

Technical Paper No. 318

Alaska Subsistence Salmon Fisheries 2005 Annual Report

by

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Alaska Department of Fish and Game

Division of Subsistence



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The Division of Subsistence Technical Paper Series was established in 1979 and represents the most complete collection of information about customary and traditional uses of fish and wildlife resources in Alaska. The papers cover all regions of the state. Some papers were written in response to specific fish and game management issues. Others provide detailed, basic information on the subsistence uses of particular communities which pertain to a large number of scientific and policy questions. Technical Paper Series reports are available through the Alaska State Library and on the Internet: <http://www.subsistence.adfg.state.ak.us/>

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ABSTRACT

Every year, many thousands of Alaskans participate in subsistence fishing and processing activities. These practices represent an important part of Alaska's social and cultural heritage, as well as a crucial component of the state's non-cash subsistence economy. This report summarizes Alaska's 2005 subsistence fishing season based upon subsistence permit data and harvest assessment surveys from across the state. This report compares this new information to previous years' findings and discusses these results. Where appropriate, harvest information from "personal use" fisheries is included. In addition, federal agencies now regulate and administer several subsistence fisheries in Alaska; where the harvest data are available, these fisheries are also included.

Key words: salmon, sheefish, whitefish, char, Chinook, coho, sockeye, pink, chum, Norton Sound, Port Clarence, Kotzebue, Yukon, Kuskokwim, Bristol Bay, Chignik, Alaska Peninsula, Aleutian Islands, Kodiak, Cook Inlet, Prince William Sound, Southeast Alaska, Yakutat

I. INTRODUCTION

This is the seventh 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). A cooperative agreement with the U.S. Fish and Wildlife Service, Office of Subsistence Management (FIS 04-751), contributed \$230,744 to the overall cost of this project.

"Subsistence fishing" is defined in Alaska 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. These include:

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]).

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, adopt regulations that 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).

Also, the Joint Board of Fisheries and Game is required to identify "nonsubsistence areas," where "dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life of the area or community" (AS 16.05.258(c)). The Board of Fisheries may not authorize subsistence fisheries in nonsubsistence areas. Personal use fisheries (see below) provide opportunities for harvesting fish with gear other than rod and reel in nonsubsistence areas. The Joint Board has identified 5 nonsubsistence areas (5 AAC 99.015): Ketchikan Nonsubsistence Area, Juneau Nonsubsistence Area, Anchorage-Matsu-Kenai Nonsubsistence Area, Fairbanks Nonsubsistence Area, and Valdez Nonsubsistence Area.

In addition to subsistence, Alaska state law recognizes 3 other categories of fishing: commercial, sport, and personal use. Commercial fishing is the taking of fish "with the intent of disposing of them for profit, or by sale, barter, trade, in commercial channels" (AS 16.05.940[5]). Sport fishing is defined by Alaska state law as the taking "for personal use, and not for sale or barter, any fresh water, marine, or anadromous fish by hook and line held in the hand, or by hook and line with the line attached to a pole or rod which is held in the hand or closely attended, or by other means defined by the Board of Fisheries" (AS 16.05.940[29]). Personal use fishing is defined by statute as the taking of fish "by Alaska residents for personal use and not for sale or barter, with gill or dip net, seine, fish wheel, long line, or other means defined by the Board of Fisheries" (AS 16.05.940[24]). Personal use fisheries are different from subsistence fisheries because they do not meet the criteria established by the Joint Board for identifying customary and traditional fisheries (5 AAC 99.010), or because they occur within nonsubsistence areas.

Every year, ADF&G's Division of Commercial Fisheries prepares "fishery management reports" (FMRs), formally "annual management reports" (AMRs), for most fishery management areas in the state. Figure I-1 shows the location of these management areas. Although the FMRs focus primarily on commercial fisheries, most also routinely summarize basic data for programs that collect harvest information for subsistence fisheries. In several areas, more detailed annual reports about subsistence fisheries harvest assessment programs are prepared. These are Northwest Alaska, the Yukon River, and the Kuskokwim River. However, until this annual report series was undertaken in 1999, there was no single source that compiled subsistence fisheries harvest data from all management areas. That is the purpose of this report for 2005.

The Federal Subsistence Board (FSB) adopts subsistence fishing regulations for federal waters in Alaska, in compliance with the Alaska National Interest Lands Conservation Act (ANILCA). Only eligible Alaska rural residents may participate in federal subsistence fisheries. For most subsistence fisheries, a single program administered by ADF&G provides harvest estimates for all participants regardless of where the fishing took place. However, for some fisheries (such as the salmon fisheries of the upper Copper River District), FSB regulations require a federal subsistence fishing permit. The following chapters on each management area note where separate state and federal harvest monitoring programs are operating. Subsistence harvest estimates in this report include the results of state and federal programs.

At the outset, it is important to recognize the limitations associated with the effort to present a comprehensive annual report on Alaska's subsistence fisheries. These limitations include:

- 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 Alaska, substantial numbers of fish for home use are taken with rod and reel (in most areas considered sport gear by regulation) or are retained from commercial harvests. With the exceptions noted in the chapters 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 a particular issue in 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 accurate 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, FMRs do contain discussions of data limitations and harvest trends.

Despite these limitations, it is nonetheless possible to present an informative, conservative statewide overview of subsistence harvests of salmon. Information for all areas of the state where salmon fisheries occur is covered in this report. We have included data for personal use salmon fisheries in the Yukon Management Area, the Prince William Sound Management Area (the Chitina Subdistrict of the Upper Copper River District), and Southeast Region because these fisheries have been classified as subsistence fisheries in the past, and because they are administered in the same programs that collect subsistence harvest data. We have not included data from the Cook Inlet Management Area personal use salmon fisheries in this statewide overview, primarily because most of these fisheries have relatively short histories and are administered separately from the Cook Inlet subsistence fisheries. However, it is our intention to add data from these personal use fisheries in future versions of the Alaska Subsistence Fisheries Database (see below) and to include summaries in future annual reports in order to offer a more comprehensive and detailed overview of non-recreational fish harvests for home use in the state.

The coverage for other finfish and for shellfish is very uneven. For other finfish, if annual subsistence harvest information is collected, it is reflected in this report if the summary data were available to the Division of Subsistence. In other areas, we have usually noted which species are primarily used for subsistence, relying in general on baseline studies conducted by the Division of Subsistence. In a small number of instances we have drawn from reports prepared for the Alaska Board of Fisheries.

This annual report does not attempt to provide a comprehensive overview of subsistence shellfish harvests. However, once existing data have been located, reviewed, and summarized, we anticipate providing more thorough coverage of historical as well as current shellfish harvests in future reports.

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 development of this annual report series, this database was updated, upgraded, and renamed the “Alaska Subsistence Fisheries Database” (Caylor 2005). The database is written for Microsoft Access 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 sets have been sought, which in some cases are more up to date than are the data reported in FMRs. In most fisheries, reported harvests have been expanded to account for unreturned permits. In a few cases, this results in a larger estimate than is found in those FMRs 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 instance, 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 slightly different estimates of total harvests than those reported in FMRs. The goal of this annual

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

The Alaska Subsistence Fisheries Database is not yet available for downloading from the Internet. Currently, upon request, the Division of Subsistence distributes the database on compact disks (CDs), along with the Subsistence Community Information System, formerly the Community Profile Database (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 this report is a statewide perspective on subsistence salmon harvests in Alaska in 2005. This is followed by chapters on 11 management areas, or in the case of Southeast Alaska, a region. In several 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 an annual report such as this, and the supporting database, were 2 of several objectives of the "Statewide Subsistence Fisheries Harvest Monitoring Strategy" project, funded by the U.S. 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 central goal of the project was to develop recommendations for a unified subsistence harvest assessment program for Alaska's subsistence fisheries. A Working Group composed of state, federal, and tribal members developed these recommendations. 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, although they have been updated as necessary.

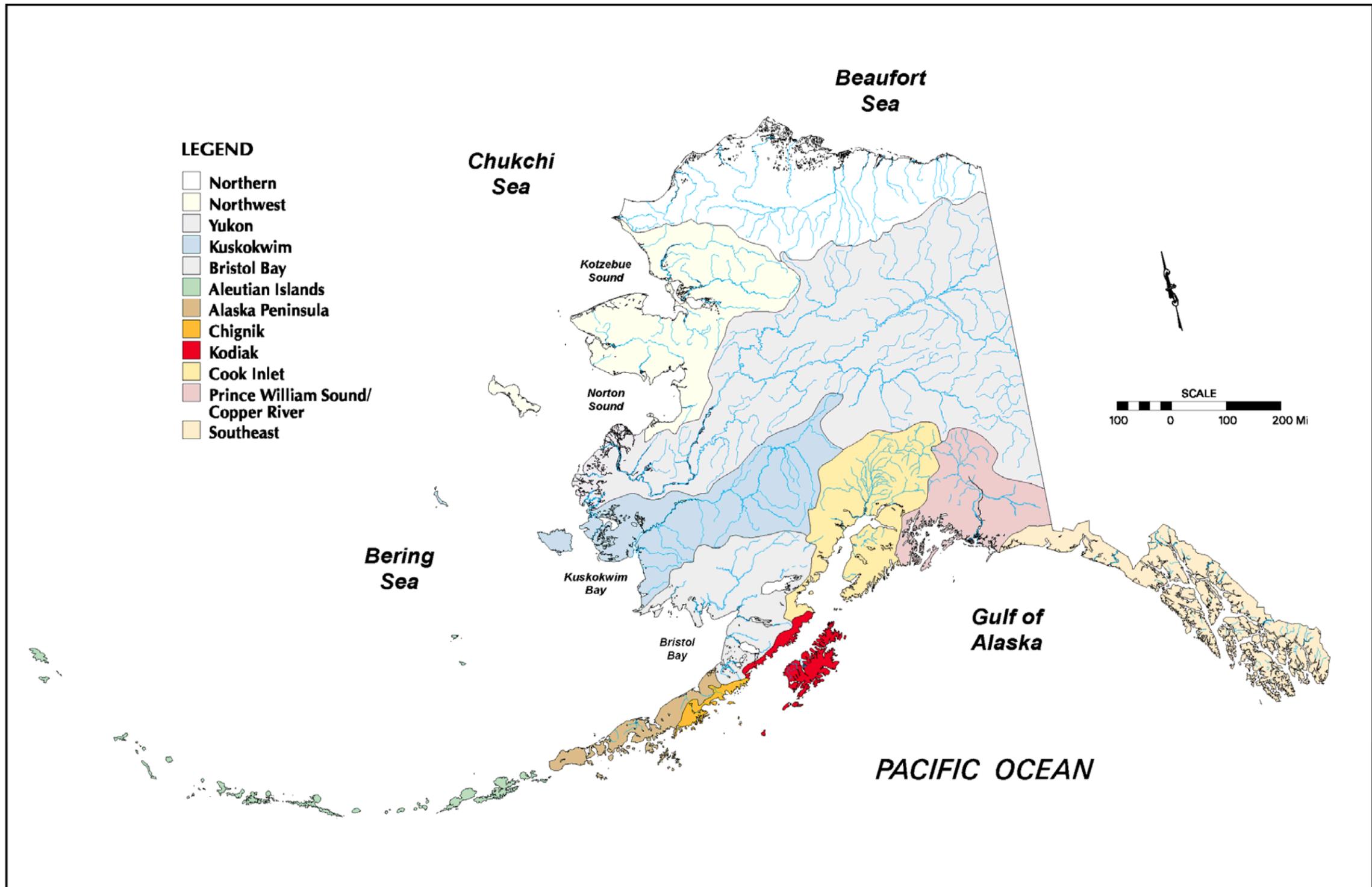


Figure 11.—Alaska subsistence fisheries areas.

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 60% from finfish and 2% from shellfish (Figure II-1). On average, the 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%. Commercial fisheries take 97% of the wild resource harvest, and sport fisheries and hunts take about 1%.

SUBSISTENCE SALMON HARVESTS IN 2005

The estimated total subsistence harvest of salmon in Alaska in 2005 based on annual harvest assessment programs was 1,052,564 fish (Table II-1).¹ The estimated statewide harvest by species was as follows: 461,804 sockeye (43%), 257,977 chum (25%), 155,658 Chinook (15%), 100,095 coho (10%), and 77,031 pink salmon (7%) (Figure II-2). Table II-2 reports subsistence harvests in 2005 by species and place of residence of participants, with harvests from all subsistence fisheries combined.

In 2005, fisheries in 8 management areas accounted for 96% of the total estimated statewide subsistence salmon harvest (Table II-1; Figure II-3). These were Yukon (269,114 salmon; 25% of the state-wide total); Kuskokwim (191,019 salmon; 18%); the Chitina Subdistrict of the Prince William Sound Management Area (combining the state personal use harvest and the federal subsistence harvest) (135,072 salmon; 13%); Bristol Bay (128,811 salmon; 12%); Northwest² (102,481 salmon; 10%); the Glennallen Subdistrict of the Prince William Sound Management Area (94,752 salmon; 9%), Southeast Alaska (49,655 salmon; 5%)³; and Kodiak (37,815 salmon; 4%).

The Chitina Subdistrict fishery was classified by the Alaska Board of Fisheries as a subsistence fishery prior to 1984, a personal use fishery in 1984, a subsistence fishery in 1985, personal use again from 1986 through 1999, subsistence again from 2000 through 2002, and personal use once again starting in 2003. Because Chitina was a personal use fishery in 1999, the first year of this report series, it was not included in that year's annual report. Chitina was added to the statewide report in 2000 because it had been reclassified as

¹ Personal use salmon harvests from Southeast Alaska, the Yukon Area, and the Chitina Subdistrict of the Upper Copper River are included. Personal use fisheries that take place in the nonsubsistence area of the Cook Inlet Management Area are not included. For background, see Chapter I.

² Subsistence harvest estimates for Northwest Alaska for 2003 and 2004 do not include the regional center of Kotzebue, which since 1994 had been included in the harvest assessment program. No subsistence fisheries harvest data were collected in the Kotzebue Area for 2005. Therefore, the estimated harvest totals for Northwest Alaska as reported here since 2003 are incomplete. See also Chapter III.

³ As discussed further in Chapter XIII, state subsistence regulations for the Southeast Region focus on sockeye salmon. Small harvests of Chinook and coho are reported on permit returns as incidental to sockeye catches. The major portion of coho and Chinook harvests for home use in Southeast is taken with rod and reel (sport gear). Thus the Southeast Region is particularly underrepresented in statewide overviews based on permit data.

a subsistence fishery.⁴ The Chitina and Glennallen, the 2 subdistricts of the Upper Copper River District, accounted for 22% of the statewide harvest in 2005 (229,824 salmon), in combination ranking second after the Yukon Area.

The largest estimated subsistence harvests of Chinook salmon in 2005 occurred in the Kuskokwim Area (74,354 salmon; 48%), followed by Yukon (53,547 salmon; 34%), Bristol Bay (15,212 salmon; 10%), Northwest (4,239 salmon; 3%), the Glennallen Subdistrict of the Prince William Sound Area (2,785 salmon; 2%), and the Chitina Subdistrict of the Prince William Sound Area (2,182 salmon; 1%) (Figure II-4). For sockeye salmon, the largest estimated subsistence harvests in 2005 were in the Chitina Subdistrict (131,004 salmon; 28% of the statewide total), followed by Bristol Bay (98,511 salmon; 21%), the Glennallen Subdistrict of the Prince William Sound Area (91,715 salmon; 20%), Southeast/Yakutat region (39,694 salmon; 9%); the Kuskokwim (37,003 salmon; 8%), Kodiak (27,002 salmon; 6%), the Alaska Peninsula (11,260 salmon; 2%), Northwest (9,306 salmon; 2%), and Chignik (8,171 salmon; 2%) (Figure II-5).

In 2005, as in past recent years, 3 areas dominated the subsistence chum salmon estimated harvest: Yukon (185,078 salmon; 72% of the statewide harvest), Kuskokwim (48,397 salmon; 19%); and Northwest (14,486 salmon; 6%) (Figure II-6). Of the statewide estimated subsistence harvest of coho salmon in 2005, the greatest share was taken in the Kuskokwim drainage (29,963 salmon; 30%), followed by the Yukon (27,357 salmon; 27%), Northwest (14,622 salmon; 15%), Bristol Bay (7,889 salmon; 8%), Kodiak Island (7,447 salmon; 7%), Alaska Peninsula (4,089 salmon; 4%), Southeast (2,283 salmon; 2%), Chignik (2,112 salmon; 2%), and Chitina (1,885 salmon; 2%) (Figure II-7). Finally, by far the largest portion of the statewide estimated pink salmon subsistence harvest in 2005 occurred in Northwest Alaska (59,829 salmon; 78% percent), followed by Southeast (4,959 salmon; 6%), Yukon (3,143 salmon; 4%), Kodiak (2,343 salmon; 3%), the Port Graham Subdistrict of the Cook Inlet Management Area (1,608 salmon; 2%), and Kuskokwim (1,303 salmon; 2%) (Figure II-8).

STATEWIDE SUBSISTENCE SALMON HARVESTS, 1994-2005

Table II-3 reports historic estimated subsistence and personal use salmon harvests for 1994 through 2005 based on annual harvest assessment programs. Harvest estimates for the Chitina Subdistrict have been included for all years, even though the fishery was classified as personal use in all of these years except 2000 through 2002. While earlier estimates for many of the fisheries are available, 1994 marks the first year that data from all of the included fisheries were available and collected with methods comparable to those currently in use.

The 12-year period reflected in Table II-3 shows a general downward trend, but recent estimates indicate this trend may be reversing or stabilizing. The 2005 estimate of 1,052,564

⁴ In February 2003, the Alaska Board of Fisheries reversed its decision of December 1999 and reclassified the Chitina Subdistrict dip net fishery as a personal use fishery. Nevertheless, in future annual reports, the Chitina Subdistrict harvests will be included in the statewide subsistence salmon harvest totals. Also, beginning in 2002, the National Park Service, on behalf of the Federal Subsistence Board, began issuing federal subsistence permits for the Chitina and Glennallen subdistricts. Harvests reported from federal permit returns are included in the totals discussed in this chapter. For additional discussion, see Chapter XII.

salmon was about the same as the 2004 estimate of 1,066,692 salmon. The 2005 estimate was the second-highest since 1999, higher than the recent 5-year average (1,005,158 salmon), and approaching the recent 10-year average (1,080,866 salmon).

Table II-1.—Estimated Alaska subsistence salmon harvests, 2005.

Fishery ¹	Households / Permits		Chinook	Sockeye	Coho	Chum	Pink	Total
	Total ²	Included						
Adak District	2	2	0	188	0	0	0	188
Alaska Peninsula Management Area	160	139	192	11,260	4,089	716	1,054	17,310
Batzulnetas Fishery	0	0	0	0	0	0	0	0
Bristol Bay Management Area	1,076	979	15,212	98,511	7,889	6,102	1,098	128,811
Chignik Management Area	119	100	224	8,171	2,112	353	730	11,590
Chitina Subdistrict: State ³	8,232	6,768	2,155	129,506	1,885	0	0	133,546
Chitina Subdistrict: Federal	77	64	27	1,498	0	0	0	1,526
Copper River Flats	237	224	260	830	15	0	1	1,106
Glennallen Subdistrict	1,234	1,070	2,785	91,715	252	0	0	94,752
Kodiak Management Area	1,900	1,900	431	27,002	7,447	592	2,343	37,815
Kuskokwim Management Area	4,486	1,642	74,354	37,003	29,963	48,397	1,303	191,019
Northwest Alaska ⁴	1,129	1,104	4,239	9,306	14,622	14,486	59,829	102,481
Port Graham & Koyuktoik Subdistricts	68	68	292	2,126	1,193	180	1,608	5,399
Prince William Sound (General)	14	13	0	4	0	0	0	4
PWS Eastern District (Tatitlek)	16	3	0	98	286	16	200	600
PWS Southwestern District (Chenega Bay)	13	8	10	515	84	174	124	907
Seldovia Fishery	18	16	53	74	14	11	100	251
Southeast / Yakutat Region	3,304	2,772	887	39,694	2,283	1,831	4,959	49,655
Tyonek Fishery	78	66	982	61	139	2	0	1,184
Unalaska District	217	152	8	4,066	424	14	527	5,038
Upper Yentna Fishery	18	17	0	177	42	25	24	268
Yukon Management Area	2,662	1,406	53,547	0	27,357	185,078	3,132	269,114
Totals	25,060	18,513	155,658	461,804	100,095	257,977	77,031	1,052,564

¹ Estimates for the Yukon and Southeast fisheries include both subsistence and personal use harvests.

² Because the numbers of permits issued for the Kodiak and Port Graham/Koyuktoik fisheries are unknown, the numbers of permits returned are used in place of these values.

³ Classified as a personal use fishery in 2005. Included in this table due to its historical classification as a subsistence fishery.

⁴ Does not include the Kotzebue Area.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table II-2.—Estimated Alaska subsistence salmon harvests by species and place of residence, 2005.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Adak Station	2	2	0	138	0	0	0	138
Afognak Island	1	1	0	120	0	0	0	120
Akiok	5	5	0	95	4	0	8	107
Akiachak	134	81	4,611	2,134	1,572	2,126	0	10,442
Akiak	77	54	3,420	1,681	1,673	3,193	0	9,966
Akutan	1	1	0	0	0	0	0	0
Alakanuk	123	51	860	0	322	6,314	49	7,545
Alatna	5	4	0	0	0	5	0	5
Aleknagik	22	19	470	1,131	105	82	6	1,795
Alexander Creek	1	1	0	0	0	0	0	0
Allakaket	44	17	68	44	205	3,092	0	3,409
Ambler	1	1	0	0	0	0	0	0
Anaktuvak Pass	2	2	0	45	0	0	0	45
Anchor Point	3	3	0	328	0	0	0	328
Anchorage	2,260	1,829	1,119	43,373	506	152	166	45,317
Anderson	7	6	4	421	2	0	0	427
Angoon	90	32	0	734	34	0	70	838
Aniak	161	142	1,987	975	1,886	2,539	173	7,559
Anvik	35	30	1,206	0	406	1,026	0	2,638
Atmautluak	60	40	1,720	1,194	471	1,635	37	5,056
Auke Bay	39	32	1	321	10	0	13	345
Balance of USA	11	11	0	60	16	3	2	81
Barrow	13	10	192	513	75	0	0	780
Bear Lake	1	1	0	102	0	0	0	102
Beaver	29	24	957	0	0	247	0	1,204
Bethel	1,740	451	24,473	13,135	12,268	12,535	449	62,860
Bettles	21	15	3	0	0	54	0	57
Big Lake	38	31	15	513	12	0	0	540
Birch Creek	8	3	131	0	0	0	0	131
Brevig	38	38	89	1,736	326	1,110	2,898	6,159
Buckland	1	1	0	30	0	0	0	30
Cantwell	6	4	0	45	0	0	0	45
Central	12	11	181	132	1	41	0	355
Chalkyitsik	26	19	53	0	0	337	0	390
Chenega Bay	9	5	6	469	84	174	124	857
Chickaloon	18	13	26	793	15	0	0	834
Chignik Bay	22	21	25	1,266	158	24	61	1,534
Chignik Lagoon	26	24	157	1,896	114	14	27	2,208
Chignik Lake	24	15	30	2,714	264	0	40	3,048
Chiniak	23	23	1	245	265	9	14	534

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Table II-2.—Page 2 of 3.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Chistochina	1	1	4	545	0	0	0	549
Chitina	36	30	48	2,673	57	0	0	2,778
Chuathbaluk	39	30	863	353	311	497	0	2,024
Chugach	1	0	0	0	0	0	0	0
Chugiak	132	115	95	2,935	30	4	0	3,064
Circle	24	17	1,283	0	100	921	0	2,304
Clam Gulch	1	1	0	0	0	0	0	0
Clarks Point	10	9	264	436	277	94	46	1,117
Clear	10	9	5	403	0	0	0	407
Coffman Cove	7	6	0	0	0	0	0	0
Cold Bay	29	29	6	501	158	2	6	673
Cooper Landing	3	3	7	290	0	0	0	297
Copper Center	171	150	340	14,330	15	0	0	14,685
Copper Landing	1	1	0	34	0	0	0	34
Cordova	216	205	222	805	15	0	1	1,043
Craig	152	126	2	1,244	166	123	855	2,390
Crooked Creek	30	23	826	596	148	882	0	2,452
Delta Junction	431	361	168	8,702	106	0	0	8,976
Denali National Park	8	8	0	70	1	0	0	71
Deshka	1	1	0	0	0	0	0	0
Dillingham	307	280	5,807	10,409	3,385	1,149	192	20,942
Dot Lake	3	2	0	88	0	0	0	88
Douglas	61	50	10	588	44	1	70	713
Dutch Harbor	97	73	0	1,646	133	0	44	1,824
Eagle	46	46	2,566	0	15	17,591	0	20,172
Eagle River	377	335	388	9,742	106	2	0	10,238
Eek	80	51	2,899	893	346	764	28	4,930
Egegik	20	15	35	963	439	216	0	1,652
Eielson AFB	96	76	34	1,553	39	0	0	1,626
Ekwok	22	20	778	428	111	72	0	1,388
Elfin Cove	2	2	0	1	0	0	10	11
Elim	66	66	285	9	1,044	586	3,826	5,750
Elmendorf AFB	17	16	2	152	7	0	0	162
Emmonak	163	80	1,730	0	191	14,030	54	16,005
Ester	78	68	29	1,526	22	0	0	1,577
Fairbanks	3,065	2,573	4,652	50,310	3,940	9,501	9	68,411
False Pass	7	4	37	1,054	268	200	317	1,874
Fort Greely	7	7	0	78	0	0	0	78
Fort Richardson	21	17	3	264	0	0	0	266
Fort Wainwright	143	93	28	1,605	0	0	0	1,633

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Table II-2.—Page 3 of 7.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Fort Yukon	151	57	3,591	0	394	8,155	0	12,140
Fritz Creek	2	1	3	37	0	0	0	40
Gakona	60	57	155	6,565	0	0	0	6,720
Galena	151	47	2,864	11	607	3,708	0	7,190
Gambell	4	4	0	0	1	1	22	24
Girdwood	45	36	20	537	24	0	3	584
Glennallen	194	160	391	9,069	26	0	0	9,486
Golovin	39	39	76	7	140	204	2,126	2,553
Goodnews Bay	61	49	794	1,143	615	187	1	2,740
Grayling	45	18	1,878	0	234	1,792	3	3,907
Gustavus	21	14	0	119	0	2	38	158
Haines	346	335	98	4,736	329	597	1,461	7,220
Healy	36	35	18	773	1,601	2,075	0	4,467
Hollis	3	3	0	41	28	0	25	94
Holy Cross	51	31	2,817	0	84	1,342	0	4,243
Homer	46	45	44	849	97	29	19	1,039
Hoonah	130	53	0	1,751	15	71	93	1,930
Hooper Bay	196	67	157	0	0	9,772	860	10,789
Hope	2	2	4	30	0	0	0	34
Houston	3	3	0	64	7	4	46	121
Hughes	23	18	33	0	20	2,341	0	2,394
Huslia	68	26	207	0	734	4,047	0	4,988
Hydaburg	41	25	1	1,648	0	0	0	1,649
Hyder	1	1	0	0	0	0	0	0
Igiugig	6	6	2	1,017	1	0	14	1,034
Iliamna	29	26	0	5,588	0	0	0	5,588
Indian	7	5	5	98	0	0	0	103
Juneau	734	529	59	6,306	314	96	450	7,225
Kake	142	135	12	1,712	5	45	225	2,000
Kaktovik	1	1	0	40	0	0	0	40
Kaltag	53	18	3,367	0	307	1,769	4	5,447
Karluk	1	1	0	0	0	0	0	0
Kasaan	2	1	0	20	0	0	0	20
Kasigluk	129	0	0	0	0	0	0	0
Kasilof	5	5	0	26	10	0	0	36
Kenai	16	15	36	491	0	7	1	535
Ketchikan	310	275	27	4,011	54	633	541	5,266
King Cove	63	54	39	5,033	2,472	140	233	7,917
King Salmon	86	76	189	6,141	246	58	46	6,680
Kipnuk	175	0	0	0	0	0	0	0

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Table II-2.—Page 4 of 7.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Klawock	95	76	0	594	36	8	143	780
Klukwan	1	1	0	0	0	0	0	0
Knik	1	1	1	70	0	0	0	71
Kodiak (city)	11	11	13	160	0	0	2	175
Kodiak City	1,390	1,390	279	19,702	4,550	126	844	25,501
Kokhanok	34	33	30	17,101	392	321	125	17,968
Koliganek	22	22	1,402	3,814	266	2,582	358	8,422
Kongiganak	87	33	1,508	987	781	1,519	125	4,920
Kotlik	83	34	2,130	0	222	7,136	155	9,643
Kotzebue	1	1	0	15	0	0	0	15
Koyukuk	23	18	396	0	37	1,340	0	1,773
Kwethluk	163	123	5,402	2,177	2,584	3,897	74	14,134
Kwigillingok	95	0	0	0	0	0	0	0
Lake Minchumina	1	1	1	14	0	0	0	15
Larsen Bay	25	25	7	1,334	53	25	51	1,470
Levelock	11	11	127	914	70	19	4	1,134
Lime Village	15	0	0	0	0	0	0	0
Lower Kalskag	81	52	1,387	409	293	954	0	3,043
Manley Hot Springs	14	13	289	0	2,510	3,148	0	5,947
Manokotak	21	21	110	1,272	192	2	0	1,576
Marshall (Fortuna Le	69	30	1,804	0	341	3,816	6	5,967
McCarthy	2	1	0	16	0	0	0	16
McGrath	132	4	55	31	309	101	0	496
Meires Lake	1	0	0	0	0	0	0	0
Mekoryuk	79	5	2	0	58	460	0	520
Mentasta	2	1	32	348	0	0	0	380
Metlakatla	21	17	0	188	0	0	0	188
Minto	53	48	35	0	0	621	0	656
Moose Pass	1	1	0	0	0	0	0	0
Mountain Village	135	58	2,383	0	246	10,151	78	12,858
Naknek	104	92	383	10,165	271	137	19	10,975
Nanwalek	22	22	27	1,934	1,142	128	1,259	4,490
Napakiak	91	55	2,695	1,803	628	2,726	102	7,954
Napaskiak	89	56	4,262	1,286	598	1,931	35	8,112
Naukati Bay	3	3	0	0	0	0	0	0
Nelson Lagoon	5	3	3	322	73	0	0	398
Nenana	45	41	541	1,005	12,395	12,365	0	26,306
New Stuyahok	51	44	3,345	4,316	890	967	183	9,701
Newhalen	20	17	0	6,574	0	0	0	6,574
Newtok	79	1	0	2	0	9	0	11

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Table II-2.—Page 5 of 7.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Nightmute	46	0	0	0	0	0	0	0
Nikiski	6	6	6	135	22	1	1	165
Nikolai	40	2	3	4	31	8	0	46
Ninilchik	8	7	0	60	0	0	0	60
Noatak	1	1	1	29	0	0	0	30
Nome	358	356	81	5,575	1,506	1,903	8,672	17,737
Nondalton	34	32	0	9,092	0	0	0	9,092
North Pole	828	675	323	16,027	143	1	5	16,499
Northway	6	4	6	1,257	0	0	0	1,263
Nulato	83	31	2,749	0	60	1,055	0	3,864
Nunam Iqua (Sheldon)	33	23	338	0	241	3,104	132	3,815
Nunapitchuk	115	76	3,480	1,589	716	3,640	32	9,456
Old Harbor	38	38	13	1,304	1,025	236	725	3,303
Oliktok	1	1	1	15	0	0	0	16
Oscarville	13	8	987	257	86	633	2	1,964
Ouzinkie	36	36	119	1,690	863	172	572	3,416
Palmer	538	476	266	12,298	221	25	9	12,819
Paxson	5	4	51	266	0	0	0	316
Pedro Bay	16	15	0	4,162	0	0	0	4,162
Pelican	6	6	0	37	0	0	25	62
Perryville	38	34	4	1,863	1,576	315	600	4,359
Petersburg	88	84	1	165	305	12	116	598
Pilot Point	5	5	0	110	73	14	2	199
Pilot Station	94	52	1,658	0	241	5,171	0	7,070
Pitka's Point	24	20	618	0	30	1,029	2	1,679
Platinum	15	14	74	90	224	22	12	422
Point Baker	1	1	0	21	7	12	29	69
Port Alsworth	25	24	0	2,527	0	0	0	2,527
Port Graham	48	48	267	202	51	52	349	921
Port Heiden	3	2	0	375	0	0	0	375
Port Lions	43	43	28	1,313	466	1	85	1,893
Port Moller	1	1	0	0	0	0	0	0
Portage Creek	1	1	78	4	0	9	0	91
Prudhoe Bay	1	1	1	13	0	0	0	14
Quinhagak	144	102	3,083	1,633	1,443	915	32	7,106
Rampart	6	5	411	0	10	673	0	1,094
Red Devil	12	9	191	283	345	232	8	1,060
Ruby	60	18	1,193	0	361	1,526	0	3,080
Russian Mission	56	20	1,894	0	133	1,592	0	3,619
Saint Charles	1	0	0	0	0	0	0	0

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Table II-2.—Page 6 of 7.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Saint Johns	1	0	0	0	0	0	0	0
Saint Marys (Andreaf	104	49	2,693	0	252	7,367	144	10,456
Salcha	73	68	17	1,653	14	0	0	1,684
Sand Point	35	31	67	2,952	1,083	320	456	4,877
Sanford	1	1	1	14	0	0	0	15
Scammon Bay	78	30	691	0	279	4,655	1,645	7,270
Seldovia	20	18	60	310	11	9	71	460
Seward	15	14	5	180	0	0	0	184
Shageluk	29	22	420	0	0	4,136	0	4,556
Shaktoolik	60	58	672	0	1,594	169	10,062	12,498
Shishmaref	2	2	0	0	0	0	14	14
Sitka	680	669	6	11,484	127	27	373	12,018
Skagway	9	9	0	41	0	0	65	106
Skwentna	11	11	0	155	34	25	24	238
Slana	10	8	26	1,330	0	0	0	1,356
Sleetmute	35	28	393	512	463	295	31	1,693
Soldotna	24	23	0	129	0	0	0	129
South Naknek	31	27	219	1,561	352	18	64	2,216
St Michaels	96	88	805	49	1,208	2,916	1,405	6,383
St Paul	2	2	0	0	0	0	0	0
Stebbins	133	128	425	52	2,364	4,519	3,809	11,169
Sterling	4	4	0	0	0	0	0	0
Stevens Village	31	20	1,570	0	0	688	0	2,258
Sutton	41	33	8	709	0	0	0	717
Takotna	19	0	0	0	0	0	0	0
Talkeetna	23	22	5	520	10	0	0	535
Tanacross	3	3	11	545	0	0	0	556
Tanana	98	51	3,729	0	1,616	25,377	0	30,722
Tatitlek	8	7	15	23	186	0	0	224
Telida	2	0	0	0	0	0	0	0
Teller	40	39	41	1,388	300	685	2,952	5,366
Tenakee Springs	4	4	0	0	0	0	0	0
Thorne Bay	76	75	0	627	7	0	5	639
Togiak	43	36	1,444	2,223	281	259	26	4,232
Tok	83	74	39	5,459	0	0	0	5,498
Toksook Bay	115	1	8	5	11	27	0	51
Trapper Creek	3	2	0	73	0	0	0	73
Tuluksak	83	58	2,498	935	465	2,108	0	6,006
Tuntutuliak	86	54	4,508	2,102	1,132	3,525	163	11,430
Tununak	104	0	0	0	0	0	0	0

-continued-

Table II-2.—Page 7 of 7.

Community	Households / Permits		Estimated Salmon Harvest					Total Salmon
	Total	Included	Chinook	Sockeye	Coho	Chum	Pink	
Twins Hills	1	1	33	0	0	0	0	33
Two Rivers	20	18	7	421	0	0	0	428
Tyonek	59	48	881	15	100	0	0	996
Uganik Bay	1	1	0	0	0	0	0	0
Ugashik	9	9	25	482	166	1	0	674
Unalakleet	225	221	1,742	499	5,723	1,240	17,983	27,187
Unalaska	111	73	6	2,409	290	14	483	3,202
Upper Kalskag	64	42	2,225	825	508	1,039	0	4,598
Valdez	278	229	147	6,670	77	0	0	6,894
Venetie	57	23	59	0	0	1,801	0	1,860
Wainwright	2	2	0	14	0	0	0	14
Ward Cove	28	24	0	298	0	100	48	446
Wasilla	886	761	412	22,799	246	0	0	23,458
Waukee	1	0	0	0	0	0	0	0
White Mountain	60	59	20	5	406	1,083	5,892	7,406
Whittier	2	2	0	30	0	0	0	30
Willow	35	28	10	309	30	0	0	349
Wiseman	1	1	1	39	0	0	0	40
Wrangell	98	95	27	582	11	106	319	1,045
Yakutat	99	78	661	2,681	793	4	19	4,157
Other USA	2	1	0	0	0	0	0	0
Unknown Community	53	37	343	279	213	201	200	1,236
Totals	25,060	18,513	155,657	461,804	100,095	257,977	77,031	1,052,564

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table II-3.—Estimated historic Alaska subsistence and personal use salmon harvests, 1994-2005.

Year	Households / Permits		Estimated Salmon Harvest					Total
	Total ¹	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
2001	28,641	21,907	165,039	487,570	101,291	242,035	44,501	1,040,436
2002	24,497	19,189	144,777	398,134	94,365	229,922	86,754	953,952
2003	25,018	19,096	166,593	420,579	109,172	239,648	67,929	1,003,920
2004	27,046	20,923	176,416	453,201	103,772	241,022	92,281	1,066,692
2005	25,060	18,513	155,658	461,804	100,095	257,977	77,031	1,052,564
5-Year								
Average	26,052	20,420	157,419	436,297	102,362	240,245	68,835	1,005,158
10-Year								
Average	26,172	20,640	162,525	456,260	102,284	294,681	65,114	1,080,866
All Years								
Average	25,552	19,889	166,651	449,479	107,238	322,000	66,710	1,112,078

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

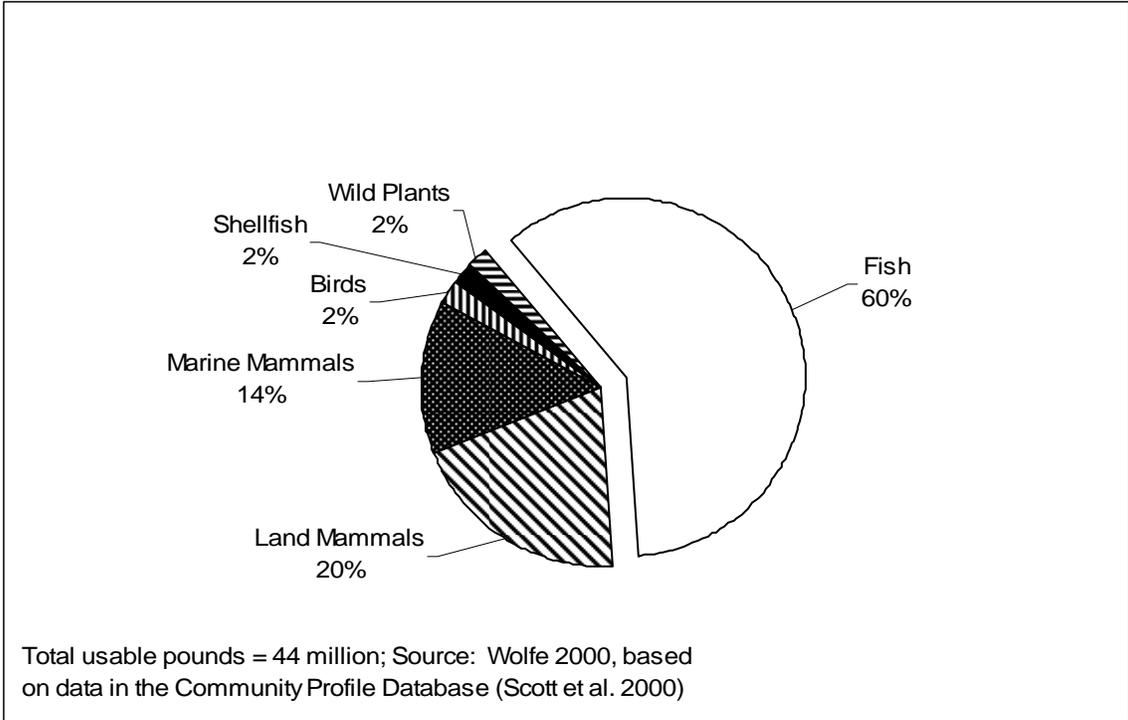


Figure II-1.—Composition of subsistence harvest by rural Alaska residents.

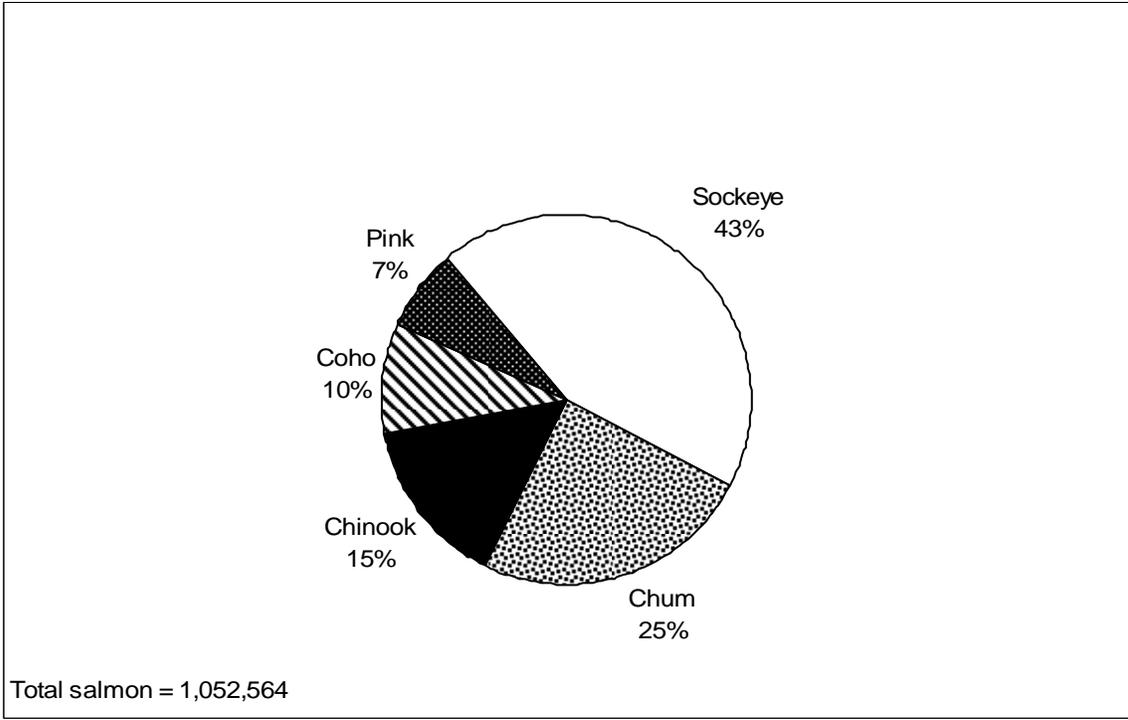


Figure II-2.—Estimated Alaska subsistence salmon harvest by species, 2005.

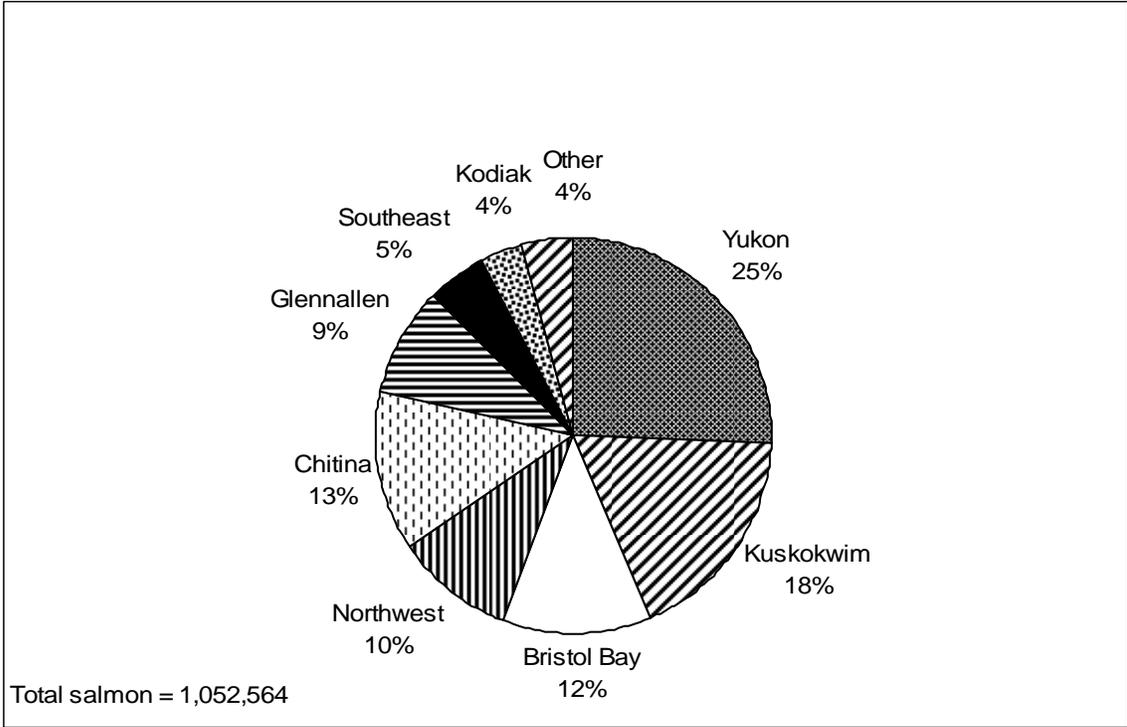


Figure II-3.—Estimated Alaska subsistence salmon by area, 2005.

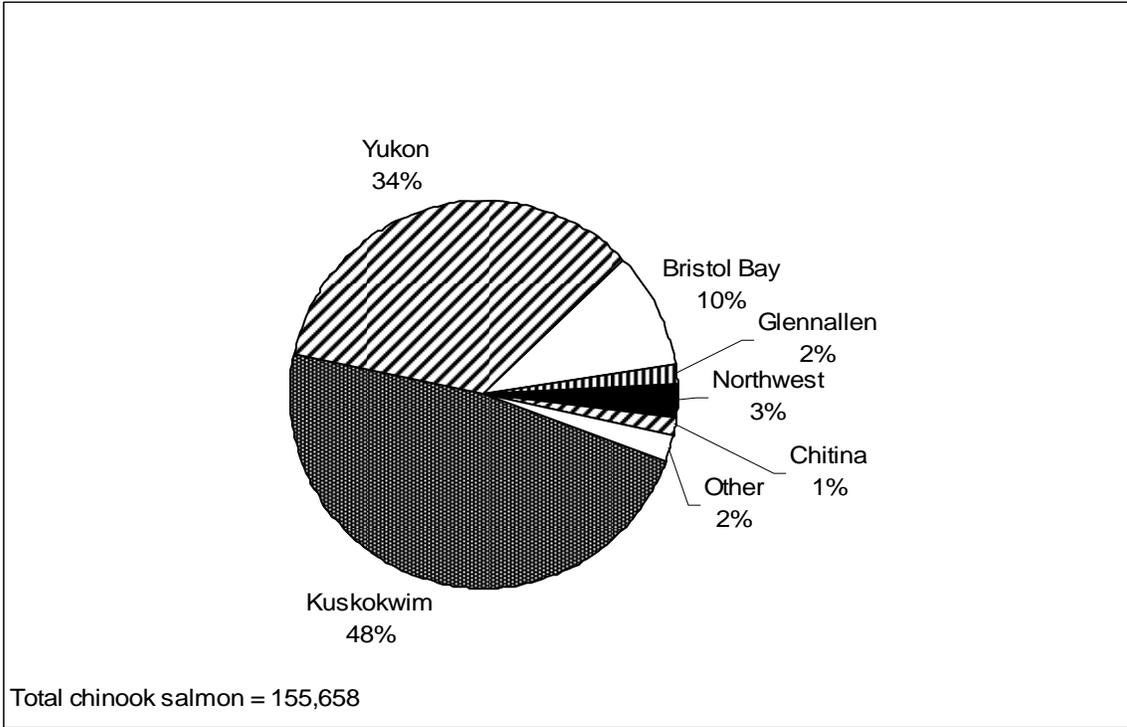


Figure II-4.—Estimated subsistence Chinook salmon harvest by area, 2005.

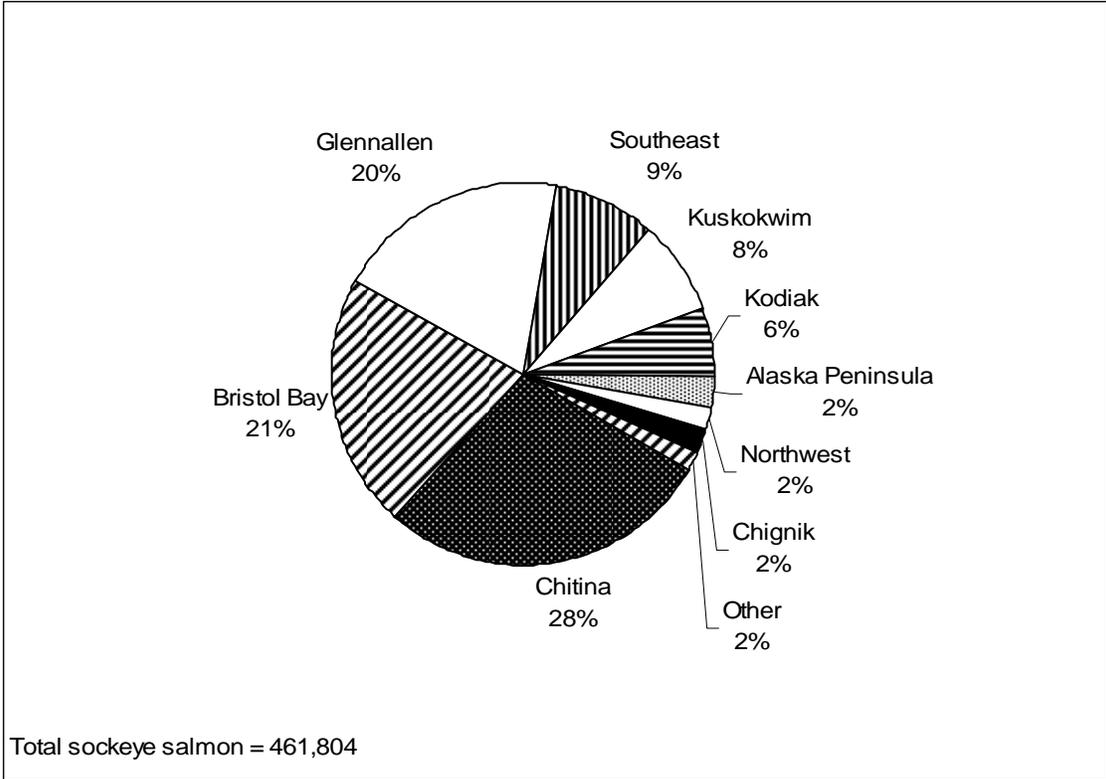


Figure II-5.—Estimated subsistence sockeye salmon harvest by area, 2005.

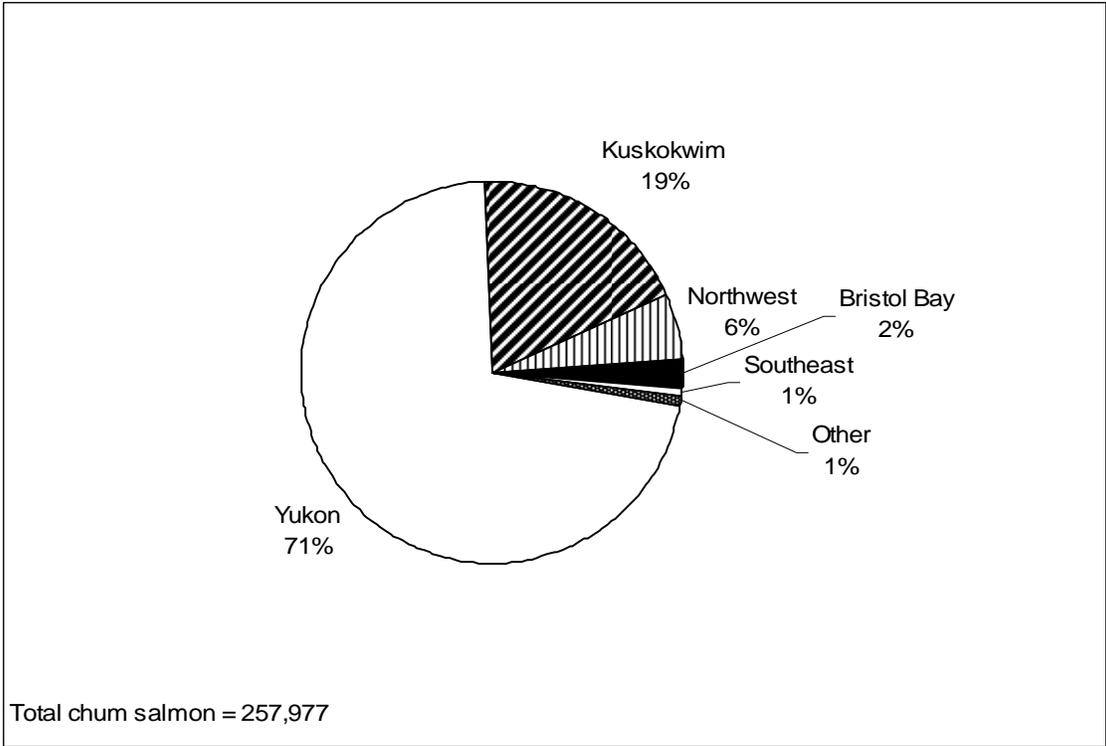


Figure II-6.—Estimated subsistence chum salmon harvest by area, 2005.

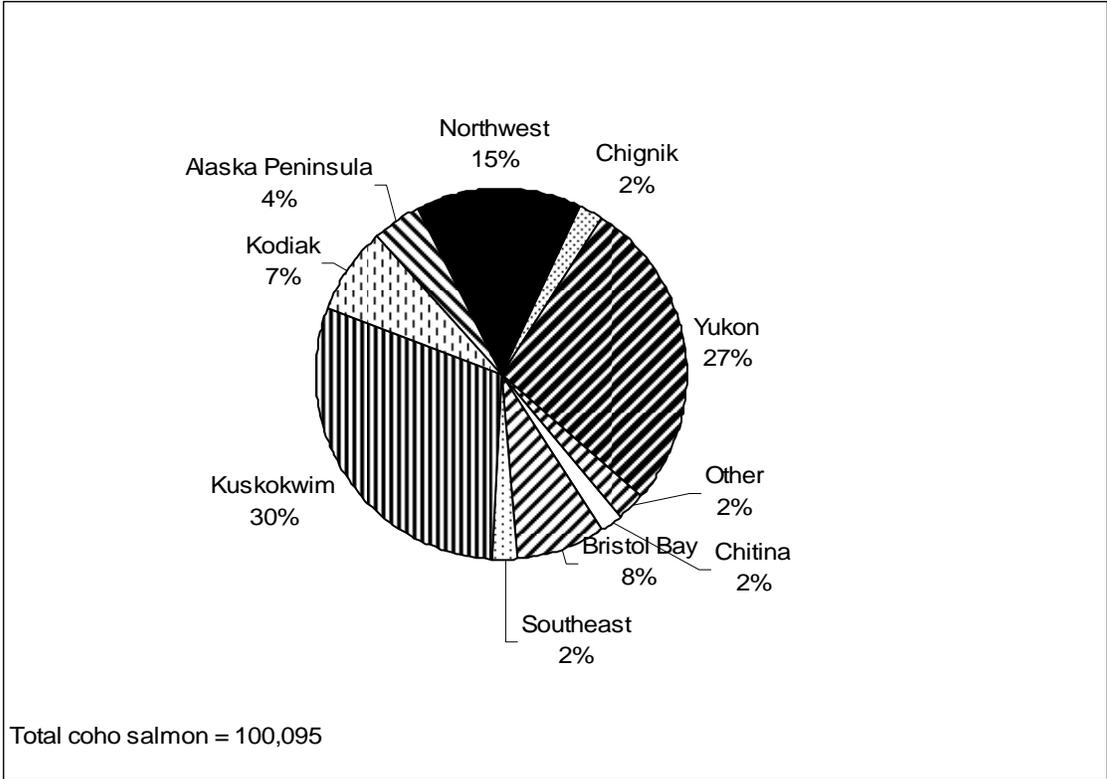


Figure II-7.—Estimated subsistence coho salmon harvest by area, 2005.

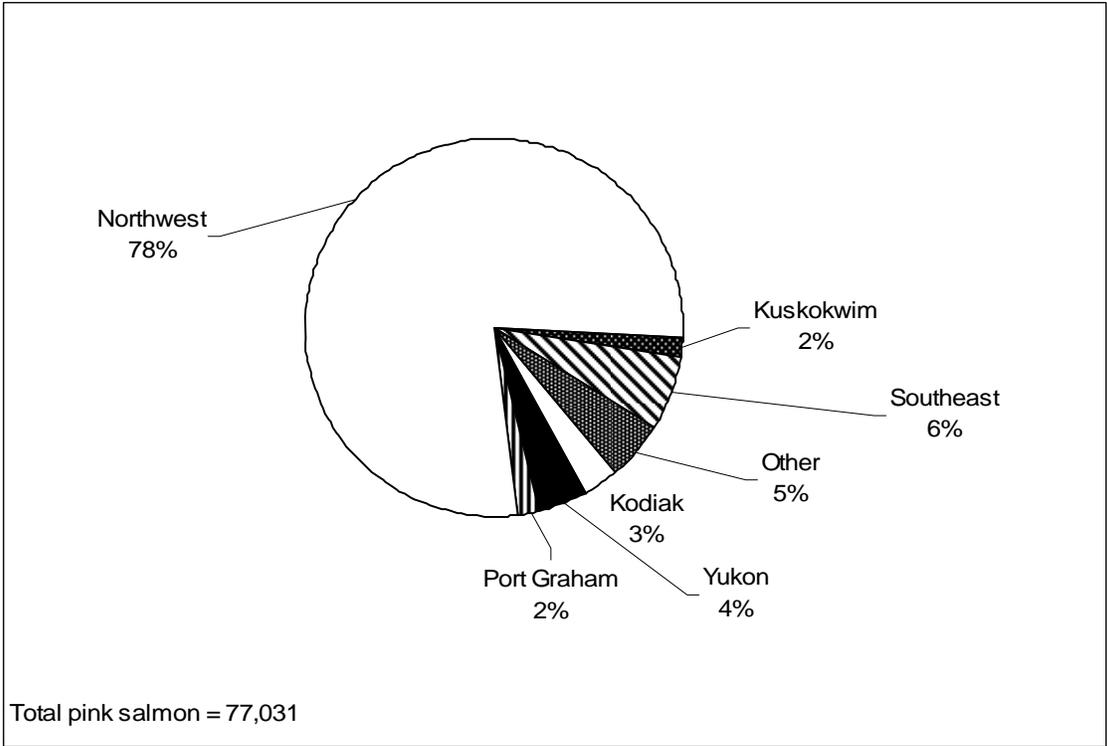


Figure II-8.—Estimated subsistence pink salmon harvest by area, 2005.

III. NORTHWEST ALASKA

NORTON SOUND-PORT CLARENCE AREA SALMON

Background

Subsistence salmon fishing has been a major feature of life in northwest Alaska for centuries. In the early twenty-first century, 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. Beginning in 2004, subsistence salmon permits were required in all Port Clarence waters. In addition, in the Pilgrim River drainage, including Salmon Lake, harvests are limited, and specified areas are closed to subsistence salmon fishing.

The Norton Sound District has 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 past 15 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.⁵ In 2005, 60 Tier II permits were available and 57 applications were received, so all Tier II applicants received a permit in 2005. 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 fishers' participation in subsistence salmon fishing.

In 2001, a regulatory change by the Board of Fisheries made rod-and-reel a legal subsistence fishing gear type in the area from Cape Espenberg on the northern Seward Peninsula to Bald Head between Elim and Koyuk. This includes most of the subsistence fishing areas used by residents of Elim, Golovin, White Mountain, Nome, Teller, Brevig Mission, Wales, and

⁵ 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.

Shishmaref. Sport fish bag and possession limits still apply, except when fishing through the ice or when a subsistence salmon permit is required. In the latter case, the harvest limits specified in the permit apply.

Subsistence Salmon Harvest Collection Methods

Two methods were used to assess subsistence salmon harvests in the Norton Sound and Port Clarence Districts in 2005: 1) fishing permits in Subdistrict 1 (Nome), the Cape Woolley area, Subdistrict 2 (Golovin), Subdistrict 3 (Moses Point), and the Port Clarence Area (Brevig Mission and Teller), and 2) post-season household surveys in 2 communities, Unalakleet and Shaktoolik.

Norton Sound Subdistricts 1, 2, and 3: 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 fishers 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 2005, 320 permits (271 Tier I and 49 Tier II permits) were issued for Subdistrict 1. In 2004, 439 Tier I permits were issued. In that year, subsistence rod and reel fishing for pink salmon opened one week before sport fishing. In 2005, the subsistence and sport fishery opened concurrently, probably accounting for the drop in Tier I permits issued (Menard 2005).

Subsistence fishing permits were also issued for the Cape Woolley area, a traditional fishing area for King Island households, many of whom now live in Nome. Located in the Norton Sound District west of Nome, this area lies outside Subdistrict 1 but within the boundaries of the area for which fishing permits are required (Rocky Point to Cape Douglas). In 2005, 10 permits were issued for the Cape Woolley area, all of which were returned to the department.

2005 was the second year for which subsistence permits were required for salmon fishing in Subdistrict 2 (Golovin) and Subdistrict 3 (Moses Point). For Subdistrict 2, 174 permits were issued, and for Subdistrict 3, 70 permits were issued.

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.

Port Clarence District: Salmon Lake and Pilgrim River Fishing Permits

Permits were required for subsistence salmon fishing in the Port Clarence District. In 2005, 209 households were issued permits for the Pilgrim River. In the remainder of the Port Clarence Subdistrict, 118 households obtained permits.

Household Surveys

In the Norton Sound, ADF&G conducted household surveys in Shaktoolik and Unalakleet. Researchers attempted to contact 100% of the households in each of the surveyed

communities. Actual sample rates ranged from 82% in Unalakleet, where 200 of the 245 households were surveyed, to 83% in Shaktoolik, where 55 of the 66 households were surveyed. 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,
- 2) Compile information on harvest by gear types, participation rates, sharing, household size, and use of salmon for dog food, and
- 3) Compile information on salmon harvest locations by species.

2005 Subsistence Salmon Harvests

Norton Sound District Subsistence Salmon Harvest

The estimated 2005 subsistence harvest of salmon by study communities in the Norton Sound District was 84,000 fish (Table III-1, Table III-2). This was the highest harvest since 1998, with the exception of 2002 (Table III-2). There was a strong coho return in 2005, and above average runs of chum and pinks. The Chinook run was poor (Menard 2005:1). Of the total subsistence salmon harvest in 2005, 1% was sockeye, 5% were Chinook, 14% were chum, 17% percent were coho, and 63% were pink (Figure III-1). Very little of the documented subsistence salmon harvest was taken by residents from outside the district (Table III-3). Combined harvest estimates for the Norton Sound District, Port Clarence District, and Kotzebue Area for the period 1975-2005 are presented in Table III-4. However, the methodology used in determining harvests prior to 1994 is substantially different from that used since 1994, and as a consequence the data are not directly comparable. Methods changed again in 2004, when permits replaced surveys in Norton Sound Subdistrict 2 (Golovin and White Mountain), Norton Sound Subdistrict 3 (Elim). In Nome, the 2005 Tier II subsistence salmon harvest as reported on Subdistrict 1 permits was 3,756 salmon.

Port Clarence District Subsistence Salmon Harvest

The estimated 2005 subsistence harvest of salmon by Teller, Brevig Mission, and Nome in the Port Clarence District was 18,481 fish (Table III-1, Table III-2). This was the second-highest harvest since 1994, only slightly lower than the harvest of 18,520 salmon in 2004 (Table III-2). Of the total harvest, 1% were Chinook, 4% were coho, 13% were chum, 36% were pink, and 46% were sockeye (Figure III-1). The estimated mean harvest in the Port Clarence District was 56 salmon per household; the estimated breakdown of this harvest was less than 1 Chinook, 2 coho, 8 chum, 20 pink, and 26 sockeye (Table III-2).

KOTZEBUE AREA SALMON

Background

Kotzebue Sound residents have relied on fish for cultural and nutritional sustenance for thousands of years. 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 fishers, however, are not allowed to subsistence fish for salmon during the commercial season.

Harvests

From 1994 through 2004, the Division of Subsistence conducted household surveys in selected Kotzebue Sound communities to collect subsistence salmon harvest data (Fall et al. 2007:23-38). Due to lack of funding, no surveys were conducted in 2005 and, therefore, no subsistence salmon harvest estimate is available.

KOTZEBUE AREA SHEEFISH, WHITEFISH, AND CHAR

In addition to salmon, major subsistence fisheries take place in northwest Alaska for sheefish, whitefish, and char (Dolly Varden). 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.

Past household surveys to collect harvest information for subsistence salmon harvests in Kotzebue Sound communities also collected harvest data for sheefish, whitefish, and char (Fall et al. 2007:28). Due to lack of funding, household surveys were not conducted for 2005.

Table III-1.—Estimated subsistence salmon harvests by district, Northwest Alaska, 2005.

	Included Households	Estimated Salmon Harvests ¹					Total
		Chinook	Sockeye	Coho	Chum	Pink	
Norton Sound District ²	1,061	4,087	774	13,896	12,008	53,236	84,000
Port Clarence District ³	329	152	8,532	726	2,478	6,593	18,481
Kotzebue Area ⁴	0						
Totals	1,390	4,239	9,306	14,622	14,486	59,829	102,481

¹ Harvests reported during household surveys are expanded into estimates to account for uncontacted households. Harvests reported on permits are not expanded.

² Household surveys conducted in Unalakleet, Shaktolik, St. Michael, and Stebbins. Permits issued for Cape Woolley, Nome Subdistrict (Tier I and Tier II), Golovin Subdistrict, and Elim Subdistrict.

³ Permits issued for Port Clarence Subdistrict and Pilgrim River.

⁴ Due to lack of funding, no collection of subsistence salmon harvest data took place in Kotzebue Sound communities for 2005.

SOURCE: Alaska Dept. of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.4.

Table III-2.—Estimated historic subsistence salmon harvests by district, Northwest Alaska, 1994-2005.

Norton Sound District							
	Number of Households	Chinook	Chum	Pink	Sockeye	Coho	Total
1994	839	7,212	24,776	70,821	1,161	22,108	126,077
1995	851	7,766	43,014	38,594	1,222	23,015	113,612
1996	858	7,255	34,585	64,724	1,182	26,304	134,050
1997 ¹	1,113	8,998	26,803	27,200	1,892	16,476	81,370
1998 ¹	1,184	8,295	20,032	51,933	1,214	19,007	100,480
1999	898	6,144	19,398	20,017	1,177	14,342	61,078
2000	860	4,149	17,283	38,308	682	17,062	77,485
2001	878	5,576	20,213	30,261	767	14,550	71,367
2002	935	5,469	17,817	64,354	763	15,086	103,490
2003	940	5,290	13,913	49,674	801	14,105	83,782
2004	1,003	3,169	3,200	61,813	363	8,225	76,770
2005	1,061	4,087	12,008	53,236	774	13,896	84,000

Port Clarence District							
	Number of Households	Chinook	Chum	Pink	Sockeye	Coho	Total
1994	151	203	2,294	4,309	2,220	1,892	10,918
1995	151	76	6,011	3,293	4,481	1,739	15,600
1996	132	194	4,707	2,236	2,634	1,258	11,029
1997	163	158	2,099	755	3,177	829	7,019
1998	157	289	2,621	7,815	1,696	1,759	14,179
1999	177	89	1,936	786	2,392	1,030	6,233
2000	163	72	1,275	1,387	2,851	935	6,521
2001	160	84	1,910	1,183	3,692	1,299	8,167
2002	176	133	2,699	3,394	3,732	2,194	12,152
2003	242	176	2,425	4,108	4,436	1,434	12,578
2004	371	278	2,505	5,918	8,688	1,131	18,520
2005	329	152	2,478	6,593	8,532	726	18,481

Kotzebue Area ²							
	Number of Households	Chinook	Chum	Pink	Sockeye	Coho	Total
1994 ³	557	135	48,175	3,579	33	478	52,400
1995 ⁴	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	1,227	211	65,975	75	75	2,557	68,893
2001 ⁵	1,149	11	49,014	36	14	768	49,844
2002 ⁶	216	3	16,880	8	9	56	16,955
2003 ⁷	488	40	19,201	583	53	1,042	20,918
2004 ⁷	440	54	23,348	1,259	18	1,502	26,181
2005 ⁸	0						

¹ Includes Gambell and Savoonga.

² Normally includes Ambler, Kiana, Kobuk, Kotzebue, Noatak, Noorvik, and Shungnak.

³ Includes Deering and Wales; doesn't include Kotzebue.

⁴ Includes Shishmaref.

⁵ Does not include Ambler.

⁶ Includes only Noatak and Noorvik.

⁷ Does not include Kotzebue.

⁸ No data collected for 2005

SOURCE: Alaska Dept. of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.4.

Table III-3.—Estimated subsistence salmon harvests by community, Northwest Alaska, 2005.

COMMUNITY ²	HOUSEHOLDS / PERMITS		ESTIMATED SALMON HARVEST ¹						TOTAL
	TOTAL	INCLUDED	CHINOOK	SOCKEYE	COHO	CHUM	PINK		
Anchorage	6	5	0	4	0	63	95	162	
Brevig	38	38	89	1,736	326	1,110	2,898	6,159	
Chugach	1	0	0	0	0	0	0	0	
Clam Gulch	1	1	0	0	0	0	0	0	
Elim	66	66	285	9	1,044	586	3,826	5,750	
Fairbanks	1	1	0	0	0	0	7	7	
Gambell	3	3	0	0	1	1	22	24	
Girdwood	2	2	1	0	10	0	3	14	
Golovin	39	39	76	7	140	204	2,126	2,553	
Juneau	1	1	1	22	0	7	2	32	
Nome	356	354	81	5,545	1,506	1,903	8,672	17,707	
Palmer	1	1	0	0	0	0	0	0	
Petersburg	1	1	0	0	0	0	60	60	
Shaktolik	60	58	672	0	1,594	169	10,062	12,498	
Shishmareff	1	1	0	0	0	0	14	14	
St Michaels	96	88	805	49	1,208	2,916	1,405	6,383	
Stebbins	133	128	425	52	2,364	4,519	3,809	11,169	
Teller	40	39	41	1,388	300	685	2,952	5,366	
Unalakleet	224	220	1,742	489	5,723	1,240	17,983	27,177	
White Mountain	59	58	20	5	406	1,083	5,892	7,406	
Totals	1,129	1,104	4,239	9,306	14,622	14,486	59,829	102,481	

¹ Includes subsistence harvests and commercial harvests retained for home use.

² Harvest information from residents of non-local communities (e.g. Anchorage) is available only for Norton Sound and Port Clarence permit areas. Non-local residents might subsistence fish in other northwest Alaska areas, but these harvests are not documented in the regional household surveys.

SOURCE: Alaska Dept. of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.4.

Table III-4.—Estimated historic subsistence salmon harvests, Northwest Alaska, 1975-2005.

YEAR	HOUSEHOLDS / PERMITS		ESTIMATED SALMON HARVEST ¹						TOTAL
	TOTAL INCLUDED		CHINOOK	SOCKEYE	COHO	CHUM	PINK		
1975	117	79	3	225	102	3,698	7,298	11,326	
1976	138	104	6	0	275	1,856	5,472	7,609	
1977	195	181	35	64	623	12,222	2,839	15,783	
1978	168	126	31	0	242	4,035	10,697	15,005	
1979	138	119	519	0	1,007	3,419	5,842	10,787	
1980	232	161	135	0	2,075	5,839	21,728	29,777	
1981	236	169	47	88	1,844	9,251	6,100	17,330	
1982	230	182	33	6	2,093	5,719	20,480	28,331	
1983	243	189	74	40	1,950	7,013	8,499	17,576	
1984	240	189	85	0	1,890	4,945	18,067	24,987	
1985	215	198	56	114	1,054	5,717	2,117	9,058	
1986	279	240	157	127	788	8,494	9,011	18,577	
1987	235	173	97	102	812	7,265	705	8,981	
1988	192	166	67	171	1,089	6,379	2,543	10,249	
1989	173	130	24	131	549	3,456	924	5,084	
1990	188	165	60	234	542	4,525	2,413	7,774	
1991	155	128	83	166	1,279	3,715	194	5,437	
1992	163	132	152	163	1,720	2,030	7,746	11,811	
1993	142	104	51	74	1,780	1,578	758	4,241	
1994 ²	1,547	1,169	7,713	3,414	24,494	75,489	78,954	190,063	
1995 ³	2,329	1,445	8,070	6,639	27,314	151,905	43,947	237,874	
1996	2,177	1,454	7,999	4,287	27,879	139,032	67,911	247,108	
1997 ⁴	2,398	1,645	9,620	5,597	18,153	86,808	29,135	149,314	
1998 ⁴	2,620	1,730	8,967	3,301	21,226	71,632	61,863	166,989	
1999	2,351	1,300	6,242	4,046	16,706	115,676	21,644	164,315	
2000	2,247	1,336	4,399	3,612	20,654	84,196	40,499	153,360	
2001 ⁵	2,192	1,259	5,671	4,473	16,617	71,138	31,480	129,378	
2002 ⁶	1,327	1,204	5,624	4,504	17,838	37,396	67,756	133,119	
2003 ⁷	1,670	1,488	5,505	5,289	16,580	35,540	54,365	117,279	
2004 ⁷	1,915	1,814	3,534	9,159	11,585	31,386	70,841	126,506	
2005 ⁸	1,129	1,104	4,239	9,306	14,622	14,486	59,829	102,481	
5-Year Average	1,647	1,374	4,915	6,546	15,448	37,989	56,854	121,752	
10-Year Average	2,003	1,433	6,180	5,357	18,186	68,729	50,532	148,985	
All Years Average	890	641	2,558	2,107	8,238	32,769	24,570	70,242	

¹ Includes selected communities in the Norton Sound District, Port Clarence District, and Kotzebue Area.

² Beginning in 1994, ADF&G initiated a new annual subsistence salmon harvest assessment effort in northwest Alaska that provided more extensive, complete, and reliable estimates than existed previously. Harvest estimates prior to 1994 cannot be directly compared to those after 1994. Communities routinely included in harvest estimates since 1994 are all the communities in the Norton Sound and Port Clarence districts except Gambell and Savoonga, and 7 communities (Ambler, Kiana, Kobuk, Kotzebue, Noatak, Noorvik, and Shungnak) in the Kotzebue Area. However, the communities actually surveyed vary from year to year.

³ Includes Shishmaref.

⁴ Includes Gambell and Savoonga.

⁵ Does not include Ambler.

⁶ For the Kotzebue Area, includes only Noatak and Noorvik.

⁷ Does not include Kotzebue.

⁸ Does not include Kotzebue Area.

SOURCE: Alaska Dept. of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.4.

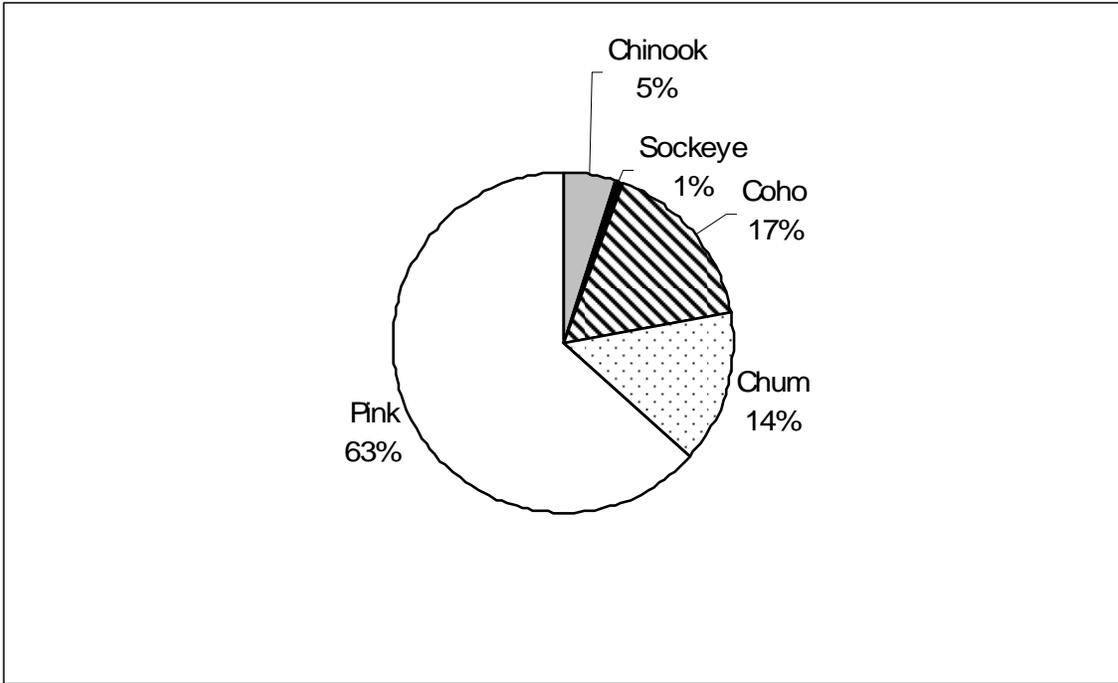


Figure III-1.—Species composition of estimated subsistence salmon harvests, Norton Sound District, 2005.

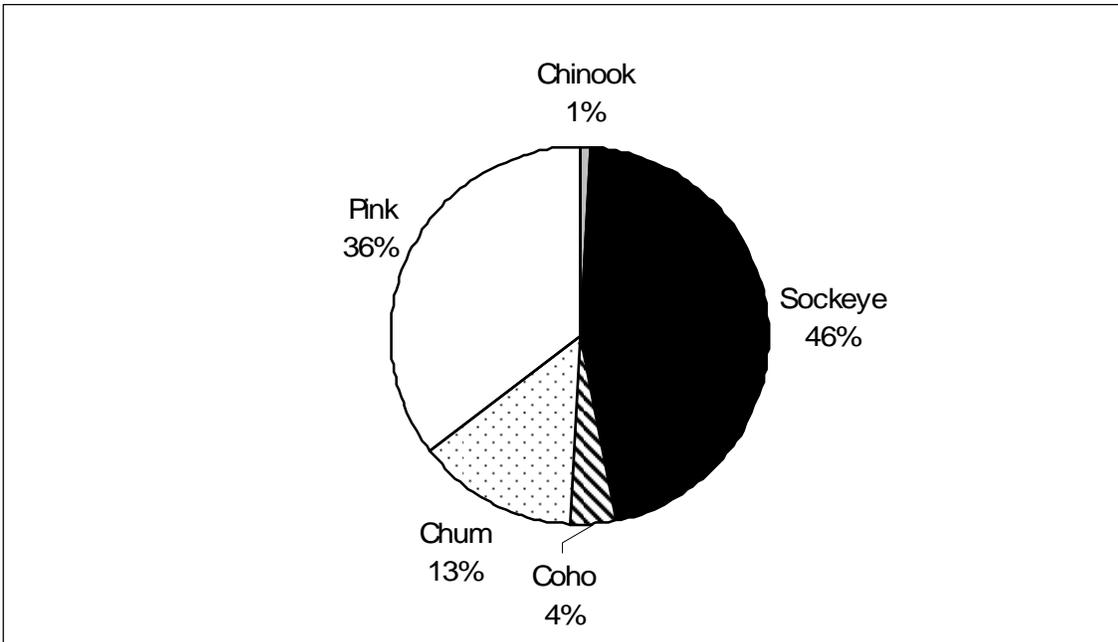


Figure III-2.—Species composition of estimated subsistence salmon harvests, Port Clarence District, 2005.

IV: YUKON AREA

BACKGROUND

Residents of the Yukon river drainage have long relied on fish for human food and other subsistence uses. While non-salmon fish species provide an important component of the overall fish harvest (Andersen et al., 2004; Brown et al., 2005), salmon comprises the bulk of the fish harvested for subsistence. Chinook, summer chum, fall chum, and coho salmon comprise the majority of the salmon harvests in the Yukon river drainage, and the number of salmon harvested for subsistence in this region is significant. Unlike many marine and coastal fisheries where commercial harvests predominate, subsistence salmon harvests within the Yukon drainage often exceed commercial, sport, and personal use harvests combined.

Drift gillnets, set gillnets, and fish wheels are used by Yukon Area fishers 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., by state regulation, that portion of the Yukon drainage from the mouth to 18 miles below Galena). Fish wheels are a legal subsistence or non-commercial gear type throughout the Yukon drainage, although due to river conditions and the availability of wood, they are used almost exclusively on the upper Yukon and Tanana rivers.

Depending on the area of the Yukon river drainage and run timing of different salmon species, subsistence fishing occurs from late May through early October. Fishing activities are either based from fish camps or from the home villages; fishing patterns and preferred sites vary from community to community. Extended family groups, typically representing several households, often undertake subsistence salmon fishing together. 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 3 articles on this topic in the Division of Subsistence “Wildlife Use Notebook Series” [ADF&G 1987a, 1987b, 1988]).

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 those fish deemed not suitable for human consumption due to presence of the fungus *Ichthyophonus hoferi* or some other disease or disfigurement are often fed to dogs. Small (jacks) Chinook salmon or spawned out fish may also be 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 late in the season, coincident with freezing weather, allowing fish to be “cribbed” for use as dog food. This method involves the natural freezing of whole (uncut) fish. The practice of keeping sled dogs is much more common in communities along the upper Yukon Area than in the lower river communities.

REGULATIONS

The majority of the United States portion of the Yukon Area is open to subsistence fishing. However, the Alaska Joint Board of Fisheries and Game has defined a portion of the Tanana River in the Yukon river drainage as lying within the Fairbanks Nonsubsistence Area (5 AAC 99.015). Subsistence fisheries may not be authorized within non-subsistence areas; the

harvest of fish for home use in these non-subsistence areas occurs under personal use and sport fishing regulations.

Over the last decade, several regulatory changes have affected the subsistence salmon fishery in the Yukon river drainage. 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 areas, subsistence salmon fishing is allowed 7 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 (Subdistricts 4-B and 4-C) and in Subdistricts 5-A, 5-B and 5-C, 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 may be allowed during the commercial salmon fishing season. In Subdistrict 5-D, subsistence salmon fishing is allowed 7 days per week, regardless of commercial activities. Since 1994, with the exception of 1998⁶, the subsistence salmon fishing schedule in Subdistrict 5-A allows subsistence salmon fishing 5 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.⁷ In the Upper Tanana river drainage, upstream of the Volkmar (north bank) and Johnson rivers (south bank)⁸, subsistence fishing is allowed 7 days per week.

Subsistence restrictions have occurred during the fall season in 1993, 1998, 2001, and 2002, with complete closure occurring in 2000. In 2000, for the first time in history, restrictions were imposed on the summer portion of the subsistence salmon fishery to protect Chinook and summer chum salmon populations. Because of several years' inability to maintain expected yields and harvestable surpluses above escapement needs, the Alaska Board of

⁶ 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 7 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.

⁷ In the lower Tanana river drainage, Subdistrict 6-C is a personal use salmon fishery. Its fishing schedule 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. In that portion of Subdistrict 6-B (the Old Minto Area) from the downstream side of the upper Tolovana to 3 miles upstream of Totchaket Slough, subsistence fishing is 5 days a week.

⁸ Salmon fishing is closed in that portion of the Tanana River drainage upstream of Subdistrict 6-C, from Salcha River upstream to the Volkmar River (north bank) and to the Johnson River (south bank). The area is closed to salmon fishing other than sport fishing and is included in the Fairbanks Non-subsistence Area. Whitefish and suckers may be harvested above the Salcha River under a personal use permit.

Fisheries (BOF) classified Yukon River Chinook salmon stock as a stock of concern (Lingnau and Salomone 2003).

In 2001, as a result of the declared disaster, the BOF instituted a new subsistence schedule on the Yukon River. The schedule was intended to fulfill several goals: 1) increase the quality of escapement, 2) distribute subsistence opportunity among users in years with no commercial fishing, and 3) reduce the impact of harvest on any one stock by spreading the harvest throughout the run, thereby providing windows of time that salmon may migrate upriver with reduced exploitation. The schedule was based on past fishing schedules and is initiated each year based on the historic average run timing entry into the Yukon River for Chinook salmon. Once initiated, the schedule is implemented chronologically upriver. The schedule is believed to provide reasonable opportunity for subsistence users to achieve their harvest goals when salmon runs are below average. The schedule directs subsistence fishing as follows:

Geographic Area/District	Opening	Schedule to begin
Coastal District	7 days/week	by regulation
District 1	two 36-hour periods	May 30, 2005
District 2	two 36-hour periods	June 1, 2005
District 3	two 36-hour periods	June 3, 2005
District 4-(A,B,C)	two 48-hour periods	June 12, 2005 (depending on sub-district)
Subdistrict 5-A	two 42-hour periods	June 21, 2005
Subdistricts 5-B, C	two 48-hour periods	June 21, 2005
Subdistrict 5-D	7 days/week	by regulation
District 6	two 42-hour periods	by regulation
Old Minto Area	5 days/week	by regulation
Koyukuk River	7 days/week	by regulation
Upper Tanana	7 days/week	by regulation

Subsistence fishing is allowed 7 days per week in all areas prior to the established schedule dates. In 2003, the BOF clarified the windows schedule to allow the Department to relax the schedule if run abundance allows for commercial fishing. 2005 marked the fifth year of implementing the window schedule. Preseason outlooks for 2005 indicated that the Chinook run would be similar to or slightly weaker than the 2004 run, but would still provide for escapement, subsistence, and some commercial opportunity. Early run assessment projects indicated a slightly stronger run than was anticipated and enough salmon to allow for a small commercial harvest. Once commercial fishing was opened, the subsistence schedule reverted to the pre-2001 fishing schedule chronologically upriver—7 days a week, 24 hours a day,

except for 18 hours prior to, during, and 12 hours after commercial openings. Thus, in 2005, just as in 2003 and 2004, the windows schedule was relaxed for most parts of the river for at least a portion of the summer season (Busher et al. *in prep*).

Regulation and management of Yukon river drainage subsistence salmon fishing follows the Yukon River Drainage Subsistence Salmon Fishery Management Protocol, which provides a framework for coordinated subsistence fisheries management between Alaska Department of Fish and Game and the Federal subsistence management programs in the Yukon river drainage. This protocol falls under the umbrella Memorandum of Agreement between the State and Federal Agencies, formalizes the working relationships between State and Federal managers, and fosters cooperation with regional advisory councils and fisheries interest groups. State managers are responsible for management of State subsistence, commercial, recreational, and personal use fisheries in all waters. Federal managers are responsible for management of subsistence fishing by qualified rural residents in applicable Federal waters. The protocol also directs state and Federal managers to work with the Yukon River Drainage Fisheries Association (YR DFA), the Yukon River Coordinating Fisheries Committee (YRCFC), and other affected public to solicit input to the decision-making process.

On May 31, 2005, during the Yukon River Salmon In-Season Management Teleconference sponsored by YR DFA and funded by USFWS, Office of Subsistence Management and the Yukon River Panel, USFWS staff reviewed new regulations regarding the Subdistrict Y-4B & C drift gillnet fishery established by the Federal Subsistence Board. This new federal subsistence fishery occurred between June 10 and July 14, 2005 during the last 18 hours of the each subsistence salmon fishing opening in the federal public waters of Subdistricts 4B and 4C, which includes the mainstem Yukon River villages of Galena and Ruby. Participation in this new fishery was open to qualified rural residents under a federal subsistence permit, limited to 150 ft length and 35 mesh deep drift gillnets with unrestricted mesh size to target Chinook salmon.

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, post-season 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), the upper portion of Subdistrict 5-D between the upstream mouth of Twenty-two Mile Slough and the U.S. - Canada border, the Rampart Area (western end of Garnet Island to the mouth of Hess Creek), and the Middle and South Fork area of the Koyukuk River, subsistence fishers are required to obtain an annual household permit prior to fishing. These last 2 areas are new regulations since 2004. In these areas, fishers 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 mailed to those households for which fishing activity is unknown and are also made available to households upon request from ADF&G offices in Emmonak and Fairbanks. The calendars provide space for fishers to record their daily subsistence catch of salmon by species. Calendars are postage paid and can be mailed back to ADF&G, or surveyors who travel through villages following the completion of salmon fishing activities pick them up. Posters sent to village post offices and announcements on local radio stations remind fishers to have their calendars available for pick up by surveyors. In 2005, the Department distributed calendars to all households identified as participating in some level of fishing; households previously identified as non-fishing households did not receive calendars. An estimated 853 calendars were sent to Lower Yukon households, and 542 calendars were sent to Upper River households for a total of 1,395 calendars. About 23% of these (326) were either returned to the department by mail or picked up by surveyors during their fall surveys. Calendars provide additional run timing information for most Yukon Area communities that is not obtained by any other data collection method.

In addition to the harvest calendars, ADF&G's Division of Commercial Fisheries personnel conduct post-season personal interviews with a stratified random sample of all 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 road-accessible portions of the Yukon river drainage (see area description above), a subsistence permit is required. Subsistence fishers 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 several ADF&G offices or by mail throughout the season. Fishers are required to keep a record of their daily fish harvest on their permit and return it to the department within 10 days of the expiration date on the permit. Permit holders who do not send in their information are sent up to 2 reminder letters. Telephone contacts with households that do not respond to the reminder letters are attempted as a final measure.

Subsistence salmon permit holders in a portion of Subdistrict 6-B (the Tanana River drainage above a point three miles upstream of Totchaket Slough to the boundary with 6-C) and the personal use fishers in Subdistrict 6-C are required to report their harvests weekly for in-season management purposes. To maximize the return of permits, ADF&G staff also send reminder letters to these households. A total of 464 subsistence and personal use permits were issued in 2005, and 424 [355 subsistence (91%) and 69 personal use (95%)] were returned (Busher et al., *in prep*). Most unreturned permits are considered to have not been fished, as subsistence fishing households are not eligible to receive a permit the following year until the previous year's permit is returned.

In 2005, 1,022 households were interviewed concerning their subsistence salmon harvests and 355 subsistence and 69 personal use permits were returned. Based on these different methods of collecting harvest data, it was estimated that approximately 1,479 Yukon Area households participated in subsistence and personal use fishing in 2005 (Busher et al., *in prep*).

SUBSISTENCE SALMON HARVESTS IN 2005

In 2005, 1,022 households (46% of the total households in Districts 1-5), 355 subsistence permit holders (91% of the 391 issued), and 69 personal use permit holders (95% of the 73 issued) provided harvest data for the Yukon Area subsistence/personal use salmon fishery (Busher et al., *in prep*). The estimated 2005 subsistence/personal use salmon harvest for the entire Yukon Area broken down by species included 53,547 Chinook (20%), 93,411 summer chum (35%), 91,667 fall chum (34%), 27,357 coho (10%), and 3,132 pink (1%), for a total estimate of 269,114 salmon (Table IV-1; Figure IV-2). (Note that this is an estimated total based on household surveys and returned permits and calendars, and it includes subsistence harvests, personal use harvests, commercial harvests retained for home use, and fish distributed from ADF&G test fisheries.) Since the disastrous harvest levels in 2000 (152,300 total salmon), subsistence Chinook and coho salmon harvests have unsteadily increased while fall chum salmon harvests have rebounded significantly. The 2005 harvest estimates registered above the recent 5-year averages for all species, except the Chinook salmon harvest estimate, which was only 144 fish below the 5-year average. The estimated harvests for all species registered above the most recent 10-year averages. Nonetheless, while summer chum and fall chum salmon estimated harvests are increasing, they still show considerable declines compared to harvests averaged for the last 2 decades. While low salmon abundance in 2001 closed commercial fishing in the Alaska portion of the Yukon river drainage, a small commercial fishery for Chinook and summer chum has been offered in every year since, including 2005, and a small commercial fishery for fall chum and coho salmon was offered in 2003, 2004, and 2005.

As shown in Table IV-2, the estimated subsistence and personal use harvest of 53,547 Chinook salmon in 2005 is above the most recent 10-year Yukon Area average of 51,273 Chinook salmon, though it fell just below the most recent 5-year average of 53,691 Chinook salmon. The estimated 2005 subsistence harvest of 93,411 summer chum salmon, the highest estimated harvest since 1997, was above both the most recent 5 and 10-year averages (83,323 and 89,860 respectively). In general, however, summer chum salmon harvests continue to fall well below earlier years when there was a commercial salmon roe fishery in the middle and upper river. The fall chum salmon harvest of 91,667 is also a marked increase in harvests since 1997 and registers well above both the most recent 5-year average of 54,113 fall chum salmon and the 10-year average of 66,069 fall chum salmon, which reflect multiple years of poor returns and harvests. It should be noted that regulatory restrictions were imposed on fishers to protect fall chum salmon stocks due to these poor returns in 1998 and 2000 through 2003. While 2005 harvests of fall chum salmon climbed significantly from earlier years' estimates, comparison with average fall chum salmon harvest for all years begins to show the true magnitude of the harvest decline in this fishery between 2000 and 2003; the average harvest of fall chum salmon between 1976 and 2005 was 119,176 fish (see also Figure IV-3).

Subsistence harvests of coho salmon in 2005 were slightly above average at 27,357 compared to the recent 5-year average of 23,459 coho salmon and the most recent 10-year

average of 22,640 coho salmon. Pink salmon harvest information is collected in several communities in the Lower 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 remained low until 2002 (8,425 fish).⁹ An estimated 3,132 pink salmon were harvested in 2005, primarily harvested by communities in the coastal district.

Every year, various environmental or social factors affect the subsistence fishery. In 2004, for example, continuous offshore winds near Hooper Bay interfered with subsistence harvests for those fishermen, while unprecedented forest fires and smoke throughout Interior Alaska interfered both with residents' ability to fish and drew some village residents away from fishing activities as part of fire-fighting crews (Lingnau and Salomone 2004). In 2005, the Yukon River was free of ice by May 17, approximately 5 days earlier than the average since 1979 (Busher et al. *in prep*).

Figure IV-4 provides a breakdown of number of dogs by fishing district. Of the estimated 1,664 households (drainage wide) owning dogs, about 15% (234 households) are estimated to have fed their dogs whole salmon in 2005. Of the 5,984 dogs owned by fishing households, about 73% (4,350 dogs) were owned by households in the upper Yukon River, which includes Districts 4, 5, and 6 (Busher et al., *in prep*). In 2005, the Division of Commercial Fisheries collected species-specific information on the number of salmon retained for dog food from subsistence harvests. In Districts 1 through 5, an estimated 13,797 summer chum, 28,532 fall chum, and 3,165 coho salmon were retained for dog food from subsistence salmon harvests. An additional 35,495 whole salmon were fed to dogs by permit holders, including those users in District 6¹⁰, Rampart, Central, Circle, Eagle. According to ADF&G, Division of Commercial Fisheries data, 667 summer chum salmon, 211 fall chum salmon, and 5 coho salmon were retained from commercial-related harvests and used as dog food.

Primary gear types used by fishing households in surveyed villages in 2005 included set gillnet (53%), drift gillnet (39%), and fish wheel (8%) (Busher et al., *in prep*). Figure IV-5 provides a breakdown of the subsistence salmon harvest gear types.

Since 1992, ADF&G has inquired as to whether surveyed households were meeting their subsistence salmon needs for that year. The disastrous fishing year in 2000 resulted in restrictions and closures in subsistence salmon fishing schedules and made it extremely difficult for fishing families to meet their needs (64% of surveyed households reported not meeting their needs in 2000.) In 2003, ADF&G began asking this question in a species-specific manner, measuring responses by community and by species. Specifically, surveyed households were asked whether 100%, 75%, 50%, or 25% or less of their harvest needs were met for each species. A "0%" and "no need" checkbox were added to the 2005 survey in order to distinguish those who had a need but had no success in harvesting a species from those who had no need and therefore did not harvest any fish. According to 2005 data, 64%

⁹ Note that pink salmon cycle in their abundance; even years generally yield higher abundance with higher harvest rates, while odd years generally yield lower abundance in the river. In some years, pink salmon do make up an important part of the subsistence catch when other preferred salmon species are less available.

¹⁰ Some District 6 users, specifically residents of the Fairbanks North Star Borough, may harvest salmon from the Yukon Bridge permit area rather than from the Tanana River drainage.

of all households reported meeting greater than 75% of their needs for Chinook salmon, 64% reported meeting greater than 75% of their needs for summer chum salmon, and 58% and 50% reported meeting greater than 75% their needs for fall chum salmon and coho salmon respectively. However, 18% of all surveyed households reported meeting less than 25% of their needs for Chinook salmon, 17% for summer chum salmon, 30% for fall chum salmon, and 33% for coho salmon.¹¹

In 1993, the Board of Fisheries (BOF) made a positive finding for Customary and Traditional Use for all salmon in the Yukon-Northern Area. The Amount Reasonably Necessary for Subsistence Use determination (ANS) was established at 348,000-503,000 salmon for all species combined. Since 1990, the overall total subsistence salmon harvest in the Yukon Area has declined by approximately 30%. Under this regime, 1992 marked the last year when total subsistence salmon harvests fell within the combined ANS range. In 2001, the BOF broke this figure down by species. A species-specific ANS range provides one index for measuring the extent to which reasonable opportunity was provided in the subsistence fishery. Harvests below the lower bound of the ANS range may indicate, with other evidence, that there was not a reasonable opportunity for subsistence uses during the previous season. Harvests consistently lower than the lower bound of the ANS are an indication to the BOF to consider whether additional management actions are necessary to provide reasonable subsistence opportunities. It is important to note that 2005 marks the first year that the harvests of all species were within their respective ANS ranges. See Table IV-3 for a comparison of ANS ranges and recent years' subsistence salmon harvests.

¹¹ See Busher et al. *in prep* for more detailed information on this break-down by community and species in 2005.

Table IV-1.—Estimated subsistence salmon harvests by community, Yukon Area, 2005.

COMMUNITY	HOUSEHOLDS / PERMITS		ESTIMATED SALMON HARVEST ¹					TOTAL SALMON
	TOTAL INCLUDED		SUMMER		FALL	COHO	PINK	
			CHINOOK	CHUM	CHUM			
Alakanuk	123	51	860	5,687	627	322	49	7545
Alatna	5	4	0	5	0	0	0	5
Allakaket	43	16	68	2,535	557	205	0	3365
Anvik	34	30	1,206	529	497	406	0	2638
Beaver	29	24	957	68	179	0	0	1204
Bettles	19	13	3	4	50	0	0	57
Birch Creek	8	3	131	0	0	0	0	131
Central	7	7	175	5	36	1	0	217
Chalkyitsik	26	19	53	0	337	0	0	390
Circle	24	17	1,283	3	918	100	0	2304
Eagle	46	46	2,566	235	17,356	15	0	20172
Emmonak	162	80	1,730	12,594	1,436	191	54	16005
Fairbanks	226	209	3,693	977	8,506	3,149	0	16325
Fort Yukon	150	57	3,591	67	8,088	394	0	12140
Galena	150	46	2,864	1,013	2,695	607	0	7179
Grayling	45	18	1,878	783	1,009	234	3	3907
Healy	7	7	0	14	2,061	1,601	0	3676
Holy Cross	51	31	2,817	760	582	84	0	4243
Hooper Bay	196	67	157	9,771	1	0	860	10789
Hughes	22	17	33	2,230	111	20	0	2394
Huslia	68	26	207	2,433	1,614	734	0	4988
Kaltag	53	18	3,367	680	1,089	307	4	5447
Kotlik	82	33	2,130	6,620	516	222	155	9643
Koyukuk	23	18	396	537	803	37	0	1773
Manley Hot Springs	14	13	289	163	2,985	2,510	0	5947
Marshall (Fortuna Ledge)	69	30	1,804	3,183	633	341	6	5967
Minto	53	48	35	21	600	0	0	656
Mountain Village	135	58	2,383	8,861	1,290	246	78	12858
Nenana	29	26	533	1,771	10,594	12,395	0	25293
Nulato	82	30	2,749	634	421	60	0	3864
Nunam Iqua (Sheldon Point)	33	23	338	2,794	310	241	132	3815
Pilot Station	94	52	1,658	4,333	838	241	0	7070
Pitka's Point	24	20	618	1,023	6	30	2	1679
Rampart	6	5	411	315	358	10	0	1094
Ruby	59	17	1,193	967	559	361	0	3080
Russian Mission	56	20	1,894	925	667	133	0	3619
Saint Marys (Andreafsky)	104	49	2,693	6,877	490	252	144	10456
Scammon Bay	78	30	691	4,586	69	279	1,645	7270
Shageluk	29	22	420	4,081	55	0	0	4556
Stevens Village	31	20	1,570	442	246	0	0	2258
Tanana	98	51	3,729	4,832	20,545	1,616	0	30722
Venetie	56	23	59	0	1,801	0	0	1860
Other Communities	13	12	315	53	132	13	0	513
Totals	2,662	1,406	53,547	93,411	91,667	27,357	3,132	269,114

¹Includes subsistence harvests, personal use harvests, commercial harvests retained for home use, and fish distributed from Alaska Department of Fish and Game test fisheries.

SOURCE: Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report: Subsistence and Personal Use Salmon Harvests in the Alaska Portion of the Yukon River Drainage, 2005, Tables 1, 3 and 7. Preliminary results as of Oct 23, 2006.

Table IV-2.—Estimated historic subsistence salmon harvests, Yukon Area, 1975-2005.

YEAR	HOUSEHOLDS / PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	TOTAL	INCLUDED	SUMMER		FALL	COHO	PINK	
			CHINOOK	CHUM	CHUM			
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
2001	3,072	1,355	56,103	72,392	36,164	23,236	403	188,298
2002	2,775	1,254	44,384	87,599	20,140	16,551	8,425	177,100
2003	2,850	1,377	56,872	83,802	58,030	24,866	2,167	225,737
2004	2,721	1,228	57,549	79,411	64,562	25,286	9,697	236,506
2005	2,662	1,406	53,547	93,411	91,667	27,357	3,132	269,114
5-Year								
Average	2,816	1,324	53,691	83,323	54,113	23,459	4,765	219,351
10-Year								
Average	2,886	1,328	51,273	89,860	66,069	22,640	4,236	232,383
All Years								
Average	2,805	1,331	43,811	162,533	119,176	28,283	4,236	335,050

SOURCE: Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report: Subsistence and Personal Use Salmon Harvests in the Alaska Portion of the Yukon River Drainage, 2005, Tables 1, 3 and 7. Preliminary results as of Oct 23, 2006.

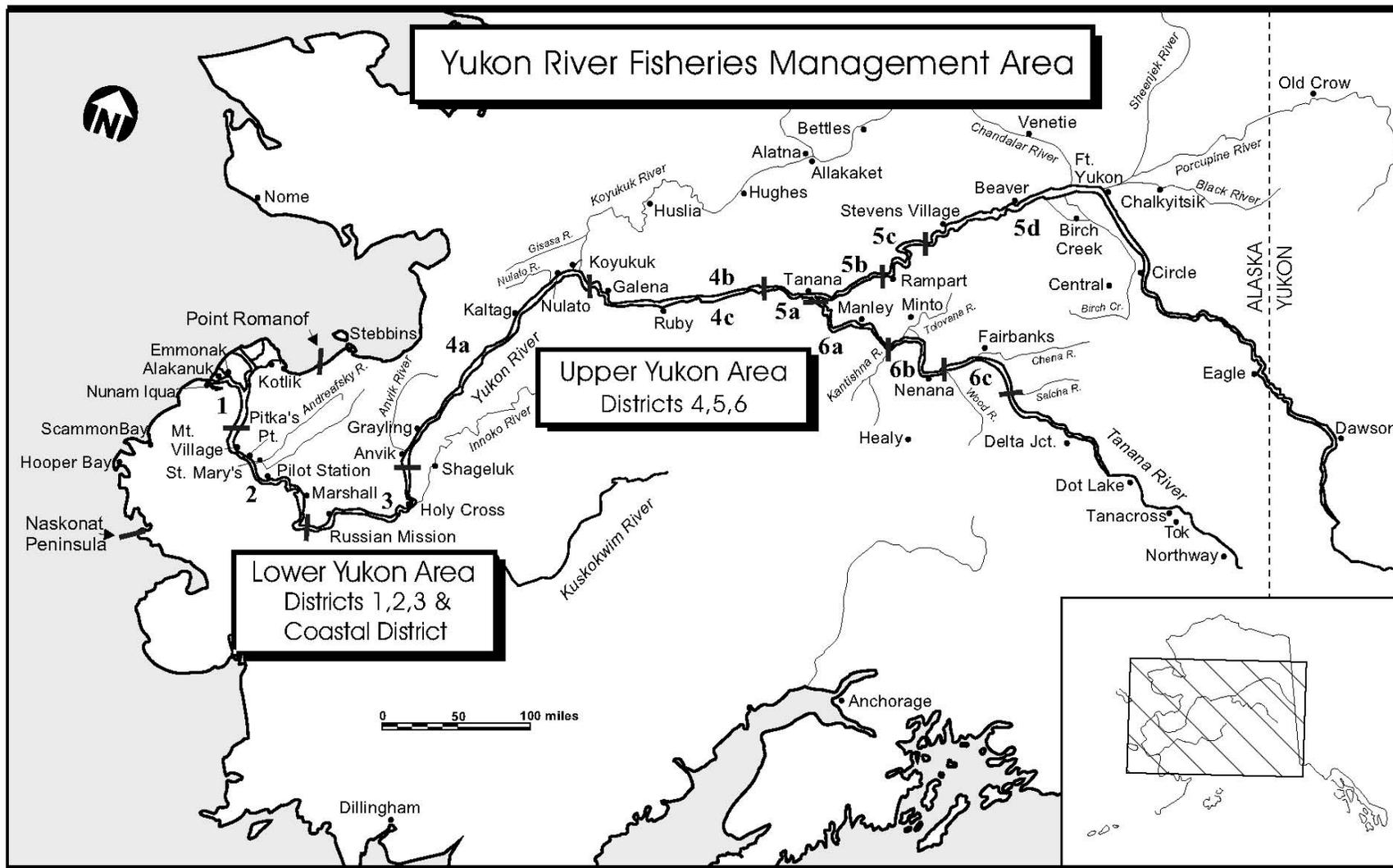
Table IV-3.—Comparison of amounts necessary for subsistence (ANS) and estimated subsistence salmon harvests, Yukon Area, 1998-2005.

		Estimated Number of Subsistence Salmon Harvested ¹			
		Chinook	Summer Chum	Fall Chum	Coho
Year \ ANS ²		45,500-66,704	83,500-142,192	89,500-167,900	20,500-51,980
1998		52,910	81,858	59,603	16,606
1999		50,711	79,348	84,203	20,122
2000		33,896	72,807	15,152	11,853
2001		53,462	68,544	32,135	21,977
2002		42,117	79,066	17,908	15,619
2003		55,221	78,664	53,829	22,838
2004		55,102	74,532	61,895	24,190
2005		53,409	93,259	91,534	27,250

¹ Estimates for 1998-2004 do not include personal use harvests, ADF&G test fishery distributions, or salmon removed from commercial harvests. Estimates for 2005 include test fishery distributions because the Amounts Necessary for Subsistence are based on harvests from 1990-1999 and included test fishery distributions. Shaded cells indicate harvest amounts are below the minimum ANS.

SOURCE: 2005 harvest data is from the Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report: Subsistence and Personal Use Salmon Harvests in the Alaska Portion of the Yukon River Drainage, 2005. Appendices B1-B4. Preliminary results as of Oct 23, 2006.

Figure IV-1.—Map of the Alaskan Portion of the Yukon River Drainage showing communities and districts.



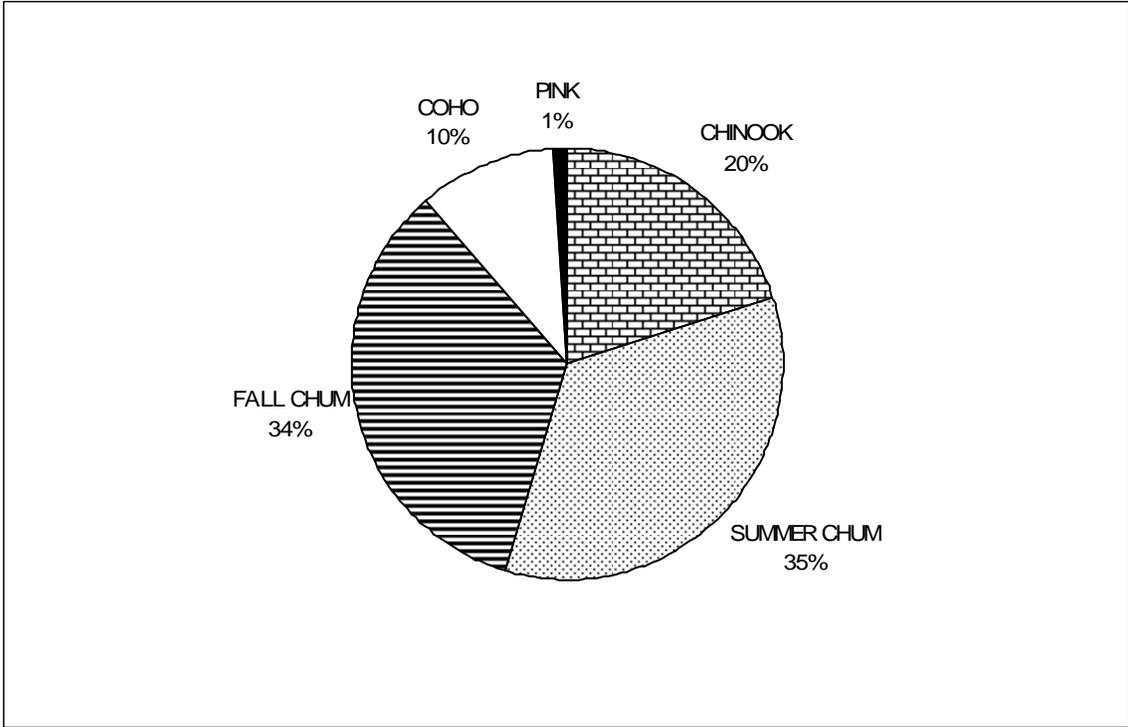


Figure IV-2.–Yukon Area estimated subsistence salmon harvests, 2005.

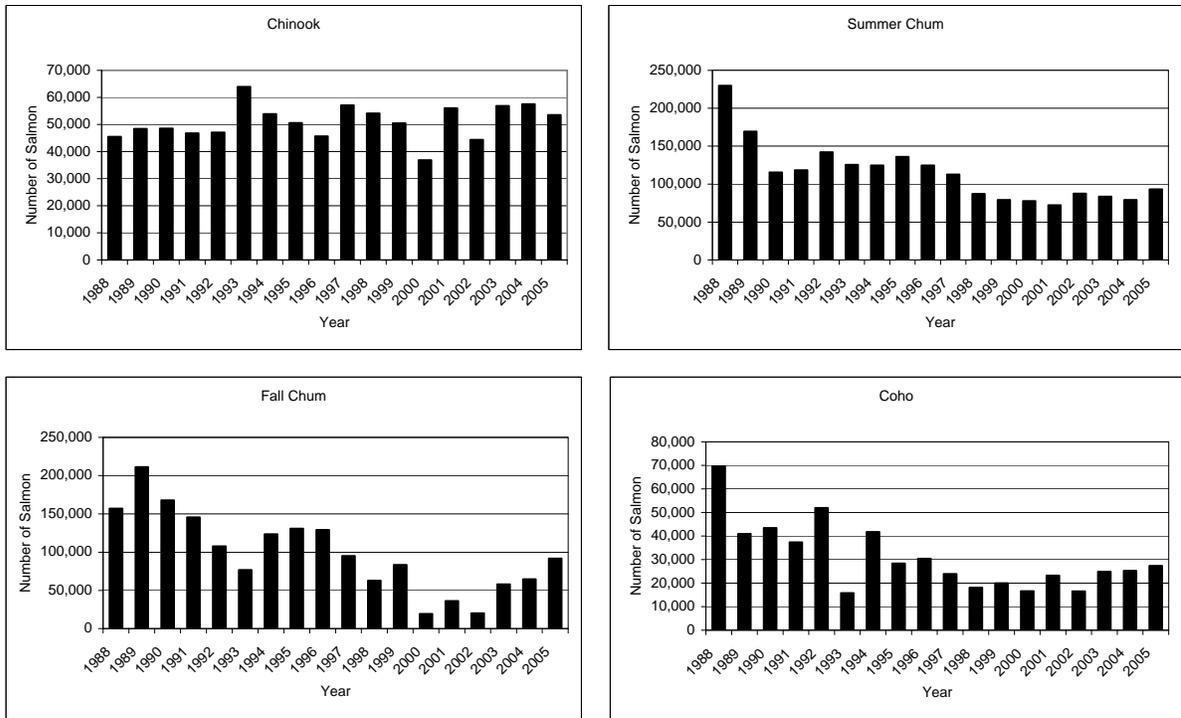


Figure IV-3.–Estimated subsistence salmon harvests by species, Yukon Area, 1988-2005.

V. KUSKOKWIM AREA

BACKGROUND

The Kuskokwim Area subsistence salmon fishery is one of the largest in the state. From June through August, the daily activities of many Kuskokwim Area households revolve around harvesting, processing, and preserving salmon for subsistence use. The movement of families from permanent winter residences to summer fish camps situated along rivers and sloughs continues to be a significant element of the annual subsistence harvest effort. Alaska Department of Fish and Game (ADF&G), Division of Subsistence studies in the region indicate that fish contribute as much as 85% of the total pounds of fish and wildlife harvested in a community, and salmon contribute as much as 53% of the total annual harvest (Coffing 1991). The harvest of salmon for subsistence use is as much as 650 pounds per capita in some Kuskokwim River communities.

For the 15-year period from 1989 through 2003, an estimated annual average of 1,443 households participated in the Kuskokwim Area subsistence salmon fishery (Simon et al. 2007). Many households not directly involved in catching salmon assist family and friends with cutting, drying, smoking, and associated preservation activities (salting, canning, and freezing). Annual subsistence surveys are aimed at gathering harvest data on Chinook, chum, sockeye, and coho salmon.

There are 38 communities consisting of approximately 4,597 households within the Kuskokwim Area. The majority (76%) of the households are situated within the Kuskokwim river drainage. Bethel is the largest community in the region, consisting of approximately 1,739 households. The north Kuskokwim Bay communities of Kwigillingok, Kongiganak, and Kipnuk are comprised of about 357 households. North Kuskokwim Bay subsistence fishers harvest salmon in the Kuskokwim River as well as from areas closer to their communities. Residents of Quinhagak, Goodnews Bay, and Platinum, located along the south shore of Kuskokwim Bay (approximately 220 households), harvest salmon primarily from the Kanektok, Arolik, and Goodnews river drainages. The Bering Sea coast communities of Mekoryuk (on Nunivak Island), Newtok, Tununak, Toksook Bay, Nightmute, and Chefornak are composed of approximately 514 households. Subsistence users from these communities harvest salmon from coastal waters as well as local tributaries.

REGULATIONS

Statewide eligibility criteria require individuals to be Alaskan residents for the preceding 12 months before harvesting salmon for subsistence use. Prior to 1990, there were additional restrictions on participation in the subsistence fishery, described in earlier Kuskokwim Area annual management reports. Most subsistence salmon fishers in the region are Kuskokwim Area residents, but some who are domiciled in other parts of Alaska often return to assist family or friends to harvest or process salmon.

Licenses and permits have never been required for subsistence salmon fishing in the Kuskokwim Area, nor were any required during 2005. Hook and line fishers upstream of the Doestock River on the Aniak River had a combined daily bag limit of 6 fish, no more than 3 of which could be salmon. Otherwise, there were no restrictions on the number of salmon harvestable by individual fishers or households for subsistence uses in the Kuskokwim Area. Salmon could be harvested for subsistence use by set and drift gillnets, beach seines, fish

wheels, and rod and reel. Spears could only be used in the Holitna, Kanektok, Arolik, and Goodnews river drainages. Set or drift gillnets in use by individual fishers could not exceed a total length of 50 fathoms. Gillnets used for harvesting salmon could be of any size mesh, however nets with 6-inch or smaller mesh could not be more than 45 meshes deep, and nets with mesh greater than 6 inches could not be more than 35 meshes deep. Fishers were required to have their names and addresses attached to their gillnets and fish wheels.

Subsistence Salmon Fishing Schedule

Following declines in Chinook and chum salmon returns to the Kuskokwim River since 1997, and in anticipation of poor returns in 2001, the Alaska Board of Fisheries (Board) designated both as stocks of concern (specifically, yield concerns) under the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222) in September of 2000. To guide the Department in the management of these stocks of concern, the Board replaced the Kuskokwim River Salmon Management Plan in January 2001 with the Kuskokwim River Salmon Rebuilding Management Plan (Rebuilding Plan) (5 AAC 07.365). Under the Rebuilding Plan, Kuskokwim River salmon stocks were to be managed conservatively for the months of June and July.

The Rebuilding Plan provides direction for implementing a subsistence fishing schedule. The fishing schedule allows salmon net (with mesh size greater than 4 inches) and fish wheel fisheries to be open for 4 consecutive days per week in June and July as announced by Emergency Order (EO) and implemented in a method that follows salmon run-timing in a step-wise progression upstream. The subsistence fishing schedule is alterable, based on run strength, by EO in a manner to achieve escapement goals. Once escapement goals are assured for Chinook and chum salmon, subsistence fishing can be allowed 7 days per week.

The Department polled the communities throughout the Kuskokwim river drainage in 2001 for guidance on which 3 days would be the most desirable for the subsistence fishing closures. Based on community response, the recommendation of the Kuskokwim River Salmon Management Working Group (Working Group) was to have the Kuskokwim River closed to subsistence net and fish wheel fisheries Sunday, Monday, and Tuesday. Subsistence fishing with rod and reel was not included in this schedule nor were other Kuskokwim Area salmon fisheries.

In 2005, the Kuskokwim River subsistence salmon fishing schedule began June 5 in District 1 (all waters downstream of Bogus Creek). On June 12, the schedule was expanded to all waters downstream of Chuathbaluk. There were no subsistence-fishing restrictions upstream of Chuathbaluk. Also some non-salmon tributaries in the lower and middle Kuskokwim river drainages were not affected by this schedule nor were waters outside of the Kuskokwim drainage. The Department and federal managers, in consultation with the working group, established a 7-day per week subsistence fishing schedule on June 19 when salmon run strength was anticipated to be large enough to meet escapement goals. There were no subsistence-fishing restrictions upstream of Chuathbaluk. Also some non-salmon tributaries in the lower and middle Kuskokwim river drainages were not affected by this schedule nor were waters outside of the Kuskokwim drainage.

Subsistence Closures during the Commercial Fishery

Areas within commercial salmon fishing districts were closed to subsistence salmon net and fish wheel gear 6 hours before, during, and 3 hours after commercial fishing periods as described in 5 AAC 01.260. Many of the fishers that participate in the Kuskokwim commercial fisheries are local residents who subsistence fish. The purpose of these closures was to discourage illegal fishing activity such as the sale of subsistence caught salmon in the commercial fishery.

SUBSISTENCE SALMON HARVEST ASSESSMENT METHODS

Data on the harvest of salmon for subsistence uses are collected annually. The Division of Commercial Fisheries began conducting subsistence salmon harvest surveys in the Kuskokwim River drainage in 1960. Subsistence surveys were first performed in Quinhagak in 1967, while Goodnews Bay and Platinum surveys were initiated in 1979. The Division of Subsistence took over the annual subsistence salmon harvest surveys in 1988 and has been responsible for collecting and analyzing the data since then. During the early survey years, prior to 1985, subsistence salmon catch data were grouped into 2 primary categories: “king salmon” and “small salmon.” The survey was further refined in 1988 to collect harvest data for each individual salmon species, except pink salmon.

Households in the Kuskokwim area are assigned a “household identification number” (HHID) to aid in tracking of an individual family’s subsistence harvest over time. To aid community harvest estimation, households are stratified into 2 groups: (1) those that “usually fish” and, (2) those that “usually do not fish.” In 2005, 2 methods were used to gather subsistence salmon harvest data in the Kuskokwim Area. These include subsistence salmon harvest calendars and post-season community household surveys.

Harvest Calendars

In June 2005, subsistence salmon harvest calendars were mailed to all Kuskokwim Area households that had been identified as “usually fish” and to those that fished the previous season. The harvest calendars were designed to record the daily catch of each salmon species harvested for subsistence use. In contrast to previous years, all Kuskokwim Area communities received the same style of calendar. The calendars were mailed to post office boxes when addresses were available; otherwise, calendars were sent via general delivery to the post office clerk for distribution. Each calendar was postage paid and return addressed to the Division of Subsistence office in Bethel. Subsistence salmon harvest calendars were mailed to 3,092 households.

Household Surveys

The primary method of collecting subsistence salmon harvest information is the post-season household surveys. Survey staff travel to communities in the Kuskokwim Area and perform house-to-house interviews, surveying residents about their subsistence fishing. Again, in contrast to previous years, the same survey instrument was used for all communities in 2005.

Division of Subsistence staff conducted house-to-house surveys in 23 communities in 2005. Budget constraints precluded attempts to conduct house-to-house surveys in Mekoryuk, Newtok, Tununak, Tooksook Bay, Nightmute, and Chefornek, as well as Lime Village, Stoney

River, McGrath, Takotna, Telida, and Nikolai. Kipnuk, Kwigillingok, and Kasigluk have not consented to allow surveys to be conducted in their villages.

Through funding administered from the USFWS Office of Subsistence Management (OSM), Orutsararmiut Native Council (ONC) hired 2 survey technicians to conduct house-to-house surveys in Bethel and Kuskokwim Native Association (KNA) hired 2 technicians to conduct house-to-house surveys in Aniak. The Division of Subsistence trained the hired technicians for both organizations and oversaw their survey efforts. Data collected by both ONC and KNA followed methods and protocols developed by the Division.

Survey efforts in Kuskokwim area communities occurred over a 2-month time span beginning in early October. This is when most residents have completed salmon fishing for the season and when most subsistence users have returned from fall moose and caribou hunts. Communities where residents usually harvest salmon through October were surveyed in November. Prior to beginning community surveys, efforts were made to inform and prepare residents for the arrival of survey staff. This was done weeks or days in advance via letters to city, tribal, or traditional council offices, radio announcements and posters placed in public buildings, and telephone calls to community officials. Prior to traveling to each community, staff identified households that had already mailed in or returned their salmon harvest calendars. Time spent by survey staff on house-to-house interviews varied from one-half to 2 days per community, depending on community size.

Upon arrival in a community, the survey staff introduced themselves to city or village council officials and outlined their task. Staff used household checklists to identify residents they needed to contact for household surveys. Each checklist contained a listing of all known households in the community and identified those households that were reported to have subsistence fished for salmon the previous year (2004). Each checklist also indicated which households were mailed 2005 harvest calendars. Knowledgeable individuals in the community helped staff update the community household list and identify which households “usually fish” and which households “usually do not fish.” These individuals also helped identify households that subsistence fished for salmon in 2005. Attempts were made to contact all households identified as “usually fish” or known to have fished during 2005.

In Bethel, a new geographically-based random sampling method, which aimed to survey 25% of the Bethel households, was implemented, based on recommendations from the USFWS, Office of Subsistence Management, and the Information Management group within the Division of Subsistence of ADF&G, in an effort to reduce harvest monitoring costs. City maps developed by the Bethel Fire Department and last updated in 2004 were ground-truthed by ONC survey staff during the last 2 weeks of October. Computer Assisted Drafting (CAD) files of the same maps were converted into GIS layers, the 2005 changes to the maps were digitized into feature data sets, and the 2004 maps were digitally updated by ADF&G Division of Subsistence. The City of Bethel was then divided into 11 subdivisions, based on logically distinct geographic divisions. The subdivisions were overlaid with the updated city maps and a computer-generated random sample of 25% of households in each subdivision was created. An additional computer generated random sample of 5% of remaining households was drawn to provide alternate households for surveyors in the case of inability to contact selected households or households who declined to participate. Each of the 2 ONC survey staff was then assigned specific subdivisions and the corresponding list of selected

households that they were to survey. Surveys were conducted in Bethel throughout November.

Completed subsistence salmon harvest calendars that had not been returned to the Department were collected during the interview if available. Other households on the community list were contacted about their subsistence fishing activities if time permitted. In 2005, 1,585 Kuskokwim Area households were surveyed.

2005 SAMPLING SUMMARY

From an estimated 4,597 households located in the Kuskokwim Area, contact was made with 1,642 by household surveys and/or returned calendars (Table V-1). From this total, harvest data were obtained for 1,126 households (i.e. households that fished; and households that did not fish, but processed salmon that were not included in the reported harvests of fishing households); community harvest estimates were expanded from this data set, except in communities where less than 30 households or less than 50% of all households were contacted, the reported harvest was used as the harvest for the community (no expansion to noncontacted households occurred). From the 1,126 households that Division of Subsistence had information for, 1,009 (22% of the total area households) were identified as having subsistence fished for salmon in 2005 (although specific harvest numbers were not available for all fishing households). The subsistence harvest estimate for the management area is the sum of totals for each community (see Appendix A for more detail on data analysis procedures). The management area total should be viewed as a minimum estimate because it is based on estimated (expanded) harvests for some communities and reported harvests for other communities with small samples or low sampling fractions, and because no harvest data are available for those communities in which no households were contacted.

Within the Kuskokwim river drainage (including north Kuskokwim Bay communities), 1,437 (41%) of the 3,506 households were contacted. This region contains 76% of the estimated total households in the Kuskokwim Area and 86% of the identified subsistence-fishing households.

In the south Kuskokwim Bay region (Quinhagak, Goodnews Bay, and Platinum), 165 (75%) of the 220 households were contacted. One hundred eight households (49%) subsistence fished in 2005. Sixty-five percent of the contacted households harvested salmon in 2005 for subsistence use.

The Bering Sea coast communities of Mekoryuk, Newtok, Nightmute, Toksook Bay, Tununak, and Cheforak have an estimated 514 households. No communities in the Bering Sea Coast region were surveyed house-to-house by department staff. Subsistence salmon fishing data from these coastal communities were obtained only from calendar returns. Seven households in this region provided information, and all reported harvesting salmon. Based on previous years' data, participation in salmon harvest activities by households in the Bering Sea coast communities is believed to be much greater than reported.

Three percent (105) of the 3,092 subsistence salmon calendars that were mailed in 2005 were returned or picked up during household surveys.

2005 SUBSISTENCE SALMON HARVEST SUMMARY

A summary of the subsistence salmon harvest estimates by community and fishing area is presented in Table V-2. In 2005, subsistence salmon harvest estimates for communities

contacted in the Kuskokwim Area totaled 74,354 Chinook (39%), 48,396 chum (25%), 37,003 sockeye (19%), 29,963 coho (16%), and 1,303 pink (1%) (Fig. V-1), for a grand total estimate of 191,019 salmon. As noted in the sampling summary section, above, these are minimum estimates because no households were contacted in some communities and, in others, too few households were contacted to produce an expanded community estimate. Subsistence harvests of all salmon species fell within or surpassed amounts necessary for subsistence (ANS) ranges set under 5 AAC 01.286.¹² Lower Kuskokwim River area communities (including Kongiganak) accounted for 80% of the 2005 subsistence salmon harvests in the Kuskokwim Area and 82% of the entire Chinook subsistence catch. Residents of Bethel accounted for 33% of the Kuskokwim Area subsistence harvests and 33% and 41% of all subsistence caught Chinook and coho salmon respectively.

Subsistence salmon harvests in the Kuskokwim Area in 2005 varied from previous years, with all harvests below recent averages. The estimated 2005 Chinook salmon subsistence harvest represents a decrease of 13% from 2004. The Chinook harvest was 10% below the 1989-2005 average; and 2% below the 5-year average (Table V-3). The 2005 chum salmon subsistence harvest estimate was 12% below the recent 5-year average and 16% below the recent 10-year average. However, it was still 35% below the 1989-2005 average. The 2005 sockeye salmon harvest estimate was 2% below the recent 5-year average and 7% below the recent 10-year average; it was 8% below the 1989-2005 average harvest. Coho salmon subsistence harvests were 14% and 9% percent higher than recent 5 and 10-year averages and 22% less than the 1989-2005 average.

As noted above, no household surveys took place in 6 upper Kuskokwim communities in 2005, and the effect of incomplete harvest data from these communities on the overall area estimated totals is an important question. In years for which harvest estimates are available for the 3 largest of these communities (McGrath, Nikolai, and Takotna), the harvest totals for 3 communities represented on average 1.7% of the management area total (Krauthoefer and Koster, in press). Thus, while of concern for assessment of subsistence salmon harvests in the upper Kuskokwim subarea, the lack of household surveys in this area likely does not have a major affect on the total area estimate.

On a regional level, in 2005, Chinook harvest estimates in the south Kuskokwim Bay communities decreased by about 16% from 2004. Lower Kuskokwim River communities (including Kongiganak) showed decreased Chinook harvests of 9%, middle Kuskokwim communities experienced a decrease in harvest of 19%. The 2005 chum salmon subsistence harvest was up for north Kuskokwim Bay by 34% and down for south Kuskokwim Bay by 45%, while lower and middle Kuskokwim River communities saw chum subsistence harvest increases of 44% and 50% from 2004. Combined sockeye salmon subsistence harvests declined by 6% from 2004. The south Kuskokwim Bay communities saw sockeye harvests vary little, while the middle Kuskokwim River communities saw sockeye harvest decreases of 27%. Lower Kuskokwim River communities, including Kongiganak harvests increased by 4% from 2004. Overall, coho salmon subsistence harvest estimates in the Kuskokwim

¹² ANS ranges are 64,500-83,000 Chinook, 39,500-75,500 chum, 27,500-39,500 sockeye, and 24,500-35,000 coho in the Kuskokwim River drainage and 7,500-13,500 salmon (all species combined) in the remainder of the Kuskokwim Area. The Alaska Board of Fisheries set ANS ranges based on the results of the harvest monitoring program described in this chapter.

Area were markedly decreased (47%). Lower and middle Kuskokwim River communities saw coho harvests decrease 43% and 57% respectively. However, south Kuskokwim Bay communities saw coho subsistence harvests increase by 30% from 2004.

Dog Food

Historically, the use of salmon for dog food was a significant portion of the overall subsistence salmon harvest, specifically for chum and coho. In recent years, the number of households harvesting salmon specifically for dog food has declined, likely due to decreased use of dog teams for transportation. During 2005, 54 households reported harvesting salmon specifically for use as dog food. The majority of the reported harvest for dog food was chum salmon at 4,071 fish, while coho salmon accounted for 1,240 fish, and sockeye contributed a reported 892. Households do not target Chinook salmon for dog food; however, some Chinook salmon unfit for human consumption may be fed to dogs so the fish is not wasted. It is common for most households to feed scraps, backbones, entrails, and salmon unfit for human consumption to their dogs. In 2005, 267 households responded that they fed scraps, backbones, and entrails to their dogs, but they did not harvest or put up any salmon specifically for dog food.

Gear Types

Subsistence fishing households often use more than one type of gear (i.e., set gillnet, drift gillnet, fish wheel, or rod and reel) when harvesting salmon (Table V-4). Households that harvested salmon were asked to provide information on the types of gear they used. During 2005, 750 households reported using drift gillnets for subsistence salmon harvests, 208 reported using setnets, and 204 reported using rod and reel. The most common gear type used throughout the Kuskokwim Area is the drift gillnet, which is the primary fishing gear used by households from Crooked Creek downstream to the coastal communities of Kuskokwim Bay. Set gillnets are also used throughout the Kuskokwim Area; however, upper Kuskokwim River communities report a higher percentage (34%) of households using set gillnets than south Kuskokwim Bay (28%), lower Kuskokwim River (20%), or middle Kuskokwim River (17%) communities.

Many households throughout the area also use rod and reel for subsistence fishing. Rod and reel is used by families who may not have access to other gear types, by fishers in areas where other gear types are not as effective or efficient, and to harvest fewer fish when less are sought. Bethel (17%), Kwethluk (21%), Aniak (81%), and Quinhagak (35%) all had a large percentage of subsistence fishing households reporting use of rod and reel in 2005.

Two households reported using fish wheel gear for harvesting subsistence salmon in 2005, one each in Bethel and Aniak. In Quinhagak, one household reported using spear gear to harvest subsistence salmon.

Salmon Retained from Commercial Fishing for Subsistence Use

Households involved in commercial salmon fishing sometimes keep a small portion of their catch for subsistence use, however the number of salmon retained from commercial fishing activities for subsistence is usually relatively low. During 2005, 48 households reported retaining commercially caught salmon for subsistence use. These harvests amounted to 83 Chinook, 275 chum, 195 sockeye, and 189 coho salmon.

OTHER FISH

Non-salmon harvest estimates have previously been provided for communities such as Kwethluk, Nunapitchuk, and Akiachak from community-based surveys conducted in the Kuskokwim region in the 1980s and 1990s, and for Bethel from 2001 through 2004. Additionally, the Division of Subsistence recently completed a 2-year non-salmon harvest assessment project for Aniak and Chuathbaluk, which was conducted in spring of 2002 and 2003. Subsistence herring surveys were conducted in the mid 1980s through the early 1990s in the Nelson Island region. These data are in the Community Subsistence Information System (ADF&G 2007). There were no non-salmon subsistence harvest monitoring projects conducted in 2005 as part of the post-season subsistence salmon harvest monitoring program.

Table V-1.—Harvest assessment sampling summary, Kuskokwim Area, 2005.

	Total	Calendar			Total	Subsistence	Harvest
	HH'S	Mailed	Returned	Surveyed	Contacts ¹	Fished ¹	Data ²
Kipnuk	175	7	0	0	0		
Kwigillingok	95	2	0	0	0		
Kongiganak	87	53	0	33	33	29	33
N. KUSKOKWIM BAY	357	62	0	33	33	29	33
Tuntutuliak	86	63	4	53	54	40	46
Eek	80	61	10	50	51	39	45
Kasigluk	129	11	0	0	0		
Nunapitchuk	115	76	5	74	76	53	57
Atmautluak	60	39	0	40	40	25	28
Napakiak	91	55	1	55	55	40	43
Napaskiak	89	49	3	56	56	40	45
Oscarville	13	11	1	8	8	7	7
Bethel	1,739	1,739	40	418	450	211	233
Kwethluk	163	114	4	121	123	78	90
Akiachak	134	98	2	80	81	59	66
Akiak	77	52	2	52	54	41	43
Tuluksak	83	65	3	57	58	37	41
LOWER KUSKOKWIM	2,859	2,433	75	1,064	1,106	670	744
Lower Kalskag	81	39	0	52	52	19	27
Kalskag (Upper)	64	40	5	41	42	26	29
Aniak	161	111	6	144	142	89	92
Chuathbaluk	39	18	1	28	30	17	17
MIDDLE KUSKOKWIM	345	208	12	265	266	151	165
Crooked Creek	30	26	1	23	23	16	19
Red Devil	12	8	0	9	9	5	5
Sleetmute	35	20	2	27	28	18	19
Stoney River	18	11	0	0	0		
Lime Village	15	9	0	0	0		
McGrath	131	68	3	0	3	3	3
Takotna	19	7	0	0	0		
Nikolai	40	19	2	0	2	2	2
Telida	2	1	0	0	0		
UPPER KUSKOKWIM	302	169	8	59	65	44	48
KUSKOKWIM RIVER	3,506	2,810	95	1,388	1,437	865	957
Quinhagak	144	96	0	101	102	63	76
Goodnews Bay	61	44	3	49	49	32	39
Platinum	15	12	0	14	14	13	14
S. KUSKOKWIM BAY	220	152	3	164	165	108	129
Mekoryuk	79	24	5	0	5	5	5
Newtok	79	4	1	0	1	1	1
Nightmute	46	3	0	0	0		
Toksook Bay	115	44	1	0	1	1	1
Tununak	104	4	0	0	0		
Chefornak	91	3	0	0	0		
BERING SEA COAST	514	82	7	0	7	7	7
TOTALS	4,597	3,106	105	1,585	1,642	1,009	1,126

¹ Households directly contacted by returning a calendar or by being interviewed in a face-to-face or telephone survey. Blank cells mean no data available due to no households contacted.

² Households that did not fish and those households which did fish and provided harvest numbers. Blank cells mean no data available due to no households contacted.

Table V-2.—Subsistence salmon harvests by community, Kuskokwim Area, 2005.¹

	Households		Estimated Salmon Harvests ²					Total Salmon
	Total	Contacted	Chinook	Chum	Sockeye	Coho	Pink	
Kipnuk	175	0						
Kwigillingok	95	0						
Kongiganak	87	33	1,508	1,519	987	781	125	4,920
N. KUSKOKWIM BAY	357	33	1,508	1,519	987	781	125	4,920
Tuntutuliak	86	54	4,508	3,525	2,102	1,132	163	11,430
Eek	80	51	2,899	764	893	346	28	4,930
Kasigluk	129	0						
Nunapitchuk	115	76	3,480	3,640	1,589	716	32	9,456
Atmautluak	60	40	1,720	1,635	1,194	471	37	5,056
Napakiak	91	55	2,695	2,726	1,803	628	102	7,954
Napaskiak	89	56	4,262	1,931	1,286	598	35	8,112
Oscarville	13	8	987	633	257	86	2	1,964
Bethel	1,739	450	24,473	12,535	13,135	12,268	449	62,860
Kwethluk	163	123	5,402	3,897	2,177	2,584	74	14,134
Akiachak	134	81	4,611	2,126	2,134	1,572	0	10,442
Akiak	77	54	3,420	3,193	1,681	1,673	0	9,966
Tuluksak	83	58	2,498	2,108	935	465	0	6,006
LOWER KUSKOKWIM	2,859	1,106	60,956	38,712	29,185	22,538	920	152,311
Lower Kalskag	81	52	1,387	954	409	293	0	3,043
Kalskag (Upper)	64	42	2,225	1,039	825	508	0	4,598
Aniak	161	142	1,987	2,539	975	1,886	173	7,559
Chuathbaluk	39	30	863	497	353	311	0	2,024
MIDDLE KUSKOKWIM	345	266	6,462	5,028	2,562	2,999	173	17,224
Crooked Creek	30	23	826	882	596	148	0	2,452
Red Devil	12	9	191	232	283	345	8	1,060
Sleetmute	35	28	393	295	512	463	31	1,693
Stoney River	18	0						
Lime Village	15	0						
McGrath	131	3	54	101	0	309	0	464
Takotna	19	0						
Nikolai	40	2	3	8	4	31	0	46
Telida	2	0						
UPPER KUSKOKWIM	302	65	1,467	1,517	1,395	1,295	39	5,714
KUSKOKWIM RIVER	3,506	1,437	68,885	45,258	33,143	26,832		174,117
Quinhagak	144	102	3,083	915	1,633	1,443	32	7,106
Goodnews Bay	61	49	794	187	1,143	615	1	2,740
Platinum	15	14	74	22	90	224	12	422
S. KUSKOKWIM BAY	220	165	3,951	1,123	2,866	2,282	45	10,268
Mekoryuk	79	5	2	460	0	58	0	520
Newtok	79	1	0	9	2	0	0	11
Nightmute	46	0	0	0	0	0	0	0
Toksook Bay	115	1	8	27	5	11	0	51
Tununak	104	0	0	0	0	0	0	0
Chefornak	91	0						
BERING SEA COAST	514	7	10	496	7	69	0	582
TOTALS	4,597	1,642	74,354	48,397	37,003	29,963	1,303	191,019

¹ Includes harvests using rod and reel and the removal of salmon from commercial harvests as well as subsistence nets.

² If less than 30 or 50% of households in a stratum in a community were contacted, then reported harvest is used for estimated harvest. Blank cells mean no data available due to no households contacted.

Table V-3.—Estimated historic subsistence salmon harvests, Kuskokwim Area, 1989-2005.

YEAR	HOUSEHOLDS		ESTIMATED SALMON HARVEST				
	TOTAL	SURVEYED	CHINOOK	SOCKEYE	COHO	CHUM	TOTAL
1989	3,422	2,135	85,323	37,088	57,846	145,106	325,363
1990	3,317	1,830	92,675	39,659	50,708	131,470	314,513
1991	3,347	2,024	90,226	56,401	55,620	96,314	298,561
1992	3,314	1,724	68,706	34,159	44,494	99,577	246,937
1993	3,274	1,816	91,722	51,362	35,295	61,724	240,103
1994	3,179	1,821	98,378	39,280	36,504	76,949	251,111
1995	3,652	1,894	100,157	28,622	39,165	68,941	236,885
1996	3,643	1,837	81,597	35,037	34,699	90,239	241,572
1997	3,510	1,831	85,506	41,251	30,717	40,993	198,466
1998	3,495	1,849	86,113	37,579	27,240	67,664	218,595
1999	4,180	2,523	77,660	49,388	27,753	47,612	202,413
2000	4,441	2,750	68,841	44,832	35,670	55,371	204,714
2001	4,483	2,297	77,570	51,965	31,686	51,117	212,338
2002	4,339	2,798	70,219	27,733	34,413	73,234	205,599
2003	4,535	2,375	72,498	36,894	38,791	46,291	194,474
2004	4,670	2,432	85,086	34,892	39,406	55,575	214,959
2005	3,903	1,642	74,354	37,003	29,963	48,396	191,019
5-Year							
Average	4,386	2,309	75,945	37,697	34,852	54,923	203,678
10-Year							
Average	4,120	2,233	77,944	39,657	33,034	57,649	208,415
All Years							
Average	3,806	2,093	82,743	40,185	38,233	73,916	235,154

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.5.

Table V-4.—Gear types used for subsistence fishing, Kuskokwim Area, 2005.¹

	Fishing Households	Gear Types ²						Not Reported
		Setnet	Drift Net	Fish Wheel	Rod & Reel	Seine	Spear	
Kipnuk								
Kwigillingok								
Kongiganak	29	1	24	0	0	0	0	5
N. KUSKOKWIM BAY	29	1	24	0	0	0	0	5
Tuntutuliak	40	2	36	0	0	0	0	3
Eek	39	14	27	0	2	0	0	4
Kasigluk								
Nunapitchuk	53	3	46	0	1	0	0	7
Atmautluak	25	2	21	0	0	0	0	1
Napakiak	40	12	35	0	1	0	0	3
Napaskiak	40	9	38	0	3	0	0	0
Oscarville	7	3	7	0	0	0	0	0
Bethel	211	18	149	1	36	0	0	12
Kwethluk	78	26	61	0	16	0	0	4
Akiachak	59	17	46	0	2	0	0	3
Akiak	41	11	33	0	8	0	0	4
Tuluksak	37	19	30	0	5	0	0	2
LOWER KUSKOKWIM	670	136	529	1	74	0	0	43
Lower Kalskag	19	6	17	0	0	0	0	0
Upper Kalskag	26	7	22	0	1	0	0	2
Aniak	89	13	58	1	72	0	0	0
Chuathbaluk	17	0	12	0	7	0	0	1
MIDDLE KUSKOKWIM	151	26	109	1	80	0	0	3
Crooked Creek	16	6	10	0	4	0	0	1
Red Devil	5	3	1	0	2	0	0	0
Sleetmute	18	6	11	0	6	0	0	1
Stoney River								
Lime Village								
McGrath	3	0	0	0	0	0	0	3
Takotna								
N kolai	2	0	0	0	0	0	0	2
Telida								
UPPER KUSKOKWIM	44	15	22	0	12	0	0	7
KUSKOKWIM RIVER	865	177	660	2	166	0	0	53
Quinhagak	63	13	41	0	22	0	1	4
Goodnews Bay	32	14	20	0	11	0	0	0
Platinum	13	3	5	0	5	0	0	1
S. KUSKOKWIM BAY	108	30	66	0	38	0	1	5
Mekoryuk	5	0	0	0	0	0	0	5
Newtok	1	0	0	0	0	0	0	1
Nightmute								
Toksook Bay	1	0	0	0	0	0	0	1
Tununak								
Chefornak								
BERING SEA COAST	7	0	0	0	0	0	0	7
TOTALS	1,009	208	750	2	204	0	1	70

¹ Data from household surveys, harvest calendars, and postcard surveys. Blank cells indicate no data available due to no households contacted.

² Households may use multiple gear types.

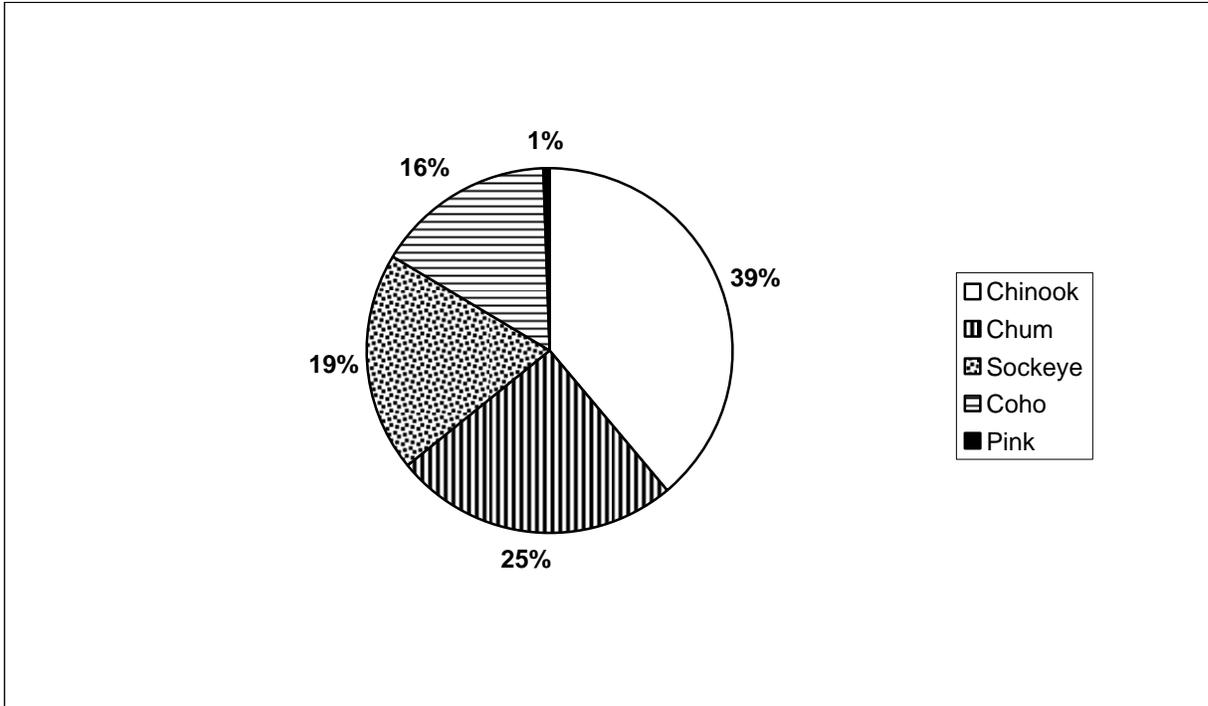


Figure V-1.—Composition of subsistence harvest by species, Kuskokwim Area, 2005.

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. Residents have relied on fish to provide nourishment and sustenance for thousands of years. Subsistence harvests still provide important nutritional, economic, social, and cultural benefits to most Bristol Bay households. All 5 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, under state regulations, all Alaska State residents have been eligible to participate in subsistence salmon fishing in all Bristol Bay drainages (but see below). In 2005, with 2 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 2005, 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.

On May 21, 2001, the National Park Service (NPS) announced that it was prohibiting subsistence fishing with nets in Lake Clark National Park and Preserve, including all of Lake Clark, except by federally qualified local rural residents. This prohibition was a new enforcement action of an existing NPS regulation and applied to anyone who was not a permanent resident of Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay, or Port Alsworth, or who did not have a Section 13.44 subsistence use permit issued by the park superintendent.

The Alaska Department of Fish and Game has continued to issue Bristol Bay subsistence salmon permits to any Alaska resident who requests one. However, the department informs

permit applicants that unless they live in one of the above-named communities or have a 13.44 permit, they need to take this NPS closure into account when they subsistence fish in waters of the park and preserve. The department also informs permittees that waters outside of national park and preserve boundaries remain open for subsistence salmon fishing to all permit holders.

IN-SEASON MANAGEMENT IN 2005

Due to extended closures to the commercial fishery in the Nushagak commercial fishing district, emergency orders opened the Nushagak commercial fishing district to subsistence salmon harvesting from 8:00 p.m. June 1 to 8:00 p.m. June 2, 2005; from 8:00 pm. June 3 until 8:00 a.m. June 6; from 8:00 a.m. June 7 to 8:00 a.m. June 9; from 8:00 a.m. June 10 to 8:00 a.m. June 12; from 8:00 a.m. June 13 to 4:00 a.m. June 16; and from 3 p.m. June 16 to 6 a.m. June 20. With limited commercial fishing occurring, the Nushagak commercial district was open to subsistence salmon fishing until further notice on August 2, 2005.

An emergency order opened the subsistence harvest of salmon in the Dillingham beaches area from the dock at Dragnet up the west shore of the Wood River to Red Bluff, down the east shore of the Wood River to the mouth, up the Nushagak River to Lewis Point, and down to Nushagak Point every day from July 2 to July 17. This action took place because the Wood River subsistence fishery was not accessible by a boat launch at the Wood River, causing subsistence fishers more difficulty accessing traditional fishing areas and raising safety concerns. Allowing fishing everyday instead of three days per week provided subsistence fishers with more access during safe weather.

Due to an extended closure to the commercial salmon fishery in the Togiak District, the commercial fishing district was opened to subsistence fishing by emergency order from 4:00 p.m. June 23 until 9:00 p.m. June 26, 2005. Subsistence fishing opportunities were available in correspondence with commercial fishing openings in the district for the remainder of the season.

An emergency order opened the Naknek Section of the Naknek/Kvichak District to subsistence salmon fishing from 12 noon June 19 until 9 a.m. June 23, 2005. The Naknek River Special Harvest Area was opened to commercial salmon fishing, and to alleviate potential gear conflicts, subsistence fishing was allowed in the Naknek Section. Another emergency order opened the Naknek Section to subsistence fishing to a schedule of two 24-hour periods per week from 9:00 a.m. Saturday to 9:00 a.m. Sunday and from 9:00 a.m. Tuesday to 9:00 a.m. Wednesday, beginning June 25. Because the minimum escapement goal of 800,000 sockeye was assured, an additional 24-hour period for the subsistence fishery was authorized, beginning 9 a.m. on July 2, from 9 a.m. Thursday to 9 a.m. Friday. An emergency order opened the Naknek River to continuous subsistence fishing effective July 13, 2005. The escapement into the Naknek River had exceeded the optimum escapement goal (OEG) and the commercial fleet had moved into the Naknek/Kvichak District.

In the Egegik District, an additional subsistence fishing period was opened by emergency order when the commercial fishery was closed, from 10 a.m. June 15 until 10 p.m. June 16. 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. The emergency order provided subsistence fishing time during a commercial closure. Additional subsistence openings in the Egegik District were established by emergency orders

from 5 p.m. June 17 until 5 p.m. June 18; 7:00 p.m. June 19 until 7 p.m. June 20; 8 p.m. June 21 to 12:00 p.m. June 26; and from 3 a.m. June 27 until 12:00 p.m. June 27.

There were no emergency orders issued for the Ugashik District in 2005.

SALMON HARVEST ASSESSMENT PROGRAM

A permit system was gradually introduced throughout the Bristol Bay region in the late 1960s to document the harvest of salmon for subsistence. Much of the increase in the number of permits issued during these years 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. Most fishers 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 salmon are probably not documented as consistently as Chinook and sockeye.

In 2005, a total of 1,076 permits were issued for the Bristol Bay Management Area, and of these, 979 (91%) were returned to the Department with harvest data (Table VI-1). The largest number of permits were issued for the Nushagak (502 permits) and Naknek/Kvichak (462 permits) districts. For the Nushagak District slightly more permits were issued in 2005 than the average for the previous 20 years (496), due in part to permits being available to all state residents since 1990.¹³ Compared to the previous 5 years and the previous 10-year average, however, the number of permits issued was down for the Nushagak District (previous 10-year average of 527 permits). Fewer permits were issued in the Naknek/Kvichak district in 2002 (471), 2003 (489), 2004 (481), and 2005 (462) than in any year since 1990, likely reflecting the National Park Service prohibition against non-drainage residents' subsistence fishing in the waters of Lake Clark National Park. About the same number of permits were issued for the Egegik District in 2005 (45) compared to the average for the previous 10 years (47), while the number issued in the Ugashik District (22) was lower than the previous 10-year average (25). The number of permits issued for the Togiak District in 2005 was 45, similar to previous averages (51 permits on average for 1995 – 2004). However, the number of permits issued in Togiak was lower in 2005 than either 2001 or 2003 (92 permits were issued in both years) when permit data for the Togiak District were supplemented by post-season household surveys conducted by the Division of Subsistence. These surveys were not conducted for 2005 due to lack of funds. Of all Bristol Bay Area subsistence permits issued in 2005, 929 (86%) were issued to residents of Bristol Bay communities, and 147 (14%) were issued to other Alaska residents (Table VI-3).

SUBSISTENCE SALMON HARVESTS IN 2005

The estimated total Bristol Bay subsistence salmon harvest in 2005 was 128,811 fish (Table VI-1). This number was about the same as the estimates for 2004 (126,865 salmon) and 2003 (131,667 salmon), but was higher than the 109,587 salmon estimated for 2002. The

¹³ For details on historical harvests and permits issued at the district level, see Westing et al. (2006:115-117).

2005 harvest was 2% below the recent 10-year average of 131,318 salmon and about 16% below the recent 23-year average of 152,778 salmon (Table VI-2).

The area-wide Chinook harvest of 15,212 salmon in 2005 was down from the estimate of 18,012 Chinook for 2004 and the record harvest of 21,231 Chinook estimated for 2003, but was higher than any other estimate since 1998 and similar to both the recent 10-year average (15,913 Chinook) and 23-year average (14,998 Chinook). The area-wide harvest of 98,511 sockeye salmon was the highest estimate since 1999 (122,281 sockeye). The 2005 sockeye harvest was 18% below the recent 23-year average of 119,494 sockeyes, however. Compared to recent 10-year averages, subsistence harvests of pink salmon were low in 2005 (returns of pink salmon to Bristol Bay are higher in even-numbered years than in odd-numbered years). The estimated harvest of chum salmon in 2005 (6,102 salmon) was above the recent 10-year average (4,886 salmon), and the coho salmon harvest of 7,889 salmon also exceeded the 10-year average (7,332 salmon) (Table VI-2).

In 2005, the Bristol Bay subsistence salmon harvest was composed of 77% sockeye, 12% Chinook, 6% coho, 5% chum, and 1% pink salmon (Fig. VI-1). Of the entire Bristol Bay Area subsistence salmon harvest in 2005, residents of Bristol Bay communities harvested 119,789 salmon (93%), and other Alaska residents harvested 9,022 salmon (7%) (Table VI-3).

In 2005 as over the last several decades, most of the Bristol Bay Area subsistence harvest was taken in the Naknek/Kvichak (56%) and the Nushagak (37%) districts (Fig. VI-2). The Naknek/Kvichak total harvest of 72,302 salmon in 2005 was about the same as the 74,300 salmon harvested in 2004, and was higher than 2003, when the harvest was 63,934 salmon. However, the 2005 subsistence salmon harvest in this district was 4% below the previous 10-year average of 75,421 fish and 16% below the previous 20-year average of 85,915 salmon.

In 2005, Kvichak drainage residents, and other permit holders fishing in the Kvichak drainage portion of the Naknek/Kvichak District, harvested an estimated 48,263 sockeye salmon, compared to a previous 10-year average of 47,496 sockeyes and a 20-year average of 59,793 sockeyes (Westing et al. 2006:118). The 2005 subsistence harvest of sockeye salmon in the Kvichak drainage was notably higher than harvests from 2000 through 2003 but was still below historic levels (the 10-year average harvest from 1985 through 1994 was 72,090 sockeyes). Of Kvichak drainage communities, estimated sockeye harvests were substantially lower at Levelock, Igiugig, Iliamna/Newhalen, and Nondalton compared to previous 10-year averages, and somewhat lower at Port Alsworth. The number of permits issued to households with Port Alsworth addresses was 24 in 2005 (and 22 in 2002, 23 in 2003, and 25 in 2004), down from 30 in 2001 and 37 in 2000. This may be the result of seasonal Port Alsworth residents not obtaining permits because of the NPS prohibition against subsistence fishing in Lake Clark by non-local residents (see above). Sockeye salmon harvests by Port Alsworth subsistence permit holders in 2005 totaled 2,457 fish, compared to a previous 10-year average of 2,565 sockeyes, although the 2005 harvest was the highest since 2000. The number of permits issued to households with non-Kvichak drainage addresses was 23 in 2005 (and 24 in 2003 and 25 in 2004), compared to 33 in 2002, 37 in 2001, and 48 in 2000, and the sockeye salmon harvest by these permittees fell to 2,078 (and 1,591 fish in 2003 and 1,631 in 2004) compared to a previous 10-year average of 2,474 sockeye salmon. The NPS closure is likely at least partly responsible for this change as well.

In the Nushagak District, the total estimated subsistence harvest in 2005 was 47,841. The estimate in 2004 was 43,154 salmon, the third lowest total on record (the total salmon harvest estimate was 38,500 in 1972 and 40,600 in 1966), and the lowest over the previous 20 years. The 2004 and 2005 estimates were both down substantially from the 2003 estimate of 55,076 fish. The previous 10-year average was 46,841 salmon (Westing et al. 2006:116). The Nushagak Chinook salmon harvest in 2005 of 12,529 was down from the 2004 estimate of 15,610 and the 2003 estimate of 18,686 Chinook (the highest estimate on record), and was lower than the previous 10-year average of 13,408 Chinook. The sockeye harvest in the Nushagak District of 23,916 was up from the estimate of 17,491 in 2004 which was, by far, the lowest estimate for the district since at least 1964 (the previous low was 22,777 sockeyes in 2002). The previous 10-year average sockeye harvest for the Nushagak District was 24,256 salmon. In 2005, subsistence salmon harvests in the Nushagak District communities of Dillingham, Manokotak, Aleknagik, and Ekwok were lower compared to previous 20-year averages. The 2005 subsistence salmon harvests in New Stuyahok and Koliganek were higher than the previous 20-year average (Westing et al. 2006:119).

The estimated total subsistence salmon harvest for the Togiak District in 2005 of 4,448 fish was about the same as the previous 10-year average (4,352 salmon) and slightly lower than the 20-year average (4,929 salmon) (Westing 2006:117). Estimated harvests in both 2004 and 2005 were below those for 2001 and 2003; this likely reflects at least in part the absence of post-season household surveys in Togiak and Twin Hills for 2004, which had increased participation in the harvest assessment program in 2001 and 2003. The estimated subsistence harvest in the Ugashik District in 2005 was 1,114, much lower than the previous 10-year average of 1,906, and the lowest estimate since 1985. In the Egegik District, the estimated subsistence salmon harvest of 3,106 for 2005 was notably lower than the 4,711 estimated for 2004 (the second highest estimate since 1984), but was about the same as the previous 10-year average of 3,106 salmon (Westing 2006:115).

OTHER SUBSISTENCE FISHERIES

In May 2003, new federal regulations authorizing subsistence halibut fishing came into effect. A harvest assessment program for the subsistence halibut fishery was implemented in 2004 (Fall et al. 2004; Fall et al. 2005; Fall et al. 2006). Beginning in 2003, subsistence fishing for rainbow trout and char in the Bristol Bay Area under federal subsistence regulations required a federal permit. No permits were issued (Edwards 2004). The permit requirement was dropped in 2005. These were the only other annual harvest assessment programs in the Bristol Bay Area for non-salmon subsistence fisheries in 2003. 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.¹⁴

- 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 through Division of Subsistence household harvest surveys (Scott et al. 2001; BBNA and ADF&G 1996; Kenner et al. 2003; Krieg et al. 2005; Fall et al. 2006). As part of the “Subsistence Fisheries Assessment: Kvichak River Watershed Resident Species” project (FIS 02-034), ADF&G Division of Subsistence and the Bristol Bay Native Association collected subsistence harvest data in Kvichak River watershed communities for the period 10/1/2002 through 9/30/2003. The final report for that project (Krieg et al. 2005) includes detailed information about uses of nonsalmon in eight study communities. Some of the findings of ADF&G 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. 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

¹⁴ Beginning in 2004, the Alaska Board of Fisheries eliminated a permit requirement for subsistence fishing for trout and char in the Bristol Bay Area. ADF&G had not developed a program for issuing these permits.

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, whitefish
- Beach seining: Dolly Varden/Arctic char, lake trout, smelt, herring, whitefish
- Hand line in open water: halibut, rainbow trout
- Dip nets: smelt, herring

Herring spawn on kelp is usually picked by hand, although rakes, knives, and uluaqs (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). Updated maps of harvest locations for eight communities in the Kvichak watershed appear in Krieg et al. (2005). Harvest activities occur throughout the 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, half-dried, fresh frozen, aged frozen and eaten with seal oil
- Dolly Varden: dried, smoked, half dried (egamaarrluk)
- Pike: dried, half-dried, fresh frozen, aged frozen and eaten with seal oil

- Rainbow trout: dried, half dried, smoked
- Whitefish: dried, fresh frozen, aged frozen and eaten with seal oil

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 *kumlaneq*. 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 aging, freezing, and/or drying; harvest locations; and harvest methods (Fall et al. 1996). The Division of Subsistence of ADF&G has compiled a database with traditional knowledge (TEK) about the fish of Bristol Bay based on interviews with area residents called "From Neqa to Tepa." Version 2.0 of this database was completed in 2003 as part of FIS project 01-109 (Kenner 2003). Another expanded version of the database incorporating findings from 8 Kvichak watershed communities was renamed "*From Neqa to Tepa, Luq'a to Chuqilin*" (Version 1.0) to reflect the addition of Dena'ina Athabascan TEK (Krieg et al. 2005; Kenner 2005).

Table VI-1.—Estimated subsistence salmon harvests by district and location fished, Bristol Bay Area, 2005.¹

Area and River System	Permits Issued ²	Sockeye	Chinook	Chum	Pink	Coho	Total
NAKNEK-KVICHAK DISTRICT	462	69,211	1,047	546	275	1,224	72,302
Naknek River	268	20,947	886	205	132	742	22,912
Kvichak River/Iliamna Lake:	194	48,263	160	341	143	482	49,390
Igiugig	5	903	2	0	14	1	920
Iliamna (community)	2	987	0	0	0	0	987
Iliamna Lake	19	1,174	0	0	0	0	1,174
Kokhanok	34	17,017	28	321	125	392	17,883
Kvichak River	4	366	0	0	0	18	384
Lake Clark: General	29	2,697	0	0	0	0	2,697
Levelock	12	1,028	127	19	4	70	1,248
Newhalen River	44	12,910	0	0	0	0	12,910
Nondalton Village	22	3,967	0	1	0	2	3,969
Pedro Bay	18	4,052	0	0	0	0	4,052
Port Alsworth	4	264	0	0	0	0	264
Six Mile Lake	1	130	0	0	0	0	130
EGEGIK DISTRICT	45	2,267	81	231	2	526	3,106
UGASHIK DISTRICT	18	818	27	18	2	249	1,114
NUSHAGAK DISTRICT	502	23,916	12,529	5,006	793	5,596	47,841
Wood River	112	3,845	1,718	220	28	720	6,531
Nushagak River	110	8,531	5,873	3,639	544	1,494	20,081
Nushagak Bay Noncommercial	210	7,647	4,202	872	158	2,657	15,536
Nushagak Bay Commercial	43	1,909	599	255	62	442	3,267
Igushik/Snake River	24	1,545	137	13	0	194	1,888
Nushagak, Site Unspecified	3	440	0	7	1	89	537
TOGIAK DISTRICT	45	2,299	1,528	301	26	295	4,448
TOTAL BRISTOL BAY	1,076	98,511	15,212	6,102	1,098	7,889	128,811

¹ Harvests are extrapolated for all permits issued, based on those returned and on the area fished as recorded on the permit. Due to rounding, the sum of columns and rows may not equal the estimated total. Of 1,076 permits issued for the management area, 979 were returned (91.0%).

² Sum of sites may exceed district totals, and sum of districts may exceed area total, because permittees may use more than one site.

Table VI-2.—Estimated historic subsistence salmon harvests, Bristol Bay Area, 1983-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
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
2001	1,226	1,137	14,412	92,041	8,406	4,158	839	119,856
2002	1,093	994	12,936	81,088	6,565	6,658	2,341	109,587
2003	1,182	1,058	21,231	95,690	7,816	5,868	1,062	131,667
2004	1,100	940	18,012	93,819	6,667	5,141	3,225	126,865
2005	1,076	979	15,212	98,511	7,889	6,102	1,098	128,811
5-Year								
Average	1,135	1,022	16,360	92,230	7,469	5,585	1,713	123,357
10-Year								
Average	1,163	1,051	15,913	101,476	7,332	4,886	1,712	131,318
All Years								
Average	1,092	952	14,998	119,494	8,825	6,925	2,536	152,778

SOURCE: Caylor and Brown 2005.

Table VI-3.—Estimated subsistence salmon harvests by community, Bristol Bay Area, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Aleknagik	22	19	470	1,131	105	82	6	1,795
Allakaket	1	1	0	44	0	0	0	44
Clarks Point	10	9	264	436	277	94	46	1,117
Dillingham	307	280	5,807	10,409	3,385	1,149	192	20,942
Egegik	20	15	35	963	439	216	0	1,652
Ekwok	21	19	778	428	111	72	0	1,388
Igiugig	6	6	2	1,017	1	0	14	1,034
Iliamna	29	26	0	5,588	0	0	0	5,588
King Salmon	86	76	189	6,141	246	58	46	6,680
Kokhanok	34	33	30	17,101	392	321	125	17,968
Koliganek	22	22	1,402	3,814	266	2,582	358	8,422
Levelock	11	11	127	914	70	19	4	1,134
Manokotak	21	21	110	1,272	192	2	0	1,576
Naknek	104	92	383	10,165	271	137	19	10,975
New Stuyahok	50	43	3,345	4,290	888	967	183	9,673
Newhalen	20	17	0	6,574	0	0	0	6,574
Nondalton	34	32	0	9,092	0	0	0	9,092
Pedro Bay	16	15	0	4,162	0	0	0	4,162
Pilot Point	5	5	0	110	73	14	2	199
Port Alsworth	25	24	0	2,527	0	0	0	2,527
Portage Creek	1	1	78	4	0	9	0	91
South Naknek	31	27	219	1,561	352	18	64	2,216
Togiak	43	36	1,444	2,223	281	259	26	4,232
Twins Hills	1	1	33	0	0	0	0	33
Ugashik	9	9	25	482	166	1	0	674
Bristol Bay Subtotal	929	840	14,742	90,447	7,514	6,002	1,085	119,789
Anchorage	67	62	162	4,868	103	41	0	5,174
Barrow	3	2	188	120	75	0	0	383
Chugiak	4	4	5	467	0	0	0	472
Copper Landing	1	1	0	34	0	0	0	34
Copper Center	1	1	2	103	0	0	0	105
Craig	1	1	0	0	0	0	0	0
Douglas	1	1	1	4	0	0	0	5
Dutch Harbor	1	1	0	13	0	0	0	13
Eagle River	4	4	7	73	0	2	0	82
Fairbanks	10	10	23	323	0	17	2	365
Fritz Creek	1	1	3	37	0	0	0	40
Galena	1	1	0	11	0	0	0	11
Girdwood	1	1	0	64	4	0	0	68
Homer	12	12	38	370	92	7	0	507

-continued-

Table VI-3.—Page 2 of 2.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Juneau	2	2	6	176	0	2	0	184
Kasilof	2	2	0	14	10	0	0	24
Kenai	3	3	0	245	0	7	1	253
Kodiak (city)	6	6	12	65	0	0	0	77
McGrath	1	1	1	31	0	0	0	32
Nikiski	3	3	5	106	22	1	1	135
North Pole	1	1	0	20	0	0	0	20
Palmer	8	8	8	395	40	23	9	475
Paxson	1	1	1	38	0	0	0	39
Seward	1	1	0	0	0	0	0	0
Sitka	1	1	0	0	0	0	0	0
Soldotna	1	1	0	38	0	0	0	38
Trapper Creek	1	1	0	53	0	0	0	53
Wasilla	7	5	8	392	0	0	0	400
Willow	1	1	0	3	30	0	0	33
Other Alaska Subtotal	147	139	470	8,063	376	100	13	9,022
Totals	1,076	979	15,212	98,511	7,889	6,102	1,098	128,811

Table VI-4.—Uses and harvests of fish other than salmon, Bristol Bay communities.

Community	Year ¹	Percentage of Households ²					Average Pounds Harvested	
		Use	Fish for	Harvest	Receive	Give	Per Household	Per Person
Aleknagik	1989	94.7	89.5	89.5	73.7	71.1	208.3	61.4
Clark's Point	1989	94.1	82.4	82.4	82.4	70.6	113.4	34.4
Dillingham	1984	75.0	56.2	54.9	39.9	19.6	51.6	17.5
Egegik	1984	64.0	60.0	60.0	24.0	40.0	36.5	15.7
Ekwok	1987	75.9	72.4	62.1	62.1	37.9	229.4	68.6
Igiugig ³	2002	100.0	100.0	100.0	63.6	36.4	108.4	30.6
Iliamna ³	2002	100.0	100.0	100.0			59.4	20.4
King Salmon	1983			76.7			48.1	15.9
Kokhanok ³	2002	100.0	96.0	92.0	48.0	40.0	115.9	29.4
Koliganek	1987	92.9	81.0	81.0	69.0	57.1	369.7	95.3
Levelock ³	2002	100.0	100.0	92.3	46.2	84.6	80.7	26.9
Manokotak	1999	86.4	77.8	76.5	76.5	75.3	163.8	37.3
Naknek	1983			75.0			58.0	18.6
New Stuyahok	1987	100.0	85.0	82.5	82.5	62.5	171.9	36.0
Newhalen ³	2002	100.0	100.0	100.0	39.0	12.2	161.6	47.9
Nondalton ³	2002	94.4	97.2	83.3	33.3	27.8	38.8	11.8
Pedro Bay ³	2002	100.0	100.0	100.0	25.0	33.3	24.4	6.3
Pilot Point	1987	94.1	94.1	94.1	35.3	58.8	55.8	15.5
Port Alsworth ³	2002	100.0	100.0	37.5	100.0	0.0	0.6	0.2
Port Heiden	1987	91.9	62.2	62.2	70.3	45.9	32.6	11.7
South Naknek	1992	85.7	77.1	74.3	68.6	48.6	64.4	20.1
Togiak	1999	89.0	83.5	83.5	56.6	66.4	185.1	44.8
Twin Hills	1999	91.7	91.7	91.7	75.0	91.7	302.9	101.0
Ugashik	1987	100.0	100.0	100.0	0.0	40.0	72.2	36.1

¹ Most recent year for which data are available.

² Blank cells indicate data not collected.

³ Poor ice conditions during the winter of 2002/2003 resulted in unusually low freshwater fish harvests in Kvickahk watershed communities.

SOURCE: Scott et al. 2001; BBNA and ADF&G 1996; Kenner et al. 2003; Krieg et al. 2005.

Table VI-5.—Non-salmon finfish used for subsistence purposes in the Bristol Bay Area.

<u>Common English Name</u>	<u>Scientific Name</u>	<u>Yup'ik Name</u>	<u>Dena'ina Name</u>
Arctic Grayling	<i>Thymallus arcticus</i>	<i>Nakrullugpak</i> <i>Culugpauk</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> ¹ <i>Atgiaq</i> ²	<i>Ch'unya</i>
Dolly Varden ³	<i>Salvelinus malma</i>	<i>Yugyaq</i> ⁴ <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 ⁵	<i>Coregonus nasus</i>	<i>Akakiik</i>	<i>Telay</i>
Humpback Whitefish ⁵	<i>Coregonus pidschian</i>	<i>Uruuq</i>	<i>Q'untuq'</i>
Round Whitefish ⁵	<i>Prosopium cylindraceum</i>	<i>Uruuq</i>	<i>Hesten</i>
Least Cisco	<i>Coregonus sardinella</i>	<i>Cavirrutnaq</i>	<i>Ghelguts'i k'una</i>
Herring, Pacific	<i>Clupea harengus pallasi</i>	<i>Iqalluarpak</i>	
Herring Spawn on Kelp		<i>Melucuaq</i>	
Starry Flounder	<i>Platichthys stellatus</i>	<i>Naterna</i>	
Halibut	<i>Hippoglossus stenolepis</i>	<i>Naternarpak</i>	
Pacific Cod	<i>Cadus macrocephalus</i>	<i>Ceturruaq</i>	
Sculpin	Unknown	<i>Kayutaq</i>	
Capelin	<i>Mallotus villosus</i>	<i>Cikaaq</i>	
Yellowfin Sole	<i>Limanda aspera</i>	<i>Sagiq</i>	

¹ Nushagak River villages.

² Manokotak, Aleknagik, Twin Hills, Togiak.

³ Also includes the closely related Arctic char, *Salvelinus alpinus*.

⁴ 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.

⁵ 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 "*ururuq*." "*Uruuq*" is used for round whitefish in the Togiak and Nushagak drainages.

SOURCE: Fall et al. 1996

VII. CHIGNIK AREA

BACKGROUND

The Chignik Management Area (CMA) 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 Lake (population 145), Ivanof Bay (population 22), and Perryville (population 107) (U.S. 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 CMA. 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 CMA, 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. Salmon may not be taken in Black Lake, or any tributary to Black and Chignik lakes.

Because of the development of new management strategies for the commercial salmon cooperative fishery (begun in 2002),¹⁵ management staff initiated subsistence permit conditions in 2003 that increased subsistence harvest opportunities for commercial fishing license holders. By regulation, commercial fishing license holders could not subsistence fish for salmon from 48 hours before the first commercial salmon fishing opening through September 30. The new permit conditions allowed commercial license holders who were not engaged in commercial fishing during an opening for the cooperative or competitive fleets to subsistence fish during commercial openings after registering with the Department.

In 2004, the ADF&G provided additional subsistence opportunity within the CMA. Until 2005, regulations (5 AAC 01.475), closed the Chignik River to subsistence salmon fishing. In 2004, through emergency order, the department allowed subsistence users to fish for salmon within the Chignik River excluding the area 100 yards upstream and downstream of the Chignik weir through June 30. The goal was to provide additional harvest opportunity for sockeye salmon while protecting spawning Chinook salmon. Beginning in 2005, the regulation was changed to read, "Salmon may not be taken from July 1 through August 31 in the Chignik River from a point 300 feet upstream from the Chignik weir to Chignik Lake."

In 2004, restrictions on commercial fishers' involvement in subsistence fishing were again relaxed through the provisions of the subsistence fishing permit. In addition to obtaining a subsistence permit, commercial fishermen wishing to subsistence fish after the first

¹⁵ The regulations providing for the cooperative commercial salmon fishery in the Chignik Area were invalidated by a decision of the Alaska Supreme Court and were not operative beginning 2006.

commercial opening were required to register with the ADF&G at the weir. ADF&G established a subsistence fishing schedule for these commercial fishers depending upon whether they fished for the cooperative fleet or independently (Bouwens 2004).

At the meeting of the Alaska Board of Fisheries (BOF) in late 2004, the board adopted regulations to increase subsistence fishing opportunities for commercial salmon fishing license holders by allowing, with certain restrictions, harvest subsistence salmon during commercial salmon fishing season. In addition, the BOF directed ADF&G to allow for an increased escapement of sockeye salmon during the August commercial fishery (from 50,000 to 75,000), in order to facilitate late season subsistence opportunities in Chignik Lake. As a result the commercial fishery was limited in August, but the escapement was not achieved (Bowens 2005).

HARVEST ASSESSMENT PROGRAM

The Division of Commercial Fisheries conducted the first subsistence salmon harvest assessment in the CMA 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 CMA. 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 CMA 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 those reported in earlier AMRs for several reasons. There are small discrepancies in some years in 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 as well as post-season surveys conducted 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 2005

Since 1980, the number of subsistence salmon permits issued for the Chignik Area has averaged 103 per year, with 69 permits (67%) returned. Over the last 10 years, the average has been 121 permits issued and 97 permits (80%) returned. The recent 5-year average (2001 through 2005) is 125 permits issued and 98 (78%) returned. In 2005, 119 permits were issued, and 100 were returned (84%) (Table VII-1). This was comparable to the recent 5-year and 10-year averages. Of all permits issued for 2005, 110 (92%) were issued to residents of Chignik Area communities, and 9 (8%) were issued to residents of other Alaska communities (Table VII-2).

In 2005, the estimated subsistence salmon harvest for the Chignik Area was 11,590 fish (Table VII-1). This was close to the long-term average (11,271 salmon) but below the recent 10-year average (13,003 salmon) and 5-year average (12,595 salmon).

Several subsistence users informed the department that despite the adjustments to the CMA subsistence fishery which allowed for more opportunity for subsistence fishing, some were still having difficulty obtaining their subsistence salmon in 2004 and 2005. Traditionally many families have put up most of their spring salmon just prior to the first commercial opening. Salmon caught in early June are especially important to subsistence users because these fish are traditionally smoked and it is necessary to cure these fish before the flies hatch, which typically occurs in mid- to late-June. In 2005, ADF&G opened the cooperative commercial fishery in early June when many participants would have been putting up their subsistence fish, and the nature of the management of the cooperative fishery resulted in less, but more steady passage of fish in the lagoon, rather than the pulses of fish that historically arrived when the competitive only fishery was in operation. Subsistence users traditionally could maximize their early season subsistence harvests because of these pulses of fish. The management of the cooperative fishery in part resulted in a decrease in efficiency and increase in effort for harvesting subsistence salmon in the lagoon.

Many families had to wait until later in the summer to subsistence fish and the flies created spoilage. Local subsistence fishers also reported that the early run fish taste better and freeze or salt better if harvested early in the season. Other local residents reported both positive and negative changes occurring with their subsistence harvests and cash economy as a result of the creation of the cooperative commercial fishery.

In 2002 and 2004 the US Fish and Wildlife Service implanted radio transmitters in sockeye salmon passing the Chignik weir in August and early-September to determine when sockeye salmon harvested in this late season subsistence fishery passed the Chignik weir. The results of the 2002 studies are described in Anderson (2003). As stated in the regulations section of

this chapter; in 2004 the Alaska Board of Fisheries modified the commercial fisheries management plan for the late run sockeye to allow more fish to pass into Chignik Lake in September to provide for subsistence harvests. In addition, late run sockeye salmon, which are dried, are harvested from Chignik Lake in the fall by many of the Chignik area residents including some Perryville families. Several residents, particularly from Chignik Lake, commented to the department that despite the limits to the August commercial fishery, they still had difficulty acquiring their late run salmon, because they were not seeing as many fish as in prior years. They needed to fish more days to achieve harvest goals, or they harvested less late run salmon.

The 2005 subsistence harvest in the CMA was made up of 71% sockeye, 18% coho, 6% pink, 3% chum, and 2% Chinook salmon (Figure VII-1). Of the total harvest, local residents took 11,148 salmon (96%) and other Alaska residents harvested 442 salmon (4%) (Table VII-2; Figure VII-2).

In 2005, the largest number of subsistence salmon (6,182; 53%) was harvested in Chignik Bay and Chignik Lagoon (Table VII-3). Most of this harvest was sockeyes (86%). Subsistence harvests in the Perryville and Western districts numbered 4,359 salmon (38%), with most of this coho (33%), sockeye (21%) and pink (13%), accounting for most of the management area's subsistence harvest of coho and pink salmon. Estimated subsistence harvests in Chignik Lake totaled 3,048 salmon (26%), 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

In May 2003, federal regulations authorizing subsistence fishing for halibut in Alaska came into effect. A harvest assessment program for subsistence halibut was implemented in 2003, and harvest estimates for eligible communities and tribes, including all those of the Chignik Management Area, are available for 2003, 2004, and 2005 (Fall et al. 2004, Fall et al. 2005, Fall et al. 2006).

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, in an update of its customary and traditional use finding in January 2002, has identified subsistence uses of all finfish in the Chignik Area. Table VII-4 lists the finfish other than salmon for which subsistence uses have been documented through systematic household interviews conducted by the Division of Subsistence.

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.

In early 2004, the Division of Subsistence of ADF&G and the Bristol Bay Native Association, in a project funded by the *Exxon Valdez* Oil Spill Trustee Council, conducted comprehensive household surveys in Chignik Bay, Chignik Lagoon, Chignik Lake, and

Perryville that, among other things, collected updated harvest data for nonsalmon fish and marine invertebrates. A summary of these findings appears in Fall (2005) and will appear in future versions of the Division of Subsistence Community Subsistence Information System (CSIS).

The reader should consult Morris (1987), Fall et al. (1995), Hutchinson-Scarborough and Fall (1996), and ADF&G (2002a) 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 Subsistence Information System.

Table VII-1.—Estimated historic subsistence salmon harvests, Chignik Area, 1976-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1976			100	6,000	1,500	150	500	8,250
1977			50	9,700	2,400	600	1,800	14,550
1978			50	6,000	500	600	2,100	9,250
1979			14	7,750	34	0	262	8,060
1980	82	37	6	12,475	32	169	478	13,160
1981	29	7	0	2,049	0	0	0	2,049
1982	59	15	3	8,532	12	0	2	8,548
1983	32	21	0	3,078	1,319	850	1,250	6,497
1984	77	64	23	8,747	464	204	330	9,768
1985	59	48	1	7,177	50	25	26	7,279
1986	74	38	4	10,347	205	77	98	10,730
1987	na	na	10	7,021	278	204	261	7,774
1988	80	34	9	9,073	1,455	142	54	10,733
1989	68	23	24	7,551	384	147	81	8,187
1990	72	23	103	8,099	210	115	470	8,996
1991	95	58	42	11,483	13	81	275	11,893
1992	98	19	55	8,648	709	145	305	9,862
1993	201	141	122	14,710	3,765	642	1,265	20,503
1994	219	122	165	13,978	4,055	382	1,720	20,300
1995	111	95	98	9,563	1,191	150	723	11,726
1996	119	104	48	7,357	2,126	355	2,204	12,089
1997	126	103	28	13,442	2,678	840	2,035	19,024
1998	104	72	91	7,750	1,390	186	1,007	10,424
1999	106	88	243	9,040	1,679	136	1,191	12,290
2000	130	112	163	9,561	1,802	517	1,185	13,227
2001	135	122	171	8,633	1,859	213	2,787	13,663
2002	120	86	74	10,092	1,401	23	390	11,980
2003	146	127	267	10,989	2,256	286	1,597	15,394
2004	104	57	88	7,029	1,981	202	1,047	10,347
2005	119	100	224	8,171	2,112	353	730	11,590
5-Year								
Average	125	98	165	8,983	1,922	216	1,310	12,595
10-Year								
Average	121	97	140	9,206	1,928	311	1,417	13,003
All Years								
Average	103	69	76	8,801	1,262	260	872	11,271

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.5. Quimby and Owen 1994:90 for 1976-1979 and 1987.

Table VII-2.—Estimated subsistence salmon harvests by community, Chignik Area, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Chignik Bay	22	21	25	1266	158	24	61	1534
Chignik Lagoon	26	24	157	1896	114	14	27	2208
Chignik Lake	24	15	30	2714	264	0	40	3048
Perryville	38	34	4	1863	1576	315	600	4359
Subtotal, Area Residents	110	94	217	7738	2112	353	728	11148

Anchorage	3	1	0	96	0	0	0	96
Girdwood	1	1	0	22	0	0	0	22
Kenai	1	0	0	0	0	0	0	0
Kodiak	3	3	1	65	0	0	2	68
Seldovia	1	1	6	250	0	0	0	256
Subtotal, Other Alaska Residents	9	6	7	433	0	0	2	442
Totals	119	100	224	8,171	2,112	353	730	11,590

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.5.

Table VII-3.—Estimated subsistence salmon harvests by species and sub-area of harvest, Chignik Area, 2005.

Subarea of Harvest ¹	Estimated Number of Salmon Harvested ²					
	Chinook	Sockeye	Coho	Pink	Chum	All Salmon
Chignik Bay and Lagoon	113	5,306	546	150	66	6,182
Chignik Lake	111	1,945	112	2	0	3,048
Perryville	1	920	1,453	578	287	4,359
Grand Total	224	8,171	2,112	730	353	11,590

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.

Table VII-4.—Subsistence use of non-salmon finfish by community, Chignik 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 ¹	<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

¹ 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 Naknek, among other communities.

Source: ADF&G 2007; Hutchinson-Scarborough and Fall 1996

Table VII-5.—Subsistence use of marine invertebrates by community, 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> ¹	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>Paralithodes 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

¹ 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

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) (U.S. 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, which must be used to record daily harvests, is required for fishing in the Alaska Peninsula Area. There is a 250 salmon per household annual limit. Legal gear includes seines and gillnets. In waters open to commercial fishing, set and drift gillnets may not exceed 50 fathoms in length. In most other areas, set gillnets may not exceed 100 fathoms and drift gillnets may not exceed 200 fathoms. Purse seines may not exceed 250 fathoms in length. (5 AAC 01.423 includes special provisions regarding subsistence gear for certain other areas, including Mortensens Lagoon, the False Pass vicinity, Bear River, and Sandy River.) Salmon may be taken at any time except that in those districts and sections open to commercial salmon fishing, salmon may not be taken during the 24 hours before and 12 hours following a commercial salmon fishing period. A few small areas closed to subsistence salmon fishing are listed in 5 AAC 01.425.¹⁶

Federal regulations governing subsistence salmon fishing in waters under the jurisdiction of the Federal Subsistence Board were generally identical to the state regulations summarized above, except rod and reel, in addition to gillnets and seines, was legal subsistence gear under federal rules. There was no separate federal subsistence permit; a state permit was required for subsistence fishing under the federal regulations.

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

¹⁶ In October 2002, the Alaska Board of Fisheries considered a petition concerning subsistence fishing regulations in the Alaska Peninsula Area. The board asked the department to review and clarify the regulations. The department developed a proposal (Number 199) that the Board adopted at its February 2004 meeting that created a subsistence salmon management plan for the area, and adjusted rules on gear, fishing periods, open areas, and permit requirements. Some of these provisions were instituted in 2003 as permit conditions. The provisions of Proposal 199 came into effect in 2004.

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 2005

Since 1985, the number of subsistence salmon permits issued for the Alaska Peninsula Area has averaged 200 per year (Table VIII-1). The recent 5-year average (2001 through 2005) was 163 permits. In 2004, 160 subsistence salmon fishing permits were issued for the Alaska Peninsula Area, up from 147 issued in 2004 (the lowest since 1986) but continuing a generally downward trend that began in 1999. The response rate was 87% percent in 2005 (139 of 160 permits were returned). Of all permits issued, 143 (89%) were issued to residents of Alaska Peninsula Area communities, and 17 (11%) were issued to other Alaska communities (Table VIII-2). Most non-local residents fish at Mortensens Lagoon on the Cold Bay road system.

The estimated subsistence salmon harvest in the Alaska Peninsula Area in 2005 was 17,310 fish. This was a notable increase from the year before (harvest of 15,049 salmon) but lower than the long-term average (19,219 salmon) and the recent 10-year average (20,301 salmon) (Table VIII-1). The 2005 subsistence harvest was made up of 65% sockeye, 24% coho, 6% pink, 4% chum, and 1% Chinook salmon (Figure VIII-1). Of the total harvest, local residents took 16,167 salmon (93%), and other Alaska residents harvested 1,143 salmon (7%) (Table VIII-2; Figure VIII-2).

In interviews with Division of Subsistence staff, fishery 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. Fishery managers believe that this number is substantial, especially in years when commercial salmon prices are low. For 1992, it was estimated that 51% of the salmon harvested for home use at King Cove and 39% at Sand Point were removed from commercial harvests (Fall et al. 1993a:56, Fall et al. 1993b:58).

In 2002 and 2003, the Division of Subsistence conducted a project called "Subsistence Fisheries Harvest Assessment and Traditional Ecological Knowledge, Lower Alaska Peninsula and Aleutian Islands," funded by the US Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program as Project No. FIS-02-032. The goals of the project were to collect harvest data for salmon to supplement estimates produced through the subsistence permit program and to collect traditional ecological

knowledge (TEK) about fisheries resources. Among other findings, the research documented that King Cove households removed 2,304 salmon from their commercial harvests for home use in 2003, representing 24% of the total salmon harvest for home use in the community (Davis 2005:116). Another product was a searchable TEK database called “The View from the Beach.” For detailed study findings, consult the project’s final report (Davis 2005).

OTHER SUBSISTENCE FISHERIES

In May 2003, federal regulations authorizing subsistence harvests of halibut in Alaska were finalized. A harvest assessment program for subsistence halibut was implemented in 2003, and subsistence harvest estimates for eligible communities and tribes, including all of those in the Alaska Peninsula Area, are available for 2003 and 2004 (Fall et al. 2004, Fall et al. 2005, Fall et al. 2006).

There are no other 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 Subsistence Information System (ADF&G 2007). 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.—Estimated historic subsistence salmon harvests, Alaska Peninsula Area, 1985-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1985	161	95	74	4,037	7,504	1,566	574	13,755
1986	147	84	101	5,396	2,996	1,455	1,779	11,727
1987	191	144	193	5,777	4,259	1,943	1,547	13,719
1988	183	114	257	5,501	5,646	1,692	1,666	14,762
1989	188	139	88	10,404	3,505	2,104	1,213	17,314
1990	201	157	246	8,588	4,029	1,589	736	15,188
1991	249	185	458	11,345	5,551	3,551	1,878	22,783
1992	229	177	385	10,739	4,267	2,574	1,840	19,805
1993	262	215	615	12,478	5,753	1,997	1,189	22,032
1994	256	213	674	11,884	6,086	4,406	2,206	25,256
1995	260	198	492	12,716	5,021	3,369	2,653	24,251
1996	234	178	362	12,176	7,743	2,728	2,569	25,578
1997	217	172	420	15,224	4,612	2,885	2,955	26,096
1998	233	153	407	12,920	5,820	1,326	2,286	22,759
1999	185	148	391	15,119	4,961	2,235	2,136	24,843
2000	180	152	341	9,955	5,239	1,699	950	18,185
2001	185	155	570	12,259	3,940	1,963	1,181	19,912
2002	157	133	345	9,384	3,188	1,603	532	15,052
2003	166	128	312	10,103	4,266	2,353	1,194	18,228
2004	147	135	218	9,484	3,787	951	609	15,049
2005	160	139	192	11,260	4,089	716	1,054	17,310
5-Year Average	163	138	327	10,498	3,854	1,517	914	17,110
10-Year Average	186	149	356	11,788	4,764	1,846	1,547	20,301
All Years Average	200	153	340	10,321	4,870	2,129	1,559	19,219

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table VIII-2.—Estimated subsistence salmon harvest estimates by community, Alaska Peninsula Area, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Bear Lake	1	1	0	102	0	0	0	102
Cold Bay	29	29	6	501	158	2	6	673
False Pass	7	4	37	1,054	268	200	317	1,874
King Cove	62	53	39	4,983	2,472	140	233	7,867
Nelson Lagoon	5	3	3	322	73	0	0	398
Port Heiden	3	2	0	375	0	0	0	375
Port Moller	1	1	0	0	0	0	0	0
Sand Point	35	31	67	2,952	1,083	320	456	4,877
Subtotal, Area Residents	143	124	151	10,289	4,054	661	1,012	16,167
Anchorage	6.00	5.00	5	526	24	34	14	602
Eagle River	1.00	0.00	0	0	0	0	0	0
Fairbanks	1.00	1.00	10	10	2	0	0	22
Homer	2.00	2.00	1	160	5	19	19	204
Kenai	1.00	1.00	0	222	0	0	0	222
Kodiak City	3.00	3.00	25	26	0	1	4	56
North Pole	2.00	2.00	0	27	4	1	5	37
Wasilla	1.00	1.00	0	0	0	0	0	0
Subtotal, Other Alaska Residents	17	15	41	971	35	55	42	1,143
Totals	160	139	192	11,260	4,089	716	1,054	17,310

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

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: ADF&G 2007

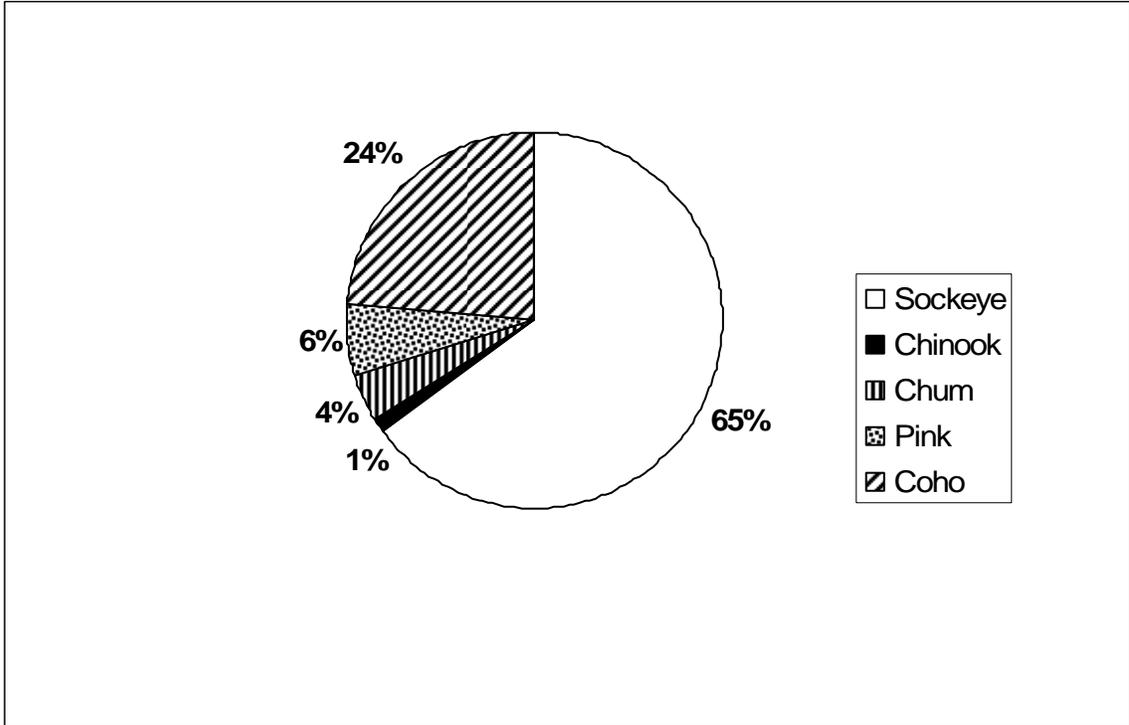


Figure VIII-1.—Composition of Alaska Peninsula area estimated subsistence salmon harvest by species, 2005.

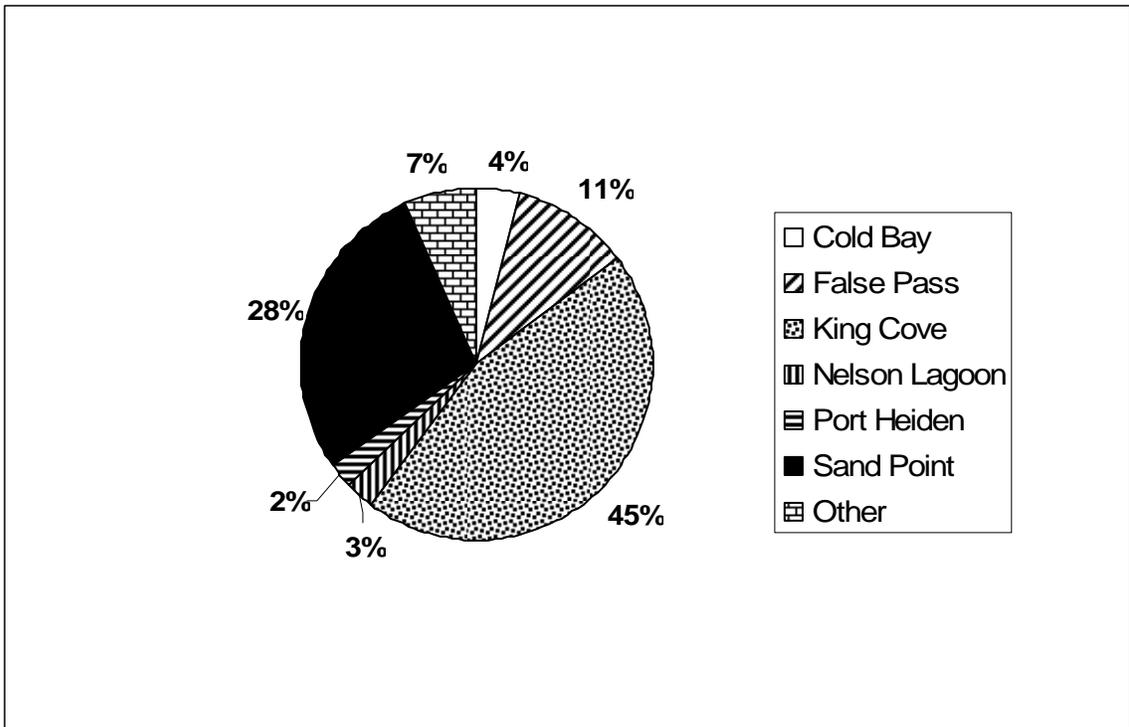


Figure VIII-2.—Subsistence salmon harvests by community, Alaska Peninsula Area, 2005.

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 58° north latitude, including the waters surrounding the Pribilof Islands (5 AAC 01.350). For subsistence purposes, the Aleutian Islands Area is divided into 5 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) (U.S. 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. In the Unalaska District, 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 approximately November 1 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 2005

In 2005, 217 subsistence salmon permits were issued for the Unalaska District, slightly higher than 2004 (208 issued) and identical to the recent 5-year average of 217 permits, but notably above the long-term average of 158 permits since 1985. The return rate in 2005 was 70% (152 of 217 permits) (Table IX-1). Individuals with Unalaska/Dutch Harbor addresses obtained 206 permits (95%), and other Alaska residents obtained the balance, 11 permits (5%) (Table IX-2).

The estimated subsistence harvest of salmon in the Unalaska District in 2005 was 5,038 fish. This is lower than the recent 5-year (5,989 salmon) and 10-year (5,310 salmon) averages for the district. The 2005 subsistence harvest in the Unalaska District was composed of 81% sockeye, 11% pink, 8% coho, and less than 1% each of chum and Chinook (Figure IX-1). Permit holders with Unalaska/Dutch Harbor addresses harvested all but 25 fish (99%) of the Unalaska District total subsistence catch in 2005 (Table IX-2).

In interviews with Division of Subsistence personnel, ADF&G fishery 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 in other areas, fishery 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% of all salmon harvested for home use were removed from commercial catches, 62% were harvested with noncommercial nets, and 34% were taken with rod and reel (ADF&G 2007).

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 (U.S. Census Bureau 2001). The Alaska Department of Labor and Workforce Development (2007) estimated the population of Adak in 2006 at 146.

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 Alaska Board of Fisheries reclassified it again as a subsistence fishery beginning in 1998.

Subsistence regulations in place since 2001 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 fishery managers believe that the program provides reliable data on subsistence salmon fishing effort and harvests at Adak.

Subsistence Salmon Harvests in 2005

Two subsistence salmon permits were issued for the Adak District in 2005, down from 6 in 2004 and 2003, and a notable drop from the 13 and 17 permits issued in 2000 and 2001, respectively. One permit was issued to an Adak resident and the other to a King Cove resident; both permits were returned (Table IX-3). The harvest was 188 salmon, all sockeyes (Table IX-4). This was well below the recent 5-year (310 salmon) and 10-year (281 salmon) average. 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. Since 1999, two years after the establishment of the civilian population at Adak, an average of 7 personal use/subsistence permits have been issued and the average annual harvest has been 295 salmon (Table IX-4).

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). As part of the “Subsistence Fisheries Harvest Assessment and Traditional Ecological Knowledge, Lower Alaska Peninsula and Aleutian Islands” project (FIS 02-032), salmon harvest data were collected for Akutan (2002 and 2003 harvests), Atka (2003 harvests), and Nikolski (2002 and 2003 harvests) (Davis 2005). The results of these interviews are reported in Table IX-5. 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). Subsequent harvest estimates for 2002 and 2003 were lower (1,070 salmon and 1,675 salmon, respectively), but were also primarily sockeye. 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. The harvest estimates for 2002 (1,137 salmon) and 2003 (1,137 salmon) were lower. 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. The harvest estimate for 2003 of 1,792 salmon was about mid-way between the previous 2 estimates, but with sockeye salmon predominating.

OTHER SUBSISTENCE FISHERIES IN THE ALEUTIAN ISLANDS AREA

Finfish

In May 2003, federal regulations authorizing subsistence harvests of halibut in Alaska were finalized. A harvest assessment program for subsistence halibut was implemented in 2003, and harvest estimates for all eligible communities and tribes, including all those of the Aleutian Islands Area, are available for 2003, 2004, and 2005 (Fall et al. 2004, Fall et al. 2005, Fall et al. 2006).

There are no other 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 under state regulations, halibut may be taken only a single handheld line with no more than 2 hooks attached. (Federal rules allow up to 30 hooks.) 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 Division of Subsistence Community Subsistence Information System (ADF&G 2007).

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 Subsistence Information System (CSIS) (ADF&G 2007).

Table IX-1.—Estimated historic subsistence salmon harvests, Unalaska District, 1985-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1985	65	22	0	897	208	20	1,293	2,418
1986	121	28	0	3,449	847	375	2,468	7,139
1987	81	49	0	1,097	378	151	1,780	3,406
1988	77	45	3	966	390	83	2,627	4,069
1989	74	42	2	1,112	470	36	1,292	2,912
1990	94	37	4	2,357	681	100	1,428	4,570
1991	89	48	0	1,294	666	45	1,075	3,080
1992	144	102	7	2,739	587	11	1,723	5,067
1993	139	102	17	2,831	697	136	587	4,268
1994	150	120	1	2,759	774	48	1,053	4,635
1995	160	129	23	4,484	484	23	791	5,805
1996	189	123	5	1,107	1,033	49	492	2,686
1997	221	163	8	4,192	864	110	554	5,728
1998	206	161	4	3,317	731	26	729	4,807
1999	208	154	0	2,485	1,234	16	1,044	4,779
2000	212	167	10	3,935	603	26	580	5,154
2001	204	165	6	4,202	724	77	784	5,793
2002	231	180	3	5,678	707	65	385	6,837
2003	227	179	25	5,124	572	40	378	6,139
2004	208	170	7	4,713	955	26	437	6,139
2005	217	152	8	4,066	424	14	527	5,038
5-Year								
Average	217	169	10	4,756	676	44	502	5,989
10-Year								
Average	212	161	8	3,882	785	45	591	5,310
All Years								
Average	158	111	6	2,991	668	70	1,049	4,784

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table IX-2.—Estimated subsistence salmon harvests by community, Unalaska District, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Anchorage	5	3	2	23	0	0	0	25
Dutch Harbor	96	72	0	1,633	133	0	44	1,811
Fritz Creek	1	0	0	0	0	0	0	0
Kotlik	1	1	0	0	0	0	0	0
St Paul	2	2	0	0	0	0	0	0
Unalaska	110	72	6	2,409	290	14	483	3,202
Wainright	1	1	0	0	0	0	0	0
Wasilla	1	1	0	0	0	0	0	0
Totals	217	152	8	4,066	424	14	527	5,038

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table IX-3.—Estimated subsistence salmon harvests by community, Adak District, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Adak Station	1	1	0	138	0	0	0	138
King Cove	1	1	0	50	0	0	0	50
Totals	2	2	0	188	0	0	0	188

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table IX-4.—Estimated historic subsistence and personal use salmon harvests, Adak District, 1988-2005.

YEAR	PERMITS ¹		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1988	43	29	0	503	23	0	150	676
1989	64	47	0	382	0	0	117	499
1990	61	29	0	800	47	0	41	888
1991	37	31	0	281	6	0	34	321
1992	52	41	0	572	30	0	4	606
1993	36	26	0	638	12	0	26	676
1994 ²	0	0	0	0	0	0	0	0
1995	4	3	0	156	0	0	0	156
1996	6	6	0	91	0	0	0	91
1997 ³	18	12	0	229	0	4	0	233
1998	13	10	0	399	0	0	25	424
1999	5	5	0	164	4	0	0	168
2000	13	13	0	270	4	0	75	349
2001	17	15	14	489	18	0	16	537
2002	3	3	0	150	0	0	0	150
2003	6	5	0	338	0	0	0	338
2004	6	4	0	336	0	0	0	336
2005	2	2	0	188	0	0	0	188
5-Year Average	7	6	3	300	4	0	3	310
10-Year Average	9	8	1	265	3	0	12	281
All Years Average	21	16	1	333	8	0	27	369

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: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table IX-5.—Estimated subsistence harvests of salmon by residents of Akutan, Atka, and Nikolski.

Community	Year	Estimated Number of Households Harvesting	Estimated Harvests in Number of Salmon ¹						
			Chum	Coho	Chinook	Pink	Sockeye	Other/Unknown	All Salmon
Akutan	1991	24	36	429	10	915	1,872	6	3,268
Akutan	2002	NA	44	147	0	70	809	0	1,070
Akutan	2003	NA	0	127	3	275	1,270	0	1,675
Atka	1992	18	24	465	4	459	502	0	1,454
Atka	1994	23	133	583	10	1,267	394	0	2,387
Atka	2003	NA	0	333	8	264	1,187	0	1,792
Nikolski	1991	12	54	547	0	327	957	17	1,902
Nikolski	2002	NA	0	643	0	182	312	0	1,137
Nikolski	2003	NA	0	270	12	35	287	0	604

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; ADF&G 2007; Davis 2004

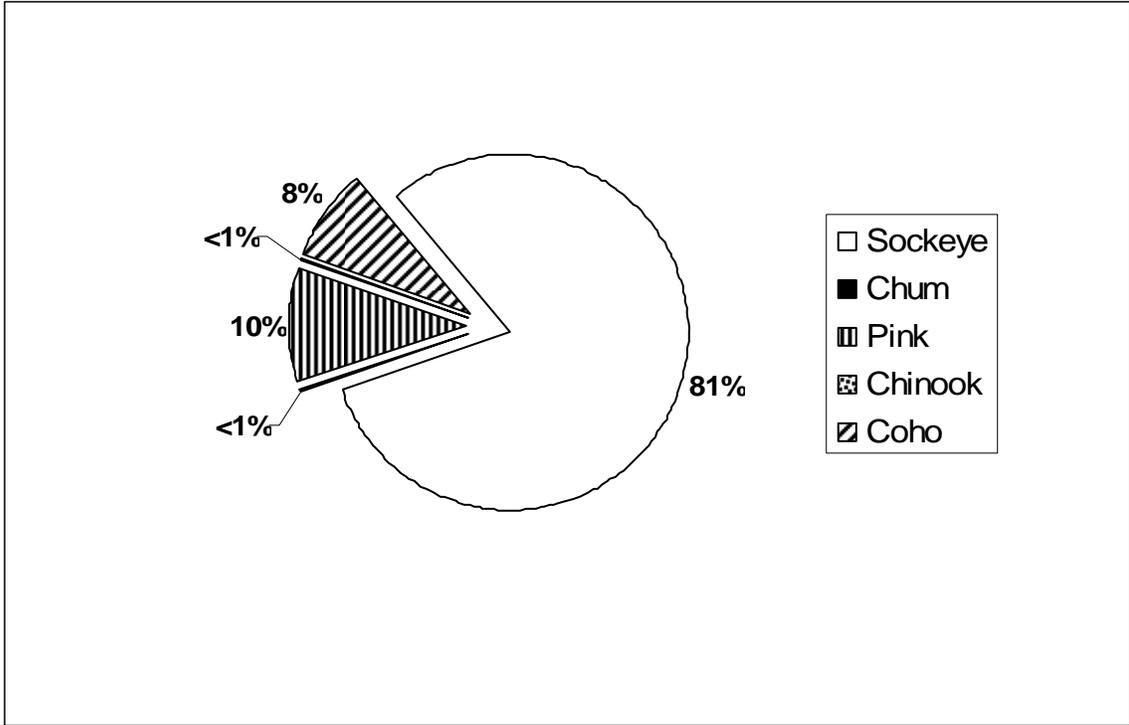


Figure IX-1.—Composition of Unalaska District estimated subsistence salmon harvest by species, 2005.

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 Kodiak Management Area include Akhiok, Chiniak, the Coast Guard Base, Karluk, the city of Kodiak, 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 (U.S. 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 2005, 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 were 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.

In 2005, federal regulations governing subsistence salmon fishing in waters under the jurisdiction of the Federal Subsistence Board were generally identical to the state regulations summarized above, except rod and reel, in addition to gillnets and seines, was legal subsistence gear under federal rules. There was no separate federal subsistence permit; a state permit was required for subsistence fishing under the federal regulations.

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 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. In June 2001, staff from the Division of Commercial Fisheries and the Division of Subsistence of ADF&G traveled to the 6 small Kodiak Island Borough communities (Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions) to implement a local permit vendor system. A resident in each community was trained to issue subsistence fishing permits. Outreach occurred in each community as well to encourage subsistence fishers to obtain permits, record their harvests, and return the permits at the end of the season. The vendor program has remained in place through the 2005 fishing season.

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 2005

In 2005, subsistence fishers returned 1,900 subsistence permits to the Department (Table X-1). Of all returned permits, 1,558 (82%) were held by residents of Kodiak Island Borough communities, and 341 (18%) were issued to other Alaska residents (Table X-2). As usual, individuals and families with Kodiak city addresses accounted for a very large number of the total permits in 2005 (1,386; 73% 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 reported total Kodiak Area subsistence salmon harvest in 2005 was 37,815 fish (Table X-1). This number is slightly below the recent 5-year average of 39,941 salmon and slightly higher than the recent 10-year average of 36,950 salmon. Of the entire management area harvest, 36,271 salmon (96%) were harvested by residents of Kodiak Island Borough communities, and 1,544 salmon (4%) were harvested by other permit holders (Table X-2).

In 2005, the Kodiak Area subsistence salmon harvest was composed of 71% sockeye, 20% percent coho, 6% pink, 2% chum, and 1% Chinook salmon (Figure X-1).

In interviews with Division of Subsistence staff, fishery 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 suspected that a substantial amount of subsistence harvesting occurs without permits, especially in areas off of the road system. Comparisons of subsistence harvests based on returned permits with those from household harvest surveys (as reported in the Community Subsistence Information System; ADF&G 2007) suggest that subsistence salmon harvests are substantially higher than permit returns indicate. Delivery of permits to subsistence fishers living in the six communities off the island road system has been problematic in the past, but as noted above, in recognition of this problem, a local permit vendor system was implemented in 2001. This outreach appeared to result in increased participation in the permit system in the 6 smaller communities: 189 households from these communities returned subsistence permits in 2001, 167 in 2002, 165 in 2003, 170 in 2004, and 147 in 2005 (Table X-2), compared to 100 in 2000 (ADF&G 2002c:105). The reported subsistence salmon harvest for the six communities was 9,034 in 2001, 9,386 in 2002, 8,714 in 2003, 7,845 in 2004, and 10,172 in 2005, compared to 6,299 in 2000 (Table X-2, ADF&G 2002c:105). Additional research and outreach need to take place to assess these recent harvest data.¹⁷

¹⁷ The Division of Subsistence in 2004 received funding through the Fisheries Information Services division of the Office of Subsistence Management, USFWS, to investigate subsistence fishing harvests and uses in Kodiak Island Borough communities and to conduct additional outreach activities (Project FIS 04-457). Future annual reports will incorporate findings from this study.

As documented in household surveys, households in this management area also harvest salmon for home use by rod and reel fishing. This gear type is allowed for subsistence salmon fishing under federal subsistence rules. Accounting of fish removed from commercial harvests needs to also occur for a full picture of home use salmon harvests in the Kodiak Management Area.

In early 2004, the Division of Subsistence of ADF&G and the Kodiak Area Native Association (KANA), in a project funded by the *Exxon Valdez* Oil Spill Trustee Council, conducted comprehensive household surveys in Akhiok, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions that, among other things, collected updated harvest data for salmon, other nonsalmon fish, and marine invertebrates. Detailed study findings appear in Fall (2005).

OTHER SUBSISTENCE FISHERIES

In May 2003, federal regulations authorizing subsistence harvests of halibut in Alaska were finalized. A harvest assessment program for subsistence halibut was implemented in 2003, and harvest data for eligible communities and tribes, including all those of the Kodiak Management Area, are available (Fall et al. 2004, Fall et al. 2005, Fall et al. 2006).

There are no other 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 Subsistence Information System (ADF&G 2007). 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 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 historic subsistence salmon harvests, Kodiak Area, 1986-2005.

YEAR	PERMITS		REPORTED SALMON HARVEST					
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	TOTAL
1986	1,244	1,002	90	14,391	6,998	605	2,371	24,455
1987	1,124	880	101	13,198	6,463	1,299	2,421	23,482
1988	1,098	699	108	10,081	4,291	377	1,320	16,177
1989	2,800	717	43	12,638	4,123	419	1,553	18,776
1990	2,900	1,167	131	17,959	8,627	655	1,605	28,977
1991	1,406	1,225	177	21,835	8,208	714	1,743	32,677
1992	1,561	1,195	318	20,684	8,643	643	1,646	31,934
1993	1,496	959	243	19,471	7,176	838	2,696	30,424
1994	2,550	1,464	205	17,962	7,491	440	1,758	27,856
1995	1,950	1,194	175	19,416	5,603	293	1,548	27,035
1996	1,567	1,390	253	28,287	5,117	381	1,125	35,163
1997	2,098	1,638	383	33,293	6,369	234	1,458	41,737
1998	1,841	1,126	350	20,459	5,348	214	1,412	27,783
1999		1,438	397	26,497	4,932	388	1,266	33,480
2000		1,376	273	24,873	5,399	341	742	31,628
2001		2,153	273	33,833	5,920	427	1,158	41,611
2002		2,271	593	32,977	6,057	350	1,665	41,642
2003		2,275	500	32,104	6,096	384	1,484	40,568
2004		2,240	379	30,217	5,819	261	1,395	38,071
2005		1,900	431	27,002	7,447	592	2,343	37,815
5-Year								
Average		2,168	435	31,227	6,268	403	1,609	39,941
10-Year								
Average		1,781	383	28,954	5,850	357	1,405	36,950
All Years								
Average		1,415	271	22,859	6,306	493	1,635	31,565

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table X-2.—Reported subsistence salmon harvests, Kodiak Area, by community and species, 2005.

COMMUNITY	Permits Returned	Reported Salmon Harvest					Total Salmon
		Chinook	Sockeye	Coho	Chum	Pink	
Afognak Island	1	0	120	0	0	0	120
Akhiok	5	0	95	4	0	8	107
Chiniak	23	1	245	265	9	14	534
Karluk	1	0	0	0	0	0	0
Kodiak City	1,386	254	19,676	4,550	125	840	25,445
Larsen Bay	24	7	1,318	53	25	50	1,453
Old Harbor	38	13	1,304	1,025	236	725	3,303
Ouzinkie	36	119	1,690	863	172	572	3,416
Port Lions	43	28	1,313	466	1	85	1,893
Ugan k Bay	1	0	0	0	0	0	0
Subtotal, Kodiak Island Borough	1,558	422	25,761	7,226	568	2,294	36,271
Adak Station	1	0	0	0	0	0	0
Alexander Creek	1	0	0	0	0	0	0
Anchor Point	1	0	25	0	0	0	25
Anchorage	124	3	802	79	11	26	921
Barrow	1	0	0	0	0	0	0
Bethel	1	0	0	0	0	0	0
Bettles	1	0	0	0	0	0	0
Big Lake	3	0	25	0	0	0	25
Central	2	0	0	0	0	0	0
Chickaloon	1	0	0	0	0	0	0
Chugiak	5	0	6	0	4	0	10
Cordova	1	0	0	0	0	0	0
Craig	1	1	10	0	0	0	11
Delta Junction	3	0	0	0	0	0	0
Douglas	1	0	25	0	0	0	25
Eagle River	16	0	17	22	0	0	39
Fairbanks	35	2	75	0	1	0	78
Fort Richardson	1	0	0	0	0	0	0
Fort Wainwright	1	0	0	0	0	0	0
Girdwood	5	0	39	0	0	0	39
Gustavus	2	0	0	0	0	0	0
Haines	1	0	0	0	0	0	0
Homer	19	0	66	0	3	0	69
Juneau	6	2	2	0	0	4	8
Kasilof	1	0	0	0	0	0	0
Kenai	7	0	0	0	0	0	0
Nikiski	2	0	0	0	0	0	0
Ninilchik	6	0	0	0	0	0	0
Nome	1	0	0	0	0	0	0
North Pole	5	0	0	0	0	0	0
Palmer	17	0	0	0	0	0	0
Salcha	2	0	0	0	0	0	0
Seldovia	3	1	26	4	2	17	50
Seward	5	0	0	0	0	0	0
Sitka	3	0	0	0	0	0	0
Soldotna	19	0	31	0	0	0	31
Sterling	2	0	0	0	0	0	0
Ta keetna	1	0	0	0	0	0	0
Unknown City	7	0	20	100	0	0	120
Valdez	1	0	0	0	0	0	0
Wasilla	16	0	12	0	0	0	12
Subtotal, Other Alaska	331	9	1,181	205	21	47	1,463
Balance of USA	11	0	60	16	3	2	81
Totals	1,900	431	27,002	7,447	592	2,343	37,815

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

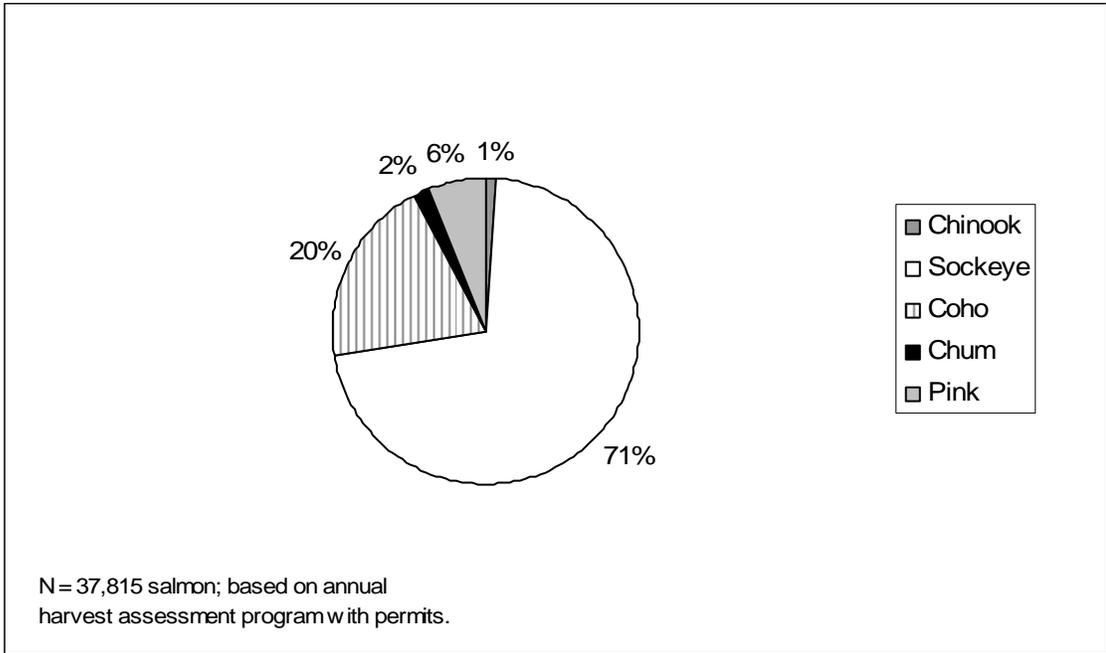


Figure X-1.—Composition of Kodiak Area reported subsistence salmon harvest by species, 2005.

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 setnet 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 59% of the state's total population in 2000 (U.S. 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 and, beginning in 2002, the Port Chatham and Wind Bay subdistricts. 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 in the Port Chatham and Windy Bay subdistricts on August 1st and in the Port Graham and Koyuktolik subdistricts on September 30th. There have been 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 3 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 6-inch stretched mesh. A lead may be used on the shoreward end of the net.

Harvest Assessment Methods

The Department of Fish and Game, Division of Subsistence, issues household permits 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 2 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, fishers 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 2 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. Returns in the late 1990s were enhanced as a result of a rehabilitation/enhancement project initiated by ADF&G and subsequently run by the Nanwalek Salmon Enhancement Project in association with the Chugach Regional Resources Commission (CRRC) and the village of Nanwalek (Hammarstrom and Dickson 2003:62). In-season escapement monitoring has taken place since 1994, with openings and closures in the subsistence and commercial fisheries controlled by emergency order. Inconsistent returns in recent years have been the result of disease outbreaks in the lake rearing portion of the program and erratic adult behavior that caused difficulty in capturing broodstock (Hammarstrom and Dickson 2005:41).

Harvest Estimates for 2005

A low return of only 4,000 sockeye salmon to English Bay lakes was forecast for 2005, less than the low end of the SEG (sustainable escapement goal) range of 9,400 to 16,900 sockeye (Hammarstrom and Dickson 2006:29); the return was 75,500 harvestable adult sockeye salmon in 2003 (Hammarstrom and Dickson 2004:45). The commercial set gillnet fishery in waters of the Port Graham Subdistrict was kept closed at the start of the commercial season in early June, and the subsistence fishery, which was opened on April 1, was closed on June 1. When sockeye returns indicated that the minimum escapement would be achieved, the subsistence fishery reopened, beginning June 30. The commercial fishery remained closed (Hammarstrom and Dickson 2006:29,40-41).

In 2005, subsistence salmon harvests in the Port Graham and Koyuktoalik subdistricts totaled 5,399 salmon, including both set net and rod and reel harvests (Table XI-1). The 2005 harvest declined from the harvest of 6,953 salmon in 2004, and the record harvest in 2002 of 14,342 salmon and the near-record total of 9,109 in 2003. The harvest in 2005 was consequently below the recent 5-year average (8,000 salmon) and the recent 10-year average (6,464 salmon), but similar to the long-term average (5,213 salmon) for the fishery (Table XI-1). This was undoubtedly due to a low return of sockeye salmon to the English Bay River in 2004 compared to the previous years.

In 2004, residents of Nanwalek, with 22 permits returned, harvested 4,490 salmon, and residents of Port Graham, with 46 permits returned, took 909 salmon; there were no other participants in the fishery (Table XI-2). Of the total harvest, sockeye salmon were the most

numerous species (2,126 salmon; 39%), followed by pink (1,608 salmon; 30%), coho (1,193 salmon; 22%), Chinook (292 salmon; 5%), and chum (180 salmon; 3%) (Figure XI-1).

SELDOVIA SUBSISTENCE FISHERY

History and Regulations

The Alaska Board of Fisheries established this subsistence set gillnet fishery in fall 1995. 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. It targets Chinook 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 2 parts, the first occurring from April 1 through May 30 and the second occurring during the first 2 weekends in August. In the early season, fishing is allowed during two 48-hour periods each week, while in the late season, fishing is open continuously during the 2-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 6 inch stretched mesh.

Harvest Assessment Methods

Household permits are issued by the Department of Fish and Game prior to fishing, and catches are recorded on the permits. Permits are also available from the harbormaster in Seldovia. Fishers are required to call in daily to report their catches to ADF&G as well as return their permits after each of the 2 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 2005 Season

There were 18 permits issued for the Seldovia subsistence fishery in 2005. Fourteen permits were returned to the Department as required by regulation (88%). The estimated harvest was 100 pink salmon, 74 sockeye, 53 Chinook salmon, 14 coho, and 11 chum, for a total of 251 salmon. All but 2 (16 permits) of the permits were issued to residents of Seldovia; one permit was issued to an Anchorage resident and one to a resident of Houston (Table XI-3).

Total salmon harvests in 1998 through 2005 were higher than the first 2 years of the fishery, the result of a longer season: beginning in 1998, 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 from 1998 through 2003 (Table XI-4). However, Chinook harvests declined to just 53 fish in 2005, about the same as 1996 and 1997. Harvests of sockeye salmon dropped to 69 fish in 2004 and 74 in 2005. On the other hand, the harvest of 100 pink salmon in 2005 was the highest ever for this fishery. The total harvest of 251 salmon was the lowest since 1998.

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 2 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 is set for the early season. If this limit is reached, the second season does not open until July 1st. In the more than 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

Household permits are issued by the Department of Fish and Game prior to fishing, and catches are recorded on the permits. 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 2005 Season

In 2005, 78 subsistence permits were issued for the Tyonek District, including 59 permits issued to Tyonek residents (76%) and 19 permits issued to other Alaska residents (24%), mostly residents of Anchorage (10 permits) (Table XI-5). The total reported subsistence salmon harvest was 1,184 fish, with 982 Chinook, 139 coho, 61 sockeye, and 2 chum. Residents of Tyonek accounted for 84% of the harvest total (996 salmon), including 90% percent of the Chinook harvest (881 salmon). The total 2005 salmon harvest was below the long-term average for this fishery of 1,602 salmon, but was the lowest total since 1997 and below the recent 5-year (1,346 salmon) and 10-year (1,297 salmon) averages (Table XI-6).

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 was 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 2005

Eighteen subsistence permits were issued for the Yentna River subsistence fish wheel fishery in 2005. All but one was returned to ADF&G (94%). In 2005, 11 of the 18 permit holders resided in the Skwentna area, with the remaining 7 permits held by residents of Anchorage (2 permits), Willow (2 permits), Chugiak (1 permit), Talkeetna (1 permit) and the Deshka River area (1 permit) (Table XI-7). The total harvest in 2005 was 268 salmon, including 177 sockeye (66%), 42 coho (16%), 25 chum (9%), and 24 pink (9%). (Chinook salmon may not be retained in this fishery.) The 2005 harvest was the lowest recorded in the history of the fishery, and was less than half the recent 5-year average (553 salmon) and the long-term average of 562 salmon (Table XI-8).

Table XI-1.—Historic reported subsistence salmon harvests, Port Graham and Koyuktolik subdistricts, 1981-2005.

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
2001		49	133	1,085	1,295	228	1,454	4,195
2002		79	346	10,620	1,057	488	1,831	14,342
2003		52	465	5,534	1,006	532	1,572	9,109
2004		80	312	3,525	1,303	213	1,600	6,953
2005		68	292	2,126	1,193	180	1,608	5,399
5-Year								
Average		66	310	4,578	1,171	328	1,613	8,000
10-Year								
Average		59	297	3,307	1,082	437	1,341	6,464
All Years								
Average		56	223	2,156	1,023	278	1,533	5,213

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XI-2.—Reported subsistence salmon harvests by community, Port Graham and Koyuktolik subdistricts, 2005.

COMMUNITY	PERMITS		REPORTED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Nanwalek		22	27	1,934	1,142	128	1,259	4,490
Port Graham		46	265	192	51	52	349	909
Totals		68	292	2,126	1,193	180	1,608	5,399

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XI-3.—Estimated subsistence salmon harvests by community, Seldovia fishery, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Anchorage	1	1	0	0	0	0	0	0
Houston	1	1	0	40	7	4	46	97
Seldovia	16	14	53	34	7	7	54	154
Totals	18	16	53	74	14	11	100	251

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, 2006.

Table XI-4.—Estimated historic subsistence salmon harvests, Seldovia fishery, 1996-2005.

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
2001	19	16	149	142	0	0	0	290
2002	20	20	124	234	13	11	31	413
2003	18	15	117	290	2	66	22	496
2004	14	12	102	69	5	18	65	258
2005	18	16	53	74	14	11	100	251
5-Year								
Average	18	16	109	162	7	21	43	342
All Years								
Average	21	20	110	129	3	17	22	281

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XI-5.—Reported subsistence salmon harvests by community, Tyonek subdistrict, 2005.

COMMUNITY	PERMITS		REPORTED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Anchorage	10	10	36	41	15	0	0	92
Eagle River	2	2	9	0	0	0	0	9
Kenai	1	1	35	4	0	0	0	39
Palmer	2	2	0	0	24	2	0	26
Tyonek	59	48	881	15	100	0	0	996
Wasilla	2	2	0	0	0	0	0	0
Unknown Community	2	1	21	1	0	0	0	22
Totals	78	66	982	61	139	2	0	1,184

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, 2006.

Table XI-6.—Reported historic subsistence salmon harvests, Tyonek subdistrict, 1980-2005.

YEAR	PERMITS		REPORTED SALMON HARVEST					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
2001	84	58	976	172	49	6	4	1,207
2002	101	71	1,080	209	115	4	9	1,417
2003	87	74	1,183	111	44	10	7	1,355
2004	97	75	1,345	93	130	0	0	1,568
2005	78	66	982	61	139	2	0	1,184
5-Year								
Average	89	69	1,113	129	95	4	4	1,346
10-Year								
Average	80	60	1,066	119	100	5	8	1,297
All Years								
Average	69	55	1,327	135	120	11	9	1,602

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XI-7.—Estimated subsistence salmon harvests by community, Upper Yentna fishery, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK ¹	SOCKEYE	COHO	CHUM	PINK	
Anchorage	2	2	0	0	0	0	0	0
Chugiak	1	1	0	0	0	0	0	0
Deshka	1	1	0	0	0	0	0	0
Skwentna	11	11	0	155	34	25	24	238
Ta keetna	1	1	0	14	8	0	0	22
Willow	2	1	0	8	0	0	0	8
Totals	18	17	0	177	42	25	24	268

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

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XI-8.—Estimated historic subsistence and personal use salmon harvests, Upper Yentna fishery, 1996-2005.¹

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK ²	SOCKEYE	COHO	CHUM	PINK	
1996	17	17	0	242	46	51	115	454
1997	24	21	0	549	83	10	30	672
1998	21	18	0	495	113	15	30	653
1999	18	16	0	516	48	13	18	595
2000	19	19	0	379	92	7	4	482
2001	16	15	0	545	50	4	10	608
2002	25	22	0	454	133	31	14	632
2003	19	15	0	553	67	8	2	630
2004	21	19	0	441	146	3	36	625
2005	18	17	0	177	42	25	24	268
5-Year								
Average	20	18	0	434	87	14	17	553
All Years								
Average	20	18	0	435	82	17	28	562

¹ This fishery was classified as personal use in 1996 and 1997; it has been a subsistence fishery since 1998.

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

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

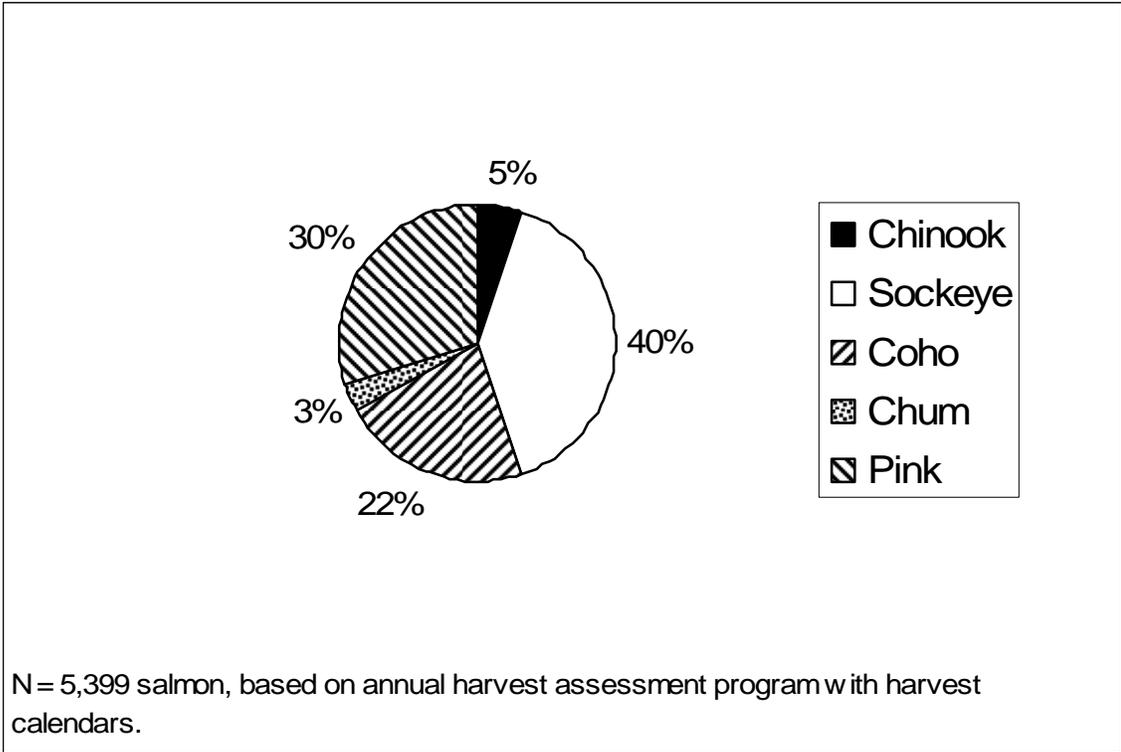


Figure XI-1.—Composition of reported subsistence salmon harvest, Port Graham/Koyuktolik subdistricts, 2005.

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 2005, there were 9 subsistence or personal use salmon fisheries with annual harvest assessment programs in the Prince William Sound Management Area:

1. Upper Copper River: Glennallen Subdistrict, state permit system
2. Upper Copper River: Glennallen Subdistrict, federal permit system
3. Upper Copper River: Chitina Subdistrict, state permit system (personal use)
4. Upper Copper River: Chitina Subdistrict, federal permit system
5. Batzulnetas Fishery
6. Copper River Flats / Prince William Sound
7. Prince William Sound: Eastern District / Tatitlek
8. Prince William Sound: Southwestern District / Chenega Bay
9. Prince William Sound: General

Each of these fisheries will be discussed in turn. 2005 was the fourth year in which there were separate state and federal permit systems for the Glennallen and Chitina subdistricts. It should also be noted that the dip net fishery that takes place in the Chitina Subdistrict of the Upper Copper River District under state regulations 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 again as a personal use fishery beginning in 2003 (with no other regulatory changes). Therefore, the Chitina dip net fishery 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. ADF&G issues state permits under the authority of 5 AAC 01.630. Permits are issued on request at ADF&G offices. Beginning in 2002, the Federal Subsistence Board created a federal permit requirement for qualified rural residents (primarily residents of Copper River Basin and Upper Tanana communities). The National Park Service administers this permit system. While state subsistence permits limit fishers to one choice of gear (either fish wheel or dip net), federal permit holders may use fish wheels, dip nets, and rod and reel. Holders of state permits for the Glennallen Subdistrict may not also obtain a permit for the Chitina Subdistrict, but federally qualified rural resident households may hold permits for both subdistricts (as well as for the Balzulkanet fishery), although seasonal limits for the subdistricts are not additive. Also, there is no prohibition against a federally-qualified rural resident household obtaining both a state and federal subsistence permit for these subdistricts, but again the seasonal limits for the 2 permits are not additive.

Legal subsistence gear in the Glennallen Subdistrict under state regulations includes fish wheels and dip nets. Federal subsistence permit holders may also use rod and reel. The state season runs from June 1 through September 30; the federal season opens May 15 and also closes September 30. Annual limits are the same under state and federal regulations: 30 salmon for a household with one person, of which no more than 5 may be Chinook salmon if taken with a dip net; 60 salmon for a household of 2 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 one person households and 500 for households of 2 or more persons. Dipnetters are still limited to 5 Chinook per year. An additional federal rule is that in addition to the 5 Chinook salmon limit for dipnetting, federal permit holders may take up to 5 Chinook with rod and reel.

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 of ADF&G. 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. Beginning in 2002, the National Park Service, on behalf of the Federal Subsistence Board, has compiled the data from federal permit returns in a program separate from that administered by ADF&G.

The creation of a dual permit system for subsistence fishing in the Upper Copper River creates challenges for the compilation of a single subsistence harvest estimate for this subsistence fishery, which is the goal of this annual report. Issues include the following:

1. As noted above, federal permits allow fishing with multiple gear types, including rod and reel, but state permits allow fishing with only one gear type--either dip net or fish wheel. Thus while past years' annual report summaries for the Glennallen Subdistrict

showed the number of permits issued by gear type, this is not possible for the combined state and federal data summaries reported here.

2. Some households obtain both state and federal permits for the Glennallen Subdistrict. Of these “dual-permitted” households, some report only on their state permits (not returning the federal permit), some report only on their federal permits (not returning the state permit), some report identical harvests on both permits, some report fishing on one permit but not the other, and some return neither permit. Controlling for double-counting of salmon requires making 2 assumptions: a) permittees returning only one permit did not harvest on the other, and b) permittees reporting identical harvests on both permits reported the same harvests twice rather than split their harvests between permits. (These assumptions were employed in the analysis only after discussing the dual-permitted households with the program administrators for ADF&G Division of Sport Fish and the National Park Service.) All households obtaining both state and federal permits were counted as receiving only one permit in the summary tables for the Glennallen Subdistrict included here.
3. State permits collect only the permit holder’s mailing address city, but federal permits collect this and the “community of primary residence.” Since the Copper River area has a number of smaller communities without their own post offices, state permits issued to residents of these communities do not provide adequate information to assure analysis results accurately reflect the true residence communities of harvesters. But because of the precision of the federal permit regarding place of residence, the federal permit place of residence data were used to compile the harvest tables, in combination with the mailing address data from state permits. Since there were several dual-permitted households in the Glennallen Subdistrict fishery, the federal residence community was used as the default where this information differed.

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 by ADF&G from 1997 through 2005. Harvests for village fish wheels are also included in the subdistrict totals.

Subsistence Salmon Harvests in 2005

As shown in Table XII-2, ADF&G and NPS issued a total of 1,234 subsistence salmon permits for the Glennallen Subdistrict for 2005. This total is similar to the recent 5-year average (1,244 permits) and slightly above the recent 10-year average (1,157 permits). Of all Glennallen Subdistrict permits issued, residents of Copper Basin communities held 369 (30%) and other Alaska residents held 865 (70%) (Table XII-3).

As reported in Table XII-2, the estimated total subsistence salmon harvest in the Glennallen Subdistrict in 2005 was 94,752 salmon, including 91,715 sockeye (97%), 2,785 Chinook (3%), and 252 coho (<1%). (There are no pink or chum salmon in the upper Copper River although a few chum salmon are sometimes reported.) This total includes fish wheel and dip net harvests in the state administered fishery, and fish wheel, dip net, and rod and reel harvests in the federally administered fishery. The estimated subsistence salmon harvest in 2005 was highest on record, surpassing the previous record set in 2004 of 87,557 salmon).

The 2005 harvest was notably higher than the recent 5-year average (81,137 salmon), 10-year average (76,767 salmon), and long-term average (62,767 salmon). Table XII-3 reports subsistence salmon harvests in the Glennallen Subdistrict by place of residence of permit holders in 2005. Copper Basin residents caught 36% of the harvest (34,146 salmon) and other Alaska residents harvested 64% (60,606 salmon).

UPPER COPPER RIVER PERSONAL USE FISHERY: CHITINA SUBDISTRICT

Background and History

As noted above, the Chitina Subdistrict is one of 2 (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. In February 2003, the Alaska Board of Fisheries again reconsidered the classification of the Chitina dip net fishery, and reversed its decision of 1999, making a negative customary and traditional use finding and changing the fishery back to personal use. No other regulatory changes were made. Despite this shift back to the personal use category, this and future annual reports will continue to include harvest data for the Chitina Subdistrict. For a detailed discussion of the history of these fisheries, see Simeone and Fall (1996) and ADF&G 2002b.

Regulations

There are state and federal permit programs for the Chitina Subdistrict. Under state regulations, a household permit is required for subsistence fishing in the Chitina Subdistrict, issued by ADF&G. Households may not possess state subsistence permits for both the Glennallen and Chitina Subdistricts in the same year. Under state rules, 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 by ADF&G, currently by the Division of Sport Fish. Chitina Subdistrict 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.

Personal Use Salmon Harvests in 2005

As reported in Table XII-4, the estimated total salmon harvest in the state-administered Chitina Subdistrict personal use fishery in 2005 was 133,546 fish, including 129,506 sockeye (97%), 2,155 Chinook (2%), and 1,885 coho (1%), by 8,232 permit holders. (There are no pink or chum salmon in the upper Copper River.) As reported in Table XII-4, the 2005 total estimated harvest for the Chitina Subdistrict was the highest harvest since 1999, and above the recent 5-year average (115,546 salmon), 10-year average (124,797 salmon), and long-term average since 1988 (107,163 salmon).

Table XII-5 reports estimated salmon harvests in the Chitina Subdistrict personal use fishery by place of residence of state permit holders in 2005; most participants in this fishery live in Fairbanks, Anchorage, or the Matanuska-Susitna Borough. Only 33 Copper Basin residents (0.4%) obtained state personal use salmon permits for the Chitina Subdistrict in 2005. Non-local residents harvested all but 384 of the salmon harvested in this fishery in 2005 (99.7%).

FEDERAL CHITINA SUBDISTRICT SUBSISTENCE FISHERY

Regulations

In 2005, qualified Alaska rural residents could obtain federal subsistence permits for the Chitina Subdistrict from the National Park Service. Legal gear included fish wheels, dip nets, and/or rod and reel. Federal seasonal limits for the Chitina Subdistrict were the same as for the Glennallen Subdistrict, but were not additive.

Subsistence Harvests in 2005

As reported in Table XII-6, an estimated 1,526 salmon were harvested in the federal Chitina Subdistrict subsistence fishery in 2005, down slightly from 1,668 estimated for 2004. The total harvest included 1,498 sockeye salmon (98%), and 27 Chinook (2%). A total of 77 permits were issued, compared to 109 in 2004, 99 in 2003, and 122 in 2002. Table XII-7 reports harvests by the place of residence of holders of 2005 federal subsistence permits for the Chitina Subdistrict. Residents of Glennallen (30 permits), Copper Center (29 permits), and Chitina (10 permits) held most of the permits.

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 11 years (Table XII-8). One permit was issued and returned every year from 1998 through 2004. No permits were issued for 2005. 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 5 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 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 2005

As reported in Table XII-9, 237 permits were issued for this fishery in 2005, and 224 (95%) were returned. This was a very sharp drop from the record number of permits issued in 2004 (511), and the lowest number issued since 1996 (176). The number of permits issued in 2005 was also below the recent 5-year average (391 permits) and 10-year average (336 permits). The estimated harvest in 2005 was 1,106 salmon, including 830 sockeye (75%), 260 Chinook (24%), 15 coho (1%), and 1 chum (<1%). Most permit holders lived in Cordova (211; 89%) (Table XII-10). The estimated total harvest in this fishery of 1,106 salmon was the lowest since 1995 (987 salmon) and well below the recent 5-year average (2,963 salmon) and the recent 10-year average (2,939 salmon), but slightly above the long-term average dating back to 1965 (1,060 salmon).

EASTERN DISTRICT SUBSISTENCE SALMON FISHERY

The present set of subsistence regulations for 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 2005, 16 permits were issued for this fishery. Three permits were returned (19%). Because of the historically low permit return rate for this fishery, data in Table XII-11 are reported harvests only. The reported harvest for 2005 was 600 salmon, mostly coho (286; 48%), pink (200; 33%), and sockeye (98 fish; 16%). It is likely that the harvest assessment program for this fishery consistently and substantially underestimates harvests. As shown in Table XII-12, household surveys in Tatitlek provided an estimate of 1,075 salmon taken with subsistence methods in 2003, compared to 298 based on returned permits for that year. Rod and reel and removal from commercial harvests also have provided salmon for home use in Tatitlek in most years, although all salmon reported harvested in the surveys for 2003 were taken with subsistence nets or seines (Fall 2005).

SOUTHWESTERN DISTRICT SUBSISTENCE SALMON FISHERY

The present set of subsistence regulations for 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 2005, 13 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 2005 was 907 salmon, consisting of sockeye (515; 57%), chum (174; 19%), pink (124; 14%), coho (84; 9%), and Chinook (10; 1%). The 2005 harvest was above the recent 5-year (636 salmon) and 10-year (596 salmon) averages. 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 provided an estimate of 1,690 salmon taken with subsistence methods in 1998, compared to 677 based on returned permits for that same year. 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 5 years with any reported harvest. In 2005, 14 permits were issued and 13 were returned. The harvest totaled 4 sockeye salmon (Table XII-15). Permit holders were from Wasilla (6 permits), Anchorage (3 permits), Cordova (2 permits), Chugiak (1 permit), Nenana (1 permit), and Valdez (1 permit) (Table XII-16).

OTHER SUBSISTENCE FISHERIES IN THE PRINCE WILLIAM SOUND AREA

In May 2003, federal regulations authorizing subsistence fishing for halibut in Alaska were finalized. A harvest assessment program for subsistence halibut began in 2003. Harvest estimates for all eligible communities and tribes, including the Prince William Sound area communities of Cordova, Chenega Bay, and Tatitlek, are available for 2003, 2004, and 2005 (Fall et al. 2004, Fall et al. 2005, Fall et al. 2006).

In 2005, there were no other 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 Subsistence Information System (ADF&G 2007).

The Division of Subsistence, ADF&G, in collaboration with the Copper River Native Association, the Cheesh'Na Tribal Council, the Mentasta Tribal Council, and the Chitina Tribal Council, conducted a household survey to collect non-salmon fish harvest and use information in Copper Basin communities for a 12-month period from October 1, 2000 to September 30, 2001. In total, 472 households were interviewed, 42 percent of the estimated 1,193 households living in Copper Basin communities. The study produced estimated harvests by study community and gear type for burbot, Dolly Varden, lake trout, grayling, northern pike, sucker, rainbow trout, steelhead, and whitefish. Detailed summaries of study methods and findings appear in Simeone and Kari (2004).

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 Subsistence Information System (ADF&G 2007) based upon systematic household surveys. A subsistence permit is required for the harvest of shrimp from April 15 to September 15 (5 AAC 02.210(5)). The ADF&G Division of Sport Fish administers this permit program. Future annual reports will summarize the findings of that permit program. Subsistence fishing for Dungeness, tanner, and king crab in the Prince William Sound Management Area is closed until the stocks recover enough to provide a harvestable surplus.

Table XII-1.—Subsistence harvests by village fish wheel permits, Glennallen Subdistrict, 1997-2004.

Year	Village	Sockeye	Chinook	Coho	Steelhead	Other	Total	Comments
1997	Chistochina	342	105	139	88	1	675	
1997	Gakona	1,242	8				1,250	
1997	Kluti-Kah	61	12				73	
1999	Chickaloon	5	1				6	
1999	Gakona						0	did not fish
1999	Kluti-Kah	85	46				131	
2000	Chickaloon	200	73	0	0	0	273	
2000	Chistochina	880	1	0	0	0	881	
2000	Kluti-Kah	110	20	0	0	0	130	
2001	Chickaloon	120	20	0	0	0	140	
2001	Chistochina	1,203	4	0	0	0	1,207	
2001	Kluti-Kah	259	3	114			376	
2002	Chickaloon	91					91	
2002	Chitina						0	
2003	Chickaloon	105	8				113	
2004	Chickaloon	178	5				183	
2004	Chistochina	1,563	17				1,580	taken under federal permit
2005	Chistochina	545	4				549	taken under federal permit
2005	Chickaloon	533	20			1	554	
2005	Gakona	442	9				451	

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

Table XII-2.—Estimated historic subsistence salmon harvests, Glennallen Subdistrict, 1988-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST ¹					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
2001	1,239	1,176	3,480	81,960	1,142	20	0	86,601
2002	1,308	1,162	4,446	63,028	686	1	0	68,161
2003	1,227	1,101	3,344	64,618	650	0	0	68,612
2004	1,212	1,032	4,503	82,174	880	0	0	87,557
2005	1,234	1,070	2,785	91,715	252	0	0	94,752
5-Year								
Average	1,244	1,108	3,712	76,699	722	4	0	81,137
10-Year								
Average	1,157	1,058	3,267	72,134	658	3	0	76,061
All Years								
Average	931	836	2,407	59,863	495	1	0	62,767

¹Starting in 2002, estimates include salmon harvested under federal as well as state subsistence fishing regulations and permits.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-3.—Estimated subsistence salmon harvests by community, Glennallen Subdistrict, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST ¹					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Chistochina	1	1	4	545	0	0	0	549
Chitina	23	19	39	2,175	57	0	0	2,271
Copper Center	134	117	331	13,700	10	0	0	14,041
Gakona	55	54	151	6,421	0	0	0	6,571
Glennallen	141	119	373	8,372	25	0	0	8,770
Mentasta	2	1	32	348	0	0	0	380
Paxson	3	2	50	158	0	0	0	207
Slana	10	8	26	1,330	0	0	0	1,356
Copper Basin								
Subtotal	369	321	1,005	33,049	92	0	0	34,146
Anchor Point	2	2	0	303	0	0	0	303
Anchorage	278	226	492	13,509	17	0	0	14,018
Anderson	2	1	2	328	0	0	0	330
Barrow	2	2	3	298	0	0	0	301
Big Lake	4	4	2	94	0	0	0	96
Cantwell	3	2	0	0	0	0	0	0
Central	1	1	4	54	0	0	0	58
Chickaloon	1	1	20	533	0	0	0	553
Chugiak	17	16	51	734	0	0	0	785
Clear	1	1	0	244	0	0	0	244
Cooper Landing	1	1	6	231	0	0	0	237
Cordova	1	1	4	130	0	0	0	134
Delta Junction	24	21	65	1,639	0	0	0	1,704
Dot Lake	1	1	0	36	0	0	0	36
Eagle River	67	61	291	5,333	46	0	0	5,670
Eielson AFB	3	2	0	0	0	0	0	0
Ester	3	3	14	311	0	0	0	325
Fairbanks	101	90	154	4,022	4	0	0	4,180
Girdwood	9	7	9	140	0	0	0	149
Healy	1	1	6	224	0	0	0	230
Homer	1	1	1	21	0	0	0	22
Indian	1	1	2	21	0	0	0	23
Juneau	1	1	0	9	0	0	0	9
Knik	1	1	1	70	0	0	0	71
Meires Lake	1	0	0	0	0	0	0	0
Nenana	2	2	3	761	0	0	0	764

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COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST ¹					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
North Pole	45	39	110	2,918	7	0	0	3,035
Northway	6	4	6	1,257	0	0	0	1,263
Palmer	55	51	145	5,044	0	0	0	5,188
Ruby	1	1	0	0	0	0	0	0
Salcha	7	6	5	601	1	0	0	607
Sterling	1	1	0	0	0	0	0	0
Sutton	2	2	0	2	0	0	0	2
Talkeetna	1	1	0	108	0	0	0	108
Tanacross	3	3	11	545	0	0	0	556
Tok	74	65	38	5,344	0	0	0	5,382
Valdez	35	33	94	3,193	74	0	0	3,362
Wasilla	104	92	240	10,600	10	0	0	10,850
Willow	1	0	0	0	0	0	0	0
Wrangell	1	1	2	9	0	0	0	11
Unknown Community	1	0	0	0	0	0	0	0
Other Communities								
Subtotal	865	749	1,779	58,666	160	0	0	60,606
Totals	1,234	1,070	2,785	91,715	252	0	0	94,752

¹Includes salmon harvested under federal as well as state subsistence fishing regulations and permits.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-4.—Estimated historic subsistence and personal use salmon harvests, State Chitina Subdistrict permits, 1988-2005.¹

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
2001	9,458	8,356	3,171	137,047	2,687	0	0	142,905
2002	6,804	5,736	2,093	90,655	2,034	0	0	94,782
2003	6,440	5,438	1,962	84,790	2,579	0	0	89,332
2004	8,153	6,855	2,521	111,203	2,751	0	0	116,476
2005	8,232	6,768	2,155	129,506	1,885	0	0	133,546
5-Year								
Average	7,817	6,631	2,381	110,640	2,387	0	0	115,408
10-Year								
Average	8,346	7,607	3,691	118,745	2,361	0	0	124,797
All Years								
Average	7,352	6,684	3,660	101,227	2,277	0	0	107,163

¹ Under state regulations, this fishery was classified as personal use from 1986 through 1999; in 2000, 2001, and 2002, it was classified as a subsistence fishery; stating in 2003, it was again classified as personal use.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-5.—Estimated personal use salmon harvests by community, State Chitina Subdistrict permits, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Chitina	3	2	3	45	0	0	0	48
Copper Center	7	5	1	18	4	0	0	24
Glennallen	23	19	7	304	1	0	0	312
Copper Basin								
Subtotal	33	26	12	367	5	0	0	384
Ambler	1	1	0	0	0	0	0	0
Anaktuvak Pass	2	2	0	45	0	0	0	45
Anchorage	1,723	1,359	408	23,356	268	0	0	24,032
Anderson	5	5	2	93	2	0	0	97
Anvik	1	0	0	0	0	0	0	0
Barrow	7	5	1	95	0	0	0	97
Bettles	1	1	0	0	0	0	0	0
Big Lake	31	24	13	394	12	0	0	419
Buckland	1	1	0	30	0	0	0	30
Cantwell	3	2	0	45	0	0	0	45
Central	2	1	2	78	0	0	0	80
Chickaloon	16	11	6	260	15	0	0	281
Chugiak	103	87	34	1,702	30	0	0	1,766
Clear	9	8	5	159	0	0	0	163
Cooper Landing	2	2	1	59	0	0	0	60
Delta Junction	403	336	103	7,063	106	0	0	7,272
Denali National Park	8	8	0	70	1	0	0	71
Dot Lake	2	1	0	52	0	0	0	52
Eagle River	285	250	81	4,310	38	0	0	4,429
Eielson AFB	93	74	34	1,553	39	0	0	1,626
Elmendorf AFB	17	16	2	152	7	0	0	162
Emmonak	1	0	0	0	0	0	0	0
Ester	75	65	15	1,215	22	0	0	1,252
Fairbanks	2,676	2,214	770	45,834	784	0	0	47,388
Fort Greely	7	7	0	78	0	0	0	78
Fort Leonard Wood	1	1	0	0	0	0	0	0
Fort Richardson	20	16	3	264	0	0	0	266
Fort Wainwright	142	92	28	1,605	0	0	0	1,633
Fort Yukon	1	0	0	0	0	0	0	0
Gakona	2	1	0	0	0	0	0	0
Girdwood	26	19	10	272	10	0	0	291
Haines	3	3	2	84	0	0	0	86
Healy	28	27	12	549	0	0	0	561
Homer	12	11	4	232	0	0	0	237
Hope	1	1	0	25	0	0	0	25
Houston	2	2	0	24	0	0	0	24
Hughes	1	1	0	0	0	0	0	0
Hydaburg	1	1	1	5	0	0	0	6
Indian	6	4	3	77	0	0	0	80

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COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Juneau	8	8	2	152	3	0	0	157
Kaktovik	1	1	0	40	0	0	0	40
Kasilof	2	2	0	12	0	0	0	12
Kenai	3	3	1	20	0	0	0	21
Ketchikan	1	1	0	15	0	0	0	15
Kodiak	2	2	0	30	0	0	0	30
Kotzebue	1	1	0	15	0	0	0	15
Lake Minchumina	1	1	1	14	0	0	0	15
McCarthy	2	1	0	16	0	0	0	16
Moose Pass	1	1	0	0	0	0	0	0
Nenana	13	12	5	244	0	0	0	249
New Stuyahok	1	1	0	26	2	0	0	28
N kiski	1	1	1	29	0	0	0	30
Ninilch k	2	1	0	60	0	0	0	60
Noatak	1	1	1	29	0	0	0	30
Nome	1	1	0	30	0	0	0	30
North Pole	775	628	213	13061	132	0	0	13407
Nulato	1	1	0	0	0	0	0	0
Oliktok	1	1	1	15	0	0	0	16
Palmer	453	395	111	6857	157	0	0	7125
Port Graham	2	2	2	10	0	0	0	12
Prudhoe Bay	1	1	1	13	0	0	0	14
Saint Charles	1	0	0	0	0	0	0	0
Saint Johns	1	0	0	0	0	0	0	0
Salcha	64	60	13	1052	13	0	0	1077
Sanford	1	1	1	14	0	0	0	15
Seward	7	6	4	173	0	0	0	176
Shishmaref	1	1	0	0	0	0	0	0
Soldotna	3	3	0	60	0	0	0	60
Sterling	1	1	0	0	0	0	0	0
Sutton	39	31	8	707	0	0	0	715
Talkeetna	20	19	5	398	2	0	0	405
Tok	6	6	1	115	0	0	0	116
Trapper Creek	2	1	0	20	0	0	0	20
Two Rivers	20	18	7	421	0	0	0	428
Unalakleet	1	1	0	10	0	0	0	10
Valdez	236	190	46	3375	2	0	0	3423
Venetie	1	0	0	0	0	0	0	0
Wainwright	1	1	0	14	0	0	0	14
Wasilla	744	633	162	11784	236	0	0	12183
Waukee	1	0	0	0	0	0	0	0
White Mountain	1	1	0	0	0	0	0	0
Whittier	1	1	0	30	0	0	0	30
Willow	31	26	10	298	0	0	0	308
Wiseman	1	1	1	39	0	0	0	40
Yakutat	1	0	0	0	0	0	0	0

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COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Other USA	2	1	0	0	0	0	0	0
Unknown Community	18	15	7	160	0	0	0	167
Other Communities Subtotal	8,199	6,742 0	2,144	129,139	1,880	0	0	133,162
Totals	8,232	6,768 0	2,155	129,506	1,885	0	0	133,546

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-6.—Estimated historic subsistence salmon harvests, Federal Chitina Subdistrict permits, 2002-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
2002	122	90	48	835	0	0	0	883
2003	99	71	33	1,316	152	0	0	1,500
2004	109	83	9	1,631	28	0	0	1,668
2005	77	64	27	1,498	0	0	0	1,526
All Years Average	105	78	29	1,300	50	0	0	1,380

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-7.—Estimated subsistence salmon harvests by community, Federal Chitina Subdistrict permits, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Chitina	10	9	7	452	0	0	0	459
Copper Center	29	27	5	509	0	0	0	514
Gakona	3	2	5	144	0	0	0	149
Glennallen	30	22	11	393	0	0	0	404
Tok	3	3	0	0	0	0	0	0
Unknown City	1	0	0	0	0	0	0	0
Valdez	1	1	0	0	0	0	0	0
Totals	77	64	27	1,498	0	0	0	1,526

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-8.—Historic subsistence salmon harvests, Batzulnetas fishery, 1987-2005.

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
2001	1	1	1	61	0	0	0	62
2002	1	1	0	208	0	0	0	208
2003	1	1	0	164	0	0	0	164
2004	1	1	0	182	0	0	0	182
2005	0	0	0	0	0	0	0	0
5-Year								
Average	1	1	0	123	0	0	0	123
10-Year								
Average	1	1	0	111	0	0	0	111
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, 2006.

Table XII-9.—Estimated historic subsistence salmon harvests, Copper River District (Copper River Flats), 1965-2005.

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
2001	468	439	881	3,275	75	2	0	4,232
2002	355	331	589	3,289	30	2	0	3,910
2003	384	367	730	1,655	37	0	16	2,439
2004	511	487	1,163	1,910	48	5	3	3,129
2005	237	224	260	830	15	0	1	1,106
5-Year								
Average	391	370	725	2,192	41	2	4	2,963
10-Year								
Average	336	315	556	2,005	372	3	2	2,939
All Years								
Average	135	123	193	734	131	1	1	1,060

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-10.—Estimated subsistence salmon harvests by community, Copper River District (Copper River Flats), 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Anchorage	8	7	10	41	0	0	0	51
Chugiak	1	1	5	25	0	0	0	30
Cordova	211	200	218	675	15	0	1	909
Delta Junction	1	1	0	0	0	0	0	0
Eagle River	1	1	0	0	0	0	0	0
Fairbanks	1	1	0	0	0	0	0	0
Hope	1	1	4	5	0	0	0	9
Palmer	1	1	2	2	0	0	0	4
Seward	2	2	1	7	0	0	0	8
Tatitlek	6	5	15	23	0	0	0	38
Unalaska	1	1	0	0	0	0	0	0
Valdez	2	2	3	52	0	0	0	55
Wasilla	1	1	2	0	0	0	0	2
Totals	237	224	260	830	15	0	1	1,106

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-11.—Historic reported subsistence salmon harvests, Prince William Sound, Eastern District, 1988-2005.

YEAR	PERMITS		REPORTED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1988	17		2	210	249	297	143	901
1989	14		1	107	653	43	28	832
1990	13		0	5	241	4	10	260
1991	19		0	107	984	28	320	1,439
1992	15		2	441	369	49	30	891
1993	18		2	512	305	74	144	1,037
1994	14		0	50	143	70	50	313
1995	15	0						
1996	6		0	0	38	0	0	38
1997	6		0	107	45	54	0	206
1998	11		0	2	71	28	4	105
1999	17		0	344	541	31	31	947
2000	12	3	0	140	468	40	40	688
2001	14	9	0	114	230	12	60	416
2002	19	8	6	437	278	66	71	858
2003	15	8	0	81	185	12	20	298
2004	18	12	2	358	505	28	105	998
2005	16	3	0	98	286	16	200	600
5-Year								
Average	16	8	2	218	297	27	91	634
10-Year								
Average	13	7	1	168	265	29	53	515
All Years								
Average	14	6	1	183	329	50	74	637

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-12.—Estimated harvests of salmon for home use, Tatitlek, 2003.

	<u>Estimated Number Harvested</u>			All Methods
	Subsistence Methods	Rod & Reel	Removed from Commercial Harvests	
Chinook	27	0	0	27
Sockeye	306	0	0	306
Coho	651	0	0	651
Pink	77	0	0	77
Chum	13	0	0	13
All Salmon	1,075	0	0	1,075
Estimated Number of Households Harvesting ¹	13 households	0 households	0 households	13 households (any method)

¹ Number of households in the community = 27; 15 (92.6 percent) were interviewed

SOURCE: Fall et al. 2005

Table XII-13.—Historic reported subsistence salmon harvests, Prince William Sound, Southwestern District, 1988-2005.

YEAR	PERMITS		REPORTED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1988	10		1	50	8	294	251	604
1989	8		0	322	0	180	554	1,056
1990	7		1	36	5	2	20	64
1991	12		3	345	42	53	195	638
1992	14		1	526	23	99	313	962
1993	22		2	835	50	124	232	1,243
1994	16		5	192	77	161	402	837
1995	10		2	152	67	41	67	329
1996	7		0	107	7	46	105	265
1997	5		44	193	30	272	110	649
1998	4		13	114	20	119	65	331
1999	14		57	499	62	101	168	887
2000	12	8	24	39	229	143	211	646
2001	16	9	2	119	92	146	95	454
2002	10	5	10	142	123	60	83	418
2003	13	7	6	219	156	147	149	677
2004	8	5	3	535	44	84	56	722
2005	13	8	10	515	84	174	124	907
5-Year Average	12	7	6	306	100	122	101	636
10-Year Average	10	7	17	248	85	129	117	596
All Years Average	11	7	10	274	62	125	178	649

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-14.—Estimated harvests of salmon for home use, Chenega Bay, 2003.

	<u>Estimated Number Harvested</u>			All Methods
	Subsistence Methods	Rod & Reel	Removed from Commercial Harvests	
Chinook	79	36	19	134
Sockeye	829	100	0	929
Coho	331	263	0	594
Pink	201	131	0	333
Chum	250	81	0	331
Other/Unknown	0	56	0	56
All Salmon	1,690	668	19	2,376
Estimated Number of Households Harvesting ¹	8 households	10 households	1 household	14 households (any method)

¹ Number of households in the community = 20; 16 (80.0 percent) were interviewed.

SOURCE: Fall et al. 2005

Table XII-15.—Estimated historic subsistence salmon harvests, Prince William Sound General, 1960-2005.

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1960	50		1	139	505	27	1,292	1,964
1961	12		3	41	123	3	732	902
1962	9		0	0	119	142	214	475
1963	9		0	0	406	24	298	728
1964	15		0	11	0	0	900	911
1965	22	16	0	0	0	34	246	281
1966	3	3	0	3	19	50	20	92
1967	4	3	0	0	5	0	5	11
1968	4	3	0	0	27	0	208	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	0	69	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						
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	0	12	10	0	0	23
1981	12	8	0	5	44	3	0	51
1982	35	27	0	109	5	31	40	185
1983	26	21	0	27	45	98	11	181
1984	8	8	0	10	0	2	11	23
1985	22	16	1	37	22	36	19	116
1986	25	14	0	9	27	0	0	36
1987	18	17	5	33	6	17	0	61
1988	7	7	2	51	7	9	10	79
1989	11	7	0	0	0	5	0	5
1990	8	8	0	0	7	0	4	11
1991	9	5	0	4	0	0	0	4
1992	10	6	0	33	0	0	0	33
1993	6	6	1	104	10	0	0	115
1994	5	4	0	0	0	0	0	0
1995	4	2	0	0	0	0	0	0
1996	10	7	0	0	0	0	0	0
1997	4	3	0	4	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
2001	5	5	0	0	0	0	0	0
2002	11	9	0	38	0	9	11	57
2003	11	11	0	48	0	3	0	51
2004	8	7	0	12	0	5	0	17
2005	14	13	0	4	0	0	0	4
5-Year Average	10	9	0	20	0	3	2	26
10-Year Average	7	6	0	11	0	2	1	13
All Years Average	11	7	0	16	39	11	91	158

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XII-16.—Estimated subsistence salmon harvests by community, Prince William Sound General, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Anchorage	3	2	0	0	0	0	0	0
Chugiak	1	1	0	0	0	0	0	0
Cordova	2	2	0	0	0	0	0	0
Nenana	1	1	0	0	0	0	0	0
Valdez	1	1	0	4	0	0	0	4
Wasilla	6	6	0	0	0	0	0	0
Totals	14	13	0	4	0	0	0	4

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

XIII. SOUTHEAST/YAKUTAT REGION

INTRODUCTION

The Southeast/Yakutat Region includes all waters of Alaska between the latitude of Cape Muzon at the southern tip of Prince of Wales Island at Dixon Entrance to Cape Suckling on the Gulf of Alaska. The Alaska Joint Board of Fisheries and Game identified 2 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 either subsistence or personal use regulations. Subsistence and personal use fisheries have annual harvest assessment programs based on a permit reporting system. All of the areas except the Yakutat Area have identified specific waters where subsistence or personal use fishing is permitted, with daily or annual limits, seasons, and gear type allowed. Since 1990, any Alaska resident may harvest under the terms of a subsistence permit. In 2005, there were 6 management areas with annual harvest assessment programs in the Southeast/Yakutat Management Region:

1. Yakutat Management Area
2. Haines Management Area
3. Juneau Management Area
4. Sitka Management Area
5. Petersburg Management Area
6. Ketchikan Management Area

HARVEST ASSESSMENT PROGRAM

The Division of Commercial Fisheries is responsible for administering the subsistence/personal use salmon fisheries in Southeast Alaska. Area management biologists issue permits identifying open fishing locations, species, daily (and in some cases annual) possession limits, seasons, and gear. Area management biologists may use their discretion in changing permit conditions, including issuing emergency closures. Area management offices require that catch calendars on the permit be returned by mail or phone at the end of each season, and the information on the calendars is entered into *Alexander: The Integrated Fisheries Database for Southeast Alaska and Yakutat*. The database includes the names and addresses of all those applying for subsistence/personal use permits, along with their catch record. Permits specify that a permit will not be issued to anyone who has failed to return a permit issued for the previous year. Generally, area management offices will accept a reported catch for the previous year at the time a person is applying for a current year permit.

SUBSISTENCE SALMON HARVESTS IN 2005

In 2005, the estimated subsistence/personal use salmon harvest for the Southeast Alaska/Yakutat Region was 49,655 fish (Table XIII-1). This was below the estimated harvest for 2004 (71,763 salmon) and below recent 5-year (67,147) and 10-year averages (69,727) (Table XIII-2). By species, sockeye comprised the greatest share at 39,694 fish (80%), followed by 4,959 pink (10%), 2,283 coho (5%), 1,813 chum (4%), and 887 Chinook (2%)

(Figure XIII-1). The total salmon harvest by management area was as follows: Sitka 12,616 (25%), Ketchikan 11,309 (23%), Juneau 9,202 (19%), Haines 7,759 (16%), Yakutat 4,881 (10%), and Petersburg 3,889 (8%) (Figure XIII-2).

Since 2001, the number of salmon permits issued for the Southeast Alaska/Yakutat Region has averaged 3,507 per year (Table XIII-2). Prior to 1996, only permits returned with harvest data were included in the database, and reported harvests were not expanded to account for permits not returned. In 2005, 3,304 permits were issued, and 2,772 were returned, a region-wide response rate of 84%.

YAKUTAT MANAGEMENT AREA

Background and History

The Yakutat Management Area stretches from Cape Fairweather to Cape Suckling. “Customary and traditional use” determinations by the Alaska Board of Fisheries for salmon identify the freshwaters upstream from the terminus of streams and rivers from the Doame River in the south to the Tsiu River, the waters of Yakutat Bay and Russell Fjord, and the waters of Icy Bay (5AAC 01.666 (3)). The Yakutat Area is unique among southeast areas in that subsistence salmon fishing locations are not restricted to specific streams, nor are there daily or annual limits on the number of fish harvested.

Regulations

A subsistence salmon permit for the Yakutat Management Area limits subsistence fishing in the hours before, during and after commercial salmon fishing openings. The 2005 permit form specified that subsistence salmon could not be taken during the period 48 hours before a commercial opening until 48 hours after the closure of an open commercial salmon net fishing season. There was an exception in cases where the commercial salmon net fishery exceeded 2 days; in such cases the subsistence fishing period ran “from 6:00 am to 6:00 pm Saturday in those locations, except in the Tsiu River where the subsistence fishing period shall be from 6:00 am to 6:00 pm Sunday.” This effectively limited the period when subsistence fishing could take place to 2 to 3 days a week during the commercial salmon fishing season. At the Situk River, subsistence fishers were required to attend their nets when they were being used to take salmon.

Other standard permit conditions included removal of dorsal fins, prohibition of fishing within 300 feet of a dam, fish ladder, weir, culvert or other artificial obstruction, completion of the catch calendar for each day fished, specifying location, species, and gear. Sport-taken and subsistence taken salmon could not be possessed on the same day. In this region in 2005, the State of Alaska regulations did not recognize rod and reel as subsistence gear, except for the Redoubt Bay sockeye fishery. Therefore, any salmon or steelhead taken with rod and reel gear could not be possessed with fish taken with nets. The permit, however, did not specify allowed subsistence gear, but set gillnets were the preferred gear. Permits could be used for any location in the district.

Harvest Assessment Program

Annual subsistence salmon harvest assessments have been in place since 1989. As reported in Table XIII-3, the estimated total subsistence salmon harvest for the Yakutat Management Area in 2005 was 4,881 salmon, including 3,235 sockeye (66%), 679 Chinook (14%), 944

coho (19%), 4 chum (<1%), and 19 pink salmon (<1%). Most of the permits were issued to Yakutat residents, 98 permits were issued and 78 returned (80%). The estimated total subsistence salmon harvest for the community of Yakutat in 2005 was 4,157, including 661 Chinook (14%), 2,681 sockeye (66%), 793 coho (19%), 4 chum (<1%), and 19 pink salmon (<1%) (Table XIII-4).

HAINES MANAGEMENT AREA

Background and History

The Haines Management Area stretches from Little Island in Lynn Canal north to Chilkat Inlet and the waters of the Chilkat River, and up Chilkoot Inlet to Skagway. “Customary and traditional use” determinations by the Alaska Board of Fisheries for salmon identify all the waters of the Chilkat River and Chilkat Inlet north of the latitude of Glacier Point, and in the Chilkoot River, Lutak Inlet, and Chilkoot Inlet north of the latitude of Battery Point, excluding waters of Taiya Inlet north of the latitude of the tip of Taiya Point (5AAC 01.716 (2)).

There are several communities in the Haines Management Area: the city of Haines and surrounding borough, which includes the settlements of Covenant Life, Lutak, Mosquito Lake, and Excursion Inlet, as well as Klukwan on the Chilkat River and Skagway at the head of Chilkoot Inlet. In 2000, the combined population of these communities was 3,393 in 1,435 households. The populations of Haines and Skagway are predominantly non-Native, while Klukwan continues to have a predominantly Alaska Native population.

Regulations

In 2005, a subsistence permit for the Haines Management Area provided for an open season for sockeye salmon in the Chilkat River, Chilkat Inlet, and Lutak Inlet, and for pink and chum salmon in the Chilkat River and Chilkat Inlet, both running from June 1 through September 30. Initially, only one permit was issued per household; an additional permit could be issued upon request if more salmon were needed. Limits for sockeye were 25 in possession or 50 annually; for coho, 20 in possession or 40 annually; and for pink and chum, 75 in possession or 100 annually. Chinook salmon, trout (such as steelhead) and char (Dolly Varden) could be taken only incidentally by gear operated under the terms of the permit.

Sport taken and subsistence taken salmon could not be possessed on the same day. In District 15, the salt waters of Lynn Canal including Chilkat, Chilkoot, and Lutak inlets, subsistence salmon could not be taken during closed periods of the commercial salmon net fishery, except salmon could be taken in the salt waters of Chilkoot Inlet north of the latitude of Battery Point and in Chilkat Inlet north of Glacier Point on a Saturday before any period the commercial salmon net fishery was open in Section 15-A.

Set and drift gillnets could not be used to take salmon except in the mainstream and side channels, but not the tributaries of the Chilkat River from four-mile Haines Highway to one-mile upstream of Wells Bridge. The permit holder was required to be physically present at the net while operating a set gill net. Drift and set gillnets may not exceed 50 feet in length when fishing in the Chilkat River, and drift gillnets fished in marine waters could not exceed 50 fathoms in length. Other standard permit conditions included removal of dorsal fins, prohibition of fishing within 300 feet of a dam, fish ladder, weir, culvert or other artificial

obstruction, and completion of the catch calendar for each day fished, specifying location, species, and gear.

Harvest Assessment Program

Annual subsistence salmon harvest assessments have been in place since 1985. The estimated subsistence salmon harvest in the Haines Management Area in 2005 was 7,759 salmon, including 5,036 sockeye (65%), 1,601 pink (21%), 664 chum (9%), 361 coho (5%), and 97 Chinook (1%) (Table XIII-3).

Klukwan fishers with post office box addresses in Haines are shown as Haines residents. In this report, Haines and Klukwan permits and harvests are combined for 2005; 342 permits were issued, and 331 were returned (97%). The estimated total number of salmon harvested by Haines residents (7,134 salmon) included 4,652 sockeye (65%), 1,461 pink salmon (21%), 597 chum (8%), 329 coho (5%), and 96 Chinook (1%) (Table XIII-4).

JUNEAU MANAGEMENT AREA

Angoon Subsistence Area

Background and History

Subsistence salmon fisheries in the waters traditionally used by the community of Angoon are under the management responsibility of the Juneau and Sitka management area offices of the Division of Commercial Fisheries. In 1989, the Alaska Board of Fisheries adopted a positive C&T finding for salmon in the waters of District 12 south of a line from Fishery Point to South Passage Point and north of the latitude of Point Caution, and in waters of Section 13-C east of the longitude of Point Elizabeth (5AAC 01.716(5)).

The residents of Angoon are the principal subsistence fishers in this area. In 2000, Angoon had a population of 572 in 184 households. Angoon Tlingit have traditionally used most of the west coast of Admiralty Island, from Hawk Inlet to the south tip of Admiralty Island, and lands and waters of the east coasts of Chichagof and Baranof Islands. Over the years, the waters of Kootznahoo Inlet, Favorite Bay and Hood Bay to the south, Mitchell Bay, Salt Lake and Kanalku Bays further east, and Chatham Strait have provided the people of Angoon salmon and other marine resources.

Regulations

In 2005, a subsistence salmon permit for the Angoon area waters of District 12 provided for an open season for sockeye salmon in Kanalku Bay from June 1 through July 31 with a limit of 25 fish; in Basket Bay (Kook Lake outlet) from June 1 through July 31 with a limit of 15 fish; in Sitkoh Bay from June 1 through August 31 with a limit of 50 fish; and in Hasselborg River/Salt Lake from July 1 through July 31 with a limit of 25 fish. The open period for subsistence coho salmon fishing on Hasselborg River/Salt Lake was from August 1 through October 31 with a limit of 20 fish. Coho salmon could be taken in other streams in the Angoon subsistence areas described under specific subsistence permit conditions from June 1 through October 31, with limits of 20 in possession and 40 annually. Pink salmon could be harvested in all streams of the District from June 1 through September 30 with a limit of 150 fish. The season for chum salmon in all streams of the District was from June 1 through October 31, and the limit was 50 fish.

Sport taken and subsistence taken salmon could not be possessed on the same day, and salmon taken under the subsistence/personal use regulations could not be subsequently used as bait for commercial fishing purposes. Gaffs, spears, beach seines, dip nets, drift gillnets and cast nets were the types of subsistence gear allowed for general use in the Angoon area. Drift gillnets could not exceed 50 fathoms in length; set gillnets could not be used. Snagging or fishing with a rod or reel was prohibited. Other standard permit conditions included removal of dorsal fins, prohibition of fishing within 300 feet of a dam, fish ladder, weir, culvert or other artificial obstruction, completion of the catch calendar for each day fished, specifying location, species, and gear. Only one permit was allowed per household.

Harvest Assessment Program

Annual subsistence salmon harvest assessments have been in place since 1985. The estimated salmon harvest in Angoon Subsistence Area fisheries in 2005 was 1,193 salmon, including 1,089 sockeye (91%), 70 pink (6%), 34 coho (3%), and no Chinook or chum (Table XIII- 3).

The estimated salmon harvest for the community of Angoon, based on 90 permits issued and 32 returned (36%), totaled 838 salmon, including 734 sockeye (88%), 70 pink salmon (8%) and 34 coho (4%) (Table XIII- 4).

Hoonah Subsistence Area

Background and History

Subsistence salmon fisheries in the waters traditionally used by the community of Hoonah are under the management responsibility of the Juneau and Sitka Management Area offices of the Division of Commercial Fisheries. In 2000, Hoonah had a population of 860 in 300 households. In 1989, the Alaska Board of Fisheries adopted a positive C&T finding for the salmon in the waters of District 12 in waters of Basket Bay inside a line from 57°30.83' N. lat., 134°53.20' W. long., to 57°39.28' N. lat., 134°53.88' W. long., in District 13 in waters along the western shore of Yakobi Island east of a line from Cape Spencer Light to Surge Bay Light, and in waters of Section 14B and 14-C, (5 AAC 01.716(4)).

Regulations

The 2005 subsistence salmon permit for Hoonah area waters provided open seasons and limits for sockeye salmon at the following locations: Surge Bay from June 1 through August 15 with a limit of 50 fish; Hoktaheen Cove from June 1 through July 20 with a limit of 50 fish; Hanus Bay (Lake Eva) from June 1 through August 15 with a limit of 50 fish; Berg Bay from June 1 through July 31 with limits of 25 fish; and Neva Creek from June 1 through August 15 with a limit of 40 fish. Pink salmon could be harvested under a subsistence permit in all the streams in the Hoonah subsistence area from July 1 through September 30 with a limit of 150 fish. Chum salmon could be harvested under a subsistence permit in all the streams in the Hoonah subsistence area from July 1 through October 31 with a limit of 50 fish. Coho salmon could be taken in streams in the Hoonah subsistence area described under specific subsistence permit conditions from July 1 through October 31 with limits of 20 possession and 40 annually.

Sport taken and subsistence taken salmon could not be possessed on the same day, and salmon taken under subsistence regulations could not be subsequently used as bait for commercial fishing purposes. Gaffs, spears, beach seines, dip nets, drift gillnets, and cast

nets were the types of subsistence gear allowed for general use in the Hoonah Area. Drift gillnets could not exceed 50 fathoms in length; set gillnets could not be used. Snagging or fishing with a rod or reel was prohibited. Other standard permit conditions included removal of dorsal fins, prohibition of fishing within 300 feet of a dam, fish ladder, weir, culvert or other artificial obstruction, completion of the catch calendar for each day fished, specifying location, species, and gear. Only one permit was issued per household.

Harvest Assessment Program

Annual subsistence salmon harvest assessments have been in place since 1985. The estimated salmon harvest in the Hoonah Subsistence Area in 2005 was 2,110 salmon, including 1,914 sockeye (91%), 138 pink (7%), 43 chum (2%), and 15 coho (<1%) (Table XIII-3).

The estimated salmon harvest for the community of Hoonah based on 130 permits issued and 53 returned (41%) totaled 1,930 salmon, including 1,751 sockeye (91%), 93 pink salmon (5%), 71 chum (4%), and 15 coho (<1%) (Table XIII-4).

Elfin Cove, Gustavus, Pelican, and Tenakee Springs Subsistence and Personal Use Fishing

Background

In 2005, Elfin Cove, Gustavus, Pelican, and Tenakee Springs residents subsistence fished for salmon in Districts 11, 12, 13 and 14. Elfin Cove subsistence fishers harvest salmon from Hoktaheen Cove in District 13. Gustavus fishers harvest salmon primarily from Surge Bay and Hoktaheen Cove in District 13, but also from Taku River in District 11, Berg River in District 14, and Chilkat River in District 15. Residents of Pelican and Tenakee Springs, harvest salmon at Kook Creek and Kook Lake Outlet in Basket Bay, and Takanis Bay and Hoktaheen Cove in District 13.

Harvest Assessment Program

In 2005, the amount of salmon reported on permits from Elfin Cove, Gustavus, Pelican and Tenakee Springs was once again modest. Two permits were issued and returned by residents of Elfin Cove. The estimated total subsistence salmon harvest for Elfin Cove was 11 salmon, including 1 sockeye and 10 pink salmon. In Gustavus, 19 permits were issued and 12 returned. The total estimated harvest for Gustavus was 158 salmon, including 119 sockeye 2 chum, and 38 pink salmon. Six permits were issued to Pelican residents, and 6 were returned. Pelican had a total harvest of 62 salmon, including 37 sockeye and 25 pink salmon. Four permits were issued and 4 returned by Tenakee Springs residents; no salmon were reported harvested (Table XIII-4).

Juneau Personal Use Fishing

Waters of District 11 lie within the Juneau Nonsubsistence Area. Personal use regulations apply to salmon fishing with nets and spears for home use in this area. Juneau residents were the principal participants in the designated personal use fisheries in District 11. Juneau fishers primarily harvest sockeye salmon from the Taku River and Sweetheart Creek.

Regulations

The 2005 personal use permit for the Juneau area waters provided open seasons and limits for sockeye salmon at the following locations. In the Taku River drainage, from July 1 through July 31, the total annual limit for each personal use salmon permit is five sockeye salmon for a household of one and 10 sockeye salmon for a household of two or more people. For Sweetheart Creek, June 1 through October 31 there is a possession limit of 25 sockeye salmon and no annual limit. In all streams in the Juneau Management Area, except along the Juneau road system, the open season and limit for pink salmon was June 1 through September 30 with a 150 fish limit; for chum salmon, the open season was June 1 through October 31 with a 50 fish limit.

Salmon could be taken under a personal use fishing permit by holders of a valid Alaska sport fishing license, Alaska residents under the age of 16, or persons 60 years of age or more who had been issued a permanent identification card. Both tips (lobes) of the caudal fin (tail) of personal use taken salmon had to be removed immediately after harvest. Beach seines, cast nets, dip nets, gaffs and spears were the gear allowed in the Juneau area. Set gillnets could not be used except in the Taku River. Set gillnets could not be fished within 100 yards of the ADF&G Taku River fish wheels. Snagging was prohibited in the personal use fisheries. It is unlawful to buy, sell, trade, or barter fish or their parts under statewide personal use regulations. King and coho salmon, trout, and char could only be taken incidentally under a personal use permit. Possession limits were 2 Chinook and 6 coho salmon.

Harvest Assessment Program

The total estimated salmon harvest for the Juneau Area personal use fisheries in 2005 was 5,900 salmon, consisting of 5,227 sockeye (89%), 398 pink (7%), 180 coho (3%), 50 chum (<1%), and 45 Chinook (<1%) (Table XIII-3).

The estimated salmon harvest for the community of Juneau based on 716 permits issued and 511 returned (71%) totaled 6,835 salmon, including 5,945 sockeye (87%), 444 pink (7%), 311 coho (5%), 87 chum (1%), and 48 Chinook (<1%) (Table XIII-4). The estimated salmon harvest for the community of Douglas based on 59 permits issued and 48 returned totaled 683 salmon, including 559 sockeye, 70 pink, 44 coho, 9 Chinook, and 1 chum (Table XIII-4).

SITKA MANAGEMENT AREA

Sitka Subsistence Salmon Fisheries

Background and History

Subsistence salmon fisheries in the waters traditionally used by the Tlingit people of Sitka are under the management responsibility of the Sitka Area office of the Division of Commercial Fisheries. In 1989, the Alaska Board of Fisheries adopted a positive finding for “customary and traditional use” of sockeye salmon in the waters of Section 13-A south of the latitude of Cape Edward, in waters of Section 13-B north of the latitude of Redfish Cape, and in waters of Section 13-C (5 AAC 01.716 (8)). At the Board of Fisheries meeting in Sitka in March 1997, this finding was extended to include all other salmon species (5AAC 01.716 (21)). Principal salmon waters and streams used by Sitka fishers include Klag Bay-Lake Anna, Lake Stream-Ford Arm, Necker Bay, Redoubt Bay, Salmon Lake, and Redfish Bay.

The Sitka Management Area office also manages the subsistence salmon fisheries at Surge Bay and Hoktaheen Cove, on the west coast of Yakobi Island, and Sitkoh Bay on the east side of Chichagof Island. Surge Bay and Hoktaheen Cove fisheries are discussed with the Hoonah fisheries, and Sitkoh Bay fishery is discussed with the Angoon fisheries.

The residents of Sitka are the principal subsistence users of the salmon stocks in this area. In 2000, Sitka had a population of 8,835 in 3,278 households. Twenty percent of Sitka households are estimated to use subsistence methods to harvest salmon for home use (Scott et al. 2001). Sitka Tlingits have traditionally used most of the Pacific coast of Baranof and Chichagof islands from Point Urey in the north to Cape Ommaney, including the myriad islands lying off the coast, and extending inward up Peril Strait between Chichagof and Baranof islands into Hoonah Sound as far as Patterson Bay. Sitkans share with Hoonah people the use of Yakobi Island and the sockeye salmon fisheries at Hoktaheen Cove and Surge Bay. Sitka territory touches that of Angoon in Peril Strait and Sitkoh Bay.

Regulations

The 2005 subsistence/personal use salmon permit for the Sitka Management Area stipulated that “sport-taken and subsistence/personal use taken salmon may not be possessed on the same day.” Chinook, steelhead, trout and char “may only be taken incidentally by gear operated under the subsistence/personal use fishing guidelines of the permit.” Additionally, “salmon streams flowing across or adjacent to the Sitka road system are closed to subsistence/personal use fishing.” With the exception of Redoubt Bay, salmon could not be taken by rod and reel gear.

The 2005 permit provided for an open season for pink salmon from July 15 through September 30, and for chums from July 15 through October 31, in streams in the Sitka Management Area. Open season for sockeye salmon for all Sitka sockeye locations started June 1 and closed on varying dates at the various locations. July 20th was the closing date for Gut Bay, and Hoktaheen Cove. July 20th was also the closing date for Takanis Bay, which is managed under personal use regulations. July 25th was the closing date for Leo’s Anchorage and July 31st for Silver Bay (Salmon Lake) and Politofski Lake. August 15th was the closing date for Hanus Bay (Lake Eva). August 31 was the closing date for Necker Bay, Redfish Bay, Redoubt Bay, and Sitkoh Bay.

Possession and annual limits for sockeye were from 10 fish at Leo’s Anchorage to 100 fish at Necker Bay. Sitkoh, Takanis, Surge, and Klag Bays, Hoktaheen Cove, Ford Arm, Falls Lake, Politofski Lake, Hanus Bay (Lake Eva), and Lake Anna all had limits of 50 fish. Salmon Lake and Gut Bay limits were 10 in possession and 20 annually. Redfish Bay had limits of 50 fish in possession and 100 annually.

In January 2003, the Alaska Board of Fisheries adopted the Redoubt Bay and Lake Sockeye Salmon Management Plan (5AAC 01.760). The plan provides a management approach for subsistence, sport, and commercial fisheries that harvest Redoubt Lake sockeye salmon based on a new optimal escapement goal of 7,000 to 25,000 fish. The management plan provides that if the projected total escapement is greater than 30,000 fish, then the subsistence/household possession limit will be 25 fish, and the annual limit will be 100 fish. The management plan also provides for the issuance of community harvest permits if the projected total escapement is greater than 40,000 fish. In 2005 the season was opened on

June 1 with a daily possession limit of 10 fish and 50 fish annual limit; beginning July 16 the limits were increased to 25 fish in possession and 100 for the year.

In 2005, the Alaska Department of Fish and Game opened a directed coho salmon fishing season in the Sitka area running from August 16 through October 31st. The directed coho salmon fishing season at Redoubt Lake, Necker, Redfish and Sitkoh Bays was September 1 through October 31. Possession and annual limits for coho salmon were 20 and 40 respectively. Gear authorized under the coho permit included dip nets, gaffs, spears, hand purse seines, cast nets, beach seines, and drift gill nets up to 50 fathoms in length. Use of hook and line attached to a rod or pole was not authorized under this permit. Subsistence coho salmon fishing was allowed only in the customary and traditional areas as defined under specific permit conditions for coho. The possession and annual limit for chum salmon was 50, and for pink salmon, the possession limit was 50, and the annual limit was 150.

Allowed subsistence gear included hand purse seines, beach seines, drift gill nets, dip nets, gaffs, and spears. Drift gillnets could not exceed 50 fathoms. Set gillnets were not allowed. In Redoubt Bay, the use of rod and reel gear was allowed, and sport regulations applied to this gear.

Harvest Assessment Program

As reported in Table XIII-1, the estimated salmon harvest in the Sitka Area (District 13) subsistence fisheries in 2005, was 14,846 salmon, including 13,999 sockeye (94%), 650 pink salmon (4%), 145 coho (1%), 50 chum (<1%), and 2 Chinook (<1%).

As reported in Table XIII-4, the estimated salmon harvest for the community of Sitka, based on 676 permits issued and 665 returned (98%), was 12,018 salmon, including 11,484 sockeye (96%), 373 pink salmon (3%), 127 coho (1%), 27 chum (<1%), and 6 Chinook (<1%).

PETERSBURG/WRANGELL MANAGEMENT AREA

Kake Subsistence Salmon Fisheries

Background and History

Subsistence salmon fisheries in the waters traditionally used by the Tlingit people of Kake are under the management responsibility of the Petersburg/Wrangell office of the Division of Commercial Fisheries. In 1989, the Alaska Board of Fisheries adopted a positive finding for “customary and traditional use” of salmon in the waters of Section 9-A and 9-B, in waters north of the latitude of Swain Point, in waters of District 10 west of a line from Pinta Point to False Point Pybus, and in waters of District 5 north of a line from Point Barrie to Boulder Point (5AAC 01.716(10)). Principal salmon waters and streams used by Kake fishers include Gut Bay and Falls Lake Creek flowing into Chatham Strait on the southwest coast of Baranof Island, as well as Saginaw, Security (Salt Lake), Pillar (Kutlaku Creek), and Tebenkof (Alecks Creek) Bays on Kuiu Island.

The residents of Kake are the principal subsistence users of the salmon stocks in Gut Bay and Falls Lake Creek on Baranof Island and in Saginaw, Security, Pillar, and Tebenkof Bays on Kuiu Island. In 2000, Kake had a population of 710 in 246 households. Thirty-three percent of Kake households are estimated to use subsistence methods to harvest salmon for home use (Scott et al. 2001). Kake residents shared the use of the southern coastal waters of Admiralty

Island with people of Angoon and Petersburg. In recent years, principal subsistence salmon fishing by Kake residents has occurred in Gut Bay and Falls Creek on Baranof Island, and at Kutlaku Creek in Pillar Bay.

Regulations

The 2005 subsistence salmon permit for the Kake area waters of District 9 provided for an open season for sockeye salmon in Alecks Creek, Bay of Pillars, and Shipley Bay from June 1 through July 31. For Falls Lake, the season ran from June 1 through July 13, was closed from July 14 through July 22, then open again from July 23 through August 15, after which it remained closed. The sockeye season for Gut Bay ran from June 1 through July 20. The open season for pink salmon in all streams in the Kake and Point Baker/Port Protection subsistence area ran from July 15 through August 31. Permitted subsistence gear included gaffs, spears, beach seines, dip nets, drift gillnets, and cast nets. Drift and set gillnets could not exceed 50 fathoms. Set gillnets could only be used in Shipley Bay within 100 yards of the terminus of Shipley Creek, and the permit holder was required to be physically present at the net while it was in operation.

Harvest limits for sockeye from Alecks Creek and Bay of Pillars were 50 in possession and 50 annually. The limit for Gut Bay, 10 in possession and 20 annually, Falls Lake, 50 in possession and 50 annually and for Shipley Bay, 25 in possession, 50 annually.

Harvest Assessment Program

As reported in Table XIII-3, the estimated salmon harvest in the Kake subsistence area in 2005 was 2,144 salmon, including 1,852 sockeye (86%), 227 pink (11%), 48 chum (2%), 12 Chinook (<1%) and 5 coho (1%).

As reported in Table XIII-4, the estimated subsistence salmon harvest for the community of Kake in 2005, based on 142 permits issued and 135 returned (95%), was 2,000 salmon including 1,712 sockeye (86%), 225 pink salmon (11%), 45 chum (2%), 12 Chinook (<1%), 5 coho (<1%).

Petersburg Subsistence and Personal Use Fisheries

Background and History

Subsistence salmon fisheries in the waters traditionally used by the Tlingit people of Wrangell are under the management responsibility of the Petersburg/Wrangell office of the Division of Commercial Fisheries. In 1989, the Alaska Board of Fisheries adopted positive findings for “customary and traditional use” of salmon in the waters of southeast Alaska. The board did not act on proposals requesting a positive finding for “customary and traditional use” of salmon in the waters of District 7 and 8, the principal waters used by the people of Petersburg and Wrangell. In 2002, the Alaska Board of Fisheries made a positive finding for District 7 and District 8 (5AAC 01.716(23)). These waters include Thoms Place, Harding River, Mill Creek, and the Stikine River.

The Petersburg/Wrangell Management Area office also manages the subsistence sockeye salmon fisheries at Alecks Creek in Tebenkof Bay, Kutlaku Creek in Bay of Pillars on Kuiu Island, and Gut Bay and Falls Creek on Baranof Island in District 9.

Petersburg and Wrangell are the principal communities dependent on the salmon stocks of Salmon Bay on Prince of Wales Island, Crystal Creek, Thoms Creek, Earl West Cove, Mill

Creek, and the Stikine River. In 2000, Petersburg had a population of 3,247 in 1,252 households, and Wrangell had a population of 2,308 in 907 households.

Regulations

The 2005 subsistence/personal use salmon permit for the Petersburg/Wrangell Management Area provided for an open season for sockeye salmon in Shipley, Salmon, and Red Bays, along with Thoms Place and Mill Creek, from June 1 through July 31. Season limits for sockeye were 25 in possession and 50 annually from Shipley Bay and 30 in possession/annually from Salmon Bay and Red Bay. The open season for the subsistence sockeye salmon fisheries at Thoms Place and Mill Creek was June 1 through July 31 with a daily possession limit of 20 and an annual limit of 40.

Regulations have established a weekly season at Hatchery Creek, which drains into Sweetwater Lake. Because of increasing fishing pressure and concerns for the viability of the stock, the fishery is closed each week during Monday, Tuesday, and Wednesday, June 2 through June 30. Harvest limits were also restricted to 6 fish daily and 24 annually.

For all streams in the Kake, Point Baker/Port Protection, Wrangell and Petersburg subsistence areas, the open season for subsistence pink salmon fishing was from July 15 through August 31 with a daily/possession limit of 100 pinks and no annual limit. For all streams in the Kake, Point Baker/Port Protection, Wrangell and Petersburg subsistence areas, the open season for subsistence chum salmon fishing was from July 1 through October 31 with a daily possession limit of 50 fish and no annual limit.

Coho season for all of the streams in the Kake, Point Baker/Port Protection, Wrangell and Petersburg subsistence areas were open from August 16 through October 31 with a limit of 20 fish in possession and 40 annually. Personal use coho fishing was open in Blind Slough and North Wrangell Narrows from August 15 through September 5 (Fridays 6 am - 8 pm) with both possession and annual limits of 25 fish. The Anita Bay and Eastern Passage personal use permit allowed the harvest of Chinook, chum, and coho salmon from June 15 through October 10 with both possession and annual limits of 25 fish.

Allowed subsistence gear included gaffs, spears, beach seines, dip nets, drift gillnets, and cast nets. Drift and set gillnets could not exceed 50 fathoms. Set gillnets could only be used in Shipley Bay within 100 yards of the terminus of Shipley Creek, and the permit holder was required to be physically present at the net while it was in operation.

2005 FEDERAL STIKINE RIVER SUBSISTENCE SALMON FISHERY: REGULATIONS

In January of 2004, the U.S. and Canada negotiated a modified treaty annex provision to allow a U.S. subsistence fishery for sockeye salmon on the Stikine River. The U.S. Federal Subsistence Board implemented the Sitkine River subsistence sockeye salmon fishery in 2004.

On March 21, 2005, federal regulations implementing a subsistence fishery on the Stikine River were published in the Federal Register 13377 / Vol. 70, No. 53 / Rules and Regulations. There are as follows:

Subpart C—Board Determinations

§11.24 Customary and traditional use determinations.

(2) Fish determinations. The following communities and areas have been found to have a positive customary and traditional use determination in the listed area for the indicated species:

SOUTHEASTERN ALASKA AREA:

District 8 and waters draining into that District: Salmon, Dolly Varden, trout, smelt, and eulachon. Residents of drainages flowing into Districts 7 & 8, residents of drainages flowing into District 6 north of the latitude of Point Alexander (Mitkof Island), and residents of Meyers Chuck.

(i) Fishery management area restrictions.

(13) Southeastern Alaska Area.

(xix) You may take Chinook, sockeye, and coho salmon in the mainstem of the Stikine River only under the authority of a Federal subsistence fishing permit. Each Stikine River permit will be issued to a household and will be valid for 15 days. Permits may be revalidated for additional 15-day periods. Only dipnets, spears, gaffs, rod and reel, beach seine, or gillnet not exceeding 15 fathoms in length with mesh size no larger than 5 ½ inches may be used.

(A) You may take Chinook salmon from May 15 through June 20. The annual limit is 5 Chinook salmon per household.

(B) You may take sockeye salmon from July 1 through July 31. The annual limit is 40 sockeye salmon per household.

(C) You may take coho salmon from August 15 through October 1. The annual limit is 20 coho salmon per household

(D) You may retain other salmon taken incidentally by gear operated under terms of this permit. The incidentally taken salmon must be reported on your permit calendar.

(E) The total annual guideline harvest level for the Stikine River fishery is 125 Chinook, 600 sockeye, and 400 coho salmon. All salmon harvested, including incidentally taken salmon, will count against the guideline for that species.

There was a midseason change to the maximum gillnet mesh size in the Chinook salmon fishery in 2005 through a Special Action by the Federal Subsistence Board. Canadian and State of Alaska fisheries managers concurred with this action, which increased the maximum mesh size from 5½ inches to 8 inches, effective June 4 through June 20. This increase in mesh size was designed to enhance the opportunity for subsistence harvest of Chinook salmon.

The following conditions were included on the 2005 Stikine River subsistence fishing permit. The permit was only valid for subsistence salmon fishing in the mainstream of the Stikine River. Clearwater tributaries of the Stikine were closed to subsistence fishing. Fishing gear had to be operated in such a way that it did not interfere with the US-Canada test fishing program. Only residents of Meyers Chuck, Wrangell and Petersburg (including all residents of Fishing District 6 living north of Point Alexander) could participate in the Stikine River subsistence fishery. The permit had to be in the fishers possession while fishing. A daily harvest entry had to be completed prior to leaving the fishing site, whether a fish was harvested or not. Only one permit was issued to a household. Another federally qualified person could fish the permit if included as a designated fisherman on the permit. Incidental harvest of Chinook, sockeye, or coho outside of the directed fishery seasons and the harvest of any other species of fish was allowed but harvests had to be reported on the daily harvest log. Completed permits had to be returned (postmarked) to either the Wrangell or Petersburg Ranger District offices by October 14, 2005. Permits had to be validated prior to fishing during any of the following seven different time periods: May 15-31, June 1-20, July 1-15, July 16-31, August 15-31, September 1-15 and September 16-October 1.

A total of 35 fishing permits were issued during the 2005 season. Petersburg households were issued 10 permits and Wrangell households 25. Fishing reports were obtained from all permits issued for this fishery. Any household that did not return permits by October 14 was contacted by telephone. A total of 22 households engaged in subsistence fishing.

The subsistence harvest totaled 15 Chinook greater than 28 inches, 8 Chinook less than 28 inches, 252 sockeye, 53 coho, 69 pink, and 22 chum salmon. There were no steelhead and 4 Dolly Varden harvested. Most of the fishing effort and harvest occurred in the lower and middle portions of the river. The Chinook salmon harvest occurred throughout the Chinook season while most of the sockeye harvest occurred in the first half of July. Most of the coho salmon were caught the last week of August.

Harvest Assessment Program – Petersburg

As reported in Table XIII-3, the estimated salmon harvest in the Petersburg Subsistence/Personal Use Area in 2005 was 714 salmon, including 313 coho (44%), 293 sockeye (41%), 85 pink salmon (11%), 22 chum (3%), and no Chinook.

As reported in Table XIII-4, the estimated subsistence salmon harvest for the community of Petersburg in 2005, based on 87 permits issued and 83 returned (95%), was 538 salmon, including 305 coho (57%), 165 sockeye (31%), 56 pink salmon (10%), 12 chum (2%), and 1 Chinook (<1%),

Wrangell Subsistence and Personal Use Fisheries

Regulations

For a summary, see the regulations above for Petersburg/Wrangell Management Area.

Harvest Assessment – Wrangell

As reported in Table XIII-3, the estimated salmon harvest in the Wrangell Subsistence/Personal Use Area in 2005 was 1,031 salmon, which included 570 sockeye (55%), 319 pink (31%), 106 chum (10%), 25 Chinook (3%), and 11 coho (1%).

As reported in Table XIII-4, the estimated subsistence salmon harvest for the community of Wrangell in 2005, based on 97 permits issued and 94 returned (97%), was 1,034 salmon, including 573 sockeye (55%), 319 pink salmon (31%), 106 chum (10%), 25 Chinook (4%), and 11 coho (1%).

Point Baker/Port Protection Subsistence Fisheries

Background and History

The Petersburg/Wrangell Area office of the Division of Commercial Fisheries manages subsistence and personal use salmon fisheries in the waters used by fishers from the communities of Point Baker and Port Protection—the Salmon Bay and Red Bay sockeye salmon stocks at the north end of Prince of Wales Island. In 1989, when the Alaska Board of Fisheries adopted positive findings for “customary and traditional use” of salmon in some waters of southeast, it did not act on proposals to make a similar finding for the principal waters used by the people of Point Baker and Port Protection to obtain their fish for home use. In 1997, the Alaska Board of Fisheries adopted a positive finding for “customary and traditional” use of salmon (and other fish) “in waters of District 5 north of a line from Point St. Albans to Cape Pole, in waters of Section 6-A west of a line from Macnamara Point to Mitchell Point, and in waters of Section 6-B west of the longitude of Macnamara Point” (5 AAC 01.716(20)).

In 2000, Point Baker had a population of 35 in 13 households, and Port Protection had a population of 63 in 31 households. In 1996, 50 percent of households in Point Baker and 28 percent in Port Protection relied on removal from commercial catches to provide salmon for their households’ use (Scott et al. 2001).

Regulations

The Point Baker drift gillnet subsistence salmon fishery occurs in the waters of Sumner Strait within 3 miles of the Prince of Wales Island shoreline north of Hole-in-the-Wall and west of the western side of Buster Bay. The fishery was open June 13 through July 31 from Wednesday noon until Sunday noon. Only drift gillnet gear was allowed, and gillnets could not exceed 50 fathoms in length. Harvest was limited to a maximum of 25 sockeye salmon per family per year. Incidental harvests of other species were allowed.

Harvest Assessment Program

In 2005 no permits were issued to Port Protection residents. Port Protection households receive mail via pouch from Ketchikan and maintain either a Ketchikan or Point Baker post office box address. Port Protection harvests can also be included in either the Point Baker or Ketchikan harvest numbers. For Point Baker in 2005, one permit was issued and returned, with 69 salmon, including 29 pink, 21 sockeye, 12 chum, and 7 coho salmon.

KETCHIKAN MANAGEMENT AREA

Craig, Klawock And Hydaburg Subsistence Fisheries

Background and History

The Ketchikan Management Area includes three distinct subsistence areas where the Board of Fisheries adopted positive “customary and traditional use” determinations in 1989. Two of these areas are on the west coast of Prince of Wales Island, the Hydaburg area waters and

the Craig/Klawock area waters. Hydaburg area waters include Section 3-A and the waters of District 2 in Nichols Bay north of 54°42.12' N. lat. (5AAC 01.716(18)). Craig/Klawock area waters include Section 3-B east of a line from Point Ildefonso to Tranquil Point, Warm Chuck Inlet north of a line from a point on Heceta Island at 55°44' N. lat., 133°25' W long., to Bay Point, Section 3-C in Karheen Passage north of 55°48' N lat. and east of 133°20' W long., and Sarkar Cove and Sarkar Lakes (5 AAC 01.716(15)).

The communities of Hydaburg, Craig, and Klawock on the west coast of Prince of Wales Island primarily use the salmon stocks of Districts 3-A and 3-B, the main harvest locations being Hetta Inlet/Sukkwon Strait (Eek Creek), Big Salt/Trocadero Bay (Klawock River), and Sea Otter Sound (Sarkar).

In 1997, a household survey conducted by the Division of Subsistence found that 27 percent of Craig households used subsistence methods to harvest salmon. In Klawock, 36 percent, and in Hydaburg, 59 percent of households used subsistence methods to harvest salmon in 1997 (ADFG Division of Subsistence, Community Profile Database 2003).

In 2000, the numbers of people and households in the 3 west coast Prince of Wales Island communities were as follows:

Community	Population	Households
Craig ^[1]	1,725	631
Klawock	854	313
Hydaburg	382	133

Source: U.S. Census of Population, 2000

[1] Alaska Native Village Statistical Area includes population on Port St. Nicholas Rd. and other residential areas outside City of Craig boundaries.

Regulations

The 2005 subsistence/personal use salmon permit for the Ketchikan Management Area stipulated that hand purse seines, beach seines, spears, gaffs, cast nets, and dip nets were the types of subsistence/personal use gear allowed for general use. Salmon could not be taken with a “line attached to a rod or pole.” The standard rules prohibiting fishing near dams, fish ladders, weirs, culverts, etc., were also included, as well as the prohibition against possessing salmon taken under sport fishing regulations on the same day as subsistence/personal use taken salmon and the requirement of removing tail fin tips immediately. The 2005 subsistence sockeye salmon openings in Craig/Klawock area waters were from July 7 through July 29 (8am Monday to 5pm Friday) with a 20 sockeye possession limit and no annual limit; in Hetta Inlet and Eek Creek from June 1 through August 31 with a possession limit of 20 sockeye and no annual limit; and in Hugh Smith Lake from June 22 through July 12 with a 12 sockeye possession limit and no annual limit. All other systems in the Ketchikan Management Area with customary and traditional use areas were open to sockeye fishing June 1 through July 31 with 20 sockeye in possession and no annual limit. All streams in the Ketchikan Management Area with customary and traditional use areas were open for pink salmon from July 1 through September 30 and allowed 150 fish in possession with no annual limit. Chum salmon fishing was open in the same waters from July 1 through October 31 with a possession limit of 25 and no annual limit, and coho fishing was open July 1 through October 31 with limits of 20 fish in possession and 40 annually.

Harvest Assessment Program

As reported in Table XIII-3, the estimated salmon harvest for the Craig/Klawock/Hydaburg subsistence area in 2005 was 4,150 salmon, including 2,951 sockeye (71%), 997 pink (24%), 155 coho (4%), and 46 chum (1%).

As reported in Table XIII-4, 150 permits were issued to residents of Craig, and 124 (83%) were returned. The total estimated salmon harvest was 2,379 salmon, consisting of 1,234 sockeye (52%), 855 pink salmon (36%), 166 coho (7%), and 123 chum (5%). The total estimated salmon harvest for Klawock, based on 95 permits issued and 76 returned (80%), was 780 salmon, consisting of 594 sockeye (76%), 143 pink salmon (18%), 36 coho (5%), and 8 chum (1%). The total estimated salmon harvest for Hydaburg, based on 40 permits issued and 24 returned (60%), was 1,643 sockeye.

Kasaan Subsistence and Eastern Prince Of Wales Personal Use Fisheries

Background and History

The subsistence area on the east coast of Prince of Wales Island identified by the Board of Fisheries as having “customary and traditional use” of salmon includes the Kasaan area waters of District 2 north of the latitude of the northernmost tip of Chasina Point and west of a line from the northernmost tip of Chasina Point to the easternmost tip of Grindall Island to the easternmost tip of the Kasaan Peninsula (5AAC 01.716 (12)). Salmon fishing in all other marine waters along the east coast of Prince of Wales Island occurs under personal use regulations. The principal waters used for salmon fishing in District 6 along the east coast of Prince of Wales Island are the Kegan Lake, Thorne River, and Hatchery Creek-Sweetheart Creek.

The population and number of households of the communities of Prince of Wales Island that use these waters are:

Community	Population	Households	Community	Population	Households
Coffman Cove	199	63	Kasaan	39	17
Craig ^[1]	1,725	631	Klawock	854	313
Edna Bay	49	19	Thorne Bay	557	219
Hollis	139	55	Whale Pass	58	22
Hydaburg	382	133			

Source: U.S. Census of Population, 2000

[1] Alaska Native Village Statistical Area, includes population on Port St. Nicholas Rd and other suburbs of City of Craig.

Regulations

All streams in the Ketchikan Management Area with customary and traditional use areas not otherwise listed on the permit had open seasons for subsistence sockeye salmon fishing from June 1 through July 31 with a 20 fish possession limit and no annual limit. Also in these waters, pink salmon fishing was open from July 1 through September 30 with a limit of 150 fish in possession and no annual limit, and chum salmon fishing was open from July 1 through October 31 with a 25 fish possession limit and no annual limit. Coho salmon fishing was also open in these waters from August 16 through October 31 with a limit of 20 fish in possession and 40 annually.

Harvest Assessment Program

As reported in Table XIII-3, the estimated salmon harvest in the Kasaan subsistence area in 2005 was 1,952 salmon, including 1,716 sockeye (88%), 97 coho (5%), 91 chum (5%) percent), and 49 pink salmon (3%).

As reported in Table XIII-4, the estimated salmon harvest for Kasaan, based on 2 permits issued and 1 returned, was 20 sockeye salmon. For Coffman Cove, 7 permits were issued and 6 were returned with no reported salmon harvests. In Hollis, 3 permits were issued and 3 were returned, resulting in a harvest estimate of 41 sockeye, 28 coho, and 25 pink salmon, a total of 94 salmon. Thorne Bay residents were issued 76 permits and returned 75 of them, resulting in a harvest estimate of 639 salmon, including 627 sockeye, 7 coho, and 5 pink salmon.

Ketchikan Personal Use Fisheries

Background and History

The Ketchikan Management Area office of the Division of Commercial Fisheries is responsible for the subsistence and personal use salmon fisheries in Districts 1, 2, 3, and 6. The Board of Fisheries recognized “customary and traditional use” of salmon stocks in the waters used by the Tongass Tlingit of Saxman. These waters include the Naha River, Boca de Quadra in the waters of Sockeye Creek and Hugh Smith Lake, and within 500 yards of the terminus of Sockeye Creek (5AAC 01.716 (19)). Sockeye salmon fisheries in Helm, McDonald, and Checates Lakes and pink and chum salmon fisheries in all streams in the

Ketchikan Management Area except along the Ketchikan road systems and in subsistence areas described above, are managed under personal use regulations.

The communities of Ketchikan and Saxman are the principal users of these fisheries. In 2000, the population of the City and Borough of Ketchikan, excluding Saxman, was 13,639 in 5,272 households. Saxman, located within the Ketchikan Borough, had a population of 431 in 127 households.

Regulations

The personal use salmon permit for the Ketchikan Management Area provided for an open season for sockeye salmon at McDonald Lake (Yes Bay) from June 1 through August 30 with a possession limit of 25 fish and no annual limit. All other streams in the Ketchikan Management Area's personal use area except the Ketchikan road system were open from June 1 through July 31 with a limit of 12 sockeye in possession and no annual limit. Hatchery Creek was open weekly, Thursday through Sunday, June 2 through June 30 with a limit of 6 sockeye in possession and 24 annually. For pink salmon, all streams in the Ketchikan Management Area's personal use area except the Ketchikan road system were open from June 2 through September 30 with a limit of 150 fish in possession and no annual limit. The same streams/areas were open for chum salmon from June 1 through October 31 with a possession limit of 25 and no annual limit.

Harvest Assessment Program

As reported in Table XIII-3, the total estimated salmon harvest in the Ketchikan personal use area in 2005 was 5,206, including 3,854 sockeye (74%), 726 chum (14%), 562 pink salmon (11%), 37 coho (<1%), and 27 Chinook (<1%).

As reported in Table XIII-4, the total estimated salmon harvest for the community of Ketchikan, based on 309 permits issued and 274 returned (89%), was 5,251, including 3,996 sockeye (76%), 633 chum (12%), 541 pink salmon (10%), 54 coho (1%), and 27 Chinook (<1%). No permits were issued to residents of Saxman in 2005. The total estimated salmon harvest for the community of Metlakatla, based on 21 permits issued and 17 returned, was 188 sockeye salmon.

Table XIII-1.—Estimated subsistence and personal use salmon harvests by district, Southeast Alaska/Yakutat Region, 2005.

Fishing Location	Name	Permits Fished		Estimated Salmon Harvests					
		Reported	Estimated	Chinook	Sockeye	Coho	Chum	Pink	Total
District 1	Ketchikan/Behm Canal	230	266	27	3855	37	726	562	5207
District 2	Clarence Strait/East Prince of Wales Island	160	180	0	1731	97	117	198	2144
District 3	Inside Waters/West Prince of Wales Island	146	192	1	2908	158	19	848	3934
District 6	East Sumner Strait/North Frederick Sound	68	73	0	338	135	20	106	598
District 7	East Etolin Island/Wrangell Island/Ernest Sound	94	97	25	551	10	106	296	989
District 8		14	15	0	0	177	2	2	181
District 9	South Chatham Strait/West Frederick Sound	98	106	12	1888	5	48	227	2180
District 11	Juneau.Taku Inlet.Stephens Passage	342	464	45	5198	180	50	398	5872
District 12	Angoon/North Chatham Strait/ East Chichagof	19	42	0	533	34	0	0	566
District 13	Sitka.Outer Baranof and Chichagof/Peril Strait	719	787	2	13999	145	50	650	14846
District 14	Icy Strait/Glacier Bay	17	32	0	421	0	25	51	497
District 15	Lynn Canal/Chilkat Inlet	956	1003	97	5036	361	664	1601	7759
Yakutat Forelands	Yakutat Forelands	98	124	220	2995	944	4	19	4182
Yakutat Bay-Troll	Yakutat Bay-Troll	80	101	459	240	0	0	0	699
	Totals			887	39694	2283	1831	4959	49655

Source: ADF&G Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XIII-2.—Estimated historic subsistence and personal use salmon harvests, Southeast Alaska/Yakutat Region, 1985-2005.

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
2001	3,605	3,116	1,457	55,157	3,266	3,968	4,230	68,080
2002	3,326	2,732	1,857	56,379	3,176	2,183	3,210	66,804
2003	3,595	2,924	1,543	64,670	3,052	6,275	3,894	79,434
2004	3,703	3,235	1,583	61,419	2,446	3,151	3,164	71,763
2005	3,304	2,772	887	39,694	2,283	1,831	4,959	49,655
5-Year								
Average	3,507	2,956	1,465	55,464	2,845	3,482	3,891	67,147
10-Year								
Average	3,827	3,217	1,311	57,735	2,736	4,289	3,655	69,727
All Years								
Average	3,827	2,377	848	46,819	2,273	3,750	3,007	56,698

¹ For years prior to 1996, only permits returned with harvest data are included, and harvests reported in these years are not expanded into estimates. Caution should be used if comparing pre-1996 data with later data.

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XIII-3.—Estimated subsistence and personal use salmon harvests by management and use areas, Southeast Alaska/Yakutat Region, 2005.

	Permits Fished		Estimated Harvests					Total
	Reported	Estimated	Chinook	Sockeye	Coho	Chum	Pink	
Yakutat Management Area	178	225	679	3235	944	4	19	4881
Haines Management Area	956	1003	97	5036	361	664	1601	7759
Juneau Management Area	421	633	45	8229	228	94	607	9202
Juneau Personal Use Area	343	467	45	5227	180	50	398	5900
Angoon Subsistence Area	31	71	0	1089	34	0	70	1193
Hoonah Subsistence Area	47	95	0	1914	15	43	138	2110
Sitka Management Area	678	696	2	11959	130	32	493	12616
Petersburg Management Area	269	283	36	2714	330	176	632	3889
Petersburg Subsistence/ Personal Use Area	71	76	0	293	313	22	85	714
Wrangell Subsistence/ Personal Use Area	102	105	25	570	11	106	319	1031
Kake Subsistence Area	96	102	12	1851	5	48	227	2144
Ketchikan Management Area	539	642	28	8520	290	863	1608	11309
Ketchikan Personal Use Area	229	265	27	3854	37	726	562	5206
Kasaan Subsistence Area	157	176	0	1716	97	91	49	1952
Craig/Klawock/Hydaburg Subsistence Area	153	200	1	2951	155	46	997	4150
Totals			887	39694	2283	1831	4959	49655

Source: ADF&G Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

Table XIII-4.—Estimated subsistence and personal use salmon harvests by community, Southeast Alaska/Yakutat Region, 2005.

COMMUNITY	PERMITS		ESTIMATED SALMON HARVEST					TOTAL SALMON
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
Akutan	1	1	0	0	0	0	0	0
Anchorage	24	22	1	107	1	3	31	143
Angoon	90	32	0	734	34	0	70	838
Auke Bay	39	32	1	321	10	0	13	345
Coffman Cove	7	6	0	0	0	0	0	0
Cordova	1	1	0	0	0	0	0	0
Craig	150	124	1	1,234	166	123	855	2,379
Douglas	59	48	9	559	44	1	70	683
Eagle River	1	1	0	9	0	0	0	9
Ekwok	1	1	0	0	0	0	0	0
Elfin Cove	2	2	0	1	0	0	10	11
Fairbanks	13	12	0	46	0	0	0	46
Gambell	1	1	0	0	0	0	0	0
Gustavus	19	12	0	119	0	2	38	158
Haines	342	331	96	4,652	329	597	1,461	7,134
Hollis	3	3	0	41	28	0	25	94
Hoonah	130	53	0	1,751	15	71	93	1,930
Hydaburg	40	24	0	1,643	0	0	0	1,643
Hyder	1	1	0	0	0	0	0	0
Juneau	716	511	48	5,945	311	87	444	6,835
Kake	142	135	12	1,712	5	45	225	2,000
Kasaan	2	1	0	20	0	0	0	20
Ketchikan	309	274	27	3,996	54	633	541	5,251
Klawock	95	76	0	594	36	8	143	780
Klukwan	1	1	0	0	0	0	0	0
Kodiak City	1	1	0	0	0	0	0	0
Larsen Bay	1	1	0	16	0	0	1	17
Metlakatla	21	17	0	188	0	0	0	188
Naukati Bay	3	3	0	0	0	0	0	0
Palmer	1	1	0	0	0	0	0	0
Paxson	1	1	0	70	0	0	0	70
Pelican	6	6	0	37	0	0	25	62
Petersburg	87	83	1	165	305	12	56	538
Point Baker	1	1	0	21	7	12	29	69
Sitka	676	665	6	11,484	127	27	373	12,018
Skagway	9	9	0	41	0	0	65	106
Soldotna	1	0	0	0	0	0	0	0
Tenakee Springs	4	4	0	0	0	0	0	0
Thorne Bay	76	75	0	627	7	0	5	639
Ward Cove	28	24	0	298	0	100	48	446
Wasilla	4	4	0	11	0	0	0	11
Wrangell	97	94	25	573	11	106	319	1,034
Yakutat	98	78	661	2,681	793	4	19	4,157
Totals	3,304	2,772	887	39,694	2,283	1,831	4,959	49,655

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, 2006.

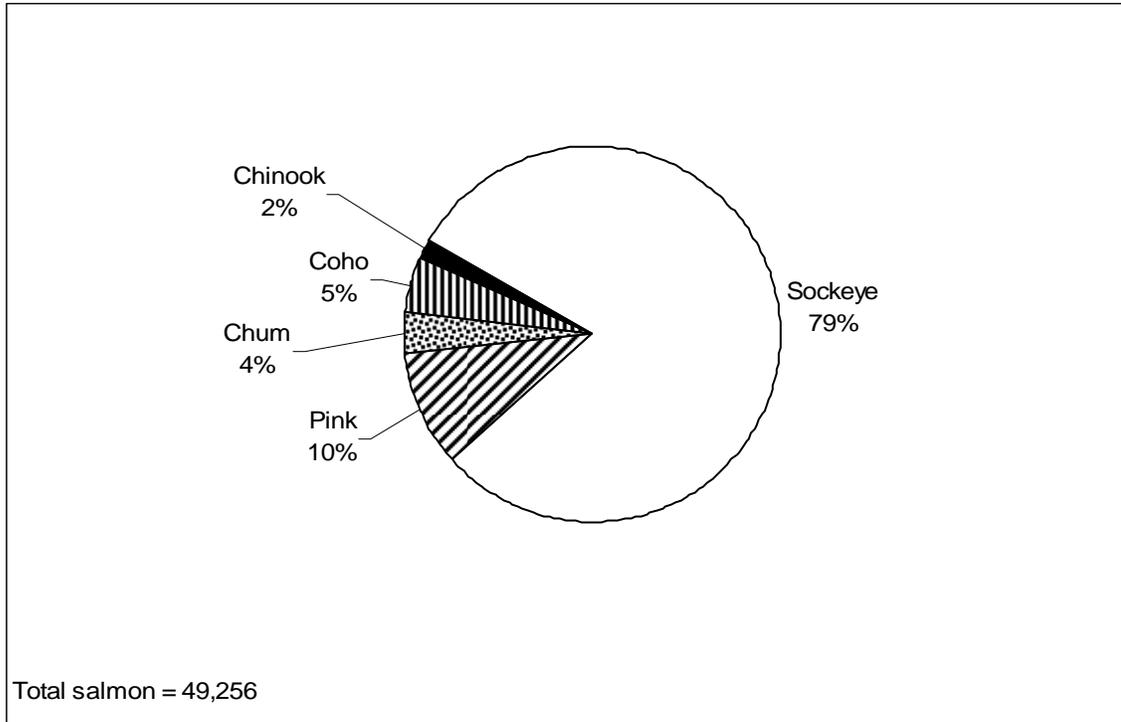


Figure XIII 1–Southeast/Yakutat subsistence and personal use harvests by species, 2005.

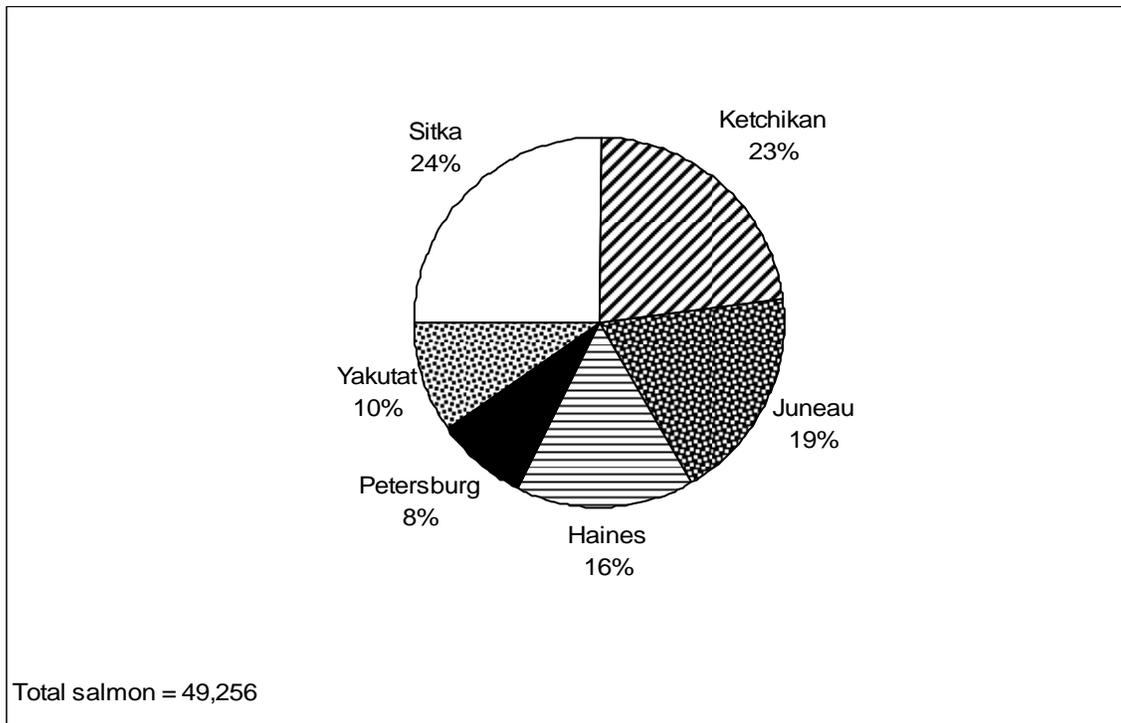


Figure XIII 2.–Total salmon harvested by management area, Southeast/Yakutat Region, 2005.

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Each year, thousands of Alaska residents who participate in subsistence fisheries take the time to provide harvest information to the Alaska Department of Fish and Game. We acknowledge their support with profound gratitude, for without it, a report like this would be impossible to produce.

We also offer thanks to the numerous Department of Fish and Game staff in the divisions of Commercial Fisheries, Sport Fish, and Subsistence who conduct the programs that collect, analyze, and report the subsistence fisheries harvest data every year. They too made this report possible.

Many department personnel generously made time to allow Division of Subsistence staff to interview them about subsistence databases and harvest assessment programs. We have relied upon their numerous insights about these programs to develop the Alaska Subsistence Fisheries Database, as well as to evaluate the data that appear in this report. We sincerely appreciate their help.

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

Finally, we acknowledge the support of the U.S. Fish and Wildlife Service, Office of Subsistence Management, for contributing \$230,744 toward the cost of this project through Project Number FIS 04-751, agreement 701812J44.

This annual report is the result of the work of a number of Division of Subsistence staff. Dave Caylor and Jeannie Heltzel (who have both since left the division) compiled the information from the various harvest assessment programs, administered and updated the Alaska Subsistence Fisheries Database, and prepared the methods appendix. Brian Davis (who has since left the division) and David Koster contributed to the presentation of the fisheries data. Caroline Brown, James Fall, Tracie Krauthoefer (who has left the division), and Michael Turek wrote specific sections of the report. Additional Division of Subsistence staff who administered subsistence fisheries harvest assessment programs in 2005 were Molly Chythlook (who has left the division), Eunice Dyasuk, Lisa Hutchinson-Scarborough, and Ron Stanek (who has left the division).

As noted in the report itself, this is the seventh in a series of statewide summaries of subsistence fisheries harvest data. Though many have contributed to this report, any errors are the responsibility of the authors. We encourage those who use this report to offer ideas and suggestions to improve future volumes in this series.

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APPENDIX

METHODS

Introduction

The estimated and reported harvests presented in this report result from the efforts of many people: subsistence fishers who record their harvests on permits or catch calendars; residents of rural communities who volunteer subsistence fishing information during annual household surveys; people who respond to mailed inquiries about their subsistence fishing activities; cooperating local government offices and businesses; and employees of numerous tribal organizations, three Alaska Department of Fish and Game (ADFG) divisions, and the National Park Service.

More than two-dozen annual harvest assessment projects are supported by the efforts of these people and organizations. Most of these projects were designed independently of the others, were initially quite different from one another, and have been further modified over time. Today, they produce results that are not always comparable across fisheries.

Most of these annual projects are conducted in order to satisfy specific reporting requirements such as the inclusion of subsistence fish harvest information in the ADFG Division of Commercial Fisheries and Division of Sport Fish annual management reports. To the extent that agency or regional reporting requirements vary, different report authors may summarize subsistence harvest information differently—in more or less detail, for example—making the summary results even less comparable across fisheries.

This Alaska Subsistence Fisheries 2004 Annual Report, along with the Alaska Subsistence Fisheries Database upon which many of its tables are based, is a statewide compilation of subsistence harvest information from all of the individual harvest assessment projects. Because Alaska's individual harvest assessment projects vary widely in the methods they use and the information they report, special measures were necessary before some of their results became compatible with this statewide approach. Results from some of the individual harvest assessment projects are reported here without modification, while the data from other projects were reanalyzed for more detail or otherwise distilled into more compatible and more combinable results.

This appendix provides brief overviews of how each subsistence salmon fishery's results in this report were arrived at and what, if any, special measures were taken to modify individual harvest assessment project findings into formats compatible with this statewide compilation.

Project descriptions appearing in this appendix appear in the same order their corresponding fisheries were discussed in the main body of the report. (See table of contents.)

Northwest Alaska: Norton Sound – Port Clarence Area

Data Sources

- Household surveys
- Subsistence fishing permits
- Test fishery records

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Issued subsistence fishing permits, required in some fishing areas
 - Conducted household surveys in Unalakleet and Shaktoolik
 - Compiled reported harvest data from returned permits and household surveys into Excel spreadsheets
 - Distributed salmon harvested by ADFG test fisheries to local communities and kept records of how many were distributed to each village by species
 - Provided fishing permit and test fishery data to Division of Subsistence

Annual Harvest Assessment Project – Analysis

- Household surveys
 - Reported harvests were analyzed separately by type.
 - Subsistence harvests (harvested under subsistence regulations)
 - Commercial harvests retained for home use
 - Rod and reel harvests (by regulation, these are sport fishing harvests in most areas, but subsistence harvests in others—accurate separation not possible)
 - Reported harvests expanded to community harvest estimates within each of two harvest strata
 - Usually fish
 - Do not usually fish
 - Harvest estimates
 - For community i , species j : $E_{i,j} = \sum_{k=1}^2 \left((N_{i,k} / n_{i,k}) \times R_{i,j,k} \right)$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = total number of households,
 - n = number of households sampled, and
 - k = harvest stratum.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

- **Subsistence fishing permits**
 - **Reported harvests by permit area—as compiled by Division of Commercial Fisheries—are included in project tables.**
 - **Reported harvests are not expanded into community estimates.**
- **Test fishery records**
 - **Salmon harvested by ADFG test fisheries and distributed to communities are included in results tables.**

Statewide Compilation – Included Data and Special Measures

- **Results of five types are included in the report tables.**
 - **Subsistence harvests from household surveys**
 - **Subsistence permit harvests**
 - **Commercial harvests retained for home use**
 - **Rod and reel harvests**
 - **Test fishery harvests distributed to communities**
- **No special measures were necessary to include project results in this statewide report.**

Northwest Alaska: Kotzebue Area

Note: the information below describes how data have been collected and analyzed for the Kotzebue Area in the past. These data appear in the Alaska Subsistence Fisheries Database and in historic tables in this annual report. However, no subsistence fisheries data collection program occurred in the Kotzebue Area for 2005 due to lack of funding.

Data Sources

- Household surveys
- Test fishery records

Annual Harvest Assessment Project – Tasks

- Division of Subsistence
 - Coordinated postseason household survey process, conducted surveys
 - Conducted analysis of data from all sources
 - Provided results to Division of Commercial Fisheries for inclusion in annual management report
 - Included more detailed results in annual Northwest Alaska subsistence salmon report
- Division of Commercial Fisheries
 - Distributed salmon harvested by ADFG test fisheries to local communities and kept records of how many were distributed to each village by species
 - Provided test fishery data to Division of Subsistence

Annual Harvest Assessment Project – Analysis

- Household surveys
 - Reported harvests were analyzed separately by type.
 - Subsistence harvests (harvested under subsistence regulations)
 - Commercial harvests retained for home use
 - Rod and reel harvests (by regulation, these are sport fishing harvests)
 - Reported harvests expanded to community harvest estimates within each of two harvest strata
 - Usually fish
 - Do not usually fish
 - Harvest estimates
 - For community i , species j : $E_{i,j} = \sum_{k=1}^2 \left((N_{i,k} / n_{i,k}) \times R_{i,j,k} \right)$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = total number of households,

- n = number of households sampled, and
- k = harvest stratum.
- For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community
- Test fishery records
 - Salmon harvested by ADFG test fisheries and distributed to communities are included in results tables.

Statewide Compilation – Included Data and Special Measures

- Results of four types are included in the report tables.
 - Subsistence harvests from household surveys
 - Commercial harvests retained for home use
 - Rod and reel harvests
 - Test fishery harvests distributed to communities
- No special measures were necessary to include project results in this statewide report.

Yukon Area

Data Sources

- Household surveys
- Harvest calendars
- Subsistence fishing permits
- Personal use fishing permits
- Test fishery records

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Distributed preseason subsistence harvest calendars to selected households
 - Coordinated postseason household survey process, conducted surveys
 - Distributed salmon harvested by ADFG test fisheries to local communities and kept records of how many were distributed to each village by species
 - Conducted detailed analysis of data from all sources
 - Included detailed results in annual Yukon River drainage subsistence salmon report
 - Provided selected raw data to Division of Division of Subsistence
 - Provided analysis results to Division of Division of Subsistence

Annual Harvest Assessment Project – Analysis

- Household surveys
 - Reported harvests expanded to community harvest estimates within each of five harvest strata
 - Unknown
 - Do not fish
 - Light harvester
 - Medium harvester
 - Heavy harvester
 - Harvest estimates
 - For community i , species j : $E_{i,j} = \sum_{k=1}^5 \left((N_{i,k} / n_{i,k}) \times R_{i,j,k} \right)$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = total number of households,
 - n = number of households sampled, and
 - k = harvest stratum.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...

- E = estimated harvest and
- i = community
- **Harvest calendars**
 - Not normally calculated into harvest estimates
 - Data may substitute for survey if household not contacted
 - Special treatment of some cases, e.g. may include calendar in survey estimates if calendar harvest is especially high
- **Subsistence fishing permits**
 - Reported harvests not expanded into community estimates—only reported harvests included in project results
 - Assumption is unreturned permits were not fished
- **Personal use fishing permits**
 - Reported harvests not expanded into community estimates—only reported harvests included in project results
 - Assumption is unreturned permits were not fished
- **Test fishery records**
 - Salmon harvested by ADFG test fisheries and distributed to communities reported at the community level.
 - Test fishery harvests sometimes included in community survey estimates

Statewide Compilation – Included Data and Special Measures

- **Results of five types are included in the report tables.**
 - Subsistence harvests from household surveys
 - Subsistence harvests from permits
 - Personal use harvests from permits
 - Commercial harvests retained for home use
 - Test fishery harvests distributed to communities
- **Special measures necessary to include project results in this statewide report.**
 - Subsistence harvests from household surveys
 - Division of Commercial Fisheries harvest estimates were adjusted to remove non-survey amounts (e.g. test fishery harvests) and to accommodate several Division of Commercial Fisheries special case adjustments.
 - Subsistence harvests from permits
 - Permit data analyzed to separate harvests by community
 - Permit-survey overlap removed, i.e. permit data from residents of surveyed communities not included.
 - Reported harvests were expanded into community estimates for non-response.
 - Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and

- n = number of permits returned.
- For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community
- Personal use harvests from permits
 - Permit data analyzed to separate harvests by community
 - Expansion for non-response unnecessary due to 100 percent response rate.
- Commercial harvests retained for home use
 - Information not available in Division of Commercial Fisheries project results
 - Household survey data analyzed according to established Division of Commercial Fisheries methods, i.e. reported harvests were expanded into community estimates using five harvest strata.
 - Harvest estimates
 - For community i , species j : $E_{i,j} = \sum_{k=1}^5 \left((N_{i,k} / n_{i,k}) \times R_{i,j,k} \right)$,
where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = total number of households,
 - n = number of households sampled, and
 - k = harvest stratum.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community
- Test fishery harvests distributed to communities
 - Distributions reported by community
 - No special measures necessary

Kuskokwim Area

Data Sources

- Household surveys
- Harvest calendars

Annual Harvest Assessment Project – Tasks

- Division of Subsistence
 - Coordinated postseason household survey process
 - Conducted postseason household surveys in all surveyed communities except Bethel and Aniak
 - Conducted analysis of data from all sources
 - Provided results to Division of Commercial Fisheries for inclusion in annual management report
- Orutsararmiut Native Council (ONC)
 - Conducted postseason household surveys in Bethel
- Kuskokwim Native Association
 - Conducted postseason household surveys in Aniak

Annual Harvest Assessment Project – Analysis

- Household surveys
 - Three types of harvests were analyzed and reported together.
 - Subsistence harvests
 - Commercial harvests retained for home use
 - Rod and reel harvests
 - Reported harvests expanded to community harvest estimates using two harvest strata
 - Usually fish
 - Do not usually fish
 - Harvest estimates
 - For community i , species j : $E_{i,j} = \sum_{k=1}^2 \left((N_{i,k} / n_{i,k}) \times R_{i,j,k} \right)$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = total number of households,
 - n = number of households sampled, and
 - k = harvest stratum.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community
- Harvest calendars

- For surveyed households, harvests reported on calendars used in place of postseason survey reports; analyzed with survey data.
- For households not surveyed, harvests reported on calendars used instead of household survey; analyzed with survey data.

Statewide Compilation – Included Data and Special Measures

- Results of three types are included in the report tables.
 - Subsistence harvests from household surveys
 - Commercial harvests retained for home use
 - Rod and reel harvests
- No special measures were necessary to include project results in this statewide report.

Bristol Bay Area

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Subsistence
 - Issued subsistence salmon fishing permits
 - Conducted all data analysis
 - Provided results to Division of Commercial Fisheries for inclusion in annual management report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests expanded to community harvest estimates using a single harvest stratum.
 - Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests from subsistence fishing permits included in report tables.
- No special measures were necessary to include project results in this statewide report.

Chignik Area

Data Sources

- Subsistence fishing permits
- Follow-up household surveys

Annual Harvest Assessment Project – Tasks

- Division of Subsistence
 - Coordinated issuing of subsistence salmon permits through local vendors, businesses, and public offices
 - Conducted follow-up household surveys
 - Conducted all data analysis
 - Provided results to Division of Commercial Fisheries for inclusion in annual management report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests expanded to community harvest estimates using a single harvest stratum.
- Follow-up household surveys
 - Used to supplement permit data for households not obtaining permits
 - Analyzed with permit data
 - Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued¹⁸, and
 - n = number of permits returned.¹
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- No special measures were necessary to include project results in this statewide report.

¹⁸ Includes number of households surveyed post-season, whether or not permits were issued.

Alaska Peninsula Area

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Issued subsistence salmon permits
 - Conducted all data analysis
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis and inclusion in statewide database and annual report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests from local communities expanded to community harvest estimates.
 - Non-local communities grouped into categories, then harvests expanded together to non-local estimate

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests from permits included in report tables.
- Data reanalyzed to generate community harvest estimates without grouping non-local communities.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Aleutian Islands Area: Unalaska District

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Issued subsistence salmon permits
 - Conducted all data analysis
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis and inclusion in statewide database and annual report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests from local communities expanded to community harvest estimates.
 - Non-local communities grouped into categories, then harvests expanded together to non-local estimate

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests from permits included in report tables.
- Data reanalyzed to generate community harvest estimates without grouping non-local communities.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Aleutian Islands Area: Adak District

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Issued subsistence salmon permits
 - Conducted all data analysis
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis and inclusion in statewide database and annual report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests from local communities expanded to community harvest estimates.
 - Non-local communities grouped into categories, then harvests expanded together to non-local estimate

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests from permits included in report tables.
- Data reanalyzed to generate community harvest estimates without grouping non-local communities.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Kodiak Area

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- **Division of Commercial Fisheries**
 - Issued subsistence salmon permits
 - Conducted all data analysis
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis and inclusion in statewide database and annual report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests not expanded into estimates.
 - Harvests tabulated and reported only at the fishery level.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests from permits included in report tables.
- Data reanalyzed to generate reported community harvests.

Cook Inlet Area: Port Graham & Koyuktolik Subdistricts

Data Sources

- **Subsistence fishing permits**

Annual Harvest Assessment Project – Tasks

- **Division of Subsistence**
 - **Issued subsistence fishing permits in Anchorage**
 - **Conducted all data analysis**
 - **Provided results to Division of Commercial Fisheries for inclusion in annual management report**
- **Port Graham Tribal Council**
 - **Issued subsistence fishing permits in Port Graham**
 - **Entered data into local database**
 - **Forwarded data to Division of Subsistence for analysis**
- **Nanwalek Tribal Council**
 - **Issued subsistence fishing permits in Nanwalek**
 - **Entered data into local database**
 - **Forwarded data to Division of Subsistence for analysis**

Annual Harvest Assessment Project – Analysis

- **Subsistence fishing permits**
 - **Reported harvests were analyzed separately by type.**
 - **Subsistence harvests**
 - **Rod and reel harvests**
 - **Harvests reported at the community level and not expanded into community harvest estimates.**

Statewide Compilation – Included Data and Special Measures

- **Results of two types are included in the report tables.**
 - **Subsistence harvests**
 - **Rod and reel harvests**
- **No special measures were necessary to include project results in this statewide report.**

Cook Inlet Area: Seldovia Fishery

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Subsistence
 - Issued subsistence fishing permits
 - Conducted all data analysis
 - Provided results to Division of Commercial Fisheries for inclusion in annual management report

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
 - Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- No special measures were necessary to include project results in this statewide report.

Cook Inlet Area: Tyonek Subdistrict

Data Sources

- **Subsistence fishing permits**

Annual Harvest Assessment Project – Tasks

- **Division of Subsistence**
 - **Issued subsistence fishing permits in Anchorage**
 - **Conducted all data analysis**
 - **Provided results to Division of Commercial Fisheries for inclusion in annual management report**
- **Tyonek Tribal Council**
 - **Issued subsistence fishing permits in Tyonek**

Annual Harvest Assessment Project – Analysis

- **Subsistence fishing permits**
 - **Only subsistence harvest data analyzed.**
 - **Reported harvests *not* expanded into harvest estimates.**
 - **Harvests reported at the community level.**

Statewide Compilation – Included Data and Special Measures

- **Only subsistence harvests included in report tables.**
- **No special measures were necessary to include project results in this statewide report.**

Cook Inlet Area: Upper Yentna Fishery

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Sport Fish
 - Issued subsistence fishing permits
 - Compiled data from returned permits into Excel spreadsheet
 - Provided data to Division of Subsistence for further analysis
- Division of Subsistence
 - Provided Division of Subsistence analysis results (see “Statewide Compilation” description below) to Division of Commercial Fisheries for inclusion in annual management report.

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Harvests reported at the fishery level and not expanded into estimates.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Prince William Sound Area: Glennallen Subdistrict

Data Sources

- State subsistence fishing permits
- Federal subsistence fishing permits

Annual Harvest Assessment Project(s) – Tasks

- Division of Sport Fish
 - Issued state subsistence fishing permits
 - Conducted all data analysis
 - Provided data to Division of Subsistence for further analysis
- National Park Service
 - Issued federal subsistence fishing permits
 - Compiled data from returned permits into Excel spreadsheet
 - Provided data to Division of Subsistence for further analysis

Annual Harvest Assessment Project(s) – Analysis

- State subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Detailed analysis guided by Division of Sport Fish operational plan
 - Reported harvests expanded into fishery-level estimates.
- Federal subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Data from returned permits compiled into Excel spreadsheet.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Data from the state and federal permit systems combined and controlled for state-federal data overlap.¹⁹
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.

¹⁹ State-federal data overlap occurs in the Glennallen fishery when a household obtains both state and federal permits and then reports the same harvests on each. When such cases were identified, only one permit's harvests were included in the combined data set.

- For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Prince William Sound Area: Chitina Subdistrict (State)

Data Sources

- State personal use fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Sport Fish
 - Issued state personal use fishing permits
 - Conducted all data analysis
 - Provided data to Division of Subsistence for further analysis

Annual Harvest Assessment Project – Analysis

- State personal use fishing permits
 - Only personal use harvest data analyzed.
 - Detailed analysis guided by Division of Sport Fish operational plan
 - Reported harvests expanded to fishery-level estimates.

Statewide Compilation – Included Data and Special Measures

- Only personal use harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Prince William Sound Area: Chitina Subdistrict (Federal)

Data Sources

- Federal subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- National Park Service
 - Issued federal subsistence fishing permits
 - Compiled data from returned permits into Excel spreadsheet
 - Provided data to Division of Subsistence for further analysis

Annual Harvest Assessment Project – Analysis

- Federal subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Data from returned permits compiled into Excel spreadsheet.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Prince William Sound Area: Batzulnetas Fishery

Data Sources

- **State subsistence fishing permits**
- **Federal subsistence fishing permits**
 - **Only one permit issued**

Annual Harvest Assessment Project – Tasks

- **Division of Sport Fish**
 - **Available to issue permits if requested (none were)**
- **National Park Service**
 - **Issued federal subsistence fishing permit (only one)**
 - **Provided data to Division of Subsistence**

Annual Harvest Assessment Project – Analysis

- **State subsistence fishing permits**
 - **No data; no analysis**
 - **Similar treatment as other Copper River fisheries if any permits issued**
- **Federal subsistence fishing permits**
 - **Only subsistence harvest data included.**
 - **No analysis.**

Statewide Compilation – Included Data and Special Measures

- **Only subsistence harvests included in report tables.**
- **Harvest reported at the community level.**

Prince William Sound Area: Copper River District

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Issued subsistence fishing permits
 - Compiled data from returned permits into Excel spreadsheet
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests not expanded into harvest estimates.
 - Harvests reported at the fishery level.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Prince William Sound Area: Eastern District

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Coordinated issuing of permits
 - Issued subsistence fishing permits in Cordova
 - Compiled data from returned permits into Excel spreadsheet
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis
- Tatitlek Tribal Council
 - Issued subsistence fishing permits in Tatitlek
 - Provided data from returned permits to Division of Commercial Fisheries

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests *not* expanded into harvest estimates.
 - Harvests reported at the fishery level.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the fishery level.
 - Community harvest estimates not possible from available data.
 - Division of Commercial Fisheries did include residence community in compiled data.
- Harvest estimates
 - For fishery total, species j : $E_j = ((N/n) \times R_j)$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.

Prince William Sound Area: Southwestern District

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Coordinated issuing of permits
 - Issued subsistence fishing permits in Cordova
 - Compiled data from returned permits into Excel spreadsheet
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis
- Chenega Bay Tribal Council
 - Issued subsistence fishing permits in Chenega Bay
 - Provided data from returned permits to Division of Commercial Fisheries

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests not expanded into harvest estimates.
 - Harvests reported at the fishery level.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the fishery level.
 - Community harvest estimates not possible from available data.
 - Division of Commercial Fisheries did include residence community in compiled data.
- Harvest estimates
 - For fishery total, species j : $E_j = ((N/n) \times R_j)$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.

Prince William Sound Area: General

Data Sources

- Subsistence fishing permits

Annual Harvest Assessment Project – Tasks

- Division of Commercial Fisheries
 - Issued subsistence fishing permits
 - Compiled data from returned permits into Excel spreadsheet
 - Published results in Division of Commercial Fisheries annual management report
 - Provided data to Division of Subsistence for further analysis

Annual Harvest Assessment Project – Analysis

- Subsistence fishing permits
 - Only subsistence harvest data analyzed.
 - Reported harvests *not* expanded into harvest estimates.
 - Harvests reported at the fishery level.

Statewide Compilation – Included Data and Special Measures

- Only subsistence harvests included in report tables.
- Reported harvests expanded into harvest estimates.
 - Single stratum expansion at the community level.
- Harvest estimates
 - For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...
 - E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
 - For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
 - E = estimated harvest and
 - i = community

Southeast/Yakutat Region

Data Sources

- **Yakutat Management Area subsistence fishing permits**
- **Haines Management Area subsistence fishing permits**
- **Juneau Management Area subsistence and personal use fishing permits**
- **Sitka Management Area subsistence and personal use fishing permits**
- **Petersburg/Wrangell Management Area subsistence and personal use fishing permits**
- **Ketchikan Management Area subsistence and personal use fishing permits**

Annual Harvest Assessment Project – Tasks

- **Division of Commercial Fisheries**
 - **Issued subsistence fishing permits in each management area**
 - **Entered data from returned permits into Southeast/Yakutat Region’s “Alexander Database”**
 - **Published results in Division of Commercial Fisheries regional report to the Alaska Board of Fisheries**
 - **Provided data to Division of Subsistence for further analysis**

Annual Harvest Assessment Project – Analysis

- **Subsistence fishing permits**
 - **Only subsistence harvest data analyzed for Yakutat and Haines Management Areas**
 - **Permits in these management areas are for subsistence fishing only.**
 - **Subsistence and personal use harvest data analyzed for Juneau, Sitka, Petersburg/Wrangell, and Ketchikan Management Areas**
 - **Permits in these management areas are dual subsistence *and* personal use permits.**
 - **Reported harvests *not* expanded into harvest estimates.**
 - **Harvests reported at the fishery level.**

Statewide Compilation – Included Data and Special Measures

- **Results of two types are included in the report tables.**
 - **Subsistence harvests**
 - **Personal use harvests**
- **Reported harvests expanded into harvest estimates.**
 - **Single stratum expansion at the community level.**
- **Harvest estimates**
 - **For community i , species j : $E_{i,j} = ((N_i/n_i) \times R_{i,j})$, where...**

- E = estimated harvest,
 - R = reported harvest,
 - N = number of permits issued, and
 - n = number of permits returned.
- For species j fishery total: $E_j = \sum_{i=1}^n E_{i,j}$, where...
- E = estimated harvest and
 - i = community