

ALASKA SUBSISTENCE FISHERIES

2000 ANNUAL REPORT



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

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TABLE OF CONTENTS

List of Tables	iii
List of Figures	v
Acknowledgments.....	vii
I. Introduction: Purposes and Objectives	1
II. Overview of Statewide Subsistence Fisheries Harvests in 2000	7
Subsistence Harvests in Rural Alaska.....	7
Subsistence Salmon Harvests in 2000	8
Statewide Subsistence Salmon Harvests, 1994 – 2000.....	9
III. Northwest Alaska.....	23
Norton Sound and Port Clarence Area Salmon	23
Kotzebue Area Salmon	27
Kotzebue Area: Sheefish, Whitefish, and Char	30
IV. Yukon Area	37
Background	37
Regulations	37
Subsistence Harvest Assessment Methods	39
Subsistence Salmon Harvests in 2000	40
V. Kuskokwim Area	49
Background	49
Regulations	49
In-Season Subsistence Closures in 2000.....	50
Subsistence Salmon Harvest Assessment Methods	51
2000 Sampling Summary.....	53
2000 Subsistence Salmon Harvest Summary	54
Other Fish.....	56
VI. Bristol Bay Area	63
Background	63
Regulations	63
Inseason Management in 2000.....	63
Salmon Harvest Assessment Program	64
Subsistence Salmon Harvests in 2000	65
Other Subsistence Fisheries	66
VII. Chignik Area.....	77
Background	77
Regulations	77
Harvest Assessment Program	77
Subsistence Salmon Harvests in 2000	78
Other Chignik Area Subsistence Fisheries	79
VIII. Alaska Peninsula Area	87
Background	87
Regulations	87
Salmon Harvest Assessment Program	87
Subsistence Salmon Harvests in 2000	87

	Other Subsistence Fisheries	88
IX.	Aleutian Islands Area.....	93
	Unalaska District: Subsistence Salmon Fishery	93
	Adak District.....	94
	Other Subsistence Salmon Fisheries in the Aleutian Islands.....	95
	Other Subsistence Fisheries in the Aleutian Islands Area	96
X.	Kodiak Area.....	101
	Introduction.....	101
	Regulations	101
	Harvest Assessment Program	101
	Subsistence Salmon Harvests in 2000	101
	Other Subsistence Fisheries	102
XI.	Cook Inlet Area.....	107
	Introduction.....	107
	Port Graham and Koyuktolik Subdistricts	107
	Seldovia Subsistence Fishery.....	108
	Tyonek Subdistrict	109
	Upper Yentna River Fish Wheel Fishery.....	110
XII.	Prince William Sound Area	121
	Introduction.....	121
	Upper Copper River Subsistence Fishery: Glennallen Subdistrict.....	121
	Upper Copper River Subsistence Fishery: Chitina Subdistrict.....	123
	Batzulnetas Subsistence Fishery	124
	Copper River District Subsistence Fishery	124
	Eastern District Subsistence Salmon Fishery	125
	Southwestern District Subsistence Salmon Fishery.....	125
	Prince William Sound: General Districts.....	126
	Other Subsistence Fisheries in the Prince William Sound Area.....	126
XIII.	Southeast/Yakutat Region.....	145
	Background	145
	Regulations	145
	Harvest Data.....	145
	Discussion	146
	References Cited	151

LIST OF TABLES

Table II-1.	Alaska Subsistence Salmon Harvests by Fishery and Species, 2000.....	10
Table II-2.	Alaska Subsistence Salmon Harvests by Species and Place of Residence of Fisher, 2000	11
Table II-3.	Historic Alaska Subsistence Salmon Harvests, 1994 – 2000	18
Table III-1.	2000 Northwest Alaska Subsistence Salmon Harvests by District and Species.....	31
Table III-2.	2000 Northwest Alaska Subsistence Salmon Harvests by Community	32
Table III-3.	Northwest Alaska Subsistence Salmon Harvests by Area, 1994 – 2000.....	33
Table III-4.	Sheefish and Whitefish Harvests by Community in the Kotzebue District, 2000	34
Table III-5.	Sheefish, Whitefish, and Char Harvests in the Kotzebue District, 1995 – 2000	35
Table IV-1.	2000 Subsistence Salmon Harvests by Community, Yukon Management Area	42
Table IV-2.	Historic Subsistence Salmon Harvests, Yukon Management Area	44
Table V-1.	2000 Subsistence Salmon Harvests by Community: Kuskokwim Management Area	59
Table V-2.	Historic Subsistence Salmon Harvests: Kuskokwim Area, 1960 –2000	60
Table V-3.	Subsistence Harvests of Nonsalmon Fish, Kwethluk and Numapitchuk	61
Table VI-1.	Subsistence Salmon Harvest by Species, by District and Location Fished, Bristol Bay, 2000.....	70
Table VI-2.	Historic Subsistence Salmon Harvests: Bristol Bay Management Area, 1979 – 2000.....	71
Table VI-3.	Bristol Bay Subsistence Salmon Harvest by Species and Community of Residence, 2000	72
Table VI-4.	Uses and Harvests of Fish Other Than Salmon, Bristol Bay Communities.....	73
Table VI-5.	Nonsalmon Finfish Known to be Used for Subsistence Purposes in the Bristol Bay Area	74
Table VII-1.	Historic Subsistence Harvests of Salmon, Chignik Management Area, 1976 – 2000	80
Table VII-2.	Chignik Area Subsistence Salmon Harvests by Species and Community of Residence, 2000.....	81
Table VII-3.	Chignik Area Subsistence Salmon Harvests by Species and Subarea of Harvest, 2000	82
Table VII-4.	Finfish Other Than Salmon Used for Subsistence Purposes in Communities of the Chignik Management Area, 1989	83

Table VII-5.	Marine Invertebrates Used for Subsistence Purposes in Communities of the Chignik Management Area, 1989	84
Table VIII-1.	Historic Subsistence Salmon Harvests, Alaska Peninsula Area, 1985 – 2000	89
Table VIII-2.	Estimated Subsistence Salmon Harvests, Alaska Peninsula Area by Community and Species, 2000	90
Table VIII-3.	Percentage of Households Using Selected Non-Salmon Finfish, Alaska Peninsula Area Communities.....	91
Table IX-1.	Historic Subsistence Salmon Harvests, Unalaska District, 1985 – 2000.....	97
Table IX-2.	Estimated Personal Use and Subsistence Harvests of Salmon, Adak District, 1988 – 2000	98
Table IX-3.	Estimated Subsistence Harvests of Salmon: Akutan, Atka, and Nikolski	99
Table X-1.	Historic Subsistence Salmon Harvests, Kodiak Management Area, 1981 – 2000	104
Table X-2.	Reported Subsistence Salmon Harvests, Kodiak Area, by Community and Species, 2000	105
Table XI-1.	2000 Subsistence Salmon Harvests by Community, Port Graham/Koyuktolik Subdistricts.....	112
Table XI-2.	Historic Subsistence Salmon Harvests: Port Graham and Koyuktolik Subdistricts, 1981 – 2000.....	113
Table XI-3.	Historic Subsistence Salmon Harvests: Seldovia Fishery, 1996 – 2000.....	114
Table XI-4.	Tyonek Subdistrict Subsistence Salmon Harvests by Community, 2000	115
Table XI-5.	Historic Subsistence Salmon Harvests: Tyonek Subdistrict, 1980 – 2000	116
Table XI-6.	Subsistence Salmon Harvests, Upper Yentna River Fish Wheel Fishery by Community, 2000	117
Table XI-7.	Historic Subsistence and Personal Use Salmon Harvests, Upper Yentna River Fish Wheel Fishery, 1996 – 2000.....	118
Table XII-1.	Subsistence Harvests by Village Fish Wheel Permit Holders, Glennallen Subdistrict	127
Table XII-2.	Historic Subsistence Salmon Harvests, Glennallen Subdistrict, 1988 – 2000.....	128
Table XII-3.	Subsistence Salmon Glennallen Subdistrict, by Area of Residence and Gear Type, 2000	129
Table XII-4.	2000 Subsistence Harvests of Salmon by Community: Glennallen Subdistrict.....	130
Table XII-5.	2000 Subsistence Harvest by Community: Glennallen Subdistrict – Fish Wheels.....	132
Table XII-6.	2000 Subsistence Harvest by Community: Glennallen Subdistrict – Dip Nets	133
Table XII-7.	2000 Subsistence Harvest by Community: Chitina Subdistrict.....	134

Table XII-8.	Historic Subsistence Salmon Harvests, Chitina Subdistrict, 1988 – 2000	137
Table XII-9.	Historic Subsistence Salmon Harvests, Batzulnetas Fishery, 1987 – 2000.....	138
Table XII-10.	Historic Subsistence Salmon Harvests, Copper River District (Copper River Flats), 1965 – 2000.....	139
Table XII-11.	Historic Subsistence Harvests of Salmon, Eastern Prince William Sound, 1988 – 2000	140
Table XII-12.	Estimated Harvests of Salmon for Home Use, Tatitlek, 1998.....	141
Table XII-13.	Reported Subsistence Salmon Harvests, Southwestern Prince William Sound, 1988 – 2000	142
Table XII-14.	Estimated Harvests of Salmon for Home Use, Chenega Bay, 1998	143
Table XII-15.	Historic Subsistence Salmon Harvests, General Prince William Sound Area, 1960 - 2000	144
Table XIII-1.	Subsistence and Personal Use Salmon Harvests by District and Species, Southeast/Yakutat Region, 2000.....	148
Table XIII-2.	2000 Subsistence and Personal Use Salmon Harvest by Community, Southeast/Yakutat Region.....	149
Table XIII-3.	Historic Subsistence and Personal Use Salmon Harvests, Southeast/Yakutat Region, 1985 – 2000.....	150

LIST OF FIGURES

Figure I-1.	Alaska Subsistence Fisheries Areas.....	5
Figure II-1.	Composition of Subsistence Harvest by Rural Alaska Residents.....	7
Figure II-2.	Alaska Subsistence Salmon Harvest by Species, 2000.....	8
Figure II-3.	Alaska Subsistence Salmon Harvest by Area, 2000	19
Figure II-4.	Alaska Subsistence Chinook Salmon Harvest by Area, 2000	19
Figure II-5.	Alaska Subsistence Sockeye Salmon Harvest by Area, 2000.....	20
Figure II-6.	Alaska Subsistence Chum Salmon Harvest by Area, 2000	20
Figure II-7.	Alaska Subsistence Coho Salmon Harvest by Area, 2000	21
Figure II-8.	Alaska Subsistence Pink Salmon Harvest by Area, 2000.....	21
Figure III-1.	Species Composition of Subsistence Salmon Harvests, Norton Sound, Port Clarence, and Kotzebue Districts, 2000	36
Figure IV-1.	Map of the Alaskan Portion of the Yukon River Drainage Showing Communities and Fishing Districts	45
Figure IV-2.	Yukon Area Subsistence Salmon Harvests, 2000.....	46
Figure IV-3.	Estimated Number of Dogs by Fishing District, Yukon Area, 2000	47
Figure IV-4.	Primary Gear Type Utilized for Subsistence Salmon Fishing, Yukon Area, 2000.....	48
Figure V-1.	Composition of Subsistence Salmon Harvest by Species, Kuskokwim Area, 2000	62
Figure VI-1.	Composition of Bristol Bay Area Subsistence Salmon Harvest by Species, 2000.....	75

Figure VI-2.	Subsistence Salmon Harvests by District, Bristol Bay Management Area, 2000.....	75
Figure VII-1.	Composition of Chignik Area Subsistence Salmon Harvest by Species, 2000.....	85
Figure VII-2.	Subsistence Salmon Harvests by Community, Chignik Management Area, 2000.....	85
Figure VIII-1.	Composition of Alaska Peninsula Area Subsistence Salmon Harvest by Species, 2000.....	92
Figure VIII-2.	Subsistence Salmon Harvests by Community, Alaska Peninsula Management Area, 2000.....	92
Figure IX-1.	Composition of Unalaska District Subsistence Salmon Harvest by Species, 2000.....	100
Figure X-1.	Composition of Kodiak Area Subsistence Salmon Harvest by Species, 2000.....	106
Figure XI-1.	Composition of Subsistence Salmon Harvest, Port Graham/Koyuktolik Subdistricts, 2000.....	119

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We also thank the many Department of Fish and Game staff in the divisions of Commercial Fisheries, Sport Fish, and Subsistence who annually conduct the programs that collect, analyze, and report subsistence fisheries harvest data. They, too, made this report possible.

Many department personnel made the time to be interviewed by Division of Subsistence staff about harvest assessment programs and subsistence harvest databases. They provided many insights about these programs that we have relied upon in developing the Alaska Subsistence Fisheries Database and evaluating the data that appear in this report. We very much appreciate their help.

We also thank the Subsistence Fisheries Harvest Assessment Working Group, composed of federal, tribal, and state representatives, for providing guidance in the preparation of this report series, including important commentary on existing harvest assessment programs.

Finally, we thank the Office of Subsistence Management of the US Fish and Wildlife Service for helping to fund the preparation of this report and the supporting database.

As we note in the report itself, this is the second in a series of statewide summaries of subsistence fisheries harvest data. While we have received a lot of help in compiling the report, we take full responsibility for any errors or shortcomings it may contain. We encourage the users of the report to share with us their ideas on how we can improve upon this effort in the future.

I. INTRODUCTION

This is the second in a series of annual reports on Alaska's subsistence fisheries. It was prepared by the Division of Subsistence of the Alaska Department of Fish and Game (ADF&G). Funding was provided through a cooperative agreement with the US Fish and Wildlife Service, Office of Subsistence Management (Project No. FIS 01-107; USFWS Agreement No.701811J335; ADF&G COOP-01-074). "Subsistence fishing" is defined in state law as taking of fish, shellfish, or other fisheries resources by Alaska residents for subsistence uses (AS 16.05.940[30]). "Subsistence uses" of wild resources are defined as "noncommercial, customary and traditional uses" for a variety of purposes, including:

Direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption (AS 16.05.940[32]).

In addition to subsistence, Alaska law recognizes three other categories of fishing: commercial, sport, and personal use. Under Alaska's subsistence statute, the Alaska Board of Fisheries must identify fish stocks that support subsistence fisheries and, if there is a harvestable surplus of these stocks, provide reasonable opportunities for these subsistence uses to take place. Whenever it is necessary to restrict harvests, subsistence fisheries have a preference over other uses of the stock (AS 16.05.258).

Every year, ADF&G's Division of Commercial Fisheries prepares "annual management reports" (AMRs) for most fishery management areas in the state. Figure I-1 shows the location of these management areas. Although the AMRs focus primarily on commercial fisheries, they routinely summarize basic data for programs that collect harvest information for subsistence fisheries. In a few areas, more detailed annual reports about subsistence fisheries harvest assessment programs are prepared. These include Northwest Alaska, the Yukon River, and the Kuskokwim River. However, there has been no single source that compiles subsistence fisheries harvest data from all management areas. That is the purpose of this report.

At the outset, it is important to acknowledge the limitations that are faced when trying to present a comprehensive annual report on Alaska's subsistence fisheries. These limitations include the following points.

- Annual harvest assessment programs do not take place for all subsistence fisheries. Programs are in place for most salmon fisheries, but few other finfish fisheries or shellfish fisheries have annual harvest monitoring programs.
- Annual harvest data are mostly, but not entirely, limited to fisheries classified as subsistence by regulation, which for salmon generally means fish taken with nets, seines, or fish wheels. In some parts of the state, substantial numbers of fish for home use are taken with rod and reel (in most areas considered sport gear by regulation) or retained from commercial harvests. With the exceptions noted in the individual sections on each area, these harvests are not included in the subsistence harvest estimates in this report

because they are not covered in annual harvest assessments. Therefore, the harvest data in this report are a conservative estimate of the number of salmon being taken for subsistence use in Alaska. Underestimates of subsistence salmon harvests are particularly an issue in the Southeast Region (see Section XIII on the Southeast Region).

- Between management areas, and sometimes between districts within management areas, there is inconsistency in how subsistence harvest data are collected, analyzed, and reported.
- In some areas, there are no routine mechanisms for evaluating the quality of the subsistence harvest data. For example, in some areas it is not known if all subsistence fishers are obtaining permits and providing harvest reports. This can result in a large underestimate of harvests.
- There are also few programs for contextualizing subsistence harvest data each year to provide information to interpret changes in harvests. In some cases, however, AMRs do contain discussions of data limitations and harvest trends.

Despite these limitations, it is possible to present a reasonable, conservative statewide overview of subsistence harvests of salmon. All areas of the state where salmon occur are covered in this report. The coverage for other finfish and for shellfish is very uneven. For other finfish, if annual subsistence harvest data are collected, they are reported here if the summary data were available to the Division of Subsistence. In other areas, we have usually noted which are the major species used for subsistence, generally relying on baseline studies conducted by the Division. In a few cases, we have drawn from reports prepared for the Alaska Board of Fisheries.

We have not attempted to provide a comprehensive overview of subsistence shellfish harvests in this report. This is largely because the statewide database development (see immediately below) has not yet located, reviewed, and summarized existing data. Future annual reports will provide historical data for subsistence shellfish as well as overviews of the study year.

In 1988, the Division of Subsistence, ADF&G, prepared the first version of the “Historic Subsistence Salmon Harvest Database” (HSSHDB). As part of the same cooperative agreement that supported the preparation of this report, this database was updated, upgraded, and renamed the “Alaska Subsistence Fisheries Database.” The database is written for Microsoft Access 2000 software. It is organized by 21 subsistence fisheries, mostly reflecting unique harvest assessment programs and regulatory structures. It contains harvest data by species, year, community of residence of permit holder, and gear type. The number of permits issued and returned each year is reported as well. In developing the database, the most complete data have been sought, which in many cases are more up to date than that reported in AMRs. In most fisheries, reported harvests have been expanded to account for unreturned permits. In a few cases, this results in a larger estimate than in those AMRs that routinely only summarize data from returned permits. Also, the database calculates harvest estimates first for all permit holders living in particular communities represented in the fishery, and then adds these community estimates for a fishery total. This contrasts with the conventional expansion method for a few fisheries (for example, the Glennallen Subdistrict of the Prince William Sound Area) which only considers the total number of issued and returned permits in expansion, and results in a slightly different estimate of the total harvest for those fisheries as reported in AMRs. The goal of this annual report on

Alaska's subsistence fisheries is to treat each fishery in a consistent, systematic manner, rather than to reiterate previously published data.

Due to the large size of the database, it is not available for downloading from the Internet. The database is presently distributed upon request to the Division of Subsistence on compact disks (CDs) along with the Community Profile Database (CPDB) (Scott et al. 2001), which includes the results of systematic household surveys, and is the primary source for subsistence harvest data for finfish other than salmon and for shellfish.

The next chapter of the report is a statewide perspective on subsistence salmon harvests in Alaska in 2000. This is followed by chapters on 11 management areas or, in the case of Southeast Alaska, a region. In a few cases (Northwest, Aleutians, Cook Inlet, and Prince William Sound) harvest assessment programs within areas with different regulations or histories are discussed separately.

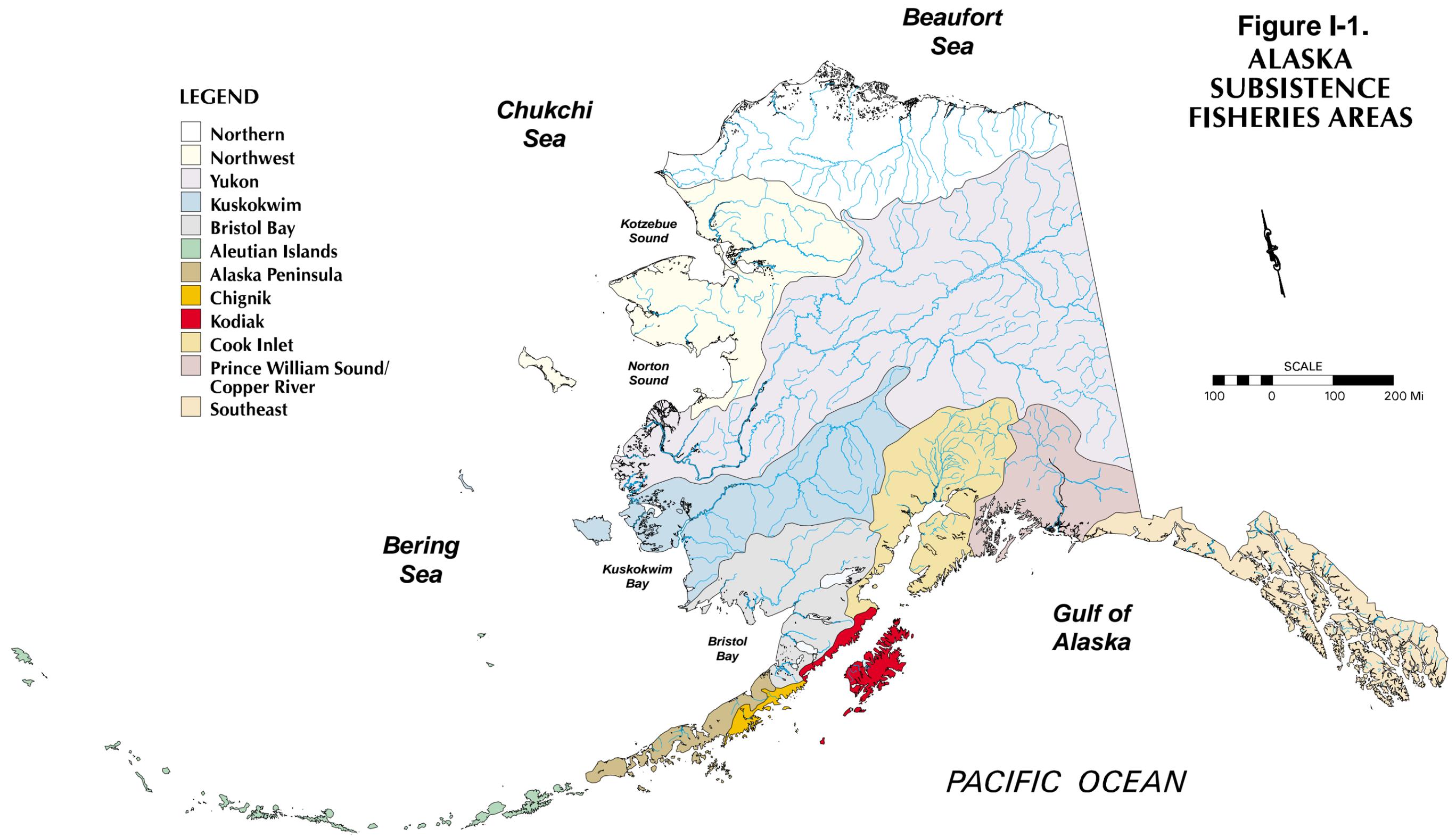
It is important to note that the preparation of this annual report and the supporting database were two of several objectives of the "Statewide Subsistence Fisheries Harvest Monitoring Strategy" project, funded by the US Fish and Wildlife Service's Office of Subsistence Management and implemented jointly by the Division of Subsistence of ADF&G and the Alaska Inter-Tribal Council (AI-TC). A key goal of the project was to develop recommendations for a unified subsistence harvest assessment program for Alaska's subsistence fisheries. These recommendations were developed by a Working Group composed of state, federal, and tribal members. The recommendations are available as a separate document (ADF&G and AI-TC 2000a) and a final report with an overview of all the project activities is also available (ADF&G and AI-TC 2000b). The final report also includes a set of comments on existing subsistence harvest assessment programs, based on interviews of ADF&G staff conducted by the Division of Subsistence as well as Working Group discussions. We have drawn on these comments for most of the evaluations of harvest data in this annual report. As background for the Working Group's efforts, Division of Subsistence staff prepared detailed overviews of current subsistence fisheries harvest assessment programs. These are the basis of the descriptions of these programs that appear in this report.

This annual report is the result of the work of a number of Division of Subsistence staff. James Fall and Dave Caylor were the primary compilers of the information. Charles Utermohle and Gretchen Jennings assisted with developing the harvest database. Several other staff prepared preliminary drafts of sections of the report, including Susan Georgette (Northwest), Mike Coffing (Kuskokwim), Dave Andersen (Yukon), and Mike Turek (Southeast).

**Figure I-1.
ALASKA
SUBSISTENCE
FISHERIES AREAS**

LEGEND

- Northern
- Northwest
- Yukon
- Kuskokwim
- Bristol Bay
- Aleutian Islands
- Alaska Peninsula
- Chignik
- Kodiak
- Cook Inlet
- Prince William Sound/
Copper River
- Southeast



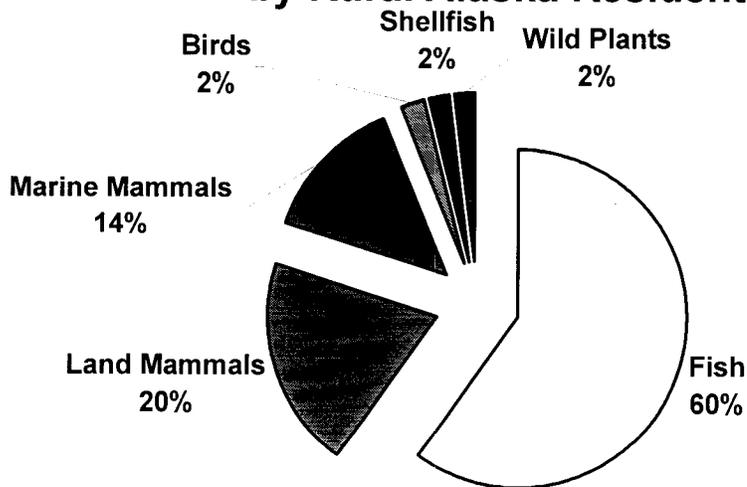
Source: Alaska Department of Fish and Game, Division of Subsistence.

II. OVERVIEW: SUBSISTENCE FISHERIES IN ALASKA

SUBSISTENCE HARVESTS IN RURAL ALASKA

Of the estimated 43.7 million pounds of wild foods produced in rural Alaska communities annually, subsistence fisheries contribute about 62 percent – 60 percent from finfish and 2 percent from shellfish (Fig. II-1). On average, this subsistence fisheries harvest provides about 230 pounds of food per person per year in rural Alaska (Wolfe 2000:2). Although producing a major portion of the food supply, subsistence harvests represent just a small part of the annual harvest of wild resources in Alaska, about 2 percent. Commercial fisheries take 97 percent of the wild resource harvest and sport fisheries and hunts take about 1 percent.

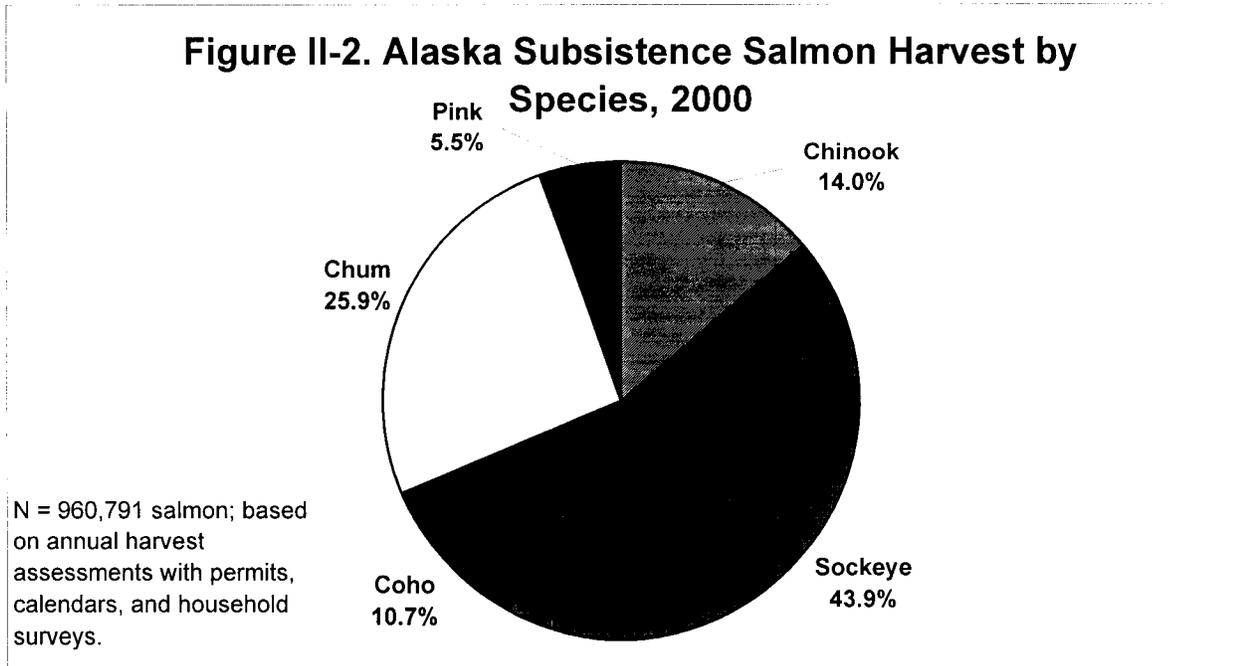
Figure II-1. Composition of Subsistence Harvest by Rural Alaska Residents



N = 44 million usable pounds; Source: Wolfe 2000, based on data in the Community Profile Database (Scott et al. 2001)

SUBSISTENCE SALMON HARVESTS IN 2000

The estimated total subsistence harvest of salmon in Alaska in 2000 based on annual harvest assessment programs was 960,791 fish (Table II-1, Fig. 11-2).¹ The statewide harvest by species was as follows: sockeye, 422,002 (43.9 percent); chum, 248,598 (25.9 percent); chinook, 134,270 (14.0 percent); coho, 103,212 (10.7 percent); and pink, 52,710 (5.5 percent). Table II-2 reports subsistence harvests in 2000 by species by place of resident of participants, with harvests from all subsistence fisheries combined.



In 2000, fisheries in five management areas accounted for 77.7 percent of the total statewide subsistence salmon harvest (Table II-2; Fig. II-3). These were Kuskokwim (204,714 salmon; 21.3 percent of the state-wide total); Northwest (153,360 salmon; 16.0 percent); Yukon (152,300 salmon; 15.9 percent); Bristol Bay (118,824 salmon; 12.4 percent); and the Chitina Subdistrict of the Prince William Sound Management Area (116,347 salmon; 12.1 percent). The Chitina Subdistrict fishery was classified as personal use in 1984 and from 1986 through 1999 and was not included in previous statewide overviews of Alaska Subsistence fisheries. As a result of Alaska Board of Fisheries action in December 1999, beginning in 2000, this fishery is again classified as a subsistence fishery and has been added to statewide totals.

The largest subsistence harvests of chinook salmon in 2000 occurred in the Kuskokwim Area (68,841 salmon; 51.3 percent), followed by Yukon (36,844 salmon; 27.4 percent), Bristol Bay (11,547 salmon; 8.6 percent); the Glennallen Subdistrict of the Prince William Sound Area

¹ Personal use fisheries that take place in the Nonsubsistence Area of the Cook Inlet Management Area are not included in these statewide totals. Personal use salmon fisheries in southeast Alaska and the Yukon Management Area are included.

(4,937 salmon; 3.7 percent; and Northwest (4,399 salmon; 3.3 percent) (Fig. II-4). For sockeye salmon, the largest subsistence harvests in 2000 were in the Chitina Subdistrict (109,370; 25.9 percent of the statewide total); followed by Bristol Bay (92,050 salmon; 21.8 percent), the Glennallen Subdistrict of the Prince William Sound Area (66,032 salmon; 14.3 percent), Southeast (52,867 salmon; 12.5 percent), Kuskokwim (44,832 salmon; 10.6 percent), and Kodiak Area (24,873 salmon; 5.9 percent) (Fig. II-5). Three areas dominated the subsistence chum salmon harvest in 2000: Yukon (97,215 salmon; 39.1 percent of the statewide harvest), Northwest (84,196 salmon; 33.9 percent), and Kuskokwim (55,371 salmon; 22.3 percent) (Fig. II-6). Of the statewide subsistence harvest of coho salmon in 2000, the most were taken in the Kuskokwim drainage (35,670 salmon; 34.6 percent), followed by northwest (20,654 salmon; 20.0 percent), Yukon (16,650 salmon; 16.1 percent), Bristol Bay (7,991 salmon; 7.7 percent), Kodiak Island (5,399 salmon; 5.2 percent), and Alaska Peninsula (5,239 salmon; 5.1 percent) (Fig. II-7). Finally, by far the largest portion of the statewide pink salmon subsistence harvest in 2000 occurred in Northwest Alaska (40,499 salmon; 76.8 percent), followed by Southeast (2,619 salmon; 5.0 percent), Bristol Bay (2,599 salmon; 4.9 percent), the Port Graham Subdistrict of the Cook Inlet Management Area (1,606 salmon; 3.0 percent), and Yukon (1,591 salmon; 3.0 percent) (Fig. II-8).

STATEWIDE SUBSISTENCE SALMON HARVESTS, 1994 - 2000

Table II-3 reports estimated statewide subsistence salmon harvests for 1994 through 2000 based on annual harvest assessment programs. Harvest estimates for the Chitina Subdistrict have been added for the years 1994 through 1999, although the fishery was classified as personal use during that period. Statewide estimates for years prior to 1994 are not available based on annual harvest assessment programs because data for key fisheries, such as most of the Northwest Alaska fisheries, were not regularly collected. There appears to be a downward trend in the statewide total over the seven-year period reported in Table II-3. The estimate for 2000 of 960,791 salmon was below the recent five-year average of 1,138,219 salmon. Accounting for much of this decline is a drop in subsistence harvests in the Yukon Area (from 344,049 salmon in 1994 to 152,300 salmon in 2000; see Section IV) and the Kuskokwim Area (from 251,112 salmon in 1994 to 204,714 salmon in 2000; see Section V).

Table II-1. Alaska Subsistence Salmon Harvests, 2000

Fishery ²	Households / Permits		Estimated Salmon Harvest								Total
	Total	Included	Expanded? ¹	Chinook	Sockeye	Coho	Chum	Pink	Total		
Adak District	13	13	Yes	0	270	4	0	75	349		
Alaska Peninsula Management Area	180	152	Yes	341	9,955	5,239	1,699	950	18,185		
Batzulinetas Fishery	1	1	Yes	0	55	0	0	0	55		
Bristol Bay Management Area	1,219	1,109	Yes	11,547	92,050	7,991	4,637	2,599	118,824		
Chignik Management Area	130	112	Yes	163	9,561	1,802	517	1,185	13,227		
Chitina Subdistrict	8,145	7,676	Yes	3,219	109,370	3,758	0	0	116,347		
Copper River Flats	416	400	Yes	717	4,534	46	18	3	5,318		
Glennallen Subdistrict	1,251	1,197	Yes	4,937	60,551	539	5	0	66,032		
Kodiak Management Area	1,376	1,376	No	273	24,873	5,399	341	742	31,628		
Kuskokwim Management Area	4,441	2,750	Yes	68,841	44,832	35,670	55,371	0	204,714		
Northwest Alaska	2,247	1,336	Yes	4,399	3,612	20,654	84,196	40,499	153,360		
Port Graham & Koyuktoilik Subdistricts	67	67	No	259	4,664	1,831	953	1,606	9,313		
Prince William Sound (General)	3	3	Yes	0	0	0	0	0	0		
PWS Eastern District (Tatitlek)	12	3	No	0	140	468	40	40	688		
PWS Southwestern District (Chenega Bay)	12	8	No	24	39	229	143	211	646		
Seldovia Fishery	24	24	Yes	179	252	0	16	0	447		
Southeast / Yakutat Region	3,771	3,170	Yes	1,359	52,867	2,151	3,414	2,619	62,411		
Tyonek Fishery	60	59	No	1,157	63	87	0	6	1,313		
Unalaska District	212	167	Yes	10	3,935	603	26	580	5,154		
Upper Yentna Fishery	19	19	Yes	0	379	92	7	4	482		
Yukon Management Area	3,209	1,341	Yes	36,844	0	16,650	97,215	1,591	152,300		
Totals	25,365	20,983		134,270	422,002	103,212	248,598	52,710	960,791		

¹ "Yes" means reported harvests from returned permits are expanded to the estimated total participants. "No" means harvests are as reported only.

² Estimates for the Yukon and Southeast fisheries include both subsistence and personal use harvests.

Source: Division of Subsistence, Alaska Department of Fish and Game, Subsistence Salmon Permit Database, Version 3.10

Table II-2. Alaska Subsistence Salmon Harvests by Species and Place of Residence of Fisher, 2000

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Adak Station	12	12	0	270	4	0	72	346
Akhiok		2	4	95	6	0	0	105
Akiachak	125	94	6,124	3,597	2,509	4,589	0	16,819
Akiak	59	47	2,190	970	483	2,456	0	6,099
Alakanuk	152	32	1,109	0	84	6,765	38	7,995
Alatna	7	7	8	0	0	15	0	23
Aleknagik	19	17	187	735	134	55	0	1,111
Allakaket	63	22	41	0	0	1,557	0	1,598
Ambler	70	34	0	0	0	5,009	0	5,009
Anchor Point	6	6	8	50	0	0	0	58
Anchorage	2,564	2,395	2,078	41,741	1,260	272	32	45,383
Anderson	11	11	24	507	4	0	0	535
Angoon	115	72	0	2,158	236	80	31	2,505
Aniak	169	153	3,117	1,143	1,922	1,943	0	8,125
Anvik	42	17	205	0	0	600	30	835
Atmautluak	52	48	1,174	1,516	224	1,819	0	4,733
Auke Bay	36	29	1	194	0	0	0	195
Barrow	15	12	10	221	0	0	0	232
Bear Lake	3	2	0	608	0	0	0	608
Beaver	37	23	196	0	0	7	0	203
Beluga	2	2	13	0	0	0	0	13
Bethel	1,739	1,213	22,515	12,536	13,794	10,616	0	59,461
Bettles	31	20	0	0	0	0	0	0
Big Lake	48	45	22	677	25	0	0	724
Birch Creek	15	12	72	0	0	10	0	81
Bird Creek	1	1	1	14	0	0	0	15
Brevig Mission	69	57	32	1,007	530	486	808	2,863
Buckland	1	1	0	10	0	0	0	10
Cantwell	5	5	15	132	0	0	0	147
Central	24	23	38	274	3	1	0	316
Chalkyitsik	41	12	0	0	0	132	0	132
Chefornak	93	0						
Chekok	1	1	0	294	0	0	0	294
Chickaloon	8	8	73	271	11	0	0	355
Chicken	1	1	3	0	0	0	0	3
Chignik Bay	13	16	0	1,173	173	125	87	1,558
Chignik Lagoon	26	22	88	2,563	8	0	0	2,660
Chignik Lake	17	16	15	2,464	0	0	5	2,484
Chiniak		21	4	279	292	40	13	628
Chitina	21	19	86	1,357	3	0	0	1,446
Chuathbaluk	29	25	303	515	469	704	0	1,991
Chugiak	211	198	131	3,453	78	3	0	3,665

continued

Table II-2. Continued

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Circle	28	26	675	0	0	117	0	793
Clarks Point	16	13	336	539	142	33	97	1,147
Clear AFB	5	5	1	89	0	0	0	90
Coffman Cove	35	30	0	144	0	0	0	144
Cold Bay	16	16	0	553	50	26	1	630
College	2	2	1	7	0	0	0	8
Cooper Landing	4	4	13	306	1	0	0	320
Copper Center	140	128	624	9,784	181	0	0	10,589
Cordova	3	2	32	62	0	0	0	94
Craig	261	209	6	3,093	25	110	155	3,388
Crooked Creek	31	28	575	505	132	812	0	2,024
Deadhorse	1	1	1	14	0	0	0	15
Delta Junction	333	312	139	5,723	193	2	0	6,058
Denali Park	11	11	8	130	14	1	0	153
Dillingham	342	326	4,908	15,165	4,185	1,279	1,286	26,824
Dot Lake	5	5	2	60	0	100	0	162
Douglas	73	51	8	596	24	0	16	645
Dutch Harbor	101	79	4	1,835	314	5	25	2,184
Eagle	63	62	1,105	0	0	155	0	1,260
Eagle River	429	414	516	6,573	170	1	0	7,259
Edna Bay	2	1	0	0	0	0	0	0
Eek	67	59	2,112	878	488	636	0	4,114
Egegik	15	12	11	319	233	9	0	572
Eielson AFB	183	174	83	2,967	19	0	0	3,069
Ekuk	1	1	0	0	0	0	0	0
Ekwok	19	19	669	1,601	731	780	165	3,946
Elfin Cove	4	4	0	21	2	4	0	27
Elim	84	80	272	46	1,517	1,316	6,691	9,843
Elmendorf AFB	41	36	18	554	5	0	0	576
Emmonak	198	84	2,194	0	191	9,477	0	11,862
Ester	59	57	21	668	44	0	0	733
Excursion Inlet	1	1	0	10	0	53	0	63
Fairbanks	2,408	2,286	2,854	34,929	1,099	379	0	39,261
False Pass	6	5	6	690	605	104	32	1,438
Fort Greely	2	2	1	45	0	0	0	46
Fort Richardson	26	25	28	364	0	0	0	391
Fort Wainwright	148	125	72	1,598	151	0	0	1,821
Fort Yukon	171	28	976	4	120	331	0	1,431
Fox	1	1	0	3	0	0	0	3
Gakona	65	64	309	6,395	67	0	0	6,771
Galena	217	59	789	21	71	1,384	0	2,266
Girdwood	25	24	12	444	62	0	0	519

continued

Table II-2. Continued

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Glennallen	152	146	1,028	8,065	80	0	0	9,173
Golovin	45	42	42	18	1,328	866	4,306	6,560
Goodnews Bay	53	52	601	1,028	414	280	0	2,323
Grayling	49	24	840	18	372	758	0	1,988
Gustavus	7	6	0	69	0	9	2	81
Haines	302	273	53	5,151	244	853	432	6,732
Healy	37	36	18	548	1,203	200	0	1,969
Hollis	5	5	0	77	0	0	0	77
Holy Cross	62	26	1,249	0	70	1,092	20	2,431
Homer	39	36	25	1,469	97	60	61	1,712
Honolulu	1	1	1	0	0	0	0	1
Hoonah	119	76	0	1,186	19	166	142	1,513
Hooper Bay	218	47	114	0	218	9,256	901	10,489
Hope	2	2	1	14	0	0	0	15
Houston	8	7	1	151	0	0	0	152
Hughes	24	17	50	0	12	1,236	0	1,298
Huslia	96	15	688	0	132	780	0	1,600
Hydaburg	56	34	0	1,387	8	3	212	1,611
Hyder	2	2	0	10	0	12	44	66
Igiugig	8	8	5	1,981	19	14	3	2,022
Iliamna	32	31	3	3,769	0	0	0	3,772
Indian	6	6	1	69	0	0	0	70
Ivanof Bay	15	12	3	439	583	181	288	1,493
Juneau	764	561	84	4,560	106	112	132	4,995
Kake	180	176	3	1,629	0	330	45	2,007
Kaktovik	3	3	1	6	0	0	0	7
Kalskag (Upper)	56	48	1,237	636	288	1,558	0	3,719
Kaltag	62	25	1,074	0	110	359	0	1,543
Kasaan	9	9	0	128	1	2	10	141
Kasigluk	136	19	731	666	1,667	930	0	3,994
Kasilof	7	6	4	33	0	7	27	70
Kenai	8	8	3	146	0	0	0	149
Kenny Lake	1	1	0	0	0	0	0	0
Ketchikan	491	428	161	9,034	64	1,102	783	11,145
Kiana	88	51	0	74	107	2,876	0	3,057
King Cove	53	45	33	2,505	3,726	592	202	7,058
King Salmon	116	109	228	7,122	332	170	274	8,125
Kipnuk	177	13	170	179	223	269	0	841
Klawock	158	124	0	2,863	33	88	86	3,070
Klukwan	2	2	0	49	0	34	2	85
Kobuk	30	15	0	0	0	318	0	318
Kodiak (city)	24	1,049	278	18,227	3,234	166	444	22,349

continued

Table II-2. Continued

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Kodiak USCG Base		48	0	627	5	0	10	642
Kokhanok	25	22	18	8,814	0	2	1	8,835
Koliganek	15	15	835	1,047	140	770	0	2,792
Kongiganak	73	62	1,299	1,789	339	1,850	0	5,277
Kotlik	94	30	1,893	0	787	9,692	263	12,635
Kotzebue	780	186	205	0	636	36,896	0	37,737
Koyuk	75	70	385	19	259	4,580	2,290	7,533
Koyukuk	43	11	175	0	138	443	0	755
Kwethluk	144	109	4,925	3,685	3,271	5,048	0	16,929
Kwigillingok	95	0						
Larsen Bay	1	11	0	430	23	3	3	459
Levelock	14	11	81	1,467	51	19	64	1,683
Lime Village	17	12	45	918	362	294	0	1,619
Lower Kalskag	63	51	1,822	885	428	1,641	0	4,776
Manley Hot Springs	16	16	223	34	2,410	251	0	2,918
Manokotak	22	21	331	2,639	171	24	8	3,173
Marshall	86	30	3,279	0	11	3,212	0	6,501
McCarthy	3	3	1	9	0	0	0	10
McGrath	113	103	642	42	700	161	0	1,545
Mekoryuk	89	18	2	7	78	2,120	0	2,207
Mentasta	1	1	0	55	0	0	0	55
Metlakatla	11	5	0	2	0	0	0	2
Minto	35	34	5	0	3	5	0	13
Moose Creek CDP	2	2	2	29	0	0	0	31
Moose Pass	1	1	0	1	8	0	0	9
Mountain Village	170	59	1,715	0	376	7,386	61	9,538
Nabesna Road	1	1	0	19	0	0	0	19
Naknek	108	96	311	10,873	314	177	177	11,851
Nanwalek		32	18	3,880	1,579	470	1,251	7,198
Napakiak	75	63	2,178	2,026	502	2,987	0	7,693
Napaskiak	79	71	4,309	2,611	889	2,848	0	10,657
Nelson Lagoon	9	8	8	430	136	0	0	574
Nenana	52	50	597	210	1,828	823	0	3,458
New Stuyahok	46	33	1,954	1,091	369	397	71	3,884
Newhalen	20	19	31	3,023	0	45	0	3,099
Newtok	79	11	19	124	64	16	0	223
Nightmute	67	6	8	71	2	2	0	83
Nikiski	1	1	0	26	12	0	0	38
Nikolaevsk	1	1	1	24	0	0	0	25
Nikolai	29	28	155	0	31	60	0	246
Ninilchik	8	8	3	192	0	1	0	196
Noatak	102	61	0	2	87	7,293	3	7,385

continued

Table II-2. Continued

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Nome	133	102	18	153	827	394	2,778	4,170
Nondalton	25	19	0	12,451	0	0	0	12,451
Noorvik	112	42	5	0	1,722	10,391	71	12,189
North Pole	693	651	496	9,683	204	0	5	10,388
Northway	22	21	4	283	0	0	0	287
Nulato	101	30	1,083	0	60	377	0	1,520
Nunam Iqua (Sheldon Point)	38	29	684	0	5	3,414	0	4,102
Nunapitchuk	103	92	3,354	2,111	366	4,694	0	10,525
Old Harbor		21	0	351	570	34	184	1,139
Oscarville	15	0						
Ouzinkie		26	8	1,422	617	43	20	2,110
Palmer	566	536	389	9,399	261	16	13	10,078
Paxson	4	4	13	219	0	2	0	234
Pedro Bay	10	10	0	1,815	0	0	0	1,815
Pelican	10	8	0	170	0	2	74	246
Perryville	42	40	29	1,747	1,037	177	805	3,797
Peters Creek	1	1	0	30	0	0	0	30
Petersburg	100	97	17	527	144	76	22	785
Pilot Point	13	10	23	794	272	33	0	1,122
Pilot Station	111	55	2,324	0	1,708	5,997	6	10,035
Pitka's Point	27	22	753	0	139	1,733	114	2,738
Platinum	17	15	102	177	103	84	0	466
Point Baker	3	3	2	152	7	25	38	224
Point Hope	2	2	0	37	0	0	0	37
Port Alexander	2	2	0	0	0	0	0	0
Port Alsworth	40	38	1	3,336	0	0	0	3,337
Port Graham		35	241	784	252	483	355	2,115
Port Heiden	3	2	6	0	21	0	0	27
Port Lions		41	2	2,041	431	1	11	2,486
Portage Creek	3	2	117	15	0	15	0	147
Quinhagak	130	107	3,106	1,341	1,088	912	0	6,447
Rampart	28	15	847	0	0	47	0	894
Red Devil	14	11	94	107	158	53	0	412
Ruby	77	26	1,577	0	173	1,297	1	3,048
Russian Mission	68	21	1,860	0	24	1,354	8	3,247
Saint Marys	148	52	1,783	0	117	8,244	54	10,199
Saint Michael	85	80	160	16	1,180	1,381	80	2,818
Saint Paul	1	0						
Salcha	66	63	153	735	6	69	0	962
Sand Point	62	49	296	4,282	647	919	674	6,817
Scammon Bay	89	24	449	0	4	3,886	96	4,434
Selawik	1	1	1	16	0	0	0	17

continued

Table II-2. Continued

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Seldovia	23	22	179	252	0	16	0	447
Seward	13	11	7	218	0	0	0	225
Shageluk	40	26	805	0	0	1,838	0	2,642
Shaktoolik	56	54	440	20	2,799	2,412	5,432	11,103
Shungnak	46	34	0	0	1	2,944	0	2,945
Sitka	604	584	10	12,531	9	46	69	12,666
Skagway	7	5	1	29	0	95	13	138
Skwentna	12	12	0	227	61	3	4	295
Slana	13	13	25	759	1	0	0	785
Sleetmute	34	30	430	759	552	390	0	2,131
Soldotna	14	14	20	351	0	4	0	375
South Naknek	42	40	118	2,571	231	119	272	3,311
Stebbins	128	111	294	337	2,398	2,876	360	6,264
Sterling	4	3	1	44	0	0	0	45
Stevens Village	42	16	466	0	0	50	0	516
Stony River	15	3	21	266	10	99	0	396
Sutton	25	25	7	344	59	0	0	410
Takotna	17	16	0	0	21	0	0	21
Talkeetna	19	18	36	413	0	7	1	456
Tanacross	16	13	0	14	0	0	0	14
Tanana	122	45	2,896	29	6,285	12,266	0	21,477
Tatitlek	1	1	0	10	0	0	0	10
Tazlina	1	1	0	76	0	0	0	76
Telida	2	0						
Teller	80	70	39	1,784	369	747	557	3,494
Tenakee Springs	5	5	0	11	0	0	0	11
Thorne Bay	91	81	0	669	16	1	18	705
Togiak	52	40	1,014	2,945	342	533	83	4,917
Tok	94	93	67	3,264	24	6	0	3,362
Toksook Bay	132	11	58	253	112	217	0	640
Trapper Creek	4	3	3	18	0	0	0	21
Tuluksak	76	63	2,432	2,207	523	2,504	0	7,666
Tuntutuliak	74	63	2,939	1,236	3,435	2,735	0	10,345
Tununak	108	9	52	48	23	44	0	167
Twin Hills	1	1	102	68	0	36	7	213
Two Rivers	18	18	3	224	22	0	0	249
Tyonek	46	45	1,059	42	25	0	6	1,132
Ugashik	8	8	15	395	137	1	1	549
Unalakleet	206	188	2,390	203	5,931	2,936	10,522	21,982
Unalaska	105	83	3	2,100	301	20	544	2,968
Valdez	245	229	168	5,730	85	0	0	5,983
Venetie	60	14	103	0	0	130	0	233

continued

Table II-2. Continued

COMMUNITY	Households/ Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Wainwright	1	1	0	0	0	0	0	0
Ward Cove	66	55	36	1,394	10	141	107	1,688
Wasilla	853	821	689	15,712	411	7	0	16,820
White Mountain	67	65	120	0	932	289	6,600	7,941
Willow	49	45	22	933	5	0	0	960
Wrangell	131	121	48	1,117	10	40	28	1,243
Yakutat	115	109	930	3,842	1,176	29	158	6,135
Unknown Community	454	600	758	6,400	964	271	314	8,707
Totals	25,365	20,983	134,270	422,002	103,212	248,598	52,710	960,791

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table II-3. Historic Alaska Subsistence and Personal Use Salmon Harvests: 1994 - 2000 ¹

Year	Households/ Permits		Estimated Salmon Harvest					Total
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
1994	22,553	16,492	188,134	445,109	138,101	417,199	94,469	1,283,012
1995	22,358	15,770	186,422	386,034	125,909	499,992	54,908	1,253,264
1996	23,708	18,751	161,976	416,467	124,786	498,525	80,928	1,282,682
1997	26,754	21,782	182,174	525,417	99,043	347,808	41,543	1,195,985
1998	27,774	22,264	177,017	466,386	95,211	302,037	74,216	1,114,867
1999	27,854	22,993	161,333	511,044	91,896	339,242	33,253	1,136,768
2000	25,365	20,983	134,270	422,002	103,212	248,598	52,710	960,791
1996-2000								
Average	26,291	21,355	163,354	468,263	102,829	347,242	56,530	1,138,219
All Years								
Average	25,195	19,862	170,189	453,208	111,165	379,057	61,718	1,175,338

¹ Does not include personal use salmon fisheries in the Cook Inlet Area (within the Nonsubsistence Area). Does include personal use fisheries in the southeast region and Yukon Area. Also includes estimates for the Seldovia, Yentna River, and Chitina Subdistrict fisheries, that were classified as subsistence fisheries in 2000, for prior years when they were classified as personal use fisheries.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Figure II-3. Alaska Subsistence Salmon Harvest by Area, 2000

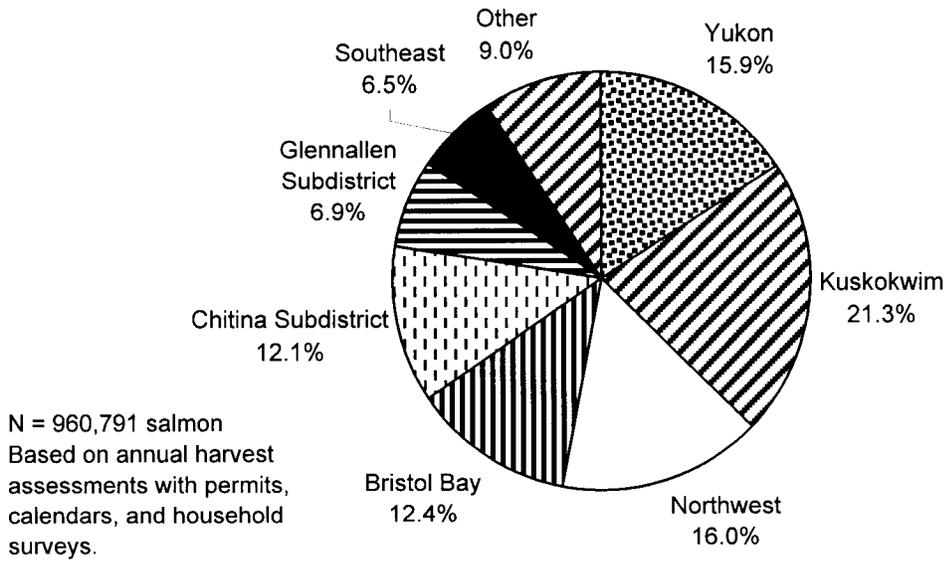


Figure II-4. Alaska Subsistence Chinook Salmon Harvest by Area, 2000

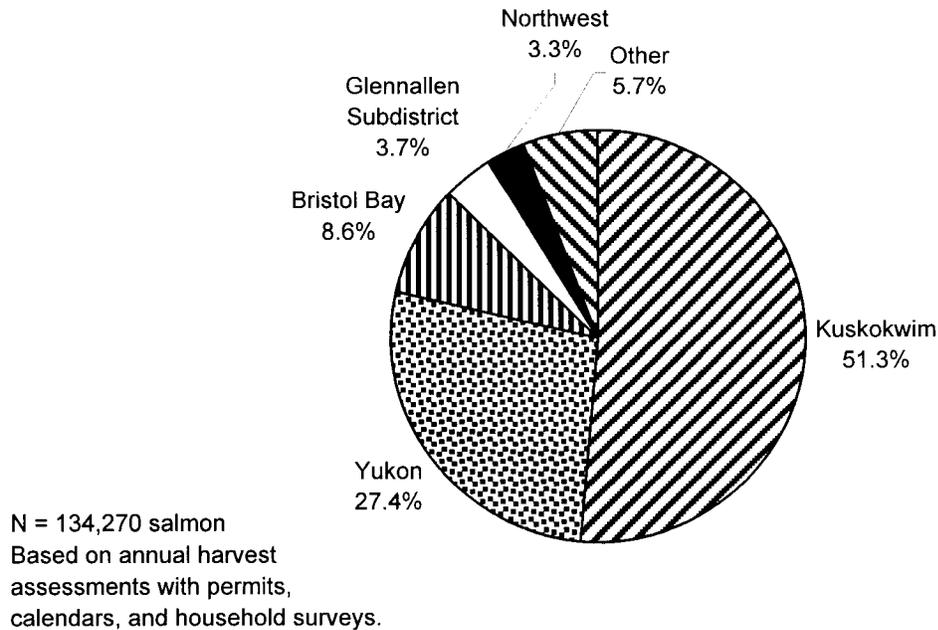


Figure II-5. Alaska Subsistence Sockeye Salmon Harvest by Area, 2000

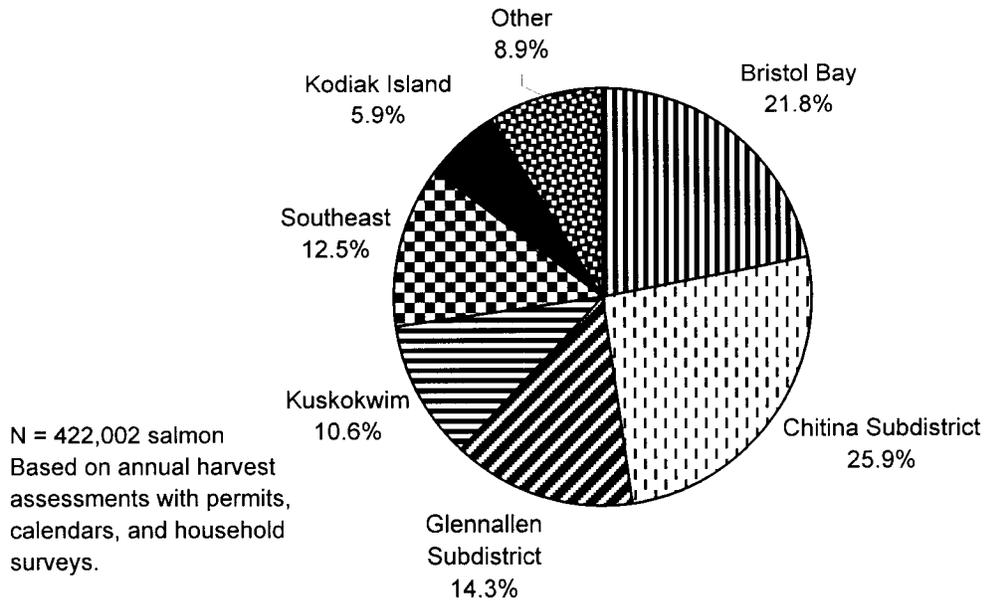


Figure II-6. Alaska Subsistence Chum Salmon Harvest by Area, 2000

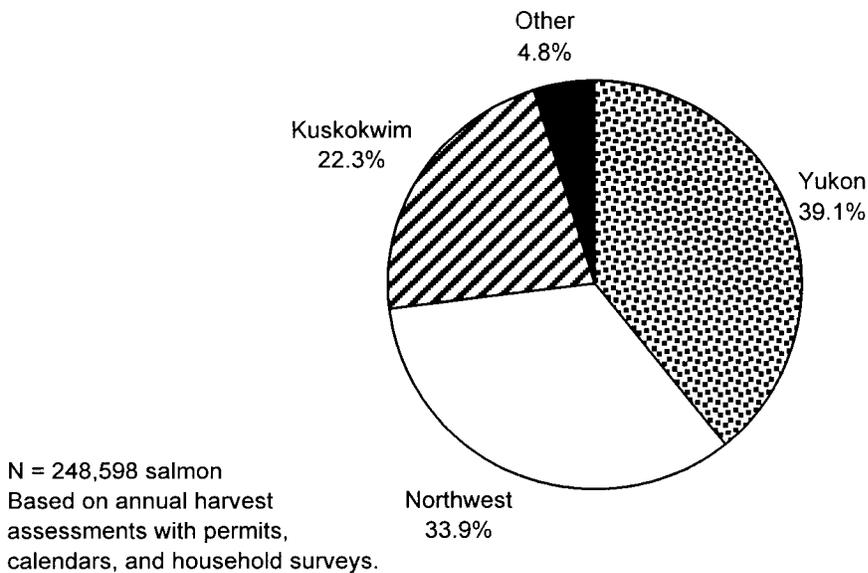
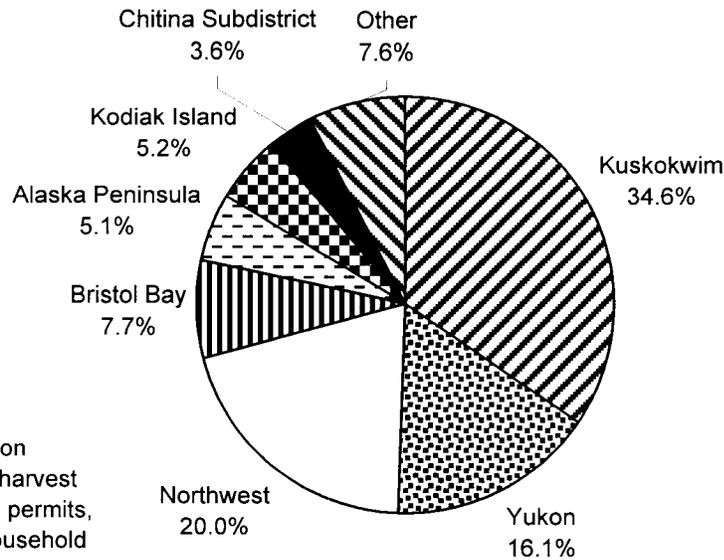
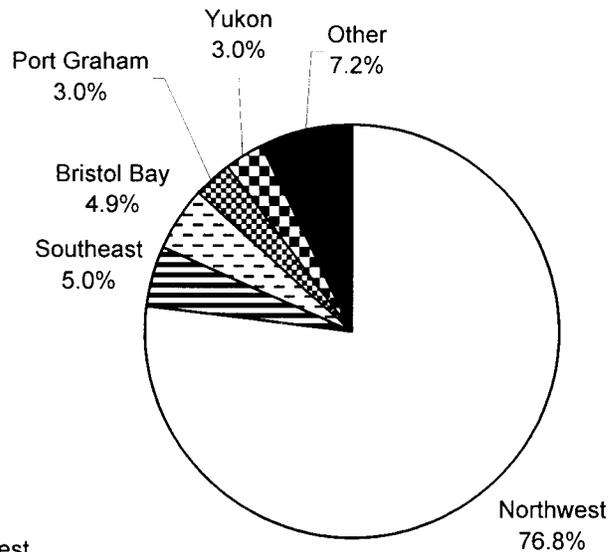


Figure II-7. Alaska Subsistence Coho Salmon Harvest by Area, 2000



N = 103,212 salmon
Based on annual harvest assessments with permits, calendars, and household surveys.

Figure II-8. Alaska Subsistence Pink Salmon Harvest by Area, 2000



N = 52,710 salmon
Based on annual harvest assessments with permits, calendars, and household surveys.

III. NORTHWEST ALASKA

NORTON SOUND AND PORT CLARENCE AREA SALMON

Background

Subsistence salmon fishing has been a major feature of life in northwest Alaska for centuries. At the turn of the millennium, most local residents in the region continue to participate in a mixed subsistence-cash economy, depending on local wild foods for cultural and nutritional sustenance. In summer subsistence fishers harvest salmon with gillnets or seines in the main Seward Peninsula rivers and in the coastal marine waters. Beach seines are used near the spawning grounds to catch schooling or spawning salmon and other species of fish. The major portion of fish taken during the summer months is air dried or smoked for later consumption by local residents. Chum, pink, and coho salmon are found throughout the Norton Sound and Port Clarence districts, with chinook salmon more common in eastern and southern Norton Sound and sockeye salmon more common in Port Clarence drainages.

Regulations

In most of the Port Clarence District, subsistence salmon fishing has few restrictions other than the general statewide provisions. Salmon may be taken in most areas at any time with no harvest limits and no required permits. The exception to this is the Pilgrim River drainage including Salmon Lake where permits are required, harvests are limited, and specified areas are closed to subsistence salmon fishing.

The Norton Sound District has considerably more complex regulations, particularly in Subdistricts 1 (Nome) and 6 (Unalakleet), where restrictions exist on gear, fishing periods, and areas opened to fishing. In Subdistrict 1, chum salmon runs have been depressed for approximately 20 years. Upstream portions of most rivers are closed to protect spawning salmon, and harvests are limited in all subdistrict rivers. In regulation, subsistence fishing in fresh water is open during two 48-hour periods each week, but during the last 10 years subsistence fishing has been regulated primarily by emergency order, and openings have been much less frequent than in regulation. Fishing periods in marine waters are also limited. Since 1999, chum salmon fishing in Subdistrict 1 has been managed on a Tier II system, the only such fishery in the state.¹ In 2000, 10 Tier II permits were issued. In Subdistrict 6, subsistence fishing is closed one day a week through July 15 to ensure adequate chinook salmon escapement. In Subdistricts 2-5, salmon may be taken at any time with no harvest limits. However, restrictions exist on commercial fishermen's participation in subsistence salmon fishing.

¹ A "Tier II" subsistence permit system is necessary when the number of participants in a subsistence fishery or hunt must be limited because the harvestable surplus of the fish stock or wildlife population is less than the amount necessary to provide for subsistence uses. Individuals are scored based on their history of use of the particular resource and availability of alternative resources; those with the highest scores receive Tier II permits.

In-Season Management in 2000

In Subdistrict 1 (Nome), subsistence salmon fishing was initially closed to all households. On June 27 salmon fishing opened three days per week in the marine waters east of Cape Nome for the 10 households with Tier II permits. Beginning July 18, the fresh waters east of Cape Nome also were opened three days per week for Tier II permit holders. Beach seine pink salmon fishing opened July 7 for all households in the fresh waters east of Cape Nome for one 24-hour period. Fishing periods for pink salmon gradually expanded throughout July, with gillnets for pink salmon allowed in marine waters beginning July 18. Fishing returned to its regular schedule beginning August 1 to target coho salmon.

In Subdistricts 2-6 subsistence fishing continued as normal throughout the season.

Subsistence Salmon Harvest Collection Methods

Two methods were used to assess subsistence salmon harvests in the Norton Sound and Port Clarence districts in 2000: 1) fishing permits in the Nome Subdistrict and in the Salmon Lake-Pilgrim River drainage, and 2) post-season household surveys in 10 communities.

Norton Sound Subdistrict 1 Fishing Permits

Permits have been required for subsistence salmon fishing in Norton Sound Subdistrict 1 (Nome) since 1974. Beginning in 1999, Tier II chum salmon fishing permits also were issued to a limited number of Nome households with the intent that these households would have first priority over other subsistence users if only a small number of chum salmon were available for harvest. This priority would allow these households to fish earlier in the season when weather conditions are more suitable for drying salmon. Tier I fishing permits were available to all other households when run strength was determined to be adequate. In 2000, 105 permits (97 Tier I and 8 Tier II permits) were issued for Subdistrict 1, 83 (79 percent) of which were returned to the department.

Since 1998, the Nome permit data have not been expanded to account for households whose permits were not returned. This contrasted with earlier years when permit data were expanded by drainage with expansion factors based upon the fraction of unreturned permits for that drainage. Department staff believed that expansion of the permit data led to an overestimation of the salmon harvest because the unreturned permits were most likely from households that did not fish.

Salmon Lake and Pilgrim River Fishing Permits

Permits were required for subsistence salmon fishing in Salmon Lake and the Pilgrim River drainage in the Port Clarence District. In 2000, 15 households requested permits for this area, 9 (60 percent) of which were returned to the department.

Household Surveys

In the Norton Sound and Port Clarence districts, household surveys were conducted in Brevig Mission, Teller, Golovin, White Mountain, Elim, Koyuk, Shaktoolik, Unalakleet, St. Michael, and Stebbins. Surveys were not conducted in Gambell or Savoonga. Researchers attempted to contact 100 percent of the households in each of the surveyed communities. Actual sample rates ranged from 82.6 percent of households in Brevig Mission to 97.0 percent of households in White Mountain. Overall, 91.3 percent of the households in the surveyed communities were interviewed (816 of 894). The salmon survey data were expanded by community to account for the households not contacted.

The goals of the post-season household survey were to:

- 1) collect harvest data that would result in a total harvest estimate for subsistence salmon by species by community, and
- 2) compile information on gear types, participation rates, sharing, household size, and use of salmon for dog food.

2000 Subsistence Salmon Harvests

Norton Sound District Subsistence Salmon Harvest

The estimated 2000 subsistence harvest of salmon by the surveyed communities in the Norton Sound District was 78,199 fish (Table III-1, Table III-2). This was the second lowest subsistence salmon harvest documented in the seven years of this survey project in this area, and the lowest harvest for the district in an even-numbered year when pink salmon returns are strongest (Table III-3). (Pink salmon abundance fluctuates in an even-year/odd-year cycle, with even-numbered years having the greatest abundance.) Of the total salmon harvest in the Norton Sound District, 5.3 percent were chinook, 22.0 percent were chum, 49.9 percent were pink, 0.9 percent were sockeye, and 22.0 percent were coho (Fig. III-1).

The estimated mean harvest was about 90 salmon per household in the Norton Sound District; the estimated breakdown of this harvest was 5 chinook, 20 chum, 45 pink, 1 sockeye, and 20 coho. Mean household harvests in the subdistricts ranged from 43 salmon in southern Norton Sound (Stebbins and St. Michael) to 198 salmon in Subdistrict 5 (Shaktoolik).

Port Clarence District Subsistence Salmon Harvest

The estimated 2000 subsistence harvest of salmon by the two communities in the Port Clarence District was 6,521 fish (Table III-1, Table III-2). This was the second lowest harvest documented in the seven years of this survey project, and only slightly higher than the lowest harvest in 1999. Of the total harvest, 1.1 percent were chinook, 19.6 percent were chum salmon, 21.3 percent were pink, 43.7 percent were sockeye, and 14.3 percent were coho (Fig. III-1). The

estimated mean harvest in the Port Clarence District was about 42 salmon per household; the estimated breakdown of this harvest was 0.4 chinook, 8 chum, 9 pink, 18 sockeye, and 6 coho.

Participation in Subsistence Fishing

In the Norton Sound District (excluding Nome), about 59 percent of households subsistence fished for salmon and an additional 11 percent assisted other households in processing subsistence-caught salmon. Participation in subsistence salmon fishing in the district ranged from 40 percent of households in Stebbins and St. Michael to 85 percent in Unalakleet.

In the Port Clarence District, 49 percent of households subsistence fished for salmon in 2000. About 11 percent helped other households process subsistence-caught fish.

Participation in Commercial Fishing

In the Norton Sound District (excluding Nome), about 18 percent of households participated in commercial salmon fishing, with 5 percent of all households removing salmon from their commercial catches for subsistence use. In the Port Clarence District less than 1 percent of households participated in commercial salmon fishing, and none removed salmon from their commercial catches for subsistence use. In 2000, as in other recent years, commercial salmon fishing in the region suffered from poor market conditions and from poor salmon returns in some areas. In the Norton Sound District, an estimated total of 1,077 salmon were retained from commercial catches for subsistence use, of which 56 percent were chum salmon. The salmon retained from commercial catches comprised about 1 percent of the district's estimated subsistence harvest.

Gear Type

In the Norton Sound District (excluding Nome), rod and reel was used by about 88 percent of households to harvest salmon, followed by set gillnets (68 percent of households), seines (22 percent of households), and driftnets (less than 1 percent of households). Although rod and reel was the most widely used gear type, it accounted for only 11 percent of the total salmon harvest in the surveyed communities in the Norton Sound District. Coho and pink salmon were the primary targets of rod and reel fishing.

In the Port Clarence District, set gillnet was the most common gear for harvesting salmon, used by about 93 percent of the households that subsistence fished for salmon. Rod and reel was used by 3 percent of the households that subsistence fished for salmon, and seines by 1 percent. Less than 1 percent of the salmon harvest by district residents was caught with rod and reel.

Salmon for Dog Food

In 2000 an estimated 2,041 salmon, or about 3 percent of the total subsistence catch, were harvested specifically for dog food in the surveyed communities (excluding Nome) in the two

districts. This was similar to the 1999 salmon harvest for dog food. The mean number of salmon fed per dog was about 18 fish per year. Overall, about 2 percent of all the surveyed households in the two districts (excluding Nome) caught salmon for dog food.

Assessment of Fishing Season

When asked whether subsistence chum salmon fishing was very good, average, or poor in 2000, 67 percent of the fishing households in the Norton Sound District (excluding Nome) responded “poor,” 25 percent responded “average,” and 8 percent responded “very good.” A larger percentage of households responded “poor” in 2000 than in the previous four years. The percentage of households assessing the 2000 chum salmon fishing season as “poor” ranged from 37% of households in Koyuk to 79 percent in St. Michael.

In the Port Clarence District, about 76 percent of the fishing households responded that the chum fishing season was “poor” in 2000 and 16 percent said it was “average.” About 8 percent said the chum fishing season was “very good.” As in the Norton Sound District, a larger percentage of households responded “poor” in 2000 than in the previous four years.

KOTZEBUE AREA SALMON

Background

Kotzebue Sound residents have relied on fish for cultural and nutritional sustenance for thousands of years. At the turn of the millennium, most local residents in the region continue to participate in a mixed subsistence-cash economy, harvesting a wide variety of wild foods. In the Kotzebue Area, salmon’s role in the wild food diet varies from community to community, affected primarily by salmon abundance. Along the Noatak and Kobuk rivers, where runs of chum salmon are strong, many households’ activities in middle and late summer revolve around the catching, drying, and storing of salmon for use during the winter. Chum salmon predominate in the district, with small numbers of other salmon species present.

Regulations

In the Kotzebue Area, subsistence salmon fishing has few restrictions other than the general statewide provisions. Salmon may be taken in the district at any time with no harvest limits and no required permits. Commercial fishermen, however, are not allowed to subsistence fish for salmon during the commercial season.

In-Season Management

Subsistence salmon fishing in the Kotzebue Area proceeded as normal in 2000. No emergency orders were issued affecting this fishery.

Subsistence Salmon Harvest Collection Methods

Two methods were used to assess subsistence salmon harvests in the Kotzebue Area in 2000: 1) post-season household surveys in 6 communities, and 2) a postcard survey in Kotzebue.

Household Surveys

In the Kotzebue Area, household surveys were conducted in the Noatak and Kobuk river villages of Noatak, Noorvik, Kiana, Ambler, Shungnak, and Kobuk. The communities of Wales, Diomede, Shishmaref, Deering, Buckland, Selawik, Kivalina, and Point Hope were not surveyed due to little availability of salmon, the lack of competing commercial salmon uses, or limited staff time and funding. Researchers attempted to contact 100 percent of the households in each of the surveyed communities. Overall, about 52.9 percent of the households in the surveyed communities were interviewed (237 of 448 households). The salmon survey data were expanded by community to account for the households not contacted.

The goals of the post-season household survey were to:

- 1) collect harvest data that would result in a total harvest estimate for subsistence salmon by species by community, and
- 2) compile information on gear types, participation rates, sharing, household size, and use of salmon for dog food.

Kotzebue Postcard Survey

With a population of about 3,000 people, Kotzebue was too large to survey house-to-house in an effective and timely way. Instead the department assessed subsistence salmon harvests through a mail-out postcard survey, essentially an abbreviated version of the household survey instrument. A total of 733 postcards were mailed to Kotzebue households; 186 (25.4 percent) responded. The Kotzebue postcard data were analyzed as a random sample and expanded with a single expansion factor based on the sampling rate of the entire community. An additional 45 households were added to the Kotzebue household list after the postcard mailing took place. The expanded estimate of Kotzebue's salmon harvest was based on this total of 778 households.

2000 Subsistence Salmon Harvests

Kotzebue Area Subsistence Salmon Harvest

The 2000 subsistence salmon harvest in the Kotzebue Area was 68,640 fish, 95.8 percent of which were chum salmon (Table III-1, Fig. III-1). The remaining portion was a mix of other salmon species, present in only small numbers in the district. The estimated mean salmon harvest was about 56 salmon per household, which included 54 chum salmon and 2 coho. Mean harvests ranged from 21 salmon per household in Kobuk to 109 salmon per household in Noorvik.

Participation in Subsistence Fishing

In the Kotzebue Area, 52 percent of households subsistence fished for salmon in 2000 and about 5 percent assisted other households in processing subsistence-caught salmon. Participation in subsistence salmon fishing ranged from 28 percent of households in Ambler to 69 percent in Noatak.

Participation in Commercial Fishing

In the Kotzebue Area (excluding Kotzebue) about 3 percent of households in the surveyed communities participated in commercial salmon fishing, and about 1 percent of households removed salmon from their commercial catches for subsistence use. An estimated total of 115 salmon were retained from commercial catches for subsistence use in the Kotzebue Area, comprising less than 0.2 percent of the district's estimated subsistence harvest. In 2000 as in other recent years, commercial salmon fishing in the region suffered from poor market conditions.

Gear Type

In the Kotzebue Area, set gillnet was the most common gear for harvesting salmon, used by about 65 percent of the households that subsistence fished for salmon. Rod and reel was the next most widely used gear (38 percent of fishing households), although it accounted for less than 4 percent of the salmon harvest in the surveyed communities (excluding Kotzebue). Overall, seines were used by 10 percent of fishing households.

Salmon for Dog Food

In the Kotzebue Area, an estimated 2,167 salmon were harvested specifically for dog food in the surveyed communities (excluding Kotzebue) in 2000. This harvest for dog food was about 7 percent of the total subsistence salmon catch in these communities. The mean number of salmon fed per dog was about 10 fish per year. Overall, about 5 percent of the surveyed households in the district (excluding Kotzebue) caught salmon specifically for dog food.

Assessment of Fishing Season

In the Kotzebue Area, 11 percent of fishing households responded that their chum fishing season was "poor" in 2000, 46 percent said "average," and 43 percent said "very good." This was similar to the responses in 1999, and a considerable improvement from 1998 when 48 percent of households assessed the chum fishing season as "poor." In general, satisfaction with subsistence chum salmon fishing in the Kotzebue Area is determined largely by weather and water conditions. Salmon stocks continue to be fairly stable and abundant in this district, particularly compared to the Norton Sound area.

KOTZEBUE AREA SHEEFISH, WHITEFISH, AND CHAR

Background

In addition to salmon, major subsistence fisheries take place in northwest Alaska for sheefish, whitefish, and char. In the Kotzebue Area, subsistence fishing for these species has few restrictions other than the general statewide provisions. Fish may be taken at any time with no harvest limits and no required permits. Gillnets used to take sheefish have length, depth, and mesh size restrictions.

Harvest Collection Methods

Household surveys were conducted in October and November in the Noatak and Kobuk river villages of Noatak, Noorvik, Kiana, Ambler, Shungnak, and Kobuk. These household surveys primarily collected subsistence salmon harvest information, but also asked about harvests of sheefish and whitefish and, in Noatak, about harvests of char. Researchers attempted to contact 100 percent of the households in each of the surveyed communities. Overall, about 53 percent of the households in the surveyed communities were interviewed. The survey data were expanded by community to account for the households not contacted.

2000 Sheefish and Whitefish Harvests

In 2000 an estimated 7,446 sheefish were harvested by the six surveyed communities in the Kotzebue Area (Table III-4). This was slightly less than the average harvest of the previous five years (Table III-5). Household harvests ranged from 1 sheefish in Noatak to 29 sheefish in Noorvik.

In 2000 an estimated 50,028 whitefish were harvested for subsistence by the six surveyed communities in the Kotzebue Area (Table III-4). This was lower than the average harvest of the previous three years (60,310 fish) (Table III-5). Mean household harvests ranged from about 26 whitefish in Noatak to 338 in Ambler.

In 2000 an estimated 3,315 char (Dolly Varden) were harvested for subsistence by the community of Noatak for a mean household harvest of 33 fish. This was lower than the estimated char harvests for Noatak from 1995-98. Char harvest data were not collected in 1999.

Table III-1. 2000 Northwest Alaska Subsistence Salmon Harvests by District and Species

	Total	Harvests in Numbers of Fish					Total
	Households	Chinook	Chum	Pink	Sockeye	Coho	
Norton Sound District	858	4,117	17,193	39,037	685	17,166	78,199
Port Clarence District	163	72	1,275	1,387	2,851	935	6,521
Kotzebue Area	1,226	210	65,728	75	75	2,552	68,640
Total Northwest Alaska	2,247	4,399	84,196	40,499	3,612	20,654	153,360

SOURCE: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

Table III-2. 2000 Northwest Alaska Subsistence Salmon Harvests by Community

	Total HH's	HH's Contacted	Harvests in Numbers of Fish*					Total
			Chinook	Chum	Pink	Sockeye	Coho	
Anchorage: Nome R. Permits ¹	2	2	0	186	0	2	42	230
Nome: Nome R. Permits ¹	103	81	7	349	2,657	24	705	3,742
Subdistrict 1	105	83	7	535	2,657	26	747	3,972
Anchorage: Niukluk R. Permits ¹	1	0						
Golovin	45	42	42	866	4,306	18	1,328	6,560
Nome: Niukluk R. Permits ¹	6	5	7	2	99	0	74	182
White Mountain	67	65	120	289	6,600	0	932	7,941
Subdistrict 2	119	112	169	1,157	11,005	18	2,334	14,683
Elim	84	80	272	1,316	6,691	46	1,517	9,843
Subdistrict 3	84	80	272	1,316	6,691	46	1,517	9,843
Koyuk	75	70	385	4,580	2,290	19	259	7,533
Subdistrict 4	75	70	385	4,580	2,290	19	259	7,533
Shaktolik	56	54	440	2,412	5,432	20	2,799	11,103
Subdistrict 5	56	54	440	2,412	5,432	20	2,799	11,103
Unalakleet ²	206	188	2,390	2,936	10,522	203	5,931	21,982
Subdistrict 6	206	188	2,390	2,936	10,522	203	5,931	21,982
Stebbins	128	111	294	2,876	360	337	2,398	6,264
St. Michael	85	80	160	1,381	80	16	1,180	2,818
South Norton Sound	213	191	454	4,257	440	353	3,578	9,082
NORTON SOUND	858	778	4,117	17,193	39,037	685	17,166	78,199
Brevig Mission	69	57	32	486	808	1,007	530	2,863
Nome: Pilgrim R. Permits ¹	15	9	2	43	22	61	36	164
Teller	79	69	39	747	557	1,784	369	3,494
PORT CLARENCE	163	135	72	1,275	1,387	2,851	935	6,521
Ambler	70	34	0	5,009	0	0	0	5,009
Kiana ³	88	51	0	2,876	0	74	107	3,057
Kobuk	30	15	0	318	0	0	0	318
Kotzebue ⁴	778	186	205	36,896	0	0	636	37,737
Noatak	102	61	0	7,293	3	2	87	7,385
Noorvik	112	42	5	10,391	71	0	1,722	12,189
Shungnak	46	34	0	2,944	0	0	1	2,945
KOTZEBUE SOUND	1,226	423	210	65,728	75	75	2,552	68,640
TOTALS	2,247	1,336	4,399	84,196	40,499	3,612	20,654	153,360

* Data from contacted households were expanded to households not contacted. If less than 30 and less than 50% of households in a community were contacted, then reported harvest is used for estimated harvest.

¹ Alaska Department of Fish and Game, Division of Commercial Fisheries, permit returns, 2000. Data not expanded. Total HH's column indicates permits issued. HH's contacted column indicates permits returned.

² Estimated salmon harvest in Unalakleet includes 45 chinook, 535 chum, 292 pink, and 183 coho from the ADF&G test net fishery in addition to the survey results.

³ Estimated chum salmon harvest in Kiana includes 1,932 chum from the ADF&G test net fishery in addition to the survey results.

⁴ Alaska Department of Fish and Game, Division of Subsistence, postcard survey, 2000.

SOURCE: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

Table III-3. Northwest Alaska Subsistence Salmon Harvests by Area, 1994-2000

Norton Sound-Port Clarence Area							
	Number of Households	Chinook	Chum	Pink	Sockeye	Coho	Total
1994	990	7,415	27,070	75,130	3,381	24,000	136,995
1995	1,002	7,842	49,025	41,887	5,703	24,754	129,212
1996	990	7,449	39,292	66,960	3,816	27,562	145,079
1997 ¹	1,276	9,157	28,903	27,955	5,070	17,305	88,389
1998 ¹	1,341	8,584	22,653	59,748	2,910	20,766	114,659
1999	1,075	6,233	21,334	20,803	3,569	15,372	67,311
2000	1,021	4,189	18,469	40,424	3,537	18,101	84,720

Kotzebue Area							
	Number of Households	Chinook	Chum	Pink	Sockeye	Coho	Total
1994 ²	557	135	48,175	3,579	33	478	52,400
1995 ³	1,327	228	102,880	2,059	935	2,560	108,662
1996	1,187	550	99,740	951	471	317	102,029
1997	1,122	464	57,906	1,181	528	848	60,925
1998	1,279	383	48,979	2,116	392	461	52,330
1999	1,277	9	94,342	841	478	1,334	97,004
2000	1,126	210	65,728	75	75	2,552	68,640

¹ Includes Gambell and Savoonga.

² Includes Deering and Wales; does not include Kotzebue.

³ Includes Shishmaref.

Table III-4. Sheefish and Whitefish Harvests by Community in the Kotzebue District, 2000

	Total Households	Number of Fish Harvested	
		Sheefish	Whitefish
Ambler	70	1,672	23,703
Kiana	88	1,385	8,867
Kobuk	30	140	1,252
Noatak	102	123	2,664
Noorvik	112	3,276	6,520
Shungnak	46	850	7,023
Total	448	7,446	50,028

Table III-5. Sheefish, Whitefish, and Char Harvests in Kotzebue District, 1995-2000

	Sheefish ¹		Whitefish ²		Char ³	
	Total Households	Number of Fish	Total Households	Number of Fish	Total Households	Number of Fish
1995	385	9,465	*	*	92	5,762
1996	389	6,953	*	*	88	5,692
1997	398	9,805	482	84,851	84	4,763
1998	392	5,350	489	39,754	97	3,872
1999	445	8,256	445	56,326	*	*
2000	448	7,446	448	50,028	102	3,315

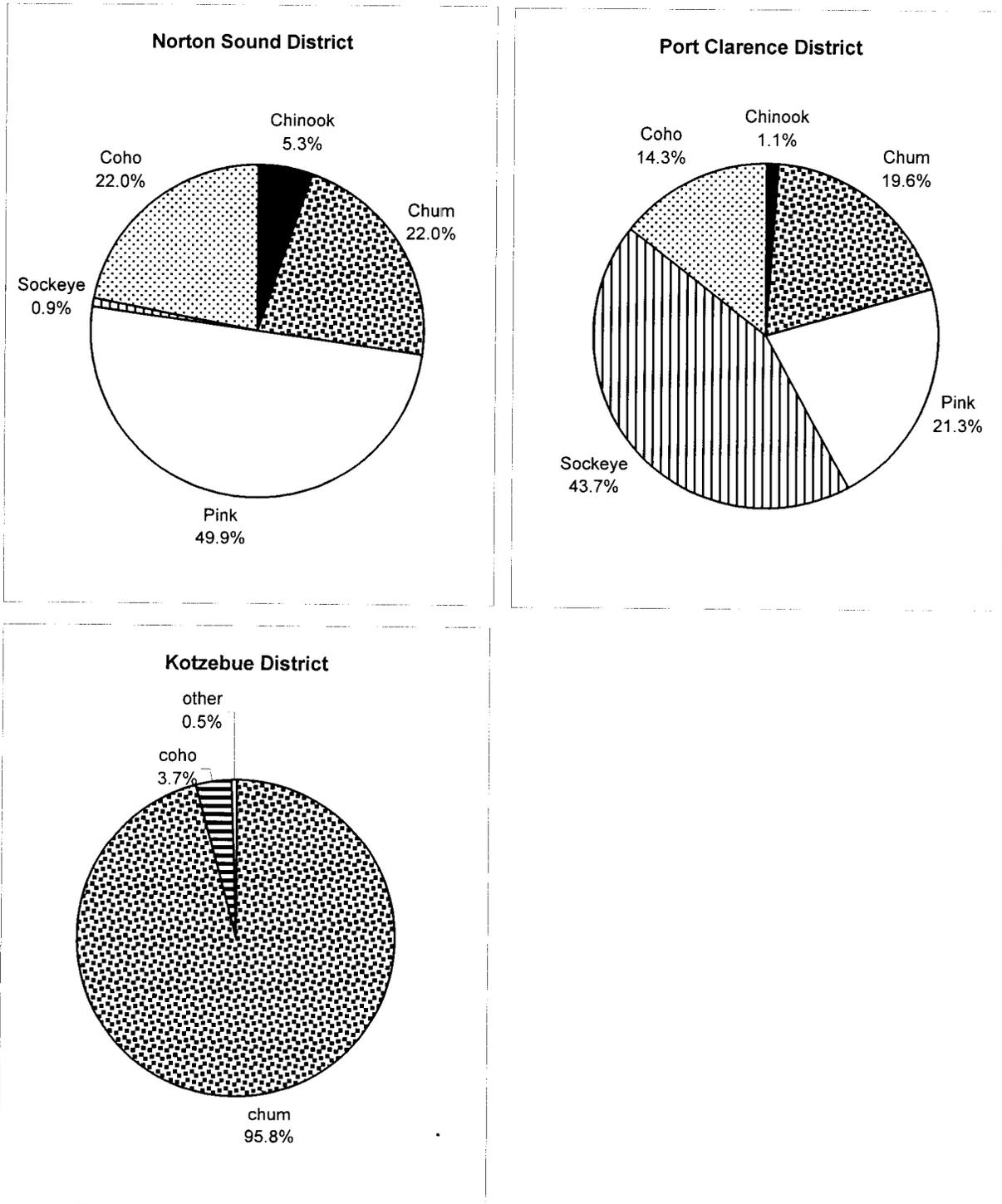
* Data not collected.

¹ Includes Noorvik, Kiana, Ambler, Shungnak, and Kobuk. Also Noatak in 2000.

² Includes Noorvik, Kiana, Ambler, Shungnak, Kobuk, and Noatak.

³ Includes Noatak.

Figure III-1. Species Composition of Subsistence Salmon Harvests, 2000, Norton Sound, Port Clarence, and Kotzebue Districts



IV: YUKON AREA

BACKGROUND

Today as in the past, residents of the Yukon River area rely heavily upon fish for human food. While non-salmon fish species provide an important component of the overall fish harvest, salmon comprises the bulk of the fish harvested for subsistence. Chinook, summer chum, fall chum, and coho salmon comprise the majority of the subsistence salmon harvests in the Yukon drainage and the number of salmon harvested for subsistence in this region is significant. Unlike many marine and coastal fisheries where commercial harvests predominate, within the Yukon drainage subsistence salmon harvests often exceed commercial, sport and personal use harvests combined.

Drift gillnets, set gillnets, and fish wheels are used by Yukon Area fishermen to harvest the majority of salmon. Set gillnets are utilized throughout the Yukon area, in the main rivers and coastal marine waters, while drift gillnets are used extensively in some parts of the river (i.e., that portion of the Yukon drainage 18 miles below Galena). Fish wheels are a legal gear type throughout the Yukon drainage, although due to river conditions and the availability of wood, they are only used on the Upper Yukon and Tanana Rivers.

Depending on the area of the drainage, subsistence fishing occurs from late May through early October. Fishing activities are either based from a fish camp or from the home village: fishing patterns and preferred sites vary from community to community. Extended family groups, typically representing several households, often undertake subsistence salmon fishing. Households and related individuals typically cooperate to harvest, process, preserve, and store salmon for subsistence use. (For more detail on subsistence uses of Yukon River salmon, see the three articles on this topic in the Division of Subsistence "Wildlife Use Notebook Series" [ADF&G n.d.a, n.d.b, n.d.c]).

The majority of the subsistence salmon harvest is preserved for later use by freezing, drying, or smoking, while the head, cutting scraps and viscera are often fed to dogs. Chinook salmon are harvested and processed primarily for human consumption, although small kings and those fish deemed not suitable for human consumption (due to presence of the fungus, *Ichthyophonus hoferi* or some other disease) are often fed to dogs. In addition, while chum and coho salmon are primarily taken for human consumption, relatively large numbers are harvested and processed to feed sled dogs. Fall chum and coho salmon typically arrive in the upper portion of the drainage with the advent of freezing weather allowing fish to be "cribbed" for use as dog food. This method involves the natural freezing of whole (un-cut) fish. The practice of keeping sled dogs is much more common in communities along the Upper Yukon River.

REGULATIONS

The Alaska Joint Board of Fisheries and Game has defined a portion of the Yukon River drainage as lying within the Fairbanks Nonsubsistence Area (5 AAC 99.015). Subsistence

fisheries may not be authorized within nonsubsistence areas and the harvest of fish for home use in these areas occurs under personal use and sport fishing regulations.

In 1993 the Alaska Board of Fisheries adopted regulations which separated subsistence and commercial salmon fishing times in Districts 1, 2, and 3 and in the lower portion of District 4 (Subdistrict 4-A) (Fig. IV-1). In these districts, subsistence salmon fishing is allowed seven days per week, but may not occur 24 hours prior to and immediately following the commercial salmon fishing season. By regulation, once the commercial season is open, subsistence salmon fishing may not occur 18 hours immediately before, during, and 12 hours after each District 1, 2, or 3 summer season commercial fishing period. During the fall season, in Districts 1, 2, and 3, subsistence fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial fishing period. In Subdistrict 4A, subsistence salmon fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial salmon fishing period throughout the season.

In the Upper portion of District 4 (4-B and 4-C) and in Subdistricts 5-B and 5C, subsistence salmon fishing is allowed 7 days per week until 24 hours prior to and immediately following the commercial salmon fishing season. In these areas, subsistence salmon fishing periods coincide with commercial salmon fishing periods. Additional, subsistence-only salmon fishing periods are also allowed during the commercial salmon fishing season. In Subdistrict 5-D, subsistence salmon fishing is allowed 7 days per week.

In Subdistrict 5-A, subsistence fishing is allowed seven days per week until 24 hours prior to the commercial fishing season. Since 1994, with the exception of 1998¹, the subsistence salmon fishing schedule in 5-D allows subsistence salmon fishing five days per week following the closure of the commercial salmon fishing season.

Since 1988, subsistence fishing in the lower Tanana River drainage in Subdistricts 6-A and 6-B is allowed for two 42-hour periods per week unless altered by emergency order.² In the Upper Tanana River drainage, subsistence fishing is allowed seven days per week.

The 2000 subsistence fishing season in the Yukon River was distinguished by extremely weak returns of chinook, as well as summer and fall chum salmon. These poor returns resulted in unprecedented restrictions and closures to commercial, personal use, sport, and subsistence fisheries. Initial restrictions to subsistence fishing were instituted on July 19, 2000 resulting in one 12-hour period per week in districts 1, 2, and 3; two 24-hour periods per week in District 4; one 24-hour and two 12-hour periods per week in District 5; and one 24-hour period per week in Districts 6A and 6B with one 40-hour period per week allowed in the Old Minto Area. With commercial, sport, and personal use salmon fisheries closed, additional subsistence restrictions were announced for all Yukon River districts on August 12 reflecting an 80 percent reduction of

¹ In 1998, the Alaska Board of Fisheries relaxed restrictive elements of the Toklat River Fall Chum Salmon Rebuilding Management Plan and allowed Subdistrict 5-A to subsistence salmon fish seven days per week. When the escapement objectives were not subsequently met, the restrictive elements of the salmon rebuilding plan were reinstated and subsistence fishing in Subdistrict 5-A was reduced during the 1999 season.

² In the lower Tanana River drainage, Sub-district 6-C is a personal use salmon fishery. Its regulations match those of the 6-A and 6-B subsistence salmon fishery; namely, that personal use fishing is allowed for two 42-hour periods per week unless altered by emergency order.

fishing opportunity in most districts. Finally, out of concern for critically weak fall chum salmon returns, subsistence salmon fishing in the entire Alaska portion of the Yukon River drainage was closed on August 23, 2000. During this closure, subsistence fishing for non-salmon species was allowed to continue using small-mesh gillnets and in some districts the harvest of late season coho salmon was permitted using fish wheels equipped with “live chutes” that allowed chum salmon to be released. Normal subsistence schedules resumed in stages between September 16 and October 9, 2002 after the majority of fall chum salmon had passed through the various districts.

SUBSISTENCE HARVEST ASSESSMENT METHODS

For the majority of villages within the Yukon Area, there are no regulatory requirements to report subsistence salmon harvests. For these villages, ADF&G utilizes a voluntary survey program to estimate the total subsistence salmon harvest. Harvest information is collected using a combination of subsistence harvest calendars mailed out prior to fishing activities, post-season household interviews, postseason household telephone interviews, and postcards. In road-accessible portions of the Yukon Area, including the majority of the Tanana River drainage (Subdistricts 6-A, 6-B and the Upper Tanana River drainage), the Yukon River drainage between Hess Creek and the Dall River (known as the Yukon River bridge area), and the upper portion of Subdistrict 5-D between the upstream mouth of Twenty-two Mile Slough and the U.S. Canada border, subsistence fishermen are required to obtain an annual household permit prior to fishing. In these areas, fishermen are required to document their subsistence salmon harvest on the household permit and return it to ADF&G at the end of the season.

Prior to salmon fishing activities, subsistence harvest calendars are mailed out to all identified fishing households within the survey communities. The lower Yukon Area calendars contain the months of May through September and the upper Yukon Area contain the months of June through October. Additional calendars are made available to households upon request from ADF&G offices in Emmonak and Fairbanks. The calendars provide space for fishermen to record their daily subsistence catch of salmon. Surveyors who travel through villages following the completion of salmon fishing activities pick up calendars. Posters are sent to village post offices and announcements on local radio stations remind fishermen to have their calendars available for pick up by surveyors. In 2000, an estimated 2,436 calendars were distributed. About 8 percent of these (177) were either returned to the department by mail, or picked up by surveyors during their fall surveys. Calendars provide important run timing information that is not obtained by any other data collection method.

In addition to the catch calendars, the Division of Commercial Fisheries conducts post-season personal interviews with a stratified random sample of all fishing households within the Yukon River drainage. Survey questions focus on chinook, summer chum, fall chum and coho salmon, but households are also asked about other species as well such as pink salmon (primarily taken by coastal communities) pike, whitefish, and sheefish. Some households that are not personally contacted by the surveyors are contacted by telephone. Those households not contacted by telephone are mailed a survey questionnaire including a postage paid return envelope. In 2000, 967 households were interviewed about their subsistence salmon fishing harvests.

In road-accessible portions of the Yukon River drainage (see area description above), a subsistence permit is required. Subsistence fishermen record their salmon catches on a household permit and return the permit at the end of the season. Subsistence permit applications are mailed to all permittees who return the prior year's permit. Subsistence permit applications are mailed to rural communities along with a letter explaining how to apply by mail. In addition, ADF&G staff travel to select villages so that applicants can be issued permits in person. Permits are also issued in person or by mail throughout the season from numerous ADF&G offices. Permit holders are required to keep a record of their daily fish harvest on their permit and return it to the department within ten days of the expiration date on the permit. Permit holders that do not send in their permits within ten days are sent up to two reminder letters. Telephone contacts with households that do not respond to the reminder letters are attempted as a final measure.

Subsistence salmon permits in a portion of Subdistrict 6-B (the Tanana River drainage above a point three miles upstream of Tolchaket slough to the boundary with 6-C) are required to report their harvests weekly for in-season management purposes. To maximize the return of permits, ADF&G staff sends reminder letters. The annual return rate for permits is typically over 80 percent. A total of 357 subsistence permits were issued in 2000, and 338 (95%) were returned.

SUBSISTENCE SALMON HARVESTS IN 2000

In 2000, 1,341 households provided harvest data for the Yukon Area subsistence salmon fishery. It is estimated that 3,209 households participated in the fishery. The estimated 2000 subsistence salmon harvest for the Yukon area broken down by species included 36,844 chinook (24.1 percent), 77,813 summer chum (51.1 percent), 19,402 fall chum (12.7 percent), 16,650 coho (10.9 percent), and 1,591 pink (1.0 percent) for a total of 152,300 salmon. (Table IV-1; Figure IV-2).

As shown in Table IV-2, the estimated subsistence harvest of 36,844 chinook salmon in 2000 falls well below the recent five-year Yukon Area average of 48,854 chinook. Similarly, the estimated 2000 summer chum subsistence harvest of 77,813 was about 19.3 percent below the recent five-year average of 96,397. A even more dramatic decline occurred in the subsistence harvest of fall chum salmon where the estimated 2000 harvest of 19,402 fish was 75.1 percent below the recent five-year average harvest of 78,024. It should be noted that the 1996- 2000 average harvest figure in Table IV-2 includes other recent years when regulatory restrictions were imposed on fishers to protect fall chum stocks due to poor returns. Comparison with harvests in the late 1980s and early 1990s, in which restrictions were not imposed shows the true magnitude of the harvest decline in this fishery in 2000.

Subsistence harvests of coho salmon in 2000 were also below average. As illustrated in Table IV-2, the estimated 2000 subsistence coho salmon harvest was 16,650, 23.7 percent below the recent five year average.

Pink salmon harvest information is collected in several communities in the Yukon Area. Although pink salmon can be abundant in coastal and near-coastal communities of the lower

Yukon area, they are not typically targeted by fishers and their harvest in the subsistence fishery remains low. The estimated 2000 subsistence pink salmon harvest was 1,591 fish. These fish were harvested exclusively by communities in the coastal district.

An estimated 55 percent of the total households who participated in the 2000 subsistence fishery owned dogs. Households in the Upper Yukon (districts 4, 5, and 6) own 63.4 percent of the dogs. Figure IV-3 provides a breakdown of number of dogs by fishing district. Of the estimated 1,557 households owning dogs about 9 percent (140 households) are estimated to have fed their dogs whole salmon in 2000. An estimated 7,626 summer chum salmon, 7,739 fall chum salmon and 2,220 coho salmon were retained for dog food from both subsistence and commercial-related salmon harvests (Borba and Hamner 2001:44,49).

Primary gear types used by households in 2000 in surveyed villages reporting fishing included drift net (49.2 percent) set gillnet (45.4 percent), fish wheel (4.4 percent), and hook and line (1.0 percent) (Borba and Hamner 2001:35). Figure IV-4 provides a breakdown of the subsistence salmon harvest gear types for the Yukon Area for 2000.

The poor salmon returns of 2000 and the resulting restrictions and closures to subsistence salmon fishing schedules made it extremely difficult for fishing families to meet their needs. A total of 932 households, or 64 percent of all surveyed households, reported that they did not meet their subsistence salmon needs in 2000.

Table IV-1. 2000 Subsistence Harvests by Community: Yukon Management Area

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Summer Chum	Fall Chum	Coho	Pink	
Alakanuk	152	32	1,109	6,259	505	84	38	7,995
Alatna	7	7	8	0	15	0	0	23
Allakaket	63	22	41	1,520	37	0	0	1,598
Anchorage	1	1	0	0	0	0	0	0
Anvik	41	16	205	425	175	0	30	835
Beaver	37	23	196	7	0	0	0	203
Bettles	30	19	0	0	0	0	0	0
Birch Creek	15	12	72	0	10	0	0	81
Central	12	12	26	1	0	0	0	27
Chalkyitsik	41	12	0	132	0	0	0	132
Chugiak	1	0						
Circle	28	26	675	117	0	0	0	793
Delta Junction	7	7	0	2	0	0	0	2
Denali Park	1	1	4	1	0	0	0	5
Dot Lake	2	2	0	0	100	0	0	100
Eagle	63	62	1,105	123	33	0	0	1,260
Eielson AFB	1	1	0	0	0	0	0	0
Emmonak	198	84	2,194	8,312	1,165	191	0	11,862
Ester	5	5	2	0	0	0	0	2
Fairbanks	98	92	1,632	356	9	0	0	1,997
Fort Wainwright	2	2	0	0	0	0	0	0
Fort Yukon	169	27	976	0	331	120	0	1,427
Gakona	1	1	0	0	0	0	0	0
Galena	216	58	788	820	564	71	0	2,244
Grayling	48	23	839	474	284	372	0	1,969
Healy	7	7	0	0	200	1,200	0	1,400
Holy Cross	62	26	1,249	569	523	70	20	2,431
Hooper Bay	218	47	114	9,178	78	218	901	10,489
Hughes	24	17	50	1,079	157	12	0	1,298
Huslia	96	15	688	745	35	132	0	1,600
Juneau	1	1	10	0	0	0	0	10
Kaltag	62	25	1,074	169	190	110	0	1,543
Kotlik	94	30	1,893	6,173	3,519	787	263	12,635
Koyukuk	42	10	175	204	239	138	0	755
Manley Hot Springs	14	14	223	251	0	2,410	0	2,884

continued

Table IV-1. 2000 Subsistence Harvests by Community: Yukon Management Area

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Summer Chum	Fall Chum	Coho	Pink	
Marshall (Fortuna Ledge)	86	30	3,279	3,212	0	11	0	6,501
Minto	35	34	5	3	2	3	0	13
Mountain Village	170	59	1,715	7,074	313	376	61	9,538
Nenana	39	39	591	815	8	1,828	0	3,242
North Pole	19	19	154	0	0	0	0	154
Northway	16	15	2	0	0	0	0	2
Nulato	101	30	1,083	377	0	60	0	1,520
Nunam Iqua (Sheldon Point)	38	29	684	3,309	105	5	0	4,102
Pilot Station	111	55	2,324	5,145	852	1,708	6	10,035
Pitka's Point	27	22	753	1,728	5	139	114	2,738
Rampart	28	15	847	47	0	0	0	894
Ruby	77	26	1,577	1,233	64	173	1	3,048
Russian Mission	68	21	1,860	1,318	37	24	8	3,247
Saint Marys (Andreafsky)	148	52	1,783	7,994	250	117	54	10,199
Salcha	9	9	121	69	0	2	0	192
Scammon Bay	89	24	449	3,876	11	4	96	4,434
Shageluk	40	26	805	1,800	38	0	0	2,642
Slana	1	1	0	0	0	0	0	0
Stevens Village	42	16	466	50	0	0	0	516
Tanacross	15	12	0	0	0	0	0	0
Tanana	121	44	2,895	2,848	9,419	6,285	0	21,447
Tok	9	9	3	0	1	0	0	4
Venetie	60	14	103	0	130	0	0	233
Wasilla	1	1	0	0	0	0	0	0
Totals	3,209	1,341	36,844	77,813	19,402	16,650	1,591	152,300

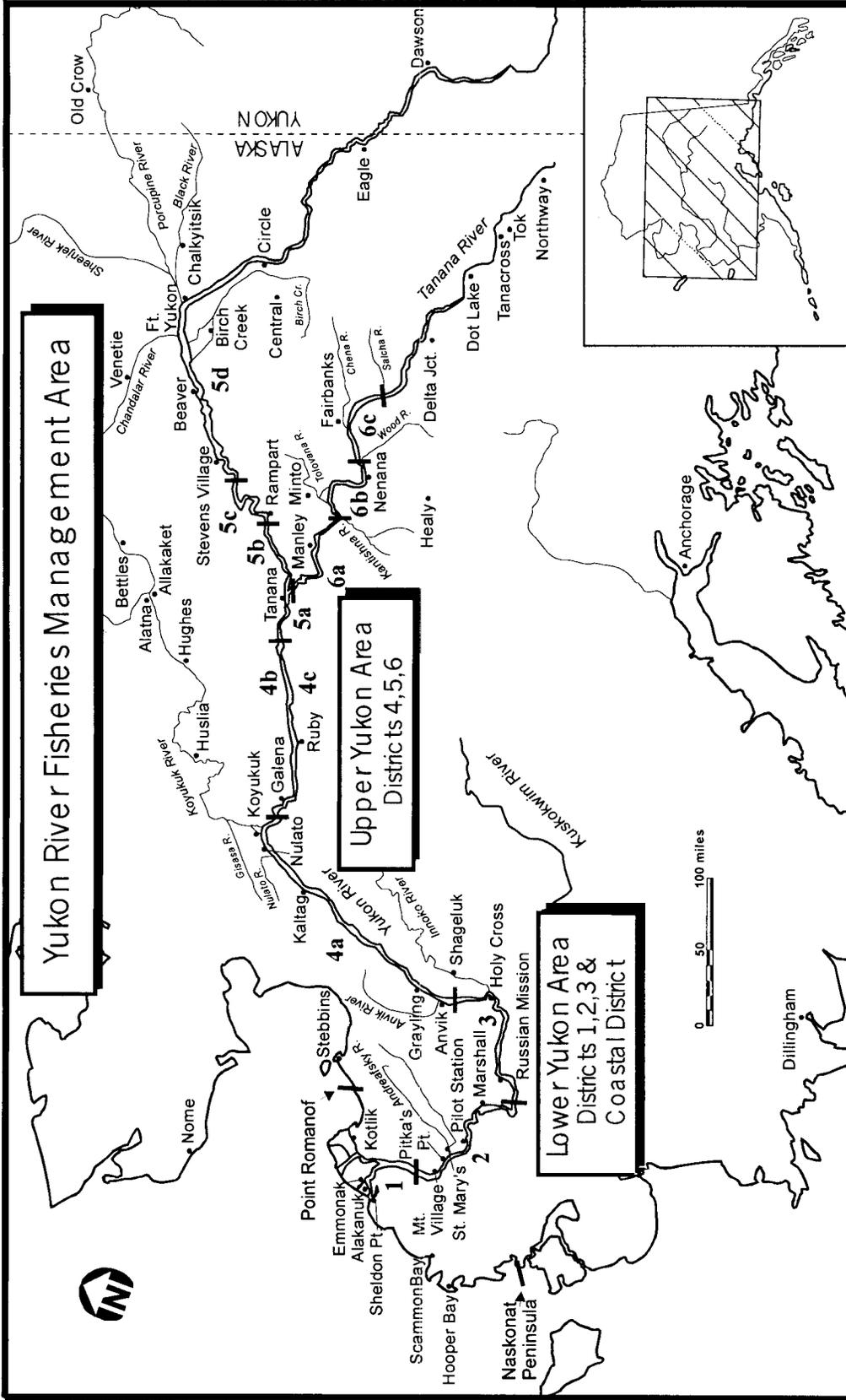
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.1.

Table IV-2. Historic Subsistence Salmon Harvests: Yukon Management Area

Year	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Issued	Returned	Chinook	Summer Chum	Fall Chum	Coho	Pink	
1975			12,724			10,992		23,716
1976			17,530		1,375	12,737		31,642
1977			16,007		4,099	16,333		36,439
1978			30,785	213,953	95,532	7,965		348,235
1979			31,005	202,772	233,347	9,794		476,918
1980			42,724	274,883	172,657	20,158		510,422
1981			29,690	210,785	188,525	21,228		450,228
1982			28,158	260,969	132,897	35,894		457,918
1983			49,478	240,386	192,928	23,905		506,697
1984			42,428	230,747	174,823	49,020		497,018
1985			39,771	264,828	206,472	32,264		543,335
1986			45,238	290,825	164,043	34,468		534,574
1987			55,039	300,042	226,990	46,213		628,284
1988	2,700	1,865	45,495	229,838	157,075	69,679		502,087
1989	2,211	983	48,462	169,496	211,303	40,924		470,185
1990	2,666	1,121	48,587	115,609	167,900	43,460		375,556
1991	2,521	1,261	46,773	118,540	145,524	37,388		348,225
1992	2,751	1,281	47,077	142,192	107,808	51,980		349,057
1993	3,028	1,397	63,915	125,574	76,882	15,812		282,183
1994	2,922	1,386	53,902	124,807	123,565	41,775		344,049
1995	2,832	1,391	50,620	136,083	130,860	28,377		345,940
1996	2,869	1,293	45,671	124,738	129,258	30,404		330,071
1997	2,825	1,309	57,117	112,820	95,141	23,945		289,023
1998	2,986	1,337	54,124	87,366	62,901	18,121		222,512
1999	2,888	1,377	50,515	79,250	83,420	19,984		233,169
2000	3,209	1,341	36,844	77,813	19,402	16,650	1,591	152,300
1996-2000								
Average	2,955	1,331	48,854	96,397	78,024	21,821	1,591	245,415
1991-2000								
Average	2,883	1,337	50,656	112,918	97,476	28,444	1,591	289,653
All Years								
Average	2,801	1,334	41,911	179,753	132,189	29,210	1,591	357,299

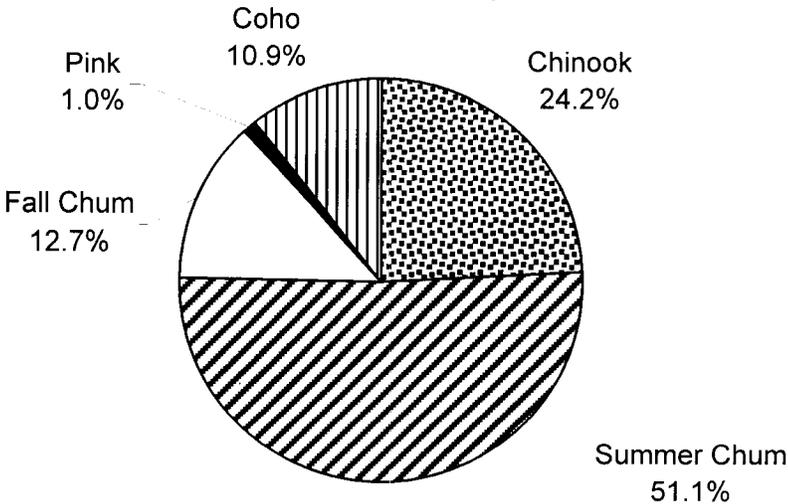
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

Figure IV-1



Map of the Alaskan portion of the Yukon River drainage showing communities and fishing districts.

Figure IV-2. Yukon Area Subsistence Salmon Harvests, 2000



N = 152,300 salmon; based on annual harvest assessment program using permits, calendars, and household surveys.

Figure IV-3. Estimated Number of Dogs by Fishing District, Yukon Area, 2000

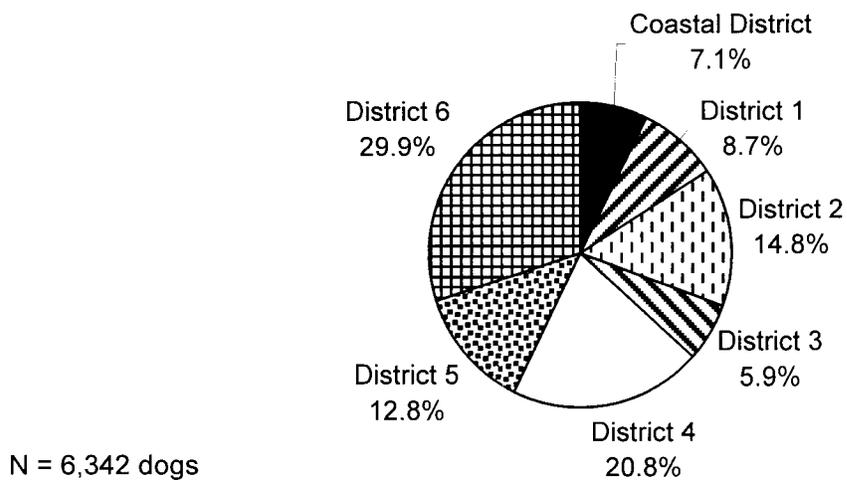
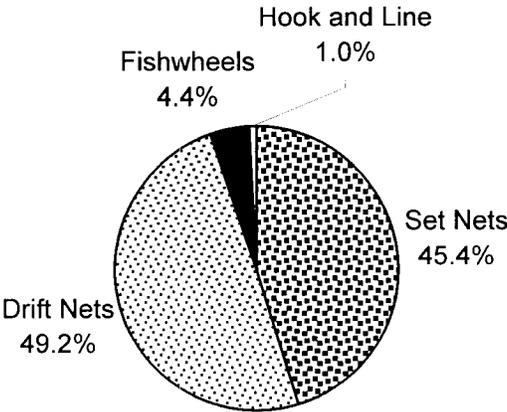


Figure IV-4. Primary Gear Type Utilized for Subsistence Salmon Fishing, Yukon Area, 2000



V: KUSKOKWIM AREA

BACKGROUND

The subsistence salmon fishery in the Kuskokwim region is one of the largest and most important in the state. During summer, early June through August, the day-to-day activities of many Kuskokwim Area households revolve around the harvesting, processing, and preserving of salmon for subsistence use. The seasonal movement of families from permanent winter communities to summer fishcamps situated along rivers and sloughs, continues to be a significant element of the annual subsistence harvest effort. Division of Subsistence studies in the region indicate that fish contribute as much as 85 percent of the total pounds of fish and wildlife harvested in a community annually, and salmon as much as 53 percent of the total annual harvest (Coffing 1991).

More than 1,700 households in the region annually harvest salmon for subsistence use. Many other households, which are not directly involved in catching salmon, participate by assisting family and friends with cutting, drying, smoking, and associated preservation activities (salting, canning and freezing). Annual subsistence harvest surveys have been aimed at gathering data on chinook, chum, sockeye, and coho salmon. Subsistence catches of chinook salmon in the Kuskokwim Area often exceed the commercial catch of this species.

There are 37 communities consisting of approximately 4,400 households within the Kuskokwim Area. The majority of the area households (3,330) are situated within the drainage of the Kuskokwim River. Bethel is the largest community in the region, containing approximately 1,700 households. Approximately 344 households are located in the northern Kuskokwim Bay communities of Kwigillingok, Kongiganak and Kipnuk. Residents of these three communities harvest subsistence salmon from the Kuskokwim River as well as from areas closer to the communities. Residents of Quinhagak, Goodnews Bay, and Platinum, located along the south shore of Kuskokwim bay, harvest salmon stocks primarily from the Kanektok, Arolik, and Goodnews River systems. Residents of Toksook Bay, Nightmute, Tununak, Newtok, Cheforak and Mekoryuk, situated near the Bering Sea Coast, harvest salmon from coastal waters as well as local tributaries.

REGULATIONS

Eligibility criteria require individuals be Alaskan residents for the preceding 12 consecutive months before harvesting salmon for subsistence use. Prior to 1990 there were additional restrictions on participation in the fishery. These are described in earlier annual management reports. The majority of those individuals subsistence fishing for salmon in the Kuskokwim Area are residents of the area. People living in other parts of the state who have family or friends in the region sometimes return to the Kuskokwim area to harvest or help process salmon.

Licenses and permits have never been required for subsistence salmon fishing in the Kuskokwim Area, nor were any required during 2000. There were also no restrictions on the number of salmon that could be harvested by individual fishers or households. Salmon harvested for subsistence use could be caught using set and drift gill nets, beach seines, and fish wheels. In the Holitna, Kanektok, Arolik, and Goodnews river drainages only, spears could also be used. The total length of set or drift gill nets in use by an individual fisher could not exceed 50 fathoms. Unless changed by emergency order, gill nets used for harvesting salmon in the Kuskokwim Area could be of any size mesh. Gill nets with six-inch or smaller mesh could not be more than 45 meshes in depth and nets with greater than six-inch mesh could not be more than 35 meshes in depth. Fishers were required to have their name and address attached to their gill nets and fish wheels.

At their March 2000 meeting, the Board of Fisheries concluded action on a petition submitted by the Association of Village Council Presidents to include fishing with a line attached to a rod or pole and hand held lines as subsistence fishing gear. This regulation took effect in July 2000 for the entire Kuskokwim Area except for that portion of the Kuskokwim River drainage upstream of the Tatlawiksuk River. In addition, the Aniak River drainage upstream of Buckstock River was closed to the taking of chum salmon by subsistence hook and line gear. In the same area, the subsistence harvest of coho salmon with hook and line gear was allowed only until August 31 with a daily bag limit of one coho salmon. There were no salmon bag and possession limits in the remainder of the Kuskokwim Area.

IN-SEASON SUBSISTENCE CLOSURES IN 2000

Areas within the commercial salmon fishing districts were periodically closed to subsistence salmon fishing 16 hours before, during, and 6 hours after commercial salmon fishing periods. The purpose of these closures was to discourage illegal commercial fishing and to help discourage the sale of subsistence caught salmon in the commercial fishery. Many of the commercial fishers are local residents who also participate in the subsistence fishery. The specific area closed to subsistence fishing varied from one district to the next.

In District 1, the waters of the Kuskokwim River were closed to subsistence salmon fishing around commercial salmon fishing periods. Tributaries flowing into the Kuskokwim River within the District did not close. That portion of the Kuskokwim River between Districts 1 and 2 was closed to subsistence fishing at the same time subsistence closures occurred in District 1. Kuskokuak Slough, located in District 1, did not close to subsistence fishing after July 31.

In District 2, waters of the Kuskokwim River and all tributaries flowing into the Kuskokwim River within District 2 were closed to subsistence salmon fishing around commercial salmon fishing periods in District 2. In addition to subsistence closures in District 4 waters, the entire Kanektok and Arolik Rivers near District 4 were closed to all subsistence fishing with nets around the commercial salmon fishing periods in that District. Likewise, the waters of District 5 were also restricted. The Goodnews River was also closed to all subsistence fishing by nets around the commercial periods in District 5.

During 2000, additional restrictions on the subsistence fishery in the Kuskokwim River drainage were implemented on July 8. Following a commercial fishing period on July 5, the Department of Fish and Game and the Federal Office of Subsistence Management restricted the subsistence fishery throughout the Kuskokwim River drainage. The restrictions required that gillnets must have 6-inch or less stretched mesh and limited individuals to a daily subsistence hook and line chinook bag limits of one chinook salmon.

SUBSISTENCE SALMON HARVEST ASSESSMENT METHODS

Data on the subsistence harvest of salmon are collected annually. Commercial Fisheries Division began conducting subsistence salmon harvest surveys along the Kuskokwim River in 1960. Surveys were initiated in Quinhagak (1967) and Goodnews Bay and Platinum (1979). The Division of Subsistence took over the annual subsistence salmon harvest surveys in 1988 under a reimbursable service agreement and have been responsible for collecting and analyzing the data since then. During the early survey years, prior to 1985, subsistence salmon catch data was lumped into two primary categories, "king salmon" and "small salmon." Survey methods were further refined during the 1988 field season that have resulted in more complete data for all salmon species harvested.

Three methods were used to gather subsistence salmon harvest data in the Kuskokwim Area. These methods include subsistence salmon catch calendars, post-season community household surveys, and postcard surveys.

Catch Calendars

In May 2000 subsistence salmon catch calendars were mailed to all Kuskokwim Area households that had been identified as "usually fish." Three similar, but unique, catch calendars were designed for recording the daily catch of each salmon species harvested for subsistence use. One style of calendar was sent to households in communities along the Lower and Middle regions of the Kuskokwim River, to communities along the Bering Sea coast and along North Kuskokwim Bay, and to those communities in the Upper Kuskokwim River region upstream as far as the community of Stony River. A second style of calendar was sent to the remaining households in the Upper Kuskokwim River region and a third style was sent to households in Quinhagak, Goodnews Bay, and Platinum. Differences in the style of calendar sent to households take into account the species available, salmon run-timing, and timing of subsistence fishing activities. Where mailing addresses were available, the calendars were mailed to post office boxes; otherwise calendars were sent general delivery for the post office clerk to distribute. Each calendar was postage paid and addressed for return to the Division of Subsistence office in Bethel. Subsistence salmon catch calendars were distributed to 1,768 households.

Household Surveys

The second method of collecting subsistence salmon harvest information was the post-season household surveys. With this method, staff traveled to communities in the Kuskokwim Area and went house-to-house interviewing residents about their 2000 salmon fishing efforts. Similar to the approach used in developing the catch calendars, three color-coded survey instruments were used to survey the majority of the communities. Except for local terms used for the salmon species, the survey questions asked in each region were identical. The survey form used when interviewing Bethel households also included a space for recording the households resident address and asked reasons why the household harvested salmon for subsistence using hook and line gear.

During 2000, the Division of Subsistence staff conducted house-to-house surveys in 26 communities. Budget constraints have precluded attempts to conduct house-to-house surveys in Mekoryuk, Newtok, Nightmute, Toksook Bay, Tununak, Cheforak, and Telida. Staff was not successful getting to Oscarville, Stony River or Lime Village. House to house surveys were also not done in the communities of Kwigillingok, Kipnuk, and Kasigluk, since the communities asked us to stop doing surveys there several years ago. Through funding administered through the US Fish and Wildlife Service Office of Subsistence Management, the Orutsararmiut Native Council (ONC) located in Bethel, hired two survey technicians to assist the department in gathering data by conducting house to house salmon surveys in Bethel. This cooperative effort between the department and ONC resulted in a much better coverage of the Bethel community.

Survey efforts in these communities occurred over a two-month period, beginning in early October, after most residents had completed salmon fishing for the season and after most hunters had returned home from fall moose and caribou hunting. Communities in which residents usually harvest salmon through October were surveyed in November. Time spent in any one community ranged from one-half to two days depending on the size of the community. Surveys in Bethel were conducted over a 6 week period.

Survey work was conducted systematically. Prior to beginning the community surveys, efforts were made to inform and prepare residents for the arrival of staff doing the surveys. This was done weeks or days in advance of their arrival through letters to City, Tribal, or Traditional Council offices in each community, radio announcements, posters in public buildings and phone calls to community officials. Prior to traveling to each community, staff identified households that had already mailed in or returned their salmon harvest calendars.

In Bethel, survey staff used a map of the community originally developed by the Bethel Fire Department. This map identified the street addresses of much of the community and was used to divide the community into areas that could be assigned to each of the two survey staff. Each survey staff working in Bethel also had access to a list of all Bethel households identified through previous surveys and a list of households which had been sent and returned their salmon fishing calendar.

Upon arrival in a community, staff checked in with the City or Council office to introduce themselves and outline their task. Staff used community household checklists, prepared in advance, to help them identify households they needed to contact while conducting household

surveys. Each "checklist" contained a listing of all known households in the community, identified those households which were reported to have subsistence fished for salmon the previous year (1999), and households which were mailed 2000 catch calendars. Knowledgeable individuals in the community helped staff update the community household list and identify which households "usually fished" and which households "usually did not fish". These individuals also helped to identify households that subsistence fished for salmon in 2000.

Attempts were made to contact all households that were either identified as "usually fish" or were known to have fished during 2000. In Bethel, an effort was made to contact every household (a census) so that a more accurate list of the total number of households in Bethel could be established. Unlike the other communities, there was no one agency or organization that could provide a current Bethel household list. Structured interviews were conducted with these households through the use of the survey instrument. Subsistence salmon catch calendars that had not been mailed back to the department were also collected. If time permitted, other households on the community list were contacted about their salmon fishing activities. In 2000, 2,432 households were surveyed using this method.

Postcard Surveys

The third method of collecting information on subsistence harvest of salmon was through the use of postcard surveys. The postcard survey simply asked if the household harvested salmon from the Kuskokwim Area for subsistence use, the species and quantities harvested, the type of fishing gear used, and how fishing was for each of the four salmon species usually harvested. The postcard could be separated in half and returned postage paid to the department. This type of survey was the primary method of obtaining harvest data from households in Kipnuk, Kwigillingok, Kasigluk, Mekoryuk, Newtok, Nightmute, Toksook Bay, and Tununak, Oscarville, Stony River, Lime Village and households in other communities which were not available at the time of the community surveys.

Postcard surveys were also left at the doors of several occupied households in Bethel where multiple attempts to contact household residents failed. As a final effort to contact households in Bethel, those individuals for which the department had a mailing list but were not contacted were also mailed a survey postcard. Overall 286 postcards were distributed to Bethel residents and 35 were returned completed. Many of the postcards were returned with an address correction indicating that the individual had moved away. If the address correction included a current address, a follow-up postcard was then sent to determine if the individual harvested salmon in the Kuskokwim Area during 2000. Overall, approximately 1,600 households were mailed postcard surveys.

2000 SAMPLING SUMMARY

Of the estimated 4,441 households located in the Kuskokwim Area, information was obtained for 2,985 (67 percent). A total of 2,627 different households were contacted through the various survey efforts. In association with the households that were contacted directly, information about

the fishing status of an additional 358 households was also obtained. A total of 1,729 households harvested salmon for subsistence use during 2000.

Within the Kuskokwim River drainage (including North Kuskokwim Bay communities), 2,423 (66 percent) of 3,674 households living in the region were surveyed. Households that were determined not to have fished during 2000 were not targeted, however some were contacted. This region contains 83 percent of the total households in the Kuskokwim Area and 91 percent of the subsistence fishing households.

In the South Kuskokwim Bay region, containing the communities of Quinhagak, Goodnews Bay, and Platinum, 145 (72 percent) of the 200 households living in the region were contacted. Of these contacted households, 126 (87 percent) harvested salmon in 2000 for subsistence use.

In total, 567 households have been estimated in the Bering Sea coast communities of Mekoryuk, Newtok, Nightmute, Toksook Bay, Tununak and Chefornak. A complete list of households was not available for these communities. Because house-to-house surveys were not conducted in these communities, data were obtained only by postcard surveys and calendar returns. Fifty-nine households in this region provided information and thirty-four reported harvesting salmon. Based on data gathered in other years, actual participation in salmon harvesting activities by households in this region is thought to be much greater than that reported by catch calendars or postcard surveys. For most communities, house-to-house surveys continue to be the primary vehicle for gathering data on harvest and use of subsistence salmon. During the 2000 survey efforts, house to house surveys accounted for 92 percent of all households contacted.

In total, 14 percent (253) of the 1,788 subsistence salmon calendars which were mailed pre-season were used and returned or picked up during the household surveys. There were 161 responses to the 1,605 postcard surveys that were mailed to Kuskokwim Area households.

2000 SUBSISTENCE SALMON HARVEST SUMMARY

A summary of the subsistence salmon harvest estimates by community and fishing area presented in Table V-1. The 2000 total subsistence salmon harvest estimates for the Kuskokwim Area was 68,841 chinook (34 percent), 55,371 chum (27 percent), 44,832 sockeye (22 percent), and 35,670 coho salmon (17 percent), a total of 204,714 salmon (Figure V-1). Seventy-eight percent of the overall subsistence salmon harvests in the Kuskokwim Area were taken by residents of communities located from Tuluksak downstream to Eek.

Overall, the subsistence salmon harvest during 2000 (all species combined) for the entire Kuskokwim Area was 16 percent below the average harvest from the previous ten years (1990-1999). Most notably, the chinook harvest was down more than 21 percent and the chum harvest was down by 29 percent. Chinook salmon are particularly sought after for subsistence use in the Kuskokwim Area and accounted for about a third (34 percent) of the total subsistence salmon catch.. The estimated sockeye harvest during 2000 (44,832 fish) was about average, although a little lower than the 1999 harvest. Subsistence harvests of both coho and chum salmon increased in 2000 compared to the harvest the previous year (1999). Both of these species have experienced a

general decline since 1989. The harvest of 35,670 coho salmon in 2000 is 28 percent above the 1999 harvest, however, it is about equal to the previous ten year average for this species (1990-1999: 38,220). See Table V-2 for historic subsistence salmon estimates for the Kuskokwim Area.

The most significant decline occurred within the upper region of the Kuskokwim River drainage for the communities of Crooked Creek upstream to Nikolai. This area had the lowest salmon harvest for each salmon species since at least 1989. In this region, the 2000 subsistence salmon harvest was more than 60 percent below the previous ten year average (1990–1999) average. The chinook harvest was down by 53 percent, sockeye down by 49 percent, coho down by 61 percent, and chum salmon down by 72 percent in this section of the river. The subsistence salmon harvest in the lower Kuskokwim River (Eek to Tuluksak) was down by 10 percent for all species combined, relative to the 1990–1999 average harvest. Although the sockeye and coho harvest in the lower Kuskokwim River region increased during 2000, the chinook harvest was down 18 percent and the chum salmon harvest was down by 24 percent. The middle Kuskokwim region (Lower Kalskag to Chuathbaluk) saw a harvest that was 28 percent below the previous ten year average. There the chinook harvest was down 31 percent and the chum harvest was 43 percent lower than the 10 year average. Salmon harvests in the Quinhagak area were down 26 percent, although the sockeye harvest was up 14 percent (based on the 1990-1999 average). Harvests in District 5, Goodnews Bay and Platinum, were seven percent better than the ten-year average (1990–1999).

Many fishing households provided information on the types of gear that they used for harvesting chinook salmon. Households often used multiple types of gear: set gill nets, drift gill nets, large mesh gear and small mesh gear. Drift gill nets were the gear type most commonly reported, particularly in the lower and middle Kuskokwim River areas. Set gill nets were used throughout the region. Fishers in the Kuskokwim River drainage from Stony River upstream to Nikolai and communities in the Bering Coast area depended largely on set gill nets for harvesting subsistence salmon. No fishwheels were reported during the 2000 surveys. Fishwheels are sometimes used by residents in Aniak and Stony River as well as in other middle and upper Kuskokwim River communities. Two households in Mekoryuk reported using a seine to harvest salmon. Several households (235) in 27 different communities throughout the region reported using rod and reel gear to harvest salmon for subsistence use.

On occasion, commercial fishers sometimes keep salmon caught during a commercial fishing period and take them home for subsistence use. During 2000, approximately 22 percent of the households which reported commercial fishing also reported that they kept salmon from their commercial catch for subsistence use. This was twice the percentage from the previous year (1999). A total of 187 chinook salmon, 109 chum, 270 sockeye, and 515 coho salmon were reportedly retained from the commercial catch for subsistence use. The number of salmon retained from commercial fishing activities for subsistence use is usually relatively low.

Fishing households were asked to respond to a qualitative question about their subsistence salmon fishing for the season. The purpose of this question was to learn how households viewed their 2000 subsistence fishing success. Households were asked to rate their subsistence fishing success for each of the four species surveyed (chinook, sockeye, chum, coho) as “Very Good,” “Average,” or “Poor”. A total of 1,172 households provided responses to this survey question.

Overall, 59 percent of households reported their subsistence chinook fishing success as very good or average. Fishers in the lower Kuskokwim river area and in Kuskokwim Bay had better success than residents in the middle and upper Kuskokwim region. Eighty percent of the responses by households located in the upper Kuskokwim region (Crooked Creek to Nikolai) were that subsistence fishing for chinook salmon was poor. Of all households that reported their fishing as poor, 61 percent indicated that a weak chinook run, or “few fish this year” or “most of the fish were small” as the reasons. Some felt that their low chinook catches were due to a combination of using a large meshed net and the chinook salmon being smaller than usual. Some households in the middle Kuskokwim reported that high water made fishing difficult. Some fishers in the lower Kuskokwim area felt that low water conditions, clear water and warm weather were responsible for their household’s low chinook catches. Equipment problems, lack of time to subsistence fish because of wage employment and other personal reasons were also identified. Three households reported that the subsistence fishing restrictions put into effect during 2000 were the reasons.

In contrast, most of the responses relating to chum, sockeye, and coho salmon reported that subsistence fishing was very good or average. However, one exception to this was that 68 percent of the responses from the middle Kuskokwim region indicated that subsistence fishing for chum salmon was poor. A weak chum salmon run and few fish were the reasons most frequently given.

OTHER FISH

There are no fisheries harvest assessment projects in place uniformly throughout the Kuskokwim Area on an annual basis. In most communities, harvest assessment does not occur. Harvest estimates are available for a few communities, such as Kwethluk, Nunapitchuk and Akiachak, based on community based subsistence surveys conducted in the region. Surveys of herring harvested for subsistence used were conducted in the mid 1980s through the early 1990s in the Nelson Island region. These data are in the Community Profile Database (Scott et al. 2001).

During 2000, harvest assessment of non-salmon species occurred in conjunction with the post-season salmon harvest surveys. The Division of Subsistence (Division), Alaska Department of Fish and Game (Department) directed a study of the Bethel area through the work of the Orutsararmuit Native Council (ONC) in Bethel to conduct subsistence fish harvest surveys of households in the community of Bethel during October and November 2000. The purpose of the survey was to contact Bethel households to gather information about their harvest of fish, identify households that participated in the subsistence fishery, estimate the number of fish harvested by the community and identify gear used for subsistence fishing. The survey focused on salmon harvested during the period from May through September 2000, and non-salmon species harvested during the period October 1, 1999 through September 30, 2000.

2000 Bethel Sampling Summary

All of the occupied housing units in Bethel were identified and added to the ADF&G database with a physical address. Survey results indicate that there were a total of 1,739 occupied units (houses plus apartments) in Bethel. Face to face surveys were successfully completed at 1,221 of

these units. An estimated 768 Bethel households participated in the subsistence fishery. Household participation rates in subsistence fishing activities was highest for salmon.

2000 Bethel Subsistence Fish Harvest Summary

An estimated 559 households harvested chinook salmon. Approximately 400 households each reported harvesting chum, sockeye and coho salmon while 29 households harvested pink salmon (Table V-3). Of non-salmon species, smelt, whitefish and northern pike were the species most frequently reported. Relatively few households reported harvesting lake trout.

Harvest Amounts

Based on the 1,221 Bethel households that were surveyed, total community estimates were made of the amount of each fish species harvested for subsistence use during the study period. An estimated 59,529 salmon and 15,849 non-salmon fish (excluding blackfish and smelt) were harvested. Chinook salmon represented 38 percent of the total salmon harvest, coho salmon 23 percent, sockeye 21 percent, and chum 18 percent. Whitefish and northern pike each represented about one-third of the total non-salmon harvest, in numbers of fish. Approximately 1,600 gallons of smelt and 1,200 gallons of blackfish were harvested.

Harvest Gear

The majority of the salmon harvested (86 percent) were caught with drift gillnets (Table V-3). Set gillnets were used to harvest approximately 12 percent of the salmon caught and are more commonly used when fishers are targeting chinook salmon early in the run. Large mesh gear continues to be used by a majority of subsistence fishers targeting chinook salmon. A total of 315 households provided information on the mesh size of gillnets used when harvesting chinook salmon. Seventy-seven percent (242 households) reported using gill nets having 8-inch or greater mesh size. Approximately 1,300 salmon were harvested with hook and line gear. Most (83 percent) of the salmon harvested with hook and line gear were coho salmon. A total of 1,053 coho, 130 chinook, 57 sockeye, 28 chum and 4 pink salmon were harvested with hook and line gear. Gear type was unreported for 13 chinook salmon.

In contrast to salmon, drift gillnets were used to harvest only three percent of non-salmon species. Approximately 25 percent of the non-salmon fish were harvested with rod and reel gear, 33 percent were caught by hook and line through the ice, 21 percent with set gillnet in open water, and 18 percent caught with set gillnet under the ice. Smelt were harvested exclusively with dipnets. Blackfish were caught with small, locally made fishtraps called *taluyat*.

Whitefish and sheefish were the predominant non-salmon species harvested with drift gillnets. These fish were harvested primarily when fishers were drifting for salmon. Sheefish are typically caught while fishers target chinook salmon in late May and early June. Whitefish are frequently caught in August when fishers are targeting coho salmon. Setnets used during periods of open water were used primarily for harvesting whitefish, however, pike, burbot and sheefish were also harvested in set gillnets. Gillnets set under the ice during winter (November through March) caught mostly whitefish. A few burbot, pike, sheefish and grayling were also harvested with this gear. Fishing with hook and line gear through the ice resulted in a harvest of 5,208 fish, composed primarily of northern pike, burbot and whitefish. A few sheefish (47) and grayling (9) were also taken. Subsistence harvests with hook and line gear in open water resulted in a harvest of approximately 1,200 whitefish, 1,400 northern pike, 540 burbot, 124 sheefish, 246 grayling, 258 Dolly Varden, 234 rainbow trout, and 38 lake trout.

Table V-1. 2000 Subsistence Salmon Harvests, Kuskokwim Area

Community	HOUSEHOLDS					ESTIMATED SUBSISTENCE HARVEST			
	Total in Community	Surveyed In Person at Home	ADFG Mailed a Survey	Subsistence Contacted*	Fished	Number of Salmon Harvested			
						Chinook	Chum	Sockeye	Coho
Kipnuk	176	1	174	12	9	170	269	179	22
Kwigillingok	95	0	95	0	-	-	-	-	-
Kongiganak	73	51	19	52	59	1,299	1,850	1,789	33
Tuntutuliak	74	61	15	62	64	2,939	2,735	1,236	3,43
Eek	67	53	10	55	48	2,112	636	878	48
Kasigluk	135	0	133	18	14	731	930	666	1,66
Nunapitchuk	103	81	18	83	71	3,354	4,694	2,111	36
Atmautluak	52	43	7	45	34	1,174	1,819	1,516	22
Napakiak	75	47	15	49	48	2,178	2,987	2,026	50
Napaskiak	79	55	18	55	61	4,309	2,848	2,611	88
Oscarville	15	0	15	0	-	-	-	-	-
Bethel	1,739	1,221	286	1,258	545	22,515	10,616	12,536	13,79
Kwethluk	144	85	37	95	104	4,925	5,048	3,685	3,27
Akiachak	123	80	35	84	99	6,124	4,589	3,597	2,50
Akiak	59	34	17	40	40	2,190	2,456	970	48
Tuluksak	76	53	16	56	59	2,432	2,504	2,207	52
Lower Kalskag	63	36	18	42	35	1,822	1,641	885	42
Upper Kalskag	56	35	12	38	35	1,237	1,558	636	28
Aniak	169	141	19	148	94	3,117	1,943	1,143	1,92
Chuathbaluk	29	24	3	26	22	303	704	515	46
Crooked Creek	31	23	3	24	18	575	812	505	13
Red Devil	14	9	5	9	8	94	53	107	15
Sleetmute	34	28	6	29	29	430	390	759	55
Stony River	15	1	15	3	3	21	99	266	1
Lime Village	17	3	4	4	7	45	294	918	36
McGrath	113	88	10	94	48	642	161	42	70
Takotna	17	16	1	16	2	0	0	0	2
Nikolai	29	24	1	26	13	155	60	0	3
Telida	2	0	0	0	-	-	-	-	-
Quinhagak	130	79	28	84	82	3,106	912	1,341	1,08
Goodnews Bay	53	47	2	48	34	601	280	1,028	41
Platinum	17	13	2	13	10	102	84	177	10
Mekoryuk	88	0	88	19	15	2	2,120	7	7
Newtok	79	0	79	12	5	19	16	124	6
Nightmute	67	0	67	7	4	8	2	71	-
Toksook Bay	132	0	131	12	6	58	217	253	11
Tununak	108	0	108	9	4	52	44	48	2
Chefornak	93	0	93	0	-	-	-	-	-
Kuskokwim Area Totals	4,441	2,432	1,605	2,627	1,729	68,841	55,371	44,832	35,67

* Includes households that returned a calendar, returned a mailed survey or were surveyed by staff in person.

NOTE: Data from surveyed households were expanded within each community to include households that were not surveyed. However, if fewer than 30 households or less than 50% of households in a stratum in a community were contacted, then reported harvest is used for estimated harvest. Blanks appear where data are not available. Survey staff was unable to travel to the following communities: Newtok, Tununak, Toksook Bay, Nightmute, Mekoryuk, Chefornak, Kipnuk, Kwigillingok, Kasigluk, Oscarville, Stony River and Telida. Data from these communities were derived from harvest calendars or mailed surveys.

Table V-2. Historic Subsistence Salmon Harvest Kuskokwim Area, 1960 - 2000.

Year	Households		Estimated Salmon Harvest					Total Salmon
	Total	Surveyed	Chinook	Sockeye	Chum	Coho	"Small Salmon"	
1960			18,887				303,153	322,040
1961			28,934				183,186	212,120
1962			13,582				163,554	177,136
1963			34,482				138,669	173,151
1964			29,017				190,191	219,208
1965			24,697				250,878	275,575
1966			49,325				180,054	229,379
1967			61,262				221,419	282,681
1968			35,698				278,008	313,706
1969			40,617				238,798	279,415
1970			69,612				258,678	328,290
1971			43,013				123,290	166,303
1972			38,176				121,641	159,817
1973			38,451				203,005	241,456
1974			26,665				309,950	336,615
1975			47,569				176,389	223,958
1976			58,055				228,104	286,159
1977			58,158				215,590	273,748
1978			38,145				137,489	175,634
1979			57,053				190,567	247,620
1980			62,047				216,322	278,369
1981			64,274				191,855	256,129
1982			61,141				240,872	302,013
1983			51,020				76,059	127,079
1984			60,668				103,144	163,812
1985			45,720	33,632	95,999	24,524	154,155	199,875
1986			54,256	20,239	142,930	29,742	192,911	247,167
1987			71,804	25,180	70,709	18,085	113,974	185,778
1988			75,107	33,102	153,980	43,866	230,948	306,055
1989	3,422	2,135	85,322	37,088	145,106	57,847	240,041	325,363
1990	3,317	1,830	92,678	39,662	131,469	50,713	221,844	314,522
1991	3,347	2,024	90,224	56,404	96,308	55,581	208,293	298,517
1992	3,314	1,724	68,665	34,159	99,576	44,496	178,231	246,896
1993	3,274	1,816	91,721	51,363	61,726	35,295	148,384	240,105
1994	3,179	1,821	98,378	39,279	76,951	36,504	152,734	251,112
1995	3,652	1,894	100,159	28,622	68,942	39,165	136,729	236,888
1996	3,643	1,837	81,598	35,036	90,238	34,698	159,972	241,570
1997	3,510	1,831	85,506	41,270	40,976	30,714	112,960	198,466
1998	3,495	1,849	86,115	37,578	67,665	27,239	132,482	218,597
1999	4,180	2,523	77,660	49,388	47,612	27,753	124,753	202,413
2000	4,441	2,750	68,841	44,832	55,371	35,670	135,873	204,714
41 Year Average			58,154				185,004	243,157
1960 - 1979 Average			40,570				205,631	246,201
1980 - 1999 Average			75,203				166,833	242,036
1996 - 2000 Average	3,854	2,158	79,944	41,621	60,372	31,215	133,208	213,152
1991 - 2000 Average	3,604	2,007	84,887	41,793	70,537	36,712	149,041	233,928

Note: Prior to 1985, subsistence salmon harvest information was collected using two basic categories, King salmon and small salmon. Small salmon were comprised of primarily chum and sockeye salmon with some coho salmon and very few pink salmon. In 1985 survey methods were modified to identify chum, sockeye and coho salmon harvests in the subsistence catch. Pink salmon are harvested primarily on even number years and have not been included in the subsistence surveys. Data for 1983, 1984, 1986 and 1987 are estimates based on surveys in a sample of communities. Survey methods were revised beginning in 1988.

Table V-3. Estimated Number of Fish Harvested for Subsistence Use by Bethel Households

Species	Estimated Number of Households Harvesting *	Estimated Number of Fish Harvested for Subsistence **							TOTAL
		Set Net	Drift Net	Net Under Ice	Other Gear	Hooking Thru Ice	Hook and Line (Open water)		
Chinook	559	3,593	18,779	0	13	0	130	22,515	
Chum	392	1,172	9,416	0	0	0	28	10,616	
Sockeye	434	1,533	10,946	0	0	0	57	12,536	
Coho	434	723	12,018	0	0	0	1,053	13,794	
Pink	29	19	45	0	0	0	4	68	
SALMON		7,040	51,204	0	13	0	1,272	59,529	
Northern Pike	147	235	3	177	0	3,326	1,367	5,108	
Burbot	115	132	17	312	0	1,508	540	2,509	
Whitefish	182	2,195	275	2,139	0	318	1,205	6,132	
Sheefish	127	772	171	174	0	47	124	1,288	
Grayling	48	1	0	14	0	9	246	270	
Dolly Varden	47	1	3	0	0	0	258	262	
Rainbow Trout	46	7	3	0	0	0	234	242	
Lake Trout	7	0	0	0	0	0	38	38	
NON-SALMON		3,343	472	2,816	0	5,208	4,012	15,849	
Blackfish	37	<u>Fishtrap</u>	1,196 Gallons						
Smelt	198	<u>Dipnet</u>	1,626 Gallons						

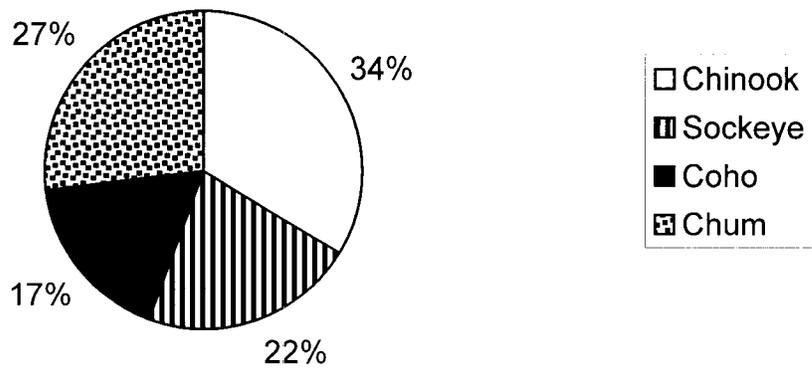
SOURCE: Alaska Department of Fish and Game, Division of Subsistence and Orutsamiut Native Council, Household Surveys, 2001.

Note: Salmon harvest data are for summer 2000. Data for other species are from 1 October 1999 to 30 September 2000.

*Household number expanded within strata from household surveys.

** Estimates of salmon harvest by gear types based on gear distribution of face to face survey data and estimated total harvest from all data sources (household surveys, calendars, postcards).

Figure V-1. Composition of Subsistence Harvest by Species, Kuskokwim Area, 2000



N = 204,714 salmon; based on annual harvest assessment program using calendars and household surveys.

VI. BRISTOL BAY AREA

BACKGROUND

In spite of numerous social, economic, and technological changes, Bristol Bay residents continue to depend on salmon and other fish species as an important source of food. Bristol Bay communities have relied on fish to provide nourishment and sustenance for thousands of years. Subsistence harvests provide important nutritional, economic, social, and cultural benefits to most Bristol Bay families. All five species of salmon are utilized for subsistence purposes in Bristol Bay, but the most popular are sockeye, chinook, and coho. Many residents continue to preserve large quantities of fish through traditional methods such as drying and smoking, and fish are also frozen, canned, salted, pickled, fermented, and eaten fresh.

REGULATIONS

Permits are required to harvest salmon for subsistence purposes in Bristol Bay. Since 1990, all Alaska state residents have been eligible to participate in subsistence salmon fishing in all Bristol Bay drainages. In 2000, with two exceptions, only gillnets were recognized as legal subsistence gear. In the Togiak District, spear fishing was also allowed. In 1998, the Board of Fisheries adopted new regulations for the taking of “redfish” (spawned sockeye salmon) in portions of the Naknek District. Gillnets, spears, and dipnets may be used along a 100 yard length of the west shore of Naknek Lake near the outlet to the Naknek River from August 20 through September 30; at Johnny’s Lake from August 15 through September 25; and at the mouth of the Brooks River from October 1 through November 15. In the Bristol Bay Area in 2000, gillnet lengths were limited to 10 fathoms in the Naknek, Egegik, and Ugashik rivers, Dillingham beaches, and within the Nushagak commercial district during emergency openings. Up to 25 fathoms could be used in the remaining areas, except that nets were limited to 5 fathoms in the special “redfish” harvest areas in the Naknek District.

In Dillingham and the Naknek, Egegik, and Ugashik rivers, subsistence fishing was limited to several fishing periods per week during the peak of the sockeye run. All commercial districts were open for subsistence fishing during commercial openings. In addition, all commercial districts were open for subsistence fishing in May and September, from Monday to Friday. In recent years, declining chinook and coho stocks resulted in longer commercial closures and some residents had an increasingly difficult time obtaining fish for home use. The Nushagak commercial district, starting in 1988, has been opened for subsistence fishing by emergency order during extended commercial closures.

INSEASON MANAGEMENT IN 2000

Due to extended closures to the commercial fishery in the Nushagak commercial fishing district, an emergency order opened the district to subsistence salmon harvesting from noon June 1 until further notice. This subsistence opening was closed by emergency order effective 9 p.m. June 20. Another emergency order opened this area to subsistence fishing from 12 p.m. June 23 until

9 p.m. June 25. By emergency order effective August 21, subsistence fishing in the Nushagak commercial fishing district was opened until 12 a.m. October 1, due to the closure of the commercial fishery for the rest of the year.

In the Nushagak District, the Wood River Special Harvest Area was opened to commercial salmon fishing beginning 6 p.m. June 26. Consistent with the provisions of the Wood River Special Harvest Area Management Plan (5 AAC 06.358), subsistence fishing in this area was closed by emergency order effective 5 p.m. June 26. With the conclusion of commercial openings in the special harvest area, it was reopened to subsistence fishing by emergency order effective 12 a.m. July 21.

Because of an extended closure to commercial salmon fishing in the Togiak District, an emergency order opened subsistence fishing within the commercial fishing district from noon June 28 until Saturday July 1. Effective 9 a.m. August 16, an emergency order opened the Togiak commercial fishing district to subsistence salmon fishing for the remainder of the season, due to the closure of the commercial fishery for the rest of the year.

An emergency order opened the Naknek Section of the Naknek/Kvichak District to subsistence fishing for two 24-hour periods per week, from 9 a.m. Saturday until 9 a.m. Sunday and from 9 a.m. Tuesday until 9 a.m. Wednesday, effective 9 a.m. Saturday July 15 until 9 a.m. Sunday July 23. This was to allow subsistence fishing opportunity when the Naknek Section was closed to commercial fishing and commercial fishing was occurring in the Naknek River Special Harvest Area.

In the Egegik District, an additional subsistence fishing period was opened by emergency order at 8 a.m. on June 18, and extended through 9 p.m. June 19 by two additional emergency orders. The department had been informed that some Egegik residents were having difficulty obtaining subsistence fishing locations within the district when the commercial fishery was open. These emergency orders provided subsistence fishing time during a commercial closure.

No emergency orders were issued for the Ugashik subsistence fishery in 2000.

SALMON HARVEST ASSESSMENT PROGRAM

A permit system was gradually introduced throughout the region in the late 1960s to document the harvest of salmon for subsistence. Much of the increase in the number of permits issued during the 1960s and 1970s reflects: 1) a greater compliance with the permitting and reporting requirements, 2) an increased level of effort expended by the department in making permits available (including a local system of vendors), contacting individuals, and reminding them to return the harvest forms, and 3) a growing regional population. Today, most subsistence fishermen are obtaining permits and reporting their catches, and overall permit returns have averaged between 85 percent and 90 percent. However, fish removed for home use from commercial catches are not included in most reported subsistence harvest totals. Also, fish caught later in the season, such as coho and spawning sockeye salmon are probably not documented as consistently as Chinook, sockeye, chum, and pink.

Bristol Bay subsistence permits include a harvest report on the reverse side that asks for dates fished, location fished, and quantities of each species harvested. In 2000, subsistence fishers could obtain permits at ADF&G offices in Dillingham or King Salmon. Permits were also available through vendors in most of the smaller communities of the area. Division of Subsistence staff send three rounds of reminder letters to permit holders at the end of the season to encourage return of harvest data.

In 2000, a total of 1,219 permits were issued for the Bristol Bay Management Area, and of these, 1,109 (91.0 percent) were returned to the Department with harvest data. The largest number of permits were issued for the Naknek/Kvichak (562 permits) and Nushagak (541 permits) and districts (Table VI-1). For the Nushagak and Naknek/Kvichak districts, more permits were issued in 2000 than the long-term 20 year average, due in part to permits being available to all state residents since 1990. Fewer permits were issued for the Egegik District in 2000 (31) than the average for the past 10 years (56), while the number issued in the Ugashik District was the same as the recent 10-year average (31). The number of permits issued for the Togiak District (54) was considerably higher than recent averages, reflecting a more complete involvement by local subsistence fishers in the harvest reporting program for that district than has been the case in the past. Of all permits, 1,012 (83.0 percent) were issued to residents of Bristol Bay communities, and 207 (17.0 percent) were issued to other Alaska residents.

SUBSISTENCE SALMON HARVESTS IN 2000

The estimated total Bristol Bay subsistence salmon harvest in 2000 was 118,824 fish (Table VI-1). This number is the lowest estimated subsistence salmon harvest for the Bristol Bay Area since 1973, when 88,400 salmon were harvested, and the third-lowest since harvest records have been kept beginning in 1963 (the estimated subsistence harvest was 93,000 salmon in 1972). The 2000 harvest was 24 percent below the recent 10-year average of 156,389 salmon and about 29 percent below the recent 20-year average of 166,602 salmon (Table VI-2). In 2000, the Bristol Bay subsistence salmon harvest was composed of 77.5 percent sockeye, 9.7 percent chinook, 3.9 percent chum, 2.2 percent pink, and 6.7 percent coho salmon (Fig VI-X). Of the entire Bristol Bay Area harvest, residents of Bristol Bay communities harvested 110,990 salmon (93.4 percent), and other Alaska residents harvested 7,834 salmon (6.6 percent) (Table VI-3).

The area-wide chinook harvest of 11,547 salmon was the lowest since 1989, and below the long-term average of 14,285 chinook salmon. The area-wide harvest of 92,050 sockeye salmon was the lowest since 1973. The 2000 sockeye harvest was about 25 percent below the previous 10-year average of 122,809 sockeyes. Compared to previous 10-year averages, subsistence harvests of chum, pink, and coho salmon were also down in 2000.

In 2000 as over the last several decades, most of the subsistence harvest was taken in the Naknek/Kvichak (54.7 percent) and the Nushagak (37.9 percent) districts (Fig. VI-1). The Naknek/Kvichak total harvest of 65,053 salmon was the lowest since 1973 (when 43,000 salmon were harvested) and the third lowest on record (the estimated harvest was 53,800 salmon in

1972). The 2000 subsistence salmon harvest in this district was 30 percent below the recent 10-year average of 93,332 fish.

In 2000, Kvichak drainage residents, and other permit holders fishing in the Kvichak drainage portion of the Naknek/Kvichak District, harvested an estimated 36,990 sockeye salmon, compared to a recent 10-year average of 63,444 sockeyes and a 20-year average of 70,392 sockeyes. The 2000 subsistence harvest of sockeye salmon in the Kvichak drainage was the lowest since records have been kept beginning in 1963. The previous low was 39,100 sockeyes in 1973. Of Kvichak drainage communities, estimated sockeye harvests were down substantially at Levelock, Pedro Bay, Kokhanok, Iliamna/Newhalen, and Nondalton, compared to 10-year averages, but were similar to 10-year averages in Igiugig and Port Alsworth. Levelock residents received approximately 10,000 pounds of salmon (about 2,000 fish) from the ADF&G test fishery in 2000. (See the annual management reports for Bristol Bay for historic data at the district level.)

In the Nushagak District, the total estimated subsistence harvest in 1999 was 45,029 salmon. The recent 10-year average is 52,660. The Nushagak chinook harvest in 2000 of 9,470 was the lowest since 1989, and was down notably from the 15,318 chinook estimated for 1997 and the 12,258 harvested in 1998. The sockeye harvest of 24,452 was below the 10-year average (27,583) and 20-year average (35,353). In 2000, subsistence salmon harvests in several Nushagak District communities were substantially lower than recent averages, most notably Aleknagik, New Stuyahok, and Koliganek.

The estimated total subsistence salmon harvest for the Togiak District in 2000 of 5,130 fish was down slightly from the previous year, but exceeds the recent 10-year average and is very similar to the 20-year average. The estimated subsistence harvest in the Ugashik District in 2000 was 2,481, very similar to the 10-year average of 2,276. In the Egegik District the estimated subsistence salmon harvest of 1,131 in 2000 was less than a third of the recent 10-year average and the lowest estimated subsistence harvest for that district since 1985. However, the number of permits issued for this district has continued to drop since peaking at 80 in 1992; 31 permits were issued for 2000.

OTHER SUBSISTENCE FISHERIES

There are no annual harvest assessment programs in the Bristol Bay Area for non-salmon subsistence fisheries. The following overview derives primarily from a report that the Division of Subsistence, ADF&G, prepared for the Alaska Board of Fisheries in November 1997 (Fall and Chythlook 1997).

Subsistence Regulations

The Alaska Board of Fisheries has determined that all finfish of the Bristol Bay Management Area support customary and traditional uses (5 AAC 01.336). The Board determined that approximately 250,000 pounds (usable weight; about 41 pounds per person) is the amount necessary to provide for these uses. This amount was based upon estimates of fish harvests

derived from systematic household surveys conducted by the Division of Subsistence (Scott et al. 2001). Amounts for specific species or more specific stocks were not established.

For the most part, subsistence fishing for fish other than salmon and rainbow trout is open year-round in the Bristol Bay Area with gear listed in 5 AAC 01.010(a). There are no seasonal limits established by regulation. The following regulations apply to subsistence fishing for fish other than salmon in the area.

- A permit is required for harvesting trout and char (5 AAC 01.330). However, the department has no program for issuing such permits, and virtually all subsistence fishing for these resources takes place without permits.
- Rainbow trout taken incidentally in other subsistence net fisheries or through the ice are lawfully taken and may be retained for subsistence uses (5 AAC 01.310(g)).
- Subsistence fishing with a line attached to a rod or pole is prohibited except when fishing through the ice (5 AAC 01.320(l)).
- Subsistence fishing with nets is prohibited in 18 waters of the Kvichak/Iliamna Lake drainage and within one-fourth mile of the terminus of those waters from September 1 through June 14.

Subsistence Harvests and Uses

A detailed description of subsistence uses of freshwater fish in the Bristol Bay Area appears in Fall et al. (1996). Wright and Chythlook (1985) describe uses of herring spawn on kelp in the Togiak District. Harvests of fish other than salmon contribute about 10 percent of the annual subsistence harvests of wild foods in the Bristol Bay region, about 42.5 pounds per person. In the villages, the per capita harvest is 72.6 pounds per person (Fall and Chythlook 1997).

Subsistence harvests of fish other than salmon are not annually monitored by the Department of Fish and Game. Harvest and use data are available for most communities (except Twin Hills) through Division of Subsistence household harvest surveys (Scott et al. 2001; BBNA and ADF&G 1996). Some of the findings of this research regarding non-salmon fish are summarized in Table VI-4. The vast majority of households in the Bristol Bay area use fish other than salmon for subsistence purposes. Most households also participate in the harvest of these fish. Harvests as measured in pounds useable weight per person for available study years vary from community to community, but are generally substantial. Harvests range from a low of 12 pounds per person (Port Alsworth in 1983) to 175 pounds per person (Nondalton in 1983). Harvests in ten communities exceeded 50 pounds per person per year; these harvests exceeded 20 pounds per person per year in an additional five communities. Fish other than salmon generally rank third behind salmon and land mammals in their contribution to the total subsistence harvests in Bristol Bay communities.

Harvests and uses of the non-salmon fish listed in Table VI-5 have been documented in Bristol Bay communities through Division of Subsistence research. Uses of other species may occur.

Harvest quantities of particular species vary between communities, subregions, and from year to year. Generally, fish taken in the largest quantities in the area as a whole include smelt, whitefish, Dolly Varden, grayling, and pike (see Fall et al. 1996 for a summary of harvest data).

In the Bristol Bay Area, harvests of non-salmon finfish occur throughout the year. Harvest effort for these fish is generally lower among Bristol Bay residents in the summer as attention is focused on salmon. Spring is important for herring, herring spawn-on-kelp, and smelt. Substantial harvests of non-salmon fish occur through the ice in winter. Smelting is a popular activity in October and in late winter when they can be caught by jigging through the ice. Halibut are mostly taken in June and July (Wright et al. 1985:34).

Many gear types are used to harvest non-salmon fish for home use in the Bristol Bay Area. Rod and reel is used for most fish and some, such as Dolly Varden/Arctic char, herring, and other marine fish are removed from commercial catches. Various other methods are used, including (but not necessarily limited to) the following:

- Traps: blackfish, burbot
- Set hooks: burbot
- Handline jigging through the ice: grayling, Dolly Varden/Arctic char, lake trout, smelt, rainbow trout, whitefish, pike
- Set gill nets: grayling, Dolly Varden/Arctic char, lake trout, suckers, rainbow trout, herring, pike, burbot
- Beach seining: Dolly Varden/Arctic char, lake trout, smelt, herring
- Hand line in open water: halibut
- Dipnets: smelt, herring

Herring spawn on kelp is usually picked by hand, although rakes, knives, and *uluuqs* (woman's knife) are also used (Schichnes and Chythlook 1988:127).

Maps of areas used by Bristol Bay communities to harvest non-salmon fish appear in the Alaska Habitat Management Guide Reference Atlas Series (ADF&G 1985) and in Wright et al. (1985). Harvest activities occur throughout in region in most rivers, lakes, and along shorelines. It is likely that most effort occurs near each community and near seasonal camps at such locations as Kulukak. (See Wright and Chythlook (1985) and Schichnes and Chythlook (1988) for maps of herring camps at Kulukak Bay.) For frequency of use of various areas for freshwater fishing by Nushagak River communities, see Schichnes and Chythlook (1991) and by Togiak and Manokotak, see BBNA and ADF&G (1996).

Bristol Bay residents use a wide variety of methods to process and preserve their harvests of fish other than salmon. These vary by species and community. Some freezing of harvests of most species occurs. Some examples of other methods include the following:

- Grayling: dried, frozen
- Dolly Varden: dried, smoked, half dried (*egamaarrluk*)

- Pike: dried, half-dried
- Rainbow trout: dried
- Whitefish: dried, frozen with seal oil, fermented and frozen

Much dry fish is eaten with seal oil. Some use of brown bear fat with dry fish also occurs. Smelt are fried, boiled, dried, or eaten frozen with seal oil (Fall et al. 1986:100). Herring are salted, or split, dried, and smoked (Schichnes and Chythlook 1988:126). Pike heads and stomachs are boiled and eaten (Schichnes and Chythlook 1991:139). Freshwater fish that are usually eaten frozen with seal oil also form a category called *qumlanaq*. This includes grayling, whitefish, and pike (Fall et al. 1986:102).

Much traditional knowledge is associated with subsistence uses of nonsalmon fish in the Bristol Bay area. For example, a Yup'ik classification system for some types of freshwater fish exists that is different from that developed by Western science. Three kinds of fish separately named in Central Yup'ik all are classed by biologists as "Dolly Varden." Distinctions are made in Yup'ik depending upon the condition of the flesh for drying, harvest locations, and harvest methods (Fall et al. 1996).

Table VI-1. Subsistence salmon harvest by species, in numbers of fish, by district and location fished, Bristol Bay, 2000*

Area and River System	Permits Issued	Estimated Number of Salmon Harvested					Total
		Sockeye	Chinook	Chum	Pink	Coho	
NAKNEK-KVICHAK DISTRICT	562	61,817	894	560	845	937	65,053
Naknek River ¹	350	24,827	736	502	756	858	27,680
Kvichak River/Iliamna Lake:	212	36,990	158	58	89	78	37,373
Alagnak River	1	60	12	15	0	0	87
Chekok	1	294	0	0	0	0	294
Igiugig	6	889	3	10	0	0	902
Iliamna Lake	24	3,415	3	0	0	0	3,418
Kokhanok	25	6,956	4	1	1	0	6,961
Kvichak River	20	2,047	8	17	23	20	2,115
Lake Clark	51	4,993	1	0	0	0	4,994
Levelock	15	1,989	81	4	64	51	2,190
Newhalen River	37	5,990	45	11	2	8	6,055
Nondalton Village	7	5,033	0	0	0	0	5,033
Pedro Bay	7	1,285	0	0	0	0	1,285
Port Alsworth	5	342	0	0	0	0	342
Six Mile Lake	13	3,697	0	0	0	0	3,697
EGEGIK DISTRICT ²	31	842	16	11	0	262	1,131
UGASHIK DISTRICT ³	31	1,927	51	34	1	467	2,481
NUSHAGAK DISTRICT	541	24,451	9,470	3,463	1,662	5,983	45,029
Wood River ⁴	110	4,351	1,938	321	201	1,229	8,039
Lower Nushagak River ⁵	28	947	1,123	153	37	217	2,477
Upper Nushagak River ⁶	50	2,514	1,941	1,488	159	768	6,871
Dillingham Beaches ⁷	238	10,747	2,872	934	1,030	2,933	18,516
Nushagak Bay Commercial ⁸	75	2,402	1,052	357	180	445	4,435
Igushik/Snake River	27	2,871	333	25	10	175	3,416
Nushagak, Site Unspecified	13	619	211	184	45	216	1,276
TOGIK DISTRICT ⁹	54	3,013	1,116	569	90	342	5,130
TOTAL BRISTOL BAY	1,219	92,050	11,547	4,637	2,599	7,991	118,824

* Harvests are extrapolated for all permits issued, based on those returned and on the area fished as first recorded on the permit. Due to rounding, the sum of columns and rows may not equal the estimated total. Of 1,219 permits issued for the management area, 1,109 were returned (91.0%).

¹ Includes Mile 5 North, Naknek River General, Powerline-North, North and South Savonoski, South Naknek Beach, and Telephone Point-North.

² Includes Egegik river and beach

³ Includes Point Point and Ugashik

⁴ Includes Dragnet, Aleknagik area, Muklung River, Red Bluff, and Upper and Lower Wood River General

⁵ Includes Black Point, Grassy Island, and Lewis Point

⁶ Includes Ekwook Area, Kokwok River, New Stuyahok Area, Koliganek Area, Mulchatna River, and Portage Creek

⁷ Includes Bradford Point, City Dock, Kakanak, Scandinavia, Skinner, Snag Point, and Squaw Creek

⁸ Includes Clark's Point, Ekuk, Etolin Point, Nushagak Point, Protection Point, and Queen's Slough.

⁹ Includes Togiak village and Togiak River

Source: Bristol Bay Subsistence Permit Data Base, ADF&G

Table VI-2. Historic Subsistence Salmon Harvests: Bristol Bay Management Area, 1979 - 2000¹

YEAR	Permits		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1979	829		10,300	116,500	7,300	7,700	500	142,300
1980	1,243		14,100	168,600	7,300	13,100	10,000	213,100
1981	1,121		13,000	132,100	12,200	11,500	2,600	171,400
1982	806		13,700	110,800	11,500	12,400	8,600	157,000
1983	829	674	13,268	143,639	7,477	11,646	1,073	177,104
1984	882	698	11,537	168,803	16,035	13,009	8,228	217,612
1985	1,015	808	9,737	142,755	8,122	5,776	825	167,215
1986	930	723	14,893	129,487	11,005	11,268	7,458	174,112
1987	996	866	14,424	135,782	8,854	8,161	673	167,894
1988	938	835	11,848	125,556	7,333	9,575	7,341	161,652
1989	955	831	9,678	125,243	12,069	7,283	801	155,074
1990	1,042	870	13,462	128,343	8,389	9,224	4,455	163,874
1991	1,194	1,045	15,245	137,837	14,024	6,574	572	174,251
1992	1,203	1,028	16,425	133,605	10,722	10,661	5,325	176,739
1993	1,206	1,005	20,527	134,050	8,915	6,539	1,051	171,082
1994	1,193	1,019	18,873	120,782	9,279	6,144	2,708	157,787
1995	1,119	990	15,921	107,717	7,423	4,566	691	136,319
1996	1,110	928	18,072	107,737	7,519	5,813	2,434	141,575
1997	1,166	1,051	19,074	118,250	6,196	2,962	674	147,156
1998	1,234	1,155	15,621	113,289	8,126	3,869	2,424	143,330
1999	1,219	1,157	13,009	122,281	6,143	3,653	420	145,506
2000	1,219	1,109	11,547	92,050	7,991	4,637	2,599	118,824

1996-2000								
Average	1,190	1,080	15,465	110,722	7,195	4,187	1,710	139,278

1991-2000								
Average	1,186	1,049	16,432	118,760	8,634	5,542	1,890	151,257

All Years								
Average	1,066	933	14,285	127,964	9,269	8,003	3,248	162,768

¹ Data for 1983 through 1998 may differ from data previously reported in annual management reports.

The number of permits issued and returned has been updated. Also, data have been expanded to reflect community of residence of permit holders.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table VI-3. 2000 Subsistence Harvests by Community: Bristol Bay Management Area

Community	Permits		Estimated Salmon Harvest					Total Salmon
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
Aleknagik	19	17	187	735	134	55	0	1,111
Chekok	1	1	0	294	0	0	0	294
Clarks Point	16	13	336	539	142	33	97	1,147
Dillingham	341	325	4,908	15,165	4,185	1,279	1,286	26,824
Egegik	15	12	11	319	233	9	0	572
Ekuk	1	1	0	0	0	0	0	0
Ekwok	19	19	669	1,601	731	780	165	3,946
Igiugig	8	8	5	1,981	19	14	3	2,022
Iliamna	32	31	3	3,769	0	0	0	3,772
King Salmon	116	109	228	7,122	332	170	274	8,125
Kokhanok	25	22	18	8,814	0	2	1	8,835
Koliganek	15	15	835	1,047	140	770	0	2,792
Levelock	14	11	81	1,467	51	19	64	1,683
Manokotak	22	21	331	2,639	171	24	8	3,173
Naknek	108	96	311	10,873	314	177	177	11,851
New Stuyahok	46	33	1,954	1,091	369	397	71	3,884
Newhalen	20	19	31	3,023	0	45	0	3,099
Nondalton	25	19	0	12,451	0	0	0	12,451
Pedro Bay	10	10	0	1,815	0	0	0	1,815
Pilot Point	13	10	23	794	272	33	0	1,122
Port Alsworth	40	38	1	3,336	0	0	0	3,337
Portage Creek	3	2	117	15	0	15	0	147
South Naknek	42	40	118	2,571	231	119	272	3,311
Togiak	52	40	1,014	2,945	342	533	83	4,917
Twin Hills	1	1	102	68	0	36	7	213
Ugashik	8	8	15	395	137	1	1	549

Bristol Bay Communities	1,012	921	11,298	84,869	7,803	4,511	2,509	110,990

Other Communities	207	188	249	7,180	188	126	90	7,833

Totals	1,219	1,109	11,547	92,050	7,991	4,637	2,599	118,824

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table VI-4. Uses and Harvests of Fish Other Than Salmon, Bristol Bay Communities¹

Community and Year	Percentage of Households					Average Pounds Harvested	
	Use	Fish for	Harvest	Receive	Give	Per Household	Per Person
Aleknagik 89	94.7	89.5	89.5	73.7	71.1	208.3	61.4
Clark's Point 89	94.1	82.4	82.4	82.4	70.6	113.4	34.4
Dillingham 84	75.0	56.2	54.9	39.9	19.6	51.6	17.5
Egegik 84	64.0	60.0	60.0	24.0	40.0	36.5	15.7
Ekwok 87	75.9	72.4	62.1	62.1	37.9	229.4	68.6
Igiugig 92	100.0	100.0	100.0	80.0	80.0	392.0	100.5
Iliamna 91	87.0	73.9	73.9	65.2	43.5	249.7	76.6
King Salmon 83			76.7			48.1	15.9
Kokhanok 92	91.7	86.1	86.1	72.2	61.1	469.9	105.7
Koliganek 87	92.9	81.0	81.0	69.0	57.1	369.7	95.3
Levelock 92	90.0	76.7	73.3	76.7	63.3	186.6	65.9
Manokotak 94	100.0	96.0	96.0	98.0	87.0	327.2	65.9
Naknek 83			75.0			58.0	18.6
New Stuyahok 87	100.0	85.0	82.5	82.5	62.5	171.9	36.0
Newhalen 91	100.0	96.2	92.3	73.1	46.2	185.1	37.6
Nondalton 83		90.5	90.5	23.8		906.4	174.6
Pedro Bay 96	76.9	53.8	53.8	53.8	30.8	85.6	25.9
Pilot Point 87	94.1	94.1	94.1	35.3	58.8	55.8	15.5
Port Alsworth 83		61.5	61.5	7.7		42.0	11.6
Port Heiden 87	91.9	62.2	62.2	70.3	45.9	32.6	11.7
South Naknek 92	85.7	77.1	74.3	68.6	48.6	64.4	20.1
Togiak 94	98.0	96.0	96.0	86.0	72.0	245.4	53.1
Ugashik 87	100.0	100.0	100.0	0.0	40.0	72.2	36.1

¹ Information for the most recent year for which data are available. Data not available for Twin Hills.

Source: Scott et al. 2001; BBNA and ADF&G 1996

Table VI-5. Nonsalmon Finfish Known to be Used for Subsistence Purposes in the Bristol Bay Area

<u>Common English Name</u>	<u>Scientific Name</u>	<u>Yup'ik Name</u>	<u>Denal'ina Name</u>
Arctic Grayling	<i>Thymallus arcticus</i>	<i>Nakrullugpak</i>	<i>Ch'dat'an</i>
Blackfish	<i>Dallia pectoralis</i>	<i>Can'giiq</i>	<i>Huzhegh</i>
Burbot	<i>Lota lota</i>	<i>Manignaq</i> ^a <i>Atgiaq</i> ^b	<i>Ch'unya</i>
Dolly Varden ^c	<i>Salvelinus malma</i>	<i>Yugyaq</i> ^d <i>Anerrluaq</i> <i>Anyuk</i>	<i>Qak'elay</i>
Lake Trout	<i>Salvelinus namaycush</i>	<i>Cikignaq</i>	<i>Zhuk'udghuzha</i>
Longnose Sucker	<i>Catosomus catostomus</i>	<i>Cungartak</i>	<i>Duch'ehdi</i>
Northern Pike	<i>Esox lucius</i>	<i>Cuukvak</i>	<i>Ghelguts'i</i>
Rainbow Smelt	<i>Osmerus mordax</i>	<i>Iqalluaq</i>	
Rainbow Trout	<i>Oncorhynchus mykiss</i>	<i>Talaariq</i>	<i>Tuni</i>
Broad Whitefish ^e	<i>Coregonus nasus</i>	<i>Akakiik</i>	<i>Telay</i>
Humpback Whitefish ^e	<i>Coregonus pidschian</i>	<i>Uraruq</i>	<i>Q'untuq'</i>
Round Whitefish ^e	<i>Prosopium cylindraceum</i>	<i>Uraruq</i>	<i>Hesten</i>
Least Cisco	<i>Coregonus sardinella</i>	<i>Cavirutnaq</i>	<i>Ghelguts'i k'una</i>
Herring, Pacific	<i>Clupea harengus pallasii</i>	<i>Iqalluarpak</i>	
Herring Spawn on Kelp		<i>Melucuaq</i>	
Starry Flounder	<i>Platichthys stellatus</i>	<i>Naternaq</i>	
Halibut	<i>Hippoglossus stenolepis</i>	<i>Naternarpak</i>	
Pacific Cod	<i>Cadus macrocephalus</i>	<i>Ceturruq</i>	
Sculpin	Unknown	<i>Kayutaq</i>	
Capelin	<i>Mallotus villosus</i>	<i>Cikaaq</i>	
Yellowfin Sole	<i>Limanda aspera</i>	<i>Sagiq</i>	

^a Nushagak River villages.

^b Manokotak, Aleknagik, Twin Hills, Togiak.

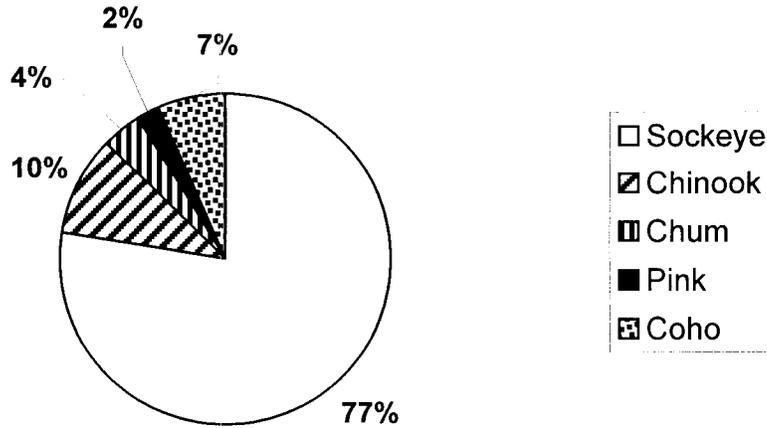
^c Also includes the closely related Arctic char, *Salvelinus alpinus*.

^d At Togiak, Manokotak, and Aleknagik, and perhaps elsewhere, there are three Yup'ik names for Dolly Varden/Arctic char. *Yugyak* probably refers to resident Dolly Varden/char. *Anerrluaq*, called "Togiak trout" in the local English dialect, probably refers to anadromous fish taken in fresh water. Finally, *anyuk* or "sea run dollies" are Dolly Varden or char taken in salt water. See Fall et al. 1996:16-20 for further discussion of these distinctions.

^e Broad whitefish are rare to absent in the Bristol Bay region. "*Akakiik*" is the word used at Aleknagik and Manokotak to refer to whitefish they receive from Kuskokwim River communities, where broad whitefish are common. Humpback whitefish are caught in the Iliamna Lake subregion and called "*uraruq*." "*Uraruq*" is used for round whitefish in the Togiak and Nushagak drainages.

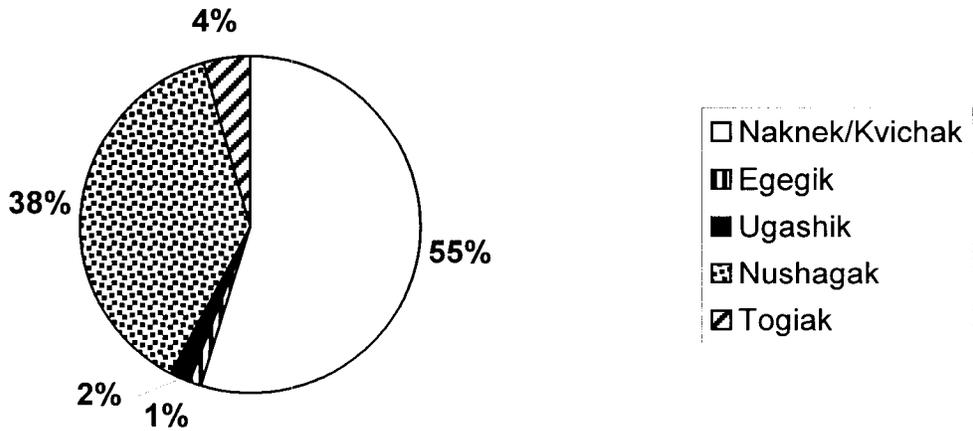
Source: Fall et al. 1996

Figure VI-1. Composition of Bristol Bay Area Subsistence Salmon Harvest by Species, 2000



N = 118,824 salmon, based on annual harvest assessment program with subsistence permits

Figure VI-2. Subsistence Salmon Harvests by District, Bristol Bay Management Area, 2000



N = 118,824 salmon, based on annual harvest assessment program with subsistence permits

VII. CHIGNIK AREA

BACKGROUND

The Chignik Management Area includes all waters of Alaska on the south side of the Alaska Peninsula enclosed by 156°20.22' west longitude (the longitude of the southern entrance to Imuya Bay near Kilokak Rocks) and a line extending 135° southeast from the tip of Kupreanof Point. The communities of the Chignik Area are Chignik (also called Chignik Bay) (estimated population 79 in 2000), Chignik Lagoon (population 103), Chignik Bay (population 145), Ivanof Bay (population 22), and Perryville (population 107) (US Census Bureau 2001). All of these communities are within the Lake and Peninsula Borough.

In the early 1990s, the Division of Subsistence of ADF&G conducted detailed research on patterns of subsistence use of fisheries resources in the Chignik Management Area. The research findings are summarized in Hutchinson-Scarborough and Fall (1996). More recent updates with more detail on subsistence uses of salmon by Perryville residents are also available (Hutchinson-Scarborough and Fall 1999; ADF&G 2002a).

REGULATIONS

A subsistence permit is required for fishing within the Chignik Management Area, which must be used to record daily salmon harvests. Permits must be returned to the department by December 31. There is a 250 salmon annual limit. Legal gear includes seine and gillnets. Purse seines may not be used in Chignik Lake. There is no closed season for subsistence salmon fishing. However, commercial fishing license holders may not subsistence fish for salmon from 48 hours before the first commercial salmon fishing opening through September 30. Salmon may not be taken in the Chignik River upstream from the department weir site or counting tower, in Black Lake, or any tributary to Black and Chignik lakes.

HARVEST ASSESSMENT PROGRAM

The Division of Commercial Fisheries conducted the first subsistence salmon fisheries harvest assessment in the Chignik Area in 1976. Subsistence harvest assessments for salmon have been conducted annually since then. The Division of Subsistence took over responsibility for running the harvest assessment program in 1993. Permits are issued on request in each community. The method of permit issuance in the communities varies by community and year, depending on the availability of vendors and other arrangements in place with local organizations. Permits are also issued on request at the Chignik River fish weir by Division of Commercial Fisheries seasonal staff.

Chignik subsistence salmon permits must be returned by mail to the Division of Subsistence office in Anchorage by December 31. Permits include a harvest report that fishers are required to complete. The report asks for the dates fished, the specific locations fished, and the number of each species of salmon caught on each day. Non-responses are followed up with reminder letters, and phone calls are made where phone numbers are known if further follow-up is required. Also, face-to-face household interviews have been conducted since 1997 to collect

harvest information from households that do not obtain permits and to add late season harvest information not recorded on permits. Local survey technicians attempt to contact all households in the Chignik area. The surveys are generally conducted during January, February, and March. Respondents are asked questions similar to those on the permit, but additional questions regarding late season harvests and whether or not their subsistence needs were met are also asked.

In 1993, the Division of Subsistence, ADF&G, obtained copies of all available subsistence permits for the Chignik Management Area from the Division of Commercial Fisheries archive in Kodiak. Permits issued prior to 1980 and for 1987 could not be located. All permit data were entered into a database. The estimated harvests developed in this database and reported in subsequent AMRs differ slightly from that reported in earlier AMRs for several reasons. There are small discrepancies in some years for the number of permits issued or returned. Estimated harvests in earlier AMRs were based on a simple expansion from harvests reported on returned permits to the total number of permits issued. Since 1993, harvest data from returned permits have been expanded by community of residence to estimate the harvest by all permit holders. Data from returned permits are tabulated by species and fishing area. Increases in permits issued and returned beginning in 1993, and consequently higher harvest estimates, reflect the use of local vendors to issue permits and post-season surveys by department staff and local research assistants.

Comparisons of household survey data and permit data collected for 1984 and 1989 suggested that permit data underestimated subsistence harvests in the Chignik Area subsistence salmon fishery (Hutchinson-Scarborough and Fall 1996:27). With the assistance of local permit vendors, research assistants, and local governments, subsistence salmon harvest assessments for most recent years, with some exceptions, have resulted in more reliable estimates of the total harvest.

SUBSISTENCE SALMON HARVESTS IN 2000

Since 1980, the number of subsistence salmon permits issued for the Chignik Area has averaged 97 per year, with 63 percent returned. Since 1993, the average has been 140 permits issued and 75 percent returned. The recent 5-year average (1996 through 2000) is 117 permits issued, and 82 percent returned. In 2000, 130 permits were issued and 112 were returned (86 percent) (Table VII-1). Of all permits issued, 112 (86.2 percent) were issued to residents of Chignik Area communities, and 18 (13.8 percent) were issued to residents of other Alaska communities (Table VII-2).

In 2000, the estimated subsistence salmon harvest for the Chignik Area was 13,227 fish (Table VII-1). This was above the long-term average (11,007 salmon) but slightly lower than the average since 1993 (14,948 salmon). The 2000 subsistence harvest was made up of 72 percent sockeye, 14 percent coho, 9 percent pink, 4 percent chum, and 1 percent chinook salmon (Fig. VII-1). Of the total harvest, local residents took 11,777 salmon (89.0 percent) and other Alaska residents harvested 1,450 salmon (11.0 percent) (Table VII-2; Fig. VII-2).

In 2000, the largest number of salmon (6,823; 51.6 percent) was harvested in Chignik Bay and Chignik Lagoon (Table VII-3). Most of this harvest was sockeyes (96.8 percent). Subsistence

harvests in the Perryville and Western districts numbered 3,801 salmon (28.7 percent), with most of this coho and pink, accounting for most of the Area's subsistence harvest of these species. Estimated subsistence harvests in Chignik Lake totaled 2,603 salmon (19.7 percent), mostly sockeye salmon. This total includes spawning sockeye salmon, locally called "redfish," which are harvested in the fall and early winter.

OTHER CHIGNIK AREA SUBSISTENCE FISHERIES

Although state regulations require a subsistence permit for harvesting trout and char, there are no annual harvest assessment programs for the other subsistence fisheries of the Chignik Area. The Alaska Board of Fisheries has identified subsistence uses of all finfish in the Chignik Area, except rainbow trout and steelhead for which no finding had been made as of 2000. (In January 2002, the Board made a positive finding for all finfish in the management area.) Table VII-4 lists the finfish other than salmon for which subsistence uses have been documented through systematic household interviews.

For purposes of subsistence shellfish management, the Chignik Finfish Management Area is within the Alaska Peninsula – Aleutian Islands Area. The Alaska Board of Fisheries has identified subsistence uses of all shellfish stocks in the Alaska Peninsula – Aleutian Islands Area. There are no subsistence harvest assessment programs for these shellfish stocks in the Chignik Area. Table VII-5 lists the shellfish for which subsistence uses have been documented through systematic household interviews.

The reader should consult Morris 1987, Fall et al. 1995, Hutchinson-Scarborough and Fall 1996, and ADF&G 2002 for more background on these subsistence fisheries for nonsalmon finfish and for shellfish. For harvest estimates based on systematic household interviews, see the Division of Subsistence Community Profile Database (Scott et al. 2001).

Table VII-1. Historic Subsistence Harvests of Salmon, Chignik Management Area, 1976 - 2000¹

Year	Number of Permits		Percentage Returned	Estimated		Estimated Harvests					
	Issued	Returned		Number Fished	Percentage Fished	Chinook	Sockeye	Coho	Pink	Chum	Total
1976						100	6,000	1,500	500	150	8,250
1977						50	9,700	2,400	1,800	600	14,550
1978						50	6,000	500	2,100	600	9,250
1979						14	7,750	34	262	0	8,060
1980	82	37	45.1%	70.0	85.4%	6	12,475	32	478	169	13,160
1981	29	7	24.1%	18.0	62.1%	0	2,049	0	0	0	2,049
1982	59	15	25.4%	56.0	94.9%	3	8,532	12	2	0	8,548
1983	32	21	65.6%	26.5	82.8%	0	3,078	1,319	1,250	850	6,497
1984	77	64	83.1%	57.7	74.9%	23	8,747	464	330	204	9,768
1985	59	48	81.4%	49.0	83.1%	1	7,177	50	26	25	7,279
1986	74	38	51.4%	70.0	94.6%	4	10,347	205	98	77	10,730
1987	NA	NA	NA	NA	NA	10	7,021	278	204	261	7,774
1988	80	34	42.5%	77.0	96.3%	9	9,073	1,455	54	142	10,733
1989	68	23	33.8%	46.8	68.8%	24	7,552	384	81	147	8,187
1990	72	23	31.9%	62.0	86.1%	103	8,099	210	470	115	8,996
1991	95	58	61.1%	83.0	87.4%	42	11,483	13	275	81	11,893
1992	98	19	19.4%	85.8	87.5%	55	8,648	709	305	145	9,862
1993	202	141	69.8%	163.6	81.0%	122	14,710	3,765	1,265	642	20,503
1994	219	122	55.7%	159.9	73.0%	165	13,978	4,055	1,720	382	20,300
1995	111	95	85.6%	95.2	85.8%	98	9,563	1,191	723	150	11,725
1996	119	104	87.4%	104.1	87.5%	48	7,357	2,126	2,204	355	12,090
1997	126	103	81.7%	118.7	94.2%	28	13,442	2,678	2,035	840	19,023
1998	104	72	69.2%	89.6	86.2%	91	7,750	1,390	1,007	186	10,424
1999	106	88	83.0%	99.1	93.5%	243	9,040	1,679	1,191	136	12,290
2000	130	112	86.2%	111.0	85.4%	163	9,561	1,802	1,185	517	13,227
Average	97.1	61.2	63.0%	82.2	84.6%	58	8,765	1,130	783	271	11,007
Average											
1993-00	139.6	104.6	74.9%	117.6	84.3%	120	10,675	2,336	1,416	401	14,948
Average											
1996-00	117.0	95.8	81.9%	104.5	89.3%	115	9,430	1,935	1,524	407	13,411

Sources: Quimby and Owen 1994:90, for 1976 - 1979 and 1987; Division of Subsistence, ADF&G, Alaska Subsistence Fisheries Database, for the remaining years.

Table VII-2. Chignik Area Subsistence Salmon Harvests by Species and Community of Residence, 2000

Community of Residence	Permits		Estimated Number of Salmon Harvested					Total
	Issued	Returned	Chinook	Sockeye	Coho	Pink	Chum	
Chignik	13	12	0	1,159	173	87	125	1,544
Chignik Lagoon	25	21	88	2,363	8	0	0	2,460
Chignik Lake	17	16	15	2,464	0	5	0	2,484
Ivanof Bay	15	12	3	439	583	288	181	1,493
Perryville	42	40	29	1,747	1,037	805	177	3,797
								0
Subtotal, Chignik Area Communities	112	101	135	8,172	1,802	1,185	483	11,777
Subtotal, Other Alaska Communities	18	11	28	1,389	0	0	34	1,450
Grand Total	130	112	163	9,561	1,802	1,185	517	13,227

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database Version 3.10

Table VII-3. Chignik Area Subsistence Salmon Harvests by Species and Subarea of Harvest, 2000

Subarea of Harvest ¹	Estimated Number of Salmon Harvested ²					
	Chinook	Sockeye	Coho	Pink	Chum	All Salmon
Chignik Bay and Lagoon	128	6,605	46	5	39	6,823
Chignik Lake	4	2,593	0	5	0	2,603
Perryville	31	362	1,756	1,174	478	3,801
Grand Total	163	9,561	1,802	1,185	517	13,227

¹ The Chignik Bay/Lagoon Subarea corresponds to the portion of the Chignik Bay District downstream of the ADF&G weir in the Chignik River, and the Central District. The Chignik Lake Subarea includes subsistence harvests above the weir. The Perryville Subarea corresponds to the Perryville and Western districts, including Ivan Bay, Mitrofanina Bay, the Kametolook River and other streams near Perryville, and Ivanof Bay. In recent years there have been no subsistence harvests reported for the Eastern District.

² Estimated based on extrapolating harvests recorded on returned permits. In 2000, 130 permits were issued and 112 were returned (86.2 percent).

Table VII-4. Finfish Other Than Salmon Used for Subsistence Purposes in Communities of the Chignik Management Area, 1989

Common English Name	Scientific Name	Percentage of Households Using in:				
		Chignik Bay	Chignik Lagoon	Chignik Lake	Ivanof Bay	Perryville
Herring	<i>Clupea harengus pallasii</i>	22.9	46.7	28.6	28.6	14.8
Herring Spawn on Kelp	---	14.3	0.0	4.8	0.0	3.7
Pollock	<i>Theragra chalcogramma</i>	2.9	0.0	0.0	0.0	0.0
* Rainbow Smelt	<i>Osmerus mordax</i>	11.4	0.0	47.6	0.0	0.0
Halibut	<i>Hippoglossus stenolepis</i>	88.6	100.0	66.7	100.0	96.3
Rainbow Trout	<i>Salmo gairdneri</i>	2.9	0.0	23.8	57.1	7.4
Dolly Varden	<i>Salvelinus malma</i>	22.9	6.7	38.1	85.7	55.6
Eulachon (Candlefish)	<i>Thaleichthys pacificus</i>	22.9	40.0	33.3	100.0	77.8
Pacific Cod (Gray)	<i>Gadus macrocephalus</i>	28.6	60.0	47.6	85.7	63.0
Sculpin	<i>Hemilepidotus sp.</i>	11.4	0.0	4.8	0.0	29.6
Starry Flounder	<i>Platichthys stellatus</i>	5.7	0.0	19.0	14.3	0.0
Greenling	<i>Hexagrammos decagrammus</i>	11.4	0.0	9.5	0.0	29.6
Grayling	<i>Thymallus arcticus</i>	0.0	0.0	0.0	14.3	0.0
Black Cod	<i>Anoplopoma fimbria</i>	0.0	6.7	4.8	0.0	0.0
Steelhead	<i>Salmo gairdneri</i>	0.0	13.3	4.8	0.0	0.0
Black Rockfish	<i>Sebastes melanops</i>	0.0	6.7	0.0	0.0	22.2
Red Rockfish	<i>Sebastes ruberrimus</i>	2.9	0.0	0.0	0.0	3.7
Any Fish Other Than Salmon		89.0	100.0	86.0	100.0	96.0

* Most likely harvested outside the Chignik Management Area; Chignik area households receive gifts of rainbow smelt from relatives and friends in Pilot Point, Ugashik, and Nanek, among other communities.

Source: Scott et al. 2001; Hutchinson-Scarborough and Fall 1996

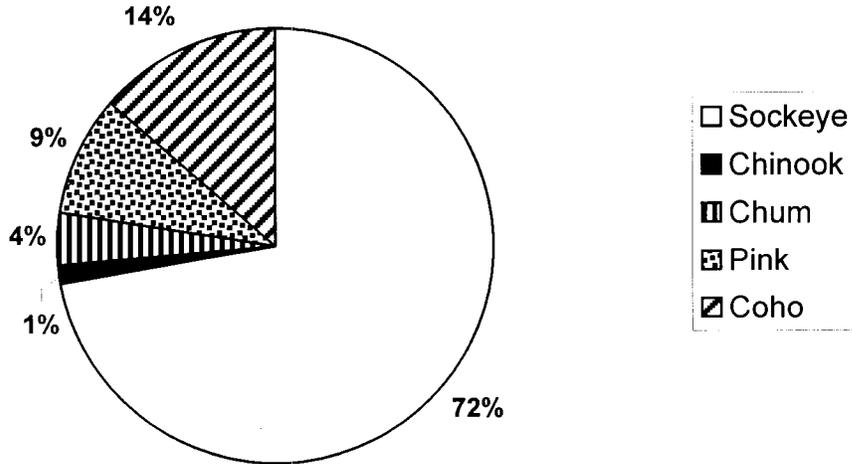
Table VII-5. Marine Invertebrates Used for Subsistence Purposes in Communities of the Chignik Area, 1989

Common English Name	Scientific Name	Percentage of Households Using in:				
		Chignik Bay	Chignik Lagoon	Chignik Lake	Ivanof Bay	Perryville
Razor Clams	<i>Siliqua patula</i>	14.3	33.3	23.8	42.9	37.0
Butter Clams	<i>Saxidomus giganteus</i>	71.4	66.7	52.4	71.4	40.7
Horse Clams	<i>Tresus capax</i>	11.4	0.0	0.0	0.0	3.7
Cockles	<i>Clinocardium sp.</i>	37.1	6.7	47.6	100.0	70.4
Pinkneck Clams (redneck)	<i>Spicula polynuma</i>	0.0	0.0	0.0	71.4	3.7
Littleneck (Steamer) Clams	<i>Protothaca staminea*</i>	11.4	0.0	0.0	28.6	11.1
Chitons, Black	<i>Katharina tunicata</i>	48.6	26.7	57.1	100.0	92.6
Chitons, Red	<i>Cryptochiton stelleri</i>	0.0	0.0	0.0	85.7	11.1
Mussels (blue)	<i>Mytilus edulis</i>	8.6	6.7	0.0	14.3	14.8
Octopus	<i>Octopus dofleini</i>	42.9	20.0	47.6	71.4	51.9
Sea Urchins	<i>Strongylocentrotus sp.</i>	28.6	0.0	47.6	100.0	88.9
Sea Cucumber	Unidentified	0.0	0.0	0.0	0.0	3.7
Shrimp	<i>Pandalus sp.</i>	8.6	0.0	4.8	0.0	0.0
Scallops	<i>Pecten caurinus</i>	2.9	0.0	0.0	0.0	0.0
King Crab	<i>Paralithades camtschatica</i>	40.0	20.0	33.3	42.9	0.0
Dungeness Crab	<i>Cancer magister</i>	37.1	40.0	47.6	100.0	51.9
Tanner Crab	<i>Chionoecetes bairdi</i>	62.9	66.7	14.3	0.0	3.7
Snails	<i>Neptunea sp.</i>	2.9	0.0	0.0	0.0	3.7
Limpets	<i>Acmaeidae sp.</i>	2.9	0.0	0.0	0.0	3.7
Any Marine Invertebrate		89.0	87.0	81.0	100.0	96.0

* May also include smaller-sized individuals of other species and softshell clams of the genus *Mya*.

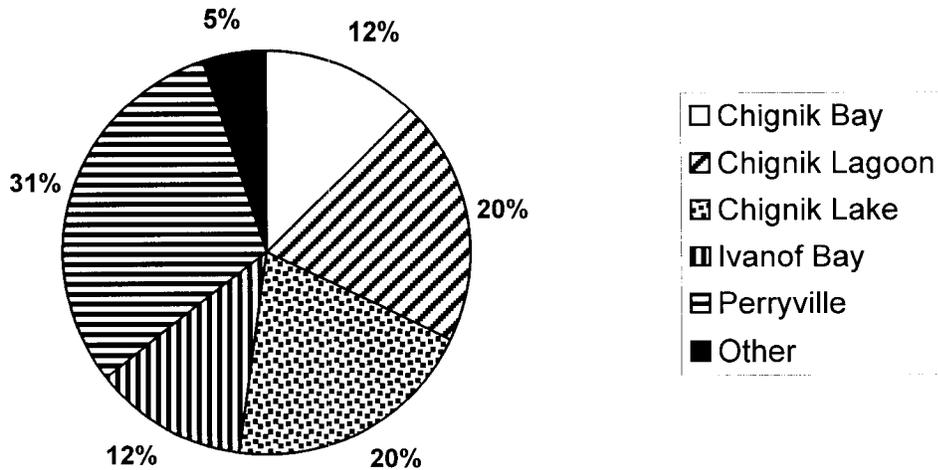
Source: Scott et al. 2001; Hutchinson-Scarborough and Fall 1996

Figure VII-1. Composition of Chignik Area Subsistence Salmon Harvest by Species, 2000



N = 13,227 salmon, based on annual harvest assessment program with permits and household surveys.

Figure VII-2. Subsistence Salmon Harvests by Community, Chignik Management Area, 2000



N = 13,227salmon, based on annual harvest assessment program with permits and household surveys.

VIII: ALASKA PENINSULA AREA

BACKGROUND

The Alaska Peninsula Area includes all Pacific Ocean waters of Alaska between a line extending southeast from the tip of Kupreanof Point and the longitude of the tip of Cape Sarichef, and all Bering Sea waters of Alaska east of the longitude of the tip of Cape Sarichef and south of the latitude of the tip of Cape Menshikof. The communities of the Alaska Peninsula Area are Port Heiden (estimated population 119 in 2000), Nelson Lagoon (population 83), False Pass (population 64), Cold Bay (population 88), King Cove (population 792), and Sand Point (population 952) (US Census Bureau 2001). Port Heiden is in the Lake and Peninsula Borough; the other communities are in the Aleutians East Borough (which also includes Akutan in the Aleutian Islands Area).

REGULATIONS

A subsistence permit is required for fishing in the Alaska Peninsula Area, which must be used to record daily harvests. There is a 250 salmon annual limit. Legal gear includes seine and gillnets. Set gillnets may not exceed 100 fathoms in length. Salmon may be taken at any time except within 24 hours before and within 12 hours following each open weekly commercial salmon fishing period within a 50-mile radius of the area open to commercial salmon fishing. A few small areas closed to subsistence salmon fishing are listed in 5 AAC 01.425.

HARVEST ASSESSMENT PROGRAM

The Division of Commercial Fisheries of ADF&G has issued subsistence permits for the Alaska Peninsula Area since 1979. Except for residents of Sand Point and Cold Bay, permits are mailed each year to fishers who turned in their permits at the end of the previous fishing season. Sand Point and Cold Bay residents are issued permits on request at the Sand Point and Cold Bay ADF&G offices. Permits are also issued on request at other ADF&G offices and by mail to people who call in and request them. Regulations require that permits be turned in to ADF&G by October 31. Reminder letters are sent around November 1 to people who have not yet returned their permits. If a person does not return the permit, their name is dropped from the mailing list for the next year. Data from returned permits are tabulated by species and fishing area. Harvest data from returned permits are expanded by community of residence to estimate the harvest by all permit holders.

SUBSISTENCE SALMON HARVESTS IN 2000

Since 1985, the number of subsistence salmon permits issued for the Alaska Peninsula Area has averaged 211 per year (Table VIII-1). The recent five-year average (1996 through 2000) was 210 permits. However, only 180 subsistence salmon fishing permits were issued for the Alaska Peninsula Area in 2000, the lowest number since 1988 and a sharp decrease from 233 permits issued in 1998. The response rate was 84.4 percent in 2000 (152 of 180 permits were returned). Of all permits issued, 151 (83.9 percent) were issued to residents of Area communities, and 29

(16.1 percent) were issued to other Alaska communities (Table VIII-2). Most non-local residents fish at Mortensen's Lagoon on the Cold Bay road system.

In 2000, the estimated subsistence salmon harvest for the Alaska Peninsula Area was 18,185 fish. This was below the long-term average (19,878 salmon) and well below the recent five-year average (23,492 salmon) (Table VIII-2). The 2000 subsistence harvest was made up of 55 percent sockeye, 29 percent coho, 9 percent chum, 5 percent pink, and 2 percent chinook salmon (Fig. VIII-1). Of the total harvest, local residents took 17,102 salmon (94.0 percent) and other Alaska residents harvested 1,083 salmon (6.0 percent) (Table VIII-2; Fig. VIII-2).

In interviews with Division of Subsistence staff, fisheries managers stated that in their view, the subsistence permit system does completely document all subsistence salmon harvesting activities because some fishers fail to obtain permits. A comparison of permit and household interview data for 1992 for King Cove found that about 31 percent of interviewed households that reported subsistence fishing did not have permits. The estimated total subsistence salmon harvest for the community based on the interviews was 7,036 (+/-1,773), compared to 5,856 based on permit returns (Fall et al. 1993a:58-62). At Sand Point in the same year, 41 percent of interviewed households who reported that they harvested salmon with subsistence methods did not have permits. The estimated total subsistence salmon harvest for Sand Point based on the interviews was 11,338 (+/-2,551), compared to 7,833 based on permit returns (Fall et al. 1993b:61).

Another limitation is that the subsistence permit system for the Alaska Peninsula Area does not account for salmon withheld from commercial catches for home use. Fisheries managers believe that this number is substantial, especially in years when commercial salmon prices are low. For 1992, it was estimated that 51 percent of the salmon harvested for home use at King Cove and 39 percent at Sand Point were removed from commercial harvests (Fall et al. 1993a:56, Fall et al. 1993b:58).

OTHER SUBSISTENCE FISHERIES

There are no annual harvest assessment programs for the other finfish and shellfish subsistence fisheries of the Alaska Peninsula Area. The Division of Subsistence has conducted one round of systematic household harvest surveys in each of the Area's communities except Cold Bay. The findings of these surveys, including species used, percentage of households harvesting each species in the study year, and estimated harvest quantities for the study year, appear in the Community Profile Database (Scott et al. 2001). Table VIII-3 reports the percentage of households in the surveyed communities that used selected non-salmon finfish species in the study year. Generally, Pacific cod, halibut, and Dolly Varden/char were used by the most households. Survey data for marine invertebrates will be reported in future annual reports.

Table VIII-1. Historic Subsistence Salmon Harvests, Alaska Peninsula Area, 1985 - 2000

Year	Permits		Estimated Harvests in Number of Salmon					Total
	Issued	Returned	Sockeye	Chinook	Coho	Pink	Chum	
1985	161	95	4,037	74	7,504	574	1,566	13,755
1986	147	84	5,396	101	2,996	1,779	1,455	11,727
1987	191	144	5,777	193	4,259	1,547	1,943	13,719
1988	183	114	5,501	257	5,646	1,666	1,692	14,762
1989	188	139	10,404	88	3,505	1,213	2,104	17,314
1990	201	157	8,588	246	4,029	736	1,589	15,188
1991	249	185	11,345	458	5,551	1,878	3,551	22,783
1992	229	177	10,739	385	4,267	1,840	2,574	19,805
1993	262	215	12,478	615	5,753	1,189	1,997	22,032
1994	256	213	11,884	674	6,086	2,206	4,406	25,256
1995	260	198	12,716	492	5,021	2,653	3,369	24,251
1996	234	178	12,176	362	7,743	2,569	2,728	25,578
1997	217	172	15,224	420	4,612	2,955	2,885	26,096
1998	233	153	12,920	407	5,820	2,286	1,326	22,759
1999	185	148	15,119	391	4,961	2,136	2,235	24,843
2000	180	152	9,955	341	5,239	950	1,699	18,185
<hr/>								
Average	211	158	10,266	344	5,187	1,761	2,320	19,878
Recent 5-Year Average	210	161	13,079	384	5,675	2,179	2,175	23,492
Recent 10-Year Average	231	179	12,456	455	5,505	2,066	2,677	23,159

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database Version 3.10

Table VIII-2. Estimated Subsistence Salmon Harvests, Alaska Peninsula Area,
by Community and Species, 2000

Community	Permits		Estimated Harvests in Number of Salmon					Total
	Issued	Returned	Sockeye	Chinook	Coho	Pink	Chum	
Bear Lake	3	2	608	0	0	0	0	608
Cold Bay	16	16	553	0	50	1	26	630
False Pass	6	5	690	6	605	32	104	1,438
King Cove	52	44	2,474	14	3,726	202	592	7,008
Nelson Lagoon	9	8	430	8	136	0	0	574
Port Heiden	3	2	0	6	21	0	0	27
Sand Point	62	49	4,282	296	647	674	919	6,817
Subtotal, Area Residents	151	126	9,036	330	5,185	910	1,641	17,102
Other Alaska Residents	29	26	919	11	54	40	58	1,083
Grand Total	180	152	9,955	341	5,239	950	1,699	18,185

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database

Table VIII-3. Percentage of Households Using Selected Non-Salmon Finfish,
Alaska Peninsula Area Communities

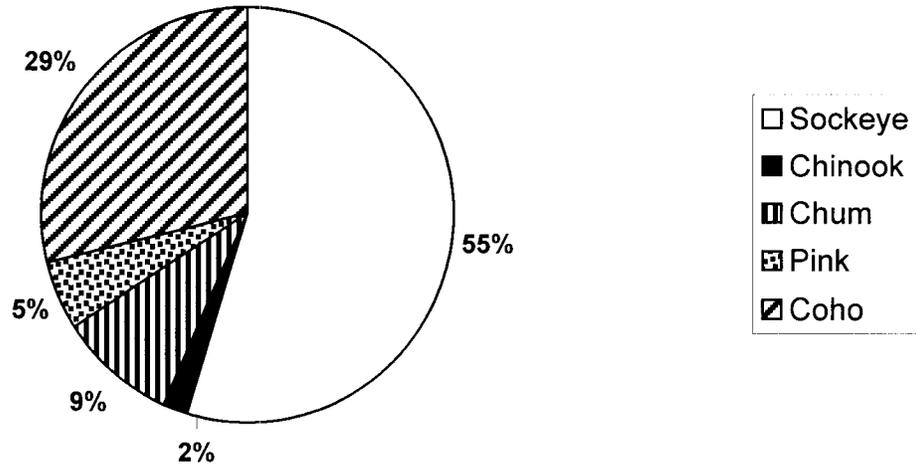
Resource ¹	Percentage of Households Using in Study Year ²				
	False Pass	King Cove	Nelson Lagoon	Port Heiden	Sand Point
Pacific Cod	65.0%	44.0%	0.0%	2.7%	60.6%
Sablefish	15.0%	8.0%			12.5%
Greenling	10.0%	5.3%			6.7%
Flounder	20.0%	4.0%	7.7%	10.8%	3.8%
Halibut	95.0%	73.3%	0.0%	21.6%	89.4%
Herring	30.0%	22.7%		2.7%	13.5%
Herring Spawn on Kelp	0.0%	2.7%		2.7%	1.0%
Smelt	0.0%	1.3%		48.6%	4.8%
Rockfish	5.0%	36.0%			60.6%
Sculpin	35.0%	6.7%			3.8%
Pollock		2.7%			1.9%
Lake Trout				10.8%	
Dolly Varden/Char	75.0%	66.7%	53.8%	75.7%	51.0%
Rainbow Trout/Steelhead	5.0%	4.0%		2.7%	30.8%

¹ Most commonly used types in the study year; uses of other species occurred, or may occur in other years. Blank cells indicate no data for that resource.

² Study year = 1987/88 for False Pass; 1986/87 for Nelson Lagoon and Port Heiden; 1992 for King Cove and Sand Point.

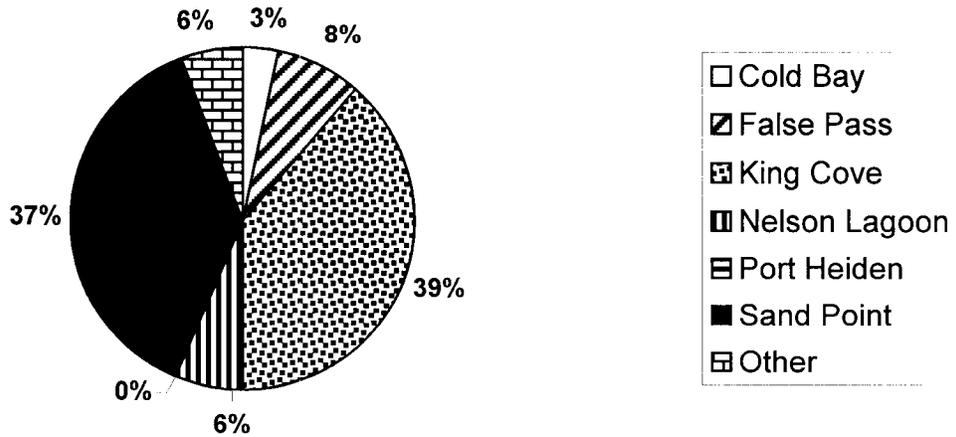
Source: Scott et al. 2001

Figure VIII-1. Composition of Alaska Peninsula Area Subsistence Salmon Harvest by Species, 2000



N = 18,185 salmon; based on annual harvest assessment program with permits.

Figure VIII-2. Subsistence Salmon Harvests by Community, Alaska Peninsula Management Area, 2000



N = 18,185 salmon; Nelson Lagoon includes Bear Lake; based on annual harvest assessment program with permits.

IX. ALEUTIAN ISLANDS AREA

UNALASKA DISTRICT: SUBSISTENCE SALMON FISHERY

Background

The Aleutian Islands Area includes all waters of Alaska west of the longitude of the tip of Cape Sarichef, east of 172° east longitude, and south of 54° 36' north latitude (5 AAC 01.350). For subsistence purposes, the Aleutian Islands Area is divided into five management districts. From east to west, they are the Akutan District, Unalaska District, Umnak District, Atka-Amlia Islands District, and the Adak District. The major communities of the Aleutian Islands Area are Akutan (population 713 in 2000, but 638 live in group quarters [fish processor]; population in households is 75), Unalaska/Dutch Harbor (population 4,283; 2,091 living in households, the remainder in group quarters), Nikolski (population 39), Atka (population 92), and Adak (population 316) (US Census Bureau 2001). Akutan is part of the Aleutians East Borough; the other communities are not part of any organized borough.

The Unalaska District includes all waters west of Akutan Pass to and including Umnak Pass (5 AAC 12.200(b)).

Regulations

A permit is required for subsistence salmon fishing in the Unalaska District. Fishers must record their daily harvests on the permit, and return it to ADF&G by October 31. Permit holders may harvest no more than 25 salmon, plus an additional 25 salmon for each member of the same household who are listed on the permit. Also, as specified in 5 AAC 01.380(b)(2), “a permit holder may obtain an additional permit from the department to harvest more salmon.” Salmon may be taken from 6 a.m. until 9 p.m. from January 1 through December 31, except from June 1 through September 15, a salmon seine vessel may not be used to take salmon for subsistence purposes 24 hours before, during, or 24 hours after an open commercial fishing period within a 50-mile radius of the area open to commercial fishing. Salmon may be taken by seine or gillnet, but from June 1 through September 15, a purse seine vessel may be used to take subsistence salmon only with a gillnet. Subsistence gillnets must be attended at all times while fishing. Waters within the Unalaska District that are closed to subsistence fishing for salmon are defined in 5 AAC 01.375.

Harvest Assessment Program

The Division of Commercial Fisheries of ADF&G has issued subsistence salmon harvest permits for the Unalaska District since 1979. Permits are issued only in person at the ADF&G office in Dutch Harbor. Unalaska District permits may be dropped off or mailed back to the ADF&G office in Dutch Harbor at the end of the fishing season. They are required by regulation to be returned by October 31. Reminder letters are sent around the first of November to all permit holders who have not turned in their permits by that time. Data from returned permits are tabulated by species and fishing area. Data from successfully fished permits are then expanded to represent fish taken by all permit holders, including those who did not return permits.

Subsistence Salmon Harvests in 2000

In 2000, 212 subsistence salmon permits were issued for the Unalaska District, the second highest on record and notably above the long-term average of 139 permits and like recent five – year average of 207 permits. The return rate in 2000 was 78.8 percent (167 of 212 permits) (Table IX-1). Individuals with Unalaska/Dutch Harbor addresses obtained 205 permits (96.7 percent) and other Alaska residents obtained the balance, 7 permits (1.9 percent).

The estimated subsistence harvest of salmon in the Unalaska District in 2000 was 5,154 fish. This is above the long-term average of 4,408 salmon and also higher than the recent five-year average of 4,631 salmon. The 2000 subsistence harvest was composed of 76.3 percent sockeye, 11.7 percent coho, 11.3 percent pink, 0.5 percent chum and 0.2 percent chinook (Fig. IX-1). Permit holders with Unalaska/Dutch harbor addresses harvested 99.7 percent of the subsistence catch in 2000.

In interviews with Division of Subsistence personnel, ADF&G fisheries managers expressed the view that the permit system covers most subsistence salmon fishing occurring in the Unalaska District. In their view, most subsistence fishers obtain permits. They cite the local presence of Fish and Wildlife Protection officers and a population that is self-enforcing (likely to report violators) as reasons for this belief. Unlike other in other areas, fisheries managers in the Unalaska District feel that commercially caught salmon withheld for subsistence purposes is not a major factor in the Aleutian Islands Area. This is because most commercial fishing occurring in the area is for shellfish and ground fish, not for salmon. Results of a survey of randomly-selected Unalaska households conducted by the Division of Subsistence, found that about 4 percent of all salmon harvested for home use were removed from commercial catches, 62 percent were harvested with noncommercial nets, and 34 percent were taken with rod and reel (Scott et al. 2001).

ADAK DISTRICT

Background

The Adak District of the Aleutian Islands Area consists of waters west of Atka Pass at 175° 23.00' west longitude to the terminus of the Aleutian Islands.

Until phased out from 1993 to 1996, Adak was the site of a navy base and military community, with a population of 4,633 in 1990. With the base closure complete, the population was estimated at 0 in 1997. Since then, a new civilian community has been established. In 2000, the Alaska Boundary Commission approved Adak's application to become a second class city. The estimated population in 2000 was 316 (US Census Bureau 2001).

Regulations

Prior to 1988, the non-commercial salmon net fishery at Adak was classified as a subsistence fishery. Beginning in 1988, this fishery operated as a personal use fishery. The Board of Fisheries reclassified it again as a subsistence fishery beginning in 1998.

Subsistence regulations in place in 2000 required that fishers obtain a permit from ADF&G. Fishers must record their daily harvests on the permit, and return it to ADF&G by October 31. Permit holders may harvest no more than 25 salmon, plus an additional 25 salmon for each member of the same household who are listed on the permit. Also, as specified in 5 AAC 01.380(b)(2), “a permit holder may obtain an additional permit from the department to harvest more salmon.” Salmon may be taken at any time. The following waters of and around Adak Island and Kagalaska Island were closed to subsistence fishing for salmon (5 AAC 01.375(6)):

- A. all freshwater
- B. all salt waters within 100 yards of a stream terminus.

Harvest Assessment Program

Subsistence salmon permits are issued by ADF&G out of the Cold Bay office and are faxed upon request to Adak residents. Permits must be returned by mail or fax to Cold Bay by October 31, after which reminder letters are sent to those who have yet to report their harvests. ADF&G fisheries managers believe that the program provides reliable data on subsistence salmon fishing effort and harvests at Adak.

Subsistence Salmon Harvests in 2000

Thirteen subsistence salmon permits were issued for the Adak District in 2000. All were returned. The harvest was 270 sockeye salmon, 4 coho salmon, and 75 pink salmon, for a total harvest of 349 fish (Table IX-2).

For the period 1988 through 1993 during which the navy base operated at Adak, an average of about 49 personal use permits were issued annually. The average annual harvest during that period was 611 salmon (Table IX-2). Since the establishment of the civilian population at Adak in 1997, an average of 12 personal use/subsistence permits have been issued and the average annual harvest has been 294 salmon.

OTHER SUBSISTENCE SALMON FISHERIES IN THE ALEUTIAN ISLANDS

Permits are not required for subsistence salmon fishing in the waters fished by the communities of Atka, Akutan, and Nikolski, and there are no annual harvest assessment programs in place. The Division of Subsistence of ADF&G conducted post-season household interviews in Akutan and Nikolski pertaining to 1991 subsistence harvests (all resources), and in Atka pertaining to harvests in 1992 (salmon only) and 1994 (all resources). The results of these interviews for salmon are reported in Table IX-3. Subsistence salmon harvests in Akutan in 1991 totaled 3,268 fish. This harvest consisted primarily of sockeye (1,872 fish), pink (915 fish), and coho (429). At Nikolski in 1991, subsistence salmon harvests totaled 1,902 fish, with sockeye (957 fish), coho (547 fish), and pink (327 fish) making up most of the total. At Atka in 1992, the subsistence salmon harvest totaled 1,454 fish, composed of about equal numbers of sockeye (502 fish), coho (465 fish), and pink salmon (459). Subsistence salmon harvests at Atka were higher

in 1994, with a total of 2,387 fish. A substantially larger harvest of pink salmon in 1994 (1,267) accounted for most of the difference from the 1992 estimates.

OTHER SUBSISTENCE FISHERIES IN THE ALEUTIAN ISLANDS AREA

Finfish

There are no annual harvest assessment programs for the other subsistence finfish fisheries of the Aleutian Islands Area. Permits are required for the taking of trout and char, but no permit system is in place. Fish other than salmon may be taken by gear specified in 5 AAC 01.010(a), except that halibut may be taken only a single handheld line with no more than two hooks attached. The Division of Subsistence has conducted systematic household surveys pertaining to a single year's harvests in Akutan (pertaining to 1991), Atka (1994), Nikolski (1991), Saint George (1994), Saint Paul (1994), and Unalaska/Dutch Harbor (1994). Results, including harvest estimates for finfish and shellfish, can be found in the Community Profile Database (Scott et al. 2001).

Shellfish

Permits for the taking of shellfish for subsistence purposes are only required for king and Tanner crab in the portion of the Alaska Peninsula-Aleutian Islands area west of Scotch Cap Light and east of 168° west longitude. Future annual reports will summarize subsistence harvest data from this permit program. As noted above, estimates of subsistence harvests of all marine invertebrates for single study years based on systematic household surveys are available in the Community Profile Database (Scott et al. 2001).

Table IX-1. Historic Subsistence Salmon Harvests, Unalaska District, 1985 - 2000

Year	Permits		Estimated Harvests in Numbers of Salmon					
	Issued	Returned	Sockeye	Chinook	Coho	Pink	Chum	Total
1985	65	22	897	0	208	1,293	20	2,418
1986	121	28	3,449	0	847	2,468	375	7,139
1987	81	49	1,097	0	378	1,780	151	3,406
1988	77	45	966	3	390	2,627	83	4,069
1989	74	42	1,112	2	470	1,292	36	2,912
1990	94	37	2,357	4	681	1,428	100	4,570
1991	89	48	1,294	0	666	1,075	45	3,080
1992	144	102	2,739	7	587	1,723	11	5,067
1993	139	102	2,831	17	697	587	136	4,268
1994	150	120	2,759	1	774	1,053	48	4,635
1995	160	129	4,484	23	484	791	23	5,805
1996	189	123	1,107	5	1,033	492	49	2,686
1997	221	163	4,192	8	864	554	110	5,728
1998	206	161	3,317	4	731	729	26	4,807
1999	208	154	2,485	0	1,234	1,044	16	4,779
2000	212	167	3,935	10	603	580	26	5,154
Average	139	93	2,439	5	665	1,220	78	4,408
Recent 5-Year Average	207	154	3,007	5	893	680	45	4,631
Recent 10-Year Average	172	127	2,914	8	767	863	49	4,601

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database Version 3.10

Table IX-2. Estimated Personal Use and Subsistence Harvests of Salmon, Adak District, 1988 - 2000

Year	Permits ¹		Estimated Harvest in Number of Salmon					Total
	Issued	Returned	Sockeye	Chinook	Coho	Pink	Chum	
1988	43	29	503	0	23	150	0	676
1989	64	47	382	0	0	117	0	499
1990	61	29	800	0	47	41	0	888
1991	37	31	281	0	6	34	0	321
1992	52	41	572	0	30	4	0	606
1993	36	26	638	0	12	26	0	676
1994 ²	0	0	0	0	0	0	0	0
1995	4	3	156	0	0	0	0	156
1996	6	6	91	0	0	0	0	91
1997 ³	18	12	229	0	0	0	4	233
1998	13	10	399	0	0	25	0	424
1999	5	5	164	0	4	0	0	168
2000	13	13	270	0	4	75	0	349

Average, 1988 -								
1993	49	34	529	0	20	62	0	611

Average, 1997 -								
2000	12	10	266	0	2	25	1	294

¹ Personal use fishery, 1988 to 1997; subsistence fishery, 1998 to present

² US Navy presence at Adak was reduced beginning in 1994; no requests for personal use permits in 1994

³ In 1997, a substantial number of civilians were hired by the Navy to work on a clean-up effort at Adak

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

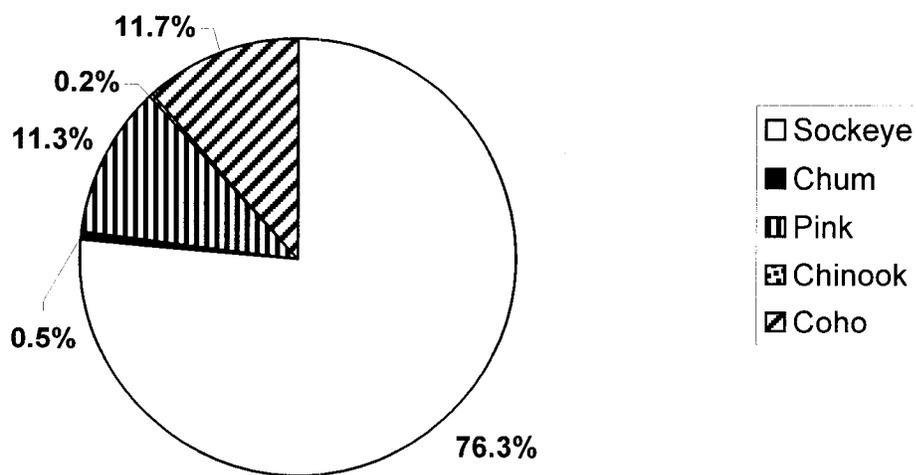
Table IX-3. Estimated Subsistence Harvests of Salmon, Akutan, Atka, and Nikolski

Community	Year	Estimated Number of Households Harvesting	Estimated Harvests in Number of Salmon ¹						All Salmon
			Chum	Coho	Chinook	Pink	Sockeye	Other/Unknown	
Akutan	1991	24	36	429	10	915	1,872	6	3,268
Atka	1992	18	24	465	4	459	502	0	1,454
Atka	1994	23	133	583	10	1,267	394	0	2,387
Nikolski	1991	12	54	547	0	327	957	17	1,902

¹ Includes harvests for home use by all methods, including subsistence nets, rod & reel, and removal from commercial harvests.

Source: ADF&G, Division of Subsistence Household Surveys; Scott et al. 2001

Figure IX-1. Composition of Unalaska District Subsistence Salmon Harvest by Species, 2000



N = 5,154 salmon; based on annual harvest assessment program with permits.

X: KODIAK AREA

INTRODUCTION

The Kodiak Management Area encompasses the waters of the western Gulf of Alaska surrounding the Kodiak Archipelago and along that portion of the Alaska Peninsula that drains into Shelikof Strait between Cape Douglas and Kilokak Rocks. It also includes Chirikof Island. The major communities within the Area include Akhiok, Chiniak, the Coast Guard Base, Karluk, and Kodiak City. Larsen Bay, Old Harbor, Ouzinkie, and Port Lions. All are within the Kodiak Island Borough, which had an estimated population in 2000 of 13,913 (US Census Bureau 2001).

REGULATIONS

Permits have been required to harvest salmon for subsistence purposes in the Kodiak Management Area since 1962. Since 1990, all Alaska state residents have been eligible to participate in subsistence salmon fishing in the Kodiak Management Area. In 2000, legal gear for subsistence salmon fishing under state regulations included gillnets and seines, and fishers were required to be physically present while the net was being fished. Generally, fishing was open year-round from 6:00 a.m. to 9:00 p.m. daily. From June 1 through September 15, salmon seine vessels could not be used for subsistence salmon fishing 24 hours before, during, and 24 hours after any open commercial salmon fishing period. During the same time span, only gillnets could be operated for subsistence purposes from purse seine vessels. Permits allowed fishers to harvest 25 salmon plus 25 additional salmon for each member of the permit holder's household. An additional permit could be obtained if the fisher could demonstrate a need for more fish. Permit holders are required to keep a record of their harvest on the permit. A list of waters closed to subsistence fishing within the Kodiak Management Area appears in 5 AAC 01.525.

HARVEST ASSESSMENT PROGRAM

ADF&G's Division of Commercial Fisheries runs the subsistence salmon harvest assessment program for this management area out of the Kodiak regional office. Permits are mailed each year to people who turned in their permits at the end of the previous fishing season. Subsistence permits are also issued on request at ADF&G offices and by mail to people who call in and request one. In addition, field camp staff at Karluk and Olga Bay issue permits on request. Subsistence fishers mail permits with a harvest record to ADF&G at the end of the season or drop the permits off at the Kodiak office. ADF&G sends reminder letters in February to those permit holders who have not returned their permits by then.

SUBSISTENCE SALMON HARVESTS IN 2000

In 2000, subsistence fishers returned 1,376 subsistence permits to the Department (Table X-1). Of all returned permits, 1,208 (87.8 percent) were held by residents of Kodiak Island Borough communities, and 168 (12.2 percent) were issued to other Alaska residents (Table X-2).

Individuals and families with Kodiak city addresses accounted for a very large number of the total permits in 2000 (1,027; 74.6 percent of all permits returned).

In the Kodiak Area, tabulated subsistence harvest data are not expanded. Results of the assessment program reflect only the reported harvests of subsistence fishers who obtained and returned permits. The estimated total Kodiak Area subsistence salmon harvest in 2000 was 31,628 fish (Table X-1). This number is very similar to both the recent 5-year average of 33,978 salmon and recent 10-year average of 31,982 salmon. Of the entire management area harvest, 29,947 salmon (94.7 percent) were harvested by residents of Kodiak Island Borough communities, and 1,681 salmon (5.3 percent) were harvested by other Alaska residents (Table X-2).

In 2000, the Kodiak Area subsistence salmon harvest was composed of 78.6 percent sockeye, 17.1 percent coho, 2.3 percent pink, 1.1 percent chum, and 0.9 percent chinook salmon (Fig. X-1).

In interviews with Division of Subsistence staff, fisheries managers within Division of Commercial Fisheries expressed uncertainty about the extent to which subsistence salmon harvests in the Kodiak Management Area are documented by the permit system. They suspect that a substantial amount of subsistence harvesting occurs without permits, especially in areas off of the road system. Delivery of permits to subsistence fishers living in the six communities off the island road system has been problematic in the past.¹ Comparisons of subsistence harvests based on returned permits with those from household harvest surveys (as reported in the Community Profile Database; Scott et al. 2001) suggest that subsistence salmon harvests are substantially higher than permit return indicate.

The permit system in this management area might also be improved by adding documentation of rod and reel fishing as subsistence take method. This gear type is allowed for subsistence salmon fishing under federal subsistence rules.

OTHER SUBSISTENCE FISHERIES

There are no annual harvest assessment programs for the other subsistence finfish fisheries of the Kodiak Management Area. Harvest estimates based on systematic household surveys conducted by the Division of Subsistence are available for resident and marine species for multiple years for each Kodiak Island Borough community. These estimates can be found in the Community Profile Database (Scott et al. 2001). Fish harvested in the largest quantities and used by the most households include Pacific cod, lingcod, flounder, halibut, rockfish, and Dolly Varden.

Subsistence permits are required for the harvest of king, Tanner, and Dungeness crab in the Kodiak Area (5 AAC 02.410). Regulations also establish size, bag and possession limits for each type of crab. Only male crab may be taken. In addition to crab, other marine invertebrates

¹ A permit vendor system in the communities off the road system was introduced in 2001. A discussion of any changes to harvest estimates that may be attributed to the vendor system will appear in future annual reports.

used for subsistence purposes in the Kodiak Area include, but are limited to, clams, cockles, mussels, chitons, octopus, and sea urchins. Future annual reports will summarize the subsistence harvest data for marine invertebrates based on permit programs and household surveys.

Table X-1. Reported Subsistence Salmon Harvests, Kodiak Area, 1981 - 2000

Year	Permits		Reported Harvest in Number of Salmon ¹					Total
	Issued	Returned	Sockeye	Chinook	Coho	Pink	Chum	
1981		658	12,924	49	4,029	2,458	484	19,944
1986	1,244	1,002	14,391	90	6,998	2,371	605	24,455
1987	1,124	880	13,198	101	6,463	2,421	1,299	23,482
1988	1,098	699	10,081	108	4,291	1,320	377	16,177
1989	2,800	717	12,638	43	4,123	1,553	419	18,776
1990	2,900	1,167	17,959	131	8,627	1,605	655	28,977
1991	1,406	1,225	21,835	177	8,208	1,743	714	32,677
1992	1,561	1,195	20,684	318	8,643	1,646	643	31,934
1993	1,496	959	19,471	243	7,176	2,696	838	30,424
1994	2,550	1,464	17,962	205	7,491	1,758	440	27,856
1995	1,950	1,194	19,416	175	5,603	1,548	293	27,035
1996	1,567	1,390	28,287	253	5,117	1,125	381	35,163
1997	2,098	1,638	33,293	383	6,369	1,458	234	41,737
1998	1,841	1,126	20,459	350	5,348	1,412	214	27,783
1999		1,390	26,522	397	4,974	1,299	388	33,580
2000		1,376	24,873	273	5,399	742	341	31,628
Average	1,818	1,130	19,625	206	6,179	1,697	520	28,227
Recent 5-Year Average	1,835	1,384	26,687	331	5,441	1,207	312	33,978
Recent 10-Year Average	1,809	1,296	23,280	277	6,433	1,543	449	31,982

¹ In the Kodiak Management Area, reported harvest data are not expanded.

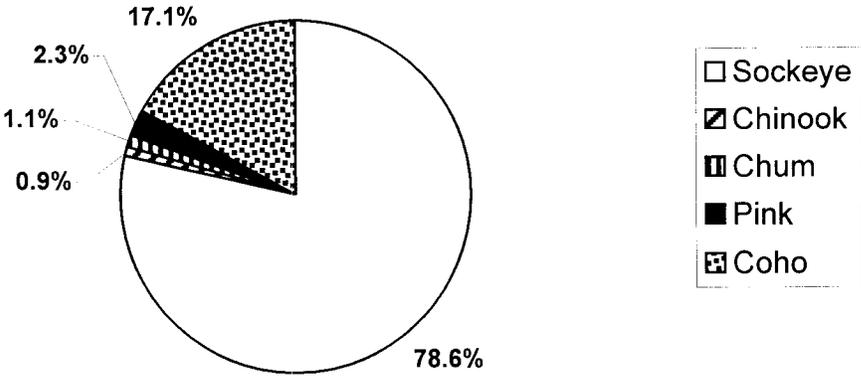
Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

Table X-2. Reported Subsistence Salmon Harvests, Kodiak Area, by Community and Species, 2000

Community	Permits	Reported Harvests in Numbers of Salmon					Total
	Returned	Chinook	Sockeye	Coho	Chum	Pink	
Akhiok	2	4	95	6	0	0	105
Chiniak	21	4	279	292	40	13	628
Kodiak City	1,027	242	17,994	3,230	150	441	22,057
Kodiak USCG Base	48	0	627	5	0	10	642
Larsen Bay	10	0	430	23	3	3	459
Old Harbor	21	0	351	570	34	184	1,139
Ouzinkie	26	8	1,422	617	43	20	2,110
Port Lions	41	2	2,041	431	1	11	2,486
Other, Kodiak Island	12	0	269	26	8	18	321
Subtotal, Kodiak Island	1,208	260	23,508	5,200	279	700	29,947
Chignik Bay	4	0	14	0	0	0	14
Unalaska	1	0	0	13	0	0	13
Other Alaska	151	13	1,247	166	62	42	1,530
Other USA	12	0	104	20	0	0	124
Subtotal, Other	168	13	1,365	199	62	42	1,681
Grand Total	1,376	273	24,873	5,399	341	742	31,628

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

Figure X-1. Composition of Kodiak Area Subsistence Salmon Harvest by Species, 2000



N = 31,628 salmon; based on annual harvest assessment program with permits.

XI. COOK INLET AREA

INTRODUCTION

Most of the waters of the Cook Inlet Management Area are within the Anchorage-MatSu-Kenai Nonsubsistence Area as established by the Joint Boards of Fisheries and Game (5 AAC 99.015(3)). Subsistence fisheries are not authorized within these nonsubsistence areas. Non-commercial harvesting opportunities are provided under sport and personal use fishing regulations. Harvest summaries for the personal use dip net and set net fisheries of the Kenai Peninsula can be found in annual management reports prepared by the ADF&G divisions of Sport Fish and Commercial Fisheries.

Waters outside the nonsubsistence area include the Tyonek Subdistrict and the western portion of the Susitna River drainage in Upper Cook Inlet, plus those waters north of Point Bede which are west of a line from the eastern most point of Jakolof Bay north of the westernmost point of Hesketh Island including Jakolof Bay and south of a line west of Hesketh Island and the waters south of Point Bede which are west of the easternmost point of Rocky Bay, which are in Lower Cook Inlet.

Communities within the areas outside the nonsubsistence zone include Skwentna (population 111 in 2000), Alexander (population 39 [in 1999] [ADLWD 2000]), Tyonek (population 193), Seldovia (population 430 in city and village CDP), Port Graham (population 171) and Nanwalek (English Bay) (population 177). The population of the entire Cook Inlet Area in 2000 was 369,296, including the Anchorage Municipality (population 260,283), the Kenai Peninsula Borough (49,691), and the Matanuska-Susitna Borough (59,322). This represents 58.9 percent of the state's total population in 2000 (US Census Bureau 2001).

PORT GRAHAM AND KOYUKTOLIK SUBDISTRICTS

History and Regulations

A separate set of subsistence regulations for this subsistence setnet fishery was first established by the Alaska Board of Fisheries in 1980. The fishery is located along the southern shore of outer Kachemak Bay in the Port Graham and Koyuktolik subdistricts of the Southern District. Two Alaska Native communities, Nanwalek and Port Graham, are located in the Port Graham Subdistrict. For detailed description of this subsistence fishery and other subsistence harvests and uses in Nanwalek and Port Graham, see Stanek (1985).

The fishery opens April 1st and closes September 30th. There are frequent emergency closures and openings during July when escapements of sockeye salmon into the English Bay River are being closely monitored to achieve minimum escapement goals. Throughout the season two 48-hour openings occur each week. The area open to subsistence set netting includes the entire shoreline of the subdistrict to a regulatory marker near the head of Port Graham Bay. There are no season or household bag or possession limits. The three primary species harvested include sockeye, pink, and coho salmon. The gear allowed includes set gillnets no longer than 35

fathoms, no deeper than 45 meshes, and no larger than a six-inch stretched mesh. A lead may be used on the shoreward end of the net.

Harvest Assessment Methods

Household permits are issued by the Department of Fish and Game, Division of Subsistence through cooperative agreements with the Port Graham and Nanwalek village councils prior to fishing. When permits are issued, a separate monthly catch calendar is also issued for recording daily household harvests. Home use salmon harvests by the two communities occur with the use of setnet and rod and reel gear. While the recording of harvests in the setnet fishery is mandatory, it is not in the rod and reel fishery. Therefore, fishermen are asked to voluntarily record their rod and reel harvests. In order to accommodate the recording of harvests in both fisheries, the recording device has two pages, one for each gear type, and is issued separately from the permit. Local assistants hired by each village council collect the calendars periodically throughout the season. Dolly Varden harvests are also recorded on the calendars. (Future annual reports will summarize the Dolly Varden data.)

The sockeye salmon run to the English Bay Lakes was severely depressed for much of the late 1980s and early 1990s, with returns failing to achieve the minimum escapement goal for nine consecutive years between 1985 and 1993. Recent returns have been bolstered as a result of a rehabilitation/enhancement project initiated by ADF&G and subsequently run by the Chugach Regional Resources Commission (CRRC) and the village of Nanwalek. In-season escapement monitoring has taken place since 1994, and openings and closures in the subsistence and commercial fisheries controlled by emergency order.

Harvest Estimates

In 2000, subsistence salmon harvests in the Port Graham and Koyuktolik subdistricts totaled 9,313 salmon, including both set net and rod and reel harvests. Residents of Nanwalek, with 32 permits, harvested 7,198 salmon and residents of Port Graham, with 35 permits, took the balance of 2,115 salmon (Table XI-1). Of the total harvest, sockeye were the most numerous species (4,664 salmon; 50.1 percent), followed by coho (1,831 salmon; 19.7 percent), pink (1,606 salmon; 17.2 percent), chum (953 salmon; 10.2 percent), and chinook (259 salmon; 2.8 percent) (Fig. XI-1). The total subsistence harvest in 2000 was the largest since the monitoring program for this fishery began in 1981. This was due in part to a strong return of sockeye salmon to the English Bay River and a record subsistence harvest of chum salmon. Another factor was likely the very thorough documentation of the 2000 harvest, with most subsistence fishers providing data. This is in contrast to 1997 and 1998, when subsistence harvests were likely underreported due to incomplete coverage of all fishing households.

SELDOVIA SUBSISTENCE FISHERY

History and Regulations

This is a subsistence set gillnet fishery that was established in the fall of 1995 by the Alaska Board of Fisheries. The fishery is located on the south side of Kachemak Bay in the vicinity of

the community of Seldovia in the Southern District of the Lower Cook Inlet Area. The fishery targets king salmon runs passing through lower Cook Inlet and a separate enhanced chinook run returning to Seldovia Bay. Coho salmon are targeted in a fall fishery.

The fishery operates in a split season with two parts, the first occurring from April 1 through May 30 and the second occurring during the first two weekends in August. In the early season fishing is allowed during two 48-hour periods each week, while in the late season fishing is continuous during the two-day weekends. There is a guideline harvest limit of 200 chinook salmon set for the early season and an annual possession limit of 20 chinook per household. There are no seasonal limits for the other species.

The area open to subsistence set gillnetting includes those waters along the eastern shore of Seldovia Bay as well as a short stretch outside Seldovia Bay proper to the west of Point Naskowhak. The gear allowed includes set gillnets no longer than 35 fathoms, no deeper than 45 meshes, and no larger than a six inch stretched mesh.

Harvest Assessment Methods

A household permit is issued by the Department of Fish and Game prior to fishing, and catches are recorded on the permit. Permits are also available from the harbormaster in Seldovia. Fishermen are required to call in daily to report their catch to ADF&G and return their permit after each of the two segments of the season. ADF&G sends reminder letters to permit holders if harvest records have not been returned in a timely manner, and phone calls are also made to enhance permit returns. ADF&G considers the harvest data for this fishery to be very reliable.

The 2000 Season

There were 22 permits issued in the 2000 early season, and no permits issued in the late season. All permits were returned to the Department as required by regulation, and the total harvest was determined from these returns. The total reported harvest was 179 chinook salmon, 252 sockeyes, and 16 chums (Table XI-3). Twenty-two permits were issued to residents of Seldovia, one to a Homer resident, and one to an Anchorage resident. All of the harvest was taken by Seldovia permit holders.

The 1998, 1999, and 2000 early season harvests increased from the first two years of the fishery, and this increase can be attributed to the longer season for the third straight year. Beginning with the 1998 season, the Board of Fisheries lengthened the season by 10 days in May. The additional fishing time resulted in increased harvests of both chinook and sockeye salmon (Table XI-3).

TYONEK SUBDISTRICT

History and Regulations

A separate set of subsistence salmon fishing regulations was first established for the Tyonek Subdistrict by court order in 1980, and subsequently established permanently by the Alaska

Board of Fisheries. This setnet fishery is located in the Tyonek Subdistrict of the Northern District of upper Cook Inlet. The subdistrict includes the area from one mile south of the mouth of the Chuitna River south to the eastern-most part of Granite Point and from the mean high tide to the mean lower low tide. The area is unique in that all the lands within the subdistrict are owned by the Tyonek Native Corporation. This feature often raises issues of trespass for those individuals living outside the Tyonek area who do not seek permission to land their boats or set their nets on the privately owned land. For a detailed discussion of this fishery and other subsistence uses at Tyonek, see Fall et al. (1984).

The season in this subsistence fishery operates in two parts. The first part, which focuses on chinook salmon, opens May 15th and runs through June 15th with daily openings on Tuesdays, Thursdays, and Fridays. The second part opens on Saturdays from June 16th through October 15th. A 4,200 chinook salmon limit in set for the early season. If this limit is reached, the second season does not open until July 1st. In 20 years of operation of this fishery, the chinook salmon limit has never been reached.

Allowable gear for the Tyonek Subdistrict subsistence fishery includes set gillnets 10 fathoms in length, no deeper than 45 meshes, and a stretched mesh sized no larger than 6 inches. When fishing, permit holders are required to be present at the net site.

Harvest Assessment Methods

A household permit is issued by the Department of Fish and Game prior to fishing, and catches are recorded on the permit. Two separate permits are required, one for the early season and one for the late season. Permits are available in the Anchorage ADF&G office or in the Tyonek village office. Reported harvests are not expanded in this fishery. Because of the high compliance with the permit requirement and the strong assistance from the Tyonek village government, ADF&G views the harvest estimates for this fishery as very reliable.

The 2000 Season

In 2000, 60 subsistence permits were issued for the Tyonek District, including 46 permits issued to Tyonek residents (76.7 percent) and 14 permits issued to other Alaska residents (23.3 percent), mostly residents of Anchorage (Table XI-4). The total reported subsistence salmon harvest was 1,313 fish, with 1,157 chinook, 63 sockeye, 87 coho, 6 pink, and 0 chum. Residents of Tyonek accounted for 86.2 percent of the harvest total (1,132 salmon), including 91.5 percent of the chinook harvest (1,059 salmon). The total 2000 harvest was slightly lower than the long-term average for this fishery of 1,663 salmon, but was higher than the recent five and ten-year averages (Table XI-5)

UPPER YENTNA RIVER FISH WHEEL FISHERY

History and Regulations

This is a subsistence fish wheel fishery that began in 1996 as a personal use fishery and was reclassified as a subsistence fishery by the Board of Fisheries beginning in 1998. It is located in

the main stem of the Yentna River from its confluence with Martin Creek upstream to its confluence with the Skwentna River. The fishery occurs from July 15 through July 31. Fishing periods are from 4 a.m. to 8 p.m. Monday, Wednesday, and Friday.

Legal gear includes a fish wheel with a live box. Permit holders must be present at the fish wheel while fishing. A season limit of 2,800 salmon is established for the fishery. Chinook salmon and rainbow trout must be returned alive to the water. Seasonal limits for households are 25 salmon for a head of household and 10 salmon for each dependent.

Harvest Assessment Methods

A permit issued by the ADF&G is required prior to fishing. Permits are available through the Division of Sport Fish office in Palmer. Permit holders must record their harvests on the permit and return it to the department. In the view of ADF&G, compliance with the permit requirement is high and harvest estimates for this fishery are very reliable.

Harvests in 2000

Nineteen subsistence permits were issued for the Yentna River subsistence fish wheel fishery in 1999. All were returned to ADF&G. In 2000, 12 of the 19 permit holders resided in the Skwentna area, with the remaining seven permits held by residents of Anchorage (four permits), Big Lake (one), and Chugiak (two) (Table XI-6). The total harvest in 2000 was 482 salmon, including 379 sockeye (78.6 percent), 43 coho (19.1 percent), 4 pink (0.8 percent), and 7 chum (1.4 percent). (Chinook salmon may not be retained in this fishery.) The 2000 harvest was slightly lower than the five-year average (571 salmon), and down slightly from the harvest in 1998 of 653 salmon and the 1999 harvest of 595 salmon (Table XI-7).

Table XI-1. 2000 Subsistence Salmon Harvests by Community, Port Graham/Koyuktolik Subdistricts

Community	Permits		Reported Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
Nanwalek		32	18	3,880	1,579	470	1,251	7,198
Port Graham		35	241	784	252	483	355	2,115
Totals		67	259	4,664	1,831	953	1,606	9,313

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XI-2. Historic Subsistence Salmon Harvests: Port Graham/Koyuktolik Subdistricts,
1981 - 2000

Year	Permits		Reported Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1981		57	138	2,670	825	177	874	4,684
1982		61	124	2,354	1,493	220	2,932	7,123
1983		46	67	2,480	471	95	187	3,300
1984		24	45	3,262	510	6	673	4,496
1985		24	146	1,177	621	26	345	2,315
1986		44	125	647	481	14	1,062	2,329
1987		55	21	901	914	114	714	2,664
1988		48	104	1,021	844	110	1,756	3,835
1989		44	51	157	1,155	74	1,495	2,932
1990		60	265	1,162	1,417	151	2,960	5,955
1991		63	163	688	2,053	221	4,587	7,712
1992		71	200	535	1,150	236	1,421	3,542
1993		56	277	1,148	913	257	2,663	5,258
1994		70	300	830	1,370	504	1,979	4,983
1995		87	585	1,795	538	376	1,273	4,567
1996		75	310	1,744	939	276	749	4,018
1997		26	202	325	203	153	511	1,394
1998		19	169	289	243	240	459	1,400
1999		74	485	3,157	1,747	1,104	2,023	8,516
2000		67	259	4,664	1,831	953	1,606	9,313
1996-2000								
Average		52	285	2,036	993	545	1,070	4,928
1991-2000								
Average		61	295	1,518	1,099	432	1,727	5,070
All Years								
Average		54	202	1,550	986	265	1,513	4,517

SOURCE: Alaska Department of Fish and Game, Division of Subsistence,
Alaska Subsistence Fisheries Database, Version 3.10.

Table XI-3. Historic Subsistence Salmon Harvests: Seldovia Fishery, 1996 - 2000

YEAR	Permits		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1996	43	42	51	9	0	0	0	60
1997	20	17	52	22	0	0	0	74
1998	22	20	143	65	0	8	0	216
1999	16	16	136	130	0	38	0	304
2000	22	22	179	252	0	16	0	447
1996-2000								
Average	25	23	112	96	0	12	0	220

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XI-4. Tyonek Subdistrict Subsistence Salmon Harvests by Community, 2000

Community	Permits		Reported Harvests in Number of Salmon					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
Anchorage	8	8	69	21	62	0	0	152
Beluga	2	2	13	0	0	0	0	13
Big Lake	1	1	0	0	0	0	0	0
Chugiak	1	1	0	0	0	0	0	0
Eagle River	2	2	16	0	0	0	0	16
Tyonek	46	45	1,059	42	25	0	6	1,132
Total	60	59	1,157	63	87	0	6	1,313

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10

Table XI-5. Historic Subsistence Salmon Harvests: Tyonek Subdistrict, 1980 - 2000

Year	Permits		Reported Subsistence Harvests					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1980	67		1,757	235	0	0	0	1,992
1981	70		2,002	269	64	32	15	2,382
1982	69		1,590	310	113	4	14	2,031
1983	75		2,665	187	59	6	0	2,917
1984	75		2,200	266	79	23	3	2,571
1985	76		1,472	164	91	10	0	1,737
1986	65		1,676	203	223	46	50	2,198
1987	64	61	1,610	166	149	24	10	1,959
1988	47	42	1,587	91	253	12	8	1,951
1989	49	47	1,250	85	115	1	0	1,451
1990	42	37	781	66	352	12	20	1,231
1991	57	54	902	20	58	0	0	980
1992	57	44	907	75	234	19	7	1,242
1993	62	54	1,370	57	77	17	19	1,540
1994	58	49	770	85	101	22	0	978
1995	70	55	1,317	45	153	15	0	1,530
1996	73	49	1,039	68	137	7	21	1,272
1997	70	42	639	101	137	8	0	885
1998	74	49	1,027	163	64	2	1	1,257
1999	77	54	1,230	144	94	11	32	1,511
2000	60	59	1,157	63	87	0	6	1,313
1996-2000								
Average	71	51	1,018	108	104	6	12	1,248
1991-2000								
Average	66	51	1,036	82	114	10	9	1,251
All Years								
Average	65	50	1,378	136	126	13	10	1,663

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XI-6. Subsistence Salmon Harvests, Upper Yentna River Fish Wheel Fishery by Community, 1999

Community	Permits		Reported Harvests in Number of Salmon					Total
	Issued	Returned	Chinook ¹	Sockeye	Coho	Pink	Chum	
Anchorage	4	4	0	75	19	0	3	97
Big Lake	1	1	0	19	6	0	0	25
Chugiak	2	2	0	58	6	0	1	65
Skwentna	12	12	0	227	61	4	3	295
								0
Total	19	19	0	379	92	4	7	482

¹ Regulations prohibit the retention of chinook salmon in this fishery (5 AAC 01.593).

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XI-7. Historic Subsistence and Personal Use Salmon Harvests,
Upper Yentna River Fish Wheel Fishery, 1996 - 2000¹

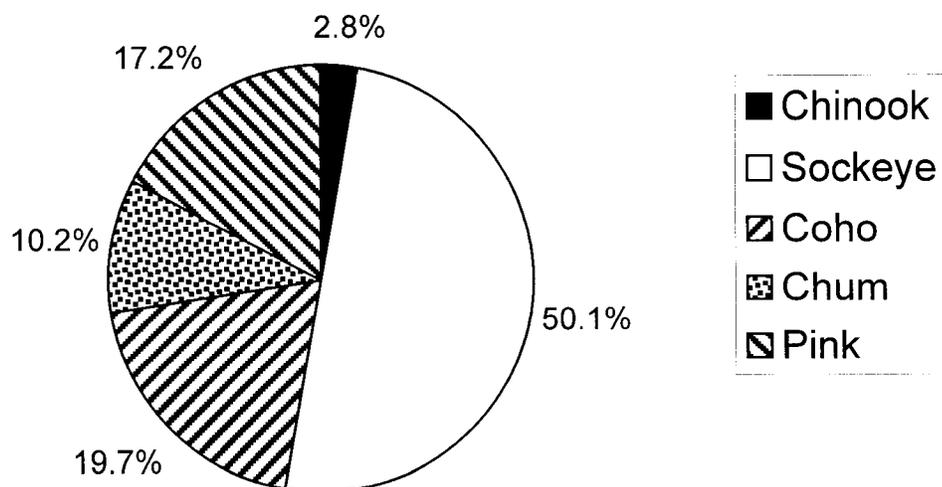
Year	Permits		Estimated Harvests in Number of Salmon					Total
	Issued	Returned	Chinook ²	Sockeye	Coho	Pink	Chum	
1996	17	17	0	242	46	115	51	454
1997	24	21	0	549	83	30	10	672
1998	21	18	0	495	113	30	15	653
1999	18	16	0	516	48	18	13	595
2000	19	19	0	379	92	4	7	482
Average	20	18	0	436	76	39	19	571

¹ This fishery was classified as personal use in 1996 and 1997, and as subsistence since 1998.

² Regulations prohibit the retention of chinook salmon in this fishery (5 AAC 01.593).

Source: ADF&G, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Figure XI-1. Composition of Subsistence Salmon Harvest, Port Graham/Koyuktolik Subdistricts, 2000



N = 9,313 salmon, based on annual harvest assessment program with harvest calendars.

XII: PRINCE WILLIAM SOUND AREA

INTRODUCTION

The Prince William Sound Management Area includes all waters of Alaska between the longitude of Cape Fairfield and the longitude of Cape Suckling. In 2000, there were seven subsistence fisheries with annual harvest assessment programs in the Prince William Sound Management Area:

1. Upper Copper River: Glennallen Subdistrict
2. Upper Copper River: Chitina Subdistrict
3. Batzulnetas Fishery
4. Copper River Flats / Prince William Sound
5. Prince William Sound: Eastern District / Tatitlek
6. Prince William Sound: Southwestern District / Chenega
7. Prince William Sound: General

Each of these fisheries will be discussed in turn. It should also be noted that the dip net fishery that takes place in the Chitina Subdistrict of the Upper Copper River District was classified as a personal use fishery through 1999. The Alaska Board of Fisheries reclassified this fishery as a subsistence fishery beginning in 2000 and therefore it is discussed in this report. Historical data for this fishery, including years when it was classified as personal use, are included as well.

UPPER COPPER RIVER SUBSISTENCE FISHERY: GLENNALLEN SUBDISTRICT

Background and History

The Upper Copper River District of the Prince William Sound Management Area consists of all waters of the mainstem Copper River from the mouth of the Slana River downstream to an east-west line crossing the Copper River approximately 200 yards upstream of Haley Creek as designated by ADF&G regulatory markers. There are two subdistricts:

1. The Chitina Subdistrict consists of all waters of the Upper Copper River District downstream of the downstream edge of the Chitina-McCarthy Road Bridge; and
2. The Glennallen Subdistrict consists of all remaining waters of the Upper Copper River District.

The Glennallen and Chitina subdistricts were established in 1977. Prior to that time, the Upper Copper River was treated as one unit for management purposes. For a detailed discussion of the history of these fisheries, see Simeone and Fall (1996).

Regulations

In the Glennallen Subdistrict, permits are required to participate in subsistence fishing for salmon and freshwater fish species under the authority of 5 AAC 01.630. Permits are issued on request

at ADF&G offices in Glennallen and Tok, at the Slana office of the National Park Service, Chistochina Village Council office, and the Copper River Native Association office.

Legal subsistence gear in the Glennallen Subdistrict includes fish wheels and dip nets. The season runs from June 1 through September 30. Annual limits are 30 salmon for a household with one person, of which no more than five may be chinook salmon if taken with a dip net; 60 salmon for a household of two persons, with the same chinook limit for dipnetters; and 10 salmon for each additional person in the household, again with the chinook limit for dipnetters. Upon request, permits will be issued for additional salmon, with limits of 200 salmon for 1 person households and 500 for households of two or more persons. Dipnetters are still limited to 5 chinook per year.

Harvest Assessment Program

Annual subsistence salmon harvest assessments have been conducted for Upper Copper River since 1960, originally by the Division of Commercial Fisheries, but currently by the Division of Sport Fish. Permits include harvest reports, and fishers are required to record the dates they fish and the number of each species harvested each day. Reminder letters are mailed to those permittees who do not return permits at the end of the season. Total harvest estimates for the fishery are made based on reported harvests expanded to all permit holders.

Under the provisions of 5 AAC 01.630(h), a village council or other similarly qualified organization, may obtain a permit to operate a fish wheel on behalf of its members upon approval of a harvest assessment plan submitted to ADF&G. These organizations may also issue household permits and register fish wheels. Table XII-1 summarizes data for the permits issued for village fish wheels in 1997, 1999, and 2000. Harvests for village fish wheels are also included in the subdistrict totals.

Subsistence Salmon Harvests in 2000

As reported in Table XII-2, the estimated total subsistence salmon harvest in the Glennallen Subdistrict in 2000 was 66,032 salmon, including 60,551 sockeye (91.7 percent), 4,937 chinook (7.5 percent), and 839 coho (0.8 percent). (There are no pink or chum salmon in the upper Copper River although 5 chum were reported harvested on one permit, as shown in Table XII-2.) Of the total harvest in 2000, 56,356 salmon were taken with fish wheels (85.3 percent) and 9,675 salmon with dip nets (14.7 percent) (Table XII-3). Table XII-4 reports subsistence salmon harvests in the Glennallen Subdistrict by place of residence of permit holders in 2000, while Table XII-5 and Table XII-6 shows harvests by community by gear type, fish wheel or dip net, respectively. Copper Basin residents harvested 43.1 percent of the harvest, including 49.3 percent of the fish wheel harvest but only 6.5 percent of the dip net harvest (Table XII-3).

UPPER COPPER RIVER SUBSISTENCE FISHERY: THE CHITINA SUBDISTRICT

Background and History

As noted above, the Chitina Subdistrict is one of two (along with the Glennallen Subdistrict) within the Upper Copper River District. It consists of all waters of the Upper Copper River District downstream of the downstream edge of the Chitina-McCarthy Road Bridge to an east-west line crossing the Copper River approximately 200 yards upstream of Haley Creek. The Glennallen and Chitina subdistricts were separated in 1977. Prior to that time, the Upper Copper River was treated as one unit for management purposes. In 1984 and from 1986 through 1999, the Chitina Subdistrict was closed to subsistence fishing, and the dip net fishery there operated as a personal use fishery. At its December 1999 meeting, the Alaska Board of Fisheries reversed its earlier decision and determined that the Chitina Subdistrict supported customary and traditional uses of salmon, changing the classification of the fishery back to subsistence. For a detailed discussion of the history of these fisheries, see Simeone and Fall (1996) and ADF&G 2002b.

Regulations

A household permit is required for subsistence fishing in the Chitina Subdistrict, issued by ADF&G. Households may not possess subsistence permits for both the Glennallen and Chitina subdistricts in the same year. Dip nets are the only legal gear in the Chitina Subdistrict. Annual limits are 15 salmon for a one-person household and 30 salmon for households with more than one person. Only one chinook salmon may be harvested annually. Households that achieve their annual limits may obtain supplemental permits for 10 additional sockeye salmon if ADF&G determines that a weekly surplus of 50,000 salmon or more will be present in the subdistrict.

Harvest Assessment Program

Annual subsistence salmon harvest assessments have been conducted for Upper Copper River since 1960, currently by the Division of Sport Fish. Permits include harvest reports, and fishers are required to record the dates they fish and the number of each species harvested each day. Reminder letters are mailed to those permittees who do not return permits at the end of the season. Total harvest estimates for the Chitina Subdistrict are made based on reported harvests expanded to all permit holders.

Subsistence Salmon Harvests in 2000

As reported in Table XII-7, the estimated total subsistence salmon harvest in the Chitina Subdistrict in 2000 was 116,347 salmon, including 109,370 sockeye (94.0 percent), 3,219 chinook (2.8 percent), and 3,758 coho (3.2 percent). (There are no pink or chum salmon in the upper Copper River.) Table XII-7 reports subsistence salmon harvests in the Chitina Subdistrict by place of residence of permit holders in 2000; most participants in this fishery live in Fairbanks, Anchorage, or the Matanuska-Susitna Borough. As reported in Table XII-8, the 2000 total harvest for the Chitina Subdistrict was very similar to the recent 10-year average of 116,110, but below the record harvest levels of 1997 through 1998, which ranged at around 150,000 salmon.

BATZULNETAS SUBSISTENCE FISHERY

The Batzulnetas subsistence salmon fishery includes all waters from the regulatory markers near the mouth of Tanada Creek and approximately on-half mile downstream from that mouth, and in Tanada Creek between ADF&G regulatory markers. The fishery may begin after June 1. Fishing periods during the month of June are one 48 hour period per week. Beginning in July fishing periods are 84-hours per week until September 1 when the fishery closes. This fishery was created in 1987 through an emergency regulation to settle the United States District Court case of John vs. Alaska.

Since 1987, subsistence permits have been issued in seven years (Table XII-9). In 2000, one permit was issued with a total reported harvest of 55 sockeye salmon. The long-term average harvest for this fishery is 122 sockeye salmon, with the highest harvest occurring in 1994 with a take of 997 sockeyes. Participants in this fishery are largely from the community of Mentasta.

COPPER RIVER DISTRICT SUBSISTENCE FISHERY

Background and Regulations

This fishery takes place in the Copper River District at the mouth of the Copper River (Copper River Flats) near the community of Cordova. Permits are required to participate in subsistence fishing for salmon and freshwater fish species under the authority of 5 AAC 01.630. Permits are issued on request at the ADF&G office in Cordova or they may be obtained by calling and requesting them by phone. Legal gear is set or drift gillnet. Annual limits are 15 salmon for a one person household; 30 salmon for a two person household; and 10 salmon for each additional person in the household. There is a limit of five king salmon per permit.

Harvest Assessment Program

A permit system with annual subsistence salmon harvest assessments has been in place for Prince William Sound at least since 1960. Permits are either dropped off at the Cordova ADF&G office or mailed in at the end of the fishing season. Permits include a harvest report, and fishers are required to fill in the dates fished and the number of each species of fish harvested caught each day. There is one version of the permit, but fishers need to declare whether they want to fish the Copper River Flats area or in Prince William Sound. An issued permit is only valid for one of these locations.

Subsistence Salmon Harvests in 2000

As reported in Table XII-10, 416 permits were issued for this fishery in 2000, and 400 (96.2 percent) were returned. Both were record numbers for this fishery. The estimated harvest was 5,318 salmon, including 4,534 sockeye (85.3 percent), 46 coho (0.9 percent), and 717 chinook (13.5 percent). Most permit holders lived in Cordova, although place of residence data are not presently available in the database. The 2000 harvest was, by far, the highest on record, and almost double the recent 5-year average of 2,914 salmon.

EASTERN DISTRICT SUBSISTENCE SALMON FISHERY

The present set of subsistence regulations the Eastern District of Prince William Sound has been in place since 1988. The primary participants in this fishery are residents of Tatitlek. Prior to 1992, permits were only issued in Tatitlek. Since 1992, they have also been issued at the ADF&G office in Cordova. Permits may be dropped off at the Cordova ADF&G office, the Tatitlek Village Council office, or mailed in at the end of the fishing season. Permits include a harvest report, and fishers are required to fill in the dates fished and the number of each species of salmon caught each day.

Legal gear for this fishery includes seines up to 50 fathoms in length and 100 meshes deep with a maximum mesh size of four inches, or gillnets up to 150 fathoms in length with a maximum size of six and one-quarter inches. Pink salmon may be taken in fresh water with dip nets. The season is May 15 through October 31, seven days per week before and after the commercial salmon season, and during commercial fishing openings. There are no bag or possession limits for this fishery.

In 2000, 12 permits were issued for this fishery. Three permits were return. Because of the historically low permit return rate for this fishery, data in Table XII-11 are reported harvests only. The reported harvest for 2000 was 688 salmon, mostly coho (468; 68.0 percent) and sockeye (140; 20.3 percent). It is likely that the harvest assessment program for this fishery consistently underestimates harvests. As shown in Table XII-12, household surveys in Tatitlek for 1998 provide an estimate of 830 salmon taken with subsistence methods in 1998, compared to just 105 based on returned permits. Rod and reel and removal from commercial harvests also provide salmon for home use in Tatitlek.

SOUTHWESTERN DISTRICT SUBSISTENCE SALMON FISHERY

The present set of subsistence regulations the Southwestern District of Prince William Sound has been in place since 1988. For subsistence fishing purposes, the waters around Green Island are included in this area. The primary participants in this fishery are residents of Chenega Bay. Prior to 1992, permits were only issued in Chenega Bay. Since 1992, they have also been issued at the ADF&G office in Cordova. Permits may be dropped off at the Cordova ADF&G office, the Chenega Village Council office, or mailed in at the end of the fishing season. Permits include a harvest report, and fishers are required to fill in the dates fished and the number of each species of salmon caught each day.

Legal gear for this fishery includes seines up to 50 fathoms in length and 100 meshes deep with a maximum mesh size of four inches, or gillnets up to 150 fathoms in length with a maximum size of six and one-quarter inches. Pink salmon may be taken in fresh water with dip nets. The season is May 15 through October 31, seven days per week before and after the commercial salmon season, and during commercial fishing openings. There are no bag or possession limits for this fishery.

In 2000, 12 permits were issued for this fishery. Eight permits were returned. Because permit return rates for this fishery have been low in the past, data in Table XII-13 are reported harvests only. The reported harvest for 2000 was 646 salmon, consisting mostly of coho (229; 35.4 percent), pink (211; 32.7 percent), and chum (143; 22.1 percent). Historically, sockeye have been the most abundant species in this fishery, but only 39 sockeyes were reported for 2000, compared to a long-term average of 262 sockeye salmon. It is likely that the harvest assessment program for this fishery consistently underestimates harvests. As shown in Table XII-14, household surveys in Chenega Bay for 1998 provide an estimate of 1,571 salmon taken with subsistence methods in 1998, compared to just 331 based on returned permits. Rod and reel and removal from commercial harvests also provide salmon for home use in Chenega Bay.

PRINCE WILLIAM SOUND: GENERAL DISTRICTS

Subsistence fishing for salmon in the other districts of the Prince William Sound Area (other than the Upper Copper River, Copper River, Eastern, and Southwestern districts) is open in conformance with commercial fishing regulations regarding gear, open areas, and open periods. Permits are required and may be obtained from the Cordova office of ADF&G. Annual limits are 15 salmon for a one person household; 30 salmon for a two person household; and 10 salmon for each additional person in the household. There is a limit of five king salmon per permit.

Since the creation of separate regulations for the waters fished by Tatitlek and Chenega Bay residents in 1988, there has been very limited participation in this fishery. Since 1994, there has been only one year with any reported harvest. In 2000, 3 permits were issued, but none of these permit holders fished (Table XII-15).

OTHER SUBSISTENCE FISHERIES IN THE PRINCE WILLIAM SOUND AREA

In 2000, there were no harvest assessment programs for other subsistence finfish fisheries in the Prince William Sound Area. In the upper Copper River watershed, resident species such as grayling, burbot, and whitefish, among other species, are harvested for home use. Harvest estimates based on household surveys are available in the Community Profile Database (Scott et al. 2000).

Residents of Cordova, Chenega Bay, Tatitlek, Valdez, and Whittier take a variety of shellfish and marine finfish for subsistence use. Harvest estimates are available in the Community Profile Database (Scott et al 2001) based upon systematic household surveys.

Table XII-1. Subsistence Harvests by Village Fish Wheel Permit Holders, Glennallen Subdistrict

Year	Village	Sockeye	Chinook	Coho	Steelhead	Other	Total	Comments
2000	Chickaloon	200	73	0	0	0	273	
2000	Chistochina	880	1	0	0	0	881	
2000	Kluti-Kaah	110	20	0	0	0	130	
1999	Gakona							0 did not fish
1999	Chickaloon	5	1				6	
1999	Kluti-Kah	85	46				131	
1997	Kluti-Kah	61	12				73	
1997	Gakona	1,242	8				1,250	
1997	Chistochina	342	105	139	88	1	675	

Source: Tom Taube, ADF&G, Division of Sport Fish, Glennallen

Table XII-2. Historic Subsistence Salmon Harvests: Glennallen Subdistrict, 1988 - 2000

YEAR	Permits		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1988	420	264	1,082	33,294	465	0	0	34,841
1989	386	360	796	28,724	67	0	0	29,587
1990	406	384	639	32,219	91	0	0	32,949
1991	712	645	1,314	39,364	241	0	0	40,919
1992	655	619	1,440	45,115	345	0	0	46,900
1993	773	696	1,443	54,003	76	0	0	55,523
1994	970	776	1,979	69,143	71	0	0	71,193
1995	858	726	1,968	54,336	975	0	0	57,280
1996	850	788	1,483	52,269	552	0	0	54,305
1997	1,136	1,058	2,608	83,692	183	0	0	86,483
1998	1,010	951	1,846	64,876	553	0	0	67,275
1999	1,102	1,040	3,234	76,456	1,145	0	0	80,835
2000	1,251	1,197	4,937	60,551	539	5	0	66,032

1996-2000								
Average	1,070	1,007	2,822	67,569	595	1	0	70,986

1991-2000								
Average	932	768	1,795	57,147	423	0	0	59,366

All Years								
Average	810	731	1,905	53,388	408	0	0	55,702

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-3. Subsistence Salmon Harvests, Glennallen Subdistrict, by Area of Residence and Gear Type, 2000

	<u>Dip Nets</u>				<u>Fishwheels</u>				<u>Either Gear</u>			
	Permits	%	Harvest	%	Permits	%	Harvest	%	Permits	%	Harvest	%
Copper Basin	40	8.6%	633	6.5%	322	40.9%	27,811	49.3%	362	28.9%	28,445	43.1%
Other Alaska	424	91.4%	9,042	93.5%	465	59.1%	28,546	50.7%	889	71.1%	37,588	56.9%
Total	464	37.1%	9,675	14.7%	787	62.9%	56,357	85.3%	1,251		66,032	

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Fisheries Database, Version 3.10

Table XII-4. 2000 Subsistence Harvests by Community: Glennallen Subdistrict -- All Gear

Community	Permits		Estimated Salmon Harvest				Total Salmon
	Issued	Returned	Chinook	Sockeye	Coho	Chum	
Chitina	19	17	85	1,340	0	0	1,425
Copper Center	128	116	619	9,633	180	0	10,432
Gakona	63	62	309	6,394	67	0	6,770
Glennallen	134	130	1,027	7,864	40	0	8,931
Kenny Lake	1	1	0	0	0	0	0
McCarthy	2	2	1	9	0	0	10
Nabesna Road	1	1	0	19	0	0	19
Paxson	2	2	6	20	0	0	26
Slana	11	11	24	730	1	0	755
Tazlina	1	1	0	76	0	0	76
Copper Basin	362	343	2,071	26,085	288	0	28,445
Anchor Point	2	2	7	12	0	0	19
Anchorage	285	270	1,050	11,501	108	0	12,658
Anderson	1	1	23	359	0	0	382
Anvik	1	1	0	0	0	0	0
Big Lake	2	2	0	0	0	0	0
Cantwell	3	3	15	87	0	0	102
Central	3	2	9	176	0	0	185
Chickaloon	1	1	73	200	0	0	273
Chicken	1	1	3	0	0	0	3
Chugiak	26	25	55	521	10	0	585
Cooper Landing	1	1	12	173	1	0	186
Cordova	1	1	32	61	0	0	93
Delta Junction	32	30	37	1,284	11	0	1,332
Dot Lake	2	2	2	53	0	0	55
Eagle River	52	52	320	1,864	8	0	2,192
Eielson AFB	6	6	6	99	0	0	105
Elmendorf AFB	1	1	4	101	0	0	105
Ester	6	5	0	18	0	0	18
Fairbanks	129	122	309	3,163	15	0	3,487
Fort Richardson	9	8	23	160	0	0	182
Fort Wainwright	2	2	5	7	0	0	12

continued

Table XII-4. Continued

Community	Permits		Estimated Salmon Harvest				Total Salmon
	Issued	Returned	Chinook	sockeye	Coho	Chum	
Girdwood	5	5	7	188	15	0	210
Healy	3	3	0	90	0	0	90
Homer	2	2	1	64	10	0	75
Houston	1	1	0	55	0	0	55
Juneau	3	3	4	14	0	0	18
Kenai	1	1	0	48	0	0	48
Kodiak (city)	2	2	28	47	0	0	75
Nome	1	1	0	0	0	0	0
North Pole	41	40	79	1,018	0	0	1,097
Northway	6	6	2	283	0	0	285
Palmer	56	53	198	2,245	6	0	2,449
Salcha	5	5	16	211	0	0	227
Seward	1	1	0	1	0	0	1
Skagway	1	1	1	29	0	0	30
Soldotna	2	2	1	82	0	0	83
Sutton	1	1	0	18	0	0	18
Talkeetna	1	1	16	104	0	0	120
Tanacross	1	1	0	14	0	0	14
Tok	65	64	57	2,962	16	5	3,041
Valdez	37	36	108	3,156	44	0	3,308
Wasilla	87	86	364	3,964	6	0	4,334
Willow	1	1	0	35	0	0	35
Other Communities	889	854	2,866	34,466	251	5	37,588
All Communities	1,251	1,197	4,937	60,551	539	5	66,032

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-5. 2000 Subsistence Salmon Harvests by Community: Glennallen Subdistrict -- Fish Wheels

Community	Permits		Estimated Salmon Harvest				Total Salmon
	Issued	Returned	Chinook	Sockeye	Coho	Chum	
Chitina	16	15	85	1,310	0	0	1,395
Copper Center	107	97	598	9,157	180	0	9,934
Gakona	60	59	303	6,370	67	0	6,740
Glennallen	123	119	1,020	7,805	40	0	8,865
Kenny Lake	1	1	0	0	0	0	0
Nabesna Road	1	1	0	19	0	0	19
Paxson	2	2	6	20	0	0	26
Slana	11	11	24	730	1	0	755
Tazlina	1	1	0	76	0	0	76
Copper Basin	322	306	2,036	25,487	288	0	27,811
Anchor Point	2	2	7	12	0	0	19
Anchorage	125	124	857	7,543	55	0	8,456
Anderson	1	1	23	359	0	0	382
Cantwell	2	2	12	62	0	0	74
Chickaloon	1	1	73	200	0	0	273
Chicken	1	1	3	0	0	0	3
Chugiak	13	12	46	374	10	0	429
Cooper Landing	1	1	12	173	1	0	186
Cordova	1	1	32	61	0	0	93
Delta Junction	13	13	21	893	7	0	921
Dot Lake	2	2	2	53	0	0	55
Eagle River	42	42	307	1,742	8	0	2,057
Elmendorf AFB	1	1	4	101	0	0	105
Ester	2	2	0	18	0	0	18
Fairbanks	47	45	188	1,908	3	0	2,099
Fort Richardson	2	2	19	106	0	0	125
Healy	3	3	0	90	0	0	90
Homer	1	1	0	63	10	0	73
Houston	1	1	0	55	0	0	55
Juneau	1	1	0	9	0	0	9
Kenai	1	1	0	48	0	0	48
Kodiak (city)	2	2	28	47	0	0	75
North Pole	8	8	24	475	0	0	499
Northway	6	6	2	283	0	0	285
Palmer	34	33	168	1,836	6	0	2,010
Skagway	1	1	1	29	0	0	30
Soldotna	1	1	1	82	0	0	83
Sutton	1	1	0	18	0	0	18
Talkeetna	1	1	16	104	0	0	120
Tanacross	1	1	0	14	0	0	14
Tok	55	54	57	2,704	16	5	2,783
Valdez	31	30	103	3,025	44	0	3,172
Wasilla	61	61	327	3,554	6	0	3,887
Other Communities	465	458	2,333	26,041	167	5	28,546
All Communities	787	764	4,369	51,528	455	5	56,357

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Fisheries Database, Version 3.10

Table XII-6. 2000 Subsistence Salmon Harvests by Community: Glennallen Subdistrict -- Dip Nets

Community	Permits		Estimated Salmon Harvest			
	Issued	Returned	Chinook	Sockeye	Coho	Total Salmon
Chitina	3	2	0	30	0	30
Copper Center	21	19	21	476	0	497
Gakona	3	3	6	24	0	30
Glennallen	11	11	7	59	0	66
McCarthy	2	2	1	9	0	10
Copper Basin	40	37	35	598	0	633
Anchorage	160	146	193	3,957	53	4,203
Anvik	1	1	0	0	0	0
Big Lake	2	2	0	0	0	0
Cantwell	1	1	3	25	0	28
Central	3	2	9	176	0	185
Chugiak	13	13	9	147	0	156
Delta Junction	19	17	16	391	4	411
Eagle River	10	10	13	122	0	135
Eielson AFB	6	6	6	99	0	105
Ester	4	3	0	0	0	0
Fairbanks	82	77	121	1,254	12	1,388
Fort Richardson	7	6	4	54	0	57
Fort Wainwright	2	2	5	7	0	12
Girdwood	5	5	7	188	15	210
Homer	1	1	1	1	0	2
Juneau	2	2	4	5	0	9
Nome	1	1	0	0	0	0
North Pole	33	32	55	543	0	598
Palmer	22	20	30	409	0	439
Salcha	5	5	16	211	0	227
Seward	1	1	0	1	0	1
Soldotna	1	1	0	0	0	0
Tok	10	10	0	258	0	258
Valdez	6	6	5	131	0	136
Wasilla	26	25	37	410	0	447
Willow	1	1	0	35	0	35
Other Communities	424	396	533	8,425	84	9,042
All Communities	464	433	568	9,023	84	9,675

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-7. 2000 Subsistence Salmon Harvests by Community: Chitina Subdistrict

Community	Permits		Estimated Salmon Harvest			
	Issued	Returned	Chinook	Sockeye	Coho	Total Salmon
Akiachak	1	1	0	0	0	0
Anchor Point	4	4	1	38	0	39
Anchorage	2,129	1,989	785	25,249	933	26,967
Anderson	10	10	1	148	4	153
Barrow	14	11	10	221	0	232
Bettles	1	1	0	0	0	0
Big Lake	43	40	22	643	19	684
Bird Creek	1	1	1	14	0	15
Buckland	1	1	0	10	0	10
Cantwell	2	2	0	45	0	45
Central	9	9	3	98	3	104
Chickaloon	7	7	0	71	11	82
Chitina	2	2	1	17	3	21
Chugiak	176	167	73	2,512	60	2,645
Clear AFB	5	5	1	89	0	90
College	2	2	1	7	0	8
Cooper Landing	1	1	1	27	0	28
Copper Center	12	12	5	151	1	157
Cordova	1	1	0	1	0	1
Deadhorse	1	1	1	14	0	15
Delta Junction	294	275	103	4,439	182	4,723
Denali Park	10	10	4	130	14	148
Dillingham	1	1	0	0	0	0
Dot Lake	1	1	0	7	0	7
Eagle River	367	352	174	4,468	162	4,803
Eielson AFB	176	167	77	2,868	19	2,964
Elmendorf AFB	40	35	14	453	5	471
Ester	48	47	19	650	44	713
Fairbanks	2,169	2,060	906	31,198	1,072	33,175
Fort Greely	2	2	1	45	0	46
Fort Richardson	17	17	5	204	0	209
Fort Wainwright	144	121	67	1,591	151	1,809
Fort Yukon	2	1	0	4	0	4
Fox	1	1	0	3	0	3
Gakona	1	1	0	1	0	1
Galena	1	1	1	21	0	22
Girdwood	17	16	4	210	40	255
Glennallen	18	16	1	201	39	242
Grayling	1	1	1	18	0	19
Healy	27	26	18	458	3	479
Homer	11	11	5	160	12	177
Honolulu	1	1	1	0	0	1

continued

Table XII-7. Continued

Community	Permits		Estimated Salmon Harvest			
	Issued	Returned	Chinook	Sockeye	Coho	Total Salmon
Hoonah	1	1	0	10	0	10
Hope	2	2	1	14	0	15
Houston	7	6	1	96	0	97
Indian	6	6	1	69	0	70
Juneau	7	7	4	61	0	65
Kaktovik	3	3	1	6	0	7
Kasilof	2	2	1	14	0	15
Kenai	5	5	3	98	0	101
Ketchikan	1	1	0	0	0	0
Kodiak (city)	1	1	1	27	0	28
Kotzebue	2	0				
Koyukuk	1	1	0	0	0	0
Manley Hot Springs	2	2	0	34	0	34
McCarthy	1	1	0	0	0	0
Moose Creek CDP	2	2	2	29	0	31
Moose Pass	1	1	0	1	8	9
Nenana	13	11	6	210	0	216
Nikolaevsk	1	1	1	24	0	25
Ninilchik	7	7	1	134	0	135
Nome	6	5	2	58	12	72
North Pole	632	591	263	8,649	204	9,116
Other USA	11	11	4	67	9	80
Palmer	499	473	170	6,731	236	7,137
Paxson	1	1	1	29	0	30
Peters Creek	1	1	0	30	0	30
Point Hope	2	2	0	37	0	37
Saint Paul	1	0				
Salcha	51	49	16	524	4	543
Selawik	1	1	1	16	0	17
Seward	10	9	7	132	0	139
Sitka	1	1	0	0	0	0
Slana	1	1	1	29	0	30
Soldotna	7	7	3	133	0	136
Sterling	4	3	1	44	0	45
Sutton	24	24	7	326	59	392
Talkeetna	14	13	8	209	0	216
Tanana	1	1	1	29	0	30
Tatitlek	1	1	0	10	0	10
Teller	1	1	0	0	0	0
Tok	18	18	7	264	8	279
Trapper Creek	2	2	0	0	0	0
Two Rivers	18	18	3	224	22	249

continued

Table XII-7. Continued

Community	Permits		Estimated Salmon Harvest			Total Salmon
	Issued	Returned	Chinook	Sockeye	Coho	
Valdez	208	193	59	2,575	41	2,675
Wainwright	1	1	0	0	0	0
Wasilla	744	714	316	11,015	371	11,702
Willow	48	44	22	898	5	925
Wrangell	1	1	0	31	0	31
Totals	8,145	7,676	3,219	109,370	3,758	116,347

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-8. Historic Subsistence and Personal Use Salmon Harvests: Chitina Subdistrict

Year	PERMITS		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1988	4,252	2,900	3,936	55,862	658	0	0	60,455
1989	4,584	4,353	2,269	56,547	865	0	0	59,681
1990	5,689	5,475	2,711	66,435	1,516	0	0	70,662
1991	6,222	5,990	4,092	78,412	3,378	0	0	85,882
1992	6,387	6,229	3,422	87,090	1,524	0	0	92,036
1993	7,914	7,914	2,729	89,629	1,358	0	0	93,716
1994	7,060	5,939	4,198	106,163	2,204	0	0	112,566
1995	6,762	5,442	5,617	94,494	5,861	0	0	105,972
1996	7,196	6,962	3,607	95,645	3,404	0	0	102,656
1997	9,086	8,919	5,470	149,020	160	0	0	154,650
1998	10,002	9,751	6,746	137,530	2,156	0	0	146,431
1999	9,941	9,607	5,964	142,682	2,199	0	0	150,845
2000	8,145	7,676	3,219	109,370	3,758	0	0	116,347
1996-2000								
Average	8,874	8,583	5,001	126,849	2,335	0	0	134,186
1991-2000								
Average	7,872	7,443	4,506	109,004	2,600	0	0	116,110
All Years								
Average	7,172	6,704	4,152	97,606	2,234	0	0	103,992

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-9. Historic Subsistence Salmon Harvests, Batzulnetas Fishery, 1987 - 2000

YEAR	Permits		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1987	8	8	0	22	0	0	0	22
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	1	1	0	160	0	0	0	160
1994	4	4	0	997	0	0	0	997
1995	4	2	0	32	0	0	0	32
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	1	1	0	382	0	0	0	382
1999	1	1	0	55	0	0	0	55
2000	1	1	0	55	0	0	0	55
1996-2000								
Average	1	1	0	98	0	0	0	98
1991-2000								
Average	1	1	0	168	0	0	0	168
All Years								
Average	1	1	0	122	0	0	0	122

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-10. Historic Subsistence Salmon Harvests: Copper River District (Copper River Flats), 1965 - 2000

YEAR	Permits		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1965	31	20	19	711	132	0	0	862
1966	45	31	68	254	0	0	0	322
1967	61	56	90	167	0	0	0	257
1968	17	15	12	41	0	0	0	53
1969	49	33	24	94	126	0	0	244
1970	32	27	78	212	0	0	0	290
1971	29	26	11	36	4	0	0	51
1972	104	79	196	749	70	0	0	1,015
1973	94	89	162	344	190	0	0	696
1974	9	5	9	7	4	0	0	20
1975	2	2	0	5	0	0	0	5
1976	27	14	2	19	0	0	0	21
1977	23	22	10	74	0	0	0	85
1978	34	28	45	22	15	0	0	81
1979	49	41	54	31	20	0	0	105
1980	39	35	21	30	19	0	0	70
1981	72	51	68	205	147	0	0	419
1982	108	90	72	761	127	0	0	960
1983	87	73	94	128	68	0	0	290
1984	118	104	77	368	153	0	0	598
1985	94	94	88	261	83	0	0	432
1986	88	85	89	360	49	0	0	498
1987	95	89	52	383	15	0	0	450
1988	114	97	69	266	49	0	0	384
1989	75	64	66	397	60	0	0	523
1990	88	76	69	543	95	0	0	707
1991	129	115	153	931	43	0	0	1,126
1992	126	113	158	875	47	0	0	1,080
1993	111	93	143	511	35	0	0	689
1994	101	97	171	494	70	0	0	734
1995	126	112	173	779	35	0	0	987
1996	176	157	309	1,086	53	0	0	1,448
1997	269	243	223	1,144	1,967	0	0	3,333
1998	245	230	314	905	724	0	0	1,944
1999	294	275	377	1,422	729	0	0	2,528
2000	416	400	717	4,534	46	18	3	5,318

1996-2000								
Average	280	261	388	1,818	704	4	1	2,914

1991-2000								
Average	199	184	274	1,268	375	2	0	1,919

All Years								
Average	99	88	119	532	144	1	0	795

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-11. Historic Subsistence Salmon Harvests, Eastern Prince William Sound, 1988 - 2000¹

Year	Permits		Reported Harvests in Number of Salmon					Total
	Issued	Fished	Sockeye	Chinook	Coho	Pink	Chum	
1988	17	9	210	2	249	143	297	901
1989	14	7	107	1	653	28	43	832
1990	13	8	5	0	241	10	4	260
1991	19	7	107	0	984	320	28	1,439
1992	15	5	441	2	369	30	49	891
1993	18	7	512	2	305	144	74	1,037
1994	14	4	50	0	143	50	70	313
1995	15	*						
1996	6	1	0	0	38	0	0	38
1997	6	3	107	0	45	0	54	206
1998	11	2	2	0	71	4	28	105
1999	17	8	344	0	541	31	31	947
2000	12	**	140	0	468	40	40	688
Average	14	6	169	1	342	67	60	638
Recent 5-year average	10	4	119	0	233	15	31	397

¹ Defined as "those waters north of a line from Porcupine Point to Granite Point, and south of a line from Point Lowe to Tongue Point" (5 AAC 5 AAC 01.648(b)). Prior to 1988, this area was included in the "general Prince William Sound Area" for purposes of subsistence salmon permits.

* No permits were returned.

** 3 permits returned

Source: ADF&G Division of Subsistence Alaska Subsistence Fisheries Database, Version 3.10; Sharp et al. 2000

Table XII-12. Estimated Harvests of Salmon for Home Use, Tatitlek, 1998

	<u>Estimated Number Harvested</u>			
	Subsistence Methods	Rod & Reel	Removed from Commercial Harvests	All Methods
Chinook	29	3	8	40
Sockeye	472	46	83	601
Coho	202	322	54	578
Pink	110	25	0	135
Chum	17	3	0	20
All Salmon	830	399	145	1,374
Estimated Number of Households Harvesting ¹	8 households	19 households	3 households	19 households (any method)

¹ Number of households in the community = 27; 16 (59.3 percent) were interviewed

Source: Community Profile Database (Scott et al. 2001)

Table XII-13. Reported Subsistence Salmon Harvests, Southwestern Prince William Sound, 1988 - 2000¹

Year	Permits		Reported Harvests in Number of Salmon					Total
	Issued	Fished	Sockeye	Chinook	Coho	Pink	Chum	
1988	10	5	50	1	8	251	294	604
1989	8	7	322	0	0	554	180	1,056
1990	7	2	36	1	5	20	2	64
1991	12	4	345	3	42	195	53	638
1992	14	8	526	1	23	313	99	962
1993	22	17	835	2	50	232	124	1,243
1994	16	8	192	5	77	402	161	837
1995	10	5	152	2	67	67	41	329
1996	7	3	107	0	7	105	46	265
1997	5	4	193	44	30	110	272	649
1998	4	3	114	13	20	65	119	331
1999	14	7	499	57	62	168	101	887
2000 ^a	12		39	24	229	211	143	646
Average	11	6	262	12	48	207	126	655
Recent 5-year average	8	4	190	28	70	132	136	556

¹ Defined as "those waters of the Southwestern District, as described in 5 AAC 24.200, and along the northwestern shore of Green Island" (5 AAC 01.648(a)). Prior to 1988, this area was included in the "general Prince William Sound Area" for purposes of subsistence salmon permits.

^a 8 permits were returned.

Source: ADF&G Division of Subsistence Alaska Subsistence Fisheries Database Version 3.10; Sharp et al. 2000

Table XII-14. Estimated Harvests of Salmon for Home Use, Chenega Bay, 1998

	Estimated Number Harvested			All Methods
	Subsistence Methods	Rod & Reel	Removed from Commercial Harvests	
Chinook	112	57	21	190
Sockeye	409	41	87	537
Coho	60	78	21	159
Pink	391	112	140	643
Chum	599	73	140	812
Other/Unknown	0	45	0	45
All Salmon	1,571	406	409	2,386
Estimated Number of Households Harvesting ¹	14 households	8 households	4 households	17 households (any method)

¹ Number of households in the community = 21; 15 (71.4 percent) were interviewed

Source: Community Profile Database (Scott et al. 2001)

Table XII-15. Historic Subsistence Salmon Harvests, General Prince William Sound Area, 1960 - 2000

Year	Permits		Estimated Harvests in Number of Salmon					Total
	Issued	Returned	Sockeye	Chinook	Coho	Pink	Chum	
1960	50		139	1	505	1,292	27	1,964
1961	12		41	3	123	732	3	902
1962	9		0	0	119	214	142	475
1963	9		0	0	406	298	24	728
1964	15		11	0	0	900	0	911
1965	22	16	0	0	0	246	34	281
1966	3	3	3	0	19	20	50	92
1967	4	3	0	0	5	5	0	11
1968	4	3	0	0	27	208	0	235
1969	7	3	0	0	37	0	0	37
1970	1	1	0	0	0	0	0	0
1971	3	2	0	0	0	69	0	69
1972	0	0	0	0	0	0	0	0
1973	19	16	0	0	343	0	0	343
1974	3	1	0	0	0	0	0	0
1975	2	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	4	4	0	0	0	0	0	0
1978	3	2	0	0	0	0	0	0
1979	15	2	0	0	0	0	0	0
1980	26	15	7	0	6	0	0	0
1981	12	8	3	0	29	0	2	0
1982	35	27	109	0	5	40	31	185
1983	26	21	27	0	45	11	98	181
1984	8	8	10	0	0	11	2	23
1985	22	16	37	1	22	19	36	116
1986	25	14	9	0	27	0	0	36
1987	18	17	33	5	6	0	17	61
1988	7	7	51	2	7	10	9	79
1989	11	7	0	0	0	0	5	5
1990	8	8	0	0	7	4	0	11
1991	9	5	4	0	0	0	0	4
1992	10	6	33	0	0	0	0	33
1993	6	6	104	1	10	0	0	115
1994	5	4	0	0	0	0	0	0
1995	4	2	0	0	0	0	0	0
1996	10	2	0	0	0	0	0	0
1997	4	3	4	0	0	0	0	4
1998	4	3	0	0	0	0	0	0
1999	3	3	0	0	0	0	0	0
2000	3	3	0	0	0	0	0	0

Recent 5-Year								
Average	5	3	1	0	0	0	0	1
Average	11	7	15	0	43	99	12	168

Source: ADF&G Division of Subsistence Alaska Subsistence Fisheries Database, Version 3.10

XIII: SOUTHEAST/YAKUTAT REGION

BACKGROUND

The Southeast/Yakutat Region consists of two management areas for subsistence purposes: the Yakutat Area and the Southeastern Alaska Area. Both are combined for this discussion. The total population of Southeast Alaska in 2000 was estimated at 73,302 (ADLWD 2000). The Alaska Joint Board of Fisheries and Game has identified two nonsubsistence areas in Southeast Alaska: the Ketchikan Nonsubsistence Area and the Juneau Nonsubsistence Area (5 AAC 99.015). Subsistence fisheries may not be authorized in nonsubsistence areas. Depending upon the district and section, non-commercial, non-recreational salmon fishing in Southeast Alaska occurs under subsistence or personal use regulations. In this discussion, harvests and participation rates for both subsistence and personal use fisheries are combined.

The salmon of Southeast Alaska have helped sustain the Tlingit and Haida people for generations, and this resource continues to be an important factor in the well being of Southeast Alaska households and communities. Documented subsistence harvests of salmon in 2000 demonstrated this continuing importance. All five species of salmon were taken by subsistence fishers, with sockeye being the most heavily harvested species by far. In Southeast Alaska, salmon are processed by a variety of methods, which include drying, smoking, jarring, and fresh freezing.

REGULATIONS

The Alaska Department of Fish and Game, Division of Commercial Fisheries, regulates and monitors subsistence and personal use fisheries in Southeast Alaska. Area managers based in Juneau, Haines, Petersburg, Sitka and Ketchikan issue the permits to Alaskan residents, and collect the permits and harvest data at the end of the season. In 2000, salmon fishing seasons varied by drainage and by species. Sockeye openings, in most cases, started June 1 and extended through the middle to the end of July, with some rivers remaining open longer. Pink and chum seasons were generally a month later than the sockeye seasons. The only subsistence coho season, in the Hasselborg River, was open from August 1 to October 31. Chinook were harvested incidentally.

In 2000 the means of catching salmon by subsistence permit included beach seines, drift gillnets, dip nets, spears, cast nets, and gaffs.

HARVEST DATA

The area fisheries managers tabulate the data from permits returned to the Department. This information is uploaded to the Alexander Database, maintained at the Southeast Regional office in Juneau, from which the Division of Subsistence obtained the information for this report. Variables include number of permits per community for each stream, as well as overall numbers of different salmon species for each permitted stream. Streams in Southeast Alaska are classified as either subsistence or personal use based on their location within an area determined to be a customary and traditional use area in the Alaska Administrative Code; those that fall within these

areas are subsistence streams, and fishing on those streams is conducted under a subsistence permit. All other streams in Southeast Alaska are classified as personal use.

Table XIII-1 shows subsistence harvest information for the 16 commercial fishing districts in Southeast Alaska that had reported subsistence harvests in 2000, based upon permit returns. For each district, the number of permits returned and the number of salmon of each species reported for those permits. District 113, the area around Sitka and the Pacific Coast of Baranof and Chichagof Islands, had the highest participation levels, with 409 permits, 14,257 salmon and 14,042 sockeye salmon among those. Customary and traditional use findings in this district determine that all of these salmon are subsistence, rather than personal use, salmon. Other important districts in the Southeast Alaska subsistence and personal use fisheries included 103, the streams that flow into the waters of the west coast of Prince of Wales Island, including the Klawock River, Sarkar Lake, and streams Hetta Inlet. In District 103, 7,827 sockeye were harvested, most of which were taken in subsistence streams. District 101, around Ketchikan and Behm Canal, also had a high harvest of sockeye salmon, with 8,773 being estimated for 2000.

Table XIII-2 shows the participation and harvest of fishers from different communities in Southeast Alaska, based upon permit returns. Sitka had the most permits returned (582) and the second-most issued (601), and the most salmon estimated (12,666). Of those, 12,531 were sockeye. Close behind Sitka, Juneau also had a high level of participation, with 752 permits issued and 549 permits returned in 2000, but only 4,874 salmon (4,457 sockeye) harvested. The estimated harvests for Ketchikan fishers included 11,145 salmon (9,034 sockeye). Overall, the Southeast Alaska/Yakutat region included 3,170 permits returned and 3,771 issued, 62,411 total salmon harvested, and of those, 52,867 sockeye. As noted in the discussion, below, these estimates based solely on subsistence permits very likely substantially underestimate the number of salmon harvested for home use in this region.

Table XIII-3 shows the participation in Southeast Alaska subsistence and personal use salmon fisheries since 1985. The number of permits returned to the Department of Fish and Game (used to indicate overall participation) has more than doubled since 1985. So has the total number of salmon reported for the subsistence harvest, from 25,472 in 1985 to 68,782 in 1999 and 62,411 in 2000. Sockeye harvests increased along a similar trend, with 20,006 reported taken in 1985 and 52,867 taken in 2000.

DISCUSSION

In interviews with Division of Subsistence staff, ADF&G fishery managers for Southeast Alaska expressed uncertainty concerning the extent to which subsistence salmon harvests in Southeast Alaska are documented by the permit system. There is a general view among ADF&G staff and the public that many people in Southeast Alaska engage in subsistence salmon fishing without permits. Also, the harvest assessment program in the Southeast/Yakutat Region does not account for commercially caught salmon withheld for home use. Such harvests are substantial in some communities. Rod and reel harvests are also an important source of salmon for use in this region, but these harvests, too, are not documented through the subsistence permit system.

In 1987, researchers with ADF&G, the US Forest Service, and the University of Alaska's Institute of Social and Economic Research conducted a survey of households in Southeast Alaska communities. Survey findings regarding harvests of salmon for home use can be compared with permit harvest reports for the same year. As reported to the participants in the conference on "Understanding Harvest Assessment in the North" in 1995 (ADF&G and ISER 1996:4-5), harvest estimates that people provided during personal interviews result in a regional harvest estimate that is several times larger than that based on returned permits. The permit calendar system provided an estimate of 30,737 salmon harvested for home use in rural Southeast Alaska in 1987, compared to 172,293 salmon based on household interviews. The researchers gave several reasons for what they concluded was better information from the interviews. They offered confidentiality to respondents, provided broader coverage in terms of gear types and the number of households providing information, and made it easier for users to respond with information. The participants in the conference concluded that more collaboration between users and resource management agencies, among other things, could help improve subsistence fisheries harvest estimates. This is also one of the several recommendations for developing more effective and reliable subsistence fisheries harvest assessment programs developed by the Subsistence Fisheries Harvest Assessment Working Group (ADF&G and AI-TC 2000a, 2000b) (see Chapter One).

Table XII-1. Subsistence and Personal Use Salmon Harvests by District and Species, Southeast/Yakutat Region, 2000

Code	District	Name	Permits		Estimated Salmon Harvests							Total	
			Reported	Estimated	Chinook	Sockeye	Coho	Chum	Pink	Total			
101	District 1	Keitchikan/Behm Canal	271	314	197	8,773	72	1,250				896	11,188
102	District 2	Clarence Strait/East Prince of Wales Island	70	84	0	1,204	27	61				300	1,592
103	District 3	Inside Waters/West Prince of Wales Island	252	320	3	7,827	60	146				219	8,255
106	District 6	East Summer Strait/North Clarence Strait	191	215	2	1,857	161	34				58	2,112
107	District 7	East Etolin Island/Wrangell Island/ Ernest Sound	79	85	48	809	1	38				28	924
109	District 9	South Chatham Strait/ West Frederick Sound	128	131	3	1,679	0	399				53	2,134
110	District 10	East Frederick Sound	4	4	0	51	0	0				0	51
111	District 11	Juneau/Taku Inlet/ Stephens Passage	271	377	31	3,684	44	11				100	3,870
112	District 12	Angoon/ North Chatham Strait/East Chichagof	79	122	0	2,711	286	107				176	3,280
113	District 13	Sitka/Outer Baranof and Chichagof/Peril Strait	380	409	1	14,042	9	64				141	14,257
114	District 14	Icy Strait/Glacier Bay	35	53	0	406	19	203				34	662
115	District 15	Lynn Canal/Chilkat Inlet	237	262	53	5,349	244	1,072				457	7,174
182	Yakutat Forelands		101	107	724	4,032	1,089	29				156	6,029
183	Yakutat Bay-Troll		27	29	298	443	98	0				1	840
185	Yahise-Yana		1	1	0	0	16	0				0	16
192	Yakataga		1	1	0	0	26	0				0	26
Totals			2,127	2,512	1,359	52,867	2,151	3,414	2,619				62,411

Source: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database Version 3.10

Table XIII-2. 2000 Subsistence and Personal Use Salmon Harvest by Community:
Southeast Alaska/Yakutat Region

Community	Permits		Estimated Salmon Harvest					Total Salmon
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
Anchorage	17	14	37	143	17	0	0	197
Angoon	115	72	0	2,158	236	80	31	2,505
Auke Bay	36	29	1	194	0	0	0	195
Chugiak	1	1	0	0	0	0	0	0
Coffman Cove	35	30	0	144	0	0	0	144
Craig	260	208	3	3,058	25	108	155	3,348
Douglas	73	51	8	596	24	0	16	645
Eagle River	1	1	0	0	0	0	0	0
Edna Bay	2	1	0	0	0	0	0	0
Elfin Cove	4	4	0	21	2	4	0	27
Excursion Inlet	1	1	0	10	0	53	0	63
Fairbanks	4	4	0	67	0	3	0	70
Girdwood	1	1	0	0	0	0	0	0
Gustavus	7	6	0	69	0	9	2	81
Haines	302	273	53	5,151	244	853	432	6,732
Hollis	5	5	0	77	0	0	0	77
Homer	1	1	0	50	0	0	0	50
Hoonah	118	75	0	1,176	19	166	142	1,503
Hydaburg	56	34	0	1,387	8	3	212	1,611
Hyder	2	2	0	10	0	12	44	66
Juneau	752	549	66	4,457	106	112	132	4,874
Kake	180	176	3	1,629	0	330	45	2,007
Kasaan	9	9	0	128	1	2	10	141
Ketchikan	489	426	161	9,034	64	1,102	783	11,145
Klawock	158	124	0	2,863	33	88	86	3,070
Klukwan	2	2	0	49	0	34	2	85
Metlakatla	11	5	0	2	0	0	0	2
Nome	1	1	0	10	0	0	0	10
Palmer	1	1	0	10	0	0	0	10
Pelican	10	8	0	170	0	2	74	246
Petersburg	96	94	0	472	144	76	20	712
Point Baker	3	3	2	152	7	25	38	224
Port Alexander	2	2	0	0	0	0	0	0
Sitka	601	582	10	12,531	9	46	69	12,666
Skagway	5	3	0	0	0	95	13	108
Tenakee Springs	5	5	0	11	0	0	0	11
Thorne Bay	91	81	0	669	16	1	18	705
Tok	1	1	0	38	0	0	0	38
Trapper Creek	1	0						
Ward Cove	66	55	36	1,394	10	141	107	1,688
Wasilla	1	1	0	10	0	0	0	10
Wrangell	130	120	48	1,086	10	40	28	1,212
Yakutat	115	109	930	3,842	1,176	29	158	6,135
Totals	3,771	3,170	1,359	52,867	2,151	3,414	2,619	62,411

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

Table XII-3. Historic Subsistence and Personal Use Salmon Harvests:
Southeast Alaska and Yakutat Region, 1985 - 2000

Year	Permits		Estimated Salmon Harvest					Total
	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	
1985		1,271	19	20,006	360	2,951	2,136	25,472
1986		1,354	29	21,974	277	2,840	971	26,091
1987		1,322	34	25,405	117	3,878	1,474	30,908
1988		1,013	94	19,898	97	3,013	1,145	24,247
1989		1,479	580	32,860	1,381	3,113	3,664	41,598
1990		1,543	524	36,376	1,615	3,433	3,529	45,477
1991		1,554	262	37,765	766	3,271	1,741	43,805
1992		1,860	614	53,131	4,939	3,201	2,942	64,827
1993		2,121	537	56,249	3,515	2,583	2,143	65,027
1994		2,239	800	57,097	3,607	4,211	3,639	69,354
1995		2,005	1,203	45,087	3,702	3,370	3,215	56,577
1996	4,172	3,341	1,170	69,216	3,090	5,553	3,204	82,233
1997	4,211	3,529	780	58,782	2,701	4,515	4,080	70,858
1998	4,273	3,629	1,082	62,551	3,264	6,442	3,910	77,250
1999	4,308	3,717	1,393	56,618	1,933	5,557	3,280	68,782
2000	3,771	3,170	1,359	52,867	2,151	3,414	2,619	62,411
1996-2000								
Average	4,147	3,477	1,157	60,007	2,628	5,096	3,419	72,307
1991-2000								
Average	4,147	2,717	920	54,936	2,967	4,212	3,077	66,112
All Years								
Average	4,147	2,197	655	44,118	2,095	3,834	2,731	53,432

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.10.

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