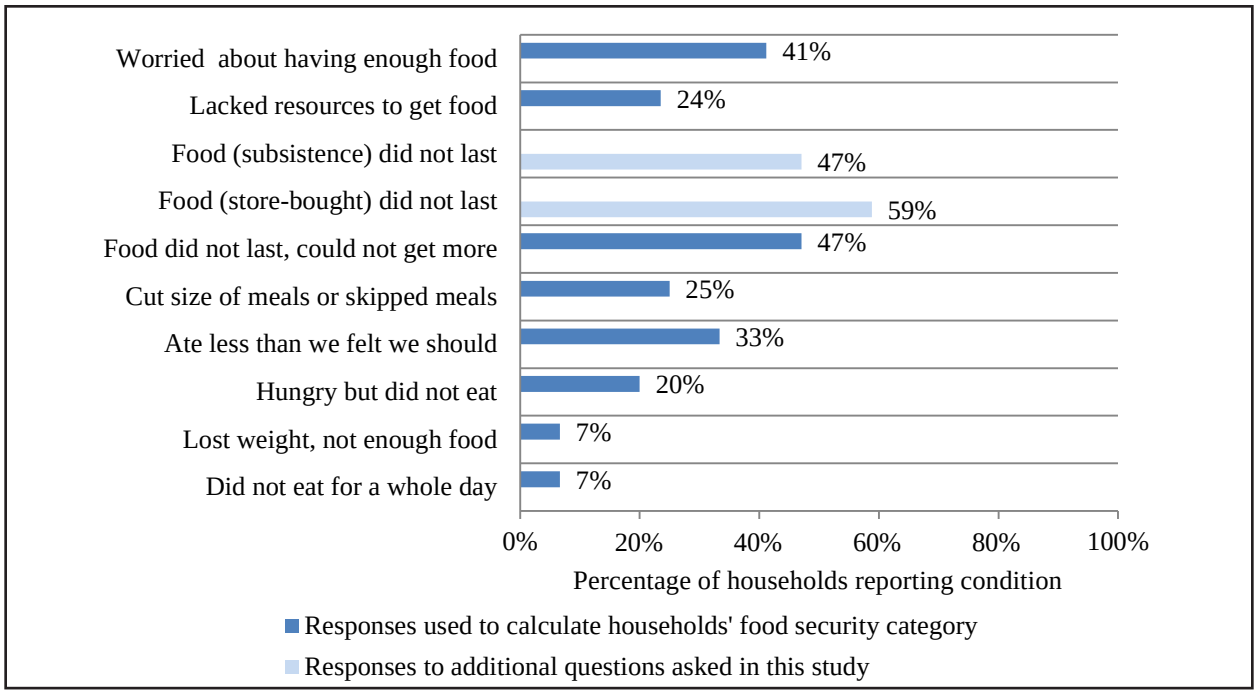


Figure 3-7.–Responses to questions about food insecure conditions, Pilot Point, 2014.

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). Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were broken down further into two subcategories—high or marginal food security. Food insecure households were also divided into two subcategories—low food security or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Figure 3-7 summarizes affirmative responses to food insecurity conditions experienced by Pilot Point households that did not have enough of the kinds of food they wanted to eat. The first five conditions described in the figure were asked about the overall household while the last five applied only to the adults in the household and were asked to ascertain the severity of food insecure conditions experienced by the household. The most common affirmative answer was in response to the question asking whether the store-bought food lasted and if the household could not get more (59%). The next most affirmative responses were to similar questions posed about the household's subsistence food (47%) or overall food (47%). Other conditions garnering high percentages of affirmative responses included that the household worried about having enough food (41%) and that adults in the household ate less than they felt they should (33%). Fewer households agreed with the final five conditions represented in the chart; however, more than one-fifth of households still felt that several of these instances applied to their households during 2014.

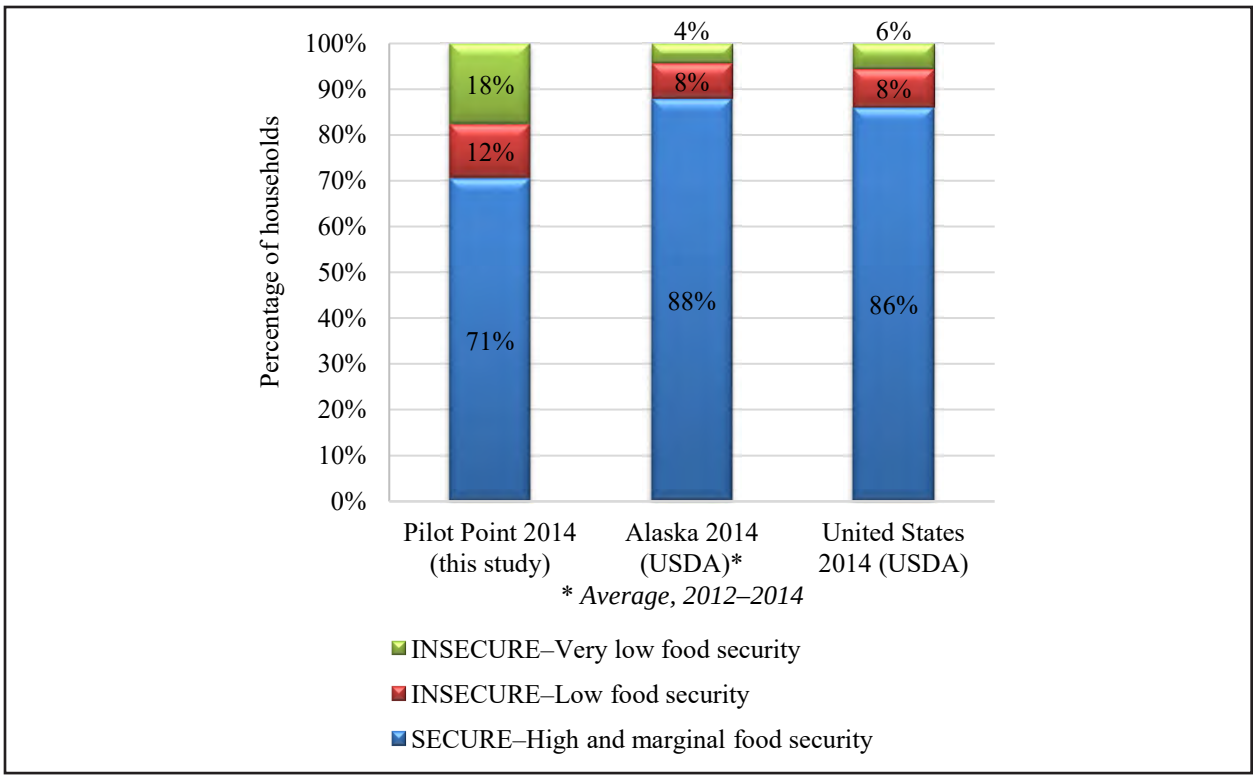


Figure 3-8.–Comparison of food security categories, Pilot Point, Alaska, and United States, 2014.

Table 3-10.–Households' assessments of food security conditions, Pilot Point, 2014.

Statement	Percentage of households
Had enough of the kinds of food desired	11.8%
Had enough food, but not the desired kind	76.5%
Sometimes, or often, did not have enough food	11.8%
Missing/No response	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Food security results for surveys for Pilot Point, the state of Alaska, and the United States are summarized in Figure 3-8. Fewer households in Pilot Point experienced high and marginal food security than households across Alaska or the nation. While 88% of Alaska households were termed food secure, only 71% of Pilot Point households were designated similarly for 2014. There were greater percentages of households in Pilot Point experiencing low food security and very low food security as compared to the state and nation: 12% of households had low food security while 18% of households had very low food security. Compared to the other study communities, a smaller proportion of households in Pilot Point were food secure, and a higher proportion of households were experiencing very low food security than in the other communities.

Table 3-10 shows, by percentage of sampled households, assessment results regarding eating desired types of food during the study year. Approximately three-quarters (77%) of Pilot Point households had enough food but not necessarily the kinds of food households desired. Also, 12% of households equally either had enough desired foods, or did not have enough food. Figure 3-9 portrays the mean number of food insecure conditions per household by food security category by month. Figure 3-10 shows which months households reported foods not lasting. Food secure households experienced little change in food insecure conditions over the course of the year (Figure 3-9). Food insecure households experienced a distinct seasonal trend that was more pronounced for households with very low food security. The most insecure conditions occurred during the winter months, before decreasing during the summer months, and increasing as winter came again. Salmon, a staple of Pilot Point households, begin returning at the beginning of summer concurrent with a drop in the occurrence of food insecure conditions. Recent experience with poor hunting success, as will be discussed below, contributed to a growing number of food insecure conditions starting in the fall and spanning winter months when subsistence foods are generally unavailable and store-bought food choices may be limited and expensive. Also, during this time of year, households may be faced with the choice of spending limited financial resources on fuel to heat their home or on purchasing food from the store.

A similar seasonal pattern was observed in the months in which foods did not last, whether the foods were store-bought or from subsistence resources (Figure 3-10). Late winter/early spring months were when the most households reported running out of foods; this is the time of year when households are getting to the end of the supply of subsistence foods they put up the previous summer or fall, income saved from summer employment may be running low, and weather conditions can prevent grocery store replenishment. During the summer months, no households reported subsistence foods running out, but as the fall advanced into winter there was another uptick in instances of store-bought and subsistence foods not lasting.

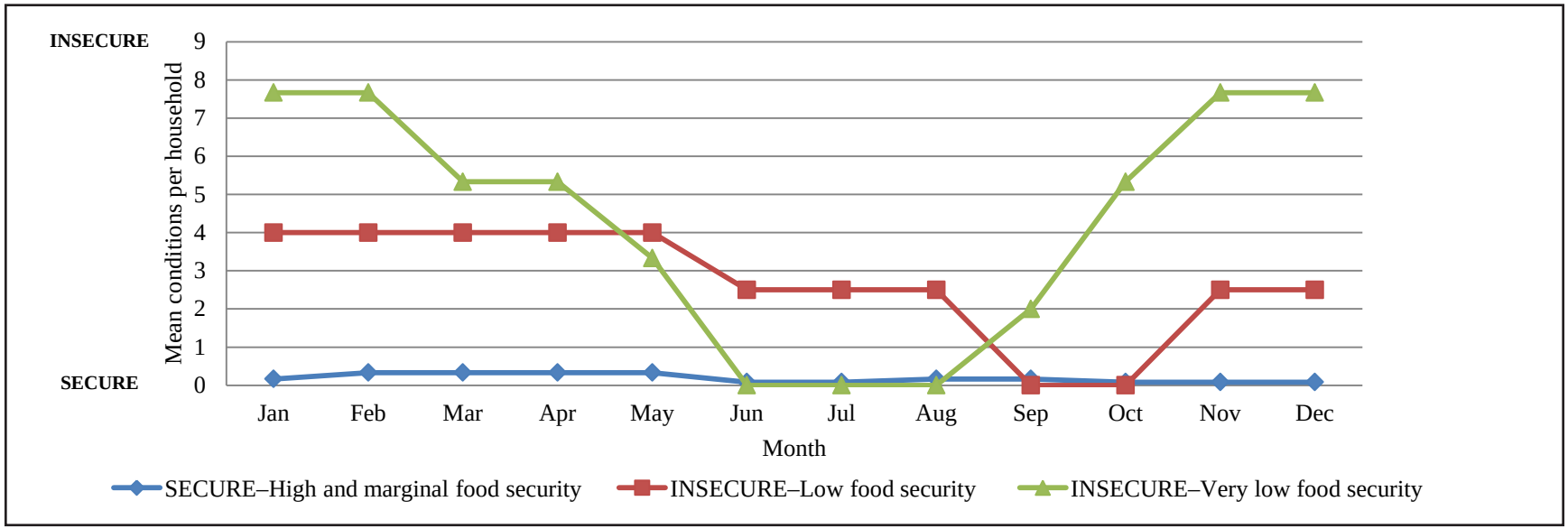


Figure 3-9.–Mean number of food insecure conditions by month and by household food security category, Pilot Point, 2014.

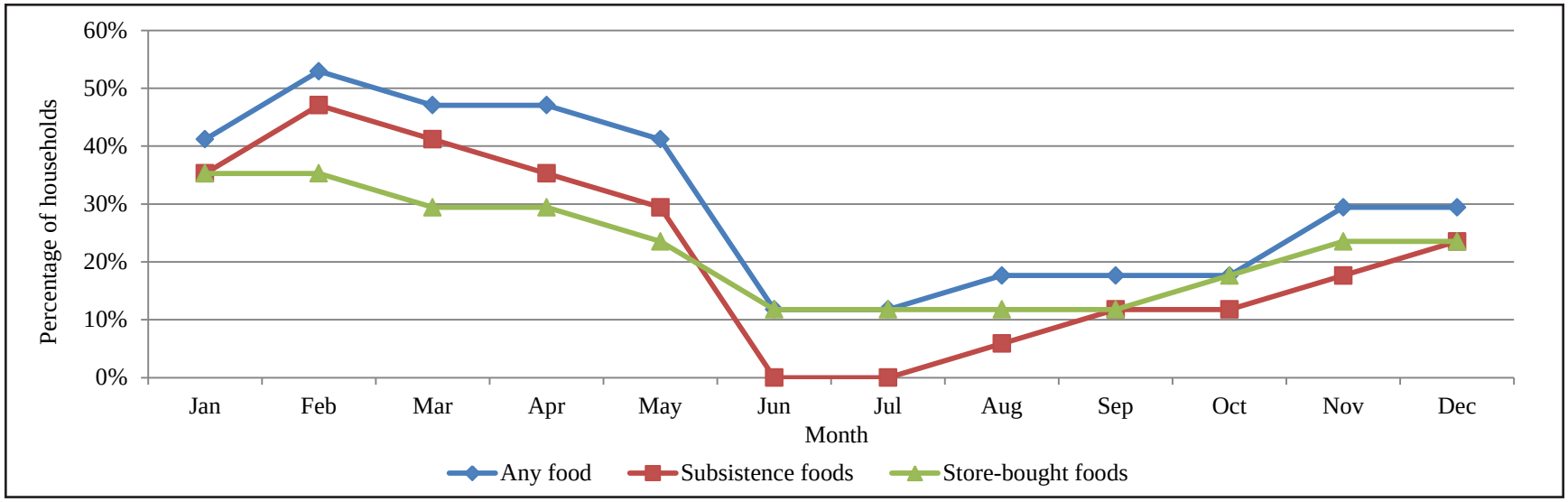


Figure 3-10.–Comparison of months when food did not last, Pilot Point, 2014.

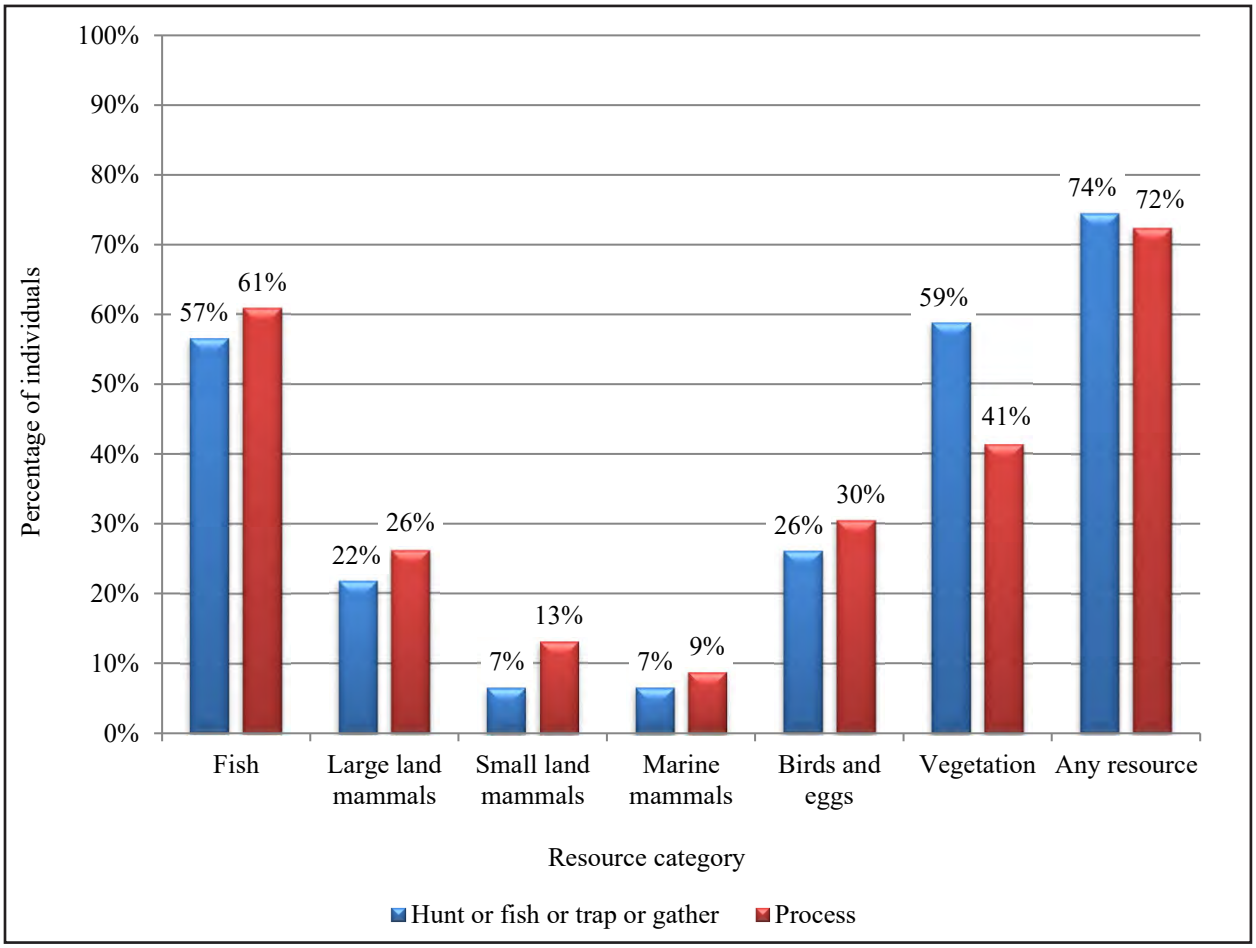


Figure 3-11.–Individual participation in subsistence harvesting and processing activities, Pilot Point, 2014.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 3-11 and Table 3-11 report the expanded levels of individual participation in the harvesting and processing of wild resources by all Pilot Point residents in 2014. Overall, 74% of residents participated in harvesting activities—either hunting, fishing, trapping, or gathering resources. More residents (59%) participated in gathering vegetation than any other resource category, but participation in salmon fishing (57%) was a close second. Approximately one-quarter of Pilot Point residents hunted large game (22%) or hunted birds or gathered bird eggs (26%), with smaller percentages of people hunting marine mammals (7%) or hunting and trapping small land mammals (7%). For almost every resource category, more people participated in the processing of resources than harvest activities. Vegetation is the only resource category for which more people harvested than processed; this is likely because picking berries and gathering plants can be a family activity easily involving all ages of family members, but processing often falls to just a few household members.

Table 3-11.–Individual participation in subsistence harvesting and processing activities, Pilot Point, 2014.

Total number of people	**63.6**
Fish	
Fish	
Number	35.9
Percentage	56.5%
Process	
Number	38.7
Percentage	60.9%
Large land mammals	
Hunt	
Number	13.8
Percentage	21.7%
Process	
Number	16.6
Percentage	26.1%
Small land mammals	
Hunt or trap	
Number	4.1
Percentage	6.5%
Process	
Number	8.3
Percentage	13.0%
Marine mammals	
Hunt	
Number	4.1
Percentage	6.5%
Process	
Number	5.5
Percentage	8.7%
Birds and eggs	
Hunt/gather	
Number	16.6
Percentage	26.1%
Process	
Number	19.4
Percentage	30.4%
Vegetation	
Gather	
Number	37.3
Percentage	58.7%
Process	
Number	26.3
Percentage	41.3%
Any resource	
Attempt harvest	
Number	47.4
Percentage	74.5%
Process	
Number	46.0
Percentage	72.3%

Source ADF&G Division of Subsistence household surveys, 2015.

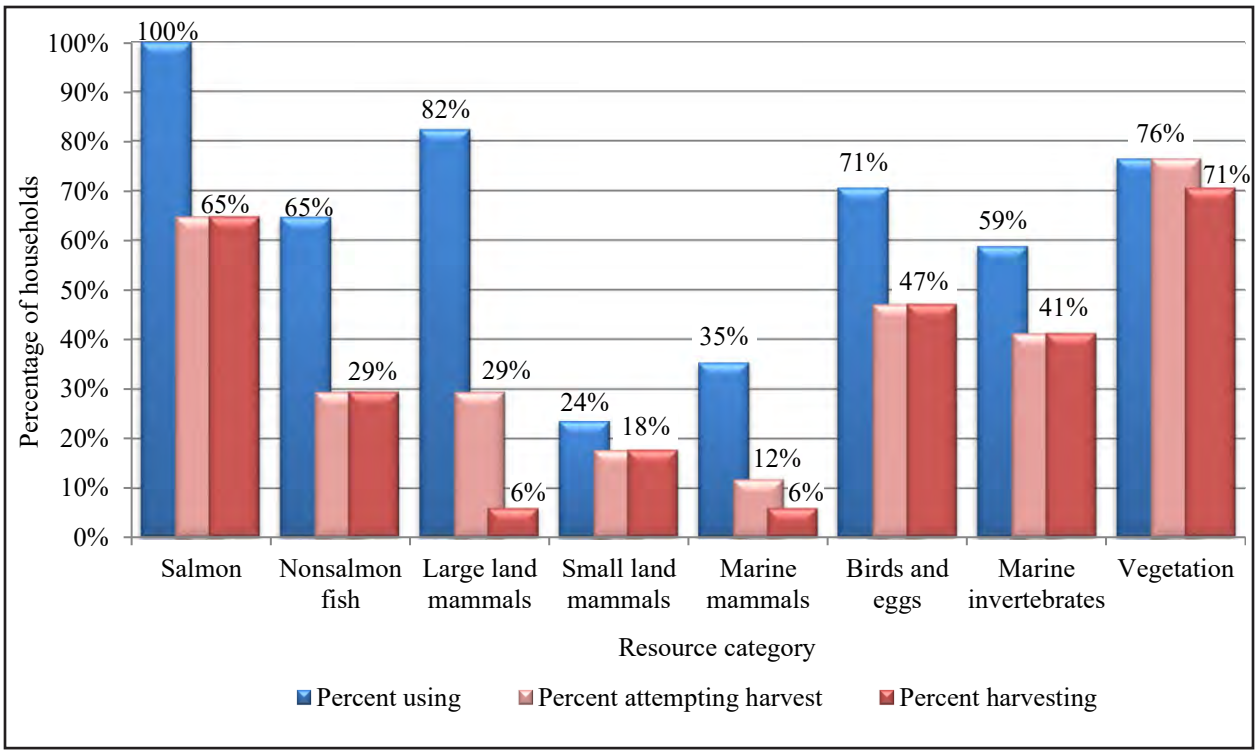


Figure 3-12.–Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Pilot Point, 2014.

Harvest and Use of Wild Resources at the Household Level

Figure 3-12 shows by resource category the percentages of households that used, attempted to harvest, and harvested wild foods. More than one-half of the households in the community used all resource categories except for small land mammals (24%) and marine mammals (35%). Every household in Pilot Point used salmon in 2014. For almost every resource category, significantly more households used a resource than harvested it; similar percentages of households used and harvested small land mammals and vegetation. Sharing of resources is a key characteristic of subsistence communities and is clearly displayed here.

With some notable exceptions, Pilot Point households experienced high harvest success rates, as seen by similar proportions of households attempting to harvest and harvesting resources from many categories. Households experienced lower success rates in hunting large land mammals and marine mammals, as well as in gathering berries. While 29% of households hunted large land mammals, only 6% of households successfully harvested these resources. Less of a disparity existed for marine mammals and vegetation, where 12% hunted marine mammals and 6% harvested, and 76% of households attempted to gather vegetation and 71% of households were successful.

Table 3-12 summarizes resource harvest and use characteristics for Pilot Point in 2014 at the household level. The average harvest was 582 lb usable weight per household, or 211 lb per person. During the study year, households harvested an average of seven kinds of resources and used an average of 11 kinds of resources. The maximum number of resources used by any household was 38. In addition, households gave away an average of four kinds of resources.

Table 3-12.–Resource harvest and use characteristics, Pilot Point, 2014.

Characteristic	
Mean number of resources used per household	**11.4**
Minimum	4
Maximum	38
95% confidence limit (±)	19.9%
Median	9
Mean number of resources attempted to harvest per household	**7.3**
Minimum	0
Maximum	24
95% confidence limit (±)	26.4%
Median	5
Mean number of resources harvested per household	**6.8**
Minimum	0
Maximum	23
95% confidence limit (±)	26.7%
Median	5
Mean number of resources received per household	**5.5**
Minimum	0
Maximum	20
95% confidence limit (±)	23.0%
Median	4
Mean number of resources given away per household	**3.5**
Minimum	0
Maximum	16
95% confidence limit (±)	33.9%
Median	2
Household harvest (pounds)	
Minimum	0
Maximum	4,084
Mean	582.0
Median	128
Total harvest weight (lb)	13,385.5
Community per capita harvest (lb)	210.5
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	94.1%
Percentage harvesting any resource	94.1%
Percentage receiving any resource	94.1%
Percentage giving away any resource	70.6%
Number of households in sample	17
Number of resources asked about and identified voluntarily by respondents	151

Source ADF&G Division of Subsistence household surveys, 2015.

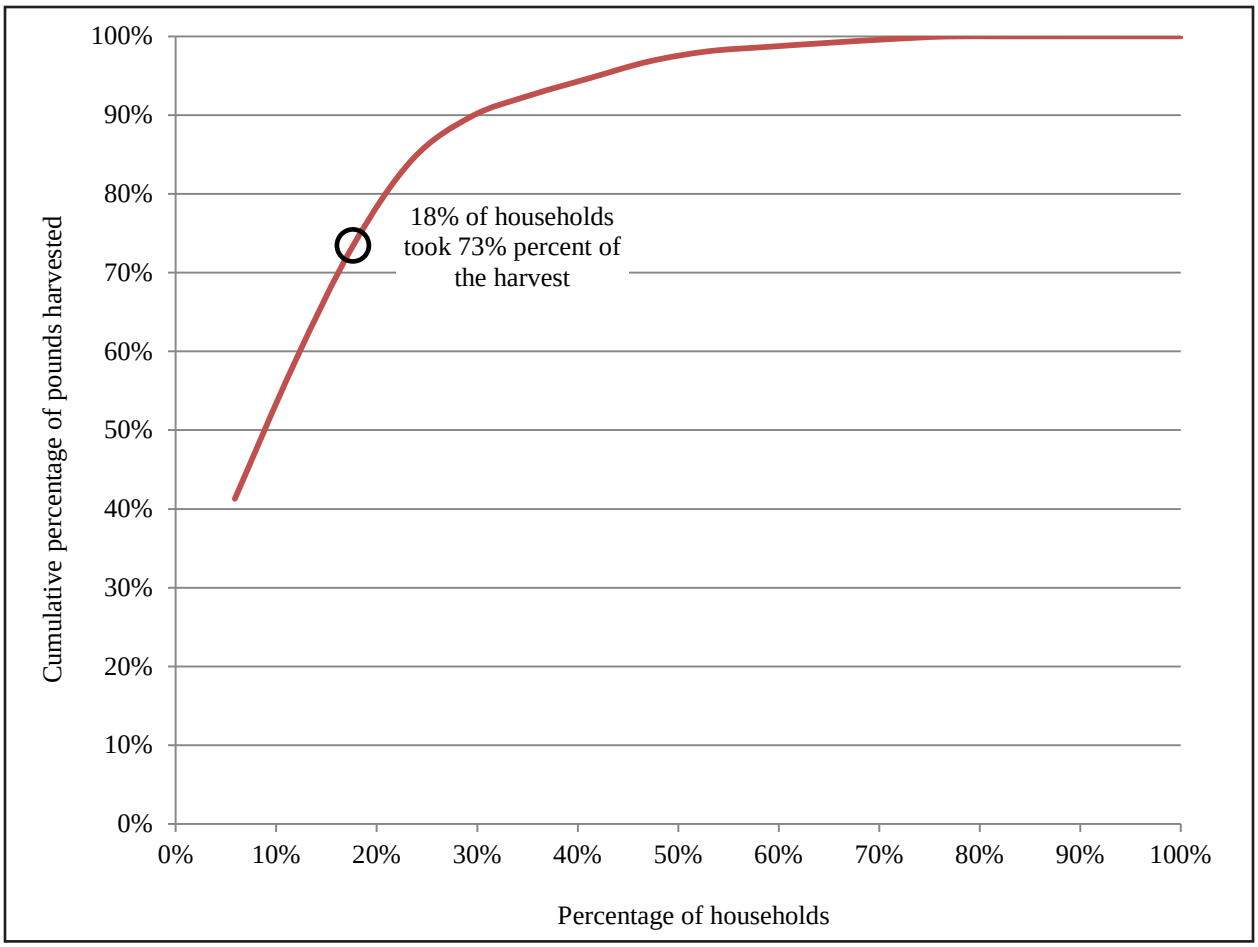


Figure 3-13.–Household specialization, Pilot Point, 2014.

Sharing of Wild Resources

Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A 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 3-13, in the 2014 study year in Pilot Point, about 73% of the harvests of wild resources as estimated in pounds usable weight were harvested by 18% of the community's households. Further analysis of the study findings, which is beyond the scope of this report, or future studies may identify characteristics of the highly productive households in Pilot Point.

Harvest Quantities and Composition

Table 3-13 reports estimated wild resource harvests and uses by Pilot Point residents in 2014 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see Appendix B for conversion factors[3]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as wood 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.

Pilot Point residents harvested a total of 13,386 lb of wild resources in 2014, which was equal to 211 lb per person (Table 3-13). The salmon harvest accounted for nearly three-quarters (74%) of the total harvest by weight, with 9,952 lb harvested, or 157 lb per capita (Figure 3-14; Table 3-13). Following salmon was the harvest of marine mammals (10%), large land mammals (6%), and birds and eggs (5%). In terms of pounds harvested, in addition to salmon, Pilot Point households harvested 1,346 lb of marine mammals (21 lb per capita), 731 lb of large land mammals (12 lb per capita), and 660 lb of birds and eggs (10 lb per capita). The remainder of the harvest comprised vegetation (2%; 316 lb, or 5 lb per capita), marine invertebrates (2%; 241 lb, or 4 lb per capita), nonsalmon fish (1%; 94 lb, or 2 lb per capita), and small land mammals (less than 1%; 45 lb, or 1 lb per capita).

Use and Harvest Characteristics by Resource Category

Households typically use more resources than they harvest because of the prevalence of sharing within and between communities. Households may share resources with one or many other households, and within the community or beyond. Households within the community receive resources from one or many other households residing in the same community or from another community. While most resources are shared, the extent to which they are shared varies. In Pilot Point in 2014, more than 70% of households shared a subsistence resource and 94% of households received subsistence resources. On average, a household gave away four kinds of resources and received six kinds (Table 3-12). Salmon was the resource category given by the most households (59%), while no households gave nonsalmon fish (most likely because of the low harvest) (Table 3-13). Other commonly shared resource categories were large land mammals and birds and eggs, each of which was given by 29% of households, and vegetation, which was shared by 24% of households. Marine invertebrates, small land mammals, and marine mammals were shared the least, after nonsalmon fish: 18% of households shared marine invertebrates, 12% shared small game, and 6% shared marine mammals. The most received resource category was large land mammals: 82% of households received these resources in 2014. Seventy-seven percent of households received salmon and no other resource category was received by more than 50% of the community. Marine mammals, birds and eggs, marine invertebrates and vegetation were received by 24%–35% of households in Pilot Point, while only 6% of households received small land mammals. Although no households in the community shared nonsalmon fish, 41% of households received these resources from somewhere else.

Table 3-14 lists the top ranked resources used by households and Figure 3-15 shows the species with the highest harvests during the 2014 study year. The top resources harvested were predominantly from the marine environment, while the most used resources were relatively evenly split between marine and terrestrial resources. Sockeye and coho salmon were harvested in the highest amounts, followed by beluga whales and moose. No other species composed more than 2% of the overall harvest weight. Resources used by more than one-half of Pilot Point households included sockeye, coho, and Chinook salmon, along with moose, ptarmigan, smelt, and crowberries. Interestingly, of the top resource most used, only the top three composed 5% or more of the overall harvest by weight.

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

Table 3-13.–Estimated use and harvest of fish, game, and vegetation resources, Pilot Point, 2014.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	limit (±) harvest
All resources	**100.0**	**94.1**	**94.1**	**94.1**	**70.6**	**13,385.5**	**582.0**	**210.5**	**13,385.5**	**lb**	**582.0**	**47.3**
Salmon	**100.0**	**64.7**	**64.7**	**76.5**	**58.8**	**9,952.4**	**432.7**	**156.5**	**9,952.4**	**lb**	**432.7**	**54.7**
Chum salmon	11.8	5.9	5.9	5.9	0.0	124.1	5.4	2.0	27.1	ind	1.2	108.3
Coho salmon	76.5	52.9	52.9	35.3	35.3	2,721.4	118.3	42.8	604.8	ind	26.3	71.7
Chinook salmon	52.9	29.4	23.5	29.4	11.8	319.3	13.9	5.0	29.8	ind	1.3	64.1
Pink salmon	11.8	11.8	11.8	0.0	5.9	48.4	2.1	0.8	18.9	ind	0.8	93.1
Sockeye salmon	94.1	58.8	58.8	64.7	52.9	6,711.1	291.8	105.5	1,619.5	ind	70.4	51.7
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Spawning coho salmon	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Spawning sockeye salmon	5.9	5.9	5.9	0.0	0.0	28.0	1.2	0.4	6.8	ind	0.3	108.3
Nonsalmon fish	**64.7**	**29.4**	**29.4**	**41.2**	**0.0**	**93.7**	**4.1**	**1.5**	**93.7**	**lb**	**4.1**	**73.1**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring 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	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring roe on hemlock branches	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Capelin (grunion)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	52.9	17.6	17.6	35.3	0.0	6.1	0.3	0.1	1.9	gal	0.1	63.5
Pacific (gray) cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Starry flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Pacific halibut	23.5	11.8	11.8	11.8	0.0	87.7	3.8	1.4	87.7	lb	3.8	78.7
Rockfish	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
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
Sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Salmon shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Yellowfin sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Burbot	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dolly Varden–freshwater	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–saltwater	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern pike	11.8	0.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

-continued-

Table 3-13.–Page 2 of 5.

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												
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
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Humpback whitefish	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown whitefishes	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Large land mammals	**82.4**	**29.4**	**5.9**	**82.4**	**29.4**	**730.6**	**31.8**	**11.5**	**730.6**	**lb**	**31.8**	**108.3**
Bison	5.9	0.0	0.0	5.9	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	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Moose	82.4	29.4	5.9	82.4	29.4	730.6	31.8	11.5	1.4	ind	0.1	108.3
Small land mammals	**23.5**	**17.6**	**17.6**	**5.9**	**11.8**	**45.3**	**2.0**	**0.7**	**45.3**	**lb**	**2.0**	**84.8**
Beaver	11.8	11.8	11.8	0.0	5.9	23.7	1.0	0.4	9.5	ind	0.4	108.3
Coyote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic fox	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–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Porcupine	11.8	11.8	11.8	0.0	11.8	21.6	0.9	0.3	2.7	ind	0.1	74.1
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	5.9	0.0	0.0	5.9	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

-continued-

Table 3-13.–Page 3 of 5.

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	**35.3**	**11.8**	**5.9**	**29.4**	**5.9**	**1,346.2**	**58.5**	**21.2**	**1,346.2**	**lb**	**58.5**	**108.3**
Harbor porpoise	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	11.8	5.9	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown seal	11.8	0.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea otter	5.9	0.0	0.0	5.9	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
Walrus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Beluga whale	23.5	5.9	5.9	17.6	5.9	1,346.2	58.5	21.2	1.4	ind	0.1	108.3
Birds and eggs	**70.6**	**47.1**	**47.1**	**35.3**	**29.4**	**660.4**	**28.7**	**10.4**	**660.4**	**lb**	**28.7**	**54.7**
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Common eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
King eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller's eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gadwall	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	23.5	17.6	17.6	5.9	5.9	22.9	1.0	0.4	14.3	ind	0.6	63.6
Common merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red-breasted merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	17.6	17.6	17.6	5.9	11.8	22.4	1.0	0.4	18.7	ind	0.8	80.4
Scaup	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black scoter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern shoveler	5.9	5.9	5.9	0.0	5.9	2.4	0.1	0.0	2.7	ind	0.1	0.0
Green-winged teal	29.4	23.5	23.5	5.9	17.6	12.9	0.6	0.2	25.9	ind	1.1	62.6
Wigeon	11.8	11.8	11.8	0.0	11.8	6.2	0.3	0.1	5.7	ind	0.2	77.6
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
Brant	17.6	5.9	5.9	11.8	0.0	8.7	0.4	0.1	5.4	ind	0.2	108.3
Canada/cackling goose	35.3	23.5	23.5	17.6	17.6	216.9	9.4	3.4	77.5	ind	3.4	64.3
Canada goose	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Emperor goose	5.9	5.9	5.9	0.0	0.0	6.5	0.3	0.1	2.7	ind	0.1	108.3

-continued-

Table 3-13.–Page 4 of 5.

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												
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	5.9	5.9	5.9	0.0	5.9	8.7	0.4	0.1	2.7	ind	0.1	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
Trumpeter swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	23.5	23.5	23.5	0.0	11.8	131.5	5.7	2.1	24.4	ind	1.1	73.1
Common snipe	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	58.8	41.2	41.2	23.5	23.5	152.6	6.6	2.4	190.8	ind	8.3	43.1
Duck eggs	5.9	5.9	5.9	0.0	5.9	4.5	0.2	0.1	43.3	ind	1.9	108.3
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
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
Gull eggs	35.3	23.5	23.5	17.6	11.8	64.1	2.8	1.0	213.8	ind	9.3	70.9
Murre eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
Marine invertebrates	**58.8**	**41.2**	**41.2**	**23.5**	**17.6**	**240.6**	**10.5**	**3.8**	**240.6**	**lb**	**10.5**	**56.1**
Black (small) chitons	5.9	5.9	5.9	0.0	0.0	10.8	0.5	0.2	2.7	gal	0.1	108.3
Butter clams	11.8	5.9	5.9	5.9	5.9	60.9	2.6	1.0	20.3	gal	0.9	108.3
Horse clams	5.9	5.9	5.9	5.9	0.0	20.3	0.9	0.3	6.8	gal	0.3	108.3
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	17.6	17.6	17.6	0.0	0.0	13.5	0.6	0.2	4.5	gal	0.2	69.4
Softshell clams	29.4	17.6	17.6	11.8	11.8	113.6	4.9	1.8	37.9	gal	1.6	65.2
Cockles	5.9	5.9	5.9	0.0	5.9	20.3	0.9	0.3	6.8	gal	0.3	108.3
Dungeness crab	5.9	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red king crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Blue 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	ind	0.0	0.0
Scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sea urchin	5.9	5.9	5.9	0.0	0.0	1.1	0.0	0.0	2.3	gal	0.1	108.3
Shrimp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

-continued-

Table 3-13.–Page 5 of 5.

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	**76.5**	**76.5**	**70.6**	**35.3**	**23.5**	**316.3**	**13.8**	**5.0**	**316.3**	**lb**	**13.8**	**38.5**
Blueberry	35.3	29.4	29.4	5.9	0.0	78.5	3.4	1.2	19.6	gal	0.9	74.6
Lowbush cranberry	35.3	35.3	35.3	5.9	5.9	106.9	4.6	1.7	26.7	gal	1.2	58.9
Highbush cranberry	11.8	0.0	0.0	11.8	5.9	0.0	0.0	0.0	0.0	gal	0.0	0.0
Crowberry	52.9	52.9	41.2	17.6	5.9	72.7	3.2	1.1	18.2	gal	0.8	44.3
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	5.9	5.9	5.9	0.0	0.0	5.4	0.2	0.1	1.4	gal	0.1	108.3
Salmonberry	11.8	5.9	5.9	5.9	5.9	21.6	0.9	0.3	5.4	gal	0.2	108.3
Beach asparagus	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	5.9	5.9	5.9	0.0	0.0	1.4	0.1	0.0	1.4	gal	0.1	108.3
Lambs quarter	0.0	0.0	0.0	0.0	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
Beach rye grass	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	17.6	17.6	17.6	0.0	5.9	2.7	0.1	0.0	2.7	gal	0.1	62.8
Other wild greens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
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	5.9	5.9	5.9	0.0	5.9	27.1	1.2	0.4	6.8	gal	0.3	108.3
Wood	29.4	29.4	29.4	0.0	0.0							

Source ADF&G Division of Subsistence household surveys, 2015.

Note Use of a resource obtained during a previous study year may be indicated when the sum of the percentage of households that received and harvested a resource is greater than the percentage of households that used the resource.

Note Blank cells indicate the survey did not collect harvest amount for the resource.

a. Summary rows have been converted to pounds usable weight.

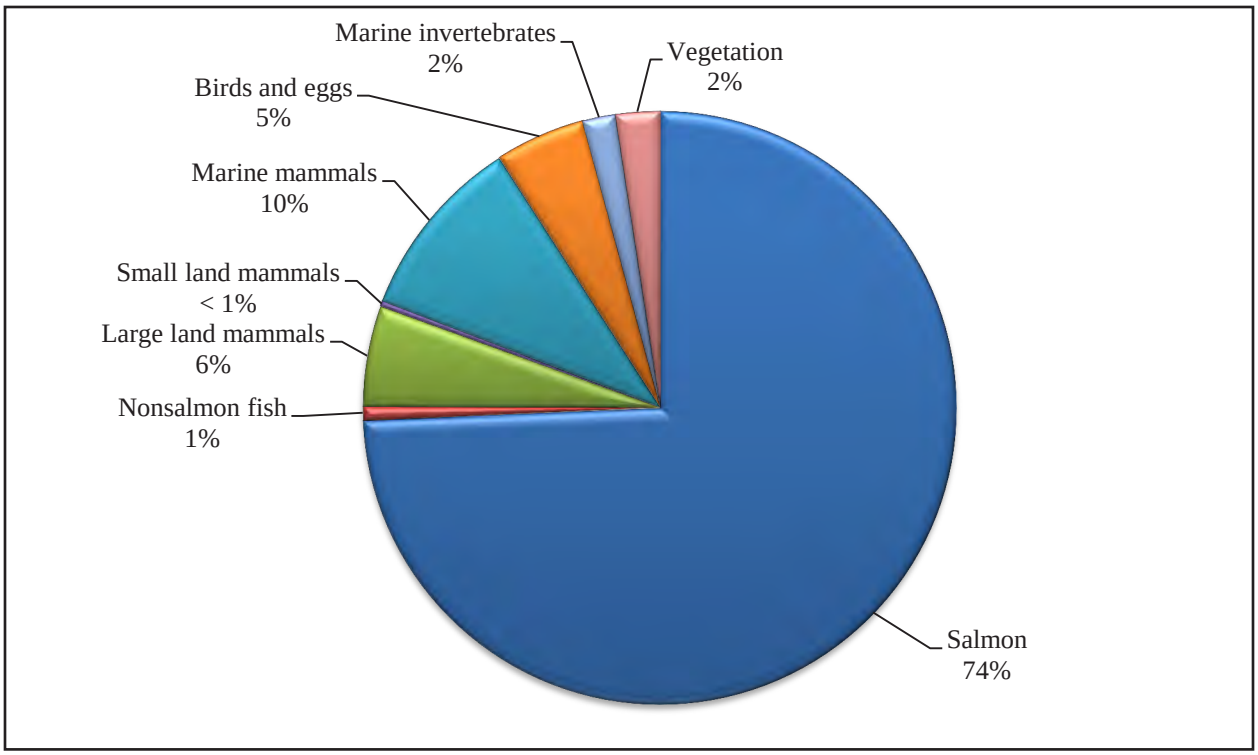
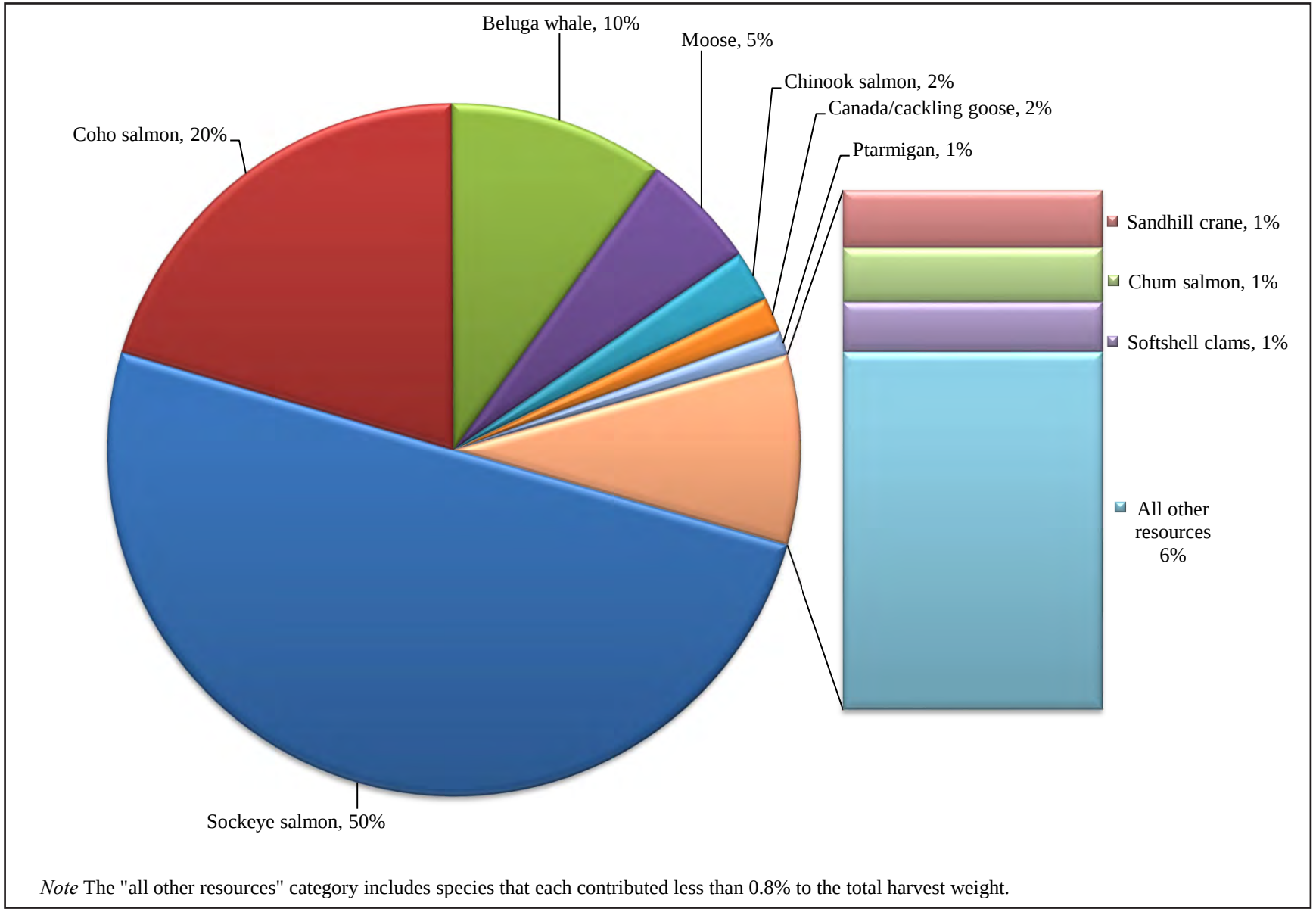


Figure 3-14.–Composition of harvest in pounds usable weight, by resource category, Pilot Point, 2014.

Table 3-14.–Top ranked resources used by households, Pilot Point, 2014.

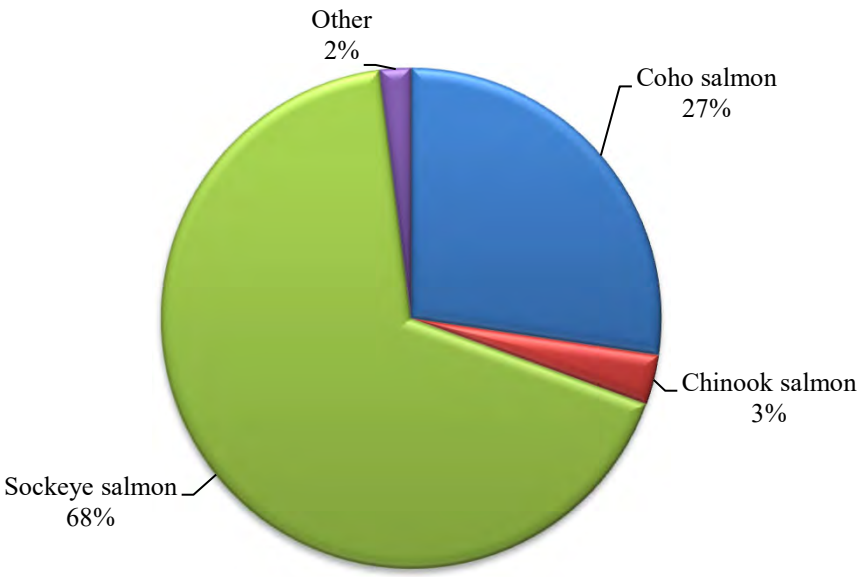
Rank[a]	Resource	Percentage of households using
1.	Sockeye salmon	94.1%
2.	Moose	82.4%
3.	Coho salmon	76.5%
4.	Ptarmigan	58.8%
5.	Chinook salmon	52.9%
5.	Smelt	52.9%
5.	Crowberry	52.9%
8.	Canada/cackling goose	35.3%
8.	Gull eggs	35.3%
8.	Blueberry	35.3%

Source ADF&G Division of Subsistence household surveys, 2015.
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 includes species that each contributed less than 0.8% to the total harvest weight.

Figure 3-15.–Top resources harvested by percentage of total harvest in pounds usable weight, Pilot Point, 2014.



Note The "other" category includes species that each contributed less than 1.5% to the total salmon harvest weight.

Figure 3-16.–Composition of salmon harvest in pounds usable weight, Pilot Point, 2014.

Salmon

In 2014, Pilot Point residents harvested 9,952 lb of salmon; nearly three-quarters (68%) of the harvest weight came from sockeye salmon, and coho and Chinook salmon contributed 27% and 3%, respectively (Table 3-13; Figure 3-16). The final 2% of the salmon harvest comprised chum, pink, and spawning sockeye salmon harvests. Sockeye salmon were used, harvested, and shared by the highest percentage of households: 59% of households harvested 6,711 lb of sockeye salmon—equal to 106 lb per person—and 53% of households shared sockeye salmon. Overall, 94% of households used sockeye salmon and 65% received this species.

Subsistence set gillnets were used to harvest 2,230 salmon (9,468 lb) and 77 salmon (485 lb) were removed from commercial harvests for home use (Table 3-15). Figure 3-17 is a visual representation of the salmon harvest weight caught by gear type. An estimated 95% of the salmon harvest weight was caught using subsistence set gillnets (Table 3-16). For all species except Chinook salmon, set gillnet was the most commonly used harvest method. All of the chum, coho, and spawning sockeye salmon were caught by set gillnet, as was 97% of the sockeye salmon harvest weight, and 86% of the pink salmon harvest weight (Table 3-15; Table 3-16). Eighty-six percent of the Chinook salmon harvest was obtained through commercial removals. Pilot Point residents used no other gear type to harvest salmon in 2014.

Residents used Ugashik Bay as their primary salmon harvesting grounds (Figure 3-18). The coastline of the bay south of Pilot Point was used, as were several locations along the coast to the north of the community.

Table 3-15.–Estimated harvest of salmon by gear type and resource, Pilot Point, 2014.

			Subsistence and personal use methods													
	Removed from commercial catch		Set gillnet		Seine		Dip net		Other method		Subsistence and personal use gear, any method		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**77.1**	**484.5**	**2,229.6**	**9,467.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2,229.6**	**9,467.9**	**0.0**	**0.0**	**2,306.8**	**9,952.4**
Chum salmon	0.0	0.0	27.1	124.1	0.0	0.0	0.0	0.0	0.0	0.0	27.1	124.1	0.0	0.0	27.1	124.1
Coho salmon	0.0	0.0	604.8	2,721.4	0.0	0.0	0.0	0.0	0.0	0.0	604.8	2,721.4	0.0	0.0	604.8	2,721.4
Chinook salmon	25.7	275.8	4.1	43.5	0.0	0.0	0.0	0.0	0.0	0.0	4.1	43.5	0.0	0.0	29.8	319.3
Pink salmon	2.7	6.9	16.2	41.5	0.0	0.0	0.0	0.0	0.0	0.0	16.2	41.5	0.0	0.0	18.9	48.4
Sockeye salmon	48.7	201.8	1,570.8	6,509.2	0.0	0.0	0.0	0.0	0.0	0.0	1,570.8	6,509.2	0.0	0.0	1,619.5	6,711.1
Landlocked 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
Spawning coho 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
Spawning sockeye salmon	0.0	0.0	6.8	28.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	28.0	0.0	0.0	6.8	28.0

Source ADF&G Division of Subsistence household surveys, 2015.
Note The harvested number of salmon is represented as individual fish harvested.

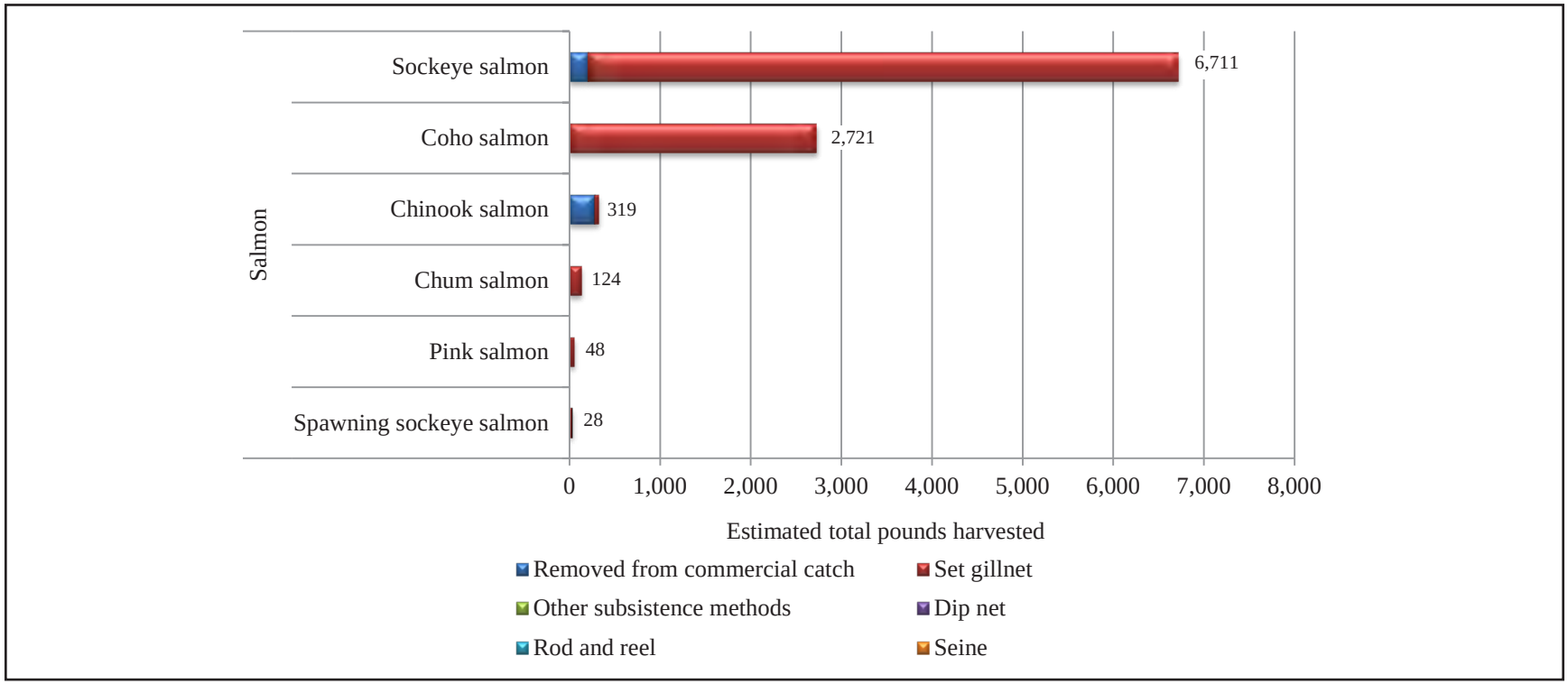


Figure 3-17.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Pilot Point, 2014.

Table 3-16.–Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Pilot Point, 2014.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Seine	Dip net	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Salmon	**Gear type**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**100.0%**
	Resource	**4.9%**	**95.1%**	**0.0%**	**0.0%**	**0.0%**	**95.1%**	**0.0%**	**100.0%**
	Total	**4.9%**	**95.1%**	**0.0%**	**0.0%**	**0.0%**	**95.1%**	**0.0%**	**100.0%**
Chum salmon	Gear type	0.0%	1.3%	0.0%	0.0%	0.0%	1.3%	0.0%	1.2%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	1.2%	0.0%	0.0%	0.0%	1.2%	0.0%	1.2%
Coho salmon	Gear type	0.0%	28.7%	0.0%	0.0%	0.0%	28.7%	0.0%	27.3%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	27.3%	0.0%	0.0%	0.0%	27.3%	0.0%	27.3%
Chinook salmon	Gear type	56.9%	0.5%	0.0%	0.0%	0.0%	0.5%	0.0%	3.2%
	Resource	86.4%	13.6%	0.0%	0.0%	0.0%	13.6%	0.0%	100.0%
	Total	2.8%	0.4%	0.0%	0.0%	0.0%	0.4%	0.0%	3.2%
Pink salmon	Gear type	1.4%	0.4%	0.0%	0.0%	0.0%	0.4%	0.0%	0.5%
	Resource	14.3%	85.7%	0.0%	0.0%	0.0%	85.7%	0.0%	100.0%
	Total	0.1%	0.4%	0.0%	0.0%	0.0%	0.4%	0.0%	0.5%
Sockeye salmon	Gear type	41.7%	68.8%	0.0%	0.0%	0.0%	68.8%	0.0%	67.4%
	Resource	3.0%	97.0%	0.0%	0.0%	0.0%	97.0%	0.0%	100.0%
	Total	2.0%	65.4%	0.0%	0.0%	0.0%	65.4%	0.0%	67.4%
Landlocked 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%
Spawning coho 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%
Spawning sockeye salmon	Gear type	0.0%	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%

Source ADF&G Division of Subsistence household surveys, 2015.

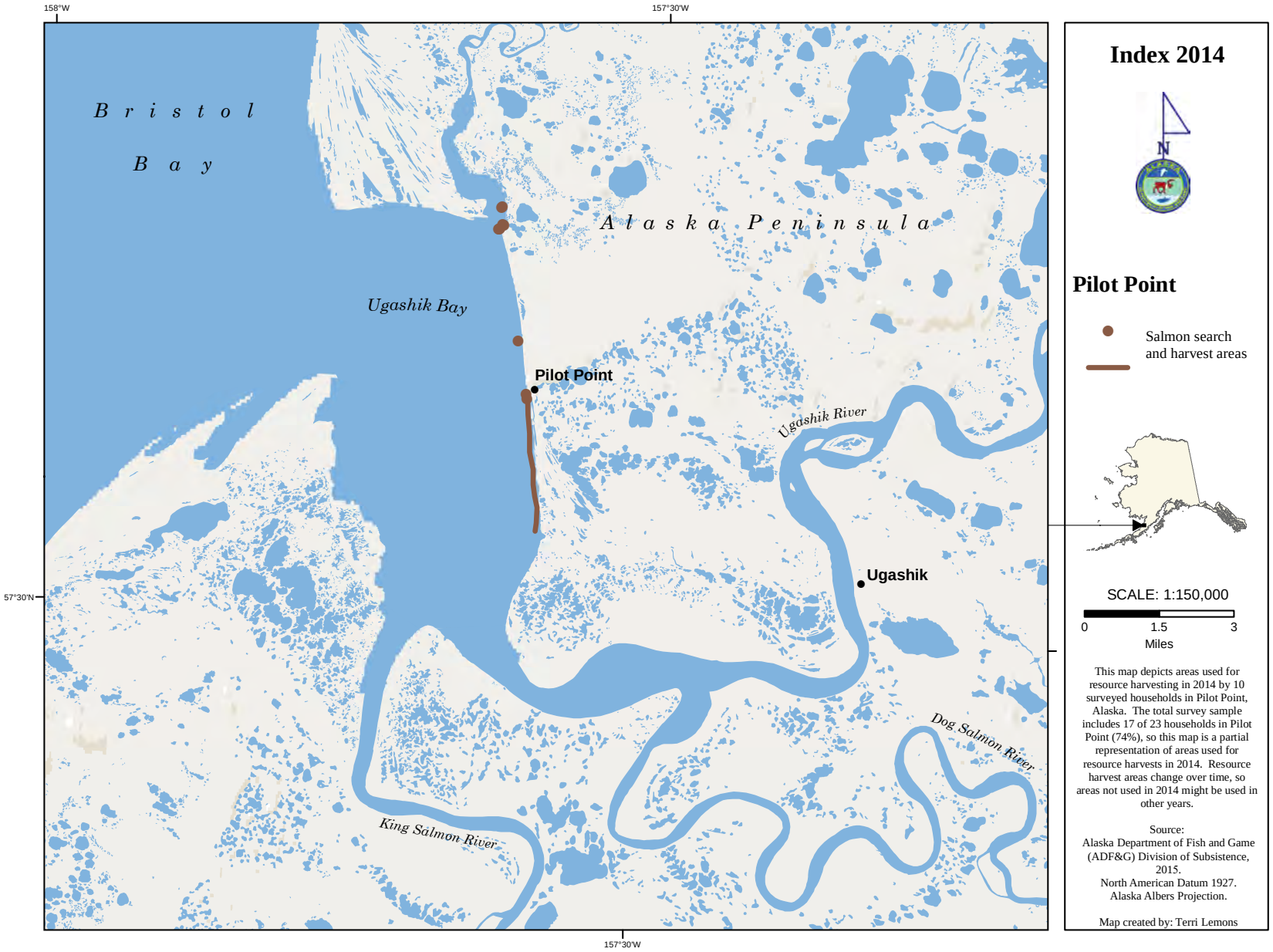


Figure 3-18.–Fishing and harvest locations of salmon, Pilot Point, 2014.

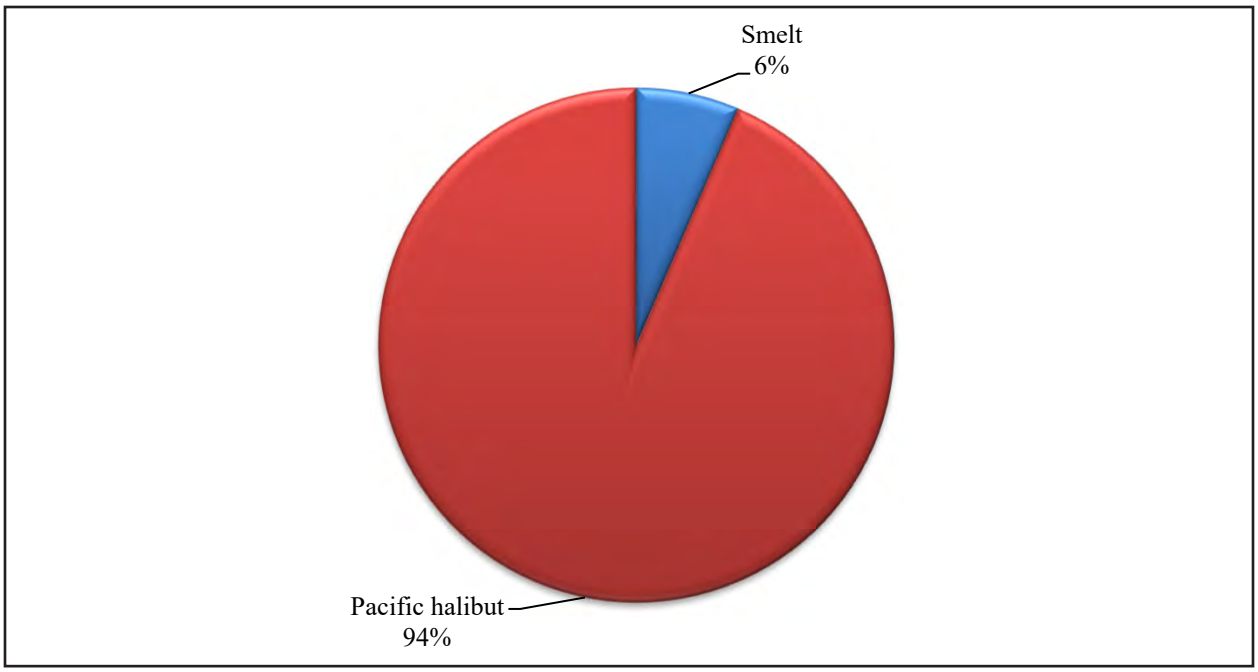


Figure 3-19.–Composition of nonsalmon fish harvest in pounds usable weight, Pilot Point, 2014.

Nonsalmon Fish

Pilot Point residents harvested only two kinds of nonsalmon fish in 2014: Pacific halibut, which made up 94% of the harvest by weight, and smelt, accounting for the remaining 6% (Figure 3-19). The nonsalmon fish harvest contributed less than 2 lb per capita, with a 1.4 lb per capita harvest of Pacific halibut and a 0.1 lb per capita harvest of smelt (Table 3-13). Despite these small harvest amounts, the two species were used by many households. More than one-half (53%) of households used smelt and 24% used Pacific halibut. Eighteen percent and 12% of households harvested the two species, respectively. Along with these species, several other nonsalmon fish were used by Pilot Point households. Other used species included northern pike, used by 12% of households, as well as Pacific herring eggs on branches and kelp, burbot, humpback whitefish, and unknown whitefishes, all of which were used by 6% of households. Six percent of households attempted to harvest rockfish but had no success. No household gave away nonsalmon fish, but several received these species, either from unsurveyed households within the community or from other communities. The largest percentage of households received smelt (35%), while 12% of households received Pacific halibut and northern pike, and 6% received the remaining nonsalmon fish species that were used.

An estimated total of 60 lb of nonsalmon fish were harvested using rod and reel gear, and 29 lb were obtained through commercial removals (Table 3-17). Figure 3-20 is a visual representation of the nonsalmon fish harvest weight caught by gear type. As estimated in total pounds of fish, 64% of the nonsalmon fish harvest was caught using rod and reel gear (Table 3-18). Pacific halibut were harvested most commonly with rod and reel gear (67% of harvest weight); the remaining 33% came from commercial removals. In contrast, 81% of the smelt harvest weight was taken by ice fishing and just 19% of the harvest was from rod and reel.

Nonsalmon fish were harvested from several locations along the Ugashik River (Figure 3-21). Pacific halibut were harvested from Kachemak Bay, which is not depicted on Figure 3-21.

Table 3-17.–Estimated harvest of nonsalmon fish by gear type and resource, Pilot Point, 2014.

				Subsistence and personal use methods											
		Removed from commercial catch		Set gillnet		Dip net		Ice fishing		Other method		Subsistence and personal use 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	Number[a]	Pounds
Nonsalmon fish			**29.2**		**0.0**		**0.0**		**4.9**		**0.0**		**4.9**		**59.6**		**93.7**
Pacific herring	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	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	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	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	0.0	0.0
Capelin (grunion)	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	0.0	0.0
Smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	1.5	4.9	0.0	0.0	1.5	4.9	0.3	1.1	1.9	6.1
Pacific (gray) 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	0.0	0.0
Starry 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	0.0	0.0
Pacific halibut	lb	29.2	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.4	58.4	87.7	87.7
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	0.0	0.0
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	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	0.0	0.0
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	0.0	0.0
Salmon 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	0.0	0.0
Yellowfin 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	0.0	0.0
Alaska blackfish	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	0.0	0.0
Burbot	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	0.0	0.0
Dolly Varden–freshwater	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	0.0	0.0
Dolly Varden–saltwater	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	0.0	0.0
Arctic grayling	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	0.0	0.0
Northern pike	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	0.0	0.0
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	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	0.0	0.0
Least cisco	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	0.0	0.0
Humpback whitefish	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	0.0	0.0
Round whitefish	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	0.0	0.0
Unknown 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	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2015.

Note The summary row that includes 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.

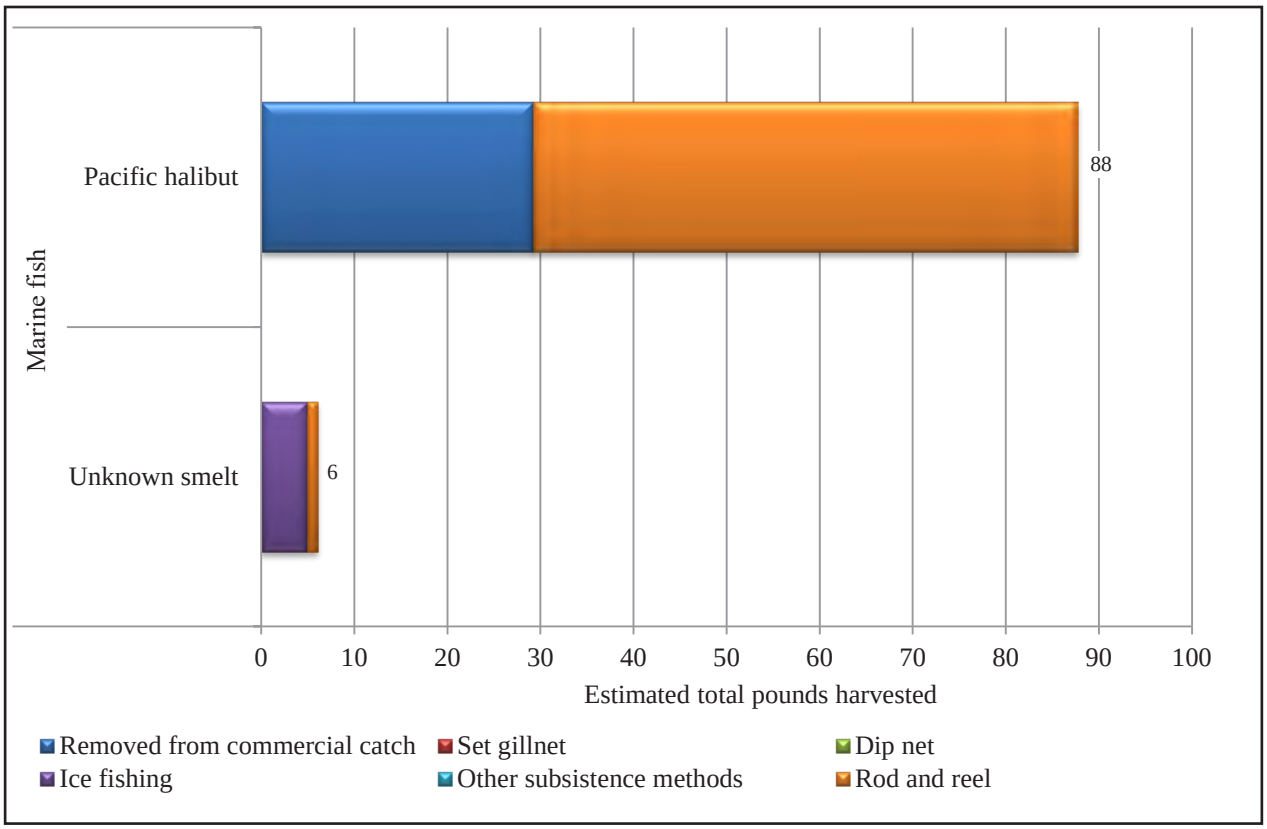


Figure 3-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Pilot Point, 2014.

Table 3-18.–Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Pilot Point, 2014.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Nonsalmon fish	**Gear type**	**100.0%**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**31.2%**	**0.0%**	**0.0%**	**5.3%**	**0.0%**	**5.3%**	**63.6%**	**100.0%**
	Total	**31.2%**	**0.0%**	**0.0%**	**5.3%**	**0.0%**	**5.3%**	**63.6%**	**100.0%**
Pacific herring	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%
Pacific herring sac roe	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%
Pacific herring spawn on kelp	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%
Pacific herring roe on hemlock branches	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%
Capelin (grunion)	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%
Smelt	Gear type	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	1.9%	6.5%
	Resource	0.0%	0.0%	0.0%	81.3%	0.0%	81.3%	18.8%	100.0%
	Total	0.0%	0.0%	0.0%	5.3%	0.0%	5.3%	1.2%	6.5%
Pacific (gray) cod	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%
Starry flounder	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%
Pacific halibut	Gear type	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.1%	93.5%
	Resource	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	100.0%
	Total	31.2%	0.0%	0.0%	0.0%	0.0%	0.0%	62.4%	93.5%
Rockfish	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%
Sablefish (black cod)	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%

-continued-

Table 3-18.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Red Irish lord	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%
Sculpin	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%
Salmon shark	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%
Yellowfin sole	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%
Alaska blackfish	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%
Burbot	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%
Dolly	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Varden–freshwater	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%
Dolly	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Varden–saltwater	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%
Arctic grayling	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%
Northern pike	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%
Rainbow trout	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%

-continued-

Table 3-18.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Steelhead	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%
Least cisco	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%
Humpback whitefish	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%
Round whitefish	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%
Unknown whitefishes	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, 2015.

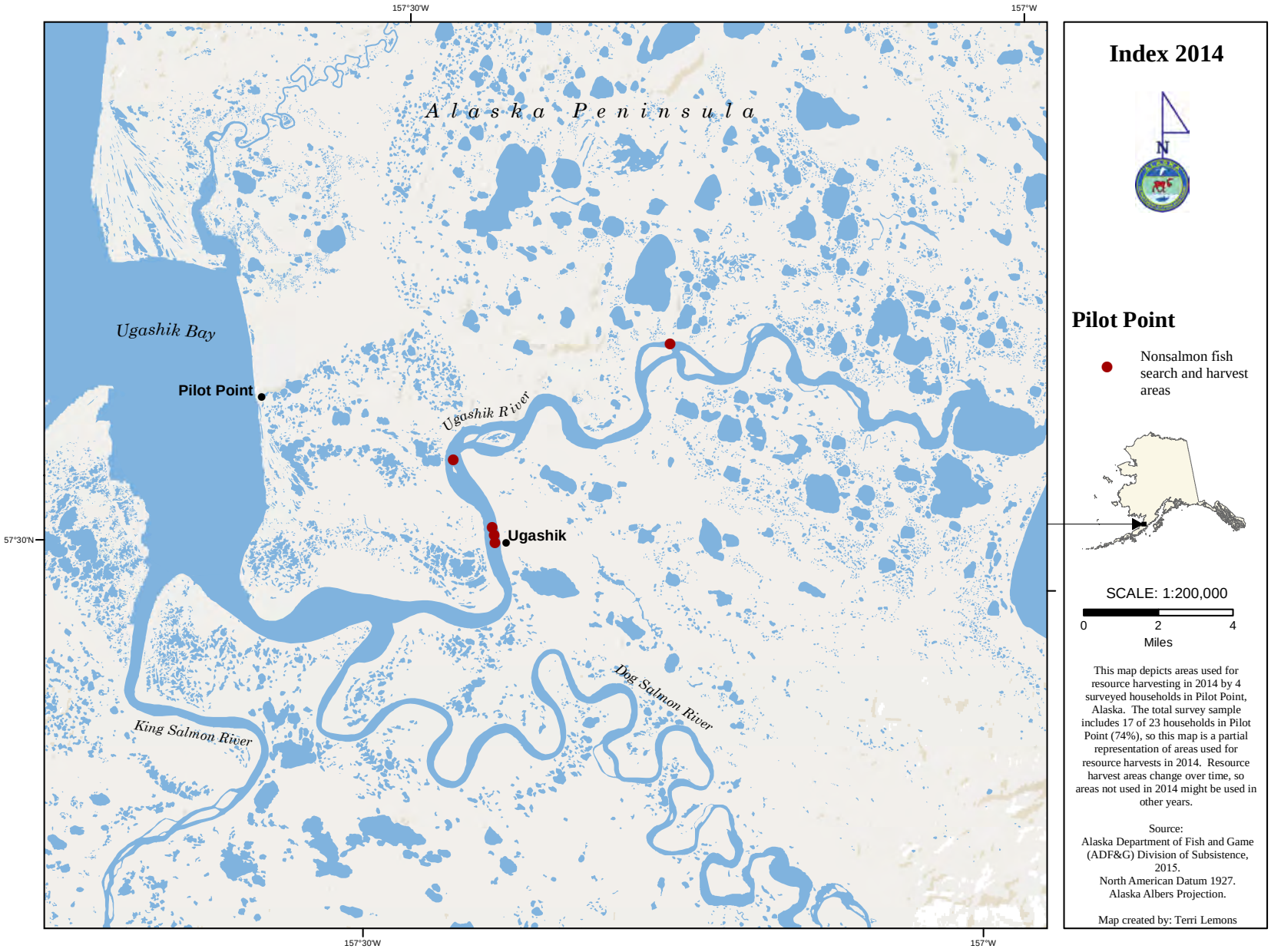


Figure 3-21.–Fishing and harvest locations of nonsalmon fish, Pilot Point, 2014.

Table 3-19.–Estimated large land mammal harvests by month and sex, Pilot Point, 2014.

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**	**0.0**	**0.0**	**1.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.4**
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**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	**1.4**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	**1.4**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2015.

Large Land Mammals

Moose composed the entire large land mammal harvest by Pilot Point residents in 2014. While 29% of households attempted to harvest a moose, only 6% of households successfully did so (Table 3-13). Most households (82%) used moose, and sharing of this resource was widespread with 29% of households giving away moose and 82% of households receiving it. An estimated 731 lb of moose were harvested, which equaled approximately 12 lb of moose per capita. Only one bull moose was reported harvested (because not all households were interviewed, the estimated harvest was 1.4 moose) and it was taken during the month of August (Table 3-19).[4] Although moose was the only large land mammal species harvested in 2014, some households received and used other species: 6% of households received bison and caribou (Table 3-13). No Pilot Point households shared these resources. Comments offered during the surveys indicated many households wish for a return of the caribou to the area so they could be hunted as in the past. Additionally, in 2014, many respondents noted a lack of moose locally available, leading to less hunter success but also less sharing of moose meat by guides who were also unsuccessful.

Residents sought and harvested moose from a large area to the north and east of Pilot Point, between the Ugashik River and the Bristol Bay coastline (Figure 3-22). Nonlocally, hunting occurred on the Kenai Peninsula, although the area was not depicted on the map.

4. The harvest database WinfoNet also indicated one moose was harvested by a Pilot Point resident in 2014 (database accessed June 2018).

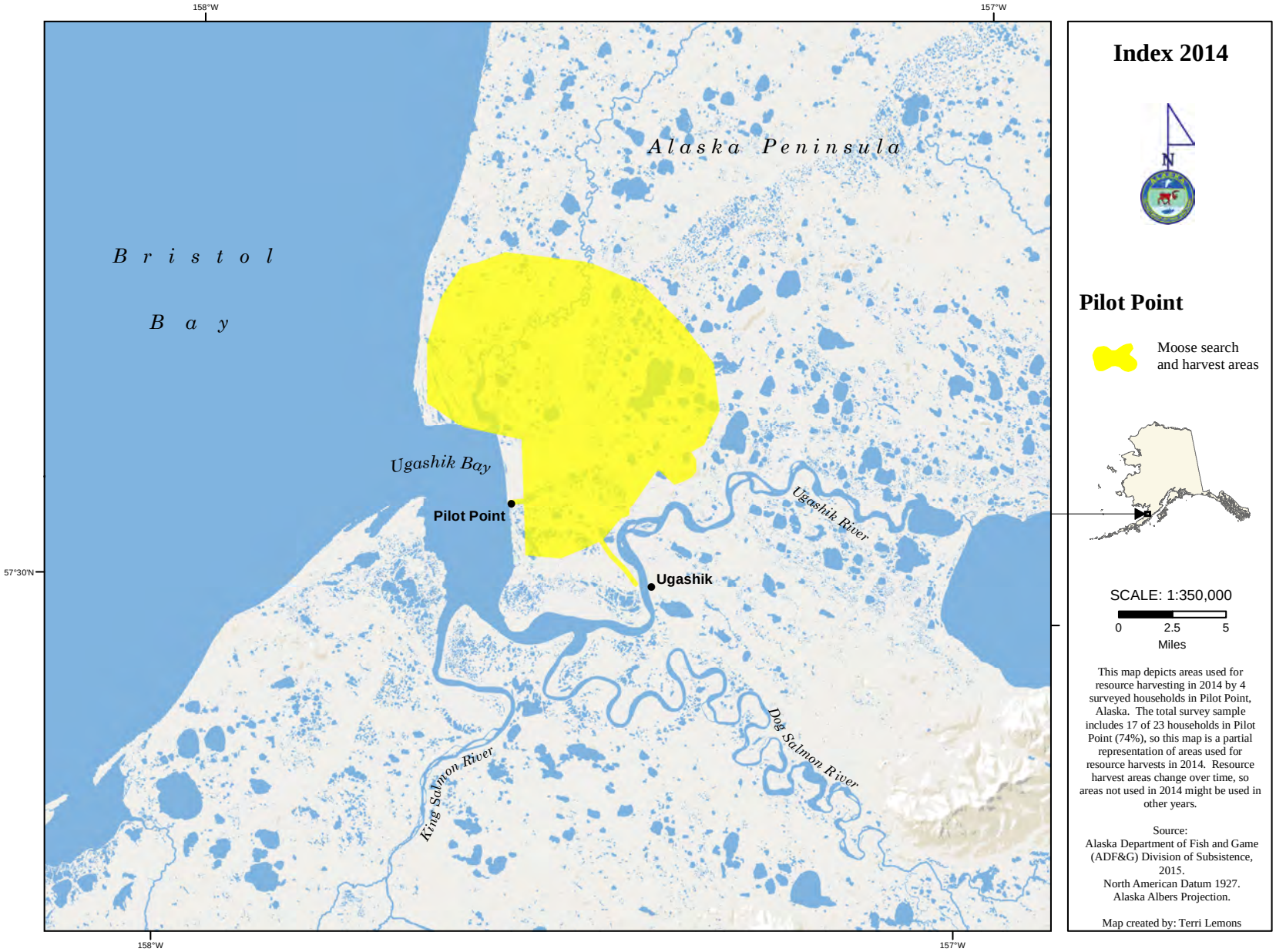


Figure 3-22.–Hunting locations of moose, Pilot Point, 2014.

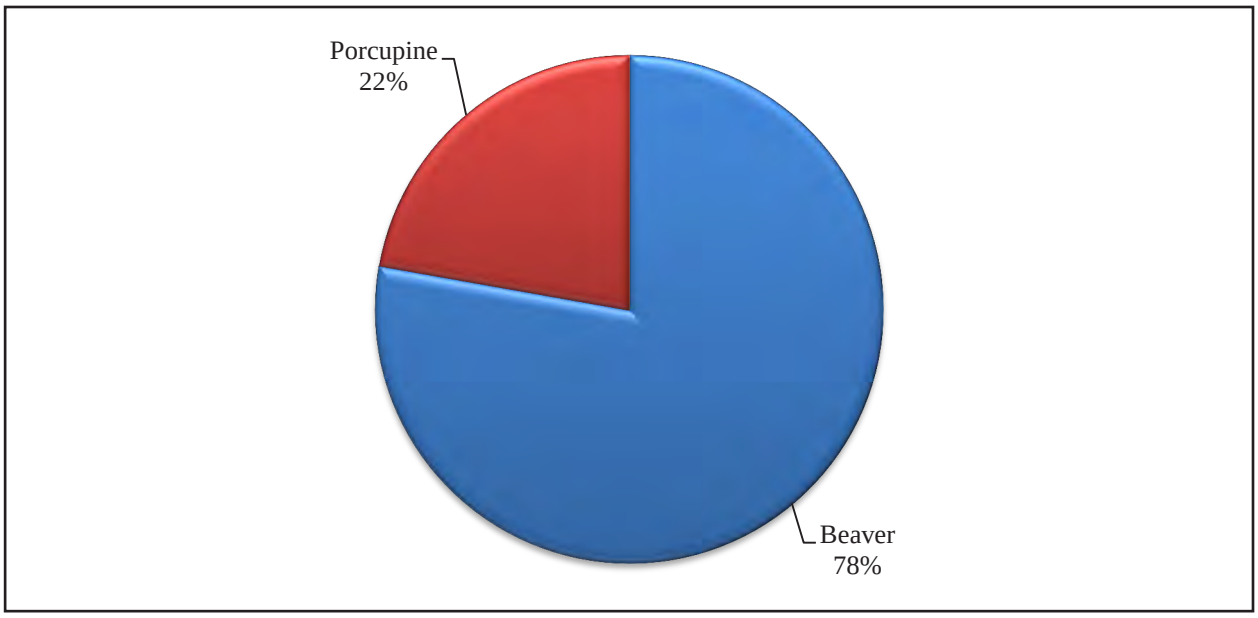


Figure 3-23.–Composition of small land mammal/furbearer harvest by individual animals harvested, Pilot Point, 2014.

Small Land Mammals/Furbearers

Small land mammals were used by less than one-quarter of households in Pilot Point in 2014: 24% of households used these species, 18% of households harvested them, 12% of households gave some away, and 6% of households received them (Table 3-13). Beavers and porcupines composed the small land mammal harvest in 2014: 78% of the harvest (by numbers of animals) was beaver and 22% was porcupine (Figure 3-23). Both of these animals were harvested for food, as well as fur in the case of beavers. Twenty-four pounds of beavers (approximately 10 animals) and 22 lb of porcupines (approximately three animals) were harvested; these harvests each equal less than one-half pound per capita (Table 3-13). Beavers were harvested predominantly in March, with a smaller harvest occurring during November (Table 3-20). Porcupines were harvested equally in May and September. Equal percentages of households used, attempted to harvest, and harvested both porcupines and beavers (12%); however, 12% of households shared porcupines while 6% shared beavers (Table 3-13). Additionally, 6% of households used gray wolves, which were received from another household. No households in Pilot Point received porcupines or beavers, and none shared gray wolves.

Pilot Point residents sought and harvested small land mammals around the community, as well as a few miles to the east toward the Ugashik River (Figure 3-24).

Table 3-20.–Estimated small land mammal/furbearer harvests by month, Pilot Point, 2014.

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**	**6.8**	**0.0**	**1.4**	**0.0**	**0.0**	**0.0**	**1.4**	**0.0**	**2.7**	**0.0**	**0.0**	**12.2**
Beaver	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	**9.5**
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**
Arctic 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**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–red phase	0.0	0.0	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	0.0	0.0	**0.0**
Muskrat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Porcupine	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	**2.7**
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
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, 2015.

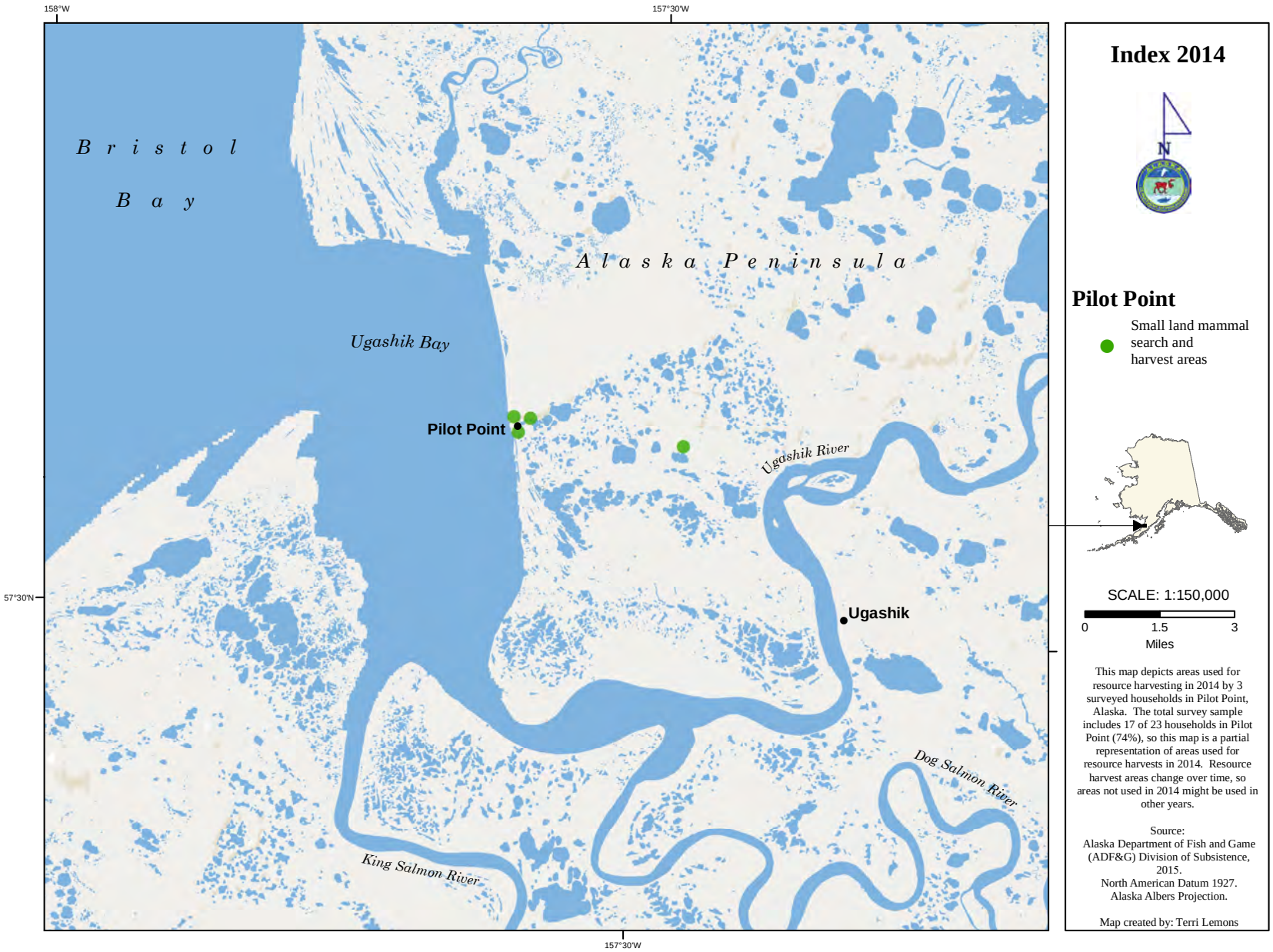


Figure 3-24.–Hunting and trapping locations of small land mammals/furbearers, Pilot Point, 2014.

Table 3-21.–Estimated marine mammal harvests by month and sex, Pilot Point, 2014.

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**	**0.0**	**0.0**	**1.4**	**0.0**	**0.0**	**0.0**	**0.0**	**1.4**
Harbor porpoise	0.0	0.0	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	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Harbor 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**
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, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown 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**
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**
Walrus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Beluga whale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	**1.4**

Source ADF&G Division of Subsistence household surveys, 2015.

Marine Mammals

Marine mammals were used by approximately one-third of households in Pilot Point in 2014 (Table 3-13). Resources used included beluga whales (used by 24% of households), harbor seals and other unspecified seals (both used by 12% of households), and sea otters (used by 6% of households). No households hunted sea otters or unspecified seals and the households that used the resources reported receiving them. For harbor seals, 6% of households hunted them but were unsuccessful and 6% of households received harbor seals from others. The other households that used harbor seals reported obtaining them through salvage.

Beluga whales composed the entirety of the marine mammal harvest, conducted by 6% of households: 1,346 lb were harvested, or 21 lb per capita. Beluga whales were harvested during the month of September (Table 3-21). Beluga whales were also the only marine mammal resource that was shared: 6% of household gave beluga whale away and 18% received beluga whale (Table 3-13). It is highly likely that those households that shared beluga whale also shared with households outside of the community and this sharing dynamic is not represented in the table.

Households searched for and harvested marine mammals in the Dog Salmon River and in the northern portion of Ugashik Bay near the Dago Creek mouth (Figure 3-25).

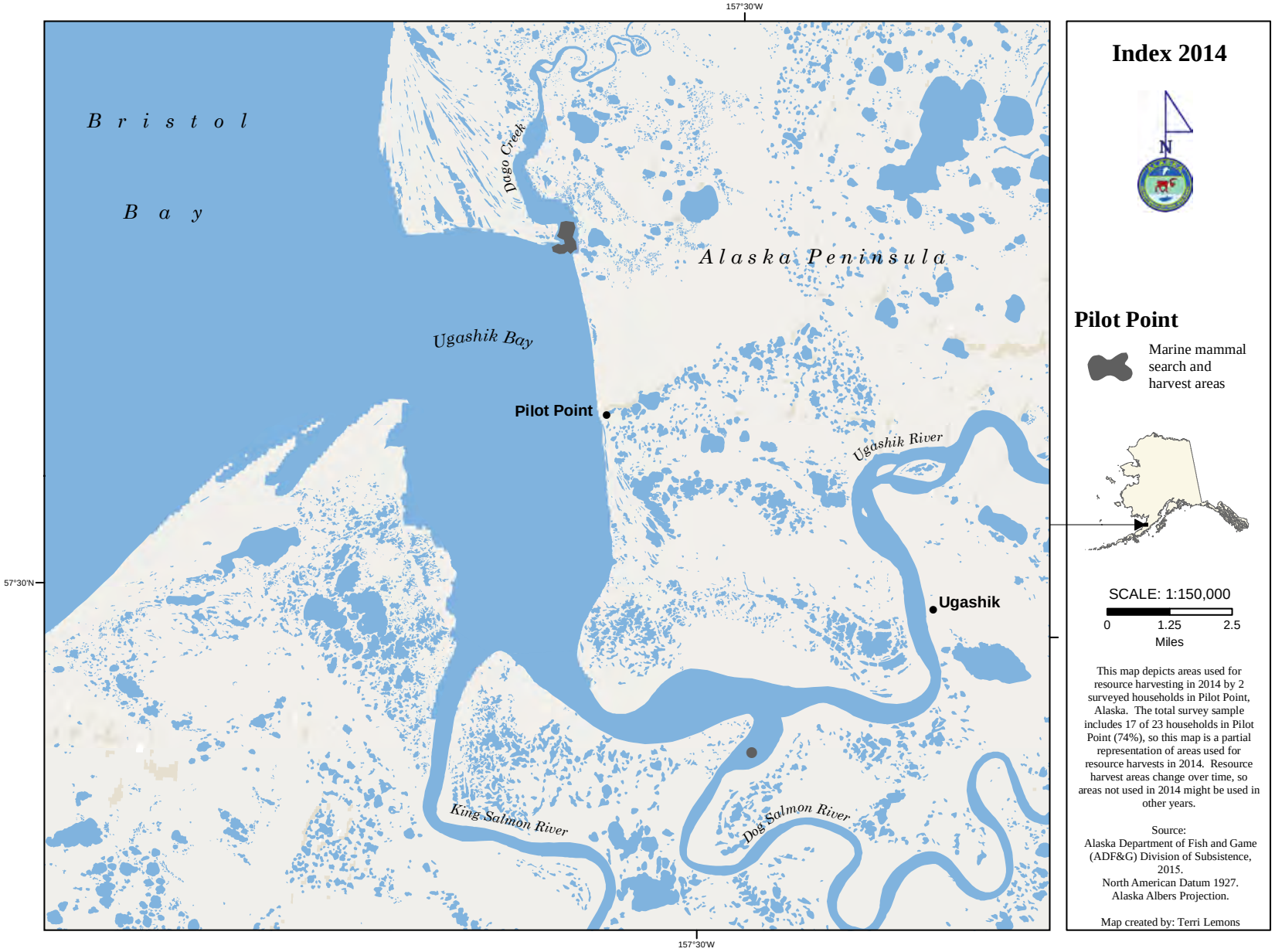
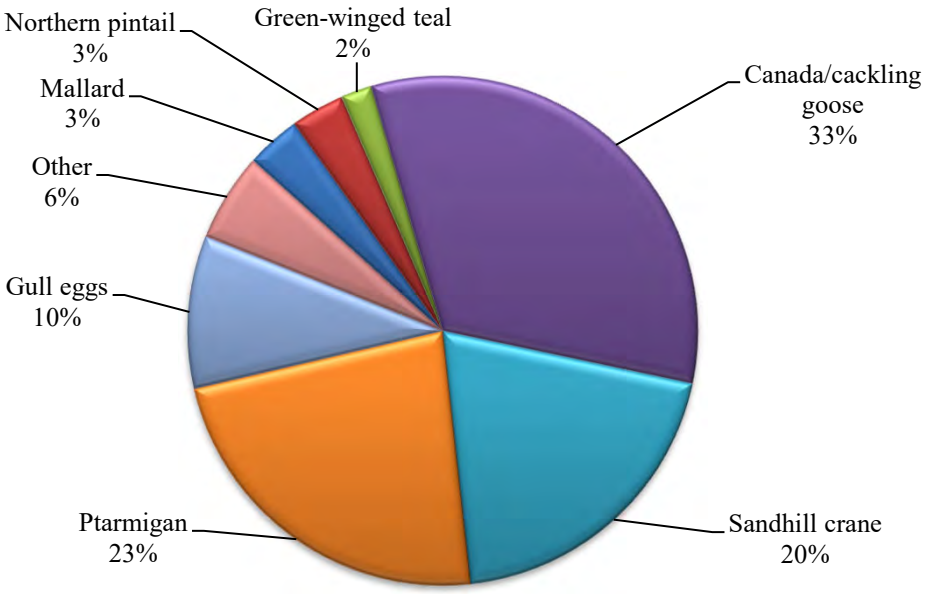


Figure 3-25.–Hunting locations of marine mammals, Pilot Point, 2014.



Note The "other" category includes species that each contributed less than 2% to the total birds and eggs harvest weight.

Figure 3-26.–Composition of bird and bird egg harvest in pounds usable weight, Pilot Point, 2014.

Birds and Eggs

Pilot Point residents harvested a variety of birds and bird eggs (Figure 3-26). By weight, Canada/cackling geese contributed the largest percentage to the overall harvest at 33% of the total. This was followed by the harvest of ptarmigan at 23%, sandhill cranes at 20%, and gull eggs at 10% of the birds and eggs harvest weight. No other species of bird or egg contributed more than 10% to the overall harvest. There were four resources that provided at least 1 lb per capita: Canada/cackling geese (3 lb), ptarmigan (2 lb), sandhill cranes (2 lb), and an estimated harvested 214 gull eggs (1 lb) (Table 3-13).

Overall, 71% of households used birds and bird eggs (Table 3-13). The most used individual species was ptarmigan, of which 59% of households used. Ptarmigan were followed by gull eggs and Canada/cackling geese, with 35% of households using these resources, and green-winged teals, sandhill cranes, and mallards were used by the next most households (24%–29%). Several resources were used by only 6% of households, including northern shovelers, gadwalls, Canada geese, emperor geese, white-fronted geese, and duck eggs. Not all of these species were harvested; gadwalls and Canada geese were not harvested but were received by the same percentage of households that used these species.

Most of the 371 birds harvested were hunted in the fall (244 birds), with summer[5] harvests (81 birds) and winter harvests (46 birds) completing the total harvest (Table 3-22). No birds were harvested in the spring. The winter harvest was dominated by ptarmigan harvests (38 birds), but most ptarmigan (139 individuals) were harvested during the fall. Other birds primarily harvested in the fall included Canada geese (46 birds), sandhill cranes (20 birds), and ducks (13 mallards and 12 green-winged teals). In the summer months (defined as July through September on the survey), Canada goose was the most harvested species with 29 birds harvested, followed by northern pintails, green-winged teals, and ptarmigan (14 birds each). No more than five of any species of bird for the remainder of the harvests were harvested during any particular season.

5. On the survey form, seasons of bird harvest were defined as follows: winter—January through April; spring—May and June; summer—July through September; and fall—October through December.

Table 3-22.–Estimated bird harvests by season, Pilot Point, 2014.

Resource	Estimated harvest by season					
	Spring	Summer	Fall	Winter	Season unknown	**Total**
All birds	**0.0**	**80.5**	**244.1**	**46.0**	**0.0**	**370.6**
Bufflehead	0.0	0.0	0.0	0.0	0.0	**0.0**
Canvasback	0.0	0.0	0.0	0.0	0.0	**0.0**
Common eider	0.0	0.0	0.0	0.0	0.0	**0.0**
King eider	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller's eider	0.0	0.0	0.0	0.0	0.0	**0.0**
Gadwall	0.0	0.0	0.0	0.0	0.0	**0.0**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Harlequin duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	0.0	1.4	12.9	0.0	0.0	**14.3**
Common merganser	0.0	0.0	0.0	0.0	0.0	**0.0**
Red-breasted merganser	0.0	0.0	0.0	0.0	0.0	**0.0**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	0.0	14.4	4.3	0.0	0.0	**18.7**
Scaup	0.0	0.0	0.0	0.0	0.0	**0.0**
Black scoter	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern shoveler	0.0	1.4	1.4	0.0	0.0	**2.7**
Green-winged teal	0.0	14.4	11.5	0.0	0.0	**25.9**
Wigeon	0.0	1.4	4.3	0.0	0.0	**5.7**
Unknown ducks	0.0	0.0	0.0	0.0	0.0	**0.0**
Brant	0.0	0.0	2.7	2.7	0.0	**5.4**
Canada/cackling goose	0.0	28.8	46.0	2.7	0.0	**77.5**
Canada goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Emperor goose	0.0	0.0	0.0	2.7	0.0	**2.7**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	1.4	1.4	0.0	0.0	**2.7**
Unknown geese	0.0	0.0	0.0	0.0	0.0	**0.0**
Trumpeter swan	0.0	0.0	0.0	0.0	0.0	**0.0**
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	4.1	20.3	0.0	0.0	**24.4**
Common snipe	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	13.5	139.4	37.9	0.0	**190.8**

Source ADF&G Division of Subsistence household surveys, 2015.

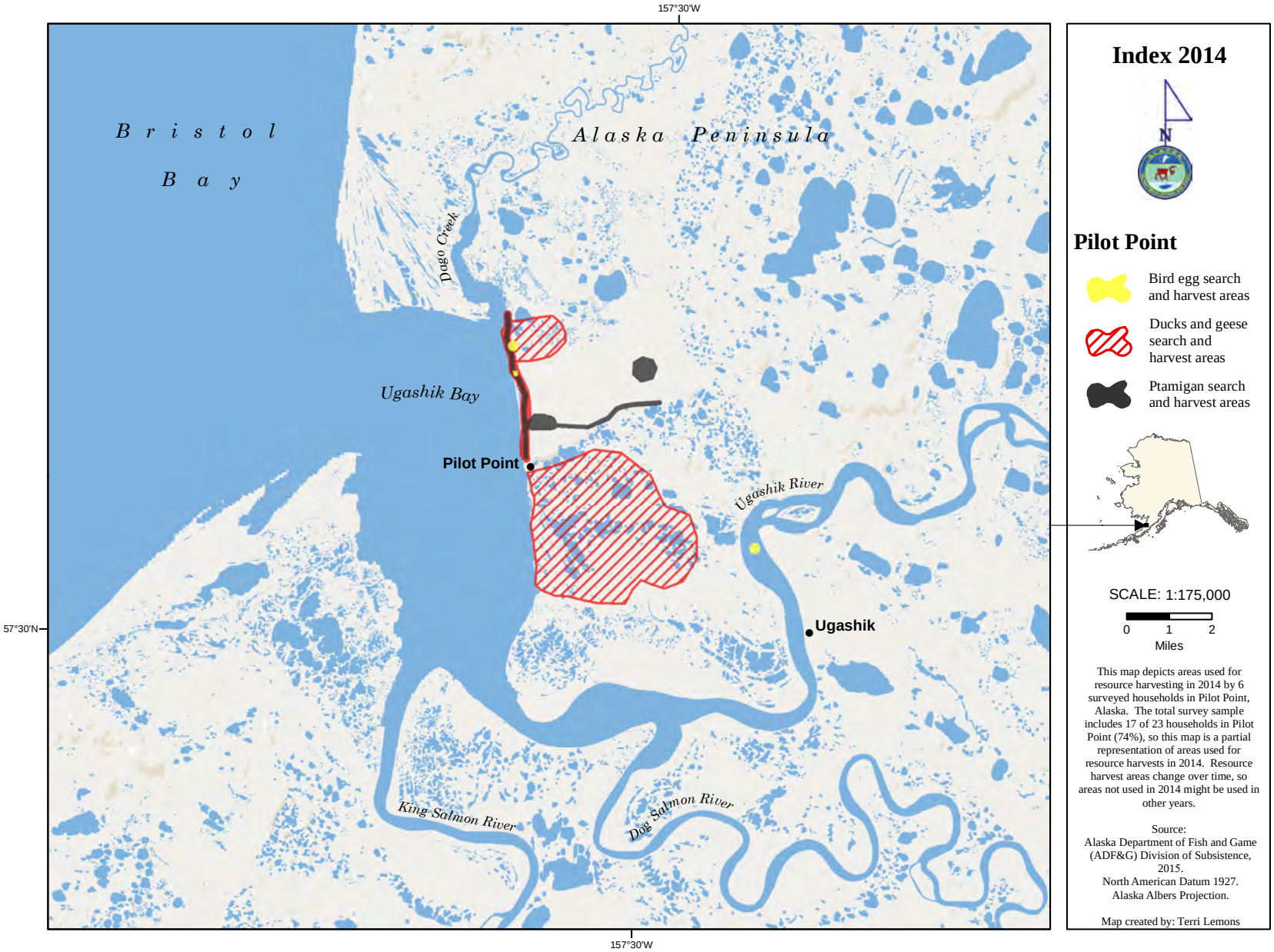


Figure 3-27.–Hunting and harvest locations of birds and bird eggs, Pilot Point, 2014.

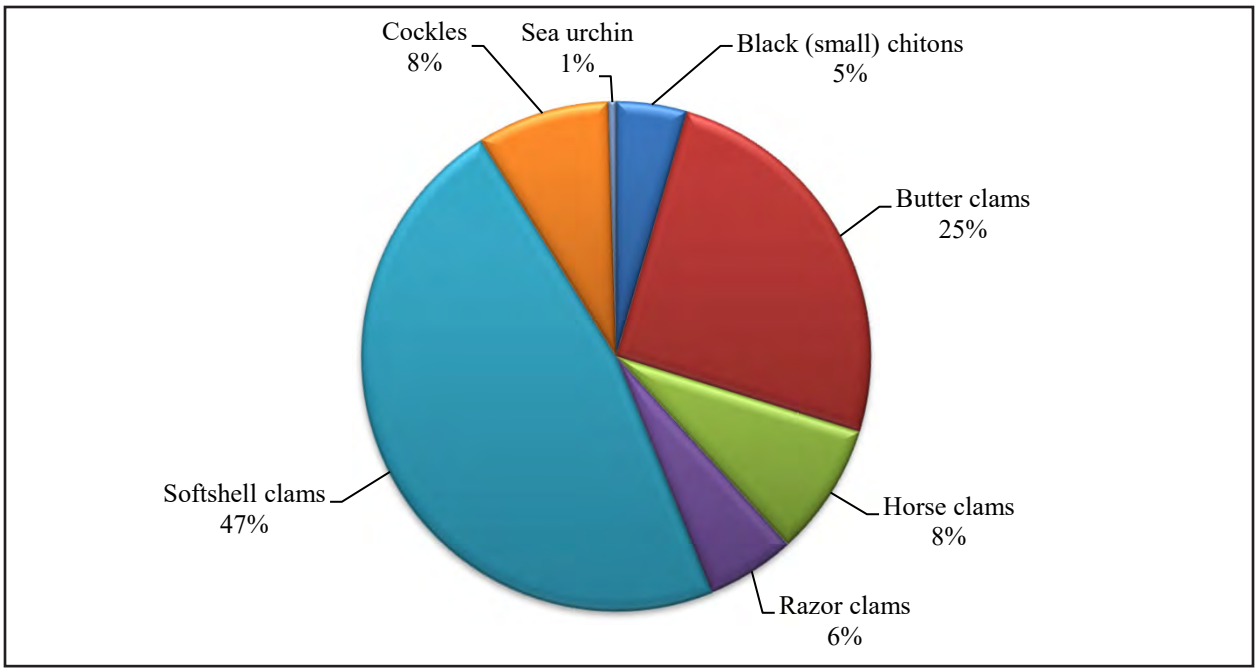


Figure 3-28.–Composition of marine invertebrate harvest in pounds usable weight, Pilot Point, 2014.

Of all the birds harvested, Pilot Point residents hunted for ducks and geese over the largest area, including the many lakes, ponds, and creeks to the southeast of town and along the coast of Ugashik Bay north to the outlet of Dago Creek (Figure 3-27). Ptarmigan were hunted along the same stretch of Ugashik Bay coastline up to Dago Creek, as well as along the uplands just north of town. Bird eggs were sought and harvested on the Ugashik River as well as near the Dago Creek outlet. Farther from town, and not shown on the map, bird eggs were gathered along the Kvichak River.

Marine Invertebrates

Pilot Point residents harvested a greater diversity of marine invertebrates than residents of Ugashik or Egegik. Seven different species or groups composed the 2014 marine invertebrates harvest of 241 lb (Table 3-13). Clams and cockles composed nearly 94% of the harvest weight: 47% softshell clams (114 lb; 2 lb per capita), 25% butter clams (61 lb; 1 lb per capita), followed by 8% horse clams (20 lb), 8% cockles (20 lb), and 6% razor clams (14 lb) that, combined, contributed less than 1 lb per capita (Figure 3-28; Table 3-13). Black chitons (5%) and sea urchins (1%) composed the remainder of the harvest weight. Overall, 41% of households harvested marine invertebrates and 59% used the resource category. Razor clams and softshell clams were harvested by 18% of households, and 6% of households participated in the harvest of the other marine invertebrate species. Households that attempted to harvest were successful in doing so. Less than one-quarter of households shared marine invertebrates: 18% gave these resources away and 24% received them. With 12% of households sharing and receiving softshell clams, that resource was the most shared. Butter clams and cockles were the only other species given away: 6% of households shared these resources. Six percent of households received butter and horse clams, as well as Dungeness crabs, the only marine invertebrate used by Pilot Point households but not harvested.

Pilot Point households traveled across the Alaska Peninsula to Yantarni Bay to harvest marine invertebrates as well as up Ugashik Bay to Dago Creek (Figure 3-29).

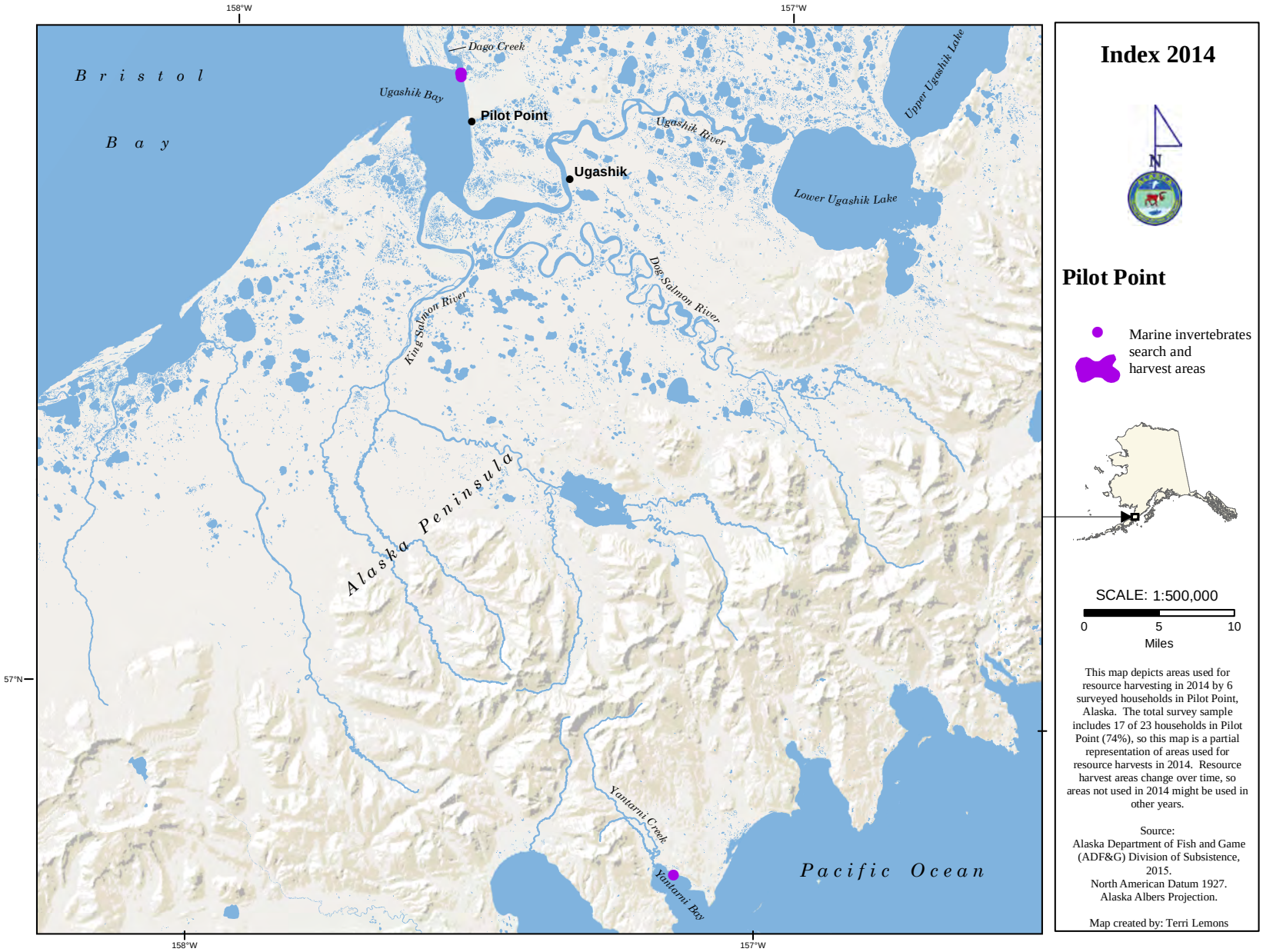


Figure 3-29.–Search and harvest locations of marine invertebrates, Pilot Point, 2014.

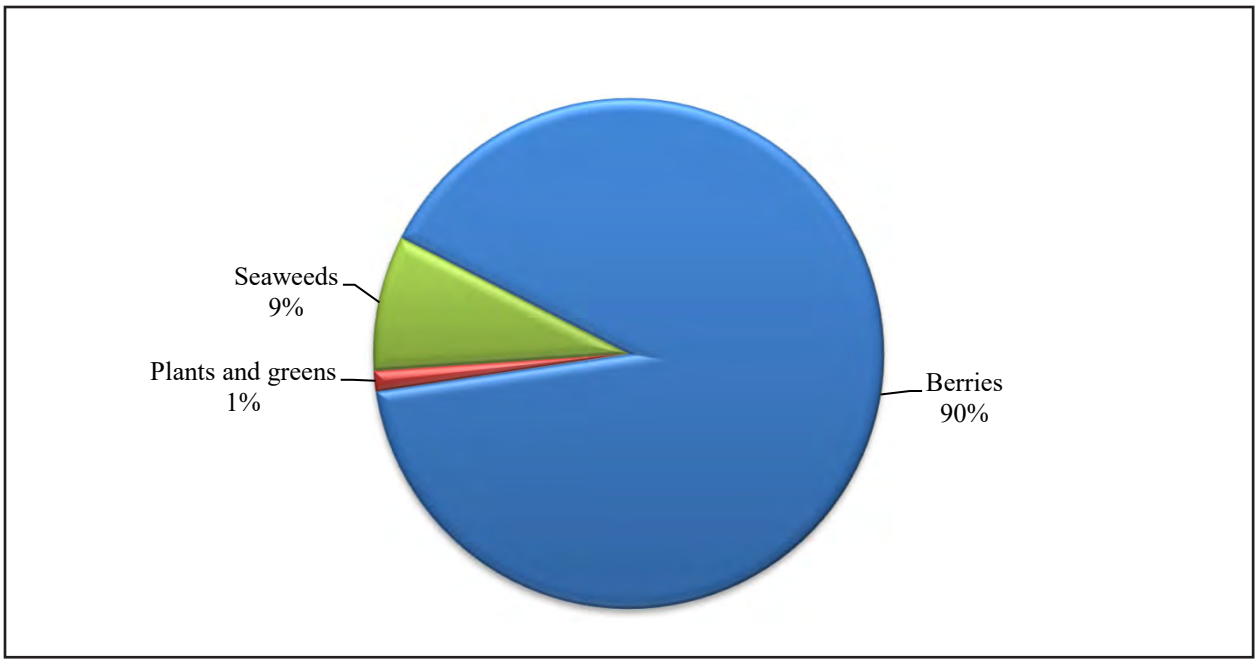


Figure 3-30.–Composition of vegetation harvest by type in pounds usable weight, Pilot Point, 2014.

Vegetation

Pilot Point residents harvested berries, plants and greens, and seaweeds totaling 316 lb, or 5 lb per capita, of vegetation (Table 3-13). By weight, berries made up the majority of the harvest: 90% of the harvest was berries, 9% was seaweeds, and 1% was plants and greens (Figure 3-30). As in Egegik, by weight, lowbush cranberries were harvested the most with 107 lb (2 lb per capita) harvested (Table 3-13; Table 2-13). This was followed by blueberries and crowberries, with 79 lb and 73 lb harvested, respectively. Raspberries were harvested the least with only 5 lb harvested in total, or less than 1 lb per capita. For plants and greens, only wild parsley and Hudson's Bay tea were harvested. An estimated 27 lb (seven gallons) of seaweeds were also harvested by Pilot Point households. Overall, 77% of households used or tried to harvest vegetation resources and 71% harvested them. Of all the types of vegetation resources for which use was documented in Pilot Point, the most households used (53%), looked for (53%), harvested (41%), and received (18%) crowberries. This berry was also the only vegetation resource that some households attempted to harvest but did not. Interestingly, despite these high use percentages, crowberry was the third most harvested type of berry, by weight. The fewest households in Pilot Point used, harvested, and shared raspberries and Hudson's Bay tea.

Yantarni Bay on the southern portion of the Alaska Peninsula, Ugashik Bay north of Pilot Point, east of town, and along the Bristol Bay coastline to the southwest of town is where vegetation resources were gathered in 2014 (Figure 3-31). Pilot Point households also picked berries and wild plants near Fairbanks, Russian Mission, and Anchorage; these areas are not depicted on the map.

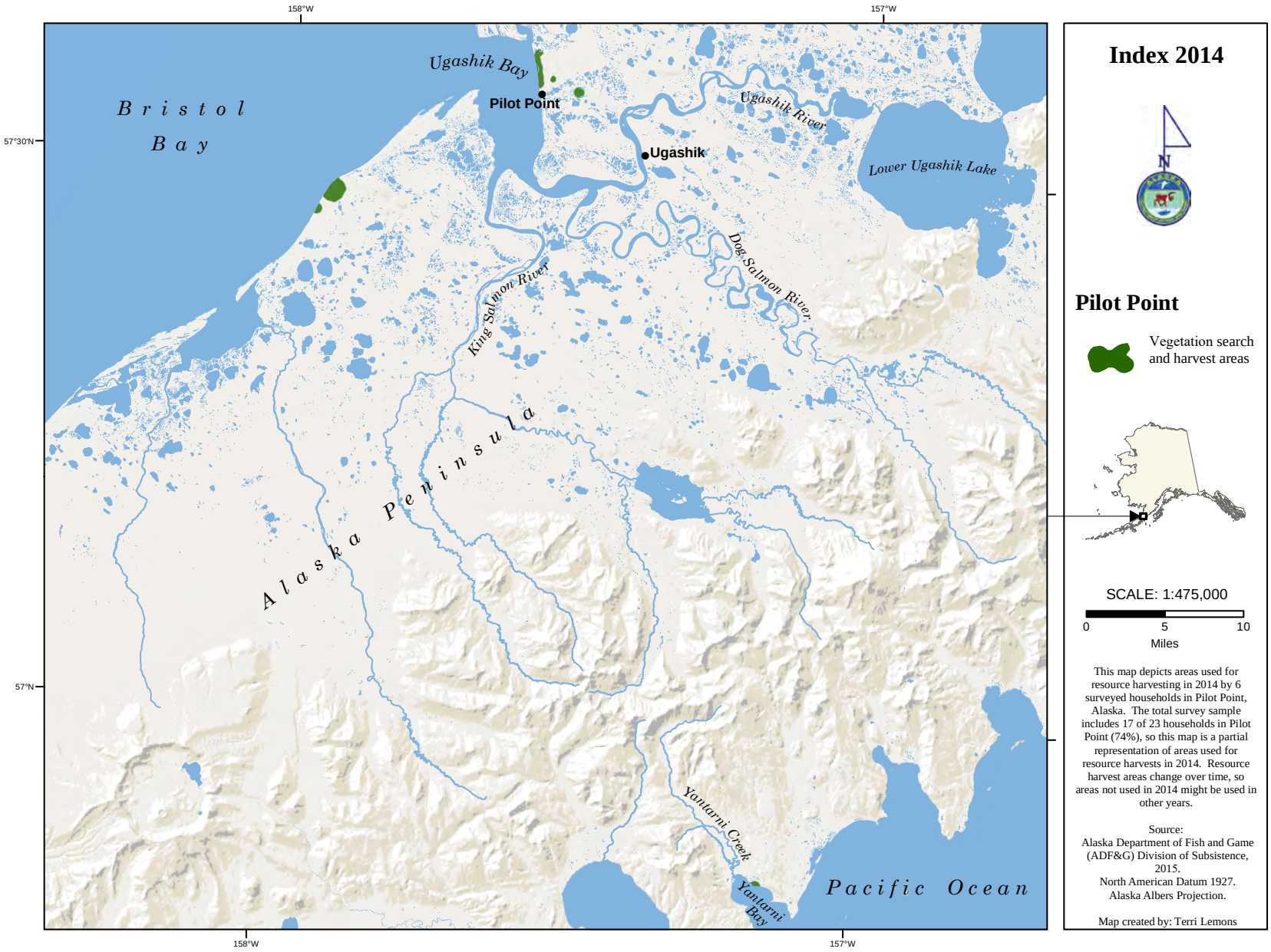


Figure 3-31.–Gathering and harvest locations of vegetation, Pilot Point, 2014.

Comparing Harvests and Uses in 2014 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their own harvests in two ways: 1) whether they used more, less, or about the same amount of eight resource categories and all wild resources overall in 2014 as in the past five years, and 2) whether they got "enough" of each of the eight resource categories and all wild resources overall. 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 then asked to evaluate the severity of the impact to their household as a result of not getting enough. Because not every household uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply chose not to answer questions. This section discusses responses to those questions going in order of the most to the least used resource category (Figure 3-12).

Salmon was the most used and harvested of all the subsistence resource categories included in the survey administered to Pilot Point households. Twenty-four percent of households explained that they used the same amount of salmon in 2014 as they did in previous years, 71% reported that they used less, and 6% said they used more (Table 3-23; Figure 3-32). When asked why they used less, 33% of households indicated that they did so due to family or personal reasons (Table 3-24). Other stated reasons for using less salmon that garnered more than one response included resources less available, lack of equipment, lack of effort, and working/no time. Family/personal reasons and increased effort were the reasons given by the one household that used more salmon in 2014 (Table 3-25). In Pilot Point, 29% of sampled respondents stated that they did not get enough salmon in 2014 (Figure 3-33). When households that did not get enough salmon were asked to evaluate the impact of not getting enough, 40% described the impact as minor, 40% explained that not getting enough salmon had a major effect on their household, and 20% stated that the impact was severe (Table 3-26).

The second most used subsistence resource category was large land mammals. Thirty-three percent of responding households explained that they used the same amount of large land mammals in 2014 as they did in previous years, 60% reported that they used less, and 7% said they used more (Table 3-23; Figure 3-32). When asked why they used less, 33% of households indicated that they did so due to the resources being less available or less sharing (Table 3-24). Three other reasons were cited by more than one household as the cause for less use of large land mammals: regulations, unsuccessful hunts, and family/personal reasons. The only reason given for more use of large mammals was that the household received more (Table 3-25). In Pilot Point, 59% of sampled respondents stated that they did not get enough large land mammals (Figure 3-33). The impact of not getting enough large land mammals was described as having a minor impact by 30% of households, 30% explained that not getting enough had a major effect on their household, and 40% stated that the impact was severe (Table 3-26).

Vegetation was the third most used subsistence resource category in Pilot Point in 2014. All surveyed households explained that they used less vegetation in 2014 as they did in previous years (Table 3-23; Figure 3-32). When asked why they used less, 82% of households indicated that they did so due to the resources being less available (Table 3-24). Other stated reasons for using less vegetation included family/personal reasons (24%) and weather/environment (12%). In Pilot Point, 82% of sampled respondents stated that they did not get enough vegetation (Figure 3-33). When households that did not get enough vegetation were asked to evaluate the impact of not getting enough, 14% described it as not noticeable, 21% described the impact as minor, 50% explained that not getting enough vegetation had a major effect on their household, and 14% stated that the impact was severe (Table 3-26).

Following vegetation, the next most used subsistence resource category was birds and eggs. Twenty-nine percent of households explained that they used the same amount of birds and eggs in 2014 as they did in previous years, 41% reported that they used less, and none said they used more (Table 3-23; Figure 3-32). When asked why they used less, 43% of responding households indicated that they did so due to family/personal reasons and 29% said it was due to resources being less available (Table 3-24). Other stated

reasons for using less birds and eggs was less sharing of the resources and unfavorable weather. In Pilot Point, 35% of sampled respondents stated that they did not get enough birds and eggs (Figure 3-33). When households that did not get enough birds and eggs were asked to evaluate the impact of not getting enough, 17% described it as not noticeable, 17% described the impact as minor, 17% explained that not getting enough birds and eggs had a major effect on their household, and 50% stated that the impact was severe (Table 3-26).

While per capita harvests of nonsalmon fish were relatively small, well more than one-half the households in Pilot Point used the resource in 2014. Twenty-nine percent of households explained that they used the same amount of nonsalmon fish in 2014 as they did in previous years, 41% reported that they used less, and none said they used more (Table 3-23; Figure 3-32). When asked why they used less, 57% of households indicated that they did so due to the weather/environment (Table 3-24). Pilot Point households depend on the rivers freezing for their smelt harvest and in 2014 the lack of consistently cold enough weather impeded the harvest. Other stated reasons for using less nonsalmon fish included less sharing, personal/family reasons, lack of effort, and the cost of gas or necessary equipment was prohibitive. In Pilot Point, 29% of sampled respondents stated that they did not get enough nonsalmon fish (Figure 3-33). When households that did not get enough nonsalmon fish were asked to evaluate the impact of not getting enough, 20% described it as not noticeable, 20% described the impact as minor, 40% explained that not getting enough nonsalmon fish had a major effect on their household, but none stated that the impact was severe (Table 3-26).

Marine invertebrates were used by fewer households than nonsalmon fish but were harvested in greater amounts. Twenty-four percent of households explained that they used the same amount of marine invertebrates in 2014 as they did in previous years, 35% reported that they used less, and 18% said they used more (Table 3-23; Figure 3-32). When asked why they used less, 33% of responding households indicated that they did so due to less sharing (Table 3-24). The other stated reasons for less use of marine invertebrates, each of which garnered one response, included family or personal reasons, that resources were less available, lack of effort, and that the household was working or did not have time. For the three households that used more marine invertebrates in the study year, the increased use was attributed to increased effort (67%) and receiving more (33%) (Table 3-25). In Pilot Point, 24% of sampled respondents stated that they did not get enough marine invertebrates (Figure 3-33). When households that did not get enough marine invertebrates were asked to evaluate the impact of not getting enough, all responding households described it as not noticeable (Table 3-26).

Marine mammals were used by one-third of households, but the marine mammals harvest weight was higher than all other resource categories except salmon. Despite a smaller percentage of households harvesting or using marine mammals, because these species are generally large with a high conversion factor to edible weight, harvests may compose a relatively large proportion of the overall subsistence harvest weight. For Pilot Point, only beluga whales were harvested with a conversion factor of 995 lb per whale. Twenty-four percent of households explained that they used the same amount of marine mammals in 2014 as they did in previous years, 6% reported that they used less, and 6% said they used more (Table 3-23; Figure 3-32). Less use of marine mammals was attributed to two reasons: resources were less available and unsuccessful hunting (Table 3-24). The only reason provided for more use was that the household received more of the resource (Table 3-25). In Pilot Point, no sampled respondents stated that they did not get enough marine mammals (Figure 3-33).

The least used subsistence resource category in Pilot Point in 2014 was small land mammals. Six percent of households explained that they used the same amount of small land mammals in 2014 as they did in previous years, 6% reported that they used less, and 12% said they used more (Table 3-23; Figure 3-32). More small land mammals resources were needed, which was the reason for less use of the category (Table 3-24). For those households that used more small land mammals in the study year, households indicated it was due to either family/personal reasons or receiving more (Table 3-25). In Pilot Point, 6% of sampled respondents (one household) stated that they did not get enough, which had a minor impact to the household (Figure 3-33; Table 3-26).

Table 3-23.–Changes in household uses of resources compared to recent years, Pilot Point, 2014.

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	**17**	**17**	**17**	**100.0%**	**17**	**100.0%**	**12**	**70.6%**	**6**	**35.3%**		
All resources	17	17	17	100.0%	13	76.5%	4	23.5%	0	0.0%	0	0.0%
Salmon	17	17	17	100.0%	12	70.6%	4	23.5%	1	5.9%	0	0.0%
Nonsalmon fish	17	17	12	70.6%	7	41.2%	5	29.4%	0	0.0%	5	29.4%
Large land mammals	17	15	15	100.0%	9	60.0%	5	33.3%	1	6.7%	0	0.0%
Small land mammals	17	17	4	23.5%	1	5.9%	1	5.9%	2	11.8%	13	76.5%
Marine mammals	17	17	6	35.3%	1	5.9%	4	23.5%	1	5.9%	11	64.7%
Birds and eggs	17	17	12	70.6%	7	41.2%	5	29.4%	0	0.0%	5	29.4%
Marine invertebrates	17	17	13	76.5%	6	35.3%	4	23.5%	3	17.6%	4	23.5%
Vegetation	17	17	17	100.0%	17	100.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

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

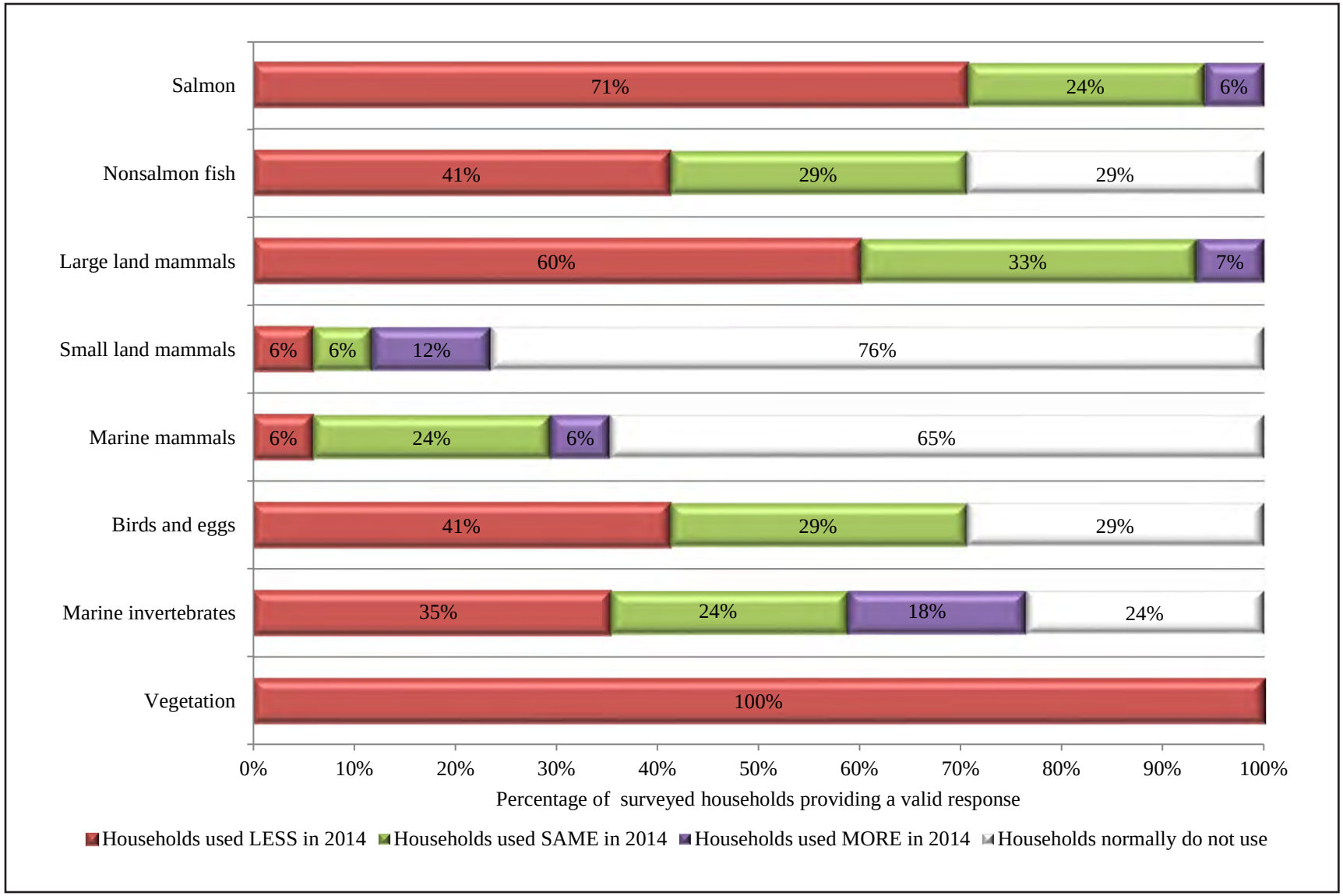


Figure 3-32.–Changes in household uses of resources compared to recent years, Pilot Point, 2014.

Table 3-24.–Reasons for less household uses of resources compared to recent years, Pilot Point, 2014.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Used other resources		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	Number	Percentage
Any resource	**17**	**17**	**6**	**35.3%**	**0**	**0.0%**	**15**	**88.2%**	**0**	**0.0%**	**3**	**17.6%**	**9**	**52.9%**	**3**	**17.6%**	**4**	**23.5%**	**6**	**35.3%**
All resources	17	13	3	23.1%	0	0.0%	9	69.2%	0	0.0%	0	0.0%	5	38.5%	0	0.0%	2	15.4%	0	0.0%
Salmon	17	12	4	33.3%	0	0.0%	2	16.7%	0	0.0%	3	25.0%	0	0.0%	2	16.7%	1	8.3%	1	8.3%
Nonsalmon fish	17	7	2	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	28.6%	1	14.3%	0	0.0%	4	57.1%
Large land mammals	15	9	2	22.2%	0	0.0%	3	33.3%	0	0.0%	0	0.0%	3	33.3%	0	0.0%	2	22.2%	1	11.1%
Small land mammals	17	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	17	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Birds and eggs	17	7	3	42.9%	0	0.0%	2	28.6%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	1	14.3%
Marine invertebrates	17	6	1	16.7%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	2	33.3%	1	16.7%	0	0.0%	0	0.0%
Vegetation	17	17	4	23.5%	0	0.0%	14	82.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	11.8%

-continued-

Table 3-24.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Working/ no time		Regulations		Resources small or diseased		Gas/equipment too expensive		Needed less		Competition		Had no help		Other reasons	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**17**	**17**	**3**	**17.6%**	**2**	**11.8%**	**1**	**5.9%**	**2**	**11.8%**	**2**	**11.8%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**5.9%**
All resources	17	13	1	7.7%	0	0.0%	0	0.0%	0	0.0%	1	7.7%	0	0.0%	0	0.0%	0	0.0%
Salmon	17	12	2	16.7%	0	0.0%	1	8.3%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	1	8.3%
Nonsalmon fish	17	7	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	15	9	1	11.1%	2	22.2%	0	0.0%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	17	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	17	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	17	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	17	6	1	16.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	17	17	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, 2015.

a. Valid responses do not include households that did not provide any response to the less, same, or more use assessment question.

Table 3-25.–Reasons for more household uses of resources compared to recent years, Pilot Point, 2014.

Resource category	Valid responses[a]	Households reporting reasons for more use	Family/personal		Used other resources		Increased availability		Traveled farther		Got/ fixed equipment		Received more		Increased effort		More success	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**17**	**6**	**1**	**16.7%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**4**	**66.7%**	**3**	**50.0%**	**0**	**0.0%**
All resources	17	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	17	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Nonsalmon fish	17	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	15	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Small land mammals	17	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Marine mammals	17	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Birds and eggs	17	0	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	17	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	2	66.7%	0	0.0%
Vegetation	17	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

-continued-

Table 3-25.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Favorable weather		Had more time		Regulations		Store-bought too expensive		Needed more		Substitute for unavailable resource(s)		Had more help		Other reasons	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**17**	**6**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
All resources	17	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	17	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	17	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	15	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	17	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	17	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	17	0	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	17	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	17	0	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, 2015.

a. Valid responses do not include households that did not provide any response to the less, same, or more use assessment question.

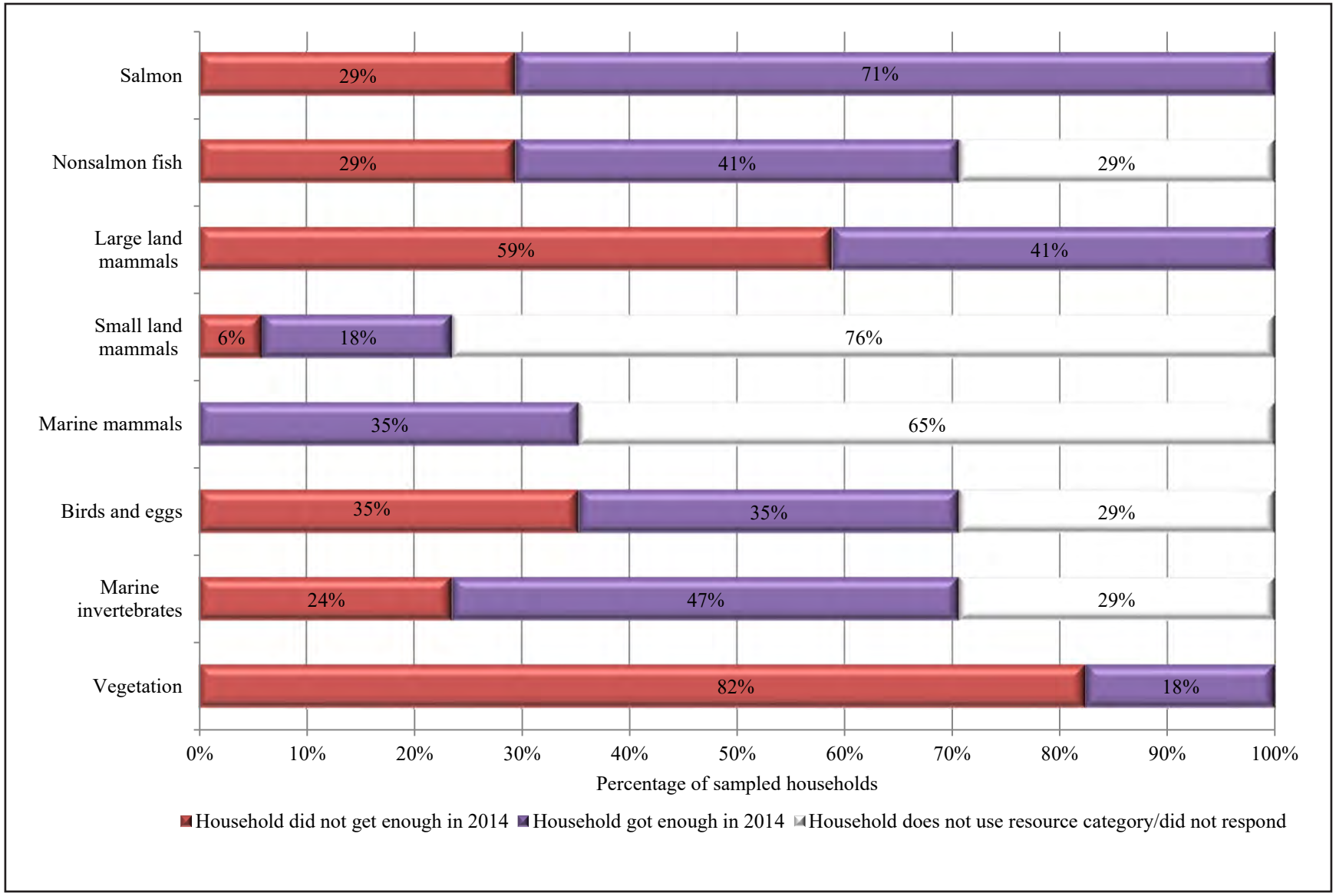


Figure 3-33.–Percentage of sampled households reporting whether they had enough resources, Pilot Point, 2014.

Table 3-26.–Reported impact to households reporting that they did not get enough of a type of resource, Pilot Point, 2014.

		Households not getting enough _____ .				Impact to those not getting enough _____ .									
	Sampled	Valid responses[a]		Did not get enough		No response		Not noticeable		Minor		Major		Severe	
Resource category	households	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
All resources	17	17	100.0%	10	58.8%	0	0.0%	0	0.0%	1	10.0%	8	80.0%	1	10.0%
Salmon	17	17	100.0%	5	29.4%	0	0.0%	0	0.0%	2	40.0%	2	40.0%	1	20.0%
Nonsalmon fish	17	12	70.6%	5	41.7%	1	20.0%	1	20.0%	1	20.0%	2	40.0%	0	0.0%
Large land mammals	17	17	100.0%	10	58.8%	0	0.0%	0	0.0%	3	30.0%	3	30.0%	4	40.0%
Small land mammals	17	4	23.5%	1	25.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Marine mammals	17	6	35.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	17	12	70.6%	6	50.0%	0	0.0%	1	16.7%	1	16.7%	1	16.7%	3	50.0%
Marine invertebrates	17	12	70.6%	4	33.3%	2	50.0%	2	50.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	17	17	100.0%	14	82.4%	0	0.0%	2	14.3%	3	21.4%	7	50.0%	2	14.3%

Source ADF&G Division of Subsistence household surveys, 2015.

a. Valid responses do not include households that did not provide any response and those households not using the resource category.

Table 3-27.–Resources that households reported needing, Pilot Point, 2014.

Resource	Households needing resource	
	Number	Percentage
Moose	10	58.8%
Crowberry	8	47.1%
Caribou	7	41.2%
Salmon	5	29.4%
Berries	4	23.5%
Sockeye salmon	3	17.6%
Smelt	3	17.6%
Pacific halibut	3	17.6%
Ptarmigan	3	17.6%
Salmonberry	3	17.6%
Chinook salmon	2	11.8%
Birds and eggs	2	11.8%
Gull eggs	2	11.8%
Lowbush cranberry	2	11.8%
Coho salmon	1	5.9%
Cod	1	5.9%
Black bear	1	5.9%
Hare	1	5.9%
Marten	1	5.9%
Porcupine	1	5.9%
Ducks	1	5.9%
Brant	1	5.9%
Geese	1	5.9%
Clams	1	5.9%
Softshell clams	1	5.9%
Crabs	1	5.9%
Dungeness crab	1	5.9%
Tanner crab	1	5.9%
Nagoonberry	1	5.9%

Source ADF&G Division of Subsistence household surveys, 2015.

Considering all subsistence resources used by Pilot Point households over the year together, 24% of households used the same amount of resources overall and 77% used less resources (Table 3-23). No household said they used more overall resources in 2014 than they did in previous years. When asked why they used less, 69% of responding households indicated that they did so due to resources being less available (Table 3-24). Other reasons given included less sharing (39%), family/personal reasons (23%), unsuccessful efforts (15%), working/no time (8%), and needing less (8%). In Pilot Point, 59% of sampled households did not get enough of all resources (Table 3-26). When those households were asked to evaluate the impact of not getting enough, 10% of households described it as minor, 80% said there was a major impact on their households, and 10% indicated a severe impact.

Nearly 30 resources were identified in response to the question of what resources households could have used more of in the study year (Table 3-27). Most households (59%) needed more moose, followed by 47% of households indicating crowberries were lacking, and 41% needing more caribou. Of resources that more than 10% of households mentioned needing more of, salmon and berries were cited the most often. Smelt, halibut, ptarmigan, gull eggs, as well as birds and eggs generally, completed the list of resources needed by more than 10% of households.

Harvest Data

Changes in the harvest of resources by Pilot Point residents can also be discerned through comparisons with findings from other study years. Comprehensive subsistence harvest surveys were conducted in Pilot Point for the study year 1987 (the study period spanned June 1986–May 1987) (Fall and Morris 1987). That study surveyed 94% of 18 year-round households. Large land mammal harvest surveys were conducted in 1992 for the 1991/1992 regulatory year (Fall 1993), in 1995 for the 1994/1995 regulatory year (Krieg et al. 1996), and in 1997 for the 1995/1996 and 1996/1997 regulatory years (Krieg et al. 1998). The large land mammal harvest survey for the 1991/1992 regulatory year combined households in Pilot Point and Ugashik as a single sample so data and estimates are not comparable to the other studies, but all other large land mammal study years separated Pilot Point from Ugashik in the sampling. Marine mammals harvest surveys were conducted in Pilot Point every year from 1992 to 1998 and 2000 to 2008; Wolfe et al. (2009) presents harvest data for each of those study years.

Comparing the 1987 comprehensive survey results to the 2014 results, the total per capita harvest decreased by nearly 175 lb, from 384 lb in 1987 to 211 lb in 2014 (Table 3-28). Not only did the overall harvest amount change, the composition of the harvest also shifted, from one dominated by large land mammals (62% of the harvest in 1987) to one dominated by salmon (74% of the harvest in 2014) (Figure 3-34). The contribution of nonsalmon fish harvests also decreased between study years while marine mammal harvest contribution increased. The 2014 estimated percentage of households using resources was lower than the 1987 estimates for most resource categories; only the use of salmon and vegetation remained the same (Figure 3-35).

Some harvesting patterns from the previous surveys were nearly nonexistent in 2014 due to changes in resources and economic opportunities. The most obvious change from the 1980s to 2014 was the lack of caribou in residents' diets and seasonal round. Caribou had long been the primary subsistence resource in Pilot Point. In 1987, 94% of Pilot Point households used caribou and 77% successfully hunted them (Fall and Morris 1987). In 2014, 6% of households used caribou and no households hunted (Table 3-13). Estimated harvests from previous study years ranged from a low of 51 caribou in 1995 to a high of 129 caribou in 1996 before dropping to zero harvest in 2014 (Figure 3-36). In 2014, moose were used more than any other land mammal species, but the estimated harvest was significantly lower than in some previous study years (Figure 3-37). Approximately 82% of households used moose in 2014, but much of this was received since only 6% of households successfully hunted them (Table 3-13). The same percentage of households harvested moose in the 1987 study year, but only 47% of households used this species (Fall and Morris 1987).

The change in large land mammal harvesting patterns is likely directly related to a change in the local availability of caribou. By the late 1980s, the Northern Alaska Peninsula caribou herd had begun migrating southward later than normal and residents of some northern Alaska Peninsula communities, including Pilot Point, began having trouble harvesting enough caribou before the end of the season. For several years, the Board of Game and ADF&G implemented emergency hunts to allow for a later caribou harvest. However, the Northern Alaska Peninsula caribou herd peaked in 1984 and began a steady decline (Doherty 2015). By 1999, the population was of a small enough size that a state Tier II hunt was implemented, restricting eligibility of hunters. By 2005, the herd was still in decline, and all state and federal hunts were closed. After the 2014 study year, a Tier II hunt was again implemented in 2016, allowing some Pilot Point residents some opportunity to harvest a caribou.

In contrast to large land mammals, salmon harvest and use has remained widespread among Pilot Point households: 100% of households used and harvested salmon in 1987 while 100% of households used salmon and 65% of households harvested them in 2014 (Figure 3-35). Despite the lower percentage of harvesting households, the per capita harvest of salmon increased over the time period from 95 lb per capita to 157 lb (Table 3-28). Salmon in 2014 composed the majority of the Pilot Point harvest (Figure 3-34). This likely reflects an increasing reliance on salmon to compensate for the loss of land mammals in residents' food sources. In addition to an overall increased amount of harvest, the composition of the salmon harvest has changed since the earlier study (Figure 3-38). In 1987, coho salmon composed more of the overall harvest

than any other species, with sockeye and Chinook salmon contributing about equal amounts. By 2014, sockeye salmon were harvested in amounts more than double the next most harvested salmon species—coho salmon. Also, in 2014, there was little Chinook salmon harvest and chum and pink salmon harvests remained low. Although the percentage of harvest that coho salmon accounted for decreased between the two study years, there was little change in the per capita harvest of this species. A similar shift from coho salmon to sockeye salmon was seen in the other study communities as well (Figure 2-34; Figure 4-34). A longer time series of subsistence salmon harvests comes from the state subsistence salmon permit system. The estimated subsistence salmon harvests based on permit returns from 1983 through 2018 show Pilot Point residents harvesting more sockeye salmon than any other species (Table 3-29). Similar to household harvest surveys, chum and pink salmon harvests have been negligible compared to the other three species. Because permits only capture harvests of salmon under subsistence regulations, they only provide insight into one aspect of the salmon harvest of Pilot Point households.

An important factor in changes in salmon harvests and harvest composition is likely the change in participation rates of Pilot Point households in commercial salmon fisheries. In 1987, 54% of the jobs held by Pilot Point residents were connected with natural resource employment such as commercial fishing or trapping (Fall and Morris 1987:27). In 2014, just 19% of jobs were associated with natural resources employment, all in the fishing industry (Table 3-7). With greater participation in commercial fisheries in the 1980s, the major source of salmon for home use in Pilot Point was fish removed from households' commercial catches (70% by weight) (Figure 3-39); often these salmon had been damaged by seals and therefore could not be sold (Fall and Morris 1987:82). In 2014, 5% of salmon came from commercial removals. In the 1987 study year, more than one-half the harvests, by weight, of chum, coho, Chinook, and sockeye salmon were removed from commercial harvests; these species were also harvested with subsistence gear and sockeye and coho salmon were also harvested with rod and reel. In 2014, no species were harvested with rod and reel, and Chinook salmon was the only species primarily harvested through commercial retention (Table 3-30). With the decline in participation in commercial fisheries, residents now rely on subsistence harvesting methods and sockeye salmon for the vast majority of their salmon needs.

Fewer households hunted or harvested marine mammals in 2014 as compared to 1987, but the per capita harvest increased from 5 lb per capita to 21 lb because of the harvest of a beluga whale (Figure 3-35; Table 3-28). The composition of the marine mammal harvest changed between the two study years: in 1987, Pilot Point residents harvested harbor seals (as well as sea otters, but only for fur) and in 2014, residents only harvested beluga whale, though some households did hunt for harbor seals and some households were given sea otters (Fall and Morris 1987:115) (Table 3-13). Throughout the years of the annual marine mammal harvest surveys, Pilot Point residents harvested anywhere from no harbor seals to five harbor seals, with an average of three seals harvested in the years when there was harvest.

Table 3-28.–Comparison of estimated per capita harvests, by resource category, Pilot Point, 1987 and 2014.

Resource category	Estimated per capita harvest (lb) 1987	2014
Salmon	95.0	156.5
Nonsalmon fish	15.5	1.5
Large land mammals	237.5	11.5
Small land mammals	2.2	0.9
Marine mammals	4.6	21.2
Birds and eggs	17.0	10.4
Marine invertebrates	6.2	3.8
Vegetation	5.6	5.0
All resources	383.7	210.7

Source ADF&G Community Subsistence Information System database for 1987 and ADF&G Division of Subsistence household surveys, 2015, for 2014.

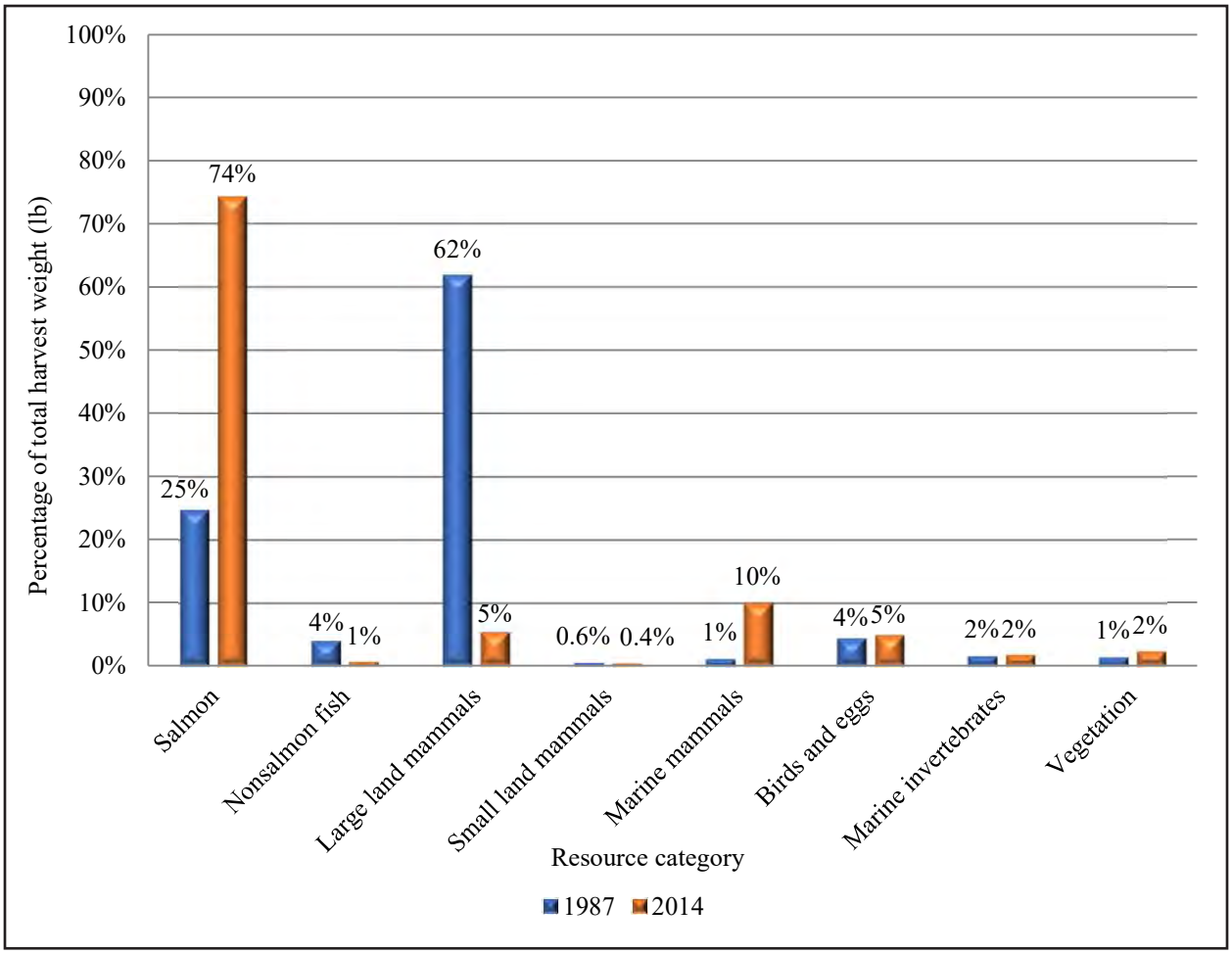


Figure 3-34.–Composition of harvest, by resource category, Pilot Point, 1987 and 2014.

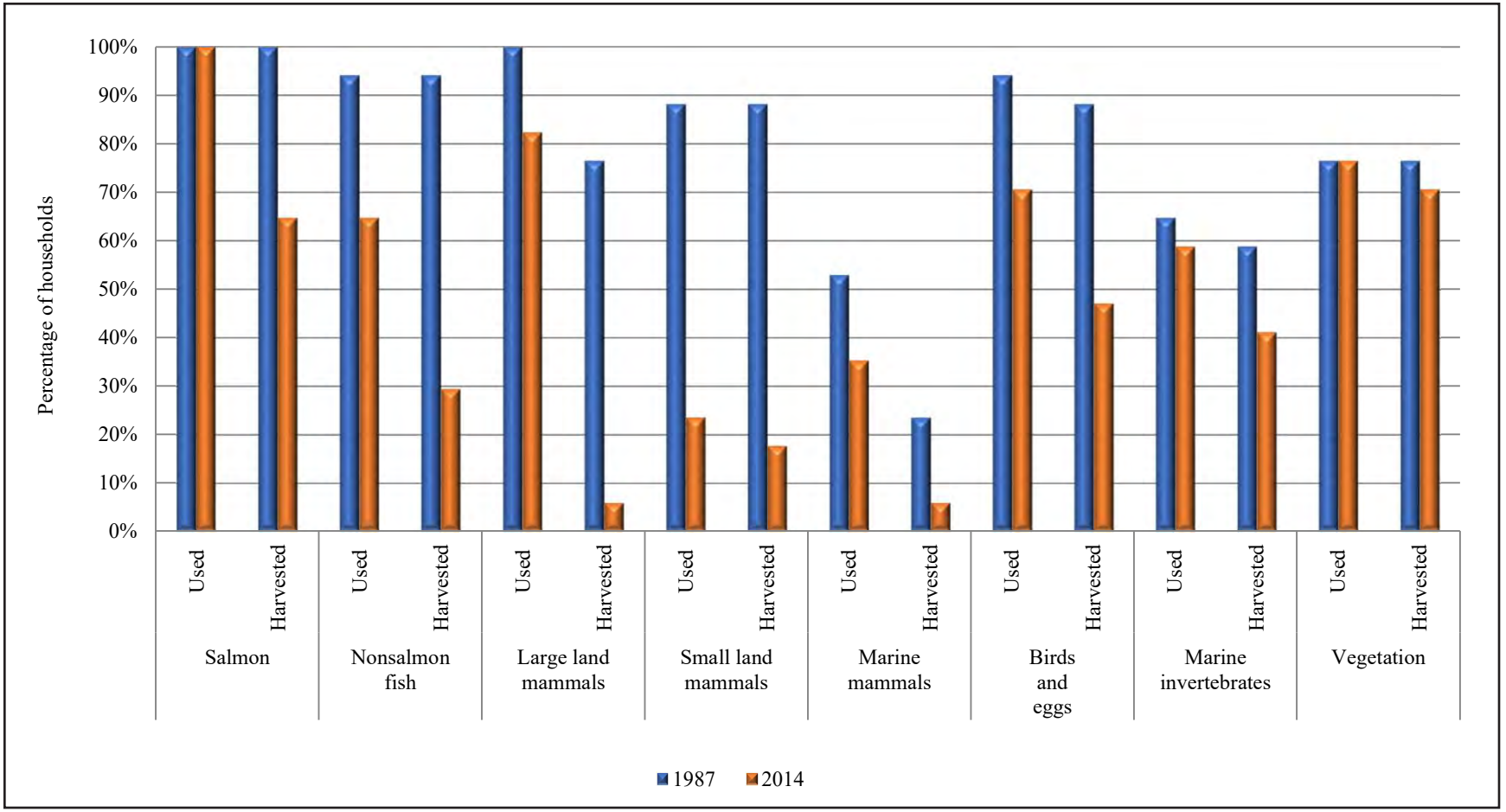


Figure 3-35.–Percentage of households using and harvesting wild resources, by resource category, Pilot Point, 1987 and 2014.

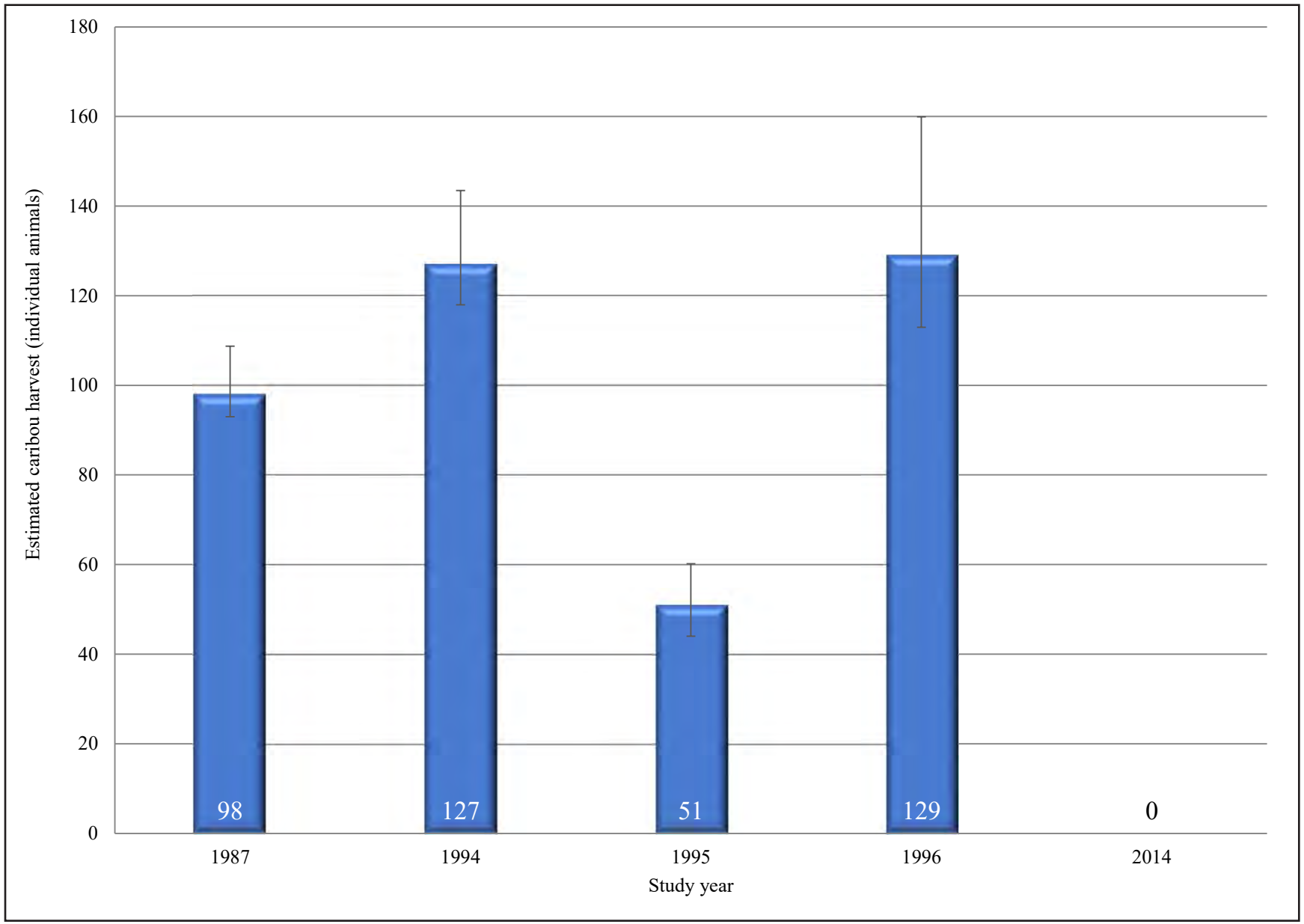


Figure 3-36.–Estimated harvests of caribou, by individual animals, Pilot Point, 1987, 1994–1996, and 2014.

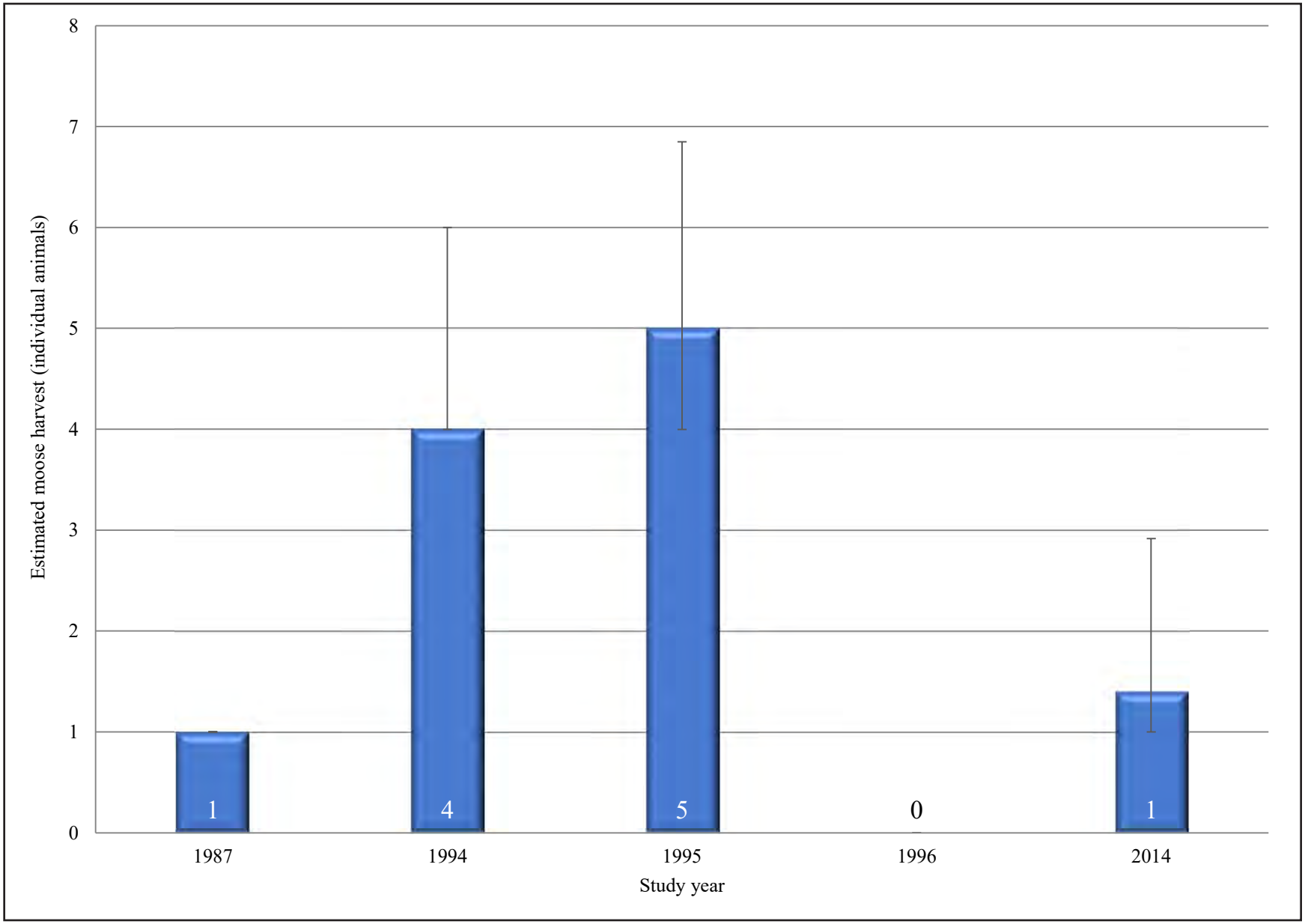


Figure 3-37.–Estimated harvests of moose, by individual animals, Pilot Point, 1987, 1994–1996, and 2014.

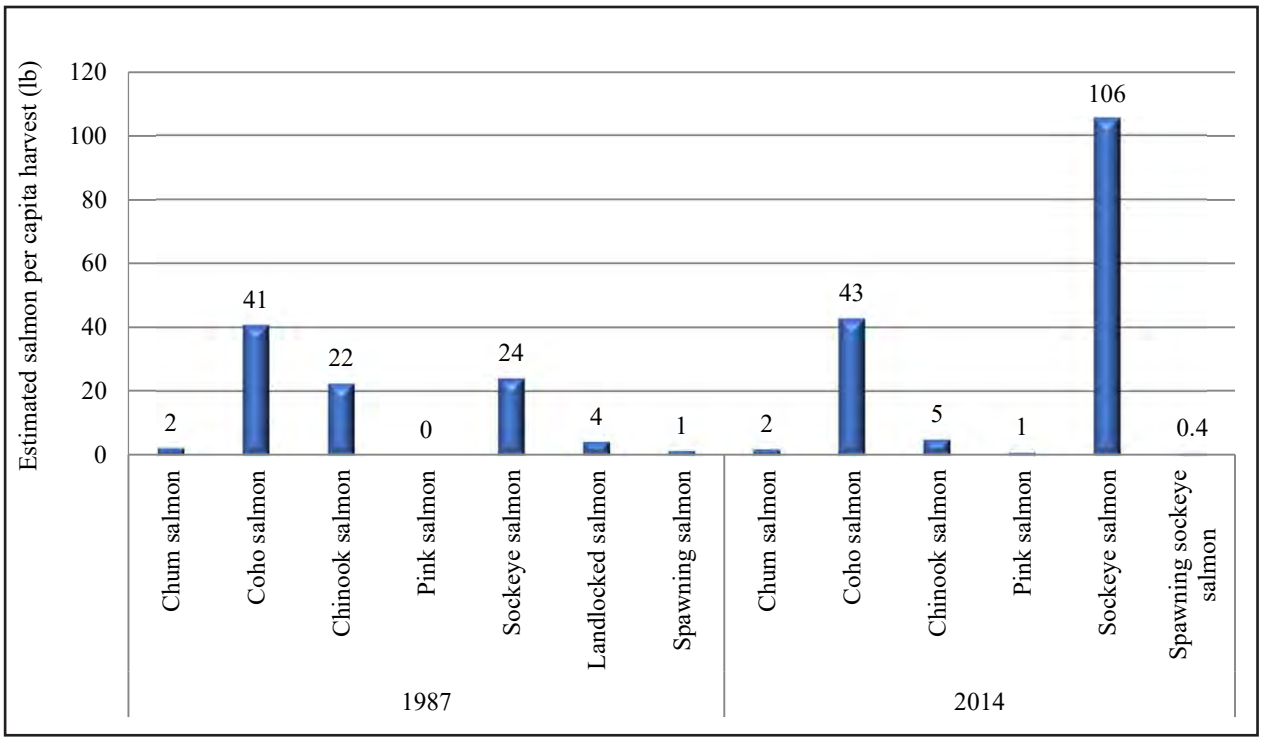


Figure 3-38.–Comparison of estimated per capita harvests of salmon, by species, Pilot Point, 1987 and 2014.

Table 3-29.–Historical subsistence salmon harvests based on Bristol Bay Area permit returns, Pilot Point, 1983–2018.

Year	Permits Issued	Permits Returned	Percentage of returned permits	Estimated salmon harvest Chinook	Sockeye	Coho	Chum	Pink	**Total**	Average harvest per returned permit
1983	4	4	100.0%	20	244	99	24	5	**392**	98
1984	1	0	0.0%	0	0	0	0	0	**0**	–
1985	4	2	50.0%	3	27	25	0	0	**55**	28
1986	10	5	50.0%	3	67	44	0	0	**114**	23
1987	13	13	100.0%	74	351	129	39	0	**593**	46
1988	12	10	83.3%	47	711	227	35	23	**1,043**	104
1989	17	15	88.2%	28	1,151	220	22	2	**1,423**	95
1990	21	14	66.7%	47	1,251	250	132	116	**1,797**	128
1991	27	17	63.0%	111	972	1,037	155	44	**2,319**	136
1992	26	22	84.6%	97	1,899	378	65	19	**2,459**	112
1993	30	24	80.0%	89	1,545	514	107	27	**2,282**	95
1994	20	19	95.0%	55	844	467	34	33	**1,433**	75
1995	10	7	70.0%	51	700	180	30	7	**969**	138
1996	14	13	92.9%	65	649	264	16	8	**1,002**	77
1997	14	13	92.9%	98	2,016	244	35	9	**2,402**	185
1998	10	8	80.0%	47	655	363	84	96	**1,246**	156
1999	13	12	92.3%	50	1,103	157	37	0	**1,347**	112
2000	13	10	76.9%	23	794	272	33	0	**1,122**	112
2001	9	8	88.9%	32	659	259	5	2	**956**	120
2002	7	7	100.0%	19	397	218	2	1	**637**	91
2003	6	5	83.3%	7	572	296	30	0	**905**	181
2004	5	5	100.0%	4	84	0	3	2	**93**	19
2005	5	5	100.0%	0	110	73	14	2	**199**	40
2006	7	7	100.0%	11	286	152	0	12	**461**	66
2007	7	6	85.7%	13	349	76	13	4	**454**	76
2008	4	4	100.0%	11	151	16	2	0	**180**	45
2009	6	6	100.0%	5	150	37	0	0	**192**	32
2010	6	6	100.0%	1	238	45	0	0	**284**	47
2011	5	5	100.0%	3	190	7	2	1	**203**	41
2012	6	5	83.3%	18	307	60	24	0	**409**	82
2013	3	2	66.7%	9	189	48	6	0	**252**	126
2014	5	3	60.0%	0	53	33	0	0	**87**	29
2015	7	4	57.1%	9	299	102	5	0	**415**	104
2016	5	4	80.0%	13	625	118	18	9	**781**	195
2017	3	2	66.7%	0	0	0	0	0	**0**	0
2018	3	1	33.3%	12	1,050	225	6	18	**1,311**	1311
5-year avg (2014–2018)	5	3	60.9%	7	406	95	6	5	**519**	185
10-year avg (2009–2018)	5	4	77.6%	7	310	67	6	3	**393**	104
Historical avg (1983–2018)	10	8	81.8%	30	575	184	27	12	**828**	102

Source ADF&G Division of Subsistence, ASFDB 2018 (ADF&G September 2020).

Note "–" indicates no permits were returned and therefore no average could be calculated.

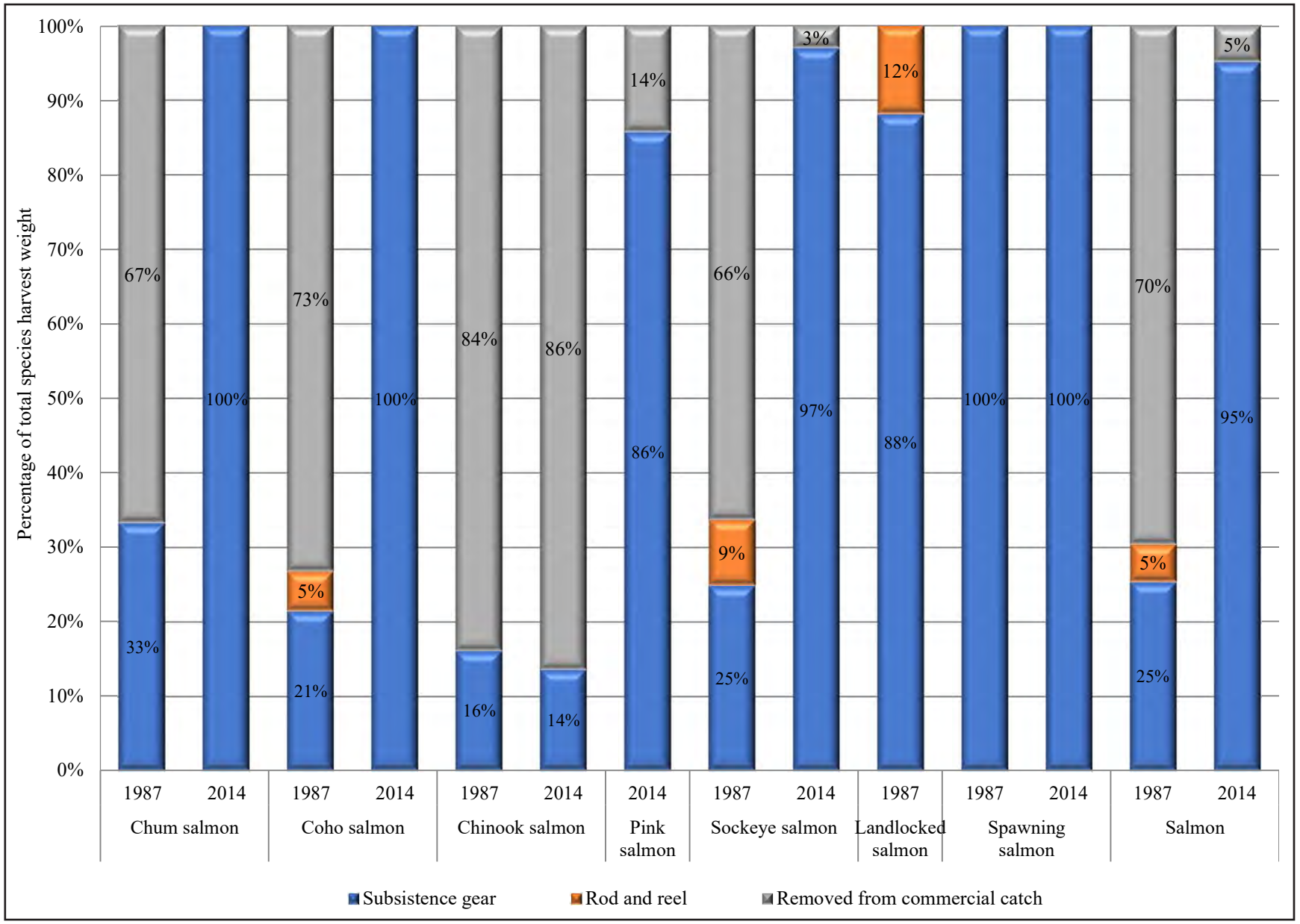


Figure 3-39.–Composition of salmon species harvest weight by gear type, Pilot Point, 1987 and 2014.

Table 3-30.–Comparison of estimated per capita harvests of salmon, by species and by gear type, Pilot Point, 1987 and 2014.

		Per capita harvest (lb)			
Year	Species	Subsistence gear	Rod and reel	Removed from commercial catch	Total
1987	Chum salmon	0.8	0.0	1.5	2.3
	Coho salmon	8.8	2.2	29.8	40.7
	Chinook salmon	3.6	0.0	18.8	22.4
	Pink salmon	0.0	0.0	0.0	0.0
	Sockeye salmon	6.0	2.1	15.9	24.0
	Landlocked salmon	3.7	0.5	0.0	4.2
	Spawning salmon	1.3	0.0	0.0	1.3
	Total salmon	**24.1**	**4.8**	**66.0**	**95.0**
2014	Chum salmon	2.0	0.0	0.0	2.0
	Coho salmon	42.8	0.0	0.0	42.8
	Chinook salmon	0.7	0.0	4.3	5.0
	Pink salmon	0.7	0.0	0.1	0.8
	Sockeye salmon	102.4	0.0	3.2	105.5
	Spawning sockeye salmon	0.4	0.0	0.0	0.4
	Total salmon	**148.9**	**0.0**	**7.6**	**156.5**

Source ADF&G Community Subsistence Information System database for 1987 and ADF&G Division of Subsistence household surveys, 2015, for 2014.

Current and Historical Harvest Areas

The study conducted by Fall and Morris (1987) included an investigation of harvest areas for waterfowl. A mapping activity done with residents of Pilot Point for a Bristol Bay Cooperative Management Plan and the *Alaska Habitat Management Guide, Southwest Region* (see Wright et al. [1985] and ADF&G [1985a; 1985b; 1985c]) provided the harvest area information for the other resource categories. During that activity, respondents were asked to show where they had hunted (or fished, trapped, or gathered) various resource categories in the previous 20 years, or roughly from 1962–1982. A comparison of these resource harvest areas to those documented in 2014 is of limited value since it is expected that households would use a larger area for harvesting activities over multiple years rather than in any single year; also, the presence or absence of game populations would determine where people hunt, and as these game populations move, so too do the hunting areas. The areas documented in the previous study do show a wider range of areas used for resource harvesting activities, and include mapped areas of caribou hunting, which is lacking from this current study as discussed above.

Local Comments and Concerns

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

All of the comments offered under the broad category of "Fish" were about salmon. Several respondents voiced their concerns about perceptions of declining returns of salmon generally, but king (Chinook) salmon and silver (coho) salmon were called out specifically. One respondent believed that local volcanic activity had negatively affected the king salmon returns. Another respondent remarked that there is not much of a silver salmon fishery as compared to the 1980s when he was commercially fishing. Several respondents were former participants in the commercial fisheries and worried about what they perceived as declines in salmon runs; also, the fishery is shorter than when they were fishing in the 1980s and they remembered being able to fill their nets in 15 minutes. It is not like that anymore. Others worried about the market for fish in their area. Other respondents commented that commercial fishing ocean trawlers in the Bering Sea and North Pacific Ocean have an outsized effect on the resources through excessive bycatch (incidentally harvested salmon and other fish), but subsistence users bear the brunt of restrictions. The sheer number of boats in the river and bay was commented on: "When tenders are in the bay, it looks like a city out there." A suggestion was made that tribes should put up salmon for community members, especially in small communities.

Large Land Mammals

Most of the comments offered during the survey fell under the category of large land mammals. In particular, respondents spoke about caribou, but also moose and bison ("buffalo"). For caribou, many respondents remarked on the lack of caribou in the area, the effect it has had on them and their families, and potential causes of the decline. "Caribou aren't around anymore. My girls can't even remember the taste." Some respondents remarked on the complexity of state and federal regulations surrounding hunting of the caribou herd. One respondent wished to see a state- or federal-managed hunt created in the Alaska Peninsula to permit at least one tribe to designate a representative to hunt caribou who would share harvests with tribal members of the hunter's and nearby communities to help ensure local needs are being met. Another respondent would like to see a bison transplant to the northern peninsula, similar to what Port Heiden is trying to do with reindeer, to provide an alternative to caribou.

On the topic of moose, comments offered by respondents discussed perceived declines in moose and the effect of sport and trophy hunting of moose by non-local residents. At the same time, many respondents noted that the meat from those trophy hunts makes its way into the community and provides moose to households.

Small Land Mammals/Furbearers

Only one comment was offered about small land mammals: "Used to be a lot of rabbit around here."

Vegetation

Few respondents offered thoughts on the vegetation resources they harvest, but those who did remarked on the lack of berries. One household surveyed told a story of some other residents who hired a plane to take them across the river to pick a patch of berries that was spotted by hunters.

Economic and Environmental Factors

The community is looking for funding for a greenhouse, as well as for larger-capacity windmills to reduce reliance on diesel heating fuel. Another respondent wished to see the establishment of a food bank to help residents in need. Other respondents commented about changes in weather and that there is less rain and less snow than there used to be. Another respondent expressed concern about the long-term effects of the 2011 Fukushima Daiichi nuclear power plant disaster in Japan and wondered if that event is related to increased green/yellow algae the respondent has seen on the beach at Iliamna Lake.

4. UGASHIK

Community Background

The community of Ugashik is located on the north side of the Alaska Peninsula, along the eastern bank of the Ugashik River about 16 miles from Ugashik Bay (Figure 1-1). The Aleutian Range separates the part of the peninsula that drains into the Pacific Ocean to the southeast from the remainder, which is located in the Bristol Bay watershed. The north side of the peninsula is a broad, flat plain that slopes gently to the sea; there are few breaks in this coastline except for bays at the mouths of the large rivers, including the Ugashik River (Plate 4-1). There are many small lakes throughout the area. The landscape is predominantly treeless tundra, supporting hardy ground cover such as lichens, mosses, and sedges, as well as patches of willow, alder, and cottonwood trees along streambanks. The northern side of the peninsula is a transitional climate zone between maritime and continental climates. Fog, drizzle, clouds, and strong winds are common. Temperatures rarely rise above 60° Fahrenheit in the summer, and the temperature can drop to below 0° Fahrenheit in the winter.

Ugashik has been a permanent settlement for centuries, with interruptions in habitation during major eruptions of the Aniakchak volcano.[1] The earliest evidence of human habitation in the Bristol Bay side of the Alaska Peninsula dates to approximately 7000 B.C. at Ugashik. The first peoples there were hunters of land mammals, especially caribou. Eventually, as cultural changes occurred across Alaska and North America, traditions of marine mammal hunting and riverine fishing were established. There is very little information about the population of the study area at the time that Europeans arrived in the late 18th and early 19th centuries. According to Oswalt (1967), the inhabitants were "Peninsular Eskimos" speaking an unknown dialect of Yupik. Like other inhabitants of the Bering Sea coast, these people probably had a diversified foraging economy based on marine mammal hunting, caribou hunting, and salmon fishing. Russians arrived in the Aleutian Islands and Alaska Peninsula in the mid-18th century, establishing a fur trade. The British Captain James Cook led the first known European exploration of Bristol Bay in 1778. In 1790, a Russian explorer, Dmitri Bocharov, traveled the north coast of the Alaska Peninsula from Unimak Island to the Kvichak River, and then portaged across the peninsula to the Pacific Ocean (Fall and Morris 1987:16). Following this, the Russians established a fur trade in the Bristol Bay and northern Alaska Peninsula areas. A Russian Orthodox mission grew out of a Russian post at Nushagak Bay, drawing Alaska Natives into the fur trade and converting them to the Russian Orthodox faith.

After Alaska passed into American ownership in 1867, the next major development in Bristol Bay was the commercial salmon fishing industry. A salmon saltery was established on the Ugashik River in 1883 and the Bering Sea Packing Company built a cannery at Ugashik. This led to the first recording of the village of "Oogashik" in the U.S. census of 1880. By the 1890s, the community was one of the largest in the region, but an influenza epidemic in 1918 severely depleted the Alaska Native population of the region. Survivors of the epidemic in Ugashik began moving to Pilot Point, marking Ugashik's decline as the major settlement in the area. The community has never regained its pre-epidemic population; though, due to the continued importance of commercial salmon fishing, the population swells every summer as fishermen return to participate in the Bristol Bay salmon fishery.

Ugashik is an unincorporated community governed by a five-member tribal council whose members are elected at the annual General Council meeting. During the study period, services and community facilities were extremely limited. There was no store, school, health clinic, or post office, though mail was handled through the tribal council's office. The tribal council's office included a full-size community meeting room, kitchen, and three bedrooms for housing visitors to the community. In addition, there were outbuildings associated with canneries that operated in the past. There was a small commercial salmon canning operation,

1. *Community Plans Library Search*, s.v. "Community: Ugashik" (by Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs), https://www.commerce.alaska.gov/dcra/dcrarepoext/Pages/CommunityPlansLibrary.aspx (accessed April 2020).

Plate 4-1.–A view of the Ugashik River downstream from the community of Ugashik.

and several greenhouses that were high tunnels, or hoop houses, owned by one family in which they grew produce for themselves as well as for other people in the community and lodges. The tribe also owned a high tunnel available for anyone (seasonal or fulltime residents) to use for growing produce. Public safety services were provided through the King Salmon Alaska State Troopers station. There were two runways: a State-owned gravel runway accommodated flights from King Salmon, and a private runway owned by the local cannery. There was a community boat dock, and residents relied on seasonal barge service and year-round air service for food, fuel, and supplies. Water came from individual wells and cisterns while individual septic systems took care of sewage. Homes were heated by fuel oil and electricity was provided by individual generators.

Seasonal Round

Seasonal rounds are descriptions of resource harvesting patterns by residents of a particular geographic location that follow a generally predictable yearly cycle of activities. These activities, and the timing, vary slightly from year to year because of environmental factors like weather and resource availability, or non-environmental factors like changes in regulations or land ownership. The following information on the seasonal round in Ugashik draws heavily from work done by James Fall and Judith Morris in the early 1980s (Fall and Morris 1987), with updated information from the present study where relevant.

As can be seen in Figure 4-1, the harvesting activities engaged in throughout the year tend to remain concentrated on the lands and waters surrounding Ugashik and Lower Ugashik Lake. The harvest year begins with the breakup of ice in the rivers and Ugashik Bay, usually in March or April. This is a time for hunting migratory waterfowl such as ducks, geese, and cranes.[2] Springtime is also the time for digging

2. See Naves (2010:1) for background information on how the 1918 Migratory Bird Treaty Act restricted migratory bird hunting and subsequent amendments opened spring and summer hunting in 2003.

clams and cockles during the seasonal low tides. Households also search for the nests of gulls and ducks to collect eggs. With the approach of summer comes the anticipated return of salmon to Bristol Bay drainages, including the Ugashik River system. Households in Ugashik begin focusing on preparations for the approaching subsistence and commercial fishing seasons. Chinook salmon are the first to arrive, usually in June. People fish for Chinook salmon near the community with setnets and remove fish from their commercial catches. Commercial and subsistence fishing continues through July, concentrating on sockeye salmon with incidental harvests of Chinook, chum, and occasionally pink salmon. Starting toward the end of August, some commercial fishermen will harvest coho salmon, which can be a major source of salmon for home use. Coho salmon are also taken in subsistence setnets. Several other resources, such as Dolly Varden, cod, or Pacific halibut, can be taken incidentally in subsistence setnets. During the height of the summer, the first berries ripen and are picked, often as a family activity. Berry picking continues through the summer.

In the fall, waterfowl hunting occurs as these birds pass through the region. When the caribou herds were in the region, fall was a good time to hunt because the bulls were fat and hunters could potentially use skiffs for transportation to hunting grounds. A disadvantage of hunting caribou in the fall was the difficulty of preserving the meat in warm weather, so sharing of caribou at this time of the year was very common. However, as described previously in Chapter 1, the Northern Alaska Peninsula caribou herd population became depressed in the late 1980s, spurring years of regulatory hunting restrictions in the local area, and caribou hunting has fallen out of the seasonal round for most residents. An early moose season provides hunting opportunity in September and some families fish for spawning sockeye salmon, locally referred to as “fall” or “red” fish, at this time.

As the weather turns cold and lakes and rivers freeze, households may jig through the ice for smelt and landlocked salmon through the winter. Some hunters search for moose during the December open season or trap furbearers. Winter activities continue until warmer weather arrives. When caribou were available and harvest was allowed, hunters would pursue caribou through the winter months and into the spring. In spring, a new round of resource harvesting activities begins.

Population Estimates and Demographic Information

For study year 2014, this study estimated there were nine individuals living in seven households in Ugashik as permanent residents; 60% of the estimated population identified as Alaska Native (Table 4-1). Seasonal resident populations were not included in the study. The estimates of the general and Alaska Native populations provided by three sources presented in Figure 4-2 differ; but, for the general population, both the five-year average American Community Survey (ACS) and 2014 study estimates have relatively wide confidence intervals indicating uncertainty in the estimates. Ugashik is a small community where sampling can produce significant differences to analyses. This study successfully interviewed four households, or 57% of the community (Table 4-2). The population of Ugashik was largest in the 1950 census; in each consecutive census the population declined until reaching its nadir in 1990 with seven residents (Figure 4-3). The population remained relatively stable with a slightly increasing trend through the 2014 study year. A federal census estimate is not available for Ugashik in 1970.

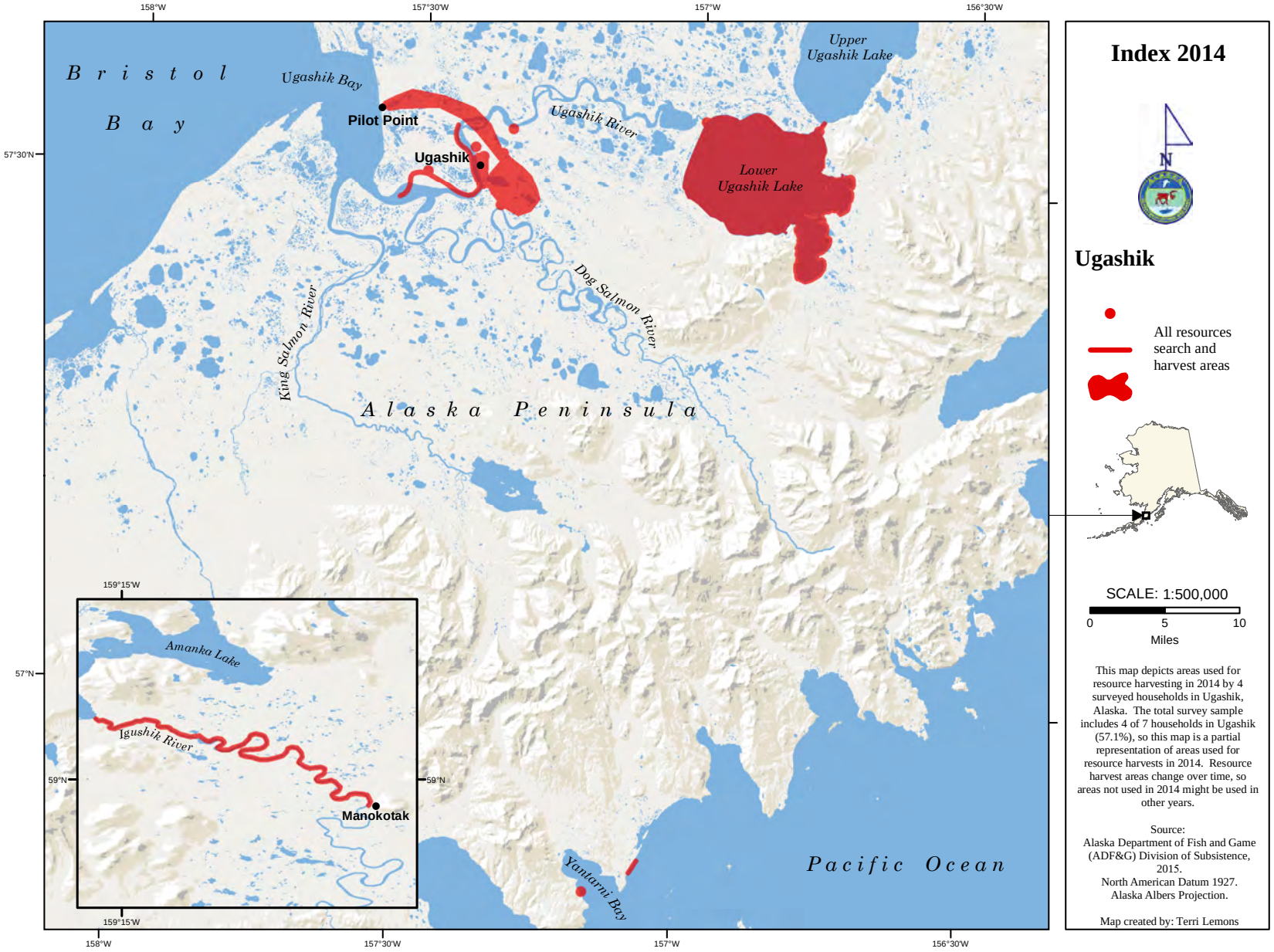


Figure 4-1.–Wild resources search and harvest areas, Ugashik, 2014.

Table 4-1.–Population estimates, Ugashik, 2010 and 2014.

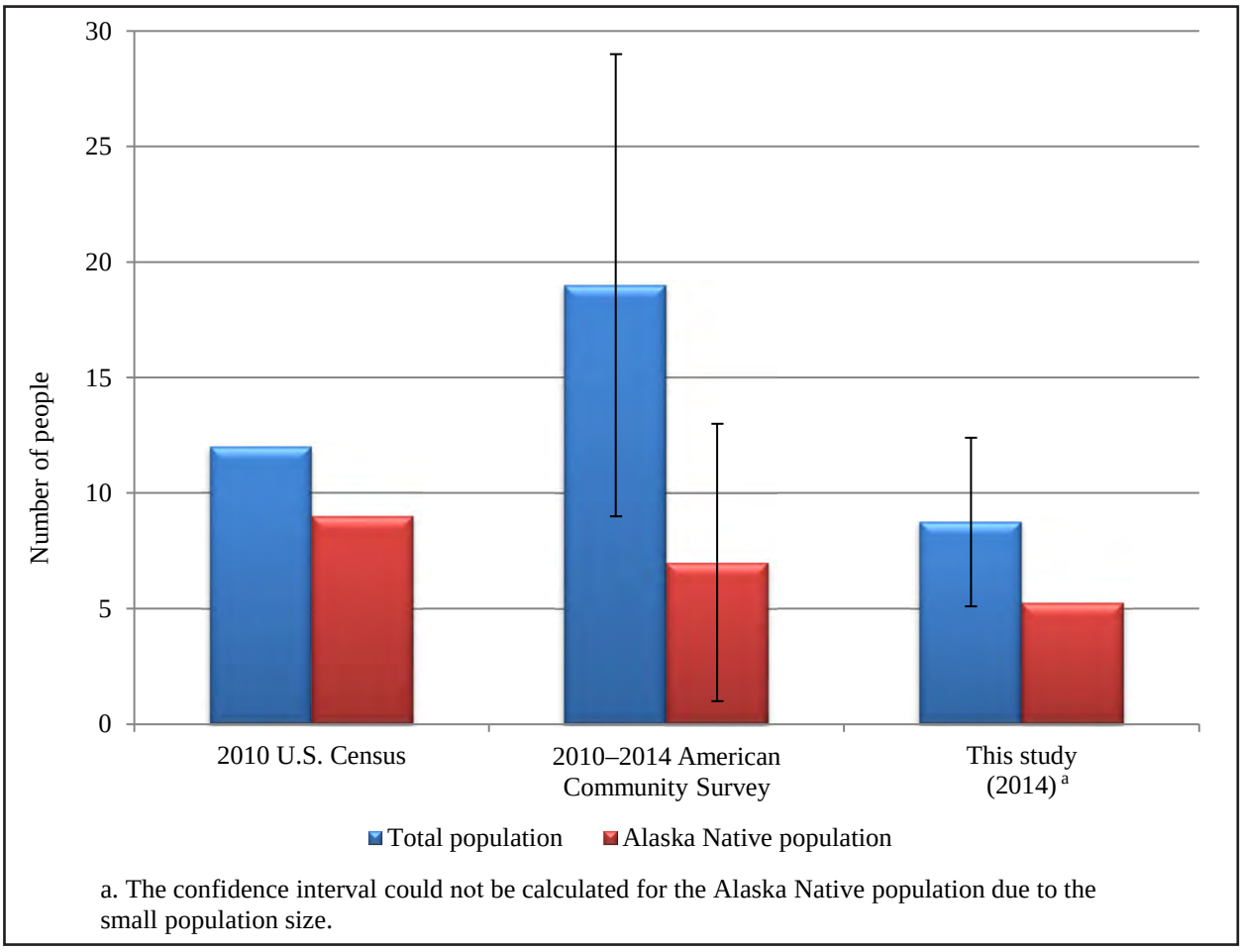
	Census (2010)	5-year American Community Survey (2010–2014)		This study (2014)	
		Estimate	Range[a]	Estimate	Range[b]
Total population					
Households	7	10.0	1 – 19	7.0	
Population	12	19.0	9 – 29	8.8	5 – 12
Alaska Native					
Population	9	7.0	1 – 13	5.3	5 – 5
Percentage	75.0%	36.8%	5.3% – 68.4%	60.0%	60.0% – 60.0%

Sources U.S. Census Bureau (n.d.) for decennial census data, and for American Community Survey (ACS) 2014 estimate (5-year average); and ADF&G Division of Subsistence household surveys, 2015, for 2014 estimate.

Note Division of Subsistence household survey eligibility requirements differ from those used by ACS.

a. ACS data range is the reported margin of error.

b. No range of households is estimated for division surveys.



a. The confidence interval could not be calculated for the Alaska Native population due to the small population size.

Figure 4-2.–Alaska Native and overall population estimates, Ugashik, 2010 and 2014.

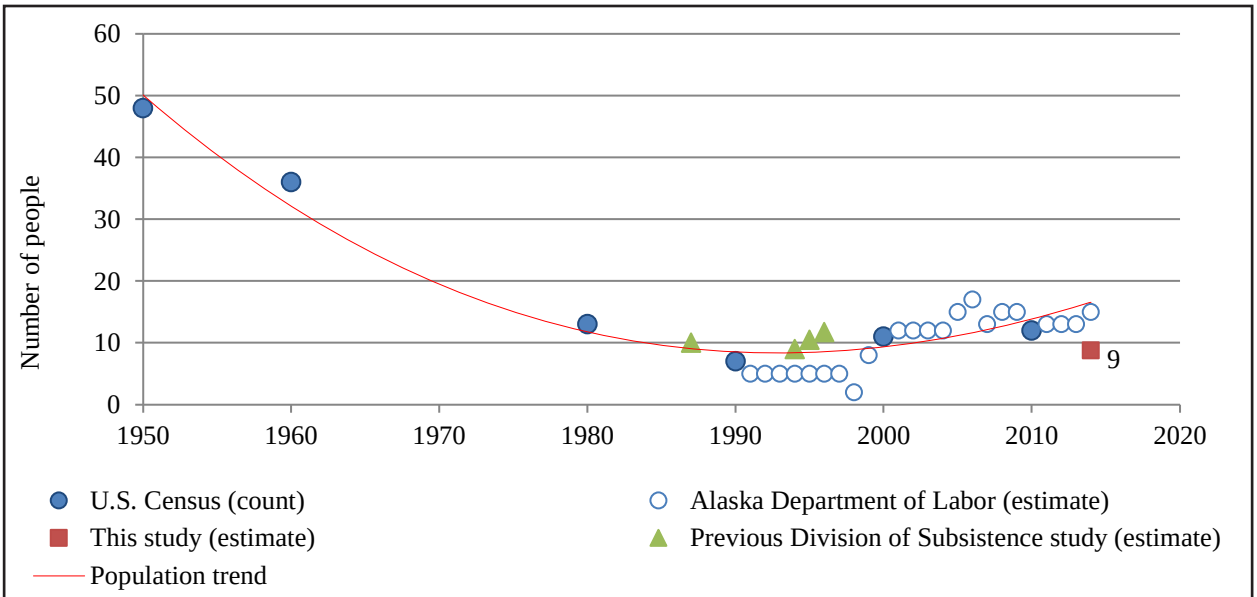
Table 4-2.–Sample and demographic characteristics, Ugashik, 2014.

Characteristics	Community Ugashik
Sampled households	4
Eligible households	7
Percentage sampled	57.1%
Sampled population	5
Estimated community population	8.8
Household size	
Mean	1.3
Minimum	1
Maximum	2
Age	
Mean	60.8
Minimum[a]	54
Maximum	78
Median	55
Length of residency	
Total population	
Mean	45.4
Minimum[a]	8
Maximum	78
Heads of household	
Mean	45.4
Minimum[a]	8
Maximum	78
Alaska Native	
Estimated households[b]	
Number	5.3
Percentage	75.0%
Estimated population	
Number	5.3
Percentage	60.0%

Source ADF&G Division of Subsistence household surveys, 2015.

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 one head of household is Alaska Native.



Note This community did not report in the 1970 U.S. Census Bureau decennial count.

Figure 4-3.–Historical population estimates, Ugashik, 1950–2014.

Table 4-3.–Birthplaces of population, Ugashik, 2014.

Birthplace	Percentage
Port Alsworth	20.0%
Ugashik	60.0%
Other U.S.	20.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Note "Birthplace" means the place of residence of the parents of the individual when the individual was born.

There was an average of one person living in a household during the study period, with a maximum of two occupants (Table 4-2). Residents averaged 61 years of age; the youngest resident of any surveyed household was 54 years old and the oldest was 78. An average resident of Ugashik had lived in the community for 45 years. Members of the community were born in Ugashik or Port Alsworth in Alaska (80%), or another state (20%) (Table 4-3). The age distribution of Ugashik residents in 2014 was small and skewed with no residents younger than age 50 (Table 4-4). There were more men than women living in Ugashik during the study period (Figure 4-4). Compared to the other study communities, Ugashik has an older and longer-residing population. There are numerous other cabins and homes that are occupied by seasonal residents, commercial fishermen, commercial processors, and ADF&G Division of Commercial Fisheries seasonal staff. This small community with few residents in the winter often swells to over 200 people during the summer to participate in the Bristol Bay salmon fishery.[3]

3. Lake and Peninsula Borough, "Native Village of Ugashik," http://www.lakeandpen.com/residents/about_l_p_b/villages/ugashik (accessed July 2021).

Table 4-4.–Population profile, Ugashik, 2014.

	Male			Female			Total		
Age	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage
0–4	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
5–9	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
10–14	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
15–19	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
20–24	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
25–29	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
30–34	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
35–39	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
40–44	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
45–49	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%
50–54	1.8	25.0%	25.0%	0.0	0.0%	0.0%	1.8	20.0%	20.0%
55–59	1.8	25.0%	50.0%	1.8	100.0%	100.0%	3.5	40.0%	60.0%
60–64	1.8	25.0%	75.0%	0.0	0.0%	100.0%	1.8	20.0%	80.0%
65–69	0.0	0.0%	75.0%	0.0	0.0%	100.0%	0.0	0.0%	80.0%
70–74	0.0	0.0%	75.0%	0.0	0.0%	100.0%	0.0	0.0%	80.0%
75–79	1.8	25.0%	100.0%	0.0	0.0%	100.0%	1.8	20.0%	100.0%
80–84	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
85–89	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
90–94	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
95–99	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
100–104	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Missing	0.0	0.0%	100.0%	0.0	0.0%	100.0%	0.0	0.0%	100.0%
Total	**7.0**	**100.0%**	**100.0%**	**1.8**	**100.0%**	**100.0%**	**8.8**	**100.0%**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2015.

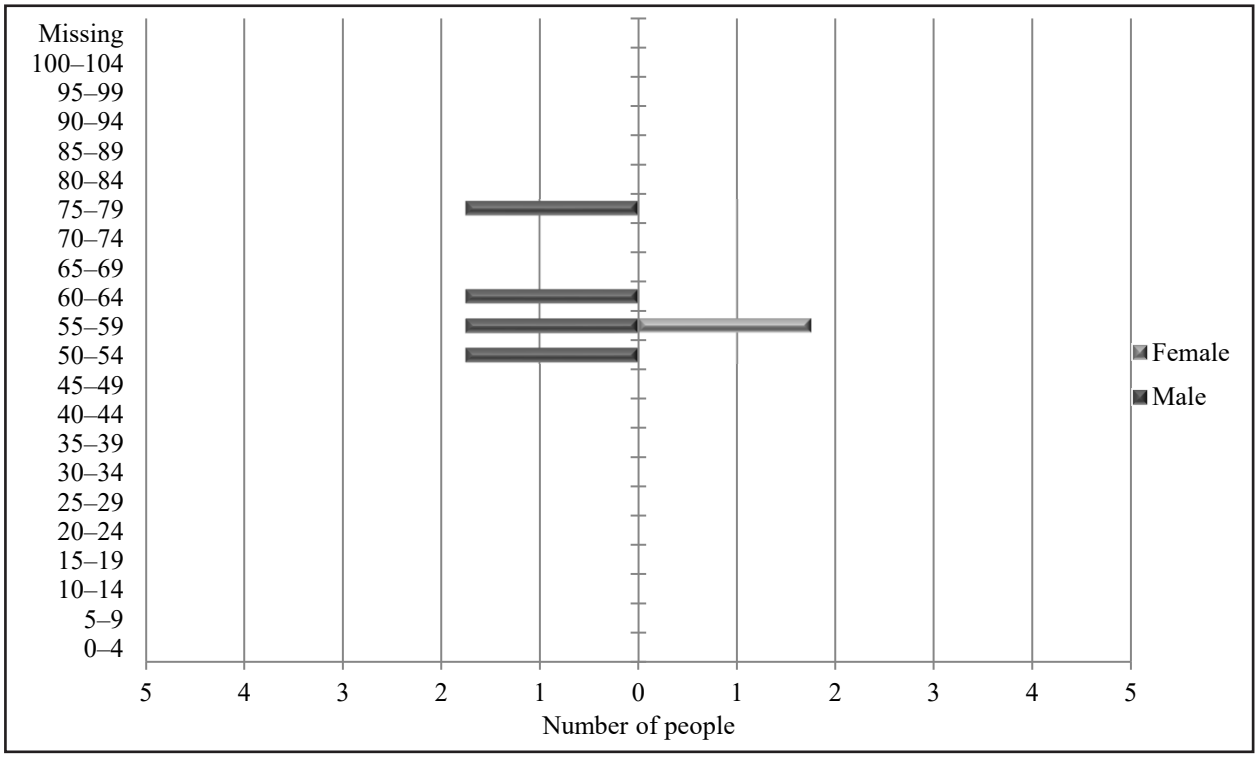
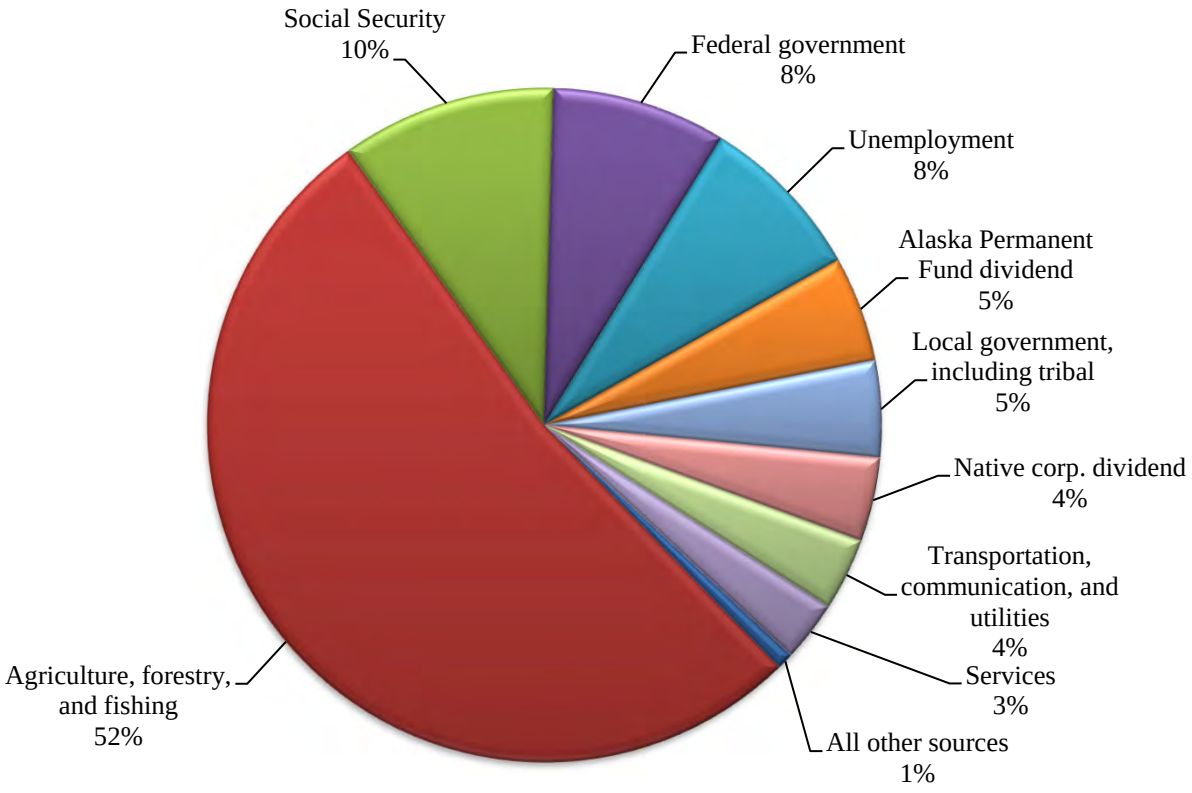


Figure 4-4.–Population profile, Ugashik, 2014.



Note "All other sources" is the sum of every income source that provided less than 1% to the total community income.

Figure 4-5.–Top income sources, Ugashik, 2014.

Income and Cash Employment

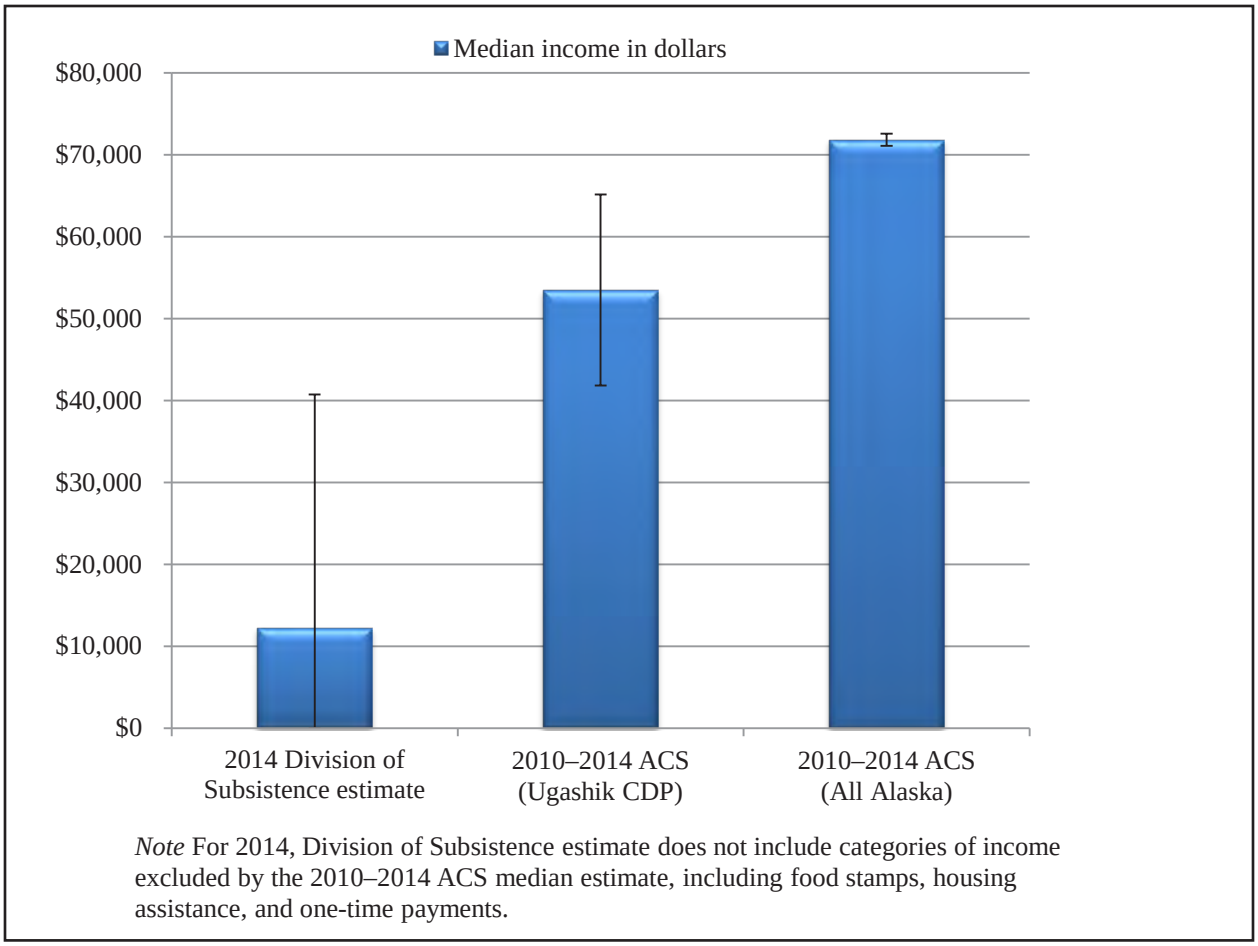
During the study period, the majority of income in Ugashik originated in the agriculture, forestry, and fishing sector (52%) (Figure 4-5). Social Security contributed 10% to overall income while the federal government and unemployment each contributed 8%. Total community income was split between earned income (72%) and other sources (28%) (Table 4-5). Social Security, unemployment benefits, Alaska Permanent Fund dividends, and dividends from Native corporations constituted most of the other income estimate. The average household income in 2014 was $37,217 while the median household income was significantly lower at $12,259 (Table 4-5; Figure 4-6). The median income estimate was lower than the five-year average ACS estimate for Ugashik, while also being significantly less than the median for all of Alaska. At the individual level, per capita income in Ugashik was $28,974 in 2014, substantially more than Pilot Point and Egegik (Table 1-8).

Looking just at jobs and earned income, rather than total community income, Table 4-6 shows that fishing contributed 73% to wage earnings in 2014. Federal government (12%), local/tribal government (7%), transportation (5%), and service sector (4%) jobs completed the sources of jobs and wages in Ugashik in 2014. While the service sector accounted for only 4% of wage earnings, it provided 25% of jobs in the community. Jobs in the community were relatively equally distributed among part-time (33%), on-call (33%), and full-time (25%) schedules (Table 4-7). All adults (age 16 or older) and all households were employed in 2014 (Table 4-8). On average, adults in Ugashik had 2.4 jobs; adults were employed for an average of nine months of the year, with 60% of adults having been employed year-round.

Table 4-5.–Estimated earned and other income, Ugashik, 2014.

Income source	Number of employed adults	Number of households	Total for community	-/+ 95% CI	Mean per household	Percentage of total community income
Earned income						
Agriculture, forestry, and fishing	7.0	5.3	$136,517	$26,141 – $286,935	$19,502	52.4%
Federal government	1.8	1.8	$21,722	$19,050 – $50,400	$3,103	8.3%
Local government, including tribal	1.8	1.8	$12,068	$10,259 – $34,202	$1,724	4.6%
Transportation, communication, and utilities	1.8	1.8	$9,051	$7,937 – $21,000	$1,293	3.5%
Services	3.5	1.8	$7,542	$6,657 – $14,694	$1,077	2.9%
Earned income subtotal	**8.8**	**7.0**	**$186,900**	**$46,400 – $342,900**	**$26,700**	**71.7%**
Other income						
Social Security		1.8	$26,901	$15,372 – $53,802	$3,843	10.3%
Unemployment		1.8	$21,000	$12,000 – $42,000	$3,000	8.1%
Alaska Permanent Fund dividend		7.0	$13,188	$7,536 – $16,485	$1,884	5.1%
Native corp. dividend		5.3	$10,500	$2,406 – $20,999	$1,500	4.0%
Fuel voucher		1.8	$1,750	$1,000 – $3,500	$250	0.7%
Per diem/public meeting		1.8	$280	$160 – $560	$40	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%
Food stamps		0.0	$0	$0 – $0	$0	0.0%
Longevity bonus		0.0	$0	$0 – $0	$0	0.0%
Heating assistance		0.0	$0	$0 – $0	$0	0.0%
Pension/retirement		0.0	$0	$0 – $0	$0	0.0%
Workers' compensation/insurance		0.0	$0	$0 – $0	$0	0.0%
Disability		0.0	$0	$0 – $0	$0	0.0%
Veterans assistance		0.0	$0	$0 – $0	$0	0.0%
Child support		0.0	$0	$0 – $0	$0	0.0%
Other		0.0	$0	$0 – $0	$0	0.0%
Foster care		0.0	$0	$0 – $0	$0	0.0%
Meeting honoraria		0.0	$0	$0 – $0	$0	0.0%
Other income subtotal		**7.0**	**$73,619**	**$13,725 – $149,840**	**$10,517**	**28.3%**
Community income total			**$260,519**	**$83,272 – $463,132**	**$37,217**	**100.0%**

Source ADF&G Division of Subsistence household surveys, 2015.



Note For 2014, Division of Subsistence estimate does not include categories of income excluded by the 2010–2014 ACS median estimate, including food stamps, housing assistance, and one-time payments.

Figure 4-6.–Comparison of median household income estimates, Ugashik, 2014.

Table 4-6.–Employment by industry, Ugashik, 2014.

Industry	Jobs	Employed households	Employed individuals	Percentage of wage earnings
Estimated total number	**21.0**	**7.0**	**8.8**	
Federal government	**8.3%**	**25.0%**	**20.0%**	**11.6%**
Executive, administrative, and managerial	8.3%	25.0%	20.0%	11.6%
Local government, including tribal	**8.3%**	**25.0%**	**20.0%**	**6.5%**
Administrative support occupations, including clerical	8.3%	25.0%	20.0%	6.5%
Agriculture, forestry, and fishing	**50.0%**	**75.0%**	**80.0%**	**73.0%**
Executive, administrative, and managerial	16.7%	25.0%	40.0%	5.2%
Agricultural, forestry, and fishing occupations	33.3%	75.0%	80.0%	67.8%
Transportation, communication, and utilities	**8.3%**	**25.0%**	**20.0%**	**4.8%**
Transportation and material moving occupations	8.3%	25.0%	20.0%	4.8%
Services	**25.0%**	**25.0%**	**40.0%**	**4.0%**
Executive, administrative, and managerial	16.7%	25.0%	40.0%	0.0%
Mechanics and repairers	8.3%	25.0%	20.0%	4.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Table 4-7.–Job schedules, Ugashik, 2014.

	Jobs		Employed persons		Employed households	
Schedule	Number	Percentage	Number	Percentage	Number	Percentage
Full time	5.3	25.0%	5.3	60.0%	3.5	50.0%
Part time	7.0	33.3%	7.0	80.0%	5.3	75.0%
Shift	1.8	8.3%	1.8	20.0%	1.8	25.0%
On-call (occasional)	7.0	33.3%	5.3	60.0%	3.5	50.0%

Source ADF&G Division of Subsistence household surveys, 2015.

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 4-8.–Employment characteristics, Ugashik, 2014.

	Community
Characteristic	Ugashik
All adults	
Number	8.8
Mean weeks employed	37.3
Employed adults	
Number	8.8
Percentage	100.0%
Jobs	
Number	21.0
Mean	2.4
Minimum	1
Maximum	4
Months employed	
Mean	8.6
Minimum	1
Maximum	12
Percentage employed year-round	60.0%
Mean weeks employed	37.3
Households	
Number	7.0
Employed	
Number	7.0
Percentage	100.0%
Jobs per employed household	
Mean	3.0
Minimum	1
Maximum	7
Employed adults	
Mean	
Employed households	1.3
Total households	1.3
Minimum	1
Maximum	2
Mean person-weeks of employment	46.6

Source ADF&G Division of Subsistence household surveys, 2015.

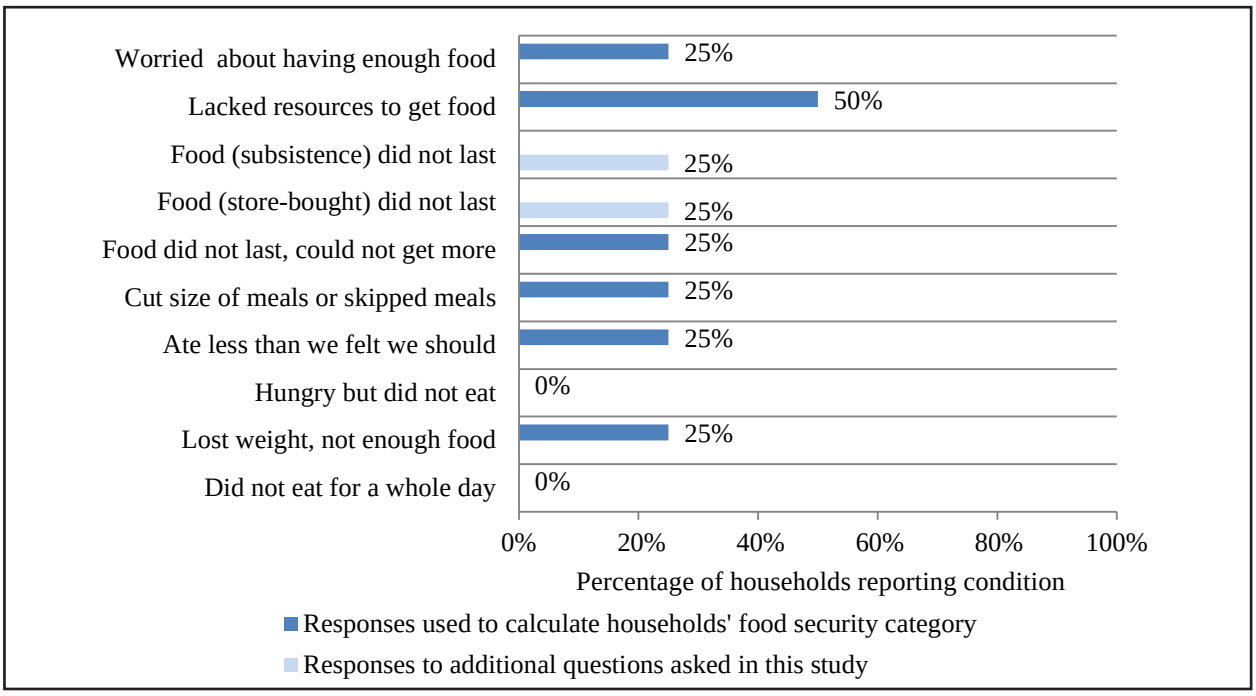


Figure 4-7.–Responses to questions about food insecure conditions, Ugashik, 2014.

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). Based on their responses to these questions, households were broadly categorized as being food secure or food insecure following a USDA protocol (Bickel et al. 2000). Food secure households were broken down further into two subcategories—high or marginal food security. Food insecure households were divided into two subcategories—low food security or very low food security.

Households with high food security did not report any food access problems or limitations. Households with marginal food security reported one or two instances of food access problems or limitations—typically anxiety over food sufficiency or a shortage of particular foods in the house—but gave little or no indication of changes in diets or food intake. Households with low food security reported reduced quality, variety, or desirability of their diet, but they, too, gave little indication of reduced food intake. Households classified as having very low food security were those that reported multiple instances of disrupted eating patterns and reduced food intake (Coleman-Jensen et al. 2012).

Figure 4-7 summarizes affirmative responses to food insecurity conditions experienced by Ugashik households that did not have enough of the kinds of foods they wanted to eat. The first five conditions described in the figure were asked about the overall household while the last five applied only to the adults in the household and were asked to ascertain the severity of food insecure conditions experienced by the household. The most common affirmative answer was in response to the question asking whether households lacked the resources to get food, meaning that they did not have what they needed to hunt, fish, or gather, or that they lacked money to buy food. The remaining conditions were all answered in the affirmative by 25% of households, except no households surveyed in Ugashik indicated that they were hungry but did not eat or that they did not eat for a whole day. From these responses, it appears that insecurities concerning food stemmed equally from store-bought food and subsistence food.

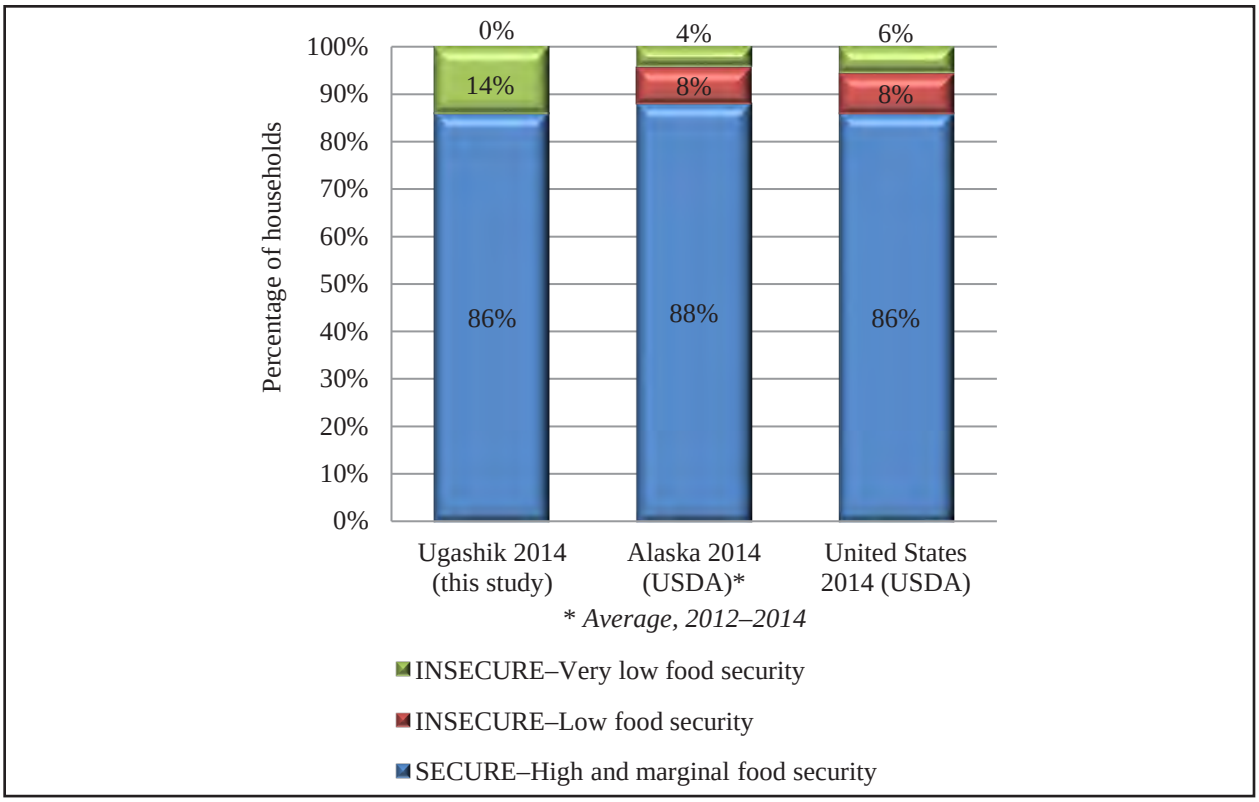
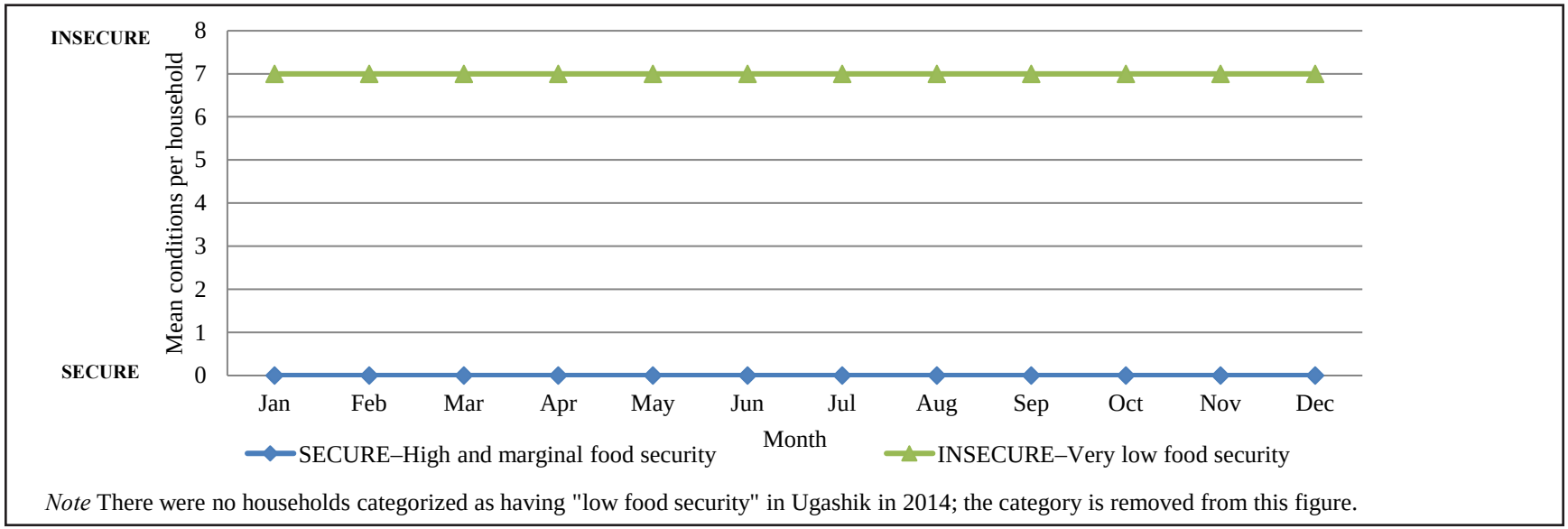


Figure 4-8.–Comparison of food security categories, Ugashik, Alaska, and United States, 2014.

Table 4-9.–Households' assessments of food security conditions, Ugashik, 2014.

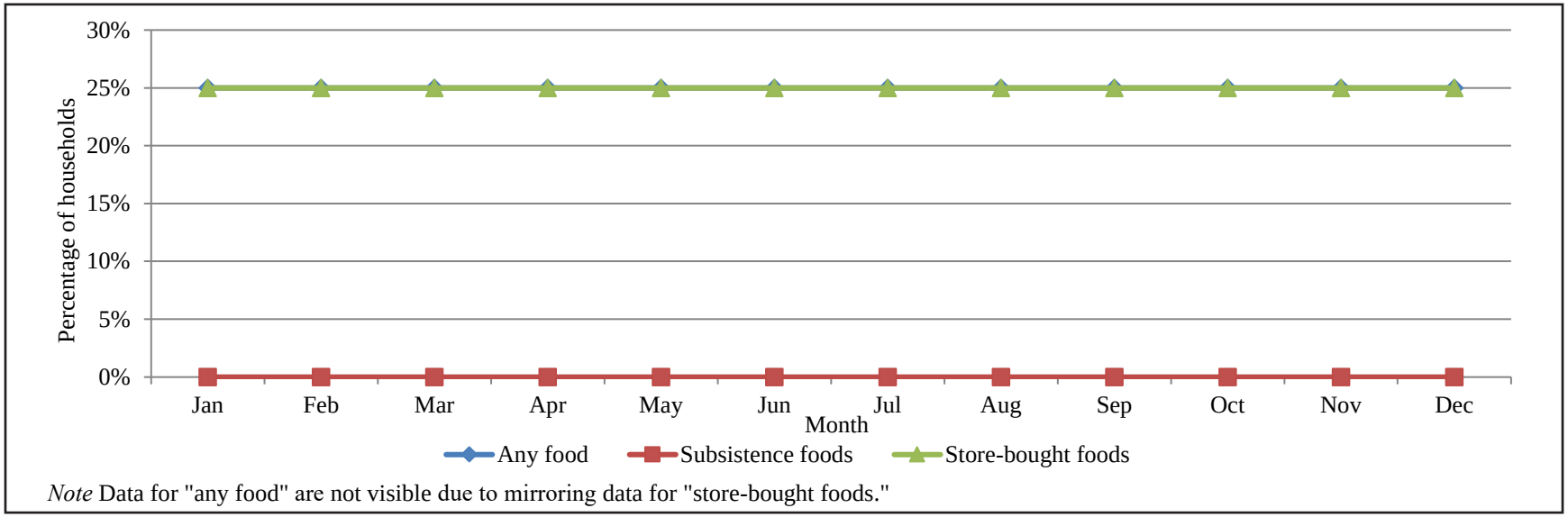
Statement	Percentage of households
Had enough of the kinds of food desired	50.0%
Had enough food, but not the desired kind	25.0%
Sometimes, or often, did not have enough food	25.0%
Missing/No response	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.



Note There were no households categorized as having "low food security" in Ugashik in 2014; the category is removed from this figure.

Figure 4-9.–Mean number of food insecure conditions by month and by household food security category, Ugashik, 2014.



Note Data for "any food" are not visible due to mirroring data for "store-bought foods."

Figure 4-10.–Comparison of months when food did not last, Ugashik, 2014.

Food security results for surveys for Ugashik, the state of Alaska, and the United States are summarized in Figure 4-8. Residents of Ugashik experienced slightly lower levels of food security than the state but were on par with the nation overall. Interestingly, no households were classified as having low food security, compared to 8% of households at the state and national levels, but 14% were classified as experiencing very low food security, a higher proportion than the state (4%) or country (6%). The remote location of the community and consequent high prices of store-bought food that had to be ordered from a grocer in another community, coupled with a generally older population, a small population, and changes in resource availability and access, may explain the community's food security profile.

According to study results, one-half of Ugashik households had enough desired foods in 2014 and 25% of households either had enough food, but not the kinds desired, or did not have enough food (Table 4-9). Figure 4-9 portrays the mean number of food insecure conditions per household by food security category by month. Figure 4-10 shows which months households reported foods not lasting. A pattern unlike that seen in Pilot Point or Egegik was displayed in Ugashik where households experienced no seasonal trends in food insecure conditions, whether the household was identified as secure or insecure (Figure 4-9). Similar results depicted in Figure 4-10 show no households ran out of subsistence foods in any month of the year, and 25% of households consistently ran out of store-bought foods. That no household indicated difficulties with subsistence foods throughout the year likely indicates that households are able to put up enough food to last through the year, or are otherwise provisioned with subsistence foods, perhaps through sharing networks. Often, seasonal weather patterns can disrupt access to store-bought foods but given the consistent nature of results depicted in Figure 4-10, it seems more likely it may be a product of fixed incomes not stretching to cover store-bought foods through the entire month.

Summary of Harvest and Use Patterns

Individual Participation in the Harvesting and Processing of Wild Resources

Figure 4-11 and Table 4-10 report the expanded levels of individual participation in the harvesting and processing of wild resources by all Ugashik residents in 2014. Looking at any resource, 100% of Ugashik residents participated in both harvesting and processing activities. At the resource category level, 100% of residents fished and hunted for large land mammals, while 60% of residents hunted birds or gathered eggs and gathered vegetation. The fewest number of individuals hunted or trapped small land mammals (20%) and no households hunted marine mammals. While 100% of individuals processed fish and birds or eggs, 80% processed large land mammals, 40% processed vegetation, and 20% processed small land mammals. No households processed marine mammals. While it is common that more people process a resource than are involved in harvesting, such as was seen with birds and eggs in Ugashik, it is more unusual that a fewer number of individuals are involved in the processing of large land mammals than hunted, which occurred in Ugashik in 2014. Although there was a resident from each household that hunted large game in 2014, not every household had a successful harvest.[4] But, due to their size, there can be multiple people involved in processing a moose or caribou, which might explain why such a great proportion of residents (80%) from this small community had processed large game in 2014.

4. The harvest database WinfoNet indicated one moose was harvested by an Ugashik resident in 2014 (database accessed July 2018).

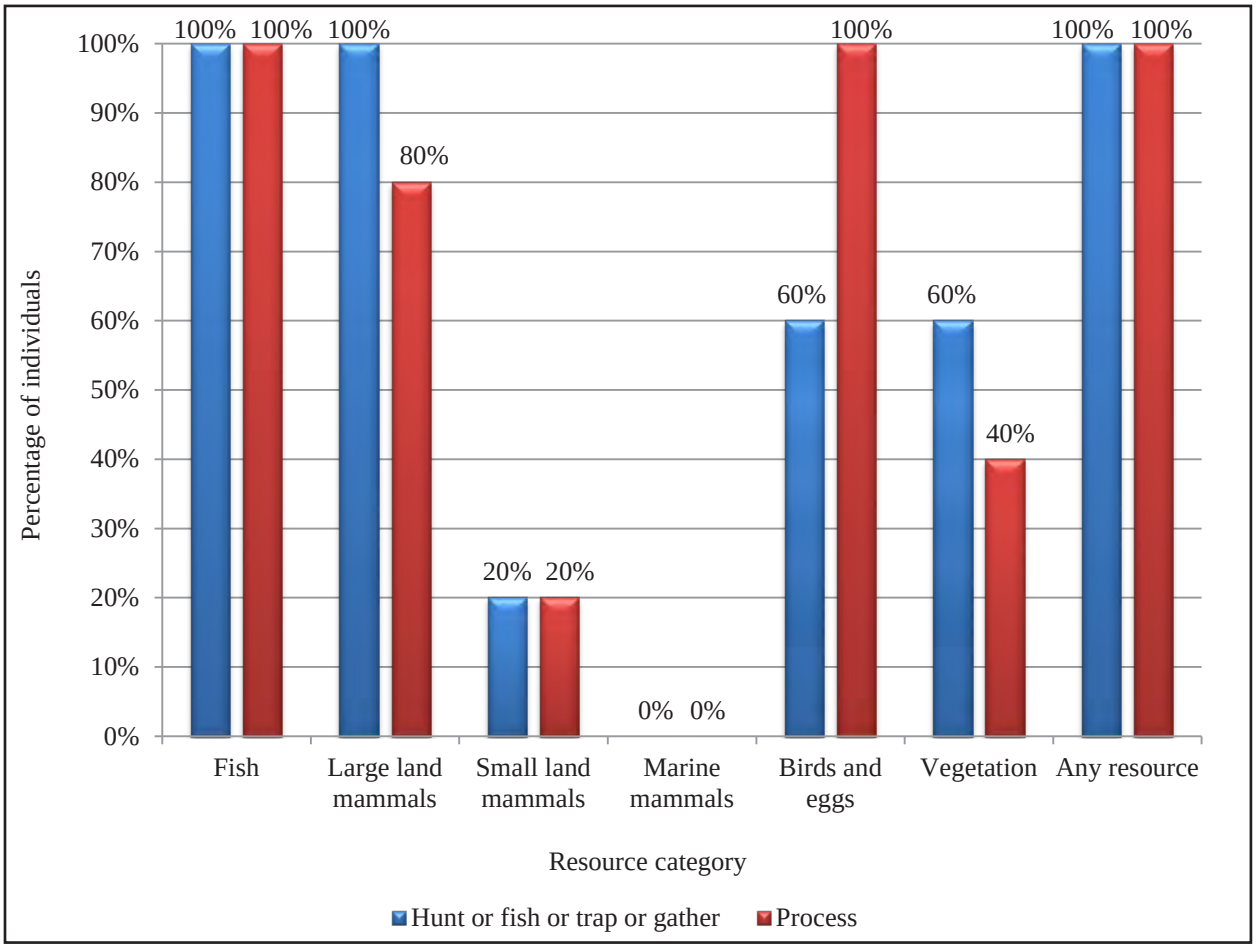


Figure 4-11.–Individual participation in subsistence harvesting and processing activities, Ugashik, 2014.

Table 4-10.–Individual participation in subsistence harvesting and processing activities, Ugashik, 2014.

Total number of people	**8.8**
Fish	
Fish	
Number	8.8
Percentage	100.0%
Process	
Number	8.8
Percentage	100.0%
Large land mammals	
Hunt	
Number	8.8
Percentage	100.0%
Process	
Number	7.0
Percentage	80.0%
Small land mammals	
Hunt or trap	
Number	1.8
Percentage	20.0%
Process	
Number	1.8
Percentage	20.0%
Marine mammals	
Hunt	
Number	0.0
Percentage	0.0%
Process	
Number	0.0
Percentage	0.0%
Birds and eggs	
Hunt/gather	
Number	5.3
Percentage	60.0%
Process	
Number	8.8
Percentage	100.0%
Vegetation	
Gather	
Number	5.3
Percentage	60.0%
Process	
Number	3.5
Percentage	40.0%
Any resource	
Attempt harvest	
Number	8.8
Percentage	100.0%
Process	
Number	8.8
Percentage	100.0%

Source ADF&G Division of Subsistence household surveys, 2015.

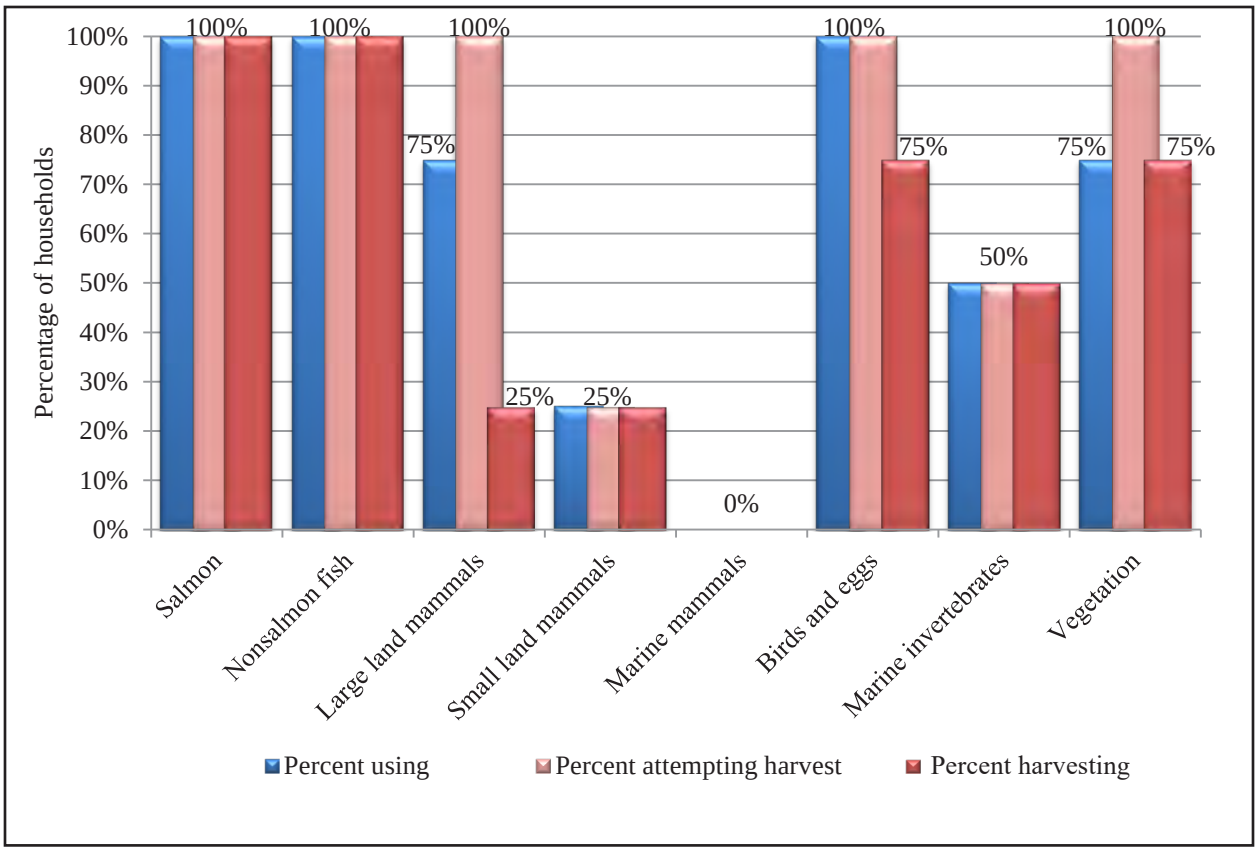


Figure 4-12.–Percentage of households using, attempting to harvest, and harvesting wild resources, by resource category, Ugashik, 2014.

Harvest and Use of Wild Resources at the Household Level

Figure 4-12 shows by resource category the percentages of households that used wild resources, attempted to harvest, and harvested wild foods. As with the individual participation rates, there were generally high rates of use and harvest of resources at the household level. All households in Ugashik used and attempted to harvest salmon, nonsalmon fish, and birds and eggs. Every household also hunted large mammals and tried to gather vegetation, but only 75% of households used these resources. The remaining resource categories exhibited lower household use rates: 50% of households used and gathered marine invertebrates, 25% of households used and hunted or trapped small land mammals, and no households used or hunted marine mammals. In general, households were successful in their harvest attempts. Large land mammals, birds and eggs, and vegetation are the only resource categories for which fewer households successfully harvested a resource than attempted to harvest. The difference is most pronounced for large land mammals: while every household hunted, only 25% of households successfully harvested.

Table 4-11 summarizes resource harvest and use characteristics for Ugashik in 2014 at the household level. The average harvest was 1,179 lb usable weight per household, or 943 lb per person. During the study year, community households harvested an average of 12 kinds of resources and used an average of 13 kinds of resources. The maximum number of resources used by any household was 18. In addition, households gave away an average of five kinds of resources.

Table 4-11.–Resource harvest and use characteristics, Ugashik, 2014.

Characteristic	
Mean number of resources used per household	**12.8**
Minimum	7
Maximum	18
95% confidence limit (±)	41.9%
Median	13
Mean number of resources attempted to harvest per household	**18.0**
Minimum	9
Maximum	24
95% confidence limit (±)	42.5%
Median	19.5
Mean number of resources harvested per household	**12.0**
Minimum	7
Maximum	18
95% confidence limit (±)	46.5%
Median	11.5
Mean number of resources received per household	**1.3**
Minimum	1
Maximum	2
95% confidence limit (±)	41.7%
Median	1
Mean number of resources given away per household	**5.0**
Minimum	1
Maximum	10
95% confidence limit (±)	78.0%
Median	4.5
Household harvest (pounds)	
Minimum	654
Maximum	1,902
Mean	1,178.8
Median	1,080
Total harvest weight (lb)	8,251.5
Community per capita harvest (lb)	943.0
Percentage using any resource	100.0%
Percentage attempting to harvest any resource	100.0%
Percentage harvesting any resource	100.0%
Percentage receiving any resource	100.0%
Percentage giving away any resource	100.0%
Number of households in sample	4
Number of resources asked about and identified voluntarily by respondents	150

Source ADF&G Division of Subsistence household surveys, 2015.

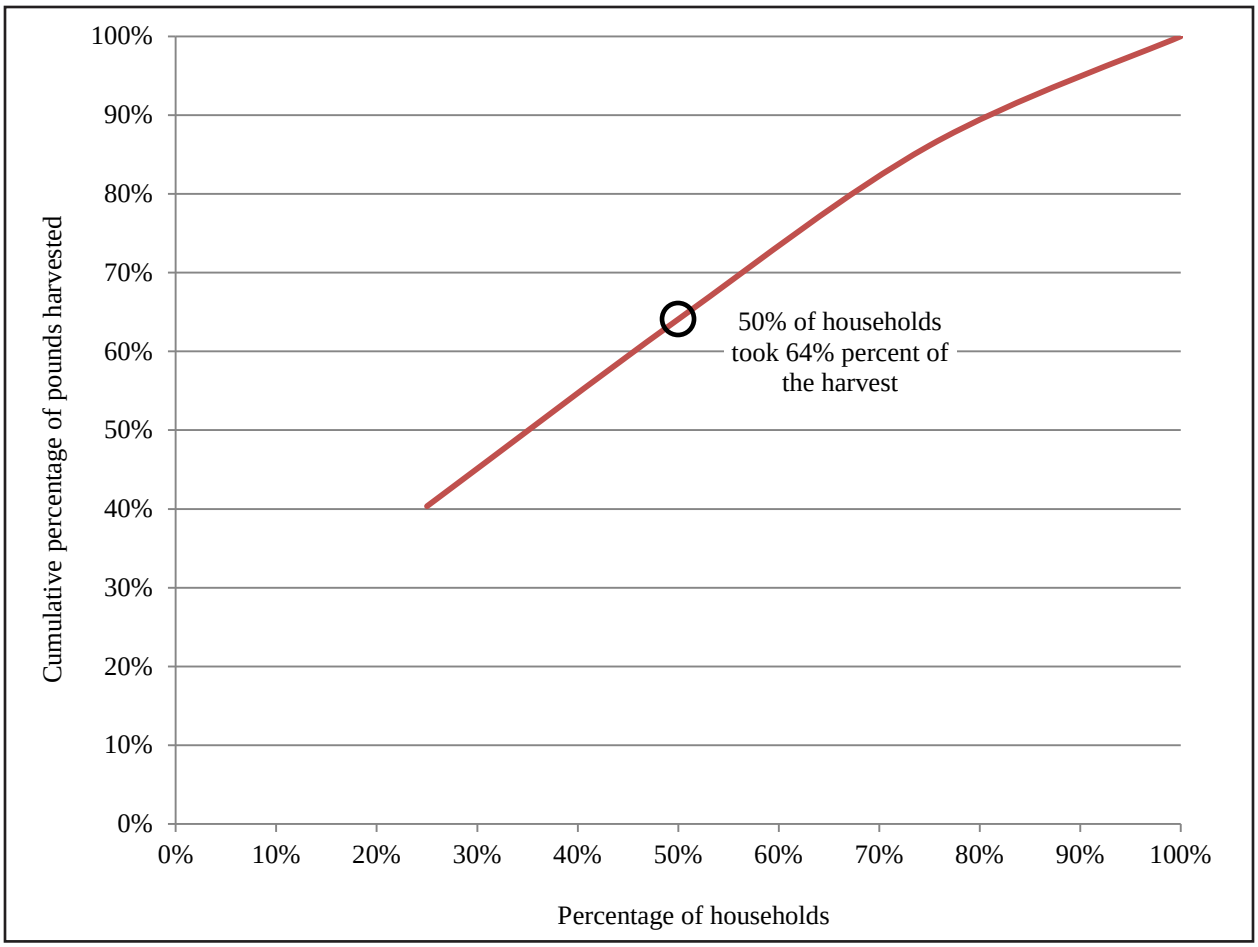


Figure 4-13.–Household specialization, Ugashik, 2014.

Sharing of Wild Resources

Household Specialization in Resource Harvesting

Previous studies (Wolfe 1987; Wolfe et al. 2010) have shown that in most rural Alaska communities, a relatively small portion of households produces most of the community's fish and wildlife harvests, which they share with other households. A 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 4-13, in the 2014 study year in Ugashik, about 64% of the harvests of wild resources as estimated in pounds usable weight were harvested by 50% of the community's households. This is a different pattern than is often identified and likely due to the small community size.

Harvest Quantities and Composition

Table 4-12 reports estimated wild resource harvests and uses by Ugashik residents in 2014 and is organized first by general category and then by species. All edible resources are reported in pounds usable weight (see

Appendix B for conversion factors[5]). The harvest category includes resources harvested by any member of the surveyed household during the study year. The use category includes all resources taken, given away, or used by a household, and resources acquired from other harvesters, either as gifts, by barter or trade, through hunting partnerships, or as meat given by hunting guides and non-local hunters. Purchased foods are not included, but resources such as wood 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 2014, Ugashik households harvested a total of 8,252 usable lb of wild resources (Table 4-12). Contributing 84% to the overall harvest, salmon was the most heavily harvested resource category (6,890 lb total, or 788 lb per capita) (Figure 4-14; Table 4-12). Far behind salmon, the harvest of large land mammals composed 11% (945 lb; 108 lb per capita) of the overall harvest weight and birds and eggs (200 lb total; 23 lb per capita) and nonsalmon fish (122 lb; 14 lb per capita) each accounted for 2% of the harvest. Marine invertebrates (90 lb; 10 lb per capita) contributed 1% to the harvest total and vegetation (4 lb; less than 1 lb per capita) contributed less than 1%.

Use and Harvest Characteristics by Resource Category

Households typically use more resources than they harvest because of the prevalence of sharing within and between communities. Households may share resources with one or many other households, and within the community or beyond. Households within the community receive resources from one or many other households residing in the same community or from another community. All households in Ugashik shared wild resources in 2014 (Table 4-12). The resource category given away by the most households was salmon (shared by 75% of households). Nonsalmon fish, large land mammals, and marine invertebrates were shared by 50% of households, while 25% shared small land mammals and birds and eggs and no households shared vegetation. Large land mammals were received by 50% of households, more than any other resource category. One-quarter (25%) of the households received salmon, nonsalmon fish, and birds and eggs; no households received small land mammals, marine invertebrates, or vegetation.

Table 4-13 lists the top ranked resources used by households and Figure 4-15 shows the species with the highest harvests during the 2014 study year. Salmon species dominated the harvest and, when combined with moose, composed more than 90% of the entire community harvest, by weight (Figure 4-15). No other single species contributed more than 1% to the harvest weight. Salmon and moose were also prevalent among the most used resources by Ugashik households, a list made up entirely of fish, birds, and moose (Table 4-14). Although the nonsalmon fish species and birds on the most used resources list were not among the top species harvested, they were still used by 50% or more households.

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 4-12.–Estimated use and harvest of fish, game, and vegetation resources, Ugashik, 2014.

	Percentage of households					Harvest weight (lb)			Harvest amount[a]			95% confidence limit (±) harvest
Resource	Use %	Attempt %	Harvest %	Receive %	Give %	Total	Mean per household	Per capita	Total	Unit	Mean per household	
All resources	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**8,251.5**	**1,178.8**	**943.0**	**8,251.5**	**lb**	**1,178.8**	**46.3**
Salmon	**100.0**	**100.0**	**100.0**	**25.0**	**75.0**	**6,890.4**	**984.3**	**787.5**	**6,890.4**	**lb**	**984.3**	**65.5**
Chum salmon	50.0	50.0	50.0	0.0	0.0	64.2	9.2	7.3	14.0	ind	2.0	147.3
Coho salmon	100.0	100.0	100.0	0.0	50.0	1,236.4	176.6	141.3	274.8	ind	39.3	65.1
Chinook salmon	100.0	100.0	100.0	0.0	75.0	1,013.8	144.8	115.9	94.5	ind	13.5	36.5
Pink salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sockeye salmon	100.0	100.0	100.0	25.0	75.0	4,561.5	651.6	521.3	1,100.8	ind	157.3	100.9
Landlocked salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Spawning sockeye salmon	25.0	25.0	25.0	0.0	25.0	14.5	2.1	1.7	3.5	ind	0.5	208.3
Nonsalmon fish	**100.0**	**100.0**	**100.0**	**25.0**	**50.0**	**122.3**	**17.5**	**14.0**	**122.3**	**lb**	**17.5**	**92.6**
Pacific herring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Pacific herring 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
Capelin (grunion)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Smelt	50.0	50.0	50.0	0.0	50.0	57.6	8.2	6.6	17.7	gal	2.5	169.5
Pacific (gray) cod	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Starry flounder	25.0	25.0	25.0	0.0	0.0	26.3	3.8	3.0	8.8	ind	1.3	208.3
Pacific halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	lb	0.0	0.0
Rockfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sablefish (black cod)	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
Sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Salmon shark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Yellowfin sole	25.0	25.0	25.0	0.0	0.0	8.8	1.3	1.0	8.8	ind	1.3	208.3
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Dolly Varden–freshwater	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–saltwater	75.0	75.0	75.0	25.0	0.0	24.5	3.5	2.8	8.8	ind	1.3	79.8
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Northern pike	25.0	25.0	25.0	0.0	25.0	5.3	0.8	0.6	1.8	ind	0.3	208.3
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
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

-continued-

Table 4-12.–Page 2 of 5.

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												
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Large land mammals	**75.0**	**100.0**	**25.0**	**50.0**	**50.0**	**945.0**	**135.0**	**108.0**	**945.0**	**lb**	**135.0**	**208.3**
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
Moose	75.0	100.0	25.0	50.0	50.0	945.0	135.0	108.0	1.8	ind	0.3	208.3
Small land mammals	**25.0**	**25.0**	**25.0**	**0.0**	**25.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**0.0**	**0.0**
Beaver	25.0	25.0	25.0	0.0	25.0	0.0	0.0	0.0	5.3	ind	0.8	208.3
Coyote	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic fox	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–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red fox–red phase	25.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	42.0	ind	6.0	208.3
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	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Lynx	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marmot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mink	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Muskrat	25.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	1.8	ind	0.3	208.3
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Weasel	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gray wolf	25.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	3.5	ind	0.5	208.3
Wolverine	25.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	1.8	ind	0.3	208.3
Marine mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**lb**	**0.0**	**0.0**
Harbor porpoise	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Fur seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harbor seal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown 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

-continued-

Table 4-12.–Page 3 of 5.

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												
Walrus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Beluga whale	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	**100.0**	**100.0**	**75.0**	**25.0**	**25.0**	**199.8**	**28.5**	**22.8**	**199.8**	**lb**	**28.5**	**124.8**
Bufflehead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Common eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
King eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Steller's eider	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Gadwall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Goldeneye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Harlequin duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Mallard	25.0	50.0	25.0	0.0	0.0	33.6	4.8	3.8	21.0	ind	3.0	208.3
Common merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Red-breasted merganser	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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	25.0	25.0	25.0	0.0	0.0	12.6	1.8	1.4	10.5	ind	1.5	208.3
Scaup	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Black scoter	25.0	25.0	25.0	0.0	0.0	15.8	2.3	1.8	17.5	ind	2.5	208.3
Northern shoveler	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Green-winged teal	50.0	75.0	50.0	0.0	25.0	10.5	1.5	1.2	21.0	ind	3.0	120.3
Wigeon	0.0	25.0	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
Brant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Canada/cackling goose	50.0	75.0	50.0	0.0	25.0	34.3	4.9	3.9	12.3	ind	1.8	171.0
Emperor goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Snow goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
White-fronted goose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Unknown geese	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Trumpeter swan	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tundra (whistling) swan	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Sandhill crane	25.0	25.0	25.0	0.0	0.0	18.9	2.7	2.2	3.5	ind	0.5	208.3
Common snipe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0

-continued-

Table 4-12.–Page 4 of 5.

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												
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	100.0	100.0	75.0	25.0	25.0	56.0	8.0	6.4	70.0	ind	10.0	95.1
Duck eggs	25.0	25.0	25.0	0.0	0.0	5.5	0.8	0.6	52.5	ind	7.5	208.3
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
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
Gull eggs	25.0	25.0	25.0	0.0	0.0	12.6	1.8	1.4	42.0	ind	6.0	208.3
Murre eggs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
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
Marine invertebrates	**50.0**	**50.0**	**50.0**	**0.0**	**50.0**	**89.8**	**12.8**	**10.3**	**89.8**	**lb**	**12.8**	**182.3**
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
Unknown chitons	25.0	25.0	25.0	0.0	0.0	2.3	0.3	0.3	0.6	gal	0.1	208.3
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
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	50.0	50.0	50.0	0.0	50.0	87.5	12.5	10.0	29.2	gal	4.2	181.6
Softshell clams	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Tanner crab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	0.0	0.0
Limpets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Blue 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	ind	0.0	0.0
Scallops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ind	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
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Snails	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Whelk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0

-continued-

Table 4-12.–Page 5 of 5.

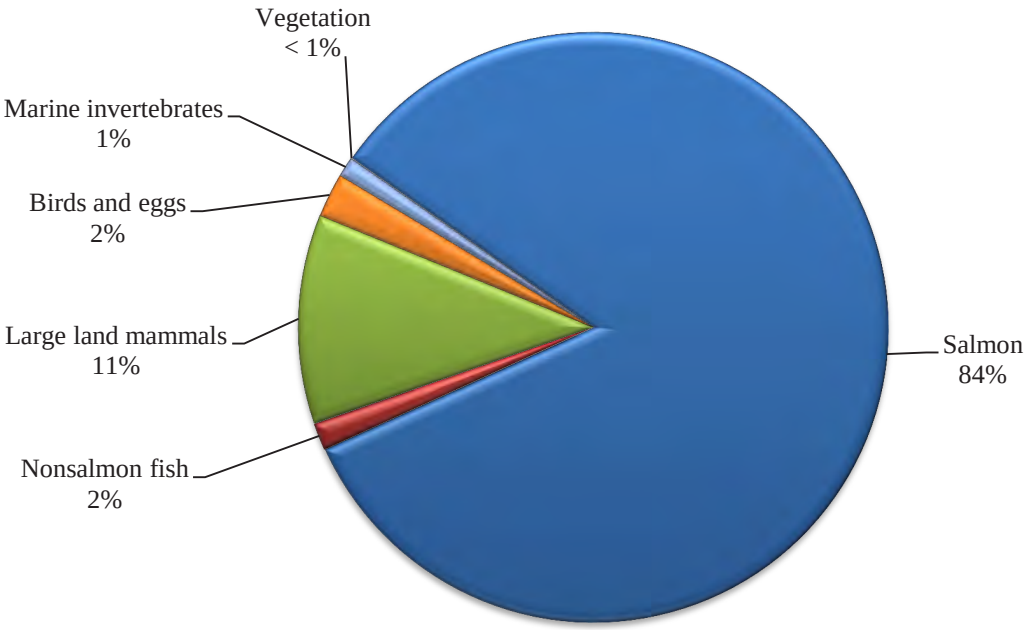
Resource	Percentage of households: Use %	Attempt %	Harvest %	Receive %	Give %	Harvest weight (lb): Total	Mean per household	Per capita	Harvest amount[a]: Total	Unit	Mean per household	95% confidence limit (±) harvest
Vegetation	**75.0**	**100.0**	**75.0**	**0.0**	**0.0**	**4.2**	**0.6**	**0.5**	**4.2**	**lb**	**0.6**	**165.5**
Blueberry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Lowbush cranberry	25.0	75.0	25.0	0.0	0.0	0.4	0.1	0.1	0.1	gal	0.0	208.3
Crowberry	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Nagoonberry	25.0	25.0	25.0	0.0	0.0	0.2	0.0	0.0	0.1	gal	0.0	208.3
Salmonberry	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Beach asparagus	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	25.0	25.0	25.0	0.0	0.0	3.5	0.5	0.4	3.5	gal	0.5	208.3
Hudson's Bay (Labrador) tea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Lambs quarter	0.0	0.0	0.0	0.0	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
Beach rye grass	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
Other wild greens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	gal	0.0	0.0
Wood	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, 2015.

Note Use of a resource obtained during a previous study year may be indicated when the sum of the percentage of households that received and harvested a resource is greater than the percentage of households that used the resource.

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.

a. Summary rows have been converted to pounds usable weight.



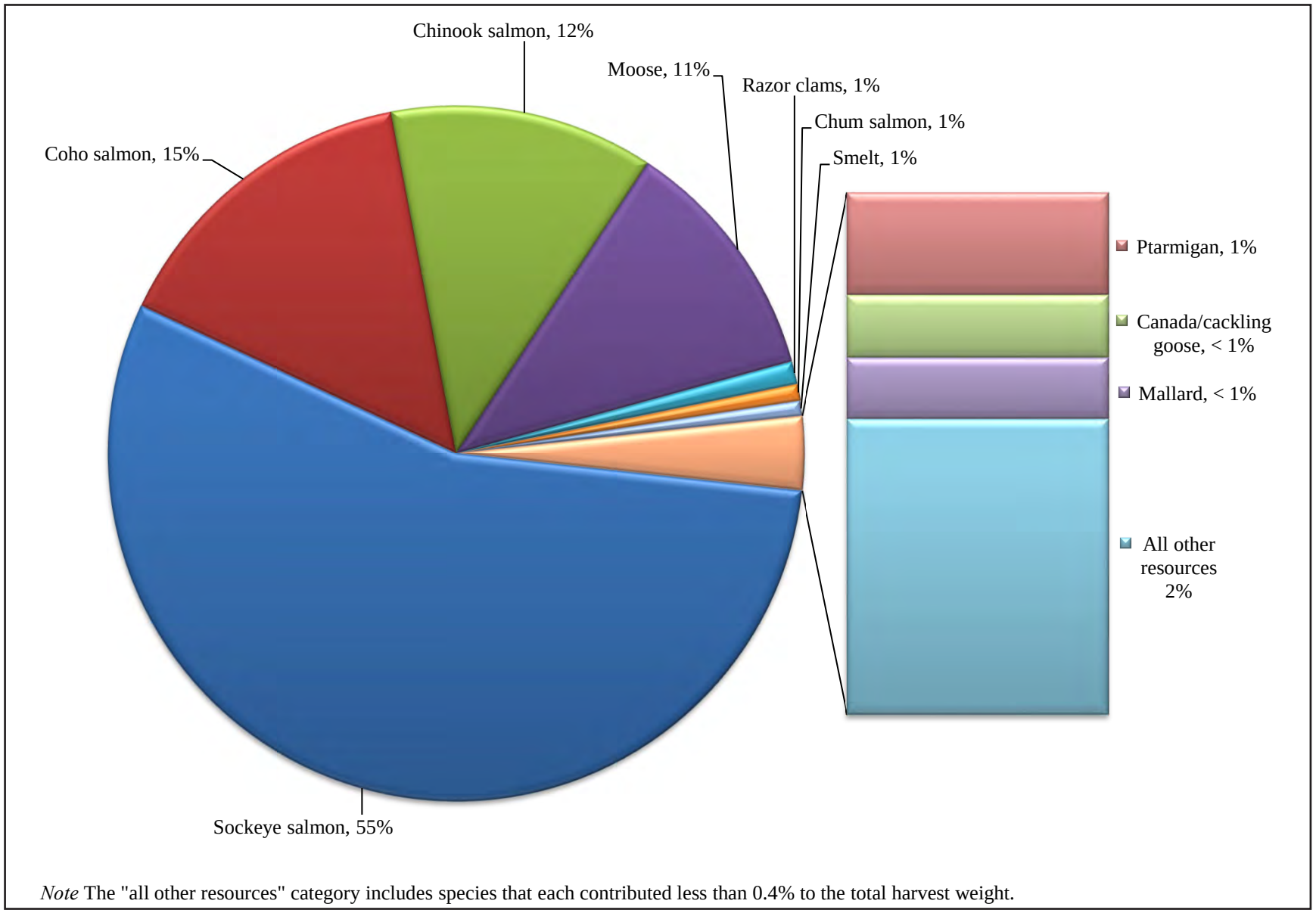
Note Categories having 0 lb of usable weight are not included.

Figure 4-14.–Composition of harvest in pounds usable weight, by resource category, Ugashik, 2014.

Table 4-13.–Top ranked resources used by households, Ugashik, 2014.

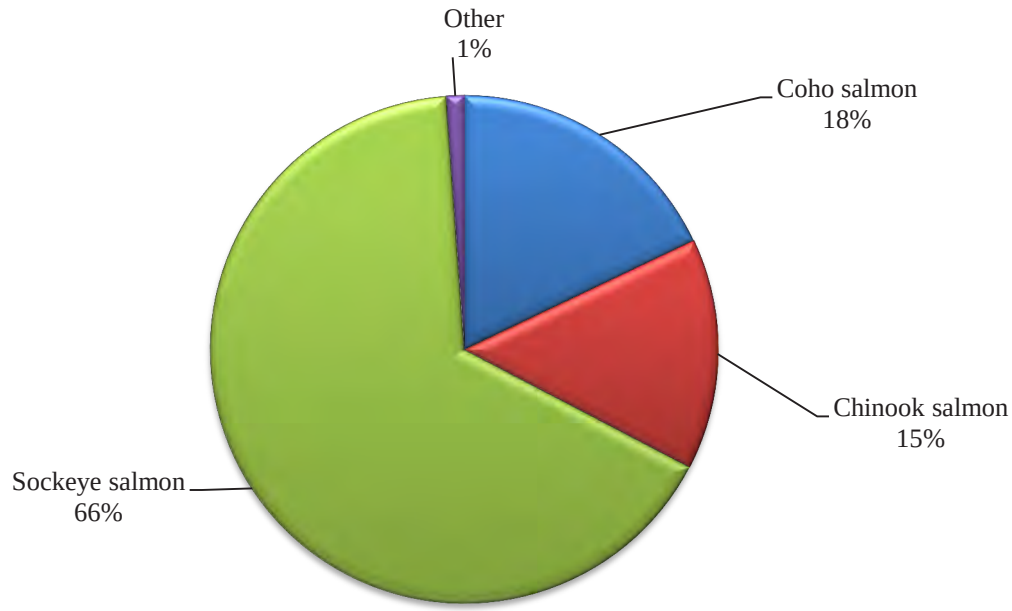
Rank[a]	Resource	Percentage of households using
1.	Coho salmon	100.0%
1.	Chinook salmon	100.0%
1.	Sockeye salmon	100.0%
1.	Ptarmigan	100.0%
5.	Dolly Varden–saltwater	75.0%
5.	Moose	75.0%
7.	Chum salmon	50.0%
7.	Smelt	50.0%
7.	Green-winged teal	50.0%
7.	Canada/cackling goose	50.0%

Source ADF&G Division of Subsistence household surveys, 2015.
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 includes species that each contributed less than 0.4% to the total harvest weight.

Figure 4-15.–Top resources harvested by percentage of total harvest in pounds usable weight, Ugashik, 2014.



Note The "other" category includes species that each contributed less than 1% to the total salmon harvest weight.

Figure 4-16.–Composition of salmon harvest in pounds usable weight, Ugashik, 2014.

Salmon

Ugashik residents harvested four species of Pacific salmon in 2014. By weight, 66% of the harvest was of sockeye salmon, followed by coho salmon (18%), Chinook salmon (15%), and 1% was a combined harvest of chum and spawning sockeye salmon (Figure 4-16). Together, the harvest of these resources totaled 6,890 lb of salmon, or 788 lb per capita. The sockeye salmon harvest totaled 4,562 lb (521 lb per capita), followed by coho salmon at 1,236 lb (141 lb per capita), and a Chinook salmon harvest of 1,014 lb (116 lb per capita) (Table 4-12). All households used and harvested these salmon species, while 50% of households used and harvested chum salmon and 25% used and harvested spawning sockeye salmon. All salmon species except chum salmon were shared, but sockeye salmon was the only species received. The fewest households (25%) shared spawning sockeye salmon and the most households (75%) shared sockeye salmon and Chinook salmon.

In 2014, an estimated 1,012 salmon (4,572 lb) were removed from commercial harvests for home use, and 476 salmon (2,318 lb) were harvested using subsistence set gillnets (Table 4-14). Figure 4-17 is a visual representation of the salmon harvest weight caught by gear type. An estimated 66% of the salmon harvest weight was caught using commercial gear and removed from commercial harvests (Table 4-15). For three species, commercial removal was the most commonly used harvest method: 100% of chum salmon, 79% of sockeye salmon, and 56% of Chinook salmon. The remainder of the harvests for each of these species came from subsistence set gillnets, as did 100% of the harvest weight of spawning sockeye salmon. No salmon were harvested using rod and reel.

Table 4-14.–Estimated harvest of salmon by gear type and resource, Ugashik, 2014.

			Subsistence and personal use methods													
	Removed from commercial catch		Set gillnet		Seine		Dip net		Other method		Subsistence and personal use gear, any method		Rod and reel		Any method	
Resource	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Salmon	**1,011.5**	**4,572.2**	**476.0**	**2,318.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**476.0**	**2,318.2**	**0.0**	**0.0**	**1,487.5**	**6,890.4**
Chum salmon	14.0	64.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	64.2
Coho salmon	80.5	362.3	194.3	874.1	0.0	0.0	0.0	0.0	0.0	0.0	194.3	874.1	0.0	0.0	274.8	1,236.4
Chinook salmon	52.5	563.2	42.0	450.6	0.0	0.0	0.0	0.0	0.0	0.0	42.0	450.6	0.0	0.0	94.5	1,013.8
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	0.0	0.0	0.0	0.0
Sockeye salmon	864.5	3,582.5	236.3	979.0	0.0	0.0	0.0	0.0	0.0	0.0	236.3	979.0	0.0	0.0	1,100.8	4,561.5
Landlocked 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
Spawning sockeye salmon	0.0	0.0	3.5	14.5	0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.5	0.0	0.0	3.5	14.5

Source ADF&G Division of Subsistence household surveys, 2015.
Note The harvested number of salmon is represented as individual fish harvested.

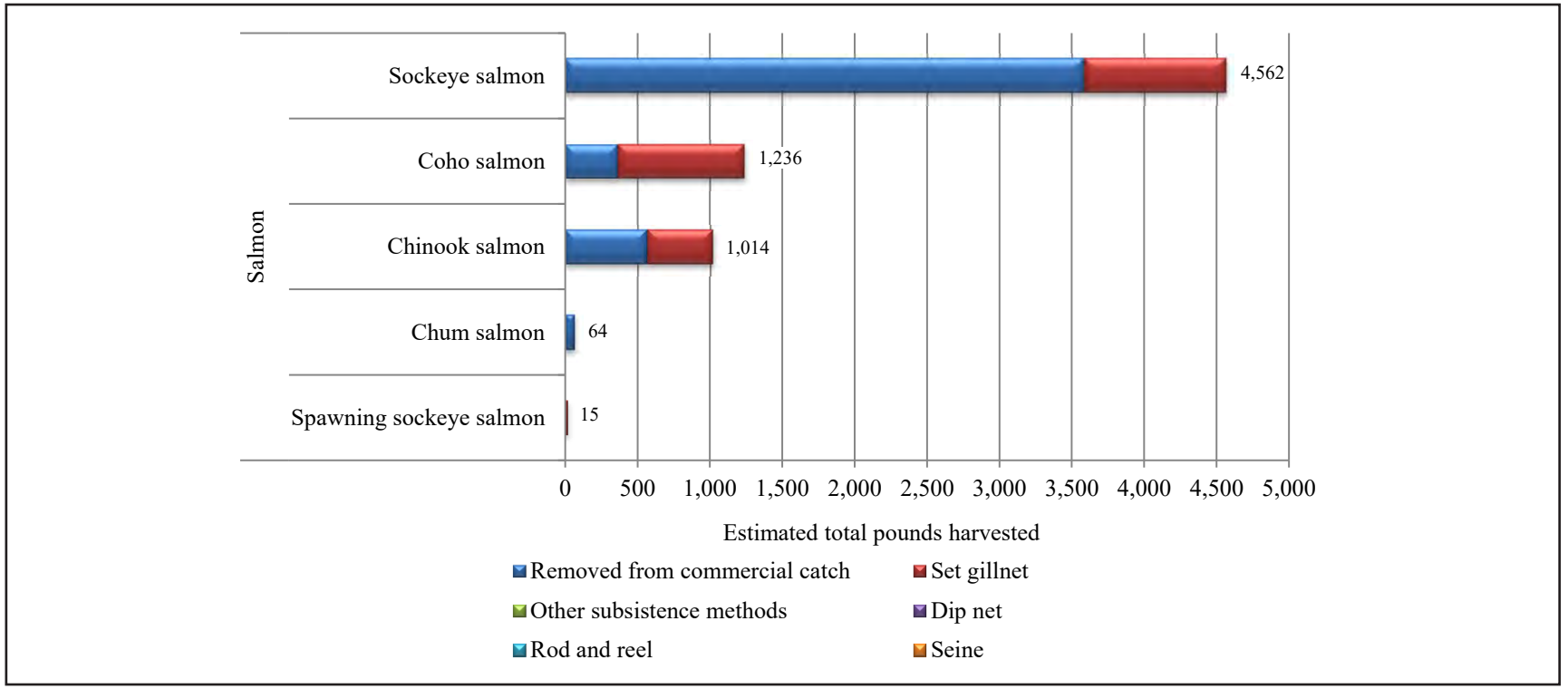


Figure 4-17.–Estimated harvest of salmon in pounds usable weight by gear type and resource, Ugashik, 2014.

Table 4-15.–Estimated percentages of salmon harvest in pounds usable weight by gear type, resource, and total salmon harvest, Ugashik, 2014.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Seine	Dip net	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Salmon	**Gear type**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**100.0%**
	Resource	**66.4%**	**33.6%**	**0.0%**	**0.0%**	**0.0%**	**33.6%**	**0.0%**	**100.0%**
	Total	**66.4%**	**33.6%**	**0.0%**	**0.0%**	**0.0%**	**33.6%**	**0.0%**	**100.0%**
Chum salmon	Gear type	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
	Resource	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Total	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Coho salmon	Gear type	7.9%	37.7%	0.0%	0.0%	0.0%	37.7%	0.0%	17.9%
	Resource	29.3%	70.7%	0.0%	0.0%	0.0%	70.7%	0.0%	100.0%
	Total	5.3%	12.7%	0.0%	0.0%	0.0%	12.7%	0.0%	17.9%
Chinook salmon	Gear type	12.3%	19.4%	0.0%	0.0%	0.0%	19.4%	0.0%	14.7%
	Resource	55.6%	44.4%	0.0%	0.0%	0.0%	44.4%	0.0%	100.0%
	Total	8.2%	6.5%	0.0%	0.0%	0.0%	6.5%	0.0%	14.7%
Pink 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%
Sockeye salmon	Gear type	78.4%	42.2%	0.0%	0.0%	0.0%	42.2%	0.0%	66.2%
	Resource	78.5%	21.5%	0.0%	0.0%	0.0%	21.5%	0.0%	100.0%
	Total	52.0%	14.2%	0.0%	0.0%	0.0%	14.2%	0.0%	66.2%
Landlocked	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%
Spawning sockeye salmon	Gear type	0.0%	0.6%	0.0%	0.0%	0.0%	0.6%	0.0%	0.2%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	0.2%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%

Source ADF&G Division of Subsistence household surveys, 2015.

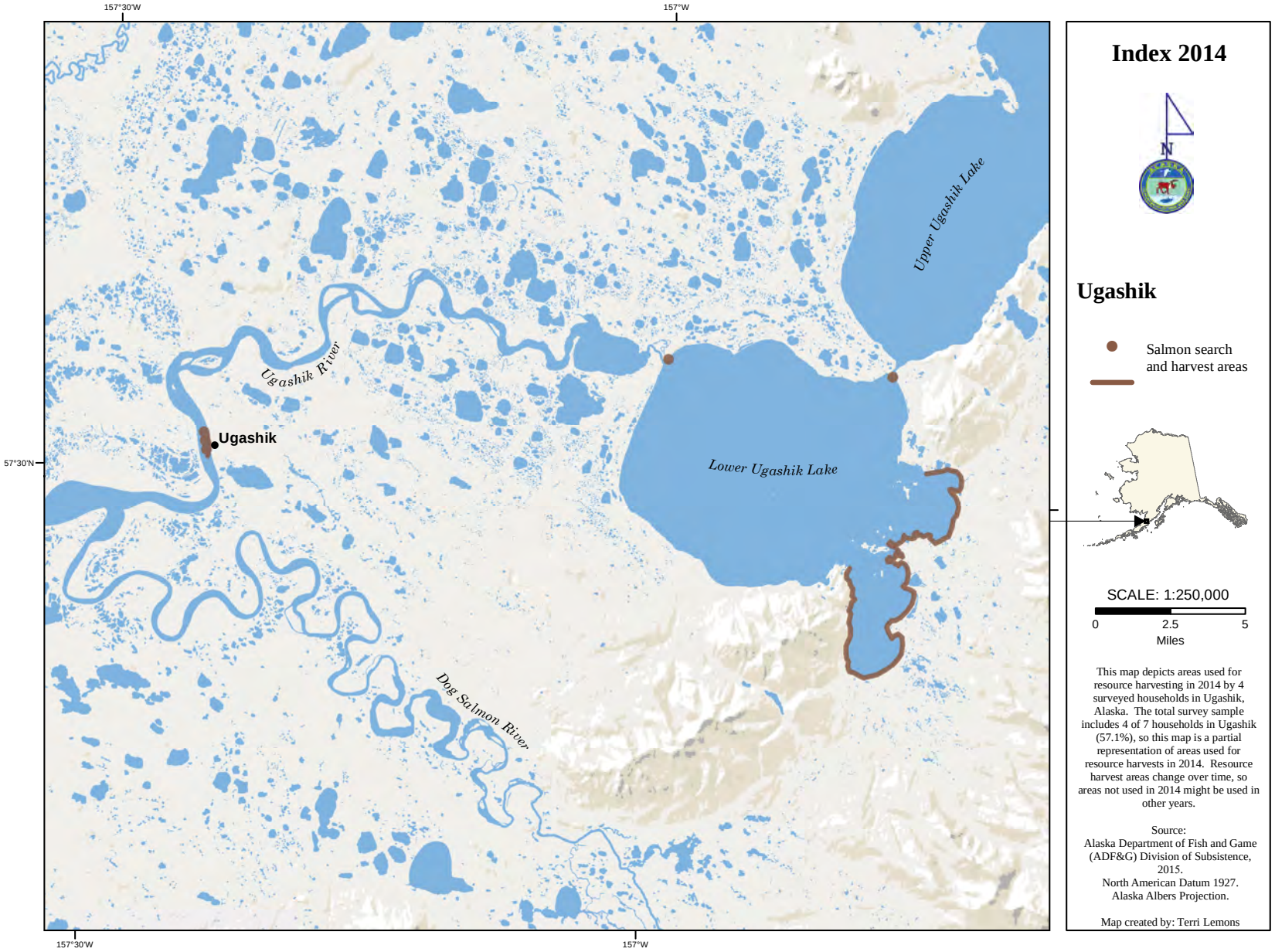


Figure 4-18.–Fishing and harvest locations of salmon, Ugashik, 2014.

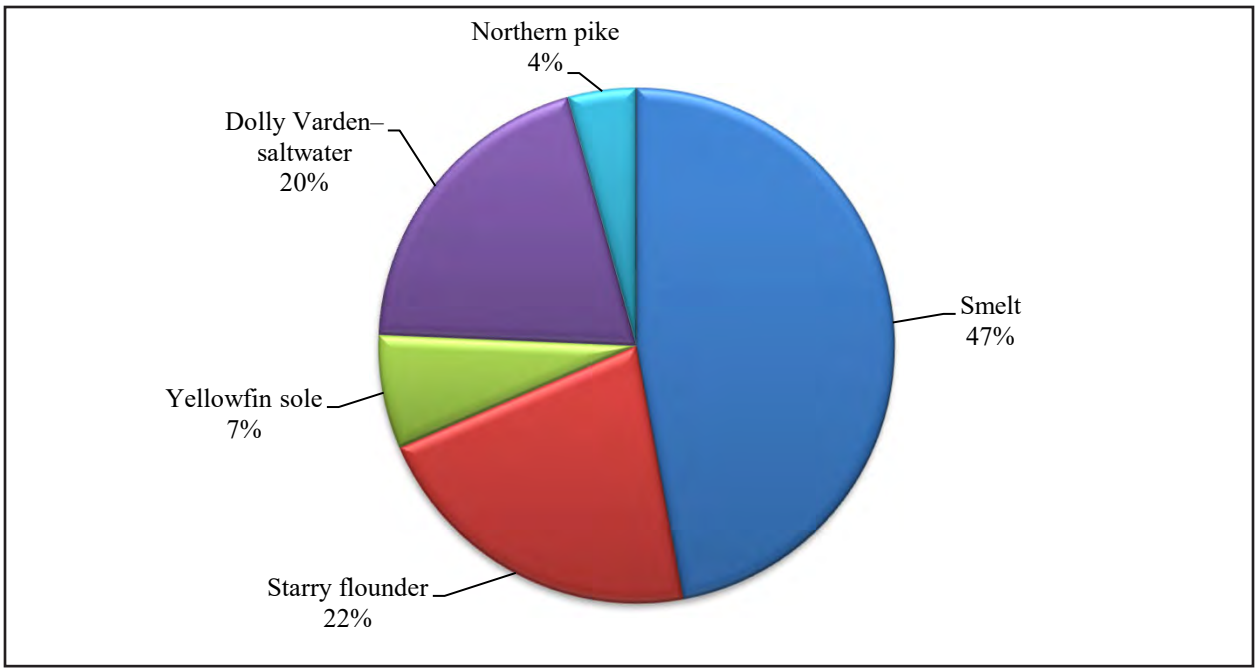


Figure 4-19.–Composition of nonsalmon fish harvest in pounds usable weight, Ugashik, 2014.

Salmon were harvested near the community in the Ugashik River as well as farther from the community by the Ugashik lakes (Figure 4-18). Some harvest activity was documented at the outfall of Lower Ugashik Lake as well as in the waters connecting the Lower and Upper Ugashik lakes and along the upper, eastern reaches of Lower Ugashik Lake. Of note, the spatial data collected did not include the locations where commercially harvested salmon kept for home use were harvested, which was how the majority (66%) of the total salmon harvest weight was obtained in Ugashik (Table 4-15). Also, the salmon commercial fishery is very active in the Ugashik River[6] and community residents do not commonly travel far downriver or into Ugashik Bay to harvest salmon, according to researcher notes.

Nonsalmon Fish

Ugashik residents harvested 122 lb (14 lb per capita) of nonsalmon fish: smelt (47%; 58 lb total, 7 lb per capita), starry flounder (22%; 26 lb, 3 lb per capita), Dolly Varden (20%; 25 lb, 3 lb per capita), yellowfin sole (7%; 9 lb, 1 lb per capita), and northern pike (4%; 5 lb, less than 1 lb per capita) (Table 4-12; Figure 4-19). While all households used and harvested nonsalmon fish, most households (75%) used and harvested Dolly Varden, 50% of households did so for smelt, and 25% of households used and harvested the rest of the species. Overall, 50% of households shared nonsalmon fish and 25% received these resources, but there was not wide sharing among all the species. No households shared or received starry flounder or yellowfin sole. No households shared Dolly Varden and no households received smelt or northern pike. Smelt was shared the most (by 50% of households) and 25% of households shared northern pike.

6. See the ADF&G Ugashik District commercial fishery boundary lines available online: https://www.adfg.alaska.gov/static/fishing/PDFs/commercial/maps/map_ugashik_salmon_districts.pdf (accessed July 2021).

Table 4-16.–Estimated harvest of nonsalmon fish by gear type and resource, Ugashik, 2014.

				Subsistence and personal use methods											
		Removed from commercial catch		Set gillnet		Dip net		Ice fishing		Other method		Subsistence and personal use 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	Number[a]	Pounds
Nonsalmon fish			**9.8**		**35.0**		**0.0**		**49.0**		**0.0**		**84.0**		**28.5**		**122.3**
Pacific herring	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	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	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	0.0	0.0
Capelin (grunion)	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	0.0	0.0
Smelt	gal	0.0	0.0	0.0	0.0	0.0	0.0	15.1	49.0	0.0	0.0	15.1	49.0	2.6	8.6	17.7	57.6
Pacific (gray) 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	0.0	0.0
Starry flounder	ind	0.0	0.0	8.8	26.3	0.0	0.0	0.0	0.0	0.0	0.0	8.8	26.3	0.0	0.0	8.8	26.3
Pacific halibut	lb	0.0	0.0	0.0	0.0	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	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	0.0	0.0
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	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	0.0	0.0
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	0.0	0.0
Salmon 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	0.0	0.0
Yellowfin sole	ind	0.0	0.0	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0	8.8	8.8	0.0	0.0	8.8	8.8
Alaska blackfish	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	0.0	0.0
Burbot	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	0.0	0.0
Dolly Varden–freshwater	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	0.0	0.0
Dolly Varden–saltwater	ind	3.5	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	14.7	8.8	24.5
Arctic grayling	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	0.0	0.0
Northern pike	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	1.8	5.3	1.8	5.3
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	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	0.0	0.0
Least cisco	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	0.0	0.0
Humpback whitefish	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	0.0	0.0
Round whitefish	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	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2015.

Note The summary row that includes 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.

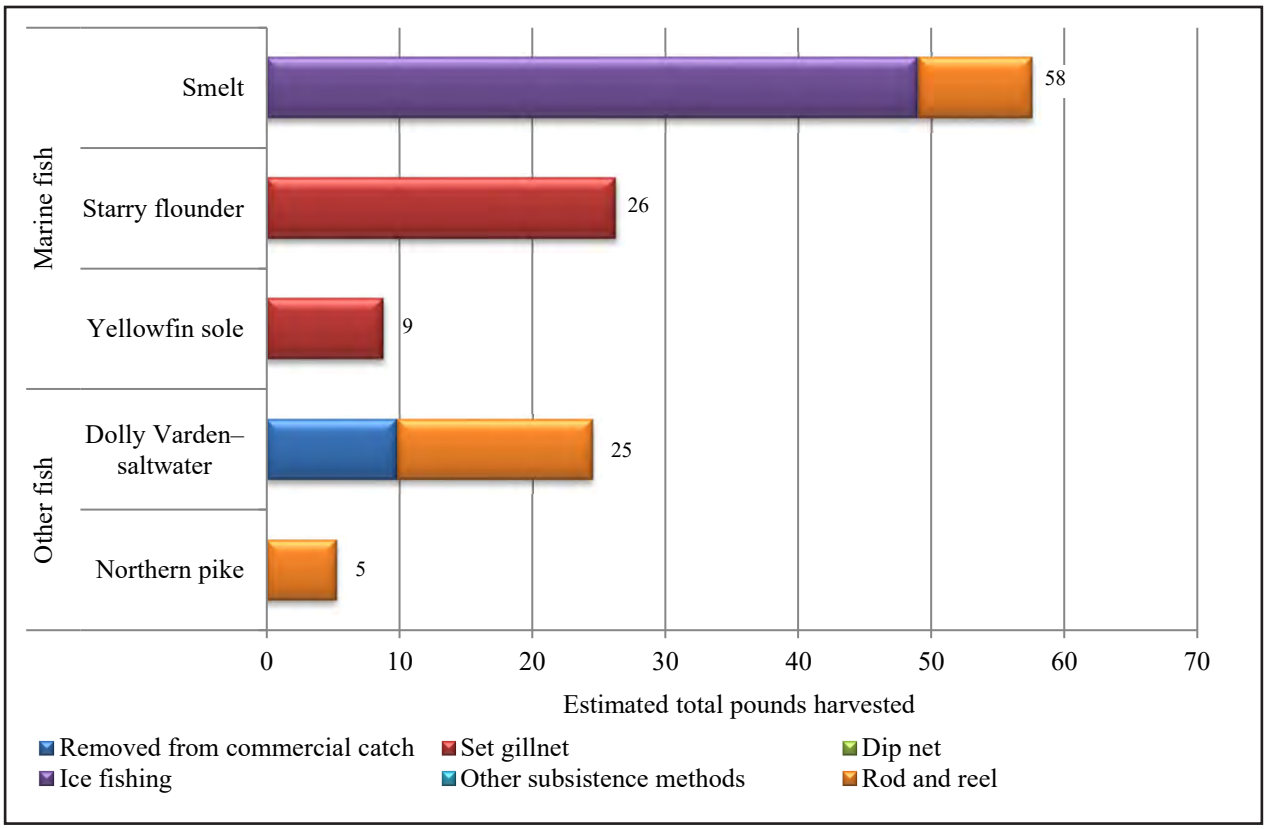


Figure 4-20.–Estimated harvest of nonsalmon fish in pounds usable weight by gear type and resource, Ugashik, 2014.

Table 4-17.–Estimated percentages of nonsalmon fish harvest in pounds usable weight by gear type, resource, and total nonsalmon fish harvest, Ugashik, 2014.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Nonsalmon fish	**Gear type**	**100.0%**	**100.0%**	**0.0%**	**100.0%**	**0.0%**	**100.0%**	**100.0%**	**100.0%**
	Resource	**8.0%**	**28.6%**	**0.0%**	**40.1%**	**0.0%**	**68.7%**	**23.3%**	**100.0%**
	Total	**8.0%**	**28.6%**	**0.0%**	**40.1%**	**0.0%**	**68.7%**	**23.3%**	**100.0%**
Pacific herring	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%
Pacific herring sac roe	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%
Pacific herring spawn on kelp	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%
Capelin (grunion)	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%
Smelt	Gear type	0.0%	0.0%	0.0%	100.0%	0.0%	58.3%	30.1%	47.1%
	Resource	0.0%	0.0%	0.0%	85.1%	0.0%	85.1%	14.9%	100.0%
	Total	0.0%	0.0%	0.0%	40.1%	0.0%	40.1%	7.0%	47.1%
Pacific (gray) cod	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%
Starry flounder	Gear type	0.0%	75.0%	0.0%	0.0%	0.0%	31.3%	0.0%	21.5%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	21.5%	0.0%	0.0%	0.0%	21.5%	0.0%	21.5%
Pacific halibut	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%
Rockfish	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%
Sablefish (black cod)	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%

-continued-

Table 4-17.–Page 2 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Red Irish lord	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%
Sculpin	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%
Salmon shark	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%
Yellowfin sole	Gear type	0.0%	25.0%	0.0%	0.0%	0.0%	10.4%	0.0%	7.2%
	Resource	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Total	0.0%	7.2%	0.0%	0.0%	0.0%	7.2%	0.0%	7.2%
Alaska blackfish	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%
Burbot	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%
Dolly	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Varden–freshwater	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%
Dolly	Gear type	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	51.5%	20.0%
Varden–saltwater	Resource	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	60.0%	100.0%
	Total	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.0%	20.0%
Arctic grayling	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%
Northern pike	Gear type	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.4%	4.3%
	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%	4.3%	4.3%
Rainbow trout	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%

-continued-

Table 4-17.–Page 3 of 3.

Resource	Percentage base	Removed from commercial catch	Subsistence and personal use methods						
			Set gillnet	Dip net	Ice fishing	Other method	Subsistence and personal use gear, any method	Rod and reel	Any method
Steelhead	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%
Least cisco	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%
Humpback whitefish	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%
Round whitefish	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, 2015.

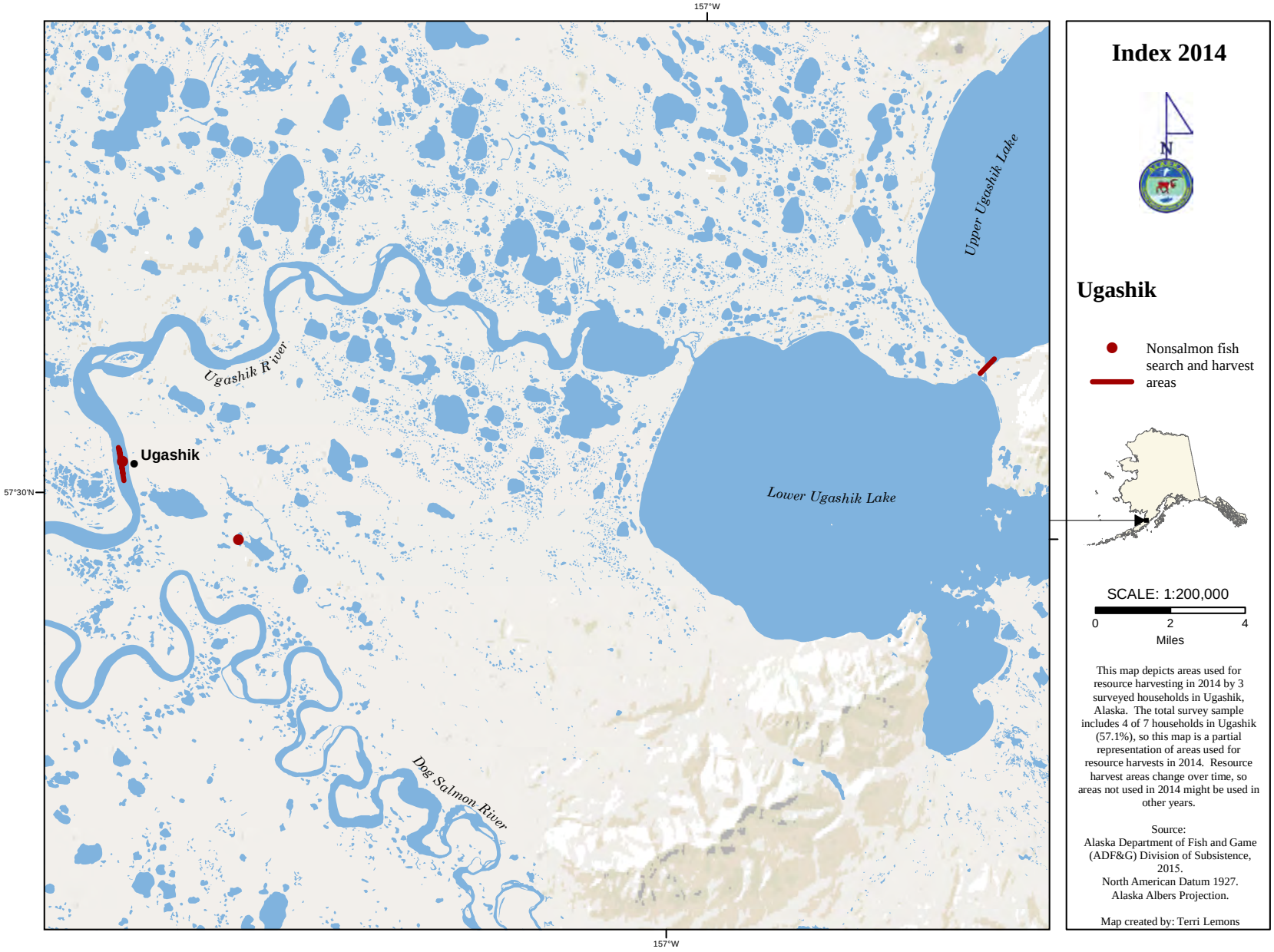


Figure 4-21.–Fishing and harvest locations of nonsalmon fish, Ugashik, 2014.

Table 4-18.–Estimated large land mammal harvests by month and sex, Ugashik, 2014.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All large land mammals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.8**	**0.0**	**0.0**	**0.0**	**0.0**	**1.8**
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Caribou, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	**1.8**
Moose, bull	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	**1.8**
Moose, cow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Moose, unknown sex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

Source ADF&G Division of Subsistence household surveys, 2015.

An estimated total of 84 lb of nonsalmon fish were harvested using subsistence gear (mainly ice fishing, but also set gillnet), and 29 lb were harvested using rod and reel gear (Table 4-16). Figure 4-20 is a visual representation of the nonsalmon fish harvest weight caught by gear type. As estimated in total pounds of fish, 69% of the nonsalmon fish harvest was caught using subsistence gear: 40% ice fishing, and 29% set gillnetting (Table 4-17). For three species, subsistence gear was the most commonly used harvest method: 100% of starry flounder and yellowfin sole and 85% of smelt harvest weights were caught using subsistence methods. Northern pike were harvested only with rod and reel. Only Dolly Varden were removed from commercial catches, and only set gillnets were used to harvest starry flounder and yellowfin sole, while ice fishing was only used to harvest smelt. Rod and reel gear was used in the harvest of smelt, Dolly Varden, and northern pike.

Nonsalmon fish were harvested in the Ugashik River in proximity to the community, as well as in the waterway connecting Upper and Lower Ugashik lakes (Figure 4-21). Of note, at the location of the community, the Ugashik River is heavily influenced by tidal movement and the water level fluctuates significantly against the bluff bordering the community; as such, saltwater species follow the tide to the fishing areas used by Ugashik residents near their community. Some harvest was also documented in the small lakes a few miles to the southeast of the community.

Large Land Mammals

Moose was the only species hunted or used in the large land mammal category in Ugashik in 2014 (Table 4-12). Only one bull moose was reported harvested (because not all households were interviewed, the estimated harvest was 1.8 moose) and it was harvested in September (Table 4-18).[7] Every household hunted moose; however, only one-quarter of households successfully harvested moose and the community harvest estimate was 945 lb (108 lb per capita). Despite the low harvest percentage, 75% of households used moose due to the high rates of sharing: 50% of households gave moose and 50% received moose. Ugashik residents hunted moose in several locations (Figure 4-22). An area between Pilot Point and Ugashik was used, as was the coast of Lower Ugashik Lake. Farther from the community, residents hunted moose along the Igushik River near the community of Manokotak.

7. The harvest database WinfoNet also indicated one moose was harvested by an Ugashik resident in 2014 (database accessed July 2018).

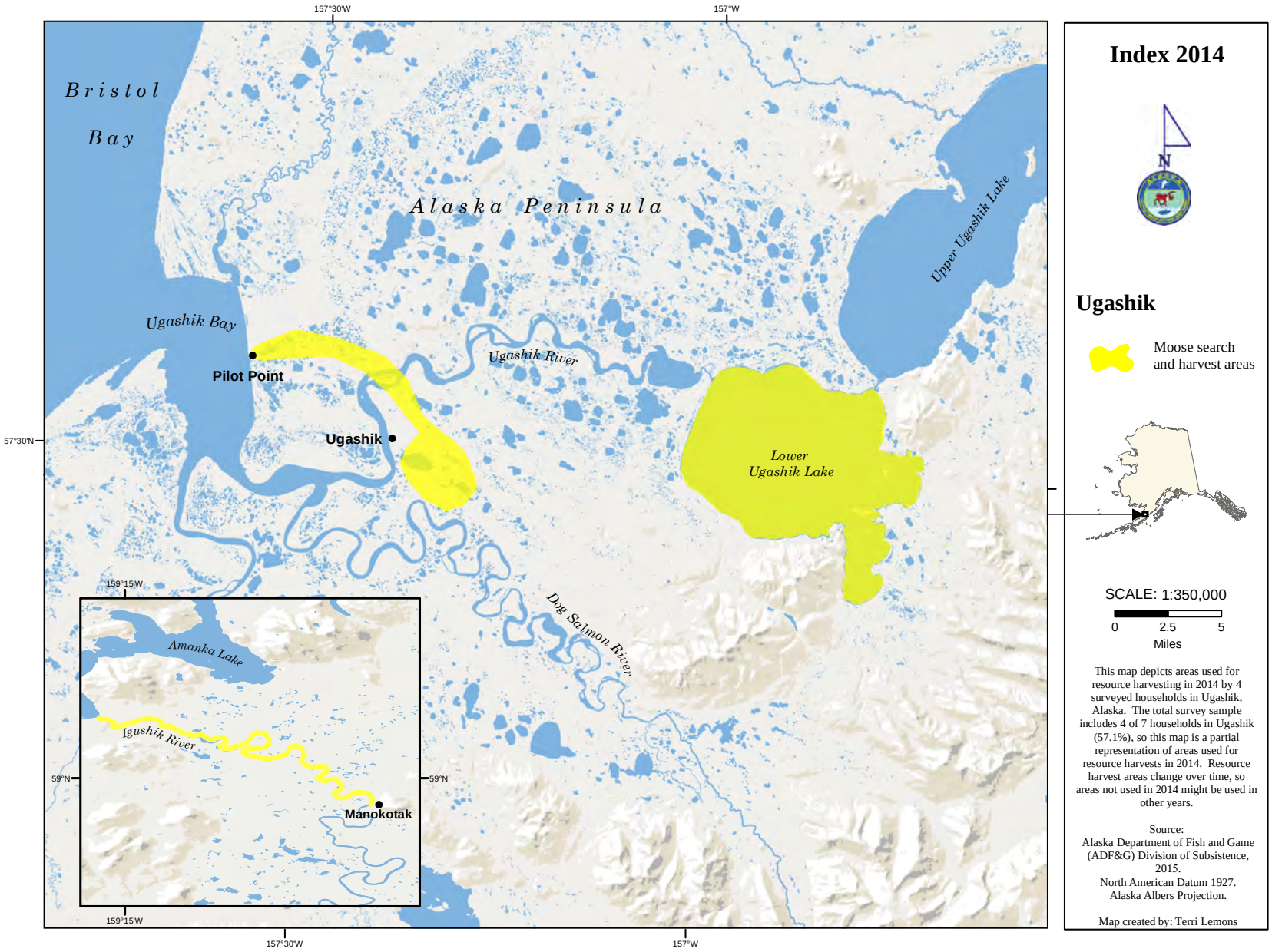


Figure 4-22.–Hunting locations of moose, Ugashik, 2014.

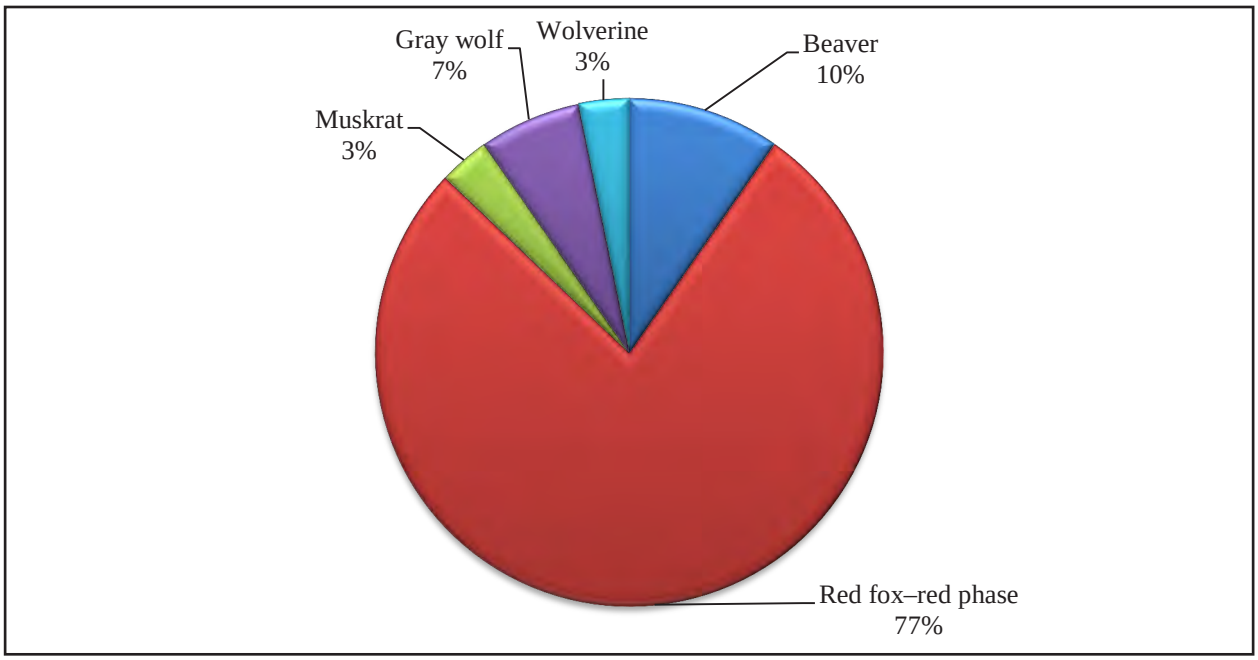


Figure 4-23.–Composition of small land mammal/furbearer harvest by individual animals harvested, Ugashik, 2014.

Small Land Mammals/Furbearers

Several types of small land mammals or furbearers were hunted in 2014 but there were only successful harvests of red foxes (77%; 42 individuals), beavers (10%; 5 individuals), gray wolves (7%; 4 individuals), muskrats (3%; 2 animals), and wolverines (3%; 2 animals) (Figure 4-23; Table 4-12). Since all of these species were used for their fur and were not eaten, Figure 4-23 shows percentage of harvest by number of animals. Animals were harvested during the winter months of January–February and November–December (Table 4-19). Red foxes were harvested in each of those months, but beavers and muskrats were only taken in January, while wolverines were only harvested in February and wolves were only harvested in December. There was generally low use and harvest of all species, with 25% of households using, attempting to harvest, harvesting, and sharing (Table 4-12). No households received small land mammals. In addition to the harvested species, 25% of households unsuccessfully hunted/trapped coyotes, river otters, lynx, mink, and weasels. Small land mammals were hunted on the tundra within a few miles from the community (Figure 4-24).

Marine Mammals

No Ugashik households hunted, used, or shared marine mammals in 2014 (Table 4-12). Formerly, men in Alaska Peninsula communities would drive beluga whales onto sand bars in local rivers where the animals would then become stranded with the outgoing tide (Wright et al. 1985:66). Both meat and blubber were used, but as of the 1980s there was little active beluga whale hunting. Occasionally beached whales will be used if still in good condition when discovered.

Table 4-19.–Estimated small land mammal/furbearer harvests by month, Ugashik, 2014.

Resource	Estimated harvest by month													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	**Total**
All small land mammals	**17.5**	**12.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**10.5**	**14.0**	**0.0**	**54.3**
Beaver	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**5.3**
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**
Arctic 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**
Red fox–cross phase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Red fox–red phase	10.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	10.5	0.0	**42.0**
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	0.0	0.0	**0.0**
Muskrat	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**1.8**
Porcupine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Arctic ground (parka) squirrel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
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	3.5	0.0	**3.5**
Wolverine	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**1.8**

Source ADF&G Division of Subsistence household surveys, 2015.

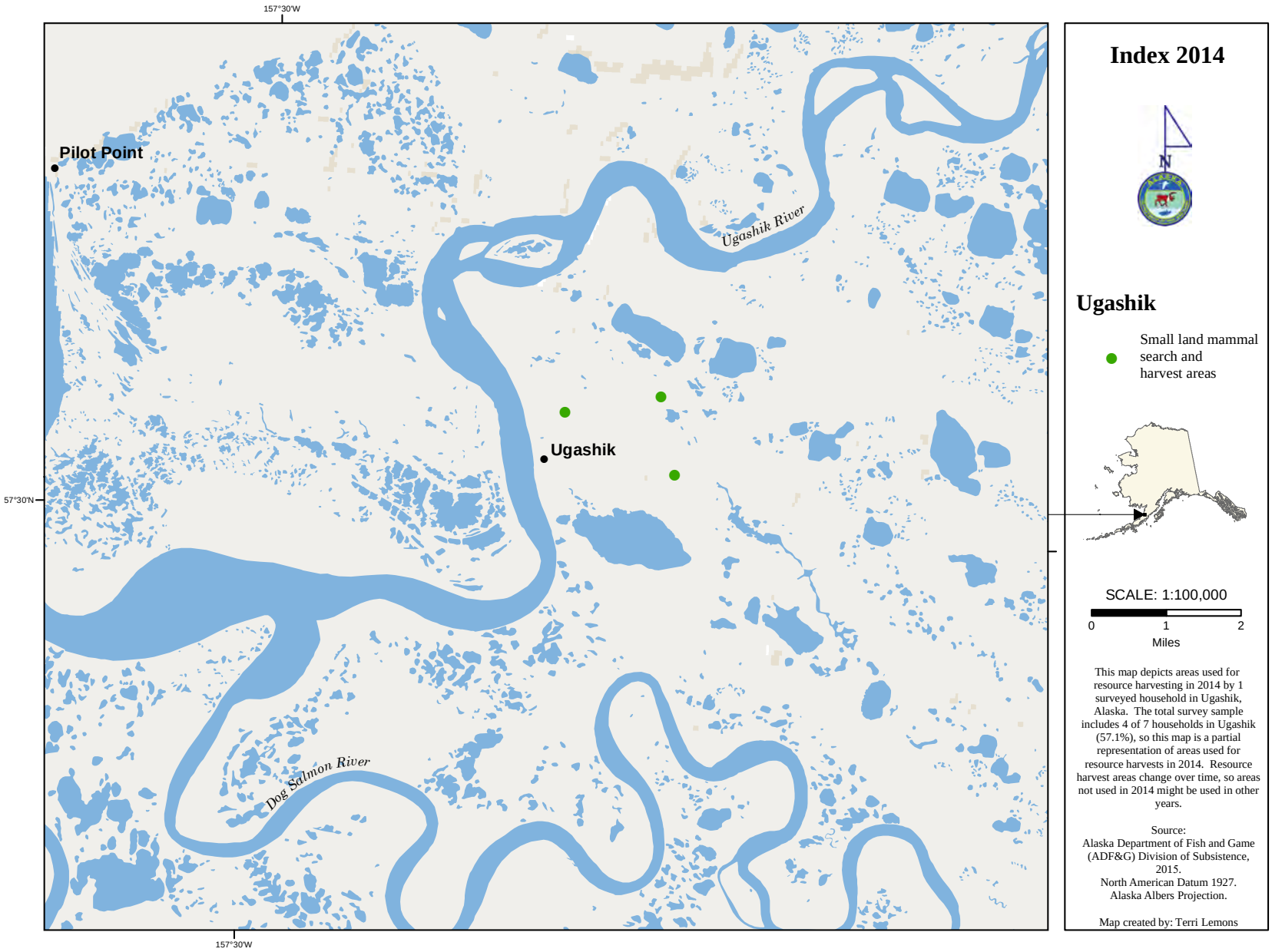


Figure 4-24.–Hunting and trapping locations of small land mammals/furbearers, Ugashik, 2014.

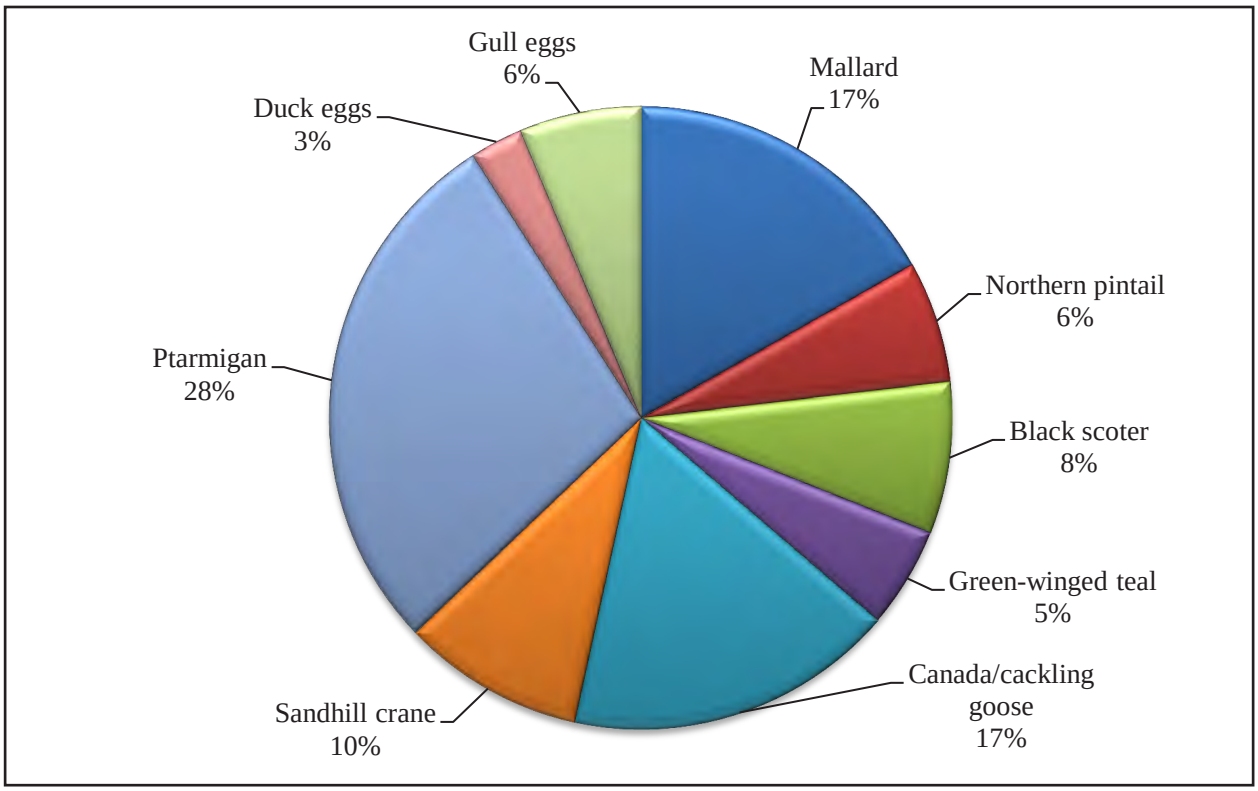


Figure 4-25.–Composition of bird and bird egg harvest in pounds usable weight, Ugashik, 2014.

Birds and Eggs

The harvest composition of birds and eggs was the most diverse of the Ugashik community's harvests. Together, ptarmigan (28%), Canada/cackling geese (17%), and mallards (17%) composed more than one-half the harvest by weight (Figure 4-25). Sandhill cranes (10%), black scoters (8%), northern pintails (6%), gull eggs (6%), green-winged teals (5%), and duck eggs (3%) completed the community's harvest. A total of 200 lb of birds and eggs were harvested (Table 4-12). Of this total, the bird harvest comprised 182 lb; much of this was 56 lb of ptarmigan that were harvested (6 lb per capita; 70 birds) and 34 lb each of Canada/cackling geese (4 lb per capita; 12 birds) and mallards (4 lb per capita; 21 birds). Although eggs did not compose a high percentage of the harvest, residents harvested 18 lb of bird eggs: 53 duck eggs (6 lb; less than 1 lb per capita) and 42 gull eggs (13 lb; 1 lb per capita). Every household hunted ptarmigan. Between one-quarter and three-quarters of households attempted to harvest other birds or eggs: 75% of households hunted green-winged teals and Canada/cackling geese, 50% of households hunted mallards, while 25% of households hunted the other harvested species. In addition, 25% of households unsuccessfully hunted wigeons and swans.

Birds were harvested during every season.[8] More birds were harvested in the fall than any other season, though the survey form defined fall to include October, November, and December (Table 4-20). Migratory ducks were hunted and harvested each season and geese were harvested in the summer (July through September) and fall. Cranes were only harvested in winter (January through April) and ptarmigan were harvested in the fall as well as winter. Households were generally successful in their hunting. The same percentage of households harvesting a bird species also used it, except for ptarmigan, where 100% of households used the resource but only 75% harvested it (Table 4-12). It is perhaps not surprising then that

8. On the survey form, seasons of bird harvest were defined as follows: winter—January through April; spring—May and June; summer—July through September; and fall—October through December.

Table 4-20.–Estimated bird harvests by season, Ugashik, 2014.

Resource	Estimated harvest by season					
	Spring	Summer	Fall	Winter	Season unknown	**Total**
All birds	**15.8**	**36.8**	**68.3**	**35.0**	**0.0**	**155.8**
Bufflehead	0.0	0.0	0.0	0.0	0.0	**0.0**
Canvasback	0.0	0.0	0.0	0.0	0.0	**0.0**
Common eider	0.0	0.0	0.0	0.0	0.0	**0.0**
King eider	0.0	0.0	0.0	0.0	0.0	**0.0**
Steller's eider	0.0	0.0	0.0	0.0	0.0	**0.0**
Gadwall	0.0	0.0	0.0	0.0	0.0	**0.0**
Goldeneye	0.0	0.0	0.0	0.0	0.0	**0.0**
Harlequin duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Mallard	5.3	5.3	5.3	5.3	0.0	**21.0**
Common merganser	0.0	0.0	0.0	0.0	0.0	**0.0**
Red-breasted merganser	0.0	0.0	0.0	0.0	0.0	**0.0**
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	**0.0**
Northern pintail	1.8	3.5	1.8	3.5	0.0	**10.5**
Scaup	0.0	0.0	0.0	0.0	0.0	**0.0**
Black scoter	5.3	5.3	3.5	3.5	0.0	**17.5**
Northern shoveler	0.0	0.0	0.0	0.0	0.0	**0.0**
Green-winged teal	3.5	12.3	3.5	1.8	0.0	**21.0**
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**
Brant	0.0	0.0	0.0	0.0	0.0	**0.0**
Canada/cackling goose	0.0	10.5	1.8	0.0	0.0	**12.3**
Emperor goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Snow goose	0.0	0.0	0.0	0.0	0.0	**0.0**
White-fronted goose	0.0	0.0	0.0	0.0	0.0	**0.0**
Unknown geese	0.0	0.0	0.0	0.0	0.0	**0.0**
Trumpeter swan	0.0	0.0	0.0	0.0	0.0	**0.0**
Tundra (whistling) swan	0.0	0.0	0.0	0.0	0.0	**0.0**
Sandhill crane	0.0	0.0	0.0	3.5	0.0	**3.5**
Common snipe	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	52.5	17.5	0.0	**70.0**

Source ADF&G Division of Subsistence household surveys, 2015.

ptarmigan was the only species received by Ugashik households (25%). Birds and eggs were generally not highly shared, with 25% of households giving some of these resources that were harvested. One-quarter of households shared green-winged teals, Canada/cackling geese, and ptarmigan. No other sharing was documented.

Ducks and geese were hunted along the Ugashik River and its tributaries from near the coast to just upriver from the community (Figure 4-26). Ptarmigan were hunted to the east and south of the community while bird eggs were gathered upriver along the Ugashik River.

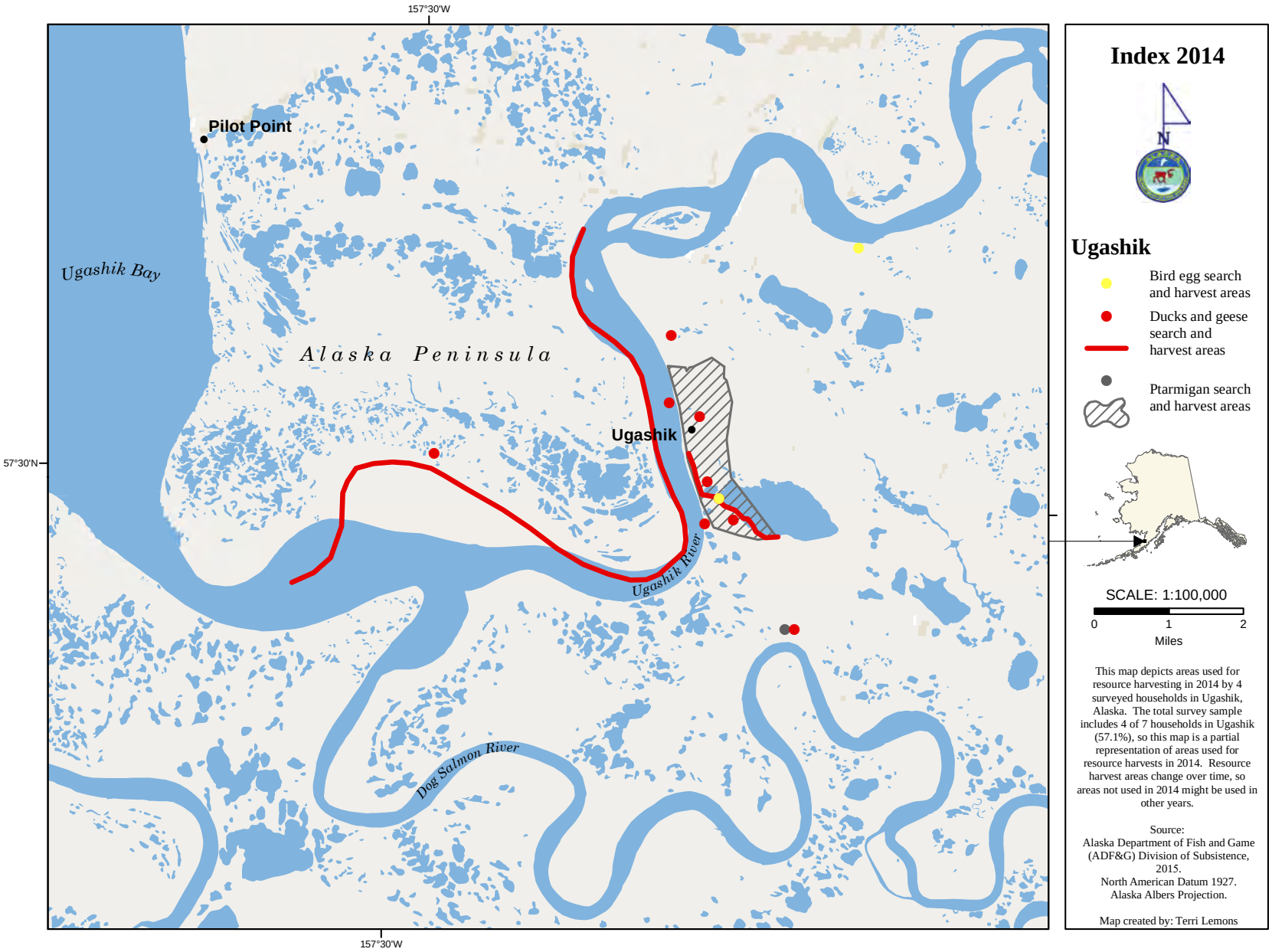


Figure 4-26.–Hunting and harvest locations of birds and bird eggs, Ugashik, 2014.

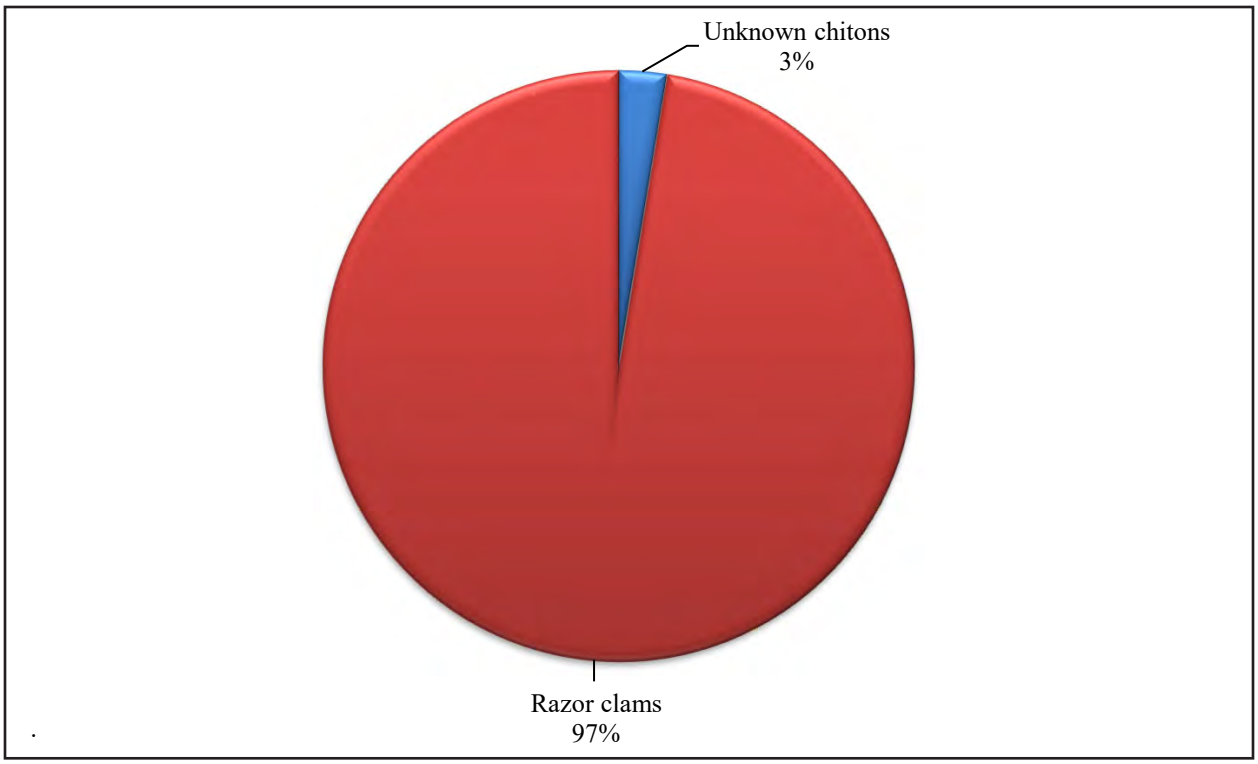


Figure 4-27.–Composition of marine invertebrate harvest in pounds usable weight, Ugashik, 2014.

Marine Invertebrates

Ugashik residents harvested razor clams as well as some chitons in 2014. Out of a total 90 lb of marine invertebrates harvested, 97% was razor clams (88 lb) (Table 4-12; Figure 4-27). This was equal to 10 lb of clams harvested per capita. Just more than 2 lb of chitons were harvested, which was less than 1 lb per capita. One-half the households in Ugashik harvested and used razor clams while one-quarter of the households harvested and used chitons. Few marine invertebrates were shared: 50% of households gave away razor clams. These resources were harvested on the south side of the Alaska Peninsula in Yantarni Bay and just outside the bay along the Pacific Ocean coast (Figure 4-28).

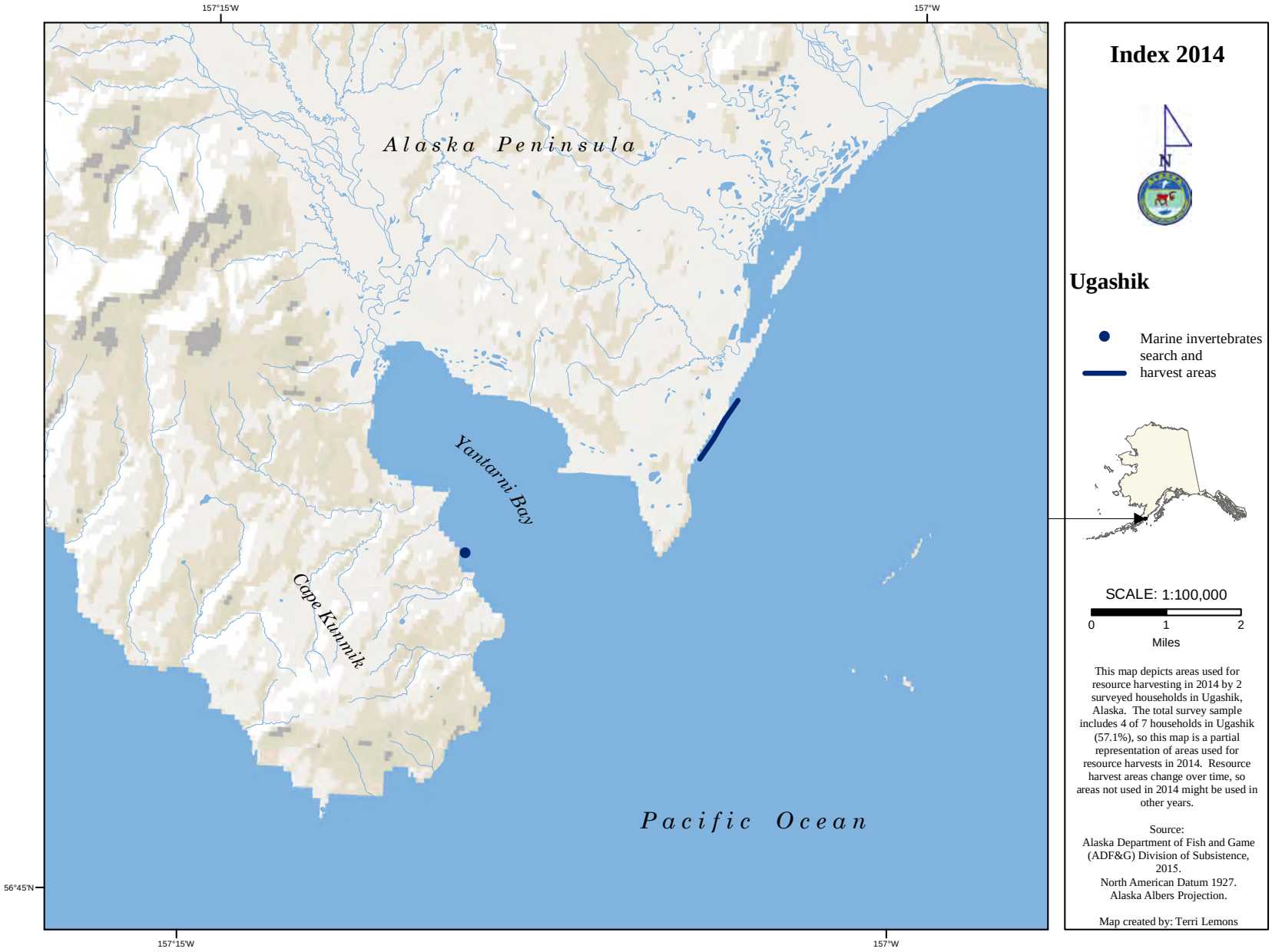


Figure 4-28.–Search and harvest locations of marine invertebrates, Ugashik, 2014.

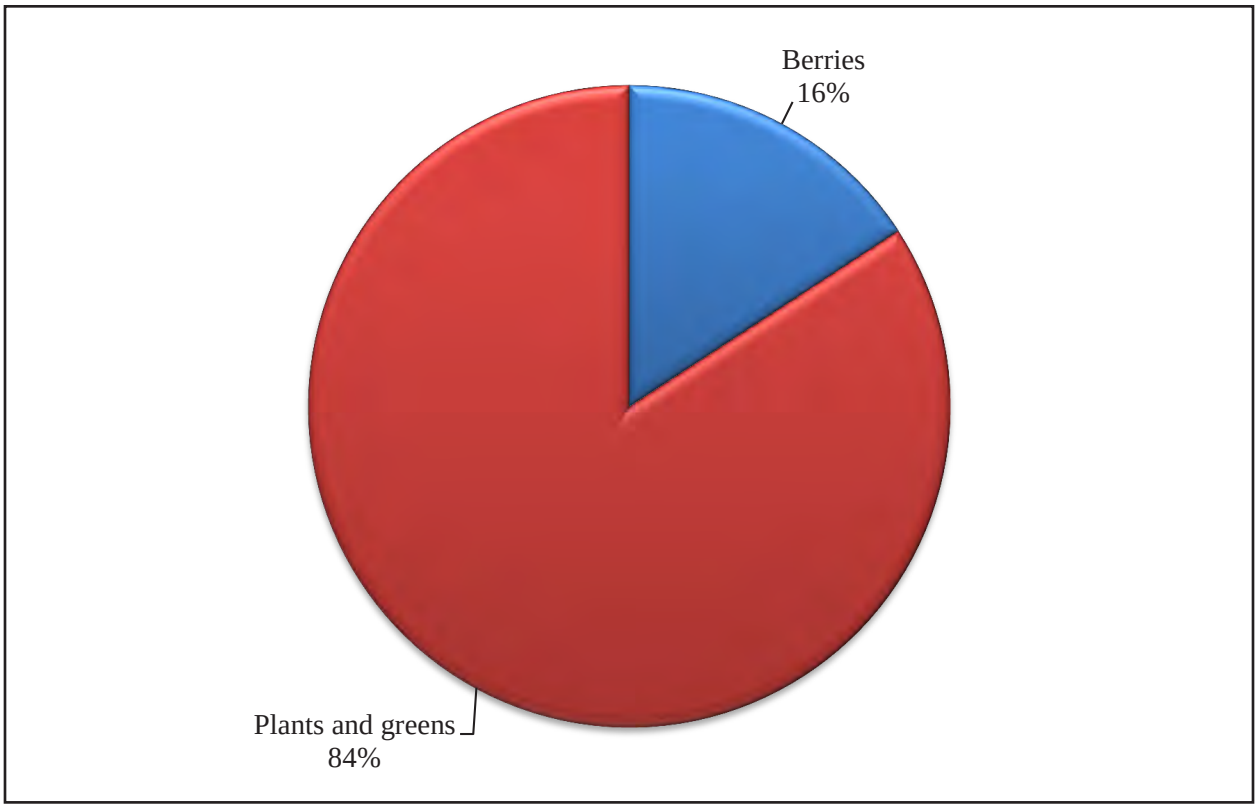


Figure 4-29.–Composition of vegetation harvest by type in pounds usable weight, Ugashik, 2014.

Vegetation

Very little vegetation was harvested in 2014. There was a harvest total of 4 lb, most of which were greens, with 3.5 lb of beach greens harvested (84% of harvest weight), and less than one-half pound each of lowbush cranberries and nagoonberries harvested (Table 4-12; Figure 4-29). Every household in Ugashik attempted to gather vegetation but only 75% of households successfully did so or used vegetation. All households attempted and were unsuccessful in gathering crowberries while one-half the households attempted unsuccessfully to harvest salmonberries. Seventy-five percent of households attempted to harvest lowbush cranberries, but only 25% of households harvested the resource. Households had the most success harvesting nagoonberries and beach greens: 25% of households attempted to and successfully harvested those resources. Three-quarters of households used any vegetation resource, but no individual resource was used by more than one-quarter of households, and no households shared or received vegetation. Households searched for and harvested their berries and greens just to the east of town and along the eastern bank of the Ugashik River in proximity to the community (Figure 4-30).

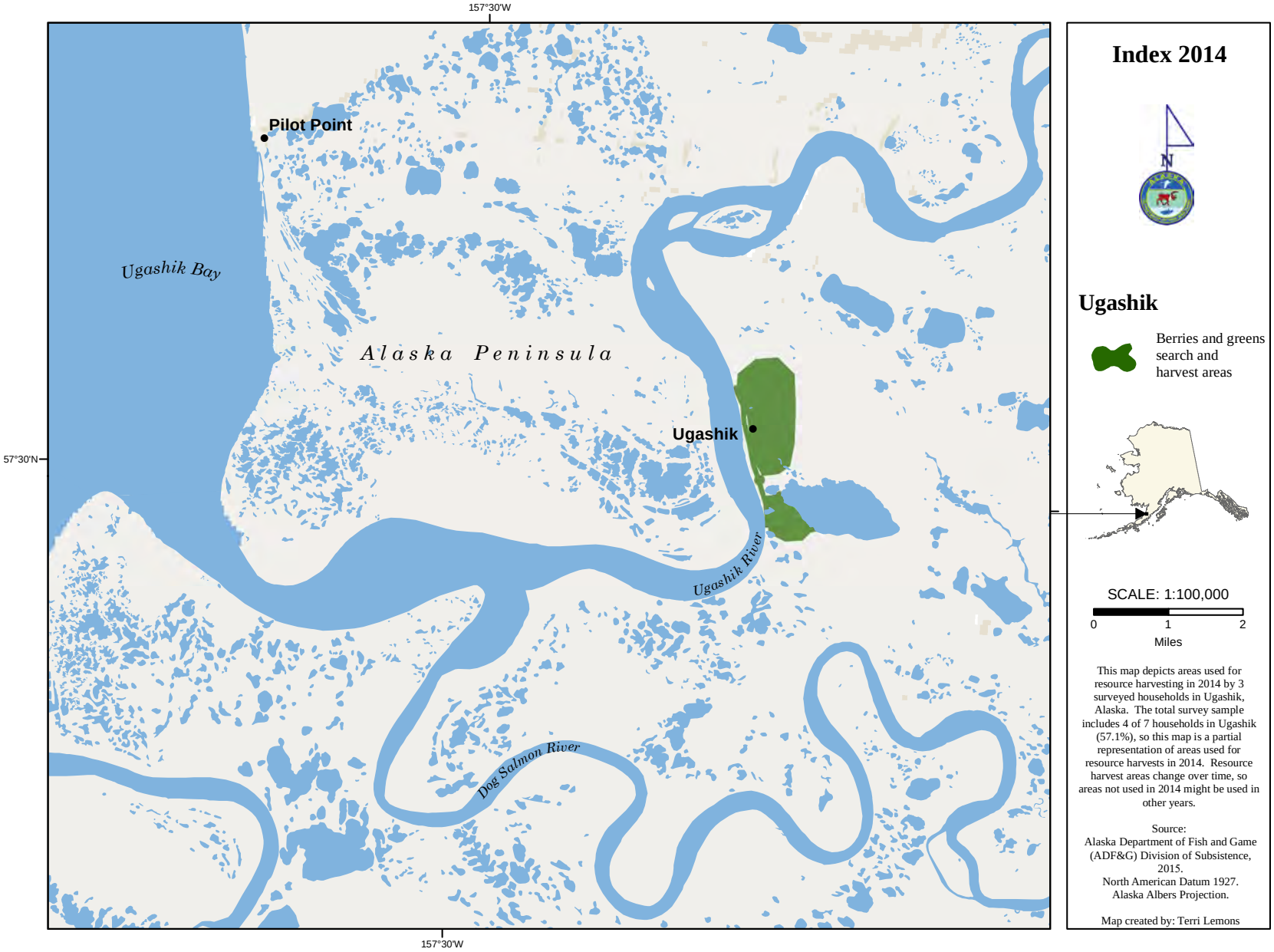


Figure 4-30.–Gathering and harvest locations of vegetation, Ugashik, 2014.

Comparing Harvests and Uses in 2014 with Previous Years

Harvest Assessments

Researchers asked respondents to assess their own harvests in two ways: 1) whether they used more, less, or about the same amount of eight resource categories and all wild resources overall in 2014 as in the past five years, and 2) whether they got "enough" of each of the eight resource categories and all wild resources overall. 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 then asked to evaluate the severity of the impact to their household as a result of not getting enough. Because not every household uses all resource categories, some households did not respond to the assessment questions. Additionally, some households that do typically use a resource category simply chose not to answer questions. This section discusses responses to those questions.

The four surveyed Ugashik households reported generally less use of all resources combined in 2014 compared to recent previous years, but assessments were mixed for the specific resource categories (Table 4-21; Figure 4-31). Seventy-five percent of households indicated that they used the same amount of nonsalmon fish and large land mammals, and 50% of households used the same amount of salmon, while 25% of households explained that they used the same amount of small game, birds and eggs, and vegetation. Twenty-five percent of households reported that they used less nonsalmon fish, large game, and small land mammals, while 50% of households indicated less use of salmon and birds and eggs and 75% of households indicated less use of vegetation. No households reported less use of marine invertebrates but 25% reported more use; this was the only resource category for which a household increased use during the study year. When asked why they used less of a particular resource category, households indicated that they did so due to resources being less available (salmon, birds and eggs, and vegetation), lack of effort (birds and eggs), weather (small land mammals and vegetation), working/no time (salmon and nonsalmon fish), regulations (large game), equipment/fuel expense (large game), needed less (birds and eggs) and lack of help (salmon) (Table 4-22). Resources being less available was the most cited reason for why households decreased use of all wild resources. Other stated reasons for less use of resources overall in 2014 included less sharing, weather/environment, equipment/fuel expense, and needed less. When the one household that used more marine invertebrates in 2014 was asked why, the response was increased effort (Table 4-23).

In Ugashik, one-half of the sampled households generally did not get enough of any particular resource category in 2014. Fifty percent of households stated they did not get enough salmon, large game, small land mammals, birds and eggs, or marine invertebrates (Figure 4-32). One hundred percent of households indicated they did not get enough vegetation. Nonsalmon fish was the only resource category for which more households (75%) said they got enough than said they did not get enough. For those households that did not get enough of a resource, most stated that the impact was not noticeable or minor (Table 4-24). Only for large land mammals, small land mammals, and vegetation did a household explain that the impact was severe (for large land mammals) or major (small land mammals and vegetation). In 2014, 75% of respondents stated that overall they did not get enough of all resources (Table 4-24). When households that did not get enough resources were asked to evaluate the impact of not getting enough, one-third described it as not noticeable and one-third described the impact as minor.

Households were asked what resources they needed more of during the study year (Table 4-25). Nearly 30 unique responses were given. All households needed caribou, while three-quarters of households needed moose, geese, ducks, crowberries, and berries in general. Resources from each resource category were needed by at least 25% of households, except for marine mammals, which are not used in Ugashik. Of all the resource categories needed, salmon was among the lowest.

Table 4-21.–Changes in household uses of resources compared to recent years, Ugashik, 2014.

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

Source ADF&G Division of Subsistence household surveys, 2015.

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

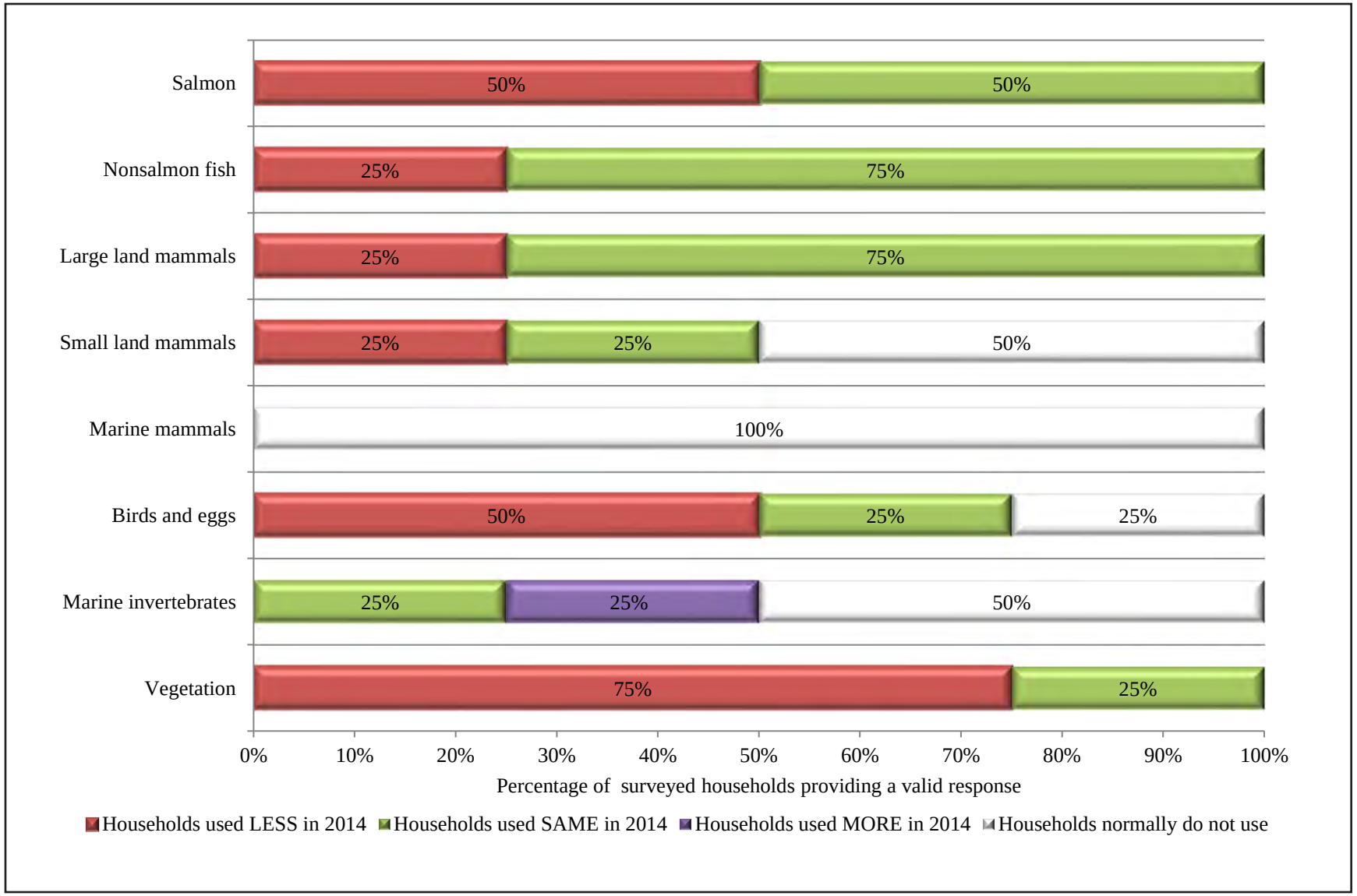


Figure 4-31.–Changes in household uses of resources compared to recent years, Ugashik, 2014.

Table 4-22.–Reasons for less household uses of resources compared to recent years, Ugashik, 2014.

Resource category	Valid responses[a]	Households reporting reasons for less use	Family/ personal		Used other resources		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	Number	Percentage
Any resource	**4**	**4**	**0**	**0.0%**	**0**	**0.0%**	**4**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**25.0%**	**2**	**50.0%**	**0**	**0.0%**	**1**	**25.0%**
All resources	4	4	0	0.0%	0	0.0%	3	75.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%	1	25.0%
Salmon	4	2	**0**	0.0%	**0**	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	4	1	**0**	0.0%	**0**	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	4	1	**0**	0.0%	**0**	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	4	1	**0**	0.0%	**0**	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%
Marine mammals	4	0	**0**	0.0%	**0**	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	4	2	**0**	0.0%	**0**	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%
Marine invertebrates	4	0	**0**	0.0%	**0**	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	4	3	**0**	0.0%	**0**	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%

-continued-

Table 4-22.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for less use	Working/ no time		Regulations		Resource small or diseased		Gas/eqiupment too expensive		Needed less		Competition		Had no help		Other reasons	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**4**	**4**	**1**	**25.0%**	**1**	**25.0%**	**0**	**0.0%**	**1**	**25.0%**	**1**	**25.0%**	**0**	**0.0%**	**1**	**25.0%**	**0**	**0.0%**
All resources	4	4	0	0.0%	0	0.0%	0	0.0%	1	25.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	4	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Nonsalmon fish	4	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	4	1	0	0.0%	1	100.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	4	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	4	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

a. Valid responses do not include households that did not provide any response to the less, same, or more use assessment question.

Table 4-23.–Reasons for more household uses of resources compared to recent years, Ugashik, 2014.

Resource category	Valid responses[a]	Households reporting reasons for more use	Family/personal		Used other resources		Increased availability		Traveled farther		Got/ fixed equipment		Received more		Increased effort		More success	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**4**	**1**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**100.0%**	**0**	**0.0%**
All resources	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
Vegetation	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

-continued-

Table 4-23.–Continued.

Resource category	Valid responses[a]	Households reporting reasons for more use	Favorable weather		Had more time		Regulations		Store-bought too expensive		Needed more		Substitute for unavailable resource(s)		Had more help		Other reasons	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Any resource	**4**	**1**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
All resources	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Salmon	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nonsalmon fish	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Large land mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Small land mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine mammals	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Birds and eggs	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marine invertebrates	4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Vegetation	4	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source ADF&G Division of Subsistence household surveys, 2015.

a. Valid responses do not include households that did not provide any response to the less, same, or more use assessment question.

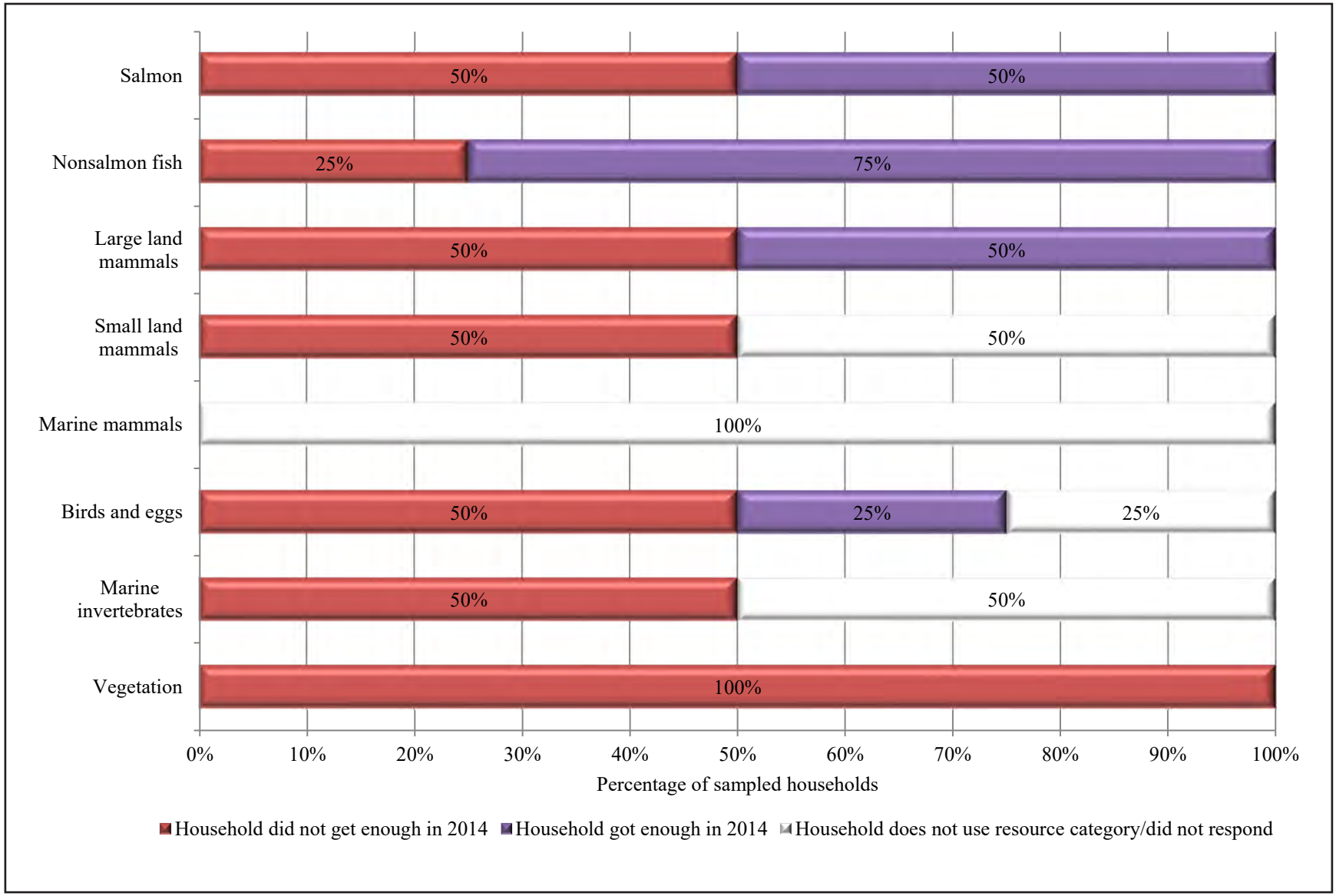


Figure 4-32.–Percentage of sampled households reporting whether they had enough resources, Ugashik, 2014.

Table 4-24.–Reported impact to households reporting that they did not get enough of a type of resource, Ugashik, 2014.

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

Source ADF&G Division of Subsistence household surveys, 2015.

a. Valid responses do not include households that did not provide any response and those households not using the resource category.

Table 4-25.–Resources that households reported needing, Ugashik, 2014.

Resource	Households needing resource	
	Number	Percentage
Caribou	4	100.0%
Moose	3	75.0%
Ducks	3	75.0%
Geese	3	75.0%
Berries	3	75.0%
Crowberry	3	75.0%
Coho salmon	2	50.0%
Beaver	2	50.0%
North American river (land) otter	2	50.0%
Lynx	2	50.0%
Gray wolf	2	50.0%
Wolverine	2	50.0%
Razor clams	2	50.0%
Lowbush cranberry	2	50.0%
Chum salmon	1	25.0%
Chinook salmon	1	25.0%
Sockeye salmon	1	25.0%
Pacific halibut	1	25.0%
Trout	1	25.0%
Coyote	1	25.0%
Fox	1	25.0%
Red fox	1	25.0%
Mink	1	25.0%
Muskrat	1	25.0%
Weasel	1	25.0%
Canada goose	1	25.0%
Ptarmigan	1	25.0%
Chitons (bidarkis, gumboots)	1	25.0%
Salmonberry	1	25.0%

Source ADF&G Division of Subsistence household surveys, 2015.

Table 4-26.–Comparison of estimated per capita harvests, by resource category, Ugashik, 1987 and 2014.

Resource category	Estimated per capita harvest (lb)	
	1987	2014
Salmon	320.1	787.5
Nonsalmon fish	36.1	14.0
Large land mammals	408.0	108.0
Small land mammals	5.8	5.4
Marine mammals	0.0	0.0
Birds and eggs	25.5	22.8
Marine invertebrates	0.0	10.3
Vegetation	18.9	0.5
All resources	814.4	948.4

Source ADF&G Community Subsistence Information System database for 1987 and ADF&G Division of Subsistence household surveys, 2015, for 2014.

Harvest Data

Changes in the harvest of resources by Ugashik residents can also be discerned through comparisons with findings from earlier study years. Comprehensive subsistence harvest surveys were conducted with all year-round households in Ugashik for the study year 1987 (the study period spanned June 1986–May 1987) (Fall and Morris 1987). Large land mammal harvest surveys were conducted in 1992 for the 1991/1992 regulatory year (Fall 1993), in 1995 for the 1994/1995 regulatory year (Krieg et al. 1996), and in 1997 for the 1995/1996 and 1996/1997 regulatory years (Krieg et al. 1998). The large land mammal harvest survey for the 1991/1992 regulatory year combined households in Ugashik and Pilot Point as a single sample so data and estimates are not comparable to the other studies, but all other large land mammal study years separated Ugashik from Pilot Point in the sampling.

Considering the harvest in pounds per capita in order to control for population changes, there was an overall increase in harvest from 1987 to 2014 (Table 4-26). This increase was driven almost entirely by increased salmon harvests. The per capita harvest of every resource category, excepting salmon and marine invertebrates, decreased between the two comprehensive study years.

The most notable per capita harvest decrease from 1987 to 2014 was of large land mammals. The large land mammal harvest in Ugashik usually consists of caribou and moose, with some brown bears harvested as well. In the 1980s, brown bears were abundant, the Northern Alaska Peninsula caribou herd ranged throughout the region, and moose, while having declined since the 1960s, were still fairly common (Wright et al. 1985). Contemporary use of brown bears by Ugashik households has never been high, but household use of caribou and moose was common and widespread. The Division of Subsistence has harvest estimates based on household surveys from 1987 and 2014, as well as 1994 through 1996. Brown bear harvests remained low through each of these study periods, with harvest only documented in 1995 (CSIS). Moose harvests ranged from no moose harvested in 1995 to three moose in 1994 (Figure 4-33). Caribou harvests ranged from 34 animals in 1996 to no animals harvested in 2014 (Figure 4-34). Moose harvests have stayed relatively consistent through all study years, including 2014. Caribou harvests were consistent—around 21 animals in the first three study years—before increasing to 34 animals in 1996 and then plummeting to zero animals in 2014. The Northern Alaska Peninsula caribou herd peaked in 1984 before beginning a steady decline (Doherty 2015). By 1999, the population was of a small enough size that a state Tier II hunt was implemented, restricting eligibility of hunters. By 2005, the herd was still in decline, and all state and federal hunts closed. After the study year, a Tier II hunt was again implemented in 2016, allowing some Ugashik residents some opportunity to harvest a caribou.

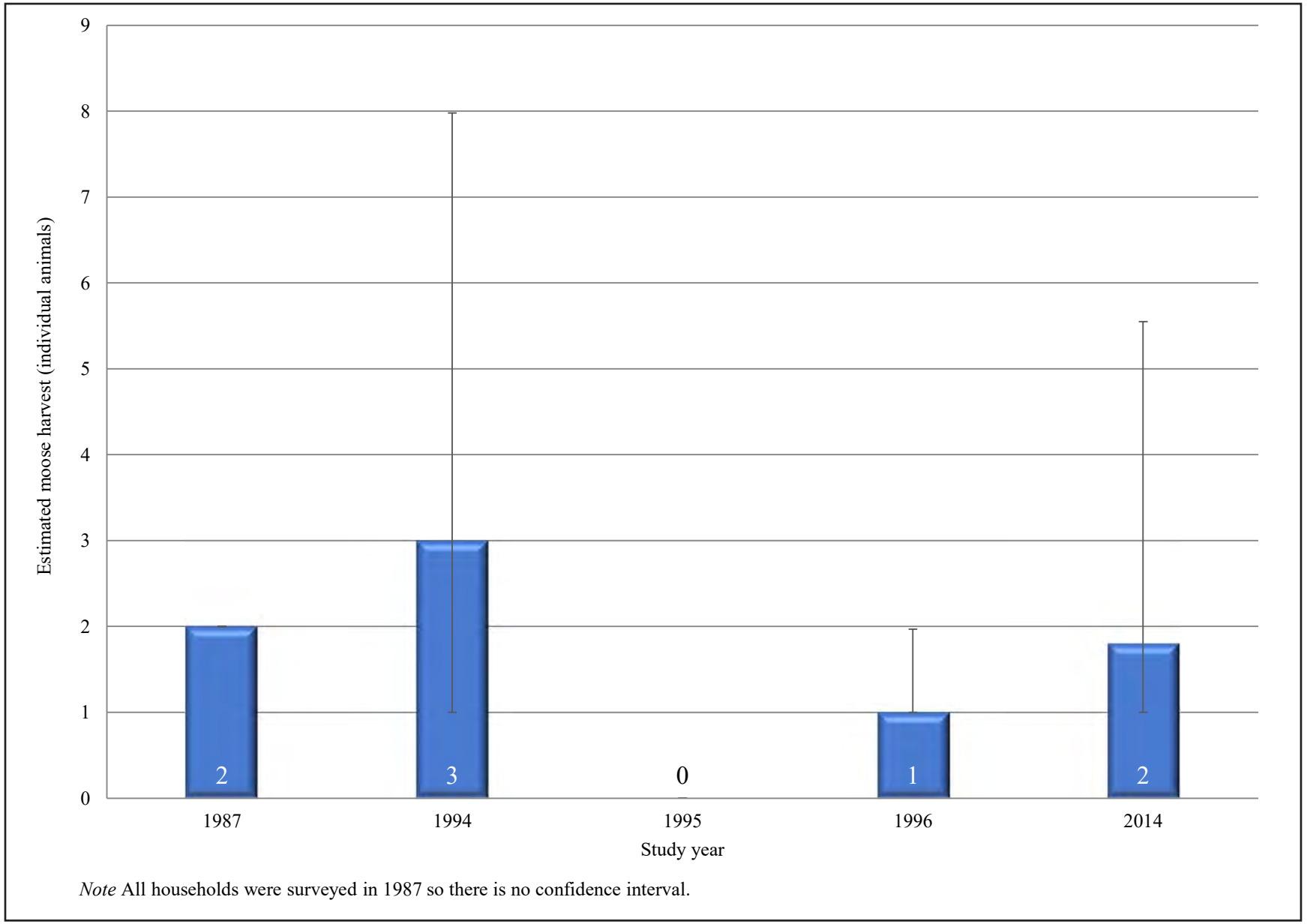


Figure 4-33.–Estimated harvests of moose, by individual animals, Ugashik, 1987, 1994–1996, and 2014.

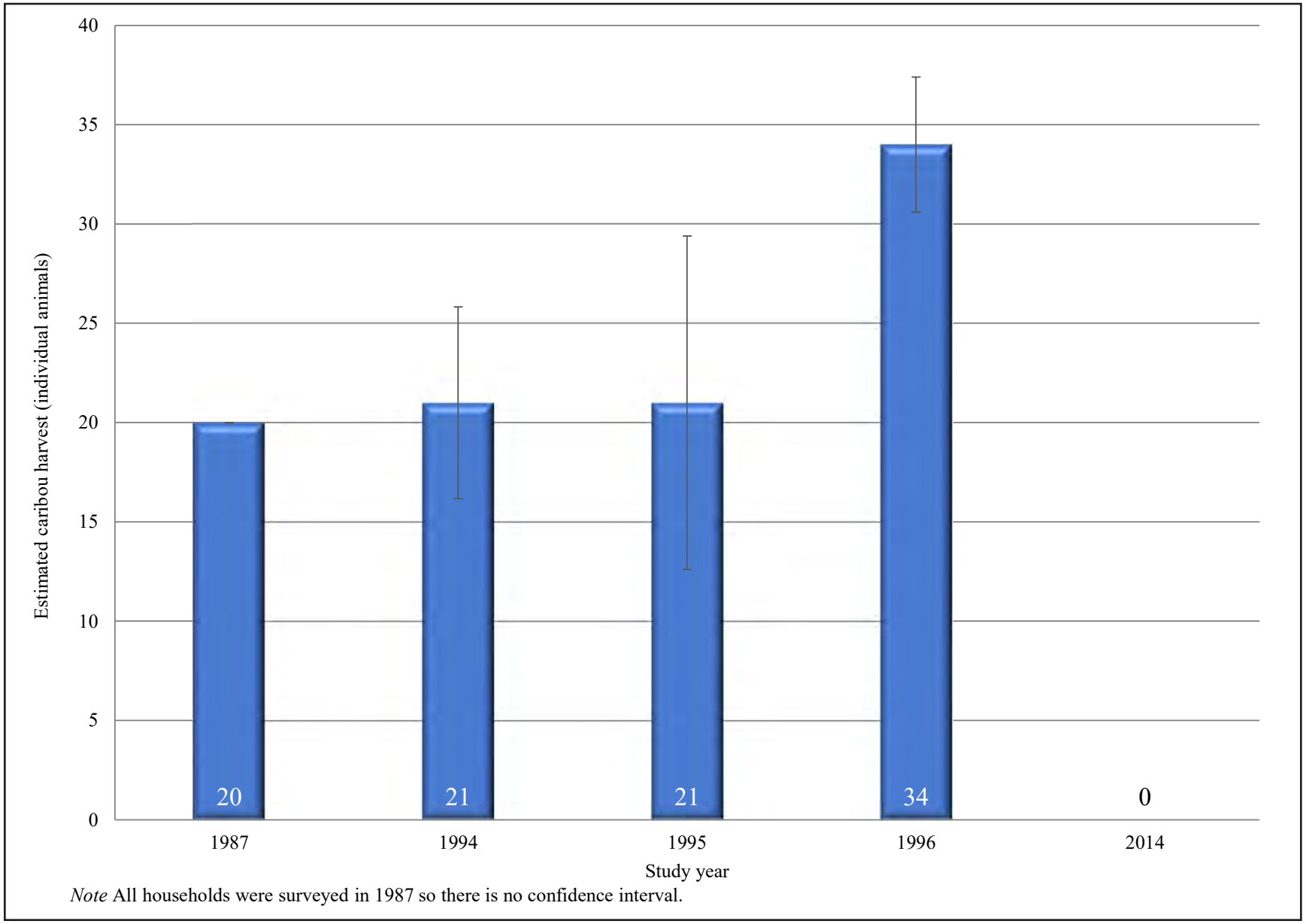


Figure 4-34.–Estimated harvests of caribou, by individual animals, Ugashik, 1987, 1994–1996, and 2014.

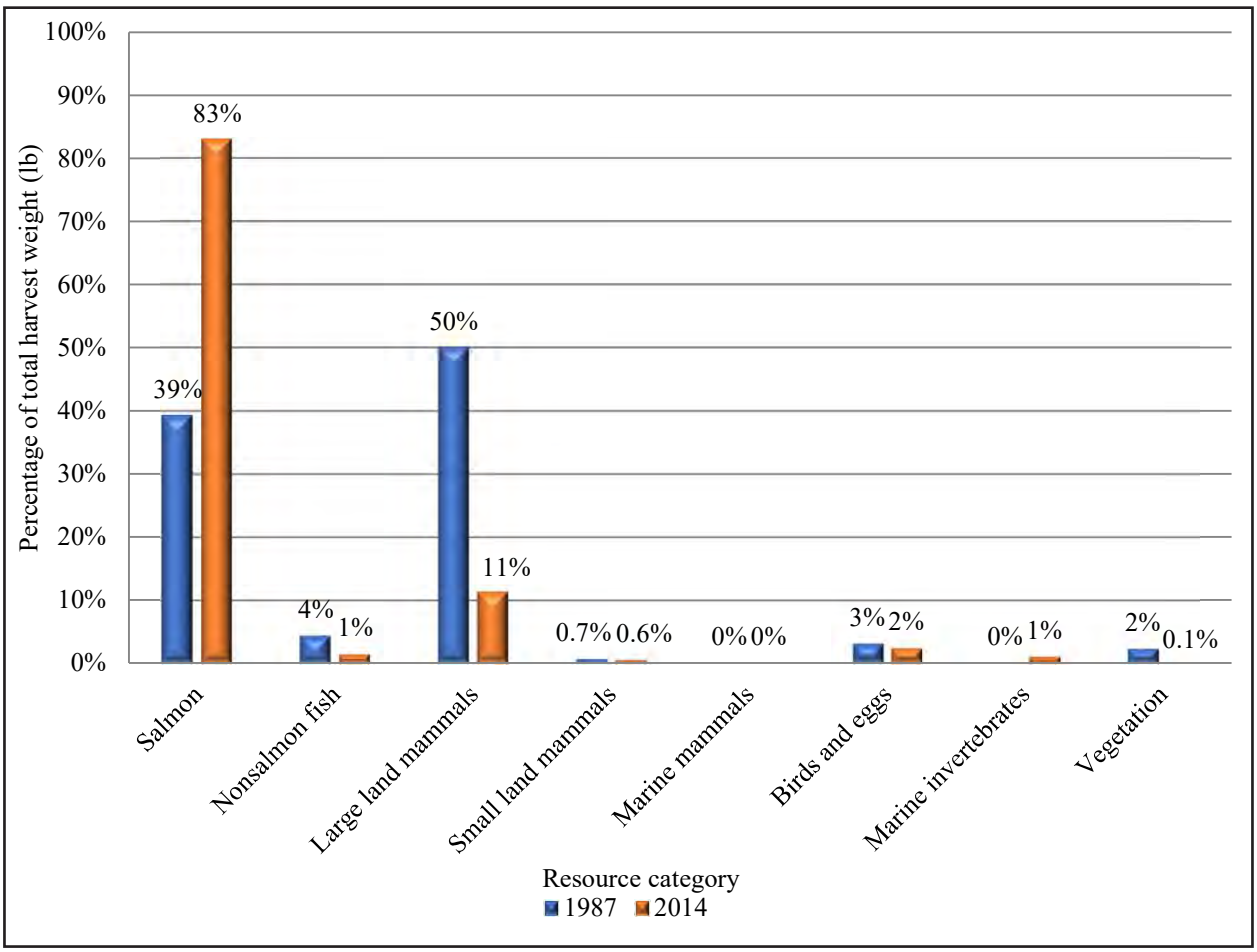


Figure 4-35.–Composition of harvest, by resource category, Ugashik, 1987 and 2014.

Compensating for the decreased caribou harvest was a dramatic increase in salmon harvests (Figure 3-35). Comparing salmon harvest by species between 1987 and 2014, it is clear that the increase in overall salmon harvest is driven primarily by an increase in sockeye salmon harvests, the per capita harvest of which increased nearly 300% between the two study years (Figure 4-36). The majority (79%) of the sockeye salmon harvest was obtained through removal from commercial catches in 2014, an increase from 1987 when commercial removals accounted for about 35% of the sockeye salmon harvest (Figure 4-37). Interestingly, while the overall per capita harvest of coho salmon increased slightly between the two study years, the predominant gear types switched from commercial removals (accounting for 80% of the 1987 coho salmon harvest but only 29% in 2014) to subsistence methods (Table 4-27). Similar changes in salmon harvests are not evident in the subsistence salmon permit return data for Ugashik (Table 4-28; Figure 4-37). The number of salmon harvested per returned permit has generally decreased over time, however, which may be supportive of the above finding that an increased percentage of the sockeye salmon harvest originated in commercial removals in 2014 compared to 1987, since sockeye salmon numbers drive overall harvest numbers on returned permits. According to permit returns, there has been a relatively small general decrease in salmon harvests since 1983, including in harvests of sockeye salmon. Harvests of Chinook salmon have increased, though. The importance of commercial retention to Ugashik household use of salmon is evident in a comparison between household survey data and household permit data. Additionally, there is likely some discrepancy between harvest estimates based on permit returns and household harvest surveys because individuals who no longer live full-time in Ugashik (and therefore would not be included

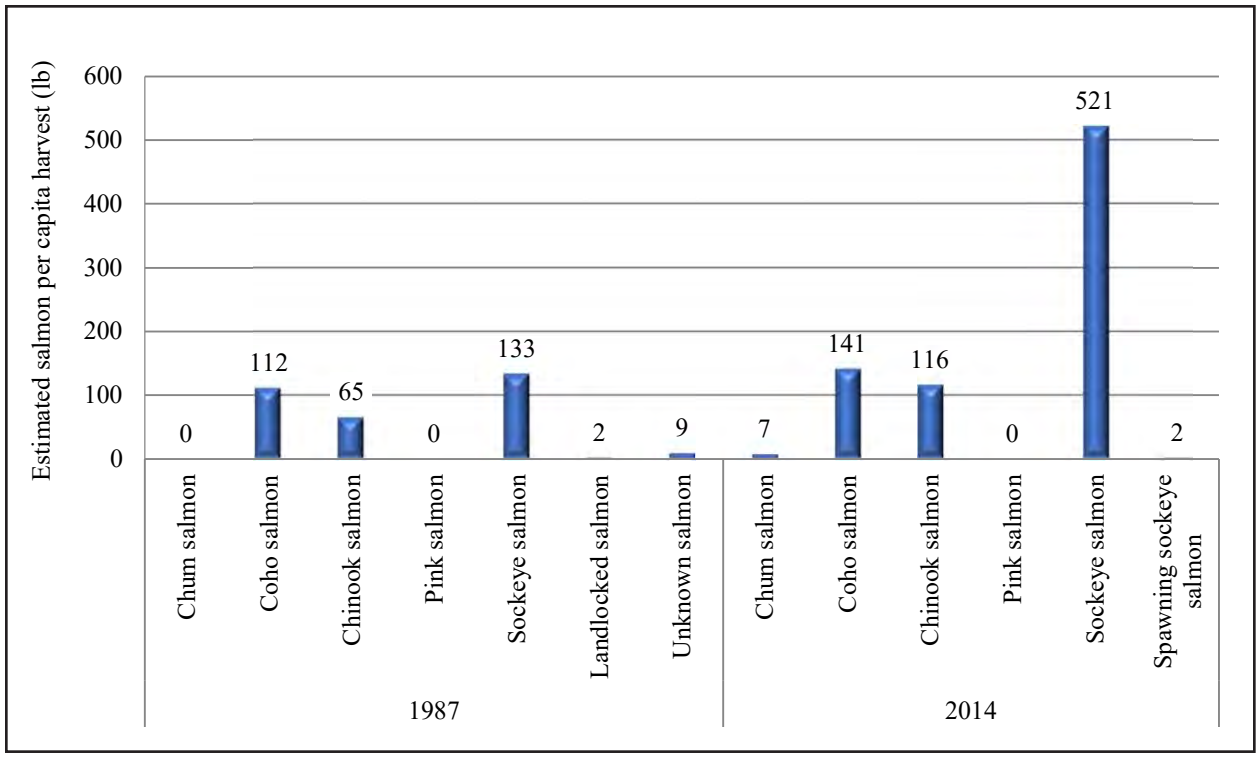


Figure 4-36.–Comparison of estimated per capita harvests of salmon, by species, Ugashik, 1987 and 2014.

in the household survey) return to the community to fish and use Ugashik as their address when obtaining a subsistence salmon permit.

Compared to the salmon and large land mammal harvests, the harvests of the other resource categories were small, in per capita pounds and as a percentage of the overall harvest, in both study years (Table 4-26; Figure 4-35). The per capita harvests of marine invertebrates, birds and eggs, and small land mammals remained similar, as did those of marine mammals (no harvest in either year). Further, each category composed nearly the same proportion of the total harvest weight in 1987 as in 2014 (Figure 4-35). However, more consideration of harvests by resource or resource category provides insight into the nature of harvest changes between survey years. For example, a notable change evidenced in the survey results, as well as in comments by respondents, was the absence of porcupines and snowshoe hares in the 2014 harvest (Fall and Morris 1987:62) (Table 3-13). Similarly, while vegetation harvests decreased a small amount in terms of proportion of the total subsistence harvest, from 2% to 0.1%, looking closely at the vegetation harvest, it is noticeable that almost no vegetation was harvested in 2014 as compared to nearly 20 lb per capita in 1987 (Figure 4-35; Table 4-26).

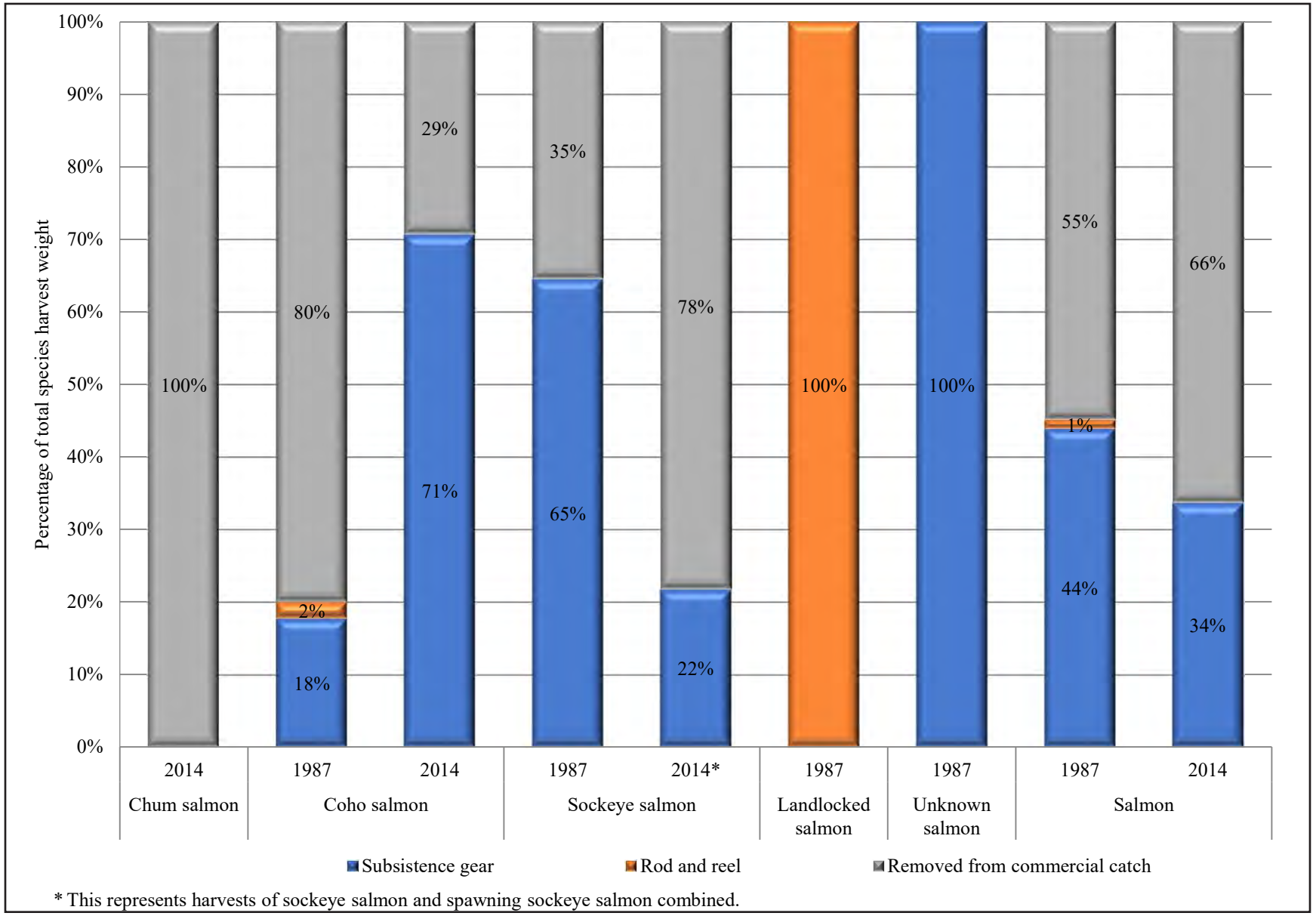


Figure 4-37.–Composition of salmon species harvest weight by gear type, Ugashik, 1987 and 2014.

Table 4-27.–Comparison of estimated per capita harvests of salmon, by species and by gear type, Ugashik, 1987 and 2014.

		Per capita harvest (lb)			
Year	Species	Subsistence gear	Rod and reel	Removed from commercial catch	Total
1987	Chum salmon	0.0	0.0	0.0	0.0
	Coho salmon	19.8	2.5	89.4	111.7
	Chinook salmon	26.0	0.0	39.1	65.1
	Pink salmon	0.0	0.0	0.0	0.0
	Sockeye salmon	86.0	0.0	47.3	133.3
	Landlocked salmon	0.0	1.5	0.0	1.5
	Unknown salmon	8.6	0.0	0.0	8.6
	Total salmon	**140.4**	**4.0**	**175.8**	**320.2**
2014	Chum salmon	0.0	0.0	7.3	7.3
	Coho salmon	99.9	0.0	41.4	141.3
	Chinook salmon	51.5	0.0	64.4	115.9
	Pink salmon	0.0	0.0	0.0	0.0
	Sockeye salmon	111.9	0.0	409.4	521.3
	Spawning sockeye salmon	1.7	0.0	0.0	1.7
	Total salmon	**264.9**	**0.0**	**522.5**	**787.5**

Source ADF&G Community Subsistence Information System database for 1987 and ADF&G Division of Subsistence household surveys, 2015, for 2014.

Table 4-28.–Historical subsistence salmon harvests based on Bristol Bay Area permit returns, Ugashik, 1983–2018.

	Permits		Percentage of returned	Estimated salmon harvest						Average harvest per returned
Year	Issued	Returned	permits	Chinook	Sockeye	Coho	Chum	Pink	**Total**	permit
1983	2	1	50.0%	20	162	0	0	0	**182**	182
1984	4	3	75.0%	21	263	601	3	0	**888**	296
1985	2	2	100.0%	6	170	52	0	0	**228**	114
1986	3	3	100.0%	10	341	78	2	0	**431**	144
1987	5	4	80.0%	30	423	140	0	0	**593**	148
1988	6	5	83.3%	34	514	62	14	0	**624**	125
1989										
1990	3	2	66.7%	5	9	27	3	0	**44**	22
1991	3	2	66.7%	3	149	59	13	0	**224**	112
1992	2	2	100.0%	11	474	70	16	4	**575**	288
1993	2	2	100.0%	0	100	50	0	0	**150**	75
1994	2	2	100.0%	10	23	22	0	0	**55**	28
1995	6	5	83.3%	17	704	144	2	0	**868**	174
1996	4	4	100.0%	13	325	71	16	4	**429**	107
1997	5	5	100.0%	33	629	64	0	1	**727**	145
1998	4	4	100.0%	12	380	163	1	0	**556**	139
1999										
2000	8	8	100.0%	15	395	137	1	1	**549**	69
2001	5	5	100.0%	24	283	51	0	0	**358**	72
2002	5	5	100.0%	16	362	132	9	0	**519**	104
2003	6	6	100.0%	9	250	72	0	0	**331**	55
2004	9	8	88.9%	46	495	224	5	1	**771**	96
2005	9	9	100.0%	25	482	166	1	0	**674**	75
2006	7	7	100.0%	13	366	160	4	4	**547**	78
2007	7	7	100.0%	21	306	155	0	0	**482**	69
2008	8	8	100.0%	34	702	206	4	1	**947**	118
2009	8	8	100.0%	18	711	94	4	41	**868**	109
2010	6	6	100.0%	3	330	90	3	0	**426**	71
2011	10	9	90.0%	12	316	129	1	1	**459**	51
2012	9	8	88.9%	7	588	168	1	0	**764**	95
2013	9	8	88.9%	10	320	108	2	0	**440**	55
2014	7	7	100.0%	48	401	191	1	0	**641**	92
2015	8	7	87.5%	38	502	78	2	0	**619**	88
2016	5	5	100.0%	20	210	42	0	0	**272**	54
2017	7	6	85.7%	6	376	113	4	1	**499**	83
2018	6	5	83.3%	48	175	46	1	0	**270**	54
5-year avg (2014–2018)	7	6	90.9%	32	333	94	2	0	**460**	77
10-year avg (2009–2018)	8	7	92.0%	21	393	106	2	4	**526**	76
Historical avg (1983–2018)	6	5	92.7%	19	360	117	3	2	**500**	96

Source ADF&G Division of Subsistence, ASFDB 2018 (ADF&G September 2020).
Note Blank cells indicate data are not available.

Current and Historical Harvest Areas

The 1986/1987 study only investigated harvest areas for waterfowl (Fall and Morris 1987). A mapping activity done with residents of Ugashik for a Bristol Bay Cooperative Management Plan and the *Alaska Habitat Management Guide, Southwest Region* (see Wright et al. [1985] and ADF&G [1985a; 1985b; 1985c]) provided the harvest area information for the other resource categories. During that activity, respondents were asked to show where they had hunted (or fished, trapped, or gathered) various resource categories in the previous 20 years, or roughly from 1962–1982. A comparison of these resource harvest areas to those documented in 2014 is of limited value since it is expected that households would use a larger area for harvesting activities over multiple years rather than in any single year; in other words, the presence or absence of game populations would determine where people hunt. As these game populations move, so, too, do the hunting areas. The areas documented in the previous study do show a wider range of areas used for resource harvesting activities, and include mapped areas of caribou hunting, which is lacking from this current study as discussed above.

Local Comments and Concerns

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

The few comments offered by Ugashik households about fish concerned residents' perceptions of the management process. With commercial fishing as a main economic driver, respondents expressed concern for how salmon are currently managed in the different fisheries management areas within the region, and how the Board of Fisheries makes decisions or chooses to not act on issues of concern to residents. Some respondents also noted their perception that the regulatory process is challenging to engage in and often does not necessarily benefit subsistence fishers.

Large Land Mammals

Some residents held similar concerns about the management of large land mammals as for salmon. One respondent would like to see more proactive management of large land mammals, rather than waiting until the game population crashes to react. Another respondent noted that sometimes there is a resource locally available, such as female moose in the winter, but they are not legal to hunt. With no store in town, it is very expensive to buy food and residents rely heavily on their subsistence resources.

5. DISCUSSION AND CONCLUSIONS

Overview of Findings for the Study Communities, 2014

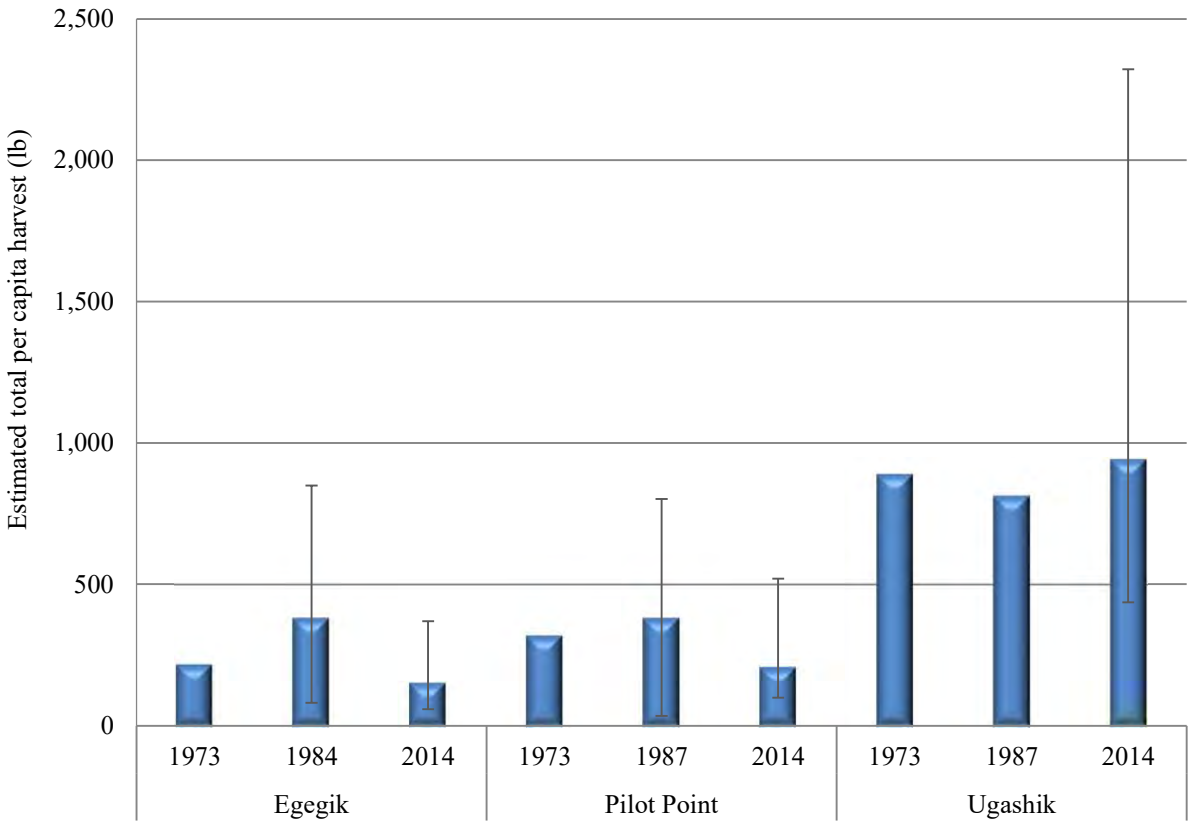
This report documented the harvest and use of wild resources in 2014 in three communities on the northwest side of the Alaska Peninsula: Egegik, Pilot Point, and Ugashik. While these communities are relatively close in geographic proximity, community characteristics are diverse in their demographics, economics, culture, and history. Although they are distinct communities, data analyses helped to identify shared patterns. Marine resources continue to be of vital importance for cultural practices and beliefs, ways of knowing, diet, and wellbeing. The remote location of each of these communities shapes residents' ability to travel and bring in non-local goods. Ecological and climatic changes are affecting subsistence resources and community members are having to adapt. Caribou were traditionally of high importance to each of the communities, and residents from all study communities attributed a rapid and steady decline in caribou populations to state management practices. Changes to climate and habitats, species population fluctuations, and man-made infrastructure and technology are causing residents to adjust their harvest activities. Despite continuous changes to their surrounding social and ecological environments, residents of Egegik, Pilot Point, and Ugashik continue to live in a mixed subsistence-market socioeconomic system, and they continue to exhibit high levels of family-based harvesting and processing of wild foods, and widespread sharing.

In the 2014 study year, most residents of each community participated in wild resource hunting, fishing, or gathering (figures 2-11, 3-11, and 4-11). An estimated 90% or more 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 (tables 2-13, 3-13, and 4-12). As estimated in pounds usable weight, average household harvests ranged from a low of 442 lb in Egegik to a high of 1,178 lb in Ugashik[1] (Table 1-8). The average per capita harvest of these three communities combined was 436 lb. Comparing the composition of community harvests, salmon harvests dominated the harvest in all three study communities in terms of total pounds harvested (figures 2-14, 3-14, and 4-14). Egegik showed the highest harvest share by weight coming from salmon (92%). In Pilot Point and Ugashik, marine mammals and large land mammals, respectively, followed salmon as the next most harvested category; each category composed approximately 10% of the total harvest in 2014.

The average number of resources harvested per household ranged from a low in Egegik of five resources to a high in Ugashik of 12. The average number of resources used per household, ranging from 7–13, was greater than that harvested in each community, which indicates resource sharing contributed to diversifying the kinds of resources available to households for their subsistence way of life.

As would be expected in these subsistence communities, sharing of wild resources was prevalent. In Ugashik and Pilot Point, 100% and 94% of all households received wild resources, respectively; however, in Egegik, only 65% of households received wild resources (tables 2-13, 3-13, and 4-12). Although fewer households gave away resources than received, most households shared part of their harvest of wild resources: 55% in Egegik, 71% in Pilot Point, and 100% in Ugashik. The strongest characteristics indicating receipt of wild resources were present in Pilot Point: households received the highest average number of resources (six), and also exhibited the largest difference between the average number of harvested and used 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 study communities reflect the pattern of fewer active harvesting households acquiring a disproportionate amount of the total community harvest weight and sharing resources with other households (figures 2-13, 3-13, and 4-13).

1. In Ugashik, the estimates of the general and Alaska Native populations provided by three sources presented in Figure 4-2 differ; but, for the general population, both the five-year average American Community Survey (ACS) and 2014 study estimates have relatively wide confidence intervals indicating uncertainty in the estimates. Ugashik is a small community where sampling can produce significant differences to analyses. This study successfully interviewed four households, or 57% of the community.



Note Error bars represent the upper and lower bounds of the 95% cofidence interval. Since all households were surveyed in Ugashik for 1987, there is no error bar. The confidence intervals for all estimates for 1973 are not available.

Figure 5-1.–Estimated per capita harvest, in pounds, study communities, 1973, 1984, 1987, and 2014.

Changes to Harvest Composition: Change Over Time

This section provides select study findings for identifying changes to harvest composition and patterns when comparing results from previous surveys conducted in Egegik, Pilot Point, and Ugashik to this study. As noted in previous chapters, comprehensive subsistence harvest surveys were conducted by the Division of Subsistence in Egegik for study year 1984 (Morris 1987) and in Pilot Point and Ugashik for study year 1987 (Fall and Morris 1987). Other studies prior to 2014 were multiple-year, species-specific projects (i.e., large land mammals and marine mammals); this section pulls from data published in Krieg et al. (1996; 1998), Fall (1993), and Wolfe et al. (2009). Another comprehensive study was conducted by the University of Alaska, which provides harvest estimates for study year 1973.[2] A technical report was not published for the 1973 survey, though the survey data are published in Division of Subsistence reports presenting results for the 1984 and 1987 surveys (Fall and Morris 1987:5, 158–162, 165–171, 177). The 1973 data are useful for evaluating changes in harvest patterns between study years.

Figure 5-1 presents per capita harvest weight estimates of wild resources by community and study year. There are few contemporary studies of subsistence harvests in the region of the study communities to use for additional comparisons. Fall (2016) presents a snapshot of subsistence harvests in 2014 in the state of Alaska by region, derived from the most recent comprehensive surveys and community populations

2. Gasbarro, Anthony and George Utermohle. 1975. "A Study of Subsistence Activities in Bristol Bay," unpublished paper on file with Division of Subsistence, Anchorage.

in 2014. While generalized to the regional level, these estimates provide another benchmark for this study's harvest estimates. The 2014 estimated per capita weight declined in Egegik and Pilot Point from the two previous comprehensive study years, most dramatically from the 1984 and 1987 studies in these communities. Egegik's per capita harvest declined 60% (384 lb in 1984 to 155 lb in 2014) and Pilot Point's per capita harvest declined 45% (from 384 lb in 1984 to 211 lb in 2014). Despite the decline of harvests in Egegik and Pilot Point in 2014, the total combined resource harvests for subsistence were commensurate with the estimated 2014 estimated harvest for all rural areas of the state of 275 lb per person, and even more comparable to the Southwest–Aleutian regional estimate of 206 lb per person (Fall 2016). Compared to Egegik and Pilot Point, the Ugashik per capita harvests of all resources have remained consistent over time: 889 lb in 1973, 814 lb in 1987, and 943 lb in 2014; the 2014 per capita estimate is 358% higher than the Southwest–Aleutian regional average of 206 lb.

Resource diversity, or the variety of resources used in a community, is an important aspect of understanding and measuring local subsistence patterns and reliance on local resources. In 1984, Egegik used an average of 10 different resources and harvested an average of seven, which were similar to 2014 characteristics, where an average of seven resources were used and five harvested (Figure 5-2). In 1987, Pilot Point harvested and used an average of 19 different resources, indicating that at that time a wider variety of resources supported the subsistence way of life than in 2014 when an average of 11 kinds of resources were used and seven were harvested. Ugashik experienced similar declines as seen in Pilot Point: although the number of resources attempted to be harvested (18) was the same in both study years, in 1987 on average 18 resources were used but in 2014 resource diversity declined to 12 resources harvested on average and 13 used. In sum, all three communities continued to demonstrate resource diversity in their harvest and use practices, which supports resilience and flexibility in subsistence economies (Fall and Kostick 2018).

Figure 5-3 and Table 5-1 detail the composition of harvests for each study year and community, showing the proportion of the total harvest weight by resource category: salmon, nonsalmon fish, land mammals (combined large and small), marine mammals, birds and eggs, marine invertebrates, and vegetation. There was a pronounced shift in the composition of the harvest from earlier study years to 2014 in all three communities. Land mammals was the primary resource category harvested by all three communities in the study years prior to 2014; caribou composed the majority of those harvests. The percentage of land mammal harvests ranged from 45% in Pilot Point in 1973 to 82% in Ugashik in 1973. By 2014, however, salmon replaced land mammals as the most harvested resource in all three communities. In 2014, land mammals accounted for 0% of the total subsistence harvest weight in Egegik to 11% in Ugashik; conversely, salmon ranged from 74% of the harvest weight in Pilot Point to 92% in Egegik. In the comprehensive resource studies prior to 2014, salmon represented the second or third (only in Ugashik in 1973) most harvested resource category in the communities, representing from only 4% of the total harvest weight in 1973 in Ugashik to 42% in 1973 in Pilot Point.

Harvests of other resource categories have also shifted in their percentage of the total subsistence harvest but in less pronounced ways than salmon and caribou. Nonsalmon fish harvests, over time, have consistently declined each study period. In Egegik in 1973, nonsalmon fish represented 9% of all the resource harvest weight but the harvests have declined over time, only representing 1% of all the harvest weight in 2014. The portion of the harvest composed of nonsalmon fish in Pilot Point and Ugashik also declined: similar to Egegik, nonsalmon fish composed 1%–2% of the total harvest in 2014. Bird and egg harvests have stayed relatively stable over time, ranging from as high as 7% of all the harvest weight in Egegik and Pilot Point in 1973, to as low as 2% in Ugashik in 2014. Although the bird and egg harvest in Pilot Point increased slightly in 2014 (5%) compared to 1987 (4%), more years of data collection are necessary to observe whether a pattern of change is developing for this resource category. Harvests of marine mammals were reported by all three communities in 1973. No harvests of marine mammals were reported in Egegik and Ugashik in later study years, and Pilot Point was the only community that had harvests all three study years; furthermore, in 2014 marine mammals composed the highest proportion of the total harvest weight (10%) of any study year. Vegetation resources (plants, berries, beach greens) were gathered in all communities in 2014, composing 2% or less of the total harvest weight for each study community. Since vegetation harvest data are not consistently available, it is not possible to characterize changes to the vegetation harvest.

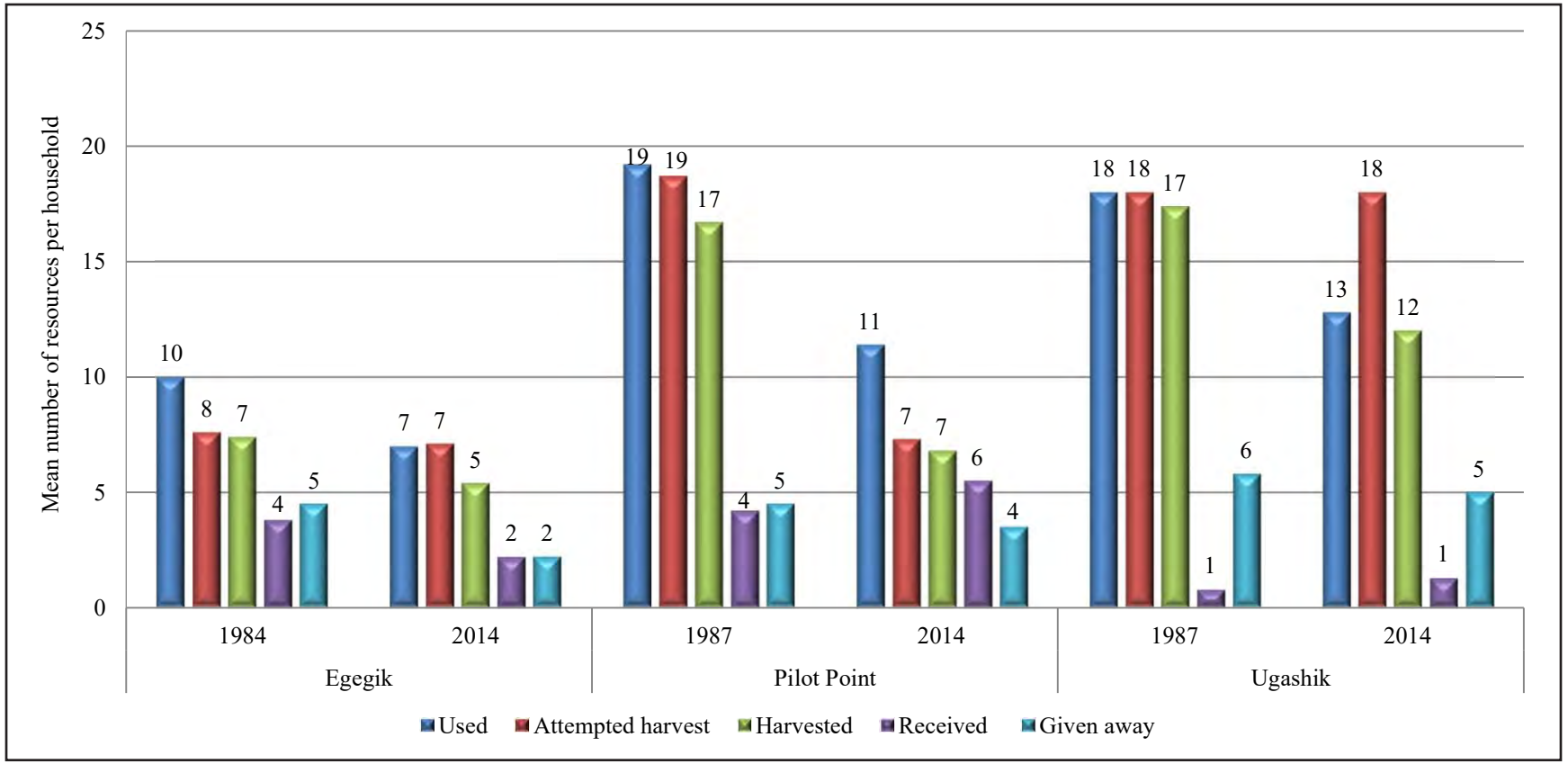
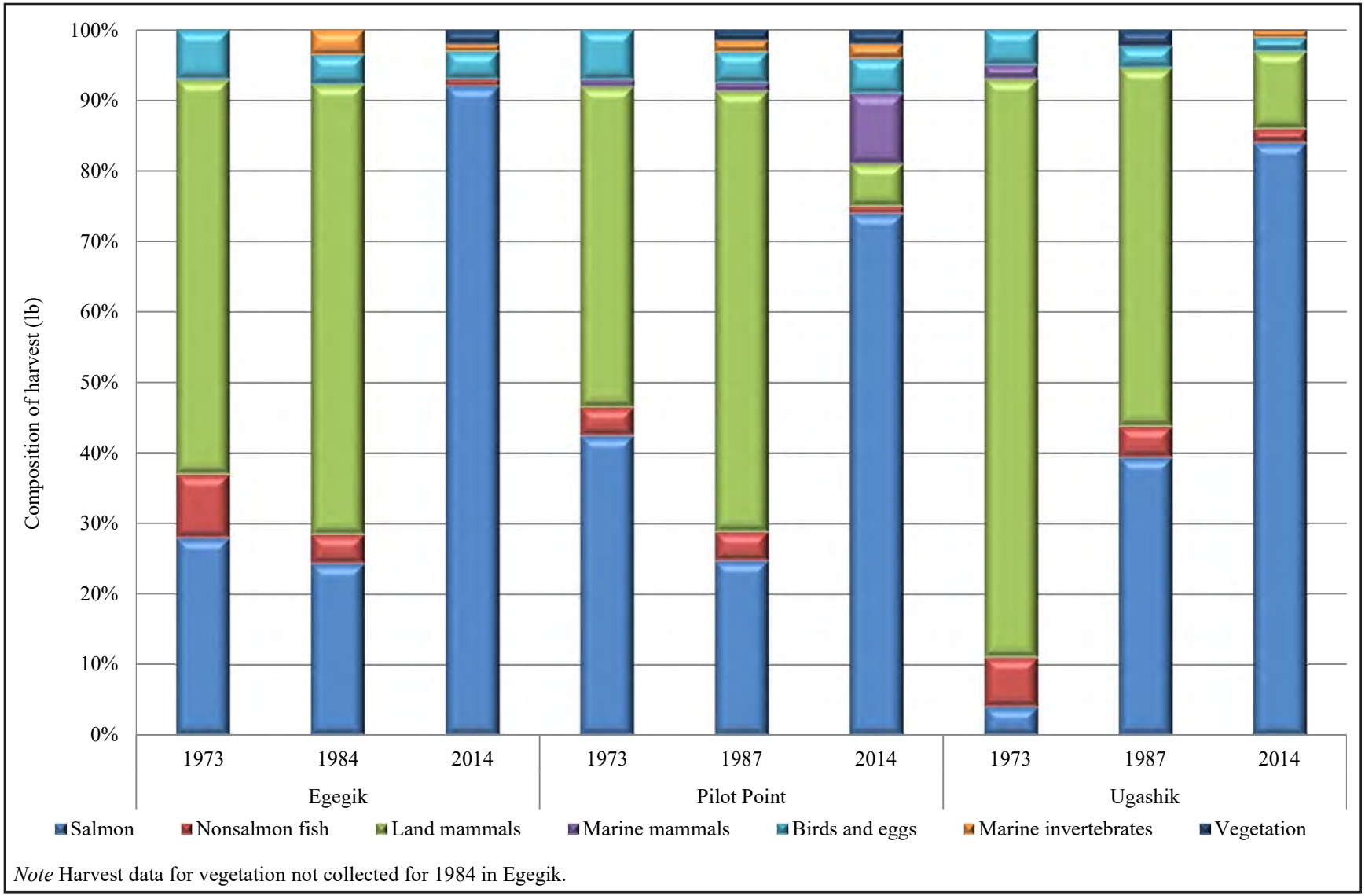


Figure 5-2.–Comparison of select household resource harvest and use characteristics, study communities, 1984, 1987, and 2014.



Note Harvest data for vegetation not collected for 1984 in Egegik.

Figure 5-3.–Comparison of total harvest composition in pounds, by resource category, study communities, 1973, 1984, 1987, and 2014.

Table 5-1.–Estimated proportion of total harvest weight, by resource category, study communities, 1973, 1984, 1987, and 2014.

	Egegik			Pilot Point			Ugashik		
Resource category	1973	1984	2014	1973	1987	2014	1973	1987	2014
Salmon	28.0%	24.3%	92.0%	42.0%	24.7%	74.0%	4.0%	39.3%	84.0%
Nonsalmon fish	9.0%	4.1%	1.0%	4.0%	4.1%	1.0%	7.0%	4.4%	2.0%
Land mammals	56.0%	63.8%		45.0%	62.5%	6.1%	82.0%	50.8%	11.0%
Marine mammals	0.1%			1.0%	1.2%	10.0%	2.0%		
Birds and eggs	7.0%	4.2%	4.0%	7.0%	4.4%	5.0%	5.0%	3.1%	2.0%
Marine invertebrates		3.5%	1.0%		1.6%	2.0%			1.0%
Vegetation		–	2.0%		1.5%	2.0%		2.3%	0.1%

Sources Gasbarro and Utermohle (1975): A Study of Subsistence Activities in Bristol Bay, unpublished paper on file with Division of Subsistence, Anchorage; Fall and Morris (1987:72, 74); Morris (1987: 194); ADF&G Division of Subsistence household surveys, 2015.
Note "–" indicates harvest data for vegetation not collected for 1984 in Egegik.
Note Blank cells indicate no harvest amount was estimated for the resource category.

Similarly, marine invertebrate harvests have composed a small proportion of the total harvest weight and estimates are not available for all study years. An estimated 4% of the total harvest in Egegik in 1984 was marine invertebrates, which was the highest percentage among the limited years for which estimates are available.

Land Mammals

Caribou has historically been the most used and harvested land mammal species for the study communities (Fall 1993:4). The studies conducted for 1984 and 1987 found an estimated 96%–100% of households in Egegik, Pilot Point, and Ugashik used land mammals (large and small land mammals combined) (Fall and Morris 1987; Morris 1987). In 1984 and 1987, greater than 79% of households in these communities hunted caribou, which provided the largest contribution to the wild food supply in all three study communities, and caribou were shared more widely than the other resources (Fall 1993; Fall and Morris 1987; Morris 1987). Land mammals, particularly caribou, followed by moose, porcupines, and snowshoe hares, were the species preferred by all of these communities as reflected from the harvest estimates for the 1973, 1984, and 1987 studies (Fall and Morris 1987; Morris 1987).[3] By 2014, however, all three study communities experienced dramatic declines of small and large land mammal harvests, with salmon replacing land mammals as the main wild food protein source.

In Egegik in 1984, large land mammals made up 63% (242 lb per capita) and salmon composed 24% (94 lb per capita) of the resource harvest weight (Figure 2-33; Table 2-26). In 2014, salmon consisted of 92% (144 lb per capita) of the resource harvest, with no large land mammals harvested. The harvest composition of Pilot Point in 1987 was similar to that of Egegik in 1984: the harvest was dominated by large land mammals (62% of harvest; 238 lb per capita) and salmon was the second most harvested category (25% of harvest; 95 lb per capita) (Figure 3-34; Table 3-28). Broadly, estimates for Pilot Point for 2014 mirrored the trend depicted in Egegik for 2014—namely that salmon became the dominant harvested category—but the changes differed in scale. In 2014 in Pilot Point, 74% (157 lb per capita) of the harvest was salmon and 5% (12 lb per capita) was large land mammals. Ugashik, in comparison, experienced a less pronounced change, but also had a decline of the large land mammal harvest, changing from 50% (408 lb per capita) of total harvest weight in 1987 to 11% (108 lb per capita) in 2014 (Figure 4-35; Table 4-26).

As described in Chapter 1 of this report, the lack of harvests of large land mammals, particularly caribou, in the study communities in 2014 was largely attributed to the dramatic decline of the Northern Alaska Peninsula caribou herd and subsequent hunting regulation changes. Historically the herd size has fluctuated greatly: after numbering 2,000 in 1949, the herd slowly increased to 10,000 animals by 1963 (Sellers and McNay 1984). The herd peaked most recently at around 20,000 animals in the mid-1980s (Harper and McCarthy 2015:4-1). Subsequent large declines in the herd occurred due to several factors, including hunting pressure and a large range overlap with the neighboring Mulchatna caribou herd (Doherty 2015; Hicks 1997). By 1994 the population of the herd, at 12,000 animals, was below the harvest management goal, resulting in caribou hunting regulatory changes that reduced the local resource harvest opportunity for the study communities and other communities in the Alaska Peninsula (Doherty 2015; Hicks 1997:38, 40). Then, in 1999, the caribou hunt became a Tier II[4] permit hunt; afterward, continued declines in caribou numbers led to closures to both state and federal caribou hunts starting in 2005 (Doherty 2015; Healy 2001:42). Over the next decade measures were implemented to help rebound the herd and ADF&G recommended that for regulatory year 2016 a Tier II permit hunt for residents be allowed (Harper and McCarthy 2015:4-5). In

3. Gasbarro, Anthony and George Utermohle. 1975. "A Study of Subsistence Activities in Bristol Bay," unpublished paper on file with Division of Subsistence, Anchorage.
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.

2016, there were 198 Tier II permits issued[5] for the Northern Alaska Peninsula caribou herd that provided limited opportunities for residents of these communities, and other Alaska residents, to hunt caribou.

When asked if they harvested or used large land mammals, most households surveyed for 2014 did not due to no resource availability and hunting closures going back 20 years or more. Many respondents, particularly elders, commented that though salmon was a very important food source, caribou remained their preferred wild resource even though many had not had any in longer than two decades. There were residents who longed for caribou to return to their region so they could once again acquire them to feed their families. Field notes and notes recorded during household surveys for 2014 articulated some of the concerns held by many.

Some expressed fear that people would lose the ability to hunt and process caribou with legal hunts being closed so for long. An Ugashik resident made this comment during the survey:

> I use [to] hunt a lot, bringing caribou, moose, porcupine, ducks, whatever I could find back for my family and to share with elders or anyone in need. I have not been able to hunt for many years now, just no caribou. I worry that the younger generation will not have anyone to teach them how to hunt if caribou return.

Others spoke of how much they missed eating caribou. One elder woman in Pilot Point described her experience when she was younger and raising her children as follows:

> There were caribou or moose everywhere. If I needed food, I would just open my door and shoot one that was right there. I would butcher it and have food on the table by dinner! I have not had one piece of caribou in so long I can't remember, but I can still taste it, but we have to get on, I just put away and eat more fish now, it's okay.

Moose harvests also significantly declined by 2014 in the study communities. Much of the moose that was used had been received from local hunting lodges.

A resident in Egegik in 2015 said that all of the moose he received, as well as moose obtained by other residents in 2014, came from local hunting lodges since many of the clients keep only heads or antlers. Guides will drop off the meat to the communities when possible.

An Ugashik resident commented during the survey in 2015:

> It is hard to find a moose especially during hunting season. Moose are out there, but they are sometimes far from the village. We don't get winters like we use to, now we have no snow in the winter and can't usually travel by snowmachine to hunt. The tundra doesn't always freeze either so hard to take our bikes far.

With the Tier II hunt for caribou implemented starting in 2016, it is hopeful that caribou will continue to rebound and increasingly provide these communities with more opportunity for harvesting and using this important resource again.

Small land mammals were harvested as well during study years in the 1980s in all study communities. Of note, harvest and use of porcupines has particularly declined significantly by 2014. For example, in Pilot Point in 1987, 35% of households used and 29% of households harvested porcupines; in comparison, in 2014, 12% of households used and harvested porcupines (CSIS; Table 3-13). In Ugashik and Egegik, a small proportion of households harvested porcupines (20%–32%) in the 1980s, but no harvests occurred in both communities in 2014 (CSIS; Table 4-12; Table 2-13). While being interviewed for the survey in 2015, when asked about porcupine harvests, a Pilot Point resident said the following:

5. *Caribou Hunting in Alaska: Harvest Statistics*, s.v. "[Year] 2016; [Hunt] Tier II; Hunt # TC505" (by Alaska Department of Fish and Game), http://www.adfg.alaska.gov/index.cfm?adfg=caribouhunting.harvest (accessed November 2019).

> It is hard to find a porcupine anymore they use to be everywhere. I believe they died off same way the caribou did, lack of food or something. Our winters too have changed, we use to have snow and ground frozen all winter. You could travel easy by snowmachine to hunt. Now we hardly get snow, just lots of wind.

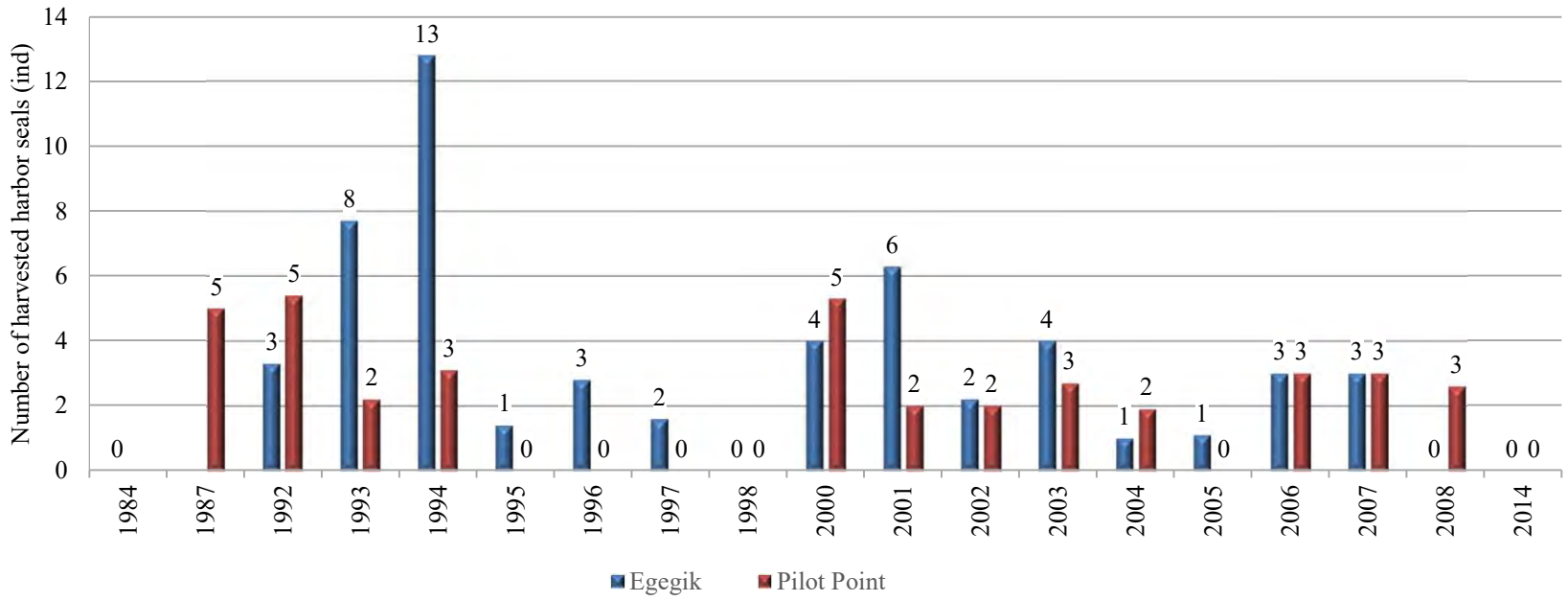
Marine Mammals

Pilot Point was the only community that harvested marine mammals in all three comprehensive study years: 1973, 1987, and 2014 (Figure 5-3). Pilot Point's 2014 harvests of marine mammals accounted for 10% of all resources harvested in pounds usable weight; this was the most of any other study year or community. The 2014 harvests consisted entirely of beluga whales, providing 21 lb per capita in Pilot Point (Table 3-13). Harbor seals and sea otters were also used through receiving. Despite the household survey identifying harvests of only beluga whales in Pilot Point in 2014, harbor seals have historically been important.

Marine mammal (harbor seal) harvests for Egegik and Pilot Point (but not Ugashik) were also documented through an annual statewide marine mammal survey conducted from 1992 through 2008 (but no survey in 1999). This survey was conducted through a collaborative effort between the Alaska Native Harbor Seal Commission and ADF&G Division of Subsistence, in cooperation with the Aleut Marine Mammal Commission and local regional organizations, including Bristol Bay Native Association. Funding for the statewide survey, provided by the National Marine Fisheries Service, ended after 2008. Reports were published annually by the Division of Subsistence and Wolfe et al. (2009) presents harvest data for each of those study years.

Figure 5-4 presents the harvest estimates for harbor seals harvested in the study communities of Egegik and Pilot Point from 1984 through 2014. Estimates are derived from the statewide marine mammal survey (1992–2008) and the 1984 (Egegik), 1987 (Pilot Point), and 2014 comprehensive surveys. Egegik in 1994 had the highest estimated seal harvest (13 seals) and second highest harvest in 1993 (eight seals). Egegik reported harvests of seals annually between 1992 and 2008 except for 1998, with harvests ranging from 1–8 seals. Pilot Point harvested seals in 1987 and 1992–1994, with harvests ranging from 2–5 seals; there were harvests also from 2000–2008 (except for 2005), ranging from 2–5 harbor seals. Note that the only study year for which an estimated marine mammal harvest occurred in Ugashik was 1973, when 2% of the total harvest weight came from marine mammals (Figure 5-3; Table 5-1).

When asked about harbor seals, several residents interviewed in all three communities commented that seal populations are increasing, especially around the mouths of streams and up rivers when salmon are running. Residents noted the presence of seals is problematic because they get into fishing nets and tear nets placed in the river. Some respondents indicated that they would eat more seals, but there are fewer people who know how to hunt them. A Pilot Point resident verbalized his thoughts during the survey in 2015 stating that there should be an exchange between Pilot Point and northern neighboring communities where residents exchange seals for caribou. In Egegik, with a declining population, especially after the school closed, many of the younger men who typically hunted and fished were no longer in the community; also, the declining elder population was not requesting seals, which has contributed toward the decline in seal harvesting. An Egegik elder commented during the survey, "We don't have anyone left here in the village to teach our boys how to hunt."



Note Data are available only for Egegik in 1984 and only for Pilot Point for 1987. Wolfe et al. (2009:70–73) is the source for 1992–2008 and the ADF&G CSIS is the source for 1984, 1987, and 2014.

Figure 5-4.–Estimated harvests of harbor seals, Egegik and Pilot Point, 1984, 1987, 1992–1998, 2000–2008, and 2014.

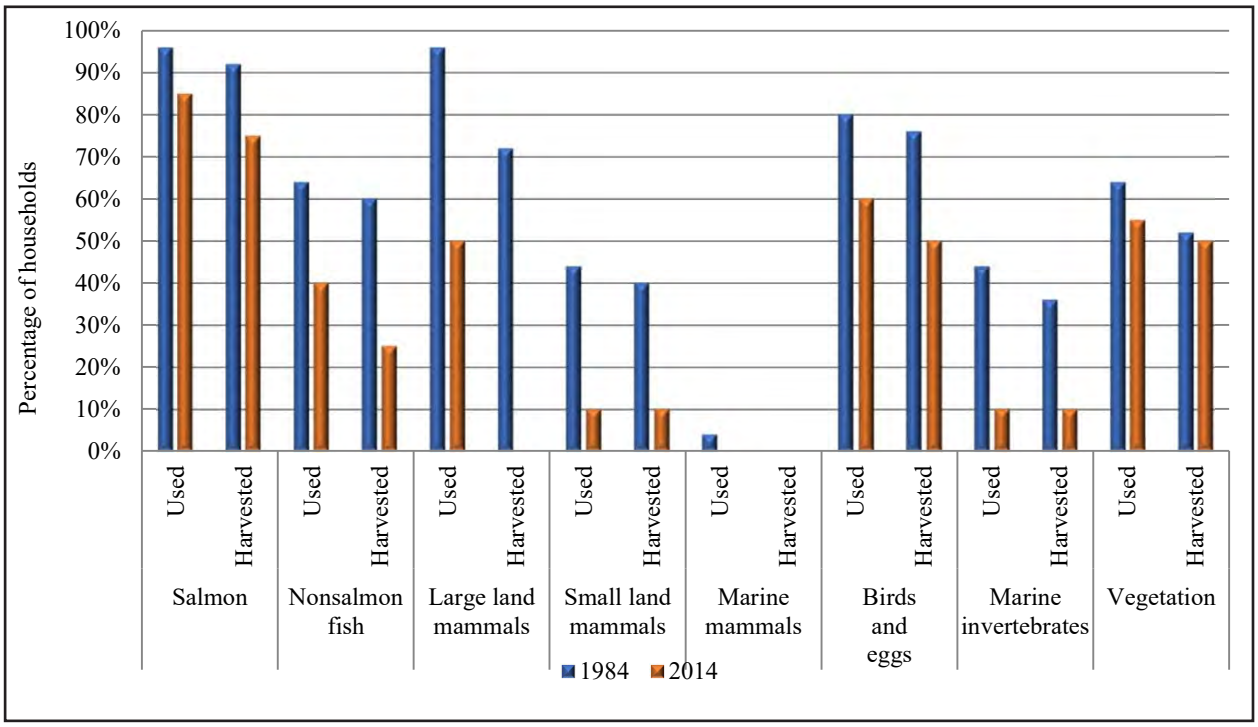


Figure 5-5.–Percentage of households using and harvesting wild resources, by resource category, Egegik, 1984 and 2014

Salmon

Each study community is situated in proximity to abundant salmon runs that provide for relatively easy access for setting a gillnet to acquire salmon. While salmon has always been an important resource in the study communities its value has increased over time as caribou have become unavailable to hunt locally. For all three study communities, salmon composed three-quarters or more of the total harvest weight in the study year 2014. Compared to past comprehensive harvest surveys, the per capita harvests of salmon increased in 2014. In Egegik, compared to 1984, the per capita salmon harvest increased by 53%: 94 lb to 144 lb per capita. Compared to 1987, Pilot Point's salmon per capita harvest increased in 2014 by 65% (95 lb to 157 lb), and Ugashik's increased substantially by 146% (320 lb to 788 lb) (tables 2-26, 3-28 and 4-26). In the earlier study years 1984 and 1987, salmon was the second most harvested resource category by proportion of total harvest weight, following land mammals. Of note, as salmon replaced land mammals as the primary source of wild food protein, as discussed previously, there was generally little change between the proportion of community households that used or harvested salmon between study years (figures 5-5, 5-6, and 5-7).

In every community, the sockeye salmon harvest composed a greater proportion of the total salmon harvest weight in 2014 compared to the first study year (Figure 5-8). This change was accompanied by marked decreases to the Chinook salmon harvest for all communities, and coho salmon harvest for Pilot Point and Ugashik. In both Egegik and Pilot Point, subsistence set gillnet harvests provided an increased proportion of the total salmon harvest weight in 2014 compared to the previous study year; correspondingly, commercial removals contributed less to the total harvest weight in 2014 (Figure 2-35; Figure 3-39). Differing from the other communities, the majority of the salmon harvest weight for Ugashik was removed from commercial catches in both study years 1987 and 2014 (Figure 4-37). Increased harvests of sockeye salmon caught by subsistence gillnet was a significant facet of the overall change to the salmon harvest characteristics in Egegik and Pilot Point between the first study year and 2014. The change was brought about by generally increased harvesting of sockeye salmon compared to other species, and subsistence gillnet use for this single resource increased considerably between the first and second study years.

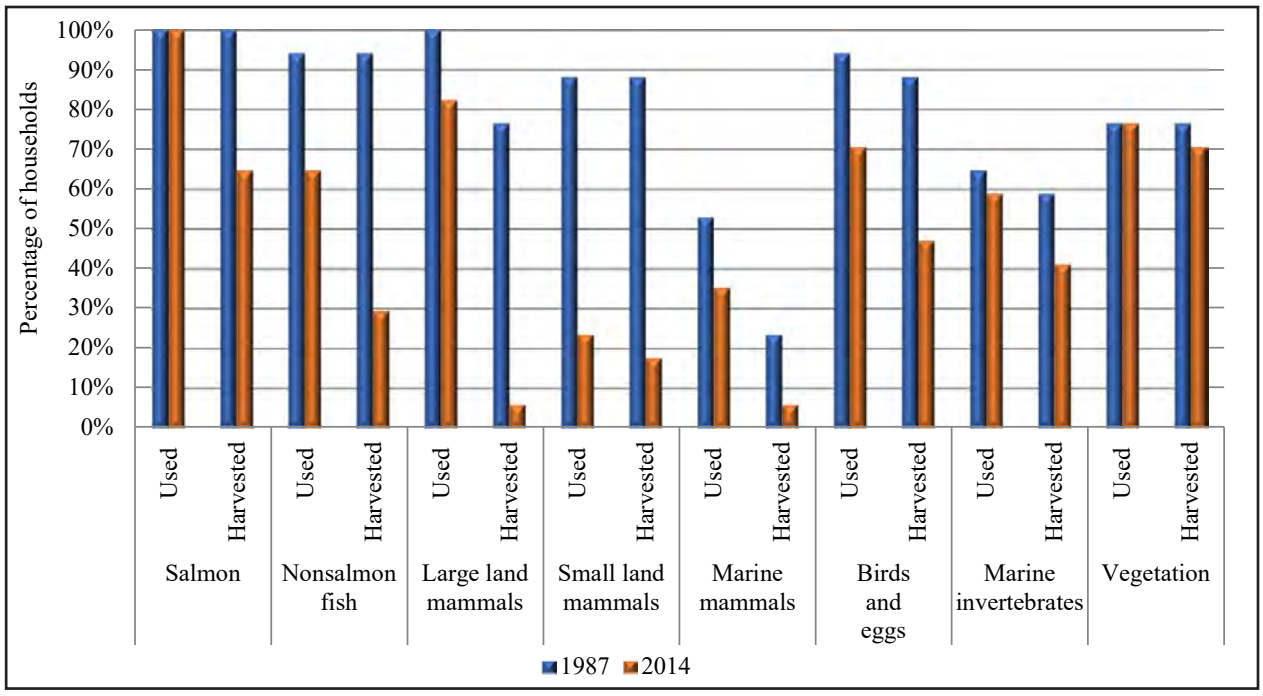


Figure 5-6.–Percentage of households using and harvesting wild resources, by resource category, Pilot Point, 1987 and 2014

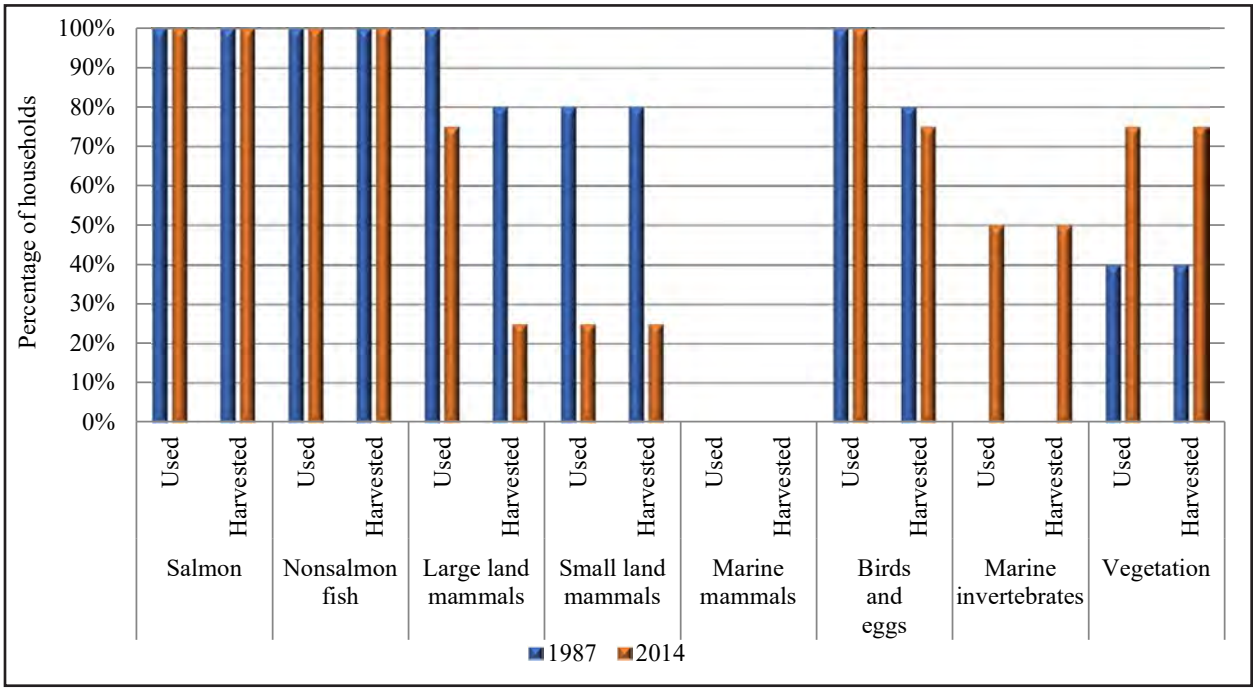
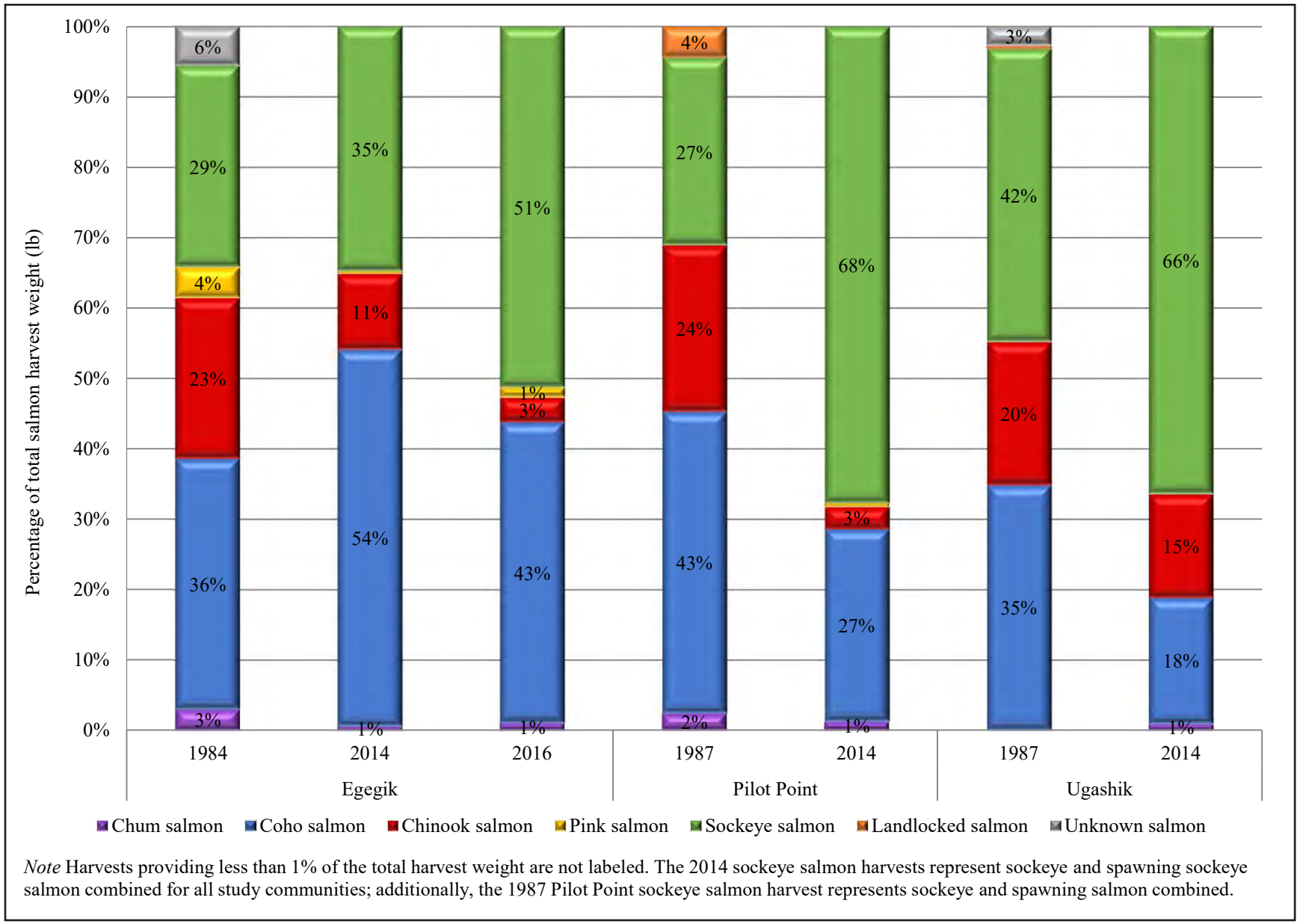


Figure 5-7.–Percentage of households using and harvesting wild resources, by resource category, Ugashik, 1987 and 2014



Note Harvests providing less than 1% of the total harvest weight are not labeled. The 2014 sockeye salmon harvests represent sockeye and spawning sockeye salmon combined for all study communities; additionally, the 1987 Pilot Point sockeye salmon harvest represents sockeye and spawning salmon combined.

Figure 5-8.–Composition of salmon harvest in pounds usable weight, study communities, 1984, 1987, and 2014.

Subsistence Salmon Permit: Annual Harvest Assessment in Egegik and Ugashik Districts of Bristol Bay Management Area

The availability of subsistence salmon harvest data derived from returned permits each year is essential for illustrating the volume of subsistence harvests over time. Permits are an easy and comparably inexpensive assessment tool to help fisheries managers monitor and manage fisheries, and also gather data that can be used to assess whether subsistence needs are being met. By regulation, subsistence salmon permits are required for any Alaska resident who wants to fish in the Bristol Bay Area; as such, harvests by seasonal residents or fishers from other Alaska communities can be captured on an annual basis. However, not all people who subsistence fish acquire the requisite permits, and of those who do, not all return the permit to ADF&G with the season's harvests reported for inclusion in the annual harvest analysis (tables 2-27, 3-29, and 4-28 depict permit return rates for permits issued to people who claimed a study community as place of residence). So, although permits provide a longitudinal dataset of salmon harvests, this highlights one limitation of the permit system and a responsibility of ADF&G to minimize that limitation: establishing and maintaining local permit vendors or other methods to make permits easily accessible for community residents and conducting outreach in subsistence-reliant communities to help residents understand the importance of obtaining a permit and documenting and submitting subsistence harvest information. Permit data complement results from household surveys. Household surveys typically produce more complete results; however, they are expensive and time-consuming to administer and therefore are not conducted annually in Bristol Bay Area communities. Together, the different assessment programs (i.e., permits and household surveys) are essential tools to help communities and fisheries managers monitor and manage salmon resources for all user groups.

This section summarizes harvest estimates based on both permits and household surveys. Harvest estimates based on returned permits are recorded in the ADF&G Alaska Subsistence Fisheries Database (ASFDB) and published in an annual report by the Division of Subsistence; the latest annual report was published by Brown et al. (2021) and presents estimates based on permits through 2018. Although 2018 is later than this project's 2014 study year, these available data are included in tables and figures in this section to provide the most robust dataset available at the time this report was being finalized. Disparate permit-based and survey-based estimates are not uncommon in other rural communities that depend on salmon; for example, see Hutchinson-Scarbrough and Koster (2021) and Hutchinson-Scarbrough et al. (2016:112–116, 191–192).

However, direct comparisons between the two approaches to estimating harvests must be made with care. In Bristol Bay, it is difficult to evaluate the comparability of the permit-based results and the survey-based results for these communities due to the influx of seasonal residents and other commercial fishing families that come to these communities in the summer months during the salmon runs for both commercial and subsistence fishing opportunities. Household surveys do not capture seasonal residents who might have obtained a subsistence permit and listed one of the communities in the study as their residence and, because they live elsewhere in the winter, did not satisfy criteria for participation in the survey. Conversely, this study did not assess whether surveyed households turned in a permit in 2014; if not, then household surveys would have captured harvest data that the permit system did not. Further, the permit return rate by permit holders—who may or may not fulfill the residency criteria for participating in household surveys—varies each year.

2014 Harvest Assessment

As will be discussed below, harvest estimates based on returned permits are substantially different than harvest estimates based on household harvest surveys. Since the beginning of the permit program in 1983, there have only been two household harvest surveys in Pilot Point and Ugashik, and three surveys in Egegik, to provide comparable data. With annual variability in subsistence harvests resulting from resource, economic, and social changes, more data collection is necessary to increase understanding of how the available harvest estimates compare and why they diverge. However, the data available through permit returns and household surveys can be further considered in detail to illustrate changes in harvesting trends.

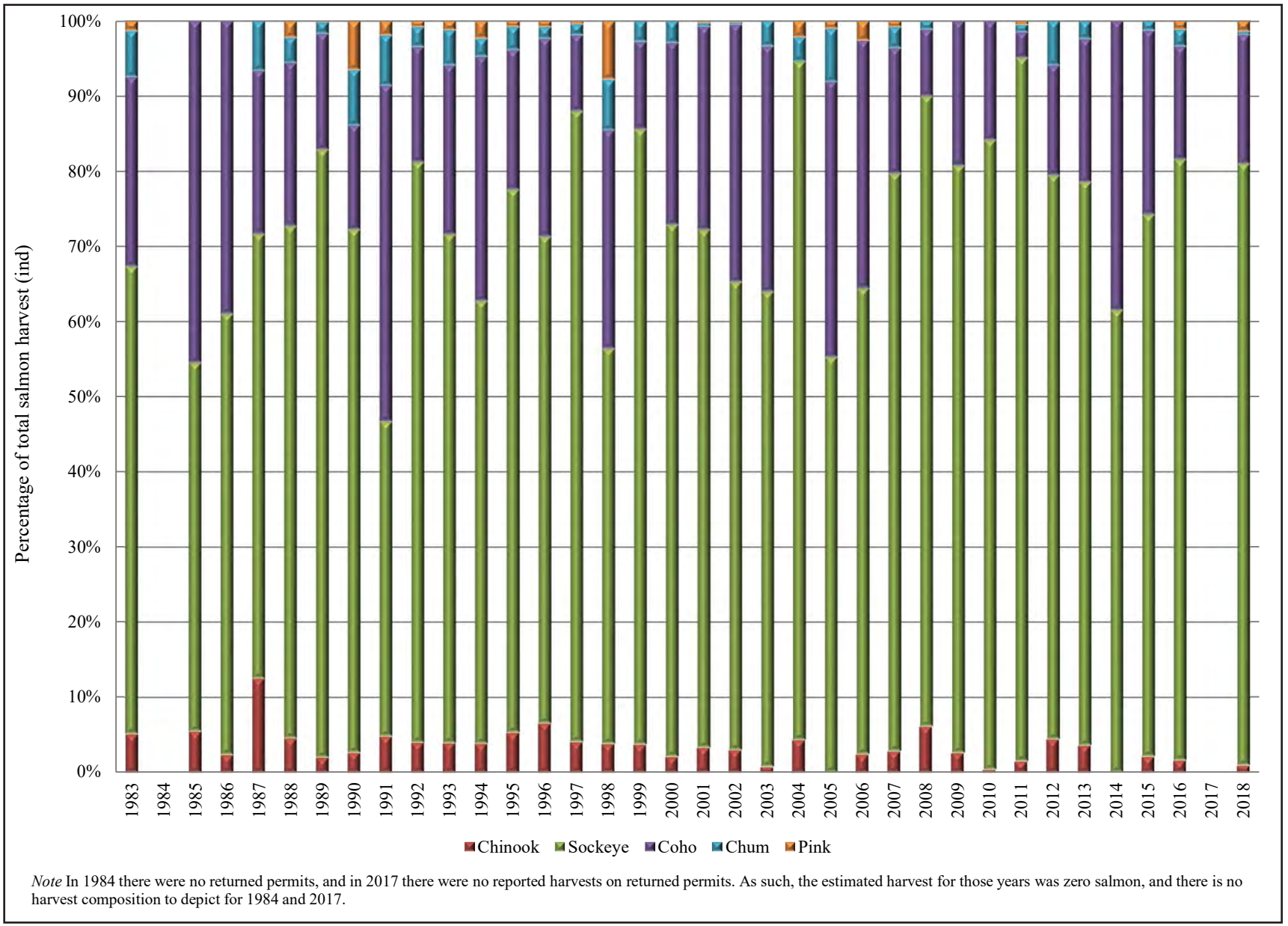
In the Egegik District, 36 permits were issued: 8 of those permits were issued to Egegik residents and 28 to seasonal residents or residents of other Alaska communities (Fall et al. 2017:123, 125). The number of salmon harvested from the Egegik District in 2014, at 1,366 salmon, was lower than the 2013 estimate of 2,380 fish but similar to the 2012 estimate of 1,425 fish. The 2014 estimate was notably lower than the 4,711 fish estimated for 2004 (the second highest estimate since 1984), and was less than the previous five-year average of 2,285 salmon (Fall et al. 2017:119). Egegik residents in 2014 harvested an estimated 12 Chinook, 285 sockeye, 85 coho, 3 chum, and 1 pink salmon, or a total of 387 salmon (Table 2-27). Subtracting the harvest by local residents from the total harvest in the Egegik District, it is evident that most of the salmon were harvested by residents of other Alaska communities: 979 total fish, or 138 Chinook, 687 sockeye, 152 coho, 1 chum, and 1 pink salmon (Fall et al. 2017:123, 125).

In the Ugashik District in 2014, there were 20 permits issued: 7 to Ugashik residents, 5 to Pilot Point residents, and 8 to residents of other Alaska communities (Fall et al. 2017:123, 125). There were an estimated 842 salmon harvested from the Ugashik District: 50 Chinook, 566 sockeye, 224 coho, and 1 chum salmon (Fall et al. 2017:123). In 2014, the total salmon harvest for the district was higher than the previous year's estimate of 672 fish, but lower than in 2012 (1,281 fish) and the 10-year average (2004–2013) of 1,206 fish (Fall et al. 2017:119). Most of the fish harvested in the Ugashik District were acquired by Pilot Point and Ugashik residents. Pilot Point residents harvested an estimated 53 sockeye and 33 coho salmon (Table 3-29). Ugashik residents harvested 641 salmon: 48 Chinook, 401 sockeye, 191 coho, and 1 chum salmon (Table 4-28).

Based on returned permits, harvests of sockeye salmon historically have composed the majority of the salmon harvest in Pilot Point and Ugashik, except for in 1984 and 1990 in Ugashik and 1990 in Pilot Point when more coho salmon were harvested (Figure 5-9; Figure 5-10). For Egegik, harvests of sockeye salmon have been the main portion of the salmon harvest in most years since 1983, though coho salmon composed an increased proportion of the total harvest since 2000, and were harvested more than sockeye salmon in 2004, 2006, 2007, 2012, 2017, and 2018 (Figure 5-11). The reason for this shift was not explored during the study, but Egegik's population has declined (see Figure 2-3), potentially losing harvesters with equipment (boats, nets) who could gain easier or more efficient access to sockeye salmon harvest areas. As described in Chapter 2 of this report, harvests in Egegik were collected by a smaller concentration of households (see Figure 2-13) than is average in many other rural Alaska communities, as determined by previous research (Wolfe et al. 2010). As such, loss of key community harvesters may have an exponential effect on harvest characteristics; also, competition with commercial harvesters could also be among the factors driving change.

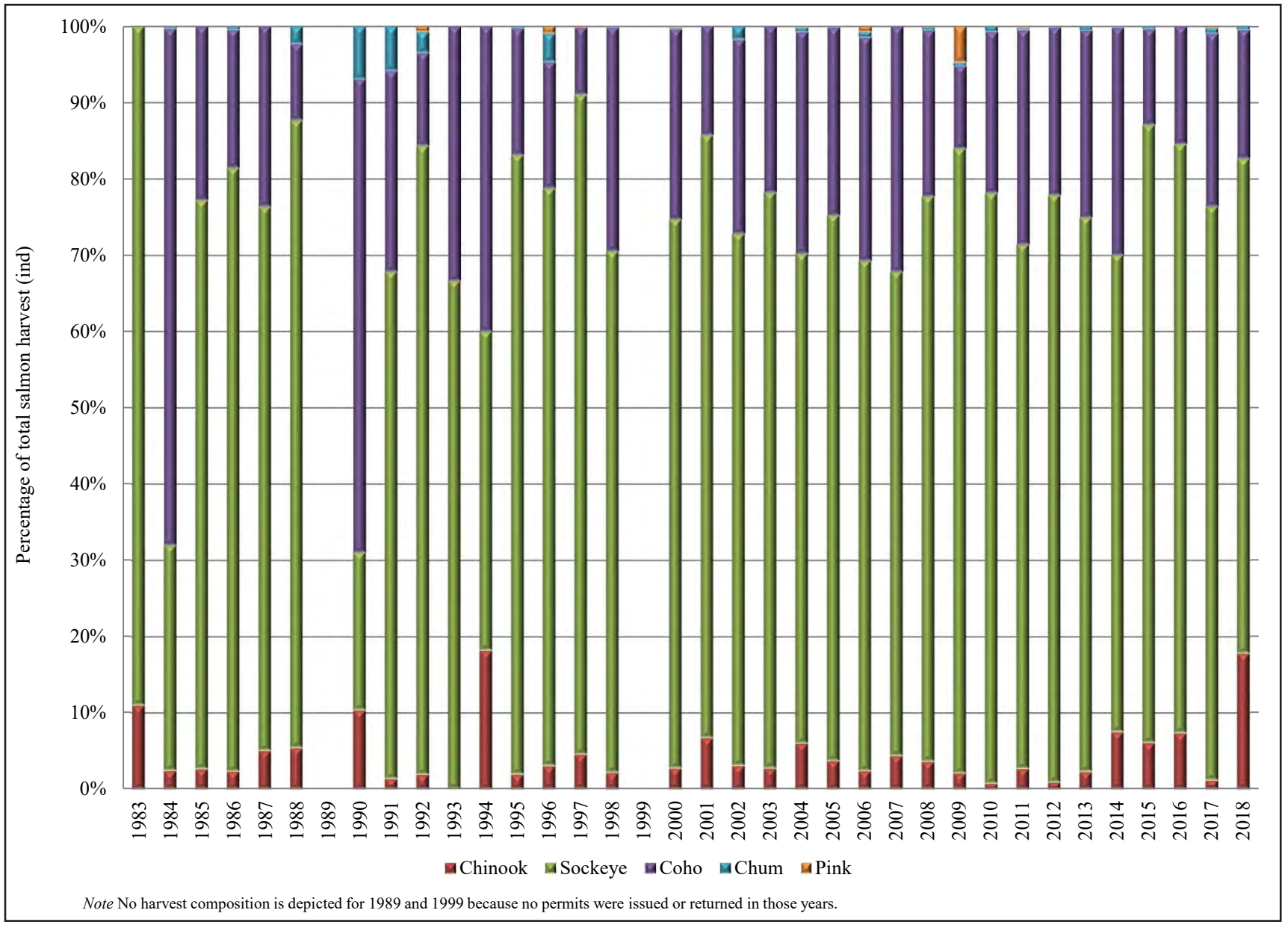
Comparisons of total individual salmon harvest estimates from permit data and household survey data can be seen in Figure 5-12, which depicts that, based on permits, subsistence salmon harvests for Egegik and Pilot Point have decreased from highs throughout the 1990s; harvests for Ugashik have reflected more moderate variation. Harvest data based on household surveys provide a notable contrast, depicting an increased or stable harvest amount of individual fish for each community. The 2014 household harvest survey estimated for Egegik and Pilot Point substantially higher salmon harvests than was estimated through the permit system. With so few data points, it is difficult to understand why the permit- and survey-based estimates are so divergent for those two communities. It is known that the majority of permit holders return their permits each year, but it is not known how accurate the returns are or how many subsistence fishers do not get a fishing permit. Also, because any resident of the state can get a subsistence salmon fishing permit, the harvests based on returned permits include harvests by the residents of the study communities as well as other communities, depending on what place of residence a permit holder declared when receiving a permit. Further studies in these communities focused on the permitting system would be valuable to increase confidence in harvest estimates through both methods.

Not only did the 2014 survey estimate higher total salmon harvests than the studies in 1973 and 1980s, it also documented an increase in the proportion that salmon contributed to the total harvest weight compared to the earlier studies (Table 5-1). But as residents indicated on their survey and told researchers in 2014, salmon harvests increased due to more effort and necessity because these communities had to modify their



Note In 1984 there were no returned permits, and in 2017 there were no reported harvests on returned permits. As such, the estimated harvest for those years was zero salmon, and there is no harvest composition to depict for 1984 and 2017.

Figure 5-9.–Composition of subsistence salmon harvest, by individual fish, based on Bristol Bay Area permit returns, Pilot Point, 1983–2018.



Note No harvest composition is depicted for 1989 and 1999 because no permits were issued or returned in those years.

Figure 5-10.–Composition of subsistence salmon harvest, by individual fish, based on Bristol Bay Area permit returns, Ugashik, 1983–2018.

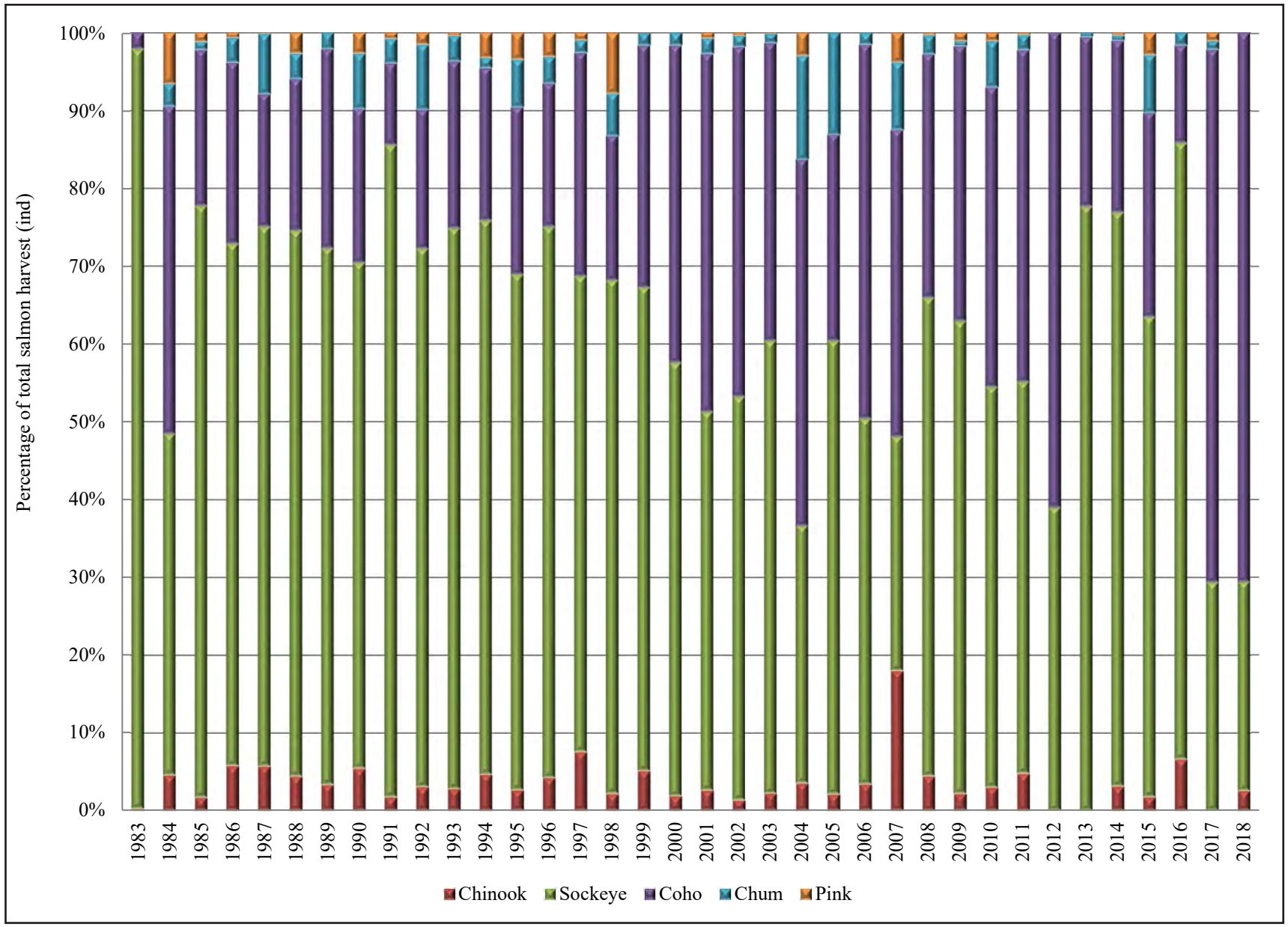
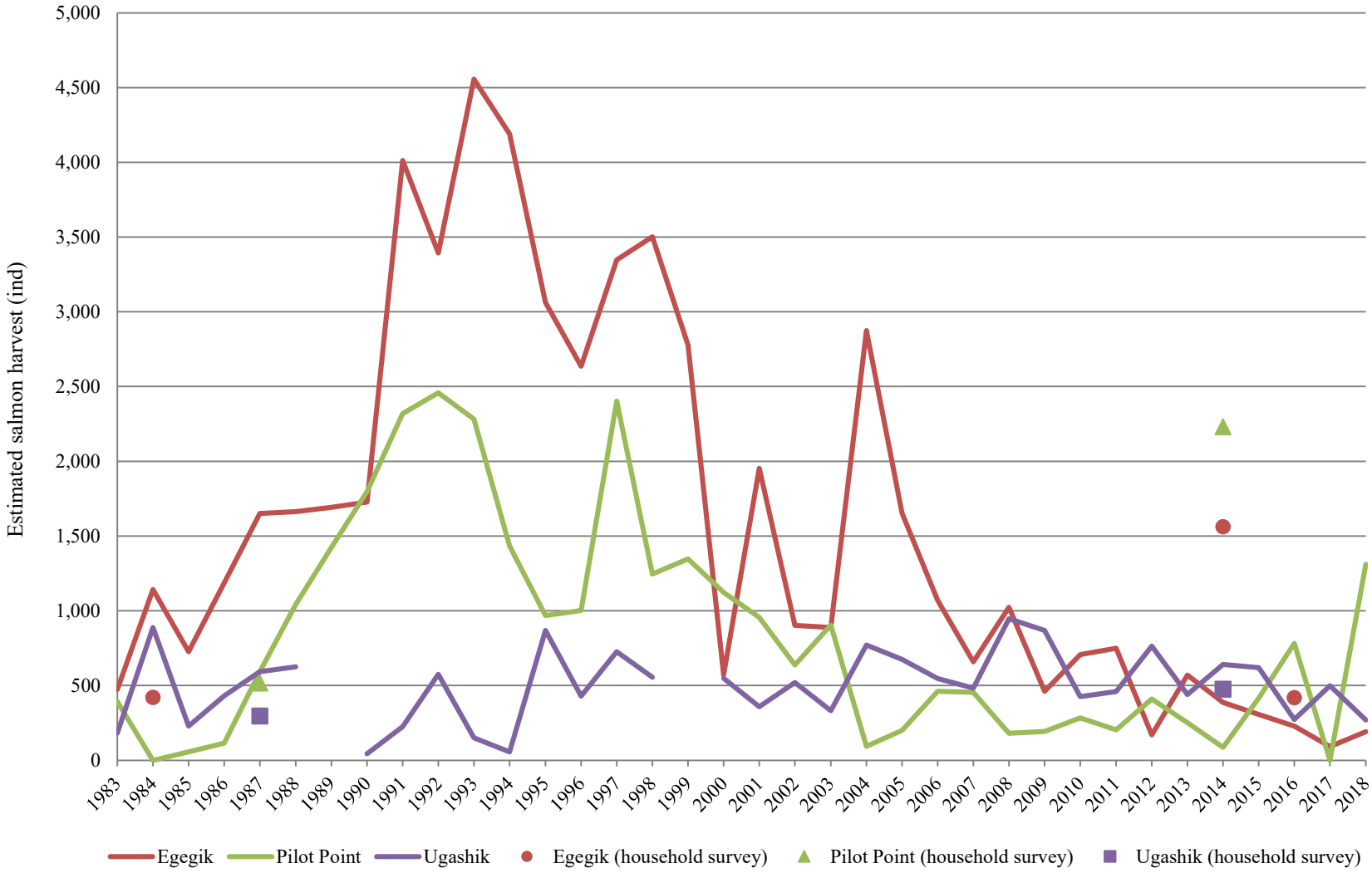


Figure 5-11.–Composition of subsistence salmon harvest, by individual fish, based on Bristol Bay Area permit returns, Egegik, 1983–2018.



Note There were no permits issued and therefore no estimated salmon harvests for Ugashik for 1989 and 1999, which is the cause for the break in the line depicting estimated salmon harvests based on returned permits for Ugashik. Differently, there were permits issued for Pilot Point every year, but no permit was returned for 1984 and no harvests were reported on returned permits in 2017, which resulted in the harvest estimate of zero salmon for Pilot Point for 1984 and 2017. Also, household survey estimates included salmon harvested by subsistence methods and by rod and reel but not salmon retained from commercial catches to improve comparability to the estimates based on returned permits.

Figure 5-12.–Estimated total salmon harvests based on Bristol Bay Area permit returns, 1983–2018, and from household surveys, 1984, 1987, 2014, and 2016, study communities.

diet to make up for the lost protein once obtained through harvesting large land mammals. Several residents commented on their survey form that this was the case. For example, taken from field notes in 2015, a Pilot Point elder commented (paraphrased):

> We eat lots of salmon. I put my net out all summer to get fish. I give away most of the fish I catch to elders and others that need fish. If we had caribou around here I wouldn't have to fish so much.

Changes to Commercial Fishing Participation and Salmon Harvests for Home Use

As described in earlier chapters, many households in these communities participate in both subsistence and commercial fisheries. Salmon may be taken under subsistence fishery regulations with a gillnet in waters proximal to these communities, such as Egegik river and bay and Ugashik river and bay, but since these waters are within commercial fishing districts, residents wishing to fish them are limited to doing so only during commercial openings (5 AAC 01.310(b)). If a resident makes the effort to subsistence fish outside the commercial district, such as upriver from Egegik, a net can be set out to fish at any time, but the fishing location is not convenient for the subsistence fisher. The regulatory stipulations were commented on by a resident of Ugashik during the survey (paraphrased):

> They (commercial fishers) set their nets right out in front of the village. If we want to fish (for subsistence) we have to fish when they are fishing, we can go upriver away outside the commercial district, which is just above the village, but it would be so much easier if we could just set our net out by our house here. Yes, we can set our net out there, but I don't like fishing that close to them (commercial fishers), and some of those guys don't like it either.

Contending interests and opportunity to participate in commercial and subsistence fisheries have existed for a long time. All three studies, from 1973 to 2014, found the economies of Egegik, Pilot Point, and Ugashik were based on commercial and subsistence resource harvesting, combined with seasonal and often part-time wage employment. Commercial fishing was found to be the single most important cash-producing activity for residents of these communities in the 1980s studies, and lack of wage-earning opportunities outside of the commercial fishing industry was a feature in all the communities in the 1980s (Fall and Morris 1987:27, 36; Morris 1987:54). In 1984 in Egegik, most households (96%) commercially fished or worked in the industry (Morris 1987:58, 64). In Pilot Point in 1987, 54% of jobs were connected to fishing or trapping and accounted for 75% of earned income (Fall and Morris 1987:27, 29, 32–33). In Ugashik in 1987, an estimated 79% of all jobs and 79% of income were from the commercial fishing or trapping industries (Fall and Morris 1987:36–37).

In 2014, the fishing industry in Egegik provided 27% of all jobs in the community; commercial fishing jobs were held by 50% of employed households and provided 8% of the total earned income for the community (Table 2-7). Commercial fishing-related jobs in Pilot Point provided 19% of all jobs held by 43% of employed households but provided the smallest proportion of community wage income (6%) of the three study communities (Table 3-7). In Ugashik, commercial fishing provided 50% of all jobs; these jobs were held by 75% of employed households and contributed 73% of total estimated earnings (Table 4-6). Many factors have contributed to the decline in percentage of jobs stemming from and income earned by commercial fishing in each of the study communities: the cost of getting into commercial fishing for younger generations has increased; the costs of participating in the fisheries have increased through raised fuel, electricity, supply, and food expenses; and demographic changes, which will be discussed below. Changing patterns of commercial fishing participation can shape subsistence salmon harvesting activities. As fewer households procure salmon through commercial retention, households may rely more heavily on subsistence harvests for their salmon needs. This change is observed in the study communities. Ugashik is the only community for which commercial fishing remains the majority source of earned income, and the proportion of the total salmon harvest obtained by removal from commercial catches changed the least for Ugashik between the 1980s and 2014 (figures 4-37, 3-39, and 2-35). Fish removed from commercial

harvests provided the majority of the total salmon harvest weight in 1987 (55%) and 2014 (66%) (Figure 4-37). By comparison, considerably less of the total earned income came from commercial fishing in Egegik and Pilot Point in 2014 compared to 1984 and 1987. Approximately 70% of the total salmon harvest weight was removed from commercial catches in both these communities during the earlier study years but by 2014 only 5% (in Pilot Point) and 30% (in Egegik) of the salmon harvest weight came from this source (Figure 2-35; Figure 3-39).

Harvest and Sharing Patterns

Changes in harvest and sharing patterns can stem from multiple factors. In the three study communities, changes documented between study years are: 1) a lower per capita harvest amount (except in Ugashik; discussed above); 2) a reduction in the percentage of households giving away resources (although once again this was not seen in Ugashik); and 3) a reduced number of resources used, harvested, and given away by community members. Some factors that likely have contributed to the observed changes include changes in the population of the communities, both in terms of number of residents but also in the population structure; smaller household sizes; less involvement in commercial fishing and lower community incomes; and smaller harvest areas. Because the changes in per capita harvests have been discussed in a previous section, the rest of this section will concentrate on the other two documented changes and factors associated with harvest and sharing patterns.

Study results from 1987 and 2014 confirm that sharing has consistently occurred in the three study communities. A smaller percentage of households gave away resources in 2014 than in 1987 in Egegik and Pilot Point but the same percentage of Ugashik households (100%) gave away resources in both study years (Figure 5-13). Interestingly, the percentage of households receiving resources in the study communities was nearly the inverse: in 2014, a greater percentage of households received resources in Egegik, a smaller percentage received them in Ugashik, and the same percentage received them in Pilot Point. Fully understanding changes in sharing patterns requires a broader understanding of the complex web of relationships and traditions within which sharing occurs, as well as the varied reasons why households share (Hutchinson-Scarbrough et al. 2020; Langdon and Worl 1981). Understanding the networks in place that facilitate the harvest and sharing of resources in these communities was beyond the scope of this study. However, a recent study on subsistence salmon sharing networks in six Bristol Bay communities, including Egegik, explored the topic in depth (Hutchinson-Scarbrough et al. 2020).

Hutchinson-Scarbrough et al. (2020:318–326) argued that households in Egegik were notable for their insularity compared to the other five Bristol Bay communities in the study. In other words, households in Egegik did not have a lot of connections with other Egegik households in terms of harvesting subsistence salmon or sharing them during the study period. Not many households were involved in harvesting subsistence salmon in Egegik, and those that did were not conducting harvesting activities with other households in the community. This suggests that most households in Egegik harvest independently, or with people who do not live in the community year-round. In terms of sharing, more households participated in that activity, but they were still not well connected to each other, meaning there were not many instances of a household in Egegik sharing salmon with another household in Egegik, or receiving salmon from another local household. There were more ties documented between Egegik residents and people living outside of the community, and greater weights of salmon were shared through these ties, than were documented between Egegik households. Egegik residents reported sharing outside of the community, generally with close family, particularly children who no longer lived in the community. Egegik households identified the Anchorage metro area as the area where they more frequently sent salmon. It is important to recognize that the study was focused on subsistence salmon, but that sharing is rarely limited to just one resource. Salmon composed the majority of harvests in Egegik, though, and were probably most frequently shared. Because a similar study was not conducted in Pilot Point or Ugashik, it is not clear if similarities exist; higher percentages of households reported sharing and receiving resources in Pilot Point and Ugashik in 2014, though, perhaps indicating a more robust sharing network within these two communities.

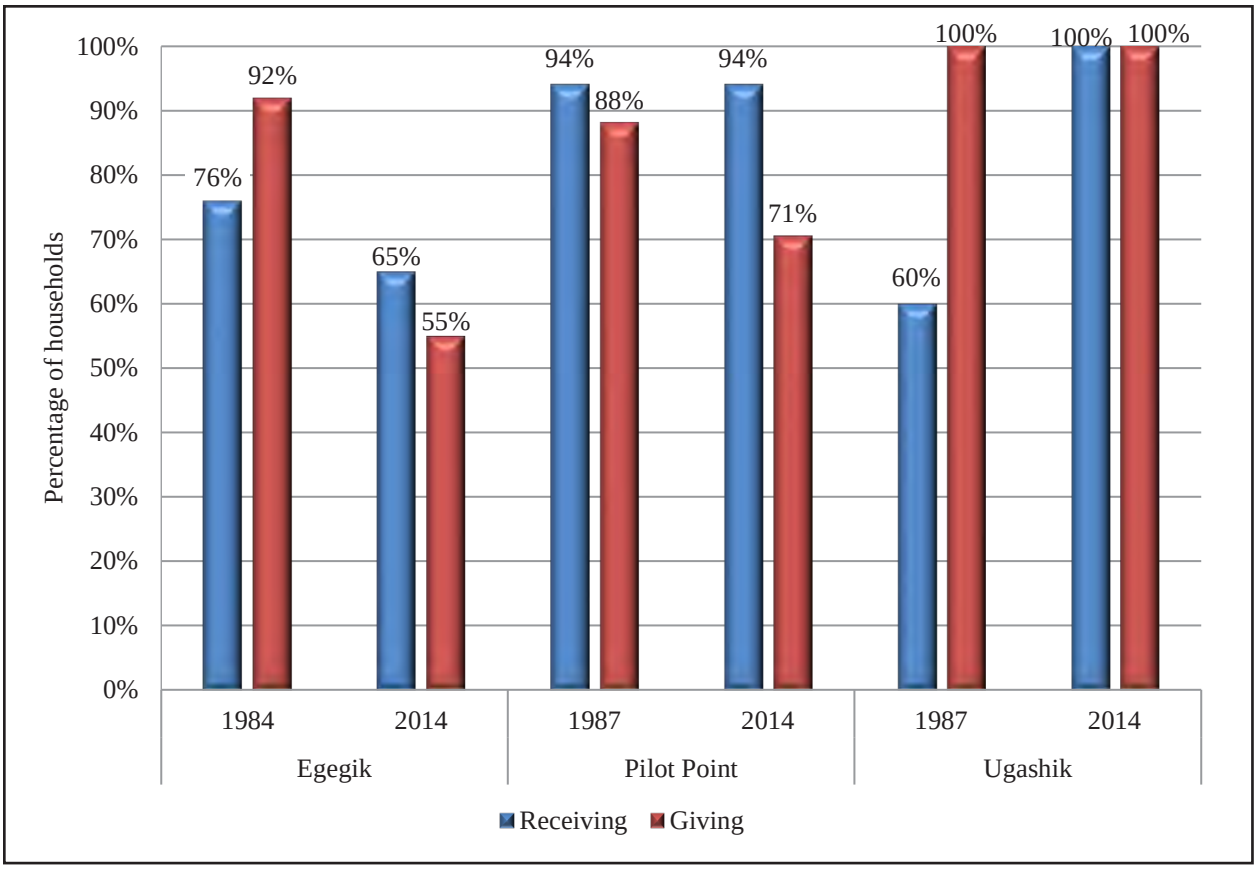


Figure 5-13.–Comparison of the percentages of households receiving and giving all resources, study communities, 1984, 1987, and 2014.

Turning from the topic of "who" is involved in sharing and receiving resources to the element of "how much" was shared, Figure 5-2 shows that from one to six resources were given away or received in each of the three study communities during both study years, and generally more resources were given away than were received. No clear trends emerge in the number of resources given or received between the study years. However, between the two study years, the number of resources used on average by households in all three communities decreased, as did the number of resources harvested (Figure 5-2). The number of resources used in a community, or resource diversity, is an important measure in understanding a community's subsistence patterns. Resource diversity supports resilience and flexibility in terms of supporting a household's diet when wild foods are not seasonally or annually available, as well as supporting involvement in food production by individuals with a range of age, skill, and ability (Fall and Kostick 2018). The decrease in resource diversity was most pronounced in Pilot Point, where households used and harvested 19 and 17 different types of resources, respectively, in 1987 but in 2014 only used 11 and harvested seven. Focusing on the differences in resource diversity between the study communities, rather than internal temporal changes, Ugashik displayed the highest average resource diversity in 2014 and Egegik the lowest. Differently, the maximum number of resources used by any household was highest in Pilot Point (38 resources), followed distantly by Egegik and Ugashik, with a maximum of 19 and 18 resources used by any one household (tables 3-13, 2-13, and 4-13). While studies have documented a smaller change in resource use by Ugashik households over time, there also appears to be the least amount of diversity in resources used among these households. Table 1-8 presents the average number of resources used by the top ranked households (in terms of harvests) and the lowest ranked households: the disparity between these two groups was least in Ugashik.

In a comparison of communities over time, it is important to note changes in the population over the same time period. The lack of connections among Egegik households, and the importance of non-local sharing ties, particularly with close family, noted by Hutchinson-Scarbrough et al. (2020), may be influenced by a variety of factors that were noted by study participants, most notably in demographic changes to the community as well as general declines in the population of year-round residents relative to the large numbers of seasonal residents working in Egegik's commercial fishing industry. Although Pilot Point and Ugashik were not part of the aforementioned sharing study, demographic changes likely influence harvest and sharing patterns in those communities. Pilot Point has maintained a more stable population over time, suggesting that sharing within Pilot Point is likely more robust than in Egegik. Stability in a population fosters increased connections and relationships between residents, strengthening those sharing ties, rather than the external connections demonstrated through Egegik's sharing patterns. For Ugashik, unique community population and economic characteristics may play roles in widening the Ugashik sharing network to households outside of the community. As discussed previously, relative to Egegik and Pilot Point, Ugashik households' involvement in the commercial fishing industry remained high in 2014 compared to the previous study year. The commercial fishing industry in Ugashik causes an influx of seasonal occupants, and the presence of temporary residents likely influences sharing patterns for salmon in particular for Ugashik households. Sharing activities of seasonal residents would not be captured through the household survey, but these residents are likely engaged in both giving and receiving of resources, depending on their connection with the local year-round residents. Seasonal residents could receive gifts of resources not available during the time they are in town or that they are otherwise unable to harvest on their own and could share with year-round households salmon retained from their commercial harvests or other harvesting activities. This is evidenced by the sharing characteristics for Ugashik in 2014: 75% of households shared salmon but only 25% of households received this resource, suggesting salmon were given to recipients outside of the community (Table 4-12).

Compared to Pilot Point, the population of Egegik has declined significantly since 1950 (Figure 2-3; Figure 3-3). One long-time Egegik resident summed up the challenges to the community in terms of its population:

> Half of Egegik exited the area to Wasilla because of the price of fuel back around 1996 and 1997. They come back in the summer to fish, but their homes are empty. Too many people continued to leave and now our school is closed. About the only kids we have here now are babies.

The Egegik school closed in fall 2015[6] due to low enrollment, and according to field notes by researchers, it was reported that most families with children left Egegik before fall 2015 and moved to various locations so their children could attend school. Many of those families returned to Egegik the following summer in order to fish commercially or for subsistence, perhaps explaining some of the unusual harvest and sharing patterns discussed above.

Ugashik's population also declined through 1980 and has held relatively steady since (Figure 4-3). Ugashik has not had a school for decades—at least as far back as the mid-1980s (Fall and Morris 1987:35)—and this study identified only seven households (nine residents) living year-round in Ugashik. Similar to Egegik, local residents explained to researchers that about 15 households generally return in the summer with their families to live, commercial fish, and subsistence fish. Although the population of Pilot Point has been generally more stable, former residents of the community do still return in the summer for commercial and subsistence fishing. In each of these communities, the harvests completed by these former community residents are not included in the community harvest totals for this project. Harvests shared between community residents and former residents do show up in the percentage of households giving and receiving resources.

Demographics of a community shape harvest and sharing patterns for that community beyond just population size; equally important is the composition of the population, for which comparable data from 1984 and

6. Bendinger, Dave. "Egegik School to Close, says LPSD." *KDLG*, Aug. 14, 2015. https://www.kdlg.org/post/egegik-school-close-says-lpsd#stream/0 (accessed July 2021).

1987 are available in Morris (1987) and Fall and Morris (1987). As discussed earlier, some characteristics of highly productive subsistence households are larger households with a pool of adult male labor, higher wage income, and involvement in commercial fishing (Wolfe et al. 2010). Compared to the earlier studies in the 1980s, fewer households in each study community participated in the commercial fishing industry in 2014. The average household size in 2014 in all of the study communities declined compared to 1987 and was relatively small, ranging from 2.8 people in Pilot Point (range 1–8) and 2.9 people in Egegik (range 1–6) to 1.3 in Ugashik (range 1–2) (tables 3-2, 3-2, and 4-2). This compares to an average household size in 1987 of 3.6 people in Pilot Point and 2.3 in Egegik to 2.0 people in Ugashik. The gender and age profile of the communities has also changed, skewing more toward males and males within typically less-productive age brackets. In 1987, males between 25 and 34 made up the largest cohort of Pilot Point residents. In 2014, the largest cohorts for males in the community were ages 0–4 and 55–59 (Table 3-3). In Ugashik in 1987, nearly all the residents were men and only two people were under 20 years of age. In 2014, the balance still skewed heavily toward males, but there were no residents under the age of 50 (Table 4-3). There were 14 males between the ages of 21 and 30 living in Egegik in 1987, composing the largest age cohort of the population. The largest male cohort in 2014 was ages 15–19, of which there were nine (Table 2-3). This was followed by the 45–49 age group with six men. Many of the changes in demographics between the earlier study years and 2014 would predict less productive households and smaller subsistence harvests. In Egegik and Pilot Point, that is seen between the study years: the average household harvest declined and the total per capita harvest declined (Fall and Morris 1987:50; Morris 1987:107; Table 1-8). In Ugashik, despite an aging and smaller population, the total per capita harvest increased (Fall and Morris 1987:50; Table 1-8). However, the mean household harvest did decline, likely owing to the fact that Ugashik households in 2014 comprised only one or two individuals.

Robust sharing patterns support the most vulnerable households in a community. One measure of vulnerability is food security. All three study communities were less food secure than Alaska as a whole and households in Pilot Point were generally less food secure than households in Egegik or Ugashik. More households experienced the condition of food not lasting, either store-bought or subsistence, than any other food insecurity condition (figures 3-7, 2-7, and 4-7). None of the communities had a grocery store during the study year, but Pilot Point did have groceries locally available. Many of the previously noted factors contributing to productive households and levels of sharing would seem to suggest that the food security of Pilot Point households would be greater than of Ugashik or Egegik. An analysis of food security in Yukon and Kuskokwim households from 2009–2011 found that household maturity, access to subsistence foods, and cash income were related to food security (Fall and Kostick 2018:4). These factors are also associated with higher per capita harvests (Wolfe et al. 2010). Average household income was highest in Pilot Point, but was about twice the median income, suggesting a substantial portion of the community's households had an income less than the average (Table 3-6; Figure 3-6). In Egegik, the median household income was relatively similar to the average household income, suggesting a less disparate population (Table 2-6; Figure 2-6). Ugashik had the highest per capita income, the highest per capita harvest, and the highest per capita harvest by the lowest ranked 50% of households (Table 1-8), but the small size of the community and survey sample makes a comparison of food security scores difficult.

Conclusions

The comparison of the three comprehensive survey resource data sets for the three study communities summarized in this chapter shows a continuity in the reliance on wild resources harvested from hunting, fishing, and gathering. In the 2014 study year, most residents of all communities participated in wild resource hunting, fishing, or gathering (figures 2-11, 3-11, and 4-11). In 2014, the per capita harvests, in pounds usable weight, of resources harvested for home use were estimated as follows: 155 lb in Egegik, 211 lb in Pilot Point, and 943 lb in Ugashik. These per capita harvests were close to or higher than the 2014 annual Southwest–Aleutian regional estimate of 206 lb per person of combined resources harvested for subsistence (Fall 2016). Sharing of subsistence foods, a common factor in rural Alaska subsistence-based communities, remains a strong value and the glue that helps maintain cultural values. Another important characteristic is the interplay between cash and subsistence in the community economy. Commercial fishing has remained

a primary contributor to jobs in these communities over time, though income has declined considerably over the last three decades. These communities have and continue to use and rely on local resources that are important for food, culture, and continued sustainability of the communities. Though they have endured hardships, such as population and resource declines, these communities provide exemplary representations of adaptability and resiliency to changes in resource availability, climate, and local environment and habitats. The most significant evidence of resiliency is the response to the Northern Alaska Peninsula caribou herd nearly vanishing from the Alaska Peninsula by 2005, when both state and federal caribou hunts closed. The herd population exhibited a rebound throughout the next decade in which no hunting opportunities were available until a Tier II hunt was allowed after this study occurred, in regulatory year 2016–2017. Despite the lack of opportunity to harvest and use large land mammals, which was the primary resource harvested in the 1970s and 1980s, much of this resource category was replaced by a substantial increase of salmon harvests in comparison to previous studies (Figure 5-3).

ACKNOWLEDGMENTS

This project would not have been possible without the local support in the communities of Egegik, Pilot Point, and Ugashik. We wish to thank the Egegik Village Council, the City of Egegik, the Pilot Point Tribal Council, and the Ugashik Traditional Council for providing us with approval to conduct research in their communities, housing, recommendations for local research assistants, logistical support, and feedback during the community data review meetings. We also are grateful for the help provided by the local research assistants from each community who contacted households about this research and assisted with administering surveys and interviews. Finally, a heartfelt thank you to all the residents in each community who welcomed us into their homes and graciously shared knowledge, and often a snack or meal with us.

REFERENCES CITED

ADF&G, (Alaska Department of Fish and Game)
1985a *Alaska habitat management guide, Southwest region: map atlas*. Alaska Department of Fish and Game Division of Habitat: Juneau. http://www.arlis.org/docs/vol1/C/AHMG/18134286.pdf

1985b *Alaska habitat management guide, Southwest region: reference maps—volume IV: human use of fish and wildlife*. Alaska Department of Fish and Game Division of Habitat: Juneau. http://www.arlis.org/docs/vol1/C/AHMG/index.html

1985c *Alaska habitat management guide, Southwest region: Volume II, human use of fish and wildlife*. Alaska Department of Fish and Game Division of Habitat: Juneau. http://www.arlis.org/docs/vol1/C/AHMG/13907847v2.pdf

ADLWD, (Alaska Department of Labor and Workforce Development)
2019 *Alaska population estimates by borough, census area, city, and census designated place (CDP), 2010–2019*. http://live.laborstats.alaska.gov/pop/estimates/data/TotalPopulationPlace.xls

AMBCC, (Alaska Migratory Bird Co-Management Council)
2020 *Regulations for the 2020 Alaska subsistence spring/summer migratory bird harvest: effective April 2 – August 31, 2020*. Office of the Alaska Migratory Bird Co-Management Council, U.S. Fish and Wildlife Service: Anchorage. http://www.alaskamigratorybirds.com/images/regulations/2020_RegsBook.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 https://acuns.ca/wp-content/uploads/2010/09/EthicsEnglishmarch2003.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.

Brown, C.L., A.R. Brenner, H. Ikuta, E. Mikow, B. Retherford, L.J. Slayton, A. Trainor, J. Park, D. Koster, and M.L. Kostick
2015 *The harvest and uses of wild resources in Mountain Village, Marshall, Nulato, Galena, and Ruby, Alaska, 2010*. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 410: Fairbanks.

Brown, C.L., J.A. Fall, A. Godduhn, L. Hutchinson-Scarbrough, B. Jones, J.M. Keating, B.M. McDavid, C. McDevitt, E. Mikow, J. Park, L.A. Sill, and T. Lemons
2021 *Alaska Subsistence and Personal Use Salmon Fisheries 2018 Annual Report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 484: Anchorage. http://www.adfg.alaska.gov/techpap/TP484.pdf

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), pages 1438S–1448S.

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

Coleman-Jensen, A., M.P. Rabbitt, C. Gregory, and A. Singh
2015 *Household food security in the United States in 2014*. U.S. Department of Agriculture, Economic Research Service, ERR-194: n.p. https://www.ers.usda.gov/webdocs/publications/45425/53740_err194.pdf?v=9146.7

Crowley, D.W.
2017 *Moose management report and plan, Game Management Unit 9: report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Alaska Department of Fish and Game Division of Wildlife Conservation, Species Management Report and Plan ADF&G/DWC/SMR&P-2017-5: Juneau. https://www.adfg.alaska.gov/static/research/wildlife/speciesmanagementreports/pdfs/moose_2015_2020_smr_gmu_9.pdf

Doherty, S.R., editor.
2015 *Northern Alaska Peninsula caribou herd update [Newsletter]*. Alaska Department of Fish and Game Division of Wildlife Conservation: Palmer. http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/brochures_newsletters/northern_alaska_peninsula_caribou_herd_update_2015.pdf

Dumond, D.E.
1981 *Archaeology on the Alaska Peninsula: the Naknek region, 1960–1975*, Anthropological Papers, Number 21. University of Oregon: Eugene, OR.

Elison, T., P. Salomone, T. Sands, M. Jones, C. Brazil, G. Buck, F. West, T. Krieg, and T. Lemons
2015 *2014 Bristol Bay Area annual management report*. Alaska Department of Fish and Game, Fishery Management Report No. 15-24: Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMR15-24.pdf

Fall, J.A.
1993 *An overview of subsistence uses of the Northern Alaska Peninsula Caribou Herd by communities of Game Management units 9C and 9E*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 224: Juneau. http://www.adfg.alaska.gov/techpap/tp224.pdf

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

Fall, J.A., A. Godduhn, L. Hutchinson-Scarbrough, B. Jones, M. Kukkonen, L.A. Sill, A. Trainor, and T. Lemons
2017 *Alaska subsistence and personal use salmon fisheries, 2014 annual report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 427: Anchorage. http://www.adfg.alaska.gov/techpap/TP427.pdf

Fall, J.A. and M.L. Kostick
2018 *Food Security and Wild Resource Harvests in Alaska*. Alaska Department of Fish and Game Division of Subsistence: Anchorage. http://www.adfg.alaska.gov/static-f/home/subsistence/pdfs/food_security_whitepaper.pdf

Fall, J.A. and J.M. Morris
1987 *Fish and wildlife harvests in Pilot Point, Ugashik, and Port Heiden, Alaska Peninsula, 1986–1987.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 158: Juneau. http://www.adfg.alaska.gov/techpap/tp158.pdf

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), pages 1409s–1419s.

Harper, P. and L.A. McCarthy, editors.
2015 *Caribou management report of survey-inventory activities, 1 July 2012–30 June 2014*. Alaska Department of Fish and Game Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2015-4: Juneau. http://www.adfg.alaska.gov/static/research/wildlife/speciesmanagementreports/pdfs/caribou_2015_smr_full_report.pdf

Healy, C.
2001 *Caribou management report of survey–inventory activities 1 July 1998–30 June 2000*. Alaska Department of Fish and Game, Division of Wildlife Conservation: Juneau. http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/01_ca_3.0_man_si.pdf

Hicks, M.V., editor
1997 *Federal Aid in Wildlife Restoration Management report of Survey-Inventory Activities 1 July 1994–30 June 1996: Caribou*. Alaska Department of Fish and Game Division of Wildlife Conservation: Juneau. http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/ca_97_hicks.pdf

Hutchinson-Scarbrough, L., D. Gerkey, G. Halas, C. Larson, L.A. Sill, J.M. Van Lanen, and M. Cunningham
2020 *Subsistence salmon networks in select Bristol Bay and Alaska Peninsula communities, 2016*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 459: Anchorage. http://www.adfg.alaska.gov/techpap/TP459.pdf

Hutchinson-Scarbrough, L. and D. Koster
2021 *Subsistence harvest assessment of salmon and local traditional knowledge of Chinook salmon in the Chignik Management Area, 2014–2016*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 462: Anchorage. http://www.adfg.alaska.gov/techpap/TP462.pdf

Hutchinson-Scarbrough, L., M.A. Marchioni, and T. Lemons
2016 *Chignik Bay, Chignik Lagoon, Chignik Lake, and Perryville: an ethnographic study of traditional subsistence salmon harvests and uses*. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 390: Anchorage. http://www.adfg.alaska.gov/techpap/TP390.pdf

Krieg, T.M., J.A. Fall, C.J. Utermohle, and L. Brown
1998 *Subsistence harvests and uses of caribou, moose, and brown bear in 12 Alaska Peninsula communities, 1995/96 and 1996/97.* Alaska Department of Fish and Game, Division of Subsistence. http://www.adfg.alaska.gov/techpap/tp244.pdf

Krieg, T.M., P.C. Kenner, L. Hutchinson-Scarbrough, and L. Brown
1996 *Subsistence harvests and uses of caribou, moose, and brown bear in 12 Alaska Peninsula communities, 1994/95*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 240, and the Natural Resource Department of the Bristol Bay Native Association.: Juneau and Dillingham. http://www.adfg.alaska.gov/techpap/tp240.pdf

Langdon, S. and R. Worl
1981 *Distribution and exchange of subsistence resources in Alaska*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 55: Anchorage. http://www.adfg.alaska.gov/techpap/tp055.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), pages 1431S–1437S.

Morris, J.M.
1987 *Fish and wildlife uses in six Alaska Peninsula communities: Egegik, Chignik, Chignik Lagoon, Chignik Lake, Perryville, and Ivanof Bay*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 151: Juneau. http://www.adfg.alaska.gov/techpap/tp151.pdf

Naves, L.C.
2010 *Alaska migratory bird subsistence harvest estimates, 2004–2007, Alaska Migratory Bird Co-Management Council*. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 349: Anchorage.

Oswalt, W.H.
1967 *Alaskan Eskimos*. Chandler Publishing Company: San Francisco, CA.

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.

Sellers, R. and M. McNay
1984 *Report to the Board of Game: population status and management considerations of brown bear, caribou, moose and wolves on the Alaska Peninsula*. Alaska Department of Fish and Game: King Salmon, Alaska.

Sill, L.A. and D. Koster, editors.
2017a *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, AK. http://www.adfg.alaska.gov/techpap/TP399.pdf

2017b *The harvest and use of wild resources in Sitka, Alaska, 2013*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 423: Douglas. http://www.adfg.alaska.gov/techpap/TP423.pdf

Social Science Task Force, U.S. Interagency Arctic Research Policy Committee
1995 *Principles for the conduct of research in the Arctic*. Arctic Research of the United States Vol 9(Spring), pages 56–57, https://www.iarpccollaborations.org/uploads/cms/documents/arotus-9.1995-spring.pdf.

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), pages 1449S–1452S.

U.S. Census Bureau
n.d. *2010 Decennial Census and American Community Survey data*. U.S. Department of Commerce, Bureau of the Census, Explore Census Data Homepage: Washington, D.C. https://data.census.gov/cedsci/

U.S. Fish and Wildlife Service, Office of Subsistence Management
2019 *Federal subsistence management regulations for the harvest of fish and shellfish on federal public lands and waters in Alaska: effective 1 April 2019–31March 2021*. Federal Subsistence Board, Office of Subsistence Management: Anchorage. https://www.doi.gov/sites/doi.gov/files/uploads/2019-21_fisheries_regs_book_web.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), pages 1404s–1408s.

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.A. Fall, and M. Riedel
2009 *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Department of Fish and Game Division of Subsistence, and the Alaska Native Harbor Seal Commission, Technical Paper No. 347: Anchorage. http://www.adfg.alaska.gov/techpap/TP347.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.

Wright, J.M., J.M. Morris, and R. Schroeder
1985 *Bristol Bay regional subsistence profile.* Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 114: Dillingham. http://www.adfg.alaska.gov/techpap/tp114.pdf

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 FORM

COMPREHENSIVE SUBSISTENCE SURVEY

INDEX

EGEGIK, ALASKA

From January 1, 2014 to December 31, 2014

printed: 2015-01-30

This survey is used to estimate subsistence harvests and to describe the role of subsistence in the local economy of your community. We will publish a short summary report, that will be available to community members. We share this information with the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Park Service. We work with the Federal Regional Advisory Councils and with local Fish and Game Advisory Committees to better manage 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:	122	122
INTERVIEWER #1:		
INTERVIEWER #2:		
INTERVIEW DATE:		
START TIME:		
STOP TIME:		
DATA CODED BY:		
DATA ENTERED BY:		
SUPERVISOR:		

Photo courtesy of Hazel Nelson

DIVISION OF PUBLIC HEALTH AND SOCIAL SERVICES
3601 C STREET, SUITE 540
ANCHORAGE, AK 99503
907-269-8000

EGEGIK VILLAGE COUNCIL
PO BOX 29
EGEGIK, AK 99579
907-233-2211

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF SUBSISTENCE
333 RASPBERRY ROAD
ANCHORAGE, AK 99518-1565
907-263-2353

HOUSEHOLD MEMBERS

HOUSEHOLD ID

First, I would like to ask about the people in your household, permanent members of your household who sleep at your house. This includes students who return home every summer. I am NOT interested in people who lived with you temporarily, even if they stayed several months.

Last year, that is, between January 1, 2014 and December 31, 2014 WHO were the head or heads of your household?

Is this person answering questions on this survey?		How is this person related to HEAD 1?	Is this person MALE or FEMALE?	Is this person an ALASKA NATIVE?	How OLD is this person?	Where were parents living when this person was born?	How many years has this person lived in egegik?
ID #	*(circle)*	*(relation)*	*(circle)*	*(circle)*	*(years)*	*(AK city or state)*	*(number)*
HEAD 1	Y N		M F	Y N			
1							
NEXT enter spouse or partner. If a household has a SINGLE HEAD, leave HEAD 2 row BLANK and move to PERSON 3.							
HEAD 2	Y N		M F	Y N			
2							
BELOW, enter children (oldest to youngest), grandchildren, grandparents, or anyone else living full-time in this household.							
PERSON 03	Y N		M F	Y N			
3							
PERSON 04	Y N		M F	Y N			
4							
PERSON 05	Y N		M F	Y N			
5							
PERSON 06	Y N		M F	Y N			
6							
PERSON 07	Y N		M F	Y N			
7							
PERSON 08	Y N		M F	Y N			
8							
PERSON 09	Y N		M F	Y N			
9							
PERSON 10	Y N		M F	Y N			
10							
PERSON 11	Y N		M F	Y N			
11							
PERSON 12	Y N		M F	Y N			
12							
PERSON 13	Y N		M F	Y N			
13							

PERMANENT HH MEMBERS: 01 **EGEGIK: 122**

HOUSEHOLD PARTICIPATION

HOUSEHOLD ID

To continue our questions about people in your household, I would like to ask a few questions about participation in subsistence activities...

Between January 1, 2014 and December 31, 2014

Did this person ....

PERSON ID# FROM PAGE 2	FISH		LARGE LAND MAMMALS		SMALL LAND MAMMALS		MARINE MAMMALS		BIRDS AND EGGS		PLANTS / BERRIES / WOOD	
	FISH FOR	PROCESS	HUNT	PROCESS	HUNT / TRAP	PROCESS	HUNT	PROCESS	HUNT / GATHER	PROCESS	GATHER	PROCESS
ID #	*(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
1												
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
2												
PERSON 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
3												
PERSON 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
4												
PERSON 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
5												
PERSON 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
6												
PERSON 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
7												
PERSON 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
8												
PERSON 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
9												
PERSON 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
10												
PERSON 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
11												
PERSON 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
12												
PERSON 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
13												

PERMANENT HH MEMBERS: 01 **EGEGIK: 122**

RETAINED COMMERCIAL HARVESTS: SALMON

HOUSEHOLD ID

1. Do you or members of your household USUALLY participate in commercial SALMON fishing? ..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household PARTICIPATE in a commercial SALMON fishery? ..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

During the last year,[1] did you or members of your household...

A ... FISH commercially for _____?

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

C Was the ____ that you kept INCIDENTAL[4] catch?

if keep is "yes"

Please estimate how many fish ALL MEMBERS OF YOUR HOUSEHOLD removed from commercial harvests for personal use during the last year.

Include COMMERCIALLY HARVESTED fish that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If helping others, report ONLY THIS HOUSEHOLD'S share.

Read names below in blanks above	A COMM FISH?	B KEEP?	C INCI?	How many were removed for your OWN USE?[5] *number*	How many were removed for your CREW?[5] *number*	How many were removed to give to OTHERS? *number*	Units[3] *specify*	*comments*
CHINOOK SALMON	Y N	Y N	Y N				IND.	
113000001								
CHUM SALMON	Y N	Y N	Y N				IND.	
111000001								
SOCKEYE SALMON	Y N	Y N	Y N				IND.	
115000001								
PINK SALMON	Y N	Y N	Y N				IND.	
114000001								
COHO SALMON	Y N	Y N	Y N				IND.	
112000001								
UNKNOWN SALMON	Y N	Y N	Y N				IND.	
119000001								
	Y N	Y N	Y N					
	Y N	Y N	Y N					
	Y N	Y N	Y N					

1 *"LAST YEAR" means between January 1, 2014 and December 31, 2014.*

2 *"USE" includes eating, feeding to dogs, sharing or trading with others, etc.*

3 *UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.*

4 *"INCIDENTAL CATCH" means the fish kept was not being commercially fished. For example, a king salmon kept from a chum commerical fishery.*

5 *Double counting (captains' removals for crew members and crew members' removal for own uses) is fixed in analysis. Collect both.*

RETAINED COMMERCIAL HARVESTS: OTHER FISH

HOUSEHOLD ID

1. Do you or members of your household USUALLY participate in a commercial fishery for OTHER FISH?..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household PARTICIPATE in a commercial fishery for OTHER FISH?..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page …

During the last year,[1] did you or members of your household...

A … FISH commercially for _____?

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

C Was the ____ that you kept INCIDENTAL[4] catch?

if keep is "yes"

Please estimate how many fish ALL MEMBERS OF YOUR HOUSEHOLD removed from commercial harvests for personal use during the last year.

Include COMMERCIALLY HARVESTED fish that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If helping others, report ONLY THIS HOUSEHOLD'S share.

Read names below in blanks above	A COMM FISH?	B KEEP?	C INCI?	How many were removed for your OWN USE?[5] *number*	How many were removed for your CREW?[5] *number*	How many were removed to give to OTHERS? *number*	Units[3] *specify*	*comments*
HALIBUT	Y N	Y N	Y N				LB.	
121800001								
HERRING	Y N	Y N	Y N				GAL.	
120200001								
HERRING SAC ROE	Y N	Y N	Y N				GAL.	
120304001								
CAPELIN	Y N	Y N	Y N				IND.	
120402001								
SEA RUN DOLLIES	Y N	Y N	Y N				IND.	
125006021								
SCULPIN (UNKNOWN) *KAYULUK*	Y N	Y N	Y N				IND.	
123099001								
STARRY FLOUNDER	Y N	Y N	Y N				IND.	
121406001								
SALMON SHARK	Y N	Y N	Y N				IND.	
123204001								
YELLOWFIN SOLE	Y N	Y N	Y N				IND.	
123606001								
PACIFIC COD (GRAY)	Y N	Y N	Y N				IND.	
121004001								

1 *"LAST YEAR" means between January 1, 2014 and December 31, 2014.*

2 *"USE" includes eating, feeding to dogs, sharing or trading with others, etc.*

3 *UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.*

4 *"INCIDENTAL CATCH" means the fish kept was not being commercially fished. For example, a king salmon kept from a chum commerical fishery.*

5 *Double counting (captains' removals for crew members and crew members' removal for own uses) is fixed in analysis. Collect both.*

COMMERCIAL FISHING: 03 **EGEGIK: 122**

RETAINED COMMERCIAL HARVESTS: MARINE INVERTEBRATES

HOUSEHOLD ID

1. Do you or members of your household USUALLY participate in a commercial fishery for MARINE INVERTEBRATES? Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household PARTICIPATE in a commercial fishery for MARINE INVERTEBRATES? ..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

During the last year,[1] did you or members of your household...

A ... FISH commercially for _____?

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

C Was the ____ that you kept INCIDENTAL[4] catch?

if keep is "yes"

Please estimate how many fish ALL MEMBERS OF YOUR HOUSEHOLD removed from commercial harvests for personal use during the last year.

Include COMMERCIALLY HARVESTED fish that members of this household gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If helping others, report ONLY THIS HOUSEHOLD'S share.

Read names below in blanks above	A COMM FISH?	B KEEP?	C INCI?	How many were removed for your OWN USE?[5] *number*	How many were removed for your CREW?[5] *number*	How many were removed to give to OTHERS? *number*	Units[3] *specify*	*comments*
RAZOR CLAMS	Y N	Y N	Y N				GAL.	
500612001								
PACIFIC LITTLENECK CLAMS (STEAMERS)	Y N	Y N	Y N				GAL.	
500608001								
DUNGENESS CRAB	Y N	Y N	Y N				IND.	
501004001								
KING CRAB	Y N	Y N	Y N				IND.	
501008991								
TANNER CRAB	Y N	Y N	Y N				IND.	
501012991								
OCTOPUS	Y N	Y N	Y N				IND.	
502200001								
SHRIMP	Y N	Y N	Y N				GAL.	
503400001								
SCALLOPS	Y N	Y N	Y N				GAL.	
502699001								
	Y N	Y N	Y N					
	Y N	Y N	Y N					

1 *"LAST YEAR" means between January 1, 2014 and December 31, 2014.*

2 *"USE" includes eating, feeding to dogs, sharing or trading with others, etc.*

3 *UNITS will differ by species and situation. Units may be pounds (lbs), individuals (ind), portions of individuals (1/4), buckets, sacks, tubs, etc.*

4 *"INCIDENTAL CATCH" means the fish kept was not being commercially fished. For example, a king salmon kept from a chum commerical fishery.*

5 *Double counting (captains' removals for crew members and crew members' removal for own uses) is fixed in analysis. Collect both.*

COMMERCIAL FISHING: 03 **EGEGIK: 122**

HARVESTS: SALMON

HOUSEHOLD ID

1. Do you or members of your household USUALLY fish for salmon?..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST salmon?..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page …

Please estimate how many salmon ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014, 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 2014 did members of your household …					In 2014 HOW MANY ____ DID YOUR HOUSEHOLD HARVEST WITH ….						*those used just for dog food?*
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SET GILL NET	SEINE NET	DIP NET	ROD & REEL	OTHER GEAR (specify type)	UNITS	
Read names below	*(circle)*					*(number harvested by each gear type)*				*amount / type*	*specify*	*amt*
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												
SPAWNING SOCKEYE	Y N	Y N	Y N	Y N	Y N					/	IND.	
117050000												
COHO (SILVER) SALMON	Y N	Y N	Y N	Y N	Y N					/	IND.	
112000000												
PINK 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												
LANDLOCKED SALMON (SPECIFY)	Y N	Y N	Y N	Y N	Y N					/	IND.	
116000000												

These columns should include ALL the salmon HARVESTED by members of this household in 2014.

ASSESSMENTS: SALMON

110000000

Between January 1, 2014 and December 31, 2014...

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

Last year…

… *did your household use LESS, SAME, or MORE salmon than in recent years?* ..... X L S M

IF LESS or MORE …

X = do not use

WHY was your use different? 1 _____

2 _____

Last year…

…did your household GET ENOUGH salmon?..... Y N

If NO…

What KIND of salmon did you need? _____

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

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

SALMON: 04 **EGEGIK: 122**

HARVESTS: OTHER FISH

HOUSEHOLD ID

1. Do you or members of your household USUALLY fish for other fish? ..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST other fish?..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

Please estimate how many other fish ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014, 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 2014 did members of your household ...					In 2014 HOW MANY _____ DID YOUR HOUSEHOLD HARVEST WITH						those used just for dog food?
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SET GILL NET	DIP NET	ICE FISHING	ROD & REEL	OTHER GEAR (specify type)	UNITS	
Read names below	(circle)					(number harvested by each gear type)				amount / type	specify	amt.
HALIBUT	Y N	Y N	Y N	Y N	Y N					/	LB.	
121800000												
PACIFIC (GRAY) COD	Y N	Y N	Y N	Y N	Y N					/	IND.	
121004000												
BURBOT (LING COD)	Y N	Y N	Y N	Y N	Y N					/	IND.	
124800000												
SABLEFISH (BLACK COD) *BUTTER FISH*	Y N	Y N	Y N	Y N	Y N					/	IND.	
122800000												
HERRING	Y N	Y N	Y N	Y N	Y N					/	GAL.	
120200000												
HERRING SPAWN ON KELP	Y N	Y N	Y N	Y N	Y N					/	GAL.	
120306000												
HERRING SAC ROE	Y N	Y N	Y N	Y N	Y N					/	GAL.	
120304000												
SMELT	Y N	Y N	Y N	Y N	Y N					/	GAL.	
120499000												
STEELHEAD TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.	
126206000												
RAINBOW TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.	
126204000												
DOLLY VARDEN TROUT	Y N	Y N	Y N	Y N	Y N					/	IND.	
125006010												
CHAR (SEA RUN DOLLY VARDEN)	Y N	Y N	Y N	Y N	Y N					/	IND.	
125000000												

These columns should include ALL the other fish HARVESTED by members of this household in 2014.

OTHER FISH: 06 **EGEGIK: 122**

HARVESTS: OTHER FISH

HOUSEHOLD ID

...continued from previous page

Read names below	In 2014 did memers of your household ... USE? (circle)	TRY TO HARVEST? (circle)	HARVEST? (circle)	RECEIVE? (circle)	GIVE AWAY? (circle)	In 2014 HOW MANY _____ DID YOUR HOUSEHOLD HARVEST WITH .... SET GILL NET (number harvested by each gear type)	DIP NET	ICE FISHING	ROD & REEL	OTHER GEAR (specify type) amount / type	UNITS specify	those used just for dog food? amt
TROUT (UNKNOWN)	Y N	Y N	Y N	Y N	Y N					/	IND.	
126299000												
GRAYLING	Y N	Y N	Y N	Y N	Y N					/	IND.	
125200000												
PIKE	Y N	Y N	Y N	Y N	Y N					/	IND.	
125400000												
ROCKFISH (SPECIFY)	Y N	Y N	Y N	Y N	Y N					/	IND.	
122699000												
YELLOWFIN SOLE	Y N	Y N	Y N	Y N	Y N					/	IND.	
123606000												
SCULPIN *KAYULUK*	Y N	Y N	Y N	Y N	Y N					/	IND.	
123099000												
RED IRISH LORD	Y N	Y N	Y N	Y N	Y N					/	IND.	
123006020												
BLACKFISH (FRESHWATER)	Y N	Y N	Y N	Y N	Y N					/	IND.	
124600000												
STARRY FLOUNDER	Y N	Y N	Y N	Y N	Y N					/	IND.	
121406000												
CAPELIN	Y N	Y N	Y N	Y N	Y N					/	IND.	
120402000												
ROUND WHITEFISH (CANDLEFISH)	Y N	Y N	Y N	Y N	Y N					/	IND.	
126412000												
LEAST CISCO WHITEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.	
126406060												
HUMPBACK WHITEFISH	Y N	Y N	Y N	Y N	Y N					/	IND.	
126408000												
OTHER (SPECIFY)	Y N	Y N	Y N	Y N	Y N					/	IND.	
129900000												

These columns should include ALL the other fish HARVESTED by members of this household in 2014.

OTHER FISH: 06 **EGEGIK: 122**

HARVESTS: OTHER FISH

HOUSEHOLD ID

...continued from previous page

ASSESSMENTS: OTHER FISH 120000000

Between January 1, 2014 and December 31, 2014...

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

OTHER FISH: 06 **EGEGIK: 122**

HARVESTS: MARINE INVERTEBRATES

HOUSEHOLD ID

1. Do you or members of your household USUALLY try to harvest marine invertebrates?..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST marine invertebrates?..... Y N

IF the answer to QUESTION 2 is NO, to to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page …

Please estimate how many marine invertebrates ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. INCLUDE marine invertebrates you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	In 2014 did members of your household …					In 2014 HOW MANY _____ DID YOUR HOUSEHOLD HARVEST….		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	AMOUNT	UNITS	COMMENTS
Read names below	(circle)					(amt)	specify	(text)
RAZOR CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500612000								
BUTTER CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500602000								
PACIFIC LITTLENECK CLAMS (STEAMERS)	Y N	Y N	Y N	Y N	Y N		GAL.	
500608000								
SOFT SHELL CLAMS	Y N	Y N	Y N	Y N	Y N		GAL.	
500614000								
CLAMS (UNKNOWN)	Y N	Y N	Y N	Y N	Y N		GAL.	
500699000								
COCKLES (UNKNOWN)	Y N	Y N	Y N	Y N	Y N		GAL.	
500899000								
BLUE MUSSELS	Y N	Y N	Y N	Y N	Y N		GAL.	
502002000								
RED KING CRAB	Y N	Y N	Y N	Y N	Y N		IND.	
501008080								
	Y N	Y N	Y N	Y N	Y N		GAL.	

Include ALL the marine invertebrates HARVESTED by members of this household in 2014.

MARINE INVERTEBRATES: 08 **EGEGIK: 122**

HARVESTS: MARINE INVERTEBRATES

HOUSEHOLD ID

...continued from previous page

ASSESSMENTS: MARINE INVERTEBRATES 500000000

Between January 1, 2014 and December 31, 2014...

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

Last year...

... *did your household use LESS, SAME, or MORE marine invertebrates than in recent years?* ..... X L S M

IF LESS or MORE ... X = do not use

WHY was your use different? _____ 1

_____ 2

Last year...

...did your household GET ENOUGH marine invertebrates?..... Y N

If NO...

What KIND of marine invertebrates did you need? _____

	... *not noticable?*	... *minor ?*	... *major?*	... *Severe?*
How would you describe the impact to your household of not getting enough marine invertebrates last year?	*(0)*	*(1)*	*(2)*	*(3)*

HARVESTS: LARGE LAND MAMMALS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for large land mammals? ..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST large land mammals? ..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page …

Please estimate how many large land mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. 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 harvest.

Read names below	In 2014 did members of your household … USE? (circle)	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	SEX M/F	In 2014 HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST…. JANUARY (specify amount harvested per month)	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS (specify)
CARIBOU	Y N	Y N	Y N	Y N	Y N	M														IND
						F														IND
211000000						UNK														IND
211000001						1														
211000002						2														
211000009						-9														
MOOSE	Y N	Y N	Y N	Y N	Y N	M														IND
						F														IND
211800000						UNK														IND
211800001						1														
211800002						2														
211800009						-9														
BROWN BEAR	Y N	Y N	Y N	Y N	Y N															IND.
210800000																				
	Y N	Y N	Y N	Y N	Y N															IND.

Include ALL the large land mammals HARVESTED by members of this household in 2014.

ASSESSMENTS: 211000002 211800000

Between January 1, 2014 and December 31, 2014…

To conclude our 211000002 section, I am going to ask a few general questions about large land mammals.

Last year…

… did your household use LESS, SAME, or MORE 211000002 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 211000002? ..... Y N

If NO…

What KIND of 211000002 did you need? _____

How would you describe the impact to your household of not getting enough 211000002 last year?

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

LARGE LAND MAMMALS: 10 EGEGIK: 122

HARVESTS: SMALL LAND MAMMALS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt or trap for small land mammals? ..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST small land mammals? ..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

Please estimate how many small land mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. INCLUDE small land mammals 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 harvest.

Read names below	In 2014 did members of your household ... (circle)					In 2014 HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST.... (specify amount harvested per month)													MANY _____ WERE USED FOR FUR ONLY? (amount)	UNITS (specify)
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN		
BEAVER	Y N	Y N	Y N	Y N	Y N															IND.
220200000																				
PORCUPINE	Y N	Y N	Y N	Y N	Y N															IND.
222600000																				
SNOWSHOE HARE	Y N	Y N	Y N	Y N	Y N															IND.
221004000																				
UNKNOWN HARE	Y N	Y N	Y N	Y N	Y N															IND.
221099000																				
RED FOX	Y N	Y N	Y N	Y N	Y N															IND.
220804040																				
CROSS FOX	Y N	Y N	Y N	Y N	Y N															IND.
220804020																				
ARCTIC FOX	Y N	Y N	Y N	Y N	Y N															IND.
220802000																				
COYOTE	Y N	Y N	Y N	Y N	Y N															IND.
220400000																				
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																				
MARMOT	Y N	Y N	Y N	Y N	Y N															IND.
221800000																				
MARTEN	Y N	Y N	Y N	Y N	Y N															IND.
222000000																				

Include ALL the small land mammals HARVESTED by members of this household in 2014.

SMALL LAND MAMMALS: 14 **EGEGIK: 122**

HARVESTS: SMALL LAND MAMMALS

HOUSEHOLD ID

...continued from previous page

Read names below	In 2014 did members of your household ... USE? (circle)	TRY TO HARVEST? (circle)	HARVEST? (circle)	RECEIVE? (circle)	GIVE AWAY? (circle)	In 2014 HOW MANY ____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST.... JANUARY (specify amount harvested per month)	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	HOW MANY ____ WERE USED FOR FUR ONLY? (amount)	UNITS (specify)
MINK	Y N	Y N	Y N	Y N	Y N															IND.
222200000																				
MUSKRAT	Y N	Y N	Y N	Y N	Y N															IND.
222400000																				
WEASEL	Y N	Y N	Y N	Y N	Y N															IND.
223000000																				
WOLF	Y N	Y N	Y N	Y N	Y N															IND.
223200000																				
WOLVERINE	Y N	Y N	Y N	Y N	Y N															IND.
223400000																				
PARKA SQUIRREL (GROUND)	Y N	Y N	Y N	Y N	Y N															IND.
222802000																				
	Y N	Y N	Y N	Y N	Y N															IND.
	Y N	Y N	Y N	Y N	Y N															IND.

Include ALL the small land mammals HARVESTED by members of this household in 2014.

ASSESSMENTS: SMALL LAND MAMMALS 220000000

Between January 1, 2014 and December 31, 2014...

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?

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

SMALL LAND MAMMALS: 14 **EGEGIK: 122**

HARVESTS: MARINE MAMMALS

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for marine mammals..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST marine mammals?..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

Please estimate how many marine mammals ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. 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 harvest.

Read names below	In 2014 did members of your household ... USE? (circle)	TRY TO HARVEST? (circle)	HARVEST? (circle)	RECEIVE? (circle)	GIVE AWAY? (circle)	In 2014 HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST.... SEX M/F	JANUARY (specify amount harvested per month)	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	UNITS (specify)
HARBOR (SPOTTED) SEAL	Y N	Y N	Y N	Y N	Y N	M														IND
						F														IND
300806000						UNK														IND
300806001						1														
300806002						2														
300806009						-9														
SEA LION	Y N	Y N	Y N	Y N	Y N	M														IND
						F														IND
301200000						UNK														IND
301200001						1														
301200002						2														
301200009						-9														
FUR SEAL	Y N	Y N	Y N	Y N	Y N															IND.
300804000																				
SEAL (UNKNOWN)	Y N	Y N	Y N	Y N	Y N															IND.
300899000																				
WALRUS	Y N	Y N	Y N	Y N	Y N															IND.
301400000																				
BELUGA	Y N	Y N	Y N	Y N	Y N															IND.
301602000																				
HARBOR PORPOISE	Y N	Y N	Y N	Y N	Y N															IND.
300604000																				
SEA OTTER	Y N	Y N	Y N	Y N	Y N															IND.
301000000																				
	Y N	Y N	Y N	Y N	Y N															
	Y N	Y N	Y N	Y N	Y N															

Include ALL the marine mammals HARVESTED by members of this household in 2014.

MARINE MAMMALS: 12 **EGEGIK: 122**

HARVESTS: MARINE MAMMALS

HOUSEHOLD ID

...continued from previous page

ASSESSMENTS: MARINE MAMMALS 300000000

Between January 1, 2014 and December 31, 2014...

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

Last year...

... *did your household use LESS, SAME, or MORE marine mammals than in recent years?* ..... X L S M

IF LESS or MORE ... X = do not use

WHY was your use different? _____ 1

_____ 2

Last year...

...did your household GET ENOUGH marine mammals?..... Y N

If NO...

What KIND of marine mammals did you need? _____

How would you describe the impact to your household of not getting enough marine mammals last year?	... *not noticable?* (0)	... *minor ?* (1)	... *major?* (2)	... *Severe?* (3)

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for migratory waterfowl?..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST migratory waterfowl?..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

Please estimate how many migratory waterfowl ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. INCLUDE migratory waterfowl 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 harvest.

	In 2014 did members of your household ...					In 2014 HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST....					
						WINTER	SPRING	SUMMER	FALL		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY FEBRUARY MARCH APRIL	MAY JUNE	JULY AUGUST SEPTEMBER	OCTOBER NOVEMBER DECEMBER	UNKNOWN SEASON	UNITS
Read names below	(circle)					(specify amount harvested per season)					(specify)
CANADA GEESE	Y N	Y N	Y N	Y N	Y N						IND.
410404000											
WHITE-FRONTED GEESE *(SPECKLEBELLY)*	Y N	Y N	Y N	Y N	Y N						IND.
410410000											
BRANT (SEA GEESE)	Y N	Y N	Y N	Y N	Y N						IND.
410402000											
EMPEROR GEESE	Y N	Y N	Y N	Y N	Y N						IND.
410406000											
SNOW GEESE	Y N	Y N	Y N	Y N	Y N						IND.
410408000											
GEESE (UNKNOWN)	Y N	Y N	Y N	Y N	Y N						IND.
410499000											
MALLARD	Y N	Y N	Y N	Y N	Y N						IND.
410214000											
NORTHERN PINTAIL	Y N	Y N	Y N	Y N	Y N						IND.
410220000											
GOLDENEYE	Y N	Y N	Y N	Y N	Y N						IND.
410210000											
NORTHERN SHOVELER	Y N	Y N	Y N	Y N	Y N						IND.
410230000											
GADWALL	Y N	Y N	Y N	Y N	Y N						IND.
410208000											
GREEN WINGED TEAL	Y N	Y N	Y N	Y N	Y N						IND.
410232060											

Include ALL the migratory waterfowl HARVESTED by members of this household in 2014.

MIGRATORY WATERFOWL: 15 **EGEGIK: 122**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

...continued from previous page

Read names below	In 2014 did members of your household ... USE? (circle)	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	In 2014 HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST.... WINTER JANUARY FEBRUARY MARCH APRIL (specify amount harvested per season)	SPRING MAY JUNE	SUMMER JULY AUGUST SEPTEMBER	FALL OCTOBER NOVEMBER DECEMBER	UNKNOWN SEASON	UNITS (specify)
BUFFLEHEAD	Y N	Y N	Y N	Y N	Y N						IND.
410202000											
HARLEQUIN	Y N	Y N	Y N	Y N	Y N						IND.
410212000											
SCAUP (UNKNOWN)	Y N	Y N	Y N	Y N	Y N						IND.
410226990											
WIGEON (UNKNOWN)	Y N	Y N	Y N	Y N	Y N						IND.
410236990											
LONG-TAILED DUCK (OLD SQUAW)	Y N	Y N	Y N	Y N	Y N						IND.
410218000											
CANVASBACK	Y N	Y N	Y N	Y N	Y N						IND.
410204000											
COMMON MERGANSER	Y N	Y N	Y N	Y N	Y N						IND.
410216020											
RED-BREASTED MERGANSER	Y N	Y N	Y N	Y N	Y N						IND.
410216040											
MERGANSER (UNKNOWN)	Y N	Y N	Y N	Y N	Y N						IND.
410216990											
BLACK SCOTER (BLACK DUCK)	Y N	Y N	Y N	Y N	Y N						IND.
410228020											
COMMON EIDER	Y N	Y N	Y N	Y N	Y N						IND.
410206020											
KING EIDER	Y N	Y N	Y N	Y N	Y N						IND.
410206040											
STELLER EIDER	Y N	Y N	Y N	Y N	Y N						IND.
410206080											
DUCK (UNKNOWN)	Y N	Y N	Y N	Y N	Y N						IND.
410299000											

Include ALL the migratory waterfowl HARVESTED by members of this household in 2014.

MIGRATORY WATERFOWL: 15 **EGEGIK: 122**

HARVESTS: MIGRATORY WATERFOWL

HOUSEHOLD ID

1. Do you or members of your household USUALLY hunt for migratory waterfowl?..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014)
did you, or members of your household USE or TRY TO HARVEST migratory waterfowl?..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page …

Please estimate how many migratory waterfowl ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. INCLUDE migratory waterfowl 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 harvest.

	In 2014 did members of your household …					In 2014 HOW MANY _____ DID MEMBERS OF YOUR HOUSEHOLD HARVEST….					
						WINTER	SPRING	SUMMER	FALL		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	JANUARY FEBRUARY MARCH APRIL	MAY JUNE	JULY AUGUST SEPTEMBER	OCTOBER NOVEMBER DECEMBER	UNKNOWN SEASON	UNITS
Read names below	(circle)					(specify amount harvested per season)					(specify)
GROUSE	Y N	Y N	Y N	Y N	Y N						IND.
421802990											
PTARMIGAN	Y N	Y N	Y N	Y N	Y N						IND.
421804000											
TUNDRA SWAN	Y N	Y N	Y N	Y N	Y N						IND.
410604000											
TRUMPETER SWAN	Y N	Y N	Y N	Y N	Y N						IND.
410602000											
UNKNOWN SWAN	Y N	Y N	Y N	Y N	Y N						IND.
410699000											
SANDHILL CRANE	Y N	Y N	Y N	Y N	Y N						IND.
410802000											
COMMON SNIPE	Y N	Y N	Y N	Y N	Y N						IND.
411002000											

Include ALL the migratory waterfowl HARVESTED by members of this household in 2014.

ASSESSMENTS: MIGRATORY WATERFOWL 410000000

Between January 1, 2014 and December 31, 2014…

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

Last year…

… *did your household use LESS, SAME, or MORE migratory waterfowl than in recent years?* ..... X L S M

IF LESS or MORE … X = do not use

WHY was your use different? _____ 1

_____ 2

Last year…

…did your household GET ENOUGH migratory waterfowl?..... Y N

If NO…

What KIND of migratory waterfowl did you need? _____

How would you describe the impact to your household of not getting enough migratory waterfowl last year?	… not noticable? (0)	… minor ? (1)	… major? (2)	… Severe? (3)

MIGRATORY WATERFOWL: 15 **EGEGIK: 122**

HARVESTS: BIRD EGGS

HOUSEHOLD ID

1. Do you or members of your household USUALLY try to harvest bird eggs? ..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST bird eggs? ..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

Please estimate how many bird eggs ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. INCLUDE bird eggs you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	In 2014 did members of your household ...					In 2014 HOW MANY _____ DID YOUR HOUSEHOLD HARVEST....		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	AMOUNT	UNITS	COMMENTS
Read names below	(circle)					(amt)	specify	(text)
GULL EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
431212000								
MURRE EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
431218000								
GEESE EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
430400000								
DUCK EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
430200000								
SWAN EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
430600000								
TERN EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
431226000								
UNKNOWN EGGS	Y N	Y N	Y N	Y N	Y N		IND.	
439900000								

Include ALL the bird eggs HARVESTED by members of this household in 2014.

ASSESSMENTS: BIRD AND EGGS 430000000

Between January 1, 2014 and December 31, 2014...

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

Last year...

... *did your household use LESS, SAME, or MORE bird and eggs than in recent years?* ..... X L S M

IF LESS or MORE ... X = do not use

WHY was your use different? _____ 1

_____ 2

Last year...

...did your household GET ENOUGH bird and eggs? ..... Y N

If NO...

What KIND of bird and eggs did you need? _____

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

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

BIRD EGGS: 08 **EGEGIK: 122**

HARVESTS: PLANTS AND BERRIES

HOUSEHOLD ID

1. Do you or members of your household USUALLY try to harvest plants and berries? ..... Y N

2. During the last year (between January 1, 2014 and December 31, 2014) did you, or members of your household USE or TRY TO HARVEST plants and berries? ..... Y N

IF the answer to QUESTION 2 is NO, go to the *NEXT PAGE*.

IF the answer is *YES*, continue on this page ...

Please estimate how many plants and berries ALL MEMBERS OF YOUR HOUSEHOLD HARVESTED in 2014. INCLUDE plants and berries you gave away, ate fresh, fed to dogs, lost to spoilage, or got by helping others. If harvesting with others, report ONLY YOUR SHARE of the harvest.

	In 2014 did members of your household ...					In 2014 HOW MANY _____ DID YOUR HOUSEHOLD HARVEST....		
	USE?	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	AMOUNT	Units	COMMENTS
Read names below	*(circle)*					*(amt)*	*specify*	*(text)*
CROWBERRY *(BLACKBERRY)*	Y N	Y N	Y N	Y N	Y N		GAL.	
601007000								
BLUEBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601002000								
LOW BUSH CRANBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601004000								
SALMONBERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601022000								
NAGOONBERRY *BULUK*	Y N	Y N	Y N	Y N	Y N		GAL.	
601018000								
OTHER WILD BERRY	Y N	Y N	Y N	Y N	Y N		GAL.	
601099000								
WILD CELERY *PUSHKI*	Y N	Y N	Y N	Y N	Y N		GAL.	
602032000								
WILD PARSLEY *PETRUSKI*	Y N	Y N	Y N	Y N	Y N		GAL.	
602034000								
BEACH ASPARAGUS	Y N	Y N	Y N	Y N	Y N		GAL.	
602002000								
LABRADOR TEA	Y N	Y N	Y N	Y N	Y N		GAL.	
602018000								
WILD SPINACH *CHAVASUK*	Y N	Y N	Y N	Y N	Y N		GAL.	
602025000								
RYE GRASS (ROOTS) *DAHICK*	Y N	Y N	Y N	Y N	Y N		GAL.	
602033000								

Include ALL the plants and berries HARVESTED by members of this household in 2014.

PLANTS AND BERRIES: 17 **EGEGIK: 122**

HARVESTS: PLANTS AND BERRIES

HOUSEHOLD ID

...continued from previous page

Read names below	In 2014 did members of your household ... USE? (circle)	TRY TO HARVEST?	HARVEST?	RECEIVE?	GIVE AWAY?	In 2014 HOW MANY ____ DID YOUR HOUSEHOLD HARVEST.... AMOUNT (amt)	Units (specify)	COMMENTS (text)
OTHER WILD GREENS	Y N	Y N	Y N	Y N	Y N		GAL.	
602038000								
	Y N	Y N	Y N	Y N	Y N		GAL.	
	Y N	Y N	Y N	Y N	Y N		GAL.	
	Y N	Y N	Y N	Y N	Y N		GAL.	
	Y N	Y N	Y N	Y N	Y N		GAL.	
	Y N	Y N	Y N	Y N	Y N		GAL.	

Include ALL the plants and berries HARVESTED by members of this household in 2014.

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

Please estimate the percentage of your household's heating needs in 2014 that came from firewood.

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

(circle one)

ASSESSMENTS: PLANTS AND BERRIES 600000000

Between January 1, 2014 and December 31, 2014...

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?

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

PLANTS AND BERRIES: 17 **EGEGIK: 122**

HARVEST SUMMARY: ALL RESOURCES

HOUSEHOLD ID

ASSESSMENTS: ALL RESOURCES 0

To conclude our subsistence harvests section, I am going to ask a few general questions about wild resources.

During the last year,

... did your household use LESS, SAME, or MORE wild resources than in recent years? ..... X L S M

IF LESS or MORE ... X = do not use

WHY was your use different? _____ 1

_____ 2

During the last year,

...did your household GET ENOUGH wild resources?..... Y N

If NO...

What KIND of wild resources did you need? _____

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

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

HEALTH IMPACT ASSESSMENTS

We know things change throughout the year, but in general, over the whole year, how often are wild foods such as fish, game, birds, berries, and other wild resources served in your household?

(circle ONE response)

None, don't use (0)	less than once per week (1)	1 - 3 times per week (2)	4 - 6 times per week (3)	once per day (4)	2 times per day (5)	3 or more times per day (6)

If this household does NOT USE wild foods, go to the next page

Otherwise, continue below...

Please list the most important wild foods that are used in your household each year. Include wild foods that may not be available now, but are important at other times of the year. Please list most important wild foods first.

(Not necessary to fill out every line)

	Wild Food 1	Wild Food 2	Wild Food 3	Wild Food 4	Wild Food 5
TOP FIVE WILD FOODS					

If your household cannot get or runs short of wild foods, what do members of your household eat instead? These can be foods from the store or garden, such as: meat, grains, prepared foods, or fruits and vegetables. Please list your most important alternative foods first.

(Not necessary to fill out every line)

	Other Food	Other Food	Other Food	Other Food	Other Food
OTHER FOODS[2] (1 TO 5)					
OTHER FOODS[2] (6 TO 10)					

1 "LAST YEAR" means between January 1, 2014 and December 31, 2014.

2 For "OTHER FOODS", we are not interested in condiments or staples, such as sugar, flour, coffee, or butter etc... We are interested in foods used in place of traditional foods for meals or snacks. This includes foods substituted by personal preference or out of necessity (traditional food not available).

ASSESSMENTS OF ALL RESOURCES: 66 **EGEGIK: 122**

FOOD SECURITY

HOUSEHOLD ID

The questions on this page have been asked all over the United States to find out if Americans have enough to eat. We would like to know if people in your community have enough to eat. I'd like you to think about all your household's food, both wild food and store-bought...

Which of these three statements best describes the food eaten in your household in the last 12 months...

(Circle one) HH1

1 **STATEMENT 1**. We had enough of the kinds of food we wanted to eat.....
2 **STATEMENT 2**. We had enough food, but not always the KIND of food we wanted to eat.....
3 **STATEMENT 3**. Sometimes, or often, we did **NOT HAVE ENOUGH** food to eat.....

1 2 3

If 2 or 3

If STATEMENT 2 or STATEMENT 3 was TRUE, continue with food security questions on this page. Otherwise, go to next section...

Now I am going to read you several statements about different food situations.
Please tell me whether EACH statement was true for your household (HH) in the last 12 months.

4 **STATEMENT 4. We WORRIED that our household would run out of food before we could get more.** HH2

In the last 12 months, was this ever true for your household?..... Y N ?

If YES...

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

...did this happen because your household couldn't get WILD FOOD,
your HH couldn't get STORE-BOUGHT food, or your HH couldn't get BOTH KINDS of food?..... WILD STOR BOTH

5 **STATEMENT 5. We could not get the kinds of foods we wanted to eat because of a LACK OF RESOURCES** HH4

By "lack of resources," we mean your household did NOT have what you needed to hunt, fish, gather, OR did not have enough money to buy food.

In the last 12 months, was this ever true for your household?..... Y N ?

If YES...

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

...did this happen because your household couldn't get WILD FOOD,
your HH couldn't get STORE-BOUGHT food, or your HH couldn't get BOTH KINDS of food?..... WILD STOR BOTH

6 **STATEMENT 6. The food we had JUST DID NOT LAST, and we could not get more.** HH3

In the last 12 months, was this ever true for your household?..... Y N ?

If YES...

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

Now, think just about your household's WILD FOOD...

STATEMENT 7. The SUBSISTENCE food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this ever true for your household?..... Y N ?

If YES...

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

Now, think just about your household's STORE-BOUGHT food...

STATEMENT 8. The STORE-BOUGHT food we had JUST DID NOT LAST, and we could not get more.

In the last 12 months, was this ever true for your household?..... Y N ?

If YES...

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

If any ONE of the STATEMENTS 4, 5, OR 6 was "YES," continue with food security questions on next page. Otherwise, go to next section...

FOOD SECURITY: 201 **EGEGIK: 122**

FOOD SECURITY

HOUSEHOLD ID

If any ONE of the STATEMENTS 4, 5, or 6 on previous page was "YES," continue with food security questions below. Otherwise, go to next section…

In the past 12 months, did you or other adults in your household ever CUT THE SIZE OF YOUR MEALS OR SKIP MEALS because the HH could not get the food that was needed? …… Y N ? AD1

If YES…

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

In the last 12 months, did you or other adults in your household ever EAT LESS THAN YOU FELT YOU SHOULD because the HH could not get the food that was needed?…… Y N ? AD2

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

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

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

If YES…

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

FOOD SECURITY: 201 **EGEGIK: 122**

EMPLOYMENT

HOUSEHOLD ID

The next few pages ask about jobs and income. We ask about these things because we are trying to understand all parts of the community economy. Many people use wages from jobs to support subsistence activities.

Between January 1, 2014 and December 31, 2014 ...

...Did any members of your household earn money from a JOB or from SELF EMPLOYMENT?..... Y N

Starting with the first head of your household, what job or jobs did he or she have last year?

For each member of this household born before 1999, list EACH JOB held last year. For household members who did not have a job, write: RETIRED, UNEMPLOYED, STUDENT, HOMEMAKER, DISABLED, etc.

			INCLUDE EACH PERSON 16 YEARS AND OLDER EVEN IF THEY DID NOT HAVE A JOB				WORK SCHEDULE					
			Person code from page 2	What kind of work did he or she do in this job?	For whom did he or she work in this job?	In the past year, what months did he or she work in this job?	FULL TIME	PART TIME	SHIFT - FULL TIME	ON-CALL, VARIES	SHIFT - PART TIME	In the past year how much did hee or she earn in this job?
			(ID #)	*(JOB title)*	*(employer)*	*(circle each month worked)*	*(circle one)*					*gross income*
	1ST JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
1	6 910100000			*SOC:*	*SIC:*							*schedule:*
	2ND JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
2	6 910100000			*SOC:*	*SIC:*							*schedule:*
	3RD JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
3	6 910100000			*SOC:*	*SIC:*							*schedule:*
	4TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
4	6 910100000			*SOC:*	*SIC:*							*schedule:*
	5TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
5	6 910100000			*SOC:*	*SIC:*							*schedule:*
	6TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
6	6 910100000			*SOC:*	*SIC:*							*schedule:*
	7TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
7	6 910100000			*SOC:*	*SIC:*							*schedule:*
	8TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
8	6 910100000			*SOC:*	*SIC:*							*schedule:*
	9TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
9	6 910100000			*SOC:*	*SIC:*							*schedule:*
	10TH JOB					J F M A M J J A S O N D	FT	PT	SF	OC	SP	$ / YR
10	6 910100000			*SOC:*	*SIC:*							*schedule:*

If a person FISHES COMMERCIALLY or is otherwise SELF-EMPLOYED, list that as a separate job. For job title, enter COMMERCIAL FISHER, CARVER, SEWER, BAKER, etc. Work schedule usually will be ON CALL. For gross income from self-employment, enter revenue MINUS expenses.

If a person does not earn money from any kind of work, enter RETIRED, UNEMPLOYED, DISABLED, STUDENT, or HOMEMAKER or other appropriate description as the job title.

Leave employer, months worked, schedule, and gross income blank.

WORK SCHEDULE

***FT** - Fulltime (35+ hr/wk)*
***PT** - Parttime (<35 hr/wk)*
***SF** - Shift (2wks on/2wks off, etc.)*
***SP** - Shift - part time*
***OC** - Irregular, on call*
-- -Unemployed

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

EMPLOYMENT: 23 **EGEGIK: 122**

OTHER INCOME

HOUSEHOLD ID

Between January 1, 2014 and December 31, 2014 ...

...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 2014 (circle one)		TOTAL amount all members of your household received from ____ in 2014 (dollars)	
DIVIDENDS	ALASKA PERMANENT FUND DIVIDEND	Y	N	$	/ YR
	32				
	NATIVE CORPORATION DIVIDENDS	Y	N	$	/ YR
	13				

Alaska PFD IN 2014	
1	*PFD = $1,884*
2	*PFDs = $3,768*
3	*PFDs = $5,652*
4	*PFDs = $7,536*
5	*PFDs = $9,420*
6	*PFDs = $11,304*
7	*PFDs = $13,188*
8	*PFDs = $15,072*
9	*PFDs = $16,956*
10	*PFDs = $18,840*
11	*PFDs = $20,724*

Regional corporations	*Dividend*
BBNC	*$13.08*

Village Corporation(s)	*Dividend*
Becharof Village Corporation	

Between January 1, 2014 and December 31, 2014 ...

...Did any members of your household receive OTHER income such as SENIOR BENEFITS or UNEMPLOYMENT?..... Y N

IF NO, go to the next section on this page

IF YES, continue below…

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

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

* per diem covers travel expenses, and is not counted as income.

Scratch paper for calculations

for _____ *weeks =*
for _____ *weeks =*

for _____ *weeks =*
for _____ *weeks =*

Senior Benefits of $125 per month for 12 months = $1,500 per elder
Senior Benefits of $175 per month for 12 months = $2,100 per elder
Senior Benefits of $250 per month for 12 months = $3,000 per elder

OTHER INCOME: 24 **EGEGIK: 122**

COMMENTS

HOUSEHOLD ID

DO YOU HAVE ANY QUESTIONS, COMMENTS OR CONCERNS?

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

COMMENTS: 300 **EGEGIK: 122**

APPENDIX B–CONVERSION FACTORS

The following table presents the conversion factors used in determining how many pounds were harvested of each resource surveyed. For instance, if respondents reported harvesting 10 coho salmon, the quantity would be multiplied by the appropriate conversion factor (in this case 4.5) to show a harvest of 45 lb of coho salmon.

Resource name	Reported units	Conversion factor
Chum salmon	Individual	4.5880
Chum salmon [CF retention]	Individual	4.5880
Coho salmon	Individual	4.5000
Coho salmon	Pounds	1.0000
Coho salmon [CF retention]	Individual	4.5000
Chinook salmon	Individual	10.7280
Chinook salmon [CF retention]	Individual	10.7280
Pink salmon	Individual	2.5550
Pink salmon [CF retention]	Individual	2.5550
Sockeye salmon	Individual	4.1440
Sockeye salmon [CF retention]	Individual	4.1440
Landlocked salmon	Individual	1.5000
Spawning coho salmon	Individual	4.5000
Spawning sockeye salmon	Individual	4.1440
Pacific herring	Individual	0.4000
Pacific herring	Pounds	1.0000
Pacific herring	Gallons	6.0000
Pacific herring [CF retention]	Individual	0.4000
Pacific herring [CF retention]	Gallons	6.0000
Pacific herring sac roe	Gallons	7.0000
Pacific herring sac roe [CF retention]	Individual	1.0000
Pacific herring sac roe [CF retention]	Gallons	7.0000
Pacific herring spawn on kelp	Pounds	1.0000
Pacific herring spawn on kelp	Gallons	7.0000
Pacific herring spawn on kelp [CF retention]	Individual	3.9485
Pacific herring spawn on kelp [CF retention]	Gallons	7.0000
Pacific herring roe on hemlock branches	Pounds	1.0000
Pacific herring roe on hemlock branches	Gallons	3.9485
Capelin (grunion)	Individual	0.1800
Capelin (grunion) [CF retention]	Individual	0.1800
Smelt	Individual	0.1400
Smelt	Gallons	3.2500
Pacific (gray) cod	Individual	3.2000
Pacific (gray) cod	Pounds	1.0000
Pacific (gray) cod [CF retention]	Individual	3.2000
Starry flounder	Individual	3.0000
Starry flounder [CF retention]	Individual	3.0000
Pacific halibut	Individual	18.7656
Pacific halibut	Pounds	1.0000
Pacific halibut [CF retention]	Individual	18.7656
Pacific halibut [CF retention]	Pounds	1.0000
Rockfish	Individual	1.5000

-continued-

Resource name	Reported units	Conversion factor
Sablefish (black cod)	Individual	3.1000
Sablefish (black cod)	Pounds	1.0000
Sablefish (black cod) [CF retention]	Individual	3.1000
Sablefish (black cod) [CF retention]	Pounds	1.0000
Sablefish (black cod) [CF retention]	Gallons	1.0000
Red Irish lord	Individual	1.0000
Sculpin	Individual	0.5000
Sculpin [CF retention]	Individual	0.5000
Salmon shark [CF retention]	Individual	9.0000
Yellowfin sole	Individual	1.0000
Yellowfin sole [CF retention]	Individual	1.0000
Alaska blackfish	Individual	0.0700
Burbot	Individual	4.2000
Dolly Varden–freshwater	Individual	2.8000
Dolly Varden–saltwater	Individual	2.8000
Dolly Varden–saltwater [CF retention]	Individual	2.8000
Arctic grayling	Individual	0.7000
Northern pike	Individual	3.0000
Northern pike	Individual	3.0000
Rainbow trout	Individual	1.4000
Steelhead	Individual	1.4000
Steelhead [CF retention]	Individual	1.4000
Least cisco	Individual	0.7000
Humpback whitefish	Individual	2.1000
Round whitefish	Individual	0.7000
Unknown whitefishes	Individual	1.7500
Bison	Individual	450.0000
Brown bear	Individual	150.0000
Caribou	Individual	150.0000
Moose	Individual	540.0000
Beaver	Individual	8.7500
Coyote	Individual	0.0000
Arctic fox	Individual	0.0000
Red fox	Individual	0.0000
Red fox–cross phase	Individual	0.0000
Red fox–red phase	Individual	0.0000
Snowshoe hare	Individual	2.0000
North American river (land) otter	Individual	3.0000
Lynx	Individual	4.0000
Marmot	Individual	1.5000
Marten	Individual	0.0000
Mink	Individual	2.5000
Muskrat	Individual	0.7500
Porcupine	Individual	8.0000
Arctic ground (parka) squirrel	Individual	0.5000
Weasel	Individual	0.5000
Gray wolf	Individual	0.0000
Wolverine	Individual	0.0000

-continued-

Resource name	Reported units	Conversion factor
Harbor porpoise	Individual	45.0000
Fur seal	Individual	15.0000
Harbor seal	Individual	56.0000
Unknown seal	Individual	84.0000
Sea otter	Individual	19.5000
Steller sea lion	Individual	200.0000
Walrus	Individual	770.0000
Beluga whale	Individual	995.0000
Bufflehead	Individual	0.6000
Canvasback	Individual	1.7000
Common eider	Individual	3.3000
King eider	Individual	2.2000
Steller's eider	Individual	1.2000
Gadwall	Individual	1.2000
Goldeneye	Individual	1.3000
Harlequin duck	Individual	0.8000
Mallard	Individual	1.6000
Common merganser	Individual	2.1000
Red-breasted merganser	Individual	1.4000
Long-tailed duck	Individual	1.2000
Northern pintail	Individual	1.2000
Scaup	Individual	1.4000
Black scoter	Individual	1.5000
Northern shoveler	Individual	0.9000
Green-winged teal	Individual	0.5000
Wigeon	Individual	1.1000
Unknown ducks	Individual	1.0000
Brant	Individual	1.6000
Canada/cackling goose	Individual	2.8000
Canada goose	Individual	2.8000
Emperor goose	Individual	2.4000
Snow goose	Individual	2.6000
White-fronted goose	Individual	3.2000
Unknown geese	Individual	3.2000
Trumpeter swan	Individual	15.3000
Tundra (whistling) swan	Individual	10.2000
Sandhill crane	Individual	5.4000
Grouse	Individual	0.9000
Ptarmigan	Individual	0.8000
Duck eggs	Individual	0.1050
Duck eggs	Gallons	6.7200
Goose eggs	Individual	0.2500
Swan eggs	Individual	0.6000
Gull eggs	Individual	0.3000
Gull eggs	5 gallon buckets	4.0000
Gull eggs	Gallons	6.0000
Murre eggs	Individual	0.2400
Tern eggs	Individual	0.0400

-continued-

Appendix B.–Page 4 of 7.

Resource name	Reported units	Conversion factor
Red (large) chitons	Individual	0.5000
Red (large) chitons	Gallons	3.0000
Red (large) chitons	Quarts	0.7500
Black (small) chitons	Individual	0.0313
Black (small) chitons	Pounds	1.0000
Black (small) chitons	5 gallon buckets	37.5000
Black (small) chitons	Gallons	4.0000
Black (small) chitons	Quarts	1.0000
Black (small) chitons	Pints	0.5000
Unknown chitons	Gallons	4.0000
Butter clams	Individual	0.1200
Butter clams	Pounds	1.0000
Butter clams	5 gallon buckets	22.2500
Butter clams	Gallons	3.0000
Horse clams	Gallons	3.0000
Pacific littleneck clams (steamers)	Individual	0.2500
Pacific littleneck clams (steamers)	5 gallon buckets	15.0000
Pacific littleneck clams (steamers)	Gallons	3.0000
Pacific littleneck clams (steamers)	Quarts	0.7500
Pacific littleneck clams (steamers)	Pints	0.3750
Pacific littleneck clams (steamers) [CF retention]	Gallons	3.0000
Razor clams	Individual	0.2500
Razor clams	Gallons	3.0000
Razor clams	Quarts	1.0000
Razor clams [CF retention]	Gallons	3.0000
Softshell clams	Individual	0.2500
Softshell clams	Gallons	3.0000
Cockles	Gallons	3.0000
Cockles	Quarts	0.7500
Dungeness crab	Individual	0.7000
Dungeness crab	Pounds	1.0000
Dungeness crab [CF retention]	Individual	0.7000
Red king crab	Individual	5.3800
Red king crab [CF retention]	Individual	5.3800
Tanner crab	Individual	1.6000
Tanner crab [CF retention]	Individual	1.6000
Limpets	Gallons	1.5000
Limpets	Quarts	0.3750
Limpets	Half-pints	0.0500
Blue mussels	Gallons	0.2600
Octopus	Individual	4.0000
Octopus	Pounds	1.0000
Octopus [CF retention]	Individual	4.0000
Octopus [CF retention]	Pounds	1.0000
Scallops [CF retention]	Gallons	1.0000
Sea cucumber	Individual	0.1000
Sea cucumber	Pounds	1.0000
Sea cucumber	Gallons	2.0000

-continued-

Resource name	Reported units	Conversion factor
Sea cucumber [CF retention]	Individual	0.1000
Sea cucumber [CF retention]	Pounds	1.0000
Sea urchin	Individual	0.0420
Sea urchin	Gallons	0.5000
Shrimp	Individual	0.0250
Shrimp	Pounds	1.0000
Shrimp	Gallons	2.0000
Shrimp [CF retention]	Individual	0.0250
Shrimp [CF retention]	Pounds	1.0000
Shrimp [CF retention]	Gallons	2.0000
Snails	Gallons	1.5000
Snails	Quarts	0.3750
Whelk	Gallons	1.5000
Blueberry	Pounds	1.0000
Blueberry	5 gallon buckets	15.0000
Blueberry	Gallons	4.0000
Blueberry	Quarts	1.0000
Blueberry	Pints	0.5000
Blueberry	Half-pints	0.2500
Lowbush cranberry	5 gallon buckets	20.0000
Lowbush cranberry	Gallons	4.0000
Lowbush cranberry	Quarts	1.0000
Lowbush cranberry	Half-pints	0.2500
Highbush cranberry	Pounds	1.0000
Highbush cranberry	5 gallon buckets	20.0000
Highbush cranberry	Gallons	4.0000
Highbush cranberry	Quarts	1.0000
Highbush cranberry	Pints	0.5000
Highbush cranberry	Half-pints	0.2500
Crowberry	Pounds	1.0000
Crowberry	Gallons	4.0000
Crowberry	Quarts	1.0000
Crowberry	Half-pints	0.2500
Nagoonberry	Individual	0.0100
Nagoonberry	Gallons	4.0000
Nagoonberry	Quarts	1.0000
Nagoonberry	Pints	0.5000
Nagoonberry	Half-pints	0.2500
Raspberry	Gallons	4.0000
Raspberry	Quarts	1.0000
Raspberry	Pints	0.5000
Raspberry	Half-pints	0.2500
Salmonberry	Pounds	1.0000
Salmonberry	5 gallon buckets	20.0000
Salmonberry	Gallons	4.0000
Salmonberry	Quarts	1.0000
Salmonberry	Pints	0.5000
Salmonberry	Half-pints	0.2500

-continued-

Resource name	Reported units	Conversion factor
Beach asparagus	Pounds	1.0000
Beach asparagus	Gallons	1.0000
Beach asparagus	Pints	0.1250
Beach asparagus	Half-pints	0.0625
Wild rhubarb	Pounds	1.0000
Wild rhubarb	Gallons	1.0000
Other beach greens	Gallons	1.0000
Other beach greens	Quarts	0.2500
Hudson's Bay (Labrador) tea	Gallons	1.0000
Hudson's Bay (Labrador) tea	Quarts	0.2500
Hudson's Bay (Labrador) tea	Pints	0.1250
Hudson's Bay (Labrador) tea	Half-pints	0.0625
Lambs quarter	Gallons	1.0000
Sourdock	Gallons	1.0000
Sourdock	Half-pints	0.0625
Wild celery	Pounds	1.0000
Wild celery	Gallons	0.2500
Wild celery	Quarts	1.0000
Wild celery	Pints	0.1250
Wild celery	Half-pints	0.0625
Beach rye grass	Gallons	1.0000
Wild parsley	Gallons	1.0000
Wild parsley	Quarts	0.2500
Wild parsley	Half-pints	0.0625
Yarrow	Pounds	1.0000
Yarrow	Gallons	1.0000
Yarrow	Quarts	0.2500
Other wild greens	Gallons	1.0000
Other wild greens	Quarts	0.2500
Other wild greens	Pints	0.1250
Fireweed	Pounds	1.0000
Fireweed	Gallons	1.0000
Fireweed	Quarts	1.0000
Fireweed	Half-pints	0.0625
Black seaweed	Pounds	1.0000
Black seaweed	Gallons	4.0000
Black seaweed	Quarts	1.0000
Black seaweed	Pints	0.3125
Black seaweed	Half-pints	0.2500
Bull kelp	Gallons	4.0000
Bull kelp	Quarts	1.0000
Bull kelp	Pints	0.5000
Bull kelp	Half-pints	0.2500
Red seaweed	Pounds	1.0000
Red seaweed	Gallons	4.0000
Red seaweed	Quarts	1.0000
Red seaweed	Half-pints	0.2500

-continued-

Resource name	Reported units	Conversion factor
Sea ribbons	Pounds	1.0000
Sea ribbons	Gallons	4.0000
Sea ribbons	Quarts	1.0000
Giant kelp (*macrocystis*)	Gallons	4.0000
Alaria	Gallons	4.0000
Unknown seaweed	Pounds	1.0000
Unknown seaweed	Gallons	4.0000
Unknown seaweed	Quarts	1.0000
Unknown seaweed	Half-pints	0.2500
Wood	Cords	0.0000

Source ADF&G Division of Subsistence household surveys, 2015.