Fishery Management Report No. 08-36

Annual Management Report Yukon and Northern Areas 2002-2004

by

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Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Measures (fisheries)

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

Mathematics, statistics

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

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PREFACE

This report summarizes the 2002 through 2004 seasons and historical information concerning the commercial, subsistence, and personal use fisheries in the Yukon Area. Information from selected Yukon Area research and monitoring projects are also summarized in this report. Complete documentation of these projects and results may appear in separate reports. Some of the data presented are preliminary and may be presented with minor differences in future reports.

To assist the reader, the Yukon Area report is organized into the following 4 sections:

1. *Salmon Fishery*: This section presents a description of the area, fishery resources, and fisheries management practices.
2. *Area Salmon Reports:* These sections present a comprehensive report of the 2002, 2003, and 2004 salmon fisheries, by summer and fall season, and makes comparisons with previous years.
3. *Cape Romanzof District Herring Fishery:* This section presents a description of the area, fishery resources, fisheries and management practices, and summary of the 2002 through 2004 herring fishery.
4. *Other Marine and Freshwater Finfish Fisheries:* This section presents a description of the fishery resources and freshwater finfish fisheries other than salmon and herring.

For ease of use, the salmon data for individual years are presented in 3 separate tables that and are labeled with each year at the top of each table. The historic data is presented in the appendices. Herring and freshwater finfish data are presented in the appendices.

In this report, catch per unit effort (CPUE) is obtained by dividing the catch by the total fisher hours for the corresponding period of time. Commercial fishing effort has been computed using the assumption that if a permit holder delivers fish in a given fishing period, that permit holder fished the entire period. The total number of permit holders who made at least 1 delivery during the corresponding period of time (e.g. a given fishing period, summer season, fall season or for the entire fishing season) are presented. There are fishers who may make only 1 delivery during the entire fishing season. The summer season refers to the fishing associated with the Chinook and summer chum salmon migrations. Fall season refers to the fishing associated with the fall chum and coho salmon migrations.

This report also includes a section on the Northern Area, which includes a description of the area and documentation of the Colville River commercial freshwater finfish fishery.

A select list of acronyms, abbreviations, and symbols, in this report, listed alphabetically, are as follows:

AWT	Alaska Wildlife Troopers
ADF&G	Alaska Department of Fish and Game
Agreement	Interim Yukon River Salmon Agreement
ASL	Age, sex, and length data
AVCP	Association of Village Council Presidents
AYK	Arctic-Yukon-Kuskokwim
BASIS	Bering-Aleutian Salmon International Survey
BEG	Biological Escapement Goal
BLM	Bureau of Land Management
BOF	Alaska Board of Fisheries
BSFA	Bering Sea Fishermen's Association
CDQ	Community Development Quota
CFEC	Commercial Fisheries Entry Commission
CPUE	Catch per unit effort
DFO	Canadian Department of Fisheries and Oceans
EEZ	U.S. Exclusive Economic Zone
EO	Emergency Order
FWP	Division of Fish and Wildlife Protection
IFMP	Integrated Fisheries Management Plan
JTC	Joint Technical Committee of the U.S. Canada Panel
NMFS	National Marine Fisheries Service
Panel	U.S./Canada Yukon River Panel
PST	Pacific Salmon Treaty
R&E Fund	U.S./Canada Restoration and Enhancement Fund
SEG	Sustainable Escapement Goal
TCC	Tanana Chiefs Conference, Inc.
U.S.	United States
UFA	Comprehensive Land Claim Umbrella Final Agreement
USFWS	United States Fish and Wildlife Services
VHF	Very High Frequency
YRDFA	Yukon River Drainage Fisheries Association
YSC	Yukon Salmon Committee

ABSTRACT

The 2002-2004 Yukon and Northern management report summarizes management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries in the Yukon and Northern Areas of Alaska. The report provides the Yukon Area salmon stock escapements (Chinook *Oncorhynchus tshawytscha*, coho *O. kisutch*, summer and fall chum *O. keta*) in 2002, 2003, and 2004 with reference to historical data, presents an outlook for the 2005 fishing season, and provides data on the utilization of salmon species by commercial and subsistence (aboriginal) harvests, personal use (domestic) and sport (recreational) fisheries. Alaska and Canada fisheries are summarized, as the Yukon River is a transboundary river. The summer season refers to the fishing associated with the Chinook and summer chum salmon migrations. Fall season refers to the fishing associated with the fall chum and coho salmon migrations. The report further compiles summaries of selected Yukon River projects (e.g., mark–recapture, sonar, stock identification) and a review of salmon bycatch in the groundfish and pollock fisheries of the Bering Sea and the Gulf of Alaska. Complete documentation of these projects and results may appear in separate reports. Fisheries' data in this report supersedes information in previous annual management reports. Some of the data presented are preliminary and may be presented with minor differences in future reports. The Yukon Area report is organized into the following 4 sections: 1) *Salmon Fishery*: this section presents a description of the area, fishery resources, and fisheries management practices, 2) *Area Salmon Report:* this section presents a comprehensive report for each of the 2002, 2003, and 2004 salmon fisheries, by summer and fall season, and makes comparisons with previous years, 3) *Cape Romanzof District Herring Fishery:* this section presents a description of the area, fishery resources, fisheries and management practices, and summary of the 2002-2004 herring fisheries, and 4) *Other Marine and Freshwater Finfish Fisheries:* this section presents a description of the fishery resources and freshwater finfish fisheries other than salmon and herring. Historic salmon, herring and freshwater finfish data are presented in the appendices.

This report also includes a section on the Northern Area, which includes a description of the area and documentation of the Colville River commercial freshwater finfish fishery.

Keywords: Annual Management Report, Yukon River, Yukon River Salmon Agreement, Chinook salmon, *Oncorhynchus tshawytscha*, chum salmon, *O. keta*, coho salmon, *O. kisutch*, Pacific herring, *Clupea pallasi*, escapement, commercial harvest, subsistence harvest, season outlook.

INTRODUCTION

The Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G) is responsible for the management of state subsistence, personal use, and commercial fisheries in the Yukon Area. This annual management report details the activities of ADF&G in the Yukon Area during 2002-2004.

The Yukon Area includes all waters of the Yukon River drainage in Alaska and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula (Figure 1). Important commercial and subsistence fisheries include salmon and herring. Other marine and freshwater finfish are harvested primarily for subsistence use. A list of indigenous fishes found in the Yukon Area is provided in Appendix A1.

SALMON FISHERY

DESCRIPTION OF AREA AND DISTRICT BOUNDARIES

The Yukon River is the largest river in Alaska and the fifth largest drainage in North America. The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska, and flows over 2,300 miles to its terminus at the Bering Sea. It drains an area of approximately 330,000 square miles and approximately 222,000 square miles of the state. With the possible exception of a few fish taken near the mouth or in the adjacent coastal waters, only salmon of Yukon River origin are harvested in the Yukon Area.

Excluding the greater Fairbanks area (approximately 84,000 residents), there are approximately 21,000 rural residents in the Alaskan portion of the drainage (U.S. Census 2000), the majority of whom reside in 43 small communities scattered along the coast and major river systems. Most of these people are dependent to varying degrees on fish and game resources for their livelihood.

Commercial salmon fishing is allowed along the entire 1,200 mile length of the mainstem Yukon River in Alaska, the lower 225 miles of the Tanana River, and lower 12 miles of the Anvik River. The Yukon Area is divided into 7 districts and 10 subdistricts for management and regulatory purposes (Figure 2). The district boundaries were originally established in 1961 and redefined in 1962, 1974, 1978, 1994 and 1996. The Lower Yukon Area includes the Yukon River drainage from the mouth to Old Paradise Village, river mile 301 (Districts 1, 2, and 3). The Coastal District was established in 1994, redefined in 1996 and is open only to subsistence fishing. The Upper Yukon Area is that portion of the Yukon River drainage upstream of Old Paradise Village to the border with Canada (Districts 4, 5, and 6). The districts and subdistricts are further divided into 28 statistical areas for management and reporting purposes (Figures 3-9). Yukon River mileages at specific locations are listed in Appendix A2.

In addition to the U.S. fisheries, Aboriginal, commercial, sport, and domestic salmon fisheries also occur in the Canadian portion of the Yukon River drainage. The Canadian Department of Fisheries and Oceans (DFO) conducts the corresponding fishery management activities [details can be found in annual Joint Technical Committee of the U.S. Canada Panel (JTC) reports].

FISHERY RESOURCES

Five species of Pacific salmon are found in the Yukon River drainage: Chinook salmon *Oncorhynchus tshawytscha*, chum salmon *O. keta*, coho salmon *O. kisutch*, pink salmon *O. gorbuscha*, and sockeye salmon *O. nerka*.

Chinook salmon are the largest salmon found in the Yukon River, ranging from 2 to 90 pounds. Spawning populations of Chinook salmon have been documented throughout the Yukon River drainage from the Archuelinguk River, located approximately 80 miles from the mouth, to as far upstream as the headwaters of the drainage in Canada, nearly 2,000 miles from the mouth. Chinook salmon begin entering the mouth of the Yukon River soon after ice breakup, during late May or early June, and continue through mid July.

The chum salmon return is made up of a genetically distinct early summer chum salmon run and a later fall chum salmon run. Summer chum salmon are characterized by: earlier run timing (early June to mid July at the mouth), rapid maturation in freshwater and, smaller size (average 6 to 7 pounds). Summer chum salmon spawn primarily in run-off streams in the lower 700 miles of the drainage and in the Tanana River drainage. Fall chum salmon are distinguished by: later run timing (mid July to early September at the mouth), robust body shape, and larger size (average 7 to 8 pounds). Fall chum salmon primarily spawn in the upper portion of the drainage in streams that are spring fed. Major fall chum salmon spawning areas include the Tanana, Porcupine and Chandalar River drainages, as well as various streams in Yukon Territory, Canada, including the mainstem Yukon River. Fall chum salmon run size is typically much smaller than that of summer chum salmon.

Coho salmon enter the Yukon River from late July through September and average approximately 7 pounds in weight. Coho salmon spawn discontinuously throughout the Alaskan portion of the drainage, primarily in tributaries in the lower 700 miles of the drainage and in the Tanana River drainage. Major spawning populations of coho salmon have been documented in tributaries of the Tanana River drainage and in the Andreafsky River.

Pink salmon enter the lower river from late June to late July and average approximately 2 to 3 pounds in weight. Pink salmon primarily spawn in the lower portion of the drainage, downstream of the community of Grayling, river mile 336. However, pink salmon have been caught in the mainstem Yukon River upstream as far as Ruby, river mile 601 (ADF&G 1983). In the past decade, pink salmon have exhibited a high and low abundance 2-year cycle. High abundance has typically occurred during the even numbered years.

Sockeye salmon are uncommon in the Yukon River drainage, and only a few fish are caught each year. Sockeye salmon have been reported in the mainstem Yukon River upstream of Rampart, river mile 763. Observations of sockeye salmon have occurred in the Innoko (ADF&G 1986), Kantishna (L. Barton, ADF&G, Fairbanks, personal communication 1988), Tanana River upstream of confluence with Kantishna River (B. Borba, ADF&G, Fairbanks, personal communications 2004), Anvik (M. Erickson, ADF&G, Anchorage, personal communication 1989), Andreafsky (Tobin and Harper 1995) and Gisasa (Wiswar 1999) River drainages.

MANAGEMENT

The policy of ADF&G is to manage the salmon runs to the extent possible for maximum sustained yield, unless otherwise directed by regulation (ADF&G 1992). ADF&G has managed the salmon fisheries in the Yukon Area over the past few decades with the dual goal of maintaining important fisheries while at the same time achieving desired escapements consistent with the Sustainable Salmon Fisheries Policy. Management of the Yukon River salmon fishery is complex due to the inability to determine stock specific abundance and timing, overlapping multispecies salmon runs, the increasing efficiency of the fishing fleet, allocation issues, and the immense size of the Yukon River drainage. The Alaska State Legislature and the Alaska Board of Fisheries (BOF) have designated subsistence use as the highest priority among beneficial uses of the resource. To maintain the subsistence priority and to provide for spawning escapements to ensure sustainable yields, Yukon River salmon fisheries must be managed conservatively.

Salmon fisheries within the Yukon River drainage may harvest stocks that are up to several weeks and over a thousand miles from their spawning grounds. Since the Yukon River commercial fishery is a mixed stock fishery, some tributary populations may be under or over

exploited in relation to their actual abundance. Based on current knowledge, it is not possible to manage for individual stocks in most areas where commercial fishing occurs. Within the Yukon River drainage only stocks within the Tanana and Anvik rivers can be managed as terminal harvest areas.

Primary tools used to manage the commercial salmon fisheries are management plans, guideline harvest ranges established by the BOF (Table 1), and emergency order (EO) authority, which is used to implement time and area openings or closures and mesh size restrictions. Guideline harvest ranges have been established for Chinook, summer chum, and fall chum salmon commercial fisheries throughout the Alaskan portion of the drainage. ADF&G attempts to manage the commercial salmon fisheries so the harvest in each district, or Subdistrict, is proportionally similar within their respective guideline harvest ranges. Management of commercial fisheries for coho salmon is conditionally based on the abundance of fall chum salmon and typically the harvest is incidental to the fall chum fishery.

During the fishing season, management is based on preseason projections and inseason run assessment. Inseason run assessment includes abundance indices from test fisheries, passage estimates from various sonar, mark-recapture projects, and spawning escapement and harvest data. Since 1995, the main river sonar project at Pilot Station has provided inseason estimates of salmon passage for fisheries management. The level of commercial, subsistence, and personal use harvests can be adjusted through the use of EOs to control time and area of openings and closures. News releases announcing emergency orders are broadcast on local radio stations and are transmitted by fax, posted on the state web site (http://www.cf.adfg.state.ak.us/region3/finfish/salmon/salmhom3.php), and email to select communities, processors, buyers and fishers. Additionally, select processors, buyers, and fishers are notified of the emergency order by telephone and VHF radio where available.

In response to the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF classified the Yukon River Chinook and fall chum salmon stocks as yield concerns during the September, 2000 work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest level in 2001. In addition, the BOF classified the Yukon River summer chum and Toklat and Fishing Branch River fall chum salmon stocks as management concerns. The determination of the management concerns was based on the chronic inability to meet existing escapement goals for the summer chum stock since 1998 and for the Toklat and Fishing Branch Rivers fall chum salmon stocks since 1997.

During the January 2001 BOF meeting, action plans were developed through public process to guide the department in managing each stock of concern. The action plans contained goals, measurable and implementable objectives, and provisions including fishery management actions needed to achieve rebuilding goals and objectives, in proportion to each fishery's use of, and hazards posed to, a salmon stock.

Regulatory actions adopted by the BOF to protect the Yukon River stocks of concern included a 70% reduction of commercial fishing timed during the South Peninsula/Area M June fishery, an expansion of the Yukon River king salmon and summer chum salmon management plans, and development of a subsistence salmon fishing schedule. Other notable regulatory changes included EO authority to restrict subsistence gillnets to no greater than 6-inch mesh size; allow the use of dip nets; and establish methods, means, and seasons or bag limits for the rod and reel

subsistence fishery in the Association of Village Council Presidents (AVCP) Region. Most of the BOF actions during the January 2001 meeting directly affected subsistence fishing in the Yukon River drainage.

Various government and non-government agencies operate many projects in the Yukon Area to obtain the biological information necessary for management of the salmon runs. In 2002 through 2004, the following projects were utilized:

1. *Test Fishing:* The lower Yukon River ADF&G test fishing projects located at South, Middle and North Mouths utilized set gillnets from late May through mid July to capture Chinook salmon. Bering Sea Fishermen's Association (BSFA) provided support to operate the set gillnet project. The U.S. Fish and Wildlife Service (USFWS), Office of Subsistence Management (OSM) provided funding for a cooperative ADF&G and Emmonak Tribal Council drift gillnet test fishery in the mouth of the Yukon River from late May through August since 2001 to provide an index of the Chinook, summer chum, fall chum, and coho salmon runs. The Yukon Delta Fisheries Development Association (YDFDA) contributed funding for the test fishery in 2004 in place of reduced OSM support. Additionally, the Yukon River Drainage Fisheries Association (YRDFA) has provided support through funding local technicians working on various projects. Catch rates and species composition provided run timing, age composition, and an index of relative abundance for comparisons between years. A contract fisher operated a Tanana River test fish wheel near the community of Nenana from July through early October to monitor Chinook, summer chum, fall chum, and coho salmon passages. To index the fall chum salmon run, the U.S./Canada Restoration and Enhancement Fund (R&E Fund) provided the support needed to test the feasibility of using video equipment to monitor test fish wheel catches on the south (left) bank of the mainstem Yukon River near the community of Tanana. The R&E Fund provided additional support to operate a video monitored CPUE fish wheel in the Rapids for Chinook and chum salmon, and drift gillnet fisheries operated in Mountain Village and Kaltag are used to index the fall chum and coho salmon runs.

2. *Tributary Sonar Projects:* Hydroacoustic equipment was operated by ADF&G in the Anvik and Sheenjek Rivers to estimate summer and fall chum salmon spawning escapements, respectively. USFWS operated hydroacoustic equipment in the Chandalar River to estimate fall chum salmon escapement.

3. *Main River Sonar Project:* Hydroacoustic equipment was operated in the mainstem Yukon River near Pilot Station to obtain inseason salmon passage estimates by species.

4. *Stock Separation and Age Composition:* Scale and vertebrae samples were collected from salmon harvests and escapement projects to determine age composition of the runs. Scale samples of Chinook salmon were also utilized to apportion the harvest to region of spawning, using scale pattern analysis techniques. In 2004, genetic analysis replaced scale pattern analysis as the primary method for stock identification for Chinook salmon. Genetic stock identification techniques were used to determine the degree of overlap between summer and fall chum salmon in Pilot Station Sonar test fishing catches from late June to early August, 2002.

5. *Aerial and Ground Surveys of Salmon Spawning Streams:* Aerial surveys were flown to monitor spawning escapements in major spawning tributaries throughout the Yukon

River drainage. Fall chum salmon foot surveys were conducted at selected areas in the Tanana River drainage. Additionally, BSFA conducted aerial surveys in the Nenana River drainage to estimate fall chum and coho salmon escapement.

6. *Tagging Projects:* A salmon mark-recapture project was conducted by DFO to estimate the abundance of Chinook and fall chum salmon in the Canadian mainstem Yukon River. ADF&G and BSFA conducted a mark-recapture project on the Tanana River to estimate fall chum salmon abundance upriver of the confluence of the Kantishna River. Additionally, a mark-recapture project was operated within the Kantishna River to estimate fall chum salmon abundance in this drainage with assistance from National Park Service (NPS). USFWS conducted a fall chum salmon mark-recapture project to estimate fall chum salmon passage in the mainstem Yukon River near Rampart. A Chinook salmon radio telemetry program was continued in the Yukon River basin in 2002 to 2004 by ADF&G and National Marine Fisheries Service (NMFS) to provide information on run characteristics including stock composition, run timing, and migration patterns.
7. *Radio Telemetry:* ADF&G, Division of Commercial Fish, conducted a large-scale radio telemetry project to estimate abundance and distribution of Chinook salmon above Russian Mission and Marshall from 2001–2004 (Spencer et al. 2006). The goal of this multi-year cooperative study was to determine the migratory characteristics, abundance, and spawning distribution. This project has provided population estimates that closely tracked Pilot Station sonar estimates in 3 out of 4 years.
8. *Tower Projects:* ADF&G, Division of Sport Fish, conducted counting tower projects on the Chena and Chatanika Rivers. BSFA operated the Salcha River tower. Tower projects on the Chena, Chatanika, and Salcha Rivers estimated Chinook and summer chum salmon escapements. Cooperative counting tower projects were operated on the Nulato River (Nulato Tribal Council, BSFA, and ADF&G), Clear Creek (USFWS and Tanana Chiefs Conference Inc. [TCC]), a tributary of the Hogatza River, and Kaltag Creek (Alaska Cooperative Extension Service, City of Kaltag, and BSFA) to estimate Chinook and summer chum salmon escapements.
9. *Weir Projects:* USFWS operated weirs on the East Fork Andreafsky River, Gisasa River, and Henshaw Creek to estimate salmon escapement. The Bureau of Land Management (BLM) operated weirs on the Tozitna and Kateel Rivers. DFO operates Fishing Branch River weir.
10. *Subsistence and Personal Use Harvest:* In the majority of the Yukon Area, no regulatory requirement exists for fishers to report their subsistence salmon harvest. To estimate the subsistence salmon harvest from communities within this area, ADF&G has implemented a voluntary survey program. In areas of the drainage with road access, fishers are required to obtain an annual subsistence or personal use household permit prior to fishing on which they record their daily harvest.

ADF&G's Division of Commercial Fisheries permanent full time staff assigned to the Yukon Area includes 8 positions: 2 area management biologists (1 summer, 1 fall), 2 assistant area management biologists, 5 research biologists, and 1 field office assistant. In addition, approximately 30 seasonal employees annually assist in conducting various management and research projects. Staff also assist with enforcement of regulations in cooperation with the Department of Public Safety, Division of Fish and Wildlife Protection (FWP).

State of Alaska funding for the Yukon Area salmon management and research program from July 1, 2001 through June 30, 2004 was approximately $1 million annually. Approximately $1 million was received annually for the same time period by ADF&G through a federal U.S./Canada grant for Yukon River Salmon Negotiation Studies, which includes support for participation in related meetings.

ALASKAN SALMON FISHERY DESCRIPTION

Commercial Fishery

The first recorded commercial salmon harvest in the Alaskan portion of the Yukon River drainage occurred in 1918. Relatively large harvests of Chinook, chum, and coho salmon were taken during 1919 to 1921 (ADF&G 1985). The majority of these harvests were taken outside of the river mouth because of restrictions imposed within the river. The early commercial fishery was closed from 1925 to 1931 because of concerns for the large in-river subsistence fishery. Commercial fishing for Chinook salmon was resumed at a reduced level in 1932 and has continued since that time. Commercial harvests of chum and/or coho salmon occurred during 1918 to 1921, 1952 to 1954, 1956, and since 1961. Pink salmon commercial harvests to date within the Yukon River have been very small due to an extremely limited market (Appendix A21).

From 1954 to 1960, a 65,000 Chinook salmon commercial harvest quota was in effect for the Alaskan portion of the Yukon River. Of this total, not more than 50,000 fish could be taken below the mouth of the Anuk River (river mile 63), 10,000 fish in the area between the mouths of the Anuk and Anvik Rivers, and 5,000 Chinook salmon upstream from the confluence of the Anvik River. The current Chinook salmon guideline harvest ranges have been in effect since 1981 (Appendix A14). Chinook salmon commercial harvests began increasing during the late 1970s (Appendix A4), because of increased efficiency of the fleet and years of above average run strength. Concern for possible over-exploitation resulted in more conservative fisheries management and therefore reduced harvests during the late 1980s and into the 1990s.

Summer chum salmon commercial harvests increased greatly during the 1980s as a result of regulation changes (e.g., mesh size specifications and earlier openings), greater availability of processing facilities and tendering, higher exvessel prices, development of Japanese markets, and the occurrence of several very large runs. In February 1990, the BOF established a river-wide guideline harvest range of 400,000 to 1,200,000 summer chum salmon (Appendix A15). The BOF established guideline harvest ranges for districts and subdistricts based on the 1975 to 1989 average harvest shares. Summer chum salmon commercial harvests declined from 1990 through 1993 because of below average runs. Beginning in 1994, declining chum salmon flesh markets limited the harvest, particularly in the lower river. In March 1994, the BOF adopted 5 AAC 05.368. *Anvik River Chum Salmon Fishery Management Plan*, which established regulations allowing for a commercial summer chum salmon roe fishery within the Anvik River. Low commercial harvests have occurred since 1997 because of low summer chum salmon runs and decreasing market interest.

The directed commercial fishery for fall chum salmon began in 1961. Fall chum salmon commercial harvests increased beginning in 1979 (Appendix A6). Low fall chum salmon spawning escapements in the mid 1980s resulted in more conservative management and therefore reduced commercial harvests from 1986 to 1990. Guideline harvest ranges for fall chum salmon were reduced by the BOF in 1986, but the upper end increased to their original

levels in 1990 (Appendix A16). The BOF adopted 5 AAC 01.249. *Yukon River Drainage Fall Chum Salmon Management Plan* in March 1994. The management plan has been reviewed and modified by the BOF several times since 1994. The management plan was modified in 2004 and identifies the need for 300,000 fall chum salmon for escapement with approximately 200,000 fall chum salmon to provide for Alaskan subsistence and Canadian harvests. Under the plan, commercial fishing in all districts is allowed only when the projected run size inseason is greater than 600,000 fall chum salmon. Additionally, beginning in 1990, there has been an effort to rebuild both Canadian and Toklat River fall chum salmon stocks. The weakest stocks have included the Toklat and Fishing Branch Rivers with poor runs beginning in 1997 continuing through 2002 with improvements in 2003 and 2004. The BOF discontinued the stock of management concern designation for the Toklat and Fishing Branch Rivers in January 2004, because the SEG for the Toklat River had been met in recent years and the Fishing Branch River is in Canada and management is under the purview of the U.S./Canada Panel. Appropriate sections of the 5 AAC 01.248 *The Toklat River Fall Chum Salmon Rebuilding Management Plan* were incorporated into 5 AAC 01.249 by the BOF in 2004.

Coho salmon runs to the Yukon River are of lesser magnitude than fall chum salmon. Typically, coho salmon were taken incidentally to the directed fall chum salmon commercial fishery (Appendix A7). In managing the coho salmon run, ADF&G follows guidelines established by the BOF in 5 AAC 05.369 *Yukon River Drainage Coho Salmon Management Plan.* The BOF adopted this plan in November 1998. The coho salmon management plan allows a directed coho salmon commercial fishery only under unique situations. It is unlikely that conditions outlined in the coho salmon management plan would occur in a given year. In most years, fall chum salmon will continue to be the species directly managed for during the fall season.

The majority of commercial fishers are residents of the Yukon River drainage. The cash income derived from the commercial salmon fishery has assisted many area residents in their subsistence life-style. For example, income earned from commercial fishing is often used to obtain hunting and fishing gear such as nets, boats, and outboard motors; which are utilized in subsistence activities.

Most commercial fishers operate outboard powered skiffs of 18 to 24 feet in length. Very few skiffs utilize gillnet rollers or power reels of any type. The use of larger outboard motors (greater than 100 horsepower), VHF radios, and fish finders has increased the fleet efficiency.

The majority of the Yukon Area salmon harvest is presently processed as a fresh or frozen product in contrast to earlier years when canning and salting were more important (Appendix A10). Currently, most salmon are processed at shore-based or floating operations, or transported by aircraft outside the area for processing. However, limited “value added” products such as smoked salmon and salmon sausage are now being produced within the Yukon Area. The purchasing of salmon roe directly from permit holders was prevalent, primarily in the Upper Yukon Area. Fish ticket reports containing a breakdown of salmon roe by species other than chum salmon have only been available since 1990. Prior to 1990, small amounts of Chinook and coho salmon roe were reported as summer chum and fall chum salmon roe, respectively. A few salmon are sold to local markets. Small quantities of Chinook, fall chum, and coho salmon are smoke-cured and sold as “strips,” a local specialty product. In addition, undocumented quantities of chum and coho salmon are dried and sold or bartered as dog food.

Subsistence Fishery

Salmon have been harvested in the Yukon Area for subsistence use long before Alaska statehood. In addition to human consumptive uses, salmon are fed to dogs which are used for recreation and transportation; the practice of keeping sled dogs is more common in the Upper Yukon Area than in the Lower Yukon Area. A gradual reduction in the need for salmon as dog food was seen around 1930 when the airplane began replacing the sled dog as a primary mail and supply carrier. This decline was further accelerated in the 1960s with the introduction of snow machines to Interior Alaska (Andersen 1992). Beginning in the early 1980s, an interest in the recreational use and racing of sled dogs was renewed, thereby increasing the number of subsistence salmon harvested for dog food.

Yukon Area subsistence fishers use drift gillnets, set gillnets, and fish wheels to harvest salmon. Set gillnets are utilized throughout the Yukon Area, whereas drift gillnets are only allowed from the mouth of the Yukon River to 18 miles below the community of Galena. Although fish wheels are a legal gear type for subsistence fishing throughout the drainage, they are essentially only used in the Upper Yukon Area.

Subsistence salmon fishing activities in the Yukon Area typically begin in late May and continue through early October. Salmon fishing in May and October is highly dependent on river ice conditions. Fishing activities have traditionally been based from a fish camp or a home community. Extended family groups, representing 2 or more households, often work together to harvest, cut, and preserve salmon for subsistence use. Some households from communities not located along the mainstem Yukon River, such as Shageluk, operate fish camps along the mainstem Yukon River.

Although the majority of salmon harvested for subsistence use in the Yukon Area originate from Yukon River drainage stocks, communities within the Coastal District may harvest stocks bound for other areas. A salmon mark-recapture study conducted at Hooper Bay in 1986 documented the presence of Norton and Kotzebue Sound salmon stocks in the area (Kerkvliet 1986). The tagging study also showed that 89% of the recovered tagged chum salmon were of Yukon River origin.

The majority of the Chinook salmon harvested for subsistence use are dried, smoked, or frozen for later human consumption. However, many small Chinook ("jacks"), summer chum, fall chum, and coho salmon are typically harvested to feed dogs (Andersen 1992). The majority of subsistence harvested summer chum salmon used for dog food is dried and fall chum and coho salmon are typically "cribbed" (frozen in the open air). Dogs are often fed scraps that become available during the processing of freshly harvested salmon, and relatively few whole fresh salmon are fed to dogs. There is usually little wastage of fish taken for subsistence purposes, although damp weather may cause some drying fish to spoil.

During a commercial fishing season, many Yukon Area residents participate in both commercial and subsistence harvest activities. Restrictions on subsistence salmon fishing may be required during a commercial salmon fishing season to assist in the enforcement of commercial fishing regulations. However, during a typical salmon fishing season, substantially more time is allowed for subsistence and personal use salmon fishing than for commercial fishing. Throughout most of the history of the Yukon Area commercial salmon fishery, commercial and subsistence fishing periods coincided. However, the BOF adopted regulations which separated subsistence and commercial fishing periods beginning in 1993 in Districts 1, 2, and 3 and in 1994 in Subdistrict

4-A. Prior to 2001, in these areas, subsistence salmon fishing was allowed 7 days per week until 24 hours prior to the commercial salmon fishing season. By regulation, once the commercial salmon season is open, subsistence salmon fishing is allowed except for 18 hours immediately before, during, and 12 hours after each District 1, 2, or 3 summer season commercial salmon fishing period. During the fall season in Districts 1, 2, and 3, subsistence salmon fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial fishing period. In Subdistrict 4-A, subsistence salmon fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial fishing period throughout the season.

Prior to 2001, the upper portion of District 4 (Subdistricts 4-B and 4-C) and in Subdistricts 5-B and 5-C, subsistence salmon fishing was allowed 7 days per week until 24 hours prior to and following the commercial salmon fishing season. In these areas, subsistence salmon fishing periods coincide with commercial salmon fishing periods. Additional subsistence-only salmon fishing periods are also allowed during the commercial salmon fishing season. In Subdistrict 5-A, subsistence fishing was allowed 7 days per week until 24 hours prior to the commercial salmon fishing season. In Subdistrict 5-D, subsistence salmon fishing is allowed 7 days per week throughout the fishing season. Subsistence fishing within the lower Tanana River drainage is allowed during two 42-hour periods per week throughout the fishing season unless altered by EO. In the upper Tanana River drainage, subsistence fishing is allowed 7 days per week throughout the fishing season.

In January 2001, the BOF modified regulations by adopting a subsistence salmon fishing schedule. The BOF judged that this subsistence-fishing schedule should provide a reasonable opportunity for subsistence fishers to obtain an average subsistence harvest during years of normal to below average salmon run strength. The schedule was enacted to spread the harvest throughout the river, to reduce the impact on a particular stock, and spread subsistence harvest opportunity among users. The goal of the schedule is to provide windows of time during which salmon migrate upriver unexploited.

The subsistence salmon schedule is based on current, or past, fishing schedules and is implemented chronologically, consistent with migratory timing, as the salmon run progresses upstream. The commissioner may alter this schedule for conservation by EO, if preseason, or inseason, run indicators show this is necessary. The schedule for subsistence salmon fishing is as follows:

(1) Coastal District, Koyukuk River and Subdistrict 5-D: 7 days per week;

(2) Districts 1–3: two 36-hour periods a week;

(3) District 4 and Subdistricts 5-B and 5-C: two 48-hour periods a week;

(4) Subdistrict 5-A and District 6: two 42-hour periods a week; and

(5) Old Minto Area: 5 days per week.

If inseason run strength assessment projects indicate that there is sufficient surplus, above escapement and subsistence requirement to allow a commercial fishery, the subsistence fishing schedule reverts to the pre-2001 subsistence fishing schedule.

Federal Subsistence Management

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 mandates that rural subsistence users have a priority over other users to take wildlife on Federal public lands where

recognized customary and traditional use patterns exist and required the creation of Regional Advisory Councils (RAC) to enable rural residents to have a meaningful role in Federal subsistence management. On October 1, 1999, the Secretaries of Interior and Agriculture published regulations to expand Federal management of subsistence fisheries to Alaskan rivers, lakes, and limited marine waters within, and adjacent to, Federal public lands. The Secretary of Interior and the Secretary of Agriculture delegated their authority in Alaska to the Federal Subsistence Board (FSB) to manage fish and wildlife resources for subsistence uses on Federal public land, including waters running through, or next to, these lands. Federal subsistence fishing regulations are adopted by the FSB. The RACs provide recommendations and information to the FSB, review policies and management plans, provide a public forum and deal with other matters relating to subsistence uses. The FSB or USFWS may close fishing for other uses in these waters and implement a priority for federally qualified rural subsistence users if it is determined that state-managed fishery management is causing subsistence or conservation concerns (68 FR 22308-22313).

Federal subsistence fishing schedules, openings, closures, and fishing methods are established in regulations (Department of Interior 2005-06). In general, the regulations are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060). However, differences in regulations do exist in some cases, and if State regulations are superseded by a Federal Special Action.

Commercial-Related Harvests

Distinguishing between subsistence and commercial harvests became more difficult with the development of salmon fisheries in which commercial fishers extract and sell only roe. Stripped carcasses are a byproduct of the commercial roe fishery and are available for the fisher to utilize. Subsistence harvests are defined as those that are harvested under subsistence fishing regulations. Salmon or their eggs harvested under subsistence regulations cannot be legally bought or sold under the State of Alaska regulations. However, commercially harvested salmon may be retained by the fisher for use. Salmon taken during commercial fishing operations that provide for both the fishers personal and commercial use are assigned to a special category referred to as *commercial-related* harvest. Commercial roe fisheries began in 1978 in the Upper Yukon Area, and the only sales of salmon roe in the Lower Yukon Area occurred in 1996. Commercial-related salmon harvests can be combined with the subsistence harvest estimate to provide the total potential subsistence utilization. The commercial-related harvests can also be combined with the salmon sold in the round to provide an estimate of the commercial harvest.

Historically, the commercial-related harvest was a small proportion of the subsistence harvest and easily absorbed the commercial-related harvest. However, in Subdistrict 4-A, in most years from 1981 to 1997, the number of female summer chum salmon carcasses available from the commercial roe fishery, along with the incidental harvest of male chum salmon, was greater than the subsistence utilization levels documented prior to the commercial roe fisheries. ADF&G estimated the number of male and female chum salmon harvested during a commercial fishing by using the average pounds of roe per female and the sex ratio calculated during each commercial fishing period. However, since 1998 due to a series of poor summer chum salmon runs followed by poor markets conditions, no summer chum salmon roe fisheries have occurred.

From 1978 to 1990, ADF&G's subsistence survey questions were not structured to identify the commercial-related harvests. During these years it is believed that commercial-related salmon

harvests were reported primarily as subsistence harvests. In 1984, the Division of Subsistence conducted the first subsistence surveys directly addressing the amount of the commercial-related harvests in the communities of Kaltag and Nulato. These surveys attempted to exclude the commercial-related summer chum salmon used from the subsistence harvest. As a result, the subsistence summer chum salmon harvest estimates for Kaltag and Nulato in 1984 were below harvest estimates for previous years. From 1986 to 1989, efforts to identify the commercial-related summer chum salmon harvest from the Subdistrict 4-A subsistence harvest estimates were continued (Sandone 1991). Although, during the transition, it is probable that some portion of the commercial-related harvest was still being reported as subsistence harvest. It was not until 1990 that the survey questions and fisher reports resulted in satisfactory separation into subsistence and commercial-related harvests. ADF&G continues to estimate the commercial-related harvests for all surveyed individuals that participate in commercial fisheries in a given year.

Prior to 1990, the commercial harvest included the number of fish sold in the round and the number of females taken to produce the roe sold. Since 1990 by regulation, commercial-related harvests in Subdistrict 4-A are considered to be the number of female salmon taken to produce the roe sold plus the incidental harvest of male salmon. All salmon caught by commercial fishers during a commercial fishing period are required by regulation to be reported on fish tickets, including the number of male and female salmon harvested to produce roe sold. ADF&G estimates the commercial harvest of summer chum salmon in Subdistricts 4-B and 4-C and in the lower Yukon Area in the same manner as in Subdistrict 4-A.

In 1994, the BOF adopted regulations that allowed a terminal commercial summer chum salmon fishery on the Anvik River. A commercial summer chum salmon roe fishery occurred on the Anvik River from 1994 through 1997. The Anvik River commercial summer chum salmon fishery has only involved the sale of roe to date, and resulted in additional chum salmon carcasses becoming available to subsistence users. Commercial-related harvests in the Anvik River fishery are based only on the number of female chum salmon harvested to produce roe. The gear types utilized in this fishery allow for the release of male chum salmon and other non-targeted salmon species.

Personal Use Fishery

In 1986, subsistence fishing was limited to rural Alaskan residents. The BOF created personal use salmon fisheries in the Yukon Area for non-rural state residents. The regulation directed that fishers residing within non-rural areas be considered personal use fishers regardless of where they fished. Correspondingly, fishers residing in rural areas were considered subsistence fishers regardless of where they fished. The residents of the greater Fairbanks area were considered non-rural fishers. Under the statutes and regulations that were in effect from 1988 until July 1, 1990, Alaska residents domiciled in non-rural areas were prohibited from participating in subsistence fisheries. During that time, non-rural residents harvested salmon under personal use fishing regulations wherever they fished. Personal use fishing is a lower priority use of the fish resource than subsistence fishing.

Effective July 1, 1990, the Alaska Supreme Court struck down the rural residency requirement for subsistence participation (*McDowell vs. State*). In that ruling, the Alaska Constitution prevented the allocation of fish and wildlife resources to people based on the location of their

residence. The result was that every Alaska resident became eligible for subsistence fishing. In effect, this decision made the personal use category obsolete in the Yukon Area.

During a special session in 1992, the legislature revised the subsistence law to allow the Joint Boards of Fisheries and Game to divide the state into subsistence and nonsubsistence areas. Inside the nonsubsistence areas, personal use fishing could be authorized by BOF, and the regulations, which allowed subsistence fishing, were repealed. The Fairbanks Nonsubsistence Area (Appendix D8), the only nonsubsistence area created in the Yukon Area, consists of the Fairbanks North Star Borough and surrounding areas. During the 1993 fishing season, personal use fishery regulations were implemented in this area. In October 1993, the state superior court ruled in the Kenaitze case that the nonsubsistence area provision of the 1992 subsistence law was unconstitutional because it discriminated between different areas of the state. All Alaska residents again qualified as subsistence users during the 1994 fishing season.

On May 9, 1995, the Alaska Supreme Court reversed the superior court's ruling, upholding the constitutionality of the nonsubsistence areas. Once again, the Joint Boards of Fisheries and Game adopted regulations that reestablished the Fairbanks Nonsubsistence Area. No subsistence fishing is allowed within any nonsubsistence areas; however, personal use fishing regulations are applicable. The nonsubsistence area regulations primarily affect salmon fishers within Subdistrict 6-C, which is entirely within the boundaries of the Fairbanks Nonsubsistence Area. By regulation, Subdistrict 6-C personal use salmon fishery has a household permit limit of 10 Chinook, 75 summer chum, and 75 fall chum and coho salmon combined. Additionally the fishery has a harvest limit of 750 Chinook, 5,000 summer chum, and 5,200 fall chum and coho salmon combined.

Lower Yukon Area

Since the beginning of the commercial salmon fishery in 1918, the majority of the Yukon River harvest has occurred in Districts 1 and 2. With the advent of the limited entry program in 1976, through the Commercial Fisheries Entry Commission (CFEC), fishing effort in terms of the number of participants stabilized, but efficiency of the fleet increased. From 1989 through 1998, an average of 707 Lower Yukon Area CFEC gillnet permits have been issued annually (Appendix A8). All Lower Yukon Area permits are designated as gillnet, and either set or drift gillnets may be operated. With some restrictions, permit holders may transfer between Districts 1, 2, and 3 during the season. Set gillnets are more commonly used in coastal areas within the Yukon River delta (during the fall season commercial fishers must register to operate within the "set gillnet only area" Appendix B8). Drift gillnets are the predominant gear type used within the Yukon River in Districts 1, 2 and 3.

Chinook salmon harvest quotas were eliminated for Districts 1 and 2 in 1960. From 1961 through 1980, the fishery was regulated by scheduled weekly fishing periods, and the season was opened by a published regulatory date. Commercial fishing time during the Chinook salmon migration was 4 days per week during 1961 to 1967, but was reduced primarily to 3.5 days per week beginning in 1968, 3 days per week in 1974, and 2.5 days per week in 1977. Fishing periods of 24 hours duration generally occurred twice weekly from 1982 to 1986, and 12-hour periods for Districts 1 and 2 were first used in 1987. Since 1989, commercial periods have been generally 6, 9, or 12 hours in duration. Since 1981, a 60,000 to 120,000 Chinook salmon guideline harvest range has been in effect for Districts 1 and 2 combined (Appendix A14). In District 3, a guideline harvest range of 1,800 to 2,200 Chinook salmon was established in 1979.

The sale of other species of salmon captured during the Chinook salmon directed commercial fishery has been allowed since 1967. The incidental catch of summer chum salmon was limited during the Chinook salmon directed commercial fishery in the late 1960s because fishers could use only gillnets of 8-inch minimum stretched mesh. However, beginning in 1970, each fisher could substitute up to 50 fathoms of gillnet of any mesh size in Districts 1 and 2. In 1973, all mesh size restrictions were lifted during the Chinook salmon migration from June 1 through early July.

A regulation was adopted in 1973 specifying that gillnets of 6-inch mesh size or less could be fished after a specified date in early July in Districts 1 and 2. Prior to the 1976 fishing season, a regulation was adopted which established a flexible range of dates of June 27 to July 5 in Districts 1 and 2, and July 5 to 15 in District 3, after which only gillnets of 6-inch maximum mesh size could be used. A regulation was adopted prior to the 1985 fishing season that eliminated specific dates and implemented EO. authority for establishing restricted mesh size periods (6-inch maximum mesh size) in Districts 1, 2, and 3.

Allowable commercial fishing time for the fall season in the Lower Yukon Area has gradually reduced since the 1970s. Throughout most of the 1970s, biweekly 24 and 36-hour commercial fishing periods were allowed. Throughout the early 1980s, biweekly 24-hour fishing periods were generally allowed. Beginning in 1983, a summer season closure of July 15 was established in the Lower Yukon Area to protect the early portion of the fall chum salmon run and to provide more time to evaluate the fall chum salmon run strength. Since 1990, commercial fishing periods have typically been 12 hours or less in duration in the Set Gillnet Only Area (Figure 10) and 6 or 9 hours in the remainder of the Lower Yukon Area. In the coastal area only set gillnets are allowed during commercial fishing periods. More commercial fishing time has been allowed in the coastal Set Gillnet Only Area due to the influence of tides on gear efficiency.

Upper Yukon Area

Prior to 1974, the Yukon River drainage above the confluence of the Koyukuk River was designated as a single district (District 4). By regulation, commercial fishing was allowed 7 days per week until the quota of 2,000 Chinook salmon had been harvested. The fishery was then reopened to allow the harvest of fall chum and coho salmon. When a combined quota of 2,000 fall chum and coho salmon were taken, the fishery was closed for the season. These quotas were established to allow a limited commercial activity in the Upper Yukon Area. Fish wheels and set gillnets are the legal gear types for commercial salmon fishing in the Upper Yukon Area with fish wheels accounting for roughly 95% of the commercial harvest of summer chum salmon. Fishers may not transfer between districts in the Upper Yukon Area.

In recognition of the developing upriver commercial fishery and the desire for increased participation by fishers, the BOF adopted several major regulation changes prior to the 1974 fishing season. District 4 was divided and reduced in size, and 2 new districts, Districts 5 and 6, were defined. Additionally, the weekly commercial salmon fishing period was reduced from 7 to 5 days per week. Regulations also provided for increased upriver commercial harvest quotas.

Since 1974, the BOF has enacted a number of major regulation changes in the Upper Yukon Area. Weekly fishing periods were reduced in all districts (except the upper portion of District 5) from 5 to 4 days per week, and split-period (two 48-hour periods) fishing schedules were established in 1980. Beginning in 1979, quotas for Chinook, and fall chum and coho salmon combined were replaced by a more flexible guideline harvest range, District 4 boundaries were

redefined, and new subdistricts were created to allow for more stock-specific management of fall chum and coho salmon. The designation of District 4 subdistricts has remained static since BOF changes in 1981. District 5 was first divided into 2 sections in 1979 and then divided again in 1981 to the current 4 subdistricts (Figure 7). Prior to 1993, the Upper Yukon Area had a fall chum and coho salmon combined guideline harvest range. In 1993, coho salmon were excluded from the guideline harvest range in the Upper Yukon Area. Since 1990, the duration of fishing periods has dramatically decreased, and fishing time has been based increasingly more on inseason run assessment.

In the spring of 1988, the BOF met in special session to receive testimony on current and proposed salmon management practices on the Tanana River. This special session was a result of large-scale illegal salmon and salmon roe sales documented in 1987 in portions of Districts 5 and 6. The BOF adopted regulations for District 6 which included: 1) reducing the commercial and subsistence fishing schedule from two 48-hour periods to two 42-hour periods per week, 2) specifying that there would be no more than one 42-hour commercial fishing period per week during the fall season (repealed to open and close by EO by BOF in 2004), 3) requiring subsistence salmon fishing permits for the entire Tanana River drainage, and 4) establishing subsistence reporting requirements inseason for a portion of Subdistrict 6-B and all of Subdistrict 6-C.

The BOF further instructed ADF&G to manage District 6 on the basis of existing guideline harvest ranges, specifying that these guidelines could be exceeded only if it was determined that doing so would not jeopardize meeting subsistence and escapement requirements. Based on concerns for fall chum salmon spawning escapements in the Toklat River, the BOF in February 1990 reduced the commercial fishing time allowed for Subdistricts 5-A and 6-A to no more than one 24-hour period per week during the fall fishing season. These restrictions were lifted during the 1998 fishing season, but they were reinstated after that year because escapement objectives were not met. When the BOF integrated the Toklat River Fall Chum Salmon Rebuilding Management Plan into the Yukon River Drainage Fall Chum Salmon Management Plan in 2004 the restriction was removed by default and future openings and closures will be regulated by EO authority, thereby leaving length of the commercial periods to the discretion of the fishery managers. Often the Tanana River fisheries are managed as terminal harvest areas using inriver indicators to determine harvestable surpluses.

In most of the Upper Yukon Area, summer chum salmon flesh is difficult to market due to the high cost of transportation and the degradation caused by freshwater and advancing sexual maturity. In contrast, the summer chum salmon roe quality is considered to be excellent by the industry. This had resulted in increased sales of summer chum salmon roe from 1980 to 1997. Because of the large summer chum salmon roe fishery in Subdistrict 4-A and difficulty in estimating the associated harvest, the guideline harvest range for Subdistrict 4-A was established in February 1990 as 113,000 to 338,000 summer chum, or the equivalent of 61,000 to 183,000 pounds of roe, or some combination of fish and pounds of roe. In addition, regulations were adopted stipulating that no more than 183,000 pounds of summer chum salmon roe from Subdistrict 4-A harvests could be sold annually. Once the roe cap is reached, fishing effort could continue, but only the sale of chum salmon in the round would be allowed. Besides stating the pounds of roe sold, the BOF also required that all salmon caught by CFEC permit holders during commercial fishing periods in Subdistrict 4-A be reported on fish tickets in numbers of fish (both males and females).

In March 1994, the BOF adopted 5 AAC 05.368. *The Anvik River Chum Salmon Fishery Management Plan*. Under this plan the Anvik River may be opened to summer chum salmon commercial fishing if a surplus greater than the escapement goal of 500,000 fish was available. The intent is to allow a harvest of Anvik River summer chum salmon that are in excess of the spawning escapement goals and to decrease the harvest pressure on non-Anvik River summer chum salmon stocks in the mainstem Yukon River near the Anvik River. All Chinook salmon taken in the Anvik River during commercial fishing periods must be returned to the water alive.

During the November 1994 BOF meeting, the Anvik River Chum Salmon Fishery Management Plan was amended to allow use of the following gear types: hand operated beach and purse seines, fish wheels with live boxes, and a single set gillnet not to exceed 25 fathoms in length and not larger than 5 1/4-inch mesh. The management plan also included a provision that gillnets must be attended at all times to release Chinook salmon. Beginning in 1994, the lower 12 miles of the Anvik River were opened to commercial fishing (Figure 9). Hand beach seines have been the dominant gear type utilized and only summer chum salmon roe has been sold from the Anvik River fishery. A cap of 100,000 pounds of summer chum salmon roe was established by the BOF in March 1996.

Sport Fishery

In general, sport fish salmon harvests in the Yukon Area are minor compared to commercial and subsistence harvests. The Tanana River drainage is the exception because it supports a popular salmon sport fishery on the Chena, Salcha, and Chatanika Rivers. In 1988, the BOF established a guideline harvest range of 300 to 700 Chinook salmon for the Salcha River sport fishery. In 1990, the BOF established a guideline harvest range of 300 to 600 Chinook salmon for the Chena River sport fishery. In 2001, the BOF eliminated the guideline harvest ranges. Sport fish harvests are now managed to achieve the established escapement goals.

CANADIAN HARVESTS OF YUKON RIVER SALMON

DFO have provided annual harvest data from the Canadian portion of the Yukon River drainage since 1962. The first recorded commercial salmon harvest in the Canadian portion of the Yukon River drainage occurred in 1903, when 70,000 pounds of Chinook and fall chum salmon were taken (ADF&G 1985). Records indicate a Canadian commercial fishery occurred sporadically from 1903 to 1917, and continuously from 1918 to 1947 (Appendix A3). No harvest records are available from 1948 to 1957. Harvest records document the annual salmon harvest by species since 1958 and also by user group since 1961.

The Canadian portion of the Yukon River drainage maintains Aboriginal, domestic, commercial, and sport fisheries for salmon. The Aboriginal and domestic fisheries are in some ways comparable to subsistence and personal use fisheries in Alaska, although the Aboriginal fishery is only open to native people. All of the commercial salmon harvest in Canada occurs on the mainstem Yukon River. Canadian salmon harvests in the Porcupine River drainage consist only of an Aboriginal fishery.

U.S./Canada Yukon River Salmon Panel and Treaty Negotiations

Negotiations were initiated in 1985 between the United States and Canada regarding a Yukon River salmon treaty. The purpose of these negotiations was to develop coordination of management between the U.S. and Canada of salmon stocks that spawn in the Canadian portion of the Yukon River drainage.

In the mid 1990s, the realization was that while reaching a comprehensive long term agreement remained a formidable challenge given some of the key unresolved issues, there would be benefits that could be realized by more formally implementing the areas of agreement to date. In February 1995, an interim Yukon River Salmon Agreement (Agreement) went into effect. A U.S./Canada Yukon River Panel (Panel) was formed to implement the Agreement. The focus of the Panel was on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. The Panel made recommendations to the management agencies in Alaska and Canada. The Panel also administered the R&E Fund.

A 6-year stabilization plan was completed in 1995 for Canadian Yukon River mainstem Chinook salmon. The objective of the 6-year stabilization plan was to prevent further declines in spawning escapement by achieving an escapement of at least 18,000 Chinook salmon for each year through 1995. In April 1996, the Panel agreed to the first 6 years of a rebuilding plan for Canadian mainstem Chinook salmon stocks. Recognizing the desirability of rebuilding stocks, the Panel agreed to an interim minimum spawning escapement objective for Canadian mainstem Yukon River Chinook salmon of 28,000 fish for 6 years beginning in 1996. The U.S. contribution to this effort was to endeavor to deliver 44,800 to 47,800 Chinook salmon to the Canadian mainstem Yukon River. The Canadian contribution to this effort was to endeavor to manage the harvest of Chinook salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 16,800 to 19,800 Chinook salmon.

For Canadian Yukon River mainstem fall chum salmon, a 12-year rebuilding plan was agreed upon during the negotiation process beginning with the 1990 season. The objective of this plan was to rebuild the stock by achieving a spawning escapement of more than 80,000 fall chum salmon for all brood years in the 4-year cycle by 2001. The U.S. contribution to this effort was to endeavor to deliver to the Canadian border on the mainstem Yukon River an agreed to number of fall chum salmon which varies by year based upon the rebuilding schedule. The Canadian contribution to this effort was to endeavor to manage the harvest of fall chum salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 23,600 to 32,600 fall chum salmon.

A key component of the Interim Agreement was administration of the R&E Fund by the Panel to address the restoration and enhancement of Canadian spawned salmon stocks. The U.S. contributes $400,000 per year into the R&E Fund. At its annual spring meeting, the Panel has allocated monies from this special fund to restore and increase salmon production on the river. Overall, approximately $3.6 million (U.S.) has been granted to applicants of the fund through 2004. Applicants have included regional organizations, Native groups, private consultants and others, primarily in Canada.

Initially the Interim Agreement was in place through 1997, with an option to extend if both sides agreed. Negotiations resumed in October 1997 to reach a long-term agreement on the remaining issues and to incorporate the relevant elements of the Agreement. At an October negotiations meeting, the Interim Agreement was extended through March 31, 1998.

Although the U.S. representatives supported extending the Interim Agreement, the Canadian representatives allowed it to expire during the March 1998 negotiations. No other bilateral meetings were held through the remainder of 1998. After March 1998, ADF&G continued to endeavor to manage the salmon fisheries on the Yukon River consistent with the stock rebuilding and conservation plans for Chinook and fall chum salmon that were contained in the Interim Agreement.

In April 1999, representatives of salmon users from communities of the Yukon River in Alaska and Canada attended a workshop in which a consensus was reached that negotiations should be resumed to achieve a final agreement. It was also concluded that the inter-jurisdictional Yukon River Panel should be re-established, along with the R&E Fund.

Negotiations resumed in April 2000 and most of the details were worked out on a framework agreement, with the exception of a harvest share proposal that was presented by the Canadian delegation. Given the substantial progress, the Delegations agreed to resume the panel process as soon as possible for organizational and planning purposes.

On March 29, 2001 the United States and Canada initialed an agreement which was later signed in December 2002 that set salmon harvest share target ranges based on a postseason assessment of run strength for Chinook and fall chum salmon into the Canadian mainstem of the Yukon River.

For 2002, the Alaska and Canadian fisheries were to be managed consistent with stock rebuilding and conservation objectives that had been jointly developed out of concerns for the health of these salmon stocks. The escapement objective and harvest sharing of Canadian-origin Yukon River Chinook salmon is:

1. The Parties agree that the spawning escapement objective for the rebuilt Chinook salmon stock in the Mainstem Yukon River shall be 33,000 to 43,000 Chinook salmon.
2. Harvest of Mainstem Yukon River Chinook salmon shall be shared beginning in 2001, and continuing until amended by the Parties, on the following basis:
    a. when the Total Allowable Catch (TAC) is between 0 and 110,000 Chinook salmon, the guideline harvest range for Canada shall be between 20% and 26% of the TAC;
    b. when the TAC is above 110,000 Chinook salmon, the guideline harvest range for Canada shall be between 20% and 26% of 110,000, i.e., 22,000 and 28,600 Chinook salmon, plus 50% of the portion of TAC greater than 110,000 Chinook salmon.

The escapement objective and harvest sharing of Canadian-origin Yukon River fall chum salmon is:

1. The Parties agree that the escapement objective for the rebuilt chum salmon stock:
    a. in the Mainstem Yukon River in Canada shall be greater than 80,000 chum salmon; and
    b. upstream from the Fishing Branch River weir site shall be 50,000 to 120,000 chum salmon.
2. Harvest of Mainstem Yukon River chum salmon shall be shared beginning in 2001, and continuing until amended by the Parties, on the following basis:
    a. when the Total Allowable Catch (TAC) is between 0 and 120,000 chum salmon, the guideline harvest range for Canada shall be between 29% and 35% of the TAC;
    b. when the TAC is above 120,000 chum salmon, the guideline harvest range shall be between 29% and 35% of 120,000, i.e., 34,800 and 42,000 chum salmon, plus 50% of the portion of the TAC greater than 120,000 chum salmon.

Under the agreement, the Panel was established to implement the agreement. The focus of the Panel is on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. The Panel makes recommendations to the management agencies in Alaska and Canada and also administers the R&E Fund.

A key component of the Agreement is administration of the R&E Fund by the Panel to address the restoration and enhancement of Canadian spawned salmon stocks. The U.S. will contribute $1,200,000 per year into the R&E Fund. Monies from the R&E Fund shall be disbursed by the Yukon River Panel according to the following rules:

1. 50% of the annual available funds shall be disbursed on Canadian programs and projects approved by the Canadian section of the Yukon River Panel based on recommendations by the Canadian section of the JTC and found by the Panel as a whole to be consistent with the *Principles and Guidelines for Restoration, Conservation and Enhancement Programs and Projects* until amended by the parties; and
2. The balance of annual available funds shall be disbursed at the direction of the Panel as a whole based on recommendations by the JTC as a whole.

The Yukon River Panel will meet each fall to resume management recommendations. The Panel advises the United States and Canadian Governments on conservation and management of the salmon originating in the Canadian portion of the Yukon River. In recognition of the changing dynamics of the fishery and the spirit of the agreement, interim management objectives are reviewed and agreed upon jointly each spring prior to the salmon returns.

For the 2003 season, the Panel recommended to forego the 33,000-44,000 Chinook salmon Canadian Mainstem escapement goal and agreed to a spawning escapement target of 25,000 if there was no commercial fishing. If commercial fishing did occur, the escapement target would be 28,000. The panel agreed to a fall chum salmon Canadian Mainstem spawning escapement rebuilding target of 65,000 chum salmon, and a spawning escapement target of 15,000 chum salmon into the Fishing Branch. Management plans were laid out to rebuild the fall chum salmon Canadian Mainstem stocks over 3 lifecycles which is considered a 12-year period while the Fishing Branch River escapement target of >15,000 is a small step towards rebuilding the stock back to a level of 50,000 to 120,000 fall chum salmon.

For the 2004 season, the Panel again recommended to forego the 33,000-44,000 Chinook salmon Canadian Mainstem escapement objective and agreed to a spawning escapement target of 28,000 Chinook salmon. The panel agreed to continue with the fall chum salmon Canadian Mainstem spawning escapement rebuilding goal of 65,000 chum salmon, and a spawning escapement goal of 15,000 chum salmon into the Fishing Branch. Management plans were laid out to rebuild the fall chum salmon Canadian Mainstem stocks over 3 lifecycles which is considered a 12-year period while the Fishing Branch River escapement target of >13,000 is a small step towards rebuilding the stock back to a level of 50,000 to 120,000 fall chum salmon.

MARINE HARVESTS OF YUKON RIVER ORIGIN SALMON

High Seas Salmon Gillnet Fisheries

Chinook salmon of western Alaska origin were intercepted annually by the Japanese mothership and landbased gillnet fisheries from 1964 through 1991 (Appendix A26). Current estimates indicate an average of approximately 141,000 western Alaska origin Chinook salmon were taken

during 1975-1983. Yukon River Chinook salmon comprised the majority of western Alaska stocks taken in the Bering Sea mothership harvests. In 1980, a total of 438,000 western Alaska Chinook salmon were estimated to have been taken in these fisheries, which exceeded the domestic commercial catch in western Alaska for that year.

Prior to 1988, the Japanese mothership salmon fishery operated in parts of the U.S. Exclusive Economic Zone (EEZ), waters from 3 to 200 miles off the U.S. coast. Beginning in 1988, the mothership fishery occurred outside of the EEZ. In 1990, the Japanese mothership fishery was converted to a "nontraditional land based salmon fishery" which ended in 1991. Estimates of the numbers of western Alaska Chinook salmon in this harvest are not available.

Due to international agreements these high seas salmon gillnet fisheries no longer occur.

Foreign, Joint-Venture, and U.S. Domestic Groundfish Fisheries

Information on incidental Chinook salmon catches in offshore fisheries is presented in Appendix A26. Foreign groundfish fisheries in the EEZ ended in the Gulf of Alaska in 1985 and in the Bering Sea in 1987. The joint-venture groundfish fishery ended in the Gulf of Alaska in 1988 and in the Bering Sea in 1990. U.S. domestic groundfish fisheries replaced these fisheries.

The numbers of salmon taken by the U.S./domestic groundfish fleet were estimated through 1989 due to lack of an observer program. NMFS initiated an observer program beginning in 1990. In 2002, U.S. groundfish trawl fisheries harvested approximately 37,500 Chinook salmon in the Bering Sea and Aleutian Islands (BSAI) area and approximately 12,900 Chinook salmon in the Gulf of Alaska (GOA) (Appendix A26). The BSAI Chinook salmon bycatch was average, while the GOA Chinook salmon bycatch was below average for all years in 2002. Additionally, approximately 78,000 other salmon were taken in the BSAI area and 3,200 other salmon were taken in the GOA trawl fishery. In 2003, U.S. groundfish trawl fisheries harvested approximately 52,600 Chinook salmon in the BSAI area and approximately 15,600 Chinook salmon in the GOA. The BSAI Chinook salmon bycatch was above average, while the GOA Chinook salmon bycatch was below average for all years in 2003. Additionally, approximately 189,000 other salmon were taken in the BSAI area and 10,500 other salmon were taken in the GOA trawl fishery. The 2004 U.S. groundfish trawl fisheries harvested approximately 62,500 Chinook salmon in the BSAI area and approximately 17,800 Chinook salmon in the GOA. The BSAI Chinook salmon bycatch was above average, while the GOA Chinook salmon bycatch was near average for all years in 2004. Additionally, approximately 447,000 other salmon were taken in the BSAI area and 5,900 other salmon were taken in the GOA trawl fishery. It is estimated that chum salmon accounted for 95% or more of the other salmon take in both the BSAI and GOA bycatch. Generally, Chinook salmon bycatch are 1 to 2 years away from maturity (D. Ackley, ADF&G, Juneau, personal communication 1998).

Management measures were taken to reduce salmon bycatch in the groundfish fishery. In February 1999, the North Pacific Fishery Management Council acted upon a proposal by YRDFA to reduce the Chinook salmon bycatch limits that trigger a trawl closure in the Chinook Salmon Savings Areas in the Bering Sea. The Council incrementally reduced the Chinook bycatch cap in the walleye pollock *Theragra chalcogramma* trawl fisheries as follows: 48,000 in 1999, 41,000 in 2000, 37,000 in 2001, 33,000 in 2002, and 29,000 in 2003. However in recent years, closing the Chinook Salmon Savings Areas has not been affective in reducing bycatch. It appears that the distribution of salmon has changed since the 1990s.

Alaska Peninsula

The majority of chum salmon captured during June in the Unimak and Shumagin Islands area, located on the south side of the Alaska Peninsula, are bound for Bristol Bay, Asia, and the Arctic-Yukon-Kuskokwim (AYK) Region. The chum salmon stocks contributing to the harvest in this fishery have been described by several studies, including a tagging study in 1987 (Eggers et al. 1991). Beginning in 1993, a genetic stock identification study was conducted using samples from South Unimak and Shumagin Islands fishery (Seeb et al. 1995). Results of this study indicate chum salmon stock contribution was similar to the 1987 tagging study. Sockeye salmon is the target species in the June commercial fishery, but incidental catches of chum salmon are also taken. Though 2003, the sockeye salmon harvest was regulated according to a quota that was adjusted annually and based on the Bristol Bay sockeye salmon forecast.

From 1993 to 1997, a harvest cap of 700,000 chum salmon during the June fishery was in effect. In addition, the BOF allowed ADF&G to open the fishing season and establish fishing periods based on sockeye to chum salmon ratios in an effort to reduce incidental chum salmon harvests. In January 1998, the BOF changed the fishery management plan for the June False Pass fishery. The most significant change lowered the chum salmon cap from 700,000 fish to a floating cap ranging from 350,000 to 650,000 chum salmon. The floating cap was dependent upon the previous year's harvest of summer chum salmon in AYK. In January 2001, the BOF again changed the fishery management plan for the June False Pass fishery. The most significant changes eliminated the sockeye and chum salmon guideline harvest levels and limited fishing time to no more than 16 hours per day by any gear group. A total of 591,106, 524,709, and 1,347,000 sockeye and 177,606, 357,043, and 482,000 chum salmon were taken in the combined South Unimak and Shumagin Islands June commercial fishery in 2002-2004 respectively (JTC 2006).

Norton Sound

A small portion of Yukon River bound Chinook and chum salmon are known to be intercepted in the Norton Sound coastal commercial fisheries (Gaudet and Schaefer 1982). Chinook salmon runs have been weak to the Eastern Norton Sound since 1998. The Chinook commercial harvest was 5 fish in 2002, 12 fish in 2003 and 0 fish in 2004. The harvest of Chinook salmon in 2002 and 2003 occurred during the coho commercial salmon fishery which starts the last week in July. The Chinook harvest in that time period is believed to be local stocks.

In the last 10 years, the subsistence fishery in Norton Sound takes from 4,000 to 9,000 Chinook salmon and is where the majority of the of Yukon stocks may be intercepted by Norton Sound residents.

SALMON SPAWNING ESCAPEMENT

An essential requirement for management of the Yukon River salmon fisheries is documentation of annual salmon spawning escapements. Such documentation provides for:

1. Determination of appropriate escapement levels or goals for selected spawning areas or management units;
2. Evaluation of escapement trends;
3. Evaluation of the effectiveness of the management program, which in turn forms the basis for proposing regulatory changes and management strategies; and
4. Evaluation of stock status for use in projecting subsequent returns.

Escapement Assessment Methods

The Yukon River drainage is too extensive for complete comprehensive escapement coverage of all salmon spawning streams. Consequently, low-level aerial surveys from single-engine, fixed-wing aircraft form an integral component of the escapement assessment program. Nevertheless, comprehensive assessment studies employing such techniques as intensified ground surveys, mark-recapture programs, counting towers, weirs, radio telemetry, and hydroacoustics are also conducted. Regardless of the method utilized, the overall objective of escapement assessment in the Yukon Area is to estimate abundance (or provide indices of relative abundance), timing, and distribution of spawning salmon populations throughout the drainage.

There are both advantages and disadvantages related to each type of assessment method. The more comprehensive studies tend to provide estimates of total salmon abundance and are often less dependent upon weather and water conditions. However, due to costs associated with staffing and operating the more sophisticated assessment projects, relatively few have been initiated. While most of these projects are designed to monitor salmon escapements in selected major spawning streams, 6 projects have been implemented to estimate salmon passage at various locations in the Yukon and Tanana Rivers. Projects that provide abundance information include: ADF&G's sonar at Pilot Station, mark-recapture studies in the Kantishna and upper Tanana rivers, a USFWS mark-recapture study near Rapids-Rampart on the Yukon River, mark-recapture studies by DFO near Dawson, and near Old Crow on the Porcupine River in Canada.

An ADF&G sonar project at river mile 123 near Pilot Station estimates total salmon passage by species through the lower Yukon River, typically through August 31. Hydroacoustic techniques at the Pilot Station site are used to estimate passage of fish and a comprehensive drift gillnet sampling program is conducted to apportion sonar counts by species.

The DFO mark-recapture project has been operated annually by DFO since 1982 (excluding 1984) near the U.S./Canada border. This project provides estimates of abundance of Chinook and chum salmon entering the Canadian portion of the mainstem Yukon River. There are also 2 more recent large river salmon monitoring projects that involve mark-recapture experiments. One mark-recapture project provides abundance estimates of fall chum salmon passage to the upper Tanana River (above the confluence of the Kantishna River drainage) and the other to the mainstem Yukon River upstream of the Rapids-Rampart. The upper Tanana River project has been conducted annually by ADF&G since 1995 through a cooperative agreement with BSFA. Since 1999 the mark-recapture abundance estimate project was expanded to include the Kantishna River drainage with the aid of the Western Alaska Disaster funding, BSFA, and additional support from NPS. A mainstem Yukon River study located at Rapids-Rampart has been conducted annually since 1996 and consists of a cooperative, multi-year interagency, mark-recapture (radio-tracking operated until 1998) study to evaluate the distribution, abundance, and run characteristics of upper Yukon River fall chum salmon, with USFWS as the lead agency. In 2003 a mark-recapture project for Canadian-origin fall chum salmon began, on the Porcupine River upstream of the U.S./Canada border, for enumeration and evaluation of stocks other than those destined for the Fishing Branch River.

In contrast to the more comprehensive assessment projects, the greatest advantage of aerial surveys is the cost-effectiveness of obtaining escapement information throughout an extremely vast and remote area. Another advantage to aerial surveillance is that current or potential habitat-

related problems arising from natural, or man-induced, causes can be identified. Among the disadvantages are that results may be highly variable if non-standardized procedures are used.

Variability in aerial survey accuracy is dependent upon a number of factors such as weather and water turbidity, timing of surveys with respect to peak spawning, aircraft type, survey altitude, experience of both pilot and observer, and species of salmon being assessed. It is recognized that aerial estimates are lower than actual stream abundance due to these factors. Further, peak abundance measured by aerial survey methods is significantly lower than total spawning abundance due to the die-off of early spawners and arrival of fish after the survey. Aerial estimates in a given stream may demonstrate a wide range in the proportion of fish being estimated from year to year. To the extent that this variability can be controlled, peak aerial counts may serve as indices of relative abundance for examination of annual trends in escapement.

Aerial escapement estimates are obtained from as many spawning streams as possible within the confines of fiscal, personnel, and weather constraints. However, selected spawning streams, or "index areas," which represent a larger geographic area have been identified and receive highest priority. Index areas have been designated due to their importance as spawning areas and/or by their geographic location with respect to other unsurveyable salmon spawning streams in the general area. Several index areas have escapement goals for Chinook salmon.

Escapement Goals

Escapement goals have been established for several Yukon River drainage salmon spawning streams or areas (Appendix E1). The most recent review occurred during the fall of 2001 with some revision in 2004 (ADF&G 2004). Biological escapement goal (BEG) means a level of escapement that provides the highest potential to produce maximum sustainable yield. Sustainable escapement goal (SEG) means a level of escapement known to provide for sustainable yield over a 5 to 10 year period. The BEGs and SEGs developed through this process were presented as ranges. The underlying principle in establishing SEGs was that maintenance of average or better spawning escapements should provide for sustained yield consistent with historic levels (Policy for the Management of Sustainable Salmon Fisheries 5 AAC 39.222 and Policy for Statewide Salmon Escapement Goals 5 AAC 39.223). The use of ranges for BEGs and SEGs should allow for uncertainty associated with measurement techniques, observed variability in the salmon stock measured, changes in climate and oceanographic conditions, and varying abundance within related populations of the salmon stock being measured.

Most of the SEG ranges established within the Yukon River drainage represent the number of desired spawners considered necessary to maintain the historical yield from the stocks and are based upon historical performance (e.g. they are predicated upon some measure of historic averages). Establishment of escapement goals based upon a rigorous analysis of maximum sustained yield is not possible for most spawning areas at this time due to the nature of the Yukon River mixed stock fisheries, lack of stock identification data, and consequential inability to reconstruct total inriver stock-specific returns. Consequently, most escapement goals are based upon aerial survey index estimates that do not represent total escapement but are assumed to reflect relative spawner abundance when using standard survey methods under acceptable survey conditions. However, the goals established for Chena and Salcha River Chinook salmon and Anvik River summer chum salmon (Clark and Sandone 2001) and selected fall chum salmon spawning stocks (Eggers 2001) represent the desired range for total spawning abundance; as they are based upon a more comprehensive database.

AREA SALMON REPORT 2002

2002 ALASKA BOARD OF FISHERIES ACTIONS

Regulatory changes made during an out-of-cycle BOF meeting in March 2002 provided the department EO authority to remove the requirement for clipping the dorsal fin of subsistence caught king salmon during times when there is no commercial fishing. In addition, ADF&G managers were given authority to regulate personal use fishing gear during times of conservation, including the addition of dip net gear. A summary of the most recent BOF actions affecting the Yukon River drainage can be found in Appendix I1.

In response to the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF classified the fall chum salmon stock as a yield concern during the September 2000 work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest level in 2002. In addition, the BOF classified the Toklat River and the Fishing Branch River fall chum salmon stocks as a management concern. The determination of a management concern was based on the chronic inability to meet existing escapement goals for the Toklat River fall chum salmon stock since 1998.

The 2002 preseason outlook for fall chum salmon was for a below average to poor run similar to 2001. No commercial fishery was expected and it was anticipated that the subsistence harvests of fall chum salmon would be less than normal. The 2002 Yukon River coho salmon run was expected to be near average in run strength. However, because of the overlap in run timing and conservation concerns with fall chum salmon, no commercial harvest was anticipated for coho salmon. If subsistence restrictions were necessary to protect the fall chum salmon stocks, coho salmon fishing would also be affected. A summary of the most recent BOF actions affecting the Yukon River drainage can be found in Appendix I1.

TOTAL YUKON RIVER DRAINAGE SALMON HARVEST 2002

The total 2002 estimated harvest for the Yukon River drainage, including Canada, was 77,145 Chinook, 86,614 summer chum, 27,411 fall chum, and 16,828 coho salmon (Table 2). The 2002 estimated total Yukon River drainage harvests compared to the recent 5-year averages (1997-2001) were as follows: Chinook, 30% below average (Appendix A17); summer chum, 36% below average (Appendix A18); fall chum, 69% below average (Appendix A19); and coho salmon, 41% below average (Appendix A20).

ALASKAN SUBSISTENCE FISHERY 2002

Subsistence Harvest Reporting 2002

A total of 43,742 Chinook, 87,056 summer chum, 19,674 fall chum, and 15,489 coho salmon were estimated to have been harvested with 1,416 households estimated to have participated in the Yukon Area subsistence fisheries in 2002 (Table 3). The Yukon Area includes the Alaskan

portion of the Yukon River drainage and the communities with the Coastal District. Harvest estimates include salmon given away by test fishing projects (Brase and Hamner 2003).

Historical estimates of the subsistence harvest based on surveys and permit harvest information for salmon species are shown in Appendices D1 through D4. Historical subsistence permit harvest information for fisheries currently in regulation is summarized in Appendices D5 and D6.

Survey Program 2002

The majority of communities within the Yukon Area have no regulatory requirements to report their subsistence salmon harvest. To estimate the harvest of each salmon species from these communities, ADF&G has implemented a voluntary survey program. Household subsistence salmon surveys were conducted in the Lower Yukon Area in September and continued in the Upper Yukon Area through October. The survey program utilizes subsistence catch calendars, postseason household interviews, and postseason household telephone interviews, as well as postcards to collect harvest information.

Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the 2002 postseason survey. Based on survey information collected in 2002, an estimated 1,260 households harvested approximately 34,926 Chinook; 77,871 summer chum; 13,740 fall chum; and 5,077 coho salmon in the survey portion of the Yukon Area, which includes the coastal communities of Hooper Bay and Scammon Bay (Table 3).

Subsistence Permit Program 2002

In some portions of the Yukon Area, subsistence fishers are required to obtain an annual household permit prior to fishing for salmon and/or non-salmon fish species. In 2002, these areas included the Tanana River drainage, the Yukon River drainage between Hess Creek and the Dall River (referred to as the Yukon River Bridge area), and the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border. In these areas, fishers are required to document their subsistence salmon harvest on the household permit and return them to ADF&G at the end of the fishing season. A total of 305 subsistence permits were issued in 2002, of which, approximately 240 subsistence permits were issued to harvest salmon (Table 4). Subsistence salmon permits issued compares to the 5-year average (1997-2001) of 282 permits and the 10-year average (1992-2001) of 277 permits (Appendices D5 and D6). Additionally, subsistence fishing permits are required annually for the harvest of northern pike *Exos lucius* in the Tolovana River drainage (designated ST), for non-salmon fish species in the Upper Tanana River drainage (designated SU), and for the occasional subsistence whitefish *Conregonus sp.* permits (designated SW) for sensitive or unknown harvest areas. Subsistence whitefish permit applications typically are required to go through a 10-day review process to determine harvest levels and establish fishing stipulations regarding gear and reporting requirements.

A total of 159 subsistence permit holders (including Stevens Village) indicated they fished in 2002. The reported harvest (including Stevens Village) from permits totaled 6,981 Chinook, 861 summer chum, 3,715 fall chum, and 9,500 coho salmon, 2,806 whitefish species, 66 sheefish *Stenodus leucicthys*, 65 burbot *Lota lota*, 791 pike, 254 suckers *Catostomus sp.*, and 138 Artic grayling *Thymallus arcticus* (Table 4 and Appendix G2).

Note that estimates for Stevens Village in Table 3 are a combination of permit and survey data and do not reflect strictly permit totals. Because of its unique location, fishers in Stevens Village

harvested salmon in both the permitted and survey areas. The Stevens Village permit information was used to supplement the postseason survey of the community.

Subsistence Salmon Use from Test Fisheries 2002

In order to monitor and manage the Yukon Area salmon fisheries, ADF&G operates, or oversees, several test fishing projects. The fish harvested during operation of these projects are provided to the local community to supplement their subsistence harvests. In 2002, the test fishery projects throughout the drainage provided a total of 2,092 Chinook, 4,592 summer chum, 2,219 fall chum, and 912 coho salmon to households for subsistence use (Table 3). Residents of the communities of Alakanuk, Emmonak, Kaltag, Kotlik, Mountain Village, Pilot Station, Rampart, Russian Mission, and Tanana were the primary recipients of fish from the test fisheries. Salmon caught in the test fisheries were assumed to replace fish that would have been obtained through normal fishing activities; therefore, salmon given away from the test fisheries were added into the subsistence harvest for that community.

ALASKAN PERSONAL USE FISHERY 2002

A household permit is required for personal use fishing in the portion of the Tanana River drainage within the Fairbanks Nonsubsistence Area. Fishers are required to document their personal use harvest on household permits and return them to ADF&G at the end of the season.

In 2002, 57 personal use salmon permits were issued (Table 4 and Appendix G2). This compares to the recent 5-year average (1997 to 2001) of 88 permits. The reduced number of permits in 2002 was a function of the poor chum salmon returns and limited fishing opportunity. In addition, 5 personal use whitefish and sucker permits were issued in 2002 to fishers in the Fairbanks Nonsubsistence Area. Personal use fishers reported harvest was 126 Chinook, 175 summer chum, 3 fall chum, and 20 coho salmon. Additionally, 50 whitefish and 90 suckers were reported taken under the personal use fisheries.

YUKON AREA CHINOOK AND SUMMER CHUM SALMON FISHERY SUMMARY 2002

In response to the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF classified the Yukon River Chinook stock as a yield concern during the September 28-29, 2000, work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest level in 2001. In addition, the BOF classified the Yukon River summer chum salmon stock as a management concern. The determination of a management concern was based on the chronic inability to meet existing escapement goals for the summer chum stock since 1998.

The 2002 Chinook salmon run was anticipated to be similar to 2001, below average to poor. Given the uncertainties associated with recent declines in productivity, it was anticipated the Chinook salmon run would support an average subsistence harvest and possibly a small commercial harvest in the Alaska portion of the drainage. The preseason outlook anticipated a commercial harvest of 0 to 20,000 Chinook salmon. The 2002 summer chum salmon preseason outlook was for a poor summer chum salmon run. Similarly, with recent declines in productivity and the beginning of below average parent-year escapements, it was unlikely that the summer chum salmon run would support a commercial harvest. The preseason outlook anticipated a

commercial harvest of 0 to 150,000 summer chum salmon, with the likelihood that the harvest would be entirely incidental to a directed Chinook salmon commercial fishery.

Chinook Salmon Management Overview 2002

The lower Yukon River was ice-free on May 24, nearly 2 weeks earlier than in 2001 and 4 days earlier than the historic average (1962-2001). The first subsistence catch of Chinook salmon was reported on May 31 near Emmonak. ADF&G's test fishing projects recorded the first Chinook salmon catches on June 1. The lower river, throughout much of the season, was characterized as having normal water levels. (Note: Chinook salmon take approximately 30 days to migrate to the U.S./Canada border).

In cooperation with federal subsistence managers, a preseason management strategy was developed and described in an information sheet that outlined the run and harvests outlooks, and the regulatory subsistence salmon fishing schedule. The preseason management strategy was to implement the subsistence salmon fishing schedule about the time salmon began to arrive in a district or subdistrict. Prior to implementing the subsistence salmon fishing schedule, subsistence fishing would be allowed 7 days per week to provide an opportunity for harvesting resident species, such as whitefish, sheefish, pike, and suckers. A management strategy information sheet was also used to prepare fishers for the possibility of reductions to the subsistence salmon fishing schedule or to allow for a small commercial fishery depending upon how the Chinook salmon run developed. The information sheet was mailed to Yukon River commercial permit holders and 2,800 families identified from ADF&G’s subsistence survey and permit databases. State and federal staff also presented the management strategy to YRDFA and the federal Regional Advisory Councils.

Emmonak test fish indices, subsistence harvest reports, and Pilot Station sonar passage estimates provide the information ADF&G used to assess the salmon run inseason. As the run progressed upriver, other projects provide additional run assessment information. Poor runs since 1998 and an inseason run assessment indicating another weak run prompted conservative management of the fishery. Based on set gillnet test fish CPUE (Appendices B12 and B13) and preliminary Pilot Station sonar estimates, the Chinook salmon run appeared to be a week earlier than the 2001 run.

According to set gillnet test fish CPUE data, approximately 50% (midpoint) of the Chinook salmon run entered the lower river by June 20, the average date for the midpoint of the run, and 5 days earlier than 2001. The cumulative set gillnet test fish CPUE in 2002 was 20.22 compared to 15.23 in 2001 (Appendices B12 and B13). The Pilot Station sonar cumulative passage estimate of 123,213 Chinook salmon (Appendix E3) was higher than the estimate of 99,403 in 2001. Based upon preliminary harvest and escapement information, the 2002 Chinook salmon run abundance was poor and similar to 2001, but contained a higher proportion of smaller age-4 Chinook salmon.

Summer Chum Salmon Management Overview 2002

The Yukon River summer chum salmon were managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan*. The management plan provides for escapement priority followed by consumptive uses, of which subsistence has first priority, and commercial, sport, and personal use fishing are secondary. The management plan also stipulates that drainage wide directed summer chum salmon commercial fisheries be allowed only when the run size projection is greater than 1 million summer chum salmon. Provisions in the plan

allow for varying levels of subsistence salmon fishing opportunity depending on the run size projection. ADF&G is tasked to use the best available data, including preseason run projections, test fishing indices, age and sex composition, subsistence and commercial harvest reports, and escapement monitoring projects to assess the run size for the purpose of implementing this plan.

ADF&G monitored the 2002 summer chum salmon run in the lower Yukon River by using the lower Yukon River drift gillnet test fishery, subsistence harvest reports, Pilot Station sonar passage estimates, and Anvik River sonar passage estimates. Results from these projects, in combination with the preseason projection, were the basis for management decisions in 2002.

The Pilot Station sonar project only provides an estimate of the number of salmon passing the site. An estimate of the total Yukon River run size requires an estimate of the harvest and escapement below Pilot Station. The summer chum salmon subsistence harvest taken in 2000 (50,000) and the 2000 East and West Fork Andreafsky River escapement estimates (45,000) were added to the 2002 inseason run projection to estimate the total run inseason (2001 Andreafsky River weir count was incomplete). The resulting total run size estimate was applied to the summer chum salmon management plan to determine appropriate management actions.

The summer chum salmon run was assessed as being below average, but double the 2001 run. Summer chum salmon production continued to be well below average. The Pilot Station sonar cumulative passage estimate through July 18 was 1,088,463 summer chum salmon (Appendix E3). Run projections for summer chum salmon early in the season contain a wide range of estimates due to the variability of run timing between years. Due to the uncertainties early in the season of estimating summer chum salmon run timing and the lack of buyer interest, a directed summer chum salmon commercial fishery was allowed only in the Tanana River drainage.

Summer Season Subsistence Fishery 2002

The BOF adopted a subsistence salmon fishing schedule in January 2001. The goal of the schedule is to provide windows of time that salmon may migrate upriver unexploited. Objectives of the schedule are to spread the harvest throughout the run to reduce the impact on any singular component of the run, and spread subsistence harvest opportunity among users. When there are no commercial salmon fishing periods, the subsistence fishery is based on a schedule implemented chronologically by ADF&G, which is consistent with migratory timing as the run progresses upstream. The schedule is based on past fishing schedules and should provide reasonable opportunity for subsistence during years of normal to below average runs. Fishing periods may be altered if preseason or inseason run indicators indicate it is necessary for conservation purposes or if commercial salmon fishing periods occur.

Unrestricted subsistence fishing was allowed 7 days per week for non-salmon species prior to the arrival of salmon into an area. In the lower Yukon River, the subsistence salmon fishing schedule was set preseason to start on May 30, which was 6 days after the river was ice-free. During subsistence salmon fishing closures, subsistence gillnet fishers fishing for whitefish, suckers, and other non-salmon species were restricted to gillnets of a maximum length of 60 feet and 4-inches or less in stretch mesh. Additionally, fishers were not allowed to use fish wheels to fish for non-salmon species. Restricting gillnet length and mesh size and not allowing the use of fish wheels during subsistence salmon fishing closures provided protection to Chinook and summer chum salmon while allowing subsistence fishers the opportunity to fish for non-salmon species.

ADF&G estimated 25% of the run had passed through the lower Yukon River area by June 13. At that time, available data from run assessment projects indicated the Chinook salmon run was average in run timing and adequate enough to allow subsistence salmon fishing to continue following the regulatory fishing schedule. Although comparisons between the 2002 run and the 2001 run were difficult because of the 1-week difference in run timing, the test fish cumulative CPUE was tracking near average.

Subsistence harvest information was gathered during the summer season from fisher reports to ADF&G's Emmonak office, calls made to fishers by state and federal managers, and an inseason survey organized by USFWS. Through these sources, subsistence fishers in the lower river reported good catches of Chinook salmon and indicated they were meeting their needs. As the run progressed upriver, subsistence fishers in the middle river reported a mix of good to below average catches as well as a higher amount of smaller Chinook salmon in their catches compared to the last several years. Subsistence fishers in the upper river generally reported meeting their subsistence needs but that the run appeared to be weaker than last year's run. Upriver subsistence fishers using fish wheels particularly noticed lower catches and an increase in the percentage of smaller fish caught compared to the last year.

Subsistence fishing for summer chum salmon was unrestricted in 2002 because the run projection for summer chum salmon stayed above the minimum 600,000 required to allow for subsistence fishing. Subsistence fishers throughout the drainage reported that catches of summer chum salmon were better than the last several years.

Districts 1-3

Subsistence salmon fishing in the lower Yukon River districts initially followed the regulatory subsistence salmon fishing schedule of two 36-hour periods per week beginning May 30 in District 1, June 2 in District 2, and June 5 in District 3. Beginning June 19 in District 2 and June 20 in District 1, commercial salmon fishing opened and subsistence salmon fishing remained open except for 18 hours before, during, and 12 hours following each commercial salmon fishing period. Beginning July 3 and 5, Districts 1 and 2 respectively, returned to the subsistence salmon fishing schedule of two 36-hour periods per week after the last commercial fishing period was concluded in each of these districts.

Commercial salmon fishing did not open in District 3 due to the lack of buyer interest. The subsistence salmon regulation governing fishing seasons and periods states when there are no commercial salmon fishing periods, the subsistence fishing in the Yukon River drainage will be based on a schedule. Therefore the subsistence salmon fishing schedule of two 36-hour periods per week for District 3 remained in effect during the entire summer season.

Prior to the opening of the commercial fishery, subsistence fishers were not required to remove the dorsal fin of subsistence caught Chinook salmon. When the commercial fishery opened, the marking requirement was reinstated for the remainder of the Chinook salmon fishing season.

District 4

Subsistence salmon fishing in District 4 initially followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week beginning June 12. On June 26, the commercial fishing season opened and subsistence salmon fishing in Subdistrict 4-A remained open until 12 hours before, during, and 12 hours after each commercial fishing period. There was 1 commercial opening in Subdistrict 4-A on July 2. After the commercial fishing period on July

2 in Subdistrict 4-A, subsistence salmon fishing reopened for a 48-hour period. Beginning July 7, subsistence salmon fishing reopened for a 5-day period by regulation as a result of no commercial fishing openings for greater than a 5-day period. During the 5-day subsistence salmon fishing period it was decided that no additional commercial fishing periods would be announced and the commercial season was closed. Therefore, the subsistence salmon fishing schedule of two 48-hour periods per week was reinstated beginning July 14.

In Subdistricts 4-B and 4-C, four commercial fishing periods were scheduled to coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity. Subsistence salmon fishing remained on a schedule of two 48-hour fishing periods throughout the summer season.

Subdistricts 5-B and 5-C

Subsistence salmon fishing in Subdistricts 5-B and 5-C initially followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week beginning June 21. In Subdistricts 5-B and 5-C, two commercial fishing periods were scheduled to coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity. Subsistence salmon fishing remained on a schedule of two 48-hour fishing periods throughout the summer season except for 1 period that was extended to 54-hours.

Subdistrict 5-D

Subsistence salmon fishing in Subdistrict 5-D opened by regulation and was allowed 7 days per week throughout the entire fishing season. In Subdistrict 5-D, one 24-hour commercial fishing period was scheduled concurrent with subsistence salmon fishing.

Subdistrict 5-A and District 6

Subsistence salmon fishing in Subdistrict 5-A followed the regulatory subsistence salmon fishing schedule of two 42-hour periods per week beginning June 21. Subdistrict 5-A typically targets salmon bound for the Tanana River and is managed using the Tanana River Salmon Management Plan. Subsistence salmon fishing in District 6, except the Old Minto Area, opened by regulation and also followed the regulatory subsistence salmon fishing schedule of two 42-hour periods per week throughout the entire fishing season. In the Old Minto Area, subsistence salmon fishing was allowed 5 days per week.

In District 6, 4 commercial fishing periods were scheduled to coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity. Subsistence salmon fishing remained on a schedule of two 42-hour fishing periods throughout the summer season.

Coastal District and Koyukuk River

Subsistence salmon fishing in the Coastal District opened by regulation and was allowed 7 days per week throughout the entire summer season.

Summer Season Commercial Fishery 2002

The commercial harvest of Chinook and summer chum salmon was below the low end of the guideline harvest range for all districts and subdistricts. The commercial fishery was managed conservatively by opening the commercial fishing season near the midpoint of the Chinook salmon run and allowing fewer commercial fishing periods. The summer chum harvest was taken

incidental to fishing directed at Chinook salmon except for 2 directed chum salmon commercial fishing periods in District 6.

The total estimated commercial harvest including the estimated harvest to produce roe sold was 24,358 Chinook and 13,578 summer chum salmon for the Alaskan portion of the Yukon River drainage in 2002 (Table 2, Appendices A4 and A5). The Alaskan commercial harvest is expressed as the number of salmon sold in the round, pounds of salmon roe sold, and estimated harvest, which includes the estimated number of salmon harvested to produce roe sold. Commercial sales in the round were 24,128 Chinook and 13,558 summer chum salmon. Roe sales by species totaled 896 pounds for Chinook and 16 pounds for summer chum salmon. The 2002 Chinook salmon harvest was the third lowest commercial harvest since statehood. The summer chum salmon harvest was the third lowest since 1968. The 2002 Chinook salmon harvest was 69% below the 1992-2001 average harvest of 77,876 Chinook (Appendix A4). The summer chum salmon harvest was 95% below the 1992-2001 average harvest of 273,617 fish (Appendix A5).

The estimated age composition of Chinook salmon samples collected from the commercial harvest in Districts 1, 2, 5, and 6 was 4.4% age-4, 24.8% age-5, 58.4% age-6, and 12.3% age-7 fish (Price 2003). The sex composition of the samples was 52.3% females and 47.6% males. The estimated age composition of summer chum salmon samples from the commercial harvest in Districts 1 and 6 was 0.2% age-3, 55.0% age-4, 41.2% age-5, and 3.6% age-6 fish. The sex composition of the samples was 43.7% females and 56.3% males.

A record low total of 564 permit holders participated in the Chinook and summer chum salmon fishery during 2002 (Table 9), which was 14% below the 1992-2001 average of 656 permit holders. The Lower Yukon Area (Districts 1-3) and Upper Yukon Area (Districts 4-6) are separate CFEC permit areas. A total of 540 permit holders fished in the Lower Yukon Area in 2002, which was 6% below the 1992-2001 average of 578 permit holders. In the Upper Yukon Area, 24 permit holders fished, which was 69% below the 1992-2001 average of 77 permit holders.

Yukon River fishers in Alaska received an estimated $1.7 million for their Chinook and summer chum salmon harvest in 2002, approximately 71% below the 1992-2001 average of $4.6 million (Appendix A12). The decrease in exvessel value was due to the poor Chinook and summer chum salmon run resulting in a low commercial harvest.

Four buyer-processors operated in the Lower Yukon Area in 2002. Lower Yukon River fishers received an estimated average price per pound of $3.77 for Chinook and $0.06 for summer chum salmon (Appendix A11). The average price paid for Chinook salmon in the Lower Yukon Area was well above the 1990-1999 average of $2.82 per pound. Prices paid for summer chum salmon in the round continued to be low as observed since 1995. The exvessel value of the Lower Yukon Area summer season fishery of $1,695,447 is 60% below the 1992-2001 average of $4,221,218 million. The average income for Lower Yukon Area fishers that participated in the 2002 summer season fishery was $3,140. ADF&G test fish sales included 528 Chinook salmon and 218 summer chum salmon. Funds generated from the sales of test fish are used by management to off set costs associated with prosecuting the Yukon Area fishery (Table 6; Appendix A17 and A18).

Upper Yukon Area fishers received an estimated average price per pound of $0.75 for Chinook and $0.32 for summer chum salmon. The average price paid for Chinook salmon in the Upper Yukon Area was slightly below the 1990-1999 average of $0.90 per pound. The exvessel value

of the Upper Yukon Area summer season fishery of $26,920 is 93% below the 10-year average (1992-2001) of $399,490. The average income for Upper Yukon Area fishers that participated in the 2002 fishery was $1,122.

Districts 1-3

The management strategy during years of average abundance is to open the Chinook salmon directed commercial fishery in the Lower Yukon Area when increasing subsistence and/or test net catches of Chinook salmon have occurred over a 7- to 10-day period. This management strategy typically provides for passage of a portion of the early run segment through the lower river districts before commercial fishing starts. The 2002 commercial fishing season opened near the midpoint of the run on June 19 in District 2 (Table 10). This was after approximately 14 days of increasing subsistence and test fishery catches. Based on lower river test fishing, the Chinook migration increased rapidly from June 12 through June 25, and remained fairly steady through June 29. After June 29, abundance of Chinook salmon declined.

There were 3 commercial fishing periods allowed in District 1 and 3 periods in District 2. Fishing periods in these districts were reduced to 6-hours duration rather than the more typical 12-hour periods. Eight-inch or greater mesh size gillnets were required during all fishing periods in the Lower Yukon Area to direct the harvest at Chinook salmon. No restricted mesh size fishing periods were allowed due to the lack of a summer chum salmon market and an estimated run size just above the minimum threshold necessary to allow for a directed commercial chum salmon harvest.

The combined total harvest of 22,521 Chinook salmon for Districts 1 and 2 was 62% below the low end of the guideline harvest range of 60,000 fish and 69% below the 1992-2001 average harvest of 72,806 fish (Table 2; Appendix A4). The average weight of Chinook salmon in the 2002 commercial harvest was 19.9 pounds (Appendix A13.). The estimated age composition of Chinook salmon samples collected from the Lower Yukon Area commercial harvest (Districts 1 and 2) was 3.6% age-4, 22.6% age-5, 60.6% age-6, and 13.2% age-7 fish (Price 2003). The sex composition of the samples was 56.2% females and 43.8% males.

The combined commercial summer chum salmon harvest in District 1 and 2 of 10,354 fish was 89% below the 1992-2001 average harvest of 94,988 fish (Appendix A5). The average weight of summer chum salmon in the 2002 commercial harvest was 7.2 pounds (Appendix A13). The estimated age composition of summer chum salmon samples from the Lower Yukon Area commercial harvest (District 1) was 0.3% age-3, 55.1% age-4, 40.9% age-5, and 3.7% age-6 fish (Price 2003). The sex composition of the samples was 41.8% females and 58.2% males.

There was no commercial harvest of Chinook salmon in District 3 in 2002 because of a lack of buyers.

Districts 4-6

Historically, the Subdistrict 4-A fishery targets summer chum salmon with the dominant gear type being fish wheels and the location of the fishery resulting in a very high chum to Chinook salmon ratio. In 2002, efforts were made to provide some commercial fishing opportunity in Subdistrict 4-A. One buyer agreed to purchase Chinook salmon, provided that fishers avoided locally spawning Chinook salmon. Subdistrict 4-A was opened for a single 12-hour period directed at Chinook salmon. No commercial deliveries were made during this period.

The Anvik River Management Area (Figure 2) remained closed to commercial fishing for the fifth consecutive year in 2002, because of poor runs of summer chum salmon. The Anvik River did not meet the minimum escapement of 500,000 summer chum salmon required to allow an in-river commercial fishery. Commercial fishers in Subdistrict 4-A and along the Anvik River were greatly affected because of the lack of commercial fishing. The 1989-1998 average harvest for Subdistrict 4-A and the Anvik River Management Area was 3,086 summer chum salmon in the round and 126,080 pounds of summer chum roe. Exvessel value from 1991 through 1998 averaged $398,000. Prior to 1997, when summer chum salmon abundance dramatically decreased, an average of 60 permit holders fished annually (1991-1996) in this Subdistrict.

Commercial fishing directed at Chinook salmon was open for four 48-hour periods in Subdistricts 4-B and 4-C (Table 10). No commercial sales of salmon were reported. Fish caught during the commercial fishing periods were retained for subsistence use.

Two commercial fishing periods were allowed in Subdistricts 5-B and 5-C (Table 10) for a total of 30 hours of fishing time. The harvest of 564 Chinook salmon was 76% below the lower end of the guideline harvest range of 2,400 fish. A total of 6 summer chum were sold. Typically, the harvest of summer chum salmon is low in these subdistricts as they are located above the majority of summer chum spawning areas.

Commercial fishing in Subdistrict 5-D was opened for one 24-hour fishing period in 2002 (Table 10). The Subdistrict 5-D harvest of 207 Chinook salmon was below the lower end of the guideline harvest range of 300-500 Chinook salmon.

Commercial fishing in District 6 was opened for two 42-hour periods directed at the harvest of Chinook salmon and two 42-hour periods directed at chum salmon in 2002 (Table 10). The total estimated commercial harvest was 836 Chinook and 3,198 summer chum salmon in District 6. The Chinook salmon harvest was above the upper end of the guideline harvest range of 600-800 fish. The summer chum salmon harvest was well below the 1989-1998 average of 23,825 fish. Management of the fishery was primarily based on Chena and Salcha River tower counts.

The estimated age composition of Chinook salmon samples collected from the Upper Yukon Area commercial harvest (Districts 5 and 6) was 10.3% age-4, 41.1% age-5, 42.3% age-6, and 6.1% age-7 fish (Price 2003). The sex composition of the samples was 30.5% females and 69.5% males. The estimated age composition of summer chum salmon samples from the Upper Yukon Area commercial harvest (District 6) was 54.6% age-4, 42.3% age-5, and 3.1% age-6 fish. The sex composition of the samples was 50.5% females and 49.5% males.

YUKON AREA FALL CHUM AND COHO FISHERY SUMMARY, 2002

Fall Chum Salmon Management Overview 2002

The Yukon River fall chum and coho salmon runs are managed according to guidelines in regulations established by the BOF. The regulatory management plans provide for escapement needs and the subsistence use priority over commercial, sport, and personal use fishing activities.

The *Yukon River Drainage Fall Chum Salmon Management Plan* 5 AAC 01.249, utilized in 2002 stipulated that commercial fisheries directed at fall chum salmon may only be allowed when the run size projection is greater than 675,000 fall chum salmon. At run sizes of less than 600,000 fall chum salmon, the drainagewide escapement goal decreases in increments from 400,000 to a minimum of 350,000 fish. These increments are provisions in the plan, which allow

varying levels of subsistence salmon fishing prior to closure of the fishery, and are balanced with requirements to meet BEGs, minimum escapement objectives, as well as interim goals with Canada.

Fall season management strategies were formulated in cooperation with the USFWS. The fall salmon season begins by regulation in the lower Yukon River on July 16. The preseason strategy was to continue the subsistence fishing levels already in progress from the summer season. Management is then based on inseason indicators as the salmon runs develop. The subsistence salmon fishing schedule during the fall season was to be adjusted if necessary near the first quarter point in the run when sufficient data became available to assess the run. Since spawning areas are located well upstream and subsistence fishers are distributed throughout the drainage, attempts are made to implement management actions sequentially from lower to upper river areas rather than all at once. Also, when managing conservatively, fewer fall chum salmon would be targeted in the early portion of the run knowing that some would be caught incidentally to the directed non-salmon and coho salmon fisheries.

From 1987 to 1998 the Yukon River preseason fall chum salmon run size projection had been presented as a point estimate. The 1999 to 2002 (excluding 2001) Yukon River preseason projections were presented as ranges due to the uncertainty associated with the unexpected run failures observed since 1998. Consequently, the 2002 Yukon River preseason projection was presented as a range of 209,000 to 646,000 fall chum salmon. However, management actions are dictated by the actual return as determined inseason and management agencies rely heavily on inseason run assessment tools that included information from the summer chum salmon run earlier in the season. The 2002 fall chum salmon run projection was adjusted after the summer season, after considering the historical relationship between annual summer and fall chum salmon abundance. Because the summer chum salmon run was higher than expected, the fall chum salmon projections were revised to 500,000 to 650,000 fish, which would allow for normal subsistence harvest.

The 2002 fall chum salmon run was monitored in the lower Yukon River through the drift gillnet test fisheries at Emmonak, Mountain Village (operated by Asacarsarmiut Traditional Council) and in the middle Yukon River at Kaltag (operated by the city of Kaltag), as well as Pilot Station sonar passage estimates and subsistence catch reports. Results from these projects were the basis for the initial management decisions, which eliminated commercial fishing possibilities in 2002 and initially restricted the fall chum salmon subsistence fishery.

The majority of fall chum salmon typically enter the Yukon River from mid July through early September in erratic surges (pulses) that usually last 2 to 3 days. Generally, 4 or 5 such pulses occur each season. These pulses are often associated with on-shore wind events or high tides. Consequently, assessing the run strength early in the season is difficult when wide fluctuations in pulse size and run timing vary so drastically each season.

Each pulse of chum salmon was detected by the Lower Yukon River and Mountain Village drift gillnet test fishery projects. The catch rates at the lower Yukon River project appear to correlate well with other assessment projects in run timing and relative magnitude of each observed pulse, however since the project began in 2001 it cannot be compared with previous years when the project utilized set gillnets. Individual pulses are tracked as they move up river and the Pilot Station sonar estimates the abundance of each pulse. Therefore, with an abundance estimate,

management can be effectively based on where and when fall chum salmon are present as they migrate upriver using the regulatory management plan.

The first recognized pulse of fall chum salmon entered the mouth of the Yukon River on July 17 and lasted approximately 3 days. A second pulse entered the river on July 25, and lasted approximately 5 days. A third pulse was tracked through the test nets in Emmonak from August 7 to 13. A fourth pulse coincided with strong storm activity at Emmonak, from August 15 to 18; this pulse was the largest of the fall season. The sizes of the pulses were approximately 32,000, 90,000, 73,000, and 116,000 fall chum salmon respectively. The fourth pulse of fish was the largest and no additional pulses were detected. The fall chum passage was near normal in run timing with the second half of the run more abundant than the first half. Consequently, the run timing appeared to be 7 days late. The 2002 fall chum salmon run was assessed to be poor overall with the Tanana River stocks fairing slightly better than the upper Yukon River stocks.

The trend of very low salmon productivity continued in 2002. This was the fourth season of the last 5 years that no commercial fishing for fall chum salmon has occurred in the Alaskan portion of the Yukon River drainage. As a result of the better than expected summer chum salmon run, the fall chum salmon run was anticipated to be better than projected preseason and the fall season began on the full regulatory subsistence fishing schedule in all districts.

As the fall season progressed, it became apparent that the run was either very late or very weak. On August 9, the Pilot Station cumulative sonar count was 147,000 fall chum salmon. This was 43% below the recent 7-year average of 270,000 fish by that date. In a year with average run timing, the midpoint of the fall chum salmon run would have been August 7 at the Pilot Station sonar.

Because so few fish had entered the river by the average midpoint, the projection for the total fall chum salmon run dropped to less than 350,000 fish. A return of this size is not sufficient to meet escapement and fulfill subsistence needs. Therefore on August 9, a drainagewide subsistence salmon fishing closure was announced, as required by the Yukon River Fall Chum Salmon Management Plan. Closures were implemented throughout the drainage in an attempt to meet escapement goals throughout the Yukon River drainage and to ensure a U.S./Canada border commitment for a minimum interim escapement goal of 60,000 fall chum salmon as agreed upon by the Yukon Panel preseason.

No commercial fall chum salmon fishing occurred. Sport fishing for chum salmon closed on August 11. Personal use fishing in the Tanana River closed on August 16. Subsistence salmon fishing began closing in the lower river on August 11 and continued sequentially closing areas upstream until August 16 when all districts in the Alaskan portion of the Yukon River were closed to fall chum salmon fishing.

Hook and line and dip net subsistence salmon gear openings were allowed in portions of Districts 1–4 to provide fishing opportunity for coho salmon while protecting fall chum salmon.

As the majority of fall chum salmon passed through Districts 1-4, subsistence salmon openings for all gear types were scheduled to provide opportunity for harvesting the later running coho salmon. Subsistence fishing restrictions including both reduced fishing time and gear limitations were lifted sequentially as the fall chum salmon passed through all districts on their migration upstream. On October 1, the majority of fall chum salmon had crossed the border into Canada or

had escaped to the spawning grounds, therefore, the new regulatory windowed fishing schedule was lifted for the remainder of the season just prior to the onset of winter.

Coho Salmon Management Overview 2002

As previously stated, Yukon River coho salmon have a slightly later, but overlapping, run timing with that of fall chum salmon. In managing the coho salmon run, ADF&G follows guidelines adopted by the BOF in the *Yukon River Coho Salmon Management Plan* 5 AAC 05.369. The coho salmon management plan allows a directed coho salmon commercial fishery only under specific conditions. It was unlikely that conditions outlined in the coho salmon management plan would occur. In most years, fall chum salmon is the primary species of management concern during the fall season. In 2002, no directed commercial coho salmon fishing periods were allowed because of the weak fall chum salmon run even though the coho salmon run appeared to be near average.

Only 1 strong pulse of coho salmon was observed entering the Yukon River as detected by the lower Yukon River drift gillnet test fishery. Pilot Station sonar estimated inseason that approximately 128,700 coho salmon passed the site by August 31 (final estimate listed in Appendix E3). The coho salmon run was near normal in run timing and 9% above the historical average passage estimate at Pilot Station sonar.

Subsistence fishing opportunity for coho salmon was reduced because of the weak fall chum salmon stocks. As the fall chum salmon passed upriver and as the coho salmon run neared peak passage, limited subsistence fishing periods were allowed in specific areas with special gear requirements that provided opportunity to harvest coho salmon while continuing to protect fall chum salmon. Late in the season when most fall chum salmon had passed through the fishery, the full subsistence fishing schedule was reinstated with unrestricted gear.

Fall Season Subsistence Fishery 2002

The fall chum salmon run began exceptionally slow. In the first 3 weeks of the season, only 3 small pulses were observed entering the mouth of the Yukon River. The weather was unusually warm across the entire interior Alaska and the western coast with calm winds. Fishers and managers remained optimistic because the summer chum run came in better than expected and it was anticipated that a change in weather to cooler, westerly winds would bring fall chum salmon into the river. The full regulatory subsistence fishing schedule remained in effect; although most fishers reported they were waiting to go fishing until fall chum salmon abundance increased.

Eventually the weather cooled, the winds became more westerly, yet the fall chum salmon were slow in moving into the Yukon River. In a year with average run timing, the midpoint of the run would have been August 7. As of August 9, the Pilot Station cumulative sonar count was 147,000 fall chum salmon, which was 43% below the recent 7-year average for that date. The fall chum salmon run was re-evaluated at the midpoint and the projection dropped to less than 350,000 fish, a level not sufficient to meet full escapement needs and provide subsistence harvest. Therefore, as required by the Yukon River Drainage Fall Chum Salmon Management Plan in order to conserve fall chum salmon, subsistence salmon fishing closures began throughout the entire Alaskan portion of the Yukon River drainage.

No commercial fall chum salmon fishing had been allowed to that point, sport fishing was closed throughout the drainage beginning August 11, and subsistence salmon fishing began closing in each district based on timing of the fishing periods that were currently in progress. The Yukon

Area Coastal District and Districts 1, 2, and 3 closed on August 11. District 4 (including the Koyukuk River) closed on August 14. Districts 5 and 6 (including the Old Minto Area and Kantishna River drainage) closed on August 16 and personal use salmon fishing in Subdistrict 6-C also closed on August 16.

With widespread subsistence salmon fishing closures in effect, managers attempted to allow subsistence harvest on the building coho salmon run and on non-salmon species. Subsistence fishing for non-salmon species remained open with gear restricted to gillnets with 4-inches or less mesh size and no longer than 60 feet. The freshwater tributaries of the Coastal District that do not flow into the Yukon River remained open 7 days per week with unrestricted gear. Under state regulations, subsistence fishing with a line attached to a rod or pole was allowed in that portion of the Yukon River drainage downstream of the lower mouth of Paimiut Slough. Federally qualified users were allowed to fish using hook and line gear in Federal Conservation System Units in accordance with Federal regulations. However, under both management regimes, all chum salmon caught with hook and line subsistence gear were required to be released immediately back into the water and a harvest limit for other salmon was set at a maximum of 10 per day per person. In addition, dip nets were allowed for subsistence fishing in the mainstem waters of Districts 1, 2, and 3 also with the condition that all chum salmon be released. Fish wheels were not allowed anywhere in the drainage. Additionally, no fishers reported using dipnets in 2002.

In mid August, 2 moderate size fall chum salmon pulses, close together in timing, entered the Yukon River mouth. The cumulative passage estimate at Pilot Station sonar increased to approximately 350,000 fish. Although the fall chum salmon run was weak, average numbers of coho salmon were returning to the Yukon River. On August 26, dip net gear was allowed in District 4 including the Koyukuk River to harvest coho salmon in an effort to allow some additional subsistence fishing opportunity while conserving fall chum salmon.

On August 29, approximately 360,000 fall chum salmon were estimated past Pilot Station Sonar and the end of season projection was for a total run of about 361,000 to 385,000 fish. The end of the last large pulse of fall chum salmon was estimated to be past the upper end of District 3, by August 24. In an effort to protect that pulse of fish, sections of the river were reopened sequentially after this group of fish passed upriver. Fishing time was then allowed to provide some opportunity to harvest the abundant coho salmon while continuing to conserve the weak fall chum salmon stocks. The Coastal District was opened to its full salmon schedule of 7 days per week because few salmon migrate close to the beach at that time of year. Districts 1, 2, and 3 were reopened with a reduced fishing schedule of two 18-hour periods each week, which was one-half their full regulatory salmon schedule beginning August 29. The Koyukuk River opened September 8 on a schedule of one 72-hour period each week. The remainder of District 4 also opened September 8, at half of the full schedule for two 24-hour subsistence salmon fishing periods each week.

As the season progressed, distribution of fall chum salmon was monitored closely to determine the portion of the run bound for the various identified spawning areas. The fall chum salmon run consists of 2 main components, an upper Yukon River component and a Tanana River component. Each of these components are also composed of smaller tributary spawning stocks. The Rapids test fish wheel provides the first opportunity to assess the upper Yukon River component as salmon migrate above the confluence of the Tanana River. The test fish wheel correlated with, lower river assessments that the first half of the run was weak and that most of

the strength was in the later portion of the run. For the same corresponding portion of the run, the Rapid/Rampart tagging, Chandalar sonar, Sheenjek sonar, Fishing Branch weir, and the DFO Border passage estimates all indicated upper Yukon River stocks were poor. Due to the late entry of fall chum salmon into the river, all projects in the upper Yukon River showed a relative increase in the second half of the run. The 2 outliers were the extremely high catch rates observed at the Rapids and DFO test fish wheels; which, among other factors, are assumed to be affected by high water events.

By the end of the first week in September, it became apparent that the upper Yukon River component would likely not meet most of its tributary escapement goals. The migration rate decreased as fall chum salmon passed through the Rapids area, so the sequential relaxing of the subsistence salmon fishing restrictions were delayed in the upper Yukon River to assure most fall chum salmon were allowed to pass.

Meanwhile in the lower river Districts 1, 2, and 3, nearly the entire fall chum and coho salmon runs had passed. These 3 districts were returned to the full regulatory subsistence salmon fishing schedule of two 36-hour periods each week beginning September 15 to allow some harvest of late entering salmon and fishing gear to target non-salmon fish species was unrestricted. District 4 was returned to the full subsistence schedule of two 48-hour periods per week and the Koyukuk River was returned to 7 days per week on the same date.

Subdistrict 5-A and District 6

Even though a substantial number of coho salmon spawn in the Tanana River, it was necessary to continue the subsistence salmon closure until the fall chum salmon run could be assessed in keeping with the conservative management approach. By the second week in September, fall chum and coho salmon began to peak in the Tanana River at the same time. Salmon tagging projects on the Kantishna and upper Tanana Rivers indicated the fall chum salmon run was larger than the previous 3 years. On September 13, Subdistricts 5-A, 6-A, and 6-B opened for a single 24-hour coho salmon directed subsistence fishing period. Only fish wheels equipped with either a “livebox” or a “live chute” were allowed to operate in order to release all chum salmon.

Both the coho and fall chum salmon runs into the Tanana River continued to build along with confidence in the passage estimate from the tagging projects. The fall chum salmon run into the Tanana River was assessed to be large enough to provide for established escapement goals and meet subsistence needs. Therefore, on September 17, Subdistricts 5-A, 6-A, and 6-B opened to the full subsistence salmon fishing schedule of two 42-hour periods per week to harvest both fall chum and coho salmon.

Personal use salmon fishing in Subdistrict 6-C, was opened to directed coho salmon fishing using restricted gear which included fish wheels equipped with either a “livebox” or “live chute” or dip nets. Both types of gear required that all chum salmon had to be released. This was in accordance with the Yukon River Drainage Fall Chum Salmon Management Plan that directed no personal use fall chum salmon fishing was to be allowed when the drainagewide total run size was assessed to be below 550,000 fish even though the Tanana River had an available surplus.

Subdistrict 5-B, 5-C, and 5-D

In contrast, the upper Yukon River monitoring projects on the Chandalar, Sheenjek and Fishing Branch Rivers as well as the U.S./Canada border passage estimate indicted that the upper Yukon River escapement goals would likely not be attained. By mid September the majority of fall

chum salmon had passed, Subdistricts 5-B and 5-C were opened on September 17 for a 12-hour subsistence salmon fishing period to allow fishers opportunity to harvest other fish species. Chum salmon catch rates and fishing effort was low during this opening, therefore both Subdistricts 5-B and 5-C were returned to the full regulatory subsistence salmon fishing schedule of two 48-hour periods each week beginning September 20.

When the Chandalar River was expected to reach its escapement goal, the drainage was opened for subsistence fishing on the full regulatory fishing schedule of 7 days per week on September 21. However, the Sheenjek sonar estimate, the Fishing Branch weir count, and the mainstem U.S./Canada Border tag estimate were still projecting fall chum salmon escapement goals would not be met. Since Subdistrict 5-D is very large, the subdistrict was divided at 22-Mile Slough into a lower and upper section. The lower section opened on September 23 to a 24-hour period to primarily allow subsistence fishing for non-salmon fish species after the majority of fall chum salmon had passed. On September 27, both the lower and upper sections opened to a 24-hour period to also allow additional subsistence fishing opportunity for non-salmon species after most fall chum salmon had crossed the U.S./Canada Border.

On September 28, the Yukon River Coastal District, Districts 1, 2, 3, 4, and Subdistricts 5-A, 5-B, and 5-C were opened to subsistence fishing 7 days per week to all types of legal subsistence fishing gear including fish wheels and gillnets with unrestricted mesh size. Subdistrict 5-D opened similarly 3 days later on October 1 to provide additional protection to the tail end of the weak fall chum salmon run.

Although the Tanana River was experiencing adequate escapements of fall chum salmon in most portions, attaining the Toklat River regulatory optimal escapement goal (OEG) was uncertain. According to the Tanana River Salmon Management Plan, the subsistence fishing schedule is limited to a maximum of two 42-hour periods each week except for the Kantishna River which could open to as much as 7 days per week. Since the Toklat River is a tributary to the Kantishna River, the two 42-hour periods per week subsistence fishing schedule was maintained in the Kantishna River to conserve fall chum salmon in that portion of the river. Use of all legal subsistence fishing gear to harvest of non-salmon species was authorized beginning October 1 in the Tanana River.

The overall 2002 fall chum salmon subsistence harvest was well below average. Because of the subsistence fishing restrictions for fall chum salmon, the coho salmon subsistence harvest was below average. The Pilot Station sonar project ended August 31 with a fall chum salmon passage estimate of 360,000 salmon with an approximate 90% confidence interval range of 330,000 to 389,000 salmon. Pilot Station only provides an estimate of the number of salmon passing the site during its operational period. An estimate of the total Yukon River fall chum salmon run size requires an estimate of the passage by the sonar site after operations end and an estimate of harvests below Pilot Station. The projected end of season total fall chum salmon run past the Pilot Station site was estimated to range from 361,000 to 385,000 fish.

Fall Season Commercial Fishery 2002

There has been no commercial fishing for fall chum or coho salmon since 1999. In the previous 10 fall seasons (1992-2001) the average commercial salmon harvest was 49,400 fall chum salmon (30,500 Lower Yukon Area, 18,900 Upper Yukon Area; Appendix A6) and 15,200 coho salmon (12,500 Lower Yukon Area, 2,700 Upper Yukon Area; Appendix A7). The previous 10-year commercial fall chum and coho salmon seasons combined values for the Yukon Area

averaged $47,700 ($30,800 Lower Yukon Area, $16,900 Upper Yukon Area). In the previous 10 fall seasons, an average of 130 permit holders fished the fall chum and coho salmon fishery (118 Lower Yukon Area, 12 Upper Yukon Area). As with other years with no commercial fishing, no test fish sales were made for either fall chum or coho salmon. Historical commercial harvest by statistical area is presented in Appendices C4 to C19. Appendices C2 and C3 present historical commercial salmon sales and estimated harvest by gear type, set gillnet and fish wheel, respectively.

CANADIAN FISHERIES 2002

A total of 9,257 Chinook salmon, 8,018 chum salmon, and 475 coho salmon were harvested in the 2002 Canadian fisheries (Table 2; Appendices A17, A19, and A20), including fish harvested in Canadian commercial, sport, domestic and test fisheries. (JTC 2006).

Canadian Commercial Fishery 2002

A total of 708 Chinook salmon, 3,065 chum salmon and 17 coho salmon were harvested in the Canadian Yukon River commercial fishery in 2002 (Table 2). The combined species catch of 3,790 salmon was 81% below the previous 10-year average commercial harvest of approximately 20,200 salmon. Since 1997, poor catches have resulted from below average run sizes of Canadian-origin Yukon River Chinook and chum salmon.

A total of 21 commercial licenses were issued in 2002, three more than in 2001. Roughly two-thirds of the 2002 licensees opted not to fish in 2002 because of below average run sizes and limited opportunities to fish.

Chinook Salmon

The 2002 preseason expectation for Canadian-origin mainstem Yukon River Chinook salmon was for a total run of approximately 49,000 fish. A run of this size would be well below average when compared to the previous cycle average of approximately 93,000 fish (1996-2001). The outlook was driven by uncertainty associated with marine survival of the fish that spawned between 1994 and 1999. The potential for reduced marine survivals has been made apparent by the poor run sizes of Canadian-origin Yukon Chinook salmon in the 1998 to 2001 period, which were lower than expected despite healthy brood year escapements.

Key elements of the 2002 Canadian Integrated Fisheries Management Plan (IFMP) for Yukon Chinook salmon developed by the Yukon Salmon Committee (YSC):

i. an escapement target of 28,000 Chinook salmon. This goal was consistent with the Yukon Panel recommendation from the March 2002 Panel meeting. The YSC was willing to tolerate restricted First Nation fisheries so long as the spawning escapement was greater than 18,000 Chinook salmon and the First Nation catch was consistent with Yukon Salmon Agreement harvest sharing provisions;

ii. closures in the commercial, recreational and domestic fisheries would be in place from the beginning of the season until inseason run projections indicated the priorities for conservation, i.e. spawning escapement and First Nation harvest, would be achieved.

Similar to 2001, the plan described a series of management categories (Red, Yellow and Green Zones) which were bound by specific reference points (run sizes into Canada) and were associated with expected management actions. For example, the Red Zone included run

projections of less than 19,000 fish. Projections falling in the Red Zone would result in all fisheries being closed except for the test fishery, which would operate for assessment purposes providing the projected run size was not less than 11,000 fish. No test fishery would be allowed if the run projection was less than 11,000. In the Yellow Zone, which was described as a run size projection in the 19,000 to 37,000 range, only the First Nation fishery and an assessment test fishery would operate. Restrictions in the First Nation fishery would depend on the run abundance, increasingly more severe the closer the run projection was to 19,000, i.e. the lower end of the Yellow Zone. The Green Zone included run size projections greater than 37,000 Chinook and indicated that First Nation fisheries would be unrestricted and that harvest opportunities in the commercial, recreational, and domestic fisheries would be considered depending on abundance and international harvest sharing provisions.

With a total run outlook of 49,000 fish (at the river mouth), it was expected that the proposed restrictions in Alaska would result in a border escapement of approximately 33,000 Chinook salmon, or roughly the three-quarter point of the Yellow Zone. This meant the likelihood of no commercial, domestic or recreational fisheries and a 25% reduction in the First Nation fishery. Hence the season commenced with closures in place for all fisheries except First Nation fisheries, which, after a series of community meetings, agreed to follow a conservative approach until inseason indicators became available.

Throughout June, before Chinook salmon had entered the Canadian section of the upper Yukon River, Alaskan test fishing and sonar projects near the river mouth indicated run abundance was larger than 2001 and adequate to provide for escapement, subsistence fishing, and a small commercial salmon harvest. However in early July, run abundance was downgraded to a run size similar to, or larger than, 2001 and was cast as “below average” and lower than initially projected. Run timing was described as normal, based on the average run timing for 1989-2001.

Fish started to appear in DFO fish wheels on June 28, which is when Chinook usually first appear. Throughout the run, the cumulative daily fish wheel catches remained well below average, initially suggesting the run was weak. The primary purpose of the DFO fish wheels is to live-capture salmon throughout the run for tagging purposes; fish are tagged and released. Recoveries of tagged fish primarily in the Dawson area commercial fishery allow assessment biologists to estimate the abundance of fish throughout the season. Inseason projections of the total run (into Canada) are made by expanding the abundance estimates by historical run timing. The projections based on the tagging data are therefore a key component in management decisions.

The closure in the commercial fishery created the need to implement a test fishery to provide stock assessment data for inseason run forecasting. The test fishery operated similar to that of 2001 involving both First Nation and commercial fishers working under the direction of the Tr’ondek Hwech’in First Nation and the Yukon River Commercial Fishing Association with funding provided from the R&E Fund. The objective of the test fishery was to collect timely catch and tag recovery data that could be used in developing reliable inseason run forecasts. All fish caught in the test fishery were distributed under direction from the Tr’ondek Hwech’in First Nation. Without the tagging data, there would be little else upon which to rely for inseason run assessment. The option of just using the DFO fish wheel catch was not exercised because of the poor historical relationship between catch and run size. Unlike the previous 2 years, which were characterized by abnormally high water conditions, low water conditions prevailed in 2002 raising doubts regarding the comparability of catches this year with other years.

The Chinook test fishery commenced July 6 and continued through the remainder of the month with 2 to 4 fishers fishing 48 hour periods/week to obtain mark-recapture data for run projections. The first inseason border escapement run projection was produced in statistical week 29 (e.g. the week beginning July 14, indicating a run size of 39,000 Chinook (range: 27,000 to 68,000). The wide range around the projection was attributed to uncertainty over run timing; the lower end of the range was based on the assumption that the run timing was 1 week earlier than normal, whereas, the upper end of the range was based on an assumption of normal run timing. At this point, it was unclear from the DFO fish wheel data which timing assumption to place the most confidence in, normal or early. ADF&G had characterized the run timing as "normal" in the lower river based on test fishing and sonar results. However, inseason reports from the 2002 Yukon Chinook radio telemetry program consistently indicated that Chinook migration rates for upriver stocks were much higher than expected. It was surmised that "normal" run timing at the mouth of the river could transform into earlier than normal run timing in the upper river. The run projection of 39,000 Chinook salmon which was developed for management purposes in mid July incorporated some of the uncertainty over run timing and was in the lower end of the Green Zone (e.g. greater than 37,000). As a result, First Nation fisheries were advised July 18 that a normal fishery could proceed. However, closures in all other fisheries were continued until it became apparent that the run projections would likely continue to fall in the Green Zone.

By July 25, the run projection had increased to approximately 44,000 (range: 38,000 to 53,000), which was not only sufficient to allow for a normal First Nation fishery, but was also large enough to provide limited fishing opportunities in the recreational, commercial, and domestic fisheries. Salmon retention in the recreational fishery commenced July 29 and a 48-hour fishing period was announced for the commercial and domestic fisheries starting at noon July 29. Six commercial fishers participated in this first opening, catching a total of 309 Chinook salmon.

With a surge in DFO fish wheel catches in late July, it became apparent that early run timing assumptions were not valid. Run projections continued to hover around 45,000 Chinook salmon through August 06, prompting continuation of the salmon retention provisions in the recreational fishery and an additional opening in each of the commercial and domestic fisheries. The second commercial opening included a 72-hour period (August 2-5) in the section of the Yukon River downstream from the White River/Yukon River confluence with an additional 24 hours allowed in the area upstream of the White River. Participation in this opening increased by 1 fisher and the catch totaled 378 Chinook salmon. The second opening in the domestic fishery was for 4 days from August 2-6.

Catches in the DFO fish wheels rapidly declined during the first week of August and continued to taper off thereafter indicating little strength left in the run. Inseason run projections after August 6 declined to approximately 36,000 resulting in no further commercial or domestic fishery periods for Chinook salmon.

The total catch of Chinook salmon taken in the commercial fishery was 708 fish of which 687 were taken in the "Dawson area" fishery, downstream from the confluence of the Yukon and White Rivers, and 21 Chinook salmon were caught in the "upper fishing area". The fishery was open for a total of 5 days and total fishing effort was 33 boat-days. For comparison, the previous 10-year average (1992-2001) commercial catch is 6,478 Chinook and the average effort is 170 boat-days (note: these averages include data from 1998 to 2001 when the fishery was severely restricted or closed).

Fall Chum and Coho Salmon

The preseason expectation for Canadian-origin Yukon River chum salmon was for a poor run. Spawning escapements in the mainstem Canada in 1997 and 1998, the primary brood years contributing to the 2002 run, were 85,400 and 46,300, respectively. The 1997 escapement had achieved the rebuilding target of >80,000 chum salmon, whereas the 1998 escapement was well below it. Although the runs in 1998 through 2001 were the product of excellent spawning escapements, the run sizes were well below average appearing to have been significantly impacted by poor marine survival. Managers surmised that poor survival could once again result in a depressed run in 2002. To capture this uncertainty, the total run outlook was expressed as a range from 37,000 (poor), to 144,000 (above average) Canadian-origin Yukon River chum salmon. The lower end of this range was more likely, given the weak runs over the previous 4 years.

The Canadian chum salmon management plan for 2002 acknowledged the likelihood of a poor return and contained the following key elements:

1) A spawning escapement target of 60,000 Canadian-origin Yukon River chum salmon which was consistent with Yukon Panel recommendation of March 2002; and
2) Given the expectation for a poor run, the commercial fishery would be closed until inseason run projections indicated the spawning escapement and First Nation requirements were likely to be achieved.

Funding was approved from the 2002 R&E Fund budget for a live-release test fishery to operate in the Dawson City area to obtain tagging data for run size estimates. This project, conducted jointly by the Yukon River Commercial Fishing Association and the Tr'ondek Hwech'in First Nation, marked an improvement over previous years. Prior to this year, run projections were generated either from DFO fish wheel catch data, which had proven to be of marginal reliability in recent years, or from mark-recapture data collected from the commercial fishery. Commercial data was reliable but with the fishery initially planned to be closed in 2002, it would be lacking.

As per the Chinook management plan, a decision matrix was included in the chum salmon plan with Red, Yellow and Green management zones described by specific reference points (run sizes into Canada) and expected management actions. The Red Zone included run projections of less than 40,000 fish when closures in all fisheries except for the test fishery could be expected. The Yellow Zone included run projections in the 40,000 to 63,000 range; in this zone, the commercial, domestic and recreational fisheries would be closed and the First Nation fishery would be reduced with restrictions increasingly more severe the closer the run projection was to the lower end of the Yellow Zone. The Green Zone included run size projections greater than 63,000 chum salmon and indicated that First Nation fisheries would be unrestricted and that harvest opportunities in the commercial, recreational and domestic fisheries would be considered depending on run abundance and international harvest sharing provisions.

Throughout August, chum catches in the DFO fish wheels remained low suggesting the run was below average. Although still very early in the Canadian-origin Yukon chum salmon season, this was consistent with run status indicators in the Alaskan portion of the river where the run was also described as weak. The test fishery, which consisted of 3 fish wheels equipped with live boxes fishing 2 days per week, operated throughout September. Border escapement projections through mid September were in the 28,000 to 42,000 range resulting in a continuing closure in

the commercial fishery. A significant pulse of chum salmon crossed the border in late September causing the run projections to increase. By October 1, the projection had reached 68,000 chum salmon (Green Zone), which resulted in the scheduling of a 96-hour commercial fishing period from October 2-6. Because of the lateness in the fishing season, only 4 fishers participated in this first chum salmon opening, which netted 2,608 chum salmon and 12 coho salmon. Most of the catch was used for personal needs and was not sold. A second 96-hour commercial opening occurred October 9-13 after the run projection had been updated to approximately 72,000 fish. Participation in this last chum opening dropped to 2 fishers and the catch included 456 chum and 5 coho salmon. No further commercial openings were posted because of declining abundance and inclement fishing conditions.

The total commercial Canadian-origin chum catch of 3,065 fish was 78% below the previous 10-year average (Appendix A19). For comparison, the previous 10-year average (1992 to 2001) commercial catch is 13,700 chum salmon; during this period the catch ranged from 0 chum salmon in 1998 to 39,012 chum salmon in 1995. With only 2 fishing periods, total fishing effort was well below average in 2002: 21 boat-days of effort compared to the 1992-2001 average of 82 boat-days. The total commercial catch of 17 coho salmon was the highest ever recorded. Coho salmon are not usually encountered in the Dawson area fisheries; when they are, they generally appear in October just before freeze-up. It is possible that coho salmon migrate into the upper Yukon River drainage after freeze-up and as a result have gone virtually undetected in the past.

Canadian Aboriginal, Domestic and Sport Fisheries 2002

The seventh year of a multi-year comprehensive survey of the Aboriginal fishery was conducted in 2002 as part of the implementation of the Yukon Comprehensive Land Claim Umbrella Final Agreement. The project entitled: *The Yukon River Drainage Basin Harvest Study*, is being conducted by LGL Limited Environmental Research Associates, and primarily involves intensive inseason surveys of catch and effort in the fishery throughout the Canadian portion of the upper Yukon River drainage, excluding the Porcupine drainage. Catch estimates from the Porcupine River in the Old Crow area are determined independently from locally conducted, postseason interviews.

Preseason expectations for a below average Chinook salmon run resulted in recommendations for a reduced harvest by Yukon First Nations. Plans were developed whereby fisheries would be restricted to approximately 75% of a normal harvest if required. By mid July it was determined that the run was better than expected and First Nations were notified on July 18 that conservation concerns were diminished to the point where a normal level of harvest would be permitted. The estimate of the 2002 total Canadian-origin Yukon River Chinook salmon catch in the Aboriginal fishery is 7,138 fish (std = 389) (Appendix A17), 2% below the 10-year average (1992-2001) of 7,254 Chinook and 4% below the final estimate of 7,421 (std = 263) Chinook in 2001. The total fishing effort during the Chinook season was 32,389 net-hours, which was 23% above the 1996-2001 average of 26,384 net-hours.

Fishing effort in upper Yukon First Nation fisheries was low during the early part of the chum salmon season. However, border escapement projections through mid September were in the 28,000 to 42,000 range resulting in consultations with First Nations about conservation concerns and restrictions in the principal First Nation fisheries. Following these discussions, the Dawson area Tr'ondek Hwech'in First Nation fishery was reduced to 1 day of fishing per week effective

September 17 and the Selkirk First Nation fishery was restricted to 2 days/week effective September 22. A significant pulse of chum salmon crossed the border in late September causing the run projections to increase. On September 25, the projection had increased to the 59,000 to 61,000 range, i.e. the upper end of the Yellow Zone, prompting the removal of all restrictions in First Nation fisheries for the remainder of the season. The estimate of the 2002 harvest of Canadian-origin Yukon River chum salmon in the Aboriginal fishery is 3,093 fish (std = 451) through October 25 (Appendix A19). Although the fishery is virtually complete by late October, small numbers of chum salmon may be harvested during early November in the Selkirk First Nation fishery near Minto. This estimate is 27% above the 1992-2001 average of 2,434 chum salmon. The preliminary estimate of total fishing effort during the chum season (September on) was 2,468 net-hours, approximately 10% above the 1996-2001 average of 2,240 net-hours.

Because of the anticipated poor return of fall chum salmon to the Porcupine River drainage, the Vuntut Gwitch'in First Nation of Old Crow agreed in preseason consultations to reduce chum salmon harvests to approximately 25% of the normal allocation of 6,000 fish. Inseason, run status indicators in the Alaska portion of the drainage in combination with poor early season counts at the Fishing Branch River weir resulted in the implementation of a weekly conservation closure on the Porcupine River. As of September 4, fishing was restricted to 2 days per week to a maximum harvest allocation of 1500 chum salmon. Further opportunities for chum harvest on the Porcupine River were examined as the season progressed, however little improvement in run strength was demonstrated through the Old Crow fishery catches or by expanding Fishing Branch weir counts by historical timing. The closure remained in effect until October 11, at which time chum passage in the vicinity of Old Crow was considered complete and the restriction was lifted to allow for directed coho salmon harvests.

Detailed harvest data from the Vuntut Gwitch'in First Nation fishery near Old Crow on the Porcupine River are 188 Chinook, 1,860 chum, and 449 coho salmon. The 1992-2001 average catch in this fishery includes 298 Chinook salmon (Appendix A17), 4,010 chum (Appendix A19), and 209 coho salmon (Appendix A20). These catches are included in the Canadian total utilization numbers charted in Table 2.

The estimate of the total domestic fishery catch is 59 Chinook salmon (Table 2). Because of the preseason expectation for a poor run, the domestic fishery did not open until it was determined that more the 28,000 Chinook salmon would likely make it to the spawning grounds. This determination was made at the end of July allowing the fishery to open for 2 fishing periods: July 29–31 and August 02–06. Effort was low with only 3 fishers reporting catches.

In 1999, a mandatory Yukon Salmon Conservation Catch Card was introduced by the Yukon Salmon Committee in an attempt to improve harvest estimates and to serve as a statistical base to ascertain the importance of salmon to the Yukon sport fishery. Anglers are required to report their catch via mail by the late fall. Information requested includes: the number, sex, size, date, and location of salmon caught and released.

Because of preseason conservation concerns, the retention of Chinook salmon in the recreational fishery was prohibited from June 24 through July 28. Retention was allowed with normal catch and possession limits (2 Chinook/day, 2-day possession limit) from July 29 to August 20. Thereafter, salmon non-retention was re-introduced again because of conservation concerns.

Estimated catches from Yukon Salmon Conservation Catch Card returns in 2002 were as follows: 128 Chinook, 0 chum and, 9 coho salmon (Table 2). Yukon Salmon Conservation Catch Card return rates were 74.4% in 1999, 81.3% in 2000, and 72.1% in 2001.

ESCAPEMENT 2002

Summer Season Escapement 2002

Beginning in 2001, Chinook salmon BEGs on the Chena and Salcha Rivers and summer chum salmon BEGs on the Anvik and Andreafsky Rivers were based on spawner-recruit analysis. Prior to 2001, most BEGs were generally established using a simple escapement averaging methodology based on aerial survey counts. Escapement goals based on aerial survey counts are now referred to as SEGs. A number of escapement monitoring projects (counting towers and weirs) were established between 1993 and 1995. Although the database for these projects is still quite limited and no goals have been set for them yet, comparisons can be made between the current year and the recent project average. Most of these are cooperative projects: Nulato tower operated by the Nulato Tribal Council, BSFA, and ADF&G; Kaltag Creek tower project operated by the City of Kaltag and funded by the Alaska Cooperative 4-H Extension Service, and BSFA; Clear Creek tower (a tributary of the Hogatza River within the Koyukuk River drainage) operated by USFWS and TCC; East Fork Andreafsky, Gisasa River, and Henshaw Creek weirs operated by USFWS; Tozitna weir operated by BLM; Chena River tower operated by ADF&G and BSFA; and the Salcha River tower operated by BSFA.

Chinook Salmon Escapement

Yukon River Chinook salmon escapement abundance in 2002 was assessed as average or better for the second consecutive year. This assessment is based on escapement counts and estimates from selected tributaries. Still, production from the 1996 and 1997 parent year appears to have been poor based on the overall low run abundance. It was noted throughout escapements and fisheries, the increased number of age-4 fish. This may be a positive indication for runs in the next few years. Because of a dry summer with little rainfall, successful aerial survey observations were made in 6 of the 8 Yukon River index tributaries used for escapement assessment. Substantial rainfall in the Tanana River drainage deterred successful aerial surveys in the Chena and Salcha Rivers. Minimum aerial survey SEGs have been established in the East and West Fork Andreafsky, Anvik, North and South Fork Nulato, and Gisasa Rivers. For tributaries surveyed under acceptable conditions, all aerial survey objectives were met with the exception of the West Fork Andreafsky and Gisasa Rivers.

The East Fork Andreafsky River weir count for Chinook salmon was 4,123 (Appendix E4). An aerial survey count on the East Fork Andreafsky was 1,447 Chinook salmon. This is very near the aerial survey SEG of 1,500. Under good conditions, 917 Chinook salmon were counted on the West Fork Andreafsky, roughly two-thirds the SEG. Age and sex composition samples were collected in 2002 from fish passing through the East Fork Andreafsky weir trap. The estimated age composition was 30.5% age-4, 48.2% age-5, 20.0% age-6 and 1.4% age-7 fish. The sex composition of the samples was 21.1% females and 78.9% males.

An aerial survey of the Anvik River conducted under fair conditions resulted in a count of 1,713 Chinook salmon (Appendix E4). This count is above the aerial survey SEG of 1,300 Chinook salmon. Age and sex composition samples were collected in 2002 by carcass survey. Age-6 Chinook salmon samples comprised 34.2% of the total with age-4 and age-5 fish (19.5% and

43.1%, respectively) comprising the remainder. The sex composition of the samples was 28.8% females and 71.2% males.

The minimum aerial survey index SEG for the North Fork Nulato River is 800 Chinook salmon and 500 for the South Fork. Aerial surveys were rated good for both tributaries. The aerial survey count of Chinook salmon was 687 for the North Fork and 897 for the South Fork for a combined aerial survey count of 1,584 (Appendix E4). This is above the combined escapement objective of 1,300 Chinook salmon. The Nulato River escapement project was to become a weir in 2002 but because of high water early in the season, the weir was not installed. The tower count for 2002 was 2,696 Chinook salmon (Appendix E4).

The minimum aerial survey SEG for the Gisasa River of 600 Chinook salmon was not met, with an aerial survey count in 2002 of 506 Chinook salmon (survey rating good). The weir passage estimate was 2,025 Chinook salmon (Appendix E4). The estimated age composition from scale samples was 31.9% age-4, 41.8% age-5, 23.4% age-6 and 2.9% age-7 fish. The sex composition of the samples was 20.7% females and 79.3% males.

A weir was operated on Henshaw Creek between June 29 and August 2. This was the second successful year of operation of a multi-year monitoring effort using a weir to estimate escapement in this river. A counting tower located near the mouth of Henshaw Creek was used in 1999 and aerial surveys have been conducted intermittently since 1960. The escapement through the weir was estimated at 648 Chinook salmon, roughly two-thirds of the 2001 count of 1,091 fish. An aerial survey counted 112 Chinook salmon on July 28 under fair conditions. The age composition from scale samples was 30.3% age-4, 36.0% age-5, 31.4% age-6 and 2.3% age-7 fish. The sex composition of the samples was 30.8% females and 69.2% males.

Aerial surveys were flown on selected Koyukuk River tributaries. Unacceptable to poor conditions existed for surveys on the Jim and South Fork Koyukuk Rivers. Therefore, results are incomplete and are not detailed in this report.

BLM operated a weir project on Tozitna River between June 22 and August 7. The project operated as a counting tower in 2001 and converted into a floating weir this year. The preliminary escapement estimate past the weir was 1,441 Chinook salmon. This escapement estimate is roughly half of the 2001 tower project's estimate of 2,825 Chinook salmon. The estimated age composition from scale samples was 0.6% age-3, 43.3% age-4, 37.9% age-5, 17.6% age-6 fish and 0.6% age-7 fish. The sex composition of the samples was 12.8% females and 87.2% males.

Tower counting operations on the Chena River began on June 27 and ended on July 25. High water between July 4-14 and July 22 and 23 interrupted counting. Because of the missed counts during the peak of the run, and the duration of counts missed, a mark-recapture study was conducted. Results indicate the Chinook salmon run into the Chena River was approximately 6,967 fish (Appendix E4). This escapement estimate is near the recommended upper end of the BEG range of 5,700 Chinook salmon. Because of poor survey conditions throughout the season, no acceptable aerial surveys were completed. Age, sex and length data were collected in 2002 from both electro-shocking and carcasses surveys. The combined age composition estimated from all samples collected in the Chena River was 0.1% age-3, 29.0% age-4, 29.8% age-5, 38.5% age-6 and 2.7% age-7 fish. The sex composition of the samples was 31.7% females and 68.3% males.

Tower counting operations on the Salcha River began on July 29 and ended on August 10. Similar to the Chena River, counting was interrupted by high water between July 4 to 15, July 22, and July 27. The raw escapement count, without interpolations for days missed, was 4,814 Chinook salmon. This is within the recommended BEG range of 3,300-6,500 Chinook salmon. Expansions were calculated for the missed counting days in 2002, resulting in a passage estimate of 8,850 Chinook salmon (Appendix E4). An early aerial survey count on the Salcha River, under fair conditions was 2,416 Chinook salmon. Age, sex and length data were collected in 2002 by carcass survey. The estimated age composition was 36.2% age-4, 13.8% age-5, 38.7% age-6, and 11.3% age-7 fish. The sex composition of the samples was 34.8% females and 65.2% males.

Results of the DFO 2002 mark-recapture tagging project at the U.S./Canada border indicated a total spawning escapement for the Canadian portion of the upper Yukon River drainage of approximately 40,145 Chinook salmon (Appendix E5). Spawning escapement is based on the abundance of Chinook salmon derived from the border passage estimate minus the Canadian mainstem Yukon River harvests. The interim escapement target for 2002 was 28,000 Chinook salmon. Age, sex, and length data were collected from the border fish wheels as the Chinook salmon were marked and released. The estimated age composition for Chinook salmon samples collected from the border fish wheels was 1.5% age-3, 40.4% age-4, 35.4% age-5, 21.1% age-6, and 1.7% age-7 fish. The sex composition of the samples was 20.4% females and 79.6% males (Price 2003).

DFO conducted aerial surveys of the Little Salmon, Big Salmon, Wolf, and Nisutlin River index areas. Two surveys were flown for each area. Index surveys are rated according to fish countability. Potential ratings include excellent, good, fair and poor. Historical counts are documented in Appendix E5.

The Little Salmon aerial surveys were flown on August 15 and 24. Countability was rated as good to excellent for the first survey and good for the second survey, which had high water conditions. One surveyor participated in the first survey and 2 surveyors participated in the second survey; the total counts were 526 and 172 Chinook salmon, respectively. The first count was 83.7% of the recent average (1992-2001) of 630 and both counts were much higher than the 2000 count of only 46 Chinook salmon.

The Big Salmon, Nisutlin, and Wolf River index areas were flown on August 16 and 23, with 2 surveyors participating in both surveys. Excellent survey conditions were encountered on the first survey date and poor to good survey conditions on the second survey. Counts of 1,149 and 231 Chinook salmon were obtained in the Big Salmon River index area. The early survey was 12.8% higher than the recent 10-year average of 1,019 Chinook salmon. The Nisutlin River index counts were 280 and 67 Chinook salmon, respectively. The early count was 86.9% of the recent average of 322 Chinook salmon. In the Wolf River index area, counts of 84 and 34 Chinook salmon were recorded; the early count was 36.4% of the recent average of 231 fish, but it was much higher than the record low count of 32 Chinook salmon observed in 2000. The timing of the early aerial surveys of the Little Salmon, Big Salmon, Nisutlin, and Wolf Rivers appeared to be very close to peak spawning. This survey was conducted approximately 1 week earlier than the peak survey date chosen in recent years. There is some anecdotal information that peak spawning occurred earlier in 2002, however, the use of 2 aerial surveys should be continued to determine if what was observed this year was a 1-year event or a trend. The Blind Creek and Tatchun Creek weirs were not operated in 2002.

The Yukon Commercial Fishers Association and the Tr'ondek Hwetch'in First Nation attempted to install a resistance board weir on the Chandindu River in 2002. This is the fifth year that a weir has been in operation at this location. Problems were encountered during the installation and operation of this weir in previous years and it was thought that a resistance board weir would be the more suitable structure for the site. However, there were operational problems associated with the resistance board; it was not totally installed and no fish were counted in 2002. A conventional conduit weir was operated from July 01 to September 8, 2001, however, the weir was breached by high water conditions, which occurred from July 31 to August 7. A total of 129 Chinook and 29 chum salmon were counted in 2001. In 2000, the weir was installed much later than anticipated because of high water conditions and 4 Chinook and 21 chum salmon were counted. Previous counts were 239 Chinook and 92 chum salmon in 1999, and 132 Chinook and 23 chum salmon in 1998.

The Whitehorse Rapids Fishway Chinook salmon count of 605 fish, provided by the Yukon Fish and Game Association, represents 44.1% of the recent average (1992-2001) of 1,371 fish. The sex composition observed at the fishway was 36.9% female. Hatchery produced fish accounted for 39.0% of the return and consisted of 198 males and 38 females.

Summer Chum Salmon Escapement

Postseason analysis of escapement data indicates the 2002 summer chum salmon escapement levels were below average, but well above escapements observed since 1998 (Appendix E6). Aerial surveys were conducted in conjunction with Chinook salmon surveys. Because the Chinook salmon peak spawning is dissimilar to summer chum salmon, aerial surveys in 2002 are not considered acceptable for summer chum and are not reported. Aerial survey index counts do not represent the total escapement to the spawning tributary. BEG ranges based on a spawner-recruit analysis for summer chum salmon have been established for the Anvik and Andreafsky Rivers (Appendix E1).

The Anvik River sonar-based escapement count of 462,396 summer chum salmon (Appendix E6) was just above the low end of the BEG range of 400,000 to 800,000 and 30% below the recent 10-year average (1992-2001) of 664,191 chum salmon. The 2002 run were primarily from parent-year escapements of 609,118 in 1997 and 471,865 in 1998; escapements that were within the current BEG range. Production from these brood years was well below average. Age, sex, and length data were collected in 2002 by beach seine. The estimated age composition was 1.9% age-3, 76.2% age-4, 20.0% age-5, and 1.9% age-6 fish. The sex composition of the samples was 60.0% females and 40.0% males.

The estimated escapement for chum salmon into the East Fork Andreafsky River in 2002 was 44,194 (Appendix E6). Weir-derived BEG and aerial survey SEG ranges have been established for each fork of the Andreafsky River. The weir-derived BEG is 65,000-135,000 and the aerial survey SEG is 35,000-70,000 summer chum for each fork. Aerial surveys were conducted on the east and west forks for summer chum salmon in 2002. However, because of poor weather conditions, the surveys were not conducted at peak spawning activity for chum salmon. Therefore, these results are not useable. Age, sex and length data were collected in 2002 from the weir trap. The estimated age composition was 0.9% age-3, 83.5% age-4, 12.3% age-5, 3.0% age-6, and 0.4% age-7 fish. The sex composition of the samples was 54.3% females and 45.7% males.

The escapement estimate of summer chum salmon past the Gisasa River weir in 2002 was 33,481 fish (Appendix E6). The age composition of samples collected was 0.6% age-3, 60.1% age-4, 36.9% age-5, and 2.4% age-6 fish. The sex composition of the samples was 47.7% females and 52.3% males.

The escapement estimate of summer chum salmon past the Henshaw Creek weir in 2002 was 25,249 fish. This escapement was nearly identical to the 2000-2001 average of 26,312 fish. Age, sex, and length data was were collected at the weir trap. The estimated age composition from scale samples was 0.1% age-3, 15.7% age-4, 80.1% age-5, and 4.0% age-6 fish. The sex composition of the samples was 60.6% females and 39.4% males.

The Kaltag Creek tower project counted 13,583 summer chum salmon (Appendix E6). This escapement is highest escapement since 1997, but 61% below the 1994-2000 average of 34,851 fish. Limited counting occurred in 2001 because of high water.

The Nulato River escapement project was to become a weir in 2002, but because of high water early in the season, the weir was not installed. The tower count for 2002 was 72,286 chum salmon (Appendix E6). This count is well below the (1994-2000) average of 110,978 but twice the 1998-2000 average of 34,508. The project did not operate in 2001 because of high water. Age, sex and length data were collected at the weir trap. The estimated age composition from scale samples was 0.3% age-3, 61.8% age-4, 36.1% age-5, and 1.9% age-6 fish. The sex composition of the samples was 29.2% females and 70.8% males.

The summer chum salmon escapement estimate for the Tozitna River weir was 18,792 fish. This escapement estimate is roughly 50% more than the 2001 estimate of 12,383 summer chum salmon. Age, sex, and length data were collected from the weir trap. The estimated age composition from scale samples was 0.8% age-3, 19.3% age-4, 73.3% age-5, 6.3% age-6, and 0.3% age-7 fish. The sex composition of the samples was 36.1% females and 63.9% males.

A counting tower project on Clear Creek, a tributary of the Hogatza River, operated between June 22 and August 2. The estimated escapement of 13,150 chum salmon (Appendix E6) this year was well below the average of 63,295, but was more than three times the 2001 escapement of 3,674 fish. No aerial surveys were flown because of poor weather conditions. The estimated age composition from samples collected was 1.1% age-3, 23.3% age-4, 72.6% age-5, and 3.0% age-6 fish. The sex composition of the samples was 51.6% females and 48.4% males.

High, turbid water periodically hampered visibility on tower-counting operations on the Chena and Salcha Rivers during the 2002 season. Aerial surveys were also limited because of poor conditions. The summer chum salmon counts of 1,080 into the Chena River and 20,837 into the Salcha River are considered minimal.

Fall Season Escapement 2002

Fall Chum Salmon Escapement

Major fall chum salmon spawning areas within the Yukon River drainage are located in the Chandalar, Tanana, and Porcupine River drainages and within the Canadian portion of the mainstem Yukon River drainage. Appendix E7 presents historic fall chum salmon escapement data for selected streams since the early 1970s. Biological escapement goal ranges have been developed for total spawning abundance for 4 fall chum salmon streams within the Alaskan portion of the drainage as follows: 6,000 to 13,000 for the Delta River, 15,000 to 33,000 for the

Toklat River, 50,000 to 104,000 for the Sheenjek River, and 74,000 to 152,000 for the Chandalar River. Two composite goals were also developed to include the upper Yukon tributaries consisting of Chandalar, Sheenjek, and Fishing Branch Rivers at 152,000 to 312,000 fall chum salmon and the Tanana River consisting of estimates of the upper Tanana River stocks based on mark-recapture and the Toklat River stream survey counts providing a range of 61,000 to 136,000 fall chum salmon (Eggers 2001). The Canadian portion of the Porcupine River drainage retains its minimum biological escapement goal of 50,000 fall chum salmon for the Fishing Branch River as adopted in the U.S./Canada Yukon Panel agreement. Additionally, annual estimates of border passage and subsequent spawning escapement also exist for Canadian fall chum stocks in the upper mainstem Yukon River. The minimum escapement goal for those stocks is typically 80,000 fall chum salmon (border passage less harvest).[1] However, in 2002 the Yukon Panel recommended an escapement target of 60,000 fall chum salmon based on recent poor productions. The recommended biological escapement goal for the drainagewide Yukon River is 300,000 to 600,000 fall chum salmon.

In general, the 2002 fall chum salmon run was characterized as having poor strength with the strongest component arriving late in the run and run was assessed to be approximately 6 days later than average. The coho salmon run timing was average. The inseason sonar passage estimate at Pilot Station was approximately 360,000 fall chum salmon for the 44-day period of July 19 through August 31, 2002. ADF&G genetics study began in 1999 was continued to determine the variation in timing of the summer run and fall run of chum salmon at Pilot Station. Genetic samples were collected from chum salmon at the sonar site during the period June 27 through August 8, 2002 (Appendix A24). During postseason analysis the proportions of summer to fall chum salmon allocation as determined by GSI sample week are apportioned to the sonar counts of chum salmon for the same time frame. Analysis of 4 years of data (1999 to 2002) reveals that, when compared to their respective runs, after July 19 on average 5% of salmon were identified as summer chum salmon, and before July 19 on average 6% of salmon were identified as fall chum salmon, indicating that the date is sufficient to use as a demarcation between the runs.

Since 1999 (excluding 2001) Yukon River preseason projections have been presented as ranges due to the uncertainty associated with the run failures observed in recent years. The 2002 Yukon River preseason projection ranged from 209,000 to 646,000 fall chum salmon. Inseason estimates were derived from evaluations of the various monitoring and escapement projects located in strategic areas along the migration route within the Yukon River drainage. Inseason estimates of total run size include an estimate for the number of fish that passed the Pilot Station sonar site (359,565 $\pm$ 29,532; 90% CI) in addition to the harvest that occurred below the sonar site. The harvest estimates included approximately 3,158 fall chum salmon taken for subsistence and none for commercial. Typically 5 percent is added to the Pilot Station estimate to represent the portion, which entered the river after August 31. Using this method the total run size was estimated to be on the order of 381,000 chum salmon. Since the run started out slow and weak, the inseason projections remained low and subsistence fishing restriction were implemented to provide salmon for escapement. Through continued monitoring of the fish passage up river, it

[1] The U.S. and Canada negotiated a 12 year rebuilding plan, beginning in 1990 and ending after the 2001 season, for Canadian Yukon River mainstem fall chum salmon. The objective of the plan was to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum salmon for all (four) brood years by the year 2001.

was determined that the Tanana River stocks were fairing better than the Upper Yukon River stocks. Subsistence fishing was resumed completely in the Tanana River drainage, whereas the upper Yukon River remained under restrictions throughout the majority of the chum salmon run.

An estimate of drainagewide fall chum salmon escapement was taken as the reconstructed run size less estimated total U.S./Canada in-river harvest of approximately 28,000 fish. Run size was monitored by various projects in operation during the 2002 season including estimates of run size at Pilot Station, abundance estimates for the Upper Yukon River and Tanana River components, in combination with various escapement monitoring projects. Escapements based on the different methods of run reconstruction ranged from 347,000 to 385,000 fall chum salmon. Spawning escapements were patchy due to the distribution throughout the drainage with weakest runs occurring in the Sheenjek and Fishing Branch Rivers. Overall, the 2002 return was assessed to be slightly better than the 2001 run (367,000 fish) which was an improvement after the record low return in 2000 (238,000 fall chum salmon).

A review of upper river test fish data and escapement information indicated that the upper Yukon River (non-Tanana) was weaker relative to the Tanana River component. Escapement in the Chandalar River was estimated at 89,580 chum salmon for the 50-day period of August 8 through September 26, 2002. This estimate is slightly below the previous years estimate, but remains slightly below the 1997-2001 average of 108,000 fish. The 2002 estimate is within the BEG range of 74,000 to 152,000 fall chum salmon.

Assessment of escapement to the Porcupine River drainage was based upon observations made in the Sheenjek and Fishing Branch Rivers. The Sheenjek River sonar project operated from August 9 through September 24, ending slightly earlier than normal due to a third year of extremely low water levels. For the 47-day period of operation the cumulative count at termination was 31,856 chum salmon. This escapement is also below the 2001 estimate and is below the lower end of the BEG range of 50,000 to 104,000 fall chum salmon. Similarly, the DFO weir on the Fishing Branch River passed an estimated 13,563 fall chum salmon during the 47-day period from August 30 through October 15, 2002. This passage estimate is minimal since the weir was already passing fish upon the first day of operation after a late deployment. The estimate is also below the previous year's estimate and is similar to the escapement in 1998, however it was 73% below the minimum escapement goal of 50,000 fish.

The mark-recapture abundance estimate for fish passing the USFWS tagging site at "Rampart Rapids" was approximately 196,186 chum salmon for the period July 29 through September 8, 2002. This is very similar to 1998 estimate of 195,000 fish. However, the 2002 estimate is 47% lower than the 1997 estimate (369,500) and 70% lower than the 1996 estimate (654,300). The last 5 years have ranged from the upper hundreds to approximately 202,000 fish. The 5-year average, 1996 to 2001 (excluding 2000, since the project was terminated early), is approximately 322,000 fall chum salmon at this location. A combined escapement goal for the Yukon River above "Rampart Rapids" can be viewed as the conglomerate of the upper Yukon tributaries (Chandalar, Sheenjek, and Fishing Branch Rivers) and the mainstem Yukon River fall chum salmon stocks, thereby producing an escapement goal range of 212,000 to 441,000 fall chum salmon traveling beyond the Rapids. For comparison, the sum of escapements to the Chandalar, Sheenjek, and Fishing Branch Rivers together with the mainstem Yukon River border passage estimate in 2002 was 220,000 fall chum salmon. Overall the 2002 fall chum salmon run provided lower than average escapements and remained at the extreme lower end of what would be expected. The 2002 estimate of spawning escapement for Canadian upper Yukon River fall chum

salmon was 98,695 fish. In recent years much of the upper Yukon escapements have been driven by the continued relative strength of the Chandalar River and mainstem border passage fall chum salmon components. The Porcupine River escapements have remained weakest for the past 5 years.

Sheenjek River escapement age, sex, and length samples from fall chum salmon using vertebra were collected by beach seining throughout the season but the sample size obtained was extremely small (n=31). The estimated age composition from the samples included 61.3% age-4 and 38.7% age-5 fish. The sex composition of the samples was 38.7% females and 61.3% males.

The Tanana River fall chum salmon run component was more normal in 2002 based upon test fishery results from the south bank Yukon River near Tanana, as well as those in the Tanana River. The mark-recapture estimate for the Kantishna River run component was 56,665 ± 8,078 (95% CI) fall chum salmon (Cleary and Hamazaki 2003). The Toklat River population estimate was approximately 28,500 chum salmon based upon ground and aerial surveys conducted in the major spawning areas at Toklat Springs during mid October. This estimate was 14% below the minimum escapement goal of 33,000 chum salmon. However, this level of escapement is better than the previous 6 years. Age, sex and length samples using vertebra were collected from carcasses in various channels. The estimated age composition from samples included 4.7% age-3, 82.9% age-4, and 12.4% age-5 fish. The sex composition of the samples was 40.0% females and 60.0% males.

Fall chum salmon run strength to the upper Tanana River (upstream of the Kantishna River) in 2002 was estimated at 109,961 ± 24,939 (95% CI) fish (Cleary and Hamazaki 2003). A combination of factors contributed to the tighter confidence interval in 2002, mainly an attempt to harvest more fish by utilizing a 3 basket capture fish wheel and adequate water levels keeping the current flowing through the fishing site. This estimate is equal to the 1995 to 2001 average abundance. Estimates have ranged from a low of 35,000 (2000) to 268,000 (1995) fall chum salmon.

Total spawning escapement for the Delta River was estimated at approximately 12,000 chum salmon, based upon observations from 9 ground surveys conducted of the spawning area during the period October 3 through December 3, 2002. This estimate was slightly above the minimum escapement goal of 11,000 chum salmon. Age, sex, and length samples using vertebra were collected from carcasses in various channels. The estimated age composition from samples included 11.4% age-3, 79.0% age-4, 9.0% age-5, and 0.6% age-6 fish. The sex composition of the samples was 50.3% females and 49.7% males.

In Bluff Cabin Slough, 1 aerial and 2 ground surveys were conducted late in the season due to high water conditions. The peak ground survey count produced an estimate of approximately 3,100 chum salmon which is also slightly above the most recent 5-year average (1997 to 2001) of 2,750 chum salmon.

Coho Salmon Escapement

Coho salmon spawning escapement assessment is very limited in the Yukon River drainage due to funding limitations and often marginal survey conditions that prevail during the periods of peak spawning. Presently, only 1 escapement goal has been established for coho salmon in the Yukon River drainage. The Delta Clearwater River in the Tanana River drainage has a minimum goal of 9,000 coho salmon based upon a boat survey conducted by the Division of Sport Fish

annually during peak spawning. In 2002, the Delta Clearwater River index area was surveyed on October 31 providing an estimate of 38,625 coho salmon (Appendix E2), which is well above the escapement goal and the third highest on record. An additional 10,442 coho salmon were estimated in tributaries of the Delta Clearwater River based upon an expansion factor derived from a comparison from the years 1994 to 1998 between the average proportion aerial survey escapement estimates in tributary streams to the mainstem Delta Clearwater River.

While most coho salmon escapement information is from the Tanana River drainage (Appendix E9), cooperative efforts of USFWS and BSFA have extended the East Fork Andreafsky River weir operations into September to collect information on the timing and abundance of coho salmon to a tributary in the lower Yukon River. The weir was operated through September 14, 2002, and provided a minimum estimate of 3,577 coho salmon. Escapements to the Andreafsky River appeared to be late and weak with only 44% of the average passage by the weir. The average passage (1995-2001) is approximately 9,000 coho salmon.

In 2002, Pilot Station sonar operated until August 31 counting the majority of the fall chum salmon run and only a portion of the coho salmon run. The sonar passage estimate at Pilot Station was 122,566 coho salmon for the 44-day operating period. The recent 5-year average (1995, 1997 to 2001) is 118,000 coho salmon and the 2002 run was the fourth highest record. The coho salmon run was assessed to be average at the majority of the monitoring projects along the salmon migration route.

Remaining escapement information for coho salmon in 2002 was obtained primarily by aerial surveys flown in portions of the Tanana River drainage, although limited ground surveys were also attempted at a few locations. A portion of this work was conducted by YRDFA, particularly in the Nenana River drainage. Estimated numbers of coho salmon spawners in the Nenana River drainage included 1,910 in Seventeen Mile Slough and 328 in the mainstem Nenana River upstream of the Teklanika River. In the Toklat River drainage, a mid October ground survey of Geiger Creek documented 744 coho salmon.

ENFORCEMENT 2002

The primary enforcement authority for violations of Fish and Game regulations is the FWP with the Department of Public Safety. State FWP officers worked cooperatively with federal USFWS officers for the purpose of enforcing subsistence, personal use, and commercial fishing regulations within the Yukon Area.

Lower Yukon Area

FWP conducted patrols in the Lower Yukon Area during June 2002 with 3 FWP officers utilizing 1 float plane, 1 wheel plane, and 1 skiff. In general, compliance with commercial fishing regulations was good. Over 128 contacts were made and 7 citations were issued. Citations issued were for unmarked gear, lack of crew member license, commercial fishing without CFEC permit, and improper vessel identification.

Upper Yukon Area

Aircraft and boat patrols from Fairbanks and Galena were conducted in the Upper Yukon Area during the summer season. Early in the season, emphasis was placed on patrolling the openings and closings of commercial fishing periods. A total of 52 contacts were made and 4 citations

were issued and 9 warnings were given. All citations were related to marking requirements of gear.

OUTLOOK FOR 2003

Chinook Salmon

Yukon River Chinook salmon return primarily as age-5 and age-6 fish, although age-4 and age-7 fish also contribute to the run. Spawning ground escapements in 1997, the brood year producing age-6 fish returning in 2003, was the third largest observed in Canada, largest observed in the Tanana River tributaries, and some of the largest in lower Yukon River tributaries. However, the return of salmon since 1998 has been well below average in strength indicating abnormally poor production from parent year escapements. Assuming continued below-average trends in survival rates of parent year escapements, the return of 5- and age-6 fish in 2003 is expected to be below average. However, a strong age-4 component from 2002 may be an indicator of improved survival rates of parent year escapements.

Overall, the 2003 Chinook salmon run is anticipated to be below average to poor in strength. Given the uncertainties associated with recent declines in productivity, it is anticipated the run will support an average subsistence harvest and possibly a small commercial harvest. Fishery management is based upon inseason assessments of the actual runs. If inseason qualitative indicators of run strength suggest a harvestable surplus exists, the commercial harvest in Alaska could range from 0 to 20,000 Chinook salmon (0 to 18,000 fish in the Lower Yukon Area and 0 to 2,000 fish in the Upper Yukon Area). This represents a range of catch well below the previous 30-year period.

Summer Chum Salmon

Summer chum salmon spawning escapements in 1998, were slightly above the low end of the BEG ranges established in 2001 in the Anvik and East Fork Andreafsky Rivers (Appendix E1). In 1999, the Anvik River escapement also surpassed the low end of the BEG range of 400,000 to 800,000 summer chum salmon. However, the escapement into the East Fork Andreafsky was half the low end of the BEG range of 65,000 to 130,000 summer chum salmon. It appears that recent declines in the productivity of Yukon River summer chum salmon are continuing. This trend is similar to the declines seen in many Chinook and chum salmon stocks in the Bering Sea region. Specifically, production of Anvik River chum salmon, which represent the largest spawning stock of Yukon River summer chum salmon, has fallen well below one return per spawner for the most recent returning brood years. Causes for the observed drop in productivity are still largely unknown. There is uncertainty as to how long this trend will continue, and whether productivity could be reduced even further. While exact reasons for the run failures are unknown, it is widely speculated that poor marine survival related to localized weather and ocean conditions in the Bering Sea are the primary contributing factors. Weakness in Yukon River salmon runs has been attributed to reduced productivity, and not the result of low levels of parent year escapements. However, similar to Chinook salmon, age-4 summer chum salmon were strong and were the largest component of the both the East Fork Andreafsky (83.5%) and Anvik (76.2%) rivers in 2002. The age-4 component also dominated both large mesh commercial (55.1%) and subsistence (61.5%) samples.

Overall, the 2003 summer chum salmon run is anticipated to be poor in strength. Given the uncertainties associated with recent declines in productivity, and the beginning of below average

parent-year escapements, it is unlikely the run will support a commercial harvest. If necessary, subsistence harvest opportunity may also require reductions to provide for escapements. If inseason qualitative indicators of run strength suggest a harvestable surplus exists, the commercial harvest in Alaska could range from 0 to 150,000 summer chum salmon.

Fall Chum Salmon

Drainagewide, Yukon River fall chum salmon escapements for the period 1974 through 1996 have been estimated by ADF&G to have ranged from approximately 180,000 (1982) to 1,500,000 (1975), based upon expansion of escapement assessments for selected stocks to approximate overall escapement abundance. Escapements in these years resulted in subsequent returns that ranged in size from approximately 315,000 (1996 production) to 1,400,000 (1975 production) fish, using the same approach to approximating overall escapement. Corresponding return per spawner rates ranged from 0.3 to 3.2, averaging 1.9 for all years combined.

Yukon River fall chum salmon return primarily as age-4 or age-5 fish, although age-3 and age-6 fish also contribute to the run. A Ricker spawner-recruit model was used to predict the returns from the 1997 to 2000 parent years that will contribute to the 2003 run. This process resulted in a projection of 647,300 fall chum salmon with the approximate age composition of 1.5%, 64.5%, 32.7% and 1.3% for fish age-3 through age-6 respectively.

There is a level of uncertainty associated with the 2003 Yukon River fall chum salmon outlook. Very dramatic declines in salmon returns to western Alaska have been realized since 1997 and trend continued to most areas in 2002. While exact reasons for the region-wide failure are unknown, it has been speculated that it is likely an artifact of poor marine survival resulting from, or accentuated by, localized conditions in the Bering Sea. Weakness in the salmon runs at the beginning of this downward trend has been attributed to reduced productivity and not the result of low levels of parental escapement.

The escapement for each of the 4 parent years that will contribute to the 2003 run were extremely poor with only 1997 above the minimum drainagewide escapement goal of 350,000 fall chum salmon. The overall return in 1997 was below the odd-year average run size. The major contributor to the 2003 fall chum salmon run is anticipated to be age-4 fish returning from the parent year 1999. The majority of the escapement goals have not been met since 1998, particularly in the upper Yukon River drainage. Should the factor(s) that affected the productivity of fish from the parent years that returned in 1998 and 1999 carry over to fish expected to return in 2003, a weak return is again likely to materialize.

Beginning in 1999 the projection has been presented as a range that includes the normal point projection as a high end. The lower end for 2003 was determined by reducing the normal point projection by the average ratio of observed to predicted returns for 1998 through 2002. During this time period the observed return averaged only 40% of the predicted. The 2003 projected run size range of return is 260,000 to 650,000 fall chum salmon.

The potential for another weak return is not unreasonable given there has been speculation that longer–term climatic changes taking place in the North Pacific Ocean and Bering Sea may result in lowering future salmon production. The return of age-4 fish from odd-numbered brood years during the most recent decade typically averages 581,000 chum salmon, and ranges from 243,000 for brood year 1997 to a high of 1,200,000 for brood year 1975. The average run size for the most recent decade for odd-numbered years is 841,000 chum salmon with the long-term

average over 1 million fish. Should the productivity continue to be poor it is likely that total run size in 2003 will materialize toward the midpoint of the projected range.

At a projected run size of less than 650,000 fall chum salmon the 2003 run is unlikely to support a commercial harvest. Run assessment will primarily be based on inseason indicators and subsistence harvest opportunities may be reduced to provide for escapement based on the levels stipulated in the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 AAC 01.249).

Coho Salmon

Although comprehensive escapement information on Yukon River drainage coho salmon is lacking, it is known that coho salmon primarily return as age-4 fish and overlap in run timing with fall chum salmon. An average to below average return of coho salmon was anticipated in 2003, based upon parental escapement levels observed in several spawning streams in 1999 and assuming average survival.

The BOF has adopted a *Yukon River Coho Salmon Management Plan* (5 AAC 05.369) that would allow a directed commercial coho salmon fishery, but only under very unique conditions. Directed coho salmon fishing is dependent on the assessed levels of returns of both coho and fall chum salmon since they commonly return mixed together. A directed commercial coho salmon fishery is not likely to occur in 2003 because of the poor outlook for fall chum salmon combined with an average to below average coho salmon run.

AREA SALMON REPORT 2003

2003 ALASKA BOARD OF FISHERIES ACTIONS

The BOF met out of cycle in March of 2003 to discuss the application of the new subsistence salmon fishing schedule for the Yukon River. The BOF provided some clarity to confusing regulations regarding the implementation of the subsistence fishing schedule during the prosecution of a commercial fishery. The clarification allowed for the suspension of the subsistence fishing schedule adopted in 2001 and return to the pre-2001 subsistence fishing period regulations when it is projected there is a surplus of salmon beyond escapement and subsistence needs. A summary of the most recent BOF actions affecting the Yukon River drainage can be found in Appendix I1.

TOTAL YUKON RIVER DRAINAGE SALMON HARVEST 2003

The total 2003 estimated harvest, for the Yukon River drainage, including Canada but excluding the Coastal District, was 108,769 Chinook, 80,894 summer chum, 79,529 fall chum, and 51,379 coho salmon (Table 2). The 2003 estimated total Yukon River drainage harvests compared to the recent 5-year averages (1998-2002) were as follows: Chinook 25% above average; summer chum 8% below average; fall chum 31% above average; and coho salmon 164% above average.

ALASKAN SUBSISTENCE FISHERY 2003

Subsistence Harvest Reporting 2003

A total of 56,959 Chinook, 82,272 summer chum, 56,930 fall chum, and 23,872 coho salmon were estimated to have been harvested and 1,491 households were estimated to have participated in the Yukon Area subsistence and personal use fisheries in 2003 (Table 3). The Yukon Area includes the Alaskan portion of the Yukon River drainage and coastal communities of Hooper Bay and Scammon Bay. Harvest estimates include salmon given away by Yukon Area test fish projects (Busher and Hamazaki 2005).

Historical estimates of the subsistence harvest based on surveys and permit harvest information for salmon species is shown in Appendices D1 through D4. Historical subsistence permit harvest information for fisheries currently in regulation is summarized in Appendices D5 and D6.

Survey Program 2003

The majority of communities within the Yukon Area have no regulatory requirements to report their subsistence salmon harvest. To estimate the harvest of each salmon species from these communities, ADF&G has implemented a voluntary survey program. Household subsistence salmon surveys were conducted in the Lower Yukon Area in September and continued in the Upper Yukon Area through October. The survey program utilizes subsistence catch calendars, postseason household interviews, and postseason household telephone interviews, as well as postcards to collect harvest information.

Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the postseason survey. Based on survey information collected in 2003, an estimated 1,296 households harvested approximately 47,603 Chinook; 75,210 summer chum; 36,493 fall chum; and 11,964 coho salmon in the survey portion of the Yukon Area, which includes the coastal communities of Hooper Bay and Scammon Bay (Table 3).

Subsistence Permit Program 2003

In some portions of the Yukon Area, subsistence fishers are required to obtain an annual household permit prior to fishing for salmon and/or non-salmon fish species. In 2003, these areas included the Tanana River drainage, the Yukon River drainage between Hess Creek and the Dall River (referred to as the Yukon River Bridge area), and the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border. In these areas, fishers are required to document their subsistence salmon harvest on the household permit and return them to ADF&G at the end of the fishing season. A total of 440 subsistence permits were issued in 2003, of which, approximately 281 subsistence permits were issued to harvest salmon (Table 4). Subsistence salmon permits issued compares to the 5-year average (1998-2002) of 273 permits and the 10-year average (1993-2002) of 304 permits (Appendices D5 and D6). Additionally subsistence fishing permits are required annually for the harvest of northern pike in the Tolovana River drainage (designated ST), for non-salmon fish species in the Upper Tanana River drainage (designated SU), and for the occasional subsistence whitefish permits (designated SW) for sensitive or unknown harvest areas. Subsistence whitefish permit applications typically are required to go through a 10-day review process to determine harvest levels and establish fishing stipulations regarding gear and reporting requirements.

A total of 249 subsistence permit holders (including Stevens Village) indicated they fished in 2003. The reported harvest from permits totaled 8,221 Chinook, 3,192 summer chum, 16,464 fall chum, and 10,508 coho salmon, 4,378 whitefish species, 202 sheefish, 117 burbot, 1,256 pike, 821 suckers, and 1,216 grayling (Table 4 and Appendix G2).

Note that estimates for Stevens Village in Table 3 are a combination of permit and survey data and do not reflect strictly permit totals. Because of its unique location, fishers in Stevens Village harvested salmon in both the permitted and survey areas. The Stevens Village permit information was used to supplement the postseason survey of the community.

Subsistence Salmon Use from Test Fisheries 2003

In order to monitor and manage the Yukon Area salmon fisheries ADF&G operates or oversees several test fishing projects. The fish harvested during operation of these projects are provided to the local community to supplement their subsistence harvests. In 2003, the test fishery projects throughout the drainage provided a total of 1,253 Chinook, 3,866 summer chum, 3,205 fall chum, and 1,391 coho salmon to households for subsistence use (Table 3) Residents of the communities of Alakanuk, Emmonak, Kaltag, Kotlik, Mountain Village, Pilot Station, Rampart, Russian Mission, and Tanana were the primary recipients of fish from the test fisheries. Salmon caught in the test fisheries were assumed to replace fish that would have been obtained through normal fishing activities; therefore salmon given away from the test fisheries were added into the subsistence harvest for that community.

ALASKAN PERSONAL USE FISHERY 2003

A household permit is required for personal use fishing in the portion of the Tanana River drainage within the Fairbanks Nonsubsistence Area. Fishers are required to document their personal use harvest on household permits and return them to ADF&G at the end of the season.

In 2003, 67 personal use salmon permits were issued (Table 4 and Appendix G2). This compares to the recent 5-year average (1998 to 2002) of 77 permits and 10-year average (1993 to 2002) of 100 permits (Appendix D7). In addition, 7 personal use whitefish and sucker permits were issued in 2003 to fishers in the Fairbanks Nonsubsistence Area. Personal use fishers reported harvest was 204 Chinook, 148 summer chum, 394 fall chum, and 549 coho salmon. Additionally, 22 whitefish, 1 sheefish, 5 burbot, 135 suckers, and 7 graylings were reported harvested under the personal use fisheries.

YUKON AREA CHINOOK AND SUMMER CHUM SALMON FISHERY SUMMARY 2003

In response the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF classified the Yukon River Chinook salmon stock as a yield concern during the September 28-29, 2000, work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest in subsequent years. In addition, the BOF classified the Yukon River summer chum salmon stock as a management concern. The determination of a management concern was based on the chronic inability to meet existing escapement goals for the summer chum stock since 1998.

The 2003 Chinook run was anticipated to be similar to the previous 2 years (2001 and 2002), below average to poor. Given the uncertainties associated with recent declines in productivity, it was anticipated the Chinook salmon run would provide for escapements, support an average subsistence harvest, and possibly a small commercial harvest. The preseason outlook anticipated a commercial harvest of 0 to 20,000 Chinook salmon. Similarly, considering recent declines in productivity, and the beginning of below average parent-year escapements, it was anticipated the summer chum salmon run would also provide for escapements, support an average subsistence harvest, and possibly a small directed commercial harvest. The preseason outlook anticipated a commercial harvest of 0 to 150,000 summer chum salmon, with the likelihood that the harvest would be incidental to a directed Chinook salmon commercial fishery.

Chinook Salmon Management Overview 2003

The lower Yukon River was ice-free on May 17, the second earliest date since ADF&G began maintaining records (1961) and 10 days earlier than the historic average of May 27 (1962-2002) (Appendix A25). The first subsistence catch of Chinook salmon was reported on May 22 near Alakanuk. ADF&G's test fishing project recorded its first Chinook salmon catch immediately after setting the test fishing nets on May 27. River conditions in the lower river during the early portion of the season were characterized by low and unusually clear water. Elders noted this was the lowest and clearest the Yukon River has been in many years during this early portion of the season. Near normal levels were prevalent from mid June to the end of the summer season. Chinook salmon take approximately 30 days to migrate to the U.S./Canada border.

In cooperation with federal subsistence managers, a preseason management strategy was developed and described in an information sheet that outlined the run and harvest outlooks along with the regulatory subsistence salmon fishing schedule. The preseason management strategy was to implement the subsistence salmon fishing schedule when salmon typically begin to arrive in a district or subdistrict. Prior to implementing the subsistence salmon fishing schedule, subsistence fishing would be allowed 7 days per week to provide opportunity to harvest resident species, such as whitefish, sheefish, pike, and suckers. The informational sheet was also used to prepare fishers for the possibility of reductions to the subsistence salmon fishing schedule, or to allow for a small commercial fishery, depending upon how the runs develops. The information sheet was mailed to Yukon River commercial permit holders and approximately 2,800 families identified from ADF&G's subsistence survey and permit databases. State and federal staff also presented the management strategy to the YRDFA, State of Alaska Fish and Game Advisory Committees, and Federal Regional Advisory Councils.

A major and conservative component of the preseason management plan was to wait until near the midpoint of the Chinook salmon run before determining if the run was strong enough to support a commercial fishery. This strategy was to pass fish upstream for escapement, border commitments to Canada, subsistence uses, and to provide ADF&G time to assess the run prior to commercial fishing. This was an interim strategy designed to manage the run conservatively yet offer some limited commercial fishing opportunity during the recent weak runs. However, a drawback to this approach is that any commercial fishing would occur on the end of the run, on singular stocks, and does not spread out harvest. Also, if the run is strong, delaying commercial fishing could result in foregone commercial harvests. Because the 2003 Chinook salmon run was unexpectedly strong, this management strategy was detrimental to the commercial fishery. The first half of the run was strong enough to have sustained commercial harvest of Chinook salmon. The preferred strategy for a commercial fishery is to fish between the quarter and three-quarter point (middle) of the run, a strategy that was in place prior to the decline of the runs beginning in 1998. With the past 2 years of improved runs, and additional surplus of fish above escapement and subsistence needs, a return to commercial fishing during the mid portion of the run will be considered for the 2004 season. Because of conservative management in 2003, a foregone commercial harvest of up to 40,000 Chinook salmon may have occurred, a loss to commercial fishers of up to 2 million dollars.

Emmonak test fishing indices, subsistence harvest reports, and Pilot Station sonar passage estimates provide information ADF&G used to assess the salmon run inseason. As the run progressed upriver, other projects provided additional run assessment information. Poor runs since 1998 lead to a conservative preseason management strategy in 2003 with a potential harvest, if the run was similar to 2002, ranging from 0-20,000 Chinook. As the run developed it became clear that the 2003 Chinook run was better than expected and management of the fishery became more liberal as a result. The summer season commercial harvest total for Chinook salmon was 40,437 fish (Table 10), twice the preseason outlook. Based on set gillnet test fishing CPUE and preliminary Pilot Station sonar estimates, the Chinook salmon run appeared to be a week earlier than the 2002 run.

According to test fishing CPUE data, the midpoint of the Chinook salmon run in the lower river was June 15, six days earlier than the average date for the midpoint (Appendix B12). The cumulative set gillnet test fishery CPUE in 2003 was 27.05 compared to 1998-2002 average of 17.59 and above the 1989-1997 (prior to the run decline) average of 26.17. The Pilot Station

sonar cumulative passage preliminary estimate of approximately 268,500 Chinook salmon (Appendix E3) was more than twice the average estimate of 112,000, and the highest ever recorded at the project. This contrasted with the information from the test nets, which indicated a run of near average run strength. Commercial catches during openings in Districts 1 and 2 were near record harvests for the period of time fished, also indicating a good run. Good catch rates were reported in subsistence harvests throughout the Alaska portion of the Yukon River, corroborating ADF&G's assessment of a strong Chinook salmon run. It was surmised post season that the sonar estimate for Chinook salmon may have been more accurate than other years because there was little overlap with the summer chum run and correspondingly less difficulty with species apportionment.

Similar to index projects and commercial and subsistence catch rates, projects throughout the drainage indicated Chinook salmon escapement goals were either met or exceeded. Escapement information from tributaries in the Tanana River drainage indicated escapements of near record levels. Aerial surveys in the U.S. portion of the drainage were limited because of poor weather and/or high water levels. Preliminary escapement information from Canada also indicated high numbers of Chinook salmon in spawning tributaries. Record escapement levels were recorded in several Chinook salmon escapement index areas that included consistent data from late 1960 (Appendix E5). However, the border passage estimate indicated a run approximately 15% below the record set in 2001.

Based upon harvest and escapement information, the 2003 Chinook salmon run abundance was assessed at near average and the best run since 1997.

Summer Chum Salmon Management Overview 2003

The 2003 Yukon River summer chum salmon run was managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan*. Same as Chinook salmon, the management plan provides for escapement followed by consumptive uses, of which subsistence has first priority, and commercial, sport, and personal use fishing is secondary. The plan allows for varying levels of harvest opportunity depending on the run size projection.

ADF&G uses the best available data, including preseason run outlooks, test fishing indices, age and sex composition, subsistence and commercial harvest reports, and escapement monitoring projects to assess the run. ADF&G monitored the 2003 summer chum salmon run in the lower Yukon River by using the lower Yukon River drift gillnet test fishery, subsistence harvest reports, Pilot Station sonar passage estimates, and Anvik River sonar passage estimates. Results from these projects, in combination with the preseason projection, were the basis for initial management decisions in 2003.

Unlike Chinook salmon, the run timing of summer chum salmon was normal. There was no interest from buyers for a directed summer chum salmon fishery except in District 6. By the end of June, the estimated summer chum salmon projection, based on Pilot Station sonar counts, had reached a passage estimate that would have allowed a directed summer chum salmon fishery. Prior to the 2003 season, ADF&G informed buyers and commercial fishers of the potential for a directed summer chum salmon commercial fishery in 2003. However, because of poor market conditions and problems with infrastructure, only limited opportunistic summer chum salmon commercial fishing occurred.

Summer chum salmon estimates at Pilot Station indicated a run size similar to 2002. However, by the first week in July, escapement projects throughout the drainage were not reflecting the run strength that Pilot Station had shown (Appendix E6). ADF&G discussed this during the July 22 YRDFA teleconference. The example used was the Anvik River which typically accounts for about half of the Pilot Station summer chum salmon passage. With the Pilot Station cumulative passage of 1.2 million summer chum salmon, roughly 500,000 summer chum salmon would have been expected in the Anvik River. However, the escapement estimate was approximately 250,000 fish at that time. This apparent discrepancy was not limited to the Anvik River. All summer chum salmon escapement projects indicated escapements were less than they had been in 2002.

Although new, the lower river summer chum salmon drift gillnet project (CPUE of 1,074) did indicate, similar to the escapement projects, a summer chum salmon run of less magnitude than 2002 (CPUE of 2,490; Appendix B14). However, a thorough review of the sonar operations, along with an analysis of the number of fish passing the Pilot Station sonar project, along with the CPUE associated with the species apportionment portion of the project, verified the sonar counts. It is possible that escapements to unmonitored systems accounted for the difference between Pilot Station sonar estimates and established escapement monitoring projects

Summer Season Subsistence Fishery 2003

The BOF adopted a subsistence salmon fishing schedule in January 2001. The goal of the schedule is to provide windows of time that salmon may migrate upriver with no fishing. Objectives of the schedule are to spread the harvest throughout the run to reduce the impact on any singular component of the run, and spread subsistence harvest opportunity among users. When there are no commercial salmon fishing periods, the subsistence fishery is based on a schedule implemented chronologically by ADF&G, which is consistent with migratory timing as the run progresses upstream. The schedule is based on past fishing schedules and should provide reasonable opportunity for subsistence during years of normal to below average runs. Fishing periods may be altered if preseason or inseason run assessment indicates it is necessary for conservation purposes or if commercial salmon fishing periods occur.

Unrestricted subsistence fishing was allowed 7 days per week prior to establishment of the subsistence fishing schedule. In the lower Yukon River, the subsistence salmon fishing schedule was implemented on May 29 in District 1. This date was chosen preseason as part of the management strategy, based on normal run timing and also to provide subsistence fishers advanced notice. Because the run arrived a week early, fishers were able to fish for salmon prior to the implementation of the schedule. Once the schedule began, it was implemented chronologically as the run migrated upriver. During subsistence salmon fishing closures, subsistence fishers were allowed to fish for whitefish, suckers, and other non-salmon species using gillnets restricted to a maximum length of 60 feet and 4-inches or less in stretch mesh. Additionally, fishers were not allowed to use fish wheels to fish for non-salmon species. Restricting gillnet length and mesh size, and not allowing the use of fish wheels during subsistence salmon fishing closures provided protection to Chinook and summer chum salmon while allowing subsistence fishers the opportunity to fish for non-salmon species.

ADF&G estimated that 50% of the Chinook salmon run had passed through the lower Yukon River area by June 15 (Appendix B13). At that time, available data from run assessment projects indicated the Chinook salmon run was early in run timing and adequate enough to allow

subsistence salmon fishing to continue following the regulatory fishing schedule. Further assessment indicated that a surplus of Chinook salmon was available for commercial harvest and once the commercial season was opened, the subsistence schedule reverted to the pre-2001 BOF subsistence fishing schedule. This allowed subsistence fishing to occur 7 days per week, 24 hours per day except 18 hours prior to, during, and 12 hours after each commercial period in Districts 1-3. A relaxed subsistence fishing schedule was afforded to most areas of the Yukon River.

Because the summer chum salmon run was near normal run timing, a distinct gap existed between the Chinook and summer chum runs. When the run strength of summer chum salmon came into question, subsistence fishing was closed for a period of time in lower Yukon River fishing districts. Once summer chum run indicators began to show an increasing trend, the subsistence fishing schedule was re-instituted.

Subsistence harvest information was gathered during the summer season from fisher reports to ADF&G's Emmonak office, calls made to fishers by state and federal managers, and an inseason survey organized by USFWS. Salmon run strength information was also gained through the weekly YRDFA teleconferences. Through these sources, subsistence fishers in the lower river reported good catches of Chinook salmon and meeting their needs. Generally, fishers were satisfied with their Chinook salmon harvests. A regular comment this year concerned the condition of Chinook salmon. Nearly all fishers commented that the fish looked "good" (healthy) and large. Preliminary average weight information from the commercial fishery also indicated robust Chinook salmon in 2003. Reports also indicated some fishers took advantage of fishing opportunity in their area prior to the schedule being implemented. However, these individuals were few and although the run was early, many fishers began fishing at their usual time or later.

Subsistence fishing for summer chum salmon was slower early in the season because the summer chum salmon run was later than the Chinook salmon run. Subsistence reports from fishers for summer chum were infrequent this year. When reports were received, they generally indicated satisfaction with the summer chum salmon catch.

Districts 1-3

Subsistence salmon fishing in the lower Yukon River districts initially followed the regulatory subsistence salmon fishing schedule of two 36-hour periods per week beginning May 29 in District 1, June 1 in District 2, and June 4 in District 3. The commercial fishing season was opened in District 1 beginning June 16, on June 17 in District 2, and on June 22 in District 3. Once the commercial season opened, subsistence salmon fishing remained open except for 18 hours before, during, and 12 hours following each commercial salmon fishing period.

The management of District 3 differed from the 2002 season in that ADF&G had the ability to liberalize subsistence opportunity when it became apparent that a harvestable surplus of Chinook salmon existed. Similar to 2002, no buyer expressed interest in purchasing salmon from District 3. In 2002, the regulations stipulated that unless commercial fishing occurred the subsistence schedule of two 36-hour periods per week would remain in place, regardless of abundance. In the spring of 2003 ADF&G asked BOF to clarify the regulations as to how the schedule was to interact with commercial fishing, or in the case of District 3, the lack of commercial fishing. The BOF allowed ADF&G some discretion as to when to apply the schedule. With that guidance, the subsistence fishing schedule in District 3 was relaxed in the same fashion as for Districts 1 and 2. This did not occur in 2002.

On June 25, subsistence salmon fishing in District 1 was closed for a period of time due to concerns for the slowly developing summer chum salmon run. This closure occurred after the majority of lower Yukon River subsistence fishers had harvested their Chinook salmon. Commercial fishing periods targeting the surplus Chinook salmon were still allowed because of the ability to restrict gillnet mesh size to 8-inch mesh size or greater, which has a minimal impact on summer chum salmon. District 2 was closed to subsistence salmon fishing for the same reason. Beginning June 29 in District 2 and June 30 in Districts 1 and 3 the subsistence salmon fishing schedule returned to two 36-hour periods per week.

Prior to the opening of the commercial fishing season, subsistence fishers were not required to remove the dorsal fin of all subsistence caught Chinook salmon. When the commercial fishing season began, the marking requirement was reinstated for the remainder of the commercial salmon fishing season.

District 4

Subsistence salmon fishing in District 4 initially followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week beginning June 11. The commercial fishing season was opened in Subdistrict 4-A on June 25. During the commercial fishing season subsistence salmon fishing in Subdistrict 4-A is open except 12 hours before, during, and 12 hours after a commercial fishing period. Additionally during the commercial season in Subdistrict 4-A, Chinook salmon may be taken for subsistence use with drift gillnet gear, but only for two 48-hour periods each week. In addition, during any commercial salmon fishing season closure of greater than 5 days in duration in District 4, excluding the Koyukuk River drainage, subsistence salmon fishing is open 5 days per week. No commercial fishing occurred in Subdistrict 4-A in 2003 because there was a lack of buyer interest. Beginning July 8, subsistence salmon fishing returned to the salmon subsistence fishing schedule of two 48-hour periods per week.

Generally, subsistence and commercial fishing coincide in Subdistricts 4-B and 4-C, but because of the regulation that subsistence fishing for salmon close 24-hours before the first commercial period, the first half of the scheduled subsistence period beginning at 6:00 p.m. Wednesday, June 24, was closed to subsistence fishing for salmon. With the exception of this 1 period, subsistence salmon fishing in Subdistricts 4-B and 4-C remained on a schedule of two 48-hour fishing periods throughout the summer season.

Subdistricts 5-B and 5-C

Subsistence salmon fishing in Subdistricts 5-B and 5-C initially followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week beginning June 20. In Subdistricts 5-B and 5-C, commercial fishing periods were scheduled to coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity. In addition, in response to comments from the community regarding slow catch rates for Chinook salmon, two additional 24-hour subsistence salmon fishing periods were opened. The normal subsistence schedule of two 48-hour periods per week was resumed on July 20.

Subdistrict 5-D

Subsistence salmon fishing in Subdistrict 5-D opened by regulation and was allowed 7 days per week throughout the entire fishing season. In Subdistrict 5-D, two 24-hour commercial fishing

periods were scheduled to coincide with subsistence salmon fishing to avoid the loss of any subsistence fishing opportunity.

Subdistrict 5-A and District 6

Subsistence salmon fishing in Subdistrict 5-A followed the regulatory subsistence salmon fishing schedule of two 42-hour periods per week beginning June 20. Subdistrict 5-A typically targets salmon bound for the Tanana River and is managed using the Tanana River Salmon Management Plan. Subsistence salmon fishing in District 6, except in the Old Minto Area, was opened by regulation and followed the regulatory subsistence salmon fishing schedule of two 42-hour periods per week throughout the entire fishing season. In the Old Minto Area, subsistence salmon fishing was allowed 5 days per week.

In District 6, five commercial salmon fishing periods were scheduled to coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity. Subsistence salmon fishing remained on a schedule of two 42-hour fishing periods throughout the summer season.

Coastal District and Koyukuk River

Subsistence salmon fishing in the Coastal District and the Koyukuk River was opened by regulation and subsistence fishing was allowed 7 days per week throughout the entire summer season.

Summer Season Commercial Fishery 2003

The commercial fishery was managed conservatively, according to management plans developed preseason, by only establishing 6-hour commercial periods and waiting until near the midpoint of the run before determining if abundance assessment warranted commercial harvest opportunity. The summer chum harvest was taken incidental to fishing directed at Chinook salmon, except for 2 directed chum salmon commercial fishing periods in District 6.

The total commercial harvest was 40,438 Chinook and 10,685 summer chum salmon for the Alaskan portion of the Yukon River drainage in 2003 (Table 2 and Table 10; Appendix A4 and A5). The Alaskan commercial harvest is expressed as the number of salmon sold in the round; pounds of salmon roe sold, and estimated harvest, which includes the estimated number of salmon harvested to produce roe sold. No roe was sold from Chinook or summer chum. While the 2003 Chinook salmon harvest was the best since 1999, nearly twice the 2002 harvest, it was 41% below the 10-year average (1993-2002) harvest of 68,194 Chinook salmon. The summer chum salmon harvest was 95% below the 1993-2002 average harvest of 220,617 fish.

The estimated age composition of Chinook salmon from the commercial harvest in Districts 1, 2, 4, 5, and 6 was 0.1% age-3, 1.5% age-4, 29.1% age-5, 61.5% age-6, 7.6% age-7, and 0.1% age-8 fish (DuBois 2004). The sex composition of the harvest was 52.5% females and 47.5% males. The estimated age composition of summer chum salmon from the commercial harvest in Districts 1, 2, and 6 was 0.1% age-3, 65.6% age-4, 31.1% age-5, and 3.2% age 6 fish. The sex composition of the harvest was 45.4% females and 54.6% males.

A total of 582 permit holders participated in the Chinook and summer chum salmon fishery during 2003 (Appendix A9), which was 8% below the 1993-2002 average of 630 permit holders. The Lower Yukon Area (Districts 1-3) and Upper Yukon Area (Districts 4-6) are separate CFEC permit areas. A total of 556 permit holders fished in the Lower Yukon Area in 2003, which was

1% below the 1993-2002 average of 564 permit holders. In the Upper Yukon Area, 26 permit holders fished, which was 63% below the 1993-2002 average of 66 permit holders.

Yukon River fishers in Alaska received an estimated $1.9 million for their Chinook and summer chum salmon harvest in 2003, 48% below the 1993-2002 average of $3.7 million (Appendix A12) but slightly higher than the value of the 2002 harvest. Although the 2003 harvest was about twice the 2002 harvest, the decrease in exvessel value was due to the reduced market value for both Chinook and summer chum salmon resulting in an overall lower exvessel value.

Four buyer-processors operated in the Lower Yukon Area. Fishers in the lower Yukon River received an estimated average price per pound of $2.37 for Chinook and $0.05 for summer chum salmon (Appendix A11). The average price paid for Chinook salmon in the Lower Yukon Area was 18% below the 1993-2002 (excluding 2001) average of $2.88 per pound. The exvessel value of the Lower Yukon Area fishery of $1,872,787 (Appendix A12) was 43% below the 1993-2002 average of $3,334,365 million. The average income for Lower Yukon Area fishers that participated in the 2003 fishery was $3,368. ADF&G test fish sales included 680 Chinook salmon and 119 summer chum salmon. Funds generated from the sales of test fish are used by management to off set costs associated with prosecuting the Yukon Area fishery (Table 6; Appendix A17 and A18.).

Upper Yukon Area fishers received an estimated average price per pound of $0.80 for Chinook and $0.27 for summer chum salmon (Appendix A11). The average price paid for Chinook salmon in the Upper Yukon Area was 3% below the 1993-2002 (excluding 2001) average of $0.83 per pound. The average price per pound for summer chum salmon ($0.27) was 59% above the 1993-2002 (excluding 2001) average of $0.17 per pound. The exvessel value of the Upper Yukon Area summer season fishery of $47,836 is 86% below the 10-year average (1993-2002) of $332,762. The average income for Upper Yukon Area fishers that participated in the 2003 summer season fishery was $1,839.

Districts 1-3

The management strategy during years of average abundance is to open the Chinook salmon directed commercial fishery in the Lower Yukon Area when increasing subsistence and/or test net catches of Chinook salmon have occurred over a 7- to 10-day period. This management strategy typically provides for passage of a portion of the early run segment through the lower river districts before commercial fishing begins. Because of concerns for the 2003 Chinook salmon run strength, the commercial fishing season did not open until after the midpoint of the run on June 16 in District 1. This was after 17 days of increasing subsistence and test fishery catches. Based on lower river test fishing, the Chinook salmon migration exhibited steady passage rates from May 31 through July 6, declining thereafter. A strong pulse was detected in the test fishery from June 11 to June 15 and at Pilot Station from June 13 to June 17. This pulse was tracked all the way to the Canadian border and provided a reference point in the run as it migrated upriver.

Fishing periods in Districts 1 and 2 were reduced to 6-hours duration rather than the more typical 12-hour periods. All District 1 and 2 commercial openings were restricted to 8-inch, or greater, mesh size gillnets to direct the harvest at Chinook salmon. No small mesh size fishing periods were allowed due to the lack of a summer chum salmon market and an estimated run size just above the minimum threshold necessary to allow for a directed commercial chum salmon harvest.

There were 5 commercial fishing periods allowed in District 1 and 4 periods in District 2 (Table 10). No commercial fishing occurred in District 3 due to the lack of a buyer. One fishing period (period 4 in District 1 and period 3 in District 2) was a concurrent fishing period. District 1 was open but only a portion of District 2. For District 2, ADF&G worked out a plan that provided an opportunity for commercial fishers because the buyers at that time would only purchase fish from the lower end of District 2 in an attempt to obtain higher quality product. District 2 commercial fishers were allowed to commercially fish only in a specific area within the district. The area that was open to District 2 commercial fishers was downriver of ADF&G regulatory marker located in Mountain Village at the old cannery, on the north side, and a regulatory marker on the opposite bank. This was because of processor concerns over the quality of fish caught in the upper reaches of District 2. This type of split-district opening represented a creative attempt to offer opportunity to fishers in District 2 where market interest existed. The result of commercial fishing in 2 districts concurrently proved unsatisfactory. Therefore the remaining fishing periods were opened on a single entire district basis and not opened concurrently.

The combined total commercial harvest of 36,929 Chinook salmon for Districts 1 and 2 was 38% below the low end of the guideline harvest range of 60,000 fish (Appendix A14) and 42% below the 1993-2002 average harvest of 63,823 fish (Appendix A4). The average weight of Chinook salmon in the 2003 commercial harvest was 21.4 pounds (Appendix A13). The estimated age composition of Chinook salmon from the Lower Yukon Area commercial harvest (Districts 1 and 2) was 0.6% age-4, 28.0% age-5, 63.5% age-6, 7.8% age-7 fish, and 0.1% age-8 fish (DuBois 2004). The sex composition of the harvest was 54.1% females and 45.9% males.

The combined commercial summer chum salmon harvest in District 1 and 2 of 6,162 fish was 91% below the 1993-2002 average harvest of 64,864 fish (Appendix A5). The average weight of summer chum salmon in the 2003 commercial harvest was 7.3 pounds (Appendix A13). The estimated age composition of summer chum salmon from the Lower Yukon Area commercial harvest (Districts 1 and 2) was 0.2% age-3, 62.3% age-4, 34.4% age-5, and 3.1% age-6 fish (DuBois 2004). The sex composition of the harvest was 37.3% females and 62.7% males.

Districts 4-6

Historically, the Subdistrict 4-A fishery targets summer chum salmon with the dominant gear type being fish wheels and the location of the fishery resulting in a very high chum to Chinook ratio. In 2003, efforts were made preseason by ADF&G to develop markets in anticipation of a potential surplus of summer chum salmon. In spite of a proactive approach by ADF&G, no market was found with the result that no commercial periods were scheduled in Subdistrict 4-A.

The Anvik River Management Area remained closed to commercial fishing for the sixth consecutive year in 2003, because of a poor run of summer chum salmon into that tributary. The Anvik River did not meet the minimum escapement of 500,000 summer chum salmon required to allow an inriver commercial fishery. Commercial fishers in Subdistrict 4-A, which includes the Anvik River, were once again impacted by the lack of commercial fishing.

Commercial fishing directed at Chinook salmon was open for one 24-hour and two 48-hour periods in Subdistricts 4-B and 4-C (Table 10). A total of 562 Chinook salmon were harvested, which is 75% below the lower end of the guideline harvest range for all of District 4. A total of 62 summer chum salmon were harvested and sold incidentally to the directed Chinook salmon fishery.

Additional commercial fishing periods directed at summer chum salmon in Subdistrict 4-C were considered to see if the summer chum salmon run was stronger along the south bank of the Yukon River. Information about summer chum salmon abundance above the Koyukuk River was sparse in 2003 because high water disrupted operations at most of the assessment projects. A commercial fishing period in Subdistrict 4-C may have provided managers with information on abundance through qualitative analysis of catch rates. There are other factors that effect catchability, such as water levels and amount of effort, but run strength information can be obtained from a commercial fishing period. Although ADF&G was in favor of the opening, the federal inseason manager was against the idea and the commercial opening was not pursued.

Four commercial fishing periods were allowed in Subdistricts 5-B and 5-C (Table 10) for a total of 60 hours of fishing time. The harvest of 908 Chinook salmon was 62% below the lower end of the guideline harvest range of 2,400-2,800 fish. The low harvest was not due to a weak run, but rather the inability of the predominant gear type to catch fish in that portion of the river. Also, market capacity limited harvests in Subdistricts 5-B and 5-C after the second opening. Typically, the harvest of summer chum salmon is low in these subdistricts as they are located above the majority of summer chum spawning areas.

Commercial fishing in Subdistrict 5-D was opened for two 24-hour fishing periods in 2003 (Table 10). The Subdistrict 5-D harvest of 226 Chinook salmon was 25% below the lower end of the guideline harvest range of 300-500 Chinook salmon.

Commercial fishing in District 6 was opened for three 42-hour Chinook salmon directed periods and two 42-hour summer chum salmon directed periods in 2003 (Table 10). Test fish wheel and commercial catches indicated summer chum salmon passage in the Tanana River was near average and was sufficient to provide commercial fishing opportunity. The total estimated commercial harvest was 1,813 Chinook and 4,461 summer chum salmon in District 6. The Chinook salmon harvest was 2.3 times above the upper end of the guideline harvest range of 600-800 fish. The 1993-2002 average summer chum salmon harvest in District 6 is 14,868 fish. Management of the fishery for Chinook salmon was primarily based on Chena and Salcha River escapement tower counts.

The estimated age composition of Chinook salmon from the Upper Yukon Area commercial harvest (Districts 4, 5, and 6) was 0.9% age-3, 11.3% age-4, 41.3% age-5, 40.2% age-6, and 6.2% age-7 fish (DuBois 2004). The sex composition of the harvest was 35.8% females and 64.2% males. Fish wheels, which are the predominant gear type in the upper Yukon River area, are biased in their harvests, catching mostly smaller Chinook salmon, which are also mostly males. The estimated age composition of summer chum salmon from the Upper Yukon Area commercial harvest (District 6) was 70.2% age-4, 26.5% age-5, and 3.3% age-6 fish (DuBois 2004). The sex composition of the harvest was 56.7% females and 43.3% males.

YUKON AREA, FALL CHUM AND COHO SALMON FISHERY SUMMARY, 2003

In response to the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF classified the fall chum salmon stock as a yield concern during the September, 2000 work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998. In addition, the BOF classified the Toklat and the Fishing Branch Rivers fall chum salmon stocks as management concerns. This determination of a management concern was

based on the chronic inability, since 1998, to meet existing escapement goals for these fall chum salmon stocks.

The 2003 preseason outlook for fall chum salmon was for a below average to poor return similar to 2001 and 2002. No commercial fishery was expected and it was anticipated that the subsistence harvest of fall chum salmon would be less than normal. The 2003 Yukon River coho salmon run was expected to be average in run strength. However, because of the overlap in run timing and concerns for fall chum salmon, no commercial harvest was anticipated for coho salmon. If any actions were necessary to protect the fall chum salmon stocks, including subsistence restrictions, coho salmon fishing would also be affected.

Fall Chum Salmon Management Overview 2003

Assessments of fall chum and coho salmon returns begin from the time the fish enter the mouth of the Yukon River and continue until they reach their spawning grounds in Alaska and Canada. Fall chum salmon typically take 34 days to migrate as far as the U.S./Canada border.

The Yukon River fall chum and coho salmon runs are managed according to guidelines in regulations established by the BOF with special provisions subject to ANILCA Title VIII in Federal waters. The regulatory management plans provide for escapement and subsistence use priority over commercial, sport, and personal use fishing activities.

The *Yukon River Drainage Fall Chum Salmon Management Plan* 5 AAC 01.249, stipulates that a directed commercial fishery for fall chum salmon may only be allowed when the run size projection is greater than 675,000 fish. At run sizes of less than 600,000 fall chum salmon, the drainagewide escapement goal decreases in increments from 400,000 to a minimum of 350,000 fish. These increments are provisions in the plan, which allow varying levels of subsistence salmon fishing prior to complete closure of this fishery, and are balanced with requirements to meet BEG and minimum escapement objectives as well as interim goals with Canada.

The 2003 fall season management strategies were formulated in cooperation with the USFWS and described in an informational sheet. This sheet outlined the run and harvest outlooks along with the regulatory subsistence salmon fishing schedule. The informational sheet was also used to prepare fishers for the likelihood of no commercial fishing and the possibility of reductions to the subsistence salmon fishing schedule.

The fall salmon fishing season began by regulation in the lower Yukon River on July 16. The 2003 preseason strategy was to continue the subsistence fishing schedules already in progress from the summer season. Management was then based on inseason indicators as the salmon runs developed. The subsistence salmon fishing schedule during the fall season was to be adjusted if necessary near the first quarter point in the run. Since spawning areas are located well upstream and subsistence fishers are distributed throughout the drainage, attempts were made to implement management actions sequentially from lower to upper river areas rather than all at once.

From 1987 to 1998 the Yukon River preseason fall chum salmon run size projection had been presented as a point estimate. However, the 1999 to 2003 (excluding 2001) Yukon River preseason projections were presented as ranges due to the uncertainty associated with the unexpected run failures observed in recent years. Consequently, the 2003 Yukon River preseason projection was presented as a range of 260,000 to 650,000 fall chum salmon. Management actions are dictated by the actual return and management agencies rely heavily on inseason run

assessment tools that include information from the summer chum salmon run earlier in the season.

The trend of low fall chum salmon productivity was projected to continue in 2003. The fall chum salmon run was monitored in the lower Yukon River by the drift gillnet test fisheries at Emmonak (operated by ADF&G) and Mountain Village (operated by Asacarsarmiut Traditional Council) and in the middle Yukon River at Kaltag (operated by the City of Kaltag), as well as Pilot Station sonar passage estimates and subsistence catch reports. Mixed results from these projects along with the close relationship between annual summer and fall chum salmon run sizes in recent years were the basis for initial management decisions to reduce fall chum salmon subsistence fishing time and preclude any commercial fishing possibilities for 2003.

In recent years when summer chum salmon estimates were below average the fall chum salmon run was also below average to poor. The Pilot Station sonar appeared to be over estimating summer chum salmon passage when compared to many upriver escapement projects. However, the poor summer chum salmon assessment was driven by the relationship between the Pilot Station and Anvik River sonar indices. The summer chum salmon run to the Anvik River is typically about half of the Pilot Station summer chum passage estimate. The 2003 Pilot Station sonar estimated approximately 1.1 million summer chum salmon, with the expectation that the Anvik River sonar would estimate approximately 500,000 to 600,000 fish. However, the Anvik River sonar estimate was only approximately 260,000 fish. Consequently, management of the fall chum salmon run was very conservative based on the inseason assessment of poor performance by summer chum salmon in the escapement.

Beginning July 16, fall chum salmon management actions were revised to reduce fishing time in Districts 1, 2, and 3 to one-third of the BOF subsistence fishing schedule or two 12-hours periods each week. The Coastal District fishing time was reduced to one-half of the BOF schedule from 7 days to 3.5 days each week. Similar management actions would be initiated sequentially and proportionally in the upper Yukon River districts as the fall chum salmon run migrated into these areas. The reduced fishing time would provide for escapement needs but still allow for limited subsistence opportunities until the run could be further assessed.

The majority of fall chum salmon typically enter the Yukon River from mid July through early September in unpredictable surges (pulses) that usually last 2 to 3 days. Generally, 4 or 5 such pulses occur each season. These pulses are often associated with on-shore wind events or high tides. Consequently, assessing the run strength early in the season is difficult when wide fluctuations in pulse size and run timing vary so drastically both between and within a season.

Each pulse of fall chum salmon was detected by the Lower Yukon River and Mountain Village drift gillnet test fishery projects. The catch rates at the lower Yukon River project appeared to correlate well with other assessment projects for run timing and relative magnitude of each pulse. However, since the lower river drift gillnet project is only 3 years old comparison between years cannot be made. Individual pulses were tracked as they move up river and the Pilot Station sonar was used to estimate the abundance of each pulse.

In 2003, a small pulse of chum salmon entered the river just prior the start of fall season on July 16 which contained a mixture of summer and fall chum salmon. For management considerations, the first 2 recognizable pulses of fall chum salmon entered the river on July 21 and July 27, and lasted approximately 4 and 3 days, respectively with relatively low abundance. A large third pulse was tracked through the test nets in Emmonak from August 3 to 5. A sustained fourth pulse

was observed from August 10 to 17. This pulse was the largest of the fall season. And a late fifth pulse was tracked through the test nets from August 22 to 24. The Pilot Station Sonar Project ended operation on August 31. Test fishing continued at Mountain Village through September 10 with no additional significant pulses of either fall chum or coho salmon detected late in the season.

As the fall season progressed, it became apparent that the run was either very early or stronger than projected preseason. On August 8, the Pilot Station cumulative sonar count was approximately 470,000 fall chum salmon. This was 52% above the recent 9-year average of 246,000 fish by that date. In a year with average run timing, August 8 represents the midpoint of the fall chum salmon run at the Pilot Station sonar or an actual run size nearing 1 million if Pilot Station sonar estimates were correct. By August 17, which marks the average three-quarter point of the fall chum salmon run in the lower Yukon River, upriver assessment projects agreed with the Pilot Station sonar estimates. At that time, with the confidence of a run size exceeding 600,000 fish, ADF&G returned subsistence salmon fishing in the lower Yukon River Districts 1, 2, 3, and the Coastal District to the BOF subsistence fishing schedule on August 20. Fishing was also returned to the BOF schedule in those upriver districts and subdistricts where fishing time had been reduced.

The final Pilot Station sonar passage estimate through the end of the project was 889,778 fall chum salmon (Appendix E3). In comparison, the average return of fall chum salmon has been approximately 400,000 fish for the last 5 years (1998-2002). The Rampart-Rapids mark-recapture abundance estimate through September 18 was approximately 488,000 fall chum salmon. This provided a run size projection to the upper Yukon of approximately 500,000 fish. In addition, the upper Tanana River mark-recapture abundance estimate through October 1 was approximately 200,000 fall chum salmon and the Kantishna River mark-recapture abundance estimate was approximately 80,000 fall chum salmon. In combination, these Tanana River estimates accounted for roughly 300,000 fall chum salmon. The upper Yukon River and Tanana River estimates combined totaled approximately 800,000 fall chum salmon. Fall chum salmon continue to pass after these assessment projects terminate each season and the mark-recapture estimates in the upper Yukon Area do not include estimates of unmonitored areas such as the Koyukuk River drainage therefore these estimates are believed to be conservative.

Run timing for fall chum salmon was near normal with the second half of the run slightly more abundant than the first half. The 2003 fall chum salmon run was overall assessed to be above average to very good except for Porcupine River stocks which were assessed to be slightly below average to average. The Tanana, Chandalar, and mainstem Yukon River stocks all performed above average.

Coho Salmon Management Overview 2003

As previously stated, Yukon River coho salmon have a slightly later, but overlapping, run timing with fall chum salmon. In managing the coho salmon run, ADF&G follows guidelines adopted by the BOF in the *Yukon River Coho Salmon Management Plan* 5 AAC 05.369. The coho salmon management plan allows a directed coho salmon commercial fishery only under specific conditions. It was very unlikely that conditions outlined in the coho salmon management plan would occur in 2003. In most years, fall chum salmon are the primary species of management concern and coho salmon are typically taken incidentally during the fall season fisheries.

The 2003 coho salmon run began about 1 week earlier than usual based on the 3-year running lower Yukon River drift test fishery (Appendix E9) and appeared to be stronger than the last few years, which were considered large runs. The coho salmon run estimate through August 31 at Pilot Station sonar was 277,000 fish. This was over twice the recent 5-year historical average passage estimate of 128,000 fish. The projected run total was estimated to be approximately 320,000 coho salmon, which is greater than the previous highest end-of-season estimate of 263,000 in 2002. In addition, the Andreafsky River weir passage of coho salmon ended the season slightly above average as did most of the upriver test fish indices, and with some exceptions, showing extremely good escapements.

Subsistence fishing opportunity for coho salmon was initially reduced in the lower districts because of management actions that were implemented to protect the anticipated weak fall chum salmon stocks. As the fall chum salmon run was reassessed to be average to above average, subsistence fishing periods were returned to the BOF regulatory schedule. In 2003, no directed commercial coho salmon fishing periods were anticipated. However, as confidence in the assessment improved with the late season reevaluation of fall chum salmon and in particular coho salmon run strength, combined with interest by buyers to purchase both fall chum and coho salmon in District 1 and Subdistricts 4-B, 4-C, 6-B, and 6-C a limited commercial fishery was allowed.

In prosecuting the fall chum and coho salmon commercial fishery in District 1 the fishing season ending dates as outlined in regulations, were extended until September 11 by EO. In addition, in District 1, the EO included extending commercial fishing time for coho salmon from 24 hours to 36 hours per 7-day period. In District 6, the fall chum salmon fishing season normally closes by EO on or before October 1 for directed fall chum salmon, and on or before October 5 for a directed coho salmon as stipulated under the *Yukon River Coho Salmon Management Plan.* However, the late run assessment that identified a harvestable surplus and the presence of a limited commercial market enabled managers to extend the commercial fishing season for coho salmon. An EO was also issued to extend the normal fishing time for coho salmon from 32 hours in a 7-day period to 84 hours in a 7-day period. Where market conditions did not allow for commercial fishing the subsistence salmon fishing schedules were relaxed.

Fall Season Subsistence Fishery 2003

Subsistence fishing efforts are usually light during the transition period from summer to fall season. However, as expected during the transition (both before and after the July 16 fall season date) the run contains a mixture of both summer and fall chum salmon stocks, and some subsistence fishers are able to report the changes in proportion in their catches.

The preseason and initial inseason assessment of the fall chum salmon run was assessed to be poor. Based on those assessments and comments from fishers participating during the YRDFA sponsored teleconference, management staff reduced the BOF subsistence salmon fishing schedule that was in place for the summer season by one-third, which consisted of two 12-hour periods each week in Districts 1, 2, and 3, beginning July 16. The Coastal District fishing time was reduced by one-half, from 7 to 3.5 days per week. The reduced fishing times and dates were later shifted to provide some opportunity during daylight hours and on weekends as requested by fishers during the YRDFA teleconferences.

Similar subsistence salmon fishing restrictions were implemented upriver as the fall chum salmon moved into those areas. Beginning July 26, the Subdistrict 4-A (excluding the Koyukuk

River) subsistence salmon fishing schedule was reduced to two 16-hour periods each week. Subdistricts 4-B and 4-C, and Subdistricts 5-B and 5-C began the same reduced schedule on July 30 and August 6, respectively. On August 9, the Koyukuk River subsistence salmon fishing schedule was reduced by one-half, from 7 to 3.5 days per week.

Because of safety concerns while checking fishing gear, ADF&G revised Subdistricts 4-B and 4-C, and Subdistricts 5-B and 5-C fishing schedules, on August 13 and 15, respectively. The duration of the periods remained the same but the opening and closing times were altered to provide more daylight hours for tending gear. Again, these concerns were brought up and addressed during the weekly YRDFA teleconference. The subsistence salmon fishing scheduled in Subdistrict 5-D was reduced by one-half from 7 to 3.5 days per week, on August 17.

By August 18, the fall chum salmon run continued to be strong at the mouth and information from upriver assessment projects, particularly the Rapids-Rampart mark-recapture project, and subsistence catches substantiated that Pilot Station estimates were realistic. The fall chum salmon run was reassessed to be stronger than first thought and the end of season run size projection was revised upwards to a range of 500,000 and 600,000 fish. With the updated run assessment the Yukon River Drainage Fall Chum Salmon Management Plan stipulates a run of this size should support a normal subsistence fishery. Potential management actions were discussed during the August 19 YRDFA teleconference and the decision was announced and supported by interested parties to return all remaining Yukon River districts and subdistricts to their full BOF salmon fishing schedule beginning August 20. Even though ADF&G viewed the overall drainagewide chum salmon run assessment as favorable, concerns still existed for the Porcupine River stocks bound for the Sheenjek and Fishing Branch Rivers and therefore conservation measures remained in place regarding the 4-inch or smaller gillnet mesh size restrictions in many areas during closed salmon fishing periods. If the recent trend of poor fall chum salmon run strength to the Porcupine River drainage continued in 2003, ADF&G was prepared to reestablish conservation measures to restrict or close fishing altogether at a later date.

By September 9, it was apparent that the fall chum salmon run was assessed to be large enough to provide for drainagewide escapement needs, subsistence needs, Canadian Border passage commitments, and support commercial, personal use, and sport fish harvest as stipulated in the Yukon River Drainage Fall Chum Salmon Management Plan. All subsistence salmon fishing had been returned to the full BOF schedule by August 21 and fall commercial salmon fishing season was opened in Yukon Districts 1 through 6. However, actual commercial fishing periods were only allowed in District 1 and Subdistricts 4-B, 4-C, 6-B, and 6-C because of available commercial markets in those areas.

Fall Season Commercial Fishery 2003

The Yukon Area commercial fisheries for fall chum and coho salmon has become sporadic with commercial fishing occurring in only 5 out of the past 10 years and experiencing reduced harvests in each of those years. The 2003 fall commercial fishery developed late due in part to the initial conservative run assessment. As the 2003 fall chum salmon run progressed upriver, managers reassessed the run strength based on Pilot Station sonar estimates and corroborating run strength indicators from upriver projects and reported subsistence catches. The fall chum salmon run was reassessed to be large enough to achieve escapement goals in most areas, provide for subsistence needs, and meet Canadian obligations, as well as provide for sport, personal use, and commercial fishing opportunities.

The commercial fishing seasons opened in Districts 1, 2, and 3 on August 23; in Subdistricts 4-A, 4-B, and 4-C on August 27; District 5 on September 9; and District 6 on September 3. However due to market conditions and limited buyers, commercial fishing periods were only scheduled for District 1 and Subdistricts 4-B, 4-C, 6-B, and 6-C. There were eight 12-hour commercial periods in District 1. All District 1 periods began at 9:00 a.m. and ended at 9:00 p.m. The commercial fishing periods occurred on August 25, 27, 29, September 1, 3, 5, 9, and 11. Three 48-hour commercial fishing periods occurred in Subdistricts 4-B and 4-C and began on August 27, September 2, and 5 and were open from 6:00 p.m. to 6:00 p.m. the following day. In Subdistricts 6-B and 6-C six commercial periods were scheduled that began on September 7, 14, 21, 26, October 1, and 5. All periods were 42-hours in duration and ran from 6:00 p.m. until 12:00 noon (Table 11).

The 2003 season marks the first commercial fishing efforts for fall chum and coho salmon in the last 3 seasons (2000-2002). At the time the first commercial period was announced on August 25 in District 1, approximately 99% of the fall chum and 90% of the coho salmon run had already entered the Yukon River. Salmon buyers during the fall season were requesting coho salmon and the commercial harvest exceeded that of fall chum salmon. The estimated Yukon Area commercial harvest of fall chum salmon was 10,996 (5,586 Lower Yukon Area, 5,410 Upper Yukon Area) or approximately 77% below the 10-year average (1993-2002) of 47,500 fall chum salmon (30,500 Lower Yukon Area, 17,000 Upper Yukon Area). The estimated Yukon Area commercial harvest of coho salmon was 25,243 (9,757 Lower Yukon Area, 15,486 Upper Yukon Area) or 74% above the 10-year average of 14,500 coho salmon (12,500 Lower Yukon Area, 2,000 Upper Yukon Area) (Appendices A6 and A7). The low commercial harvest of fall chum salmon and above average harvest of coho salmon was the result of the combination of late season fishing dates, the exceptionally large return of coho salmon, and buyer preference for coho salmon. Even though the coho salmon harvest was above average, the combined overall 2003 estimated harvest for fall chum and coho salmon of 36,239 fish was 42% below the recent 10-year average of 62,000 salmon. The overall low salmon harvest was also attributed to the limited number of buyers and market conditions for salmon in the Yukon Area.

The 2003 combined commercial value for fall chum and coho salmon was estimated to be $32,654 ($24,161 Lower Yukon Area, $8,493 Upper Yukon Area) or 37% below the previous 10-year average (1993 to 2002) of $88,000 ($61,600 Lower Yukon Area, $26,400 Upper Yukon Area) (Appendix A12). No department test fish sales were made for either fall chum or coho salmon.

Yukon River fishers received an average price for fall chum salmon of $0.15 per pound in the Lower Yukon Area and $0.10 per pound in the Upper Yukon Area. The 1993-2002, (excluding 1993, 1994, and 2000 to 2002) average prices for fall chum salmon was $0.18 per pound in the Lower Yukon Area and (excluding 1994, and 2000 to 2002) $0.16 per pound in the Upper Yukon Area. For coho salmon, fishers in 2003 received an average price of $0.10 per pound in the Lower Yukon Area compared to the recent 10-year average (excluding 1993, 1994, and 2000 to 2002) price of $0.31, and $0.05 per pound in the Upper Yukon Area compared to the recent 10-year average (excluding 1993 and 1998 to 2002) of $0.23 per pound (Appendix A11).

In 2003, 82 permit holders participated in the fall season fisheries (75 Lower Yukon Area, 7 Upper Yukon Area) compared to the 1993 to 2002 average number of 128 fishers (118 Lower Yukon Area and 10 Upper Yukon Area (Appendix A9)).

CANADIAN FISHERIES 2003

A total of 9,619 Chinook salmon were harvested (JTC 2006), which includes: 2,672 commercial, 6,294 Aboriginal, 115 domestic, 263 test fishery, and an estimated 275 in the sport fishery (Table 2 and Appendix A17).

The chum salmon commercial and aboriginal harvest was 9,030 and 1,943 fish, respectively (JTC 2006). There was no reported harvest of chum salmon for domestic use (Table 2, Appendices A17, A19 and A20).

Canadian Commercial Fishery 2003

A total of 2,672 Chinook salmon and 9,030 chum salmon were harvested in the Canadian Yukon River commercial fishery in 2003 (Table 2). The combined species catch of 11,702 salmon was 34% below the previous 10-year average commercial harvest of 17,656 salmon. Since 1997, below average run sizes of upper Yukon River Chinook and chum salmon have contributed to a reduction in commercial catches.

A total of 21 commercial licenses were issued in 2003, the same number as in 2002. Most licensees opted to fish in 2003 because of a larger than anticipated above border run sizes for both Chinook and chum salmon and increased fishing opportunities.

Chinook Salmon

The 2003 preseason expectation for Canadian-origin Yukon River Chinook salmon was a below average return of approximately 62,000 fish[2]. A run of this size would be well below the average long term run size of approximately 120,000 fish (1980-2002). The 2003 outlook was driven by uncertainty associated with marine survival of the fish that spawned between 1995 and 2000. The potential for reduced marine survival was made apparent by the poor total run sizes of Canadian-origin Yukon River Chinook salmon in the 1998 to 2002 period, that were lower than expected despite healthy brood year escapements.

The key elements of the 2003 IFMP for Yukon Chinook salmon as developed by the YSC follow:

1) A target escapement goal of 28,000[3] Chinook salmon. This goal was consistent with the Panel recommendation from the March 2003 panel meeting. YSC was willing to accept restricted First Nation fisheries as long as the spawning escapement was greater than 18,000 Chinook salmon and the First Nation catch was consistent with the Yukon River Salmon Agreement harvest sharing provisions; and
2) Closures in the commercial, recreational, and domestic fisheries would be in place from the beginning of the season until inseason run projections indicated priorities established for conservation, spawning escapement, and First Nation's harvests were expected to be achieved.

Similar to 2002, the management plan established a series of color-coded categories (Red, Yellow and Green Zones) bound by specific reference points (run sizes into Canada) and were associated with anticipated management actions. For example, the Red Zone included run

[2] The initial 2003 outlook was reduced from 90,300 to 62,000 based on the proportion of the observed run in 2002 vs. the expected run.

[3] The 2003 escapement was set at 25,000 by the Yukon Panel with a provision that it would be increased to 28,000 in the event that a U.S. commercial fishery was initiated.

projections of less than 19,000 Chinook salmon. Projections falling in the Red Zone would result in all fisheries being closed except the test fishery would operate for assessment purposes providing the projected run size was not less than 11,000 fish. No test fishery would be allowed if the run projection was less than 11,000. In the Yellow Zone, described as a run size projection in the 19,000 to 37,000 range, only the First Nation fishery and an assessment test fishery would operate. Restrictions in the First Nation fishery would depend upon the run abundance, and be increasingly more severe the closer the run projection was to 19,000, the lower end of the Yellow Zone. The Green Zone included run size projections greater than 37,000 Chinook and indicated First Nation fisheries would be unrestricted and harvest opportunities in the commercial, recreational, and domestic fisheries would be considered to depend on abundance and international harvest sharing provisions.

With a total run outlook of 62,000 Canadian-origin Yukon River Chinook salmon (at the river mouth), proposed management actions in Alaska were expected to result in a border escapement of approximately 36,000 Chinook salmon, or roughly the upper end of the Yellow Zone. This zone meant the likelihood of no commercial, domestic, or recreational fisheries and a potential need for restrictions in the First Nation fishery. Hence, the season commenced with closures in place for all fisheries except First Nation fisheries. After a series of community meetings, First Nations communities agreed to follow a conservative management approach until inseason indicators became available.

Throughout most of June, before Chinook salmon entered the Canadian section of the upper Yukon River, Alaskan test fisheries and a sonar project located near the river mouth indicated the run abundance was larger than the 2002 return and adequate to provide for U.S. and Canadian escapement targets, subsistence fishing, and a small commercial salmon harvest in the U.S. Run timing was described as being a few days early but very close to normal, compared to the average run timing for 1989 to 2002 period.

The first Chinook salmon were caught in DFO fish wheels on June 26, two days earlier than usual. The cumulative fish wheel catch of Chinook salmon was initially above average, but after early July the catch was consistently below average. A total of 1,276 Chinook salmon was caught in the fish wheels, 74% of the 1993-2002 average catch of 1,726. Based on tag return ratios from the test and commercial fisheries and subjective observations of water levels, the 2003 Chinook salmon return appeared above average in run strength, but fish wheels were not catching fish in proportion to their abundance.

The primary purpose of DFO fish wheels is to live-capture salmon throughout the run for tagging purposes; fish are tagged and subsequently released. Recoveries of tagged fish, primarily in the test fishery and Dawson area commercial fishery, are used to estimate abundance of fish throughout the season. Inseason projections of the total run into Canada, also referred to as border escapement, were made by expanding the point estimates of run size by historical run timing information. Projections calculated from tagging data are therefore a key component in Canadian management decisions.

The early season closure of the commercial fishery created the need to implement a test fishery to provide stock assessment data for inseason run forecasting. The test fishery operated similar to 2002 and involved both commercial and First Nation fishers working under the direction of Yukon River Commercial Fishing Association and Tr'ondek Hwech'in First Nation Commercial Fishing Association, with funding provided from the R&E Fund. The objective of the test fishery

was to collect timely catch and tag recovery data used to develop inseason run forecasts. All fish caught in the test fishery were distributed under the direction of Tr'ondek Hwech'in First Nation. Without the tagging data, little else would be available for inseason run assessment. The option of just using the DFO fish wheel catch was not exercised because of a poor historical relationship between fish wheel catch information and run size estimates. Similar to 2002, low water conditions prevailed throughout much of the Chinook salmon migration. Whereas both 2000 and 2001 were characterized by abnormally high water conditions

The Chinook salmon test fishery commenced July 4 and continued for a 2 week period ending July 13. Four fishers participated in the fishery; each fishing 2 days per week, although specific times they fished were not the same. A total of 263 Chinook salmon was caught in the test fishery. The first 2 inseason border escapement run projections were produced in statistical weeks 27 and 28 (the weeks ending July 5 and July 12). A potential total season run size of 36,700 Chinook salmon estimate was based on the statistical week 27 information and a potential total season run size ranging from 49,900 to 78,200 was based on the statistical week 28 information. The initial week 28 border escapement estimate was 11,100 with a 95% confidence interval of 9,300 to 16,300. This estimate based on timing information was extrapolated to a projected border escapement of 49,900. An estimate made later in the week with additional tag application information produced 78,200 as the total season projection.

Early in the season, the run projections are volatile because timing information represents only a small proportion of the entire run. For example, based on normal timing, 4.4% of the run occurs by July 5 and 14.2% by July 12. Inseason projections of total border escapement are developed using various run timing scenarios: normal (average) timing, early run timing, and other timing scenarios consistent with inseason information collected elsewhere in the drainage. The intent is to ensure projections developed from timing information cover an appropriate range of potential differences in run timing. Each timing scenario results in a different run size projection and can greatly influence the total season run projection. Information from DFO mark-recapture information consistently suggested the total season border escapement would be higher than the preseason outlook; this information was supported by information from the U.S. test fishery at Emmonak, information from the Pilot Station sonar project, and U.S. subsistence catch information that tracked a substantive pulse of fish from the lower river to the upper Yukon River in Alaska.

The border escapement projections made in statistical week 28 were >49,000 Chinook salmon. Because the projections exceeded the lower end of the Green Zone, greater than 37,000, Yukon First Nations were advised early in the season to proceed with a normal, unrestricted fishery. Similarly, recreational fishers were advised on July 10 the recreational fishery was open to salmon retention. Canadian commercial and domestic fisheries were subsequently opened for 2 days starting July 13.

By July 23, the border escapement projection was approximately 68,300. The run projections declined thereafter and the initial postseason estimate is 58,100. The final border escapement was 56,929 Chinook salmon (Appendix E5). Based on information from an independent radio telemetry program, the mark-recapture program may have underestimated the 2003 Chinook salmon return.

The total catch of 2,672 Chinook salmon was taken in the commercial fishery, 2,603 in the "Dawson area" fishery, downstream from the confluence of the Yukon and White Rivers, and 69

Chinook salmon were caught in the "upper fishing area". The fishery was open for a total of 15 days and total fishing effort was 93 boat-days. For comparison, the previous 10-year average (1993-2002) commercial catch is 5,461 Chinook salmon; however this average includes data from 1998 to 2002 when the commercial fishery was severely restricted or closed.

Fall Chum and Coho Salmon

The preseason expectation for Canadian-origin Yukon River chum salmon was for a below average return. Spawning escapements in 1998 and 1999, the primary brood years contributing to the 2003 run, were 46,300 and 62,000 chum salmon, respectively. Although excellent spawning escapement was assessed for the 1994 to 1997 period (average, 116,800; range, 85,400 to 158,100), the cycle year returns from these escapements were well below average and appeared to have been significantly impacted by poor marine survival. Managers surmised poor survival could once again result in a depressed run in 2003. To capture this uncertainty, the total run outlook was expressed as a range from 97,500 (below average) to 145,000 (average) Canadian-origin Yukon River fall chum salmon. Managers thought the lower end of this range was more likely given the weak runs observed in 1998 to 2001.

The Canadian chum salmon management plan for 2003 acknowledged the likelihood of a poor return and contained the following:

1) A spawning escapement target of 65,000 Canadian-origin Yukon River chum salmon, consistent with Panel recommendation of March 2003; and
2) Given the expectation for a poor run, the commercial fishery would be closed until inseason run projections indicated spawning escapement and First Nation requirements were likely to be achieved.

Funding was approved from the 2003 R&E Fund for a live-release test fishery in the Dawson City area to obtain tagging data for population estimates. This was the second year a live-release test fishery operated fish wheels. Yukon River Commercial Fishing Association and the Tr'ondek Hwech'in First Nation jointly conducted this project. Before 2002, projections of chum salmon border escapement were generated either from DFO fish wheel catch data, or from mark-recapture data collected from First Nation and commercial fisheries located in the Dawson area.

As per the Chinook salmon management plan, a decision matrix was included in the chum salmon plan with Red, Yellow and Green management zones described by specific reference points (run sizes into Canada) and expected management actions. The Red Zone included run projections of less than 40,000 fish when closures in all fisheries, except for the live release test fishery, could be expected. The Yellow Zone included run projections in the 40,000 to 68,000 range. Commercial, domestic and recreational fisheries would be closed and the First Nation fishery would have restrictions increasingly more severe the closer the run projection was to the lower end of this Yellow Zone. The Green Zone included run size projections greater than 68,000 chum salmon and indicated First Nation fisheries would be unrestricted and harvest opportunities in the commercial, recreational, and domestic fisheries would be dependent on run abundance and international harvest sharing provisions.

Throughout August, chum salmon catches in the DFO fish wheels remained above average suggesting the run strength was above average or the timing of the run was early. Although still early in the Canadian upper Yukon River chum salmon season, this above average run strength was consistent with run status indicators in the Alaskan portion of the river. A live release test

fishery consisted of 2 fish wheels equipped with live boxes, and operated 4 days per week from August 24 to August 28 and from August 31 to September 4. A total of 990 chum salmon was caught and released. Based on average run timing, border escapement projections for the weeks ending September 6 and 13 were 110,000 and 140,000 fish, respectively. The September 6 run projection exceeded the trigger point of 68,000 for the Green Management Zone identified in the IFMP. This point resulted in a conservative commercial fishery opening of 48 hours from September 7 to September 9. Subsequent inseason border escapement projections consistently exceeded 120,000 chum salmon. Since these projections were in the Green Zone, the commercial fishery was opened for 5 days each week for the next 6 weeks. The final commercial opening took place from October 19 to October 24.

The total commercial chum salmon catch of 9,030 fish was 26% below the 1993 to 2002 average of 12,193 chum salmon. During this period, the catch ranged from 0 chum salmon in 1998 to 39,012 chum salmon in 1995 (Appendix A19). Because of a stronger than anticipated border escapement and limited fishing effort, most of the weekly commercial fishing periods were posted at 5 days per week. The number of fishers who participated in the openings ranged from 1 to 4. No coho salmon were recorded in the commercial catch in 2003.

Canadian Aboriginal, Domestic, and Sport Fisheries 2003

In 2003, as part of the implementation of the Yukon Comprehensive Land Claim Umbrella Final Agreement, the collection of inseason harvest information was conducted by the First Nations in their respective Traditional Territories. Although not as intensive, the general approach was similar to that developed under the *Yukon River Drainage Salmon Harvest Study* conducted by LGL Limited from 1996 to 2002 (Blakely et al. 2003). Before the start of the fishing season, locally hired surveyors distributed calendars to known fishers and asked them to voluntarily record their catch and effort information daily. Interviews to obtain more detailed catch, effort, gear, location, and tag recovery information were conducted inseason at fish camps or in the community 1 to 3 times weekly. Weekly summaries were completed by the surveyors and sent to the DFO office in Whitehorse by fax. This general approach was used during the Chinook salmon season in the Dawson, Mayo, Pelly, Teslin, and Carmacks areas where over 90% of the harvest typically occurred (LGL data 1996-2002).

Postseason interviews were conducted in Ross River, Burwash Landing, and Whitehorse areas. Inseason harvest data collection continued for the aboriginal fishery for chum salmon in the Dawson and Pelly Crossing areas, but no information was reported from the Carmacks area. Catch estimates from the Porcupine River in the Old Crow area are independently determined from locally conducted, postseason interviews.

Preseason expectations for a below average Chinook salmon run resulted in recommendations for a voluntary reduction in aboriginal harvest by Yukon First Nations. Plans were developed whereby fisheries would be reduced to approximately 75% of a normal harvest if required. However, early season run indications were better than expected and First Nations were notified of this trend on June 26, 2003. Further run strength assessment through the mark-recapture program in early July confirmed restrictions were not likely to be required and First Nations were notified on July 9 a normal level of harvest would be permitted. The estimate of the 2003 Canadian-origin Yukon River Chinook salmon catch in the mainstem Aboriginal fishery is 6,121 fish, 17% below the 1993-2002 average of 7,333 Chinook salmon and 14% below the final estimate of 7,138 Chinook salmon harvested in 2002 (Appendix A17). Survey effort in the

Carmacks area in 2003 was noted to be low; the reported Chinook salmon harvest for this area was 1,342, 40% below the 1993-2002 average of 2,251. The total fishing effort during the Chinook salmon season, through the end of August (statistical week 36), was approximately 24,557 net-hours, 17% below the 1996-2002 average of 29,526 net-hours.

The estimate of the 2003 Canadian-origin Yukon River fall chum salmon harvest in the mainstem Aboriginal fishery is 1,943 fish. This estimate is 28% below the 1993-2002 average of 2,713 fall chum salmon (Appendix A19). No fall chum salmon catch information was received from the Carmacks area. The preliminary estimate of total fishing effort during the chum salmon season (Statistical week 30 and later) was 1,867 net-hours, approximately 18% below the 1996-2002 average of 2,282 net-hours.

A full closure was in place from August 10 to October 15 within the Canadian section of the Porcupine River to conserve the depressed Fishing Branch River fall chum salmon run. In anticipation of a poor return in 2003, the Vuntut Gwitchin First Nation submitted a proposal to the R&E Fund for a substitution fishery. The proposal involved the purchase of a meat[4] product to reduce the impact of potential restrictions on the Old Crow Aboriginal fishery. This project (CRE-106N-03) was accepted by the Panel and the project proceeded as described in the proposal. Community members received a small number of chum salmon for human consumption and sled dog food (total was 319) were available through the test fishery component of a chum tagging program (CRE-27N-03), also funded through the Panel. An additional 63 chum salmon were caught incidentally during a late fall coho salmon fishery, which harvested 523 coho salmon (Appendix A20). A total of 173 Chinook salmon was also taken in the Porcupine Aboriginal fishery (Appendix A17).

The preliminary estimate of the total domestic fishery catch is 115 Chinook salmon (Appendix A17). Because of the preseason expectation for a poor run, the domestic fishery did not open until it was determined more than 28,000 Chinook salmon would likely reach the spawning grounds. This determination was made in early July allowing the fishery to open for 2 days starting July 13. The domestic fishery opened for 19 days spread over 5 fishing periods in concert with commercial fishery openings. Except the July 13 to 15 opening, the domestic fishery opened on the same day as the commercial fishery and 1 additional day was granted for each fishing period. Effort was low, only 4 fishers reported catches, although 7 domestic licenses were sold.

In 1999, the Yukon Salmon Committee introduced a mandatory Yukon Salmon Conservation Catch Card to improve harvest estimates and to serve as a statistical base to ascertain the importance of salmon to the Yukon recreational fishery. Anglers are required to report their catch by mail by late fall. Information requested includes: the number, sex, size, date, and location of salmon caught and released.

The preliminary 2003 recreational harvest was 275 Chinook and 7 coho salmon (Appendices A17 and A20). An additional 356 Chinook salmon were caught and released. This is the second year coho salmon were caught in the recreational fishery. Reported harvest dates (for example, early to late fall), indicate it is unlikely that Chinook salmon are misidentified as coho salmon.

[4] Chicken was initially proposed and Arctic Char was used.

Because of preseason conservation concerns, the retention of Chinook salmon in the recreational fishery was prohibited before July 10. Run strength indicators suggested the 2003 return was better than expected and retention was allowed with normal catch and possession limits (2 Chinook salmon/day, 2-day possession limit) starting July 10, 2003.

Estimated catches from Yukon Salmon Conservation Catch Card returns in 1999 through 2002 were: 177 Chinook salmon in 1999; 0 Chinook salmon in 2000 (fishery was closed); 98 Chinook salmon in 2001; and 128 Chinook and 9 coho salmon in 2002. Yukon Salmon Conservation Catch Card return rates were 74.4% in 1999, 81.3% in 2000, and 72.1% in 2001.

ESCAPEMENT 2003

Summer Season Escapement 2003

Beginning in 2001, Chinook salmon BEGs on the Chena and Salcha Rivers and summer chum salmon BEGs on the Anvik and Andreafsky Rivers have been based on spawner-recruit analysis. Prior to 2001, most BEGs were generally established using a simple escapement averaging methodology based on aerial survey counts. These goals are now referred to as SEGs because of precision issues inherent to aerial survey methodology. A number of escapement monitoring projects (counting towers and weirs) were established between 1993 and 1995. Although the database for these projects is still quite limited and no goals have been set for them, comparisons can be made between the current year and the recent project average. Most of these are cooperative projects: Nulato tower operated by the Nulato Tribal Council, BSFA, and ADF&G; Kaltag Creek tower project operated by the City of Kaltag and funded by the Alaska Cooperative 4-H Extension Service and BSFA; East Fork Andreafsky, Gisasa River and Henshaw Creek weirs operated by USFWS; Clear Creek (Hogatza River tributary) and Tozitna River weirs operated by BLM; Chena River tower operated by ADF&G; and the Salcha River tower operated by BSFA.

Chinook Salmon Escapement

Yukon River Chinook salmon escapement in 2003 was assessed as average or better than average for the third consecutive year. This assessment was based on escapement counts and estimates from selected tributaries. Production from the 1997 and 1998 parent year appeared to have improved based on the overall run abundance.

The upper portion of the Yukon River drainage was plagued by high rainfall in the late part of July and early August, particularly the Tanana River basin. As a result no aerial surveys were conducted in the Upper Yukon Basin. Minimum aerial survey SEGs have been established in the East and West Fork Andreafsky, Anvik, North and South Fork Nulato, and Gisasa Rivers. Only the Anvik and Andreafsky rivers were surveyed in 2003 because of poor weather conditions. Of these 3 surveys, only the West Fork Andreafsky was considered an acceptable survey (Appendices E4 and E5).

A weir was operated on the East Fork Andreafsky River with an estimated passage of 4,336 Chinook salmon. Age, sex, and length data was collected from Chinook salmon from the weir trap. The estimated age composition was 0.5% age-3, 16.0% age-4, 51.9% age-5, 30.7% age-6, and 0.8% age-7 fish. The sex composition of the samples was 46.2% females and 53.8% males.

Anvik River age, sex and length data were collected from a carcass survey. The estimated age composition was 0.2% age-3, 8.9% age-4, 54.7% age-5, 33.2% age-6, and 3.0% age-7 fish. The sex composition of the samples was 37.6% females and 62.4% males.

The Gisasa River weir passage estimate was 1,899 Chinook salmon (Appendix E4). Age, sex and length data were collected from the weir trap. The estimated age composition from scale samples was 0.4 age-3, 5.5% age-4, 67.8% age-5, 25.4% age-6, and 1.0% age-7 fish. The sex composition of the samples was 35.3% females and 64.7% males.

A weir was operated on Henshaw Creek between June 28 and August 6; however, high water was an issue during the early portion of the season. The escapement through the weir was estimated at 748 Chinook salmon (Appendix E4). Age, sex, and length data were collected from the weir trap. The estimated age composition from scale samples was 1.4% age-3, 19.4% age-4, 45.7% age-5, 31.8% age-6, and 1.7% age-7 fish. The sex composition of the samples was 38.4% females and 61.6% males.

BLM operated a floating weir on Tozitna River between June 24 and August 6. The preliminary escapement estimate was 1,819 Chinook salmon. However, high water made counts impossible from July 27 to the end of the season. Age, sex, and length data were collected from the weir trap. The estimated age composition from scale samples was 0.4% age-3, 26.9% age-4, 51.9% age-5, 20.4% age-6, and 0.4% age-7 fish. The sex composition of the samples was 18.6% females and 81.4% males.

BEGs have been established for the Chena and Salcha Rivers located on the Tanana River. Each of these rivers surpassed their escapement goals even though monitoring projects terminated early due to high water (Appendices E4 and E5). Results indicate that the Chinook salmon escapement was approximately 8,739 fish into the Chena River and 15,942 fish into Salcha River. Age, sex, and length data were collected from both systems during carcass surveys. The estimated age composition for Chinook salmon in the Chena River was 5.1% age-4, 46.5% age-5, 41.6% age-6, and 6.8% age-7 fish. The sex composition of the samples was 44.9% females and 55.1% males. The estimated age composition for Chinook salmon in the Salcha River was 0.7% age-3, 7.3% age-4, 42.4% age-5, 42.4% age-6, and 7.3% age-7 fish. The sex composition of the samples was 42.4% females and 57.6% males.

The DFO mark-recapture tagging project at the U.S./Canada border indicated a total spawning escapement for the Canadian Yukon River mainstem of approximately 47,486 Chinook salmon, well above the escapement objective of 28,000 (Appendix E5). Age, sex, and length data were collected from the border fish wheels as the Chinook salmon were marked and released. The estimated age composition for Chinook salmon samples collected from the border fish wheels was 11.2% age-4, 48.1% age-5, 36.9% age-6, and 3.8% age-7 fish. The sex composition of the samples from the border fish wheels was 27.6% females and 73.4% males.

Aerial surveys of the Little Salmon, Big Salmon, Wolf, and Nisutlin River index areas were conducted by DFO. Two surveys were flown for each area with two surveyors participating in both surveys (Appendix E5). Potential ratings include excellent, good, fair and poor. Surveys with ratings other than poor are considered useful for inter-annual comparisons. Historical counts are documented in Appendix E5.

The Little Salmon aerial survey was flown on August 15 and 21. Countability was rated as good to excellent for the first survey and fair for the second survey. The total counts were 1,658 and

1,301 Chinook salmon, respectively. The first count was 161.9% higher than the recent average (1993-2002) of 633 fish. The first count was the highest ever observed and both counts were much higher than the lowest recorded count of 46 Chinook salmon observed in 2000.

The Big Salmon, Nisutlin, and Wolf River index areas were flown on August 17 and August 23. Excellent survey conditions were encountered on the first survey date and fair to good survey conditions on the second survey. Counts of 3,075 and 929 Chinook salmon were obtained in the Big Salmon River index area. The early survey was 186.8% higher than the recent 10-year average of 1,072 Chinook salmon and is the highest count on record. The Nisutlin River index counts were 687 and 311 Chinook salmon, respectively. The early count was 111.4 % higher than the recent average of 325 fish. In the Wolf River index area, counts of 292 and 192 Chinook salmon were recorded; the early count was 28% higher than the recent average of 228 fish. The timing of the 2003 early aerial survey of the Little Salmon, Big Salmon, Nisutlin, and Wolf Rivers appeared close to what was believed to be peak spawning. The early survey was conducted approximately 1 week earlier than the date chosen for peak aerial surveys in recent years. Based on information from surveys conducted in both 2002 and 2003, peak spawning appears to be more closely matched to the early aerial survey date. It is not known if there has been a subtle change (an advance) in the timing of peak spawning.

The Blind Creek weir project was conducted in 2003 with a total of 1,155 Chinook salmon counted between July 31 and August 18. This project was not conducted in 2001 or 2002. A total of 892 Chinook salmon were counted between August 1 and August 22 in 1999. Counts of Chinook salmon for the 2 other years of weir operation were 957 in 1997 and 373 in 1998. A relationship between aerial surveys and weir counts has not been established for this project.

The Yukon Commercial Fishers Association and the Tr'ondek Hwech'in First Nation attempted to install a resistance board weir on the Chandindu River in 2003. This is the sixth year a weir has been in operation at this location. Problems were encountered during the installation and operation of this weir in previous years (1998 to 2001) and a resistance board weir was thought more suitable for the site. A resistance board weir information exchange was conducted with USFWS. Project staff visited and participated in installation of a resistance board weir in Alaska and USFWS personnel visited the Chandindu River during resistance board weir installation. Despite the training, onsite assistance, and much hard work, operational problems were associated with installing the resistance board weir on the Chandindu River in 2003. Installation was initially unsuccessful because water velocity was high despite relatively low water conditions during installation. A combination of a resistance board weir and tripod weir was successfully installed, however flood conditions eventually washed part of the weir out. The weir staff counted 85 Chinook salmon between July 10 and July 30. No chum salmon were observed.

Unfortunately, high water conditions have continuously presented a formidable challenge to the operation of the Chandindu River weir. This cornerstone program to build community capacity attempts to restore Chinook salmon to many streams within the Klondike region. Experience with a resistance board weir and tripod weir indicates the solution to the successful operation of a weir on the Chandindu River may be a tripod/conduit structure.

The Whitehorse Rapids Fishway was monitored by the Yukon Fish and Game Association, and had a passage estimate of 1,443 Chinook salmon which was 6.4% above the recent average (1993-2002) of 1,356 fish. The sex composition observed at the fishway was 16.8% female.

Hatchery produced fish accounted for 72.5% of the return and consisted of 968 males and 78 females.

Summer Chum Salmon Escapement

Postseason analysis of escapement data indicates that the 2003 summer chum salmon escapement levels continue to be below average. Generally, the lower river escapement projects showed escapement levels approximately 60% of the 2002 estimates. The Koyukuk River tributary projects observed similar levels of escapement. Projects in the Tanana River were washed out by high water before most of the summer chum salmon had arrived. Summer chum salmon are generally not readily observed during aerial surveys. In 2003 most of the areas that are normally surveyed from the air were not surveyed because of unfavorable weather or high water. BEGs have been established for the Andreafsky and Anvik Rivers. There is also a drainage wide escapement objective for the Yukon River, based on the Pilot Station sonar project (800,000-1,600,000 summer chum salmon).

The Pilot Station passage estimate was 1,168,518 summer chum salmon (Appendix E3). Although Pilot Station indicated a passage similar to 2002, no other monitored escapement indicated a run of this size. The exception may have been the Tanana River drainage where projects were pulled early due to flooding conditions. Anecdotal data indicates the chum salmon run into Tanana River tributaries may have been quite strong.

The Anvik River sonar-based escapement count of 251,358 summer chum salmon (Appendix E6) was well below the low end of the BEG range of 400,000 to 800,000 and 60% below the recent 10-year average (1993-2002) of 663,240 chum salmon. Age, sex, and length samples were collected by beach seine. The estimated age composition from scale samples collected was 1.4% age-3, 72.9% age-4, 24.5% age-5, and 1.3% age-6 fish. The sex composition of the samples was 55.3% females and 44.7% males.

The estimated escapement for summer chum salmon into the East Fork Andreafsky River in 2003 was 22,461(Appendix E6). This was approximately 50% of the 2002 count of 45,019 and is 65% below the low end of the ground-based BEG of 65,000-135,000 summer chum salmon. Age, sex, and length samples were collected through the weir trap. The estimated age composition from scale samples collected was 0.4% age-3, 73.4% age-4, 25.7% age-5, and 0.5% age-6 fish. The sex composition of the samples was 44.8% females and 55.2% males. Appendix E6 describes the additional summer chum salmon escapements.

The escapement estimate of summer chum salmon through Clear Creek weir in 2003 was 6,159 fish (Appendix E6). This level of escapement is 89% below the average (1994-2002, excluding 1998 and 1999) escapement of 54,937 fish. Age, sex, and length data were collected from the weir trap. The age composition of samples was 0.3% age-3, 88.7% age-4, 8.9% age-5, and 2.2% age-6 fish. The sex composition of the samples was 40.5% females and 59.5% males.

The escapement estimate of summer chum salmon through the Gisasa River weir in 2003 was 25,999 fish (Appendix E6). This level of escapement is half the average (1995-2002) of 52,685 summer chum salmon. The age, sex, and length data were collected from the weir trap. The age composition of samples was 0.6% age-3, 70.1% age-4, 27.9% age-5, and 1.4% age-6 fish. The sex composition of the samples was 45.1% females and 54.9% males.

The escapement estimate of summer chum salmon passed the Henshaw Creek weir in 2003 was 21,400 fish. This escapement was slightly below the 2000-2002 average of 25,958 summer chum

salmon. Age, sex, and length data were collected from the weir trap. The age composition from scale samples was 1.1% age-3, 85.9% age-4, 8.5% age-5, and 4.5% age-6 fish. The sex composition of the samples was 51.9% females and 48.1% males.

An estimated 17,814 summer chum salmon passed the Nulato tower project in 2003. This level of escapement is the lowest on record; however, the project began operations 2 weeks later than normal. The 1994 to 2002 average (excluding 2001) was 106,443 summer chum salmon. Age, sex, and length data were collected from the weir trap. The estimated age composition from scale samples was 1.6% age-3, 79.8% age-4, 17.5% age-5, and 1.1% age-6 fish. The sex composition of the samples was 42.2% females and 57.8% males.

The escapement estimate of summer chum salmon through the Tozitna River weir in 2003 was 25,003 fish. Age, sex, and length data were collected from the weir trap. The estimated age composition from scale samples was 1.1% age-3, 87.0% age-4, 10.5% age-5, and 1.3% age-6 fish. The sex composition of the samples was 32.9% females and 67.1% males.

Fall Season Escapement 2003

Fall Chum Salmon Escapement

Major fall chum salmon spawning areas are located in the Chandalar, Tanana, and Porcupine River drainages and within the Canadian portion of the mainstem Yukon River drainage (Figure 12). Historic fall chum salmon escapement information along with the most current 2003 escapement results are presented in Appendix E7. Historic coho salmon escapement information along with the most current 2003 escapement results are presented in Appendix E9.

The 2003 preseason run projection for Yukon River fall chum salmon ranged from 260,000 to 650,000 fish. The high end of the range was derived from normal run size expectations for the parent-year escapements realized throughout the drainage in 1998 and 1999. The low end of the range was primarily based upon the expectation of extremely poor production observed in recent years of actual fall chum salmon returns.

Initial inseason assessments of fall chum salmon for 2003 were influenced by the performance of summer chum salmon that ranged slightly below average based on the main river sonar abundance estimate to extremely poor based on observed escapements. The discrepancy between the 2 summer season assessments resulted in conservative management of fall chum salmon, particularly during the early portion of the run. Management of the fisheries continued with the use of inseason monitoring projects that are located throughout the drainage. Assessment of the run occurs at each location; however, managers are looking for alignment from the various indicators.

Each pulse of chum salmon typically takes approximately 20 days to reach the confluence of the Tanana River and another 10 days to migrate to the Canadian Border. In 2003, the largest pulse did not enter the river until August 15. Once the upriver assessment projects (particularly the mark-recapture projects which provide abundance estimates to the upper Yukon and Tanana Rivers) confirmed that the main river sonar was more realistic relative to run strength, management actions were adjusted accordingly.

Assessment of run size was made using several methods. Initially, a considerable amount of weight is placed on the Pilot Station sonar abundance estimate until the upriver monitoring projects could provide data. The fall chum salmon passage estimate, based on Pilot Station sonar

for the period July 19 through August 31 was approximately 889,800 fish (Appendix E3). One method to determine total run size is based on Pilot Station sonar abundance estimate with the addition of the estimated commercial and subsistence harvests downstream of sonar site, including the test fisheries (approximately 10,600 fish), and an estimated 5 percent for fall chum salmon that passed into the river after termination of the project (31 August). Therefore the total run size for the Yukon River drainage based on the main river sonar at Pilot Station was estimated to be 988,000 fall chum salmon. However, this appeared slightly high compared to estimates provided by up river escapements. Coho salmon have overlapping run timing with that of the fall chum salmon, which could possibly affect sonar test fishing apportionment.

A second method to calculate run size is based on the upper Yukon and Tanana River individual monitored systems plus an average escapement for tributaries downstream of the confluence of the Tanana (for example 25,000 escapement to the Koyukuk River) plus the estimated harvest from both U.S. and Canada, which resulted in a preliminary estimate of 763,000 fall chum salmon. The midpoint between the 2 estimates is approximately 875,000 fish, which is 34% above the upper end of the expected production based on average return per spawner of 650,000 fish. The 2003 fall chum salmon run could be characterized as near average run size consisting of 2 major pulses, 1 in early August, which then fell off to below average followed by a second pulse in mid August that resulted in improved overall run strength and average run timing through the Lower Yukon Area.

A review of upper river test fish data and escapement information suggested that the run strength of both the upper Yukon River (non-Tanana) and Tanana River run components were improved compared to recent years. The USFWS mark-recapture project near Rampart provided weekly passage estimates used for inseason management. The mark-recapture passage estimate through September 18 was approximately 485,100 (95% CI ± 51,500) fall chum salmon. The 2003 estimate represents the third largest return since the project began and is a 62% increase above the historical (1996 to 1999 and 2001 to 2002) average abundance of 301,000 fall chum salmon.

The Chandalar River sonar project ran from August 8 through September 25, 2003. The escapement estimate is approximately 214,400. This estimate is approximately 41% above the 1995-2002 average of 140,000 fish. Chandalar River sonar estimates of fall chum salmon range from a low of 65,894 fish in 2000 to 280,999 fish in 1995. The estimated escapement in the Chandalar River was 23% above the upper end of the BEG range of 74,000 to 152,000 fall chum salmon.

By comparison, the escapement estimate of fall chum salmon in the Sheenjek River was approximately 44,000 fish, based on the run timing observed at the USWFS Rampart tag recovery fish wheel. The Sheenjek River sonar operated from August 9 through September 26 with an estimated passage of 38,000 fall chum salmon. However the last week of counts were the highest daily passages for the season indicating that there was a late component to the run and therefore the estimate was expanded to account for the late component. The adjusted 2003 estimated escapement in the Sheenjek River was 12% below the lower end of the BEG range of 50,000 to 104,000 fall chum salmon. Age, sex, and length samples of fall chum salmon using vertebra were collected by beach seining throughout the season. The estimated age composition from samples were 1.2% age-3, 82.1% age-4, 15.5% age-5, and 1.2% age-6 fish. The sex composition of the samples was 45.2% females and 54.8% males.

The DFO weir on the Fishing Branch River passed an estimated 29,519 fall chum salmon during the 51-day period from August 30 through October 19, 2003. An interim escapement goal of 15,000 fall chum salmon for the Fishing Branch River was established preseason, anticipating that the goal of 50,000 to 120,000 fish was highly unlikely to be met given the recent productivity of the stocks as a whole. Escapement to the Fishing Branch River was higher than the previous 6 years due to conservative management actions taken along the migration route.

The mainstem Yukon U.S./Canada border escapements were estimated to be 142,683 fall chum salmon, which was above the interim goal of 65,000 and above the border passage goal of >80,000 fish in the agreement. This level of escapement was the highest since 1995 and represented improvement in the run.

In 2003, monitoring of the Tanana River drainage consisted of estimating fall chum salmon run abundance based on mark-recapture techniques. Two population estimates were generated, 1 in the Kantishna River drainage and the other in the upper Tanana River drainage (upstream of the Kantishna River). The estimate for the Kantishna River run component through October 1, 2003, was 87,359 $\pm$ 15,759 (95% CI), which is highest estimate since the project began. The 2003 mark-recapture abundance estimate for the upper Tanana River through October 1 was 193,418 $\pm$ 19,552 (95% CI) fall chum salmon based on the Bailey method (Cleary and Hamazaki 2004).

The Tanana River established BEG range of 61,000 to 136,000, which includes the Toklat River. To represent the Upper Tanana River, the Toklat River range is subtracted leaving a passage range of 46,000 to 103,000 fall chum salmon to compare with the upper Tanana River mark-recapture estimate. The 2003 estimate was double the upper end of the goal. Adjustments were made inseason to release fish untagged during nighttime operating hours due to large numbers of fish captured and budgetary constraints.

Evaluations of runs to the Delta and Toklat Rivers, 2 areas with individual BEGs, were made based on postseason foot surveys. The Delta River in the upper Tanana River drainage has a BEG of 6,000 to 13,000 fall chum salmon. The area under the curve estimate using live fish observed during 9 replicate surveys, conducted between October 3 and December 4, provided an estimate of 22,582 fall chum salmon. There were approximately 92 live fish with tags observed over the course of conducting the surveys; however, only 31 tags from carcasses were recovered. Age, sex, and length samples using vertebra were collected from fall chum salmon carcasses in various channels of the Delta River. The estimated age composition from samples was 2.3% age-3, 87.2% age-4, 9.9% age-5, and 0.6% age-6 fish. The sex composition of the samples was 55.2% females and 44.8% males.

The Toklat River, in the Kantishna River drainage, has a BEG of 15,000 to 33,000 and an Optimum Escapement Goal (OEG) of 33,000 fall chum salmon. The Toklat River abundance is estimated based on a single ground survey of the index area that was conducted on October 23-24, 2003. The abundance of fall chum salmon was estimated to be 21,492 fish derived from the expansion of the actual stream count, based on the migratory time-density curve. There were 89 tags recovered from carcasses during the survey; additionally, another 54 tags were unrecoverable due to being on live fish. Fall chum salmon age, sex, and length samples using vertebra were collected from carcasses in various channels of the Toklat River. The estimated age composition from samples was 5.0% age-3, 83.1% age-4, 11.3% age-5, and 0.6% age-6 fish. The sex composition of the samples was 58.1% females and 41.9% males.

Coho Salmon Escapement

Assessment of coho salmon spawning escapement is limited in the Yukon River drainage because of funding limitations and marginal survey conditions that often prevail during periods of peak spawning. The coho salmon passage sonar estimate at Pilot Station represents less than the total return as the project terminates on August 31, prior to the end of the run. However an estimated passage of 269,081 coho salmon at Pilot Station is the highest abundance level documented to date.

Tributary escapement estimate information is limited to the East Fork Andreafsky River and the Tanana River drainage. Presently, only 1 escapement goal has been established for coho salmon in the Yukon River drainage. The Delta Clearwater River in the Tanana River drainage has a minimum goal of 9,000 fish, based upon a boat survey during peak coho salmon spawning. The Delta Clearwater River count was 102,800 coho salmon and was conducted by boat survey on October 21, 2003. This escapement level is the highest on record and is 4.36 times higher than the 10-year average (1993-2002) of 23,605 coho salmon. Spawning ground surveys of selected areas were also conducted in other areas within the Tanana River drainage, primarily the Nenana (BSFA) and upper Tanana (ADF&G) areas, most of which substantially surpassed previous escapement levels.

In the lower Yukon River drainage only the East Fork Andreafsky River coho salmon escapement is monitored. In 2003, as of September 15, the weir passage estimate was 8,231 coho salmon. The historical (1995 to 2002) average passage is 8,311 coho salmon, ranging from 2,963 in 1999 to 15,896 in 2001. Counts were interpolated for high water events in 1998, 2001, and 2003.

ENFORCEMENT 2003

The primary enforcement authority for violations of Fish and Game regulations is the FWP with the Department of Public Safety. State FWP officers worked cooperatively with federal USFWS officers for the purpose of enforcing subsistence, personal use, and commercial fishing regulations within the Yukon Area.

Lower Yukon Area

FWP conducted patrols in the Lower Yukon Area during June 2003 with 3 FWP officers utilizing 2 float planes, 1 wheel plane, and 1 skiff. In general, compliance with commercial fishing regulations was good. Over 128 contacts were made and 7 citations were issued. Citations issued were for unmarked gear, lack of crew member license, commercial fishing without CFEC permit, and improper vessel identification.

Upper Yukon Area

Aircraft and boat patrols from Fairbanks were conducted in the Upper Yukon Area during the summer season. Early in the season, emphasis was placed on patrolling the openings and closings of commercial fishing periods. Most contacts were related to the marking of gear, however no citations were issued.

OUTLOOK FOR 2004

Chinook Salmon

Yukon River Chinook salmon return primarily as age-5 and age-6 fish, although age-4 and age-7 fish also contribute to the run. Spawning ground escapements in 1998, the brood year producing age-6 fish returning in 2004, were near the upper end of the escapement goals in the Chena and Salcha Rivers but below the escapement objective in Canada. However, the age-5 component in 2003 was average, indicating improved production. With the exception of 2003, the runs of salmon since 1998 has been well below average in strength indicating abnormally poor production from parent year escapements. Assuming a normal return of age-6 fish, and a weaker return of age-5 fish, the 2004 is expected to be average to below average but improved over recent poor years of 1998-2002. Given the uncertainties associated with recent declines in productivity, it is anticipated the run will provide for escapements, support a normal subsistence harvest, and a below average commercial harvest. Fishery management will be based upon inseason assessments of the run. If inseason indicators of run strength suggest a harvestable surplus exists, the commercial harvest in Alaska could range from 20,000 to 60,000 Chinook salmon. This range of commercial catch is near the 10-year average (1994-2003) of approximately 62,800 Chinook salmon.

In January 2001, the BOF modified the Yukon River King Salmon Management Plan by adding a fishing schedule for the subsistence salmon fisheries. This schedule was in response to the poor 2000 Chinook salmon run, and expected poor run in 2001. The objectives of the schedule are to 1) reduce harvest early in the run when there is a much higher level of uncertainty, 2) spread the harvest throughout the run to reduce harvest impacts on any particular component of the run, and 3) spread subsistence fishing opportunity among users during years of low salmon runs. The BOF addressed numerous proposals in January 2003 to change the current subsistence fishing schedule. Proposals ranged from reducing subsistence fishing opportunity in Districts 1-3 by half to lifting the schedule entirely. No changes were adopted to the current subsistence fishing schedule.

Summer Chum Salmon

Summer chum salmon runs in 2004 will be dependent on the escapements, and the production of the escapements from 2000 (age-4 fish) and 1999 (age-5-fish). Spawning escapements in 1999 were slightly above the low end of the recently established BEG range in the Anvik River and below the BEG in the East Fork Andreafsky River. The 2000 run of summer chum salmon was the poorest on record and no escapement goals were met. It appears that recent declines in the productivity of Yukon River summer chum salmon are continuing. This trend is similar to the declines seen in many Chinook and chum salmon stocks in the Bering Sea region. Specifically, production of Anvik River chum salmon, which represent the largest spawning stock of Yukon River summer chum salmon, has fallen well below 1 return per spawner for the most recent returning brood years. There is uncertainty as to how long this trend will continue, and whether productivity could be reduced even further. While exact reasons for the run failures are unknown, it is widely speculated that poor marine survival related to localized weather and ocean conditions in the Bering Sea are the primary contributing factors. Weakness in Yukon River salmon runs is been attributed to reduced productivity, and not the result of low levels of parent year escapements. However, information from the Bering Sea (BASIS project and trawl

fisheries) indicate that ocean conditions may be improving and therefore, summer chum salmon production may be improving.

If ocean conditions are more conducive to survival, it is anticipated the run will provide for escapements, support a normal subsistence harvest, and possibly a small commercial harvest. If not, subsistence harvest opportunity may require reductions to provide for escapements. If inseason indicators of run strength suggest a harvestable surplus exists, a commercial harvest in Alaska could range from 0 to 50,000 summer chum salmon.

Fall Chum Salmon

Drainagewide, Yukon River fall chum salmon escapements for the period 1974 through 1999 have been estimated to have ranged from approximately 180,000 (1982) to 1,500,000 (1975), based upon expansion of escapement assessments for selected stocks to approximate overall abundance (Eggers 2001). Escapements in these years resulted in subsequent returns that ranged in size from approximately 312,000 (1996 production) to 1,400,000 (1975 production) fish, using the same approach to approximating overall escapement. Corresponding return per spawner rates range from 0.3 to 3.2, averaging 1.8 for all years combined (1974-1997).

Dramatic declines in salmon returns to western Alaska have been realized from 1997 through 2002, with a record low in 2000. To adjust for the run failures, beginning in 1999, the projections have been presented as a range that includes the normal point projection as the high end. The low end was determined by reducing the normal point projection by the average ratio (0.52) of observed to predicted returns from 1998 through the current year.

Yukon River fall chum salmon return primarily as age-4 or age-5 fish, although age-3 and age-6 fish also contribute to the run. The 2004 run will be comprised of the parent years 1998 to 2001. Estimates of return per spawner based on brood year return were used to estimate production for 1998 and 1999 and an auto-regressive Ricker spawner-recruit model was used to predict the returns from 2000 and 2001. The point estimate utilizes the 1984 to 1997 odd/even maturity schedules and the lower end of the range is based on the average proportion of 0.52, resulting in a 2004 run size projection in the range of 350,000 to 672,000 fall chum salmon with the approximate age composition of 1.6%, 56.7%, 40.8%, and 0.9% for fish age-3 through age-6 respectively.

The escapements for each of the 4 parent years that will contribute to the 2004 run were extremely poor and below the minimum drainagewide escapement goal of 350,000 fall chum salmon. The major contributor to the 2004 fall chum salmon run is anticipated to be age-4 fish returning from the parent year 2000, which was the worst run on record. The return of age-4 fish from even-numbered brood years during the time period 1984 to 1997 typically averages 376,000 chum salmon, and ranges from a low of 166,000 for brood year 1996 to a high of 650,000 for brood year 1992. To meet the projected level of return just for age-4 fish would require exceptional survival conditions. In this case the projected level of age-4 fish would surpass the average total run size for even-numbered years of 620,000 fall chum salmon.

The projection for 2004 is based on the combination of extremely weak escapements and the likelihood of a weaker return in an even-numbered year, which advocates the use of a conservative run size estimate for 2004. However, improvements in production were evident in the 2003 return that included an unanticipated strong component of age-4 fish from the brood year 1999. If this affect of improved survival was maintained, a strong carryover of age-5 fish

could materialize which may bolster the run size enough to realize or surpass the upper end of the range.

The projected run size using the point estimate for the 2004 return should support normal subsistence fishing activities. The run will be monitored inseason to determine the strength in relation to the estimated range and what amount of harvest can be provided based on the levels stipulated in the Alaska Yukon River Drainage Fall Chum Salmon Management Plan.

Coho Salmon

Although comprehensive escapement information on Yukon River drainage coho salmon is lacking, it is known that coho salmon primarily return as age-4 fish and overlap in run timing with fall chum salmon. Based on Pilot Station sonar operations from 1995, and 1997 to 2003, the 2000 return was the second largest on record and will be the dominant age class in the 2004 return. However, in contrast to the high abundance estimated at Pilot Station sonar, the evaluations of escapement in the upper portions of the drainage were weak to poor in abundance in 2000. There is a possibility that the less than favorable survey conditions, hampered by warm fall weather maintaining high water levels or holding off by the fish due to these same conditions, may have resulted in inordinately low counts. In at least 1 area it was noted that coho salmon moved in extremely late. Assuming average survival, the 2004 coho salmon run, is anticipated to be average to above average based on the performance of Pilot Station sonar in 2000 and the fact that coho salmon abundance has been on the increase in recent years.

The Alaska *Yukon River Coho Salmon Management Plan* allows a directed commercial coho salmon fishery, but only under very unique conditions. Directed coho salmon fishing is dependent on the assessed levels of run for both coho and fall chum salmon since they overlap in run timing.

AREA SALMON REPORT 2004

2005 ALASKA BOARD OF FISHERIES ACTIONS

During the January 2004 BOF meeting, the BOF addressed stocks of concern action plan options and regulatory proposals. Chinook salmon was continued as a stock of yield concern and summer chum at the management level. The drainage-wide fall chum salmon stock also remains unchanged as a yield concern. In 2001, the Toklat River fall chum salmon stock was declared a management concern because it did not meet the established escapement goal at the time. Since then, the BEG analysis has been finalized and the BOF found that the Toklat River stock does not meet the criteria of a management concern. Also, since the Fishing Branch River fall chum salmon stock is under the purview of the US/Canada Panel, the BOF removed this stock as a management concern. However, both the Toklat and Fishing Branch River fall chum salmon stocks are included in the drainage-wide Yukon River fall chum stock classification as a yield concern. A summary of the most recent BOF actions affecting the Yukon River drainage can be found in Appendix I1.

TOTAL YUKON RIVER DRAINAGE SALMON HARVEST 2004

The total 2004 estimated harvest, for the Yukon River drainage, including Canada, was 123,570 Chinook, 96,733 summer chum, 76,296 fall chum, and 43,000 coho salmon (Table 2). The 2004 estimated total Yukon River drainage harvests compared to the recent 5-year averages (1999-2003) were as follows: Chinook 41% above average; summer chum 21% above average; fall chum 23% above average; and coho salmon 65% above average.

ALASKAN SUBSISTENCE FISHERY 2004

Subsistence Harvest Reporting 2004

A total of 55,914 Chinook, 78,165 summer chum, 62,756 fall chum, and 21,028 coho salmon were estimated to have been harvested and 1,444 households were estimated to have participated in the Yukon Area subsistence and personal use fisheries in 2004 (Table 3). The Yukon Area includes the Alaskan portion of the Yukon River drainage and the Coastal District communities. Harvest estimates include salmon given away by Yukon Area test fish projects (Busher et al. *In prep*).

Historical estimates of the subsistence harvest based on surveys and permit harvest information for salmon species is shown in Appendices D1 through D4. Historical subsistence permit harvest information for fisheries currently in regulation is summarized in Appendices D5 and D6.

Survey Program 2004

The majority of communities within the Yukon Area have no regulatory requirements to report their subsistence salmon harvest. To estimate the harvest of each salmon species from these communities, ADF&G has implemented a voluntary survey program. Household subsistence salmon surveys were conducted in the Lower Yukon Area in September and continued in the Upper Yukon Area through October. The survey program utilizes subsistence catch calendars,

postseason household interviews, and postseason household telephone interviews, as well as postcards to collect harvest information.

Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the postseason survey. Based on survey information collected in 2004, an estimated 1,246 households harvested approximately 47,701 Chinook; 72,816 summer chum; 44,635 fall chum; and 8,205 coho salmon in the survey portion of the Yukon Area, which includes the coastal communities of Hooper Bay and Scammon Bay (Table 3).

Subsistence Permit Program 2004

In some portions of the Yukon Area, subsistence fishers are required to obtain an annual household permit prior to fishing for salmon. In 2004, these areas included the Tanana River drainage, the Yukon River drainage between Hess Creek and the Dall River (Yukon River Bridge area) and the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough to the U.S./Canada border. In 2004, two additional permit areas were established by the BOF. One addition is an extension to the existing area from Hess Creek to Dall River to the downstream end of Garnet Island and includes the community of Rampart due to a new road being developed and the lack of households remaining year round in the community. The second one is for subsistence harvest of whitefish on the upper, middle, and west forks of the Koyukuk River, which are accessible by the haul road.

In these areas, fishers are required to document their subsistence salmon harvest on the household permit and return them to ADF&G at the end of the fishing season. A total of 391 subsistence permits were issued in 2004, of which, approximately 255 subsistence permits were issued to harvest salmon (Table 4). This number of subsistence salmon permits issued compares to the 5-year average (1999-2003) of 288 permits and the 10-year average (1994-2003) of 288 permits (Appendices D5 and D6). Subsistence fishing permits are issued annually for the harvest of northern pike in the Tolovana River drainage (designated ST); for non-salmon fish species in the Upper Tanana River drainage (designated SU); and for the occasional subsistence whitefish permits (designated SW) for sensitive or unknown harvest areas. Subsistence whitefish permit applications typically are required to go through a 10-day review process to determine harvest levels and establish fishing stipulations regarding gear and reporting requirements.

A total of 210 subsistence permit holders (including Stevens Village) indicated they fished in 2004 (Table 4). The reported harvest from permits totaled 6,556 Chinook, 2,429 summer chum, 15,513 fall chum, and 11,789 coho salmon, 4,351 whitefish species, 96 sheefish, 127 burbot, 606 pike, 340 suckers, and 1,032 Artic grayling (Table 4 and Appendix G2).

(Note that estimates for Stevens Village on Table 3 are a combination of permit and survey data and do not reflect strictly permit totals. Because of its unique location, fishers in Stevens Village harvested salmon in both the permitted and survey areas. The Stevens Village permit information was used to supplement the postseason survey of the community.)

Subsistence Salmon Use from Test Fisheries 2004

In order to monitor and manage the Yukon Area salmon fisheries, ADF&G operates, or oversees, several test fishing projects. The fish harvested during the operation of the projects are provided to the local community to supplement their subsistence harvests. In 2004, the test fishery projects throughout the drainage provided a total of 1,823 Chinook, 2,716 summer chum, 2,378 fall chum, and 801 coho salmon to households for subsistence use (Table 3). Residents of the

communities of Alakanuk, Emmonak, Kaltag, Kotlik, Mountain Village, and Pilot Station were the primary recipients of fish from the test fisheries. Salmon caught in the test fisheries were assumed to replace fish that would have been obtained through normal subsistence fishing activities; therefore salmon given away from the test fisheries were added into the subsistence harvest for that community.

ALASKAN PERSONAL USE FISHERY 2004

A household permit is required for personal use fishing in the portion of the Tanana River drainage within the Fairbanks Nonsubsistence Area. Fishers are required to document their personal use harvest on household permits and return them to ADF&G at the end of the season.

In 2004, 68 personal use salmon permits were issued (Table 4 and Appendix G2). This compares to the recent 5-year average (1999 to 2003) of 70 permits, and 10-year average (1994 to 2003) of 93 permits (Appendix D7). In addition, 3 personal use whitefish and sucker permits were issued in 2004 to fishers in the Fairbanks Nonsubsistence Area. Personal use fishers reported harvest was 201 Chinook, 231 summer chum, 230 fall chum, and 233 coho salmon. Additionally, 51 whitefish, 1 sheefish, and 1 sucker were reported as harvested under the personal use fisheries.

YUKON AREA CHINOOK AND SUMMER CHUM SALMON FISHERY SUMMARY 2004

In response to the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF classified the Yukon River Chinook salmon stock as a yield concern during the September 28-29, 2000 work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest in 2001. In addition, the BOF classified the Yukon River summer chum salmon stock as a management concern. The determination of a management concern was based on the chronic inability to meet existing escapement goals for the summer chum stock since 1998. The stock status was readdressed at the 2004 January BOF meeting. ADF&G recommended, and the BOF agreed, to continue the current stock of concern status for both Chinook and summer chum salmon.

The 2004 Chinook salmon run was anticipated to be stronger than the 2001 and 2002 runs, but below average. Given the uncertainties associated with recent declines in productivity, it was anticipated the Chinook salmon run would provide for escapements, support an average subsistence harvest, and a below average commercial harvest. The preseason outlook anticipated a commercial harvest of 20,000 to 60,000 Chinook salmon. Similarly, considering recent declines in productivity and the beginning of a series of below average parent-year escapements, it was anticipated the summer chum salmon run would also provide for escapements, support an average subsistence harvest, and a small directed commercial harvest. The preseason outlook anticipated a commercial harvest of 50,000 to 150,000 summer chum salmon. Besides the incidental harvest in the directed Chinook salmon commercial fishery, the only directed summer chum salmon harvest was anticipated to occur in the Tanana River where there is a limited market.

Chinook Salmon Management Overview 2004

The lower Yukon River was ice-free on May 8, the earliest date since ADF&G began maintaining records (1961) and 10 days earlier than the historic average of May 26 (1962-2003)

(Appendix A25). The first subsistence catch of chum salmon was reported in St. Mary's on May 18 with the first catch of Chinook salmon reported on May 22 near Alakanuk. ADF&G's test fishing project recorded its first Chinook salmon catch on May 28. The ice breakup occurred earlier in the lower river than it did in the upper river. This is contrary to the typical pattern observed. The river conditions in the lower river during the early portion of the season were characterized by unusually low water. However, as snowmelt in the middle and upper portions of the Yukon River progressed, the water level rose to normal breakup levels. Debris early in the season was a factor that affected ADF&G's test fishing project. Numerous elders noted this was the most debris they had seen in many years.

In cooperation with federal subsistence managers, a preseason management strategy was developed and described in an information sheet that outlined the run and harvest outlooks along with the regulatory subsistence salmon fishing schedule. The preseason management strategy was to implement the subsistence salmon fishing schedule as salmon began to arrive in a district or subdistrict. Prior to implementing the subsistence salmon fishing schedule, subsistence fishing would be allowed 7 days per week to provide opportunity to harvest resident species, such as whitefish, sheefish, pike, and suckers. The informational sheet was also used to prepare fishers for the possibility of reductions to the subsistence salmon fishing schedule or to allow for a small commercial fishery depending upon how the runs developed. The information sheet was mailed to Yukon River commercial permit holders and approximately 2,800 families identified in ADF&G's subsistence household database. State and federal staff also presented the management strategy to YRDFA, State of Alaska Advisory Committees, and Federal Regional Advisory Councils.

A major and conservative component of the 2002 and 2003 preseason management plans was to wait until near the midpoint of the Chinook salmon run before determining if the run was strong enough to support a commercial fishery. The idea was to pass fish upstream for escapement, border commitments to Canada, subsistence uses, and provide ADF&G time to assess the run prior to commercial fishing. This was an interim strategy designed to offer some limited opportunity during the recent weak runs. However, a drawback to this approach is that any commercial fishing would occur on the end of the run, on singular stocks, and does not spread out harvest. Also, if the run is strong, delaying commercial fishing would result in foregone commercial harvests. The preferred strategy for a commercial fishery is to fish during the middle of the run between the quarter and three-quarter point of the run, a strategy that was in place prior to the decline of the runs beginning in 1998. Additional harvest can occur late in the season depending on information from escapement projects. With the runs improving, a return to commercial fishing during the mid portion of the run was considered for the 2004 season. Because of the conservative management in 2002 and 2003, and underestimating the run strength in 2004, a foregone commercial harvest of Chinook salmon has occurred in each of these years.

Emmonak test fishing indices, subsistence harvest reports, and Pilot Station sonar passage estimates provide information ADF&G used to assess the salmon run inseason. As the run progressed upriver, other projects provided additional run assessment information. Because the 2004 run was expected to be driven by the age-6 class from the poor run of 1998, ADF&G developed a conservative preseason management strategy in 2004 with a potential commercial harvest ranging from 20,000-60,000 Chinook. As the run developed it became clear that the 2004 Chinook run was better than expected and management of the fishery became more liberal as a result. Based on set gillnet test fishing CPUE and preliminary Pilot Station sonar estimates, the

run was stronger than the 2001 and 2002 runs. However, because of significant periods of high debris loads in the test nets, and increased silt load at the Pilot Station sonar project, ADF&G underestimated run strength. In 2004, the season commercial harvest total for Chinook salmon was 56,149 fish (Table 10), just below the upper end of the preseason outlook.

According to test fishing CPUE data, 50% (midpoint) of the Chinook salmon run had entered the lower river by June 17, three days earlier than the average date for the midpoint. The cumulative set gillnet test fishery CPUE in 2004 was 20.48. When comparing to previous years, this was above the 1998-2002 average of 18.12 but below the 1989-1997 (prior to the run decline) and 2003 average of 26.17. The Pilot Station sonar cumulative passage preliminary estimate was approximately 194,155 Chinook salmon. Although this estimate was conservative, and small Chinook salmon (<655 mm) represented 10% more of the sampled population than normal, the passage of large fish was still the second highest since the inception of the project. This contrasted with the information from the test nets, which indicated a run of below average run strength. However, because of debris earlier in the run, indications that fish were migrating through unmonitored areas as they entered the river, and higher than normal silt load, ADF&G's early assessment of the run underestimated the actual run strength.

Projects throughout the drainage indicated Chinook salmon escapement goals were either met or exceeded. Aerial surveys in the Alaska portion of the lower Yukon River drainage indicated most escapements exceeded the upper end of the SEGs with the Anvik River the second highest on record and East Fork Andreafsky River the fifth highest on record since surveys began in 1961. For the fourth year in a row, the Tanana River drainage Chinook salmon escapements exceeded the upper end of the BEG. Aerial surveys in the U.S. portion of the upper Yukon River drainage were hampered by smoke from forest fires. Border passage information also indicated high numbers of Chinook salmon migrating into Canada. The border passage estimate was 48,111 Chinook salmon. In the previous 22 years of mark-recapture population estimates, only 5 passage estimates have been greater than 50,000 Chinook salmon (Appendix E5). The interim escapement objective into Canada has been met 4 consecutive years, and since objectives were set, objectives have been met in 11 of the 14 years.

In summary, postseason run assessment indicated the 2004 Chinook salmon run was stronger than the below average runs of 2001 and 2002, and possibly near the 1989-1998 and 2003 average run size.

Summer Chum Salmon Management Overview 2004

The Yukon River summer chum salmon run was managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan*. The management plan provides for escapement, followed by consumptive uses, of which subsistence has first priority, and commercial, sport, and personal use fishing is secondary. The plan allows for varying levels of harvest opportunity depending on the run size projection.

ADF&G uses the best available data, including preseason run outlooks, test fishing indices, age and sex composition, subsistence and commercial harvest reports, and escapement monitoring projects to assess the run. ADF&G monitored the summer chum salmon run in the lower Yukon River by using subsistence harvest reports, Pilot Station sonar passage estimates, and Anvik River sonar escapement estimates. Results from these projects, in combination with the preseason projection, were the basis for initial management decisions.

The run timing of summer chum salmon was, in general, normal. However, there was a pulse of summer chum salmon very early in the season, prior to Chinook salmon entering the river. This early pulse of summer chum salmon seemed to be most notable in the Koyukuk River drainage as indicated by subsistence harvests. By June 10, the summer chum salmon run projection had reached a level that would have allowed a directed summer chum salmon fishery. Prior to the 2004 season, ADF&G informed buyers and commercial fishers of the potential for a directed summer chum salmon commercial fishery. However, because of poor market conditions and problems with infrastructure, the summer chum salmon harvest was incidental to Chinook salmon directed harvests with the exception of a directed summer chum salmon fishery in District 6.

Summer Season Subsistence Fishery 2004

The BOF adopted a subsistence salmon fishing schedule in January 2001. The goal of the schedule is to provide windows of time that salmon may migrate upriver without fishing pressure. Objectives of the schedule are to spread the harvest throughout the run to reduce the impact on any singular component of the run and spread subsistence harvest opportunity among users. BOF also determined this schedule would provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. When there are no commercial salmon fishing periods, the subsistence fishery is based on a schedule, implemented chronologically by ADF&G, consistent with migratory timing as the run progresses upstream. The schedule is based on past fishing schedules. Fishing periods may be altered if preseason or inseason run assessment indicates it is necessary for conservation purposes or if commercial salmon fishing periods occur.

Unrestricted subsistence fishing was allowed 7 days per week prior to implementing the subsistence salmon fishing schedule. In the lower Yukon River, the subsistence salmon fishing schedule was implemented on May 31 in District 1. This date was chosen preseason as part of the management strategy, based on normal run timing, to provide subsistence fishers advanced notice. Once the schedule began, it was implemented chronologically as the run migrated upriver. During windows of subsistence salmon fishing closures, subsistence fishers were allowed to fish for whitefish, suckers, and other non-salmon species using gillnets restricted to a maximum length of 60 feet and 4-inches or less in stretch mesh. Additionally, fishers were not allowed to use fish wheels to fish for non-salmon species during subsistence salmon fishing closures. Restricting gillnet length and mesh size and not allowing the use of fish wheels during subsistence salmon fishing closures provided protection to Chinook and summer chum salmon while allowing subsistence fishers the opportunity to fish for non-salmon species.

Early run assessment indicated the Chinook and summer chum salmon run was of adequate strength to allow subsistence salmon fishing to continue on the regulatory fishing schedule. Further assessment indicated that a surplus of Chinook salmon was available for commercial harvest. Once the commercial season was opened, the schedule reverted to the pre-2001 BOF subsistence fishing schedule. The schedule was relaxed in the same manner it was instituted, chronologically up river. This allowed subsistence fishing to occur 7 days per week, 24 hours per day except 18 hours prior to, during, and 12 hours after each commercial openings in Districts 1, 2, and 3.

Subsistence harvest information was gathered during the summer season by fishers reports to ADF&G's Emmonak office, calls made to fishers by state and federal managers, and an inseason

survey organized by USFWS. Salmon run strength information was also gained through the weekly YRDFA teleconferences. Through these sources, subsistence fishers from throughout the river reported good catches of Chinook and summer chum salmon, and were meeting their needs. Generally, fishers were satisfied with their Chinook salmon harvests. A regular comment this year concerned the health of Chinook salmon. Nearly all fishers commented that the fish looked "good" (healthy) and large. Reports also indicated some fishers took advantage of fishing opportunity in their area prior to the schedule being implemented. However, these individuals were few and although the run was early, many fishers began fishing at their traditional fishing time or later.

Because run strength of the Chinook and summer chum salmon was assessed to be average to above average, once the commercial season ended, the subsistence salmon fishing schedule was not reinstituted until the fall season.

The one exception to the positive subsistence reports was from some of the coastal communities, especially Hooper Bay. Hooper Bay fishers reported they were unable to harvest their subsistence needs because of a rare event of continuous offshore winds. At a time when most fishers in Hooper Bay were done fishing, only 5-10% of the fishers had harvested their needs. Most of those who completed their needs were fishers who traveled to Black River to harvest fish. The community of Hooper Bay worked through Coastal Villages Seafoods LLC (a Community Development Quota [CDQ] group) to acquire fish from the Kuskokwim River fisheries to supply needs.

An impact not seen in many years was the impact of forest fires and smoke. In 2004, there were 655 fires reported statewide with about 6.4 million acres burned. Many of these fires occurred in the Yukon River basin. Communities were threatened, and in some cases, evacuated. These interruptions affected subsistence fishing in a large portion of the river, including Canada. Some residents chose to fight fires, which provided cash income, instead of subsistence fishing.

Districts 1-3

Subsistence salmon fishing in the lower Yukon River districts initially followed the regulatory subsistence salmon fishing schedule of two 36-hour periods per week beginning May 31 in District 1, June 2 in District 2, and June 8 in District 3. The commercial fishing season was opened in District 1 beginning June 17 and on June 15 in District 2. Because there was no buyer in District 3, the commercial fishing season was not opened in that district. Once the commercial season opened, subsistence salmon fishing remained open except for 18 hours before, during, and 12 hours following each commercial salmon fishing period. After commercial fishing ended in Districts 1 and 2, subsistence salmon fishing opportunity was allowed 7 days per week.

During a March 2003 meeting of the BOF, language was adopted that allowed ADF&G to relax the subsistence fishing schedule without opening the commercial fishing season. The adopted commercial fishing regulation stated that ADF&G shall revert to the pre-2001 subsistence fishing periods when inseason indicators suggest that the run strength is sufficient to allow a commercial salmon fishery in that district or subdistrict. Also, subsistence fishers in District 3 had requested a weekend day to go subsistence fishing. ADF&G aligned the schedule in 2004 so that a weekend day was provided for District 3 subsistence fishers, prior to going off of the schedule. No buyer expressed interest in purchasing salmon from District 3. Therefore, the schedule was relaxed and subsistence fishers were provided additional subsistence salmon fishing opportunity.

Prior to the opening of the commercial fishing season, subsistence fishers were not required to remove the dorsal fin of subsistence caught Chinook salmon. When the commercial fishing season began, the marking requirement was reinstated for the remainder of the commercial salmon fishing season.

District 4

Subsistence salmon fishing in District 4 initially followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week. A proposal for weekend fishing opportunity had been proposed and passed for District 4 at the January 2004 BOF meeting. Through advisory committee meetings, it became clear that Subdistrict 4-B and 4-C wanted to stay on its historical schedule. Therefore, subsistence fishing on a weekend day only occurred in Subdistrict 4-A. The subsistence salmon fishing schedule for Subdistrict 4-A began on June 14, and in Subdistricts 4-B and 4-C on June 13. Subsistence salmon fishing in Subdistrict 4-A is open except 12 hours before, during, and 12 hours after each commercial fishing period.

The commercial fishing season was opened in District 4 on June 27. Although there was interest from a buyer, because of flights consistently being cancelled due to smoke from forest fires, the buyer did not want to take the chance of fish being caught but not delivered. ADF&G asked fishers in the area if there was interest in a commercial opening given the possibilities of cancelled flight. Because subsistence would be closed prior to, during, and after the commercial fishing period, there was a consensus among fishers that they would rather have the subsistence salmon fishing opportunity. Subsistence salmon fishing in Subdistrict 4-A remained open 7 days per week until the subsistence salmon fishing schedule was implemented for the fall season.

Although the commercial salmon fishing season was opened in Subdistricts 4-B and 4-C, once it was found that there was no means to transport commercially caught salmon to the processor, subsistence salmon fishing reverted to 5 days per week until the subsistence salmon fishing schedule was implemented for the fall season.

During the early portion of the run, the community of Shageluk, located on the Innoko River, had requested that they be allowed to fish 7 days per week to allow for additional opportunity to harvest local non-salmon species. It was known that while subsistence fishing, few salmon are caught in the Innoko River, a tributary of the Yukon River that drains into District 3. If Shageluk residents wanted to harvest salmon for subsistence uses, they normally boated to the Yukon River mainstem to fish. The request of Shageluk residents to be allowed to fish 7 days per week was discussed on the June 1 YRDFA teleconference. There was strong support from fishers in other areas to provide the additional opportunity. Because of the low fishing effort and subsistence fishing not being very efficient in this location, ADF&G felt it was warranted to allow subsistence salmon fishing 7 days per week in the Innoko River drainage. However, when residents fish on the mainstem of the Yukon River, fishers from Shageluk would have to abide by the subsistence salmon fishing schedule.

Subdistricts 5-A, 5-B and 5-C

The Subdistrict 5-A subsistence fishing schedule was changed at the January 2004 BOF meeting. Subdistrict 5-A returned to its previous two 48-hour fishing periods per week, aligning it with Subdistricts 5-B and 5-C. Subsistence salmon fishing in Subdistricts 5-A, 5-B, and 5-C initially followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week beginning June 22. In Subdistricts 5-B and 5-C, commercial fishing periods were scheduled to

coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity. Once commercial fishing ended, subsistence salmon fishing reverted to 5 days per week until the subsistence salmon fishing schedule was implemented for the fall season.

Subdistrict 5-D

Subsistence salmon fishing in Subdistrict 5-D opened by regulation and was allowed 7 days per week throughout the entire fishing season. No commercial fishing occurred due to the lack of a buyer.

District 6

District 6 is managed using the Tanana River Salmon Management Plan. Subsistence salmon fishing in District 6, except the Old Minto Area, was opened by regulation and followed the regulatory subsistence salmon fishing schedule of two 42-hour periods per week throughout the entire fishing season. In the Old Minto Area, subsistence salmon fishing was allowed 5 days per week.

In District 6, 10 commercial salmon fishing periods were scheduled to coincide with subsistence salmon fishing periods to avoid the loss of any subsistence fishing opportunity

Coastal District and Koyukuk River

Subsistence salmon fishing in the Coastal District and the Koyukuk River was opened by regulation and subsistence fishing was allowed 7 days per week throughout the entire summer season.

Summer Season Commercial Fishery 2004

In the previous 2 years, ADF&G has waited until near the run midpoint prior to conducting commercial fishing in order to allow for subsistence fishing. However, in doing so, a harvestable surplus has been foregone, reducing potential income to commercial fishers throughout the drainage. In preseason meetings, ADF&G stressed that commercial fishing during the middle portion of the run (between the first and third quartiles) would benefit the resource and fishers. Commercial fishing would occur when the majority of the fish are in the river and would reduce the impact on any particular stock. The summer chum salmon harvest was taken incidental to fishing directed at Chinook salmon except for 7 directed chum salmon commercial fishing periods in District 6.

The total estimated commercial harvest was 56,151 Chinook and 26,410 summer chum salmon for the Alaskan portion of the Yukon River drainage in 2004 (Table 2; Appendix A4 and A5). The Alaskan commercial harvest is expressed as the number of salmon sold in the round, pounds of salmon roe sold, and estimated harvest, which includes the estimated number of salmon harvested to produce roe sold. No Chinook or summer chum roe was sold by fishers in 2004. While the 2004 Chinook salmon harvest was the largest since 1999 and more than twice the 2002 harvest, it was 11% below the 1994-2003 average harvest of 62,827 Chinook salmon (Appendix A4). The summer chum salmon harvest was 87% below the 1994-2003 average harvest of 207,674 fish (Appendix A5).

The estimated age composition of Chinook salmon from the commercial harvest in Districts 1, 2, 5, and 6 was 6.4% age-4, 19.5% age-5, 70.3% age-6, and 3.8% age-7 fish (Karpovich and DuBois 2007). The sex composition of the harvest was 53.9% females and 46.1% males. The estimated age composition of summer chum salmon from the commercial harvest in Districts 1,

2, and 6 was 2.4% age-3, 40.7% age-4, 56.7% age-5, and 0.3% age-6 fish. The sex composition of the harvest was 44.9% females and 55.1% males.

A total of 569 permit holders participated in the Chinook and summer chum salmon fishery during 2004 (Appendix A9), which was nearly identical to 582 in 2003 but 6% below the 1994-2003 average of 608 permit holders. The Lower Yukon Area (Districts 1-3) and Upper Yukon Area (Districts 4-6) are separate CFEC permit areas. A total of 549 permit holders fished in the Lower Yukon Area in 2004 summer season, which was less than 1% below the 1994-2003 average of 552 permit holders. In the Upper Yukon Area, 20 permit holders fished, which was 64% below the 1994-2003 average of 56 permit holders.

Yukon River fishers in Alaska received an estimated $3.12 million for their Chinook and summer chum salmon harvest in 2004, approximately 6% below the 1994-2003 average of $3.32 million (Appendix A12). Although the 2004 commercial harvest was one of the largest in recent years, the decrease in exvessel value was due to the reduced market value for both Chinook and summer chum salmon.

In the Lower Yukon Area 4 buyer-processors and 1 catcher-seller operated. Lower Yukon River fishers received an estimated average price per pound of $2.80 for Chinook and $0.05 for summer chum salmon (Appendix A11). The average price paid for Chinook salmon in the Lower Yukon Area was 1% below the 1994-2003 (excluding 2001) average of $2.84 per pound. The exvessel value of the Lower Yukon Area fishery of $3.07 million was the highest since 1999 and near the 1994-2003 average of $3.01 million. The average income for Lower Yukon Area fishers that participated in the 2004 summer season fishery was $5,596. ADF&G test fish sales included 792 Chinook salmon and 217 summer chum salmon. Funds generated from the sales of test fish are used by management to off set costs associated with prosecuting the Yukon Area fishery (Appendices A17 and A18).

Upper Yukon Area fishers received an estimated average price per pound of $0.77 for Chinook and $0.27 for summer chum salmon (Appendix A11). The average price paid for Chinook salmon in the Upper Yukon Area was 14% below the 10-year average (1994-2003, excluding 2000 and 2001) of $0.90 per pound. The average price per pound for summer chum salmon ($0.27) was 51% above the 10-year average (1994-2003, excluding 2000 and 2001) of $0.18 per pound. The exvessel value of the Upper Yukon Area fishery of $47,935 was 84% below the 10-year-average (1994-2003) of $305,848. The average income for Upper Yukon Area fishers that participated in the 2004summer season fishery was $2,397.

Districts 1-3

Based on lower river test fishing, the Chinook migration exhibited steady passage rates from June 9 to June 26, declining thereafter. Catch rates between May 31 and June 8 are most likely conservative. Debris during the early portion of the run reduced the catchability of the test fishing nets. Test fishing crews were spending up to 8 hours a day removing trees and sticks from the nets.

Only the first commercial fishing period in District 2 was restricted to 8-inch or larger stretch mesh gillnet gear. The remainder of the commercial fishing periods had no mesh size restrictions. Small mesh size gear was not utilized due to the lack of a summer chum salmon markets in the lower Yukon River. There were 8 commercial fishing periods allowed in District

1 and 4 periods in District 2 (Table 10). No commercial fishing occurred in District 3 because there was no buyer.

The marketable quality of Chinook salmon was a concern in the lower Yukon River in 2004. Two meetings were held in District 2 (Pilot Station and Saint Mary's) to specifically address management and market issues. Buyers went into detail describing issues they were facing and the limitations that were placed on them. Another point of discussion was the need to develop a workgroup consisting of buyers, fishers, and managers to develop strategies that would benefit both the fishers and the buyers, while allowing managers to follow management plans. The quality of fish tends to decline faster as fish move up river. Because of quality concerns, only 4 commercial fishing periods occurred in District 2 compared to the 8 that occurred in District 1.

The combined total harvest of 52,548 Chinook salmon for Districts 1 and 2 was 11% below the 10-year average (1994-2003) harvest of 58,858 fish (Appendix A4). The average weight of Chinook salmon in the 2004 Lower Yukon commercial harvest was 20.8 pounds (Appendix A13). The estimated age composition of Chinook salmon from the Lower Yukon Area commercial harvest (Districts 1 and 2) was 5.1% age-4, 18.8% age-5, 72.2% age-6, and 3.9% age-7 fish (Karpovich and DuBois 2007). The sex composition of the harvest was 55.0% females and 45.0% males.

The combined commercial summer chum salmon harvest in District 1 and 2 of 19,775 fish was 72% below the 10-year average (1994-2003) harvest of 56,181 fish (Appendix A5). The average weight of summer chum salmon in the 2003 Lower Yukon Area commercial harvest was 6.9 pounds (Appendix A13). The estimated age composition of summer chum salmon from the Lower Yukon Area commercial harvest was 3.1% age-3, 40.3% age-4, 56.3% age-5, and 0.3% age-6 fish (Karpovich and DuBois 2007). The sex composition of the harvest was 42.1% females and 57.9% males.

Districts 4-6

Historically, the Subdistrict 4-A fishery targets summer chum salmon with the dominant gear type being fish wheels and the location of the fishery resulting in a very high chum to Chinook ratio. Despite a proactive approach by ADF&G, no market was found with the result that no commercial openers were held in Subdistrict 4-A.

The Anvik River Management Area remained closed to commercial fishing for the in 2004 because of a poor run of summer chum salmon into that tributary. The Anvik River did not meet the minimum escapement of 500,000 summer chum salmon required to allow an in-river commercial fishery. Even if escapements would have allowed a commercial harvest, there was no buyer to purchase the fish. Commercial fishers in Subdistrict 4-A, and along the Anvik River have been greatly impacted because of the lack of commercial fishing since 1998.

Although the commercial fishing season in District 4 was opened, because there was no buyer, no commercial fishing periods were announced. Impacts from smoke created by forest fires caused the cancellation of many flights in the middle Yukon River. The only buyer interested in purchasing fish from this area did not want to risk having commercially caught fish go to waste because of a cancelled flight.

Six commercial fishing periods were allowed in Subdistricts 5-B and 5-C (Table 10) for a total of 72 hours of fishing time. The harvest of 1,546 Chinook salmon was 15% below the 1994-2003 average and 29% below the lower end of the guideline harvest range of 2,150 fish. Because of

logistics, buyers did not purchase fish after the third period. Additional periods were allowed to provide additional commercial opportunity to catcher/sellers. Typically, the harvest of summer chum salmon is low in these subdistricts as they are located above the majority of summer chum spawning areas.

Although there was a guideline harvest for Subdistrict 5-D, no buyer was interested in purchasing fish. Therefore, no commercial fishing occurred in this subdistrict.

Commercial fishing in District 6 was opened for ten 42-hour periods in 2004 (Table 10). The first 3 periods were directed at Chinook salmon and the remaining 7 periods were directed for chum salmon. Test fish wheel and commercial catches indicated summer chum salmon in the Tanana was near average and warranted commercial fishing. Because of poor markets, there was no harvest taken during several of these commercial openings. The total estimated commercial harvest was 2,057 Chinook and 6,610 summer chum salmon in District 6. The Chinook salmon harvest was above the upper end of the guideline harvest range of 600-800 fish because escapements to the Chena and Salcha Rivers were above the upper end of the BEGs (Appendix E4). Management of the Tanana River fishery for Chinook salmon was primarily based on Chena and Salcha River tower counts.

The estimated age composition of Chinook salmon from the Upper Yukon Area commercial harvest (Districts 5, and 6) was 0.1% age-3, 25.5% age-4, 29.8% age-5, 42.6% age-6, and 2.1% age-7 fish (Karpovich and DuBois 2007). The sex composition of the harvest was 35.3% females and 64.7% males. Fish wheels, which are the predominant gear type in the upper Yukon River drainage, are biased in their harvests, catching mostly smaller Chinook salmon, which are mostly males. The estimated age composition of summer chum salmon from the Upper Yukon Area commercial harvest (District 6) was 0.2% age-3, 41.8% age-4, 57.9% age-5, and 0.1% age-6 fish. The sex composition of the harvest was 53.4% females and 46.6% males.

YUKON AREA, FALL CHUM AND COHO SALMON FISHERY SUMMARY, 2004

In response to the guidelines established in the Sustainable Salmon Fisheries Policy, the BOF determined the Yukon River fall chum salmon stock to be yield concern during the September, 2000 work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields or harvestable surpluses above the stock's escapement needs since 1998 and the anticipated low harvest level in 2001. During the January 2004 BOF meeting, the BOF addressed stocks of concern action plan options and regulatory proposals. The drainagewide fall chum salmon designation as a stock of yield concern remained unchanged.

In 2004, the preseason outlook for fall chum salmon was for a below average run that was anticipated to provide for escapement needs and support normal subsistence fishing activities in most areas with little or no directed commercial fishing for fall chum salmon. The coho salmon run was anticipated to be average to above average. However, because of the overlap in run timing and conservation issues for fall chum salmon, management of the coho salmon fisheries was directly tied to strength of the fall chum salmon return. A small commercial coho salmon harvest was anticipated, but would be dependent on the strength of the fall chum salmon run.

Yukon River fall chum and coho salmon runs are managed according to regulations established by the BOF. The regulatory management plans provide for escapement and subsistence use priorities over commercial, sport, and personal use fishing activities. The 2004 fall season

management strategies were formulated and distributed in cooperation with the USFWS and described in a preseason informational sheet. This sheet outlined the run and harvest outlooks along with the regulatory subsistence salmon fishing schedule. The informational sheet was also used to prepare fishers for the likelihood of little or no commercial fishing with the possibility of reductions to the subsistence salmon fishing schedule. The management strategy was presented to the YRDFA, State Fish and Game Advisory Committees, and Federal Regional Advisory Councils.

Fall Chum Salmon Management Overview 2004

Assessments of fall chum and coho salmon runs begin from the time the fish enter the mouth of the Yukon River and continue until they reach their spawning grounds in Alaska and Canada. Fall chum salmon typically take 34 days to migrate as far as the U.S./Canada border.

In managing the 2004 Yukon River fall chum salmon run, ADF&G followed guidelines provided by the BOF in 5 AAC 01.249. *Yukon River Drainage Fall Chum Salmon Management Plan*, which was amended by the BOF in January 2004. This plan incorporates the U.S./Canada treaty obligations for border passage of fall chum salmon, which are necessary for escapement and prioritized uses. There are incremental provisions in the fall chum salmon plan which allows varying levels of subsistence salmon fishing balanced with requirements to attain BEG and escapement objectives. Commercial fishing is generally only allowed on the portion of the surplus above the upper end of the BEG range of 300,000 to 600,000. The intent of the plan is to assure escapement goals are attained, the subsistence priority is provided, and to bolster escapement on strong runs.

The fall chum salmon parent year escapements that would produce the 2004 return were exceptionally poor. Conversely, both the 2003 summer chum and fall chum salmon runs showed improvement over the recent trend of poor production. The 2004 Yukon River preseason projection was presented as a range of 350,000 to 672,000 fall chum salmon. The low end of the range represents a return scenario under poor production while the upper end of the range is based on the historical average production expectations. Therefore, it was anticipated that the run would provide sufficient abundance for escapement needs and subsistence harvest with little surplus available for commercial harvest.

The 2004 preseason strategy was to begin the season on the windowed subsistence fishing schedule in accordance with the management plan. The schedule would not be adjusted until near the midpoint in the run to provide time for confident assessment of the typically erratic run. Attempts would be made to implement management actions sequentially from lower to upper river areas to afford the same protection of salmon as they move upriver.

The fall chum salmon run was assessed inseason by the drift gillnet test fishery index projects located at Emmonak (operated by ADF&G), Mountain Village (operated by Asacarsarmiut Traditional Council), and in the middle Yukon River at Kaltag (operated by the City of Kaltag). The Pilot Station sonar project, located in the lower river, provided daily passage estimates of fall chum salmon that were used to derive run size projections which triggered management actions as dictated by the fall chum salmon management plan. Relationships in run timing and run strength from the various index projects and subsistence fishing reports were compared for consistency with the Pilot Station sonar estimates as a method to check if projects appeared to be operating correctly. In recent years, when summer chum salmon estimates were below average, the fall chum salmon run was also generally below average. Based on the improved performance

of the 2004 Yukon River summer chum salmon run, the 2004 fall chum salmon expectations became more optimistic as the fall season approached.

On July 16, the fall chum salmon season began by regulation and initial management actions reestablished subsistence fishing times in Districts 1, 2, and 3 to the regulatory windowed fishing schedule of two 36-hour periods each week. The Coastal District remained on the regulatory schedule of 7 days each week. The Innoko River was altered during the summer season and also placed on a schedule of 7 days per week, which was continued in the fall season. The windowed subsistence fishing schedule was implemented sequentially in the upper Yukon River districts as the fall chum salmon run migrated into those areas.

The majority of fall chum salmon typically enter the Yukon River from mid July through early September in unpredictable surges (pulses) that usually last 2 to 3 days. Generally, 4 or 5 such pulses occur each season. These pulses are often associated with on-shore wind events and/or high tides. Consequently, assessing the run strength is difficult when pulse size and run timing vary so drastically both between and within a season. In 2004, each pulse of fall chum salmon was detected by the Lower Yukon River and Mountain Village drift gillnet test fishery projects. The catch rates at these lower Yukon River projects appeared to correlate well with other assessment projects for run timing and relative magnitude of each pulse. Individual pulses were tracked as they moved upriver and the Pilot Station sonar was used to estimate the abundance of each pulse.

The 2004 fall chum salmon run began slowly. A small pulse of chum salmon entered the river from July 19 to 21. A long duration of low passage elapsed before the second large pulse entered on August 1, which lasted approximately 3 days. A large third pulse was tracked through the test nets in Emmonak from August 8 to 10. Two additional smaller pulses, the fourth and fifth pulses, were observed from August 14 to15 and 20 to 21, respectively. An unusually late and strong sixth pulse was tracked at the test nets from August 26 to 27. Because August 27 was the last day of operation of the Emmonak drift gillnet test fish project, it is highly likely a significant portion of the pulse was not monitored by this project. This late and unexpected pulse was assessed to be slightly larger than the second fall chum salmon pulse (120,000 fish) based on passage estimates provided by Pilot Station sonar. The Pilot Station sonar project ended operation on August 31 while the Mountain Village project continued test fishing through September 10. No additional significant pulses of fall chum salmon were detected late in the season. However, a late pulse of coho salmon was observed at the Mountain Village test fishery with the largest daily CPUE occurring on September 6.

The early inseason assessment was that the fall chum salmon run appeared to be either late or weak. On August 8, the Pilot Station cumulative sonar count was approximately 232,000 fall chum salmon. This was 10% below the 8-year average of 258,000 fish by that date for the project. In a year with average run timing, August 8 represents the midpoint of the fall chum salmon run at the Pilot Station sonar, which would suggest the total season run size could be expected to approach 500,000. By August 17, which marks the average three-quarter point of the fall chum salmon run in the lower Yukon River, upriver assessment projects were in alignment with the Pilot Station sonar estimates. At that time, ADF&G projected the run would exceed 500,000 fish, but not surpass the 600,000 threshold required to allow commercial fishing in the main river portion. The subsistence salmon fishing schedule in the lower Yukon River Districts 1, 2, 3, and Subdistrict 4-A was relaxed on August 19 in accordance with the fall chum salmon management plan. In an effort to protect the weak Porcupine River stocks which are commonly

thought to have an earlier run timing, subsistence fishing relaxations were implemented chronologically after the first half of the run had passed through upriver districts. The strength of the last fall chum salmon pulse abruptly shifted the run projection above 600,000, which justified opening a directed fall chum salmon commercial fishery. The 2004 season commercial harvest total for fall chum salmon was 4,110 fish (Table 11). Fall chum salmon abundance was low when fishing was opened and management actions were taken to target the more abundant coho salmon in the commercial harvest.

The final Pilot Station sonar passage estimate through the end of the project was 594,060 fall chum salmon (Appendix E3). In comparison, the passage of fall chum salmon at Pilot Station sonar has averaged 433,000 for the last 5 years (1999-2003). The Rampart-Rapids mark-recapture abundance estimate for fall chum salmon to the Upper Yukon Area through September 17 was approximately 618,600. The upper Tanana River mark-recapture abundance estimate through September 30 was approximately 123,900 fall chum salmon, and the Kantishna River mark-recapture abundance estimate was approximately 76,200 fall chum salmon. Based on the estimates of the 2 Tanana River components they account for roughly 200,000 fall chum salmon. When the upper Yukon River and Tanana River components are added together, the estimates total approximately 819,000 fall chum salmon, which was well above the Pilot Station sonar estimate of 609,000. The Rampart-Rapids project went through a postseason review and nothing was found to explain why the estimate appears to be biased high when compared to other downriver and upriver escapement assessment projects. The preliminary postseason total run estimate including estimates of harvest and escapement is approximately 650,000 fall chum salmon.

Run timing for fall chum salmon was considered 3 to 4 days later than normal. This later than normal run timing is attributed to the unexpected strength at the end of the run. The 2004 overall fall chum salmon run was assessed as below the all year average and slightly above the even-year average. The Tanana, Chandalar, and mainstem Yukon River stocks attained average to above average escapements, while the Porcupine River stocks remained the weakest component.

Coho Salmon Management Overview 2004

Yukon River coho salmon have a slightly later, but overlapping, run timing with fall chum salmon. In managing the coho salmon run, ADF&G follows guidelines adopted by the Alaska BOF of Fisheries in the *Yukon River Coho Salmon Management Plan* 5 AAC 05.369. The management plan allows a directed coho salmon commercial fishery only under specific conditions. In most years, fall chum salmon are the primary species of management concern and coho salmon are often considered an incidental catch in the fall season fisheries.

The 2004 coho salmon run timing appeared to be 7 days late based on 3 years of operating the lower Yukon River drift test fishing project, only 4 days late compared to the 21 year set gillnet project in the lower Yukon, while the run timing at Pilot Station sonar appeared average. The coho salmon run estimate at Pilot Station sonar through August 31 was approximately 188,350 fish (Appendix E3). This was 25% above the recent 5-year historical average passage estimate of 150,000 fish and second highest only to the 2003 season. In addition, both the Andreafsky and Delta Clearwater River's escapement counts of coho salmon were above average, as were most of the upriver test fishing indices. Pilot Station sonar does not operate for the entire coho salmon run due to expense and many other assessment projects are terminated due to icing conditions. Therefore, the coho run is not completely assessed.

Subsistence fishing opportunity for coho salmon was predicated on management actions taken for fall chum salmon that followed guidelines provided in the *Yukon River Drainage Fall Chum Salmon Management Plan*. When the fall chum salmon run was assessed to be adequate to provide for normal subsistence opportunity, subsistence fishing was liberalized. A directed commercial coho salmon fishery became possible after the unexpected large pulse of fall chum salmon entered the river late in the season. This influx of fish provided a surplus of fall chum and coho salmon available for commercial harvest. The late development in fall chum salmon run strength, combined with interest by local buyers to purchase both fall chum and coho salmon, allowed managers to open a commercial fishery in Districts 1 and 6. Interest for commercial fishing by fishers in Districts 2, 3, 4, and 5 was evident, but no commercial fishing time was scheduled because buyers indicated they could not afford the expense of bringing the fish and salmon roe product to a commercial market. Buyers were also frustrated that the uncertainty of a commercial fishing season made it unlikely that they could be prepared to operate on short notice. The 2004 season commercial harvest total for coho salmon was 20,232 fish (Table 11).

In prosecuting the fall chum and coho salmon commercial fishery in District 1, the fishing season ending dates as outlined in *Fishing Season* 5 AAC 05.310 (1) and in the *Coho Salmon Management Plan* 5 AAC 05.369 (e)(1), were extended by EO until September 11. In addition, in District 1, an EO was issued to extend commercial fishing time for coho salmon from 24 hours to 72 hours per 7-day period. In District 6, the fall chum salmon commercial fishing season normally closes by EO on or before September 30 according to the *Tanana River Salmon Management Plan*, and on or before October 5 for a directed coho salmon fishery as stipulated under the *Yukon River Coho Salmon Management Plan.* The late run assessment that identified a harvestable surplus and the presence of a limited commercial market enabled managers to extend the commercial fishing season for fall chum and coho salmon. An EO was also issued to allow commercial fishing for coho salmon for 84 hours in a 7-day period (Appendix A28). Where market conditions did not allow for commercial fishing, the subsistence salmon fishing schedules were further relaxed. Gear restrictions employed during closed salmon periods remained effective throughout the drainage.

Fall Season Subsistence Fishery 2004

Subsistence fishing efforts are usually light during the transition period from summer to fall season when relatively few chum salmon are moving in the river and there is a mixture of both summer and fall chum salmon stocks present. Some subsistence fishers are able to recognize and report the changes in proportion of the 2 runs in their catches.

The preseason and initial inseason assessment of the 2004 fall chum salmon run was assessed to be below average, but sufficient to provide for most escapement and subsistence needs. Based on early expectations and comments from fishers participating during the YRDFA sponsored teleconference, management staff returned subsistence salmon fishing periods to the windowed schedule at the beginning of the fall season. The schedule consisted of two 36-hour periods each week in Districts 1, 2, and 3, beginning July 16. The Coastal District and the Innoko River fishing time remained at 7 days per week. The fishing times and dates provided adequate opportunity to harvest salmon as reported by most fishers during the YRDFA teleconferences.

Beginning July 28, the subsistence salmon fishing schedule in Subdistrict 4-A (excluding the Koyukuk River) was reinstated to two 48-hour periods each week. By regulation, in the upper

portion of Subdistrict 4-A, upstream from the mouth of Stink Creek to Cone Point, the use of drift gillnet for fall chum salmon is allowed during the two 48-hour periods each week beginning 12:01 a.m. August 3. In Subdistricts 4-B and 4-C, and in Subdistricts 5-A, 5-B, and 5-C, fishing schedules were reinstated on July 30 and August 10, respectively. The Koyukuk River, Yukon River Subdistrict 5-D, Kantishna River drainage, and the Upper Tanana River drainage subsistence salmon fishing schedules were unaltered and remained open 7 days per week.

By August 17, the average three-quarter point for fall chum salmon passage at the Pilot Station sonar site, the test fish catches were comprised of a 1:1 ratio of fall chum to coho salmon. The fall chum salmon run continued to be sporadic. With the updated run assessment, the projected run size called for a less restrictive subsistence fishery as stipulated in the *Yukon River Drainage Fall Chum Salmon Management Plan.*

Potential management actions were discussed during the YRDFA teleconference on August 17 and the decision to relax the Yukon River windowed subsistence salmon fishing schedule was supported by the participating parties. The relaxation of subsistence fishing openings to the pre-2001 subsistence fishing regulations was implemented chronologically on the second half of the run as salmon migrated upriver in an effort to protect the expected weak Porcupine River stocks. Yukon River Districts 1, 2, 3, and Subdistrict 4-A subsistence fishing schedules were relaxed beginning August 19. Subdistricts 4-B and 4-C and Subdistricts 5-A, 5-B, and 5-C were relaxed on August 24 and August 31, respectively. By August 31, it was apparent that the fall chum salmon run was large enough to provide for drainagewide escapement needs, subsistence needs, Canadian Border passage commitments, and support commercial, personal use, and sport fish harvests. Even though ADF&G viewed the overall drainagewide chum salmon run assessment as favorable, concerns still existed for the weak Porcupine River stocks bound for the Sheenjek and Fishing Branch Rivers. Therefore, in many areas with scheduled closed salmon fishing periods, the 4-inch or less gillnet mesh size restrictions continued as a conservation measure. ADF&G was prepared to reestablish conservation measures to restrict or close fishing altogether at a later date if the recent trend of poor fall chum salmon run strength to the Porcupine River drainage continued in 2004.

Fall Season Commercial Fishery 2004

The Yukon Area commercial fisheries for fall chum and coho salmon have become sporadic where commercial fishing has occurred in only 6 out of the past 10 years with significantly reduced harvests in each of those years. The 2004 fall commercial fishery developed late in the season due to an unexpected late pulse of fall chum salmon that provided the surplus. All subsistence salmon fishing had been relaxed to the pre-2001 subsistence fishing regulations by August 31 and the fall commercial salmon fishing season was opened in District 1 and on September 23 in Subdistrict 5-A and District 6. Even though there was a harvestable surplus of both fall chum and coho salmon drainagewide, market conditions and lack of buyer interest limited commercial fishing activity to only District 1 and Subdistricts 6-B and 6-C.

There were six 24-hour commercial periods in District 1. Each period began at 12:00 noon and ended at 12:00 noon the following day. The commercial fishing periods began on August 31 and September 2, 4, 6, 8, and 10. In Subdistrict 5-A, there were three 48-hour commercial fishing periods from 6:00 p.m. to 6:00 p.m. the following day beginning on September 24, 27, and October 1. In District 6, five commercial periods were scheduled and began on September 24,

27, and October 1, 4, and 8. All 5 periods were 42-hours in duration and open from 6:00 p.m. until 12:00 noon the following day (Table 11).

The 2004 season marked the second consecutive year for commercial fishing for fall chum and coho salmon since 1999. At the time the first commercial period was announced in District 1 on August 31, more than 90% of the fall chum salmon and 75% of the coho salmon runs were assumed to have already entered the Yukon River. The estimated Yukon Area commercial harvest for fall chum salmon was 4,110 (660 Lower Yukon Area, 3,450 Upper Yukon Area) or approximately 35% below the 5-year average (1999-2003) of 6,300 fall chum salmon (5,100 Lower Yukon Area, 1,200 Upper Yukon Area; Appendix A6). The estimated Yukon Area commercial harvest for coho salmon was 20,232 (1,583 Lower Yukon Area, 18,649 Upper Yukon Area) or 73% above the 5-year average (1999-2003) of 5,400 coho salmon (2,300 Lower Yukon Area, 3,100 Upper Yukon Area; Appendix A7). Although the coho salmon harvest was above average, the combined 2004 estimated harvest for fall chum and coho salmon was 24,342 fish, 63% below the 5-year average (1999-2003) of 65,600 salmon.

The 2004 combined commercial value for fall chum and coho salmon was estimated to be $11,120 ($3,900 Lower Yukon Area, $7,220 Upper Yukon Area) or 88% below the previous 10-year average of $91,261 ($64,035 Lower Yukon Area, $27,226 Upper Yukon Area; Appendix A12). No ADF&G test fish sales occurred for either fall chum or coho salmon.

Yukon River commercial fishers received an average price for fall chum salmon of $0.25 per pound in the Lower Yukon Area and $0.05 per pound in the Upper Yukon Area (Appendix A11) The 10-year average (1995-1997, 1999, and 2003) price for fall chum salmon was $0.17 per pound in the Lower Yukon Area. The 10-year average (1994-1997, 1999, and 2003) price for fall chum was $0.15 per pound in the Upper Yukon Area. For coho salmon, fishers in 2004 received an average price of $0.05 per pound in the Lower Yukon area and $0.06 per pound in the Upper Yukon Area compared to the recent 10-year average (excluding years with no fishery) price of $0.26 and $0.19 per pound, respectively.

In 2004, 32 permit holders participated in the fall season fisheries (26 Lower Yukon Area, 6 Upper Yukon Area) compared to the 1994 to 2003 average number of 136 fishers (125 Lower Yukon Area and 11 Upper Yukon Area; Appendix A9)).

CANADIAN FISHERIES 2004

The total Canadian Chinook salmon harvest was 11,238 fish, which included: 3,785 commercial, 6,483 aboriginal, 167 test fishery , 88 domestic, and 423 in the sport fishery (Table 2; Appendix A17; JTC 2006).

The fall chum salmon commercial and aboriginal harvests were 7,365 and 2,385 fish, respectively (JTC 2006). There was no reported harvest of chum salmon from test fisheries or for domestic use. The coho salmon commercial and aboriginal harvests were 4 fish, and 175 respectively. There was 1 fish harvested from the sport fishery, and none harvested in the domestic fishery. (Appendices A19 and A20).

Canadian Commercial Fishery 2004

A total of 3,785 Chinook, 7,365 chum, and 4 coho salmon were harvested in the Canadian Yukon River commercial fishery in 2004 (Table 2). The combined species catch of 11,154 salmon was 34.5% below the previous 10-year average commercial harvest of 17,015 salmon.

Since 1997, below average run sizes of Candain-origin Yukon River Chinook and chum salmon and a limited market for Chinook salmon have contributed to a reduction in commercial catches. Canadian commercial, non-commercial, and Porcupine River Chinook salmon harvests for the 1961 to 2004 period are presented in Appendix A17. Similar data for chum salmon is presented in Appendix A19 and coho salmon in Appendix A20.

Chinook Salmon

All 21 eligible commercial licenses were issued in 2004.

The 2004 preseason outlook for Canadian-origin Yukon River Chinook salmon was a below average run of approximately 69,700 to 107,200 fish[5]. The use of a range for the 2004 outlook was motivated by uncertainty associated with marine survival of the fish that spawned in the 1990s. The potential for reduced marine survival has been made apparent by the poor total run sizes of Canadian-origin Yukon River Chinook salmon in the 1998 to 2002 period, which were lower than expected despite healthy brood year escapements.

The key elements of the 2004 IFMP for Yukon Chinook salmon as developed by the YSC were as follows:

i) A target spawning escapement goal of 28,000 Chinook salmon. This goal was consistent with the Panel recommendation from the March 2004 Panel meeting. If the run was gauged to be sufficiently strong, the escapement target could range up to 38,000 Chinook salmon, although the Panel did not describe what constitutes a "strong" run. The YSC was willing to accept restricted First Nation fisheries as long as the spawning escapement was greater than 18,000 Chinook salmon and the First Nation catch was consistent with the Yukon River Salmon Agreement harvest sharing provisions.

   An escapement goal of 28,000 was also the target for the 1996 to 2002 period; this period represented the first step in a Chinook rebuilding plan agreed to in 1995. In 2003, if the U.S. determined the run was of sufficient strength to allow commercial fishing opportunities, the escapement target would be 28,000 fish. If, on the other hand, the inseason run strength was judged to be inadequate to allow commercial fishing opportunities in Alaska, the U.S. subsistence fishery would be managed for an escapement of at least 25,000 Upper Yukon Chinook salmon.

ii) Commercial, sport, and domestic fisheries would be given opportunities to fish if inseason run projections indicated that requirements for escapement goals and First Nations harvests would likely be achieved.

Similar to 2002 and 2003, the 2004 IFMP established a series of color-coded categories (Red, Yellow and Green Zones) bound by specific reference points (run sizes into Canada) and were associated with anticipated management actions. For example, the Red Zone included run projections of less than 19,000 Chinook salmon. The anticipated management action for projections falling in the Red Zone would result in all fisheries being closed with the exception of the test fishery. No test fishery would be allowed if the run projection was less than 11,000. In the Yellow Zone, described as a run size projection in the 19,000 to 37,000 range, only the First

[5] The 2004 outlook of 107,200 was expressed as a range from 69,700 to 107,200 determined from the relationship between forecasted and observed returns for the 1998 to 2003 period.

Nations fishery and an assessment test fishery would operate. Restrictions in the First Nation fishery would depend upon the run abundance and be increasingly more severe the closer the run projection was to 19,000, the lower end of the Yellow Zone. The Green Zone included run size projections greater than 37,000 Chinook salmon. The anticipated management action for run projections in the Green Zone included unrestricted First Nations fisheries and consideration for harvest opportunities in the commercial, domestic and sport fisheries depending on abundance and international harvest sharing provisions.

A total run outlook of 88,000 Upper Yukon Chinook salmon at the river mouth which was the midpoint of the outlook range and proposed management actions in Alaska suggested a border escapement exceeding 42,000 Chinook salmon, or roughly the lower end of the Green Zone. This number meant the likelihood of an unrestricted First Nations fishery and fishing opportunities in the commercial, domestic and sport fisheries. The 2004 season commenced with closures in place for the commercial and domestic fisheries.

Throughout most of June, before Chinook salmon entered the Canadian section of the upper Yukon River, Alaskan test fisheries and the Pilot Station sonar project located near the river mouth indicated run abundance was adequate to provide for US and Canadian escapement targets, subsistence fishing, and a small US commercial harvest. Run timing was initially described as being average, although spawning escapement information suggested the run was a few days early.

Chinook salmon were first caught in the DFO fish wheels on June 27, one day earlier than the most recent 10-year average. The cumulative fish wheel catch of Chinook salmon was above average until July 25, after which time the catch was consistently below average. A total of 1,360 Chinook salmon was caught in the fish wheels, 79% of the 1994-2003 average catch of 1,729. In addition to the fish wheels, small-mesh set gillnets were fished on an experimental basis from July 9 to August 2 to augment the number of tags deployed. The gillnet catch was 139 Chinook salmon and 8 chum salmon; 135 of the Chinook salmon and all of the chum salmon were tagged.

The primary purpose of the DFO fish wheels is to live-capture salmon throughout the run for tagging purposes; fish are tagged and subsequently released. Recoveries of tagged fish, primarily in the test fishery and the Dawson area commercial fishery, are used to estimate the abundance of fish throughout the season. Inseason projections of the total run into Canada are developed by expanding the point estimates of run size by historical run timing information. The projections based on the tagging data are a key component in Canadian management decisions.

The early season closure of the commercial fishery creates the need to implement a test fishery to provide stock assessment data for inseason run forecasting. The 2004 test fishery operated similar to 2002 and 2003 and involved both commercial and First Nation fishers working under the direction of the Yukon River Commercial Fishing Association and the Tr'ondek Hwech'in First Nation. The objective of the test fishery is to collect timely catch and tag recovery data to develop inseason run forecasts. All fish caught in the test fishery are distributed under direction of the Tr'ondek Hwech'in First Nation. The option of using just the DFO fish wheel catch has not been exercised because of the poor historical relationship between fish wheel catch information and run size estimates; a tag recovery effort is necessary for relative inseason run assessment. Similar to both 2002 and 2003, low water conditions prevailed throughout much of the 2004 Chinook salmon migration. Both 2000 and 2001 were characterized by abnormally high water conditions. The 2004 summer season was very hot and dry and it was a year of extensive

forest fires. Many fishers reported that tributary water levels were the lowest observed in recent years and commented that August water levels were similar to the low water levels usually observed in early October prior to freeze-up. Another interesting feature of water conditions in 2004 was the impact of the warm weather in the summer and fall on glacial systems. Water levels within glacial systems, such as portions of the Upper Yukon and White River drainages, were very high throughout the summer and fall seasons due to increased glacial melt.

Inseason border escapement run projections were usually produced 2 times a week throughout the season. The first projection involved the use of test fishery information, whereas as the season progressed, data from the commercial fishery was used. The Chinook salmon test fishery operated for a 2 day period from July 5 to July 7. Four fishers participated in the fishery. A total of 167 Chinook salmon including 8 tagged fish were caught in the test fishery. Early in the season, the run size expansions or projections were volatile because the timing information represented only a small proportion of the entire run. The mark recapture estimates were expanded based on many potential timing scenarios (early, late timing etc.) since uncertainty and variability occurs in the expansions. An example of one of the relatively early estimates was a border escapement estimate to July 15 of 16,607 with a 95% confidence interval of 13,185 to 20,906 based on early run timing. Based on this estimate the end of the season projection using historical run timing at the tagging fish wheels was 54,600 Chinook salmon. The timing scenarios used for the expansions are often consistent with inseason information collected elsewhere in the drainage. The intent of expansions is to ensure projections developed from the timing information cover an appropriate range of potential differences in run timing. Each timing scenario results in a different run size projection and can greatly influence the total season run projection. In 2004, information from the DFO mark-recapture program consistently suggested the total run size was consistent with the upper end of the preseason outlook. This information was supported by data from the US test fishery at Emmonak, the Pilot Station sonar project, and the initiation of US subsistence and commercial fisheries.

As a result of the run projections being consistently in the Green Zone, Yukon First Nations were advised very early in the season to proceed with a normal, unrestricted fishery. The commercial and domestic fisheries were opened for 3 days starting noon July 11th and the sport fishery remained open to salmon retention.

The total catch of Chinook salmon in the commercial fishery was 3,785 fish; of which, 3,697 was taken in the “Dawson area” fishery downstream from the confluence of the Yukon and White Rivers and 88 Chinook salmon in the “upper fishing area”. For comparison, the previous 10-year average (1994-2003) commercial catch was 4,693 Chinook salmon (Appendix A17). However, this average includes data from 1998 to 2003, when the commercial fishery was severely restricted or hampered by limited market conditions. The Chinook salmon fishery was closed during the 2000 season and open for only 5 days in 2002. Weekly catch and effort are summarized in the JTC report, Table 5. The Chinook salmon summer fishery was open for a total of 19 days and total fishing effort was 166 boat-days.

Fall Chum and Coho Salmon

The preseason expectation for Canadian-origin Yukon River mainstem chum salmon was for a below average, to average run. Spawning escapements in 1999 and 2000, the primary brood years contributing to the 2004 run, were 62,000 and 55,400 chum salmon, respectively. Although spawning escapement was excellent for the 1994 to 1997 period (average, 116,000; range,

85,400 to 158,100), the cycle year returns from these escapements were well below average and appeared to have been impacted by poor marine survival. Managers surmised that poor survival could once again result in a depressed run in 2004 due to below average escapement in 2000, the dominant cycle year. To capture this uncertainty, the total run outlook was expressed as a range from 68,900 (below average) to 146,500 (average) Upper Yukon River chum salmon. Managers thought the upper end of this range was more likely given the improvement in run size observed in 2003. The Canadian chum salmon management plan for 2004 acknowledged the likelihood of an average run and contained the following key elements:

1) A spawning escapement target of 65,000 Canadian-origin mainstem Yukon River chum salmon consistent with Panel recommendation of March 2004; and
2) Given the expectation for an average run and uncertainty associated with recent returns, the commercial chum salmon fishery would be limited until inseason run projections indicated the spawning escapement and First Nations requirements would be likely achieved.

Funding was approved from the 2004 R&E fund for a live-release chum salmon test fishery in the Dawson City area to obtain tagging data for population estimates. This was the third year that a live-release test fishery operated using fish wheels. This project was conducted jointly by the Yukon River Commercial Fishing Association and the Tr'ondek Hwech'in First Nation. Prior to 2002, early season projections of chum salmon border escapement were generated either from DFO fish wheel CPUE data, or from mark-recapture data collected from the First Nation and commercial fisheries located in the Dawson area.

As per the Chinook salmon management plan, a decision matrix was included in the chum salmon plan with Red, Yellow and Green management zones described by specific reference points (run sizes into Canada) and expected management actions. The Red Zone included run projections of less than 40,000 fish when closures in all fisheries except for the live release test fishery could be expected. The Yellow Zone included run projections in the 40,000 to 68,000 range; in this zone, the commercial, domestic, and sport fisheries would be closed and the First Nation fishery would be reduced with restrictions increasingly more severe the closer the run projection was to the lower end of the Yellow Zone. The Green Zone included run size projections greater than 68,000 chum salmon and indicated that First Nation fisheries would be unrestricted and that harvest opportunities in the commercial, domestic, and sport fisheries would be considered depending on run abundance and international harvest sharing provisions. The difference between the escapement goal (65,000) and the trigger point for the Green Zone was 3,000 chum salmon, a total which would fully satisfy the needs of the Canadian aboriginal fishery. Management discretion is used when the season projections are close to the trigger point.

Chum salmon catches in the DFO fish wheels were close to average throughout the migration period. A live release test fishery, which consisted of 2 fish wheels equipped with live boxes, was operated 4 days per week from August 27 to August 31 and from September 3 to 4. A total of 995 chum salmon was caught and released. Based on average run timing, the border escapement estimate through September 6 was 13,800 with a 95% CI of 10,800 to 17,500; the end of the season projection was in the range of 68,800 to 78,700 fish. A trigger point of 68,000 for initiating a commercial fishery was identified in the IFMP; hence a conservative 2 day commercial fishery was started September 12. Run projections increased in subsequent weeks

which resulted in commercial fishery openings being liberalized 4 to 5 days each week for the next 4 weeks.

The total commercial chum salmon catch of 7,365 fish was 40% below the 1994 to 2003 average of 12,320 chum salmon (Appendix A19). During this period, the catch has ranged from 0 chum salmon in 1998 to 39,012 chum salmon in 1995. The number of fishers who participated in the weekly openings in 2004 ranged from 1 to 5. The chum salmon commercial fishery is currently a misnomer, since virtually all of the catch is used for what could be termed personal needs; the license holders use most of the catch to feed their personal sled dog teams. This situation could change with the construction of a processing facility and a move towards the sale of value-added products such as smoked chum salmon and salmon caviar.

Four coho salmon were recorded in the commercial catch in 2004.

Canadian Aboriginal, Domestic and Sport Fisheries 2004

In 2004, as part of the implementation of the Yukon Final Agreements (comprehensive land claim agreements), the collection of inseason harvest information for the Upper Yukon River was conducted by First Nations within their respective Traditional Territories. While not as intensive, the general approach was similar to that used in the *Yukon River Drainage Salmon Harvest Study* conducted by LGL Limited from 1996 to 2002 (Blakely et al. 2003). Before the start of the 2004 fishing season, locally hired surveyors distributed calendars to known fishers and asked them to voluntarily record their catch and effort information on a daily basis. Interviews were subsequently conducted inseason to obtain more detailed catch, effort, gear, location, and tag recovery information at fish camps or in the community 1 to 3 times weekly. In most cases, weekly summaries were completed by the surveyors and sent to the DFO office in Whitehorse by fax or e-mail. Any outstanding information was obtained post season and reviewed by First Nation staff in conjunction with DFO.

Catch estimates for the Porcupine River near Old Crow area were determined from locally conducted interviews and reported postseasonally to DFO.

While inseason harvest data collection continued for the chum salmon aboriginal fisheries in the Dawson and Minto areas, information was reported post season by the Little Salmon Carmacks First Nation for the Carmacks area.

With a below average preseason outlook for Chinook salmon and an average preseason outlook for chum salmon, it was not anticipated that aboriginal fisheries would be restricted by conservation concerns; recent harvest levels suggested escapement goals would likely be achieved in 2004. However, plans were developed whereby the aboriginal fisheries would be restricted if required to address conservation concerns. Early run assessment information from the mark-recapture program during both the Chinook and chum salmon seasons confirmed that conservation concerns were not applicable and First Nations were notified that a normal level of harvest would be permitted.

The estimate of the 2004 Canadian-origin Yukon River Chinook salmon catch in the mainstem aboriginal fishery is 6,483 fish, 12% below the recent 10-year average of 7,388 Chinook salmon and slightly above (5.9%) the 2003 estimate of 6,121 (Appendix A17). The total fishing effort for the Chinook salmon season is not available because several communities did not report their fishing effort. Comparative effort information is, however, available from communities where consistent survey methodology was applied. Through the end of August (statistical week 36),

effort in the Dawson area Chinook salmon fishery was estimated to be approximately 4,467 net-hours, 20.7% fewer net-hours than the total of 5,633 recorded in 2003. In the Mayo area, the estimate of effort is 4,368 net-hours in 2004 compared to 3,896 in 2003, an increase of 12.1%. The Pelly Crossing area estimate of effort is 9,138 net-hours in 2004 compared to 8,002 in 2003, an increase of 14.2%.

The estimate of the 2004 Canadian-origin Yukon River chum salmon harvest in the mainstem aboriginal fishery is 2,180 (Appendix A19). This estimate is 10.7% below the 1994-2003 average of 2,441 chum salmon. This total includes 2 chum salmon caught in early November by members of the Teslin Tlingit Council in Teslin Lake in a lake trout/whitefish directed food fishery. The estimate of total fishing effort for the Dawson area during the chum salmon season (Statistical week 30 and later) was 588 net-hours, approximately 46.7% below the 1996-2003 average of 1,104 net-hours. For the Selkirk First Nation fishing in the Minto area, the estimate of effort is 504 net-hours, 33.3% below the 1996-2003 average of 756 net-hours. Detailed effort information is not available for the Carmacks area fishery.

A voluntary closure was in place from August 10 to October 15 within the Canadian section of the Porcupine River to address conservation concerns associated with the depressed Fishing Branch River chum salmon run. In anticipation of a poor return in 2004, the Vuntut Gwitchin First Nation submitted a proposal to the R&E Fund for a “substitution fishery”. The proposal involved the purchase of a meat/dog food substitution product to reduce the impact of potential restrictions on the Old Crow aboriginal fishery. This project was accepted by the Panel and the project proceeded as described in the proposal (CRE-106-04). Community members received a small number of chum salmon for human consumption and sled dog food (52) that were available from the test fishery component of a chum salmon tagging program (CRE-27-04) which was also funded by the Panel. An additional 103 chum salmon were caught as an incidental catch in the Chinook or coho salmon fisheries and 50 chum salmon were taken by fishers who started their voluntary closure shortly after August 10. The total Canadian Porcupine aboriginal chum harvest was 205 (Appendix A19).

A total of 292 Chinook and 175 coho salmon were taken in the Porcupine River aboriginal fishery. Detailed effort information is not available for these fisheries.

The preliminary estimate of the total domestic fishery catch is 33 Chinook salmon (Appendix A17). Because the preseason expectation was for a below average run, the domestic fishery did not open until it was determined more than 28,000 Chinook salmon would likely reach the spawning grounds. This determination was made in early July allowing the fishery to open for 3 days starting July 11. The domestic fishery opened for a total 19 days spread over 5 fishing periods, in concert with the commercial fishery openings. Six domestic licenses were sold, however only 2 license holders have reported their harvest.

In 1999, the YSC introduced a mandatory Yukon Salmon Conservation Catch Card in an attempt to improve harvest estimates and to serve as a statistical base to ascertain the importance of salmon to the Yukon sport fishery. Anglers were required to report their catch by mail by late fall. The information requested includes the number, sex, size, date, and location of salmon caught and released.

The 2004 sport fishery harvest was 328 Chinook (Appendix A17) and 1 coho salmon (Appendix A20). An additional 388 Chinook salmon were caught and released. This is the third year recreational fishers reported catching coho salmon; however, the reported catch is lower than the

9 in 2002 and 7 in 2003. The Yukon Salmon Conservation Catch Card program often involves some data interpretation and censoring, which in 2004 involved approximately 2% of data submitted. For example in 2004, sockeye salmon were reported as both a released and a retained catch; the catch of this species is highly unlikely in the Upper Yukon River; hence, the catch was not included. Similarly, the number of coho salmon recorded is censored since the catch of this species often appears to be misidentified; in light of the location and time of year caught, many of the coho salmon recorded are probably, in fact, Chinook salmon.

The retention of Chinook salmon in the sport fishery was not prohibited early in the season. Based on the distance between the tagging site and principal fishing locations, it was expected that few fish would be available to fishers and fishing effort would be very low prior to late July. The management strategy was to close the sport fishery prior to recreational effort being expended, if a conservation concern was evident. By mid July, run strength indicators suggested that the 2004 return was sufficient to allow the normal catch and possession limits (2 Chinook salmon/day, 2-day possession limit).

Estimated catches from Yukon Salmon Conservation Catch Card returns from 1999 through 2003 were as follows: 177 Chinook salmon in 1999; 0 Chinook salmon in 2000 (fishery was closed); 146 Chinook salmon in 2001; 128 Chinook and 9 coho salmon in 2002; and 275 Chinook salmon and 7 coho salmon in 2003. These estimates have not been adjusted to account for unreturned catch cards. Yukon Salmon Conservation Catch Card return rates were 74.4% in 1999, 81.3% in 2000, and 72.1% in 2001.

ESCAPEMENT 2004

Summer Season Escapement 2004

Beginning in 2001, Chinook salmon BEGs on the Chena and Salcha Rivers and summer chum salmon BEGs on the Anvik and Andreafsky Rivers were developed based on spawner-recruit analysis. Prior to 2001, most BEGs were generally established using a simple escapement averaging methodology based on aerial survey counts. These goals are now referred to as SEGs because of precision issues inherent to aerial survey methodology. A number of escapement monitoring projects (counting towers and weirs) were established between 1993 and 1995. Although the database for these projects is still limited, SEGs for Chinook salmon were developed using historical aerial survey information. These include the East Fork Andreafsky, West Fork. Andreafsky, Anvik, North Fork. Nulato, South Fork. Nulato, and Gisasa Rivers (Appendices E4 and E5). Ground based escapement projects include Kaltag Creek tower project operated by the City of Kaltag and funded by the Alaska Cooperative 4-H Extension Service and BSFA; East Fork Andreafsky, Gisasa River and Henshaw Creek weirs operated by USFWS; Clear Creek and Tozitna River weirs operated by BLM; Chena River tower operated by ADF&G, and the Salcha River tower operated by BSFA.

Chinook Salmon Escapement

Yukon River Chinook salmon escapement in 2004 was assessed as better than average for the third consecutive year. Several escapements were near all time highs with some assessments dating back to 1961. This assessment is based on escapement counts and estimates from selected tributaries. Production from the 1998 and 1999 poor parent years appeared to have improved greatly based on the overall run abundance. A strong age-4 component from the below average

escapements in 2000 indicate that production from that brood year may be much higher than average.

Aerial surveys in the lower Yukon River drainage were conducted under some of the best conditions in recent history. Water levels were low with clear visibility. Two surveys were rated fair and 3 surveys were rated good. Although aerial surveys were flown earlier than normal, some of the escapements were already just past peak spawning and the surveys could have been conducted several days earlier. All systems with aerial survey SEGs met their escapement goals with the East Fork Andreafsky and Anvik Rivers exceeding the upper end of their escapement goals. The upper part of the Yukon River drainage was plagued by smoke due to forest fires. As a result no aerial surveys were flown in the Upper Yukon Basin.

A weir was operated on the East Fork Andreafsky River and the estimated passage of 8,045 Chinook salmon was the largest escapement on record for this system. Age, sex and length data was collected from Chinook salmon from the weir trap. The estimated age composition was 39.9% age-4, 42.6% age-5, 17.1% age-6, and 0.4% age-7 fish. The sex composition of the samples was 37.3% females and 62.7% males. Anvik River age, sex, and length data was collected from a carcass survey. The estimated age composition was 0.6% age-3, 32.2% age-4, 40.7% age-5, 25.6% age-6, and 0.9% age-7 fish. The sex composition of the samples was 27.7% females and 72.3% males.

The Gisasa River weir passage estimate was 1,774 Chinook salmon (Appendix E4). Age, sex, and length data was collected at the weir trap. The estimated age composition from scale samples was 0.5 age-3, 41.2% age-4, 32.9% age-5, 25.2% age-6, and 0.2% age-7 fish. The sex composition of the samples was 30.1% females and 69.9% males.

A weir was operated on Henshaw Creek between June 26 and August 5, 2004. Escapement through the weir was estimated at 1,247 Chinook salmon. Age, sex, and length data was collected at the weir trap. The estimated age composition from scale samples collected was 0.1 age-3, 45.7% age-4, 27.4% age-5, 26.0% age-6, and 0.8% age-7 fish. The sex composition of the samples was 21.3% females and 78.7% males.

BLM operated a floating weir on Tozitna River between June 21 and August 10. The preliminary escapement estimate past the weir was 1,880 Chinook salmon. Age, sex, and length data was collected at the weir trap. The estimated age composition from scale samples was 0.4% age-3, 38.6% age-4, 40.2% age-5, 19.9% age-6, and 0.9% age-7 fish. The sex composition of the samples was 17.7% females and 82.3% males. As in previous years the percentage of females at this site is significantly different than the other escapement projects.

BEGs have been established for the Chena and Salcha Rivers located on the Tanana River. These 2 spawning tributaries are the largest producers of Chinook salmon in the Yukon River drainage. Each of these rivers surpassed their escapement goals (Appendix E4). Without interpolation for missed counting periods, results indicate the Chinook salmon escapement into the Chena River was approximately 9,591 fish and 15,887 Chinook salmon into Salcha River.

Age, sex, and length samples in both the Chena and Salcha Rivers were collected in 2004 by carcass surveys conducted throughout the season in conjunction with the *Icthyophonus* project. The estimated age composition of the Chinook salmon samples collected in the Chena River was 8.9% age-4, 17.7% age-5, 71.5% age-6, and 1.9% age-7 fish. The sex composition of the samples was 66.5% females and 33.5% males. The estimated age composition of the Chinook

salmon samples collected in the Salcha River was 9.2% age-4, 8.3% age-5, 81.7% age-6, and 0.9% age-7 fish. The sex composition of the samples was 62.9% females and 37.1% males. The age and sex composition data collected in 2004 from both of these systems were significantly different than other escapement projects and may be a result of the different sampling methods through time.

Results of the DFO mark-recapture tagging project at the U.S./Canada border, minus the Canadian harvest, indicated a total spawning escapement for the Canadian portion of the Upper Yukon River drainage of approximately 37,165 Chinook salmon, well above the escapement objective of 28,000 (Appendix E5). Age, sex, and length data was collected from the border fish wheels as the Chinook salmon were marked and released. The estimated age composition for Chinook salmon samples collected from the border fish wheels was 24.9% age-4, 41.8% age-5, 30.6% age-6, and 2.7% age-7 fish. The sex composition of the samples from the border fish wheels was 23.8% females and 76.2% males.

Aerial surveys of the Little Salmon, Big Salmon, Wolf, and Nisutlin River index areas were conducted by DFO. Two surveys of the Little Salmon River were flown, however due to the apparent lateness of the timing observed (e.g. the number of carcasses) during the initial survey of the other systems, a second survey was deemed to be unwarranted. Peak annual historical counts are documented in Appendix E5.

The Little Salmon aerial survey was flown on August 15 and 18. Countability was rated as excellent on the first survey and good on the second survey. Total counts were 1,140 and 444 Chinook salmon, respectively. The first count was 46.2% higher than the recent average (1994-2003) of 780 (Appendix E5).

The Big Salmon, Nisutlin, and Wolf River index areas were flown on August 18. Fair to good survey conditions were encountered for these surveys. The Big Salmon count of 762 was 57.6% of the 10-year average of 1,322. It was thought that the survey was conducted approximately 5 days after the peak spawning period. The Nisutlin River index count (n=330) was very close to the 10-year average count of 360 fish. Similarly, the Wolf River count (n=226) was very close to the 10-year average count of 241 (Appendix E5).

Based on observations made in 2002, 2003, and 2004, it may be prudent to continue conducting 2 surveys of the Little Salmon, Big Salmon, Nisutlin, and Wolf River index areas with the first survey taking place no later than August 15. It has become apparent that the peak spawning is more closely matched to the earliest spawning date chosen in the years when 2 surveys were conducted. Single aerial surveys do not count the entire escapement since runs are usually protracted with the early spawning fish disappearing before the late ones arrive. Weather and water conditions, the density of spawning fish, as well as observer experience and bias also affect survey accuracy.

The Ross River Dene Council conducted the Blind Creek weir project in 2004, and a total of 792 Chinook salmon were counted between July 11 and August 15. A total of 1,115 Chinook salmon were counted between July 31 and August 18 in 2003. This project was not conducted in 2001 or 2002. A total of 892 Chinook salmon was counted between August 1 and August 22 in 1999. Counts for the 2 other years of weir operation were 957 in 1997 and 373 in 1998.

The Whitehorse Rapids Fishway Chinook salmon count of 1,989 fish, provided by the Yukon Fish and Game Association, was 39% above the recent average (1994-2003) of 1,433 fish. The

overall sex composition observed at the fishway was 17% female. Hatchery-produced fish accounted for 76% of the return and consisted of 1,251 males and 256 females. The known hatchery component (fish marked with adipose fin removal) and the unmarked component were both 17% female.

Summer Chum Salmon Escapement

Postseason analysis of escapement data indicates the 2004 summer chum salmon escapement levels continued to be below average. Generally, the 2004 escapements were improved when compared to the 2003 escapements. Escapement goals have been established for the Andreafsky and Anvik Rivers. There is also a drainagewide escapement objective for the Yukon River, based on the Pilot Station sonar project (800,000-1,600,000).

The Pilot Station passage estimate was 1,357,826 summer chum salmon (Appendix E3). This estimate was above the 2003 estimate of 1,162,679 and near the 1995, 1997-2003 average of 1,257,000 fish. However, high water earlier in the season washed a large amount of silt into the water, hampering the ability for sonar to count fish. Therefore, both summer chum and Chinook salmon passage estimates are considered conservative. It is uncertain whether adjustments can be made to ascertain the number of fish that were missed.

The Anvik River sonar-based escapement count of 365,556 summer chum salmon (Appendix E4) was just below the low end of the BEG range of 400,000 to 800,000 fish and 40% below the recent 10-year average (1994-2003) of 606,369 chum salmon. Age, sex, and length samples were collected in 2004 by beach seine. The estimated age composition was 2.5% age-3, 40.9% age-4, 56.1% age-5, and 0.5% age-6 fish. The sex composition of the samples was 53.3% females and 46.7% males.

The East Fork Andreafsky River weir was operated from June 23 through August 19, 2004. The estimated escapement for chum salmon in the East Fork Andreafsky River was 64,883 (Appendix E6). Age, sex, and length data was collected from the weir trap. The estimated age composition was 4.3% age-3, 72.5% age-4, and 23.1% age-5 fish. The sex composition of the samples was 51.4% females and 48.4% males.

The escapement estimate of summer chum salmon through the Gisasa River weir was 37,851 fish (Appendix E6). Age, sex, and length data was collected from the weir trap. The age composition of samples was 6.4% age-3, 73.8% age-4, and 19.7% age-5 fish. The sex composition of the samples was 44.9% females and 55.1% males.

The escapement estimate of summer chum salmon through the Henshaw Creek weir was 21,400 fish. This escapement was 24% below the 2000-2002 average of 28,000 fish. Age, sex, and length data was collected from the weir trap. The estimated age composition from scale samples was 6.4% age-3, 86.9% age-4, and 6.7% age-5 fish. The sex composition of the samples was 54.6% females and 45.4% males.

The Kaltag Creek tower project counted 5,247 summer chum salmon (Appendix E6). This escapement is 80% below the 1994-2003 (excluding 2001) average of 27,000 fish. The Nulato River escapement project did not operated in 2004.

The Tozitna River weir summer chum salmon escapement estimate was 25,003 fish. This escapement estimate is the highest count since the project began in 2002. Age, sex, and length data was collected from the weir trap. The estimated age composition from scale samples was

2.7% age-3, 62.6% age-4, 34.6% age-5, and 0.1% age-6 fish. The sex composition of the samples was 46.5% females and 53.5% males.

A weir was operated on Clear Creek (tributary of the Hogatza River) operated from June 21-31. The estimated escapement of 15,661 chum salmon (Appendix E6) was 69% below the 1994 to 2003 average of approximately 50,000 fish. Age, sex, and length data was collected from the weir trap. The estimated age composition from scale samples was 2.1% age-3, 66.4% age-4, 31.2% age-5, and 0.3% age-6 fish. The sex composition of the samples was 44.7% females and 55.3% males.

Fall Season Escapement 2004

Fall Chum Salmon Escapement 2004

Historic fall chum salmon escapement information along with the most current 2004 escapement results are presented in Appendix E7. Major fall chum salmon spawning areas are located in the Tanana, Chandalar, and Porcupine River drainages and within the Canadian portion of the mainstem Yukon River drainage (Figure 12). Historic coho salmon escapement information along with the most current 2004 escapement results are presented in Appendix E9.

The 2004 preseason run projection for Yukon River fall chum salmon ranged from 350,000 to 672,000 fish. The high end of the range was derived from normal run size expectations for the parent-year escapements realized throughout the drainage in 1999 and 2000. The low end of the range was primarily based upon the expectation of extremely poor production as was observed in recent years of actual fall chum salmon returns.

Initial inseason assessments of fall chum salmon for 2004 were influenced by the performance of summer chum salmon, which improved steadily with the run and ended up slightly above average, as determined from the main river sonar abundance estimate. Management of the fisheries continued with use of inseason monitoring projects located throughout the drainage. Assessment of the run occurred at each project location, and managers looked for alignment from various indicators.

Each pulse of fall chum salmon typically takes approximately 20 days to reach the confluence of the Tanana River and another 10 days to migrate to the Canadian Border. In 2004, a large pulse entered the Yukon River on August 1 and was followed by several smaller pulses. The largest pulse entered on August 27. Once each pulse was in the river, the salmon run was assessed at the mainstem Pilot Station sonar program for abundance. The upriver assessment projects provided confirmation and distribution information, and fisheries management actions were adjusted accordingly.

Assessment of run size was made using several methods. Initially, a considerable amount of weight is placed on the Pilot Station sonar abundance estimate until upriver monitoring projects can provide data. The fall chum salmon passage estimate, based on Pilot Station sonar for the period July 19 through August 31, was 594,060 fish. One method to determine total run size is based on the Pilot Station sonar abundance estimate with the addition of estimated commercial and subsistence harvests downstream of the sonar site, including test fisheries, and an estimated 5 percent for fall chum salmon that pass after termination of the project. Therefore preliminary total run size for the Yukon River drainage, primarily calculated from the main river sonar at Pilot Station, was estimated to be approximately 630,000 fall chum salmon.

A second method to calculate run size is the upper Yukon and Tanana River individually monitored systems combined with an average escapement for tributaries downstream of the confluence of the Tanana River (excluding an escapement estimate of approximately 25,000 for downstream stocks such as in the Koyukuk River) plus the estimated harvest from both the U.S. and Canada. For 2004, this method resulted in a preliminary estimate of 560,000 fall chum salmon. Both methods result in estimations near the upper end of the preseason projection based on normal production rates.

The 2004 fall chum salmon run could be characterized as having an average even-year run size, which started out weak through July. However, after the first pulse the run increased to average passage (8-year database) rates at Pilot Station and was raised to higher levels upon arrival of the substantial last pulse. Other Lower Yukon projects provided mixed fall chum salmon assessments. The Lower Yukon drift test fishery indicated below average passage (short, 3-year database), while Mountain Village indicated average passage (7-year database), and Kaltag drift test fishery indicated above average (short, 5-year database).

A review of upper river test fish data and escapement information suggested run strengths of both the upper Yukon River (non-Tanana) and Tanana River run components (although less than 2003) were much improved compared to recent years. The USFWS Rampart-Rapids mark-recapture abundance estimate for fall chum migrating to the Upper Yukon area was approximately 618,000 fish (SE 66,000) through September 18. This estimate was higher than the abundance estimate provided by Pilot Station sonar, which also includes Tanana River stocks. As upriver escapement projects came on line, the Rampart-Rapids abundance estimate was treated inseason as biased high. It was noted that the standard error was wider than in any other previous year of operation. During the postseason review some modifications were completed, and the result was an estimate of 618,579 fish (SE 60,714) that still appeared high. The 2004 Rampart-Rapids estimate represents the second largest return behind an estimated 654,000 fall chum salmon observed in 1996, the first year of the project. Typically a third method of looking at total return to the upper Yukon River drainage is to add Tanana mark-recapture estimates to the upper Yukon mark-recapture estimate. However, in 2004 this method resulted in an estimate over 857,000 fall chum salmon, inordinately high for an even-year return.

The Chandalar River sonar project operated from August 8 through September 21, 2004. The escapement estimate was 136,703 fall chum salmon. Chandalar River sonar estimates of fall chum salmon range from a low of 65,894 fish in 2000 to a high of 280,999 fish in 1995. The 2004 estimated escapement in the Chandalar River was well within the BEG range of 74,000 to 152,000 fall chum salmon.

The Sheenjek River sonar program operated from August 8 through September 25 with an estimated passage of 37,878 fall chum salmon. This estimate was approximately 59% below the 1974-2003 average of 92,694 fish. The 2004 estimate was also 24% below the low end of the BEG range of 50,000 to 104,000 fall chum salmon. Sheenjek River escapement estimates for fall chum salmon ranged from 14,229 in 1999 to 246,889 in 1996. Age, sex, and length samples of fall chum salmon using vertebra were collected by beach seining throughout the season. The estimated age composition from samples was 11.5% age-3, 61.5% age-4, 25.0% age-5, and 1.9% age-6 fish. The sex composition of the samples was 38.5% females and 61.5% males.

The DFO weir on the Fishing Branch River passed an estimated 19,664 fall chum salmon during the 49-day period from August 22 through October 10, 2004. Postseason analysis expanded the

estimated passage (based on average run timing) resulting in an estimate of 20,274 chum salmon. An interim goal of 13,000 fall chum salmon for the Fishing Branch River was established preseason anticipating that the goal in the U.S./Canada Agreement of 50,000 to 120,000 fish was highly unlikely to be met given the recent productivity of the stock. The recent 5-year average (1999-2003) is 16,500 fall chum salmon and the long-term average (1971-2003) is 49,600 fish. In 2004, escapement to the Fishing Branch River was improved by conservative management actions taken along the migration route including a voluntary closure to aboriginal harvests in the community of Old Crow (average harvest 6,000 fall chum salmon). Additionally, R&E Funds provided supplementation of dog food to fishers in the community of Old Crow and to 1 fisherman on the U.S. side of the border to offset the loss of fishing opportunity.

The Canadian Yukon River mainstem escapement was estimated to be 154,080 fall chum salmon. This level of escapement is 2.4 times higher than the interim goal of greater than 65,000 fish and above the U.S./Canada Agreement of greater than 80,000 fish. This level of escapement was only slightly lower than 2003 and represented approximately 21% of the return based on escapements to major spawning grounds.

The 2004 monitoring of the Tanana River drainage consisted of estimating fall chum salmon run abundance using mark-recapture techniques. Two population estimates were generated, one in the Kantishna River drainage and the other in the Tanana River drainage (upstream of the Kantishna River). The 2004 fall chum salmon estimate for the Kantishna River drainage through October 1 was 76,163 $\pm$ 8,606 (95% CI) fish, second highest estimate since 1999 when the project began. The upper Tanana River mark-recapture abundance estimate through September 30, 2004, was 123,879 $\pm$ 21,700 (95% CI) fall chum salmon (Cleary and Hamazaki 2005).

The Tanana River established BEG range of 61,000 to 136,000 includes the Toklat River index area BEG range of 15,000 to 33,000 fall chum salmon. To represent the Upper Tanana River, the Toklat River range is removed and leaves a BEG range of 46,000 to 103,000 fall chum salmon, which is used to compare with the mark-recapture estimate. In 2004, the upper Tanana River estimated fall chum salmon abundance was above the upper end of the BEG.

The Toklat River, a tributary of the Kantishna River, is an important fall chum salmon spawning area within the Kantishna River drainage and has represented on average 34% of the Kantishna River estimate. The abundance of fall chum salmon in the Toklat River is estimated based on a single ground survey of the index area that was conducted on October 23-24, 2004. Abundance of fall chum salmon was estimated to be 35,480 fall chum salmon derived from the expansion of the stream survey count using the migratory time-density curve. This level of escapement is above the upper end of the BEG range. Fall chum salmon age, sex, and length samples using vertebra were collected from carcasses in various channels of the Toklat River index area. The age composition from samples was 10.9% age-3, 72.4% age-4, 16.1% age-5, and 0.6% age-6 fish. The sex composition of the samples was 35.6% females and 64.4% males.

The Delta River in the upper Tanana River drainage has a BEG range of 6,000 to 13,000 fall chum salmon. Evaluation of returns to the Delta River in 2004 was based on 8 replicate foot surveys conducted between October 7 and November 30. An estimate of 25,073 fall chum salmon for the Delta River was developed using the area under the curve method, and this level of escapement was well above the upper end of the BEG range. Age, sex, and length samples using vertebra were collected from fall chum salmon carcasses in various channels of the Delta

River. The age composition from samples was 19.5% age-3, 60.4% age-4, 19.5% age-5, and 0.6% age-6 fish. The sex composition of the samples was 50.9% females and 49.1% males.

(Note that age structure of both summer and fall chum salmon were unique in 2004. This was demonstrated by the fact that most of the samples indicated a record high abundance of age-3 fish. For example, the Delta River fall chum salmon samples included 19.5% age-3 compared to the 1986 to 2003 average of 4.0%. Age-3 fish were as high as 24.2% at the Middle Mouth test fish site in the lower river and the high levels continued upstream through the test fisheries in Mountain Village, Kaltag harvests in District 5, and the escapements in the Sheenjek River. Unfortunately no age, sex, and length samples were collected from fall chum salmon in the Chandalar River escapements (the largest component) and the Canadian samples showed only slightly elevated levels of age-3 fish; however, different aging methods are utilized. However, the age-3 component did decrease by half between the lower Yukon River and the upper Yukon River projects.

Coho Salmon Escapement 2004

Assessment of coho salmon spawning escapement is limited in the Yukon River drainage because of funding limitations and marginal survey conditions that often prevail during periods of peak spawning. The coho salmon passage estimate at Pilot Station sonar under represents the actual total run because the project terminates before the end of the run on August 31. The passage estimate of 188,350 coho salmon at Pilot Station was the second highest abundance level documented; behind the record return of 269,081 coho in 2003. Tributary escapement estimate information was limited to the East Fork Andreafsky River in the lower Yukon River drainage and portions of the Tanana River drainage.

The East Fork Andreafsky River had an escapement of 11,146 coho salmon, which is 54% above the 1995-2003 average of 7,308 fish (Appendix E9). The historical passage ranges from 2,963 in 1999 to 15,896 in 2001; the 2004 passage is the second highest on record. Expansions were made for years affected by high water, including a large time period during peak passage in 1998 and 2001. Adjustments were also made for high water in 2003 and 2004; however, the high water events were early in the season with minimal impact on estimates

Presently, only 1 escapement goal has been established for coho salmon in the Yukon River drainage. The Delta Clearwater River, in the Tanana River drainage, has an established SEG of 5,200 to 17,000 coho salmon established in 2004 and replaced the SEG of 9,000 fish. The Delta Clearwater River peak spawning count was 37,550 coho salmon and was conducted by boat survey on October 27, 2004. This escapement level is 2.3 times the 1972 to 2003 average (n=16,334) and is double the upper end of the SEG range. Spawning ground surveys of selected areas were conducted in other areas within the Tanana River drainage, primarily the Nenana (BSFA) and upper Tanana (ADF&G). In 2004, the Nenana River surveys indicated slightly below average, to average numbers of coho salmon escapements. Lower than average counts may be a reflection of the survey timing relative to a late run of coho salmon. The October 3 surveys were much higher than those conducted on September 19, but the Nenana surveys were conducted much earlier than those in Delta Clearwater River.

ENFORCEMENT 2004

The primary enforcement authority for violations of Fish and Game regulations is the Department of Public Safety Alaska Wildlife Troopers (AWT). State AWT officers monitored subsistence, personal use, and commercial fisheries within the Yukon Area.

AWT conducted patrols in both the Lower and Upper Yukon Area utilizing float planes and skiffs. In general, compliance with commercial fishing regulations was good. Many contacts were made with citations being written for, but not limited to, wanton waste; improper vessel numbers; no crewmember licenses; no photo identification; and no Personal Floatation Devices (PFDs). Warnings were also issued; which included, but were not limited to, boat registrations; no Type-4 PFDs; littering; improper vessel numbers; no vessel triangle; interfering with lawful commercial fishing; commercial fishing during a closed period; and improper gear marking. Investigations were also conducted for commercial fishing without a permit. AWT Officers also participated in a Search and Rescue effort near Kotlik.

OUTLOOK FOR 2005

Chinook Salmon

Yukon River Chinook salmon return primarily as age-5 and age-6 fish, although age-4 and age-7 fish also contribute to the run. Spawning ground escapements in 1999, the brood year producing age-6 fish returning in 2005, were above the upper end of the escapement goals in the Chena and Salcha Rivers but below the escapement objective in Canada. The age-5 component in 2004 was below average and the age-4 component in 2004 was above average. The previous 2 years (2003 and 2004) runs have been near average indicating good production from the poor runs of 1998-2000.

Assuming a below normal return of age-6 fish, and a stronger return of age-5 fish, the 2005 run is expected to be below average and not as strong as the 2003 and 2004 runs. Given the uncertainties associated with recent declines in productivity, it is anticipated the run will provide for escapements, support a normal subsistence harvest, and a below average commercial harvest. Fishery management will be based upon inseason assessments of the run. Similar to 2004, if inseason indicators of run strength suggest a harvestable surplus exists, a commercial harvest in Alaska could range from 20,000 to 60,000 Chinook salmon. This range of commercial catch is below the 10-year average (1995-2004) of approximately 63,400 Chinook salmon.

In January 2001, the BOF modified the Yukon River King Salmon Management plan by adding a fishing schedule for the subsistence salmon fisheries. This schedule was in response to the poor 2000 Chinook salmon run, and expected poor run in 2001. The objectives of the schedule are to 1) reduce harvest early in the run when there is a higher level of uncertainty, 2) spread the harvest throughout the run to reduce harvest impacts on any particular component of the run, and 3) spread subsistence fishing opportunity among users during years of low salmon runs.

A conservative element of the 2002 and 2003 preseason management plans was to wait until near the midpoint of the Chinook salmon run before determining if the run was strong enough to support a commercial fishery. This interim strategy was designed to provide for escapement, subsistence uses, and border commitments to Canada in the event of poor run occurring as in 2000. However, a drawback to this approach is that commercial openings are directed at stocks migrating during the latter half of the run. The strategy for 2005 will be to conduct commercial fishing activities during the mid-portion of the run from the end of the first quarter point to the end of the third quarter point. Additional harvest can occur late in the season depending on

information from escapement projects. Based on postseason assessments, harvestable surpluses have been foregone because of the conservative management in 2002 and 2003, in addition to underestimating the run strength in 2004.

Summer Chum Salmon

Summer chum salmon runs in 2005 will be dependent on the production of escapements from 2001 (age-4 fish) and 2000 (age-5-fish). The 2000 run of summer chum salmon was the poorest on record and none of the escapement goals were met. Spawning escapements in 2001 were similar to the escapements in 2000 and no escapement goals were met. Since 2001, the summer chum salmon runs have exhibited steady improvements with harvestable surpluses in the last 3 years (2002-2004). Weakness in Yukon River chum salmon runs from 1998 through 2001 is attributed to reduced productivity, and not the result of low levels of parent year escapements. In 2004, a record number of age-3 summer chum salmon were observed throughout the AYK Region. The BASIS study and Bering Sea trawl bycatch have both observed significant increases in chum salmon. Although not all of these salmon are bound for Western Alaska, it is an indicator that the health of the Bering Sea has improved considerably and chum salmon production may have increased.

If ocean conditions are more conducive to survival, the run is anticipated to be below average to average and provide for escapements, support a normal subsistence harvest, and possibly support a below average to average commercial harvest. If inseason indicators of run strength suggest a harvestable surplus exists, a commercial harvest in Alaska could range from 100,000 to 500,000 summer chum salmon depending on salmon market conditions.

Fall Chum Salmon

Drainage wide, Yukon River fall chum salmon escapements for the period 1974 through 2000 have been estimated to have ranged from approximately 180,000 (1982) to 1,500,000 (1975), based upon expansion of escapement assessments for selected stocks to approximate overall abundance (Eggers 2001). Escapements in these years resulted in subsequent returns that ranged in size from approximately 312,000 (1996 production) to 1,400,000 (1975 production) fish, using the same approach to approximating overall escapement. Corresponding return per spawner rates range from 0.3 to 3.2, averaging 1.8 for all years combined (1974-1998).

Western Alaska experienced very dramatic declines in salmon returns from 1997 through 2002 with a record low in 2000. To adjust for the run failures, beginning in 1999, the fall chum salmon run projections have been presented as a range that includes the normal point projection as the high end. The low end was determined by reducing the normal point projection by the average ratio of observed to predicted returns from 1998 through the current year. Production has since improved based on returns in 2003 and 2004, therefore the low end for 2005 was determined based on a 4 year (one chum salmon life cycle) average ratio (0.75) of observed to predicted returns from 2001 to 2004.

Yukon River fall chum salmon return primarily as age-4 or age-5 fish, although age-3 and age-6 fish also contribute to the run. The 2005 run will be comprised of the parent years 1999 to 2002. Estimates of return per spawner (based on brood year return) were used to estimate production for 1999 and 2000 and an auto-regressive Ricker spawner-recruit model was used to predict the returns from 2001 and 2002. The point estimate utilizes the 1974 to 1983 even/odd maturity schedules to represent years of higher production. Using the 4-year average proportion of 0.75 results in tightening up the lower end of the range and together result in a 2005 run size

projection in the range of 584,000 to 776,000 fall chum salmon with the approximate age composition of 7.4%, 80.9%, 11.3%, and 0.4% for fish age-3 through age-6 respectively.

The escapements for 1999 and 2000 parent years that will contribute to the 2005 run were poor and below the minimum drainagewide escapement goal of 300,000 fall chum salmon. The major contributor to the 2005 fall chum salmon run is anticipated to be age-4 fish returning from the 2001 parent year. Both 2001 and 2002 escapements were within the drainagewide escapement goal range but in the lower third. This is the first year of returns from the 2002 brood year; however, stocks within the Tanana River drainage may have been affected by a magnitude 7.9 earthquake, which occurred November 3, 2002. The epicenter was located within the Alaska Range on the Denali fault line and could have affected fall chum and coho salmon eggs incubating in gravels from the Toklat River in the Kantishna River drainage to the upper Tanana River mainstem; including the Delta River area.

In 2004, an exceptional return of approximately 120,000 age-3 fish from the 2001 brood year (1974-1998 brood year return average is 29,000 age-3 fish) was the second highest on record and may represent further evidence of improved conditions in the marine environment. The return of age-4 fish from odd-numbered brood years during the time period 1974 to 1998 typically averages 721,000 chum salmon, and ranges from a low of 245,000 for brood year 1997 to a high of 1,225,000 for brood year 1975. Based on the highly productive years from 1974 to 1983, the return of odd-numbered brood years averages 1,256,000 chum salmon.

The projection for 2005 is based on the evident improvements in production observed in 2003 and 2004. The age-4 component is typically expected to dominate the run more than normal during odd-numbered years. Data also support continued above average returns of age-3 fish. If age-3, age-4, and age-5 fish all trend upwards in 2005, a fall chum salmon run size could not only be realized but could potentially surpass the upper end of the range. The 2005 projected run size range should support normal subsistence fishing activities and should provide some opportunity for commercial ventures where markets exist. The run will be monitored inseason to determine strength, in relation to the estimated range, and what amount of harvest can be provided based on the levels stipulated in the Alaska *Yukon River Drainage Fall Chum Salmon Management Plan*.

Coho Salmon

Although comprehensive escapement information on Yukon River drainage coho salmon is lacking, it is known that coho salmon primarily return as age-4 fish and overlap in run timing with fall chum salmon. The major contributor to the 2005 coho salmon run will be the age-4 fish returning from the 2001 parent year. Based on Pilot Station sonar operations from 1995 and 1997 through 2004, the 2001 return was slightly below average and early in run timing. The evaluations of escapement in the Andreafsky, Kantishna, and upper portions of the Tanana River drainage were above average in abundance in 2001. Monitored spawning areas in the Nenana River drainage were the only areas below average, which could be a factor of survey conditions. The Delta Clearwater River, the major producer of coho salmon in the upper Tanana River drainage, had its third highest escapement in 33 years in 2001. Based on Delta Clearwater River escapements, coho salmon abundance has been on the increase throughout this time period with a significant increase within the last decade. Assuming average survival, the 2005 coho salmon run is anticipated to be average to above average based on excellent escapements in 2001.

The Alaska *Yukon River Coho Salmon Management Plan* allows a directed commercial coho salmon fishery, but only under unique conditions. Directed coho salmon fishing is dependent on the assessed levels of return of both coho and fall chum salmon since they commonly co-migrate.

CAPE ROMANZOF DISTRICT HERRING FISHERY 2002-2004

Pacific herring *Clupea harengus pallasi* are present in coastal waters of the Yukon Area during May and June. Spawning populations occur primarily in the Cape Romanzof area in Kokechik Bay and Scammon Bay (Appendix F1) where spawning habitat consists of rocky beaches and rockweed *Fucus sp*. The arrival of herring on the spawning grounds is greatly influenced by ocean water temperature and ice conditions. Typically, herring appear immediately after ice breakup. Spawning usually occurs between mid May and mid June.

The Cape Romanzof District consists of all state waters from Dall Point to 62 degrees north latitude (Appendix F1). Local residents utilize herring for subsistence purposes. Additionally, a commercial herring sac-roe fishery has occurred in the Cape Romanzof District since 1980. In 1982, the BOF reduced the area open to commercial fishing by closing the waters outside of Kokechik Bay. In 2004, the BOF rescinded its 1982 decision and opened the Cape Romanzof District for commercial herring fishing to the pre-1982 boundaries. Gillnets are the only legal commercial gear type. The use of mechanical shakers has been prohibited since 1988. Limited entry to the fishery began with a moratorium on new entrants in 1988. The fishery is now limited to 101 permits.

COMMERCIAL FISHERY

Commercial harvests increased steadily after inception of the fishery in 1980, reaching a peak harvest of 1,865 tons in 1986 (Appendix F2). Since 1986, harvest trends have decreased.

ADF&G in cooperation with herring buyers in the Cape Romanzof area have encouraged the use of mesh sizes near the upper regulatory limit. This effort was mostly successful and resulted in a lower quantity but a higher quality harvest. Larger mesh sizes selectively harvest older (larger) and unspawned herring with minimal impact on the younger age classes and spawned out fish. Harvest of recruit age and spawned out herring have historically contributed to low roe recovery rates in the Cape Romanzof fishery.

FWP officers were not present at Cape Romanzof in 2002, 2003, or 2004. Enforcement officers historically use a Supercub aircraft and/or a skiff to patrol the herring fishery. No citations were issued from 2002 through 2004.

Commercial Fishery 2002

In 2002, a total of 102 tons of Pacific herring were harvested by 21 fishers utilizing 21 fishing vessels (Appendix F2). The commercial harvest was 82% below the recent 5-year average (1997-2001) of 555 tons. The entire catch was sold as sac roe herring with no reported sales of bait

quality herring (8% or less roe recovery). The average sac roe recovery was 9.8%. The 2002 commercial fishery consisted of 13 fishing periods, which were held between May 21 and May 28. Fishing periods ranged from 1.5 hours to 5 hours in duration for a total fishing time of 53.5 hours (Appendix F3 and F4). Fishing gear was restricted to one 50-fathom gillnet per vessel throughout the commercial season. The commercial harvest did not reach the preseason harvest projection of 403 to 510 tons.

The estimated exvessel value of the 2002 harvest was $12,500 (Appendix F2). The inseason price for herring sac roe was $125 per ton at 10% roe recovery. This includes incentives paid to fishers by Coastal Villages Seafoods LLC. One company purchased herring and was represented by 3 tenders during the fishery (Appendix F5). Residents of Hooper Bay and Scammon Bay accounted for 100% of the effort and harvest (Appendix F7).

As in recent years, the fishers were put on a one-half hour advance notice prior to opening the commercial fishery. A countdown was provided fishers prior to the opening and closing of each period on VHF radio. Commercial fishing periods were scheduled prior to high tide. In previous years, in coordination with ADF&G, commercial fishers provided catch samples for evaluation by industry representatives prior to commercial periods. The decrease in participants has allowed managers to use information obtained from ADF&G test fish and commercial harvest, in lieu of the commercial catch samples, to gage the quality and quantity of the herring harvested.

The overall exploitation rate of herring was estimated postseason to be approximately 3% of the available biomass (Appendix F2). A total of 386 herring were sampled from the commercial harvest. The estimated age composition of the commercial samples based on scale analysis was: age-5: 0.0%; age-6: 0.0%; age-7: 1.0%; age-8: 0.5%; age-9: 22.0%; age-10: 3.6%; age-11: 29.3%; age-12: 15.3%;and age-13 and older: 28.2% (Appendices F10 and F11).

Commercial Fishery 2003

A total of 80.5 tons of Pacific herring were harvested by 11 fishers utilizing 11 fishing vessels (Appendix F2). The commercial harvest was 80% below the recent 5-year average (1998-2002) of 400 tons. The entire catch was sold as sac roe herring with no reported sales of bait quality herring (8% or less roe recovery). The average sac roe recovery was 10.9%. The 2003 commercial fishery consisted of 14 fishing periods, which were held between May 13 and May 20. Fishing periods were either 4 or 5 hours in duration for a total fishing time of 63 hours (Appendices F3 and F4). Fishing gear was restricted to one 50-fathom gillnet per vessel up until the tenth commercial opening, which occurred during the afternoon high tide on May 18. Because of the small number of fishers participating in the fishery, managers allowed fishers the opportunity to use 2 shackles of gear (100 fathoms of gillnet). Few fishers took advantage this opportunity because most fishers did not have extra gear. The commercial harvest did not reach the preseason harvest projection range of 580 to 729 tons. The harvest projection range was not reached because fishing effort in recent years has dropped considerably due to lower prices.

The estimated exvessel value of the 2003 harvest was approximately $17,000 (Appendix F2). The inseason price for herring sac roe was $210.88 per ton. This includes incentives paid to fishers by Coastal Villages Seafoods LLC. One company purchased herring and was represented by 3 tenders during the fishery (Appendix F5). Residents of Hooper Bay and Scammon Bay accounted for 100% of the effort and harvest (Appendix F7).

In 2003 the fishers were put on a 1-hour advance notice prior to opening the commercial fishery. A countdown announced on VHF radio was used to open and close each commercial fishing period. Commercial fishing periods were scheduled to coincide with high tide. In 2003, because of low effort and associated low harvest rates, fishers present were allowed to fish without the precondition of providing commercial samples.

The overall exploitation rate of herring was estimated postseason to be approximately 2% of the available biomass (Appendix F2). A total of 294 herring were sampled from the commercial harvest. The estimated age composition of the commercial samples based on scale analysis was: age-5: 0.0%; age-6: 1.7%; age-7: 5.8%; age-8: 3.7%; age-9: 7.5%; age-10: 20.7%; age-11: 11.9%; age-12: 17.7%; and age-13 and older: 31.0% (Appendices F10 and F11).

Commercial Fishery 2004

A total of 25.1 tons of Pacific herring were harvested by 10 fishers (Appendix F2). The commercial harvest was 90% below the recent 5-year average (1999-2003) of 271 tons. The entire catch was sold as sac roe herring with no reported sales of bait quality herring (8% or less roe recovery). The average sac roe recovery was 12.4%. The commercial harvest did not reach the preseason harvest projection range of 600 to 800 tons. The harvest projection range was not reached because of the lack of fishing effort and the late start of the fishery.

In 2004, commercial fishing occurred in a different manner than in pervious years. Historically, fishing periods were centered near high tide events. Because of changes to the fishery (e.g. participation, weak markets, expanded fishing area) the fishery must be able to adapt in order to exist. As part of this evolution, in 2004 the fishery was opened tocommercial fishing at 9:00 a.m. on May 16 and remained open till further notice on a continuous basis until 1:00 p.m. on May 22. This was done to allow fishers participating to the maximum opportunity and explore the district to find marketable quality of sac roe herring. Total fishing time was 148 hours (Appendix F4). Similar to past years, fishing was limited to one 50 fathom gillnet per vessel.

The estimated exvessel value of the 2004 harvest was approximately $6,700 (Appendix F2). The average inseason price for herring sac roe was $266.20 per ton. This includes incentives that were paid to fishers by Coastal Villages Seafoods, LLC. One company purchased herring and was represented by 3 tenders during the fishery (Appendix F5). Residents of Scammon Bay accounted for 100% of the effort and harvest (Appendix F6).

The overall exploitation rate of herring was estimated postseason to be less than 1% of the available biomass (Appendix F2). A total of 40 herring were sampled from the commercial harvest. This sample proved inadequate and would not accurately describe the age composition of herring in the commercial harvest. Few fish were collected from the commercial fishery because all of the harvest was taken in Scammon bay, which is some distance from the established ADF&G camp, logistics of obtaining samples, inclement weather, and unsuccessful attempts to have the tenders save samples until weather permitted travel. Historic age information from the commercial harvest is presented in Appendices F10 and F11.

SUBSISTENCE FISHERY

The subsistence harvest and effort figures represent only the harvest which was reported. Therefore, the reported harvest is a minimum estimate since not all fishing families were contacted and not all households who received questionnaires returned them.

Subsistence Fishery 2002

During 2002, a subsistence harvest of 1.9 tons of herring was estimated to have been taken by 20 fishing families from Hooper Bay, Chevak, and Scammon Bay (Appendix F7). In addition, 6 families harvested 161 pounds of herring spawn-on-kelp *fucus* sp. for subsistence purposes (Appendix F8). A total of 205 mail-out questionnaires were sent to households in the communities of Hooper Bay, Chevak, and Scammon Bay. A total of 41 (20%) households responded.

Subsistence Fishery 2003

During 2003, an estimated subsistence harvest of 6.0 tons of herring was harvested by 34 fishing families from Hooper Bay, Chevak, and Scammon Bay (Appendix F7). In addition, 17 families harvested 500 pounds of herring spawn-on-kelp for subsistence purposes (Appendix F8). A total of 205 mail-out questionnaires were sent to households in the communities of Hooper Bay, Chevak, and Scammon Bay. A total of 48 (23%) households responded.

Subsistence Fishery 2004

During 2004, an estimated subsistence harvest of 6.0 tons of herring was harvested by 34 fishing families from Hooper Bay, Chevak, and Scammon Bay (Appendix F7). In addition, 9 families harvested 450 pounds of herring spawn-on-kelp for subsistence purposes (Appendix F8). A total of 205 mail-out questionnaires were sent to households in the communities of Hooper Bay, Chevak, and Scammon Bay. A total of 55 (27%) households responded.

STOCK STATUS

Due to excessive water turbidity in the Cape Romanzof area, it is usually not possible to estimate herring biomass using aerial survey techniques. Herring biomass has been estimated using a combination of information from aerial surveys, test and commercial catches, spawn deposition, and age composition. Historic aerial survey information is included in Appendix F9. The estimated 2002, 2003, and 2004 preseason biomass ranged between 2,017 and 2,552; 2,898 and 3,644; and 3,000 and 4,000 st, respectively.

VARIABLE MESH GILLNET TEST FISHERY

Test fishing with variable mesh gillnets has been conducted since 1978 to determine distribution, timing, and relative abundance of spawning herring. Additionally, samples are collected for age, sex, length, weight, and maturity information.

Variable Mesh Gillnet Test Fishery 2002

In 2002, ADF&G conducted test fishing from May 16 through June 7, 2002. A total of 971 herring were sampled for biological data. Herring comprised approximately 100 percent of the total catch of schooling species. Other fish caught during test fishing can include flounder (various species of the order *Pleuronectiformes)*, saffron cod *Eleginus gracilis*, sculpin *Cottidea spp.*, smelt *Osmeridea spp.*, and whitefish.

The age composition of the variable mesh test gillnet samples showed a healthy range of ages. Age-4, 5, 6, 7, 8, 9, 10, 11, and 12 herring accounted for 2.8%, 40.2%, 20.3%, 6.2%, 1.5%, 14.4%, 1.1%, 8.5%, and 2.2% of test fishing samples, respectively (Appendices F12 and F13). Age-13 and older

herring comprised 2.8% of the test fishing samples. Age-5 and age-6 herring (recruits) made up 60.5% of the test fish samples.

Variable Mesh Gillnet Test Fishery 2003

In 2003, ADF&G conducted test fishing from May 14 through May 27, 2003. A total of 527 herring were sampled for biological data. Herring comprised 100 percent of the total catch of schooling species.

The age composition from variable mesh test gillnet samples showed a healthy range of ages. Age-4, 5, 6, 7, 8, 9, 10, 11, and 12 herring accounted for 1.7%, 4.7%, 58.6%, 19.7%, 4.2%, 1.3%, 4.2%, 0.2%, and 2.8% of test fishing samples, respectively (Appendices F12 and F13). Age-13 and older herring comprised 2.1% of the test fishing samples. Age-6 and age-7 herring made up 78.3% of the test fish samples.

Variable Mesh Gillnet Test Fishery 2004

In 2004, ADF&G conducted test fishing from May 14 through May 25, 2004. A total of 662 herring were sampled for biological data. Herring comprised 100 percent of the total catch of schooling species.

The age composition from the variable mesh test gillnet samples showed a healthy range of ages. Age-3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 herring accounted for 2.5%, 9.9%, 2.5%, 7.6%, 46.1%, 19.0%, 4.4%, 0.4%, 3.4%, and 0.8% of test fishing samples, respectively (Appendices F12 and F13). Age-13 and older herring comprised 3.4% of the test fishing samples. Age-7 and age-8 herring made up 65.1% of the test fish samples.

SPAWN DEPOSITION SURVEY

ADF&G initiated a new quantitative spawn deposition study in 1992 to develop a spawn deposition index. The major difficulty encountered in attempting to estimate biomass utilizing spawn deposition data in the past was the loss of spawn due to storms and desiccation. To address this problem, artificial substrates were located in intertidal spawning areas prior to spawning. The artificial substrate consisted of small steel platforms with 6-inch by 12-inch rectangular pieces of outdoor carpeting attached to the steel plate on each platform. Spawn deposited on the outdoor carpeting was removed daily at low tide and weighed. Daily removal of spawn allowed measurements of new spawn deposition and decreased the problem of spawn loss due to wave action and desiccation observed in previous studies. Artificial substrates were placed in the same general spawning locations during all years of the project's operation.

Spawn Deposition Survey 2002

The ADF&G crew arrived on site May 13. Spawn was discovered on the beach during the initial walk to set up spawning platforms, which occurred on May 15. This spawn was described as moderate to heavy in some places and may have been the major spawning event of the season, as judged by subsequent observations. All spawning platforms were in place by May 20. A second spawning event occurred in the early morning hours of May 17. Approximately 691 grams of spawn were observed on the artificial substrates during the season and was among the lowest for the history of the project (Appendices F14 and F15). Two spawns occurred before the platforms were in place; spawning activity was documented on 5 other occasions, none of which deposited significant amounts of spawn on the platforms. Spawn was documented on May 22 and from May 25-28 (Appendix F14), the highest accumulation occurring on May 22 when 224 grams

where measured. Spawning platforms were removed for the season on June 8 without further spawning having occurred.

Spawn Deposition Survey 2003

In 2003, qualitative spawn deposition surveys began on May 13. The run was about 7 days earlier than average. Although ADF&G personnel had arrived on site early (May 8), a large spawning event had already occurred prior to staff arriving. Fresh herring carcasses and spawn were observed on the beach during the initial walk to set up spawning platforms, which occurred on May 11. This spawn most likely occurred around May 8, described as heavy, and may have been the major spawning event of the season, as judged from subsequent observations. All spawning platforms were in place by May 13. Spawn was deposited on the spawning platforms on May 18, 20, and 21. On May18, 323 grams of spawn was collected from spawning platforms. This was the highest amount measured for the season (Appendix F14). The total amount of spawn collected during the study was 508 grams. This is the lowest amount that has ever been documented by the study (Appendix F15). However, a large spawning event occurred prior to the arrival of ADF&G staff that was not included in the study and would have likely increased the total platform spawn weight.

Spawn Deposition Survey 2004

Qualitative spawn deposition surveys were not conducted in 2004 because of budget limitations. ADF&G crews arrived in camp on May 11. Subsequent beach walks on the morning of May 13 discovered fresh spawn and herring carcasses on the beach. The arrival time for the crew was within the normal window, which is timed to allow the camp to be set up before the arrival of the fish using historic run timing information. Since there was spawn already present on the beach, the run was judged to be early in 2004 in comparison to historic run timing.

OTHER MARINE AND FRESHWATER FINFISH FISHERIES 2002 TO 2004

SUBSISTENCE FISHERY

Many subsistence users harvest marine and freshwater finfish other than salmon and herring, either as an incidental bycatch while fishing for salmon, or by directly targeting those species. In areas where salmon are not available, or when salmon stocks are weak, an increase in reliance on non-salmon species occurs. Subsistence fisheries, which target non-salmon species (e.g. pike, sheefish, whitefish, blackfish, etc) are known to contribute to subsistence needs in most areas. Non-salmon harvest information is documented yearly during the ADF&G postseason subsistence salmon harvest surveys, but secondarily to information regarding household use of salmon. Therefore, less emphasis is placed on determining harvest estimates of non-salmon species. Comprehensive harvest assessment projects are still needed for many areas to identify the overall non-salmon harvest and utilization on a drainagewide basis. In an effort to gain more information about these subsistence fisheries, the Koyukuk River drainage and lower-middle

communities of Grayling, Anvik, Shageluk, and Holy Cross (GASH) of the Yukon River drainage were extensively surveyed in 2 studies by ADF&G (Divisions of Subsistence and Sport Fish) and TCC. The studies documented traditional ecological knowledge (TEK) of the behavior, harvest, and use of non-salmon fish in these areas of Alaska and found that non-salmon species are harvested in by a high percentage of households in these areas (Brown et al. 2005; Andersen et al. 2004).

Since 1988, subsistence salmon surveys have included the collection of freshwater finfish harvest data. Prior to 1988, non-salmon subsistence harvest was collected with less consistency during the postseason subsistence salmon surveys. Historical estimated and reported subsistence catches of freshwater finfish from subsistence surveys through 2004 are presented in Appendix G1. Subsistence catches of freshwater finfish taken under authority of a permit in the Upper Yukon Area through 2004 are presented in Appendix G2.

A variety of fishing methods are used in the main rivers and coastal marine waters to harvest non-salmon finfish. Beach seines are occasionally used near spawning grounds, primarily capturing salmon or other schooling species of fish. Traps and fish weirs of various designs are used, mainly in the fall and winter months, to capture whitefish, blackfish, and burbot. Sheefish, northern pike, char, and "tomcod" (saffron cod) are frequently taken through the ice using hand lines. Dip nets are used in late May to early June to harvest smelt in the delta area. Dip nets and “eel sticks” are used in late October to early December to harvest Arctic lamprey *Lamperta japonica* in the mainstem Yukon River downstream of Grayling.

The spring sheefish migration occurs just prior to, and during, the beginning of the upstream migration of Chinook salmon. A limited number of sheefish are harvested during late May and early June in the lower Yukon River as sheefish migrate upriver. Harvest of whitefish and sheefish in the upper Yukon and Tanana Rivers from fish wheels, at times may be large in certain areas, but is usually a relatively small incidental harvest from the subsistence and commercial salmon fishery.

Several studies have been conducted to investigate sheefish migrations and to locate spawning areas in the Koyukuk River drainage (Alt 1968, 1969, 1970, 1974) and in the mainstem Yukon River between Stevens Village and Fort Yukon (Alt 1986). From 1997 through 1999, a sheefish tagging and radio telemetry study was conducted by the USFWS near Rampart in cooperation with NMFS and ADF&G. The study found that sheefish captured at the study site were mature fish engaged in a spawning migration that originated in the lower Yukon River, or associated estuary regions, and continued towards a common spawning destination in the Yukon River, approximately 1,700 km from the sea (Brown 2000). USFWS, in conjunction with ADF&G, has an ongoing radio-telemetry projects investigating sheefish spawning and migration for the Nowitna River drainage, upper Koyukuk, upper Yukon Flats, Tanana River drainage, and Chatanika River.

Behavior and migration patterns of whitefish species are not well documented for the Yukon River drainage, but the USFWS is currently conducting a 3-year radio-telemetry and TEK study of the seasonal migrations and important habitats for humpback and broad whitefish in the upper Koyukuk and the upper Tanana River drainage.

Since 1995, ADF&G ,Division of Sport Fish, has conducted several stock assessment projects on northern pike using radiotelemetry in large tributaries of the Yukon River including: the Dall, Innoko, and Nowitna Rivers, as well as in the Kaiyuh Flats and the Old Lost Creek drainage

(Taube and Lubinski 1996; Chythlook and Burr 2002; Joy and Burr 2004; Scanlon *In prep*; Scanlon; *Unpublished* Data). Based upon the results of these experiments, coupled with low reports of sport and subsistence annual harvests, there appears to be no conservation concern for these populations and harvests appear sustainable at this time.

COMMERCIAL FISHERY

Regulations adopted by the BOF allow ADF&G to issue permits for the commercial harvest of freshwater species of fish, such as whitefish, sheefish, char, northern pike, blackfish, and Arctic lamprey. Commercial fisheries for species other than salmon have been allowed in widely scattered locations throughout the Yukon and Tanana River drainages. Most of these fisheries are limited, or experimental, operations and occur sporadically. During those years of poor salmon returns locals have applied for these alternate fisheries. Due to concern over increased pressure on freshwater species these permits have been denied. However, in more recent years, salmon returns have improved, and fewer requests for permits for the freshwater fisheries have been submitted.

Permits for the taking of non-salmon species have been issued for various locations in the Lower Yukon Area. Set gillnets are primarily used for taking whitefish and sheefish in the Lower Yukon Area. Typically, the catch is marketed in local community stores or in Bethel. The most recent commercial fisheries for non-salmon species occurred in late November and early December 2003 for Artic lamprey. The Artic lamprey fisheries were centered near the lower Yukon communities of St. Mary's and Grayling. The reported historical harvests for all Lower Yukon Area freshwater fisheries are presented in Appendix G3. In the Upper Yukon Area, commercial freshwater fisheries targeting primarily whitefish have been permitted in prior years, although since 2002 only 3 requests for application for permits were received and no permits were utilized. (Appendix G4). Permit authorization is not required for the sale of these species when taken incidentally during commercial salmon fishing (Appendix G5).

YUKON RIVER ARCTIC LAMPREY FISHERY SUMMARY 2002-2004

The winter of 2003 marked the first year for a directed Arctic lamprey commercial fisheries in the Yukon Area. No commercial Artic lamprey fishery was prosecuted in 2004 due to lack of buyer interest. The following sections describe the 2003 commercial lamprey fishery. A total of 38 fishers harvested 49,657 pounds of Artic lamprey at 2 buying locations, St. Mary's and Grayling in 2003 (Appendices G3 and G4). Fishing averaged 3 hours in duration at each location for a total fishing time of approximately 6 hours. Fishing gear was restricted to 1 hand held dip net per permit holder throughout the commercial season.

One company purchased Arctic lamprey. Onshore buying stations in each location represented the company. Estimated value of the harvest to fishers was $62,000. Average price per pound was $1.25.

Fishing effort consisted of local Alaskan residents (defined as residents of St. Mary's, Mt. Village, Anvik, and Grayling) and accounted for 100% of the effort.

The fishery began in St. Mary's on November 17. Fishers reported the run was 17 days later than normal, because of the warm fall weather. Based on local knowledge, the run usually begins near the end of October. Fishers began fishing dip nets when the lamprey arrived at the fishing sites. The total fishing time was approximately 3 hours to harvest 23,960 lbs at St. Mary's. Estimated

travel speed was determined to be 18 miles per day between the communities of St. Mary's and Grayling. The remainder of the harvest, 25,697 lbs, was taken in Grayling on December 6, where fishers stacked Artic lamprey harvested in piles on the ice. Fishers collected their lamprey and delivered to the buyer. More time was spent in delivering the lamprey than to harvest them. The temperature during the fishery in Grayling was -20°F.

All fishing was conducted by cutting holes through the ice along the riverbank in approximately 2 feet of water. Fishing occurred during the day at St. Mary's and at night in Grayling. Fishing only occurred on the north bank. No fishers fished on the south bank. It is not known if the Artic lamprey were running on the south bank. The Artic lamprey run continued to pass both locations for 10 days after the commercial fishery had ended. Local residents at both locations indicated 2 to 3 distinct pulses of Artic lamprey.

In coordination with ADF&G, commercial fishers provided catch logs of their fishing time and catch for evaluation by ADF&G postseason.

In 2004, there was no market available for lamprey. Subsistence harvest reports from St. Mary's and Grayling indicated there were less lamprey than in 2003. However, ice conditions and water level made fishing difficult. Fishers reported that high catches in 2004 were 10-15 Artic lamprey per dip, compared to 100 per dip in 2003.

Harvest Sampling

Samples were collected by the buyer and shipped to ADF&G in Anchorage in order to collect basic biological information. A total of 230 Artic lamprey were sampled from the commercial harvest in St. Mary's. Samples were collected from varying sized hand dip nets. Age composition information was not produced from these samples. At this time, ADF&G has no method for aging adult Artic lamprey. The mean length was 429 mm for male and female combined. The mean length was 437 mm for females and 423 mm for males. The average weight was 0.28 lbs for male and female combined. The average weight for females was 0.30 lbs and for males 0.27 lbs. A total of 216 Artic lampreys were sampled from the commercial harvest in Grayling. Samples were collected from varying sized hand dip nets. Age composition information was not produced from these samples. The mean length was 417 mm for male and female combined. The mean length for females was 427 mm and males 411 mm. The average weight was 0.26 lbs for male and female combined. The average weight for females was 0.28 lbs and for males 0.25 lbs.

Assessment

The life history of Arctic lamprey in the Yukon is sparsely documented. TEK provides a good indication of when to expect the fish to arrive in a given area, a rough equivalent to run timing. However, information on distribution, abundance trends, etc, is generally lacking, other than in a general sense. Sources documenting the level of subsistence harvest are not in agreement on how many fish are used by the subsistence community.

While methodology to assess Artic lamprey abundance is in the developmental stage and no assessment of abundance is available to gauge exploitation rates, ADF&G feels the level of harvest in 2003 was conservative based on the following:

1. Duration of the run compared to the duration of the fishery.

The fishery lasted a total of 6 hours spread over 2 locations. Information from residents indicates strong passage rates for over 10 days. Temporally, the fishery lasted a small fraction of the duration of the run. What is not known is how the run develops, If it is front loaded, then the fishery occurred during the heaviest part of the run, which is the preferred time to allow any harvest. More likely the run follows a normal curve where it builds slowly, peaks, and diminishes. If this is the case, it would indicate the approach in use is conservative.

2. Inefficiency of the fishing gear and comparison to catch rates.
   Fishers were allowed to use a single hand operated dip net, and though sizes of the nets varied, such gear is inherently inefficient. A typical catch rate scenario was that fishers would catch nothing at first, then 1 or 2 fish per dip. Catches would increase the course of a couple of hours to a point where 20-30 fish per dip was common. Given the inefficiency of the gear and the volume of water that was fished each dip suggests large numbers of fish moved passed the fishing location and only small percentage were caught.

In 2004, ADF&G operated a DIDSON sonar through the ice near Grayling to determine if sonar could be used to observe lamprey migrating under the ice. The results indicated that sonar could be utilized to estimate passage of lamprey, at least during periods of lower passage, which occurred in 2004.

NORTHERN AREA

DESCRIPTION OF AREA

The Northern Area includes all waters of Alaska north of the latitude of the western most tip of Point Hope and west of 141° West longitude, including those waters draining into the Arctic Ocean and the Chukchi Sea (Figure 11).

SUBSISTENCE FISHERIES

Many subsistence fishers operate gillnets in the rivers and coastal marine waters of the Northern Area to harvest marine and freshwater finfish. Small numbers of chum, pink, and Chinook salmon have been reported by subsistence fishers along the Arctic coast. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, blackfish, burbot. Northern pike, char, and "tomcod" are frequently taken through the ice by hand lines. The extent of the harvest of non-salmon finfish in the Northern Area is inadequately documented. However, recent fishery harvest studies were undertaken for 2 small Inupiat communities in the Northern Area, by ADF&G's Division of Subsistence. It was found that annual community fish harvest for Kaktovik consisted of Dolly Varden *Salvelinus malma*, Arctic cisco *Coregonus autumnalis*, Arctic grayling, Lake trout Salvelinus sp., salmon, and Arctic cod. (Pedersen et al. 2005). Similarly, community fishers in Anaktuvuk Pass produced annual catches of "char" (a mix of Arctic char and Dolly Varden), lake trout, Arctic grayling, Arctic cisco, and few burbot (Pedersen and Linn 2005).

COMMERCIAL FISHERIES

Regulations adopted by BOF allow ADF&G to issue permits for the commercial harvest of freshwater species of fish such as whitefish, sheefish, char, northern pike, blackfish and Arctic lamprey in the Northern Area. However, there are no commercial fisheries for salmon species in the Northern Area. A commercial fishery for freshwater finfish has existed in the Colville River delta (located approximately 60 miles west of Prudhoe Bay) since 1964 (Appendix H1). Historically, commercial fishing generally took place during late June and July for broad and humpback whitefish, and October through early December for Arctic and least cisco. However since 1990, commercial fishing effort has predominately occurred in October and November for arctic and least cisco. Set gillnets are used as capture gear and fishing during fall months occurs under the ice. All fish are harvested to sell commercially and are reported daily on a catch form. However, not all fish reported on permits for this area are sold. Those fish not commercially sold are retained and used for subsistence purposes (Appendix H1).

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REFERENCES CITED

ADF&G (Alaska Department of Fish and Game). 2004. Escapement goal review of select AYK region salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-01, Anchorage.

ADF&G (Alaska Department of Fish and Game). 1983. Annual management report, 1983, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

ADF&G (Alaska Department of Fish and Game). 1985. Annual management report, 1985, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

ADF&G (Alaska Department of Fish and Game). 1986. Annual management report, 1986, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

ADF&G (Alaska Department of Fish and Game). 1992. Salmon escapement goal policy, Alaska Department of Fish and Game, Juneau.

Alt, K. T. 1968. Sheefish and pike investigations of the upper Yukon and Kuskokwim drainages with emphasis on Minto Flats drainages. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1967-1968, Project F-5-R-9, 9 (17-B), Juneau.

Alt, K. T. 1969. Sheefish and pike investigations of the upper Yukon and Kuskokwim drainages with emphasis on Minto Flats drainages. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1968-1969, Project F-9-1, 10 (17-B), Juneau.

Alt, K. T. 1970. Sheefish and pike investigations of the upper Yukon and Kuskokwim drainages with emphasis on Minto Flats drainages. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1969-1970, Project F-9-2, 11 (17-B), Juneau.

Alt, K. T. 1974. A life history study of sheefish and whitefish in Alaska. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1973-1974, Project F-9-6, 15 (R-II), Juneau.

Alt, K. T. 1986. Interior whitefish program. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1985-1986, Project F-10-1, 27, W. Juneau. http://www.sf.adfg.state.ak.us/FedAidPDFs/FREDf-10-1(27)W.pdf

Andersen, D. B. 1992. The use of dog teams and the use of subsistence-caught fish for feeding sled dogs in the Yukon River drainage. Alaska Department of Fish and Game, Subsistence Division, Technical Paper No. 210, Juneau.

Andersen, D. B., C. L.Brown, R. J. Walker, and K. Elkin. 2004. Traditional ecological knowledge and contemporary subsistence harvest of non-salmon fish in the Koyukuk River drainage, Alaska. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 282, Juneau.

Bergstrom, D. J., K. C. Schultz, V. Golembeski, B. M. Borba, D. Huttunen, L. H. Barton, T. L. Lingnau, R. R. Holder, J. S. Hayes, K. R. Boeck, and W. H. Busher. 2001. Annual management report, Yukon Area, 1999. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-01, Anchorage.

Blakely, A. C., K. K. English and J. McKenzie. 2003. Yukon River drainage basin harvest study summary 1996-2002. Report prepared by LGL Limited, Sidney, B.C. for the Yukon River Basin Harvest Steering Committee, Council of Yukon First Nations, and Fisheries and Oceans Canada, Whitehorse Yukon.

Brase, A. L. J., and H. H. Hamner. 2003. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-13, Anchorage.

Brown, C. L., J. Burr, K. Elkin, and R. J. Walker. 2005. Contemporary subsistence uses and population distribution of non-salmon fish in Grayling, Anvik, Shageluk, and Holy Cross. Federal Subsistence Fishery Monitoring Program, Final Project No. 02-037-2.USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Fishery Information Service, Anchorage, Alaska.

Brown, R. J. 2000. Migratory patterns of Yukon River Inconnu as determined with otolith microchemistry and radio telemetry. A thesis presented to the Faculty of the University of Alaska Fairbanks in Partial Fulfillment of the Requirements for the Degree of Master of Science. Fairbanks, Alaska.

Busher, W. H., and T. Hamazaki. 2005. Subsistence and personal use salmon harvests, Yukon Area, 2003. Alaska Department. of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-33, Anchorage.

Busher, W. H., T. Hamazaki, and A. M. Marsh. *In prep*. Subsistence and personal use salmon harvests, Yukon Area, 2004. Alaska Department. of Fish and Game, Division of Commercial Fisheries, Fishery Data Series, Anchorage.

Chythlook, J., and J. M. Burr. 2002. Seasonal movements and length composition of northern pike in the Dall River, 1999-2001. Alaska Department of Fish and Game, Fishery Data Series No.02-07, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds02-07.pdf

Clark, J. H., and G. J. Sandone. 2001. Biological escapement goal for Anvik River chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-06, Anchorage.

Cleary, P. M., and T. Hamazaki. 2003. Estimation of fall chum salmon abundance on the Tanana and Kantishna Rivers using mark-recapture techniques, 2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A02-49, Anchorage.

Cleary, P. M., and T. Hamazaki. 2004. Fall chum salmon abundance estimation on the Tanana and Kantishna Rivers using mark-recapture techniques, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-24, Anchorage.

Cleary, P. M., and T. Hamazaki. 2005. Fall chum salmon mark-recapture abundance estimation on the Tanana and Kantishna Rivers, 2004. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Data Series No. 05-76, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds05-76.pdf

Department of Interior. Fish and Wildlife Service. 50 CFR Part 100. Subsistence Management Regulations for Public Lands in Alaska. Subpart C & D, 2005-06. Subsistence Taking of Fish and Shellfish Regulations. Proposed Rule.

DuBois, L. 2004. *Unpublished*. Salmon age and sex composition and mean lengths for the Yukon River Area, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

Eggers, D. M. 2001. Biological escapement goals for Yukon River fall chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-10, Anchorage.

Eggers, D. M., K. R. Rowell, and B. Barrett. 1991. Stock composition of sockeye and chum salmon catches in Southern Alaska Peninsula fisheries in June. Fishery Research Bulletin No. 91-01. Alaska Department of Fish and Game, Division of Commercial Fisheries, P.O. Box 3-2000, Juneau, AK 99801-2000.

Gaudet, D. M., and G. Schaefer. 1982. Migrations of salmon in Norton Sound, Alaska, determined by tagging in 1978-1979. Alaska Department of Fish and Game, Division of Commercial Fisheries Informational Leaflet No. 198, Anchorage.

Joy, P., and J. M. Burr. 2004. Seasonal movements and length composition of northern pike in Old Lost Creek, 2001-2003. Alaska Department of Fish and Game, Fishery Data Series No. 04-17, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds04-17.pdf

JTC (Joint Technical Committee of the Yukon River U.S./Canada Panel). 2006. Yukon River salmon 2005 season summary and 2006 season Outlook. Alaska Department of Fish and Game, Anchorage Alaska. .

Karpovich, S., and L. DuBois. 2007. Salmon age and sex composition and mean lengths for the Yukon River Area, 2004. Alaska Department of Fish and Game, Fishery Data Series No. 07-05, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds07-05.pdf

Kerkvliet, C. M. 1986. 1986 Hooper Bay salmon tagging study. Bering Sea Fisher's Association, Anchorage, Alaska.

Pedersen, S., and A. Linn, Jr. 2005. North Slope (Kaktovik) subsistence fish harvest assessment. U.S. Fish and Wildlife Service. Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report (Study No. 01-101). Alaska Department of Fish and Game, Division of Subsistence, Fairbanks, Alaska.

Pedersen, S., and C. Hugo. 2005. Anaktuvuk Pass subsistence fishery harvest assessment: October 2001 through September 2003. U.S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program. Final Report (Study No.02-050). Alaska Department of Fish and Game. Fairbanks, Alaska.

Price, R. A. 2003. *Unpublished*. Salmon age and sex composition and mean lengths for the Yukon River Area, 2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

Sandone, G. J. 1991. An improved procedure to estimate summer chum salmon harvest in District 4 of the Yukon River, Alaska, as applied to the 1989 fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Research Bulletin No. 91-02, Anchorage.

Seeb, L. W., and P. A. Crane, and R. B. Gates. 1995. Progress report of genetic studies of Pacific Rim chum salmon and preliminary analysis of the 1993 and 1994 South Unimak June fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report No. 5J95-07, Anchorage.

Scanlon, B. P. *In prep*. Movements and fidelity of northern pike in the Lower Innoko River drainage, 2002 - 2004. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.

Scanlon, B. P. *Unpublished*. Movements and fidelity of northern pike in the Nowitna River drainage, 2005 - 2007. Alaska Department of Fish and Game, Fairbanks, AK.

Spencer, T. R., T. Hamazaki, and J. H. Eiler. 2006. Mark-recapture abundance estimates for Yukon River Chinook salmon in 2003. Alaska Department of Fish and Game, Fishery Data Series No. 06-31, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds06-31.pdf

Taube, T. T., and B. R. Lubinski. 1996. Seasonal migrations of northern pike in the Kaiyuh Flats, Innoko National Wildlife Refuge. Alaska Department of Fish and Game, Fishery Manuscript No. 96-4, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fms96-04.pdf

Tobin, J. H., and K. C. Harper. 1995. Abundance and run timing of adult salmon in the East Fork Andreafsky River, Yukon Delta National Wildlife Refuge, Alaska, 1994. U. S. Fish and Wildlife Service, Alaska Fisheries Progress Report No. 95-5, Kenai.

U.S. Census. 2000. Alaska Department of Labor and Workforce Development, Research and Analysis Section, Demographics Unit. http://almis.labor.state.ak.us. Accessed 03/2006.

Wiswar, D. W. 1999. Abundance and run timing of adult salmon in the Gisasa River, Koyukuk National Wildlife Refuge, Alaska, 1998. United States Fish and Wildlife Service, Fairbanks Fishery Resources Office, Alaska Fisheries Data Series 99-1, Fairbanks.

TABLES AND FIGURES

Table 1.–Guideline harvest ranges and mid-points for commercial harvest of Chinook, summer chum and fall chum salmon, Yukon Area, Alaska, 2002 to 2004.

Chinook Salmon

District or Subdistrict	Guideline Harvest Range [a]					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	0 to 60,000	89.1	90,000	91.6	120,000	92.9
3	0 to1,800	2.7	2,000	2.0	2,200	1.7
4	0 to 2250	3.3	2,550	2.6	2,850	2.2
5B, C	0 to 2,400	3.6	2,600	2.6	2,800	2.2
5D	0 to 300	0.4	400	0.4	500	0.4
6	0 to 600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0

Summer Chum Salmon

District or Subdistrict	Guideline Harvest Range [b]					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	0 to 251,000	62.8	503,000	62.9	755,000	62.9
3	0 to 6,000	1.5	12,500	1.6	19,000	1.6
4A [a]	0 to 113,000	28.3	225,500	28.2	338,000	28.2
4B, C	0 to 16,000	4.0	31,500	3.9	47,000	3.9
5B, C, D	0 to 1,000	0.3	2,000	0.3	3,000	0.3
6	0 to 13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0

Anvik River Management Area roe cap of 100,000 pounds. [d]

Fall Chum Salmon

District or Subdistrict	Guideline Harvest Range [e]					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4	5,000	6.9	22,500	11.4	40,000	12.5
5B, C	4,000	5.5	20,000	10.2	36,000	11.2
5D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0

Subdistrict 5-A range of 0 to 4,000 pounds of roe. [f]

[a] The Chinook salmon guideline harvest ranges have been in effect since 1981.
[b] Summer chum salmon guideline harvest ranges were established in February 1990 based on the average harvest shares from 1975-1989.
[c] Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.
[d] The current Anvik River Management Area roe cap was established in March 1996.
[e] The current fall chum salmon guideline harvest ranges were established in 1990.
[f] Subdistrict 5-A was removed from the guideline harvest ranges for Chinook and summer chum and a separate guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe was established in November 1998.

Table 2.–Total utilization in numbers of salmon by district and country, Yukon River drainage, 2002-2004.

Data Year 2002

District	Fishery	Chinook	Summer Chum	Fall Chum	Coho
1	Subsistence	5,603	24,107	1,881	1,295
	Commercial	11,087	6,327	0	0
	Test Fish Sales	494	164	0	0
	Total	17,184	30,598	1,881	1,295
2	Subsistence	8,954	23,554	1,618	1,233
	Commercial	11,434	4,027	0	0
	Test Fish Sales	34	54	0	0
	Total	20,422	27,635	1,618	1,233
3	Subsistence	4,139	2,506	164	115
	Commercial	0	0	0	0
	Commercial Related [a]	0	0	0	0
	Total	4,139	2,506	164	115
Total Lower Yukon Area	Subsistence	18,696	50,167	3,663	2,643
	Commercial	22,521	10,354	0	0
	Commercial Related [a]	0	0	0	0
	Test Fish Sales	528	218	0	0
	Total	41,745	60,739	3,663	2,643
4	Subsistence	9,456	15,971	1,549	1,023
	Commercial	0	0	0	0
	Commercial Related [a]	0	0	0	0
	Total	9,456	15,971	1,549	1,023
5	Subsistence	13,401	5,610	10,976	2,076
	Commercial	771	6	0	0
	Commercial Related [a]	0	0	0	0
	Total	14,172	5,616	10,976	2,076
6	Subsistence	1,067	512	3,202	9,499
	Commercial	836	3,198	0	0
	Commercial Related [a]	230	20	0	0
	Personal use	126	175	3	20
	Total	2,259	3,905	3,205	9,519
Total Upper Yukon Area	Subsistence	23,924	22,093	15,727	12,598
	Commercial	1,607	3,204	0	0
	Commercial Related [a]	230	20	0	0
	Personal use	126	175	3	20
	Total	25,887	25,492	15,730	12,618
Total Yukon Area (Alaska)	Subsistence	42,620	72,260	19,390	15,241
	Commercial	24,128	13,558	0	0
	Commercial Related [a]	230	20	0	0
	Personal use	126	175	3	20
	Test Fish sales	528	218	0	0
	Sport Fish [b]	486	384		1,092
	Total	68,118	86,615	19,393	16,353
	Domestic	59		0	0
Total Canada	Aboriginal (mainstem)	7,138		3,093	0
	Sport Fish	128		0	9
	Test Fish harvest [c]	1,036		0	0
	Commercial	708		3,065	17
	Subtotal	9,069	0	6,158	26
	Porcupine Aboriginal	188		1,860	449
	Total	9,257	0	8,018	475
Grand Total		77,375	86,615	27,411	16,828

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Table 2.–Page 2 of 3.
Data Year 2003

District	Fishery	Chinook	Summer Chum	Fall Chum	Coho
1	Subsistence	6,332	19,701	2,139	1,260
	Commercial	22,709	3,579	5,586	9,757
	Test Fish Sales	619	37	0	0
	Total	29,660	23,317	7,725	11,017
2	Subsistence	9,668	16,773	2,901	1,586
	Commercial	14,220	2,583	0	0
	Test Fish Sales	61	82	0	0
	Total	23,949	19,438	2,901	1,586
3	Subsistence	5,002	5,858	738	711
	Commercial	0	0	0	0
	Commercial Related [a]	0	0	0	0
	Total	5,002	5,858	738	711
Total	Subsistence	21,002	42,332	5,778	3,557
Lower	Commercial	36,929	6,162	5,586	9,757
Yukon	Commercial Related [a]	0	0	0	0
Area	Test Fish Sales	680	119	0	0
	Total	58,611	48,613	11,364	13,314
4	Subsistence	12,771	17,513	9,750	5,773
	Commercial	562	62	1,315	367
	Commercial Related [a]	0	0	0	0
	Total	13,333	17,575	11,065	6,140
5	Subsistence	19,191	5,545	28,270	3,887
	Commercial	1,134	0	0	0
	Commercial Related [a]	0	0	0	0
	Total	20,325	5,545	28,270	3,887
6	Subsistence	2,145	2,914	12,986	10,363
	Commercial	1,813	4,461	4,095	15,119
	Commercial Related [a]	0	0	0	0
	Personal use	204	148	394	549
	Total	4,162	7,523	17,475	26,031
Total	Subsistence	34,107	25,972	51,006	20,023
Upper	Commercial	3,509	4,523	5,410	15,486
Yukon	Commercial Related [a]	0	0	0	0
Area	Personal use	204	148	394	549
	Total	37,820	30,643	56,810	36,058
Total	Subsistence	55,109	68,304	56,784	23,580
Yukon	Commercial	40,438	10,685	10,996	25,243
Area	Commercial Related [a]	0	0	0	0
(Alaska)	Personal use	204	148	394	549
	Test Fish sales	680	119	0	0
	Sport Fish [b]	2,719	1,638	0	1,477
	Total	99,150	80,894	68,174	50,849
	Domestic	115		0	0
Total	Aboriginal (mainstem)	6,121		1,943	0
Canada	Sport Fish	275		0	7
	Test Fish harvest [c]	263		0	0
	Commercial	2,672		9,030	0
	Subtotal	9,446	0	10,973	7
	Porcupine Aboriginal	173		382	523
	Total	9,619	0	11,355	530
Grand Total		108,769	80,894	79,529	51,379

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Table 2.–Page 3 of 3.
Data Year 2004

District	Fishery	Chinook	Summer Chum	Fall Chum	Coho
1	Subsistence	5,880	20,620	2,067	1,175
	Commercial	28,403	13,993	660	1,583
	Test Fish Sales	722	217	0	0
	Total	35,005	34,830	2,727	2,758
2	Subsistence	9,724	25,931	2,421	1,500
	Commercial	24,145	5,782	0	0
	Test Fish Sales	70	0	0	0
	Total	33,939	31,713	2,421	1,500
3	Subsistence	4,748	2,958	298	284
	Commercial	0	0	0	0
	Commercial Related [a]	0	0	0	0
	Total	4,748	2,958	298	284
Total Lower Yukon Area	Subsistence	20,352	49,509	4,786	2,959
	Commercial	52,548	19,775	660	1,583
	Commercial Related [a]	0	0	0	0
	Test Fish Sales	792	217	0	0
	Total	73,692	69,501	5,446	4,542
4	Subsistence	16,269	14,959	7,797	4,766
	Commercial	0	0	0	0
	Commercial Related [a]	0	0	0	0
	Total	16,269	14,959	7,797	4,766
5	Subsistence	15,666	3,411	40,670	1,423
	Commercial	1,546	25	0	0
	Commercial Related [a]	0	0	0	0
	Total	17,212	3,436	40,670	1,423
6	Subsistence	1,388	1,793	8,953	11,584
	Commercial	2,057	6,610	3,450	18,649
	Commercial Related [a]	0	0	0	0
	Personal use	201	231	230	233
	Total	3,646	8,634	12,633	30,466
Total Upper Yukon Area	Subsistence	33,323	20,163	57,420	17,773
	Commercial	3,603	6,635	3,450	18,649
	Commercial Related [a]	0	0	0	0
	Personal use	201	231	230	233
	Total	37,127	27,029	61,100	36,655
Total Yukon Area (Alaska)	Subsistence	53,675	69,672	62,206	20,732
	Commercial	56,151	26,410	4,110	20,232
	Commercial Related [a]	0	0	0	0
	Personal use	201	231	230	233
	Test Fish sales	792	217	0	0
	Sport Fish [b]	1,513	203	0	1,623
	Total	112,332	96,733	66,546	42,820
Total Canada	Domestic	88		0	0
	Aboriginal (mainstem)	6,483		2,180	0
	Sport Fish	423		0	1
	Test Fish harvest [c]	167		0	0
	Commercial	3,785		7,365	4
	Subtotal	10,946	0	9,545	5
	Porcupine Aboriginal	292		205	175
	Total	11,238	0	9,750	180
Grand Total		123,570	96,733	76,296	43,000

Note: Commercial harvest includes only fish sold in the round. Does not include subsistence harvest from coastal communities of Hooper and Scammon Bays.

[a] Commercial related is the estimated harvest of females to produce roe sales.

[b] Preliminary sport fish harvest for the Alaskan portion of the Yukon River drainage. Assume majority of chum salmon caught during summer season.

[c] The Canadian test fishery is for management purposes. Chinook salmon that are retained are given to Aboriginal and Domestic users, but are not reported under those categories. Chum salmon caught in the test fishery are all intended to be released, but any that are retained are reported under the Porcupine Aboriginal harvest.

Table 3.–Subsistence and personal use salmon harvest estimates, Yukon Area, 2002-2004.

Data Year 2002

Community [a]	Survey Date or Permit Village	Number of Fishing Households [b]	Number of Dogs	Estimated Harvest				Primary Gear Used [k]		
				Chinook	Summer Chum	Fall Chum	Coho	Set Gillnet	Drift Gillnet	Fish Wheels
Hooper Bay	9/11-14	139	253	282	9,780	44	125	47	0	0
Scammon Bay	9/10	67	146	840	5,016	240	123	20	1	0
Coastal District Total		**206**	**399**	**1,122**	**14,796**	**284**	**248**	**67**	**1**	**0**
Nunam Iqua [l]	9/10-11	16	32	393	1,897	284	56	13	1	0
Alakanuk	9/7-9	88	234	1,773	7,637	222	183	16	11	0
Emmonak	9/5-6	73	186	1,751	8,458	1,261	514	14	17	0
Kotlik	9/7-8	77	203	1,686	6,115	114	542	16	7	0
District 1 Subtotal		**254**	**655**	**5,603**	**24,107**	**1,881**	**1,295**	**59**	**36**	**0**
Mountain Village	9/16-18	87	192	1,523	6,657	478	361	5	19	0
Pitkas Point	9/14-15	19	57	566	639	16	47	1	14	0
St. Marys	9/12-15	76	129	2,045	7,284	103	209	1	27	0
Pilot Station	9/19-20	60	117	2,530	6,490	680	230	3	20	0
Marshall	9/21-22	56	353	2,290	2,484	341	386	1	16	0
District 2 Subtotal		**298**	**848**	**8,954**	**23,554**	**1,618**	**1,233**	**11**	**96**	**0**
Russian Mission	9/15-16	47	145	1,887	395	164	115	7	6	0
Holy Cross	9/17	30	81	1,813	155	0	0	2	14	0
Shageluk	9/20-21	15	87	439	1,956	0	0	6	5	0
District 3 Subtotal		**92**	**313**	**4,139**	**2,506**	**164**	**115**	**15**	**25**	**0**
Lower Yukon River Total		**644**	**1,816**	**18,696**	**50,167**	**3,663**	**2,643**	**85**	**157**	**0**
Anvik	9/18-19	17	92	708	1,089	401	0	12	3	0
Grayling	9/22-23	31	85	2,249	1,311	52	30	0	11	0
Kaltag	10/2-3	39	51	1,435	234	314	212	1	11	0
Nulato	10/3-4	52	138	1,773	269	0	78	4	13	0
Koyukuk	10/2-3	7	44	323	426	255	249	2	4	0
Galena	10/1	58	393	1,522	712	349	169	10	10	2
Ruby	10/4-5	15	117	954	1,406	78	69	6	0	3
District 4 Yukon River Subtotal		**219**	**920**	**8,964**	**5,447**	**1,449**	**807**	**35**	**52**	**5**
Huslia	10/9-10	27	184	222	3,178	0	60	9	0	0
Hughes	10/10-11	9	63	67	1,089	0	100	8	0	0
Allakaket	10/10-11	27	123	200	6,242	100	56	9	0	0
Alatna	phone	3	5	3	15	0	0	2	0	0
Bettles	10/9	0	207	0	0	0	0	0	0	0
Koyukuk River Subtotal		**66**	**582**	**492**	**10,524**	**100**	**216**	**28**	**0**	**0**
District 4 Subtotal		**285**	**1,502**	**9,456**	**15,971**	**1,549**	**1,023**	**63**	**52**	**5**
Tanana	10/7-8	40	253	2,379	3,321	6,255	2,032	13	0	6
Rampart	10/14-15	8	13	852	14	0	0	7	0	0
Fairbanks NSB [e]	permits	40	168	1,767	295	0	0	40	0	0
Stevens Village [d]	10/29, permits	11	21	1,334	12	0	0	8	0	3
Birch Creek	10/30	3	6	67	0	0	0	2	0	0
Beaver	10/16	11	26	702	77	1	17	6	0	2
Fort Yukon [n]	10/17-19	36	292	2,348	1,832	3,523	14	6	0	9
Circle	permits	11	80	1,533	5	74	0	5	0	6
Central	permits	4	11	58	0	0	0	4	0	0
Eagle	permits	21	225	1,910	24	339	1	16	0	5
Other [f]	permits	4	62	348	17	100	0	4	0	0
District 5 Yukon River Subtotal		**189**	**1,157**	**13,298**	**5,597**	**10,292**	**2,064**	**111**	**0**	**31**

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Table 3.–Page 2 of 6.

Data Year 2002

Community [a]	Survey Date or Permit Village	Number of Fishing Households [b]	Number of Dogs	Estimated Harvest: Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used [k]: Set Gillnet	Drift Gillnet	Fish Wheels
Venetie	10/16-18	10	46	77	13	680	12	8	0	0
Chalkyitsik	10/14-15	6	19	26	0	4	0	3	0	1
Chandalar and Black Rivers Subtotal		**16**	**65**	**103**	**13**	**684**	**12**	**11**	**0**	**1**
District 5 Subtotal		**205**	**1,222**	**13,401**	**5,610**	**10,976**	**2,076**	**122**	**0**	**32**
Manley	permits	9	166	336	93	947	1,617	5	0	4
Minto	permits	11	75	19	10	100	250	10	0	0
Nenana	permits	17	283	511	375	1,070	3,574	7	0	10
Healy	permits	4	105	0	0	831	3,034	3	0	1
Fairbanks NSB [g]	permits	45	95	283	207	232	1,044	37	0	2
Other [h]	permits	20	82	44	2	25	0	16	0	0
District 6 Tanana River Subtotal		**106**	**806**	**1,193**	**687**	**3,205**	**9,519**	**78**	**0**	**17**
Upper Yukon River Total		**596**	**3,530**	**24,050**	**22,268**	**15,730**	**12,618**	**263**	**52**	**54**
Survey Village Subtotal		1,260	4,393	34,926	77,871	13,740	5,077	268	210	26
Subsistence Permit Subtotal [c]		156	1,352	6,683	853	3,715	9,500	110	0	28
Subsistence Test Fish Subtotal [l]		-	-	2,092	4,592	2,219	912	-	-	-
Commercially Caught Subtotal [m]		-	-	41	3,740	0	0	-	-	-
Subsistence Harvests Subtotal		**1,416**	**5,745**	**43,742**	**87,056**	**19,674**	**15,489**	**378**	**210**	**54**
Personal Use Permit Subtotals		**30**	**-**	**126**	**175**	**3**	**20**	**28**	**0**	**1**
Alaska, Yukon River Total [j]		**1,240**	**5,346**	**42,746**	**72,435**	**19,393**	**15,261**	**348**	**209**	**54**
Alaska, Yukon Area Total		**1,446**	**5,745**	**43,868**	**87,231**	**19,677**	**15,509**	**415**	**210**	**54**
AK, Yukon Area Percentages of the Total		**-**	**-**	**26%**	**52%**	**12%**	**9%**	**58%**	**29%**	**8%**

Note: Subsistence and personal use salmon harvest estimates include test fish harvests provided for subsistence use, fish caught during commercial openings but retained for subsistence use, and related information.

[a] Data collected by Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. Survey data is expanded for number of fishing households, number of dogs, and harvest. Permit data is unexpanded, and is from all permits received as of April 1, 2003. The number of dogs is based on information obtained from permits issued, while the number of fishing households and their harvest is based on returned permits.

[b] Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas.

[c] Subsistence Permit Subtotal does not include Stevens Village.

[d] Permit harvest information from Stevens Village residents was used to complement the information obtained by the survey.

[e] Fairbanks North Star Borough (Fairbanks NSB) households that obtained a permit and indicated they fished in the Yukon River permit required area.

[f] Other includes residents of Wasilla, Manley, Nenana, Minto and the Upper Tanana River drainage villages of Northway, Tanacross and Tok who obtained a household permit and fished in a Yukon River permit required area.

[g] Fairbanks North Star Borough (Fairbanks NSB) households that obtained a subsistence and/or personal use permit and indicated they fished in the Tanana River permit required area.

[h] Other includes residents of Eagle River, Gakona and the Upper Tanana River drainage villages of Northway, Tanacross, Dot Lake and Tok who fished in the Tanana River.

[i] Test fish given away for subsistence use.

[j] Does not include Coastal District.

[k] Primary Fishing Gear is not expanded for households that were not surveyed.

[l] Formally known as Sheldon or Sheldons Point.

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Table 3.–Page 3 of 6.

Data Year 2003

Community [a]	Survey Date, Permit Village,	Number of Fishing Households [b]	Number of Dogs	Estimated Harvest: Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used [c]: Set Gillnet	Drift Gillnet	Fish Wheels
Hooper Bay	9/12-15	140	291	722	10,658	40	244	44	0	0
Scammon Bay	9/11	50	74	1,128	3,310	106	48	22	0	0
Coastal District Total		**190**	**365**	**1,850**	**13,968**	**146**	**292**	**66**	**0**	**0**
Nunam Iqua [d]	9/10-11	26	41	925	2,561	127	117	18	0	0
Alakanuk [e]	9/7-10	78	141	1,707	5,287	348	193	15	4	0
Emmonak [e]	9/6-8	76	194	2,763	7,644	1,257	547	17	19	0
Kotlik [e]	9/8-9	54	107	937	4,209	407	403	16	5	0
District 1 Subtotal		**234**	**483**	**6,332**	**19,701**	**2,139**	**1,260**	**66**	**28**	**0**
Mountain Village [e]	9/15-17	108	213	2,174	6,497	873	736	6	30	0
Pitkas Point	9/19	15	83	633	800	49	130	1	10	0
St. Marys	9/17-18	81	79	1,916	4,521	762	276	3	35	0
Pilot Station [e]	9/20-21	53	108	2,886	4,163	823	371	3	26	0
Marshall	9/21-22	46	246	2,059	792	394	64	3	15	0
District 2 Subtotal		**303**	**729**	**9,668**	**16,773**	**2,901**	**1,577**	**16**	**116**	**0**
Russian Mission [e]	9/21-22	42	170	2,057	171	615	178	1	12	0
Holy Cross	9/23-24	39	36	2,395	214	9	498	9	8	0
Shageluk	9/30	18	92	550	5,473	114	35	8	7	0
District 3 Subtotal		**99**	**298**	**5,002**	**5,858**	**738**	**711**	**18**	**27**	**0**
Lower Yukon River Total		**636**	**1,510**	**21,002**	**42,332**	**5,778**	**3,548**	**100**	**171**	**0**
Anvik	10/1-4	19	83	1,286	844	179	12	13	3	0
Grayling	9/25-26	37	48	1,613	1,072	441	559	1	9	0
Kaltag [e]	10/13	47	73	1,838	1,028	725	463	0	14	0
Nulato	10/14-15	46	233	2,531	180	1,341	928	2	9	0
Koyukuk	10/16-17	16	70	818	1,339	835	1,155	4	9	0
Galena	10/18-19	78	421	3,112	289	1,510	1,507	11	10	1
Ruby	10/13	16	175	631	876	2,331	648	4	0	4
Non-survey/permit [k]	calendars	1	0	42	0	0	0	1	0	0
District 4 Yukon River Subtotal		**260**	**1,103**	**11,871**	**5,628**	**7,362**	**5,272**	**36**	**54**	**5**
Huslia	10/16-17	32	273	469	6,187	1,786	375	10	0	0
Hughes	10/14-15	6	50	113	1,265	497	20	6	0	0
Allakaket	10/20-21	21	180	306	4,383	105	99	8	0	0
Alatna	10/20	2	4	12	50	0	7	2	0	0
Bettles	10/20	0	118	0	0	0	0	0	0	0
Koyukuk River Subtotal		**61**	**625**	**900**	**11,885**	**2,388**	**501**	**26**	**0**	**0**
District 4 Subtotal		**321**	**1,728**	**12,771**	**17,513**	**9,750**	**5,773**	**62**	**54**	**5**
Tanana	10/27-28	38	225	5,332	3,075	14,308	3,480	10	0	9
Rampart [e]	10/15	5	17	1,411	5	365	0	5	0	0
Fairbanks NSB [f]	permits	56	274	1,932	89	105	120	55	0	1
Stevens Village [g]	11/3-4, permits	13	87	1,121	0	857	0	11	0	0
Birch Creek	10/9-10	3	6	78	0	2	0	3	0	0
Beaver	10/30-31	10	10	1,156	7	192	0	7	0	1
Fort Yukon	10/6-9	70	412	4,002	2,176	7,190	244	11	0	17
Circle	permits	12	73	895	85	499	0	6	0	6
Central	permits	3	6	144	0	0	0	3	0	0
Eagle [h]	permits	37	271	2,081	104	2,871	0	29	0	8
Other [j]	permits	8	48	531	0	0	25	8	0	0
Non-survey/permit [k]	calendars	5	14	333	4	771	9	5	0	0
District 5 Yukon River Subtotal		**260**	**1,443**	**19,016**	**5,545**	**27,160**	**3,878**	**153**	**0**	**42**

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Table 3.–Page 4 of 6.

Data Year 2003

Community [a]	Survey Date, Permit Village,	Number of Fishing Households [b]	Number of Dogs	Estimated Harvest Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used [c] Set Gillnet	Drift Gillnet	Fish Wheels
Venetie	10/10-11	7	61	125	0	770	11	5	0	0
Chalkyitsik	10/10-12	4	32	50	0	340	7	3	0	3
Chandalar and Black Rivers Subtotal		**11**	**93**	**175**	**0**	**1,110**	**18**	**8**	**0**	**3**
District 5 Subtotal		**271**	**1,536**	**19,191**	**5,545**	**28,270**	**3,896**	**161**	**0**	**45**
Manley	permits	6	224	213	65	1,303	886	3	0	3
Minto	permits	17	81	317	625	675	423	16	0	1
Nenana	permits	22	296	1,215	2,246	7,840	5,431	13	0	9
Healy	permits	3	36	0	0	1,253	2,574	3	0	0
Fairbanks NSB [m]	permits	38	135	574	126	2,305	1,598	34	0	4
Other [n]	permits	19	94	30	0	4	0	18	0	0
District 6 Tanana River Subtotal [p]		**105**	**866**	**2,349**	**3,062**	**13,380**	**10,912**	**87**	**0**	**17**
Upper Yukon River Total		**697**	**4,130**	**34,311**	**26,120**	**51,400**	**20,581**	**310**	**54**	**67**
Survey Village Subtotal		1,296	4,453	47,603	75,210	36,493	11,964	282	225	35
Subsistence Permit Subtotal [r]		189	1,538	7,728	3,192	16,461	10,508	156	0	32
Subsistence Test Fish Subtotal [s]		-	-	1,253	3,866	3,205	1,391	-	-	-
Subsistence Non-survey/permit Subtotal [k]		6	14	375	4	771	9	6	0	0
Subsistence Harvests Subtotal		**1,491**	**6,005**	**56,959**	**82,272**	**56,930**	**23,872**	**444**	**225**	**67**
Personal Use Permit Subtotals		**32**	**-**	**204**	**148**	**394**	**549**	**32**	**0**	**0**
Alaska, Yukon River Total [t]		**1,333**	**5,640**	**55,313**	**68,452**	**57,178**	**24,129**	**410**	**225**	**67**
Alaska, Yukon Area Total		**1,523**	**6,005**	**57,163**	**82,420**	**57,324**	**24,421**	**476**	**225**	**67**
AK, Yukon Area Percentages of the Total		**-**	**-**	**26%**	**37%**	**26%**	**11%**	**59%**	**28%**	**8%**

Note: Subsistence and personal use salmon harvest estimates include test fish harvests provided for subsistence use, and related information.

[a] Data collected by Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. Survey data is expanded for number of fishing households, number of dogs, and harvest. Permit data is unexpanded, and is from all permits received as of June 26, 2004. The number of dogs is based on information obtained from permits issued, while the number of fishing households and their harvest is based on returned permits.

[b] Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas.

[c] Primary Fishing Gear is not expanded for households that were not surveyed.

[d] Formerly known as Sheldon or Sheldons Point.

[e] Test fish have been added to the total fish harvested in a village as reported in the postseason survey.

[f] Fairbanks North Star Borough (Fairbanks NSB) households that obtained a permit and indicated they fished in the Yukon River permit required area.

[g] Permit harvest information from Stevens Village residents was used to complement the information obtained by the survey.

[h] Does not include approximately 14,500 to 15,000 Coho salmon obtained from Valdez Fisheries Development Association as part of the *Enhance Mainstem Salmon Escapement Project* (URE-12-03) funded by US/Canada Restoration and Enhancement Fund.

[j] Other includes residents of Coldfoot, Manley, Nenana, Minto, and the Upper Tanana River drainage villages of Northway and Tok who obtained a household permit and fished in a Yukon River permit required area.

[k] Non-survey/permit includes residents of Manley, Nenana, and the Fairbanks Area who reported harvest on the Yukon River in a non-permit area and are not residents in a surveyed village. Harvest was obtained from harvest calendars and from other means.

[m] Fairbanks North Star Borough (Fairbanks NSB) households that obtained a subsistence and/or personal use permit and indicated they fished in the Tanana River permit required area.

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Table 3.–Page 5 of 6.

Data Year 2004

Community [a]	Survey Date, Permit Village,	Number of Fishing Households [b]	Number of Dogs	Estimated Harvest Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used [c] Set Gillnet	Drift Gillnet	Fish Wheels
Hooper Bay	9/11-13	107	201	1,042	3,242	264	9	48	0	0
Scammon Bay	9/9-10	43	99	996	5,020	56	54	22	0	0
Coastal District Total		**150**	**300**	**2,038**	**8,262**	**320**	**63**	**70**	**0**	**0**
Nunam Iqua [d]	9/9-10	22	65	647	2,698	49	79	16	0	0
Alakanuk [e]	9/7-8	67	137	1,317	6,555	953	207	14	22	0
Emmonak [e]	9/3-6	97	158	2,768	8,618	785	296	14	47	0
Kotlik [e]	9/7-8	67	145	1,148	2,749	280	593	25	10	0
District 1 Subtotal		**253**	**505**	**5,880**	**20,620**	**2,067**	**1,175**	**69**	**79**	**0**
Mountain Village [e]	9/16-17	103	120	2,362	10,676	918	521	11	40	0
Pitkas Point	9/18-19	15	39	609	717	0	0	0	13	0
St. Mary's	9/14-16	87	140	2,357	6,994	104	258	4	39	0
Pilot Station [e]	9/18-20	62	111	2,406	5,779	1,108	296	2	31	0
Marshall	9/22	46	220	1,990	1,765	291	425	2	23	0
District 2 Subtotal		**313**	**630**	**9,724**	**25,931**	**2,421**	**1,500**	**19**	**146**	**0**
Russian Mission	9/25-26	56	135	2,337	884	172	151	6	17	0
Holy Cross	9/20-21	30	57	1,993	276	76	27	6	16	0
Shageluk	9/22-23	17	80	418	1,798	50	106	11	3	0
District 3 Subtotal		**103**	**272**	**4,748**	**2,958**	**298**	**284**	**23**	**36**	**0**
Lower Yukon River Total		**669**	**1,407**	**20,352**	**49,509**	**4,786**	**2,959**	**111**	**261**	**0**
Anvik	9/21-22	16	85	1,588	248	398	288	8	7	0
Grayling	9/23-25	38	64	1,869	1,129	267	233	0	18	0
Kaltag [e]	10/1-2	37	59	1,656	213	687	138	1	13	0
Nulato	10/6-8	71	153	5,199	198	1,246	203	4	23	0
Koyukuk	9/28-10/1	14	47	400	329	344	166	1	10	0
Galena	9/30-10/4	75	314	3,296	782	1,587	1,307	8	16	2
Ruby	10/5-6	15	171	1,620	2,010	1,064	1,540	4	1	5
District 4 Yukon River Subtotal		**266**	**893**	**15,628**	**4,909**	**5,593**	**3,875**	**26**	**88**	**7**
Huslia	10/4-5	16	131	285	3,844	1,139	764	8	0	0
Hughes	10/5-6	8	97	291	3,823	97	110	6	0	0
Allakaket	10/7-8	9	148	65	2,367	968	17	7	0	0
Alatna	10/7-8	1	2	0	16	0	0	1	0	0
Bettles	10/14-17 tele	0	153	0	0	0	0	0	0	0
Koyukuk River Subtotal		**34**	**531**	**641**	**10,050**	**2,204**	**891**	**22**	**0**	**0**
District 4 Subtotal		**300**	**1,424**	**16,269**	**14,959**	**7,797**	**4,766**	**48**	**88**	**7**
Tanana	10/11-13	28	287	2,689	1,490	23,118	1,049	9	0	9
Rampart	permits	2	5	287	103	0	0	2	0	0
Fairbanks NSB [f]	permits	53	244	1,997	280	43	91	52	0	1
Stevens Village [g]	11/28-29, permits	17	74	2,394	108	1,080	100	11	0	0
Birch Creek	10/14-17 tele	2	13	82	0	0	0	1	0	0
Beaver	10/14-17	13	18	858	2	48	0	9	0	0
Fort Yukon	10/18-20	46	345	4,430	1,187	7,302	19	8	0	12
Circle	permits	12	58	565	52	1,022	100	6	0	6
Central	permits	4	6	83	0	0	0	3	0	1
Eagle	permits	29	255	1,512	171	5,482	14	22	0	7
Other [h]	permits	6	76	357	3	13	0	7	0	0
District 5 Yukon River Subtotal		**212**	**1,381**	**15,254**	**3,396**	**38,108**	**1,373**	**130**	**0**	**36**

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Table 3.–Page 6 of 6.

Data Year 2004

Community [a]	Survey Date, Permit Village,	Number of Fishing Households [b]	Number of Dogs	Estimated Harvest Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used [c] Set Gillnet	Drift Gillnet	Fish Wheels
Venetie	10/20-22	13	58	352	15	2,083	5	10	0	1
Chalkyitsik	10/22-23	8	58	60	0	479	45	5	1	0
Chandalar and Black Rivers Subtotal		**21**	**116**	**412**	**15**	**2,562**	**50**	**15**	**1**	**1**
District 5 Subtotal		**233**	**1,497**	**15,666**	**3,411**	**40,670**	**1,423**	**145**	**1**	**37**
Manley	permits	5	271	239	296	1,504	1,384	4	0	1
Minto	permits	10	84	35	7	0	5	9	0	0
Nenana	permits	16	374	633	1,171	5,367	6,494	5	0	11
Healy	permits	5	55	0	0	1,058	2,266	5	0	0
Fairbanks NSB [j]	permits	40	124	650	539	1,254	1,668	38	0	2
Other [k]	permits	16	95	32	11	0	0	13	0	1
District 6 Tanana River Subtotal [l]		**92**	**1,003**	**1,589**	**2,024**	**9,183**	**11,817**	**74**	**0**	**15**
Upper Yukon River Total		**625**	**3,924**	**33,524**	**20,394**	**57,650**	**18,006**	**267**	**89**	**59**
Survey Village Subtotal		1,246	3,984	47,701	72,816	44,635	8,205	282	350	29
Subsistence Permit Subtotal [m]		163	1,647	6,189	2,402	15,513	11,789	132	0	29
Subsistence Test Fish Subtotal [n]		-	-	1,823	2,716	2,378	801	-	-	-
Subsistence Harvests Subtotal		**1,409**	**5,631**	**55,713**	**77,934**	**62,526**	**20,795**	**414**	**350**	**58**
Personal Use Permit Subtotals		**35**	**-**	**201**	**231**	**230**	**233**	**34**	**0**	**1**
Alaska, Yukon River Total [p]		**1,294**	**5,331**	**53,876**	**69,903**	**62,436**	**20,965**	**378**	**350**	**59**
Alaska, Yukon Area Total		**1,444**	**5,631**	**55,914**	**78,165**	**62,756**	**21,028**	**448**	**350**	**59**
AK, Yukon Area Percentages of the Total		**-**	**-**	**26%**	**36%**	**29%**	**10%**	**52%**	**40%**	**7%**

Note: Subsistence and personal use salmon harvest estimates include commercially related and test fish harvests provided for subsistence use, and related information. Data are preliminary.

[a] Data collected by Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. Survey data is expanded for number of fishing households, number of dogs, and harvest. Permit data is unexpanded, and is from all permits received as of June 1, 2005. The number of dogs is based on information obtained from permits issued, while the number of fishing households and their harvest is based on returned permits.

[b] Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas.

[c] Primary Fishing Gear is not expanded for households that were not surveyed.

[d] Formerly known as Sheldon or Sheldons Point.

[e] Test fish have been added to the total fish harvested in a village as reported in the postseason survey.

[f] Fairbanks North Star Borough (FNSB) households that obtained a permit and indicated they fished in the Yukon River permit required area.

[g] Permit harvest information from Stevens Village residents was used to complement the information obtained by the survey.

[h] Other includes residents of Manley, Minto, Tanana, and the Upper Tanana River drainage villages of Northway and Tok who obtained a household permit and fished in a Yukon River permit required area.

[j] Fairbanks North Star Borough (FNSB) households that obtained a subsistence and/or personal use permit and indicated they fished in the Tanana River permit required area.

[k] Other includes residents of Eagle River, Denali Park, Gakona, Paxson, Wiseman and the Upper Tanana River drainage villages of Delta Junction, Dot Lake, Tanacross, Tok, and Northway who obtained a permit and fished in the Tanana River.

[l] Does not include harvest of coho and chum salmon sold commercially for roe and carcass returned to fishermen for dog food in Subdistrict 6-B.

[m] Subsistence Permit Subtotal does not include Stevens Village.

[n] Test fish given away for subsistence use.

[p] Does not include Coastal District.

Table 4.–Reported subsistence and personal use salmon harvested under the authority of a permit, listed by permit area, Yukon Area, 2002-2004.

Data Year 2002

Permit Fishing Area	Permit			Percent Returned	Number of Permits Returned that Fished	Reported Harvest			
	Type	Issued	Returned			Chinook	Summer Chum	Fall Chum	Coho
Subsistence Use									
Yukon River near Haul Road Bridge	SY	60	58	97%	44	2,275	320	100	0
Yukon River near Circle and Eagle	SE	94	79	84%	39	3,639	29	413	1
Tanana River Subdistrict 6A	SA	18	17	94%	15	373	99	1,076	1,883
Tanana River Subdistrict 6B	SB	62	59	95%	24	525	411	1,836	7,253
Tanana River Upstream of Subdistrict 6C	SU	32	31	97%	17	0	0	25	0
Kantishna River Subdistrict 6A	SK	6	6	100%	5	169	2	265	363
Tolovana River Pike Subdistrict 6B	ST	32	30	94%	14	0	0	0	0
Whitefish/ Sucker	SW	1	1	100%	1	0	0	0	0
Subsistence Permit Subtotals		305	281	92%	159	6,981	861	3,715	9,500
Personal Use									
Tanana River Subdistrict 6C	PC	57	55	96%	29	126	175	3	20
Tanana River Whitefish Upstream of Subdistrict 6C	PW	5	4	80%	1	0	0	0	0
Personal Use Permit Subtotals		62	59	95%	30	126	175	3	20
Permit Totals		**367**	**340**	**93%**	**189**	**7,107**	**1,036**	**3,718**	**9,520**

Note: Data current as of April 1, 2003.

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Table 4.–Page 2 of 3.

Data Year 2003

Permit Fishing Area	Permit [a] Type	Permit [a] Issued	Permit [a] Returned	Percent Returned	Number of Permits Returned that Fished	Reported Harvest Chinook	Reported Harvest Summer Chum	Reported Harvest Fall Chum	Reported Harvest Coho
Subsistence Use									
Yukon River near Haul Road Bridge	SY	86	80	93%	62	2,670	89	104	145
Yukon River near Circle and Eagle	SE	95	85	89%	58	3,406	189	3,374	0
Tanana River Subdistrict 6A	SA	18	16	89%	9	213	65	1,396	1,006
Tanana River Subdistrict 6B	SB	77	72	94%	40	1,839	2,849	10,537	7,849
Tanana River Upstream of Subdistrict 6C	SU	38	32	84%	17	30	0	4	0
Kantishna River Subdistrict 6A	SK	5	5	100%	4	63	0	1,049	1,508
Tolovana River Pike Subdistrict 6B	ST	119	105	88%	57	0	0	0	0
Whitefish/ Sucker	SW	2	2	100%	2	0	0	0	0
Subsistence Permit Subtotals		440	397	90%	249	8,221	3,192	16,464	10,508
Personal Use									
Tanana River Subdistrict 6C	PC	67	67	100%	32	204	148	394	549
Tanana River Whitefish Upstream of Subdistrict 6C	PW	7	5	71%	3	0	0	0	0
Personal Use Permit Subtotals		74	72	97%	35	204	148	394	549
Permit Totals		**514**	**469**	**91%**	**284** [b]	**8,425**	**3,340**	**16,858**	**11,057**

Note: Data current as of June 26, 2004.

[a] Includes 34 households that were issued permits for more than 1 area.

[b] Includes 5 households that fished in 2 different permit areas.

-continued-

Table 4.–Page 3 of 3.

Data Year 2004

Permit Fishing Area	Permit [a] Type	Permit [a] Issued	Permit [a] Returned	Percent Returned	Number of Permits Returned that Fished	Reported Harvest Chinook	Reported Harvest Summer Chum	Reported Harvest Fall Chum	Reported Harvest Coho
Subsistence Use									
Koyukuk Middle and South Fork Rivers	SF	1	1	100%	1	0	0	0	0
Yukon River between Rampart Area	SR	14	11	79%	9	832	249	0	0
Yukon River near Haul Road Bridge	SY	69	67	97%	51	2,032	164	43	91
Yukon River near Circle and Eagle	SE	89	83	93%	50	2,304	223	6,517	114
Tanana River Subdistrict 6A	SA	18	18	100%	8	239	306	1,529	1,419
Tanana River Subdistrict 6B	SB	60	56	93%	30	1,049	1,485	6,805	9,580
Tanana River Upstream of Subdistrict 6C	SU	35	30	86%	14	0	0	0	0
Kantishna River Subdistrict 6A	SK	5	5	100%	4	100	2	619	585
Tolovana River Pike Subdistrict 6B	ST	99	90	91%	42	0	0	0	0
Whitefish/ Sucker	SW	1	1	100%	1	0	0	0	0
Subsistence Permit Subtotals		391	362	93%	210	6,556	2,429	15,513	11,789
Personal Use									
Tanana River Subdistrict 6C	PC	68	66	97%	35	201	231	230	233
Tanana River Whitefish Upstream of Subdistrict 6C	PW	3	2	67%	1	0	0	0	0
Personal Use Permit Subtotals		71	68	96%	36	201	231	230	233
Permit Totals		**462**	**430**	**93%**	**246** [b]	**6,757**	**2,660**	**15,743**	**12,022**

Note: Data current as of November 4, 2005.

[a] Includes 27 households that were "issued" permits for more than 1 area.

[b] Includes 5 households that "fished" in 2 different permit areas.

Table 5.–Commercial salmon and salmon roe sales by statistical area, Yukon Area, 2002-2004.

Data Year 2002

Statistical Area	Chinook No.	Chinook Roe	Chinook Estimated Harvest [a]	Summer Chum No.	Summer Chum Roe	Summer Chum Estimated Harvest [a]	Fall Chum No.	Fall Chum Roe	Fall Chum Estimated Harvest [a]	Coho No.	Coho Roe	Coho Estimated Harvest [a]	Total Salmon No.	Total Salmon Roe	Total Salmon Estimated Harvest [a]
334-11	1,001	0	1,001	193	0	193							1,194	0	1,194
12	1,271	0	1,271	1,303	0	1,303							2,574	0	2,574
13	449	0	449	374	0	374							823	0	823
14	742	0	742	1,519	0	1,519			NO COMMERCIAL FISHING				2,261	0	2,261
15	2,993	0	2,993	858	0	858							3,851	0	3,851
16	69	0	69	4	0	4							73	0	73
17	2,338	0	2,338	1,277	0	1,277							3,615	0	3,615
18	2,224	0	2,224	799	0	799							3,023	0	3,023
Subtotal District 1	11,087	0	11,087	6,327	0	6,327	0	0	0	0	0	0	17,414	0	17,414
334-21	2,140	0	2,140	1,105	0	1,105							3,245	0	3,245
22	3,044	0	3,044	997	0	997							4,041	0	4,041
23	1,992	0	1,992	862	0	862			NO COMMERCIAL FISHING				2,854	0	2,854
24	2,712	0	2,712	794	0	794							3,506	0	3,506
25	1,546	0	1,546	269	0	269							1,815	0	1,815
Subtotal District 2	11,434	0	11,434	4,027	0	4,027	0	0	0	0	0	0	15,461	0	15,461
334-31 32									NO COMMERCIAL FISHING						
Subtotal District 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Lower Yukon	22,521	0	22,521	10,354	0	10,354	0	0	0	0	0	0	32,875	0	32,875

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Table 5.–Page 2 of 6.

Data Year 2002

Statistical Area	Chinook No.	Chinook Roe	Chinook Estimated Harvest [a]	Summer Chum No.	Summer Chum Roe	Summer Chum Estimated Harvest [a]	Fall Chum No.	Fall Chum Roe	Fall Chum Estimated Harvest [a]	Coho No.	Coho Roe	Coho Estimated Harvest [a]	Total Salmon No.	Total Salmon Roe	Total Salmon Estimated Harvest [a]
334-42	0	0	0	0	0	0							0	0	0
43	0	0	0	0	0	0			NO COMMERCIAL FISHING				0	0	0
44	0	0	0	0	0	0							0	0	0
45	0	0	0	0	0	0							0	0	0
46	0	0	0	0	0	0							0	0	0
47			NO COMMERCIAL FISHING										0	0	0
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING										0	0	0
52	307	0	307	0	0	0			NO COMMERCIAL FISHING				307	0	307
53	257	0	257	6	0	6							263	0	263
54	0	0	0	0	0	0							0	0	0
55	207	0	207	0	0	0							207	0	207
Subtotal District 5	771	0	771	6	0	6	0	0	0	0	0	0	777	0	777
334-61	0	0	0	0	0	0							0	0	0
62	732	896	962	2,711	16	2,731			NO COMMERCIAL FISHING				3,443	912	3,693
63	104	0	104	487	0	487							591	0	591
Subtotal District 6	836	896	1,066	3,198	16	3,218	0	0	0	0	0	0	4,034	912	4,284
Total Upper Yukon	1,607	896	1,837	3,204	16	3,224	0	0	0	0	0	0	4,811	912	5,061
Grand Total Yukon Area	24,128	896	24,358	13,558	16	13,578	0	0	0	0	0	0	37,686	912	37,936

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Table 5.–Page 3 of 6.

Data Year 2003

Statistical Area	Chinook No.	Chinook Roe	Chinook Estimated Harvest [a]	Summer Chum No.	Summer Chum Roe	Summer Chum Estimated Harvest [a]	Fall Chum No.	Fall Chum Roe	Fall Chum Estimated Harvest [a]	Coho No.	Coho Roe	Coho Estimated Harvest [a]	Total Salmon No.	Total Salmon Roe	Total Salmon Estimated Harvest [a]
334-11	1,601	0	1,601	90	0	90	0	0	0	0	0	0	1,691	0	1,691
12	4,714	0	4,714	588	0	588	2,784	0	2,784	4,890	0	4,890	12,976	0	12,976
13	1,089	0	1,089	117	0	117	177	0	177	305	0	305	1,688	0	1,688
14	1,514	0	1,514	292	0	292	310	0	310	656	0	656	2,772	0	2,772
15	4,756	0	4,756	690	0	690	958	0	958	1,939	0	1,939	8,343	0	8,343
16	437	0	0 437	188	0	188	0	0	0	0	0	0	625	0	625
17	3,518	0	3,518	566	0	566	381	0	381	576	0	576	5,041	0	5,041
18	5,080	0	5,080	1,048	0	1,048	976	0	976	1,391	0	1,391	8,495	0	8,495
Subtotal District 1	22,709	0	22,709	3,579	0	3,579	5,586	0	5,586	9,757	0	9,757	41,631	0	41,631
334-21	2,965	0	2,965	1,153	0	1,153							4,118	0	4,118
22	5,454	0	5,454	855	0	855							6,309	0	6,309
23	993	0	993	218	0	218			NO COMMERCIAL FISHING				1,211	0	1,211
24	2,104	0	2,104	181	0	181							2,285	0	2,285
25	2,704	0	2,704	176	0	176							2,880	0	2,880
Subtotal District 2	14,220	0	14,220	2,583	0	2,583	0	0	0	0	0	0	16,803	0	16,803
334-31 32									NO COMMERCIAL FISHING						
Subtotal District 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Lower Yukon	36,929	0	36,929	6,162	0	6,162	5,586	0	5,586	9,757	0	9,757	58,434	0	58,434

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Table 5.–Page 4 of 6.

Data Year 2003

Statistical Area	Chinook No.	Chinook Roe	Chinook Estimated Harvest [a]	Summer Chum No.	Summer Chum Roe	Summer Chum Estimated Harvest [a]	Fall Chum No.	Fall Chum Roe	Fall Chum Estimated Harvest [a]	Coho No.	Coho Roe	Coho Estimated Harvest [a]	Total Salmon No.	Total Salmon Roe	Total Salmon Estimated Harvest [a]
334-42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	562	0	562	62	0	62	1,315	0	1,315	367	0	367	2,306	0	2,306
44													0	0	0
45			NO COMMERCIAL FISHING						NO COMMERCIAL FISHING				0	0	0
46													0	0	0
47													0	0	0
Subtotal District 4	562	0	562	62	0	62	1,315	0	1,315	367	0	367	2,306	0	2,306
334-51			NO COMMERCIAL FISHING										0	0	0
52	711	0	711		0				NO COMMERCIAL FISHING				711	0	711
53	197	0	197		0								197	0	197
54	0	0	0		0								0	0	0
55	226	0	226		0								226	0	226
Subtotal District 5	1,134	0	1,134	0	0	0	0	0	0	0	0	0	1,134	0	1,134
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	1,445	0	1,445	3,953	0	3,953	3,778	0	3,778	14,984	0	14,984	24,160	0	24,160
63	368	0	368	508	0	508	317	0	317	135	0	135	1,328	0	1,328
Subtotal District 6	1,813	0	1,813	4,461	0	4,461	4,095	0	4,095	15,119	0	15,119	25,488	0	25,488
Total Upper Yukon	3,509	0	3,509	4,523	0	4,523	5,410	0	5,410	15,486	0	15,486	28,928	0	28,928
Grand Total Yukon Area	40,438	0	40,438	10,685	0	10,685	10,996	0	10,996	25,243	0	25,243	87,362	0	87,362

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Table 5.–Page 5 of 6.

Data Year 2004

Statistical Area	Chinook No.	Chinook Roe	Chinook Estimated Harvest [a]	Summer Chum No.	Summer Chum Roe	Summer Chum Estimated Harvest [a]	Fall Chum No.	Fall Chum Roe	Fall Chum Estimated Harvest [a]	Coho No.	Coho Roe	Coho Estimated Harvest [a]	Total Salmon No.	Total Salmon Roe	Total Salmon Estimated Harvest [a]
334-11	975	0	975	667	0	667	0	0	0	128	0	128	1,770	0	1,770
12	2,505	0	2,505	885	0	885	509	0	509	772	0	772	4,671	0	4,671
13	1,965	0	1,965	1,446	0	1,446	25	0	25	201	0	201	3,637	0	3,637
14	1,502	0	1,502	904	0	904	67	0	67	290	0	290	2,763	0	2,763
15	4,285	0	4,285	2,694	0	2,694	0	0	0	0	0	0	6,979	0	6,979
16	1,783	0	1,783	870	0	870	0	0	0	0	0	0	2,653	0	2,653
17	9,270	0	9,270	4,171	0	4,171	19	0	19	50	0	50	13,510	0	13,510
18	6,118	0	6,118	2,356	0	2,356	40	0	40	142	0	142	8,656	0	8,656
Subtotal District 1	28,403	0	28,403	13,993	0	13,993	660	0	660	1,583	0	1,583	44,639	0	44,639
334-21	5,879	0	5,879	1,724	0	1,724	NO COMMERCIAL FISHING						7,603	0	7,603
22	8,326	0	8,326	1,439	0	1,439							9,765	0	9,765
23	3,459	0	3,459	1,350	0	1,350							4,809	0	4,809
24	3,819	0	3,819	1,061	0	1,061							4,880	0	4,880
25	2,662	0	2,662	208	0	208							2,870	0	2,870
Subtotal District 2	24,145	0	24,145	5,782	0	5,782	0	0	0	0	0	0	29,927	0	29,927
334-31	NO COMMERCIAL FISHING														
32															
Subtotal District 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Lower Yukon	52,548	0	52,548	19,775	0	19,775	660	0	660	1,583	0	1,583	74,566	0	74,566

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Table 5.–Page 6 of 6.

Data Year 2004

Statistical Area	Chinook No.	Chinook Roe	Chinook Estimated Harvest [a]	Summer Chum No.	Summer Chum Roe	Summer Chum Estimated Harvest [a]	Fall Chum No.	Fall Chum Roe	Fall Chum Estimated Harvest [a]	Coho No.	Coho Roe	Coho Estimated Harvest [a]	Total Salmon No.	Total Salmon Roe	Total Salmon Estimated Harvest [a]
334-42															
43															
44									NO COMMERCIAL FISHING						
45															
46															
47															
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51		NO COMMERCIAL FISHING											0	0	0
52	1,317	0	1,317	3	0	3							1,320	0	1,320
53	229	0	229	22	0	22			NO COMMERCIAL FISHING				251	0	251
54	0	0	0	0	0	0							0	0	0
55	0	0	0	0	0	0							0	0	0
Subtotal District 5	1,546	0	1,546	25	0	25	0	0	0	0	0	0	1,571	0	1,571
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	1,542	0	1,542	2,447	0	2,447	3,450	0	3,450	18,649	0	18,649	26,088	0	26,088
63	515	0	515	4,163	0	4,163	0	0	0	0	0	0	4,678	0	4,678
Subtotal District 6	2,057	0	2,057	6,610	0	6,610	3,450	0	3,450	18,649	0	18,649	30,766	0	30,766
Total Upper Yukon	3,603	0	3,603	6,635	0	6,635	3,450	0	3,450	18,649	0	18,649	32,337	0	32,337
Grand Total Yukon Area	56,151	0	56,151	26,410	0	26,410	4,110	0	4,110	20,232	0	20,232	106,903	0	106,903

Note: Sales reported in numbers of fish sold in the round and pounds of unprocessed roe. Does not include ADF&G test fishery sales.

[a] Estimated harvest includes the estimated number of females to produce the roe sold.

Table 6.–Number of salmon sold from Department of Fish and Game test fishing programs, Yukon Area, 2002-2004.

Year	Districts	Gear Types	Chinook	Summer Chum	Fall Chum	Coho
2002	1	Drift & Set Gillnet	494	164	0	0
	2	Drift Gillnet	34	54	0	0
	Yukon Area Total		528	218	0	0
2003	1	Drift & Set Gillnet	619	37	0	0
	2	Drift Gillnet	61	82	0	0
	Yukon Area Total		680	119	0	0
2004	1	Drift & Set Gillnet	722	217	0	0
	2	Drift Gillnet	70	0	0	0
	Yukon Area Total		792	217	0	0

Table 7.–Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 2002–2004.

Commercial operation (Processing location / buying station)	Product	District	Years
Kwik'pak Fisheries, LLC 2200 6th Avenue Suite 707 Seattle, WA 98121 (Emmonak, Mt. Village)	Frozen Salmon Fresh Salmon Chinook Chum, Coho Salmon Roe	1 and 2	2002-2004
Boreal Fisheries P.O. Box 561 Graham, WA 98338 (St. Mary's)	Frozen Salmon Fresh Salmon Chinook Chum, Coho Salmon Roe	1 and 2	2002-2004
Bering Sea Fisheries, Inc. 4413 83rd Avenue. SE Snohomish, WA 98290 (Lamont Slough)	Frozen Salmon Chinook Chum, Coho Salmon Roe	1 and 2	2002-2004
New Sagaya 1011 Whitney Road Anchorage, AK 99501	Fresh Salmon Chinook	1 and 2	2003-2004
Maserculiq Fish Processors P.O. Box 118535 Marshall, AK 99585 (Marshall)	Fresh Salmon Chinook Chum Salmon Roe	1, 2 and 3	2002-2004
Interior Alaska Fish Processors, Inc. 2400 Davis Road Fairbanks, AK 99701 (Fairbanks, Nenana, North Pole)	Frozen Salmon Chinook, Chum, Coho Salmon Roe	4, 5, and 6	2002-2004
Brian Asplund Arctic Circle Seafood PO Box 18 Circle, AK 99733 (Nenana)	Frozen Salmon Fresh Salmon Chinook, Chum, Salmon Roe	5	2002
Linda Johnson PO Box 57 Manley Hot Springs, AK 99756	Frozen Salmon Fresh Salmon Chinook, Chum	5	2002-2004
Charlie Campbell (catcher/seller) MHF Enterprise PO Box 111 Tanana, AK 99777	Frozen Salmon Fresh Salmon Chinook, Chum	5	2002-2004

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Table 7.–Page 2 of 2.

Commercial operation (Processing location / buying station)	Product	District	Years
Frank W. Carruthers (catcher/seller) P.O. Box 23 Tanana, AK 99777	Fresh Salmon Chinook, Chum	5	2002-2004
Steve O'Brien (catcher/seller) PO Box 42 Manley Hot Springs, AK 99756	Fresh Salmon Chinook	5	2002-2004
Renee and Peter Merry (catcher/seller) 1293 Shypoke Drive Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook	5	2002-2004
Alfred F. Wright (catcher/seller) P.O. Box 60531 Fairbanks, AK 99706	Fresh Salmon Chinook	5	2002-2004
Merrill J. Hakala (catcher/seller) 140 Front St. Fairbanks, AK 99701 (Circle, Fairbanks)	Fresh Salmon Chinook	5	2002-2004
Gary S. Hinzman 1366 Opportunity Way Fairbanks, AK 99709	Fresh Salmon Chinook, chum	6	2002-2004

Table 8.–Commercial Fisheries Entry Commission salmon gear permits issued by residence, Yukon Area, 2002–2004.

Data Year 2002

District	Residence	Gillnet Permits (S04Y)
1, 2, and 3	Alakanuk	76
	Anchorage	28
	Aniak	1
	Bethel	15
	Chevak	2
	Dillingham	2
	Elim	1
	Emmonak	97
	Fairbanks	12
	Fortuna Ledge	4
	Glennallen	1
	Holy Cross	9
	Hooper Bay	2
	Juneau	6
	Kalskag	1
	Kotlik	79
	Manley Hot Springs	2
	Marshall	33
	Mountain Village	87
	Nenana	1
	Newhalen	1
	Newtok	1
	Nightmute	2
	Nome	2
	Nunam Iqua	9
	Palmer	4
	Pilot Station	54
	Pitkas Point	1
	Russian Mission	11
	Sand Point	2
	Scammon Bay	41
	Shageluk	1
	Shaktoolik	1
	Sheldon Point	14
	Sitka	2
	St. Marys	64
	St. Michael	2
	Stebbins	10
	Talkeetna	4
	Togiak	1
	Unalakleet	2
	Wasilla	5
	Willow	2
	Cameron Mills, NY	1
	Kamaih, ID	1
	Rock Hill, SC	1
	Snohomish, WA	1
	Spokane, WA	1
	Stanwood, WA	1
	Twisp, WA	1
Total Lower Yukon Area		702

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Table 8.–Page 2 of 6.

Data Year 2002

District	Residence	Gillnet Permits (S04P)	Fish Wheel Permits (S08P)	Total
4, 5, and 6	Anchorage	4	3	7
	Anchor Pt.	0	2	2
	Aniak	1	0	1
	Anvik	4	10	14
	Barrow	0	1	1
	Circle City	0	1	1
	Dot Lake	0	1	1
	Eagle River	0	1	1
	Fairbanks	25	26	51
	Fort Wainwright	0	1	1
	Ft. Yukon	0	1	1
	Galena	6	21	27
	Grayling	4	5	9
	Holy Cross	1	0	1
	Huslia	0	1	1
	Kaltag	3	13	16
	Koyukuk	0	2	2
	Manley Hot Springs	2	5	7
	Nenana	8	18	26
	North Pole	1	0	1
	Nulato	0	11	11
	Palmer	1	0	1
	Rampart	3	1	4
	Ruby	1	7	8
	Salcha	1	0	1
	Soldotna	1	0	1
	Stevens Village	0	3	3
	Tanana	3	16	19
	Valdez	0	1	1
	Wasilla	2	2	4
	Anacortes, WA	0	1	1
	Beverly Hills, CA	1	0	1
	Lynwood, WA	0	1	1
	Portland, OR	0	1	1
Total Upper Yukon Area		72	156	228
Grand Total Yukon Area		774	156	930 [a]

-continued-

Table 8.–Page 3 of 6.

Data Year 2003

District	Residence	Gillnet Permits (S04Y)
1, 2, and 3	Alakanuk	76
	Anchorage	34
	Aniak	1
	Bethel	18
	Chevak	2
	Dillingham	1
	Eagle River	2
	Elim	1
	Emmonak	96
	Fairbanks	12
	Fortuna Ledge	4
	Glennallen	1
	Holy Cross	9
	Hooper Bay	2
	Juneau	8
	Kalskag	1
	Kenai	1
	Kotlik	77
	Kotzebue	1
	Manley Hot Springs	2
	Marshall	34
	Mountain Village	85
	Nenana	0
	Newhalen	1
	Newtok	1
	Nightmute	1
	Nome	2
	Nunam Iqua	9
	Palmer	2
	Pilot Station	54
	Pitkas Point	1
	Russian Mission	11
	Saint Mary's	61
	Saint Michael	3
	Sand Point	2
	Scammon Bay	40
	Shageluk	1
	Shaktoolik	1
	Sheldon Point	10
	Sitka	2
	Stebbins	10
	Sutton	1
	Talkeetna	4
	Togiak	1
	Tuluksak	1
	Unalakleet	2
	Wasilla	5
	Willow	0
	Kamaih, ID	1
	Rock Hill, SC	1
	Fort Lewis, WA	1
	Snohomish, WA	1
	Spokane, WA	1
	Stanwood, WA	1
	Twisp, WA	1
	McFarland, KS	1
	Troy, MT	1
Total Lower Yukon Area		703

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Table 8.–Page 4 of 6.

Data Year 2003

District	Residence	Gillnet Permits (S04P)	Fish Wheel Permits (S08P)	Total
	Out of Country	1	0	1
4, 5, and 6	Anchorage	3	3	6
	Anchor Pt.	0	2	2
	Aniak	1	0	1
	Anvik	4	10	14
	Barrow	0	1	1
	Circle City	0	1	1
	Dot Lake	0	1	1
	Eagle River	0	1	1
	Fairbanks	28	28	56
	Fort Wainwright	0	1	1
	Ft. Yukon	0	1	1
	Galena	6	21	27
	Grayling	4	6	10
	Holy Cross	1	0	1
	Huslia	0	1	1
	Kaltag	2	13	15
	Koyukuk	0	1	1
	Manley Hot Springs	2	5	7
	Nenana	7	19	26
	North Pole	1	0	1
	Nulato	0	10	10
	Palmer	1	0	1
	Rampart	3	1	4
	Ruby	1	6	7
	Salcha	1	0	1
	Soldotna	1	1	2
	Stevens Village	0	3	3
	Tanana	3	16	19
	Valdez	0	1	1
	Wasilla	2	2	4
	Anacortes, WA	0	1	1
	Beverly Hills, CA	0	0	0
	Lynwood, WA	0	0	0
	Portland, OR	0	1	1
Total Upper Yukon Area		72	157	229
Grand Total Yukon Area		775	157	932 [a]

-continued-

Table 8.–Page 5 of 6.

Data Year 2004

District	Residence	Gillnet Permits (S04Y)
1, 2, and 3	Alakanuk	79
	Anchorage	35
	Aniak	1
	Bethel	14
	Chevak	2
	Dillingham	1
	Eagle River	3
	Elim	1
	Emmonak	94
	Fairbanks	10
	Fort Richardson	1
	Fortuna Ledge	4
	Glennallen	1
	Holy Cross	9
	Homer	1
	Hooper Bay	2
	Juneau	3
	Kalskag	1
	Kenai	1
	Kotlik	74
	Kotzebue	1
	Lower Kalskag	1
	Manley Hot Springs	2
	Marshall	34
	Mountain Village	82
	Nenana	0
	Newhalen	1
	Newtok	1
	Nightmute	2
	Ninilchik	2
	Nome	3
	Nunam Iqua	9
	Palmer	2
	Pilot Station	55
	Pitkas Point	1
	Russian Mission	11
	Saint Mary's	66
	Saint Michael	4
	Sand Point	0
	Scammon Bay	39
	Shageluk	1
	Shaktoolik	1
	Sheldon Point	8
	Sitka	2
	Stebbins	7
	Sutton	1
	Talkeetna	4
	Togiak	1
	Tuluksak	1
	Unalakleet	1
	Wasilla	5
	Willow	0
	Kamaih, ID	1
	Rock Hill, SC	1
	Fort Lewis, WA	0
	Snohomish, WA	1
	Spokane, WA	0
	Stanwood, WA	1
	Twisp, WA	1
	McFarland, KS	1
	Troy, MT	1
Total Lower Yukon Area		692

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Table 8.–Page 6 of 6.

Data Year 2004

District	Residence	Gillnet Permits (S04P)	Fish Wheel Permits (S08P)	Total
	out of country	1	0	1
4, 5, and 6	Anchorage	4	3	7
	Anchor Pt.	0	2	2
	Aniak	1	0	1
	Anvik	4	9	13
	Barrow	0	1	1
	Circle City	0	1	1
	Dot Lake	0	1	1
	Eagle River	0	1	1
	Fairbanks	27	24	51
	Fort Wainwright	0	1	1
	Ft. Yukon	0	1	1
	Galena	3	14	17
	Grayling	4	6	10
	Holy Cross	1	0	1
	Huslia	0	1	1
	Kaltag	2	8	10
	Koyukuk	0	0	0
	Manley Hot Springs	2	5	7
	Nenana	7	19	26
	North Pole	1	0	1
	Nulato	0	10	10
	Palmer	0	0	0
	Rampart	1	1	2
	Ruby	1	6	7
	Salcha	1	0	1
	Soldotna	1	1	2
	Stevens Village	1	3	4
	Tanana	3	15	18
	Valdez	0	1	1
	Wasilla	2	2	4
	Anacortes, WA	0	1	1
Total Upper Yukon Area		67	137	204
Grand Total Yukon Area		759	137	896 [a]

Note: Counts are for initial issues only and do not include transfers. Includes interim entry permits but not interim use or test fish permits.

[a] Total applies to number of permits.

Table 9.–Commercial salmon sales and estimated harvest by district and country, Yukon River drainage, 2002–2004.

Data Year 2002

District/ Subdistrict	Number of Fishermen [a]	Chinook Sold in Round	Chinook Pounds of Roe	Chinook Estimated Harvest [b]	Summer Chum Sold in Round	Summer Chum Pounds of Roe	Summer Chum Estimated Harvest [b]	Fall Chum Sold in Round	Fall Chum Pounds of Roe	Fall Chum Estimated Harvest [b]	Coho Sold in Round	Coho Pounds of Roe	Coho Estimated Harvest [b]
1	322	11,087	0	11,087	6,327	0	6,327	NO COMMERCIAL FISHING					
2	223	11,434	0	11,434	4,027	0	4,027						
Subtotal	540	22,521	0	22,521	10,354	0	10,354	0	0	0	0	0	0
3	NO COMMERCIAL FISHING												
Total Lower Yukon	540	22,521	0	22,521	10,354	0	10,354	0	0	0	0	0	0
Anvik River 4-A 4-BC	NO COMMERCIAL FISHING												
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
5-ABC	16	564	0	564	6	0	6	NO COMMERCIAL FISHING					
5-D	2	207	0	207	0	0	0						
Subtotal District 5	18	771	0	771	6	0	6	NO COMMERCIAL FISHING					
6	6	836	897	1,066	3,198	16	3,218	0	0	0	0	0	0
Total Upper Yukon	24	1,607	897	1,837	3,204	16	3,224	0	0	0	0	0	0
Total Alaska	564	24,128	897	24,358	13,558	16	13,578	0	0	0	0	0	0
Total Canada	18	708	0	708	0	0	0	3,065	0	3,065	17	0	17
Grand Total	582	24,836	897	25,066	13,558	16	13,578	3,065	0	3,065	17	0	17

-continued-

Table 9.–Page 2 of 3.

Data Year 2003

District/ Subdistrict	Number of Fishermen [a]	Chinook Sold in Round	Chinook Pounds of Roe	Chinook Estimated Harvest [b]	Summer Chum Sold in Round	Summer Chum Pounds of Roe	Summer Chum Estimated Harvest [b]	Fall Chum Sold in Round	Fall Chum Pounds of Roe	Fall Chum Estimated Harvest [b]	Coho Sold in Round	Coho Pounds of Roe	Coho Estimated Harvest [b]
1	358	22,709	0	22,709	3,579	0	3,579	5586	0	5586	4148	0	4148
2	217	14,220	0	14,220	2,583	0	2,583	NO COMMERCIAL FISHING					
Subtotal	557	36,929	0	36,929	6,162	0	6,162	5,586	0	5,586	9,757	0	9,757
3	NO COMMERCIAL FISHING												
Total Lower Yukon	557	36,929	0	36,929	6,162	0	6,162	5,586	0	5,586	9,757	0	9,757
Anvik River													
4-A	NO COMMERCIAL FISHING							NO COMMERCIAL FISHING					
4-BC	3	562	0	562	62	0	62	1,315	0	1,315	367	0	367
Subtotal District 4	3	562	0	562	62	0	62	1,315	0	1,315	367	0	367
5-ABC	15	908	0	908	0	0	0	0	0	0	0	0	0
5-D	1	226	0	226	0	0	0	0	0	0	0	0	0
Subtotal District 5	16	1,134	0	1,134	0	0	0	NO COMMERCIAL FISHING					
6	8	1,813	0	1,813	4,461	0	4,461	4,095	0	4,095	15,119	0	15,119
Total Upper Yukon	27	3,509	0	3,509	4,523	0	4,523	5,410	0	5,410	15,486	0	15,486
Total Alaska	584	40,438		40,438	10,685		10,685	10,996	0	10,996	25,243	0	25,243
Total Canada		2,672	0	2,672	0	0	0	9,030	0	9,030	0	0	0
Grand Total	584	43,110		43,110	10,685		10,685	20,026	0	20,026	25,243	0	25,243

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Table 9.–Page 3 of 3.

Data Year 2004

District/ Subdistrict	Number of Fishermen [a]	Chinook Sold in Round	Chinook Pounds of Roe	Chinook Estimated Harvest [b]	Summer Chum Sold in Round	Summer Chum Pounds of Roe	Summer Chum Estimated Harvest [b]	Fall Chum Sold in Round	Fall Chum Pounds of Roe	Fall Chum Estimated Harvest [b]	Coho Sold in Round	Coho Pounds of Roe	Coho Estimated Harvest [b]
1	399	28,403	0	28,403	13,993	0	13,993	660	0	660	1,583	0	1,583
2	212	24,145	0	24,145	5,782	0	5,782	NO COMMERCIAL FISHING					
Subtotal	551	52,548	0	52,548	19,775	0	19,775	660	0	660	1,583	0	1,583
3	NO COMMERCIAL FISHING												
Total Lower Yukon	551	52,548	0	52,548	19,775	0	19,775	660	0	660	1,583	0	1,583
Anvik River	-	-	-	NO COMMERCIAL FISHING									
4-A													
4-BC	-	-	-										
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
5-ABC	14	1,546	0	1,546	25	0	25	0	0	0	0	0	0
5-D					0	0	0	0	0	0	0	0	0
Subtotal	14	1,546	0	1,546	25	0	25	0	0	0	0	0	0
District 5	-	-	-										
6	9	2,057	0	2,057	6,610	0	6,610	3,450	0	3,450	18,649	0	18,649
Total Upper Yukon	23	3,603	0	3,603	6,635	0	6,635	3,450	0	3,450	18,649	0	18,649
Total Alaska	574	56,151	0	56,151	26,410	0	26,410	4,110	0	4,110	20,232	0	20,232
Total Canada		3,785 [c]	0	3,785	0		0	7,365	0	7,365	4	0	4
Grand Total	574	59,936	0	59,936	26,410	0	26,410	11,475	0	11,475	20,236	0	20,236

Note: Does not include ADF&G test fishery sales.

[a] Number of unique permits fished by district, subdistrict or area. Totals by area may not add up due to transfers between districts or subdistricts.

[b] Unless otherwise noted, estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold (pounds of roe sold divided by weighted average roe weight per female).

[c] Data are preliminary.

Table 10.–Chinook and summer chum salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Districts 1, 2, and 3 and set gillnets and fish wheels combined for Districts 4, 5, and 6, Yukon Area, 2002-2004.

Data Year 2002

District 1

								Chinook Salmon			Summer Chum Salmon		
Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen		Numbers	Pounds	Average Weight	Numbers	Pounds	Average Weight
1	6:00 PM	20-Jun	12:00 AM	20-Jun	6	265	U	4,887	99,103	20.3	2,915	20,880	7.2
2	9:00 PM	24-Jun	3:00 AM	25-Jun	6	286	U	4,562	91,161	20.0	3,022	21,805	7.2
3	6:00 PM	27-Jun	3:00 AM	28-Jun	9	229	U	1,638	34,690	21.2	390	2,775	7.1
District 1 Subtotal:					21	322		11,087	224,954	20.3	6,327	45,460	7.2

District 2

								Chinook Salmon			Summer Chum Salmon		
Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen		Numbers	Pounds	Average Weight	Numbers	Pounds	Average Weight
1	6:00 PM	19-Jun	12:00 Mid	19-Jun	6	205	U	5,249	101,731	19.4	471	3,322	7.1
2	6:00 PM	26-Jun	12:00 Mid	26-Jun	6	207	U	4,121	77,650	18.8	2,554	18,388	7.2
3	6:00 PM	30-Jun	12:00 Mid	30-Jun	6	191	U	2,064	42,717	20.7	1,002	7,052	7.0
District 2 Subtotal:					18	223		11,434	222,098	19.4	4,027	28,762	7.1
Lower Yukon Area, Summer Season, Districts 1 and 2 Subtotal:					39	540		22,521	447,052	19.9	10,354	74,222	7.2

Subdistrict 4-A

							Chinook Salmon			Summer Chum Salmon		
Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Numbers	Pounds	Average Weight	Numbers	Pounds	Average Weight
1	6:00 PM	2-Jul	6:00 AM	3-Jul	12		No commercial deliveries					
Subdistrict 4-A Subtotal:					12		0	0	0	0	0	-

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Table 10.–Page 2 of 7.

Data Year 2002

Subdistricts 4-B and 4-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	30-Jun	6:00 PM	2-Jul	48		No commercial deliveries					
2	6:00 PM	3-Jul	6:00 PM	5-Jul	48		No commercial deliveries					
3	6:00 PM	6-Jul	6:00 PM	8-Jul	48		No commercial deliveries					
4	6:00 PM	9-Jul	6:00 PM	12-Jul	48		No commercial deliveries					
Subdistricts 4-B and 4-C Subtotal:					192		0	0	0	0	0	0

Subdistricts 5-B, and 5-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	5-Jul	6:00 AM	6-Jul	12	12	223	4,230	19.0	6	36	6.0
2	6:00 PM	9-Jul	6:00 AM	10-Jul	18	11	341	6,145	18.0	0	0	-
Subdistricts 5-B and 5-C Subtotals:					30	16	564	10,375	18.4	6	36	6.0

Subdistrict 5-D

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	18-Jul	6:00 PM	19-Jul	24	2	207	3,754	18.1	0	0	-
Subdistrict 5-D Subtotal:					24	2	207	3754	18.1	0	0	-

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Table 10.–Page 3 of 7.

Data Year 2002

District 6

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	12-Jul	12:00 Mid	14-Jul	42	4	348	4,787	13.8	193	1,158	6.0
2	6:00 PM	15-Jul	12:00 Mid	17-Jul	42	5	376	5,066	13.5	758	4,548	6.0
3	6:00 PM	22-Jul	12:00 Mid	24-Jul	42	6	95	1,390	14.6	1,276	7,656	6.0
4	6:00 PM	29-Jul	12:00 Mid	31-Jul	42	5	17	201	11.8	971	5,796	6.0
District 6 Subtotal:					168	6	836	11,444	13.7	3,198	19,158	6.0
Upper Yukon Area, Summer Season, Districts 4, 5, and 6 Subtotals:					426	24	1,607	25,573	15.9	3,204	19,194	6.0
Yukon Area, Summer Season, All Districts Total [a]:					465	564	24,128	472,625	19.6 0	13,558	93,416	6.9

Note: U=Unrestricted mesh size.

[a] No commercial fishing periods occurred in District 3.

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Table 10.–Page 4 of 7.

Data Year 2003

District 1

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	9:00 PM	16-Jun	3:00 AM	17-Jun	6	305	10,717	231,341	21.6	878	7,058	8.0
2	6:00 PM	21-Jun	12:00 PM	21-Jun	6	315	7,301	157,164	21.5	1,143	8,344	7.3
3	6:00 PM	26-Jun	12:00 Mid	26-Jun	6	282	2,629	56,098	21.3	354	2,492	7.0
4	6:00PM	2-Jul	12:00 Mid	2-Jul	6	233	1,624	37,427	23.0	938	6,730	7.2
5	6:00PM	7-Jul	12:00 Mid	7-Jul	6	142	437	10,102	23.1	266	1,711	6.4
All periods were restricted to 8" or greater mesh size												
District 1 Subtotal:					30	351	22,708	492,132	21.7	3,579	26,335	7.4

District 2

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	18-Jun	12:00 Mid	18-Jun	6	192	7,512	157,221	20.9	748	5,359	7.2
2	6:00 PM	25-Jun	12:00 Mid	25-Jun	6	203	5,155	108,255	21.0	1,260	8,919	7.1
3	6:00PM	2-Jul	12:00 Mid	2-Jul	6	74	749	15,125	20.2	147	1,021	6.9
4	12:00 Noon	7-Jul	6:00PM	7-Jul	6	105	804	17,603	21.9	428	3,113	7.3
All periods were restricted to 8" or greater mesh size												
District 2 Subtotal:					24	217	14,220	298,204	21.0	2,583	18,412	7.1
Lower Yukon Area, Summer Season, Districts 1 and 2 Subtotal:					54	556	36,928	790,336	21.4	6,162	44,747	7.3

Subdistricts 4-B and 4-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	26-Jun	6:00 PM	27-Jun	24	2	137	1,347	9.8	5	39	7.8
2	6:00 PM	29-Jun	6:00 PM	1-Jul	48	3	365	3,374	9.2	40	254	6.4
3	6:00 PM	2-Jul	6:00 PM	4-Jul	48	2	60	627	10.5	17	116	6.8
Subdistricts 4-B and 4-C Subtotal:					120	3	562	5,348	9.5	62	409	6.6

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Table 10.–Page 5 of 7.
Data Year 2003

Subdistricts 5-B, and 5-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	4-Jul	6:00 AM	5-Jul	12	9	201	3,557	17.7	0	0	-
2	6:00 PM	8-Jul	6:00 AM	9-Jul	12	12	341	6,574	19.3	0	0	-
3	6:00 PM	10-Jul	6:00 AM	11-Jul	12	12	329	6,406	19.5	0	0	-
4	6:00 PM	16-Jul	6:00 PM	17-Jul	24	2	37	949	25.6	0	0	-
Subdistricts 5-B, and 5-C Subtotals:					60	15	908	17,486	19.3	0	0	-

Subdistrict 5-D

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	14-Jul	6:00 PM	15-Jul	24	1	84	1,176	14.0	0	0	-
2	6:00 PM	17-Jul	6:00 PM	18-Jul	24	1	142	1,900	13.4	0	0	-
Subdistrict 5-D Subtotal:					48	1	226	3076	13.6	0	0	-

Subdistricts 6-A, 6-B, and 6-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	11-Jul	12:00 Mid	13-Jul	42	6	467	5,724	12.3	208	1248	6.0
2	6:00 PM	14-Jul	12:00 Mid	16-Jul	42	6	684	9,998	14.6	558	3,418	6.1
3	6:00 PM	18-Jul	12:00 Mid	20-Jul	42	4	367	5,592	15.2	599	3,597	6.0
4	6:00 PM	21-Jul	12:00 Mid	23-Jul	42	5	284	4,014	14.1	1,732	10,578	6.1
5	6:00 PM	28-Jul	6:00 PM	29-Jul	24	5	11	143	13.0	1,364	8,184	6.0
District 6 Subtotal:					192	7	1,813	25,471	14.0	4,461	27,025	6.1
Upper Yukon Area, Summer Season, Districts 4, 5, and 6 Subtotals [a]:					420	26	3,509	51,381	14.6	4,523	27,434	6.1
Yukon Area, Summer Season, All Districts Total:					474	582	40,437	841,717	20.8	10,685	72,181	6.8

Note: U=Unrestricted mesh size.
[a] No commercial fishing periods occurred in District 3 or subdistrict 4-A.

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Table 10.–Page 6 of 7.

Data Year 2004

District 1

Period Number	Starting Time	Start Date	Ending Time	End Date	Mesh Size	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	12:00 Mid	17-Jun	6:00 AM	18-Jun	U	6	290	3,102	67,776	21.8	801	5,507	6.9
2	3:00 PM	21-Jun	12:00 Mid	21-Jun	U	9	314	7,967	163,127	20.5	2,091	14,603	7.0
3	6:00 PM	24-Jun	3:00 AM	25-Jun	U	9	313	10,153	212,362	20.9	5,313	37,035	7.0
4	6:00 PM	28-Jun	3:00AM	29-Jun	U	9	285	2,726	58,459	21.4	1,323	8,638	6.5
5	12:00 Mid	30-Jun	6:00 AM	1-Jul	U	6	230	1,624	34,828	21.4	1,300	8,671	6.7
6	9:00 PM	2-Jul	6:00 AM	3-Jul	U	9	259	1,530	31,181	20.4	785	4,993	6.4
7	12:00 Mid	5-Jul	9:00 AM	6-Jul	U	9	220	1,030	20,599	20.0	2,127	14,233	6.7
8	9:00 PM	9-Jul	3:00 AM	10-Jul	U	6	112	269	5,225	19.4	253	1,822	7.2
District 1 Subtotal:						63	396	28,401	593,557	20.9	13,993	95,502	6.8

District 2

Period Number	Starting Time	Start Date	Ending Time	End Date	Mesh Size	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	15-Jun	12:00 Mid	15-Jun	8" >	6	193	8,927	187,909	21.0	1,449	10,721	7.4
2	6:00 PM	20-Jun	12:00 Mid	20-Jun	U	6	185	4,019	83,050	20.7	382	2,584	6.8
3	12:00 Mid	23-Jun	6:00 PM	24-Jun	U	6	193	7,263	151,131	20.8	1,640	11,431	7.0
4	6:00 PM	27-Jun	12:00 Mid	27-Jun	U	6	183	3,936	76,715	20.0	2,311	16,228	7.0
No more Commercial fishing periods in District Y-2 after June 27 due to quality concerns.													
District 2 Subtotal:						24	212	24,145	498,805	20.7	5,782	40,964	7.1
Lower Yukon Area, Summer Season, Districts 1 and 2 Subtotal:						87	549	52,546	1,092,362	20.8	19,775	136,466	6.9

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Table 10.–Page 7 of 7.

Data Year 2004

Subdistricts 5-B, and 5-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Mesh Size	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	2-Jul	6:00 AM	3-Jul		12	9	348	5,682	16.3	12	72	6.0
2	6:00 PM	3-Jul	6:00 AM	4-Jul		12	13	665	10,118	15.2	7	42	6.0
3	6:00 PM	6-Jul	6:00 AM	7-Jul		12	9	514	8,322	16.2	6	36	6.0
4	6:00 PM	7-Jul	6:00 AM	8-Jul		12	1	19	419	22.1	0	0	-
5	6:00 PM	9-Jul	6:00 AM	10-Jul		12	0	0	0	-	0	0	-
6	6:00 PM	10-Jul	6:00 AM	11-Jul		12	0	0	0	-	0	0	-
Subdistricts 5-B, and 5-C Subtotals:						72	14	1,546	24,541	15.9	25	150	6.0

Subdistricts 6-A, 6-B, and 6-C

Period Number	Starting Time	Start Date	Ending Time	End Date	Mesh Size	Hours Fished	Number of Fishermen	Chinook Salmon Numbers	Chinook Salmon Pounds	Chinook Salmon Average Weight	Summer Chum Salmon Numbers	Summer Chum Salmon Pounds	Summer Chum Salmon Average Weight
1	6:00 PM	5-Jul	12 Noon	7-Jul		42	0	0	0	0	0	0	0
2	6:00 PM	9-Jul	12 Noon	11-Jul		42	4	700	8,341	11.9	450	2,700	6.0
3	6:00 PM	12-Jul	12 Noon	14-Jul		42	5	836	9,711	11.6	801	4,806	6.0
4	6:00 PM	16-Jul	12 Noon	18-Jul		42	5	397	5,193	13.1	2,172	10,860	5.0
5	6:00 PM	19-Jul	12 Noon	21-Jul		42	1	107	1,613	15.1	1,249	7,494	6.0
6	6:00 PM	23-Jul	12 Noon	25-Jul		42	1	15	227	15.1	1,733	10,398	6.0
7	6:00 PM	26-Jul	12 Noon	28-Jul		42	0	0	0	-	0	0	-
8	6:00 PM	30-Jul	12 Noon	1-Aug		42	0	0	0	-	0	0	-
9	6:00 PM	2-Aug	12 Noon	4-Aug		42	0	0	0	-	0	0	-
10	6:00 PM	6-Aug	12 Noon	8-Aug		42	1	2	40	20.0	205	1,230	6.0
District 6 Subtotal:						420	6	2,057	25,125	12.2	6,610	37,488	5.7
Upper Yukon Area, Summer Season, Districts 5 and 6 Subtotals:						492	20	3,603	49,666	13.8	6,635	37,638	5.7
Yukon Area, Summer Season, All Districts Total [a]:						579	569	56,149	1,142,028	20.3	26,410	174,104	12.6

Note: U=Unrestricted mesh size.

[a] No commercial fishing periods occurred in District 3 or subdistrict 4-A or District 4.

Table 11.–Fall chum and coho salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Districts 1, 2, and 3, and set gillnets and fish wheels combined for Districts 4, 5, and 6, Yukon Area, 2002–2004.

Data Year 2002

District 1-6

								Fall Chum Salmon			Coho Salmon			
Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished Drift	Hours Fished Set	Number of Fishermen	Number	Pounds	Average Weight	Number	Pounds	Average Weight	Percent Coho
	NO COMMERCIAL FISHING													

-continued-

Table 11.–Page 2 of 7.

Data Year 2003

District 1

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished Drift	Hours Fished Set	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Average Weight	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Average Weight	Percent Coho
1	9:00 AM	25-Aug	9:00 PM	25-Aug	12	12	56	2,455	17,097	7.0	4,148	30,674	7.4	62.8%
2	9:00 AM	27-Aug	9:00 PM	27-Aug	12	12	37	407	2,934	7.2	1,024	7,690	7.5	71.6%
3	9:00 AM	29-Aug	9:00 PM	29-Aug	12	12	25	123	872	7.1	730	5,352	7.3	85.6%
4	9:00 AM	1-Sep	9:00 PM	1-Sep	12	12	28	742	5,278	7.1	1,224	9,006	7.4	62.3%
5	9:00 AM	3-Sep	9:00 PM	3-Sep	12	12	38	1,046	7,629	7.3	1,293	9,694	7.5	55.3%
6	9:00 AM	5-Sep	9:00 PM	5-Sep	12	12	21	532	4,165	7.8	771	5,889	7.6	59.2%
7	8:00 AM	9-Sep	8:00 PM	9-Sep	12	12	10	80	586	7.3	190	1,586	8.3	70.4%
8	8:00 AM	11-Sep	8:00 PM	11-Sep	12	12	10	201	1,391	6.9	377	2,779	7.4	65.2%
District 1 Subtotal:			Current as of:	11-Sep	96	96	56	5,586	39,952	7.2	9,757	72,670	7.4	63.6%

District 2 - 3

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Average Weight	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Average Weight	Percent Coho
	NO COMMERCIAL FISHING												

	Hours Fished Drift	Hours Fished Set	Number of Fishermen	Number	Pounds	Average Weight	Number	Pounds	Average Weight	Percent Coho
Lower Yukon Area, Fall Season, Districts 1, 2, and 3 Subtotal:	96	96	56	5,586	39,952	7.2	9,757	72,670	7.4	63.6%

-continued-

Table 11.–Page 3 of 7.

Data Year 2003

District 4

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished 4-A	Hours Fished 4-BC	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
1	6:00 PM	27-Aug	6:00 PM	29-Aug	0	48	0	0	0	0	0	0	0	-
2	6:00 PM	31-Aug	6:00 PM	2-Sep	0	48	1	400	2,000	400	0	0	0	-
3	6:00 PM	3-Sep	6:00 PM	5-Sep	0	48	2	915	6,405	915	367	2,202	367	28.6%
District 4 Subtotal:			Current as of:	5-Sep	0	144	2	1,315	8,405	1,315	367	2,202	367	21.8%

Subdistrict 5-A, 5-B, 5-C, 5-D

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds of Roe	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
	NO COMMERCIAL FISHING												

-continued-

Table 11.–Page 4 of 7.

Data Year 2003

Subdistricts 6-A, 6-B, and 6-C

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished 6-A	Hours Fished 6-BC	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
1	6:00 PM	5-Sep	12:00 PM	7-Sep	0	42	1	3	20	3	0	0	0	-
2	6:00 PM	12-Sep	12:00 PM	14-Sep	0	42	1	154	1,078	154	41	313	41	21.0%
3	6:00 PM	19-Sep	12:00 PM	21-Sep	0	42	1	160	1,088	160	94	667	94	37.0%
4	6:00 PM	26-Sep	12:00 PM	28-Sep	0	42	4	1,989	11,484	1,989	6,551	39,306	6,551	76.7%
5	6:00 PM	29-Sep	12:00 PM	1-Oct	0	42	4	1,789	10,734	1,789	8,433	50,598	8,433	82.5%
6	6:00 PM	3-Oct	12:00 PM	5-Oct	0	42	0	0	0	0	0	0	0	-
District 6 Subtotal:			Current as of:	5-Oct	0	252	4	4,095	24,404	4,095	15,119	90,884	15,119	78.7%
Upper Yukon Area, Fall Season, Districts 4, 5, and 6 Subtotals:						396	6	5,410	32,809	5,410	15,486	93,086	15,486	74.1%
Yukon Area, Fall Season, Districts 1 Through 6 Total:						492	62	10,996		10,996	25,243		25,243	69.7%

-continued-

Table 11.–Page 5 of 7.

Data Year 2004

District 1

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished Drift	Hours Fished Set	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Average Weight	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Average Weight	Percent Coho
1	Noon	31-Aug	Noon	1-Sep	24	24	12	32	204	6.4	261	1,804	6.9	89.1%
2	Noon	2-Sep	Noon	3-Sep	24	24	15	373	2,516	6.7	732	5,177	7.1	66.2%
3	Noon	4-Sep	Noon	5-Sep	24	24	11	137	970	7.1	449	3,131	7.0	76.6%
4	Noon	6-Sep	Noon	7-Sep	24	24	5	91	636	7.0	67	448	6.7	42.4%
5	Noon	8-Sep	Noon	9-Sep	24	24	5	8	57	7.1	51	376	7.4	86.4%
6	Noon	10-Sep	Noon	11-Sep	24	24	2	19	120	6.3	23	158	6.9	54.8%
District 1 Subtotal:			Current as of:	11-Sep	144	144	26	660	4,503	6.8	1,583	11,094	7.0	70.6%

District 2 - 3

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Average Weight	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Average Weight	Percent Coho
	NO COMMERCIAL FISHING												

	Hours Fished Drift	Hours Fished Set	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Average Weight	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Average Weight	Percent Coho
Lower Yukon Area, Fall Season, Districts 1, 2, and 3 Subtotal:	144	144	26	660	4,503	6.8	1,583	11,094	7.0	70.6%

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Table 11.–Page 6 of 7.

Data Year 2004

District 4

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished 4-A	Hours Fished 4-BC	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
	NO COMMERCIAL FISHING													

Subdistrict 5-A

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds of Roe	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
1	6:00 PM	24-Sep	6:00 PM	26-Sep	48	0	0		0	0		0	-
2	6:00 PM	27-Sep	6:00 PM	29-Sep	48	0	0		0	0		0	-
3	6:00 PM	1-Oct	6:00 PM	3-Oct	48	0	0		0	0		0	-
Subdistrict 5-A Subtotal:			Current as of:	3-Oct	144	0	0	0	0	0	0	0	0.0%

Subdistricts 5-B, 5-C, 5-D

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds of Roe	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
	NO COMMERCIAL FISHING												

-continued-

Table 11.–Page 7 of 7.

Data Year 2004

Subdistricts 6-A, 6-B, and 6-C

Period Ending	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
1	6:00 PM	24-Sep	12:00 PM	26-Sep	42	4	1,109	5,985	1,109	7,412	39,617	7,412	87.0%
2	6:00 PM	27-Sep	12:00 PM	29-Sep	42	5	1,384	6,988	1,384	7,703	46,218	7,703	84.8%
3	6:00 PM	1-Oct	12:00 PM	3-Oct	42	2	246	1,251	246	2,820	16,831	2,820	92.0%
4	6:00 PM	4-Oct	12:00 PM	6-Oct	42	1	711	2,734	711	714	3,535	714	50.1%
5	6:00 PM	8-Oct	12:00 PM	10-Oct	42	0	0	0	0	0	0	0	-
District 6 Subtotal:			Current as of:	10-Oct	210	6	3,450	16,958	3,450	18,649	106,201	18,649	84.4%
Upper Yukon Area, Fall Season, Districts 4, 5, and 6 Subtotals:					354	6	3,450	16,958	3,450	18,649	106,201	18,649	84.4%

	Hours Fished	Number of Fishermen	Fall Chum Salmon Number	Fall Chum Salmon Pounds	Fall Chum Salmon Estimated Harvest [a]	Coho Salmon Number	Coho Salmon Pounds	Coho Salmon Estimated Harvest [a]	Percent Coho
Yukon Area, Fall Season, Districts 1 Through 6 Total:	498	32	4,110	21,461	4,110	20,232	117,295	20,232	83.1%

[a] Estimated harvest includes the estimated number of females to produce the roe sold.

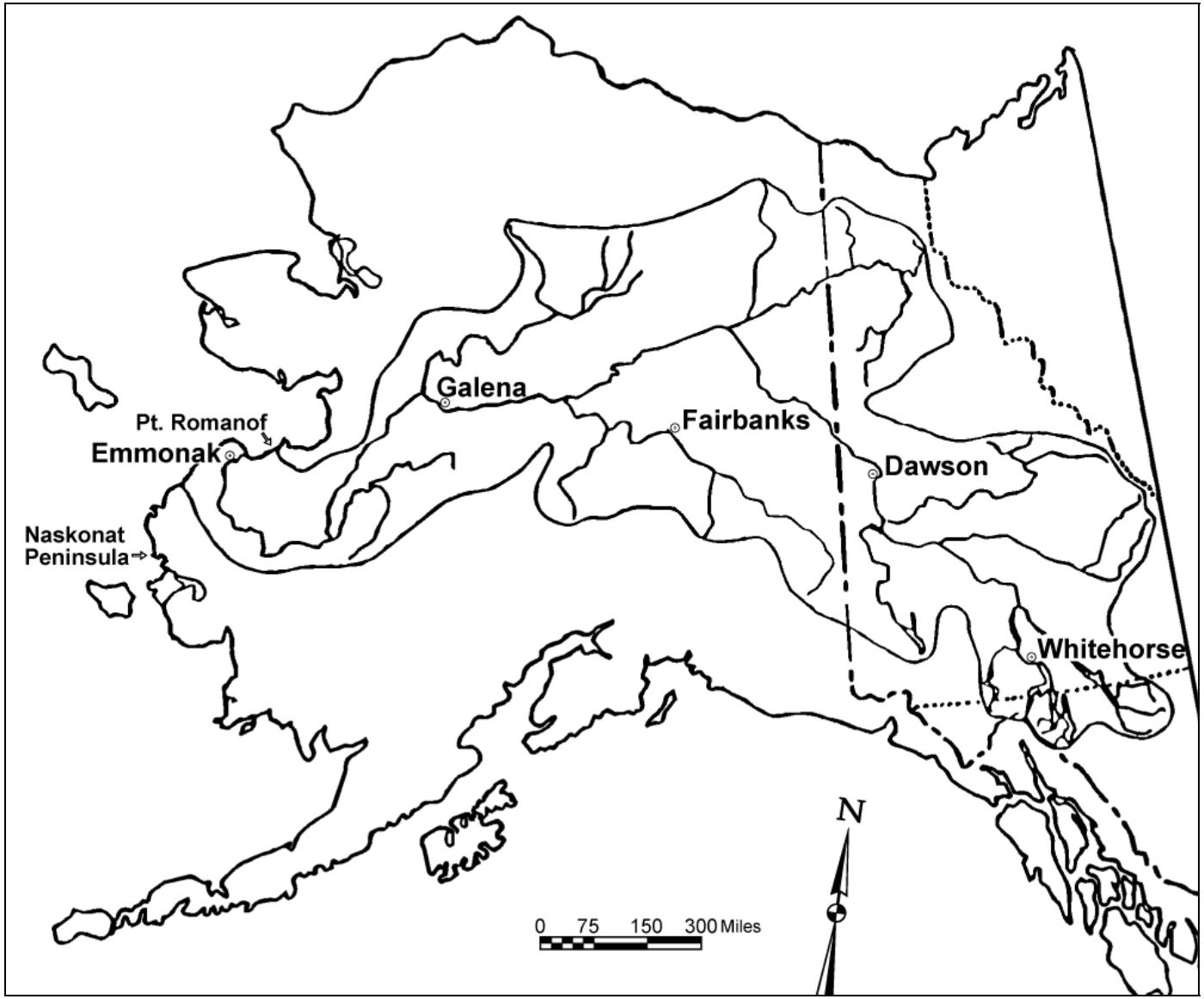

Figure 1.–Map of the Yukon River Drainage.

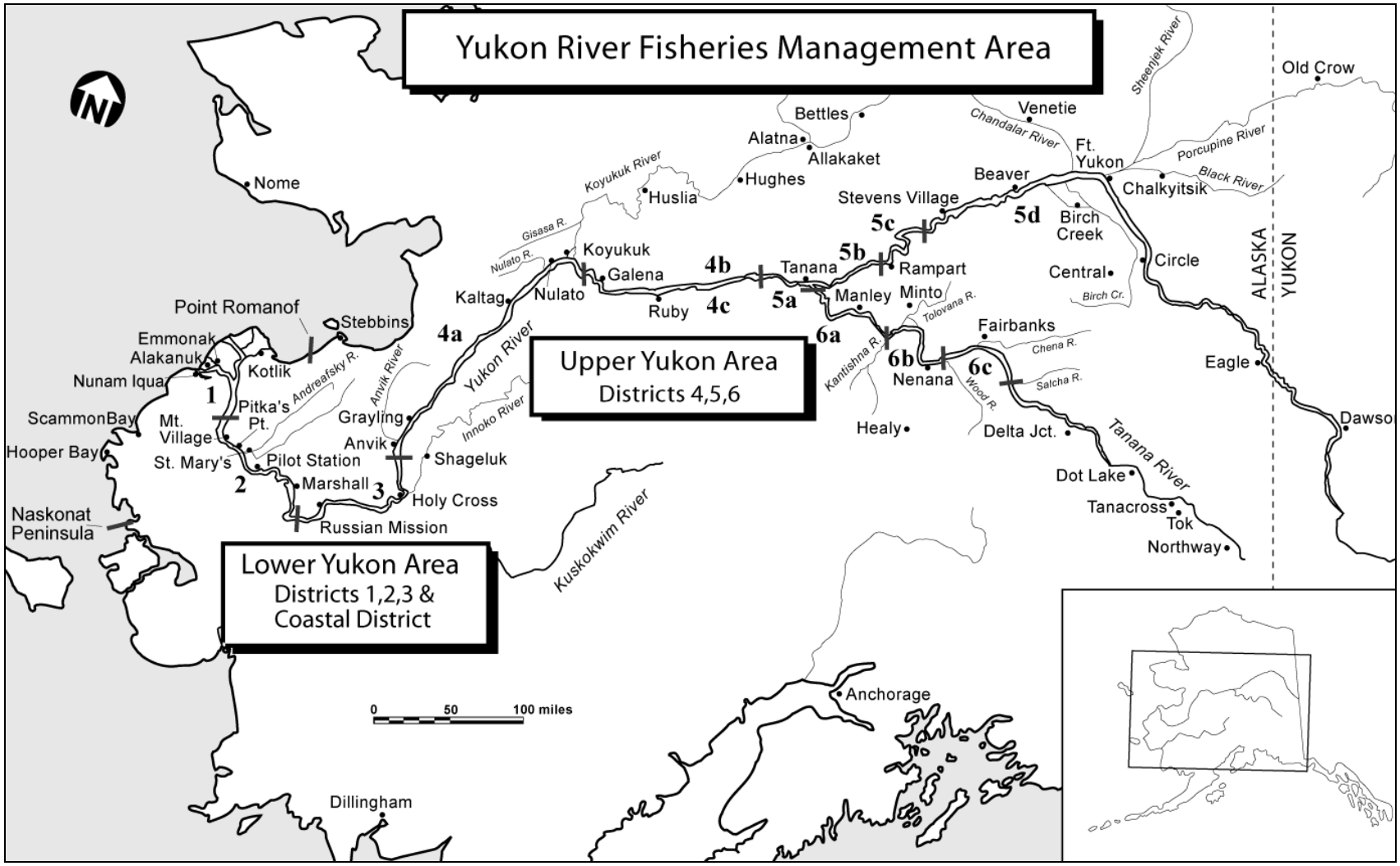

Figure 2.–Map of Alaskan portion of Yukon River drainage showing communities and fishing districts 2002 to 2004.

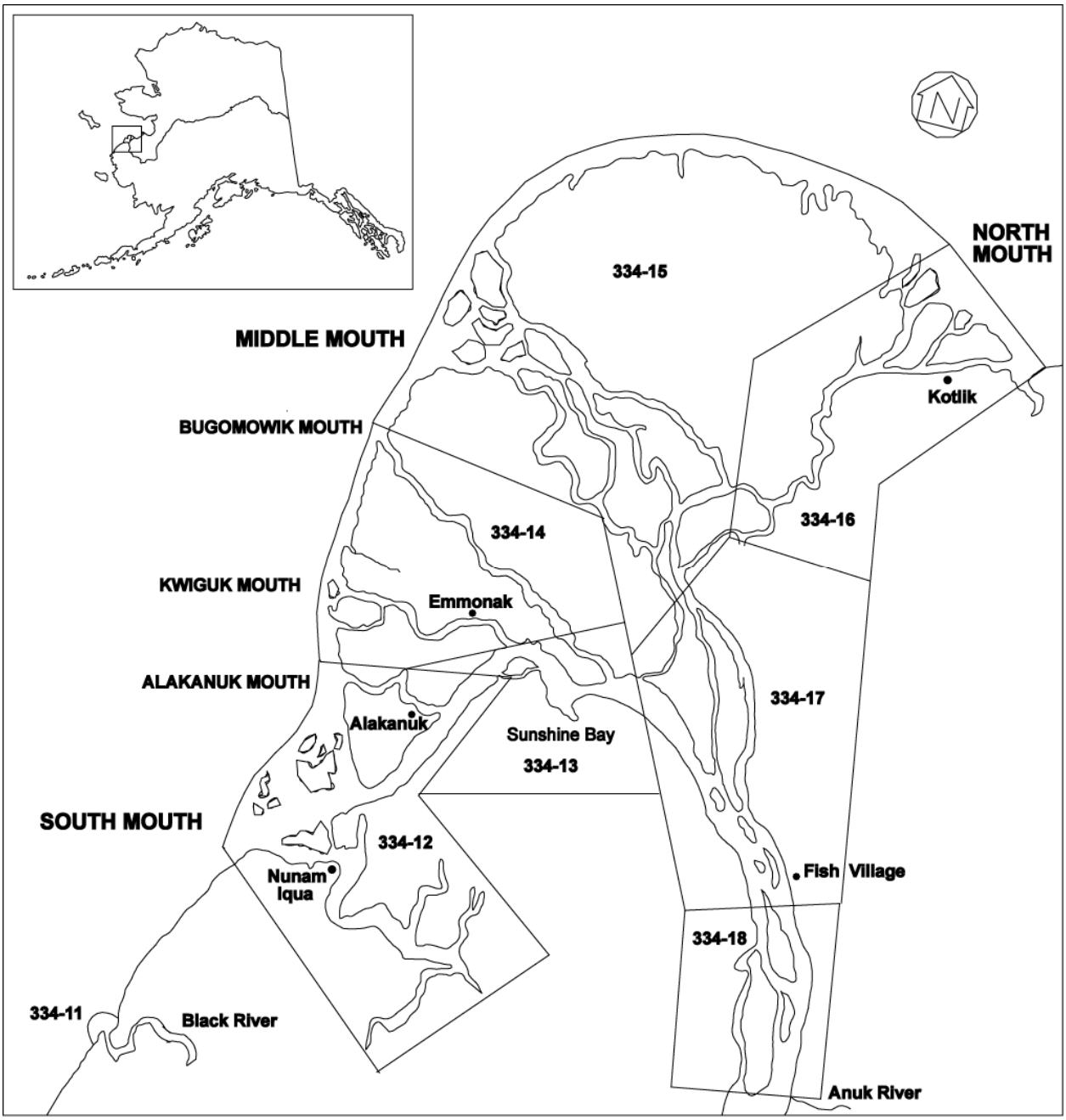

Figure 3.–District 1 showing statistical areas, Yukon Area, 2002 to 2004.

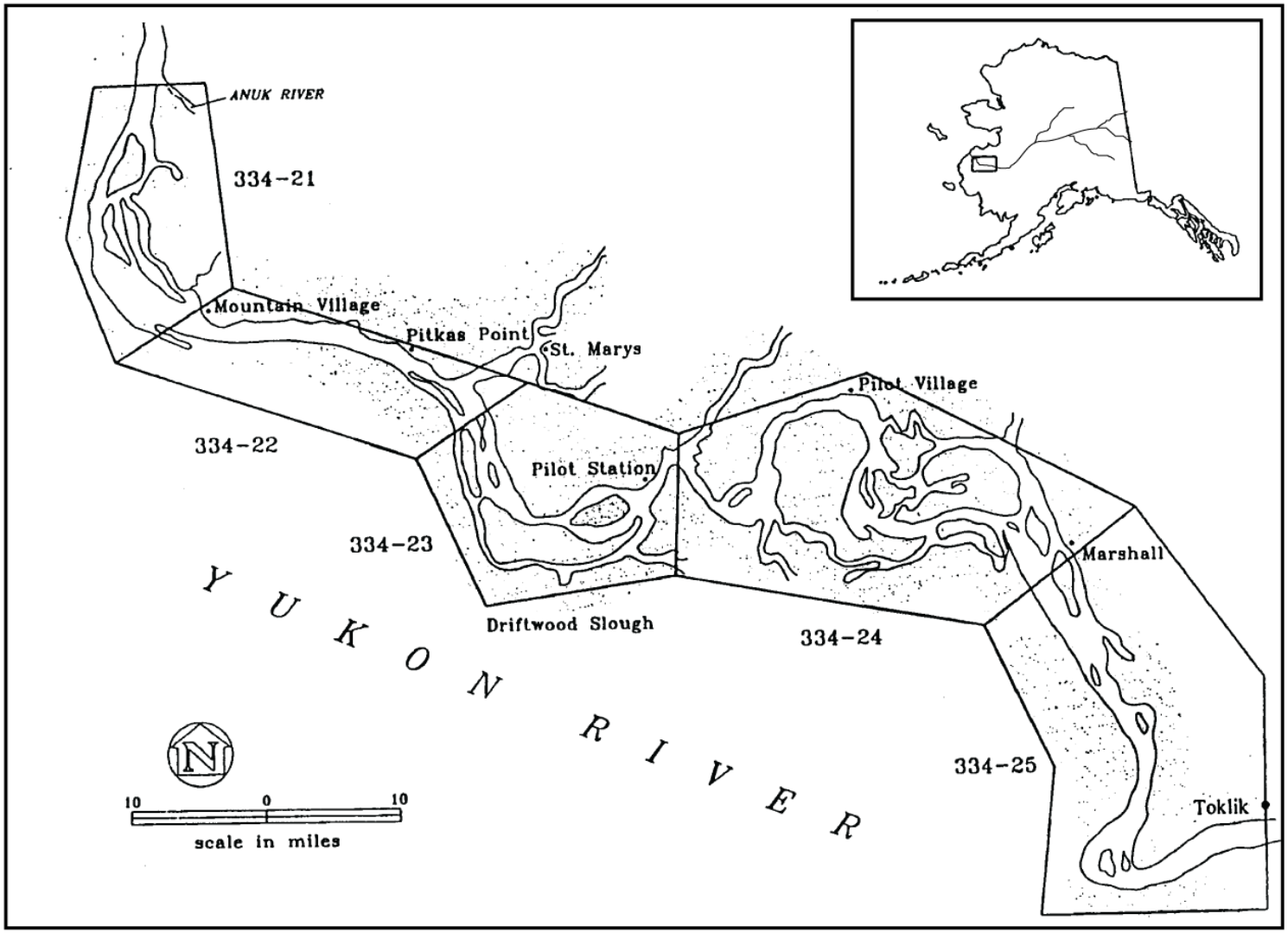

Figure 4.–District 2 showing statistical areas, Yukon Area, 2002 to 2004.

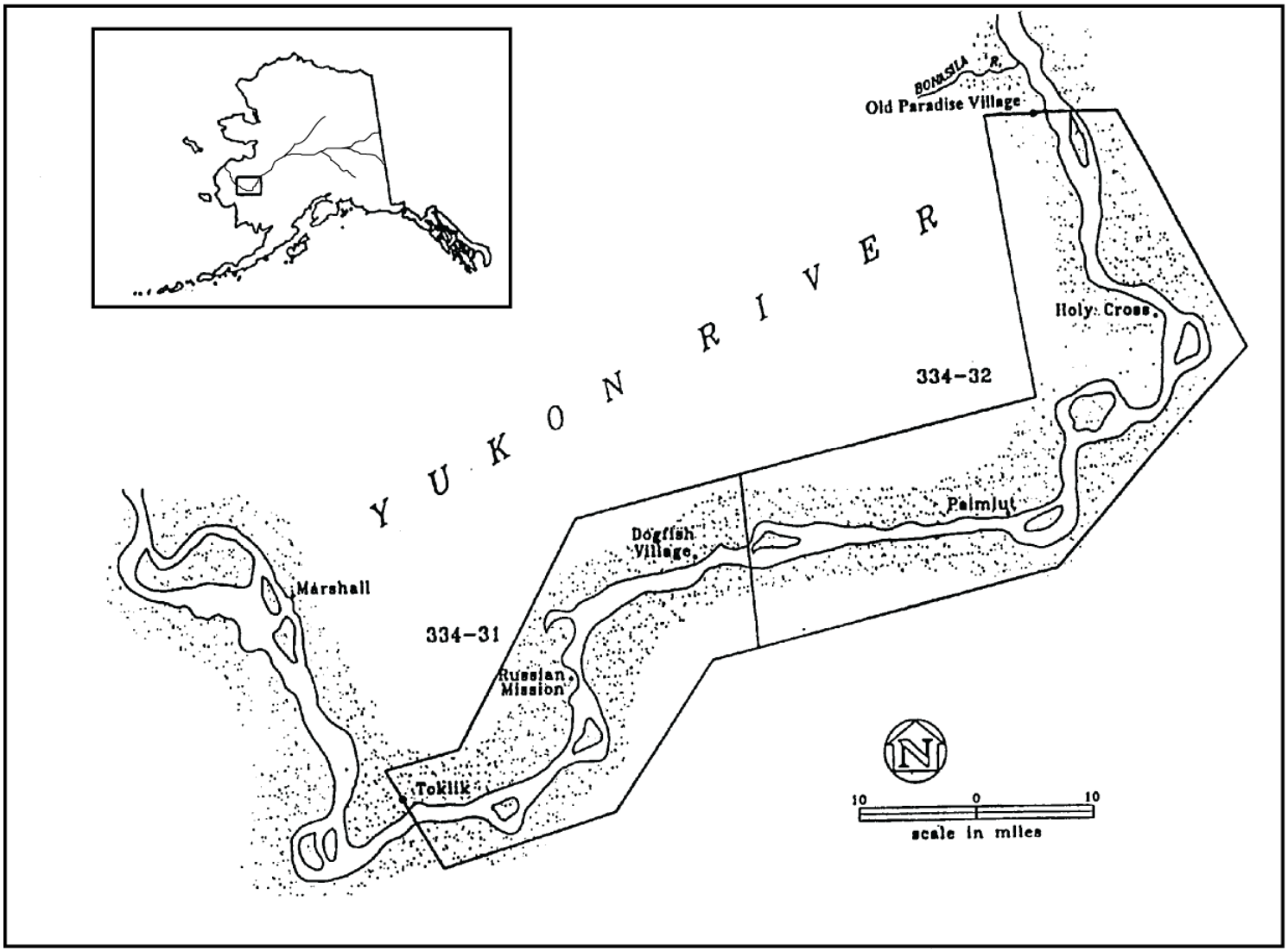

Figure 5.–District 3 showing statistical areas, Yukon Area, 2002 to 2004.

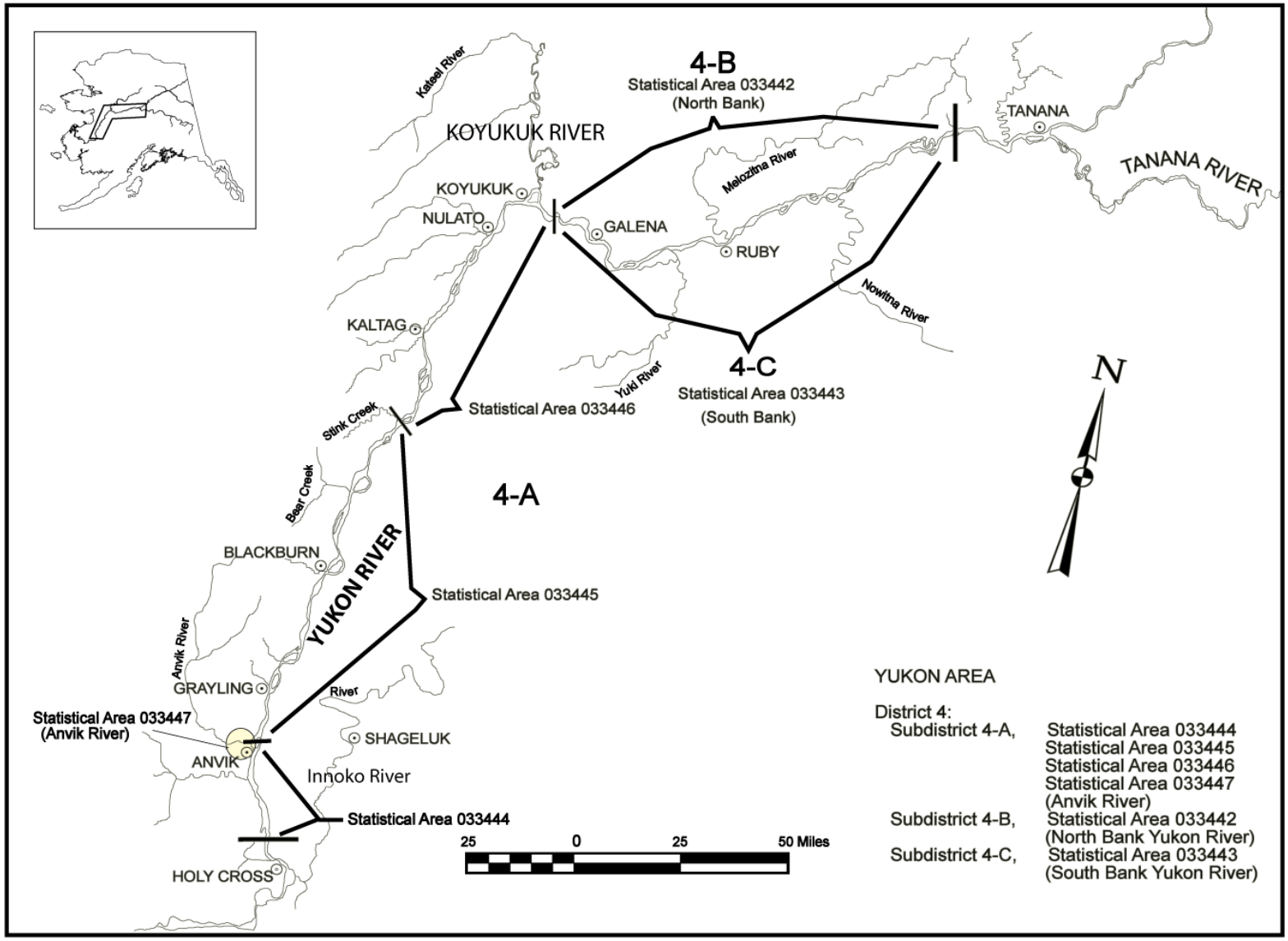

Figure 6.–District 4 showing statistical areas, Yukon Area, 2002 to 2004.

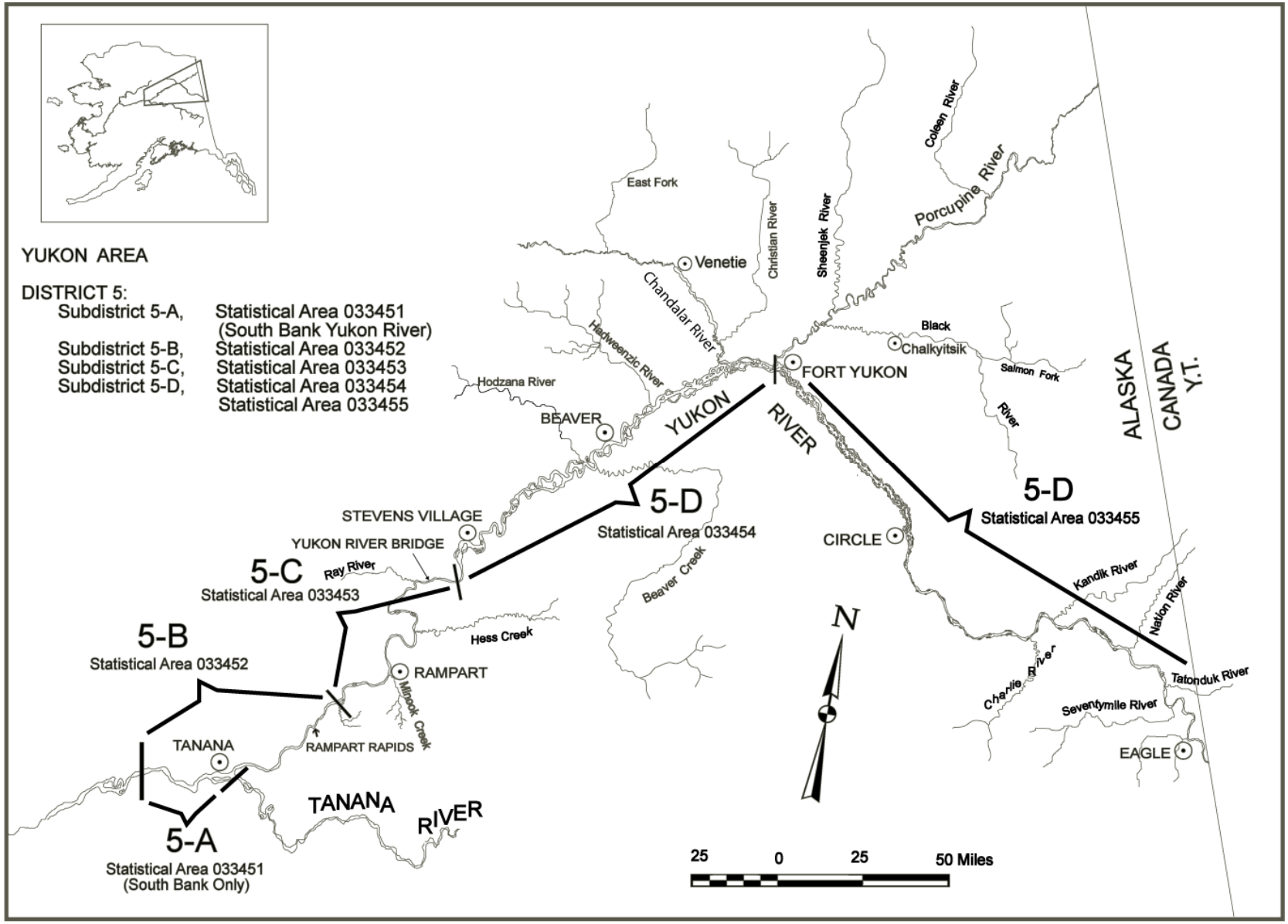

Figure 7.–District 5 showing statistical areas, Yukon Area, 2002 to 2004.

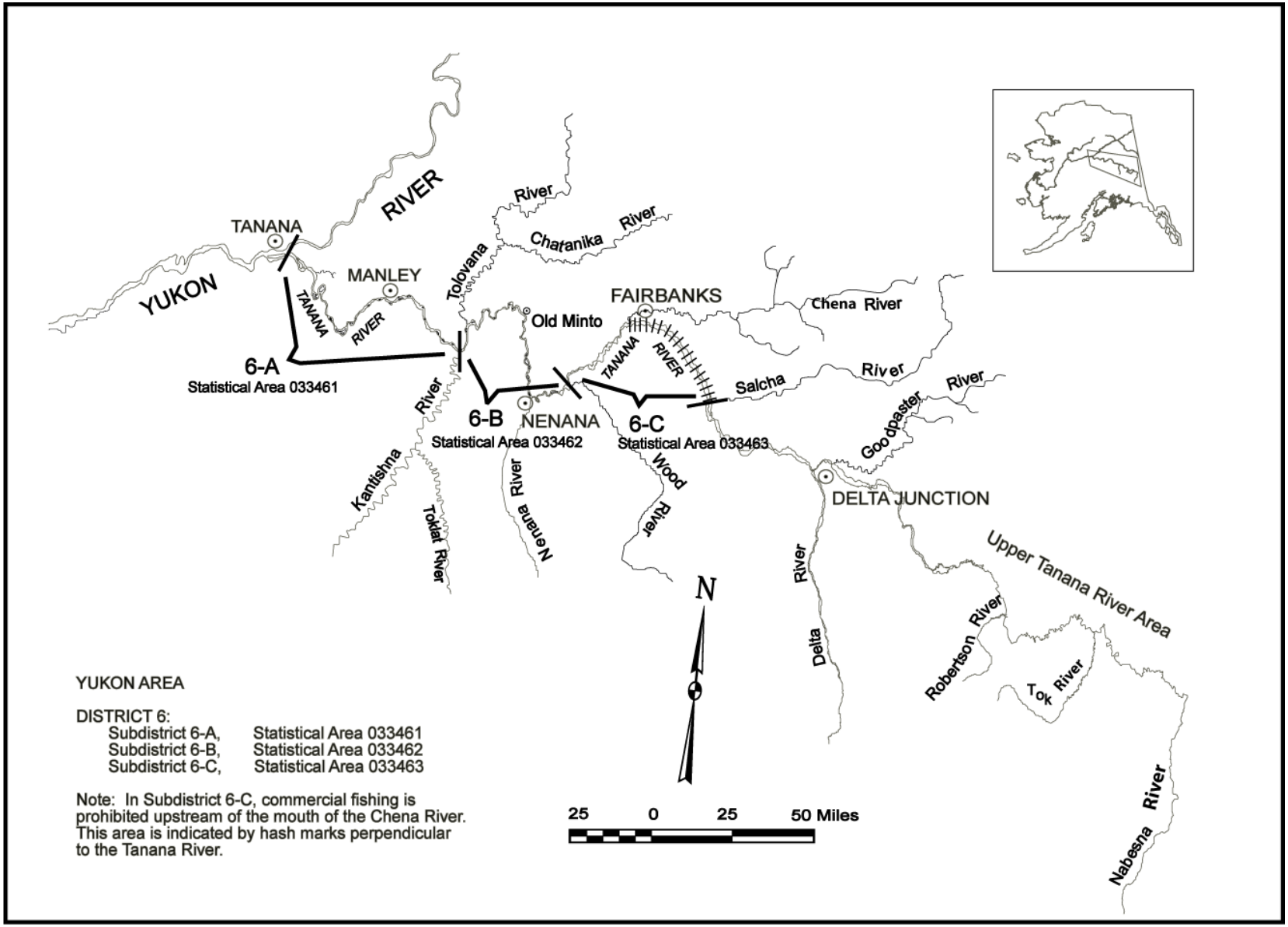

Figure 8.–District 6 showing statistical areas, Yukon Area, 2002 to 2004.

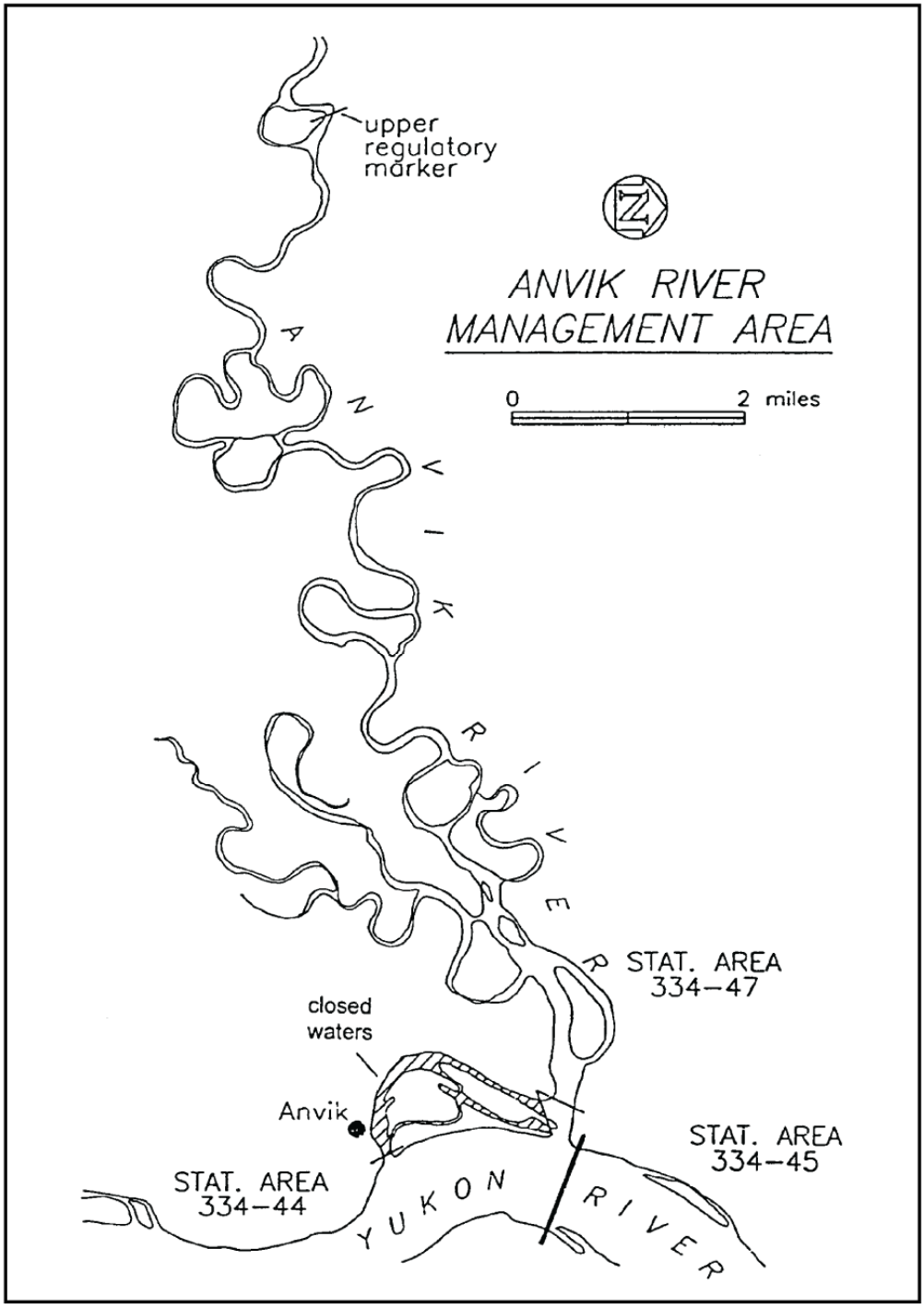

Figure 9.–Anvik River Management Area, Yukon Area, 2002 to 2004.

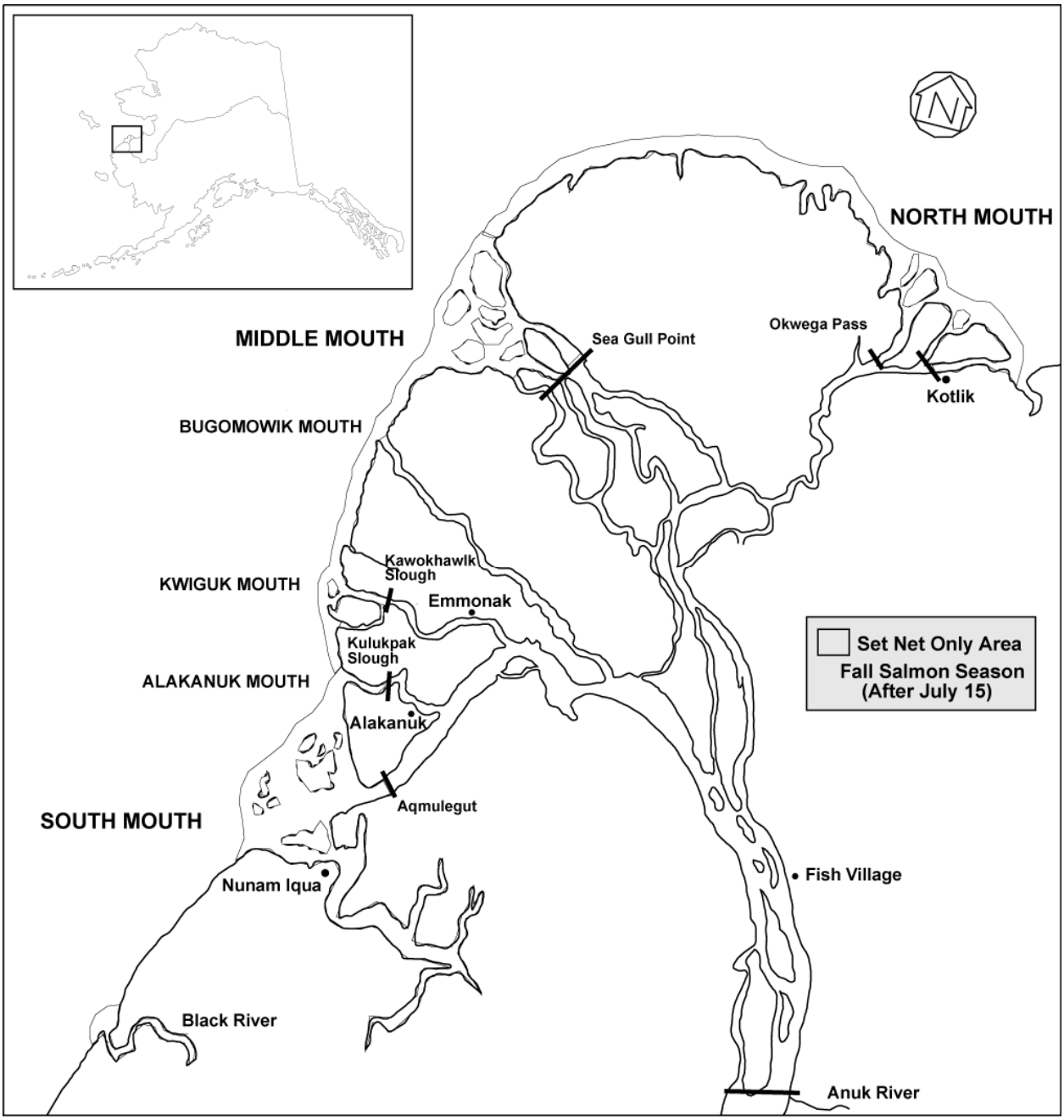

Figure 10.–Set Gillnet Only Area of District 1, Lower Yukon Area, 2002 to 2004.

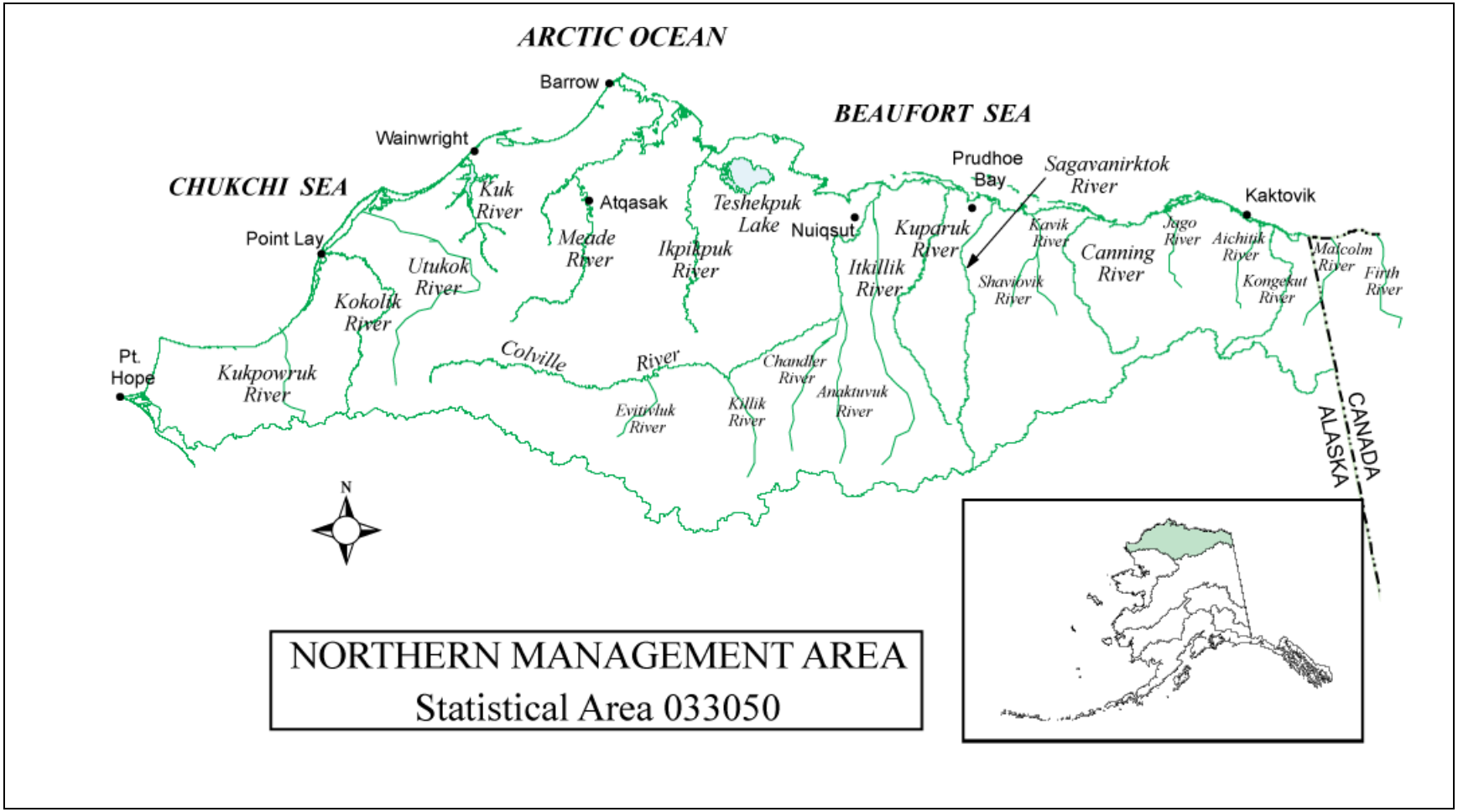

Figure 11.–The Northern Management Area, 2002 to 2004.

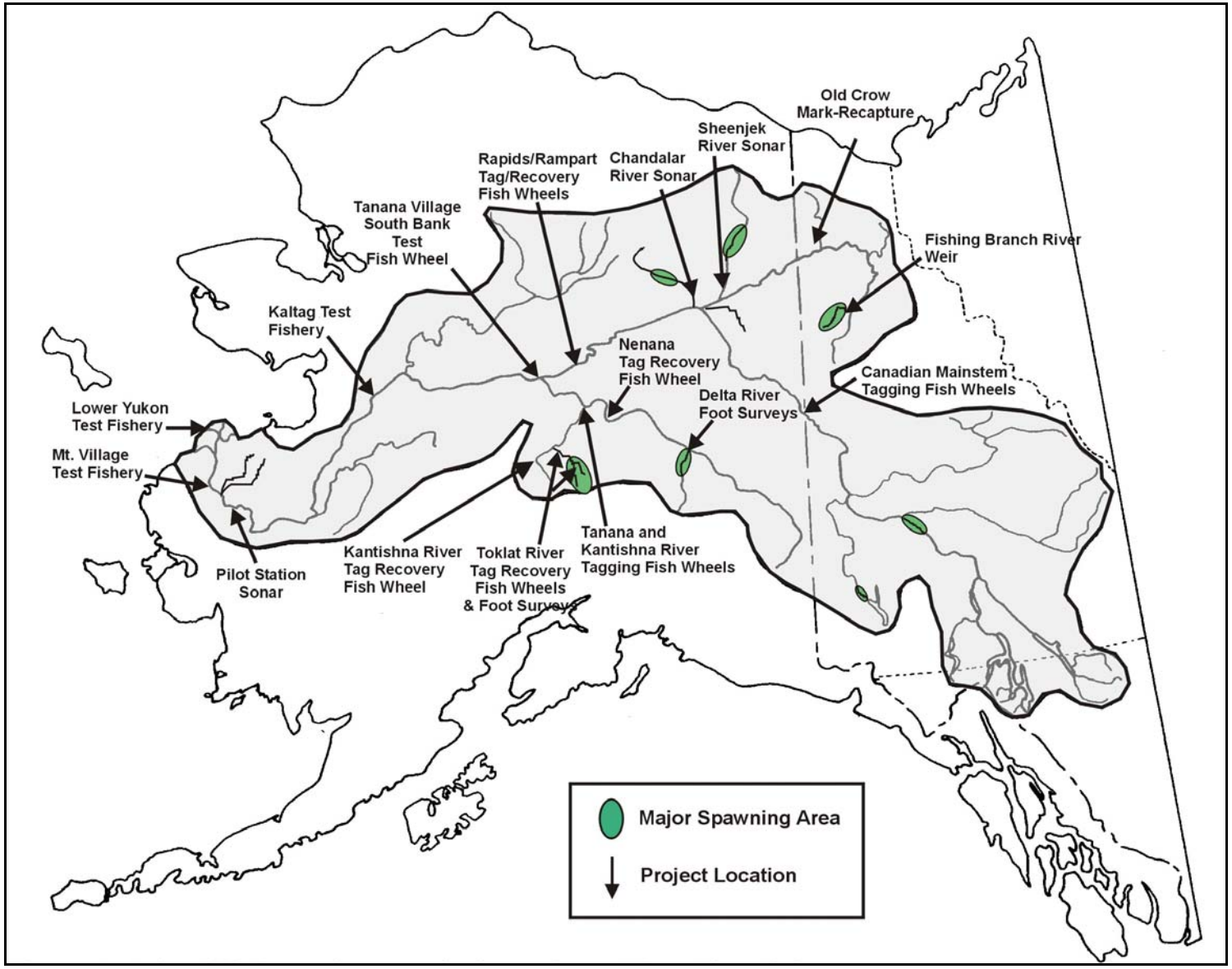

Figure 12.–Select fall chum salmon monitoring projects, Yukon River drainage.

APPENDIX A

Appendix A1.–List of indigenous fishes found in the Yukon Area.

Species Code [a]	Scientific Name	Common Name
601	*Lampetra japonica*	Arctic Lamprey
570	*Stenodus leucichthys*	Inconnu (Sheefish)
588	*Coregonus nasus*	Broad Whitefish
589	*Coregonus pidschian*	Humpback Whitefish
583	*Coregonus sardinella*	Least Cisco
585	*Coregonus laurettae*	Bering Cisco
586	*Prosopium cylindraceum*	Round Whitefish
587	*Prosopium coulteri*	Pygmy Whitefish
610	*Thymallus arcticus*	Arctic Grayling
550	*Salvelinus namaycush*	Lake Trout
520	*Salvelinus alpinus*	Arctic Char
530	*Salvelinus malma*	Dolly Varden
410	*Oncorhynchus tshawytscha*	Chinook Salmon
420	*Oncorhynchus nerka*	Sockeye Salmon
430	*Oncorhynchus kisutch*	Coho Salmon
440	*Oncorhynchus gorbuscha*	Pink Salmon
450	*Oncorhynchus keta*	Chum Salmon
513	*Osmerus mordax*	Rainbow Smelt
514	*Hypomesus olidus*	Pond Smelt
500	*Esox lucius*	Northern Pike
630	*Dallia pectoralis*	Alaska Blackfish
650	*Couesius plumbeus*	Lake Chub
640	*Catostomus catostomus*	Longnose Sucker
670	*Percopsis omiscomaycus*	Trout Perch
590	*Lota lota*	Burbot (lush)
661	*Pungitius pungitius*	Ninespine Stickleback
162	*Cottus cognatus*	Slimy Sculpin
ESTUARINE		
113	*Eleginus gracilis*	Saffron Cod
122	*Liopsetta glacialis*	Arctic Flounder
127	*Limanda aspera*	Yellowfin Sole
129	*Platichthys stellatus*	Starry Flounder
192	*Hexagrammos stelleri*	Whitespotted Greenling
230	*Clupea harengus pallas*	Pacific Herring
516	*Mallotus villosus*	Capelin
NA	*Megalocottus platycephalus*	Sculpin

Note: Includes fishes found in the Yukon River drainage in Canada.

[a] The species code is a 3-digit number that identifies the type of fish caught on harvest fish tickets.

Appendix A2.–Yukon River drainage mileage.

Location	Mileage from Mouth
NORTH MOUTH (APOON PASS)	
Kotlik	6
Hamilton	26
MIDDLE MOUTH (KWIKPAK,KAWANAK PASS)	
Choolunawick	16
Akers Camp	26
New Hamilton	34
SOUTH MOUTH (KWIKLUAK PASS)	
Mouth, Black River	-18
Flat Island	0
Sheldon Point	5
Tin Can Point	8
Alakanuk	17
Emmonak-Kwiguk (Kwiguk Pass)	24
Sunshine Bay	24
Aproka Pass (upstream mouth)	35
Kwikpak Pass (upstream mouth)	44
Head of Passes	48
Fish Village	52
Mouth, Anuk River	63
(District 1/2 Boundary)	
Patsys Cabin	71
Mountain Village	87
Old Andreafsky	97
Pitkas Point	103
Mouth, Andreafsky River	104
St. Marys	107
Pilot Station	122
Mouth, Atcheulinguk (Chulinak) River	126
Pilot Village	138
Marshall (Fortuna Ledge)	161
Upstream Mouth Owl Slough	163
Ingrihak	170
Ohogamuit	185
Toklik	191
(District 2/3 Boundary)	
Kakamut	193
Russian Mission	213
Dogfish Village	227
Paimuit	251
Mouth, Innoko River (South Slough)	274
Shageluk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Old Paradise Village	301
(District 3/4 Boundary)	
Mouth, Bonasila River	306
Anvik	317
Mouth, Anvik River	318
Grayling	336
Mouth, Thompson Creek	349
Blackburn	370
Eagle Slide	402
Mouth, Rodo River	447
Kaltag	450
Mouth, Nulato River	483
Nulato	484
Koyukuk	502
Mouth, Koyukuk River	508
Mouth, Gisasa River	564
Huslia	711
Mouth, Dakli River	755
Mouth, Hogatza River	780
Hughes	881
Mouth, Kanuti River	935
Alatna (Mouth, Alatna R.)	956
Allakaket	956
Mouth, South Fork	986
Mouth, John River	1,117
Bettles	1,121
Middle Fork	1,141
Cold Foot	1,174
Wiseman	1,186
Bishop Rock	514
Prospect Point	519
Galena	530
Whiskey Creek	555
Mouth, Yuki River	562
Ruby	581
Mouth, Melozitna River	583
Horner Hot Springs	605
Kokrines	608
Mouth, Nowitna River	612
Birches	647
Kallands-Mouth of Illinois Creek	664
(District 4/5 Boundary)	
Mouth, Tozitna River	681
Tanana Village	695
Mouth, Tanana River	695
(District 5/6 Boundary)	
Manley Hot Springs	765
Mouth, Kantishna River	793
Mouth, Toklat River	838
Mouth, Sushana R.	850
Mouth, Bearpaw River	887
Outlet, L. Minchumina	959
Minto	835
Nenana	860

-continued-

Appendix A2.–Page 2 of 2.

Location	Mileage from Mouth
Mouth, Nenana River	860
Mouth, Wood River	894
Rosie Creek Bluffs	912
Mouth, Chena R.(Fairbanks)	920
Mouth, Salcha River	965
Benchmark #735 Slough	991
Mouth, Little Delta R.	1,000
Mouth, Delta Creek	1,014
Mouth, Clear Creek (Richardson-Clearwater)	1,015
Mouth, Shaw Creek	1,021
Mouth, Delta River (Big Delta)	1,031
Delta Junction	1,041
Mouth, Goodpaster River	1,049
Bluff Cabin Slough	1,050
Outlet, Clearwater Lake	1,052
Outlet, Clearwater Crk (Delta Clearwater)	1,053
Mouth, Gerstle River	1,059
Outlet, Healy Lake	1,071
Outlet, Lake George	1,086
Tanacross	1,128
Outlet, Tetlin Lake	1,188
Mouth, Nabesna River	1,210
Northway Junction	1,214
Mouth, Chisana River	1,215
Mouth, Sheep Creek	1,297
Rampart Rapids	731
Rampart	763
Mouth, Hess Creek	789
Mouth, Ray River	817
Highway Bridge - Pipeline Crossing	820
Mouth, Dall River	841
Stevens Village	847
Mouth, Hodzana River	897
Beaver	932
Mouth Hadweenzic River	952
Mouth, Chandalar River (Venetie Landing)	982
Venetie	1,025
Fort Yukon	1,002
Mouth, Porcupine River	1,002
Mouth, Black River	1,026
Chalkyitsik	1,084
Mouth, Salmon Fork R.	1,142
Mouth, Sheenjek River	1,054
Mouth, Coleen River	1,157
Mouth, Salmon Trout R.	1,193
U.S. - Canadian Border	1,219
Old Crow	1,259
Fishing Branch R. spawning area	1,600
Circle	1,061
Woodchopper	1,110
Mouth, Charley River	1,124
Mouth, Kandik River	1,135
Mouth, Nation River	1,166
Mouth, Tatonduk River	1,186
Mouth, Seventymile River	1,194
Eagle	1,213
U.S.-Canadian border	1,224
Mouth, Fortymile River	1,269
Dawson	1,319
Mouth, Klondike River	1,320
Mouth, Sixty Mile River	1,369
Mouth, Stewart River	1,375
McQuesten	1,455
Stewart Crossing	1,491
Mayo	1,520
Mouth, Hess River	1,594
Mouth, White River	1,386
Mouth, Donjek River	1,455
Mouth Kluane River	1,541
Outlet Kluane L.	1,587
Burwash Landing	1,595
Kluane	1,625
Fort Selkirk	1,477
Mouth, Pelly River	1,478
Pelly Crossing	1,510
Mouth, MacMillan River	1,542
Ross River	1,602
Minto	1,499
Mouth Tatchun Creek	1,530
Carmacks	1,547
Mouth, Little Salmon River	1,583
Mouth, Big Salmon River	1,621
Mouth, N. Big Salmon R.	1,641
Mouth, S. Big Salmon R.	1,657
Outlet, Big Salmon Lake	1,714
Mouth, Teslin River	1,654
Roaring Bull Rapids	1,707
Johnson's Crossing (Outlet, Teslin L.)	1,756
Teslin	1,780
Mouth Nisutlin River	1,788
Mouth, Sidney Creek	1,837
Mouth, Hundred Mi. Creek	1,851
Mouth, NcNeil River	1,887
Outlet, Nisutlin Lake	1,892
Outlet, Lake Laberge	1,679
Inlet, Lake Laberge	1,712
Mouth, Takhini River	1,718
Whitehorse	1,745
Outlet, Marsh Lake	1,764
Mouth, M'Clintock River	1,769
Outlet, Little Atlin L.	1,788
Outlet, Atlin Lake	1,812
Atlin	1,844
Tagish	1,786
Outlet, Tagish Lake	1,788
Carcross (Outlet L.Bennett)	1,810
Bennett	1,835

Appendix A3.–Alaskan and Canadian total utilization of Yukon River drainage salmon, in numbers of fish, 1903–2004.

	Alaska [a,b]			Canada [c]			Total		
Year	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1903						4,666			4,666
1904									
1905									
1906									
1907									
1908						7,000			7,000
1909						9,238			9,238
1910									
1911									
1912									
1913						12,133			12,133
1914						12,573			12,573
1915						10,466			10,466
1916						9,566			9,566
1917									
1918	12,239	1,500,065	1,512,304			7,066	12,239	1,500,065	1,519,370
1919	104,822	738,790	843,612			1,800	104,822	738,790	845,412
1920	78,467	1,015,655	1,094,122			12,000	78,467	1,015,655	1,106,122
1921	69,646	112,098	181,744			10,840	69,646	112,098	192,584
1922	31,825	330,000	361,825			2,420	31,825	330,000	364,245
1923	30,893	435,000	465,893			1,833	30,893	435,000	467,726
1924	27,375	1,130,000	1,157,375			4,560	27,375	1,130,000	1,161,935
1925	15,000	259,000	274,000			3,900	15,000	259,000	277,900
1926	20,500	555,000	575,500			4,373	20,500	555,000	579,873
1927		520,000	520,000			5,366		520,000	525,366
1928		670,000	670,000			5,733		670,000	675,733
1929		537,000	537,000			5,226		537,000	542,226
1930		633,000	633,000			3,660		633,000	636,660
1931	26,693	565,000	591,693			3,473	26,693	565,000	595,166
1932	27,899	1,092,000	1,119,899			4,200	27,899	1,092,000	1,124,099
1933	28,779	603,000	631,779			3,333	28,779	603,000	635,112
1934	23,365	474,000	497,365			2,000	23,365	474,000	499,365
1935	27,665	537,000	564,665			3,466	27,665	537,000	568,131
1936	43,713	560,000	603,713			3,400	43,713	560,000	607,113
1937	12,154	346,000	358,154			3,746	12,154	346,000	361,900
1938	32,971	340,450	373,421			860	32,971	340,450	374,281
1939	28,037	327,650	355,687			720	28,037	327,650	356,407
1940	32,453	1,029,000	1,061,453			1,153	32,453	1,029,000	1,062,606
1941	47,608	438,000	485,608			2,806	47,608	438,000	488,414
1942	22,487	197,000	219,487			713	22,487	197,000	220,200
1943	27,650	200,000	227,650			609	27,650	200,000	228,259
1944	14,232		14,232			986	14,232		15,218
1945	19,727		19,727			1,333	19,727		21,060
1946	22,782		22,782			353	22,782		23,135
1947	54,026		54,026			120	54,026		54,146
1948	33,842		33,842				33,842		33,842
1949	36,379		36,379				36,379		36,379
1950	41,808		41,808				41,808		41,808
1951	56,278		56,278				56,278		56,278
1952	38,637	10,868	49,505				38,637	10,868	49,505
1953	58,859	385,977	444,836				58,859	385,977	444,836
1954	64,545	14,375	78,920				64,545	14,375	78,920
1955	55,925		55,925				55,925		55,925
1956	62,208	10,743	72,951				62,208	10,743	72,951
1957	63,623		63,623				63,623		63,623
1958	75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625
1959	78,370		78,370	8,434	3,098	11,532	86,804	3,098	89,902
1960	67,597		67,597	9,653	15,608	25,261	77,250	15,608	92,858

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	Alaska [a,b]			Canada [c]			Total		
Year	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1961	141,152	461,597	602,749	13,246	9,076	22,322	154,398	470,673	625,071
1962	105,844	434,663	540,507	13,937	9,436	23,373	119,781	444,099	563,880
1963	141,910	429,396	571,306	10,077	27,696	37,773	151,987	457,092	609,079
1964	109,818	504,420	614,238	7,408	12,187	19,595	117,226	516,607	633,833
1965	134,706	484,587	619,293	5,380	11,789	17,169	140,086	496,376	636,462
1966	104,887	309,502	414,389	4,452	13,192	17,644	109,339	322,694	432,033
1967	146,104	352,397	498,501	5,150	16,961	22,111	151,254	369,358	520,612
1968	118,632	270,818	389,450	5,042	11,633	16,675	123,674	282,451	406,125
1969	105,027	424,399	529,426	2,624	7,776	10,400	107,651	432,175	539,826
1970	93,019	585,760	678,779	4,663	3,711	8,374	97,682	589,471	687,153
1971	136,191	547,448	683,639	6,447	16,911	23,358	142,638	564,359	706,997
1972	113,098	461,617	574,715	5,729	7,532	13,261	118,827	469,149	587,976
1973	99,670	779,158	878,828	4,522	10,135	14,657	104,192	789,293	893,485
1974	118,053	1,229,678	1,347,731	5,631	11,646	17,277	123,684	1,241,324	1,365,008
1975	76,883	1,307,037	1,383,920	6,000	20,600	26,600	82,883	1,327,637	1,410,520
1976	105,582	1,026,908	1,132,490	5,025	5,200	10,225	110,607	1,032,108	1,142,715
1977	114,494	1,090,758	1,205,252	7,527	12,479	20,006	122,021	1,103,237	1,225,258
1978	129,988	1,615,312	1,745,300	5,881	9,566	15,447	135,869	1,624,878	1,760,747
1979	159,232	1,596,133	1,755,365	10,375	22,084	32,459	169,607	1,618,217	1,787,824
1980	197,665	1,730,960	1,928,625	22,846	23,718 [d]	46,564	220,511	1,754,678	1,975,189
1981	188,477	2,097,871	2,286,348	18,109	22,781 [d]	40,890	206,586	2,120,652	2,327,238
1982	152,808	1,265,457	1,418,265	17,208	16,091 [d]	33,299	170,016	1,281,548	1,451,564
1983	198,436	1,678,597	1,877,033	18,952	29,490 [d]	48,442	217,388	1,708,087	1,925,475
1984	162,683	1,548,101	1,710,784	16,795	29,767 [d]	46,562	179,478	1,577,868	1,757,346
1985	187,327	1,657,984	1,845,311	19,301	41,515 [d]	60,816	206,628	1,699,499	1,906,127
1986	146,004	1,758,825	1,904,829	20,364	14,843 [d]	35,207	166,368	1,773,668	1,940,036
1987	188,386	1,246,176	1,434,562	17,614	44,786 [d]	62,400	206,000	1,290,962	1,496,962
1988	148,421	2,311,214	2,459,635	21,427	33,915 [d]	55,342	169,848	2,345,129	2,514,977
1989	157,606	2,281,566	2,439,172	17,944	23,490 [d]	41,434	175,550	2,305,056	2,480,606
1990	149,433	1,053,351	1,202,784	19,227	34,302 [d]	53,529	167,114	1,059,943	1,256,313
1991	154,651	1,335,111	1,489,762	20,607	35,653 [d]	56,260	175,258	1,370,764	1,546,022
1992	168,191	863,575	1,031,766	17,903	21,310 [d]	39,213	186,094	884,885	1,070,979
1993	163,078	342,197	505,275	16,611	14,150 [d]	30,761	179,689	356,347	536,036
1994	172,315	577,233	749,548	21,218	38,342	59,560	193,533	615,575	809,108
1995	177,663	1,437,837	1,615,500	20,887	46,109	66,996	198,550	1,483,946	1,682,496
1996	138,562	1,121,181	1,259,743	19,612	24,395	44,007	158,174	1,145,576	1,303,750
1997	174,625	544,879	719,504	16,528	15,878	32,406	191,153	560,757	751,910
1998	99,369	199,735	299,104	5,937 [f]	8,115	14,052	105,306	207,850	313,156
1999	124,315	234,221	358,536	12,468	19,506	31,974	136,783	253,727	390,510
2000	45,308	106,936	152,244	4,829 [g]	9,273	14,102	50,137	116,209	166,346
2001	53,738	116,477	170,215	10,139	9,881	20,020	63,877	126,358	190,235
2002	67,360	122,142	189,502	9,257	8,493	17,750	76,617	130,635	207,252
2003	98,470	199,798	298,268	9,619	11,885	21,504	108,089	211,683	319,772
2004 [h]	111,540	205,882	317,422	11,238	9,930	21,168	122,778	215,812	338,590

[a] Includes estimated number of salmon harvested for the commercial production of roe.
[b] Commercial, subsistence, personal-use, and sport catches combined. Does not include test fish sales.
[c] Aboriginal, Domestic, Commercial, test fishery, and sport catches combined.
[d] Includes the Old Crow Aboriginal fishery harvest of coho salmon.
[f] Catch includes 761 Chinook salmon taken in the mark-recapture test fishery.
[g] Catch includes 737 Chinook salmon taken in the test fishery.
[h] Data are preliminary March 2006.

Appendix A4.–Commercial Chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961–2004.

	Lower Yukon Area [b]				Upper Yukon Area [a]														
					District 4			District 5			District 6			Subtotal			Total		
Year	District 1	District 2	District 3	Subtotal	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Estimated Harvest [c]	Canada Total	Grand Total
1961	84,466	29,026	4,368	117,860	-	-	-	-	-	-	-	-	-	1,804	-	1,804	119,664	3,446	123,110
1962	67,099	22,224	4,687	94,010	-	-	-	-	-	-	-	-	-	724	-	724	94,734	4,037	98,771
1963	85,004	24,221	7,020	116,245	-	-	-	-	-	-	-	-	-	803	-	803	117,048	2,283	119,331
1964	67,555	20,246	4,705	92,506	-	-	-	-	-	-	-	-	-	1,081	-	1,081	93,587	3,208	96,795
1965	89,268	23,763	3,204	116,235	-	-	-	-	-	-	-	-	-	1,863	-	1,863	118,098	2,265	120,363
1966	70,788	16,927	3,612	91,327	-	-	-	-	-	-	-	-	-	1,988	-	1,988	93,315	1,942	95,257
1967	104,350	20,239	3,618	128,207	-	-	-	-	-	-	-	-	-	1,449	-	1,449	129,656	2,187	131,843
1968	79,465	21,392	4,543	105,400	-	-	-	-	-	-	-	-	-	1,126	-	1,126	106,526	2,212	108,738
1969	71,688	14,756	3,595	90,039	-	-	-	-	-	-	-	-	-	988	-	988	91,027	1,640	92,667
1970	56,648	17,141	3,705	77,494	-	-	-	-	-	-	-	-	-	1,651	-	1,651	79,145	2,611	81,756
1971	86,042	19,226	3,490	108,758	-	-	-	-	-	-	-	-	-	1,749	-	1,749	110,507	3,178	113,685
1972	70,052	17,855	3,841	91,748	-	-	-	-	-	-	-	-	-	1,092	-	1,092	92,840	1,769	94,609
1973	56,981	13,859	3,204	74,044	-	-	-	-	-	-	-	-	-	1,309	-	1,309	75,353	2,199	77,552
1974 [d]	71,840	17,948	3,480	93,268	685	-	685	2,663	-	2,663	1,473	-	1,473	4,821	-	4,821	98,089	1,808	99,897
1975	44,585	11,315	4,177	60,077	389	-	389	2,872	-	2,872	500	-	500	3,761	-	3,761	63,838	3,000	66,838
1976	62,410	16,556	4,148	83,114	409	-	409	3,151	-	3,151	1,102	-	1,102	4,662	-	4,662	87,776	3,500	91,276
1977	69,915	16,722	3,965	90,602	985	-	985	4,162	-	4,162	1,008	-	1,008	6,155	-	6,155	96,757	4,720	101,477
1978	59,006	32,924	2,916	94,846	608	-	608	3,079	-	3,079	635	-	635	4,322	-	4,322	99,168	2,975	102,143
1979	75,007	41,498	5,018	121,523	1,989	-	1,989	3,389	-	3,389	772	-	772	6,150	-	6,150	127,673	6,175	133,848
1980	90,382	50,004	5,240	145,626	1,521	-	1,521	4,891	-	4,891	1,947	-	1,947	8,359	-	8,359	153,985	9,500	163,485
1981	99,506	45,781	4,023	149,310	1,347	-	1,347	6,374	-	6,374	987	-	987	8,708	-	8,708	158,018	8,593	166,611
1982	74,450	39,132	2,609	116,191	1,087	-	1,087	5,385	-	5,385	981	-	981	7,453	-	7,453	123,644	8,640	132,284
1983	95,457	43,229	4,106	142,792	601	-	601	3,606	-	3,606	911	-	911	5,118	-	5,118	147,910	13,027	160,937
1984	74,671	36,697	3,039	114,407	961	-	961	3,669	-	3,669	867	-	867	5,497	-	5,497	119,904	9,885	129,789
1985	90,011	48,365	2,588	140,964	664	-	664	3,418	-	3,418	1,142	-	1,142	5,224	-	5,224	146,188	12,573	158,761
1986	53,035	41,849	901	95,785	502	-	502	2,733	-	2,733	950	-	950	4,185	-	4,185	99,970	10,797	110,767
1987 [f]	76,643	47,458	2,039	126,140	1,524	-	1,524	3,758	-	3,758	3,338	-	3,338	8,620	-	8,620	134,760	10,864	145,624
1988	56,120	35,120	1,767	93,007	3,159	-	3,159	3,436	-	3,436	762	-	762	7,357	-	7,357	100,364	13,217	113,581
1989	61,570 [g]	33,166	1,645	96,381	2,790	-	2,790	3,286	-	3,286	1,741	-	1,741	7,817	-	7,817	104,198	9,789	113,987
1990	51,199 [h]	33,061	2,341	86,601	3,536	8	3,538	3,353	47	3,365	1,757	1,676	2,156	8,646	1,731	9,059	95,660	11,324	106,984
1991 [j]	56,332	39,260	2,344	97,936	2,446	2,222	3,582	3,810	62	3,826	686	1,545	1,072	6,942	3,829	8,480	106,416	10,906	117,322
1992 [k]	74,212	38,139	1,819	114,170	1,651	2,273	2,394	3,852	7	3,855	572	884	753	6,075	3,164	7,002	121,172	10,877	132,049
1993	49,286	37,293	1,501	88,080	1,349	701	1,577	3,008	0	3,008	1,113	1,313	1,445	5,470	2,014	6,030	94,110	10,350	104,460
1994	62,241	41,692	1,114	105,047	2,216	564	2,443	3,739	10	3,744	2,135	1,820	2,606	8,090	2,394	8,793	113,840	12,028	125,868
1995	76,106	41,458	0	117,564	262	626	499	3,242	0	3,242	1,660	4,731	2,747	5,164	5,357	6,488	124,052	11,146	135,198
1996	56,642	30,209	0	86,851	45	202	137	2,497	518	2,757	278	750	447	2,820	1,470	3,341	90,192	10,164	100,356
1997	66,384	39,363	0	105,747	1,450	14	1,457	3,678	0	3,678	1,966	3,211	2,728	7,094	3,225	7,863	113,610	5,311	118,921
1998	25,413	16,806	0	42,219	0	0	0	517	0	517	882	260	963	1,399	260	1,480	43,699	390	44,089
1999	37,161	27,133	538	64,832	1,437	0	1,437	2,604	0	2,604	402	1,096	689	4,443	1,096	4,730	69,562	3,160	72,722
2000 [m]	4,735	3,783	0	8,518	0	0	0	0	0	0	0	0	0	0	0	0	8,518	0	8,518
2001 [n]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,351	1,351
2002	11,087	11,434	0	22,521	0	0	0	771	0	771	836	896	1,066	1,607	896	1,837	24,358	708	25,066
2003 [p]	22,709	14,220	0	36,929	562	0	562	1,134	0	1,134	1,813	0	1,813	3,509	0	3,509	40,438	2,672	43,110
2004	28,403	24,145	0	52,548	0	0	0	1,546	0	1,546	2,057	0	2,057	3,603	0	3,603	56,151	3,785	59,936
1994-2003 Average	36,248	22,610	165	59,023	597	141	654	1,818	53	1,845	997	1,276	1,306	3,413	1,470	3,804	62,827	4,693	67,520
1999-2003 Average	15,138	11,314	108	26,560	400	0	400	902	0	902	610	398	714	1,912	398	2,015	28,575	1,578	30,153

[a] Harvest reported in numbers of fish sold in the round and pounds of roe sold. Since 1990, efforts were made to separate Chinook roe from summer chum roe. Does not include department test fish sales.
[b] All fish sold in the round. Includes department test fish sales prior to 1988.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.
[d] In 1974, District 4 was subdivided to include Districts 5 and 6.
[f] Includes the illegal sales of 653 Chinook salmon in District 5, and 2,136 Chinook salmon in District 6.
[g] Includes the illegal sales of 3,211 Chinook salmon.
[h] Includes the illegal sales of 1,101 Chinook salmon.
[j] Includes the illegal sales of 2,711 Chinook salmon in District 1, and 284 Chinook salmon in District 2.
[k] Includes the illegal sales of 1,218 Chinook salmon in District 1, and 207 Chinook salmon in District 2.
[l] Does not include 6 confiscated Chinook salmon in District 1.
[n] No commercial fishing in 2001.

Appendix A5.–Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1967–2004.

	Lower Yukon Area							
			District 3 [a]			Subtotal		
Year	District 1 [b]	District 2 [b]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]
1967	9,453	1,425	57			10,935	-	10,935
1968	12,995	1,407	68			14,470	-	14,470
1969	56,886	5,080	-			61,966	-	61,966
1970	117,357	19,649	-			137,006	-	137,006
1971	93,928	6,112	50			100,090	-	100,090
1972	114,234	20,907	527			135,668	-	135,668
1973	221,644	63,402	463			285,509	-	285,509
1974 [d]	466,004	74,152	1,721			541,877	-	541,877
1975	418,323	99,139	-			517,462	-	517,462
1976	273,204	99,190	9,802			382,196	-	382,196
1977	250,652	105,679	3,412			359,743	-	359,743
1978	393,785	227,548	27,003			648,336	-	648,336
1979	369,934	172,838	40,015			582,787	-	582,787
1980	391,252	308,704	44,782			744,738	-	744,738
1981	507,158	351,878	54,471			913,507	-	913,507
1982	249,516	182,344	4,086			435,946	-	435,946
1983	451,164	248,092	14,600			713,856	-	713,856
1984	292,676	236,931	1,087			530,694	-	530,694
1985	247,486	188,099	1,792			437,377	-	437,377
1986	381,127	288,427	442			669,996	-	669,996
1987	222,898	174,876	3,501			401,275	-	401,275
1988	645,322	424,461	13,965			1,083,748	-	1,083,748
1989	544,373 [f]	343,032	7,578			894,983	-	894,983
1990	146,725	131,755	643			279,123	-	279,123
1991	140,470 [h]	175,149	8,912			324,531	-	324,531
1992 [l]	177,329	147,129	65			324,523	-	324,523
1993	73,659	19,332	463			93,454	-	93,454
1994	42,332	12,869	35			55,236	-	55,236
1995	142,266	83,817	0			226,083	-	226,083
1996	92,506	30,727	0	935	1,534	123,233	935	124,767
1997	59,915	18,242	0	0	0	78,157	0	78,157
1998	21,270	6,848	0	0	0	28,118	0	28,118
1999	16,181	11,702	0	0	0	27,883	0	27,883
2000 [k]	3,315	3,309	0	0	0	6,624	0	6,624
2001 [m]	0	0	0	0	0	0	0	0
2002	6,327	4,027	0	0	0	10,354	0	10,354
2003	3,579	2,583	0	0	0	6,162	0	6,162
2004	13,993	5,782	0	0	0	19,775	0	19,775
1994-2003 Average	38,769	17,412	4	117	192	56,185	117	56,338
1999-2003 Average	5,880	4,324	0	0	0	10,205	0	10,205

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	Upper Yukon Area [a]														
	District 4			District 5			District 6			Subtotal			Total		
Year	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]
1967	-	-	-	-	-	-	-	-	-	0	0	0	10,935	0	10,935
1968	-	-	-	-	-	-	-	-	-	0	0	0	14,470	0	14,470
1969	-	-	-	-	-	-	-	-	-	0	0	0	61,966	0	61,966
1970	-	-	-	-	-	-	-	-	-	0	0	0	137,006	0	137,006
1971	-	-	-	-	-	-	-	-	-	0	0	0	100,090	0	100,090
1972	-	-	-	-	-	-	-	-	-	0	0	0	135,668	0	135,668
1973	-	-	-	-	-	-	-	-	-	0	0	0	285,509	0	285,509
1974 [d]	27,866	-	27,866	6,831	-	6,831	13,318	-	13,318	48,015	0	48,015	589,892	0	589,892
1975	165,054	-	165,054	12,997	-	12,997	14,782	-	14,782	192,833	0	192,833	710,295	0	710,295
1976	211,307	-	211,307	774	-	774	6,617	-	6,617	218,698	0	218,698	600,894	0	600,894
1977	169,541	-	169,541	1,274	-	1,274	4,317	-	4,317	175,132	0	175,132	534,875	0	534,875
1978	364,184	16,920	381,104	4,892	605	5,497	34,814	8,236	43,050	403,890	25,761	429,651	1,052,226	25,761	1,077,987
1979	169,430	35,317	204,747	8,608	1,009	9,617	18,491	3,891	22,382	196,529	40,217	236,746	779,316	40,217	819,533
1980	147,560	135,824	283,384	456	-	456	35,855	3,282	39,137	183,871	139,106	322,977	928,609	139,106	1,067,715
1981	59,718	187,032	330,445	1,236	49	1,285	32,477	1,987	34,464	93,431	189,068	366,194	1,006,938	189,068	1,279,701
1982	3,647	151,281	257,719	213	21	234	21,597	1,517	23,114	25,457	152,819	281,067	461,403	152,819	717,013
1983	6,672	148,125	255,388	42	1,856	1,898	24,309	18	24,327	31,023	149,999	281,613	744,879	149,999	995,469
1984	1,009	166,842	278,070	645	47	692	56,249	335	56,584	57,903	167,224	335,346	588,597	167,224	866,040
1985	12,007	247,085	427,483	700	-	700	66,913	1,540	68,453	79,620	248,625	496,636	516,997	248,625	934,013
1986	300	269,545	465,535	690	-	690	50,483	2,146	52,629	51,473	271,691	518,854	721,469	271,691	1,188,850
1987	29,991	121,474	209,800	362	44	406	10,610	450	11,060	40,963	121,968	221,266	442,238	121,968	622,541
1988	24,051	254,526	490,074	722	363	1,085	40,129	1,646	41,775	64,902	256,535	532,934	1,148,650	256,535	1,616,682
1989	18,554	283,305	510,244	154	373	527	42,115	4,871	46,986	60,823	288,549	557,757	955,806	288,549	1,452,740
1990	12,364	105,723	222,550	11	594	671	11,127 [g]	3,059	14,833	23,502	109,376	238,054	302,625	109,376	517,177
1991	6,381	137,232	309,644	4	28	35	18,197	4,716	23,892	24,582	141,976	333,571	349,113	141,976	658,102
1992 [i]	2,659	110,809	211,396	102	295	430	5,029	1,892	7,228	7,790	112,996	219,054	332,313	112,996	543,577
1993	27	22,447	42,957	0	0	0	3,041	515	3,705	3,068	22,962	46,662	96,522	22,962	140,116
1994	3,611	89,717	171,607	229	212	464	21,208	7,828	31,434	25,048	97,757	203,505	80,284	97,757	258,741
1995	8,873	281,074	554,587	107	188	316	24,711	9,475	37,428	33,691	290,737	592,331	259,774	290,737	818,414
1996	0	295,190	510,240	0	302	336	22,360	18,332	46,890	22,360	313,824	557,466	145,593	314,759	682,233
1997	2,062	74,231	124,671	137	0	137	14,886	9,036	25,287	17,085	83,267	150,095	95,242	83,267	228,252
1998	0	0	0	96	13	110	397	140	570	493	153	680	28,611	153	28,798
1999	1,267	0	1,267	115	0	115	124	24	148	1,506	24	1,530	29,389	24	29,413
2000 [k]	0	0	0	0	0	0	0	0	0	0	0	0	6,624	0	6,624
2001 [m]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	6	0	6	3,198	16	3,218	3,204	16	3,224	13,558	16	13,578
2003	62	0	62	0	0	0	4,461	0	4,461	4,523	0	4,523	10,685	0	10,685
2004	0	0	0	25	0	25	6,610	0	6,610	6,635	0	6,635	26,410	0	26,410
1994-2003 Average	1,588	74,021	136,243	69	72	148	9,135	4,485	14,944	10,791	78,578	151,335	66,976	78,671	207,674
1999-2003 Average	266	0	266	24	0	24	1,557	8	1,565	1,847	8	1,855	12,051	8	12,060

[a] Harvest reported in numbers of fish sold in the round and pounds of roe. Roe sales may include some pink and Chinook salmon roe. Does not include department test fish sales.
[b] All sales are fish in the round in District 1 and 2. Includes department test fish sales prior to 1988.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold. In addition, the estimated harvest for Districts 3 and 4 includes the estimated number of unsold males harvested.
[d] In 1974, District 4 was subdivided to include Districts 5 and 6.
[f] Includes the illegal sales of 150 summer chum salmon in District 1.
[g] Does not include 1,233 female summer chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.
[h] Includes the illegal sales of 1,023 summer chum salmon.
[i] Includes the illegal sales of 31 summer chum salmon in District 1, and 91 summer chum salmon in District 2.
[k] No commercial fishing periods in Districts 3,4,5, and 6.
[m] No commercial fishing periods in Districts 1 through 6.

Appendix A6.–Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961–2004.[a]

	Lower Yukon Area [c]				Upper Yukon Area [b]														
					District 4			District 5			District 6			Subtotal			Total		
Year	District 1	District 2	District 3	Subtotal	Numbers	Roe	Estimated Harvest [d]	Numbers	Roe	Estimated Harvest [d]	Numbers	Roe	Estimated Harvest [d]	Numbers	Roe	Estimated Harvest [d]	Estimated Harvest	Canada Total	Grand Total
1961	42,461	0	0	42,461	0	0	0	-	-	-	-	-	-	0	0	0	42,461	3,276	45,737
1962	53,116	0	0	53,116	0	0	0	-	-	-	-	-	-	0	0	0	53,116	936	54,052
1963	0	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	2,196	2,196
1964	8,347	0	0	8,347	0	0	0	-	-	-	-	-	-	0	0	0	8,347	1,929	10,276
1965	22,936	0	0	22,936	381 [e]	0	381 [e]	-	-	-	-	-	-	381	0	381	23,317	2,071	25,388
1966	69,836	0	1,209	71,045	0	0	0	-	-	-	-	-	-	0	0	0	71,045	3,157	74,202
1967	36,451	0	1,823	38,274	0	0	0	-	-	-	-	-	-	0	0	0	38,274	3,343	41,617
1968	49,857	0	3,068	52,925	0	0	0	-	-	-	-	-	-	0	0	0	52,925	453	53,378
1969	128,866	0	1,722	130,588	722 [e]	0	722 [e]	-	-	-	-	-	-	722	0	722	131,310	2,279	133,589
1970	200,306	4,858	3,285	208,449	1,146 [e]	0	1,146 [e]	-	-	-	-	-	-	1,146	0	1,146	209,595	2,479	212,074
1971	188,533	0	0	188,533	1,061 [e]	0	1,061 [e]	-	-	-	-	-	-	1,061	0	1,061	189,594	1,761	191,355
1972	136,711	12,898	1,313	150,922	1,254 [e]	0	1,254 [e]	-	-	-	-	-	-	1,254	0	1,254	152,176	2,532	154,708
1973	173,783	45,304	0	219,087	13,003 [e]	0	13,003 [e]	-	-	-	-	-	-	13,003	0	13,003	232,090	2,806	234,896
1974 [f]	176,036	53,540	552	230,128	9,213	0	9,213	23,551	-	23,551	26,884	-	26,884	59,648	0	59,648	289,776	2,544	292,320
1975	158,183	51,666	5,590	215,439	13,666	0	13,666	27,212	-	27,212	18,692	-	18,692	59,570	0	59,570	275,009	2,500	277,509
1976	105,851	21,212	4,250	131,313	1,742	0	1,742	5,387	-	5,387	17,948	-	17,948	25,077	0	25,077	156,390	1,000	157,390
1977	131,758	51,994	15,851	199,603	13,980	0	13,980	25,730	-	25,730	18,673	-	18,673	58,383	0	58,383	257,986	3,990	261,976
1978	127,947	51,646	11,527	191,120	10,988	1,721	12,709	21,016	5,220	26,236	13,259	3,687	16,946	45,263	10,628	55,891	247,011	3,356	250,367
1979	109,406	94,042	25,955	229,403	48,899	3,199	52,098	47,459	8,097	55,556	34,185	7,170	41,355	130,543	18,466	149,009	378,412	9,084	387,496
1980	106,829	83,881	13,519	204,229	27,978	4,752	32,730	41,771	474	42,245	19,452	67	19,519	89,201	5,293	94,494	298,723	9,000	307,723
1981	167,834	154,883	19,043	341,760	12,082	2,853	14,935	87,856	6,937	94,793	25,989	3,619	29,608	125,927	13,409	139,336	481,096	15,260	496,356
1982	97,484	96,581	5,815	199,880	3,894	167	4,061	13,593	367	13,960	6,820	550	7,370	24,307	1,084	25,391	225,271	11,312	236,583
1983	124,371	85,645	10,018	220,034	4,482	1,632	6,114	43,993	0	43,993	34,089	1,905	35,994	82,564	3,537	86,101	306,135	25,990	332,125
1984	78,751	70,803	6,429	155,983	7,625	2,216	9,841	24,060	57	24,117	20,564	56	20,620	52,249	2,329	54,578	210,561	22,932	233,493
1985	129,948	40,490	5,164	175,602	24,452	2,525	26,977	25,338	0	25,338	42,352	0	42,352	92,142	2,525	94,667	270,269	35,746	306,015
1986	59,352	51,307	2,793	113,452	2,045	0	2,045	22,053	395	22,448	1,892	182	2,074	25,990	577	26,567	140,019	11,464	151,483
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40,591	40,591
1988	45,317	31,861	2,090	79,268	15,662	1,421	17,083	16,989	0	16,989	21,844	1,806	23,650	54,495	3,227	57,722	136,990	30,263	167,253
1989	77,876	97,906	15,332	191,114	11,776	3,407	15,183	18,215	3,989	22,204	49,090	7,353	56,443	79,081	14,749	93,830	284,944	17,549	302,493
1990	27,337	37,173	3,715	68,225	4,989	2,351	8,166	7,778	1,058	8,976	43,182 [g]	7,535	50,975	55,949	10,944	68,117	136,342	27,537	163,879
1991	59,724	102,628	9,213	171,565	3,737	1,616	6,091	27,355	3,625	32,114	28,195	14,154	44,448	59,287	19,395	82,653	254,218	31,404	285,622
1992	0	0	0	0	0	0	0	0	0	0	15,721	2,806	19,022	15,721	2,806	19,022	19,022	18,576	37,598
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,762	7,762
1994	0	0	0	0	0	0	0	3,630	0	3,630	1	3,276	4,369	3,631	3,276	7,999	7,999	30,035	38,034
1995	79,345	90,831	0	170,176	2,924	4,126	8,731	9,778	15,993 [h]	30,033	67,855	9,560	74,117	80,557	29,679	112,881	283,057	39,012	322,069
1996	33,629	29,651	0	63,280	2,918	0	2,918	11,878	8,498	21,858	10,266	6,173	17,574	25,062	14,671	42,350	105,630	20,069	125,699
1997	27,483	24,326	0	51,809	2,458	0	2,458	2,446	1,194	3,920	0	0	0	4,904	1,194	6,378	58,187	8,068	66,255
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	9,987	9,703	0	19,690	681	0	681	0	0	0	0	0	0	681	0	681	20,371	10,402	30,773
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,319	1,319
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,198	2,198
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,065	3,065
2003	5,586	0	0	5,586	1,315	0	1,315	0	0	0	4,095	0	4,095	5,410	0	5,410	10,996	9,030	20,026
2004	660	0	0	660	0	0	0	0	0	0	3,450	0	3,450	3,450	0	3,450	4,110	7,365	11,475
1994-1998 Average	28,091	28,962	0	57,053	1,660	825	2,821	5,546	5,137	0 11,888	15,624	3,802	19,212	22,831	9,764	33,922	90,975	19,437	110,411
1999-2003 Average	3,115	1,941	0	5,055	399	0	399	0	0	0	819	0	819	1,218	0	1,218	6,273	5,203	11,476

[a] Numbers based on reports generated from the state TIX program. These numbers supersede any numbers reported in previous Annual Management Reports (AMR).

[b] Sales reported in numbers of fish sold in the round and pounds of unprocessed roe, which may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho roe from fall chum roe. Includes department test fish sales prior to 1988 but does not include them after 1988.

[c] All fish sold in the round. Includes department test fish sales prior to 1988 but does not include them after 1988.

[d] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the ratio of pounds of roe to females to produce roe was calculated as 1:1. In 1990 an "estimated harvest" column was added to district-specific tables in the AMR's.

[e] These numbers were added from original Annual Management Reports Jan 13,2006, they are not in TIX.

[f] In 1974, District 4 was subdivided to include Districts 5 and 6.

[g] Does not include 884 female fall chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. Females are accounted for in the estimated harvest to produce roe sold.

[h] Does not include 2,823 pounds of roe sold in Subdistrict 5-D, where roe was extracted and the female fall chum salmon and roe were sold separately. These female fall chum salmon are included in the estimated harvest to produce the roe sold.

Appendix A7.–Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961–2004.

	Lower Yukon Area[b]				Upper Yukon Area[a] District 4			District 5			District 6			Subtotal			Alaska
Year	District 1	District 2	District 3	Subtotal	Numbers	Roe	Estimated Harvest[c]	Numbers	Roe	Estimated Harvest[c]	Numbers	Roe	Estimated Harvest[c]	Numbers	Roe	Estimated Harvest[c]	Total Harvest
1961	2,855	0	0	2,855	-	-	-	-	-	-	-	-	-	-	-	-	2,855
1962	22,926	0	0	22,926	-	-	-	-	-	-	-	-	-	-	-	-	22,926
1963	5,572	0	0	5,572	-	-	-	-	-	-	-	-	-	-	-	-	5,572
1964	2,446	0	0	2,446	-	-	-	-	-	-	-	-	-	-	-	-	2,446
1965	350	0	0	350	-	-	-	-	-	-	-	-	-	-	-	-	350
1966	19,254	0	0	19,254	-	-	-	-	-	-	-	-	-	-	-	-	19,254
1967	9,925	0	1,122	11,047	-	-	-	-	-	-	-	-	-	-	-	-	11,047
1968	13,153	0	150	13,303	-	-	-	-	-	-	-	-	-	-	-	-	13,303
1969	13,989	0	1,009	14,998	95	0	95	-	-	-	-	-	-	95	-	95	15,093
1970	12,632	0	0	12,632	556	0	556	-	-	-	-	-	-	556	-	556	13,188
1971	12,165	0	0	12,165	38	0	38	-	-	-	-	-	-	38	-	38	12,203
1972	21,705	506	0	22,211	22	0	22	-	-	-	-	-	-	22	-	22	22,233
1973	34,860	1,781	0	36,641	0	0	0	-	-	-	-	-	-	-	-	-	36,641
1974[d]	13,713	176	0	13,889	0	0	0	1,409	0	1,409	1,479	0	1,479	2,888	-	2,888	16,777
1975	2,288	200	0	2,488	0	0	0	5	0	5	53	0	53	58	-	58	2,546
1976	4,064	17	0	4,081	0	0	0	0	0	0	1,103	0	1,103	1,103	-	1,103	5,184
1977	31,720	5,319	538	37,577	0	0	0	2	0	2	1,284	0	1,284	1,286	-	1,286	38,863
1978	16,460	5,835	758	23,053	32	0	32	1	0	1	3,066	0	3,066	3,099	-	3,099	26,152
1979	11,369	2,850	0	14,219	155	0	155	0	0	0	2,791	0	2,791	2,946	-	2,946	17,165
1980	4,829	2,660	0	7,489	30	0	30	0	0	0	1,226	0	1,226	1,256	-	1,256	8,745
1981	13,129	7,848	419	21,396	0	0	0	0	0	0	2,284	0	2,284	2,284	-	2,284	23,680
1982	15,115	14,179	87	29,381	15	0	15	0	0	0	7,780	0	7,780	7,795	-	7,795	37,176
1983	4,595	2,557	0	7,152	0	0	0	0	0	0	6,168	0	6,168	6,168	-	6,168	13,320
1984	29,472	43,064	621	73,157	1,095	0	1,095	0	0	0	7,006[e]	0	7,006[e]	8,101[e]	-	8,101[e]	81,258[e]
1985	27,676	17,125	171	44,972	938	0	938	0	0	0	11,762	0	11,762	12,700	-	12,700	57,672
1986	24,824	21,197	793	46,814	0	0	0	0	0	0	441	0	441	441	-	441	47,255
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0
1988	36,028	34,758	1,419	72,205	2	0	2	8	0	8	13,972	0	13,972	13,982	-	13,982	86,187
1989	23,001[e]	38,397[e]	3,988	65,386[e]	3	0	3	84	0	84	16,079[e]	0	16,079[e]	16,166[e]	-	16,166[e]	81,552[e]
1990	12,160	16,405	918	29,483	0	0	0	0	0	0	11,549[f]	4,042	14,804	11,549	4,042	14,804	44,287
1991	54,095	40,898	1,905	96,898	14	0	14	0	0	0	6,268	4,299	9,774	6,282	4,299	9,788	106,686
1992	0	0	0	0	0	0	0	0	0	0	6,556	1,680	7,979	6,556	1,680	7,979	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	120	5,588	4,451	120	5,588	4,451	4,451
1995	21,625	18,488	0	40,113	0	0	0	0	0	0	5,826	2,229	6,900	5,826	2,229	6,900	47,013
1996	27,705	20,974	0	48,679	161	0	161	0	0	0	3,803	4,829	7,142	3,964	4,829	7,303	55,982
1997	21,450	13,056	0	34,506	814	0	814	0	0	0	0	0	0	814	0	814	35,320
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	855	746	0	1,601	0	0	0	0	0	0	0	0	0	0	0	0	1,601
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001[g]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	9,757	0	0	9,757	367	0	367	0	0	0	15,119	0	15,119	25,243	0	15,486	25,243
2004	1,583	0	0	1,583	0	0	0	0	0	0	18,649	0	18,649	20,232	0	18,649	20,232
1994-2003 Average	8,139	5,326	0	13,466	134	0	134	0	0	0	2,487	1,265	3,361	3,597	1,265	3,495	16,961
1999-2003 Average	2,122	149	0	2,272	73	0	73	0	0	0	3,024	0	3,024	5,049	0	3,097	5,369

[a] Sales reported in numbers of fish sold in the round and pounds of roe. Coho salmon roe sales were not separated from fall chum salmon until 1990. Does not include department test fish sales.
[b] All fish sold in the round. Does not include department test fish sales.
[c] Estimated harvest is the number of fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the ratio of pounds of roe to females to produce roe was calculated at 1:1. In 1990 an "estimated harvest" column was added to the district-specific tables in the Annual Management Reports (AMR).
[d] In 1974, District 4 was subdivided into Districts 5 and 6.
[e] Numbers are based on reports generated from the State TIX program. These numbers are different than what was reported in Salmon Fisheries in the Yukon Area, AK, 1997 - A Report to the Alaska Board of Fisheries.
[f] Does not include 438 female coho salmon sold in Subdistrict 6-C with roe extracted and sold separately. These female coho salmon are accounted for in the estimated harvest to produce the roe sold.
[g] No commercial fishing in 2001.

Appendix A8.–Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1976–2004.[a]

	Lower Yukon Area Set or Drift Gillnet		Upper Yukon Area Set Gillnet		Upper Yukon Area Fishwheel		Total	
Year	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished
1976	678	- [b]	118	- [b]	169	- [b]	- [b]	- [b]
1977	700	609	69	44	160	130	929	783
1978	699	650	71	47	158	137	928	834
1979	708	661	70	50	165	129	943	840
1980	709	654	71	52	163	128	943	834
1981	711	666	80	45	163	125	954	836
1982	710	664	76	45	166	111	952	820
1983	708	655	73	40	164	115	945	810
1984	708	674	73	39	159	99	940	812
1985	708	664	71	40	159	113	938	817
1986	707	670	71	30	162	101	940	801
1987	706	656	71	33	161	108	938	797
1988	707	677	71	43	160	124	938	844
1989	707	682	70	42	160	127	937	851
1990	708	675	71	35	157	116	936	826
1991	708	680	72	36	155	110	935	826
1992	707	678	71	32	179	111	957	821
1993	708	682	72	35	166	88	946	805
1994	707	659	72	30	165	73	944	762
1995	707	663	73	36	166	106	946	805
1996	707	627	72	28	165	107	944	762
1997	705	640	72	22	163	63	940	725
1998	704	643	72	6	162	22	938	671
1999	704	632 [c]	72	13 [c]	162	25 [c]	938	670 [c]
2000	704	632 [c]	72	13 [c]	162	25 [c]	938	670 [c]
2001	700	0	72	0	156	0	928	0
2002	702	540	72	12	156	12	930	564
2003	703	557	72	7	157	20	932	584
2004	692	551	67	9	137	14	896	574
1999-2003 Average	703	472	72	9	159	16	933	498

[a] Information obtained from CFEC unless otherwise indicated. Includes permanent and interim-use permits.
[b] Information unavailable.
[c] Data source: ADF&G.

Appendix A9.–Number of commercial salmon fishing gear permit holders by district and season, Yukon Area, 1971–2004.[a]

Chinook and Summer Chum Salmon Season

	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal [b]	District 4	District 5	District 6	Subtotal	Total
1971	405	154	33	592	-	-	-	-	592
1972	426	153	35	614	-	-	-	-	614
1973	438	167	38	643	-	-	-	-	643
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	455	225	20	700	77	34	25	136	836
1984	444	217	20	613	54	31	27	112	725
1985	425	223	18	666	74	32	27	133	799
1986	441	239	7	672	75	21	27	123	795
1987	440	239	13	659	87	30	24	141	800
1988	456	250	22	678	95	28	33	156	834
1989	445	243	16	687	98	32	29	159	846
1990	453	242	15	679	92	27	23	142	821
1991	489	253	27	678	85	32	22	139	817
1992	438	263	19	679	90	28	19	137	816
1993	448	238	6	682	75	30	18	123	805
1994	414	250	7	659	55	28	20	103	762
1995	439	233	0	661	87	28	21	136	797
1996	448	189	9	627	87	23	15	125	752
1997	457	188	0	639	39	29	15	83	722
1998	434	231	0	643	0	18	10	28	671
1999	412	217	5	631	5	26	6	37	668
2000	350	214	0	562	0	0	0	0	562
2001 [c]	0	0	0	0	0	0	0	0	0
2002	322	223	0	540	0	18	6	24	564
2003	351	217	0	556	3	16	7	26	582
2004	396	212	0	549	0	14	6	20	569
1994-2003 Average	363	196	2	552	28	19	10	56	608

Fall Chum and Coho Salmon Season

	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal [b]	District 4	District 5	District 6	Subtotal	Total
1971	352	-	-	352	-	-	-	-	352
1972	353	75	3	431	-	-	-	-	431
1973	445	183		628	-	-	-	-	628
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	97	758
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752
1981	462	240	21	723	30	50	30	110	833
1982	445	218	15	678	15	24	25	64	742
1983	312	224	18	554	13	29	23	65	619
1984	327	216	12	536	18	39	26	83	619
1985	345	222	13	559	22	39	25	86	645
1986	282	231	14	510	1	21	16	38	548
1987	0	0	0	0	0	0	0	0	0
1988	328	233	13	563	20	20	32	72	635
1989	332	229	22	550	20	24	28	72	622
1990	301	227	19	529	11	11	27	49	578
1991	319	238	19	540	8	21	25	54	594
1992	0	0	0	0	0	0	22	22	22
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	1	11	12	12
1995	189	172	0	357	4	12	20	36	393
1996	158	109	0	263	1	17	17	35	298
1997	176	130	0	304	3	8	0	11	315
1998	0	0	0	0	0	0	0	0	0
1999	146	110	0	254	4	0	0	4	258
2000	0	0	0	0	0	0	0	0	0
2001 [c]	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0
2003	75	0	0	75	2	0	5	7	82
2004	26	0	0	26	0	0	6	6	32
1994-2003 Average	74	52	0	125	1	4	5	11	136

-continued-

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	COMBINED SEASON								
	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal [b]	District 4	District 5	District 6	Subtotal	Total
1971	473	154	33	660	-	-	-	27	687
1972	476	153	35	664	-	-	-	-	664
1973	529	205	38	772	-	-	-	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	609	96	53	39	188	797
1978	472	221	29	650	82	53	38	173	823
1979	461	230	33	661	90	49	40	179	840
1980	432	247	27	654	88	51	38	177	831
1981	507	257	26	666	94	56	31	181	847
1982	455	244	22	664	76	53	27	156	820
1983	458	235	26	655	79	47	31	157	812
1984	453	236	26	676	58	45	33	136	812
1985	434	247	24	666	76	48	33	157	823
1986	444	259	18	672	75	30	27	132	804
1987	440	239	13	659	87	30	24	141	800
1988	460	260	24	683	97	35	38	170	853
1989	452	257	23	687	99	38	32	169	856
1990	459	258	22	679	92	31	30	153	832
1991	497	272	29	680	85	33	28	146	826
1992	438	263	19	679	90	28	25	143	822
1993	448	238	6	682	75	30	18	123	805
1994	414	250	7	659	55	28	20	103	762
1995	446	254	0	664	87	31	24	142	806
1996	455	217	9	628	87	29	19	135	763
1997	463	221	0	640	39	31	15	85	725
1998	434	231	0	643	0	18	10	28	671
1999	422	238	5	632	6	26	6	38	670
2000	350	214	0	562	0	0	0	0	562
2001 [c]	0	0	0	0	0	0	0	0	0
2002	322	223	0	540	0	18	6	24	564
2003	358	217	0	557	3	16	8	27	584
2004	399	212	0	551	0	14	9	23	574
1994-2003 Average	366	207	2	553	28	20	11	58	611

[a] Number of permit holders which made at least 1 delivery.
[b] Since 1984 the subtotal for the Lower Yukon Area was the unique number of permits fished. Prior to 1984, the subtotals are additive for Districts 1, 2, and 3. Some individual fishers in the Lower Yukon Area may have operated in more than 1 district during the year.
[c] No commercial fishing in 2001.

Appendix A10.–Commercial salmon pack by species and type of processing, Yukon Area, 1960 to 2004.[a]

	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured Chinook		Cured Chum		
Year	Chinook	Coho	Chum	Chinook	Coho	Chum	Tierces	Half Tierces	Tierces	Half Tierces	Salmon Roe (lbs.)
1960	13,000			- [b]	- [b]	- [b]	250	180			
1961	19,474			- [b]	- [b]	- [b]	504	146			
1962	15,959	512	1,760	- [b]	- [b]	- [b]	464	280			
1963	16,400	1,190		- [b]	- [b]	- [b]	- [b]	- [b]			
1964	12,041			- [b]	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	561,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973 [c]	829,586 [c]	647	95	15		29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,594
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57		208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26		210,568
1978	5,711	74	9,340	1,473,354	168,241	8,639,156	222	117	7	75	261,422
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91		2	410,540
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	18		37	579,927
1981	1,107	378	11,573	3,686,238	130,097	11,398,680	25	13	9	28	507,550
1982		7	751	2,790,456	246,500	4,992,877		19		1	584,053
1983		198	1,181	3,000,843	72,447	10,637,613	5	39		7	426,220
1984		5	1,768	2,426,205	590,526	5,516,532		36		16	468,244
1985				2,953,199	409,725	5,462,462		9		20 [d]	476,024
1986				2,012,324	299,054	5,960,857		15		28 [f]	502,952
1987				2,830,312	0	3,013,889		36			286,099
1988 [g]				1,970,879	624,734	9,111,943		10		22 [h]	577,748
1989 [g]				2,005,949	585,216	8,864,714		6		16	303,298
1990 [g]				1,846,081	283,504	3,166,199		3		1,368 [k]	261,016
1991 [j]				2,047,188	708,902	3,978,482				2,547 [k]	350,174
1992				2,537,833	40,685	2,398,093					260,590
1993				1,905,414	0	634,931					97,630
1994				2,260,301	744	528,666					183,873
1995				2,635,972	317,357	3,524,754					498,925
1996				1,836,242	400,960	1,733,129					443,939
1997				2,324,306	255,228	1,089,678					190,359
1998				779,936	9	191,692					28,919
1999				1,368,658	10,342	352,970					50,696
2000				158,776	0	50,782					6,286
2001 [l]				0	0	0					0
2002				472,625	0 [m]	93,416					931
2003				841,748	165,757	144,942					0
2004				1,142,053	117,295	165,587					0

[a] Pack represents type of processing when fish were shipped out of districts; roe includes unprocessed roe sold by fishermen and estimated production of roe from in the round purchases.
[b] Information not available.
[c] Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.
[d] Additionally 13 half tierces of coho salmon were packed.
[f] Additionally 2 half tierces of coho salmon were packed.
[g] Does not include District 6 test fish sales.
[h] Additionally 1 half tierce of coho salmon was packed.
[j] Beginning in 1991, no ADF&G test fish sales are included.
[k] Chum salmon are represented in pounds of salted fillets.
[l] No commercial fishing.
[m] No commercial fishing in the fall season.

Appendix A11.–Estimated average prices per pound paid to fishermen, Yukon Area, 1964–2004.

	Lower Yukon Area				Upper Yukon Area							
Year	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Chinook Roe	Summer Chum	Summer Chum Roe	Fall Chum	Fall Chum Roe	Coho	Coho Roe
1964	0.17		0.03									
1965	0.20											
1966	0.20											
1967	0.19	0.05	0.05	0.07								
1968	0.18	0.06	0.06									
1969	0.19	0.08	0.08	0.08								
1970	0.22	0.09	0.09	0.12								
1971	0.24	0.10	0.10	0.12								
1972	0.24	0.11	0.11	0.13								
1973	0.30	0.16	0.16	0.18								
1974	0.38	0.21	0.21	0.25	0.50		0.15		0.13		0.15	
1975	0.42	0.20	0.20	0.21	0.92		0.17		0.14		0.17	
1976	0.51	0.24	0.24	0.27	0.74		0.19		0.16		0.19	
1977	0.85	0.40	0.45	0.50	1.37		0.27	2.66	0.22		0.27	
1978	0.90	0.45	0.47	0.60	0.87		0.24	- [a]	0.25		0.24	
1979	1.09	0.52	0.68	0.80	1.00		0.25	3.00	0.29		0.25	
1980	1.04	0.20	0.28	0.36	0.85		0.23	2.50	0.27		0.29	
1981	1.20	0.40	0.55	0.60	1.00		0.20	3.00	0.35		0.35	
1982	1.41	0.40	0.55	0.69	1.02		0.18	2.75	0.28		0.37	
1983	1.40	0.34	0.34	0.35	1.08		0.16	1.66	0.19		0.31	
1984	1.50	0.26	0.32	0.50	0.95		0.23	1.78	0.26		0.24	
1985	1.50	0.35	0.47	0.53	0.86		0.23	1.94	0.25		0.33	
1986	1.63	0.38	0.49	0.71	0.89		0.22	2.08	0.14		0.21	
1987	1.98	0.49	-	-	0.79		0.19	2.22	-		-	
1988	2.97	0.66	1.01	1.38	1.04		0.23	4.33	0.32		0.37	
1989	2.77	0.34	0.50	0.66	0.84		0.24	4.41	0.28		0.35	
1990	2.84	0.24	0.45	0.66	0.72		0.11	4.41	0.29		0.34	
1991	3.70	0.36	0.34	0.44	0.70	2.92	0.18	4.21	0.23	3.56	0.30	2.50
1992	4.12	0.27	-	-	0.91	2.82	0.30	4.53	0.39	4.50	0.39	2.18
1993	2.70	0.38	-	-	1.06	5.52	0.35	8.53	-	-	-	-
1994	2.07	0.21	-	-	0.92	3.11	0.20	3.77	0.16	1.50	0.48	1.50
1995	2.09	0.16	0.15	0.29	0.77	2.64	0.13	3.57	0.13	2.96	0.14	2.51
1996	1.95	0.09	0.10	0.26	0.95	2.57	0.07	3.05	0.13	1.71	0.09	2.16
1997	2.46	0.10	0.22	0.32	0.97	1.62	0.07	1.08	0.17	1.75	0.20	-
1998	2.51	0.14	-	-	0.91	2.00	0.18	1.90	-	-	-	-
1999	3.80	0.10	0.25	0.35	1.10	2.11	0.18	2.25	0.20	-	-	-
2000	4.57	0.17	-	-	-	-	-	-	-	-	-	-
2001 [b]	-	-	-	-	-	-	-	-	-	-	-	-
2002	3.77	0.06	-	-	0.75	1.75	0.32	2.25	-	-	-	-
2003	2.37	0.05	0.15	0.10	0.80	-	0.27	-	0.10	-	0.05	-
2004	2.80	0.05	0.25	0.05	0.77	-	0.27	-	0.05	-	0.06	-
1999-2003 Average [c]	3.63	0.10	0.20	0.23	0.88	1.93	0.26	2.25	0.15	-	0.05	-

[a] Data unavailable.
[b] No commercial fishing in 2001.
[c] A "-" is used when there are no commercial sales, and these fields are not included in the 5-year average.

Appendix A12.–Value of commercial salmon fishery to Yukon Area fishermen, 1977–2004**.**

	Summer Season							Fall Season							
	Chinook			Summer Chum				Fall Chum			Coho				
	Lower Yukon	Upper Yukon		Lower Yukon	Upper Yukon		Total	Lower Yukon	Upper Yukon		Lower Yukon	Upper Yukon		Total	Total
Year	Value	Value	Subtotal	Value	Value	Subtotal	Season	Value	Value	Subtotal	Value	Value	Subtotal	Season	Value
1977	1,841,033	148,766	1,989,799	1,007,280	306,481	1,313,761	3,303,560	718,571	102,170	820,741	140,914	2,251	143,165	963,906	4,267,466
1978	2,048,674	66,472	2,115,146	2,071,434	655,738	2,727,172	4,842,318	691,854	103,091	794,945	96,823	6,105	102,928	897,873	5,740,191
1979	2,763,433	124,230	2,887,663	2,242,564	444,924	2,687,488	5,575,151	1,158,485	347,814	1,506,299	83,466	6,599	90,065	1,596,364	7,171,515
1980	3,409,105	113,662	3,522,767	1,027,738	627,249	1,654,987	5,177,754	394,162	198,088	592,250	17,374	2,374	19,748	611,998	5,789,752
1981	4,420,669	206,380	4,627,049	2,741,178	699,876	3,441,054	8,068,103	1,503,744	356,805	1,860,549	87,385	4,568	91,953	1,952,502	10,020,605
1982	3,768,107	162,699	3,930,806	1,237,735	452,837	1,690,572	5,621,378	846,492	53,258	899,750	135,828	18,786	154,614	1,054,364	6,675,742
1983	4,093,562	105,584	4,199,146	1,734,270	281,883	2,016,153	6,215,299	591,011	128,950	719,961	17,497	11,472	28,969	748,930	6,964,229
1984	3,510,923	102,354	3,613,277	926,922	382,776	1,309,698	4,922,975	374,359	103,417	477,776	256,050	12,823	268,873	746,649	5,669,624
1985	4,294,432	82,644	4,377,076	1,032,700	593,801	1,626,501	6,003,577	634,616	178,125	812,741	176,254	26,797	203,051	1,015,792	7,019,369
1986	3,165,078	73,363	3,238,441	1,746,455	634,091	2,380,546	5,618,987	399,321	30,309	429,630	211,942	556	212,498	642,128	6,261,115
1987	5,428,933	136,196	5,565,129	1,313,618	323,611	1,637,229	7,202,358	0	0	0	0	0	0	0	7,202,358
1988	5,463,800	142,284	5,606,084	5,001,100	1,213,991	6,215,091	11,821,175	638,700	151,300	790,000	734,400	34,116	768,516	1,558,516	13,379,691
1989	5,181,700	108,178	5,289,878	2,217,700	1,377,117	3,594,817	8,884,695	713,400	223,996	937,396	323,300	33,959	357,259	1,294,655	10,179,350
1990	4,820,859	105,295	4,926,154	497,571	506,611	1,004,182	5,930,336	238,165	174,965	413,130	137,302	37,026	174,328	587,458	6,517,794
1991	7,128,300	97,140	7,225,440	782,300	627,177	1,409,477	8,634,917	438,310	157,831	596,141	300,182	21,556	321,738	917,879	9,552,796
1992	9,957,002	168,999	10,126,001	606,976	525,204	1,132,180	11,258,181	0	54,161	54,161	0	19,529	19,529	73,690	11,331,871
1993	4,884,044	113,217	4,997,261	226,772	203,762	430,534	5,427,795	0	0	0	0	0	0	0	5,427,795
1994	4,169,270	124,270	4,293,540	79,206	396,685	475,891	4,769,431	0	8,517	8,517	0	8,739	8,739	17,256	4,786,687
1995	5,317,508	87,059	5,404,567	241,598	1,060,322	1,301,920	6,706,487	185,036	167,571	352,607	80,019	11,292	91,311	443,918	7,150,405
1996	3,491,582	47,282	3,538,864	89,020	966,277	1,055,297	4,594,161	48,579	45,438	94,017	96,795	13,020	109,815	203,832	4,797,993
1997	5,450,433	110,713	5,561,146	56,535	96,806	153,341	5,714,487	86,526	7,252	93,778	79,973	1,062	81,035	174,813	5,889,300
1998	1,911,370	17,285	1,928,655	26,415	821	27,236	1,955,891	0	0	0	0	0	0	0	1,955,891
1999	4,950,522	74,475	5,024,997	19,687	1,720	21,407	5,046,404	35,639	876	36,515	3,620	0	3,620	40,135	5,086,539
2000	725,606	0	725,606	8,633	0	8,633	734,239	0	0	0	0	0	0	0	734,239
2001 [a]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	1,691,105	20,744	1,711,849	4,342	6,176	10,518	1,722,367	0	0	0	0	0	0	0	1,722,367
2003	1,871,202	40,957	1,912,159	1,585	6,879	8,464	1,920,623	5,993	3,398	9,391	18,168	5,095	23,263	32,654	1,953,277
2004	3,063,667	38,290	3,101,957	8,884	9,645	18,529	3,120,486	1,126	848	1,974	2,774	6,372	9,146	11,120	3,131,606
1999-2003 Average	1,847,687	27,235	1,874,922	6,849 #	2,955	9,804	1,884,727	8,326	855	9,181	4,358	1,019	5,377	14,558	1,899,284

[a] No commercial salmon fisheries occurred in the Yukon River in 2001.

Appendix A13.–Average weight of salmon harvests in the commercial fishery, Yukon Area, 1964–2004.[a]

	Lower Yukon Area				Upper Yukon Area			
Year	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
1964	22.6							
1965	23.0							
1966	23.0							
1967	24.0			7.3				
1968	26.5							
1969	23.9			6.7				
1970	22.3			7.1				
1971	22.6			6.9				
1972	24.6	6.6	7.6	7.1				
1973	24.5	6.8	7.9	7.1				
1974	23.7	6.5	7.5	7.0	17.3	6.7	7.7	6.7
1975	22.0	6.5	7.5	7.2	17.7	6.6	8.0	6.6
1976	21.9	6.5	7.5	6.6	18.4	6.4	8.0	7.5
1977	23.9	7.0	8.0	7.5	17.6	6.5	8.0	6.5
1978	24.0	7.1	7.7	7.0	20.2	6.8	7.4	6.4
1979	20.9	7.4	7.4	7.3	20.2	6.6	7.7	6.5
1980	22.5	6.9	6.9	6.4	16.0	6.6	7.7	6.5
1981	24.8	7.5	8.0	6.8	23.7	7.1	7.4	5.7
1982	23.0	7.1	7.7	6.7	21.4	7.1	7.5	6.5
1983	20.5	7.2	7.9	7.0	19.1	6.6	7.7	6.0
1984	20.5	6.8	7.5	7.0	19.6	6.4	7.3	6.1
1985	20.3	6.7	7.7	7.4	18.4	6.1	7.5	6.4
1986	20.2	6.9	7.2	6.3	19.7	6.1	8.0	6.0
1987	21.7	6.8	-	-	20.0	6.8	-	-
1988	19.6	7.0	7.9	7.3	18.6	6.9	7.9	6.6
1989	19.9	7.2	7.5	7.3	17.9	6.8	7.4	6.0
1990	19.6	7.3	7.7	6.8	16.8	6.9	7.0	6.2
1991	20.4	6.7	7.4	7.0	17.6	6.5	6.8	5.7
1992	21.5	6.9	-	-	19.9	5.6	6.8	6.2
1993	20.5	6.6	-	-	17.8	7.2	-	-
1994	20.3	6.5	-	-	15.7	5.8	6.2	6.2
1995	21.6	6.7	7.5	6.9	17.8	5.4	7.0	7.0
1996	20.6	7.8	7.7	7.6	16.2	6.0	6.2	7.2
1997	20.9	7.2	7.6	7.3	15.4	5.9	6.4	6.5
1998	18.0	6.7	-	-	13.2	6.1	-	-
1999	20.1	7.1	7.2	6.5	14.8	6.1	6.4	-
2000	18.0	7.7	-	-	-	-	-	-
2001 [b]	-	-	-	-	-	-	-	-
2002	19.9	7.2	-	-	15.9	6.0	-	-
2003	21.4	7.3	7.2	7.4	14.6	6.1	6.1	6.0
2004	20.8	6.9	6.8	7.0	13.8	5.7	4.9	5.7
1994-2003 Average [c]	20.1	7.1	7.4	7.1	15.5	5.9	6.4	6.6

[a] Information not available for some years. Data obtained from weight samples or from fish ticket information.
[b] No commercial fishing in 2001.
[c] Average does not include years with no data.

Appendix A14.–Commercial Chinook salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974–2004.

Year	Districts 1 and 2 GHR	District 3 Quota/GHR	District 4 Quota/GHR	Subdistricts 5-ABC Quota/GHR	Subdistricts 5-D Quota/GHR	District 6 Quota/GHR
1974		3,000	1,000	3000 [a]		1,000
1975		3,000	1,000	3000 [a]		1,000
1976		3,000	1,000	3000 [a]		1,000
1977		3,000	1,000	3000 [a]		1,000
1978		2,000	1,000	3000 [a]		1,000
1979 [b]		1,800-2,200	900-1,100	2,700-3,300		900-1,100
1980		1,800-2,200	900-1,100	2,700-3,300		900-1,100
1981	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1982	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1983	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1984	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1985	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1986	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1987	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1988	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1989	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1990	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1991	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1992	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1993	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1994	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1995	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1996	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1997	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1998	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1999	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 [c]	300-500	600-800
2000	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 [c]	300-500	600-800
2001	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 [c]	300-500	600-800
2002	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 [c]	300-500	600-800
2003	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 [c]	300-500	600-800
2004	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 [c]	300-500	600-800

[a] Quota or guideline harvest range for all of District 5.
[b] Beginning in 1979, quotas were replaced by guideline harvest ranges.
[c] Subdistrict 5-A was removed from the guideline harvest ranges for Chinook and summer chum salmon and a separate guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe was established in November 1998.

Appendix A15.–Commercial summer chum salmon guideline harvest ranges (GHR), Yukon Area, 1990–2004.

	Districts 1 and 2	District 3	Subdistrict 4-A		Anvik River	Subdistrict 4-BC	District 5	District 6
			GHR					
Year	GHR	GHR	Pounds of Roe [a]	Numbers of Fish	Roe Cap	GHR	GHR	GHR
1990	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1991	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1992	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1993	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1994	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	[b]	16,000-47,000	1,000-3,000	13,000-38,000
1995	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	50,000	16,000-47,000	1,000-3,000	13,000-38,000
1996	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1997	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1998	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1999	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000 [c]	13,000-38,000
2000	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000 [c]	13,000-38,000
2001	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2002	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2003	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2004	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000

[a] Summer chum salmon roe cap of 183,000 pounds.
[b] No summer chum salmon roe cap established for Anvik River Management Area in 1994.
[c] Subdistrict 5-A was removed from the guideline harvest ranges for Chinook and summer chum salmon and a separate guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe was established in November 1998.

Appendix A16.–Commercial fall chum salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974-2004.[a]

	Districts 1, 2, and 3	District 4	Subdistricts 4-BC	District 5	Subdistricts 5-ABC	Subdistrict 5-D	District 6
Year	Quota/GHR	Quota	GHR	Quota/GHR	GHR	GHR	Quota/GHR
1974	200,000	10,000		25,000			15,000
1975	200,000	10,000		25,000			15,000
1976	200,000	10,000		25,000			15,000
1977	200,000	10,000		25,000			15,000
1978	200,000	10,000		25,000			15,000
1979 [b]	120,000-220,000		10,000-40,000	10,000-40,000			7,500-22,500
1980	120,000-220,000		10,000-40,000	10,000-40,000			7,500-22,500
1981	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1982	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1983	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1984	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1985	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1986	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1987	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1988	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1989	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1990	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1991	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1992	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1993	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1994	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1995	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1996	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1997	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1998	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1999	60,000-220,000		5,000-40,000		4,000-36,000 [c]	1,000-4,000	2,750-20,500
2000	60,000-220,000		5,000-40,000		4,000-36,000 [c]	1,000-4,000	2,750-20,500
2001	60,000-220,000		5,000-40,000 [d]		4,000-36,000 [c]	1,000-4,000	2,750-20,500
2002	60,000-220,000		5,000-40,000 [d]		4,000-36,000 [c]	1,000-4,000	2,750-20,500
2003	60,000-220,000		5,000-40,000 [d]		4,000-36,000 [c]	1,000-4,000	2,750-20,500
2004	60,000-220,000		5,000-40,000 [d]		4,000-36,000 [c]	1,000-4,000	2,750-20,500

[a] Fall chum and coho salmon combined quota or guideline harvest range for Upper Yukon Area (1974-1992). Beginning in 1993, regulations were changed to exclude coho salmon.

[b] In 1979, quotas were replaced by guideline harvest ranges.

[c] The GHR 4,000 to 36,000 fall chum salmon applies only to Subdistricts 5-B and 5-C. Subdistrict 5-A was removed from the guideline harvest ranges for Chinook and summer chum salmon and a separate guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe was established in November 1998.

[d] In 2001, the GHR for Subdistrict 4-B and 4-C was changed to include Subdistrict 4-A.

Appendix A17.–Chinook salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2004.[a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsist	Comm [b,c]	Personal Use [d]	Test Fish Sales	Total	Subsist	Comm [b,c]	Test Fish Sales	Total	Subsist	Comm	Total	Subsist	Comm	Personal Use [d]	Test Fish Sales	Total
1961		84,466			84,466		29,026		29,026		4,368	4,368		117,860			117,860
1962		67,099			67,099		22,224		22,224		4,687	4,687		94,010			94,010
1963		85,004			85,004		24,221		24,221		7,020	7,020		116,245			116,245
1964		67,555			67,555		20,246		20,246		4,705	4,705		92,506			92,506
1965		89,268			89,268		23,763		23,763		3,204	3,204		116,235			116,235
1966		70,788			70,788		16,927		16,927		3,612	3,612		91,327			91,327
1967		104,350			104,350		20,239		20,239		3,618	3,618		128,207			128,207
1968		79,465			79,465		21,392		21,392		4,543	4,543		105,400			105,400
1969		71,688			71,688		14,756		14,756		3,595	3,595		90,039			90,039
1970		56,648			56,648		17,141		17,141		3,705	3,705		77,494			77,494
1971		86,042			86,042		19,226		19,226		3,490	3,490		108,758			108,758
1972		70,052			70,052		17,855		17,855		3,841	3,841		91,748			91,748
1973		56,981			56,981		13,859		13,859		3,204	3,204		74,044			74,044
1974		71,840			71,840		17,948		17,948		3,480	3,480		93,268			93,268
1975		44,585			44,585		11,315		11,315		4,177	4,177		60,077			60,077
1976		62,410			62,410		16,556		16,556		4,148	4,148		83,114			83,114
1977		69,915			69,915		16,722		16,722		3,965	3,965		90,602			90,602
1978	5,246	59,006			64,252	3,964	32,924		36,888	3,902	2,916	6,818	13,112	94,846			107,958
1979	2,879	75,007			77,886	4,268	41,498		45,766	3,325	5,018	8,343	10,472	121,523			131,995
1980	3,669	90,382			94,051	3,674	50,004		53,678	4,818	5,240	10,058	12,161	145,626			157,787
1981	2,282	99,506			101,788	3,580	45,781		49,361	4,011	4,023	8,034	9,873	149,310			159,183
1982	2,311	74,450			76,761	2,109	39,132		41,241	3,359	2,609	5,968	7,779	116,191			123,970
1983	6,263	95,457			101,720	9,065	43,229		52,294	4,910	4,106	9,016	20,238	142,792			163,030
1984	4,624	74,671			79,295	7,172	36,697		43,869	4,394	3,039	7,433	16,190	114,407			130,597
1985	3,071	90,011			93,082	3,468	48,365		51,833	3,342	2,588	5,930	9,881	140,964			150,845
1986	5,275	53,035			58,310	6,483	41,849		48,332	4,305	901	5,206	16,063	95,785			111,848
1987	7,278	76,643	0		83,921	9,866	47,458		57,324	4,708	2,039	6,747	21,852	126,140	0		147,992
1988	3,938	56,120	67	989	61,114	3,823	35,120	68	39,011	4,547	1,767	6,314	12,308	93,007	67	1,057	106,439
1989	4,565	61,570	286	794	67,215	7,147	33,166	59	40,372	4,778	1,645	6,423	16,490	96,381	286	853	114,010
1990	6,619	51,199	450	1,063	59,331	9,546	33,061	152	42,759	4,093	2,341	6,434	20,258	86,601	450	1,215	108,524
1991	5,925	56,332		485	62,742	7,617	39,260	113	46,990	3,187	2,344	5,531	16,729	97,936		598	115,263
1992	5,141	74,212		930	80,283	7,074	38,139	0	45,213	4,991	1,819	6,810	17,206	114,170		930	132,306
1993	10,408	49,286		1,408	61,102	11,513	37,293	164	48,970	6,592	1,501	8,093	28,513	88,080		1,572	118,165
1994	6,540	62,241		1,561	70,342	8,956	41,692	70	50,718	6,124	1,114	7,238	21,620	105,047		1,631	128,298
1995	5,960	76,106		2,078	84,144	9,037	41,458	74	50,569	5,419	0	5,419	20,416	117,564		2,152	140,132
1996	3,646	56,642		1,698	61,986	7,780	30,209	0	37,989	6,783	0	6,783	18,209	86,851		1,698	106,758
1997	7,550	66,384		2,791	76,725	9,350	39,363	20	48,733	6,311	0	6,311	23,211	105,747		2,811	131,769
1998	7,242	25,413		878	33,533	9,455	16,806	48	26,309	4,514	0	4,514	21,211	42,219		926	64,356
1999	6,848	37,161		1,049	45,058	10,439	27,133	156	37,728	7,715	538	8,253	25,002	64,832		1,205	91,039
2000	5,891	4,735		275	10,901	9,935	3,783	322	14,040	3,914	0	3,914	19,740	8,518		597	28,855
2001	7,089	0		0	7,089	13,442	0	0	13,442	6,361	0	6,361	26,892	0		0	26,892
2002	5,603	11,087		494	17,184	8,954	11,434	34	20,422	4,139	0	4,139	18,696	22,521		528	41,745
2003	6,332	22,709		619	29,660	9,668	14,220	61	23,949	5,002	0	5,002	21,002	36,929		680	58,611
2004	5,880	28,403		722	35,005	9,724	24,145	70	33,939	4,748	0	4,748	20,352	52,548		792	73,692
1999-2003 Average	6,353	15,138		487	21,978	10,488	11,314	115	21,916	5,426	108	5,534	22,266	26,560		602	49,428
1994-2003 Average	6,270	36,248		1,144	43,662	9,702	22,610	79	32,390	5,628	165	5,793	21,600	59,023		1,223	81,846

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	District 4				District 5					District 6						Upper Yukon Area Subtotals					
Year	Subsist	Comm	Comm-Related [f]	Total	Subsist	Comm [b]	Comm-Related [f]	Personal Use [d]	Total	Subsist	Comm [b]	Comm-Related [f]	Personal Use	Test Fish Sales	Total	Subsist	Comm	Comm-Related [f]	Personal Use	Test Fish Sales	Total
1961																	1,804	0			1,804
1962																	724	0			724
1963																	803	0			803
1964																	1,081	0			1,081
1965																	1,863	0			1,863
1966																	1,988	0			1,988
1967																	1,449	0			1,449
1968																	1,126	0			1,126
1969																	988	0			988
1970																	1,651	0			1,651
1971																	1,749	0			1,749
1972																	1,092	0			1,092
1973																	1,309	0			1,309
1974		685	0	685		2,663	0		2,663		1,473	0					4,821	0			4,821
1975		389	0	389		2,872	0		2,872		500	0					3,761	0			3,761
1976		409	0	409		3,151	0		3,151		1,102	0					4,662	0			4,662
1977		985	0	985		4,162	0		4,162		1,008	0					6,155	0			6,155
1978	5,549	608	0	6,157	10,405	3,079	0		13,484	1,231	635	0			1,866	17,185	4,322	0			21,507
1979	7,203	1,989	0	9,192	11,997	3,389	0		15,386	1,333	772	0			2,105	20,533	6,150	0			26,683
1980	11,053	1,521	0	12,574	17,684	4,891	0		22,575	1,826	1,947	0			3,773	30,563	8,359	0			38,922
1981	4,432	1,347	0	5,779	13,300	6,374	0		19,674	2,085	987	0			3,072	19,817	8,708	0			28,525
1982	5,077	1,087	0	6,164	12,859	5,385	0		18,244	2,443	981	0			3,424	20,379	7,453	0			27,832
1983	9,754	601	0	10,355	16,780	3,606	0		20,386	2,706	911	0			3,617	29,240	5,118	0			34,358
1984	7,650	961	0	8,611	14,989	3,669	0		18,658	3,599	867	0			4,466	26,238	5,497	0			31,735
1985	7,425	664	0	8,089	15,090	3,418	0		18,508	7,375	1,142	0			8,517	29,890	5,224	0			35,114
1986	9,530	502	0	10,032	15,944	2,733	0		18,677	3,701	950	0			4,651	29,175	4,185	0	0		33,360
1987	7,914	1,524	0	9,438	17,556	3,758	0	1,706	23,020	4,096	3,338	0			7,434	29,566	8,620	0	1,706		39,892
1988	9,515	3,159	0	12,674	17,200	3,436	0	1,435	22,071	4,884	762	0	623	24	6,293	31,599	7,357	0	2,058	24	41,038
1989	9,074	2,790	0	11,864	20,336	3,286	0	1,877	25,499	2,546	1,741	0	453	440	5,180	31,956	7,817	0	2,330	440	42,543
1990	11,122	3,536	2	14,660	14,589	3,353	12	1,693	19,647	2,618	1,757	399	451	833	6,058	28,329	8,646	413	2,144	833	40,365
1991	11,100	2,446	1,136	14,682	16,429	3,810	16		20,255	2,515	686	386	0	91	3,678	30,044	6,942	1,538	0	91	38,615
1992	8,291	1,651	743	10,685	17,691	3,852	3		21,546	2,438	572	181	0	32	3,223	28,420	6,075	927	0	32	35,454
1993	10,936	1,349	228	12,513	21,365	3,008	0		24,373	1,672	1,113	332	426	0	3,543	33,973	5,470	560	426	0	40,429
1994	10,327	2,216	227	12,770	18,760	3,739	5		22,504	2,370	2,135	471	0	0	4,976	31,457	8,090	703	0	0	40,250
1995	9,474	262	237	9,973	16,866	3,242	0		20,108	1,779	1,660	1,087	399	0	4,925	28,119	5,164	1,324	399	0	35,006
1996	8,193	45	92	8,330	15,727	2,497	260		18,484	1,177	278	169	215	0	1,839	25,097	2,820	521	215	0	28,653
1997	12,006	1,450	7	13,463	18,049	3,678	0		21,727	2,712	1,966	762	313	0	5,753	32,767	7,094	769	313	0	40,943
1998	15,801	0	0	15,801	14,802	517	0		15,319	1,919	882	81	357	0	3,239	32,522	1,399	81	357	0	34,359
1999	11,238	1,437	0	12,675	14,330	2,604	0		16,934	1,624	402	288	331	0	2,645	27,192	4,443	288	331	0	32,254
2000	6,264	0	0	6,264	8,854	0	0		8,854	983	0	0	75	0	1,058	16,101	0	0	75	0	16,176
2001	10,152	0	0	10,152	13,566	0	0		13,566	2,449	0	0	122	0	2,571	26,167	0	0	122	0	26,289
2002	9,456	0	0	9,456	13,401	771	0		14,172	1,067	836	0	126	0	2,029	23,924	1,607	0	126	0	25,657
2003	12,771	562	0	13,333	19,191	1,134	0		20,325	2,145	1,813	0	204	0	4,162	34,107	3,509	0	204	0	37,820
2004	16,269	0	0	16,269	15,666	1,546	0		17,212	1,388	2,057	0	201	0	3,646	33,323	3,603	0	201	0	37,127
1999-2003 Average	9,976	400	0	10,376	13,868	902	0		14,770	1,654	610	58	172	0	2,493	25,498	1,912	58	172	0	27,639
1994-2003 Average	10,568	597	56	11,222	15,355	1,818	27		17,199	1,823	997	286	214	0	3,320	27,745	3,413	369	214	0	31,741

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	Yukon Area Totals							Canada: Yukon Territories								Total Yukon River Drainage						
								Mainstem Yukon														
								Non-Commercial						Porcupine	Total							
Year	Subsist	Comm	Comm-Related [f]	Personal Use	Test Fish Sales	Sport Fish [g]	Total	Domestic	Aboriginal	Sport [h]	test fish [j]	Comm	Subtotal	Aboriginal	Canadian	Subsist. [k]	Comm	Comm-Related [f]	Personal Use	Alaska Test Fish	Sport Fish	Total
1961	21,488	119,664	0				141,152		9,300			3,446	12,746	500	13,246	31,288	123,110					154,398
1962	11,110	94,734	0				105,844		9,300			4,037	13,337	600	13,937	21,010	98,771					119,781
1963	24,862	117,048	0				141,910		7,750			2,283	10,033	44	10,077	32,656	119,331					151,987
1964	16,231	93,587	0				109,818		4,124			3,208	7,332	76	7,408	20,431	96,795					117,226
1965	16,608	118,098	0				134,706		3,021			2,265	5,286	94	5,380	19,723	120,363					140,086
1966	11,572	93,315	0				104,887		2,445			1,942	4,387	65	4,452	14,082	95,257					109,339
1967	16,448	129,656	0				146,104		2,920			2,187	5,107	43	5,150	19,411	131,843					151,254
1968	12,106	106,526	0				118,632		2,800			2,212	5,012	30	5,042	14,936	108,738					123,674
1969	14,000	91,027	0				105,027		957			1,640	2,597	27	2,624	14,984	92,667					107,651
1970	13,874	79,145	0				93,019		2,044			2,611	4,655	8	4,663	15,926	81,756					97,682
1971	25,684	110,507	0				136,191		3,260			3,178	6,438	9	6,447	28,953	113,685					142,638
1972	20,258	92,840	0				113,098		3,960			1,769	5,729		5,729	24,218	94,609					118,827
1973	24,317	75,353	0				99,670		2,319			2,199	4,518	4	4,522	26,640	77,552					104,192
1974	19,964	98,089	0				118,053	406	3,342			1,808	5,556	75	5,631	23,787	99,897					123,684
1975	13,045	63,838	0				76,883	400	2,500			3,000	5,900	100	6,000	16,045	66,838					82,883
1976	17,806	87,776	0				105,582	500	1,000			3,500	5,000	25	5,025	19,331	91,276					110,607
1977	17,581	96,757	0			156	114,494	531	2,247			4,720	7,498	29	7,527	20,388	101,477				156	122,021
1978	30,297	99,168	0			523	129,988	421	2,485			2,975	5,881		5,881	33,203	102,143				523	135,869
1979	31,005	127,673	0			554	159,232	1,200	3,000			6,175	10,375		10,375	35,205	133,848				554	169,607
1980	42,724	153,985	0			956	197,665	3,500	7,546	300		9,500	20,846	2,000	22,846	55,770	163,485				1,256	220,511
1981	29,690	158,018	0			769	188,477	237	8,879	300		8,593	18,009	100	18,109	38,906	166,611				1,069	206,586
1982	28,158	123,644	0			1,006	152,808	435	7,433	300		8,640	16,808	400	17,208	36,426	132,284				1,306	170,016
1983	49,478	147,910	0			1,048	198,436	400	5,025	300		13,027	18,752	200	18,952	55,103	160,937				1,348	217,388
1984	42,428	119,904	0			351	162,683	260	5,850	300		9,885	16,295	500	16,795	49,038	129,789				651	179,478
1985	39,771	146,188	0			1,368	187,327	478	5,800	300		12,573	19,151	150	19,301	46,199	158,761				1,668	206,628
1986	45,238	99,970	0			796	146,004	342	8,625	300		10,797	20,064	300	20,364	54,505	110,767				1,096	166,368
1987	51,418	134,760	0	1,706		502	188,386	330	6,069	300		10,864	17,563	51	17,614	57,868	145,624		1,706		802	206,000
1988	43,907	100,364	0	2,125	1,081	944	148,421	282	7,178	650		13,217	21,327	100	21,427	51,467	113,581		2,125	1,081	1,594	169,848
1989	48,446	104,198	0	2,616	1,293	1,063	157,616	400	6,930	300		9,789	17,419	525	17,944	56,301	113,987		2,616	1,293	1,363	175,560
1990	48,587	95,247	413	2,594	2,048	544	149,433	247	7,109	300		11,324	18,980	247	19,227	56,190	106,571	413	2,594	2,048	844	168,660
1991	46,773	104,878	1,538	0	689	773	154,651	227	9,011	300		10,906	20,444	163	20,607	56,174	115,784	1,538	0	689	1,073	175,258
1992	45,626	120,245	927	0	962	431	168,191	277	6,349	300		10,877	17,803	100	17,903	52,352	131,122	927	0	962	731	186,094
1993	62,486	93,550	560	426	1,572	1,695	160,289	243	5,576	300		10,350	16,469	142	16,611	68,447	103,900	560	426	1,572	1,995	176,900
1994	53,077	113,137	703	0	1,631	2,281	170,829	373	8,089	300		12,028	20,790	428	21,218	61,967	125,165	703	0	1,631	2,581	192,047
1995	48,535	122,728	1,324	399	2,152	2,525	177,663	300	7,945	700		11,146	20,091	796	20,887	57,576	133,874	1,324	399	2,152	3,225	198,550
1996	43,306	89,671	521	215	1,698	3,151	138,562	141	8,451	790		10,164	19,546	66	19,612	51,964	99,835	521	215	1,698	3,941	158,174
1997	55,978	112,841	769	313	2,811	1,913	174,625	288	8,888	1,230		5,311	15,717	811	16,528	65,965	118,152	769	313	2,811	3,143	191,153
1998	53,733	43,618	81	357	926	654	99,369	24	5,424	0	737	390	6,575	99	6,674	60,017	44,008	81	357	926	654	106,043
1999	52,194	69,275	288	331	1,205	1,023	124,316	213	8,804	177		3,160	12,354	114	12,468	61,325	72,435	288	331	1,205	1,200	136,784
2000	35,841	8,518	0	75	597	276	45,307	0	4,829	0	761	0	5,590	50	5,640	41,481	8,518	0	75	597	276	50,947
2001	53,059	0	0	122	0	679	53,860	89	8,188	98	767	1,351	10,493	370	10,863	62,473	1,351	0	122	0	777	64,723
2002	42,620	24,128	0	126	528	486	67,888	59	7,138	128	1,036	708	9,069	188	9,257	51,041	24,836	0	126	528	614	77,145
2003	55,109	40,438	0	204	680	2,719	99,150	115	6,121	275	263	2,672	9,446	173	9,619	61,781	43,110	0	204	680	2,994	108,769
2004	53,675	56,151	0	201	792	1,513	112,332	88	6,483	423	167	3,785	10,946	292	11,238	60,705	59,936	0	201	792	1,936	123,570
1999-2003 Average	47,765	28,472	58	172	602	1,037	78,104	95	7,016	136	707	1,578	9,390	179	9,569	55,620	30,050	58	172	602	1,172	87,674
1994-2003 Average	49,345	62,435	369	214	1,223	1,571	115,157	160	7,388	370	713	4,693	12,967	310	13,277	57,559	67,128	369	214	1,223	1,941	128,434

[a] Subsistence harvest not available by district until 1978. Test fish sales is the number of fish sold by ADF&G test fisheries. Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.
[b] Includes estimates of illegal sales (refer to Appendix A4).
[c] Includes department test fish sales prior to 1988.
[d] After 1991 the regulation did not provide for a Personal Use fishery in Districts 1, 3 and 5.
[f] Commercial related refers to the estimated harvest of female Chinook salmon to produce roe sold.
[g] Estimated sport fish harvest for Alaskan portion of the Yukon River drainage. The majority of sport fish harvest occurs in the Tanana River drainage (District 6).
[h] Canadian sport fish harvest unknown prior to 1980.
[j] Canadian Chinook test fishery is conducted for management purposes, the fish harvested are retained and given to Aboriginal or Domestic users, but are not reported under those categories.
[k] Includes Alaskan subsistence harvest and Canadian Domestic, Test fish and Aboriginal harvests.

Appendix A18.–Summer chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2004.[a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsist	Comm [b]	Personal Use [c]	Test Fish Sales	Total	Subsist	Comm [b]	Test Fish Sales	Total	Subsist	Comm	Total	Subsist	Comm [b]	Personal Use [c]	Test Fish Sales	Total
1961		0					0				0			0			
1962		0					0				0			0			
1963		0					0				0			0			
1964		0					0				0			0			
1965		0					0				0			0			
1966		0					0				0			0			
1967		9,453			9,453		1,425		1,425		57	57		10,935			10,935
1968		12,995			12,995		1,407		1,407		68	68		14,470			14,470
1969		56,886			56,886		5,080		5,080		0	0		61,966			61,966
1970		117,357			117,357		19,649		19,649		0	0		137,006			137,006
1971		93,928			93,928		6,112		6,112		50	50		100,090			100,090
1972		114,234			114,234		20,907		20,907		527	527		135,668			135,668
1973		221,644			221,644		63,402		63,402		463	463		285,509			285,509
1974		466,004			466,004		74,152		74,152		1,721	1,721		541,877			541,877
1975		418,323			418,323		99,139		99,139		0	0		517,462			517,462
1976		273,204			273,204		99,190		99,190		9,802	9,802		382,196			382,196
1977		250,652			250,652		105,679		105,679		3,412	3,412		359,743			359,743
1978	30,897	393,785			424,682	21,684	227,548		249,232	1,706	27,003	28,709	54,287	648,336			702,623
1979	16,144	369,934			386,078	23,276	172,838		196,114	9,531	40,015	49,546	48,951	582,787			631,738
1980	15,972	391,252			407,224	13,681	308,704		322,385	5,727	44,782	50,509	35,380	744,738			780,118
1981	11,310	507,158			518,468	14,218	351,878		366,096	7,430	54,471	61,901	32,958	913,507			946,465
1982	18,452	249,516			267,968	18,442	182,344		200,786	5,840	4,086	9,926	42,734	435,946			478,680
1983	24,679	451,164			475,843	27,396	248,092		275,488	4,609	14,600	19,209	56,684	713,856			770,540
1984	28,459	292,676			321,135	26,996	236,931		263,927	7,351	1,087	8,438	62,806	530,694			593,500
1985	24,349	247,486			271,835	19,795	188,099		207,894	3,687	1,792	5,479	47,831	437,377			485,208
1986	38,854	381,127			419,981	41,496	288,427		329,923	12,238	442	12,680	92,588	669,996			762,584
1987	30,760	222,898	0		253,658	33,134	174,876		208,010	12,176	3,501	15,677	76,070	401,275	0		477,345
1988	28,934	645,322	416	2,876	677,548	28,787	424,461	711	453,959	14,609	13,965	28,574	72,330	1,083,748	416	3,587	1,160,081
1989	52,844	544,373	381	3,408	601,006	39,703	343,032	930	383,665	12,824	7,578	20,402	105,371	894,983	381	4,338	1,005,073
1990	36,999	146,725	256	2,186	186,166	28,453	131,755	752	160,960	9,521	643	10,164	74,973	279,123	256	2,938	357,290
1991	27,790	140,470		1,373	169,633	20,703	175,149	703	196,555	5,545	8,912	14,457	54,038	324,531		2,076	380,645
1992	33,239	177,329		1,918	212,486	24,731	147,129	0	171,860	9,599	65	9,664	67,569	324,523		1,918	394,010
1993	33,986	73,659		1,379	109,024	25,297	19,332	490	45,119	7,538	463	8,001	66,821	93,454		1,869	162,144
1994	32,145	42,332		2,769	77,246	22,907	12,869	443	36,219	8,492	35	8,527	63,544	55,236		3,212	121,992
1995	34,990	142,266		5,672	182,928	27,190	83,817	401	111,408	12,143	0	12,143	74,323	226,083		6,073	306,479
1996	27,289	92,506		7,309	127,104	28,426	30,727	0	59,153	11,368	1,534	12,902	67,083	124,767		7,309	199,159
1997	27,248	59,915		2,557	89,720	26,971	18,242	33	45,246	10,316	0	10,316	64,535	78,157		2,590	145,282
1998	26,888	21,270		2,935	51,093	26,280	6,848	84	33,212	6,472	0	6,472	59,640	28,118		3,019	90,777
1999	20,169	16,181		799	37,149	24,137	11,702	37	35,876	5,748	0	5,748	50,054	27,883		836	78,773
2000	24,079	3,315		561	27,955	25,331	3,309	87	28,727	3,687	0	3,687	53,097	6,624		648	60,369
2001	22,771	0		0	22,771	26,303	0	0	26,303	1,309	0	1,309	50,383	0		0	50,383
2002	24,107	6,327		164	30,598	23,554	4,027	54	27,635	2,506	0	2,506	50,167	10,354		218	60,739
2003	19,701	3,579		37	23,317	16,773	2,583	82	19,438	5,858	0	5,858	42,332	6,162		119	48,613
2004	20,620	13,993		217	34,830	25,931	5,782	0	31,713	2,958	0	2,958	49,509	19,775		217	69,501
1999-2003 Average	22,165	5,880		312	28,358	23,220	4,324	52	27,596	3,822	0	3,822	49,207	10,205		364	59,775
1994-2003 Average	25,939	38,769		2,280	66,988	24,787	17,412	122	42,322	6,790	157	6,947	57,516	56,338		2,402	116,257

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	District 4					District 5					District 6						Upper Yukon Area Subtotals					
Year	Subsist [d]	Comm	Comm-Related [e]	Anvik River [f]	Total	Subsist [g]	Comm	Comm-Related [h]	Personal Use [c]	Total	Subsist [g]	Comm	Comm-Related [h]	Personal Use	Test Fish Sales	Total	Subsist	Comm	Comm-Related	Personal Use [c]	Test Fish Sales	Total
1961		0	0				0	0				0	0					0	0			
1962		0	0				0	0				0	0					0	0			
1963		0	0				0	0				0	0					0	0			
1964		0	0				0	0				0	0					0	0			
1965		0	0				0	0				0	0					0	0			
1966		0	0				0	0				0	0					0	0			
1967		0	0				0	0				0	0					0	0			
1968		0	0				0	0				0	0					0	0			
1969		0	0				0	0				0	0					0	0			
1970		0	0				0	0				0	0					0	0			
1971		0	0				0	0				0	0					0	0			
1972		0	0				0	0				0	0					0	0			0
1973		0	0				0	0				0	0					0	0			0
1974		27,866	0		27,866		6,831	0		6,831		13,318	0			13,318		48,015	0			48,015
1975		165,054	0		165,054		12,997	0		12,997		14,782	0			14,782		192,833	0			192,833
1976		211,307	0		211,307		774	0		774		6,617	0			6,617		218,698	0			218,698
1977		169,541	0		169,541		1,274	0		1,274		4,317	0			4,317		175,132	0			175,132
1978	93,139	364,184	16,920		474,243	20,423	4,892	605		25,920	3,534	34,814	8,236			46,584	117,096	403,890	25,761			546,747
1979	81,838	169,430	35,317		286,585	22,869	8,608	1,009		32,486	2,312	18,491	3,891			24,694	107,019	196,529	40,217			343,765
1980	117,305	147,560	135,824		400,689	8,594	456	0		9,050	6,426	35,855	3,282			45,563	132,325	183,871	139,106			455,302
1981	48,452	59,718	270,727		378,897	27,259	1,236	49		28,544	8,960	32,477	1,987			43,424	84,671	93,431	272,763			450,865
1982	57,967	3,647	254,072		315,686	9,770	213	21		10,004	6,942	21,597	1,517			30,056	74,679	25,457	255,610			355,746
1983	46,713	6,672	248,716		302,101	22,087	42	1,856		23,985	23,696	24,309	18			48,023	92,496	31,023	250,590			374,109
1984	49,230	1,009	277,061		327,300	31,488	645	47		32,180	23,106	56,249	335			79,690	103,824	57,903	277,443			439,170
1985	59,839	12,007	415,476		487,322	26,996	700	0		27,696	23,078	66,913	1,540			91,531	109,913	79,620	417,016			606,549
1986	53,020	300	465,235		518,555	21,833	690	0	0	22,523	14,896	50,483	2,146			67,525	89,749	51,473	467,381			608,603
1987	48,911	29,991	179,809		258,711	20,544	362	44	4,262	25,212	25,153	10,610	450			36,213	94,608	40,963	180,303	4,262		320,136
1988	86,623	24,051	466,023		576,697	28,960	722	363	567	30,612	8,686	40,129	1,646	1,242	0	51,703	124,269	64,902	468,032	1,809		659,012
1989	40,935	18,554	491,690		551,179	12,981	154	373	295	13,803	7,868	42,115	4,871	1,215	6,267	62,336	61,784	60,823	496,934	1,510	6,267	627,318
1990	26,534	12,364	210,186		249,084	9,817	11	660	641	11,129	4,285	11,127	3,706	930	5,325	25,373	40,636	23,502	214,552	1,571	5,325	285,586
1991	35,269	6,381	303,263		344,913	24,164	4	31		24,199	5,069	18,197	5,695	0	1,858	30,819	64,502	24,582	308,989	0	1,858	399,931
1992	35,812	2,659	208,737		247,208	12,612	102	328		13,042	9,504	5,029	2,199	0	49	16,781	57,928	7,790	211,264	0	49	277,031
1993	20,076	27	42,930		63,033	11,086	0	0		11,086	6,793	3,041	664	674	0	11,172	37,955	3,068	43,594	674	0	85,291
1994	27,504	3,611	145,423	22,573	199,111	11,830	229	235		12,294	7,026	21,208	10,226	0	0	38,460	46,360	25,048	178,457	0	0	249,865
1995	25,084	8,873	490,970	54,744	579,671	7,655	107	209		7,971	11,661	24,711	12,717	780	0	49,869	44,400	33,691	558,640	780	0	637,511
1996	16,425	0	425,607	84,633	526,665	11,509	0	336		11,845	7,486	22,360	24,530	905	0	55,281	35,420	22,360	535,106	905	0	593,791
1997	24,230	2,062	109,061	13,548	148,901	4,520	137	0		4,657	3,824	14,886	10,401	391	0	29,502	32,574	17,085	133,010	391	0	183,060
1998	18,046	0	0	0	18,046	2,314	96	14		2,424	6,004	397	173	84	0	6,658	26,364	493	187	84	0	27,128
1999	15,339	1,267	0	0	16,606	2,276	115	0		2,391	2,654	124	24	382	0	3,184	20,269	1,506	24	382	0	22,181
2000	7,046	0	0	0	7,046	3,641	0	0		3,641	1,111	0	0	30	0	1,141	11,798	0	0	30	0	11,828
2001	4,588	0	0	0	4,588	2,856	0	0		2,856	558	0	0	146	0	704	8,002	0	0	146	0	8,148
2002	15,971	0	0	0	15,971	5,610	6	0		5,616	512	3,198	19	175	0	3,904	22,093	3,204	19	175	0	25,491
2003	17,513	62	0	0	17,575	5,545	0	0		5,545	2,914	4,461	0	148	0	7,523	25,972	4,523	0	148	0	30,643
2004	14,959	0	0	0	14,959	3,411	25	0		3,436	1,793	6,610	0	231	0	8,634	20,163	6,635	0	231	0	27,029
1999-2003 Average	12,091	266	0	0	12,357	3,986	24	0		4,010	1,550	1,557	9	176	0	3,291	17,627	1,847	9	176	0	19,658
1994-2003 Average	17,431	1,588	117,106	17,550	153,418	5,776	69	79		5,924	4,375	9,135	5,809	304	0	19,623	27,325	10,791	140,544	304	0	178,965

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	Yukon Area Totals						
Year	Subsist	Comm	Comm-Related	Personal Use	Alaska Test Fish	Sport Fish [j]	Total
1961	305,317	0	0				305,317
1962	261,856	0	0				261,856
1963	297,094	0	0				297,094
1964	361,080	0	0				361,080
1965	336,848	0	0				336,848
1966	154,508	0	0				154,508
1967	206,233	10,935	0				217,168
1968	133,880	14,470	0				148,350
1969	156,191	61,966	0				218,157
1970	166,504	137,006	0				303,510
1971	171,487	100,090	0				271,577
1972	108,006	135,668	0				243,674
1973	161,012	285,509	0				446,521
1974	227,811	589,892	0				817,703
1975	211,888	710,295	0				922,183
1976	186,872	600,894	0				787,766
1977	159,502	534,875	0			316	694,693
1978	171,383	1,052,226	25,761			451	1,249,821
1979	155,970	779,316	40,217			328	975,831
1980	167,705	928,609	139,106			483	1,235,903
1981	117,629	1,006,938	272,763			612	1,397,942
1982	117,413	461,403	255,610			780	835,206
1983	149,180	744,879	250,590			998	1,145,647
1984	166,630	588,597	277,443			585	1,033,255
1985	157,744	516,997	417,016			1,267	1,093,024
1986	182,337	721,469	467,381	0		895	1,372,082
1987	170,678	442,238	180,303	4,262		846	798,327
1988	196,599	1,148,650	468,032	2,225	3,587	1,037	1,820,130
1989	167,155	955,806	496,934	1,891	10,605	2,131	1,634,522
1990	115,609	302,625	214,552	1,827	8,263	472	643,348
1991	118,540	349,113	308,989	0	3,934	1,037	781,613
1992	125,497	332,313	211,264	0	1,967	1,308	672,349
1993	104,776	96,522	43,594	674	1,869	564	247,999
1994	109,904	80,284	178,457	0	3,212	350	372,207
1995	118,723	259,774	558,640	780	6,073	1,174	945,164
1996	102,503	147,127	535,106	905	7,309	1,854	794,804
1997	97,109	95,242	133,010	391	2,590	475	328,817
1998	86,004	28,611	187	84	3,019	421	118,326
1999	70,323	29,389	24	382	836	555	101,509
2000	64,895	6,624	0	30	648	161	72,358
2001	58,385	0	0	146	0	82	58,613
2002	72,260	13,558	19	175	218	384	86,614
2003	68,304	10,685	0	148	119	1,638	80,894
2004	69,672	26,410	0	231	217	203	96,733
1999-2003 Average	66,833	12,051	9	176	364	564	79,998
1994-2003 Average	84,841	67,129	140,544	304	2,402	709	295,931

[a] Subsistence harvest estimates not available by district until 1978. Harvests prior to 1977 were estimated because catches of salmon other than Chinook salmon were not differentiated by species. Test Fish Sales is the number of salmon sold by ADF&G test fisheries. Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

[b] Includes estimates of illegal sales (refer to Appendix A4). Includes department test fish sales prior to 1988.

[c] After 1991 the regulation did not provide for a Personal Use fishery in Districts 1, 3 and 5.

[d] In 1978 and 1979, the commercial related harvest was subtracted from the subsistence harvest because it was assumed this harvest was included in the reported subsistence harvest. From 1980 through 1987, the District 4 subsistence harvest was also reduced to account for commercial related harvests being reported in the subsistence harvest. It was calculated that 80.2% of the reported subsistence harvest (excluding Innoko and Koyukuk River catches) was commercial related. Beginning in 1988, subsistence surveys documented subsistence only fishing catches and commercial related use separately.

[e] In District 4, excluding the Anvik River, commercial related refers to the estimated number of females and incidental males harvested to produce roe sold.

[f] Only roe has been sold in the Anvik River commercial fishery. The commercial related harvest shown is the estimated number of females harvested to produce roe sold.

[g] From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 5 and 6 because it was assumed that this harvest was included in the reported subsistence harvest during that time period.

[h] In District 5 and 6, commercial related refers to the number of females harvested to produce roe sold.

[j] Estimated sport fish harvest for all chum salmon (assume majority of chums caught during summer season) in Alaskan portion of the drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).

Appendix A19.–Fall chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2004.[a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsistence	Commercial[b]	Personal Use[c]	Test Fish Sales	Total	Subsistence	Commercial[b]	Test Fish Sales	Total	Subsistence	Commercial	Total	Subsistence	Commercial	Personal Use[c]	Test Fish Sales	Total
1961		42,461			42,461									42,461			42,461
1962		53,116			53,116									53,116			53,116
1963																	
1964		8,347			8,347									8,347			8,347
1965		22,936			22,936									22,936			22,936
1966		69,836			69,836						1,209	1,209		71,045			71,045
1967		36,451			36,451						1,823	1,823		38,274			38,274
1968		49,857			49,857						3,068	3,068		52,925			52,925
1969		128,866			128,866						1,722	1,722		130,588			130,588
1970		200,306			200,306		4,858		4,858		3,285	3,285		208,449			208,449
1971		188,533			188,533									188,533			188,533
1972		136,711			136,711		12,898		12,898		1,313	1,313		150,922			150,922
1973		173,783			173,783		45,304		45,304					219,087			219,087
1974		176,036			176,036		53,540		53,540		552	552		230,128			230,128
1975		158,183			158,183		51,666		51,666		5,590	5,590		215,439			215,439
1976		105,851			105,851		21,212		21,212		4,250	4,250		131,313			131,313
1977		131,758			131,758		51,994		51,994		15,851	15,851		199,603			199,603
1978	390	127,947			128,337	1,297	51,646		52,943	266	11,527	11,793	1,953	191,120			193,073
1979	15,788	109,406			125,194	14,662	94,042		108,704	2,443	25,955	28,398	32,893	229,403			262,296
1980	7,433	106,829			114,262	12,435	83,881		96,316	2,320	13,519	15,839	22,188	204,229			226,417
1981	15,540	167,834			183,374	11,770	154,883		166,653	3,043	19,043	22,086	30,353	341,760			372,113
1982	10,016	97,484			107,500	9,511	96,581		106,092	1,659	5,815	7,474	21,186	199,880			221,066
1983	8,238	124,371			132,609	10,341	85,645		95,986	2,863	10,018	12,881	21,442	220,034			241,476
1984	8,885	78,751			87,636	11,394	70,803		82,197	2,233	6,429	8,662	22,512	155,983			178,495
1985	13,275	129,948			143,223	11,544	40,490		52,034	2,290	5,164	7,454	27,109	175,602			202,711
1986	9,000	59,352			68,352	13,483	51,307		64,790	2,155	2,793	4,948	24,638	113,452			138,090
1987	18,467	0	0		18,467	13,454	0		13,454	3,287	0	3,287	35,208	0	0		35,208
1988	5,475	45,317	5	639	51,436	8,600	31,861	16	40,477	1,747	2,090	3,837	15,822	79,268	5	655	95,750
1989	4,914	77,876	18	3,641	86,449	10,015	97,906	348	108,269	1,023	15,332	16,355	15,952	191,114	18	3,989	211,073
1990	5,335	27,337	60	2,068	34,800	6,187	37,173	96	43,456	2,056	3,715	5,771	13,578	68,225	60	2,164	84,027
1991	3,935	59,724		2,455	66,114	5,628	102,628	96	108,352	615	9,213	9,828	10,178	171,565		2,551	184,294
1992	5,216	0		0	5,216	7,382	0	0	7,382	2,358	0	2,358	14,956	0		0	14,956
1993	7,770	0		0	7,770	3,094	0	0	3,094	1,449	0	1,449	12,313	0		0	12,313
1994	4,887	0		0	4,887	4,151	0	0	4,151	862	0	862	9,900	0		0	9,900
1995	4,698	79,345		1,121	85,164	3,317	90,831	0	94,148	1,672	0	1,672	9,687	170,176		1,121	180,984
1996	4,147	33,629		1,717	39,493	5,287	29,651	0	34,938	2,706	0	2,706	12,140	63,280		1,717	77,137
1997	3,132	27,483		867	31,482	4,680	24,326	0	29,006	787	0	787	8,599	51,809		867	61,275
1998	3,163	0		0	3,163	4,482	0	0	4,482	1,561	0	1,561	9,206	0		0	9,206
1999	6,502	9,987		1,149	17,638	4,594	9,703	22	14,319	415	0	415	11,511	19,690		1,171	32,372
2000	5,294	0		0	5,294	1,425	0	0	1,425	598	0	598	7,317	0		0	7,317
2001	3,437	0		0	3,437	3,256	0	0	3,256	700	0	700	7,393	0		0	7,393
2002	1,881	0		0	1,881	1,618	0	0	1,618	164	0	164	3,663	0		0	3,663
2003	2,139	5,586		0	7,725	2,901	0	0	2,901	738	0	738	5,778	5,586		0	11,364
2004	2,067	660		0	2,727	2,421	0	0	2,421	298	0	298	4,786	660		0	5,446
1999-2003 Average	3,851	3,115		230	7,195	2,759	1,941	4	4,704	523	0	523	7,132	5,055		234	12,422
1994-2003 Average	3,928	15,603		485	20,016	3,571	15,451	2	19,024	1,020	0	1,020	8,519	31,054		488	40,061

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Year	District 4 Subsistence [d]	District 4 Commercial	District 4 Commercial Related [f]	District 4 Total	District 5 Subsistence [d]	District 5 Commercial	District 5 Commercial Related [f]	District 5 Personal Use [c]	District 5 Total	District 6 Subsistence [d]	District 6 Commercial	District 6 Commercial Related [f]	District 6 Personal Use	District 6 Test Fish Sales	District 6 Total	Upper Yukon Area Subtotals Subsistence	Upper Yukon Area Subtotals Commercial	Upper Yukon Area Subtotals Commercial Related	Upper Yukon Area Subtotals Personal Use	Upper Yukon Area Subtotals Test Fish Sales	Upper Yukon Area Subtotals Total
1961		0 [k]		0													0	0			0
1962		0 [k]		0													0	0			0
1963		0 [k]		0													0	0			0
1964		0 [k]		0													0	0			0
1965		381 [k]		381													381	0			381
1966		0 [k]		0													0	0			0
1967		0 [k]		0													0	0			0
1968		0 [k]		0													0	0			0
1969		722 [k]		722													722	0			722
1970		1,146 [k]		1,146													1,146	0			1,146
1971		1,061 [k]		1,061													1,061	0			1,061
1972		1,254 [k]		1,254													1,254	0			1,254
1973		13,003 [k]		13,003													13,003	0			13,003
1974		9,213	0	9,213		23,551	0		23,551		26,884	0			26,884		59,648	0			59,648
1975		13,666	0	13,666		27,212	0		27,212		18,692	0			18,692		59,570	0			59,570
1976		1,742	0	1,742		5,387	0		5,387		17,948	0			17,948		25,077	0			25,077
1977		13,980	0	13,980		25,730	0		25,730		18,673	0			18,673		58,383	0			58,383
1978	8,931	10,988	1,721	21,640	46,485	21,016	5,220		72,721	26,870	13,259	3,687			43,816	82,286	45,263	10,628			138,177
1979	34,697	48,899	3,199	86,795	102,695	47,459	8,097		158,251	44,596	34,185	7,170			85,951	181,988	130,543	18,466			330,997
1980	18,923	27,978	4,752	51,653	75,861	41,771	605		118,237	50,261	19,452	67			69,780	145,045	89,201	5,424			239,670
1981	17,120	12,082	2,853	32,055	104,612	87,856	5,719		198,187	23,013	25,989	3,619			52,621	144,745	125,927	12,191			282,863
1982	20,152	3,894	167	24,213	71,786	13,593	42		85,421	19,014	6,820	550			26,384	110,952	24,307	759			136,018
1983	32,246	4,482	1,963	38,691	105,103	43,993	0		149,096	31,069	34,089	1,105			66,263	168,418	82,564	3,068			254,050
1984	28,937	7,625	2,215	38,777	98,376	24,060	57		122,493	22,670	20,564	56			43,290	149,983	52,249	2,328			204,560
1985	22,750	24,452	2,525	49,727	117,125	25,338	0		142,463	36,963	42,352	0			79,315	176,838	92,142	2,525			271,505
1986	26,126	2,045	0	28,171	87,729	22,053	395		110,177	24,973	1,892	182			27,047	138,828	25,990	577			165,395
1987	41,467	0	0	41,467	141,335 [g]	0	0	15,750	157,085	124,587 [h]	0	0	3,316		127,903	307,389	0	0	19,066		326,455
1988	16,958	15,662	1,421	34,041	84,209	16,989	0	1,762	102,960	34,597	21,844	1,806	2,114	27,008	87,369	135,764	54,495	3,227	3,876	27,008	224,370
1989	24,540	11,776	3,407	39,723	112,001	18,215	3,989	3,294	137,499	58,654	49,090	7,353	1,770	16,984	133,851	195,195	79,081	14,749	5,064	16,984	311,073
1990	19,241	4,989	3,177	27,407	90,513	7,778	1,198	3,723	103,212	44,568	43,182	7,793	1,393	7,060	103,996	154,322	55,949	12,168	5,116	7,060	234,615
1991	20,875	3,737	2,354	26,966	74,002	27,355	4,759		106,116	40,469	28,195	16,253	0	1,385	86,302	135,346	59,287	23,366	0	1,385	219,384
1992	21,232	0	0	21,232	45,701	0	0		45,701	25,713	15,721	3,301	0	1,407	46,142	92,646	15,721	3,301	0	1,407	113,075
1993	10,832	0	0	10,832	43,764	0	0		43,764	9,853	0	0	163	0	10,016	64,449	0	0	163	0	64,612
1994	13,325	0	0	13,325	66,396	3,630	0		70,026	33,597	1	4,368	0	0	37,966	113,318	3,631	4,368	0	0	121,317
1995	14,057	2,924	5,807	22,788	57,594	9,778	20,255		87,627	49,168	67,855	6,262	863	0	124,148	120,819	80,557	32,324	863	0	234,563
1996	16,786	2,918	0	19,704	63,473	11,878	9,980		85,331	36,467	10,266	7,308	356	0	54,397	116,726	25,062	17,288	356	0	159,432
1997	11,734	2,458	0	14,192	55,258	2,446	1,474		59,178	19,550	0	0	284	0	19,834	86,542	4,904	1,474	284	0	93,204
1998	7,898	0	0	7,898	31,393	0	0		31,393	14,370	0	0	2	0	14,372	53,661	0	0	2	0	53,663
1999	9,174	681	0	9,855	53,580	0	0		53,580	15,471	0	0	261	0	15,732	78,225	681	0	261	0	79,167
2000	1,759	0	0	1,759	9,920	0	0		9,920	310	0	0	1	0	311	11,989	0	0	1	0	11,990
2001	3,352	0	0	3,352	20,873	0	0		20,873	3,536	0	0	10	0	3,546	27,761	0	0	10	0	27,771
2002	1,549	0	0	1,549	10,976	0	0		10,976	3,202	0	0	3	0	3,205	15,727	0	0	3	0	15,730
2003	9,750	1,315	0	11,065	28,270	0	0		28,270	12,986	4,095	0	394	0	17,475	51,006	5,410	0	394	0	56,810
2004	7,797	0	0	7,797	40,670	0	0		40,670	8,953	3,450	0	230	0	12,633	57,420	3,450	0	230	0	61,100
1999-2003 Average	5,117	399	0	5,516	24,724	0	0		24,724	7,101	819	0	134	0	8,054	36,942	1,218	0	134	0	38,294
1994-2003 Average	9,047	898	581	10,525	39,773	2,773	3,171		45,717	18,866	8,222	1,794	217	0	29,099	67,577	12,025	5,545	217	0	85,365

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	Alaska Yukon Area Totals						Canadian Totals						Yukon River Drainage (Alaska/Canada) Totals					
							Mainstem Yukon River				Porcupine							
Year	Subsistence	Commercial	Commercial Related	Personal Use	Test Fish Sales	Total	Domestic	Aboriginal	Commercial	Subtotal	Aboriginal	Total	Subsistence [j]	Commercial	Commercial Related	Personal Use	Alaska Test Fish	Total
1961	101,772	42,461	0			144,233		3,800	3,276	7,076	2,000	9,076	107,572	45,737	0			153,309
1962	87,285	53,116	0			140,401		6,500	936	7,436	2,000	9,436	95,785	54,052	0			149,837
1963	99,031	0	0			99,031		5,500	2,196	7,696	20,000	27,696	124,531	2,196	0			126,727
1964	120,360	8,347	0			128,707		4,200	1,929	6,129	6,058	12,187	130,618	10,276	0			140,894
1965	112,283	23,317	0			135,600		2,183	2,071	4,254	7,535	11,789	122,001	25,388	0			147,389
1966	51,503	71,045	0			122,548		1,430	3,157	4,587	8,605	13,192	61,538	74,202	0			135,740
1967	68,744	38,274	0			107,018		1,850	3,343	5,193	11,768	16,961	82,362	41,617	0			123,979
1968	44,627	52,925	0			97,552		1,180	453	1,633	10,000	11,633	55,807	53,378	0			109,185
1969	52,063	131,310	0			183,373		2,120	2,279	4,399	3,377	7,776	57,560	133,589	0			191,149
1970	55,501	209,595	0			265,096		612	2,479	3,091	620	3,711	56,733	212,074	0			268,807
1971	57,162	189,594	0			246,756		150	1,761	1,911	15,000	16,911	72,312	191,355	0			263,667
1972	36,002	152,176	0			188,178		0	2,532	2,532	5,000	7,532	41,002	154,708	0			195,710
1973	53,670	232,090	0			285,760		1,129	2,806	3,935	6,200	10,135	60,999	234,896	0			295,895
1974	93,776	289,776	0			383,552	466	1,636	2,544	4,646	7,000	11,646	102,878	292,320	0			395,198
1975	86,591	275,009	0			361,600	4,600	2,500	2,500	9,600	11,000	20,600	104,691	277,509	0			382,200
1976	72,327	156,390	0			228,717	1,000	100	1,000	2,100	3,100	5,200	76,527	157,390	0			233,917
1977	82,771	257,986	0			340,757	1,499	1,430	3,990	6,919	5,560	12,479	91,260	261,976	0			353,236
1978	84,239	236,383	10,628			331,250	728	482	3,356	4,566	5,000	9,566	90,449	239,739	10,628			340,816
1979	214,881	359,946	18,466			593,293	2,000	11,000	9,084	22,084		22,084	227,881	369,030	18,466			615,377
1980	167,233	293,430	5,424			466,087	4,000	3,218	9,000	16,218	6,000	22,218	180,451	302,430	5,424			488,305
1981	175,098	467,687	12,191			654,976	1,611	2,410	15,260	19,281	3,000	22,281	182,119	482,947	12,191			677,257
1982	132,138	224,187	759			357,084	683	3,096	11,312	15,091	1,000	16,091	136,917	235,499	759			373,175
1983	189,860	302,598	3,068			495,526	300	1,200	25,990	27,490	2,000	29,490	193,360	328,588	3,068			525,016
1984	172,495	208,232	2,328			383,055	535	1,800	22,932	25,267	4,000	29,267	178,830	231,164	2,328			412,322
1985	203,947	267,744	2,525			474,216	279	1,740	35,746	37,765	3,500	41,265	209,466	303,490	2,525			515,481
1986	163,466	139,442	577			303,485	222	2,200	11,464	13,886	657	14,543	166,545	150,906	577			318,028
1987	342,597	0	0	19,066		361,663	132	3,622	40,591	44,345	135	44,480	346,486	40,591	0	19,066		406,143
1988	151,586	133,763	3,227	3,881	27,663	320,120	349	1,882	30,263	32,494	1,071	33,565	154,888	164,026	3,227	3,881	27,663	353,685
1989	211,147	270,195	14,749	5,082	20,973	522,146	100	2,462	17,549	20,111	2,909	23,020	216,618	287,744	14,749	5,082	20,973	545,166
1990	167,900	124,174	12,168	5,176	9,224	318,642	0	3,675	27,537	31,212	2,410	33,622	173,985	151,711	12,168	5,176	9,224	352,264
1991	145,524	230,852	23,366	0	3,936	403,678	0	2,438	31,404	33,842	1,576	35,418	149,538	262,256	23,366	0	3,936	439,096
1992	107,602	15,721	3,301	0	1,407	128,031	0	304	18,576	18,880	1,935	20,815	109,841	34,297	3,301	0	1,407	148,846
1993	76,762	0	0	163	0	76,925	0	4,660	7,762	12,422	1,668	14,090	83,090	7,762	0	163	0	91,015
1994	123,218	3,631	4,368	0	0	131,217	0	5,319	30,035	35,354	2,654	38,008	131,191	33,666	4,368	0	0	169,225
1995	130,506	250,733	32,324	863	1,121	415,547	0	1,099	39,012	40,111	5,489	45,600	137,094	289,745	32,324	863	1,121	461,147
1996	128,866	88,342	17,288	356	1,717	236,569	0	1,260	20,069	21,329	3,025	24,354	133,151	108,411	17,288	356	1,717	260,923
1997	95,141	56,713	1,474	284	867	154,479	0	1,218	8,068	9,286	6,294	15,580	102,653	64,781	1,474	284	867	170,059
1998	62,867	0	0	2	0	62,869	0	1,745	0	1,745	6,159	7,904	70,771	0	0	2	0	70,773
1999	89,736	20,371	0	261	1,171	111,539	0	3,104	10,402	13,506	6,000	19,506	98,840	30,773	0	261	1,171	131,045
2000	19,306	0	0	1	0	19,307	0	2,917	1,319	4,236	5,000	9,236	27,223	1,319	0	1	0	28,543
2001	35,154	0	0	10	0	35,164	3	2,717	2,198	4,918	4,594	9,512	42,468	2,198	0	10	0	44,676
2002	19,390	0	0	3	0	19,393	0	3,093	3,065	6,158	1,860	8,018	24,343	3,065	0	3	0	27,411
2003	56,784	10,996	0	394	0	68,174	0	1,943	9,030	10,973	382	11,355	59,109	20,026	0	394	0	79,529
2004	62,206	4,110	0	230	0	66,546	0	2,180	7,365	9,545	205	9,750	64,591	11,475	0	230	0	76,296
99-2003 erage	44,074	6,273	0	134	234	50,715	1	2,755	5,203	7,958	3,567	11,525	50,397	11,476	0	134	234	62,241
94-2003 erage	76,097	43,079	5,545	217	488	125,426	0	2,442	12,320	14,762	4,146	18,907	82,684	55,398	5,545	217	488	144,333

[a] Subsistence harvest estimates not available by district until 1978. Subsistence harvests prior to 1977 were estimated because catches of salmon other than Chinook salmon were not differentiated by species. Minimum estimates of fall chum subsistence catches for 1961-1978 because surveys were conducted prior to the end of the fishing season. Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay. Test Fish Sales is the number of salmon sold by ADF&G test fisheries.

[b] Includes department test fish sales prior to 1988.

[c] After 1991 the regulation did not provide for a Personal Use fishery in Districts 1, 3 and 5.

[d] From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 4, 5 and 6 because it was assumed that this harvest was included in the reported subsistence harvest during that time period. Beginning in 1989, subsistence surveys attempted to document subsistence only fishing catches and commercial related use separately.

[f] In Districts 4, 5 and 6, commercial related refers to the estimated number of females harvested to produce roe sold.

[g] Includes an estimated 95,768 fall chum salmon illegally sold in District 5.

[h] Includes an estimated 119,168 fall chum salmon illegally sold in District 6.

[j] Includes Alaskan subsistence harvest and Canadian Domestic and Aboriginal harvests. There is a chum test fishery for management purposes in Canada, but all fish are intended to be released, and any fish retained are reported within the Porcupine Aboriginal harvest.

[k] These numbers were added from original Annual Management Reports Jan 13,2006, they are not in TIX.

Appendix A20.–Coho salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2004.[a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsistence	Commercial[b]	Personal Use[c]	Test Fish Sales	Total	Subsistence	Commercial[b]	Test Fish Sales	Total	Subsistence	Commercial	Total	Subsistence	Commercial	Personal Use[c]	Test Fish Sales	Total
1961		2,855			2,855		0		0		0	0		2,855			2,855
1962		22,926			22,926		0		0		0	0		22,926			22,926
1963		5,572			5,572		0		0		0	0		5,572			5,572
1964		2,446			2,446		0		0		0	0		2,446			2,446
1965		350			350		0		0		0	0		350			350
1966		19,254			19,254		0		0		0	0		19,254			19,254
1967		9,925			9,925		0		0		1,122	1,122		11,047			11,047
1968		13,153			13,153		0		0		150	150		13,303			13,303
1969		13,989			13,989		0		0		1,009	1,009		14,998			14,998
1970		12,632			12,632		0		0		0	0		12,632			12,632
1971		12,165			12,165		0		0		0	0		12,165			12,165
1972		21,705			21,705		506		506		0	0		22,211			22,211
1973		34,860			34,860		1,781		1,781		0	0		36,641			36,641
1974		13,713			13,713		176		176		0	0		13,889			13,889
1975		2,288			2,288		200		200		0	0		2,488			2,488
1976		4,064			4,064		17		17		0	0		4,081			4,081
1977		31,720			31,720		5,319		5,319		538	538		37,577			37,577
1978	1,142	16,460			17,602	598	5,835		6,433	223	758	981	1,963	23,053			25,016
1979	3,184	11,369			14,553	1,132	2,850		3,982	74	0	74	4,390	14,219			18,609
1980	1,808	4,829			6,637	4,801	2,660		7,461	91	0	91	6,700	7,489			14,189
1981	3,769	13,129			16,898	3,736	7,848		11,584	510	419	929	8,015	21,396			29,411
1982	11,192	15,115			26,307	10,229	14,179		24,408	675	87	762	22,096	29,381			51,477
1983	3,590	4,595			8,185	6,072	2,557		8,629	917	0	917	10,579	7,152			17,731
1984	6,095	29,472			35,567	7,066	43,064		50,130	740	621	1,361	13,901	73,157			87,058
1985	3,246	27,676			30,922	4,834	17,125		21,959	376	171	547	8,456	44,972			53,428
1986	2,725	24,824			27,549	9,140	21,197		30,337	954	793	1,747	12,819	46,814			59,633
1987	6,396	0	0		6,396	6,894	0		6,894	754	0	754	14,044	0	0		14,044
1988	4,389	36,028	0	407	40,824	7,104	34,758	18	41,880	1,667	1,419	3,086	13,160	72,205	0	425	85,790
1989	5,077	22,987	59	1,685	29,808	5,039	38,402	120	43,561	537	3,988	4,525	10,653	65,377	59	1,805	77,894
1990	3,301	12,160	8	1,194	16,663	6,344	16,405	30	22,779	1,026	918	1,944	10,671	29,483	8	1,224	41,386
1991	1,808	54,095		2,094	57,997	3,297	40,898	86	44,281	1,340	1,905	3,245	6,445	96,898	0	2,180	105,523
1992	5,426	0		0	5,426	6,587	0	0	6,587	1,549	0	1,549	13,562	0	0	0	13,562
1993	2,343	0		0	2,343	1,695	0	0	1,695	279	0	279	4,317	0	0	0	4,317
1994	3,272	0		0	3,272	3,881	0	0	3,881	363	0	363	7,516	0	0	0	7,516
1995	2,251	21,625		193	24,069	2,142	18,488	0	20,630	891	0	891	5,284	40,113	0	193	45,590
1996	2,445	27,705		1,728	31,878	3,475	20,974	0	24,449	444	0	444	6,364	48,679	0	1,728	56,771
1997	1,823	21,450		498	23,771	2,424	13,056	0	15,480	766	0	766	5,013	34,506	0	498	40,017
1998	2,171	0		0	2,171	2,297	1	0	2,298	400	0	400	4,868	1	0	0	4,869
1999	1,730	855		236	2,821	2,793	746	0	3,539	610	0	610	5,133	1,601	0	236	6,970
2000	1,067	0		0	1,067	2,351	0	0	2,351	94	0	94	3,512	0	0	0	3,512
2001	1,274	0		0	1,274	1,440	0	0	1,440	0	0	0	2,714	0	0	0	2,714
2002	1,295	0		0	1,295	1,233	0	0	1,233	115	0	115	2,643	0	0	0	2,643
2003	1,260	9,757		0	11,017	1,586	0	0	1,586	711	0	711	3,557	9,757	0	0	13,314
2004	1,175	1,583		0	2,758	1,500	0	0	1,500	284	0	284	2,959	1,583	0	0	4,542
1999-2003 Average	1,325	2,122		47	3,495	1,881	149	0	2,030	306	0	306	3,512	2,272	0	47	5,831
1994-2003 Average	1,859	8,139		266	10,264	2,362	5,327	0	7,689	439	0	439	4,660	13,466	0	266	18,392

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	District 4				District 5					District 6						Upper Yukon Area Subtotals					
Year	Subsistence	Commercial	Commercial Related [d]	Total	Subsistence	Commercial	Commercial Related [d]	Personal Use [c]	Total	Subsistence	Commercial	Commercial Related [d]	Personal Use	Test Fish Sales	Total	Subsistence	Commercial	Commercial Related [d]	Personal Use	Test Fish Sales	Total
1961																					
1962																					
1963																					
1964																					
1965																					
1966																					
1967																					
1968																					
1969																	95	0			95
1970																	556	0			556
1971																	38	0			38
1972																	22	0			22
1973																	0	0			0
1974		0	0			1,409	0		1,409		1,479	0			1,479		2,888	0			2,888
1975		0	0			5	0		5		53	0			53		58	0			58
1976		0	0			0	0		0		1,103	0			1,103		1,103	0			1,103
1977		0	0			2	0		2		1,284	0			1,284		1,286	0			1,286
1978	145	32	0	177	970	1	0		971	4,709	3,066	0			7,775	5,824	3,099	0			8,923
1979	197	155	0	352	595	0	0		595	4,612	2,791	0			7,403	5,404	2,946	0			8,350
1980	7,734	30	0	7,764	561	0	0		561	5,163	1,226	0			6,389	13,458	1,256	0			14,714
1981	2,239	0	0	2,239	1,713	0	0		1,713	9,261	2,284	0			11,545	13,213	2,284	0			15,497
1982	2,952	15	0	2,967	3,428	0	0		3,428	7,418	7,780	0			15,198	13,798	7,795	0			21,593
1983	3,946	0	0	3,946	2,448	0	0		2,448	6,932	6,168	0			13,100	13,326	6,168	0			19,494
1984	2,867	1,095	0	3,962	17,467	0	0		17,467	14,785	7,688	0			22,473	35,119	8,783	0			43,902
1985	3,949	938	0	4,887	8,098	0	0		8,098	11,761	11,762	0			23,523	23,808	12,700	0			36,508
1986	2,458	0	0	2,458	5,870	0	0		5,870	13,321	441	0			13,762	21,649	441	0			22,090
1987	3,479	0	0	3,479	11,842 [f]	0	0	58	11,900	53,006 [g]	0	0	2,465		55,471	68,327	0	0	2,523		70,850
1988	4,714	2	0	4,716	19,755	8	0	103	19,866	30,201	13,972	0	1,147	13,295	58,615	54,670	13,982	0	1,250	13,295	83,197
1989	4,030	3	0	4,033	7,187	84	0	82	7,353	18,841	16,084	0	731	2,140	37,796	30,058	16,171	0	813	2,140	49,182
1990	3,614	0	0	3,614	11,562	0	0	18	11,580	17,613	11,549	3,255	1,155	1,426	34,998	32,789	11,549	3,255	1,173	1,426	50,192
1991	4,451	14	0	4,465	4,931	0	0		4,931	21,561	6,268	3,506	0	791	32,126	30,943	6,282	3,506	0	791	41,522
1992	8,429	0	0	8,429	12,376	0	0		12,376	17,554	6,556	1,423	0	1,629	27,162	38,359	6,556	1,423	0	1,629	47,967
1993	1,167	0	0	1,167	5,984	0	0		5,984	4,304	0	0	0	0	4,304	11,455	0	0	0	0	11,455
1994	3,515	0	0	3,515	4,174	0	0		4,174	26,489	120	4,331	0	0	30,940	34,178	120	4,331	0	0	38,629
1995	1,934	0	0	1,934	2,205	0	0		2,205	18,802	5,826	1,074	417	0	26,119	22,941	5,826	1,074	417	0	30,258
1996	2,467	161	0	2,628	6,588	0	0		6,588	14,893	3,803	3,339	198	0	22,233	23,948	3,964	3,339	198	0	31,449
1997	3,754	814	0	4,568	3,583	0	0		3,583	11,595	0	0	350	0	11,945	18,932	814	0	350	0	20,096
1998	2,593	0	0	2,593	2,839	0	0		2,839	7,472	0	0	9	0	7,481	12,904	0	0	9	0	12,913
1999	2,049	0	0	2,049	4,241	0	0		4,241	9,394	0	0	153	0	9,547	15,684	0	0	153	0	15,837
2000	1,068	0	0	1,068	4,987	0	0		4,987	5,150	0	0	0	0	5,150	11,205	0	0	0	0	11,205
2001	2,266	0	0	2,266	7,674	0	0		7,674	9,000	0	0	34	0	9,034	18,940	0	0	34	0	18,974
2002	1,023	0	0	1,023	2,076	0	0		2,076	9,499	0	0	20	0	9,519	12,598	0	0	20	0	12,618
2003	5,773	367	0	6,140	3,887	0	0		3,887	10,363	15,119	0	549	0	26,031	20,023	15,486	0	549	0	36,058
2004	4,766	0	0	4,766	1,423	0	0		1,423	11,584	18,649	0	233	0	30,466	17,773	18,649	0	233	0	36,655
1999-2003 Average	2,436	73	0	2,509	4,573	0	0		4,573	8,681	3,024	0	151	0	11,856	15,690	3,097	0	151	0	18,938
1994-2003 Average	2,644	134	0	2,778	4,225	0	0		4,225	12,266	2,487	874	173	0	15,800	19,135	2,621	874	173	0	22,804

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	Alaska Yukon Area Totals							Canadian Totals							Yukon River Drainage (Alaska/Canada) Totals						
									Mainstem Yukon River					Porcupine							
Year	Subsistence	Commercial	Commercial Related [d]	Personal Use	Test Fish Sales	Sport Fish [h]	Total	Domestic [j]	Aborginal	Sport [k]	Commercial	Subtotal	Aborginal	Total	Subsistence [m]	Commercial	Commercial Related [d]	Personal Use	Alaska Test Fish	Sport Fish	Total
1961	9,192	2,855	0				12,047								9,192	2,855	0				12,047
1962	9,480	22,926	0				32,406								9,480	22,926	0				32,406
1963	27,699	5,572	0				33,271								27,699	5,572	0				33,271
1964	12,187	2,446	0				14,633								12,187	2,446	0				14,633
1965	11,789	350	0				12,139								11,789	350	0				12,139
1966	13,192	19,254	0				32,446								13,192	19,254	0				32,446
1967	17,164	11,047	0				28,211								17,164	11,047	0				28,211
1968	11,613	13,303	0				24,916								11,613	13,303	0				24,916
1969	7,776	15,093	0				22,869								7,776	15,093	0				22,869
1970	3,966	13,188	0				17,154								3,966	13,188	0				17,154
1971	16,912	12,203	0				29,115								16,912	12,203	0				29,115
1972	7,532	22,233	0				29,765								7,532	22,233	0				29,765
1973	10,236	36,641	0				46,877								10,236	36,641	0				46,877
1974	11,646	16,777	0				28,423								11,646	16,777	0				28,423
1975	20,708	2,546	0				23,254								20,708	2,546	0				23,254
1976	5,241	5,184	0				10,425								5,241	5,184	0				10,425
1977	16,333	38,863	0			125	55,321								16,333	38,863	0			125	55,321
1978	7,787	26,152	0			302	34,241								7,787	26,152	0			302	34,241
1979	9,794	17,165	0			50	27,009								9,794	17,165	0			50	27,009
1980	20,158	8,745	0			67	28,970					0	1,500	1,500	21,658	8,745	0			67	30,470
1981	21,228	23,680	0			45	44,953					0	500	500	21,728	23,680	0			45	45,453
1982	35,894	37,176	0			191	73,261					0		0	35,894	37,176	0			191	73,261
1983	23,905	13,320	0			199	37,424					0		0	23,905	13,320	0			199	37,424
1984	49,020	81,940	0			831	131,791					0	500	500	49,520	81,940	0			831	132,291
1985	32,264	57,672	0			808	90,744					0	250	250	32,514	57,672	0			808	90,994
1986	34,468	47,255	0			1,535	83,258					0	300	300	34,768	47,255	0			1,535	83,558
1987	82,371	0	0	2,523		1,292	86,186				0	0	306	306	82,677	0	0	2,523		1,292	86,492
1988	67,830	86,187	0	1,250	13,720	2,420	171,407				0	0	350	350	68,180	86,187	0	1,250	13,720	2,420	171,757
1989	40,711	81,548	0	872	3,945	1,811	128,887				0	0	470	470	41,181	81,548	0	872	3,945	1,811	129,357
1990	43,460	41,032	3,255	1,181	2,650	1,947	93,525				0	0	680	680	44,140	41,032	3,255	1,181	2,650	1,947	94,205
1991	37,388	103,180	3,506	0	2,971	2,775	149,820				0	0	235	235	37,623	103,180	3,506	0	2,971	2,775	150,055
1992	51,921	6,556	1,423	0	1,629	1,666	63,195				0	0	495	495	52,416	6,556	1,423	0	1,629	1,666	63,690
1993	15,772	0	0	0	0	897	16,669				0	0	60	60	15,832	0	0	0	0	897	16,729
1994	41,694	120	4,331	0	0	2,174	48,319				2	2	332	334	42,026	122	4,331	0	0	2,174	48,653
1995	28,225	45,939	1,074	417	193	1,278	77,126				0	0	509	509	28,734	45,939	1,074	417	193	1,278	77,635
1996	30,312	52,643	3,339	198	1,728	1,588	89,808				0	0	41	41	30,353	52,643	3,339	198	1,728	1,588	89,849
1997	23,945	35,320	0	350	498	1,470	61,583				2	2	298	300	24,243	35,322	0	350	498	1,470	61,883
1998	17,772	1	0	9	0	758	18,540				0	0	214	214	17,986	1	0	9	0	758	18,754
1999	20,817	1,601	0	153	236	609	23,416				0	0	100	100	20,917	1,601	0	153	236	609	23,516
2000	14,717	0	0	0	0	554	15,271				0	0	37	37	14,754	0	0	0	0	554	15,308
2001	21,654	0	0	34	0	1,202	22,890				0	0	0	0	21,654	0	0	34	0	1,202	22,890
2002	15,241	0	0	20	0	1,092	16,353	0	0	9	17	26	449	475	15,690	17	0	20	0	1,101	16,828
2003	23,580	25,243	0	549	0	1,477	50,849	0	0	7	0	7	523	530	24,103	25,243	0	549	0	1,484	51,379
2004	20,732	20,232	0	233	0	1,623	42,820	0	0	1	4	5	175	180	20,907	20,236	0	233	0	1,624	43,000
1999-2003 Average	19,202	5,369	0	151	47	987	25,756	0	0	8	3	7	222	228	19,424	5,372	0	151	47	990	25,984
1994-2003 Average	23,796	16,087	874	173	266	1,220	42,416	0	0	8	2	4	250	254	24,046	16,089	874	173	266	1,222	42,670

[a] Subsistence harvest estimates not available by district until 1978. Subsistence harvests prior to 1977 were estimated because catches of salmon other than Chinook salmon were not differentiated by species. Minimum estimates of coho subsistence catches for 1961-1978 because surveys were conducted prior to the end of the fishing season. Test Fish Sales is the number of fish sold by ADF&G test fisheries. Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

[b] Includes department test fish sales prior to 1988.

[c] After 1991 the regulation did not provide for a Personal Use fishery in Districts 1, 3 and 5.

[d] In Districts 4, 5 and 6, commercial related refers to the estimated number of females harvested to produce roe sold.

[f] Includes an estimated 5,015 coho salmon illegally sold in District 5.

[g] Includes an estimated 31,276 coho salmon illegally sold in District 6.

[h] Estimated sport fish harvest for Alaskan portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage, District 6.

[j] A zero value for Domestic harvest in Canada means that there was opportunity to fish for Chinook, but not fall chum, and therefore there would be no coho harvest reported.

[k] In 2002, information about coho catch in Canada's sport fishery became available.

[m] Includes Alaskan subsistence harvest and Canadian Aboriginal harvest.

Appendix A21.–Yukon Area pink salmon total utilization in numbers of fish, by district and area, 1980–2004.[a]

	Coastal District			District 1			District 2			District 3				Lower Yukon Area Subtotals			
Year	Subsist	Comm	Total	Subsist	Comm	Total	Subsist	Comm	Total	Subsist	Comm	Comm-Related [b]	Total	Subsist	Comm	Comm-Related [b]	Total
1980					0	0		0	0		0	0	0	0	0	0	0
1981					0	0		0	0		0	0	0	0	0	0	0
1982					0	0		0	0		0	0	0	0	0	0	0
1983					0	0		0	0		0	0	0	0	0	0	0
1984					0	0		0	0		0	0	0	0	0	0	0
1985					0	0		0	0		0	0	0	0	0	0	0
1986					0	0		0	0		0	0	0	0	0	0	0
1987					0	0		0	0		0	0	0	0	0	0	0
1988					1,001	1,001		56	56		0	0	0	0	1,057	0	1,057
1989					17	17		0	0		0	0	0	0	17	0	17
1990					418	418		324	324		1	0	1	0	743	0	743
1991					0	0		0	0		0	0	0	0	0	0	0
1992				19 [d]	0	19		0	0	19 [d]	0	0	19	38	0	0	38
1993					0	0		0	0		0	0	0	0	0	0	0
1994	2,053	0	2,053	4,233	0	4,233	2,731	0	2,731	289	0	0	289	7,253	0	0	7,253
1995	385	0	385	132	0	132	15	0	15	0	0	0	0	147	0	0	147
1996	3,517	0	3,517	443	0	443	933	0	933	180	0	100	280	1,556	0	100	1,656
1997	265	0	265	69	0	69	115	0	115	0	0	0	0	184	0	0	184
1998	3,732	0	3,732	1,590	0	1,590	1,550	0	1,550	1,617	0	0	1,617	4,757	0	0	4,757
1999	626	0	626	32	0	32	21	0	21	0	0	0	0	53	0	0	53
2000	998	0	998	301	0	301	235	0	235	28	0	0	28	564	0	0	564
2001	394	0	394	9	0	9	0	0	0	0	0	0	0	9	0	0	9
2002	5,892	0	5,892	1,028	0	1,028	1,282	0	1,282	0	0	0	0	8,202	0	0	8,202
2003	1,470	0	1,470	207	0	207	117	0	117	130	0	0	130	1,924	0	0	1,924
2004	7,926	0	7,926	615	0	615	1,138	0	1,138	6	0	0	6	9,685	0	0	9,685
1999-2003 Average	1,876	0	1,876	315	0	315	331	0	331	32	0	0	32	2,150	0	0	2,150
1994-2003 Average	1,933	0	1,933	804	0	804	700	0	700	224	0	10	234	2,465	0	10	2,475

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	District 4				District 5				District 6				Upper Yukon Area Subtotals				Alaska Yukon Area Totals				
Year	Subsist	Comm	Comm-Related [b]	Total	Subsist	Comm	Comm-Related [b]	Total	Subsist	Comm	Comm-Related [b]	Total	Subsist	Comm	Comm-Related [b]	Total	Subsist	Comm	Comm-Related [b]	Sport Fish [c]	Total
1980		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1981		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1982		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1983		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1984	500	0	0	500		0	0	0		0	0	0	500	0	0	500	500	0	0		500
1985		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1986		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1987		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1988		0	0	0		0	0	0		0	0	0	0	0	0	0	0	1,057	0		1,057
1989		0	0	0		0	0	0		0	0	0	0	0	0	0	0	17	0		17
1990		0	0	0		0	0	0		0	0	0	0	0	0	0	0	743	0		743
1991		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1992	5 [d]	0	0	5		0	0	0		0	0	0	5	0	0	5	43	0	0		43
1993		0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0		0
1994	995	0	66	1,061	0	0	0	0	0	0	0	0	995	0	66	1,061	8,248	0	66		8,314
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147	0	0		147
1996	59	0	0	59	0	0	0	0	0	0	0	0	59	0	0	59	1,615	0	100		1,715
1997	34	0	0	34	0	0	0	0	0	0	0	0	34	0	0	34	218	0	0		218
1998	700	0	0	700	0	0	0	0	0	0	0	0	700	0	0	700	5,457	0	0		5,457
1999	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	55	0	0		55
2000	31	0	0	31	0	0	0	0	0	0	0	0	31	0	0	31	595	0	0		595
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0		9
2002	221	0	0	221	0	0	0	0	0	0	0	0	221	0	0	221	8,423	0	0		8,423
2003	243	0	0	243	0	0	0	0	0	0	0	0	243	0	0	243	2,167	0	0		2,167
2004	12	0	0	12	0	0	0	0	0	0	0	0	12	0	0	12	9,697	0	0		9,697
1999-2003 Average	99	0	0	99	0	0	0	0	0	0	0	0	99	0	0	99	2,250	0	0		2,250
1994-2003 Average	229	0	7	235	0	0	0	0	0	0	0	0	229	0	7	235	2,693	0	17		2,710

[a] Subsistence harvest estimates not available until 1995. Subsistence harvests of chum salmon below Kaltag prior to 1995 may include some pink salmon.

[b] In Districts 3-6, commercial related refers to the estimated number of females and males harvested to produce roe sold.

[c] Estimated sport fish harvest for Alaskan portion of the Yukon River drainage.

[d] Reported as caught but not sold on fish tickets.

Appendix A22.–Percentage composition of combined commercial and subsistence salmon harvest by species, Yukon River drainage, 1982–2004.[a]

Species	Year	Sample Size	Age In Years (Percent of Total) 3	4	5	6	7	8	Total [b]
Chinook Salmon	1982	3,795	0.2	6.8	18.5	58.3	15.9	0.3	100.0
	1983	3,801	0.0	6.6	21.0	62.9	9.4	0.0	100.0
	1984	3,700	0.0	3.7	27.0	56.0	13.1	0.1	100.0
	1985	4,567	0.1	5.7	13.2	69.4	11.3	0.3	100.0
	1986	5,785	0.3	3.9	27.2	42.8	25.1	0.6	100.0
	1987	5,300	0.0	4.2	8.4	72.5	14.5	0.3	100.0
	1988	5,108	0.1	14.8	22.8	31.5	29.4	1.4	100.0
	1989	3,901	0.5	7.2	30.3	51.1	10.2	0.6	99.9
	1990	3,416	0.0	17.2	26.9	49.4	6.3	0.2	100.0
	1991	3,879	0.0	5.8	45.1	42.6	6.4	0.1	100.0
	1992	3,772	0.1	8.1	20.1	68.6	3.1	0.0	100.0
	1993	4,034	0.2	15.8	25.4	50.5	8.0	0.0	100.0
	1994	3,692	0.3	4.1	47.2	44.5	3.8	0.0	99.9
	1995	5,559	0.0	7.8	13.7	74.7	3.6	0.2	100.0
	1996	5,861	0.0	2.4	44.0	35.6	17.9	0.2	100.1
	1997	5,134	0.0	7.5	17.8	70.5	4.2	0.1	100.1
	1998	3,122	0.7	5.2	55.1	31.4	7.6	0.0	100.0
	1999	4,285	0.1	3.8	17.7	76.7	1.7	0.0	100.0
	2000	1,201	0.0	1.0	29.9	60.5	8.6	0.0	100.0
	2001 [d]	1,182	0.1	9.0	27.2	57.6	6.1	0.0	100.0
	2002	3,580	0.0	8.2	27.0	53.9	10.9	0.0	100.0
	2003	3,850	0.1	3.4	32.3	56.5	7.7	0.0	100.0
	2004	6,556	0.0	9.9	23.3	63.1	3.6	0.0	100.0
5-Year Average (1999-2003)		2,820	0.1	5.1	26.8	61.0	7.0	0.0	100.0
Summer Chum Salmon	1982	3,419	5.3	0.0	88.6	6.1	0.0		100.0
	1983	4,110	1.0	53.8	44.4	0.8	0.0		100.0
	1984	2,722	2.0	73.7	23.9	0.5	0.0		100.0
	1985	2,472	1.4	68.6	29.2	0.8	0.0		100.0
	1986	3,473	0.1	29.1	69.8	1.0	0.0		100.0
	1987	2,184	0.4	60.8	31.8	6.9	0.0		100.0
	1988	5,112	0.0	70.1	29.1	0.8	0.0		100.0
	1989	3,778	0.4	38.7	60.5	0.4	0.0		100.0
	1990	3,155	0.4	38.3	58.9	2.4	0.0		100.0
	1991	5,015	1.3	48.0	49.8	0.9	0.0		100.0
	1992	4,303	0.2	31.0	65.0	3.8	0.0		100.0
	1993	2,011	0.4	47.5	47.7	4.5	0.0		100.1
	1994	3,820	0.1	51.3	46.6	2.0	0.0		100.0
	1995	4,740	0.6	51.9	45.3	2.1	0.0		99.9
	1996	3,863	0.4	46.2	48.8	4.5	0.1		100.0
	1997	3,195	0.2	29.0	67.2	3.6	0.0		100.0
	1998	1,147	0.3	62.8	34.2	2.7	0.0		100.0
	1999	1,627	0.2	40.7	58.2	0.9	0.0		100.0
	2000	442	0.0	44.2	53.4	2.4	0.0		100.0
	2001 [d]	586	0.0	15.4	81.9	2.7	0.0		100.0
	2002	1,103	0.1	52.9	44.4	2.6	0.0		100.0
	2003	1,144	0.3	55.4	39.2	5.1	0.0		100.0
	2004	2,742	1.3	37.2	60.4	1.0	0.1		100.0
5-Year Average (1999-2003)		980	0.1	41.7	55.4	2.7	0.0		100.0

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Species	Year	Sample Size	Age In Years (Percent of Total) 3	4	5	6	7	8	Total [b]
Fall	1982	2,918	6.5	58.6	34.5	0.3	0.0		100.0
Chum	1983	1,735	0.7	91.4	8.0	0.0	0.0		100.0
Salmon	1984	1,902	6.6	55.6	37.5	0.4	0.0		100.0
	1985	2,801	5.2	83.4	11.0	0.4	0.0		100.0
	1986	1,715	7.4	89.6	2.5	0.5	0.0		100.0
	1987	1,513	5.0	77.1	17.5	0.4	0.0		100.0
	1988	4,030	4.1	45.7	46.6	3.5	0.0		99.9
	1989	4,939	1.0	87.0	11.8	0.2	0.0		100.0
	1990	2,351	2.8	74.9	21.7	0.6	0.0		100.0
	1991	5,314	2.7	75.4	21.7	0.2	0.0		100.0
	1992	3,069	1.2	45.9	51.8	1.1	0.0		100.0
	1993	1,616	0.1	62.8	35.2	1.8	0.0		99.9
	1994	1,295	2.4	66.4	31.1	0.1	0.0		100.0
	1995	1,731	0.8	59.2	37.4	2.6	0.0		100.0
	1996	1,391	0.3	52.3	43.9	3.5	0.0		100.0
	1997	1,245	0.3	57.2	41.6	0.9	0.0		100.0
	1998 [c]	0	-	-	-	-	-		-
	1999	371	0.0	79.2	20.5	0.3	0.0		100.0
	2000 [c]	0	-	-	-	-	-		-
	2001 [d]	295	0.0	54.2	45.4	0.3	0.0		100.0
	2002 [c]	0	-	-	-	-	-		-
	2003	1,596	0.1	79.6	19.4	0.9	0.0		100.0
	2004	1,449	19.6	54.7	25.7	0.0	0.0		100.0
Average (1999, 2001, 2003)		754	0.0	71.0	28.4	0.5	0.0		100.0
Coho	1982	320	4.1	87.3	8.6				100.0
Salmon	1983	121	4.1	91.7	4.1				100.0
	1984	619	12.9	73.7	13.4				100.0
	1985	462	14.1	76.3	9.6				100.0
	1986	491	2.2	88.6	9.2				100.0
	1987	0	-	-	-				-
	1988	1,091	12.2	85.5	2.3				100.0
	1989	749	20.0	74.5	5.5				100.0
	1990	428	28.9	67.1	3.9				99.9
	1991	615	8.3	91.6	0.1				100.0
	1992	920	24.1	74.4	1.6				100.1
	1993	522	15.5	83.5	1.0				100.0
	1994	752	22.9	76.2	0.9				100.0
	1995	664	41.7	58.0	0.3				100.0
	1996	944	10.4	87.2	2.4				100.0
	1997	516	6.1	92.0	2.0				100.1
	1998 [c]	0	-	-	-				-
	1999	40	7.5	85.0	7.5				100.0
	2000 [c]	0	-	-	-				-
	2001 [d]	18	22.2	77.8	0.0				100.0
	2002 [c]	0	-	-	-				-
	2003	753	25.1	69.8	5.1				100.0
	2004	590	22.3	75.0	2.7				100.0
Average (1999, 2001, 2003)		270	18.3	77.5	4.2				100.0

[a] Age composition estimated from samples collected from each gear type, by district and fishery, or from samples from adjacent fisheries and/or test fisheries of the same gear type. Fisheries for which no appropriate samples were available were not apportioned to age.

[b] Total may not be equal to 100% due to rounding errors.

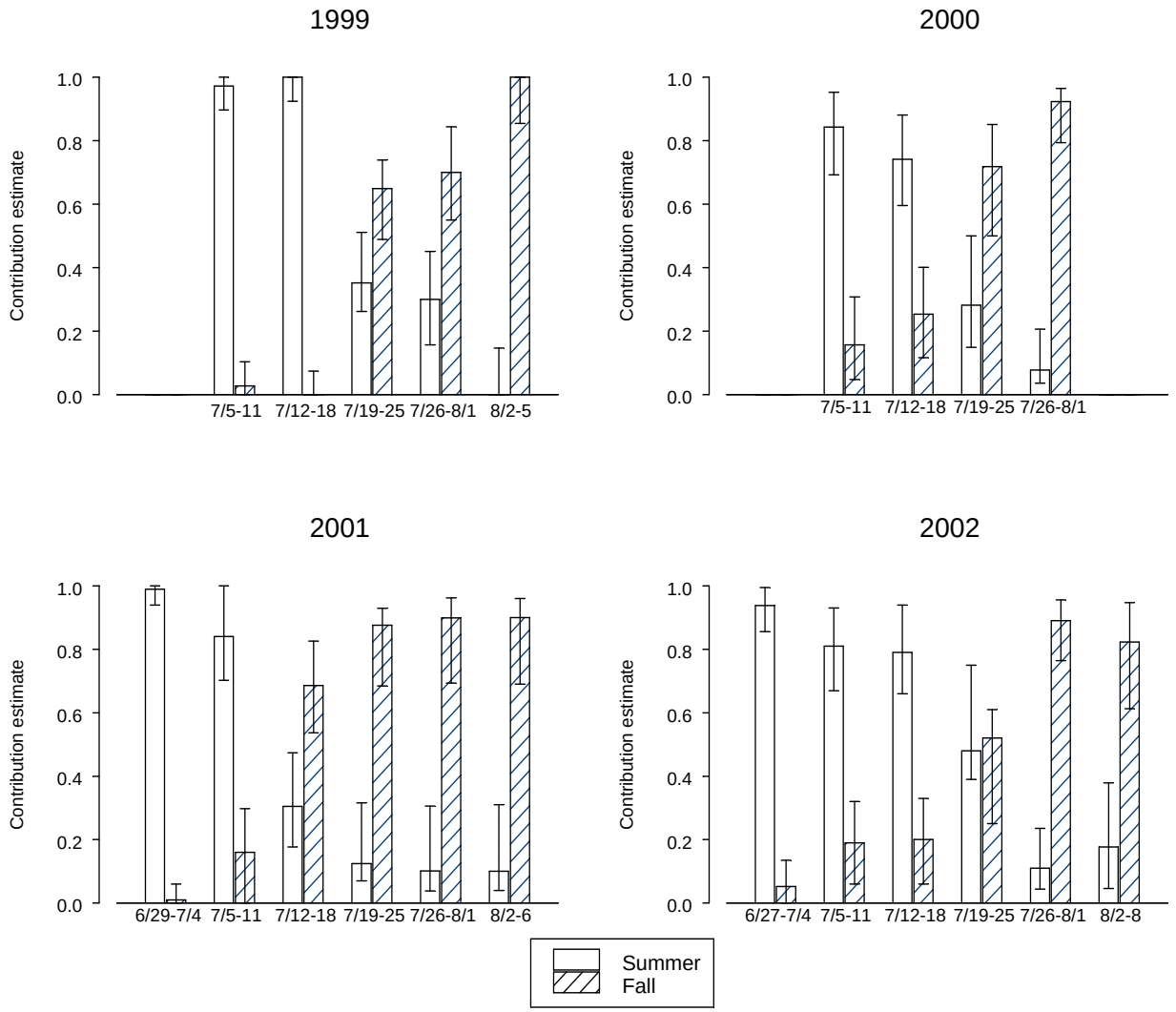
[c] No commercial fishing occurred and subsistence harvests for fall chum and coho salmon were not sampled in 1998, 2000 and 2002, therefore information is not available.

[d] No commercial fishing, samples from subsistence catches only.

Appendix A23.–Yukon River Chinook salmon historical harvest proportions by stock group for the United States and Canada, 1981–2004.

			Upper			
Year	Lower	Middle	U.S.	Canada	Total	Total
1981	0.054	0.545	0.313	0.088	0.401	1.000
1982	0.139	0.247	0.513	0.101	0.614	1.000
1983	0.129	0.337	0.446	0.087	0.533	1.000
1984	0.253	0.402	0.251	0.094	0.345	1.000
1985	0.276	0.223	0.409	0.092	0.501	1.000
1986	0.195	0.096	0.587	0.122	0.709	1.000
1987	0.159	0.196	0.560	0.086	0.645	1.000
1988	0.218	0.158	0.498	0.126	0.625	1.000
1989	0.244	0.159	0.494	0.102	0.597	1.000
1990	0.202	0.252	0.433	0.114	0.547	1.000
1991	0.280	0.253	0.349	0.118	0.467	1.000
1992	0.163	0.218	0.523	0.096	0.619	1.000
1993	0.215	0.254	0.439	0.092	0.531	1.000
1994	0.182	0.214	0.494	0.110	0.604	1.000
1995	0.179	0.224	0.492	0.105	0.597	1.000
1996	0.210	0.104	0.562	0.124	0.686	1.000
1997	0.264	0.168	0.482	0.086	0.569	1.000
1998	0.327	0.174	0.442	0.056	0.498	1.000
1999	0.401	0.063	0.445	0.091	0.536	1.000
2000	0.339	0.123	0.441	0.097	0.538	1.000
2001	0.316	0.160	0.365	0.159	0.524	1.000
2002	0.194	0.292	0.393	0.121	0.514	1.000
2003	0.068	0.289	0.554	0.089	0.643	1.000
2004	0.140	0.281	0.488	0.091	0.579	1.000
Minimum	0.054	0.063	0.251	0.056	0.345	
Maximum	0.401	0.545	0.587	0.159	0.709	
1981-2003 Average	0.218	0.224	0.456	0.102	0.558	

Appendix A24.–Draft contribution estimates with 90% bootstrap confidence intervals for summer and fall chum salmon sampled from species apportionment gillnetting at Pilot Station Sonar 1999–2002.



Note: Contributions were estimated using genetic stock identification. This study was discontinued in 2002.

Appendix A25.–Selected environmental and salmon catch information, Yukon River drainage, 1961–2004.

Year	Average Nome April Air Temp. (^{o} F)	Tanana River Nenana Ice Breakup	Iceout Yukon Delta Area	First Chinook Caught Yukon Delta Area [a]	First Summer Chum Caught Delta Area [a]	First District 1 Commercial period
1961	18	5/05	- [b]	6/05	- [b]	6/05
1962	18	5/12	6/10	6/07 [c]	- [b]	6/11
1963	18	5/05	5/29	- [b]	- [b]	6/03
1964	13	5/20	>6/12	- [b]	- [b]	6/15
1965	20	5/07	6/01	6/06	- [b]	6/07
1966	15	5/08	6/06	6/09	- [b]	6/10
1967	23	5/04	- [b]	5/20	5/30	6/02
1968	14	5/08	- [b]	- [b]	6/05	6/03
1969	22	4/28	5/25	5/26	6/02	6/02
1970	15	5/04	late May	6/06	6/05	6/06
1971	13	5/08	6/05	6/11	6/15	6/11
1972	12	5/10	6/03	6/09	6/11	6/09
1973	18	5/04	6/01	5/30 [d]	6/05	6/05
1974	21	5/06	late May	5/27	6/01	6/03
1975	13	5/10	6/01	6/01	6/13	6/09
1976	10	5/02	6/01	6/12	6/13	6/14
1977	9	5/06	6/01	6/09	6/11	6/11
1978	25	4/30	5/20	5/26	5/26	6/08
1979	26	4/30	5/20	5/24	5/28	6/04
1980	24	4/29	5/19	5/27 [f]	5/31	6/09
1981	24	4/30	5/18	5/25	5/28	6/05
1982	12	5/10	6/02	6/06	6/06	6/14
1983	25	4/29	5/21	5/25	5/30	6/09
1984	12	5/09	6/01	6/02 [g]	6/08	6/18
1985	1	5/11	6/05	6/14	6/16	6/24
1986	12	5/08	6/01	6/06	6/07	6/14 [h]
1987	19	5/05	5/31	5/31	6/04	6/15
1988	23	4/27	5/20	5/27	5/27	6/09 [h]
1989	25	5/01	5/31	5/29 [k]	6/03	6/13 [h]
1990	26	4/24	5/28	5/29	5/31	6/14
1991	25	5/01	5/24	5/29	5/29	6/13
1992	22 [j]	5/14	5/30 [m]	6/13	6/13	6/20
1993	28	4/23	5/19	5/26	5/28	6/14
1994	20	4/29	5/22	5/24	5/28	6/13
1995	26	4/26	5/18	5/24	5/26	6/12
1996	21	5/05	5/19	5/24	5/24	6/10
1997	27 [n]	4/30	5/15	5/22	5/25	6/11
1998	26	4/20	5/22	5/28	5/25	6/15
1999	17	4/29 [o]	5/29	6/06	6/13	6/22
2000	21	5/01	5/29	6/03	6/05	6/24
2001	22	5/08	6/05	6/07	6/09	N/A
2002	20	5/07	5/24	5/31	5/30	6/20
2003	26	4/29	5/17	5/22	5/30	6/16
2004	29	4/24	5/08	5/18	5/27	6/17

[a] Subsistence or test fishery.
[b] Information not available.
[c] Caught 6/09 Mt. Village, back calculated arrival date to mouth.
[d] Caught 6/03 Pilot Station, back calculated arrival date to mouth.
[f] Caught 5/23 Marshall, back calculated arrival date to mouth.
[g] Caught 6/05 Pitkas Point, back calculated arrival date to mouth.
[h] Special 6-inch maximum mesh size fishing period.
[j] Caught 6/01 St. Marys, back calculated arrival date to mouth.
[k] Average May air temperature was 8.2 degrees Fahrenheit below normal.
[m] The mainstem Yukon River was ice free, but ice remained along the coast until June 10.
[n] Average April air temperature was 9 degrees Fahrenheit above normal.
[o] The Nenana Ice Classic tripod moved on 4/29, but the ice did not move out for several more days.

Appendix A26.–Total catch and estimated catch of Western Alaska (including Canadian Yukon River) Chinook salmon (in thousands of fish) taken in Japanese high seas salmon gillnet fisheries and total catch of Chinook salmon taken in foreign, joint-venture, and U.S. domestic trawl fisheries, 1964–2004.

	Japanese Mothership Gillnet		Japanese Landbased Driftnet		Japanese Total Gillnet		Bering Sea-Aleutian Area Trawl				Gulf of Alaska Trawl		
Year	Western Alaska Origin	Total	Western Alaska Origin	Total	Western Alaska Origin	Total	Foreign	Joint Venture Groundfish [a]	U.S. Domestic	Total	Foreign	Joint Venture/U.S. Groundfish [b]	Total
1964	179	410	40	208	219	618							
1965	106	185	20	102	126	287							
1966	108	208	22	118	130	326							
1967	71	128	22	115	93	243							
1968	244	362	18	97	262	459							
1969	367	554	17	88	384	642							
1970	312	437	28	148	340	585							
1971	132	206	27	139	159	345							
1972	189	261	20	107	209	368							
1973	56	119	31	165	87	284							
1974	208	361	36	188	244	549							
1975	108	162	20	137	128	299							
1976	117	285	42	201	159	486							
1977	55	93	31	146	86	239					4.8		4.8
1978	36	105	63	210	99	315	39.1			39.1	[c]		
1979	69	126	45	162	114	286	100.4			100.4	16.9	1.0	17.9
1980	416	704	22	160	438	864	113.1	1.9		115.0	31.6	0.2	31.8
1981	30	88	55	190	85	278	35.9	0.3		36.2	28.6	0.0	28.6
1982	45	107	41	165	86	272	13.9	1.7		15.6	4.7	1.2	5.9
1983	31	87	44	178	75	265	9.8	0.5		10.3	5.9	3.6	9.5
1984	36	82	21	92	57	174	9.5	1.7		11.2	11.1	63.2	74.3
1985	25	66	22	100	47	167	7.1	2.5	1.5	11.1	0.3	13.6	13.9
1986	24	60	20	76	44	137	1.0	4.8	3.4	9.2	0.0	20.8	20.8
1987	20	39	[d]	74	[d]	116	1.0	8.4	12.8	22.2		0.8	0.8
1988	23	26	[d]	47	[d]	73		5.6	24.7	30.3		0.1	0.1
1989	[d]	16	[d]	51	[d]	67		8.6	31.8	40.4		6.7	6.7
1990	-	-	-	-	[d]	23 [f]			14.0	14.0		17.0	17.0
1991	-	-	-	-	[d]	45 [f]			48.9	48.9		38.9	38.9
1992 [g]									42.0	42.0		20.5	20.5
1993									46.0	46.0		24.5	24.5
1994									44.4	44.4		14.0	14.0
1995									23.1	23.1		14.6	14.6
1996									63.2	63.2		15.8	15.8
1997									50.2	50.2		15.1	15.1
1998									55.4	55.4		16.9	16.9
1999									12.9	12.9		30.6	30.6
2000									7.5	7.5		26.7	26.7
2001									37.7	37.7		15.1	15.1
2002									37.5	37.5		12.9	12.9
2003									52.6	52.6		15.6	15.6
2004									62.5	62.5		17.8	17.8

[a] Joint-venture harvest reported through 1989 (1990 fishery ended).
[b] Joint-venture harvest reported through 1988 when fishery ended.
[c] Species composition unknown.
[d] Information not available.
[f] Japanese mothership fishery converted to "nontraditional landbased salmon fishery".
[g] U.S. fishery entirely replaced directed foreign and joint-venture groundfish harvests.

Appendix A27.–List of emergency orders pertaining to Districts 1-6 Chinook and summer chum salmon fishery, Yukon Area, 2002–2004

EO Number	Effective Date	Action Taken	Comments
3-S-LY-01-02	May 30, 2002	Implements the subsistence salmon fishing schedule in District 1 of the Lower Yukon Area.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule to increase the quality of escapement and spread subsistence harvest opportunity among all users. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. The goal of the schedule is to provide windows of time when no fishing will be allowed so that portions of the salmon run can migrate upriver with less exploitation. However, further reductions in fishing time may be warranted during poor runs to meet targeted escapement goals. When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage is based on a schedule implemented chronologically, consistent with migratory timing as the salmon run progresses upstream.
3-S-LY-02-02	June 2,2002	Implemented the subsistence salmon fishing schedule in District 2 of the Lower Yukon Area.	See Emergency Order: 3-S-LY-01-02
3-S-LY-03-02	June 5, 2002	Implemented the subsistence salmon fishing schedule in District 3 of the Lower Yukon Area.	See Emergency Order: 3-S-LY-01-02
3-S-LY-04-02	June 7,2002	Allows subsistence gillnet fishermen in Districts 1, 2, and 3 to fish for non-salmon species during subsistence salmon fishing closures with gillnets 4-inches, or less, in stretch mesh with a maximum length of 60 feet and other legal gear.	For the conservation of chum salmon, during closed subsistence salmon fishing periods in Yukon River Districts 1-3, gillnets used to take fish other than salmon may only be 4-inches or less in stretch mesh and a maximum length of 60 feet. Fish wheels may not be used during closed subsistence salmon fishing periods.

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3-S-LY-05-02	June 19, 2002	Opens the commercial salmon fishing season in Districts 2 and 1 effective 6:00 p.m. Thursday, June 20. In Districts 1 and 2, salmon may not be taken for subsistence during the 24 hours immediately before the opening of the commercial salmon fishing season.	The first king salmon caught in a department test gillnet was on June 1, 2002. Subsistence catches of king salmon began increasing during the subsistence fishing period of June 10-11. Department test fish catches have been increasing since June 9 and the cumulative catch-per unit effort (CPUE) is near the average for 1989-2001. Pilot Station cumulative passage estimate through June 16 are 45,103 king and 135,416 summer chum salmon. In 2000 and 2001, the cumulative king salmon estimate through June 16 was 1,900 and 9,541, respectively. The cumulative estimate through June 16 for chum salmon in 2000 and 2001 was 7,373 and 1,116, respectively. Inseason subsistence surveys conducted in the lower river indicate that the run of both king and summer chum appear to be better than the 2000 and 2001 runs.
3-S-LY-06-02	June 19, 2002	Re-instates the marking requirement that fishers immediately remove the dorsal fin from salmon harvested in the subsistence fishery in Districts 1, 2, and 3.	Regulations require the marking of subsistence caught king salmon in Yukon Districts 1, 2, and 3 during the commercial fishing season to help enforce regulations prohibiting commercial sale of subsistence caught king salmon.
3-S-LY-07-02	June 19, 2002	Establishes a 6-hour commercial fishing period with gillnets of 8-inch or greater stretch mesh size from 6:00 p.m. Wednesday, June 19, until 12:00 Midnight Wednesday, June 19, in District 2.	Indications are that the 2002 king salmon run is similar to, or stronger than, the 2001 run. During 2001, all escapement objectives were either met or exceeded. In 2001, the department estimates that approximately 20,000 to 30,000 salmon were surplus to escapement and subsistence needs. Staff believes that prosecuting a commercial fishery in District 2 is warranted at this time because a harvestable surplus of salmon appears to exist.

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3-S-LY-08-02	June 20, 2002	Establishes a 6-hour commercial fishing period with gillnets of 8-inch or greater stretch mesh size from 6:00 p.m. Thursday, June 20, until 12:00 Midnight Thursday, June 20, in District 1.	Opening a commercial fishing period in District 1 is warranted based on increased and sustained subsistence and test net catches of king salmon, which have occurred over an 11 day period. Delaying the 2002 commercial fishery until near the mid-point, in addition to a low anticipated harvest, are conservative measures aimed at providing for escapement and subsistence. The CUPE for the Emmonak test fishing project is 7.67 through June 16. The 1989–2001 average through this same date is 7.68. Based on the duration and magnitude of the current passage rates we believe sufficient fish are in route to the upper river areas to satisfy escapement and subsistence needs, as well as border passage commitments to Canada.
3-S-LY-09-02	June 20, 2002	Establishes a 6-hour commercial fishing period with gillnets of 8-inch or greater stretch mesh size from 9:00 p.m. Monday, June 20, until 3:00 a.m. Tuesday, June 25, in District 1.	Opening a commercial fishing period in District 1 is warranted because the cumulative CUPE for the test fishing project is 14.59 through June 23 and the 1989-2001 average, through this same date, is 14.32. Pilot Station cumulative sonar passage estimate through June 23 is 93,742 king salmon. The cumulative king salmon estimate through June 23 was 28,659 and 43,718 in 2000 and 2001, respectively.
3-S-LY-10-02	June 26, 2002	Establishes a 6-hour commercial fishing period with gillnets of 8-inch or greater stretch mesh size from 6:00 p.m. Wednesday, June 26, until 12:00 Midnight Wednesday, June 26, in District 2.	Opening a commercial fishing period in District 2 is warranted because the cumulative CPUE for the test fishing project through June 23 is 14.59 and the 1989-2001 average, through this same date, is 14.32. Pilot Station cumulative sonar passage estimate through June 23 is 93,742 king salmon. The cumulative king salmon estimate through June 23 was 28,659 and 43,718 in 2000 and 2001, respectively.
3-S-LY-11-02	June 27, 2002	Establishes a 9-hour commercial fishing period with gillnets of 8-inch or greater stretch mesh size from 6:00 p.m. Thursday, June 27, until 3:00 a.m. Friday, June 28, in District 1.	Opening a commercial fishing period in District 1 is warranted because the cumulative catch per unit effort for the test fishing project is 16.40 through June 25 and the 1989-2001 average, through this same date, is 16.27. Pilot Station cumulative sonar passage estimate through June 25 is 121,351 king salmon. The cumulative king salmon estimate through June 25 was 34,555 and 49,813 in 2000 and 2001, respectively.

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3-S-LY-12-02	June 30, 2002	Establishes a 6-hour commercial fishing period with gillnets of 8-inch or greater stretch mesh size from 6:00 p.m. Sunday, June 30, until 12:00 Midnight Sunday, June 30, in District 2.	Opening a commercial fishing period in District 2 is warranted because the cumulative CPUE for the test fishing project is 17.11 through June 27 and the 1989-2001 average, through this same date, is 17.94. Pilot Station cumulative sonar passage estimate through June 27 is 141,375 king salmon. The cumulative king salmon estimate through June 27 was 39,495 and 70,105 in 2000 and 2001, respectively.
3-S-LY-13-02	July 3, 2002	Reinstates the subsistence salmon fishing schedule and closes the commercial salmon fishing season in District 1. The subsistence salmon fishing schedule for District 1 consists of two 36-hour periods each week from 8:00 p.m. Thursdays until 8:00 a.m. Saturdays and from 8:00 p.m. Mondays until 8:00 a.m. Wednesdays.	When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage is based on a schedule implemented chronologically, consistent with migratory timing, as the salmon run progresses upstream. The last commercial fishing period in District 1 was June 27. At this time, no additional commercial salmon fishing periods are anticipated for District 1 during the summer season.
3-S-LY-14-02	July 3, 2002	Reinstates the subsistence salmon fishing schedule and closes the commercial salmon fishing season in District 2. The subsistence salmon fishing schedule for District 2 consists of two 36-hour periods each week from 8:00 p.m. Sundays until 8:00 a.m. Tuesdays and from 8:00 p.m. Wednesdays until 8:00 a.m. Fridays.	When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage is based on a schedule implemented chronologically, consistent with migratory timing, as the salmon run progresses upstream. The last commercial fishing period in District 2 was June 30. At this time, no additional commercial salmon fishing periods are anticipated for District 2 during the summer season.

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3-S-UY-01-02	June 12, 2002	Implements the subsistence salmon fishing schedule in District 4. The subsistence salmon fishing schedule for District 4 consists of two 48-hour periods each week from 6:00 p.m. Wednesday until 6:00 p.m. Friday and from 6:00 p.m. Sunday until 6:00 p.m. Tuesday.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule to increase the quality of escapement and spread subsistence harvest opportunity among all users. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. The goal of the schedule is to provide windows of time when no fishing will be allowed so that portions of the salmon run can migrate upriver with less exploitation. However, further reductions in fishing time may be warranted during poor runs to meet targeted escapement goals. When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage is based on a schedule implemented chronologically, consistent with migratory timing as the salmon run progresses upstream.
3-S-UY-02-02	June 14, 2002	Allows subsistence gillnet fishermen in District 4 to fish for non-salmon species during subsistence salmon fishing closures with gillnets 4-inches or less in stretch mesh and a maximum length of 60 feet. Additionally, during closed subsistence salmon fishing periods, fish wheels may not be used to fish for whitefish and other non-salmon species.	For the conservation of chum salmon, during closed subsistence salmon fishing periods in District 4, gillnets used to take fish other than salmon may only be 4-inches or less in stretch mesh and a maximum length of 60 feet. Fish wheels may not be used during closed subsistence salmon fishing periods.
3-S-UY-03-02	June 21, 2002	Implements the subsistence salmon fishing schedule in Subdistrict 5-A of the Upper Yukon Area. The subsistence salmon fishing schedule for Subdistrict 5-A consists of two 42-hour periods each week from 6:00 p.m. Friday until 12:00 Noon Sunday and from 6:00 p.m. Tuesday until 12:00 Noon Thursday.	The goal of the schedule is to provide windows of time when no fishing will be allowed so that portions of the salmon run can migrate upriver with less exploitation.

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3-S-UY-04-02	June 21, 2002	Implements the subsistence salmon fishing schedule in Subdistricts 5-B and 5-C. Subsistence salmon fishing in Subdistricts 5-B and 5-C is allowed from 6:00 p.m. Friday until 6:00 p.m. Sunday and from 6:00 p.m. Tuesday until 6:00 p.m. Thursday.	The goal of the schedule is to provide windows of time when no fishing will be allowed so that portions of the salmon run can migrate upriver with less exploitation.
3-S-UY-05-02	June 21, 2002	Allows subsistence gillnet fishermen in District 5 to fish for non-salmon species during subsistence salmon fishing closures with gillnets 4-inches or less in stretch mesh and a maximum length of 60 feet. Additionally, during closed subsistence salmon fishing periods, fish wheels may not be used to fish for whitefish and other non-salmon species.	For the conservation of chum salmon, during closed subsistence salmon fishing periods in Yukon River District 5, gillnets used to take fish other than salmon may only be 4-inches or less in stretch mesh and a maximum length of 60 feet. Fish wheels may not be used during closed subsistence salmon fishing periods.
3-S-UY-06-02	June 26, 2002	Opens the commercial salmon fishing season in Subdistrict 4-A and Subdistricts 4-B and 4-C of the Upper Yukon Area.	At this time, King salmon run timing appears to be normal, based on the average run timing for years 1989-2001. At this time, the King salmon run abundance appears to be similar to or larger than 2001. Run abundance of King salmon appears to be adequate to provide for escapement, subsistence salmon fishing and a small commercial salmon harvest in most areas of the drainage. The department estimated that the mid-point of the King salmon run entered the river on June 19 or 20. A large pulse of King and summer chum salmon entered the river on June 12-13, and was followed by another pulse beginning June 20. So far, all indicators (i.e. the test net catches, subsistence reports, and Pilot Station sonar) are tracking each other well.
3-S-UY-07-02	June 14, 2002	Amends Emergency Order 3-S-UY-02-02 to correct an error under the regulatory text which incorrectly described Districts 1-3 as the area affected by the emergency order.	The previous Emergency Order, 3-S-UY-02-02, incorrectly cited Yukon River Districts 1-3 under the regulatory text. The original explanation contained the correct area, District 4, but the regulatory text was incorrect.

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3-S-UY-08-02	June 30, 2002	Establishes a 1-week schedule of two 48-hour commercial fishing periods in Subdistricts 4-B and 4-C.	At this time, King salmon run timing appears to be normal based on the average run timing for years 1989-2001 and the King salmon run abundance appears to be similar to, or larger than, 2001 and appears to be adequate to provide for escapement, subsistence uses, and a small commercial harvest. The cumulative CUPE for the test fishing project is 16.40 through June 25, which is above the 1989-2001 average, through this same date, of 16.27. The Pilot Station cumulative sonar passage estimate through June 25, 2002 is approximately 121,000 king salmon. The cumulative king salmon estimate through June 25 was approximately 34,500 and 50,000 in 2000 and 2001, respectively.
3-S-UY-09-02	July 2, 2002	Establishes a 12-hour commercial fishing period in Subdistrict 4-A effective 6:00 p.m. Tuesday, July 2, until 6:00 a.m. Wednesday, July 3.	At this time, run abundance of King salmon appears to be adequate to provide for escapement, subsistence uses, and a small commercial harvest. The cumulative CPUE for the test fishing project is 16.86 through June 26 and the 1989-2001 average, through this same date, is 17.17. The Pilot Station cumulative sonar passage estimate through June 26 is approximately 137,000 king salmon. The cumulative king salmon estimate through June 26 was approximately 37,000 and 58,000 in 2000 and 2001, respectively.
3-S-UY-10-02	July 5, 2002	Opens the commercial salmon fishing season in Subdistricts 5-B and 5-C effective 6:00 p.m. Friday, July 5.	Indications are that the 2002 king salmon run is similar to, or stronger than, the 2001 run. No commercial harvest occurred in the Alaskan portion of the drainage in 2001 and the department estimates that approximately 20,000 to 30,000 king salmon were surplus to escapement and subsistence needs. During 2001, all escapement objectives throughout the Yukon River drainage were either met or exceeded. Staff believes that prosecuting a commercial fishery in Subdistricts 5-B and 5-C at this time will allow for the harvest of surplus fish.

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3-S-UY-11-02	July 5, 2002	Establishes one 12-hour commercial fishing period in Subdistricts 5-B and 5-C effective 6:00 p.m. Friday, July 5.	The cumulative CPUE for the test fish project is 18.38 through June 30, slightly lower than the 1989-2001 average, through this same date, of 19.77. The Pilot Station cumulative sonar passage estimate through June 30 is approximately 146,000 king salmon. The cumulative king salmon estimate, through June 30, was approximately 53,000 and 94,000 in 2000 and 2001, respectively.
3-S-UY-12-02	July 6, 2002	Establishes one 36-hour subsistence salmon fishing period during Subdistricts 5-B and 5-C commercial salmon fishing season. The subsistence only fishing period in Subdistricts 5-B and 5-C will be effective from 6:00 a.m. Saturday, July 6, until 6:00 p.m. Sunday, July 7.	Based upon department test net catches at the mouth of the Yukon River, Pilot Station sonar passage estimates, subsistence catch reports, and the commercial harvest in Districts 1 and 2, the king salmon run appears to be similar to, or larger than, the 2001 run, but appears to be below years of average returns. Commercial fishing in Subdistricts 5-B and 5-C has been reduced to provide additional subsistence salmon fishing opportunity during the commercial fishing season.
3-S-UY-13-02	July 7, 2002	Establishes two 48-hour commercial fishing periods in Subdistricts 4-B and 4-C effective 6:00 p.m. Sunday, July 7.	The cumulative CPUE for the test fishing project is 19.31 through July 4, which is below the 1989-2001 average, through this same date, of 21.49. The Pilot Station cumulative sonar passage estimate through July 4, 2002 is approximately 177,000 king salmon. The cumulative king salmon estimate through July 4 was approximately 62,000 and 106,000 in 2000 and 2001, respectively.
3-S-UY-14-02	July 9, 2002	Establishes one 18-hour commercial fishing period in Subdistricts 5-B and 5-C effective 3:00 p.m. Tuesday, July 9, 2002.	The cumulative CPUE for the test fish project is 18.73 through July 6, which is below the 1989-2001 average, through this same date, of 21.85. The Pilot Station cumulative passage estimate through July 6 is approximately 174,000 king salmon. The cumulative king salmon estimate through July 6 was approximately 63,000 and 116,000 in 2000 and 2001, respectively.

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3-S-UY-15-02	July 10, 2002	Establishes one 33-hour subsistence salmon fishing period during Subdistricts 5-B and 5-C commercial salmon fishing season. The subsistence only fishing period in Subdistricts 5-B and 5-C is effective from 9:00 a.m. Wednesday, July 10, until 6:00 p.m. Thursday, July 11.	Based upon department test net catches at the mouth of the Yukon River, Pilot Station sonar passage estimates, subsistence catch reports, and the commercial harvest in Districts 1 and 2, the king salmon run appears to be similar to, or larger than, the 2001 run, but is below average returns. Commercial fishing time in Subdistricts 5-B and 5-C has been reduced to provide additional subsistence salmon fishing opportunity during the commercial fishing season.
3-S-UY-16-02	July 12, 2002	Opens the commercial salmon fishing season in District 6 effective 6:00 p.m. Friday, July 12.	The cumulative CPUE for the test fish project is 19.89 through July 7, which is below the 1989-2001 average, through this same date, of 22.40. The Pilot Station cumulative sonar passage estimate through July 7, 2002 is approximately 177,000 king and 925,000 summer chum salmon. In 2001, the cumulative passage estimate through July 7 was approximately 116,000 king and 321,000 summer chum salmon. Staff believes that prosecuting a commercial fishery in District 6 at this time will allow for the harvest of surplus fish.
3-S-UY-17-02	July 12, 2002	Establishes a 1-week schedule of two 42-hour commercial fishing periods in Subdistricts 6-A, 6-B, and 6-C effective 6:00 p.m. Friday, July 12.	The cumulative CUPE for the test fish project is 19.89 through July 7, which is below the 1989-2001 average, through this same date, of 22.40. The Pilot Station cumulative sonar passage estimate through July 7, 2002 is approximately 177,000 king and 925,000 summer chum salmon. In 2001, the cumulative passage estimate through July 7 was approximately 116,000 king and 321,000 summer chum salmon.
3-S-UY-18-02	July 14, 2002	Reinstates the subsistence salmon fishing schedule and closes the commercial salmon fishing season in District 4 effective July 14. The subsistence salmon fishing schedule for District 4 consists of two 48-hour periods per week from 6:00 p.m. Sundays until 6:00 p.m. Tuesdays and from 6:00 p.m. Wednesdays until 6:00 p.m. Fridays.	When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage is based on a schedule implemented chronologically, consistent with migratory timing, as the salmon run progresses upstream. The last commercial fishing period in District 4 was July 10.. At this time, no additional commercial salmon fishing periods are anticipated for District 4 during the summer season.

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3-S-UY-19-02	July 16, 2002	Reinstates the subsistence salmon fishing schedule and closes the commercial salmon fishing season in Subdistricts 5-B and 5-C effective July 16. The subsistence salmon fishing schedule for Subdistricts 5-B and 5-C consists of two 48-hour periods per week from 6:00 p.m. Tuesdays until 6:00 p.m. Thursdays and from 6:00 p.m. Fridays until 6:00 p.m. Sundays.	When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage is based on a schedule implemented chronologically, consistent with migratory timing, as the salmon run progresses upstream. The last commercial fishing period in Subdistricts 5-B and 5-C was July 9. At this time, no additional commercial salmon fishing periods are anticipated for Subdistricts 5-B and 5-C during the summer season.
3-S-UY-20-02	July 18, 2002	Opens the commercial salmon fishing season in Subdistrict 5-D effective 6:00 p.m. Thursday, July 18.	The cumulative CPUE for the test fish project is 20.22 through July 15, which is below the 1989-2001 average, through this same date, of 23.53. The Pilot Station cumulative sonar passage estimate through July 15 is approximately 182,000 king and 1,000,000 summer chum salmon. In 2001, the cumulative passage estimate through July 15 was approximately 134,000 king and 385,000 summer chum salmon. An initial projection of Canadian border escapement for the season is 41,400 king salmon based on run timing which falls between normal timing (the recent 10-year average) and early timing (1996 timing). Staff believes that prosecuting a commercial fishery in District 6 at this time will allow for the harvest of surplus fish.
3-S-UY-21-02	July 18, 2002	Establishes one 24-hour commercial fishing period in Subdistrict 5-D effective from 6:00 p.m. Thursday, July 18, until 6:00 p.m. Friday, July 19.	The cumulative CPUE for the test fish project is 20.22 through July 15, which is below the 1989-2001 average, through this same date, of 23.53. The Pilot Station cumulative sonar passage estimate through July 15 is approximately 182,000 king and 1,000,000 summer chum salmon. In 2001, the cumulative passage estimate through July 15 was approximately 134,000 king and 385,000 summer chum salmon. An initial projection of Canadian border escapement for the season is 41,400 king salmon based on run timing which falls between normal timing (the recent 10-year average) and early timing (1996 timing).

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3-S-LY-01-03	May 29, 2003	Established the subsistence salmon fishing schedule in District 1 starting at 8:00 p.m. Thursday, May 29.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule. The goal of the schedule is to provide windows of time (chronologically implemented upstream consistent with migratory timing) when no fishing occurs so that portions of the salmon run can migrate upriver with less exploitation. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. However, further reductions in fishing time may be warranted during poor runs to meet escapement goals.
3-S-LY-02-03	June 1, 2003	Established the subsistence salmon fishing schedule in District 2 effective 8:00 p.m., June 1.	See: 3-S-LY-01-03
3-S-LY-03-03	June 4, 2003	Established the subsistence salmon fishing schedule in District 3 effective 8:00 p.m. Wednesday, June 4.	See: 3-S-LY-01-03
3-S-LY-04-03	June 2, 2003	Allows subsistence gillnet fishing in Districts 1, 2, and 3 for non-salmon species during closures of subsistence salmon fishing with gillnets with 4-inches, or less, in stretch mesh and a maximum length of 60 feet, effective 8:00 a.m. Monday, June 2. Fish wheels may not be used during closed subsistence salmon fishing periods.	During periods closed to subsistence salmon fishing in Districts 1-3, fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet allows subsistence fishers to target non-salmon species for subsistence use.

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3-S-LY-05-03	June 16, 2003	Established the commercial salmon fishing season in District 1 effective 9:00 p.m. Monday, June 16. In District 1, salmon may not be taken for subsistence during the 24 hours immediately before the opening of the commercial salmon fishing season. By regulation, during the commercial fishing season, subsistence caught king salmon must be marked by immediately clipping the dorsal fin.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE of 14.32 is well above 2002 (11.05) and 2001 (10.67) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for commercial harvest.
3-S-LY-06-03	June 16, 2003	Establishes a 6-hour commercial fishing period for salmon with gillnets 8-inch, or greater, stretch mesh size from 9:00 p.m. Monday, June 16, until 3:00 a.m. Tuesday, June 17, in District 1.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE of 14.32 is well above 2002 (11.05) and 2001 (10.67) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial fishing period in District 1. Based on the duration and magnitude of the current passage rates, sufficient king salmon are in route to satisfy escapement and subsistence needs, as well as, border passage commitments to Canada. Restricting gillnets to 8-inch, or greater, mesh size is warranted to protect against harvesting a possible weak run of summer chum.
3-S-LY-07-03	June 17, 2003	Establishes the commercial salmon fishing season in District 2 effective 6:00 p.m. Tuesday, June 17. In District 2, salmon may not be taken for subsistence during the 24 hours immediately before the opening of the commercial salmon fishing season. By regulation during the commercial fishing season, subsistence caught king salmon must be marked by immediately clipping the dorsal fin.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE is 15.08 is well above 2002 (12.45) and 2001 (11.34) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial harvest in District 2.

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3-S-LY-08-03	June 18, 2003	Establishes a 6-hour commercial fishing period for salmon with gillnets 8-inch, or greater, stretch mesh size from 6 p.m. Wednesday, June 18, until 12 a.m. Midnight Wednesday, June 18, in District 2.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE is 15.08, well above 2002 (12.45) and 2001 (11.34) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial fishing period in District 2. Based on the duration and magnitude of the current passage rates, sufficient king salmon are in route to satisfy escapement and subsistence needs, as well as, border passage commitments to Canada. Restricting gillnets to 8-inch or greater mesh size is warranted to protect against a possible weak run of summer chum salmon.
3-S-LY-09-03	June 21, 2003	Establishes a 6-hour commercial fishing period with gillnets 8-inch, or greater, stretch mesh size from 6 p.m. Saturday, June 21, until 12 a.m. Midnight Saturday, June 21, in District Y-1.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE is 16.39, which is above 2002 (15.77) and 2001 (12.26) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial fishing period in District 1. Based on the duration and magnitude of the current passage rates, sufficient king salmon are in route to satisfy escapement and subsistence needs, as well as, border passage commitments to Canada. Restricting gillnets to 8-inch or greater mesh size is warranted to protect against a possible weak run of summer chum salmon.
3-S-LY-10-03	June 22, 2003	Establishes the commercial salmon fishing season in District Y-3 effective 8:00 p.m. Sunday, June 22. The Emergency Order 3-S-LY-03-03 is rescinded by this emergency order.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE is 16.39, which is above 2002 (15.77) and 2001 (12.26) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial harvest in District 3.

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3-S-LY-11-03	June 25, 2003	Establishes a 6-hour commercial period with gillnets 8-inch, or greater, stretch mesh size from 6:00 p.m. Wednesday, June 25, until 12:00 Midnight Wednesday, June 25, in District 2.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE is 18.91, which is above 2002 (17.21) and 2001 (13.75) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial fishing period in District 2. Based on the duration and magnitude of the current passage rates, sufficient king salmon are in route to satisfy escapement and subsistence needs, as well as, border passage commitments to Canada. Restricting gillnets to 8-inch or greater mesh size is warranted to protect against a possible weak run of summer chum salmon.
3-S-LY-12-03	June 25, 2003	Closes subsistence salmon fishing in District Y-1 beginning 6:00 p.m., June 25, to conserve summer chum salmon. All subsistence salmon fishing must be stopped during subsistence salmon fishing closures.	The summer chum salmon passage by Pilot Station is approximately 289,000 fish through June 23. This is half of the average (648,000) and 60% of the 2002 return. The total run projection is between 750,000 and 850,000 summer chum salmon, if this projection falls below 600,000 fish, then actions will be taken to further limit summer chum salmon subsistence fishing. Closing subsistence fishing is justified to insure summer chum salmon are managed conservatively for escapement requirements. Fishwheels may not be used to harvest fish during periods closed to subsistence salmon harvest.
3-S-LY-13-03	June 26, 2003	Establishes a 6-hour commercial fishing period with gillnets 8-inch, or greater, stretch mesh size from 6:00 p.m. Thursday, June 26, until 12:00 Midnight Thursday, June 26, in District 1.	Reports from subsistence fishers indicate that most are on track to meet their subsistence needs at this time. The current cumulative set gillnet test fishing CPUE is 20.41, which is above 2002 (18.06) and 2001 (14.13) when adjusted to account for run timing. This indicates that there is a harvestable surplus of king salmon to allow for a commercial fishing period in District 1. Based on the duration and magnitude of the current passage rates, sufficient king salmon are in route to satisfy escapement and subsistence needs, as well as, border passage commitments to Canada. Restricting gillnets to 8-inch or greater mesh size is warranted to protect summer chum salmon.

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3-S-LY-14-03	June 27, 2003	**C**loses subsistence salmon fishing in District 2 beginning 6:00 p.m., June 27, to conserve summer chum salmon. Subsistence fishing for non-salmon species with a gillnet that has a stretch mesh size of 4-inches, or less, and no longer than 60 feet will be allowed.	The summer chum salmon passage by Pilot Station is approximately 343,000 fish through June 25. This is half of the average (731,000) and 60% of the 2002 return. The total run projection is between 750,000 and 850,000 fish, if this projection falls below 600,000 fish, then actions will be taken to further limit summer chum salmon subsistence fishing. Closing subsistence fishing is justified to insure summer chum salmon are managed conservatively for escapement requirements. Fishwheels may not be used to harvest fish during periods closed to salmon harvest.
3-S-LY-15-03	June 29, 2003	Reinstates the subsistence salmon fishing schedule in District 2, effective Sunday, June 29, the subsistence salmon fishing schedule will consists of two 36-hour periods weekly. Subsistence salmon fishing will be allowed from 8:00 p.m. Sundays until 8:00 a.m. Tuesdays and from 8:00 p.m. Wednesdays until 8:00 a.m. Fridays.	Based on summer chum run projections, it is warranted to reestablish the regulatory subsistence fishing schedule in District 2. Subsistence salmon fishing was closed at 6:00 p.m. Friday, June 27 in District 2. The subsistence fishing schedule is implemented chronologically upstream consistent with migratory timing, except during the open commercial fishing season when subsistence fishing is open except for 18 hours before, during, and 12 hours after commercial fishing periods. At this time, no additional commercial salmon fishing periods during the summer season are anticipated in District 2.
3-S-LY-16-03	June 30, 2003	Reinstates the subsistence salmon fishing schedule in Districts 1 and 3 effective June 30. The subsistence salmon fishing schedule for Districts 1 and 3 consists of two 36-hour fishing periods per week. District 1 may subsistence fish from 8:00 p.m. Mondays until 8:00 a.m. Wednesdays and from 8:00 p.m. Thursdays until 8:00 a.m. Saturdays. Subsistence salmon fishing in District 3 is allowed from 8:00 p.m. Sundays until 8:00 a.m. Tuesdays and from 8:00 p.m. Wednesdays until 8:00 a.m. Fridays.	Based on summer chum run projections, it is warranted to reestablish the regulatory subsistence fishing schedule in Districts 1 and 3 (no commercial fishing occurred in District 3). Subsistence salmon fishing was closed at 6:00 p.m. Wednesday, June 25 in District 1 to conserve summer chum salmon. The subsistence fishery is implemented chronologically upstream consistent with migratory timing, except during the open commercial fishing season. At this time, no additional summer season commercial salmon fishing periods are anticipated for District 1.

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3-S-LY-17-03	July 2, 2003	Establishes a 6-hour commercial fishing period with gillnets 8-inch, or greater, stretch mesh size from 6:00 p.m. Wednesday, July 2 until 12:00 a.m. Midnight Wednesday, July 2, in District 1 and that portion of District 2 downriver of Department regulatory markers, on opposite banks, located near the old cannery in Mountain Village. By regulation, subsistence caught salmon must be marked immediately by clipping the dorsal fin.	Based on a harvestable surplus of king salmon, a 6-hour commercial fishing period is warranted. Subsistence harvests from the mouth to Galena indicate subsistence needs are being met, additionally, Old Crow (Canada) and Circle report some subsistence harvest. The current cumulative CPUE for the set gillnet test fishing project is 20.47 (just below the 1989-2002 average and well above the years of 2001 and 2002). Pilot Station cumulative estimates through July 1 are 220,000 king and 762,000 summer chum salmon. Based on the current passage rates, sufficient numbers of king salmon will satisfy escapement objectives, subsistence uses, and border passage commitments. Opening a concurrent commercial fishing period in District 1 and a limited area in District 2 is warranted based on buyers indicating they would not purchase king salmon from a separate district-wide opening in District 2 because of the poor quality king salmon occurring late in the run.
3-S-LY-18-03	July 7, 2003	Establishes a 6-hour commercial fishing period with gillnets 8-inch, or greater, stretch mesh size from 12:00 noon Monday, July 7, until 6:00 p.m. Monday, July 7, in District 2.	Based on a harvestable surplus of king salmon, a 6-hour commercial fishing period is warranted. Subsistence harvests from the mouth to Galena indicate subsistence needs are being met, additionally, Old Crow (Canada) and Circle reports some subsistence harvest. The current cumulative CPUE for the set gillnet test fishing project is 25.64 (just below the 1989-2002 average and well above the years of 2001 and 2002). Pilot Station cumulative estimates through July 6 are 247,500 king and 954,200 summer chum salmon. Based on the current passage rates, sufficient numbers of king salmon will satisfy escapement objectives, subsistence uses, and border passage commitments. King salmon harvested for subsistence must now be marked by immediately clipping the dorsal fin.

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3-S-LY-19-03	July 7, 2003	Establishes a 6-hour commercial fishing period with gillnets 8-inch, or greater, stretch mesh size from 6:00 p.m. Monday, July 7, until 12:00 Midnight, Monday, July 7, in District 1.	Based on a harvestable surplus of king salmon, a 6-hour commercial fishing period is warranted. Subsistence harvests from the mouth to Galena indicate subsistence needs are being met, additionally, Old Crow (Canada) and Circle reports some subsistence harvest. The current cumulative CPUE for the set gillnet test fishing project is 25.64 (just below the 1989-2002 average and well above the years of 2001 and 2002). Pilot Station cumulative estimates through July 6 are 247,500 king and 954,200 summer chum salmon. Based on passage rates, sufficient numbers of king salmon will satisfy escapement objectives, subsistence uses, and border passage commitments.
3-S-UY-01-03	June 11, 2003	Implements the subsistence salmon fishing schedule in District 4 effective 6:00 p.m. Wednesday, June 11. The subsistence salmon fishing schedule for District 4 consists of two 48-hour periods per week from 6:00 p.m. Wednesday until 6:00 p.m. Friday and from 6:00 p.m. Sunday until 6:00 p.m. Tuesday.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule. The goal of the schedule is to provide windows of time (chronologically implemented upstream consistent with migratory timing) when no fishing occurs so that portions of the salmon run can migrate upriver with less exploitation. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. However, further reductions in fishing time may be warranted during poor runs to meet escapement goals.
3-S-UY-02-03	June 11, 2003	Allows subsistence gillnet fishermen in District 4 to fish non-salmon species during closures to subsistence salmon fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet, effective 6:00 p.m. Wednesday, June 11.	During periods closed to subsistence salmon fishing in District 4, fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet allows subsistence fishers to target non-salmon species for subsistence use. Fishwheels may not be used during periods closed to subsistence salmon fishing.
3-S-UY-03-03	June 20, 2003	Implements the subsistence salmon fishing schedule in Subdistrict 5-A effective 6:00 p.m. Friday, June 20. The subsistence salmon fishing schedule consists of two 42-hour periods per week from 6:00 p.m. Friday until 12:00 Noon Sunday and from 6:00 p.m. Tuesday until 12:00 Noon Thursday.	See Emergency Order: 3-S-UY-02-03

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3-S-UY-04-03	June 20, 2003	Implements the subsistence salmon fishing schedule in Subdistricts 5- effective 6:00 p.m. Friday June 20. Subsistence salmon is allowed from 6:00 p.m. Friday until 6:00 p.m. Sunday and from 6:00 p.m. Tuesday until 6:00 p.m. Thursday.	See Emergency Order: 3-S-UY-02-03
3-S-UY-05-03	June 20, 2003	Allows subsistence gillnet fishermen in District 5 to harvest non-salmon species during subsistence salmon fishing closures with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet beginning 6:00 p.m. Friday, June 20. Additionally, during closed subsistence salmon fishing periods, fish wheels may not be used to fish for whitefish and other non-salmon species.	During periods closed to subsistence salmon fishing in the Yukon River District 5, fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet allows subsistence fishers to target non-salmon species for subsistence use. Fishwheels may not be used to harvest non-salmon species during periods closed to subsistence salmon fishing.
3-S-UY-06-03	June 25, 2003	Opens the commercial salmon fishing season in District 4 effective 6:00 p.m. Wednesday, June 25. Emergency order number 3-S-UY-01-03 is rescinded.	Based on a harvestable surplus of king salmon, opening the commercial fishing season is warranted. Subsistence harvests from the mouth to Galena indicate subsistence needs are being met, additionally, Old Crow (Canada) and Circle reports some subsistence harvest. The current cumulative CPUE for the set gillnet test fishing project is 18.66 (below the 1989-2002 average but well above the years of 2001 and 2002). Pilot Station cumulative estimates through June 23 are 182,600 king and a projected passage of 182,600 summer chum salmon. Based on passage rates, sufficient numbers of king salmon will satisfy escapement objectives, subsistence uses, and border passage commitments.

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3-S-UY-07-03	June 26, 2003	Establishes one 24-hour and two 48-hour commercial fishing periods in Subdistricts 4-B and 4-C from 6:00 p.m. Thursday, June 26, until 6:00 p.m. Friday, June 27, 6:00 p.m. Sunday, June 29, until Tuesday, July 1, 6:00 p.m. Wednesday, July 2, until 6:00 p.m. Friday, July 4.	Based on king salmon run indicators, there is a harvestable surplus, which justifies scheduling commercial fishing periods in Subdistricts 4-B and 4-C. The CPUE for the set net test fishing is 20.66 through June 25 (average CPUE for the years of 1989-2002 through this same date is 17.70). The Pilot Station cumulative sonar passage estimate through June 25 is approximately 189,200 king salmon.
3-S-UY-08-03	July 4, 2003	Establishes two 12-hour commercial salmon fishing periods in Subdistricts 5-B and 5-C from 6:00 p.m. Friday, July 4, until 6:00 a.m. Saturday, July 5, and from 6:00 p.m. Tuesday, July 8, until 6:00 a.m. Wednesday, July 9.	Opening commercial fishing periods in Subdistricts 5-B and 5-C is warranted based on the availability of a harvestable surplus of king salmon. The CPUE for the set net test fishing is 24.08 through July 2 (average CPUE for the years of 1989-2002 through this same date is 20.73). The Pilot Station cumulative sonar passage estimate through July 2 is approximately 219,000 king salmon.
3-S-UY-09-03	July 8, 2003	Reestablishes the subsistence salmon fishing schedule of two 48-hour salmon subsistence fishing periods per week in District 4 beginning at 6:00 p.m. Tuesday, July 8. Subsistence fishing for salmon will be allowed from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule. The goal of the schedule is to provide windows of time (chronologically implemented upstream consistent with migratory timing) when no fishing occurs so that portions of the salmon run can migrate upriver with less exploitation. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. However, further reductions in fishing time may be warranted during poor runs to meet escapement goals.

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3-S-UY-10-03	July 10, 2003	Opens two additional 24-hour subsistence salmon fishing periods in Subdistricts 5-B and 5-C from 6:00 p.m. on Thursday, July 10, to 6:00 p.m. Friday, July 11, and from 6:00 p.m. Thursday, July 17, to 6:00 p.m. Friday, July 18.	A surplus of king salmon has been identified; however, some fishers have reported difficulty harvesting king salmon with fish wheels in Subdistrict 5-B and 5-C; therefore, additional subsistence fishing time is warranted. Indications are that the 2003 king salmon run is similar to, or stronger than, the 2002 run. During 2002, all escapement objectives for king salmon were either met or exceeded and a commercially harvestable surplus was available. Subsistence harvest rates in 5-B and 5-C may have decreased because of below average water levels.
3-S-UY-11-03	July 10, 2003	Establishes one 12-hour commercial salmon fishing period in Subdistricts 5-B and 5-C from 6:00 p.m. Thursday, July 10, to 6:00 a.m. Saturday, July 11.	Opening commercial fishing in Subdistricts 5-B and 5-C is warranted based on the availability of a harvestable surplus of king salmon. The combined guideline harvest range is approximately 1,200 to 1,400 king salmon in Subdistricts 5-B and 5-C. Opening commercial and subsistence fishing concurrently is warranted based on the limited commercial effort and market conditions.
3-S-UY-12-03	July 11, 2003	Opens the commercial salmon fishing season in District 6 effective 6:00 p.m. Friday, July 11, and establishes two 42-hour commercial salmon periods from 6:00 p.m. Friday, July 11, to Noon Sunday, July 13, and from 6:00 p.m. Monday, July 14, to 12:00 Noon Wednesday, July 16.	A surplus of king salmon has been identified; therefore, opening the commercial fishing season in District 6 and scheduling 2 commercial fishing periods is warranted. Indications are that the 2003 king salmon run is similar to, or stronger than, the 2002 run. During 2002, all escapement objectives for king salmon were either met or exceeded and a commercially harvestable surplus was available.
3-S-UY-13-03	July 14, 2003	Establishes one 24-hour commercial fishing period in Subdistrict 5-D from 6:00 p.m. Monday, July 14, to 6:00 p.m. July 15.	See Emergency Order: 3-S-UY-12-03

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3-S-UY-14-03	July 16, 2003	Establishes one 24-hour commercial salmon fishing period in Subdistricts 5-B and 5-C from 6:00 p.m. Wednesday, July 16, to 6:00 p.m. Thursday, July 17. Subsistence fishing in Subdistricts 5-B and 5-C is opened concurrent with commercial fishing.	See Emergency Order: 3-S-UY-11-03
3-S-UY-15-03	July 17, 2003	Establishes one 24-hour commercial fishing period in Subdistrict 5-D from 6:00 p.m. Thursday, July 17, to 6:00 p.m. Friday, July 18.	See Emergency Order: 3-S-UY-12-03
3-S-UY-16-03	July 18, 2003	Establishes one 42-hour commercial salmon fishing period in District 6 from 6:00 p.m. Friday, July 18, to 12:00 Noon Sunday, July 20.	See Emergency Order: 3-S-UY-12-03
3-S-UY-17-03	July 21, 2003	Establishes one 42-hour commercial salmon fishing period in District 6 from 6:00 p.m. Monday, July 21, to 12:00 Noon Wednesday, July 23.	See Emergency Order: 3-S-UY-12-03
3-S-UY-18-03	July 28, 2003	Establishes one 24-hour commercial salmon fishing period in District 6 from 6:00 p.m. Monday, July 28, to 6:00 p.m. Tuesday, July 29.	See Emergency Order: 3-S-UY-12-03

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3-S-LY-01-04	May 31, 2004	Implements the subsistence salmon fishing schedule in District 1 effective May 31. The subsistence salmon fishing schedule for District 1 consists of two 36-hour periods per week from 8:00 p.m. Monday until 8:00 a.m. Wednesday and from 8:00 p.m. Thursday until 8:00 a.m. Saturday.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule. The goal of the schedule is to provide windows of time (chronologically implemented upstream consistent with migratory timing) when no fishing occurs so that portions of the salmon run can migrate upriver with less exploitation. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. However, further reductions in fishing time may be warranted during poor runs to meet escapement goals.
3-S-LY-02-04	June 2, 2004	Implements the subsistence salmon fishing schedule in District 2 effective June 2, 2004. The subsistence salmon fishing schedule for District 2 consists of two 36-hour periods per week from 8:00 p.m. Wednesday until 8:00 a.m. Friday and from 8:00 p.m. Sunday until 8:00 a.m. Tuesday.	See Emergency Order: 3-S-LY-01-04
3-S-LY-03-04	June 8, 2004	Implements the subsistence salmon fishing schedule in District 3 effective June 8. The subsistence salmon fishing schedule for District 3 consists of two 36-hour periods per week from 8:00 a.m. Tuesday to 8:00 p.m. Wed. and from 8:00 a.m. Friday to 8:00 p.m. to Saturday.	See Emergency Order: 3-S-LY-01-04

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3-S-LY-04-04	June 2, 2004	Allows subsistence gillnet fishermen in Districts 1, 2, and 3 to harvest non-salmon species during subsistence salmon fishing closures with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet effective 8:00 a.m. Wednesday, June 2.	During periods closed to subsistence salmon fishing in Districts 1-3, fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet allows subsistence fishers to target non-salmon species for subsistence use. Fishwheels may not be used during periods closed to subsistence salmon fishing.
3-S-LY-05-04	June 8, 2004	This emergency order allows subsistence salmon fishing 7 days per week in the Innoko River drainage effective June 8. The regulatory subsistence salmon fishing schedule established for District Y-3 by Emergency Order 3-S-LY-03-04 is amended by this emergency order for the Innoko River drainage only.	Generally, few salmon are caught in the Innoko River. Subsistence fishing effort is relatively low in the Innoko River with most fishing occurring near the village of Shageluk. When residents want to harvest salmon for subsistence uses, they normally fish the Yukon River mainstem. The request of Shageluk residents to be allowed to fish 7 days per week was discussed on the June 1, 2004, YRDFA teleconference and had strong support. Based on providing additional opportunity for subsistence fishing for resident species, low fishing effort, and subsistence fishing inefficient in this location (similar to the Koyukuk River drainage, which has a subsistence fishing schedule of 7 days per week) it is warranted to allow subsistence salmon fishing 7 days per week in the Innoko River drainage.
3-S-LY-06-04	June 15, 2004	Opens the commercial salmon fishing season in District 2 effective 6:00 p.m. Tuesday, June 15. In District 2, salmon may not be taken for subsistence during the 24 hours immediately before the opening of the commercial salmon fishing season. Emergency order 3-S-LY-02-04 is rescinded.	The test fishing project detected a pulse of king salmon on Saturday, June 12, continuing through June 14. The catch rates for June 12 and 13 were 0.83 and 1.52 CPUE. Through Jun 14, the cumulative CPUE is 6.89, which is higher than the 1989-2003 average of 5.66. When adjusted for run timing, the current cumulative CPUE of 6.89 is just below the 1989-2003 average. The Pilot Station sonar king salmon passage estimate through June 13 is 15,500, and for chum salmon, 69,700.

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3-S-LY-07-04	June 15, 2004	Establishes a 6-hour commercial fishing period with gillnets of 8-inch, or greater, stretch mesh size from 6:00 p.m. Tuesday, June 15, to 12:00 a.m. Midnight Tuesday, June 15, in District 2.	Based on current run indicators for king salmon, there is a harvestable surplus available for commercial harvest, which warrants scheduling a commercial fishing period in District 2. Restricting gillnets to 8-inch, or greater, mesh size is warranted to minimize the harvest of summer chum salmon. The test fishing project detected a pulse of king salmon on Saturday, June 12, continuing through June 14. The catch rates for June 12 and 13 were 0.83 and 1.52 CPUE. Through Jun 14, the cumulative CPUE is 6.89, which is higher than the 1989-2003 average of 5.66. When adjusted for run timing, the current cumulative CPUE of 6.89 is just below the 1989-2003 average. The Pilot Station passage estimate through June 13 is 15,500 king and 69,700 chum salmon.
3-S-LY-08-04	June 17, 2004	Opens the commercial salmon fishing season in District 1 effective 12:00 midnight Thursday, June 17. In District 1, salmon may not be taken for subsistence during the 24 hours immediately before the opening of the commercial salmon fishing season. Emergency order 3-S-LY-01-04 is rescinded.	See Emergency Order: 3-S-LY-06-04
3-S-LY-09-04	June 17, 2004	Establishes a 6-hour commercial fishing period from 12:00 midnight Thursday, June 17, until 6:00 a.m. Friday, June 18, in District 1.	Based on current run indicators (cumulative CPUE is 8.95 though June 15, which is higher than the 1989-2003 average of 7.19) for king salmon, there is a harvestable surplus available for commercial harvest, which warrants scheduling a commercial fishing period in District 1. The Pilot Station sonar passage estimate through June 15 is 23,800 king salmon and 98,200 chum salmon.
3-S-LY-10-04	June 20, 2004	Establishes a 6-hour commercial fishing period from 6:00 p.m. Sunday, June 20, until 12:00 a.m. Midnight Sunday, June 20, in District 2.	See Emergency Order: 3-S-LY-07-04

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3-S-LY-11-04	June 21, 2004	Establishes a 9-hour commercial fishing period from 3:00 p.m. Monday, June 21, until 12:00 midnight Monday, June 21, in District 1.	See Emergency Order: 3-S-LY-09-04
3-S-LY-12-04	June 20, 2004	Establishes a subsistence salmon fishing schedule in that area of the Coastal District from 62 degrees north latitude, north to a Fish and Game marker at Chris Point near the south mouth of the Yukon River. Subsistence fishing in this area will be managed the same as in District 1. Salmon may not be taken for subsistence 18 hours before, during, and 12 hours after District 1 commercial fishing periods.	During the first District 1 commercial salmon fishing period on June 18, there were subsistence and commercial salmon fishers fishing in the Black River area. Interviews of fishermen by Alaska Bureau of Wildlife Enforcement officers indicated that there was confusion as to boundaries between areas open to commercial fishing and the areas open to subsistence salmon fishing. To resolve possible conflicts and to assist in enforcement of fishing regulations, the subsistence salmon fishing schedule in that portion of the Coastal District from 62 degrees north latitude, north to Chris Point will be managed in the same manner as the subsistence salmon fishing in District 1.
3-S-LY-13-04	June 22, 2004	Rescinds the subsistence salmon fishing schedule in District 3 established by Emergency Order 3-S-LY-03-04 effective 8:00 a.m. Tuesday, June 22. Subsistence salmon fishing will be open 7 days per.	The inseason run strength is expected to provide for escapement, subsistence, and a limited commercial harvest; thus, the subsistence salmon fishing schedule will be relaxed chronologically upriver. Therefore, it is warranted to lift the subsistence salmon fishing schedule in District 3.
3-S-LY-14-04	June 23, 2004	Establishes a 6-hour commercial fishing period from 12:00 midnight Wednesday, June 23, to 6:00 a.m. Thursday, June 24, in District 2.	When adjusted for run timing, the current cumulative CPUE (13.5) is below the 1989-2003 average (16.4), but above run of 2001 (11.7) and similar to 2002 (13.5). It is thought that the departments test fishing gillnets are underestimating the run strength because of debris load earlier in the run. Indications point out that fish may be migrating through the river unmonitored.

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3-S-LY-15-04	June 24, 2004	Establishes a 9-hour commercial fishing period from 6:00 p.m. Thursday, June 24, to 3:00 a.m. Friday, June 25, in District 1.	See Emergency Order: 3-S-LY-14-04
3-S-LY-16-04	June 27, 2004	**E**stablishes a 6-hour commercial fishing period from 6:00 p.m. Sunday June 27, until 12:00 midnight Sunday, June 27, in District 2.	The cumulative CPUE through June 25 is 16.6, which is identical to the 1989-2003 average. However, when adjusted for run timing, the current cumulative CPUE is below the 1989-2003 average (19.2). Because of debris and indications that fish are migrating through unmonitored passes, it is thought that the departments test fishing gillnets are underestimating the run strength.
3-S-LY-17-04	June 28, 2004	This emergency order establishes a 9-hour commercial fishing period from 6:00 p.m. Monday, June 28, until 3:00 a.m. Tuesday, June 29, in District 1.	The cumulative CPUE through June 26 is 17.1, which is near the 1989-2003 average of 17.4. When adjusted for run timing, the current cumulative CPUE is below the 1989-2003 average (19.7). Because of debris and indications that fish are migrating through unmonitored passes, it is thought that the department's test nets are underestimating the run strength. Pilot Station sonar passage estimates are 124,400 king salmon and 600,000 chum salmon through June 26. The current projection is 1.0 to 1.4 million summer chum salmon, well above the 700,000 summer chum salmon necessary for escapement, subsistence needs, and a surplus for commercial harvest.
3-S-LY-18-04	June 30, 2004	Establishes a 6-hour commercial fishing period from 12:00 midnight Wednesday June 30, to 6:00 a.m. Thursday, July 1, in District 1.	Indications are that the 2004 king salmon run is stronger than the runs of 2001 and 2002, and possibly near the 1989-2003 average. The run abundance at this time is expected to provide for escapement, subsistence uses, with a surplus for commercial harvest. Therefore, it is warranted to open a commercial fishing period in District 1.

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3-S-LY-19-04	July 2, 2004	Establishes a 9-hour commercial fishing period from 9:00 p.m. Friday, July 2, until 6:00 a.m. Saturday, July 3, in District 1.	See Emergency Order: 3-S-LY-18-04
3-S-LY-20-04	July 5, 2004	Establishes a 9-hour commercial fishing from 12 midnight Monday, July 5, to 9:00 a.m. Tuesday, July 6, in District 1.	See Emergency Order: 3-S-LY-18-04
3-S-LY-21-04	July 9, 2004	Establishes a 6-hour commercial fishing period from 9:00 p.m. Friday, July 9, to 3:00 a.m. Saturday, July 10, in District 1.	See Emergency Order: 3-S-LY-18-04
3-S-UY-01-04	June 14, 2004	Implements the subsistence salmon fishing schedule in Subdistrict 4-A effective 6:00 p.m. Monday, June 14. The subsistence salmon fishing schedule for Subdistrict 4-A consists of two 48-hour periods per week from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday.	In January 2001, the Alaska Board of Fisheries adopted a subsistence salmon fishing schedule. The goal of the schedule is to provide windows of time (chronologically implemented upstream consistent with migratory timing) when no fishing occurs so that portions of the salmon run can migrate upriver with less exploitation. The schedule should provide reasonable opportunity for subsistence users to meet their needs during years of normal to below average runs. However, further reductions in fishing time may be warranted during poor runs to meet escapement goals.
3-S-UY-02-04	June 13, 2004	Implements the subsistence salmon fishing schedule in Subdistricts 4-B and 4-C effective 6:00 p.m. Sunday, June 13. The subsistence salmon fishing schedule for Subdistricts 4-B and 4-C consists of two 48-hour periods per week from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday.	See Emergency Order: 3-S-UY-01-04
3-S-UY-03-04	June 15, 2004	**A**llows subsistence gillnet fishermen in Districts 4 and 5 to harvest non-salmon species during closures to subsistence salmon fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet effective 6:00 p.m. Tuesday, June 15.	During periods closed to subsistence salmon fishing in the Yukon River Districts 4 and 5, fishing with gillnets 4-inches, or less, in stretch mesh and a maximum length of 60 feet allows subsistence fishers to target non-salmon species for subsistence use. Fishwheels may not be used during periods closed to subsistence salmon fishing.

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3-S-UY-04-04	June 22, 2004	Implements the subsistence salmon fishing schedule in Subdistricts 5-A, 5-B, and 5-C effective 6:00 p.m. Tuesday, June 22. The subsistence salmon fishing schedule for Subdistricts 5-A, 5-B, and 5-C consists of two 48-hour periods per week from 6:00 p.m. Tuesday until 6:00 p.m. Thursday and from 6:00 p.m. Friday until 6:00 p.m. Sunday.	See Emergency Order: 3-S-UY-01-04
3-S-UY-05-04	June 27, 2004	Opens the commercial salmon fishing season in Subdistrict 4-A, 4-B, and 4-C effective 6:00 p.m. Sunday, June 27. Emergency order numbers 3-S-UY-01-04 and 3-S-UY-2-04 are rescinded.	Indications are that the 2004 king salmon run is stronger than the 2001 and 2002 runs. During 2001 and 2002, most king salmon escapement and subsistence needs were met and a harvestable surplus of approximately 20,000 to 30,000 fish is thought to have existed. If inseason run strength is expected to provide for escapement, subsistence uses, with a surplus for commercial harvest, the subsistence salmon fishing schedule will be relaxed chronologically upriver. Therefore it is warranted to rescind Emergency Orders 3-S-UY-01-04 and 3-S-UY-2-04. Staff believes that there is a harvestable surplus of salmon and prosecuting a commercial fishery in Subdistricts 4-A, 4-B, and 4-C at this time is warranted.
3-S-UY-06-04	July 2, 2004	Establishes four 12-hour commercial salmon fishing periods in Subdistricts 5-B and 5-C from 6:00 p.m. Friday, July 2, until 6:00 a.m. Saturday, July 3, 6:00 p.m. Saturday, July 3, until 6:00 a.m. Sunday, July 4, 6:00 p.m. Tuesday, July 6, until 6:00 a.m. Wednesday, July 7, 6:00 p.m. Wednesday, July 7, until 6:00 a.m. Thursday, July 8.	The cumulative CPUE through June 26 is 17.13, only slightly lower than the 1989-2003 average of 17.38. The Pilot Station passage estimate through June 28 is 138,000 king salmon and 747,000 summer chum salmon. King salmon passage is above average (119,000), although, the summer chum salmon passage estimate is below average (858,000).

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3-S-UY-07-04	July 5, 2004	Opens the commercial salmon fishing season in District 6 effective 6:00 p.m. Monday, July 5, and establishes two 42-hour commercial fishing periods for salmon. Commercial fishing will open from 6:00 p.m. Monday, July 5, until 12:00 Noon Wednesday, July 7, and from 6:00 p.m. Friday, July 9, until 12:00 Noon Sunday, July 11.	See Emergency Order: 3-S-UY-05-04
3-S-UY-08-04	July 9, 2004	Establishes two 12-hour commercial salmon fishing periods in Subdistricts 5-B and 5-C from 6:00 p.m. Friday, July 9, until 6:00 a.m. Saturday, July 10, and from 6:00 p.m. Saturday, July 10, until 6:00 a.m. Sunday, July 11. Effective 6:00 p.m. Tuesday, July 13, subsistence salmon fishing in Subdistricts 5-A, 5-B, and 5-C will be open 5 days per week from 6:00 p.m. Tuesdays until 6:00 p.m. Sundays. It is anticipation that there will be no more commercial fishing periods.	The Pilot Station sonar passage estimate through July 8 is 176,000 king salmon and 1.13 million summer chum salmon. Based on salmon abundance, commercial fishing periods in Subdistricts 5-B and 5-C and relaxation on the subsistence fishing schedule to 5 days per week are warranted.
3-S-UY-09-04	July 12, 2004	Establishes four 42-hour commercial fishing periods in Subdistricts 6-A, 6-B, and 6-C from 6:00 p.m. Monday, July 12, until 12:00 Noon Wednesday, July 14, 6:00 p.m. Friday, July 16, until 12:00 Noon Sunday, July 18, 6:00 p.m. Monday, July 19, until 12:00 noon Wednesday, July 21, 6:00 p.m. Friday, July 23, until 12:00 noon Sunday, July 25.	At this time, the upper end of the Chena and Salcha River king salmon escapement goals are projected to be exceeded and the drainage wide summer chum salmon run is over the 1.0 million fish necessary for a directed commercial harvest. Therefore, it is warranted to commercially harvest salmon in District 6. Additional commercial fishing periods may be scheduled depending on market conditions.

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3-S-UY-10-04	July 26, 2004	Establishes four 42-hour commercial fishing periods in Subdistricts 6-A, 6-B, and 6-C effective from 6:00 p.m. Monday, July 26, until 12:00 Noon Wednesday, July 28, 6:00 p.m. Friday, July 30, until 12:00 Noon Sunday, August 1, 6:00 p.m. Monday, August 2, until 12:00 Noon Wednesday, August 4, 6:00 p.m. Friday, August 6, until 12:00 noon Sunday, August 8.	See Emergency Order: 3-S-UY-09-04

Appendix A28.–List of emergency orders pertaining to the fall chum and coho salmon fishery, Yukon Area, 2002–2004.

Data Year 2002

EO Number	Effective Date	Action Taken	Comments
3-S-YF-01-02	August 11	Closed subsistence salmon fishing throughout the Yukon River Area effective incrementally on the following dates: Coastal District and District 1, 2, 3: August 11. District 4 including Koyukuk River drainage: August 14 Subdistrict: 5-A, 5-B, 5-C, 5-D: August 16 Subdistrict 6-A and 6-B and Old Minto Area: August 16 Immediately reopened subsistence salmon fishing with use of hook and line attached to a rod or pole in the Yukon Area Coastal District and Districts 1, 2, 3 downstream from the lower mouth of Paimiut Slough 7 days per week.	The preseason run size projection for fall chum salmon was for a range of 200,000-650,000 fish. The projection was revised to 500,000-650,000 fish following the summer season because the summer chum salmon return was higher than expected. As the fall season progressed, the run appeared to be very late or very weak. By average midpoint of the fall chum salmon run, the cumulative sonar count at Pilot Station was 147,000 fish or 43% below the 7-year average of 270,000 fish. A return of this size was below the 350,000 fish necessary for escapement and subsistence needs as stipulated in the Yukon River Drainage Fall Chum Salmon Management Plan. The subsistence fishery was closed in a stepwise manner to allow time for chum salmon to pass out of each district and to facilitate notice to fishermen. No commercial fall chum salmon fishing had occurred, and sport and personal use fishing were closed August 11 and August 16, respectively. Subsistence salmon fishing with use of rod and reel was opened in the specified area for the retention of all fish species except fall chum salmon. Rod and reel gear is highly selective and produces low mortality for incidentally caught species. This action provided subsistence opportunity to harvest other salmon while conserving fall chum salmon that had to be returned to the water alive.
3-S-YF-02-02	August 11	Imposed subsistence fishing gear restrictions for non-salmon species throughout the Yukon River Area. Gillnets allowed for the taking of fish other than salmon were restricted to 4-inches or less mesh and maximum length of 60 feet. Fish wheels were not allow during closed subsistence salmon fishing periods.	Subsistence salmon fishing remained closed throughout the Yukon River Area with the exception of conditional hook and line gear that was open for salmon in the Yukon River downstream of the lower mouth to Paimiut Slough with the condition that chum salmon were immediately released. Throughout the Yukon Area, subsistence fishing for whitefish and other non-salmon species was allowed 7 days per week. However, no fish wheel gear was allowed, and gillnet gear with mesh size and net length restrictions were imposed to allow subsistence harvest of non-salmon species while conserving fall chum salmon.

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Data Year 2002

3-S-YF-03-02	August 16	Closed personal use salmon fishing in the Yukon River Subdistrict 6-C effective 6:00 pm.	As summer chum salmon moved out of the area and fall chum salmon were to begin arriving soon, personal use salmon fishing was closed as required in the Yukon River Drainage Fall Chum Salmon Management Plan when the projected size of the run drops to less than 350,000 fish.
3-S-YF-04-02	August 14	Defined a bag and possession limit of 10 salmon per person per day, excluding chum salmon, taken while subsistence fishing with hook and line attached to a rod or pole in the Coastal District and Districts 1, 2, 3 downstream of the lower mouth of Paimiut Slough. Established use of dip nets to subsistence fish 7 days per week for all fish species in the lower Yukon River districts 1, 2, 3, except for chum salmon that had to be released.	Subsistence salmon fishing closures were in effect throughout the Yukon River drainage to conserve fall chum salmon. Hook and line attached to rod or pole was allowed in the lower river for subsistence fishing of fish species other than fall chum salmon, however, a bag and possession limit was enacted to conserve local spawning stocks. The concern was that with other subsistence salmon fishing opportunities closed, concentrated subsistence fishing of small local stocks could make them susceptible to over harvest. Additional use of dip net gear was allowed to provide subsistence fishing opportunity for coho salmon while conserving fall chum salmon. The coho salmon run was just beginning and appeared to be near normal in run strength and abundance. Both allowable gear types were highly selective and produced low mortality for incidentally caught fish.
3-S-YF-05-02	August 26	Opened subsistence salmon fishing to the use of dip nets 7 days per week for all fish species in the mainstem portions of the Yukon and Koyukuk Rivers in District 4, except all chum salmon had to be released.	Provided additional opportunity to harvest coho salmon as the run progressed upstream and became more abundant in the district.

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Data Year 2002

3-S-YF-06-02	August 29	Reopened the Coastal District to subsistence salmon fishing 7 days per week effective 6:00 pm. Opened Districts 1, 2, and 3 on a reduced subsistence salmon fishing schedule of two 18 hour periods each week from 6:00 pm Thursday to 12:00 noon Friday and from 6:00 pm Monday to 12:00 noon Tuesday for all legal subsistence salmon gear types. Allowed use of hook and line and dip nets as subsistence salmon fishing gear only during open subsistence salmon fishing periods.	The Yukon River fall chum salmon run continued to be weak. By August 27 approximately 355,000 fall chum passed the Pilot Station sonar site which is 24% below the recent 7 year passage of 465,000 fish, while approximately 117,700 coho salmon passed Pilot Station sonar which is 12% above the recent 7 year passage of 103,800 fish. Because the coho salmon return appeared to be at average levels and the majority of fall chum salmon had passed through the Lower Yukon Area, opening these districts provided opportunity for harvesting coho salmon. The very small surplus of fall chum salmon above minimum escapement needs allowed opening subsistence salmon fishing to a reduced schedule in districts where fall chum salmon were still available.
3-S-YF-07-02	September 8	Reopened District 4 to a reduced subsistence salmon fishing schedule of two 24 hour periods per week for all legal subsistence salmon gear types and the Koyukuk River to one 72 hour period per week. Use of dip nets as subsistence salmon fishing gear was allowed only during open subsistence salmon fishing periods in District 4 including the Koyukuk River.	Continued subsistence harvest opportunities for coho salmon and a limited opportunity for fall chum salmon as the respective runs moved through or were past the district.
3-S-YF-08-02	September 15	Restored Yukon River Districts 1-4 to a full subsistence salmon fishing schedule. Dipnets continued to be allowed only during open subsistence salmon fishing periods.	Because the majority of fall chum salmon had passed though the Lower Yukon Area and the coho salmon return was at average levels, opening the subsistence fishery to its normal schedule provided opportunity for harvesting coho salmon.

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Data Year 2002

3-S-YF-09-02	September15	Returned Yukon River Districts 1-4 to the standard gear configurations for non-salmon species by rescinding EO 3-S-YF-02-02. Continued to restrict the use of subsistence fishing gear for non-salmon species in Districts 5 and 6 including gillnet limits of 4-inch or less stretch mesh and 60 feet maximum length, and ban on fish wheel use during closed subsistence salmon fishing periods for non-salmon species.	The majority of salmon had passed through Districts 1-4, including the Koyukuk River. The small mesh gillnets restrictions during non-salmon subsistence fishing periods were removed to give subsistence users greater opportunity to harvest large whitefish and sheefish. Gillnet and fishing wheel restrictions continued in Districts 5 and 6 to conserve fall chum salmon.
3-S-YF-10-02	September 13	Reopened Yukon River Subdistrict 5-A and District 6, including the Old Minto Area, to one 24 hour fishing period in which only fish wheels with live boxes or live chutes were allowed.	The fall chum salmon run continued to be assessed as weak as approximately 357,500 fish were counted at Pilot Station sonar. This was only slightly above the minimum escapement goal of 350,000 fish and did not support a full subsistence harvest. The coho salmon run was assessed to be near average in strength and timing with approximately 128,700 salmon past Pilot Station as of August 31. Coho salmon abundance increased in the Tanana River the past week and coho salmon were noted in non-salmon subsistence catches at Nenana. The Yukon Area subsistence fisheries were reopened incrementally after the majority of fall chum salmon had passed through a given area to provide fishing opportunity for coho salmon while minimizing fall chum salmon harvest.
3-S-YF-11-02	September 16	Reopened Subdistrict 5-A and District 6, including the Old Minto, Area, to the full subsistence salmon fishing schedule of two 42 hour periods per week, except the Old Minto Area which was opened 5 days per week. Fish wheels and all other legal gear were allowed during these subsistence fishing periods and all salmon species could be retained.	The overall fall chum salmon run was assessed as weak and could not support a full subsistence harvest. Data collected from the Tanana River tagging projects indicated that the Tanana River fall chum and coho salmon were past their average midpoints and fall chum salmon run appeared adequate for providing for escapement needs and a subsistence harvest. Therefore, although the overall Yukon River fall chum salmon run was assessed as poor and fishing periods were minimal, subsistence salmon fishing on the Tanana River was reopened to the full subsistence salmon fishing schedule.

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Data Year 2002

3-S-YF-12-02	September 17	Opened 5-B and 5-C to one 12 hour subsistence salmon fishing period. Fish wheels and all other legal gear were allowed during the opening and all salmon species could be retained.	Upriver monitoring projects on the Chandalar, Sheenjek and Fishing Branch rivers and the US/Canada border passage indicated that fall chum salmon minimum escapement goals for the upper Yukon River tributaries would likely not be met. The majority of fall chum salmon were thought to have passed through Subdistricts 5-B and 5-C. To minimize the harvest of fall chum salmon, a one 12 hour subsistence salmon fishing period was opened to allow fishermen the opportunity to harvest salmon and other species present in the area and to provide managers with an indication of fall chum salmon catch rates. Additional fishing times would be allowed if reports indicated that few fall chum salmon remained in the area.
3-S-YF-13-02	September 20	Reopened Subdistricts 5-B and 5-C to the full subsistence salmon fishing schedule of two 48 hour periods per week. Fish wheels and all other legal gear types were allowed during these subsistence fishing periods and all salmon species could be retained.	Since the majority of fall chum salmon had passed through Subdistricts 5-B and 5-C, these areas were being opened incrementally to allow some subsistence fishing opportunity on fish species present in the area..
3-S-YF-14-02	September 20	Returned Subdistricts 5-B and 5-C to standard gear configurations excluding fish wheels for non-salmon species by rescinding EO #3-S-YF-09-02. Continued 4-inch or less mesh and 60 feet maximum length gill net restrictions for taking of non-salmon species in Subdistricts 5-A and District 6 and the ban on fish wheels use during closed subsistence salmon fishing periods.	Since the majority of fall chum salmon had passed through Subdistricts 5-B and 5-C, these areas were no longer restricted to small mesh gillnets during non-salmon subsistence fishing periods. However, these areas remained closed to fish wheels during subsistence salmon fishing closures. To continue to conserve fall chum salmon in Subdistrict 5-A and District 6, fishing gear restrictions were maintained during non-salmon subsistence fishing periods.

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Data Year 2002

3-S-YF-15-02	September 20	Reopened personal use salmon fishing in Subdistrict 6-C to the full personal use fishing schedule of two 42 hour periods per week by rescinding EO #3-S-YF-03-02. Fishing gear during the open periods was limited to the use of dip nets or to fish wheels equipped with a live box or live chute, and all chum salmon had to be returned to the water.	The Yukon River Drainage Fall Chum Salmon Management Plan does not allow for directed personal use fall chum salmon fishing at a total fall chum salmon run size of 550,000 fish. Personal use salmon fishing was reopened to limited gear to allow opportunity to harvest the average return of coho salmon.
3-S-YF-16-02	September 21	Opened the Chandalar River to subsistence salmon fishing 24 hours a day, 7 days per week effective 12:00 noon. Progressively reopened Subdistrict 5-D to subsistence fishing from 12 noon on following dates: September 23: portion of Subdistrict 5-D below 22 mile slough opened to one 24 hour opening; September 27: all of Subdistrict 5-D opened to a second 24 hour opening; October 1: all of Subdistrict 5-D opened to 7 days per week. Fish wheels and all other legal gear types were allowed during these subsistence fishing periods and all salmon species were retained.	The Chandalar River Sonar Project indicated that the Chandalar River would exceed the minimum escapement goal of 74,000 fall chum salmon. This allowed opening subsistence salmon fishing to a full 7 days per week in accordance with the Yukon River Drainage Fall Chum Salmon Management Plan. The majority of fall chum salmon had passed through the lower portion of Subdistrict 5-D. Due to the size of the subdistrict, subsistence fishing was opened incrementally in 2 portions to allow some subsistence opportunity on fish species in the lower portion as the final pulse of fall chum salmon passed through the upper portion of the Subdistrict 5-D. The entire subdistrict was reopened to unrestricted subsistence fishing once most of the fall chum salmon had passed into Canada.

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Data Year 2002

3-S-YF-17-02	September 28	Returned Districts 1-6 to standard gear configurations during non-salmon fishing periods by rescinding EO #3-S-YF-14-02.	The majority of salmon passed through all the Yukon River districts and subdistricts and gillnet mesh restrictions were removed and fish wheels were allowed during non-salmon fishing periods.
3-S-YF-18-02	September 28	Opened Districts 1, 2, 3, 4 and Subdistricts 5-A, 5-B, and 5-C to subsistence salmon fishing 7 days per week. Fish wheels and all other legal gear types were allowed and all salmon species could be retained.	For the season, the Yukon River experienced poor fall chum salmon runs and minimum escapement levels were reached in only 1 of 4 monitored upper Yukon River stocks. The majority of fall chum salmon had passed through the upper portions of the Yukon River drainage including much of the Tanana River. The regulatory standard subsistence fishing schedule was restored to allow increased subsistence fishing opportunity for all fish species. The Tanana River fall chum salmon run was expected to attain most escapement goals and was large enough to provide subsistence harvest in the Tanana River, however Subdistricts 6-A, 6-B and the Old Minto Area were continued on the historical subsistence salmon fishing schedule as required by the Tanana River Salmon Management Plan.

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Data Year 2003

EO Number	Effective Date	Action Taken	Comments
3-S-YF-01-03	July 16	Reduced subsistence salmon fishing time: In marine waters of the Coastal District to one 3-1/2 day (84 hour) period per week from 8:00 am Wednesday to 8:00 pm Saturday. In Districts 1, 2, and 3 to two 12-hour periods per week from 8:00 am to 8:00 pm on Wednesdays and on Saturdays.	Fall chum salmon are managed according to the Yukon River Fall Chum Salmon Management Plan (Management Plan) adopted by the Board of Fisheries (BOF). The plan becomes effective July 16 and requires a 350,000 minimum run size to meet escapement needs throughout the drainage and a 600,000 run size to allow a normal subsistence salmon fishery. Early in the fall chum salmon season there was concern that the year's fall chum salmon run would not support minimum escapement and normal subsistence harvest needs. The concern was based on trends in recent years when poor fall chum salmon runs appeared to follow below average summer chum salmon runs and on the current year's suspected Pilot Station sonar overestimation of summer chum salmon passage when compared to several upriver escapement projects, The fall chum salmon outlook was adjusted for an expected run similar to the last 2 years ranging around 400,000 fish. This projection approached the minimum run size of 350,000 fish necessary for escapement and rebuilding needs. Directions in the Management Plan required a reduction in the subsistence harvest of fall chum salmon. With support from participants in the YRDFA sponsored teleconference, a reduced subsistence fishing schedule of approximately 1/3 the fishing time of the BOF 2001 schedule was initiated in the lower river until upriver projects could corroborate the sonar assessment. The reduced fishing schedule was to be implemented incrementally upriver as the run progressed to provided subsistence fishing opportunity more evenly throughout the drainage. Additional recommendations from the YRDFA teleconference resulted in an adjustment of fishing times and dates to provide opportunity during daylight hours and on weekends.

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Data Year 2003

3-S-YF-02-03	July 26	Reduced subsistence salmon fishing time in District 4, excluding the Koyukuk River, to two 16-hour periods per week from 8:00 am to 12:00 midnight on Wednesdays and Saturdays. Beginning July 26 in Subdistrict 4-A and beginning July 30 in Subdistricts 4-B and 4-C. Koyukuk River drainage reduction to be announced at a later time.	To conserve fall chum salmon, the reduction in subsistence salmon fishing time initiated in the lower Yukon River and Coastal districts was continued upriver as fall chum salmon moved into the area. The strategy was to spread subsistence fishing opportunity along the river. In all Yukon River districts subsistence fishing opportunity for whitefish and other non-salmon species was allowed 7 days per week. However, during subsistence salmon fishing closures, gillnet fishing gear was restricted to nets no longer than 60 feet with mesh size no larger than 4-inches and fish wheels could not be used.
3-S-YF-03-03	August 3	Reduced subsistence salmon fishing time in Subdistricts 5-B and 5-C to two 16-hour periods per week from 8:00 am to 12:00 midnight on Wednesdays and Saturdays.	Subsistence salmon restrictions initiated in the lower Yukon River were continued in upriver districts as the salmon run moved into those areas due to continuing concern that the year's run would not support minimum escapement and normal subsistence harvest.
3-S-YF-04-03	August 9	Reduced subsistence salmon fishing time in the Koyukuk River to one 3-1/2 day (84 hour) period per week from 8:00 am Wednesday to 8:00 pm Saturday.	Following recommendations from YRDFA teleconference participants, subsistence salmon fishing in the Koyukuk River was reduced by only one-half of the fishing time of the BOF 2001 schedule because fishing efficiency and level of risk in the Koyukuk River was less than in the rest of the Yukon River.
3-S-YF-05-03	August 13	Revised the opening and closing times of the two 16-hour subsistence fishing periods in Subdistricts 4-B and 4-C. Revised schedule opened fishing from 8:00 pm Wednesday to 12:00 noon Thursday and from 8:00 pm Saturday to 12:00 noon Sunday. Subdistrict 4-A schedule, excluding the Koyukuk River, continued unaltered from 8:00 am to 12:00 midnight on Wednesdays and Saturdays.	Having arrived at just past the midpoint of the fall chum salmon season, concern remained that the fall chum salmon run would not support minimum escapement levels and normal subsistence harvest. Fishing restrictions to reduce the harvest of fall chum salmon continued. However, acting on recommendations from YRDFA teleconference participants, the fishing time schedule in Subdistricts 4-B and 4-C was changed to make hours more reasonable when fishermen put in and pulled out their fishing gear.

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Data Year 2003

3-S-YF-06-03	August 17	Reduced subsistence salmon fishing time in 5-D to a 3-1/2 day (84 hour) period per week from 8:00 am Thursday to 8:00 pm Sunday.	The fall chum salmon outlook was adjusted to an expected run size ranging from 400,00 to 500,000. Since the projection remained above the 350,000 minimum escapement level but below the 600,000 level sufficient to meet all subsistence needs, the management plan dictated a reduction in subsistence harvest of fall chum salmon. The reduced fishing schedule continued to be implemented upriver following the fall chum salmon run as it migrated through the area.
3-S-YF-07-03	August 15	Revised the opening and closing times of the two 16-hour subsistence salmon fishing periods in Subdistricts 5-B and 5-C to a new schedule from 6:00 pm Friday to 10:00 am Saturday and from 6:00 pm Tuesday to 10:00 am Wednesday. Subdistrict 5-A was not altered and remained open from 8:00 am Friday to 12:00 noon Sunday and from 6:00 pm Tuesday to 12:00 noon Wednesday.	YRDFA teleconference participants recommended revising the fishing schedule times to provide for more reasonable hours when fishermen put in and pulled out their fishing gear.

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Data Year 2003

3-S-YF-08-03	August 16	Returned subsistence salmon fishing time to the normal regulatory schedule in the Coastal District and Districts 1, 2, and 3. In marine waters of the Coastal District, effective August 16, fishing allowed 7 days per week. In District 1, effective August 18, the two 36-hour fishing periods were: 8:00 pm Monday to 8:00 am Wednesday and 8:00 pm Thursday to 8:00 am Saturday. In District 2 and 3, effective August 17, the two 36-hour fishing periods were: 8:00 pm Sunday to 8:00 am Tuesday and 8:00 pm Wednesday to 8:00 am Friday.	All indicators suggested the fall chum salmon run was better than the low end of the preseason projection of 250,000 based on parent year escapements and recent production trends. Subsistence fishing reports and Lower Yukon and Mountain Village drift test fisheries indicated the fall chum salmon run was similar to the previous 2 seasons. The Kaltag drift test fishery indicated the run was slightly larger than the recent poor years. CPUE data at the Rapids and Rampart test fish wheel sites also tracked near recent average passage, but it was early for run assessment in that section of the river, and the first pulse was expected to arrive soon. At just past the average midpoint of the fall chum salmon count at Pilot Sonar on August 9, the cumulative passage estimate was 480,000 and the cumulative total projected run size was about 800,000 to 900,000 based on average run timing. Managers were concerned that a run of 900,000 fall chum salmon should be more obvious in test fish projects and the subsistence fishery. The concern was that Pilot Station was overestimating fall chum salmon abundance as it related to the summer chum salmon run that was assessed to be about one-half the Pilot Station sonar estimate based on Pilot Station sonar passage estimates and escapements upriver, primarily in the Anvik River. The coho salmon run appeared to be early and expected to be strong as in the previous year. Test fish and subsistence reports indicated a 50/50 ration of fall chum and coho salmon passing through Emmonak. Fall chum salmon passage was expected to decline in the lower river and coho salmon passage was increasing. To take advantage of the abundant coho salmon run, subsistence salmon fishing times were returned to the full BOF schedule in the Coastal District and Districts 1, 2 and 3. Similar actions were expected for upriver districts.

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Data Year 2003

3-S-YF-09-03	August 20	Returned subsistence salmon fishing time to the regulatory fishing schedule in all of District 4, including the Koyukuk River, and in Subdistricts 5-B, 5-C and 5-D. District 4: Open weekly from 6:00 pm Wednesdays to 6:00 pm Fridays and from 6:00 pm Sundays to 6:00 pm Tuesdays. Koyukuk River Drainage: Open 7 days per week. Subdistricts 5-B and 5-C: Open weekly from 6:00 pm Fridays to 6:00 pm Sundays and from 6:00 pm Tuesdays to 6:00 pm Thursdays. Subdistrict 5-D: Open 7 days per week.	Although assessment projects provided an inconsistent picture of the fall chum salmon run, it was anticipated to range between 500,000 and 600,000 fish. This projection allowed for most escapement needs but lower than average subsistence harvest due to reduced fishing time earlier in the run. Assessment projects that provided a picture of a below average run size in the range of 400,000 fall chum salmon included the Emmonak and Mountain Village drift test fish projects and upriver Rapids test fish wheel and Sheenjek sonar projects. The Kaltag drift test fish project, Rampart test fish wheel and Chandalar sonar provided a more optimistic run size. It was too early to assess the Tanana River stocks as the test projects were just getting underway. At the average three-quarter point in the Pilot Station sonar count of August 18, based on average run timing, the cumulative passage estimate of fall chum salmon was 805,000, and the cumulative total projected run size was 800,000 to 1 million. Because the earlier summer chum salmon run was assessed at one-half of the count at Pilot Station sonar, there was concern the same factors would continue into the fall season, suggesting that Pilot Station sonar might be overestimating fall chum salmon abundance by 50 to 60%. Because of the uncertainty created by discrepancies between Pilot Station sonar estimates and run assessment projects, fishermen and managers cooperated to fish conservatively on the front half of the run to help spread fall chum salmon to upriver areas and the Canadian border. However, the passing of a large pulse through the lower river confirmed that the fall chum salmon run was not dropping off early. The Rampart-Rapids tagging project also indicated adequate numbers of fall chum salmon would pass through the upper Yukon to support a full subsistence fishery. With an increased drainage-wide run size projection of 500,000 to 600,000 fall chum salmon, subsistence fishing was returned to the full BOF subsistence fishing schedule before salmon moved beyond the reach of local fishermen. According to the Fall Chum Salmon Management Plan, a run size of 600,000 provided for drainage-wide escapement and full subsistence needs. Continued strength in the run could allow further relaxing of subsistence beyond the BOF schedule, and if the run likely exceeded the 675,000 level, commercial fishing possibilities could be considered. Managers did point out that fall chum salmon continued to be conservation concerns for the Porcupine and Toklat River stocks and actions would be taken if assessments indicated those stocks needed protection.

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Data Year 2003

3-S-YF-10-03	August 23	Opened the fall commercial salmon fishing season in Districts 1, 2, and 3. Opened 3 commercial salmon fishing periods in District 1 from 9:00 am to 9:00 pm on Monday, August 25, Wednesday, August 27 and Friday, August 29 with unrestricted gear.	As of August 22 the cumulative passage estimate at Pilot Sonar was 856,000 and the cumulative total projected run size was 900,000 to 1 million. Data from the Rampart-Rapids mark-recapture project through August 18 indicated the fall chum salmon run to the upper Yukon River ranged from 325,000 to 400,000. Typically the Rampart-Rapids project estimates roughly 50% of the total run to the upper Yukon River. This suggested a run size of 650,000 to 800,000, or approximately 70% of the Pilot Station sonar estimate, and was consistent with concerns that the sonar was overestimating abundance, but to a lesser extent than previously projected. The fall chum salmon run size was projected to total approximately 700,000 and the coho salmon run was judged to be well above average. According to the Fall Chum Salmon Management Plan, commercial salmon fishing was allowed when the fall chum salmon run exceeded 675,000. Approximately 90% of fall chum and 75% of coho salmon were estimated to have entered the river at this time, which meant fewer salmon were becoming available for harvest in District 1. Salmon markets were extremely weak at that time of year and only 1 buyer declared intention to buy salmon and only in District 1. Fishermen were advised to carefully consider their market when planning to fish due to limited tendering capacity. Similar management actions were expected in upriver districts as fall chum salmon moved into them.
3-S-YF-11-03	August 27	Opened the fall commercial salmon fishing season in District 4, except for the Koyukuk River. Opened two 48-hour commercial fishing periods in Subdistricts 4-B and 4-C to coincide with subsistence salmon fishing periods from 6:00 pm Wednesdays to 6:00 pm Fridays and 6:00 pm Sundays to 6:00 pm Tuesdays. Subsistence salmon fishing in Subdistrict 4-A allowed 7 days per week with no gear restrictions.	Large pulses of salmon observed in lower river assessment projects continued to be tracked upriver. The fall chum salmon run appeared to be larger than the last 5 years in the anticipated range of 650,000 to 800,000 and with a projected total of approximately 700,000. The coho salmon return was judged well above average. This was large enough to provide for drainage-wide escapement, subsistence needs and Canadian commitments and support limited commercial, personal use and sport harvest as stipulated in the Fall Chum Salmon Management Plan. The commercial season was opened in District 4 with two 48-hour commercial periods per week to run concurrently with the two 48-hour weekly subsistence fishing periods in Subdistricts 4-B and 4-C. In Subdistrict 4-A subsistence fishing time was increased to 7 days per week unless a commercial market developed. Commercial markets were limited and it was up to fisherman to secure their own markets.

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Data Year 2003

3-S-YF-12-03	September 1	Extended the commercial salmon fishing season in Districts 1, 2 and 3. Opened 3 additional 12-hour commercial fishing periods in District 1 only from 9:00 am to 9:00 pm on Monday, September 1, Wednesday, September 3, and Friday, September 5.	As the season winded down most fall chum and coho salmon were in the Yukon River. The Emmonak drift test fish project and Pilot Station sonar closed down. Overall the drainage-wide fall chum salmon run appeared to be larger than the last 5 years with a range of 650,000 to 800,000 fish. The Rampart-Rapids tagging project and early escapement estimates upriver provided comparative information that were used to judge the Pilot Station sonar final end of project passage estimate of 930,000, and indications were that the sonar was not nearly overestimating as much as was potentially expected based on analysis of the summer chum salmon run. The coho salmon run began a week earlier than usual and appeared to be as strong as the last few years which were considered to have large runs. Pilot Station passage estimate through August 30 was 272,000 with a total run projection of 325,000 coho salmon. This was significantly greater than the average Pilot Station sonar estimate of 121,000 by this date and the highest season end estimate of 263,000.
3-S-YF-13-03	September 5	Opened one 42-hour commercial salmon fishing period weekly for Subdistricts 6-B and 6-C only from 6:00 pm Fridays to 12:00 noon Sundays. The commercial period coincided with the subsistence and personal use salmon fishing schedule. Subsistence and personal use salmon fishing schedule continued unaltered in District 6.	The Tanana River salmon stocks typically arrive later than stocks bound for the upper Yukon. Subdistrict 5-A test fish wheel indicated a steady passage of fall chum and coho salmon with significant increase on August 22. It was too early to estimate fall chum salmon abundance based on Tanana River mark-and-recapture project, but the run to the upper Tanana River was projected to be near 280,000. The coho salmon run appeared earlier than usual and at least as strong as the last few years, however the harvest of coho salmon was limited to date to conserve fall chum salmon. Commercial fishing was opened to provide commercial opportunity for a small commercial interest as a significant surplus of fall chum and coho salmon was available and the harvest to date was small elsewhere in the drainage. No impact to subsistence or personal use activities was anticipated as the commercial fishing period coincided with subsistence fishing. Commercial markets were very limited and fishermen had to secure their own market.

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Data Year 2003

3-S-YF-14-03	September 9	Opened the fall commercial salmon fishing season in District 5	To date no commercial fishing periods were announced in District 5. Opening the commercial salmon season enabled subsistence fishing opportunities in Subdistricts 5-A, 5-B and 5-C to be extended to 5 days per week. Subdistrict 5-D salmon schedule continued open 7 days per week. Opening the commercial season also allowed management to quickly react and announce a commercial period should a commercial market develop.
3-S-YF-15-03	September 9	Announced that no further commercial salmon fishing periods were to occur for the remainder of the season in Subdistricts 4-B and 4-C. The commercial salmon fishing seasons remained unaltered. Subsistence fishing time for salmon increased to 5 days per week from 6:00 pm Sundays to 6:00 pm Fridays.	The final Pilot Station sonar passage estimate through end of the project was 930,000 fall chum salmon. The Rampart-Rapids mark and recapture estimate through September 9 was approximately 375,000 fall chum salmon, providing a run size projection to the upper Yukon of roughly 500,000. The Tanana River mark-and-recapture estimate through September 6 was approximately 135,000 fall chum salmon, providing a run size projection to the upper Tanana River of roughly 325,000. When combining projections for the upper Yukon and Tanana Rivers, the overall drainage-wide fall chum salmon run was anticipated in the range from 800,000 to 900,000, which was similar to the Pilot Station sonar passage estimate and reinforced confidence that the sonar passage estimate reflected fall chum salmon run abundance. This estimate represented a significant run improvement, approximately doubling the recent 5-year average run size. The only noted weakness was in the Sheenjek River stock, and the Kantishna River stock was unknown at the time. Coho salmon entered the Yukon River in significant pulses along with the third and fourth pulses of fall chum salmon. Pilot Station sonar passage estimate through August 31 was 277,000, projecting a total run of 320,000 coho salmon. The Andreafsky River weir passage of coho salmon tracked above average. Closure of the commercial season on September 11 returned subsistence fishing in District 1 to 7 days per week. With no anticipated commercial fisheries, Districts 2 and 3 and 4-A reverted to the pre-2001 subsistence fishing schedule of 7 days per week and Subdistricts 4-B, 4-C and 5-A, 5-B and 5-C reverted to the pre-2001 subsistence fishing schedule of 5 days per week effective September 9. If commercial fishermen could secure a market for fall or coho salmon, they could contact ADF&G to work out potential commercial fishing dates and times.

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Data Year 2003

3-S-YF-16-03	September 9	Opened 2 additional commercial salmon fishing periods in District 1 from 8:00 am to 8:00 pm Tuesday, September 9 and Thursday, September 11. Both set gillnets and drift gillnets could be operated concurrently but drift gillnets could not be operated in the "Set Gillnet Only Area."	Though the fall commercial salmon fishing season was opened in Districts 1 through 6, only District 1 and Subdistricts 4-B, 4-C, 6B and 6-C had commercial fishing periods because they had the only available commercial markets. The fall chum and coho salmon runs were judged adequate to provide for escapement and subsistence needs with additional surplus available for commercial harvest. One buyer notified the department of intent to purchase salmon only in District 1. Limited tendering capacity required fishermen carefully consider their market when planning to fish.
3-S-YF-17-03	September 29	Extended the commercial season in District 6 to 12:00 noon Sunday, October 5. Opened commercial salmon fishing in Subdistrict 6-B for two 42-hour periods from 6:00 pm Monday, September 29 to 12:00 noon Wednesday, October 1 and from 6:00 pm Friday, October 3 to 12:00 noon Sunday, October 5. The subsistence and personal use salmon fishing schedules in District 6 remained unaltered.	Extended the commercial season and revised the salmon fishing schedule because there was a significant surplus of fall chum and coho salmon and the potential exploitation was anticipated to be low. The Yukon River fall chum and coho salmon runs continued to be strong. The fall chum run size projection to the Tanana River of 230,000 was well above average as was the coho salmon run. The Fall Chum Salmon Management Plan allows a run of this size to support a normal subsistence fishery and provides a near average commercial harvest. Due to limited market, however, commercial periods were scheduled only for Subdistrict 6-B. To date the cumulative commercial salmon harvest in District 6 was 2,146 fall chum salmon and 6,686 coho salmon. The Guideline Harvest Range for fall chum salmon in District 6 was 2,750 to 20,500.

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Data Year 2004

EO Number	Effective Date	Action Taken	Comments
3-S-YF-01-04	July 17, 2004	Opened the fall salmon season in Yukon Area Districts 1, 2, and 3 to the regulatory subsistence salmon fishing schedule of two 36-hour periods per week. Effective July 17 in District 1: 8:00 pm Mondays to 8:00 am Wednesdays and 8:00 pm Thursdays to 8:00 am Saturdays. Effective July 20 in District 2: 8:00 pm Sundays to 8:00 am Tuesdays and 8:00 pm Wednesdays to 8:00 am Fridays. Effective July 21 in District 3: 8:00 am Tuesdays to 8:00 pm Wednesdays and 8:00 am Fridays to 8:00 pm Saturdays.	Fall chum salmon are managed according to the Yukon River Fall Chum Salmon Management Plan (Management Plan). The plan was recently amended by the Board of Fisheries with revised run size specifications: 300,000 fall chum salmon required to meet escapement needs, over 500,000 to allow subsistence salmon fishing, and over 600,000 to open a commercial fishery. The 2004 preseason projection was for a run size between 350,000 to 672,000 fall chum salmon based on the poor salmon production trend since 1998 for the low end of the range and long-term average production rates for the upper end of the range. Primary parent year escapements that were to produce this year's run were the lowest on record. However, improved performance of the Yukon River summer chum salmon run created expectation that the fall chum salmon run might experience similar improved production. The inseason outlook was revised for a run size of 500,000 to 600,000 fall chum salmon. According to the Management Plan, this amount was sufficient to provide for most escapement and subsistence needs. Subsistence fishing periods were returned to the windowed regulatory schedule in the lower river and were to be applied sequentially as the salmon moved upstream.
3-S-YF-02-04	July 28	Returned Yukon Area District 4 to the regulatory subsistence salmon fishing schedule of two 48-hour periods per week. Effective July 28 in Subdistrict 4-A: (excluding the Koyukuk River portion) 6:00 pm Mondays to 6:00 pm Wednesdays and 6:00 pm Thursdays to 6:00 pm Saturdays. Effective July 30 in Subdistricts 4-B and 4-C: 6:00 pm Wednesdays to 6:00 pm Fridays and 6:00 pm Sundays to 6:00 pm Tuesdays. Koyukuk River remained open 7-days per week.	In accordance with the Fall Chum Salmon Management Plan, subsistence fishing periods were returned sequentially to the windowed regulatory subsistence fishing schedule as the salmon moved upstream. The preseason management plan strategy was to be conservative from early to midpoint of the fall chum salmon run to build confidence in the inseason run assessment and to reduce risk on the early portion of the run that typically includes weak stocks bound for the Porcupine River. It was anticipated that the windows schedule might be relaxed later in the run once the Porcupine River stocks had passed through the lower river.

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Data Year 2004

3-S-YF-03-04	August 10	Returned Yukon Area Subdistricts 5-A, 5-B and 5-C to the regulatory subsistence salmon fishing schedule of two 48-hour periods per week: 6:00 pm Tuesdays to 6:00 pm Thursdays and 6:00 pm Fridays to 6:00 pm Sundays.	The sequential opening of subsistence fishing periods begun in the lower Yukon River districts continued upriver as outlined in the Management Plan. August 8 is the average midpoint in the fall chum salmon run as it passes through the Pilot Station sonar project which estimates daily salmon passage. The cumulative fall chum salmon passage as of August 5 was estimated at 214,307. Based on the cumulative passage estimate and historical average run timing data, the fall chum salmon total run size was projected to range between 400,000 to 500,000. This amount was sufficient to meet most escapement and subsistence needs.
3-S-YF-04-04	August 19	Relaxed the Lower Yukon River Districts 1, 2 and 3 to the pre-2001 regulatory subsistence salmon fishing schedule of 7 days per week for the remainder of the fall salmon season.	As of August 15, the cumulative fall chum salmon passage was estimated at 356,000 by Pilot Station sonar. The total run size projection was adjusted to range from 450,000 to 550,000 fall chum. Though this was below the historical average size of 800,000 fall chum salmon since 1974, it reflected improved production over recent years with an expected return of roughly twice the parent year. Most subsistence salmon fishermen laid off fishing the front half of the run which allowed a large percent of the early portion to pass through to the upper river, thereby benefiting the weak Porcupine River stocks. Coho salmon were entering the Yukon River in increasing numbers. The 2004 total coho salmon run was expected to be above average based on the recent trend of strong returns. At three-quarter point of the average fall chum salmon run in the lower river on August 18, it was anticipated that the fall chum and coho salmon runs would provide for most escapement and subsistence needs. Incremental relaxing of the subsistence salmon fishing schedule was expected to continue in the upper river as salmon moved upstream.

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Data Year 2004

3-S-YF-05-04	August 19	Relaxed Subdistrict 4-A to the pre-2001 regulatory salmon fishing schedule of 7 days per week for the remainder of the fall salmon season.	Relaxing of the subsistence salmon fishing schedule continued upriver as the fall chum and coho salmon runs were anticipated to provided for most escapement and subsistence needs.
3-S-YF-06-04	August 24	Relaxed Subdistricts 4-B and 4-C to the pre-2001 regulatory subsistence salmon fishing schedule of 5 days per week: From 6:00 pm Sundays to 6:00 pm Fridays.	Relaxing of the subsistence salmon fishing schedule continued upriver as the fall chum and coho salmon runs were anticipated to provided for most escapement and subsistence needs.
3-S-YF-07-04	August 31	Relaxed Subdistricts 5-A, 5-B and 5-C to the pre-2001 regulatory subsistence salmon fishing schedule of 5 days per week: From 6:00 pm Sundays to 6:00 pm Fridays.	In a normal year, approximately 90% of fall chum and 50% of coho salmon have entered the lower Yukon by this date. As of August 27, Pilot Station sonar passage estimate was 486,000 fall chum and 158,000 coho salmon. The total end of season run size projection was near 500,000 fall chum salmon which was anticipated to be adequate for most drainage wide escapement and subsistence needs but not a commercial fishery. The coho salmon run continued to indicate an above average return. Relaxing of the subsistence salmon fishing schedule moved upriver as the fall chum and coho salmon runs passed through.
3-S-YF-08-04	August 31	Opened and extended the fall commercial salmon fishing season in Yukon River District 1: From 12:00 noon Tuesday, August 31, to Sunday, September 12.	A late and unexpectedly large sixth pulse of approximately 120,000 fall chum salmon, as estimated by Pilot Station sonar, entered the Yukon River. As of August 29, the cumulative fall chum salmon passage was estimated to be 573,000, and the run size was projected to be roughly 640,000. The cumulative coho salmon estimate was 177,000 at past the average three-quarter point in run timing at Pilot Station sonar. Reported subsistence fishing effort throughout the drainage was low for the season to date. Fishermen were harvesting small quantities of fish for daily use and few fall chum salmon were hung to dry due to the unusually warm fall season. The fall commercial salmon fishing season was opened because there was an adequate quantity of fall chum to meet Management Plan stipulations, the coho salmon run was well above average, and a commercial processor was interested in buying both fall chum and coho salmon in District 1.

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Data Year 2004

3-S-YF-09-04	August 31	In District 1, reduced to 12 hours the required subsistence fishing closure immediately prior to opening of the first fall commercial salmon fishing period for the season. After the first commercial period, the subsistence fishing closure time was reduced to 6 hours before, during, and 6 hours after each commercial salmon fishing period.	Decreased the amount of subsistence closure time before and after commercial fishing periods to provide more subsistence fishing opportunity due to the short notice of the first fall commercial salmon fishing period opening.
3-S-YF-10-04	August 31	Opened two 24-hour commercial salmon fishing periods in District 1: From 12:00 noon Tuesday, August 31, to 12:00 noon Wednesday, September 1; and from 12:00 noon Thursday, September 2, to 12:00 noon Friday, September 3.	The recent late and unexpectedly large pulse of fall chum salmon changed the run size projection to 640,000. This number provided adequate supplies of salmon for subsistence and commercial harvest. Salmon markets in the area were extremely weak, however 1 buyer declared an intention to buy in District 1 which warranted the opening of commercial fishing periods.
3-S-YF-11-04	September 4	Scheduled 1 commercial salmon fishing period in District 1: From 12:00 noon Saturday, September 4, to 12:00 noon Sunday, September 5.	The Yukon River fall salmon season was winding down. The fall chum salmon run was judged large enough to provide for drainage-wide escapement, subsistence, personal use, and sport needs, meet Canadian Border passage commitments, and allow a small commercial harvest. The coho salmon run was well above average. All subsistence salmon fishing was relaxed beyond the 2001 subsistence fishing windowed schedule. Subsistence fishing effort and commercial harvest during the previous two 24-hour commercial periods was very low. The third commercial fishing period was scheduled because a surplus of fall chum and coho salmon was available and a commercial buyer was interested in salmon from District 1. More subsistence fishing opportunity was provided by decreasing the subsistence closure time to 6 hours before, during, and after commercial periods.

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Data Year 2004

3-S-YF-12-04	September 6	Scheduled three 24-hour commercial salmon fishing periods in District 1: From 12:00 noon September 6, to 12:00 noon September 7; from 12:00 noon September 8 to 12:00 noon September 9; and from 12:00 noon September 10 to 12:00 noon September 11.	Commercial fishing effort and harvest were very low during the 3 previous commercial salmon fishing periods, and subsistence fishing effort was typically low due to the time of year in the lower river districts. The additional commercial fishing periods were scheduled because a commercial buyer continued to express interest in buying salmon from District 1.
3-S-YF-13-04	September 24	Opened and extended the fall commercial salmon fishing season in Subdistrict 5-A: From 6:00 pm Friday, September 24, to Sunday, October 10.	The Tanana River fall chum salmon stocks indicated a late run timing and daily passages were higher than average at ¾ point in the run. The Kantishna River tag estimate was 35% above the 1999-2003 average, which indicated the Toklat River stock should attain the established BEG. The upper Tanana River tag estimate was 18% below the 1995–2003 average to date, but the overall combined estimate was near the upper end of the BEG range and was expected to exceed the range upon assessment of the last large pulse. Most coho salmon assessment projects were seeing fish in above average numbers for the date. Pilot Station sonar cumulative estimate through August 31 was 200,000 coho, roughly 50% above average for the project and average run timing. The Kantishna River CPUE test fish wheels tracked near the cumulative average and the upper Tanana River CPUE test fish wheels tracked well above average for coho salmon. The commercial salmon season was opened because surplus fall chum and coho salmon were available for commercial harvest in the upper Yukon and Tanana River districts and 1 process/buyer was interested in buying fish and/or salmon roe in Subdistrict 5-A and District 6.

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Data Year 2004

3-S-YF-14-04	September 24	Returned subsistence salmon fishing in Subdistrict 5-A to two 48-hour periods per week: From 6:00 pm Fridays to 6:00 pm Sundays; and from 6:00 pm Mondays to 6:00 pm Wednesdays.	To prepare for commercial salmon fishing in Subdistrict 5-A, regulations required that subsistence salmon fishing be limited to two 48-hour periods per week during commercial fishing.
3-S-YF-15-04	September 24	Opened three 48-hour commercial salmon fishing periods in Subdistrict 5-A: From 6:00 pm Friday, September 24 to 6:00 pm Sunday, September 26; 6:00 pm Monday, September 27 to 6:00 pm Wednesday, September 29; 6:00 pm Friday, October 1 to 6:00 pm Sunday, October 3. Subsistence salmon fishing periods in Subdistrict 5-A were open concurrent with the scheduled commercial periods	Three-quarters of the Tanana River fall chum salmon run had escaped, the fall chum salmon run size projection for the Tanana River exceeded the established BEG and the coho salmon run was well above average One processor/buyer continued to express interest in buying fish and/or salmon roe in Subdistrict 5-A and District 6.
3-S-YF-16-04	September 24	Opened an extended fall commercial salmon fishing season in District 6: From 6:00 pm Friday, September 24 to Sunday, October 10.	Interest in buying fish from Subdistrict 5-A and District 6 was expressed by 1 processor/buyer. Length of the commercial fishing season was to be dependent on interest and freezing conditions.
3-S-YF-17-04	September 24	Opened three 42-hour commercial salmon fishing periods in Subdistricts 6-A, 6-B and 6-C: From 6:00 pm Friday, September 24 to 12:00 noon Sunday, September 26; 6:00 pm Monday, September 27 to 12:00 noon Wednesday, September 29; and 6:00 pm Friday, October 1 to 12:00 noon Sunday, October 3.	Interest in buying fish from Subdistricts 6-A, 6-B and 6-C was expressed by 1 processor/buyer. Length of the commercial fishing season was to be dependent on interest and freezing conditions.

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Data Year 2004

3-S-YF-18-04	October 1	Opened subsistence salmon fishing in Subdistricts 4-B and 4-C to 7 days per week	A majority of the fall chum and coho salmon had passed by Subdistricts 4-B and 4-C and a surplus was available to meet most escapement and subsistence needs justifying a relaxation of the subsistence salmon fishing schedule.
3-S-YF-19-04	October 5	Relaxed subsistence salmon fishing in Subdistrict 5-A to the pre-2001 regulatory schedule of 5 days per week: From 6:00 pm Tuesdays to 6:00 pm Sundays.	Continued relaxation of the subsistence salmon fishing schedule upriver as most of the upper Yukon River and three-quarters of the Tanana River fall chum salmon run had passed through the area and it was anticipated that most escapement and subsistence needs were met. No commercial fishing effort was reported in Subdistrict 5-A during the three 48-hour salmon fishing periods opened September 24 and no future commercial fishing activity was anticipated.
3-S-YF-20-04	October 4	Opened two additional 42-hour commercial salmon fishing periods in Subdistricts 6-A, 6-B and 6-C: From 6:00 pm Monday, October 4 to 12:00 noon Wednesday, October 6; and 6:00 pm Friday, October 8 to 12:00 noon Sunday, October 10.	Over three-quarters of the Tanana River fall chum salmon run had escaped. Surpluses of both fall chum and coho salmon were available for commercial harvest in the upper Yukon and Tanana River districts. The fall chum salmon run size projections for the Tanana River exceeded the established BEG, and the coho salmon run was well above average. Additional comercial salmon fishing periods were opened in District 6 in response to 1 processor/buyer's interest in buying fish and/or salmon roe.

APPENDIX B

Appendix B1.–Commercial catches of Chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1961–2004.[a]

	Unrestricted Mesh Size [b]				6 inch Maximum Mesh Size [c]	
	Chinook			Summer Chum	Chinook	Summer Chum
Year	District 1	District 2	Total	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
1961	84,466	29,026	113,492	-	-	-
1962	67,099	22,224	89,323	-	-	-
1963	85,004	24,221	109,225	-	-	-
1964	67,555	20,246	87,801	-	-	-
1965	89,268	23,763	113,031	-	-	-
1966	70,788	16,927	87,715	-	-	-
1967	104,350	20,239	124,589	10,919	-	-
1968	79,465	21,392	100,857	14,402	-	-
1969	70,588	14,756	85,344	41,418	97	15,437
1970	56,469	17,141	73,610	104,705	57	16,623
1971	84,397	19,226	103,623	42,189	1,176	57,851
1972	68,059	17,317	85,376	78,698	1,991	37,881
1973 [d]	52,790	12,479	65,269	89,841	5,168	196,540
1974	69,457	17,464	86,921	349,758	1,631	227,507
1975	41,550	9,064	50,614	148,919	4,162	345,472
1976	56,392	15,296	71,688	267,075	7,631	128,431
1977	65,745	15,328	81,073	157,909	4,720	205,634
1978	53,198	28,872	82,070	275,512	7,737	354,603
1979	61,790	33,347	95,137	136,973	22,136	434,188
1980	78,157	42,755	120,912	95,876	19,474	605,679
1981	88,038	37,660	125,698	163,979	18,648	758,767
1982	70,743	35,656	106,399	225,106	6,887	217,563
1983	76,280	30,798	107,078	121,927	31,002	590,329
1984	65,101	29,355	94,456	242,076	16,394	287,531
1985 [f]	76,106	38,194	114,300	170,345	22,445	265,240
1986	42,922	36,603	79,525	231,372	15,307	438,182
1987	62,147	40,127	102,274	128,017	21,827	269,757
1988	32,792	20,009	52,801	225,049	39,469	848,321
1989 [g]	32,180	21,494	53,674	126,360	38,548	765,233
1990 [g]	42,092	24,000	66,092	99,588	18,147	281,418
1991 [g]	52,074	36,290	88,364	108,986	4,145	205,610
1992 [g]	54,569	28,679	83,248	81,458	27,678	242,878
1993	47,084	37,293	84,377	47,488	2,202	45,503
1994 [h]	61,633	41,692	103,325	39,832	608	15,369
1995	74,827	39,607	114,434	113,860	3,098	112,223
1996	56,642	30,209	86,851	123,233	0	0
1997	63,062	39,052	102,114	49,953	3,611	28,204
1998	24,202	16,806	41,008	20,314	1,211	7,804
1999	37,145	27,119	64,264	27,883	0	0
2000	4,735	3,783	8,518	6,624	0	0
2001 [k]	0	0	0	0	0	0
2002	11,087	11,434	22,521	10,354	0	0
2003	22,709	14,220	36,929	6,162	0	0
2004	28,403	24,145	52,548	20,652	0	0
10 Year Average 1984-1993	50,707	31,204	81,911	146,074	20,616	364,967
10 Year Average 1994-2003	35,604	22,392	57,996	39,822	853	16,360

[a] ADF&G test fishery sales included, 1961-1990. ADF&G test fishery sales not included, 1991-2004.
[b] Primarily 8 to 8-1/2 inch mesh size used during early June to early July.
[c] Catch through July 15-20, relatively few Chinook and summer chum salmon taken after these dates.
[d] 6-inch maximum mesh size regulation beginning late June to early July became effective in 1973.
[f] 6-inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.
[g] Only includes information from fish ticket database; does not include salmon purchased illegally.
[h] 8-inch or greater mesh size restriction was in effect until June 27 and fishers were requested to take chum salmon home for subsistence use until June 22 in order to reduce the harvest of chums.
[k] No commercial fishery in 2001.

Appendix B2.–Numbers of commercially caught Chinook salmon (in thousands of fish) by unrestricted mesh size periods, District 1, Lower Yukon Area, 1974–2004.

	Period and (Cumulative) Harvest (in thousands of fish)												
Date	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
06/01													
06/02													
06/03													
06/04													
06/05	3.5 (3.5)					6.1 (6.1)							
06/06													
06/07								11.1 (11.1)					
06/08	7.5 (11.0)					4.9 (11.0)							
06/09					2.5 (2.5)			15.6 (26.7)					
06/10							6.8 (6.8)			22.3 (22.3)			
06/11		0.2 (0.2)											
06/12	14.7 (25.7)					19.5 (30.5)		14.5 (41.2)					
06/13					5.8 (8.3)								
06/14		0.4 (0.6)		0.04 (0.04)			26.1 (32.9)			12.7 (35.0)			
06/15	11.1 (36.8)								5.6 (5.6)				
06/16			0.1 (0.1)			9.3 (39.8)		18.3 (59.5)					
06/17					17.6 (25.9)		14.6 (47.5)			28.6 (63.6)			
06/18		1.1 (1.7)		2.6 (2.6)					12.4 (18.0)				
06/19	18.8 (55.6)		3.2 (3.3)			16.7 (56.5)		28.5 (88.0)			13.7 (13.7)		
06/20					7.5 (33.4)								21.7 (21.7)
06/21		5.7 (7.4)		10.4 (13.0)			26.2 (73.7)			12.7 (76.3)			
06/22	2.9 (58.5)					5.3 (61.8)			20.0 (38.0)		18.8 (32.5)		
06/23			9.6 (12.9)				4.5 (78.2)						
06/24					14.4 (47.8)								10.2 (31.9)
06/25		17.1 (24.5)		26.3 (39.3)					7.1 (45.1)			23.6 (23.6)	
06/26	7.2 (65.7)		15.4 (28.3)								16.1 (48.6)		
06/27		9.8 (34.3)			5.4 (53.2)								
06/28				17.7 (57.0)								33.7 (57.3)	
06/29	3.8 (69.5)								18.1 (63.2)		16.5 (65.1)		
06/30			13.8 (42.1)										5.6 (37.5)
07/01		7.3 (41.6)		8.7 (65.7)									
07/02			14.3 (56.4)						7.5 (70.7)			18.8 (76.1)	
07/03													
07/04													5.4 (42.9)
07/05													
07/06													
07/07													
07/08													

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	Period and (Cumulative) Harvest (in thousands of fish)												
Date	1987	1988	1989 [b]	1990 [c]	1991 [d]	1992 [f]	1993	1994	1995	1996	1997	1998	1999
06/01													
06/02													
06/03													
06/04													
06/05													
06/06													
06/07													
06/08													
06/09													
06/10										14.0 (14.0)			
06/11											11.4 (11.4)		
06/12									18 (18.4)				
06/13								14 (13.5)		6.8 (20.8)			
06/14		5.9 (5.9)			17 (17.1)								
06/15				19.0 (19.0)			9 (9.1)		18 (35.9)			1.8 (1.8)	
06/16	13.0 (13.0)		18.9 (18.9)					23 (36.5)			11.2 (22.5)		
06/17		16.0 (21.9)								6.7 (27.5)			
06/18					15 (32.2)		23 (32.1)						
06/19	22.5 (35.5)								7 (42.4)		20.1 (42.7)		
06/20			10.8 (29.7)			12 (11.5)				11.3 (38.8)			
06/21		10.9 (32.8)			4.7 (36.9)		10 (42.5)						
06/22			2.5 (32.2)	15.0 (34.0)		22 (33.6)		14 (50.3)	21 (64.0)				11.2 (11.2)
06/23	15.0 (50.5)										7.4 (50.1)	11.8 (13.6)	
06/24										10.9 (49.7)			
06/25					9 (46.2)								
06/26	11.6 (62.1)					10 (43.6)			11 (75.0)		13.0 (63.1)		9.8 (21.0)
06/27								11 (61.5)		6.9 (56.6)		7.2 (20.8)	
06/28							3 (45.4)						
06/29				6.5 (40.4)									
06/30													7.5 (28.5)
07/01							2 (47.0)						
07/02					6 (52.1)	11 (54.6)							
07/03				1.7 (42.1)									6.3 (34.8)
07/04													
07/05													
07/06													
07/07												3.4 (24.2)	
07/08													2.3 (37.1)

- Continued -

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	Period and (Cumulative) Harvest (in thousands of fish)				
Date	2000	2001 [g]	2002	2003	2004
06/01					
06/02					
06/03					
06/04					
06/05					
06/06					
06/07					
06/08					
06/09					
06/10					
06/11					
06/12					
06/13					
06/14					
06/15					
06/16				10.7 (10.7)	
06/17					3.1 (3.1)
06/18					
06/19					
06/20			4.9 (4.9)		
06/21				7.3 (18.0)	8.0 (11.1)
06/22					
06/23					
06/24			4.6 (9.5)		10.2 (21.2)
06/25	2.6 (2.6)				
06/26				2.6 (20.6)	
06/27			1.7 (11.2)		
06/28					2.7 (23.9)
06/29					
06/30	2.2 (4.7)				1.6 (25.6)
07/01					
07/02				1.6 (22.3)	1.5 (27.1)
07/03					
07/04					
07/05					1.0 (28.1)
07/06					
07/07				0.4 (22.7)	
07/08					
07/09					0.3 (28.4)

[a] Cumulative catch during unrestricted mesh size fishing periods, in thousands of fish, are located in the brackets ( ).

[b] Does not include 3,211 Chinook salmon sold illegally.

[c] Does not include 1,101 Chinook salmon sold illegally.

[d] Does not include 2,711 Chinook salmon sold illegally.

[f] Does not include 1,218 Chinook salmon sold illegally.

[g] No commercial fishing periods.

Appendix B3.–Numbers of commercially caught Chinook salmon (in thousands of fish) by unrestricted mesh size periods, District 2, Lower Yukon Area, 1978-2004.

	Period and (Cumulative) Harvest (in thousands of fish)										
Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
06/01											
06/02											
06/03											
06/04		1.6 (1.6)									
06/05											
06/06											
06/07		1.4 (3.0)									
06/08				7.6 (7.6)							
06/09	4.8 (4.8)		3.9 (3.9)								
06/10											
06/11		5.1 (8.1)		11.4 (19.0)							
06/12	3.2 (8.0)		7.8 (11.7)								
06/13						6.0 (6.0)					
06/14											
06/15		14.2 (22.3)		10.5 (29.5)							
06/16	4.3 (12.3)		10.9 (22.6)			7.3 (13.3)					2.7 (2.7)
06/17					4.0 (4.0)						
06/18		3.9 (26.2)		8.2 (37.7)						9.5 (9.5)	
06/19	7.8 (20.1)										
06/20			8.1 (30.7)			10.6 (23.9)					9.0 (11.7)
06/21		7.2 (33.4)			7.8 (11.8)		5.6 (5.6)				
06/22										12.2 (21.7)	
06/23	4.1 (24.2)		12.0 (42.7)			6.9 (30.8)			14.5 (14.5)		8.3 (20.0)
06/24					11.9 (23.7)						
06/25							14.4 (20.0)			10.9 (32.5)	
06/26	4.7 (28.9)										
06/27								7.0 (7.0)	12.3 (26.8)		
06/28					3.4 (27.1)		9.4 (29.4)				
06/29										7.6 (40.1)	
06/30											
07/01					8.6 (35.7)			18.3 (25.3)			
07/02									7.4 (34.2)		
07/03											
07/04								12.9 (38.2)			
07/05											
07/06											
07/07									2.4 (36.6)		
07/08											

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	Period and (Cumulative) Harvest (in thousands of fish)										
Date	1989	1990	1991 [b]	1992 [c]	1993	1994	1995	1996	1997	1998	1999
06/01											
06/02											
06/03											
06/04											
06/05											
06/06											
06/07											
06/08											
06/09								7.5 (7.5)			
06/10											
06/11							1.2 (1.2)				
06/12								10.0 (17.5)			
06/13											
06/14							9.2 (10.4)				
06/15						8.2 (8.2)			7.3 (7.3)		
06/16								4.9 (22.4)			
06/17			11.5 (11.5)		10.6 (10.6)						
06/18		10.3 (10.3)					9.8 (20.2)		9.6 (16.8)		
06/19	11.0 (11.0)							3.3 (25.7)			
06/20			9.6 (21.1)			18.2 (26.4)					
06/21					14.1 (24.7)		8.4 (28.6)				
06/22	7.5 (18.5)			5.5 (5.5)					15.2 (32.1)		
06/23								3.3 (29.0)			
06/24		7.7 (18.0)	6.7 (27.8)	13.0 (18.5)							
06/25	3.0 (21.5)				6.8 (31.5)	11.2 (37.6)			7.0 (39.1)		8.1 (8.1)
06/26			4.1 (31.9)							6.6 (6.6)	
06/27					3.2 (33.7)						
06/28				7.4 (25.9)							
06/29											7.8 (15.8)
06/30					2.6 (36.0)						
07/01								1.2 (30.2)			
07/02		4.5 (22.4)								7.5 (14.1)	7.0 (22.9)
07/03						4.1 (41.7)					
07/04			4.4 (36.3)								
07/05		1.6 (24.0)									4.3 (27.1)
07/06											
07/07											
07/08				2.8 (28.7)						2.8 (16.8)	

-Continued-

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	Period and (Cumulative) Harvest (in thousands of fish)					
Date	2000	2001 [d]	2002	2003	2004	
06/01						
06/02						
06/03						
06/04						
06/05						
06/06						
06/07						
06/08						
06/09						
06/10						
06/11						
06/12						
06/13						
06/14						
06/15					8.9 (8.9)	
06/16						
06/17						
06/18				7.5 (7.5)		
06/19			5.2 (5.2)			
06/20					4.0 (13.0)	
06/21						
06/22						
06/23					7.3 (20.2)	
06/24						
06/25				5.2 (12.7)		
06/26			4.1 (9.4)			
06/27	3.8 (3.8)				3.9 (24.2)	
06/28						
06/29						
06/30			2.1 (11.4)			
07/01						
07/02				0.7 (13.4)		
07/03						
07/04						
07/05						
07/06						
07/07				0.8 (14.2)		
07/08						

[a] Cumulative catch during unrestricted mesh size fishing periods in, thousands of fish, are located in the brackets ( ).

[b] Does not include 284 Chinook salmon caught illegally.

[c] Does not include 207 Chinook salmon caught illegally.

[d] No commercial fishing periods.

Appendix B4.–Commercial Chinook salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1974–2004.

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1974	2,935	30,174	6,984	3,987	12,721	2,048	6,826	6,165	71,840
1975	6,396	15,844	8,763	314	1,720	606	6,879	4,063	44,585
1976	8,333	27,937	7,507	851	5,101	1,415	6,164	5,102	62,410
1977	11,278	16,787	8,866	1,216	15,214	1,550	7,109	7,895	69,915
1978	886	12,237	4,135	4,388	22,019	3,738	7,533	4,070	59,006
1979	1,017	13,152	4,149	5,782	12,839	10,960	18,976	8,202	75,077
1980	464	12,832	3,235	9,224	30,737	12,333	13,654	7,903	90,382
1981	6,639	12,875	2,975	8,976	19,730	15,158	22,251	10,902	99,506
1982	3,439	11,268	2,842	9,038	9,331	7,295	18,185	13,052	74,450
1983	7,919	23,523	8,161	14,961	9,416	5,297	19,172	7,008	95,457
1984	14,385	15,320	2,598	6,297	11,123	1,434	19,089	4,425	74,671
1985	4,233	22,696	12,160	2,492	12,806	3,955	25,144	6,525	90,011
1986	4,187	7,954	3,494	5,430	10,258	1,422	15,948	4,342	53,035
1987	14,656	12,056	8,703	3,533	6,780	3,250	18,573	9,092	76,643
1988	6,780	11,154	6,023	4,274	14,123	618	8,703	5,434	57,109
1989 [a]	2,213	5,703	4,794	3,999	12,682	7,303	18,037	4,422	59,153
1990 [u]	1,473	7,315	4,478	4,257	12,486	2,794	14,619	3,739	51,161
1991 [c]	1,689	4,244	1,624	3,451	12,664	6,251	18,243	5,455	53,621
1992 [u]	11,302	12,601	9,001	6,313	5,880	2,285	18,233	7,379	72,994
1993	3,642	7,368	4,342	3,324	11,407	2,346	9,380	7,477	49,286
1994	4,176	6,723	5,037	3,888	14,580	1,686	17,575	8,576	62,241
1995	3,719	6,939	6,181	5,430	22,357	3,790	18,980	8,710	76,106
1996	6,079	6,858	3,791	3,297	8,850	4,478	16,789	6,500	56,642
1997	4,570	5,865	2,844	6,648	12,460	4,703	21,443	7,851	66,384
1998	226	1,741	654	1,591	7,264	1,934	7,822	4,181	25,413
1999	1,454	2,604	3,112	3,798	4,057	935	13,130	8,071	37,161
2000	78	1,057	144	389	640	85	1,259	1,083	4,735
2001 [f]	0	0	0	0	0	0	0	0	0
2002	1,001	1,271	449	742	2,993	69	2,338	2,224	11,087
2003	1,601	4,714	1,089	1,514	4,756	437	3,518	5,080	22,709
2004	975	2,505	1,965	1,502	4,285	1,783	9,270	6,118	28,403
1999-2003 Average	827	1,929	959	1,289	2,489	305	4,049	3,292	15,138

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	District 2						District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1974	6,344	5,611	2,624	3,369	-	17,948	1,423	2,057	3,480
1975	3,282	3,045	2,785	2,203	-	11,315	2,791	1,386	4,177
1976	5,083	4,490	3,031	3,952	-	16,556	1,827	2,321	4,148
1977	6,577	4,584	2,110	3,451	-	16,722	1,617	2,348	3,965
1978	9,004	7,953	5,248	8,499	2,220	32,924	746	2,170	2,916
1979	10,698	11,214	6,733	7,573	5,280	41,498	2,195	2,823	5,018
1980	11,544	12,903	8,259	9,591	7,707	50,004	2,039	3,201	5,240
1981	12,341	13,275	7,024	5,950	7,191	45,781	1,241	2,782	4,023
1982	10,567	9,236	5,262	8,932	5,135	39,132	896	1,713	2,609
1983	12,433	10,424	7,779	6,260	6,333	43,229	1,335	2,771	4,106
1984	9,179	11,573	4,668	5,752	5,525	36,697	900	2,139	3,039
1985	11,843	18,584	4,877	4,613	8,448	48,365	854	1,734	2,588
1986	11,138	15,326	3,450	4,336	7,599	41,849	606	295	901
1987	14,195	9,672	5,663	6,376	11,552	47,458	1,698	341	2,039
1988	6,191	11,605	4,721	6,784	5,887	35,188	1,387	380	1,767
1989	5,257	12,380	4,647	4,411	6,530	33,225	1,623	22	1,645
1990	5,592	10,675	3,741	8,514	4,691	33,213	2,128	213	2,341
1991 [g]	9,330	10,423	5,332	6,552	7,339	38,976	1,214	1,130	2,344
1992 [h]	9,014	11,647	4,135	11,311	1,825	37,932	1,160	659	1,819
1993	8,641	9,223	6,118	6,085	7,226	37,293	1,478	23	1,501
1994	9,223	14,350	4,514	8,734	4,871	41,692	1,114	0	1,114
1995	7,832	14,041	4,841	5,887	8,857	41,458	0	0	0
1996	8,265	9,134	2,749	3,626	6,435	30,209	0	0	0
1997	13,939	13,344	2,280	6,104	3,696	39,363	0	0	0
1998	2,203	6,081	2,245	4,613	1,664	16,806	0	0	0
1999	4,666	8,565	2,623	6,923	4,356	27,133	0	538	538
2000	1,434	966	415	457	511	3,783	0	0	0
2001 [f]	0	0	0	0	0	0	0	0	0
2002	2,140	3,044	1,992	2,712	1,546	11,434	0	0	0
2003	2,965	5,454	993	2,104	2,704	14,220	0	0	0
2004	5,879	8,326	3,459	3,819	2,662	24,145	0	0	0
1999-2003 Average	2,241	3,606	1,205	2,439	1,823	11,314	0	108	108

[a] Does not include 3,211 Chinook salmon sold illegally.
[b] Does not include 1,101 Chinook salmon sold illegally.
[c] Does not include 2,711 Chinook salmon sold illegally.
[d] Does not include 1,218 Chinook salmon sold illegally.
[f] No commercial fishing periods occurred in 2001.
[g] Does not include 284 Chinook salmon sold illegally.
[h] Does not include 207 Chinook salmon sold illegally.

Appendix B5.–Commercial summer chum salmon directed harvest (in numbers of fish) and effort data, Districts 1 and 2, Lower Yukon Area, 1967-2004.[a]

	District 1					District 2				
Year	Duration	Days Fished	Boat Hours	Catch	Catch per Boat Hour	Duration	Days Fished	Boat Hours	Catch	Catch per Boat Hour
1967	6/08-6/27	11.0	77,208	9,494	0.12	-	-	-	-	-
1968	6/06-7/03	14.0	91,380	12,995	0.14	6/13-7/02	10.5	27,600	1,407	0.05
1969	6/02-6/28	12.5	84,864	8,840	0.10	6/15-7/01	8.0	16,620	5,024	0.30
1970	6/11-7/03	10.5	58,056	87,169	1.50	6/14-7/03	9.0	15,756	17,536	1.11
1971	6/14-7/03	10.5	73,032	36,077	0.49	6/20-7/05	8.5	17,832	6,112	0.34
1972	6/08-7/01	12.5	79,236	69,658	0.88	6/15-7/01	8.5	19,296	9,040	0.47
1973 [b]	6/07-7/11	14.5	100,284	191,840	1.91	6/10-7/14	14.5	36,000	56,481	1.57
1974	6/03-7/13	16.5	114,624	461,025	4.02	6/05-7/16	15.5	35,316	72,281	2.05
1975	6/09-7/16	15.0	86,304	394,447	4.57	6/11-7/18	10.5	21,024	99,139	4.72
1976	6/14-7/14	12.0	90,658	272,493	3.01	6/20-7/16	11.0	32,624	99,190	3.04
1977	6/13-7/12	12.0	63,036	232,427	3.69	6/19-7/15	10.0	27,048	102,759	3.80
1978	6/08-7/15	13.5	100,008	393,785	3.94	6/08-7/14	13.5	44,376	218,196	4.92
1979	6/04-7/14	13.5	106,680	369,934	3.47	6/03-7/13	13.5	44,748	172,838	3.86
1980	6/09-7/15	12.8	89,412	391,252	4.38	6/08-7/17	12.5	48,060	308,704	6.42
1981	6/06-7/14	12.0	94,656	507,158	5.36	6/07-7/16	12.0	46,560	351,458	7.55
1982	6/14-7/13	9.5	81,240	248,950	3.06	6/16-7/16	10.0	37,920	180,321	4.76
1983	6/09-7/15	11.0	94,920	451,164	4.75	6/12-7/18	11.0	44,712	248,092	5.55
1984	6/18-7/13	8.0	67,776	292,676	4.32	6/20-7/16	8.0	32,208	234,677	7.29
1985 [c]	6/24-7/15	6.3	52,116	247,486	4.75	6/26-7/18	7.3	27,834	188,099	6.76
1986	6/14-7/15	8.5	66,768	381,127	5.71	6/15-7/14	7.5	33,954	288,427	8.49
1987	6/15-7/10	6.0	53,736	222,898	4.15	6/17-7/09	5.0	26,124	174,876	6.69
1988	6/09-7/15	6.8	55,692	648,198	11.64	6/12-7/14	6.8	33,456	425,172	12.71
1989	6/13-7/14	5.3	65,280	547,781 [d]	8.39	6/15-7/13	4.5	22,314	343,962	15.41
1990	6/14-7/03	2.3	21,267	148,911	7.00	6/18-7/05	2.4	12,333	132,507	10.74
1991	6/13-7/05	3.0	28,224	140,470 [f]	4.98	6/16-7/07	3.0	15,126	175,149	11.58
1992	6/20-7/09	2.9	25,925	177,329 [g]	6.84	6/22-7/08	2.3	11,705	147,129 [h]	12.57
1993	6/14-7/01	2.0	19,176	73,659	3.84	6/16-6/30	1.8	9,264	19,332	2.09
1994	6/13-7/05	1.6	14,073	42,332	3.01	6/15-7/03	1.3	6,807	12,869	1.89
1995	6/12-7/07	2.6	21,619	142,266	6.58	6/11-6/22	1.6	8,436	83,817	9.94
1996	6/10-6/28	2.5	28,812	92,506	3.21	6/09-7/01	2.4	9,339	30,727	3.29
1997	6/11-6/30	2.7	23,505	59,915	2.55	6/15-6/26	1.9	7,394	18,242	2.47
1998	6/15-7/08	1.5	12,207	21,270	1.74	6/26-7/09	1.0	4,914	6,848	1.39
1999	6/22-7/09	1.5	12,852	16,181	1.26	6/25-7/05	1.1	5,496	11,702	2.13
2000	6/25-6/30	0.5	3,540	3,315	0.94	6/27-6/27	0.3	1,284	3,309	2.58
2001	No Openings	0.0	0	0		No Openings	0.0	0	0	
2002	No Openings	0.0				No Openings	0.0			
2003	No Openings	0.0				No Openings	0.0			
2004	No Openings	0.0				No Openings	0.0			

[a] Summer chum salmon caught after the specified dates are not included. Includes ADF&G test fish sales through 1990.

[b] 6-inch maximum mesh size regulation during late June to early July became effective in 1973.

[c] 6-inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.

[d] Includes 150 summer chum salmon sold illegally.

[f] Includes 1,023 summer chum salmon sold illegally.

[g] Includes 31 summer chum salmon sold illegally.

[h] Includes 91 summer chum salmon sold illegally.

Appendix B6.–Commercial summer chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983-2004.

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	42,165	112,074	37,976	64,556	29,841	22,918	96,512	45,122	451,164
1984	42,264	81,295	14,888	38,285	22,485	5,838	64,320	23,301	292,676
1985	13,696	53,540	26,127	10,047	33,133	10,381	73,948	26,614	247,486
1986	39,468	102,887	35,315	52,980	26,732	6,807	85,798	31,140	381,127
1987	34,852	51,350	22,794	15,109	21,646	7,786	45,911	23,450	222,898
1988	72,408	148,578	79,248	60,956	61,752	13,239	129,938	82,070	648,189
1989 [a]	29,129	89,794	40,036	71,576	118,908	20,468	136,669	41,051	547,631
1990 [b]	23,453	35,542	15,326	12,369	10,931	1,513	39,575	10,202	148,911
1991 [c]	13,767	32,621	5,223	11,133	11,560	23,213	34,775	7,155	139,447
1992 [d]	24,094	39,225	22,293	16,717	12,000	2,500	40,353	20,116	177,298
1993	13,123	17,869	9,745	8,672	2,920	661	9,196	11,473	73,659
1994	11,208	6,340	5,165	2,389	3,602	290	8,693	4,645	42,332
1995	32,084	23,420	15,834	19,154	15,919	3,150	24,349	8,356	142,266
1996	19,432	17,769	6,837	5,611	13,111	2,831	17,864	9,051	92,506
1997	10,764	9,519	6,190	10,374	5,429	1,650	10,719	5,270	59,915
1998	54	2,583	441	2,275	5,115	730	6,601	3,471	21,270
1999	1,128	1,667	1,653	2,979	816	141	3,845	3,952	16,181
2000	146	537	207	650	631	60	546	538	3,315
2001 [h]	0	0	0	0	0	0	0	0	0
2002	193	1,303	374	1,519	858	4	1,277	799	6,327
2003	90	588	117	292	690	188	566	1,048	3,579
2004	667	885	1,446	904	2,694	870	4,171	2,356	13,993
1999-2003 Average	311	819	470	1,088	599	79	1,247	1,267	5,880

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Appendix B6.–Page 2 of 2.

Year	District 2						District 3		
							334-31		
	334-21	334-22	334-23	334-24	334-25	Total	Number	Roe	Estimated Harvest [g]
1983	57,740	71,821	56,499	31,027	31,005	248,092	3,106		3,106
1984	46,261	91,790	43,116	36,076	19,688	236,931	447		447
1985	32,911	87,687	24,983	18,911	23,607	188,099	872		872
1986	44,393	129,569	36,304	47,179	30,982	288,427	442		442
1987	48,734	54,459	19,157	22,988	29,538	174,876	3,418		3,418
1988	74,252	140,291	56,302	88,393	65,934	425,172	11,463		11,463
1989	46,224	140,571	48,986	54,542	53,639	343,962	7,548		7,548
1990 [b]	15,414	37,585	25,132	34,980	19,396	132,507	562		562
1991	46,378	70,188	32,584	14,915	11,084	175,149	3,347		3,347
1992 [f]	31,399	59,401	22,107	31,085	3,046	147,038	63		63
1993	5,444	3,711	4,445	2,920	2,812	19,332	460		460
1994	4,100	5,314	1,435	1,395	625	12,869	35		35
1995	23,794	38,808	11,541	7,257	2,417	83,817	0		0
1996	9,177	13,056	4,965	2,479	1,050	30,727	0	162	465
1997	7,126	7,938	673	1,667	838	18,242	0	0	0
1998	710	2,350	1,079	2,351	358	6,848	0	0	0
1999	1,758	3,269	1,457	3,415	1,803	11,702	0	0	0
2000	1,552	961	327	220	249	3,309	0	0	0
2001 [h]	0	0	0	0	0	0	0	0	0
2002	1,105	997	862	794	269	4,027	0	0	0
2003	1,153	855	218	181	176	2,583	0	0	0
2004	1,724	1,439	1,350	1,061	208	5,782	0	0	0
1999-2003 Average	1,114	1,216	573	922	499	4,324	0	0	0

[a] Does not include 150 summer chum salmon sold illegally.
[b] Includes ADF&G test fish sales through 1990.
[c] Does not include 1,023 summer chum salmon sold illegally.
[d] Does not include 31 summer chum salmon sold illegally.
[f] Does not include 91 summer chum salmon sold illegally.
[g] Estimated harvest includes reported harvest of both males and females harvested to produce roe sold.
[h] No commercial fishing periods in 2001.

Appendix B7.–Commercial fall chum and coho salmon harvest (in numbers of fish) and effort data, District 1, Lower Yukon Area, 1961-2004.[a]

				Fall Chum		Coho	
Year	Duration	Days Fished	Boat Hours[b]	Catch	Catch per Boat Hour	Catch	Catch per Boat Hour
1961	8/01-8/31	16	14,772	42,461	2.87	2,855	0.19
1962	8/01-9/03	21	46,950	53,116	1.13	22,926	0.49
1963	8/09-9/06	18	2,100	no purchases		5,572	2.65
1964	8/03-8/27	17	8,346	8,347	1.00	2,446	0.29
1965	8/02-8/04	-[c]	-[c]	22,936	-[c]	350	-[c]
1966	7/25-9/10	28	41,994	69,836	1.66	19,254	0.46
1967	7/24-8/27	21	19,272	36,451	1.89	9,925	0.51
1968	7/22-8/28	22	47,232	49,857	1.06	13,153	0.28
1969	7/21-8/23	20	39,408	128,866	3.27	13,989	0.35
1970	7/20-8/26	22	56,160	200,306	3.57	12,632	0.22
1971	7/22-8/28	22	85,344	178,744	2.09	12,165	0.14
1972	7/20-8/26	22	81,726	134,752	1.65	21,705	0.27
1973	7/19-8/25	22	107,136	173,783	1.62	34,860	0.33
1974	7/18-8/14	12	41,868	137,235	3.28	13,713	0.33
1975	7/21-8/16	12	52,128	158,183	3.03	2,288	0.04
1976	7/19-8/13	11	55,026	91,091	1.66	4,064	0.07
1977	7/18-8/23	11	50,568	129,486	2.56	31,720	0.63
1978	7/17-8/29	13	56,184	127,947	2.28	16,460	0.29
1979	7/19-8/14	8	47,352	101,400	2.14	11,369	0.24
1980	7/17-8/19	7	24,216	106,829	4.41	4,819	0.20
1981	7/16-8/17	7	35,520	167,834	4.73	13,129	0.37
1982	7/19-8/13	8	40,944	91,271	2.23	15,114	0.37
1983[d]	7/18-8/12	6	25,848	124,371	4.81	4,560	0.18
1984[d]	7/16-8/17	6	21,240	78,751	3.71	29,472	1.39
1985[d]	7/18-8/13	5	20,592	129,948	6.31	27,674	1.34
1986[f]	8/04-8/22	4	13,662	59,352	4.34	24,824	1.82
1987	No Openings	0	0	0	0	0	0
1988[g]	8/08-8/30	3	9,408	45,317	4.82	36,435	3.87
1989[h]	7/27-8/25	5	20,161	77,876	3.86	24,672	1.22
1990[g, j]	7/23-8/20	3	7,392	27,337	3.70	13,354	1.81
1991[h]	7/29-8/27	3	19,500	59,724	3.67	54,095	3.32
1992	No Openings	0	0	0	0	0	0
1993	No Openings	0	0	0	0	0	0
1994	No Openings	0	0	0	0	0	0
1995[k]	7/31-8/21	3	5,436	79,345	14.60	21,625	3.98
1996	8/06-8/26	4	7,715	33,629	4.36	27,705	3.59
1997	8/06-8/18	3	7,395	27,483	3.72	21,450	2.90
1998	No Openings	0	0	0	0	0	0
1999	8/01-8/12	3	3,366	9,987	2.97	855	0.25
2000	No Openings	0	0	0	0	0	0
2001	No Openings	0	0	0	0	0	0
2002	No Openings	0	0	0	0	0	0
2003	8/25-9/11	4	2,700	5,586	2.07	9,757	3.61
2004	8/31-9/11	6	1,200	660	0.55	1,583	1.32

[a] Prior to 1986, some fall chum and coho salmon may have been caught prior to specified dates. Includes ADF&G test fish sales through 1990.
[b] One day is equivalent to 24 hours of open fishing.
[c] Information unavailable.
[d] District was divided into a Set Net Only (24-hour) area and a Gill Net (12-hour) area.
[f] District was divided into a Set Net Only (24 or 12-hour) area and a Gill Net (12 or 6-hour) area.
[g] District was divided into a Set Net Only (12-hour) area and a Gill Net (6-hour) area.
[h] District was divided into a Set Net Only (16 or 12-hour) area and a Gill Net (9 or 6-hour) area.
[j] Includes ADF&G test fish sales through 1990.
[k] District was divided into a Set Gillnet Only Area (12, 9, 6, 4 or 3-hour) and a Gillnet area (9, 6, 4, or 3-hour).

Appendix B8.–Commercial fall chum and coho salmon harvest (in numbers of fish) and effort in the set gillnet only area and the gillnet area, District 1, Lower Yukon Area, 1983-2004.[a]

	Set Gillnet Area			Gillnet Area			Total		
Year	Number of Fishermen	Catch	Average Catch per Fisherman	Number of Fishermen	Catch	Average Catch per Fisherman	Number of Fishermen	Catch	Average Catch per Fisherman
Fall Chum Salmon									
1983	137	46,583	340	175	61,649	352	312	108,232	347
1984	137	34,817	254	164	24,307	148	301	59,124	196
1985	159	64,838	408	153	53,694	351	312	118,532	380
1986	122	28,449	233	160	30,903	193	282	59,352	210
1987				NO COMMERCIAL FISHING					
1988	120	21,971	183	208	23,558	113	328	45,529	139
1989	103	26,865	261	219	51,011	233	322	77,876	242
1990	83	7,553	91	218	19,784	91	301	27,337	91
1991	67	19,769	295	252	39,955	159	319	59,724	187
1992				NO COMMERCIAL FISHING					
1993				NO COMMERCIAL FISHING					
1994				NO COMMERCIAL FISHING					
1995	40	13,320	333	149	66,025	443	189	79,345	420
1996 [b]									
1997	15	2,500	167	161	24,983	155	176	27,483	156
1998				NO COMMERCIAL FISHING					
1999	14	954	68	132	9,033	68	146	9,987	68
2000				NO COMMERCIAL FISHING					
2001				NO COMMERCIAL FISHING					
2002				NO COMMERCIAL FISHING					
2003 [b]									
2004 [b]									
Coho Salmon									
1983	137	1,021	7	175	3,536	20	312	4,557	15
1984	137	15,077	110	164	14,390	88	301	29,467	98
1985	159	12,841	81	153	14,832	97	312	27,673	89
1986	122	9,334	77	160	15,490	97	282	24,824	88
1987				NO COMMERCIAL FISHING					
1988	120	13,408	112	208	23,027	111	328	36,435	111
1989	103	6,443	63	219	18,227	83	322	24,670	77
1990	83	2,033	24	218	11,321	52	301	13,354	44
1991	67	19,497	291	252	34,598	137	319	54,095	170
1992				NO COMMERCIAL FISHING					
1993				NO COMMERCIAL FISHING					
1994				NO COMMERCIAL FISHING					
1995	40	2,843	71	149	18,782	126	189	21,625	114
1996 [b]									
1997	15	2,061	137	161	19,389	120	176	21,450	122
1998				NO COMMERCIAL FISHING					
1999	10	186	19	84	669	8	94	855	9
2000				NO COMMERCIAL FISHING					
2001				NO COMMERCIAL FISHING					
2002				NO COMMERCIAL FISHING					
2003 [b]									
2004 [b]									
Combined Fall Chum and Coho Salmon									
1983	137	47,604	347	175	65,185	372	312	112,789	362
1984	137	49,894	364	164	38,697	236	301	88,591	294
1985	159	77,679	489	153	68,526	448	312	146,205	469
1986	122	37,783	310	160	46,393	290	282	84,176	298
1987				NO COMMERCIAL FISHING					
1988	120	35,379	295	208	46,585	224	328	81,964	250
1989	103	33,308	323	219	69,238	316	322	102,546	318
1990	83	9,586	115	218	31,105	143	301	40,691	135
1991	67	39,266	586	252	74,553	296	319	113,819	357
1992				NO COMMERCIAL FISHING					
1993				NO COMMERCIAL FISHING					
1994				NO COMMERCIAL FISHING					
1995	40	16,163	404	149	84,807	569	189	100,970	534
1996 [b]									
1997	15	4,561	304	161	44,372	276	176	48,933	278
1998				NO COMMERCIAL FISHING					
1999	10	1,140	114	84	9,702	116	94	10,842	115
2000				NO COMMERCIAL FISHING					
2001				NO COMMERCIAL FISHING					
2002				NO COMMERCIAL FISHING					
2003 [b]									
2004 [b]									

[a] Prior to 1986, some harvests of fall chum and coho salmon occurred before set net only area designation went into effect. Includes ADF&G test fish sales through 1990.

[b] Data not available.

Appendix B9.–Numbers of commercially caught fall chum salmon harvest (in thousands of fish) by period, District 1, Lower Yukon Area, 1978-2004.

Period and (Cumulative) harvest (in thousands of fish)

Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 [b]	1988
07/18	6.3 (6.3)		4.2 (4.2)					6.3 (6.3)			
07/19						16.1 (16.1)					
07/20		6.0 (6.0)			4.3 (4.3)						
07/21	5.1 (11.4)			6.0 (6.0)							
07/22			6.6 (10.8)								
07/23					27.8 (32.1)						
07/24		7.2 (13.2)		1.3 (7.3)							
07/25	52.8 (64.2)		10.4 (21.2)								
07/26											
07/27		14.8 (28.0)			4.0 (36.1)						
07/28	2.8 (67.0)			57.3 (64.6)							
07/29			15.3 (36.5)			3.0 (19.1)					
07/30					11.7 (47.8)						
07/31		9.7 (37.7)	1.4 (37.9)	23.2 (87.8)			18.3 (18.3)				
08/01	14.4 (81.4)										
08/02						18.5 (37.6)		2.2 (8.5)			
08/03		17.5 (55.2)					17.1 (35.4)				
08/04	0.4 (81.8)				7.9 (55.7)						
08/05			6.2 (44.1)			23.7 (61.3)			11.4 (11.4)		
08/06					1.2 (56.9)			15.2 (23.7)			
08/07		37.8 (93.0)	13.5 (57.6)				1.8 (37.2)				
08/08	1.4 (83.2)								7.5 (18.9)		
08/09						44.0 (105.3)		35.8 (59.5)			32.5 (32.5)
08/10		1.3 (94.3)			13.7 (70.6)						
08/11	1.6 (84.8)		5.2 (62.8)								
08/12					20.7 (91.3)	19.1 (124.4)			10.5 (29.4)		
08/13				43.8 (131.6)				65.3 (124.8)			
08/14		7.1 (101.4)	1.8 (64.6)				11.8 (49.0)				
08/15	1.4 (86.2)								16.2 (45.6)		
08/16											
08/17							10.1 (59.1)				
08/18	10.2 (96.4)			3.9 (135.5)							
08/19			42.2 (106.8)						5.8 (51.4)		0.5 (33.0)
08/20											
08/21											
08/22	21.9 (118.3)								8.0 (59.4)		
08/23											6.9 (39.9)
08/24											
08/25	4.4 (122.7)										
08/26											4.1 (44.0)
08/27											
08/28											
08/29	5.2 (127.9)										
08/30											1.5 (45.5)

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Appendix B9.–Page 2 of 3.

	Period and (Cumulative) harvest (in thousands of fish)										
Date	1989	1990	1991	1992 [b]	1993 [b]	1994 [b]	1995	1996	1997	1998 [b]	1999
07/18											
07/19											
07/20											
07/21											
07/22											
07/23											
07/24		1.0 (1.0)									
07/25											
07/26											
07/27		1.8 (2.8)									
07/28	4.4 (4.4)										
07/29											
07/30			15.3 (15.3)								
07/31		1.7 (4.5)					0.7 (0.7)				
08/01	0.2 (4.5)										5.6 (5.6)
08/02			3.0 (18.3)				0.4 (1.1)				
08/03		11.2 (15.7)									
08/04	48.8 (53.3)										
08/05							12.7 (13.8)				0.7 (6.3)
08/06			7.4 (25.7)					1.8 (1.8)	2.0 (2.0)		
08/07		7.5 (23.2)					10.4 (24.2)				
08/08	3.8 (57.2)										
08/09			9.2 (34.9)				8.1 (32.3)	4.3 (6.1)			0.2 (6.5)
08/10											
08/11	2.5 (59.7)						4.5 (36.8)		3.9 (5.9)		
08/12								6.2 (12.3)			3.5 (10.0)
08/13			1.4 (36.3)				10.4 (47.2)		6.7 (12.6)		
08/14											
08/15	14.9 (74.7)						14.8 (62.0)	15.1 (27.4)			
08/16			4.1 (40.4)						9.4 (22.0)		
08/17											
08/18							16.7 (78.7)		5.5 (27.5)		
08/19								1.3 (28.8)			
08/20		4.1 (27.3)	2.8 (43.2)								
08/21							0.7 (79.4)				
08/22	2.9 (77.6)							1.3 (30.1)			
08/23			14.7 (57.9)								
08/24											
08/25	0.3 (77.9)										
08/26								3.5 (33.6)			
08/27			1.8 (59.7)								
08/28											
08/29											
08/30											

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	Period and (Cumulative) harvest (in thousands of fish)					
Date	2000 [b]	2001 [b]	2002 [b]	2003	2004	
07/18						
07/19						
07/20						
07/21						
07/22						
07/23						
07/24						
07/25						
07/26						
07/27						
07/28						
07/29						
07/30						
07/31						
08/01						
08/02						
08/03						
08/04						
08/05						
08/06						
08/07						
08/08						
08/09						
08/10						
08/11						
08/12						
08/13						
08/14						
08/15						
08/16						
08/17						
08/18						
08/19						
08/20						
08/21						
08/22						
08/23						
08/24						
08/25				2.5 (2.5)		
08/26						
08/27				0.4 (2.9)		
08/28						
08/29				0.1 (3.0)		
08/30						
08/31					0.0 (.0)	
09/01				0.7 (3.7)		
09/02					0.4 (.4)	
09/03				1.0 (4.8)		
09/04					0.1 (.5)	
09/05				0.5 (5.3)		
09/06					0.1 (.6)	
09/07						
09/08					0.0 (.6)	
09/09				0.1 (5.4)		
09/10					0.0 (.7)	
09/11				0.2 (5.6)		

[a] Some harvests of fall chum salmon may have occurred before 7/18.

[b] No commercial fishing periods.

Appendix B10.–Commercial fall chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983-2004.[a]

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	135	10,300	2,224	10,460	35,824	19,985	24,816	20,627	124,371
1984	315	24,914	2,488	16,234	13,536	6,873	9,390	5,001	78,751
1985	594	34,332	6,035	36,885	43,022	1,485	5,898	1,697	129,948
1986	376	9,891	3,032	2,683	21,058	4,091	12,004	6,217	59,352
1987 [b]	0	0	0	0	0	0	0	0	0
1988	10,217	6,953	2,625	206	6,692	3,905	9,526	5,405	45,317
1989	0	2,929	1,420	5,577	26,611	17,477	15,526	8,336	77,876
1990	255	3,690	501	1,167	7,927	5,618	4,695	3,484	27,337
1991	75	11,976	3,036	5,586	9,968	8,040	11,880	9,163	59,724
1992 [b]	0	0	0	0	0	0	0	0	0
1993 [b]	0	0	0	0	0	0	0	0	0
1994 [b]	0	0	0	0	0	0	0	0	0
1995	1,674	6,766	6,892	11,909	16,450	1,696	23,722	10,236	79,345
1996	0	2,686	2,333	1,243	4,561	9,976	8,504	4,326	33,629
1997	0	2,870	3,452	3,768	3,943	1,596	6,747	5,107	27,483
1998 [b]	0	0	0	0	0	0	0	0	0
1999	4	1,931	474	1,182	1,934	1,439	1,103	1,920	9,987
2000 [b]	0	0	0	0	0	0	0	0	0
2001 [b]	0	0	0	0	0	0	0	0	0
2002 [b]	0	0	0	0	0	0	0	0	0
2003	0	2,784	177	310	958	0	381	976	5,586
2004	0	509	25	67	0	0	19	40	660
1999-2003 Average	1	943	130	298	578	288	297	579	3,115

	District 2						District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	17,245	4,673	24,132	22,072	17,523	85,645	4,607	5,411	10,018
1984	10,951	22,942	7,622	19,183	10,105	70,803	6,429	0	6,429
1985	9,131	10,607	3,530	5,859	11,363	40,490	4,173	991	5,164
1986	6,472	16,377	5,212	11,352	11,894	51,307	2,793	0	2,793
1987 [b]	0	0	0	0	0	0	0	0	0
1988	5,077	13,215	5,385	4,283	3,901	31,861	1,748	342	2,090
1989	12,005	34,268	15,001	19,029	17,603	97,906	15,153	179	15,332
1990	6,311	8,298	5,403	10,147	7,014	37,173	1,863	1,852	3,715
1991	10,584	23,195	14,291	28,306	26,252	102,628	7,209	2,004	9,213
1992 [b]	0	0	0	0	0	0	0	0	0
1993 [b]	0	0	0	0	0	0	0	0	0
1994 [b]	0	0	0	0	0	0	0	0	0
1995	147	54,231	20,018	16,435	0	90,831	0	0	0
1996	1,960	14,349	4,184	7,634	1,524	29,651	0	0	0
1997	5,040	9,827	2,316	5,972	1,171	24,326	0	0	0
1998 [b]	0	0	0	0	0	0	0	0	0
1999	1,536	2,836	3,254	1,910	167	9,703	0	0	0
2000 [b]	0	0	0	0	0	0	0	0	0
2001 [b]	0	0	0	0	0	0	0	0	0
2002 [b]	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
1999-2003 Average	307	567	651	382	33	1,941	0	0	0

[a] Includes ADF&G test fish sales in Districts 1 and 2 through 1990.

[b] No commercial salmon fishing periods occurred in 1987, 1992-1994, 1998, and 2000-2002.

Appendix B11.–Commercial coho salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983-2004.[a]

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	16	567	86	463	1,123	56	1,532	752	4,595
1984	151	6,743	1,233	3,101	5,925	4,151	4,389	3,779	29,472
1985	585	6,187	1,673	8,320	5,304	936	2,153	2,517	27,675
1986	83	1,974	805	383	7,056	6,525	5,722	2,276	24,824
1987 [b]	0	0	0	0	0	0	0	0	0
1988	1,652	5,831	1,866	392	9,166	9,848	4,831	2,849	36,435
1989	0	1,822	306	1,115	5,830	4,696	7,680	3,223	24,672
1990	4	736	301	1,684	2,108	2,530	2,429	3,562	13,354
1991	30	4,302	1,072	4,432	8,130	19,630	7,980	8,519	54,095
1992 [b]	0	0	0	0	0	0	0	0	0
1993 [b]	0	0	0	0	0	0	0	0	0
1994 [b]	0	0	0	0	0	0	0	0	0
1995	883	2,472	1,833	2,439	2,454	1,006	8,953	1,585	21,625
1996	0	1,555	1,564	854	3,995	9,634	8,068	2,035	27,705
1997	0	1,355	2,322	2,414	2,742	4,153	5,180	3,284	21,450
1998 [b]	0	0	0	0	0	0	0	0	0
1999	3	261	36	45	184	176	88	62	855
2000 [b]	0	0	0	0	0	0	0	0	0
2001 [b]	0	0	0	0	0	0	0	0	0
2002 [b]	0	0	0	0	0	0	0	0	0
2003	0	4,890	305	656	1,939	0	576	1,391	9,757
2004	128	772	201	290	0	0	50	142	1,583
1999-2003 Average	1	1,030	68	140	425	35	133	291	2,122

	District 2						District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	1,549	140	715	114	39	2,557	0	0	0
1984	4,736	26,506	5,514	4,556	1,752	43,064	621	0	621
1985	3,369	5,052	4,394	1,077	3,233	17,125	171	0	171
1986	3,074	9,317	2,250	4,117	2,439	21,197	793	0	793
1987 [b]	0	0	0	0	0	0	0	0	0
1988	3,844	12,503	4,891	7,141	6,397	34,776	1,291	128	1,419
1989	6,199	18,427	3,668	4,262	5,966	38,522	3,978	10	3,988
1990	1,226	11,364	962	2,032	851	16,435	752	166	918
1991	8,746	17,939	3,587	6,094	4,532	40,898	1,427	478	1,905
1992 [b]	0	0	0	0	0	0	0	0	0
1993 [b]	0	0	0	0	0	0	0	0	0
1994 [b]	0	0	0	0	0	0	0	0	0
1995	115	12,154	2,951	3,268	0	18,488	0	0	0
1996	761	12,155	2,755	4,409	894	20,974	0	0	0
1997	2,197	6,449	1,238	3,025	147	13,056	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	147	238	248	65	48	746	0	0	0
2000 [b]	0	0	0	0	0	0	0	0	0
2001 [b]	0	0	0	0	0	0	0	0	0
2002 [b]	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
1999-2003 Average	29	48	50	13	10	149	0	0	0

[a] Includes ADF&G test fish sales in Districts 1 and 2 through 1990.

[b] No commercial fall chum salmon fishing periods occurred in 1987, 1992-1994, 1998, and 2000-2002.

Appendix B12.–Historical daily and cumulative CPUE for Chinook salmon, Lower Yukon River set net test fishery, 2002-2004.

	Chinook Salmon in 8.5" SET Gillnets								
	2002				2001		Average 1989-2001		
Date	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished District 1	Daily CPUE	Cumulative CPUE	Daily CPUE	Cumulative CPUE	Date
26-May							0.00	0.00	26-May
27-May							0.00	0.00	27-May
28-May							0.01	0.01	28-May
29-May							0.06	0.08	29-May
30-May							0.12	0.22	30-May
31-May							0.08	0.27	31-May
1-Jun	3	0.06	0.06				0.06	0.35	1-Jun
2-Jun	11	0.23	0.29				0.13	0.52	2-Jun
3-Jun	6	0.13	0.42				0.17	0.55	3-Jun
4-Jun	7	0.15	0.57				0.24	0.77	4-Jun
5-Jun	31	0.32	0.89				0.19	0.98	5-Jun
6-Jun	43	0.45	1.34				0.32	1.33	6-Jun
7-Jun	27	0.28	1.62				0.44	1.80	7-Jun
8-Jun	23	0.24	1.86		0.09	0.09	0.42	1.97	8-Jun
9-Jun	43	0.45	2.31		0.19	0.28	0.68	2.71	9-Jun
10-Jun	40	0.42	2.73		0.11	0.39	0.53	3.28	10-Jun
11-Jun	25	0.26	2.99		0.22	0.61	0.59	3.92	11-Jun
12-Jun	70	0.73	3.72		0.32	0.93	0.59	4.56	12-Jun
13-Jun	138	1.44	5.16		0.51	1.44	0.70	5.31	13-Jun
14-Jun	40	0.42	5.58		0.73	2.17	0.69	6.05	14-Jun
15-Jun	79	0.82	6.40		0.32	2.49	0.68	6.78	15-Jun
16-Jun	123	1.28	7.68		0.38	2.87	0.83	7.68	16-Jun
17-Jun	65	0.68	8.36		0.31	3.18	0.82	8.56	17-Jun
18-Jun	92	0.96	9.32		0.14	3.32	1.01	9.65	18-Jun
19-Jun	50	0.52	9.84		0.17	3.49	0.93	10.65	19-Jun
20-Jun	127	1.32	11.16	6	0.17	3.66	0.68	11.38	20-Jun
21-Jun	125	1.30	12.46		0.60	4.26	0.91	12.36	21-Jun
22-Jun	106	1.10	13.56		0.42	4.68	1.02	13.46	22-Jun
23-Jun	100	1.04	14.60		0.92	5.60	0.80	14.32	23-Jun
24-Jun	113	1.18	15.78	3	1.33	6.93	0.89	15.28	24-Jun
25-Jun	60	0.63	16.41	3	1.40	8.33	0.94	16.27	25-Jun
26-Jun	44	0.46	16.87		1.07	9.40	0.83	17.17	26-Jun
27-Jun	24	0.25	17.12	6	1.27	10.67	0.71	17.94	27-Jun
28-Jun	10	0.10	17.22	3	0.67	11.34	0.65	18.64	28-Jun
29-Jun	82	0.85	18.07		0.38	11.72	0.62	19.31	29-Jun
30-Jun	31	0.32	18.39		0.23	11.95	0.45	19.77	30-Jun
1-Jul	16	0.17	18.56		0.31	12.26	0.44	20.25	1-Jul
2-Jul	17	0.18	18.74		0.33	12.59	0.45	20.73	2-Jul
3-Jul	34	0.35	19.09		0.30	12.89	0.40	21.16	3-Jul
4-Jul	22	0.23	19.32		0.38	13.27	0.31	21.49	4-Jul
5-Jul	21	0.22	19.54		0.48	13.75	0.33	21.85	5-Jul
6-Jul	19	0.20	19.74		0.38	14.13	0.28	22.14	6-Jul
7-Jul	15	0.16	19.90		0.35	14.48	0.24	22.40	7-Jul
8-Jul	12	0.13	20.03		0.21	14.69	0.23	22.65	8-Jul
9-Jul	3	0.03	20.06		0.20	14.89	0.21	22.88	9-Jul
10-Jul	8	0.08	20.14		0.11	15.00	0.14	23.03	10-Jul
11-Jul	2	0.02	20.16		0.08	15.08	0.11	23.15	11-Jul
12-Jul	4	0.04	20.20		0.04	15.12	0.10	23.25	12-Jul
13-Jul	2	0.02	20.22		0.04	15.16	0.10	23.36	13-Jul
14-Jul	1	0.01	20.23		0.03	15.19	0.07	23.44	14-Jul
15-Jul	0	0.00	20.23		0.04	15.23	0.09	23.53	15-Jul
	1,914		20.23					23.53	

Note: Historical daily and cumulative CPUE for Chinook salmon, Lower Yukon River set net test fishery 1989 to 2001 average, and 2001 compared to 2002.
[a] The box within the column indicates the first to the third quartile of the cumulative index. The median date of the cumulative index is also highlighted.

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	Chinook Salmon in 8.5" SET Gillnets								
	2003				2002		Average 1989-2002 [b]		
Date	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished District 1	Daily CPUE	Cumulative CPUE	Daily CPUE	Cumulative CPUE	Date
26-May									26-May
27-May	9	0.56	0.56						27-May
28-May	8	0.17	0.73				0.01	0.01	28-May
29-May	2	0.04	0.77				0.09	0.10	29-May
30-May	2	0.04	0.81				0.16	0.26	30-May
31-May	45	0.47	1.28				0.10	0.32	31-May
1-Jun	60	0.63	1.91		0.06	0.06	0.07	0.35	1-Jun
2-Jun	57	0.59	2.50		0.23	0.29	0.17	0.55	2-Jun
3-Jun	50	0.52	3.02		0.13	0.42	0.21	0.64	3-Jun
4-Jun	50	0.52	3.54		0.15	0.57	0.29	0.87	4-Jun
5-Jun	63	0.66	4.20		0.32	0.89	0.25	1.12	5-Jun
6-Jun	61	0.64	4.84		0.45	1.34	0.40	1.52	6-Jun
7-Jun	36	0.38	5.22		0.28	1.62	0.51	2.02	7-Jun
8-Jun	73	0.76	5.98		0.24	1.86	0.49	2.18	8-Jun
9-Jun	50	0.52	6.50		0.45	2.31	0.81	2.98	9-Jun
10-Jun	85	0.89	7.39		0.42	2.73	0.48	3.60	10-Jun
11-Jun	83	0.86	8.25		0.26	2.99	0.51	4.25	11-Jun
12-Jun	238	2.48	10.73		0.73	3.72	0.64	4.98	12-Jun
13-Jun	159	1.66	12.39		1.44	5.16	0.72	5.88	13-Jun
14-Jun	83	0.86	13.25		0.42	5.58	0.75	6.70	14-Jun
15-Jun	103	1.07	14.32		0.82	6.40	0.72	7.54	15-Jun
16-Jun	73	0.76	15.08	3	1.28	7.68	0.63	8.58	16-Jun
17-Jun	55	0.57	15.65	3	0.68	8.36	0.95	9.54	17-Jun
18-Jun	17	0.18	15.83		0.96	9.32	1.31	10.68	18-Jun
19-Jun	54	0.56	16.39		0.52	9.84	0.80	11.69	19-Jun
20-Jun	61	0.64	17.03		1.32	11.16	0.94	12.52	20-Jun
21-Jun	102	1.06	18.09	6	1.30	12.46	1.37	13.64	21-Jun
22-Jun	55	0.57	18.66		1.10	13.56	0.94	14.76	22-Jun
23-Jun	24	0.25	18.91		1.04	14.60	0.80	15.62	23-Jun
24-Jun	144	1.50	20.41		1.18	15.78	1.15	16.69	24-Jun
25-Jun	24	0.25	20.66		0.63	16.41	1.14	17.70	25-Jun
26-Jun	33	0.34	21.00	6	0.46	16.87	0.83	18.58	26-Jun
27-Jun	41	0.43	21.43		0.25	17.12	0.69	19.30	27-Jun
28-Jun	32	0.33	21.76		0.10	17.22	0.76	19.97	28-Jun
29-Jun	108	1.13	22.89		0.85	18.07	0.60	20.62	29-Jun
30-Jun	83	0.86	23.75		0.32	18.39	0.46	21.09	30-Jun
1-Jul	32	0.33	24.08		0.17	18.56	0.50	21.57	1-Jul
2-Jul	21	0.22	24.30	6	0.18	18.74	0.42	22.05	2-Jul
3-Jul	18	0.19	24.49		0.35	19.09	0.39	22.48	3-Jul
4-Jul	37	0.39	24.88		0.23	19.32	0.32	22.80	4-Jul
5-Jul	27	0.28	25.16		0.22	19.54	0.33	23.13	5-Jul
6-Jul	30	0.31	25.47		0.20	19.74	0.27	23.39	6-Jul
7-Jul	15	0.16	25.63		0.16	19.90	0.24	23.64	7-Jul
8-Jul	10	0.10	25.73		0.13	20.03	0.20	23.86	8-Jul
9-Jul	14	0.15	25.88		0.03	20.06	0.17	24.03	9-Jul
10-Jul	40	0.42	26.30		0.08	20.14	0.14	24.17	10-Jul
11-Jul	17	0.18	26.48		0.02	20.16	0.10	24.27	11-Jul
12-Jul	12	0.13	26.61		0.04	20.20	0.09	24.36	12-Jul
13-Jul	15	0.16	26.77		0.02	20.22	0.11	24.47	13-Jul
14-Jul	18	0.19	26.96		0.01	20.23	0.07	24.54	14-Jul
15-Jul	9	0.09	27.05		0.00	20.23	0.06	24.60	15-Jul
	2,538		27.05					24.60	

Note: Historical daily and cumulative CPUE for Chinook salmon, Lower Yukon River set net test fishery, 1989 to 2002 average, and 2002 compared to 2003.

[a] The box within the column indicates the first to the third quartile of the cumulative index. The median date of the cumulative index is also highlighted.

[b] Average is without 1998 and 2000.

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	Chinook Salmon in 8.5" SET Gillnets								
	2004 [g]				2003		Average 1989-2003 [b]		
Date	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished District 1	Daily CPUE	Cumulative CPUE	Prop	Cumulative CPUE	Date
26-May							0.00	0.00	26-May
27-May	0	0.00	0.00		0.56	0.56	0.00	0.00	27-May
28-May	2	0.04	0.04		0.17	0.73	0.00	0.09	28-May
29-May	2	0.04	0.08		0.04	0.77	0.01	0.18	29-May
30-May	0	0.00	0.08		0.04	0.81	0.01	0.30	30-May
31-May	12	0.13	0.21		0.47	1.28	0.01	0.34	31-May
1-Jun	10	0.10	0.31 [c]		0.63	1.91	0.02	0.42	1-Jun
2-Jun	13	0.14	0.45 [c]		0.59	2.50	0.03	0.65	2-Jun
3-Jun	36	0.38	0.83 [c]		0.52	3.02	0.03	0.70	3-Jun
4-Jun	3	0.03	0.86 [c]		0.52	3.54	0.04	0.93	4-Jun
5-Jun	24	0.25	1.11 [c]		0.66	4.20	0.05	1.17	5-Jun
6-Jun	18	0.19	1.30 [c]		0.64	4.84	0.07	1.55	6-Jun
7-Jun	7	0.07	1.37 [c]		0.38	5.22	0.09	2.02	7-Jun
8-Jun	32	0.33	1.70 [c]		0.76	5.98	0.09	2.18	8-Jun
9-Jun	114	1.19	2.89 [d]		0.52	6.50	0.12	2.90	9-Jun
10-Jun	96	1.00	3.89 [d]		0.89	7.39	0.15	3.46	10-Jun
11-Jun	59	0.61	4.50 [e]		0.86	8.25	0.17	4.09	11-Jun
12-Jun	80	0.83	5.33		2.48	10.73	0.20	4.75	12-Jun
13-Jun	146	1.52	6.85		1.66	12.39	0.24	5.66	13-Jun
14-Jun	128	1.33	8.18 [f]		0.86	13.25	0.27	6.44	14-Jun
15-Jun	67	0.70	8.88 [f]		1.07	14.32	0.31	7.19	15-Jun
16-Jun	66	0.69	9.57 [f]		0.76	15.08	0.34	8.12	16-Jun
17-Jun	68	0.71	10.28	6	0.57	15.65	0.38	8.98	17-Jun
18-Jun	30	0.31	10.59 [f]		0.18	15.83	0.43	10.03	18-Jun
19-Jun	91	0.95	11.54 [f]		0.56	16.39	0.46	10.94	19-Jun
20-Jun	120	1.25	12.79		0.64	17.03	0.50	11.70	20-Jun
21-Jun	60	0.63	13.42	9	1.06	18.09	0.54	12.68	21-Jun
22-Jun	58	0.60	14.02		0.57	18.66	0.59	13.77	22-Jun
23-Jun	85	0.89	14.91		0.25	18.91	0.62	14.62	23-Jun
24-Jun	116	1.21	16.12	9	1.50	20.41	0.66	15.55	24-Jun
25-Jun	51	0.53	16.65		0.25	20.66	0.70	16.56	25-Jun
26-Jun	54	0.56	17.21		0.34	21.00	0.74	17.38	26-Jun
27-Jun	33	0.34	17.55		0.43	21.43	0.77	18.09	27-Jun
28-Jun	36	0.38	17.93	9	0.33	21.76	0.80	18.73	28-Jun
29-Jun	18	0.19	18.12		1.13	22.89	0.82	19.39	29-Jun
30-Jun	48	0.50	18.62	6	0.86	23.75	0.84	19.89	30-Jun
1-Jul	18	0.19	18.81		0.33	24.08	0.87	20.37	1-Jul
2-Jul	26	0.27	19.08	9	0.22	24.30	0.88	20.82	2-Jul
3-Jul	9	0.09	19.17		0.19	24.49	0.90	21.23	3-Jul
4-Jul	15	0.16	19.33		0.39	24.88	0.92	21.55	4-Jul
5-Jul	31	0.32	19.65		0.28	25.16	0.93	21.90	5-Jul
6-Jul	16	0.17	19.82	9	0.31	25.47	0.94	22.19	6-Jul
7-Jul	20	0.21	20.03		0.16	25.63	0.95	22.44	7-Jul
8-Jul	14	0.15	20.18		0.10	25.73	0.96	22.68	8-Jul
9-Jul	14	0.15	20.33	6	0.15	25.88	0.97	22.88	9-Jul
10-Jul	4	0.04	20.37		0.42	26.30	0.98	23.03	10-Jul
11-Jul	5	0.05	20.42		0.18	26.48	0.98	23.16	11-Jul
12-Jul	4	0.04	20.46		0.13	26.61	0.99	23.26	12-Jul
13-Jul	3	0.03	20.49		0.16	26.77	0.99	23.37	13-Jul
14-Jul	6	0.06	20.55		0.19	26.96	1.00	23.44	14-Jul
15-Jul	4	0.04	20.59		0.09	27.05	1.00	23.54	15-Jul
	1,972		20.59					23.54	

Note: Historical daily and cumulative CPUE for Chinook salmon, Lower Yukon River set net test fishery, 1989 to 2003 average, and 2003 compared to 2004.

[a] The box within the column indicates the first to the third quartile of the cumulative index. The median date of the cumulative index is also highlighted.

[b] Average is without 1998 and 2000.

[c] All nets have been experiencing heavy debris.

[d] Debris has slowed down to about half of the past debris load.

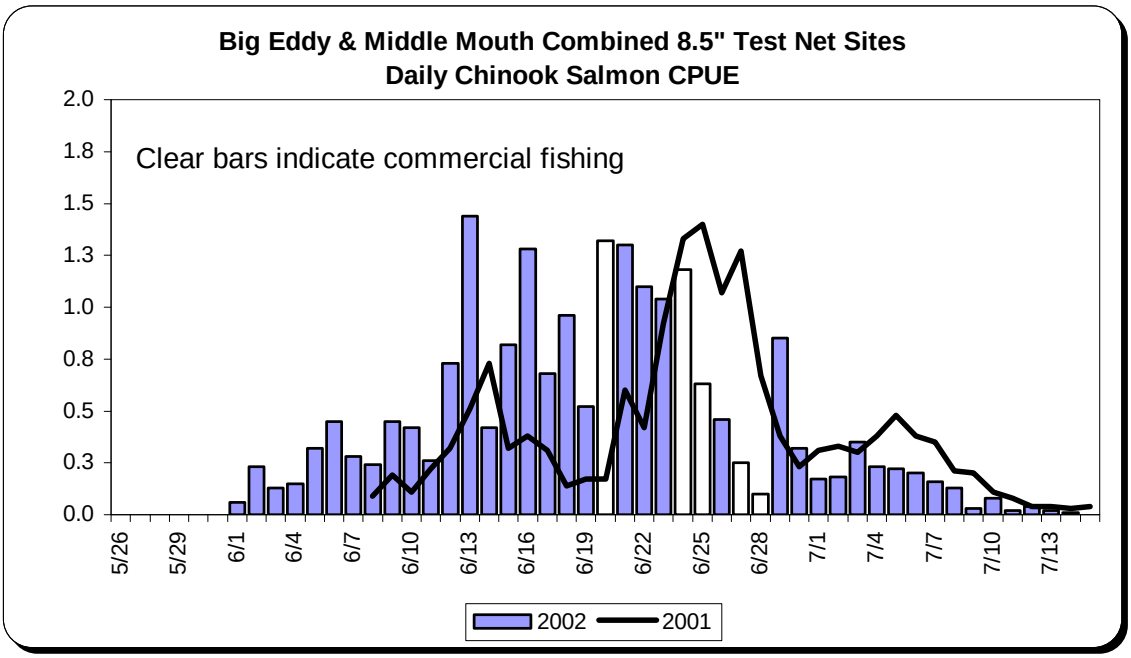
[e] Very little debris in all nets at this time.

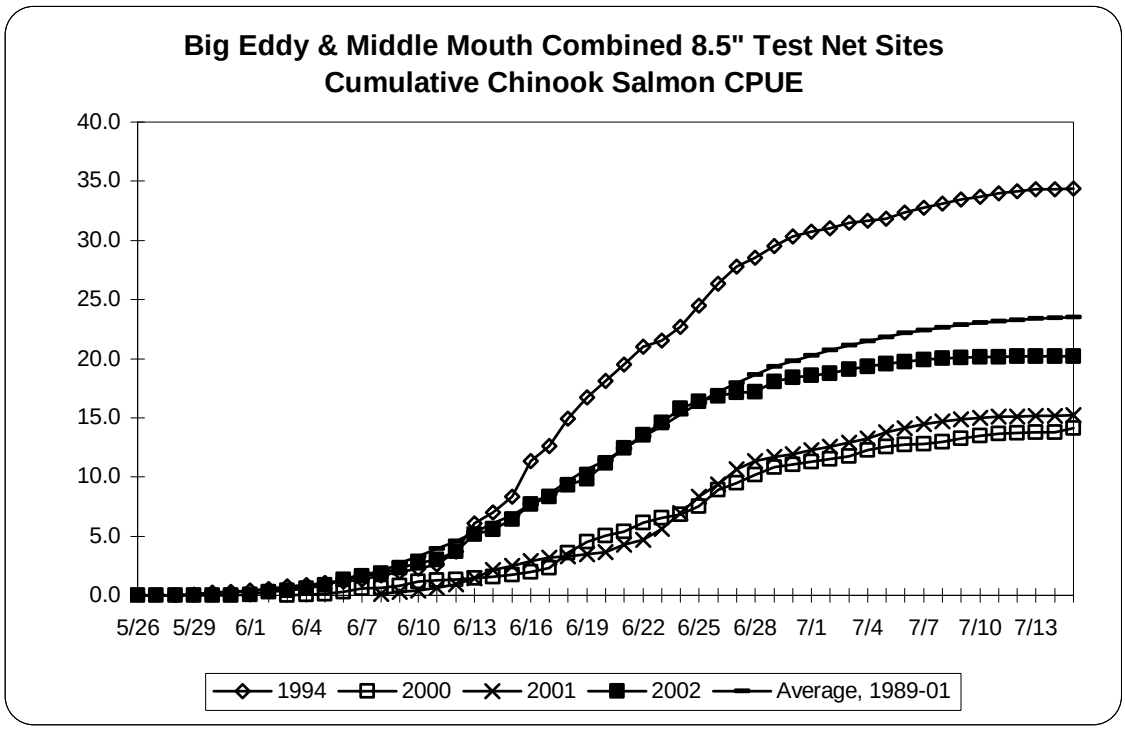
[f] Fair amount of debris in nets

[g] Conservative estimate due to heavy debris in nets in the first half of the 2004 run.

Appendix B13.–Daily and cumulative CPUE for Chinook salmon test fish sites, 2002-2004.

Data Year 2002



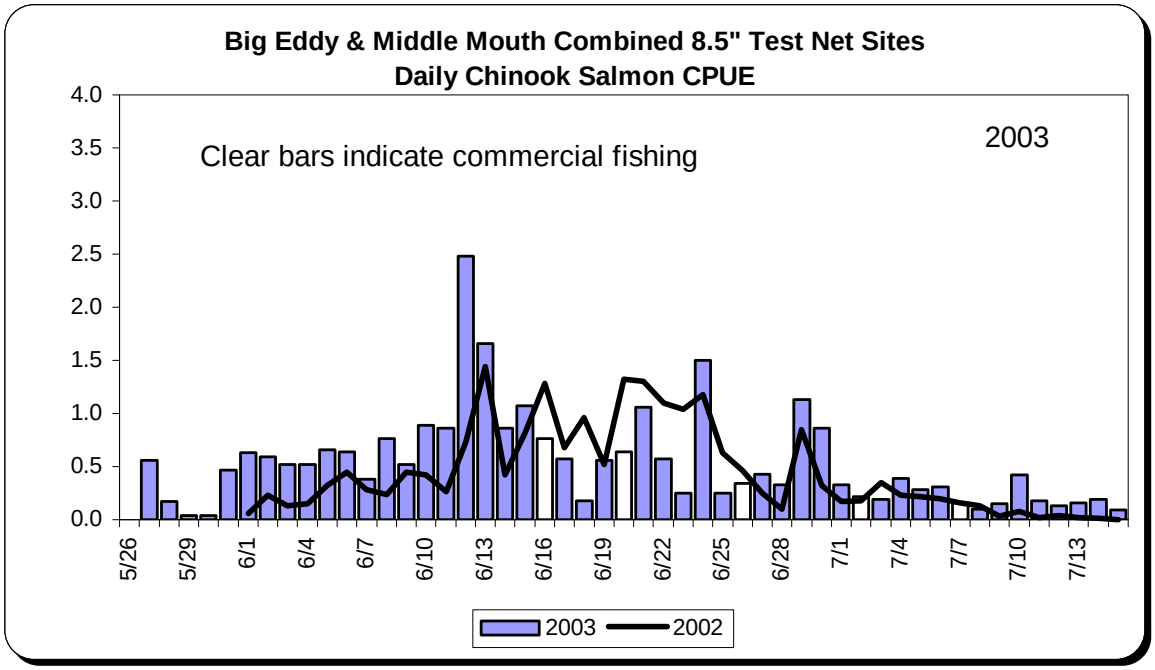


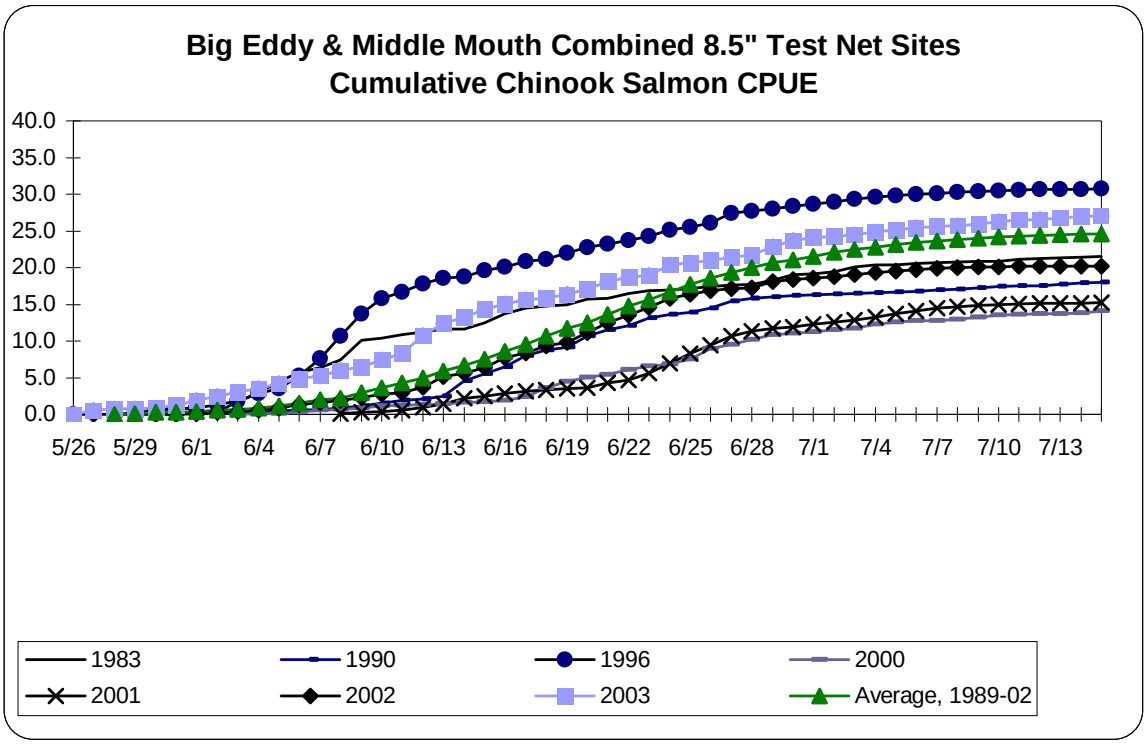
Note: Daily and cumulative CPUE for Chinook salmon test fish sites in 2002, compared to the 1989 to 2001 average CPUE.

-continued-

Appendix B13.–Page 2 of 3.

Data Year 2003



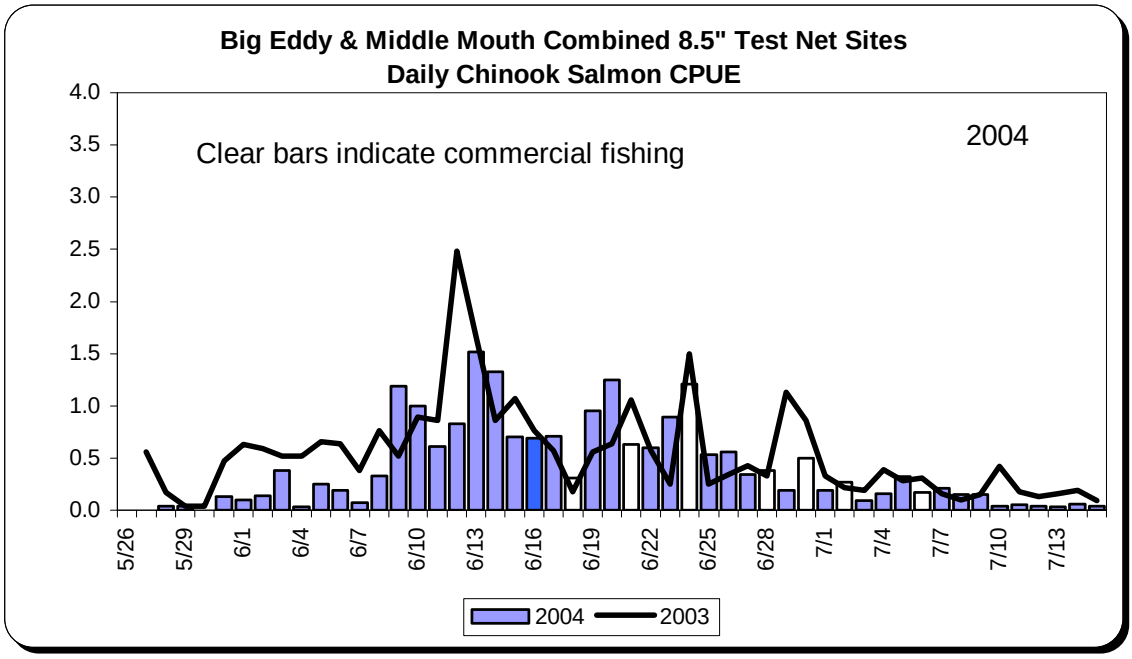


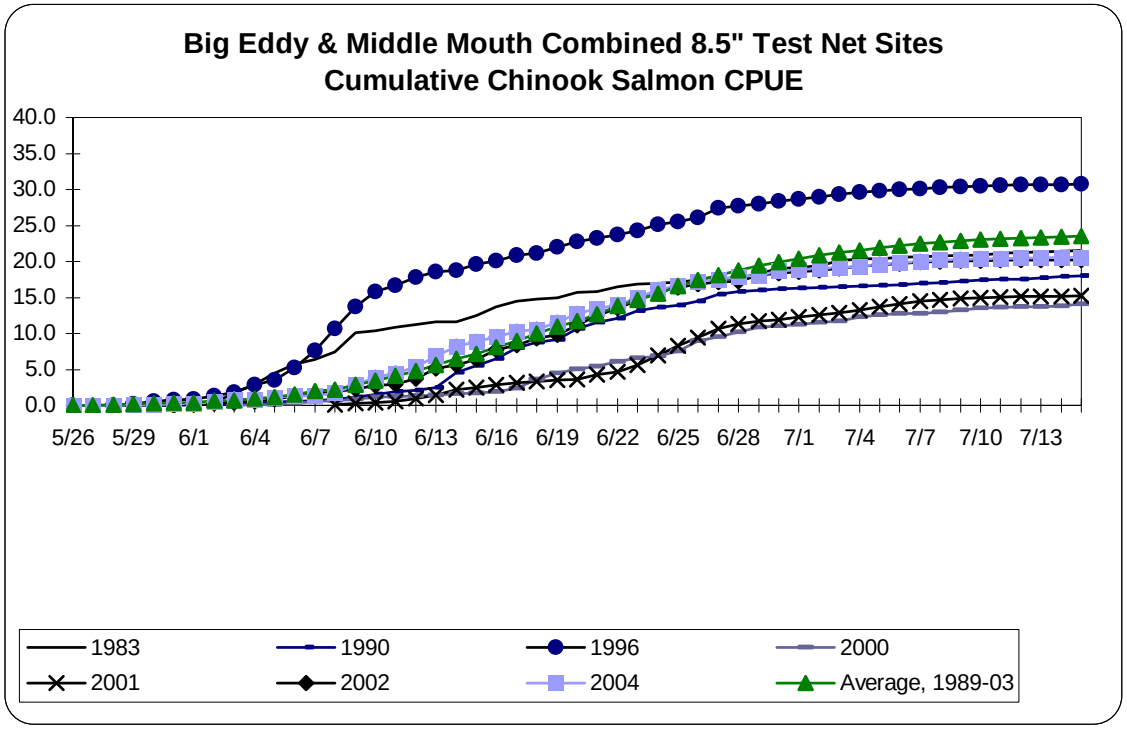
Note: Daily and cumulative CPUE for Chinook salmon test fish sites in 2003, compared to the 1989 to 2002 average CPUE.

-continued-

Appendix B13.–Page 3 of 3.

Data Year 2004





Note: Daily and cumulative CPUE for Chinook salmon test fish sites in 2004, compared to the 1989 to 2003 average CPUE.

Appendix B14.–Big Eddy and Middle Mouth summer chum salmon daily and cumulative Index, cooperative 5.5" mesh drift gillnet test fishery, Lower Yukon River, 2002-2003.[a]

Data Year 2002

	Summer Chum Salmon in 5.5" Drift Gillnet												
	Big Eddy Drift				Middle Mouth Drift				Big Eddy and Middle Mouth Combined				
Date	Daily Catch	Daily Index	Prop.	Cumulative Index	Daily Catch	Daily Index	Prop.	Cumulative Index	Daily Catch	Daily Index	Prop.	Cumulative Index	Date
26-May													26-May
27-May													27-May
28-May													28-May
29-May	0	0.00	0.00	0.00					0	0.00	0.00	0.00	29-May
30-May	7	15.14	0.00	15.00					7	7.57	0.00	7.57	30-May
31-May	3	4.51	0.00	19.65					3	2.26	0.00	2.26	31-May
1-Jun	2	2.97	0.01	22.62					2	1.49	0.00	1.49	1-Jun
2-Jun	1	1.50	0.01	24.12					1	0.75	0.00	0.75	2-Jun
3-Jun	7	7.78	0.01	31.90					7	3.89	0.00	3.89	3-Jun
4-Jun	0	0.00	0.01	31.90					0	0.00	0.00	0.00	4-Jun
5-Jun	7	10.72	0.01	42.62	0	0	0	0.00	7	5.36	0.00	5.36	5-Jun
6-Jun	13	19.92	0.01	62.54	4	6	0	6.08	17	13.00	0.01	13.00	6-Jun
7-Jun	4	6.01	0.02	68.55	1	1.50	0.01	7.58	5	3.76	0.00	3.76	7-Jun
8-Jun	2	3.00	0.02	71.55	0	0.00	0.01	7.58	2	1.50	0.00	1.50	8-Jun
9-Jun	3	4.54	0.02	76.09	1	1.54	0.01	9.12	4	3.04	0.00	4.54	9-Jun
10-Jun	1	0.55	0.02	76.64	0	0.00	0.01	9.12	1	0.28	0.00	4.82	10-Jun
11-Jun	45	51.14	0.03	127.78	2	3.08	0.02	12	47	27.11	0.01	31.93	11-Jun
12-Jun	363	690.07	0.19	817.85	0	0.00	0.02	12.20	363	345.04	0.15	376.96	12-Jun
13-Jun	22	224.56	0.24	1,042.41	4	6.19	0.03	18.39	26	115.38	0.20	492.34	13-Jun
14-Jun	24	45.53	0.25	1,087.94	1	1.54	0.03	19.93	25	23.54	0.21	515.87	14-Jun
15-Jun	19	30.09	0.26	1,118.03	9	17.42	0.06	37.35	28	23.76	0.22	539.63	15-Jun
16-Jun	70	108.19	0.28	1,226.22	3	8.85	0.07	46.20	73	58.52	0.24	598.15	16-Jun
17-Jun	11	17.40	0.29	1,243.62	5	7.62	0.08	53.82	16	12.51	0.25	610.66	17-Jun
18-Jun	126	175.79	0.33	1,419.41	2	3.08	0.09	56.90	128	89.44	0.29	700.09	18-Jun
19-Jun	100	145.90	0.36	1,565.31	1	1.50	0.09	58.40	101	73.70	0.32	773.79	19-Jun
20-Jun	96	229.91	0.42	1,795.22	2	3.00	0.09	61.40	98	116.46	0.36	890.25	20-Jun
21-Jun	340	824.15	0.61	2,619.37	58	85.21	0.22	146.61	398	454.68	0.55	1344.93	21-Jun
22-Jun	40	90.01	0.63	2,709.38	18	36.68	0.28	183.29	58	63.35	0.57	1408.27	22-Jun
23-Jun	185	297.44	0.70	3,006.82	48	99.59	0.43	282.88	233	198.52	0.66	1606.79	23-Jun
24-Jun	114	323.98	0.77	3,330.80	66	293.87	0.87	576.75	180	308.93	0.78	1915.71	24-Jun
25-Jun	87	117.00	0.80	3,447.80	3	4.66	0.88	581.41	90	60.83	0.81	1976.54	25-Jun
26-Jun	11	14.87	0.80	3,462.67	2	3.08	0.88	584.49	13	8.98	0.81	1985.52	26-Jun
27-Jun	8	23.16	0.81	3,485.83	2	6.08	0.89	590.57	10	14.62	0.82	2000.14	27-Jun
28-Jun	24	86.55	0.83	3,572.38	1	1.50	0.89	592.07	25	44.03	0.83	2044.16	28-Jun
29-Jun	187	303.83	0.90	3,876.21	16	23.44	0.93	615.51	203	163.64	0.90	2207.80	29-Jun
30-Jun	48	78.64	0.92	3,954.85	6	19.00	0.96	634.51	54	48.82	0.92	2256.62	30-Jun
1-Jul	49	70.80	0.93	4,025.65	1	1.46	0.96	635.97	50	36.13	0.94	2292.75	1-Jul
2-Jul	26	52.03	0.94	4,077.68	1	1.50	0.96	637.47	27	26.77	0.95	2319.51	2-Jul
3-Jul	90	164.92	0.98	4,242.60	2	3.00	0.97	640.47	92	83.96	0.98	2403.47	3-Jul
4-Jul	3	9.10	0.99	4,251.70	2	6.00	0.97	646.47	5	7.55	0.98	2411.02	4-Jul
5-Jul	3	4.78	0.99	4,256.48	2	3.08	0.98	649.55	5	3.93	0.99	2414.95	5-Jul
6-Jul	15	23.16	0.99	4,279.64	0	0.00	0.98	649.55	15	11.58	0.99	2426.53	6-Jul
7-Jul	5	6.12	0.99	4,285.76	0	0.00	0.98	649.55	5	3.06	0.99	2429.59	7-Jul
8-Jul	0	0.00	0.99	4,285.76	1	3.00	0.98	652.55	1	1.50	0.99	2431.09	8-Jul
9-Jul	6	9.23	1.00	4,294.99	1	1.50	0.99	654.05	7	5.37	0.99	2436.46	9-Jul
10-Jul	3	4.74	1.00	4,299.73	1	3.00	0.99	657.05	4	3.87	1.00	2440.33	10-Jul
11-Jul	1	1.67	1.00	4,301.40	0	0.00	0.99	657.05	1	0.84	1.00	2441.16	11-Jul
12-Jul	3	9.73	1.00	4,311.13	1	1.50	0.99	658.55	4	5.62	1.00	2446.78	12-Jul
13-Jul	2	3.20	1.00	4,314.33	1	1.46	1.00	660.01	3	2.33	1.00	2449.11	13-Jul
14-Jul	1	1.67	1.00	4,316.00	2	3.08	1.00	663.09	3	2.38	1.00	2451.48	14-Jul
15-Jul	0	0.00	1.00	4,316.00	0	0.00	1.00	663.09	0	0.00	1.00	2451.48	15-Jul
	2,137			4,316.00	266			663.09	2,447			2451.48	

[a] The box within the column indicates the first to the third quartile of the cumulative index. The median date of the cumulative index is also highlighted.

-continued-

Appendix B14.–Page 2 of 2.

Data Year 2003

	Summer Chum Salmon in 5.5" Drift Gillnet												
	Big Eddy Drift				Middle Mouth Drift				Big Eddy and Middle Mouth Combined				
Date	Daily Catch	Daily Index	Prop.	Cumulative Index	Daily Catch	Daily Index	Prop.	Cumulative Index	Daily Catch	Daily Index	Prop.	Cumulative Index	Date
26-May													26-May
27-May													27-May
28-May	0	0.00	0.00	0.00					0	0.00	0.00	0.00	28-May
29-May	0	0.00	0.00	0.00					0	0.00	0.00	0.00	29-May
30-May	2	2.93	0.00	2.93					2	1.47	0.00	1.47	30-May
31-May	0	0.00	0.00	2.93	0	0.00	0.00	0.00	0	0.00	0.00	0.00	31-May
1-Jun	0	0.00	0.00	2.93	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1-Jun
2-Jun	2	3.38	0.00	6.31	1	1.58	0.00	1.58	3	2.48	0.00	2.48	2-Jun
3-Jun	1	1.62	0.00	7.93	2	3.08	0.01	4.66	3	2.35	0.00	2.35	3-Jun
4-Jun	0	0.00	0.00	7.93	1	1.62	0.01	6.28	1	0.81	0.00	0.81	4-Jun
5-Jun	6	8.53	0.01	16.46	0	0.00	0.01	6.28	6	4.27	0.00	4.27	5-Jun
6-Jun	6	9.05	0.01	25.51	4	5.74	0.02	12.02	10	7.40	0.00	7.40	6-Jun
7-Jun	1	1.54	0.01	27.05	1	1.58	0.02	13.60	2	1.56	0.00	1.56	7-Jun
8-Jun	4	6.26	0.01	33.31	1	1.58	0.02	15.18	5	3.92	0.00	3.92	8-Jun
9-Jun	0	0.00	0.01	33.31	0	0.00	0.02	15.18	0	0.00	0.00	3.92	9-Jun
10-Jun	0	0.00	0.01	33.31	2	2.93	0.03	18.11	2	1.47	0.00	5.39	10-Jun
11-Jun	18	25.17	0.02	58.48	0	0.00	0.03	18	18	12.59	0.01	17.97	11-Jun
12-Jun	223	455.89	0.19	514.37	3	4.32	0.03	22.43	226	230.11	0.15	248.08	12-Jun
13-Jun	60	199.49	0.27	713.86	17	23.04	0.06	45.47	77	111.27	0.22	359.34	13-Jun
14-Jun	74	99.08	0.31	812.94	1	1.54	0.07	47.01	75	50.31	0.25	409.65	14-Jun
15-Jun	55	83.51	0.34	896.45	2	6.08	0.07	53.09	57	44.80	0.27	454.45	15-Jun
16-Jun	41	120.00	0.38	1,016.45	1	3.08	0.08	56.17	42	61.54	0.31	515.99	16-Jun
17-Jun	37	57.56	0.41	1,074.01	2	5.11	0.09	61.28	39	31.34	0.33	547.32	17-Jun
18-Jun	0	0.00	0.41	1,074.01	1	1.43	0.09	62.71	1	0.72	0.33	548.04	18-Jun
19-Jun	44	66.27	0.43	1,140.28	12	15.89	0.11	78.60	56	41.08	0.36	589.12	19-Jun
20-Jun	111	158.47	0.49	1,298.75	3	4.71	0.12	83.31	114	81.59	0.41	670.71	20-Jun
21-Jun	38	110.86	0.53	1,409.61	5	15.33	0.14	98.64	43	63.10	0.44	733.80	21-Jun
22-Jun	1	1.50	0.53	1,411.11	18	25.11	0.17	123.75	19	13.31	0.45	747.11	22-Jun
23-Jun	1	1.71	0.53	1,412.82	2	3.24	0.18	126.99	3	2.48	0.45	749.58	23-Jun
24-Jun	190	248.83	0.63	1,661.65	17	25.81	0.22	152.80	207	137.32	0.54	886.90	24-Jun
25-Jun	16	24.48	0.64	1,686.13	0	0.00	0.22	152.80	16	12.24	0.54	899.14	25-Jun
26-Jun	24	66.75	0.66	1,752.88	2	6.08	0.22	158.88	26	36.42	0.57	935.56	26-Jun
27-Jun	19	51.82	0.68	1,804.70	1	1.50	0.23	160.38	20	26.66	0.58	962.22	27-Jun
28-Jun	79	62.46	0.71	1,867.16	3	9.33	0.24	169.71	82	35.90	0.60	998.11	28-Jun
29-Jun	18	86.32	0.74	1,953.48	63	80.17	0.35	249.88	81	83.25	0.65	1,081.36	29-Jun
30-Jun	181	272.78	0.84	2,226.26	19	46.16	0.42	296.04	200	159.47	0.75	1,240.83	30-Jun
1-Jul	1	1.62	0.84	2,227.88	25	35.50	0.47	331.54	26	18.56	0.76	1,259.39	1-Jul
2-Jul	48	130.23	0.89	2,358.11	6	17.56	0.49	349.10	54	73.90	0.81	1,333.28	2-Jul
3-Jul	14	40.00	0.91	2,398.11	18	25.85	0.53	374.95	32	32.93	0.83	1,366.21	3-Jul
4-Jul	13	16.58	0.91	2,414.69	6	17.74	0.55	392.69	19	17.16	0.84	1,383.37	4-Jul
5-Jul	5	8.44	0.92	2,423.13	73	93.44	0.69	486.13	78	50.94	0.87	1,434.31	5-Jul
6-Jul	3	4.58	0.92	2,427.71	5	7.66	0.70	493.79	8	6.12	0.87	1,440.43	6-Jul
7-Jul	0	0.00	0.92	2,427.71	0	0.00	0.70	493.79	0	0.00	0.87	1,440.43	7-Jul
8-Jul	0	0.00	0.92	2,427.71	3	9.08	0.71	502.87	3	4.54	0.87	1,444.97	8-Jul
9-Jul	12	18.49	0.93	2,446.20	32	43.41	0.77	546.28	44	30.95	0.89	1,475.92	9-Jul
10-Jul	80	125.39	0.97	2,571.59	2	2.93	0.77	549.21	82	64.16	0.93	1,540.08	10-Jul
11-Jul	19	25.12	0.98	2,596.71	87	107.69	0.93	656.90	106	66.41	0.97	1,606.48	11-Jul
12-Jul	0	0.00	0.98	2,596.71	17	25.67	0.96	682.57	17	12.84	0.98	1,619.32	12-Jul
13-Jul	2	3.00	0.98	2,599.71	3	4.87	0.97	687.44	5	3.94	0.98	1,623.25	13-Jul
14-Jul	28	40.38	1.00	2,640.09	6	9.31	0.98	696.75	34	24.85	1.00	1,648.10	14-Jul
15-Jul	2	2.86	1.00	2,642.95	4	12.63	1.00	709.38	6	7.75	1.00	1,655.84	15-Jul
	1,479			2642.95	471			709.38	1,950			1,655.84	

[a] The box within the column indicates the first to the third quartile of the cumulative index. The median date of the cumulative index is also highlighted.

Appendix B15.–Fall chum and coho salmon daily and cumulative catch-per-unit-effort (CPUE), index, cooperative drift gillnet (6") test fishery, Big Eddy and Middle Mouth sites combined, Lower Yukon River, 2002-2004.[a]

Data Year 2002

	Fall Chum Salmon						Coho Salmon				
	Historical Median Cumulative	2002					Historical Median Cumulative	2002			
Date	Proportion[b]	Daily Catch	Daily Index	Proportion	Cumulative Index	Date	Proportion[b]	Daily Catch	Daily Index	Proportion	Cumulative Index
16-Jul	0.01	1	0.79	0.00	0.79	16-Jul	0.00	0	0.00	0.00	0.00
17-Jul	0.04	19	11.03	0.01	11.82	17-Jul	0.00	0	0.00	0.00	0.00
18-Jul	0.06	0	0.00	0.01	11.82	18-Jul	0.00	0	0.00	0.00	0.00
19-Jul	0.09	4	3.01	0.02	14.82	19-Jul	0.00	0	0.00	0.00	0.00
20-Jul	0.11	0	0.00	0.02	14.82	20-Jul	0.00	0	0.00	0.00	0.00
21-Jul	0.13	1	0.73	0.02	15.55	21-Jul	0.00	0	0.00	0.00	0.00
22-Jul	0.15	0	0.00	0.02	15.55	22-Jul	0.00	0	0.00	0.00	0.00
23-Jul	0.17	0	0.00	0.02	15.55	23-Jul	0.00	0	0.00	0.00	0.00
24-Jul	0.19	0	0.00	0.02	15.55	24-Jul	0.00	0	0.00	0.00	0.00
25-Jul	0.23	81	54.30	0.09	69.85	25-Jul	0.00	0	0.00	0.00	0.00
26-Jul	0.25	3	3.27	0.09	73.12	26-Jul	0.00	0	0.00	0.00	0.00
27-Jul	0.30	12	9.29	0.10	82.41	27-Jul	0.00	0	0.00	0.00	0.00
28-Jul	0.32	45	35.28	0.14	117.69	28-Jul	0.00	0	0.00	0.00	0.00
29-Jul	0.34	50	32.18	0.18	149.86	29-Jul	0.00	0	0.00	0.00	0.00
30-Jul	0.35	2	1.54	0.19	151.40	30-Jul	0.00	0	0.00	0.00	0.00
31-Jul	0.37	0	0.00	0.19	151.40	31-Jul	0.01	0	0.00	0.00	0.00
1-Aug	0.38	23	15.57	0.20	166.97	1-Aug	0.01	3	2.04	0.01	2.04
2-Aug	0.39	2	1.54	0.21	168.51	2-Aug	0.01	0	0.00	0.01	2.04
3-Aug	0.41	8	5.84	0.21	174.35	3-Aug	0.02	3	2.20	0.01	4.24
4-Aug	0.45	1	0.77	0.21	175.12	4-Aug	0.02	0	0.00	0.01	4.24
5-Aug	0.49	1	0.79	0.22	175.91	5-Aug	0.03	1	0.72	0.01	4.95
6-Aug	0.53	0	0.00	0.22	175.91	6-Aug	0.04	0	0.00	0.01	4.95
7-Aug	0.55	27	18.83	0.24	194.74	7-Aug	0.05	8	5.53	0.03	10.48
8-Aug	0.58	25	16.55	0.26	211.28	8-Aug	0.07	8	5.18	0.04	15.66
9-Aug	0.62	132	95.72	0.38	307.00	9-Aug	0.10	22	16.70	0.08	32.35
10-Aug	0.66	78	49.88	0.44	356.88	10-Aug	0.13	15	9.56	0.11	41.91
11-Aug	0.69	17	19.38	0.46	376.25	11-Aug	0.14	30	26.15	0.18	68.06
12-Aug	0.70	31	23.14	0.49	399.39	12-Aug	0.19	20	15.58	0.22	83.63
13-Aug	0.72	21	20.94	0.51	420.33	13-Aug	0.23	20	21.92	0.28	105.55
14-Aug	0.74	9	7.08	0.52	427.40	14-Aug	0.33	7	5.34	0.29	110.89
15-Aug	0.77	26	18.65	0.55	446.05	15-Aug	0.39	28	20.02	0.34	130.90
16-Aug	0.82	273	284.72	0.89	730.76	16-Aug	0.43	74	102.86	0.61	233.76
17-Aug	0.83	57	38.44	0.94	769.20	17-Aug	0.47	63	45.98	0.73	279.74
18-Aug	0.85	16	12.06	0.96	781.26	18-Aug	0.56	41	34.05	0.82	313.79
19-Aug	0.87	9	6.68	0.96	787.93	19-Aug	0.60	30	22.75	0.88	336.54
20-Aug	0.89	3	2.85	0.97	790.78	20-Aug	0.65	10	10.59	0.91	347.12
21-Aug	0.91	6	5.66	0.97	796.44	21-Aug	0.69	5	3.81	0.92	350.93
22-Aug	0.93	17	13.04	0.99	809.48	22-Aug	0.74	24	17.87	0.97	368.80
23-Aug	0.94	3	3.95	1.00	813.43	23-Aug	0.79	4	3.04	0.97	371.84
24-Aug	0.96	0	0.00	1.00	813.43	24-Aug	0.86	3	3.12	0.98	374.96
25-Aug	0.97	0	0.00	1.00	813.43	25-Aug	0.89	1	0.77	0.98	375.73
26-Aug	0.98	0	0.00	1.00	813.43	26-Aug	0.91	1	1.03	0.99	376.76
27-Aug	0.99	1	0.79	1.00	814.22	27-Aug	0.96	1	0.79	0.99	377.55
28-Aug	1.00	4	3.08[c]	1.00	817.30	28-Aug	1.00	3	4.62[c]	1.00	382.16
29-Aug	1.00					29-Aug	1.00				
30-Aug	1.00					30-Aug	1.00				
31-Aug	1.00					31-Aug	1.00				
1-Sep	1.00					1-Sep	1.00				
2-Sep	1.00					2-Sep	1.00				
3-Sep	1.00					3-Sep	1.00				
4-Sep	1.00					4-Sep	1.00				
5-Sep	1.00					5-Sep	1.00				
6-Sep	1.00					6-Sep	1.00				
7-Sep	1.00					7-Sep	1.00				
8-Sep						8-Sep					
9-Sep						9-Sep					
		1008						425			

[a] As with any new project, in the early years of operation the data will have a minimal role in salmon management decisions. There is limited or no historic information to verify if assessment levels are high, low, or normal. The utility of these projects will grow with each successful year of operation.

[b] Historical percent passage is based on the median from the set net test fishery 1980 to 1993 and 1995 to 2000. The box indicates the first to the third quartile of the cumulative catch-per-unit-effort (CPUE). The median date of the cumulative CPUE is also highlighted.

[c] Drifting finished for season.

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Appendix B15.–Page 2 of 3.

Data Year 2003

	Fall Chum Salmon						Coho Salmon				
	Historical						Historical				
	Median	2003					Median	2003			
	Cumulative	Daily	Daily		Cumulative		Cumulative	Daily	Daily		Cumulative
Date	Proportion [b]	Catch	Index	Proportion	Index	Date	Proportion [b]	Catch	Index	Proportion	Index
16-Jul	0.01	42	25.78	0.02	25.78	16-Jul	0.00	0	0.00	0.00	0.00
17-Jul	0.04	29	20.68	0.04	46.46	17-Jul	0.00	0	0.00	0.00	0.00
18-Jul	0.06	2	1.50	0.04	47.96	18-Jul	0.00	0	0.00	0.00	0.00
19-Jul	0.09	3	1.84	0.04	49.79	19-Jul	0.00	0	0.00	0.00	0.00
20-Jul	0.11	2	1.58	0.04	51.37	20-Jul	0.00	0	0.00	0.00	0.00
21-Jul	0.13	33	24.23	0.06	75.60	21-Jul	0.00	0	0.00	0.00	0.00
22-Jul	0.15	63	41.50	0.09	117.10	22-Jul	0.00	1	0.79	0.00	0.79
23-Jul	0.17	21	15.10	0.11	132.19	23-Jul	0.00	1	0.84	0.00	1.63
24-Jul	0.19	13	9.75	0.11	141.94	24-Jul	0.00	0	0.00	0.00	1.63
25-Jul	0.23	3	2.29	0.12	144.23	25-Jul	0.00	0	0.00	0.00	1.63
26-Jul	0.25	8	6.61	0.12	150.84	26-Jul	0.00	0	0.00	0.00	1.63
27-Jul	0.30	70	84.82	0.19	235.66	27-Jul	0.00	9	11.95	0.02	13.57
28-Jul	0.32	40	25.61	0.21	261.27	28-Jul	0.00	5	3.08	0.02	16.65
29-Jul	0.34	29	17.68	0.22	278.94	29-Jul	0.00	7	5.27	0.03	21.91
30-Jul	0.35	2	1.59	0.22	280.53	30-Jul	0.00	0	0.00	0.03	21.91
31-Jul	0.37	1	0.84	0.23	281.36	31-Jul	0.01	1	0.79	0.03	22.70
1-Aug	0.38	6	4.83	0.23	286.19	1-Aug	0.01	3	2.39	0.04	25.09
2-Aug	0.39	1	0.75	0.23	286.94	2-Aug	0.01	0	0.00	0.04	25.09
3-Aug	0.41	279	203.48	0.39	490.42	3-Aug	0.02	88	55.61	0.11	80.70
4-Aug	0.45	259	179.98	0.54	670.40	4-Aug	0.02	89	67.84	0.21	148.54
5-Aug	0.49	21	15.99	0.55	686.38	5-Aug	0.03	14	10.94	0.22	159.47
6-Aug	0.53	2	1.54	0.55	687.92	6-Aug	0.04	0	0.00	0.22	159.47
7-Aug	0.55	0	0.00	0.55	687.92	7-Aug	0.05	1	0.77	0.23	160.24
8-Aug	0.58	0	0.00	0.55	687.92	8-Aug	0.07	0	0.00	0.23	160.24
9-Aug	0.62	4	2.85	0.55	690.77	9-Aug	0.10	7	5.15	0.23	165.39
10-Aug	0.66	37	25.26	0.57	716.03	10-Aug	0.13	18	12.64	0.25	178.03
11-Aug	0.69	4	3.09	0.58	719.11	11-Aug	0.14	10	7.62	0.26	185.65
12-Aug	0.70	84	65.33	0.63	784.44	12-Aug	0.19	44	33.53	0.31	219.17
13-Aug	0.72	0	0.00	0.63	784.44	13-Aug	0.23	2	3.08	0.31	222.25
14-Aug	0.74	70	55.12	0.67	839.56	14-Aug	0.33	73	53.68	0.39	275.93
15-Aug	0.77	134	259.41	0.88	1,098.97	15-Aug	0.39	138	261.64	0.76	537.56
16-Aug	0.82	38	48.76	0.92	1,147.73	16-Aug	0.43	29	41.42	0.81	578.98
17-Aug	0.83	14	12.61	0.93	1,160.34	17-Aug	0.47	17	10.91	0.83	589.89
18-Aug	0.85	6	4.72	0.93	1,165.06	18-Aug	0.56	18	13.87	0.85	603.76
19-Aug	0.87	0	0.00	0.93	1,165.06	19-Aug	0.60	3	2.37	0.85	606.13
20-Aug	0.89	3	2.33	0.93	1,167.39	20-Aug	0.65	3	2.37	0.86	608.50
21-Aug	0.91	5	3.92	0.94	1,171.31	21-Aug	0.69	13	10.14	0.87	618.63
22-Aug	0.93	27	21.23	0.95	1,192.53	22-Aug	0.74	56	44.84	0.93	663.47
23-Aug	0.94	53	34.13	0.98	1,226.66	23-Aug	0.79	38	24.76	0.97	688.23
24-Aug	0.96	23	17.16	1.00	1,243.82	24-Aug	0.86	18	13.18	0.99	701.41
25-Aug	0.97	2	3.00	1.00	1,246.82	25-Aug	0.89	3	3.79	0.99	705.20
26-Aug	0.98	3	2.33	1.00	1,249.15	26-Aug	0.91	4	3.17	1.00	708.36
27-Aug	0.99	0	0.00	1.00	1,249.15	27-Aug	0.96	0	0.00	1.00	708.36
28-Aug	1.00	0	0.00 [c]	1.00	1,249.15	28-Aug	1.00	2 [c]	3.16	1.00	711.52
29-Aug	1.00					29-Aug	1.00				
30-Aug	1.00					30-Aug	1.00				
31-Aug	1.00					31-Aug	1.00				
1-Sep	1.00					1-Sep	1.00				
2-Sep	1.00					2-Sep	1.00				
3-Sep	1.00					3-Sep	1.00				
4-Sep	1.00					4-Sep	1.00				
5-Sep	1.00					5-Sep	1.00				
6-Sep	1.00					6-Sep	1.00				
7-Sep	1.00					7-Sep	1.00				
8-Sep						8-Sep					
9-Sep						9-Sep					
		1436						715			

[a] As with any new project, in the early years of operation the data will have a minimal role in salmon management decisions. There is limited or no historic information to verify if assessment levels are high, low, or normal. The utility of these projects will grow with each successful year of operation.

[b] Historical percent passage is based on the median from the set net test fishery 1980 to 1993 and 1995 to 2000. The box indicates the first to the third quartile of the cumulative catch-per-unit-effort (CPUE). The median date of the cumulative CPUE is also highlighted.

[c] Drifting finished for season.

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Appendix B15.–Page 3 of 3.

Data Year 2004

	Fall Chum Salmon						Coho Salmon					
	Historical		2004				Historical		2004			
Date	Median Cumulative Proportion [b]	Daily Catch	Daily Index	Proportion	Cumulative Index	Date	Median Cumulative Proportion [b]	Daily Catch	Daily Index	Proportion	Cumulative Index
16-Jul	0.01	0	0.00	0.00	0.00	16-Jul	0.00	0	0.00	0.00	0.00
17-Jul	0.04	0	0.00	0.00	0.00	17-Jul	0.00	0	0.00	0.00	0.00
18-Jul	0.06	1	0.72	0.00	0.72	18-Jul	0.00	0	0.00	0.00	0.00
19-Jul	0.09	47 [c]	48.07	0.06	48.79	19-Jul	0.00	0 [c]	0.00	0.00	0.00
20-Jul	0.11	13 [c]	15.96	0.09	64.74	20-Jul	0.00	0 [c]	0.00	0.00	0.00
21-Jul	0.13	26	19.89	0.11	84.63	21-Jul	0.00	0	0.00	0.00	0.00
22-Jul	0.15	7	5.28	0.12	89.90	22-Jul	0.00	0	0.00	0.00	0.00
23-Jul	0.17	2	1.60	0.12	91.50	23-Jul	0.00	0	0.00	0.00	0.00
24-Jul	0.19	1	0.77	0.12	92.27	24-Jul	0.00	0	0.00	0.00	0.00
25-Jul	0.23	1	0.75	0.12	93.02	25-Jul	0.00	0	0.00	0.00	0.00
26-Jul	0.25	7	5.11	0.13	98.13	26-Jul	0.00	1	0.72	0.00	0.72
27-Jul	0.30	2	1.55	0.13	99.68	27-Jul	0.00	0	0.00	0.00	0.72
28-Jul	0.32	0	0.00	0.13	99.68	28-Jul	0.00	0	0.00	0.00	0.72
29-Jul	0.34	1	0.73	0.13	100.41	29-Jul	0.00	0	0.00	0.00	0.72
30-Jul	0.35	0	0.00	0.13	100.41	30-Jul	0.00	0	0.00	0.00	0.72
31-Jul	0.37	10	6.89	0.14	107.29	31-Jul	0.01	0	0.00	0.00	0.72
1-Aug	0.38	219	146.73	0.34	254.02	1-Aug	0.01	2	1.17	0.01	1.88
2-Aug	0.39	94	74.50	0.44	328.52	2-Aug	0.01	8	8.00	0.03	9.88
3-Aug	0.41	12 [c]	18.10	0.46	346.62	3-Aug	0.02	4 [c]	6.67	0.06	16.55
4-Aug	0.45	16	12.06	0.48	358.68	4-Aug	0.02	0	0.00	0.06	16.55
5-Aug	0.49	3	2.22	0.48	360.89	5-Aug	0.03	1	0.77	0.06	17.32
6-Aug	0.53	5	3.79	0.48	364.68	6-Aug	0.04	0	0.00	0.06	17.32
7-Aug	0.55	3	2.27	0.49	366.95	7-Aug	0.05	0	0.00	0.06	17.32
8-Aug	0.58	93	59.62	0.57	426.57	8-Aug	0.07	7	4.68	0.07	21.99
9-Aug	0.62	75	51.31	0.63	477.88	9-Aug	0.10	30	19.97	0.14	41.96
10-Aug	0.66	23	16.64	0.66	494.52	10-Aug	0.13	20	14.38	0.19	56.34
11-Aug	0.69	2	1.54	0.66	496.06	11-Aug	0.14	7	5.39	0.21	61.72
12-Aug	0.70	0	0.00	0.66	496.06	12-Aug	0.19	2	1.39	0.21	63.11
13-Aug	0.72	3	2.52	0.66	498.58	13-Aug	0.23	5	4.02	0.23	67.13
14-Aug	0.74	32	24.61	0.69	523.19	14-Aug	0.33	32	25.69	0.31	92.82
15-Aug	0.77	14	10.44	0.71	533.63	15-Aug	0.39	7	5.26	0.33	98.07
16-Aug	0.82	0	0.00	0.71	533.63	16-Aug	0.43	3	2.40	0.34	100.47
17-Aug	0.83	3	2.12	0.71	535.75	17-Aug	0.47	9	6.61	0.36	107.07
18-Aug	0.85	1	1.47	0.71	537.21	18-Aug	0.56	6	9.01	0.39	116.08
19-Aug	0.87	0	0.00	0.71	537.21	19-Aug	0.60	3	2.36	0.40	118.44
20-Aug	0.89	113	119.04	0.87	656.25	20-Aug	0.65	26	18.72	0.46	137.16
21-Aug	0.91	11 [c]	19.60	0.90	675.85	21-Aug	0.69	27 [c]	58.75	0.66	195.91
22-Aug	0.93	1	0.77	0.90	676.62	22-Aug	0.74	2	1.52	0.66	197.43
23-Aug	0.94	0	0.00	0.90	676.62	23-Aug	0.79	2	1.48	0.67	198.91
24-Aug	0.96	8	5.81	0.90	682.43	24-Aug	0.86	2	1.50	0.67	200.41
25-Aug	0.97	7	10.32	0.92	692.75	25-Aug	0.89	8	11.75	0.71	212.15
26-Aug	0.98	25	17.81	0.94	710.56	26-Aug	0.91	16	11.29	0.75	223.44
27-Aug	0.99	55 [d]	44.26	1.00	754.81	27-Aug	0.96	102 [d]	73.83	1.00	297.27
28-Aug	1.00					28-Aug	1.00				
29-Aug	1.00					29-Aug	1.00				
30-Aug	1.00					30-Aug	1.00				
31-Aug	1.00					31-Aug	1.00				
1-Sep	1.00					1-Sep	1.00				
2-Sep	1.00					2-Sep	1.00				
3-Sep	1.00					3-Sep	1.00				
4-Sep	1.00					4-Sep	1.00				
5-Sep	1.00					5-Sep	1.00				
6-Sep	1.00					6-Sep	1.00				
7-Sep	1.00					7-Sep	1.00				
8-Sep						8-Sep					
9-Sep						9-Sep					
		936						332			

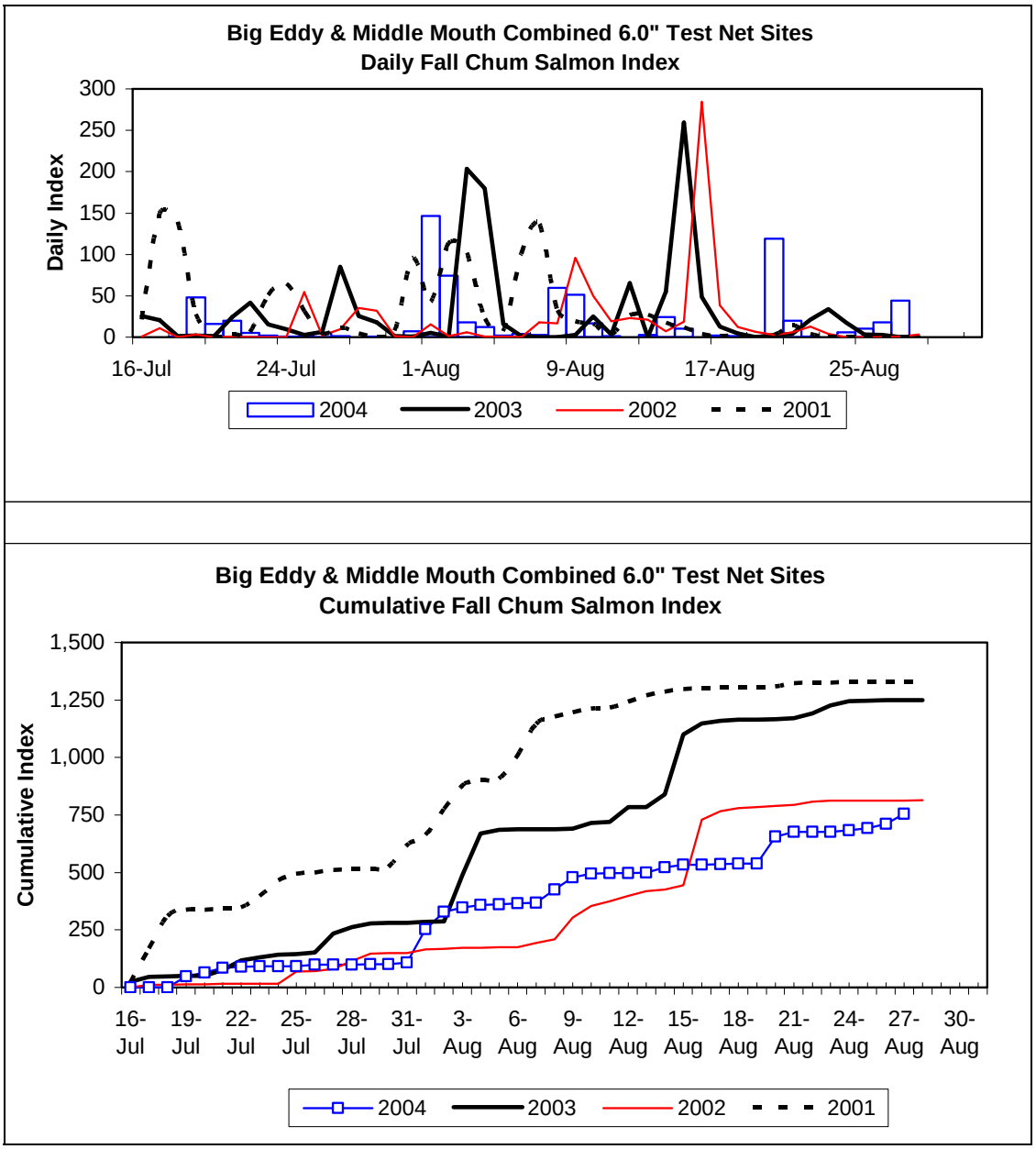
[a] As with any new project, in the early years of operation the data will have a minimal role in salmon management decisions. There is limited or no historic information to verify if assessment levels are high, low, or normal. The utility of these projects will grow with each successful year of operation.

[b] Historical percent passage is based on the median from the set net test fishery 1980 to 1993 and 1995 to 2000. The box indicates the first to the third quartile of the cumulative catch-per-unit-effort (CPUE). The median date of the cumulative CPUE is also highlighted.

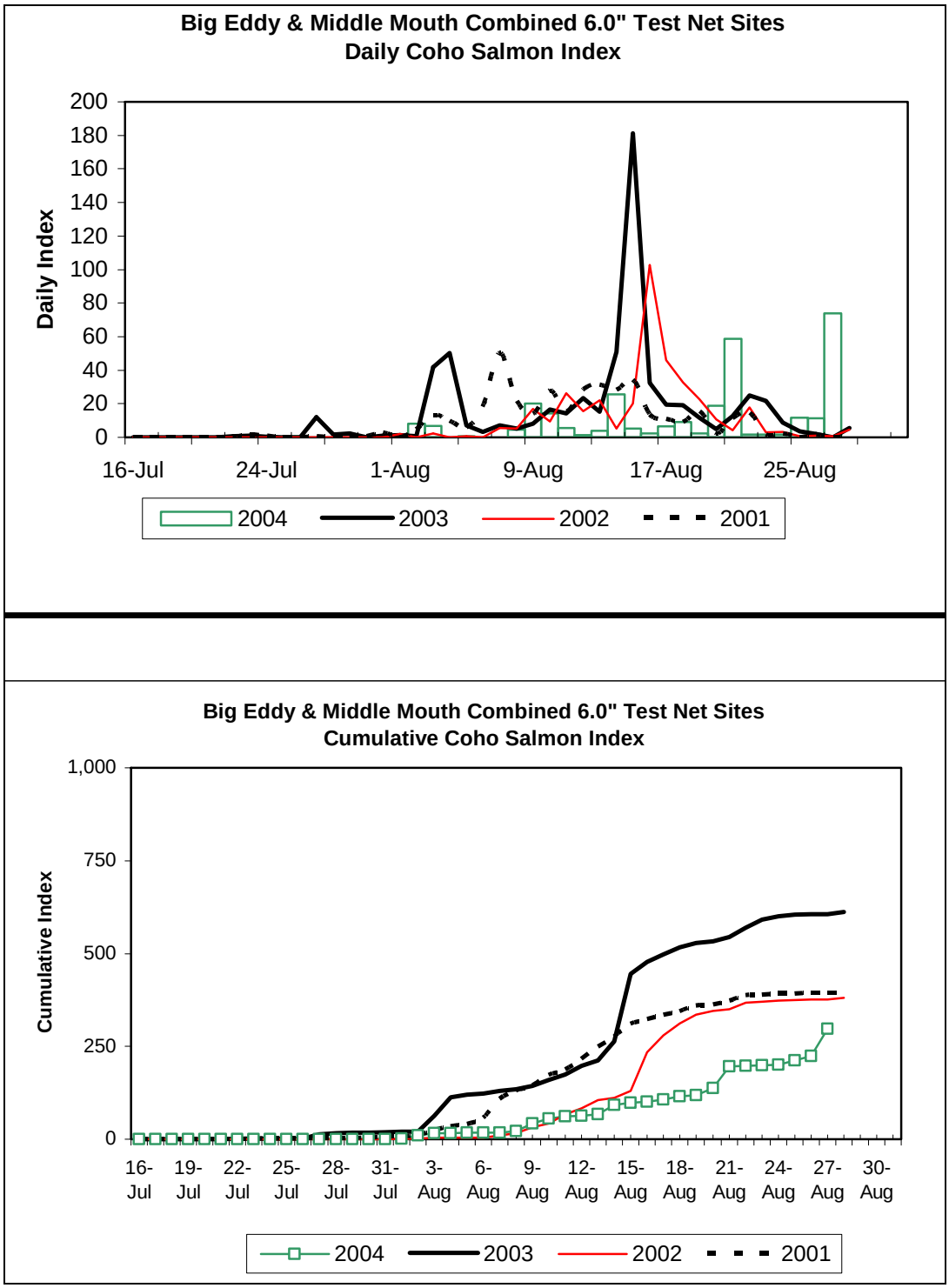
[c] Only one high tide drift for this day, either for Big Eddy or Middle Mouth sites.

[d] Drifting done for season.

Appendix B16.–Fall chum salmon daily and cumulative catch-per-unit-effort (CPUE).



Appendix B17.–Coho salmon daily and cumulative catch-per-unit-effort (CPUE) index, Big Eddy and Middle Mouth sites combined, cooperative drift net test fishery, Lower Yukon River, 2001 to 2003 compared to 2004.



APPENDIX C

Appendix C1.–Commercial salmon sales and estimated harvest by statistical area, all gears combined, Upper Yukon Area, 2002–2004.[a]

Data Year 2002

BEACH SEINE, PURSE SEINE, SET GILLNET AND FISH WHEEL COMBINED

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0	0	0	0	0	0	0						
334-43	0	0	0	0	0	0	0						
334-44	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-45	0	0	0	0	0	0	0						
334-46	0	0	0	0	0	0	0						
334-47			NO COMMERCIAL FISHING										
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING										
334-52	8	307	0	307	0	0	0						
334-53	8	257	0	257	6	0	6			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	2	207	0	207	0	0	0						
Subtotal District 5	18	771	0	771	6	0	6	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0						
334-62	4	732	896	962	2,711	16	2,731			NO COMMERCIAL FISHING			
334-63	2	104	0	104	487	0	487						
Subtotal District 6	6	836	896	1,066	3,198	16	3,218	0	0	0	0	0	0
Total Upper Yukon Area	24	1,607	896	1,837	3,204	16	3,224			NO COMMERCIAL FISHING			

-continued-

Appendix C1.–Page 2 of 3.

Data Year 2003

BEACH SEINE, PURSE SEINE, SET GILLNET AND FISH WHEEL COMBINED

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0	0	0	0	0	0	0	0	0	0	0	0	0
334-43	3	562	0	562	62	0	62	1,315	0	1,315	367	0	367
334-44													
334-45						NO COMMERCIAL FISHING							
334-46													
334-47													
Subtotal District 4	3	562	0	562	62	0	62	1,315	0	1,315	367	0	367
334-51			NO COMMERCIAL FISHING										
334-52	13	711	0	711	0	0	0						
334-53	5	197	0	197	0	0	0			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	1	226	0	226	0	0	0						
Subtotal District 5	16	1,134	0	1,134	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	6	1,445	0	1,445	3,953	0	3,953	3,778	0	3,778	14,984	0	14,984
334-63	2	368	0	368	508	0	508	317	0	317	135	0	135
Subtotal District 6	8	1,813	0	1,813	4,461	0	4,461	4,095	0	4,095	15,119	0	15,119
Total Upper Yukon Area	27	3,509	0	3,509	4,523	0	4,523	5,410	0	5,410	15,486	0	15,486

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Appendix C1.–Page 3 of 3.

Data Year 2004

BEACH SEINE, PURSE SEINE, SET GILLNET AND FISH WHEEL COMBINED

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42													
334-43													
334-44						NO COMMERCIAL FISHING							
334-45													
334-46													
334-47													
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING					0	0	0	0	0	0
334-52	9	1,317	0	1,317	3	0	3						
334-53	6	229	0	229	22	0	22			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	0	0	0	0	0	0	0						
Subtotal District 5	14	1,546	0	1,546	25	0	25	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	7	1,542	0	1,542	2,447	0	2,447	3,450	0	3,450	18,649	0	18,649
334-63	2	515	0	515	4,163	0	4,163	0	0	0	0	0	0
Subtotal District 6	9	2,057	0	2,057	6,610	0	6,610	3,450	0	3,450	18,649	0	18,649
Total Upper Yukon Area	23	3,603	0	3,603	6,635	0	6,635	3,450	0	3,450	18,649	0	18,649

[a] The estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

[b] The Number of Fishermen is the unique number of permits fished i.e., some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

Appendix C2.–Commercial set gillnet salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2002–2004.[a]

Data Year 2002

SET GILLNET

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0	0	0	0	0	0	0						
334-43	0	0	0	0	0	0	0						
334-44	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-45	0	0	0	0	0	0	0						
334-46	0	0	0	0	0	0	0						
334-47			NO COMMERCIAL FISHING										
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING										
334-52	2	126	0	126	0	0	0						
334-53	8	257	0	257	6	0	6			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	1	14	0	14	0	0	0						
Subtotal District 5	11	397	0	397	6	0	6	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0						
334-62	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-63	1	77	0	77	82	0	82						
Subtotal District 6	1	77	0	77	82	0	82	0	0	0	0	0	0
Total Upper Yukon Area	12	474	0	474	88	0	88	0	0	0	0	0	0

-continued-

Appendix C2.–Page 2 of 3.

Data Year 2003

SET GILLNET

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0	0	0	0	0	0	0	0	0	0	0	0	0
334-43	0	0	0	0	0	0	0	0	0	0	0	0	0
334-44													
334-45						NO COMMERCIAL FISHING							
334-46													
334-47													
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING										
334-52	5	263	0	263	0	0	0						
334-53	4	173	0	173	0	0	0			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	0	0	0	0	0	0	0						
Subtotal District 5	7	436	0	436	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	0	0	0	0	0	0	0	0	0	0	0	0	0
334-63	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 6	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Upper Yukon Area	7	436	0	436	0	0	0	0	0	0	0	0	0

-continued-

Appendix C2.–Page 3 of 3.

Data Year 2004

SET GILLNET

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42													
334-43													
334-44						NO COMMERCIAL FISHING							
334-45													
334-46													
334-47													
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING					0	0	0	0	0	0
334-52	3	372	0	372	0	0	0						
334-53	6	229	0	229	22	0	22			NO COMMERCIAL FISHING			
334-54			NO COMMERCIAL FISHING										
334-55													
Subtotal District 5	8	601	0	601	22	0	22	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-62	1	0	0	0	0	0	0	36	0	36	137	0	137
334-63	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
Subtotal District 6	1	0	0	0	0	0	0	36	0	36	137	0	137
Total Upper Yukon Area	9	601	0	601	22	0	22	36	0	36	137	0	137

[a] The estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

[b] The Number of Fishermen is the unique number of permits fished i.e., some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

Appendix C3.–Commercial fish wheel salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2002–2004.[a]

Data Year 2002

FISH WHEEL

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0	0	0	0	0	0	0						
334-43	0	0	0	0	0	0	0						
334-44	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-45	0	0	0	0	0	0	0						
334-46	0	0	0	0	0	0	0						
334-47			NO COMMERCIAL FISHING										
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING										
334-52	6	181	0	181	0	0	0						
334-53	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	1	193	0	193	0	0	0						
Subtotal District 5	7	374	0	374	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0						
334-62	4	732	897	962	2,711	16	2,731						
334-63	1	27	0	27	405	0	405			NO COMMERCIAL FISHING			
Subtotal District 6	5	759	897	989	3,116	16	3,136	0	0	0	0	0	0
Total Upper Yukon Area	12	1,133	897	1,363	3,116	16	3,136	0	0	0	0	0	0

-continued-

Appendix C3.–Page 2 of 3.

Data Year 2003

FISH WHEEL

Statistical Area	Number of Fishermen [b]	Chinook Number	Chinook Roe	Chinook Estimated Harvest	Summer Chum Number	Summer Chum Roe	Summer Chum Estimated Harvest	Fall Chum Number	Fall Chum Roe	Fall Chum Estimated Harvest	Coho Number	Coho Roe	Coho Estimated Harvest
334-42	0	0	0	0	0	0	0	0	0	0	0	0	0
334-43	3	562	0	562	62	0	62	1,315	0	1,315	367	0	367
334-44													
334-45						NO COMMERCIAL FISHING							
334-46													
334-47													
Subtotal District 4	3	562	0	562	62	0	62	1,315	0	1,315	367	0	367
334-51		NO COMMERCIAL FISHING											
334-52	8	448	0	448	0	0	0						
334-53	1	24	0	24	0	0	0			NO COMMERCIAL FISHING			
334-54	0	0	0	0	0	0	0						
334-55	1	226	0	226	0	0	0						
Subtotal District 5	9	698	0	698	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	6	1,445	0	1,445	3,953	0	3,953	3,778	0	3,778	14,984	0	14,984
334-63	2	368	0	368	508	0	508	317	0	317	135	0	135
Subtotal District 6	8	1,813	0	1,813	4,461	0	4,461	4,095	0	4,095	15,119	0	15,119
Total Upper Yukon Area	20	3,073	0	3,073	4,523	0	4,523	5,410	0	5,410	15,486	0	15,486

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Appendix C3.–Page 3 of 3.

Data Year 2004

FISH WHEEL

Statistical Area	Number of Fishermen [b]	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42													
334-43													
334-44						NO COMMERCIAL FISHING							
334-45													
334-46													
334-47													
Subtotal District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51			NO COMMERCIAL FISHING					0	0	0	0	0	0
334-52	6	945	0	945	3	0	3						
334-53	0	0	0	0	0	0	0			NO COMMERCIAL FISHING			
334-54			NO COMMERCIAL FISHING										
334-55													
Subtotal District 5	6	945	0	945	3	0	3	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	6	1,542	0	1,542	2,447	0	2,447	3,414	0	3,414	18,512	0	18,512
334-63	2	515	0	515	4,163	0	4,163	0	0	0	0	0	0
Subtotal District 6	8	2,057	0	2,057	6,610	0	6,610	3,414	0	3,414	18,512	0	18,512
Total Upper Yukon Area	14	3,002	0	3,002	6,613	0	6,613	3,414	0	3,414	18,512	0	18,512

[a] The estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

[b] The Number of Fishermen is the unique number of permits fished i.e., some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

Appendix C4.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974–2004.

Year	334-41[d]			334-44			334-45			334-46			**Total**		
	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1975	15	-	15	-	-	-	-	-	-	-	-	-	15	-	15
1976	44	-	44	-	-	-	-	-	-	-	-	-	44	-	44
1977	317	-	317	-	-	-	-	-	-	-	-	-	317	-	317
1978	183	-	183	-	-	-	-	-	-	-	-		183	-	183
1979	785	-	785	-	-	-	-	-	-	-	-	-	785	-	785
1980	352	-	352	-	-	-	-	-	-	-	-	-	352	-	352
1981	106	-	106	-	-	-	-	-	-	-	-	-	106	-	106
1982	78	-	78	-	-	-	-	-	-	-	-	-	78	-	78
1983	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1984	2	-	2	-	-	-	-	-	-	-	-	-	2	-	2
1985	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1986	11	-	11	-	-	-	-	-	-	-	-	-	11	-	11
1987	91	-	91	-	-	-	-	-	-	-	-	-	91	-	91
1988	19	-	19	-	-	-	-	-	-	-	-	-	19	-	19
1989	59	-	59	-	-	-	-	-	-	-	-	-	59	-	59
1990 [d]				0	8	2	0	0	0	52	0	52	52	8	54
1991				0	67	35	0	7	4	69	88	114	69	162	153
1992				0	0	0	0	15	9	0	71	41	0	86	50
1993				0	0	0	0	0	0	0	0	0	0	0	0
1994				0	0	0	0	0	0	0	14	7	0	14	7
1995				0	0	0	0	0	0	0	0	0	0	0	0
1996				0	0	0	0	0	0	0	0	0	0	0	0
1997				0	0	0	0	0	0	0	0	0	0	0	0
1998				0	0	0	0	0	0	0	0	0	0	0	0
1999				0	0	0	0	0	0	0	0	0	0	0	0
2000				0	0	0	0	0	0	0	0	0	0	0	0
2001 [f]				0	0	0	0	0	0	0	0	0	0	0	0
2002				0	0	0	0	0	0	0	0	0	0	0	0
2003				0	0	0	0	0	0	0	0	0	0	0	0
2004				0	0	0	0	0	0	0	0	0	0	0	0
1999-2003 Average				0	0	0	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.
[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.
[d] In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.
[f] No commercial fishing in 2001.

Appendix C5.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974–2004.

	334-42 [d]			334-43			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	685	-	685	-	-	-	685	-	685
1975	374	-	374	-	-	-	374	-	374
1976	365	-	365	-	-	-	365	-	365
1977	668	-	668	-	-	-	668	-	668
1978	425	-	425	-	-	-	425	-	425
1979 [d]	370	-	370	834	-	834	1,204	-	1,204
1980	549	-	549	620	-	620	1,169	-	1,169
1981	867	-	867	374	-	374	1,241	-	1,241
1982	497	-	497	512	-	512	1,009	-	1,009
1983	382	-	382	219	-	219	601	-	601
1984	272	-	272	687	-	687	959	-	959
1985	318	-	318	346	-	346	664	-	664
1986	100	-	100	391	-	391	491	-	491
1987	999	-	999	434	-	434	1,433	-	1,433
1988	1,599	-	1,599	1,541	-	1,541	3,140	-	3,140
1989	696	-	696	2,035	-	2,035	2,731	-	2,731
1990	784	0	784	2,700	0	2,700	3,484	0	3,484
1991	916	386	1,113	1,461	1,674	2,316	2,377	2,060	3,429
1992	623	482	818	1,028	1,705	1,526	1,651	2,187	2,344
1993	190	279	269	1,159	422	1,308	1,349	701	1,577
1994	389	374	539	1,827	176	1,897	2,216	550	2,436
1995	262	30	262	0	596	237	262	626	499
1996	11	202	103	34	0	34	45	202	137
1997	326	14	333	1,124	0	1,124	1,450	14	1,457
1998	0	0	0	0	0	0	0	0	0
1999	233	0	233	1,204	0	1,204	1,437	0	1,437
2000	0	0	0	0	0	0	0	0	0
2001 [f]	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	562	0	562	562	0	562
2004	0	0	0	0	0	0	0	0	0
1999-2003 Average	47	0	47	353	0	353	400	0	400

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

[d] In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

[f] No commercial fishing in 2001.

Appendix C6.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974–2004.

Year	334-51			334-52			334-53			Total		
	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	2,284	-	2,284	379	-	379	-	-	-	2,663	-	2,663
1975	2,602	-	2,602	270	-	270	-	-	-	2,872	-	2,872
1976	2,843	-	2,843	308	-	308	-	-	-	3,151	-	3,151
1977	4,013	-	4,013	149	-	149	-	-	-	4,162	-	4,162
1978	2,838	-	2,838	241	-	241	-	-	-	3,079	-	3,079
1979	3,389	-	3,389	0	-	0	-	-	-	3,389	-	3,389
1980	4,554	-	4,554	337	-	337	-	-	-	4,891	-	4,891
1981 [d]	97	-	97	3,051	-	3,051	2,477	-	2,477	5,625	-	5,625
1982	61	-	61	2,352	-	2,352	2,277	-	2,277	4,690	-	4,690
1983	0	-	0	632	-	632	2,738	-	2,738	3,370	-	3,370
1984	128	-	128	1,589	-	1,589	1,568	-	1,568	3,285	-	3,285
1985	0	-	0	1,142	-	1,142	1,842	-	1,842	2,984	-	2,984
1986	0	-	0	1,552	-	1,552	875	-	875	2,427	-	2,427
1987	0	-	0	1,183	-	1,183	1,356	-	1,356	2,539	-	2,539
1988	0	-	0	1,498	-	1,498	1,477	-	1,477	2,975	-	2,975
1989	31	-	31	1,411	-	1,411	1,459	-	1,459	2,901	-	2,901
1990	0	0	0	1,630	47	1,642	1,180	0	1,180	2,810	47	2,822
1991	56	0	56	1,724	62	1,740	1,476	0	1,476	3,256	62	3,272
1992	0	0	0	1,276	7	1,279	2,119	0	2,119	3,395	7	3,398
1993	0	0	0	1,124	0	1,124	1,484	0	1,484	2,608	0	2,608
1994	0	0	0	1,648	10	1,653	1,641	0	1,641	3,289	10	3,294
1995	0	0	0	1,519	0	1,519	1,234	0	1,234	2,753	0	2,753
1996	0	0	0	898	455	1,216	1,151	63	1,183	2,049	518	2,399
1997	0	0	0	1,314	0	1,314	1,757	0	1,757	3,071	0	3,071
1998	0	0	0	279	0	279	196	0	196	475	0	475
1999	0	0	0	1,468	0	1,468	721	0	721	2,189	0	2,189
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001 [f]	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	307	0	307	257	0	257	564	0	564
2003	0	0	0	711	0	711	197	0	197	908	0	908
2004	0	0	0	1,317	0	1,317	229	0	229	1,546	0	1,546
1999-2003 Average	0	0	0	497	0	497	235	0	235	732	0	732

[a] Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 653 Chinook salmon.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include 2 additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

[f] No commercial fishing in 2001.

Appendix C7.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974 to 2004.

	334-54			334-55			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 [d]	749	-	749	-	-	-	749	-	749
1982	695	-	695	-	-	-	695	-	695
1983	236	-	236	-	-	-	236	-	236
1984	384	-	384	-	-	-	384	-	384
1985	434	-	434	-	-	-	434	-	434
1986	306	-	306	-	-	-	306	-	306
1987	566	-	566	-	-	-	566	-	566
1988	461	-	461	-	-	-	461	-	461
1989	385	-	385	-	-	-	385	-	385
1990 [f]	194	0	194	349	0	349	543	0	543
1991	192	0	192	362	0	362	554	0	554
1992	0	0	0	457	0	457	457	0	457
1993	0	0	0	400	0	400	400	0	400
1994	0	0	0	450	0	450	450	0	450
1995	0	0	0	489	0	489	489	0	489
1996	58	0	58	390	0	390	448	0	448
1997	262	0	262	345	0	345	607	0	607
1998	11	0	11	31	0	31	42	0	42
1999	81	0	81	334	0	334	415	0	415
2000	0	0	0	0	0	0	0	0	0
2001 [g]	0	0	0	0	0	0	0	0	0
2002	0	0	0	207	0	207	207	0	207
2003	0	0	0	226	0	226	226	0	226
2004	0	0	0	0	0	0	0	0	0
1999-2003 Average	16	0	16	153	0	153	170	0	170

[a] Harvest reported in numbers of fish sold in the round.
[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.
[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include 2 additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).
[f] In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into 2 statistical areas, (Statistical Areas 334-54 and 334-55).
[g] No commercial fishing in 2001.

Appendix C8.–Commercial Chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 to 2004.

	334-61			334-62			334-63			**Total**		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	111	-	111	1,102	-	1,102	260	-	260	1,473	-	1,473
1975	77	-	77	153	-	153	270	-	270	500	-	500
1976	490	-	490	320	-	320	292	-	292	1,102	-	1,102
1977	405	-	405	365	-	365	238	-	238	1,008	-	1,008
1978	34	-	34	58	-	58	543	-	543	635	-	635
1979	102	-	102	336	-	336	334	-	334	772	-	772
1980	92	-	92	1,588	-	1,588	267	-	267	1,947	-	1,947
1981	438	-	438	366	-	366	183	-	183	987	-	987
1982	414	-	414	309	-	309	258	-	258	981	-	981
1983	249	-	249	364	-	364	298	-	298	911	-	911
1984	0	-	0	375	-	375	492	-	492	867	-	867
1985	15	-	15	560	-	560	567	-	567	1,142	-	1,142
1986	0	-	0	597	-	597	353	-	353	950	-	950
1987	0	-	0	600	-	600	602	-	602	1,202	-	1,202
1988	305	-	305	253	-	253	204	-	204	762	-	762
1989	809	-	809	614	-	614	318	-	318	1,741	-	1,741
1990	326	0	326	1,243	1,354	1,565	188	322	265	1,757	1,676	2,156
1991	117	0	117	450	1,365	791	119	180	164	686	1,545	1,072
1992	39	0	39	371	679	510	162	205	204	572	884	753
1993	57	0	57	810	1,213	1,116	246	100	272	1,113	1,313	1,445
1994	0	0	0	1,941	1,513	2,333	194	307	273	2,135	1,820	2,606
1995	0	110	26	1,418	3,783	2,287	242	838	434	1,660	4,731	2,747
1996	0	0	0	110	645	255	168	105	192	278	750	447
1997	38	0	38	1,662	2,816	2,334	266	395	356	1,966	3,211	2,728
1998	217	0	217	431	208	496	234	52	250	882	260	963
1999	0	0	0	269	734	462	133	362	228	402	1,096	690
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001 [d]	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	732	896	962	104	0	104	836	896	1,066
2003	0	0	0	1,445	0	1,445	368	0	368	1,813	0	1,813
2004	0	0	0	1,542	0	1,542	515	0	515	2,057	0	2,057
1999-2003 Average	0	0	0	489	326	574	121	72	140	610	398	714

[a] Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 2,136 Chinook salmon.
[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.
[d] No commercial fishing in 2001.

Appendix C9.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974 to 2004.

	334-41					334-44					334-45				
		Roe Expansion					Roe Expansion					Roe Expansion			
Year	Number [a]	Roe [b]	Males [c]	Females [d]	Estimated Harvest [f]	Number [a]	Roe [b]	Males [c]	Females [d]	Estimated Harvest [f]	Number [a]	Roe [b]	Males [c]	Females [d]	Estimated Harvest [f]
1974	g	0	0	0	g	-	-	-	-	-	-	-	-	-	-
1975	g	0	0	0	g	-	-	-	-	-	-	-	-	-	-
1976	g	0	0	0	g	-	-	-	-	-	-	-	-	-	-
1977	g	0	0	0	g	-	-	-	-	-	-	-	-	-	-
1978	g	16,920	0	16,920	g	-	-	-	-	-	-	-	-	-	-
1979	g	35,117	0	35,117	g	-	-	-	-	-	-	-	-	-	-
1980	g	119,957	0	119,957	g	-	-	-	-	-	-	-	-	-	-
1981	g	160,757	123,266 [n]	160,757	g	-	-	-	-	-	-	-	-	-	-
1982	1,032	137,611	95,788	137,611	234,431	-	-	-	-	-	-	-	-	-	-
1983	3,407	130,013	90,740	130,013	224,160	-	-	-	-	-	-	-	-	-	-
1984	51	148,519	98,962	148,519	247,532	-	-	-	-	-	-	-	-	-	-
1985	5,130	222,149	157,062	222,149	384,341	-	-	-	-	-	-	-	-	-	-
1986	0	236,856	172,222	236,856	409,078	-	-	-	-	-	-	-	-	-	-
1987	29,314	110,977	51,379	110,977	191,670	-	-	-	-	-	-	-	-	-	-
1988	19,070	230,276	167,594	256,718 [j]	443,382	-	-	-	-	-	-	-	-	-	-
1989	14,397	270,039	170,322	301,383 [k]	486,102	-	-	-	-	-	-	-	-	-	-
1990 [m]						0	27,628	24,484	31,409	55,893	427	28,181	24,153	32,166	56,746
1991						88	39,281	37,164	47,574	84,826	79	43,087	42,445	53,401	95,925
1992						0	20,444	13,192	22,383	35,575	0	35,312	26,463	40,142	66,605
1993						0	6,234	4,308	7,334	11,642	0	6,081	4,246	7,230	11,476
1994 [n]						0	18,095	12,937	22,606	35,543	0	15,091	11,031	19,276	30,307
1995						0	37,595	37,575	46,084	83,659	0	49,577	49,149	56,667	105,816
1996						0	31,186	26,210	34,592	60,802	0	40,692	30,785	45,483	76,268
1997						0	14,188	10,905	15,118	26,023	0	526	342	570	912
1998						0	0	0	0	0	0	0	0	0	0
1999						0	0	0	0	0	0	0	0	0	0
2000						0	0	0	0	0	0	0	0	0	0
2001 [p]						0	0	0	0	0	0	0	0	0	0
2002						0	0	0	0	0	0	0	0	0	0
2003						0	0	0	0	0	0	0	0	0	0
2004						0	0	0	0	0	0	0	0	0	0
1999-2003 Average						0	0	0	0	0	0	0	0	0	0

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Year	334-46 Number [a]	334-46 Roe Expansion Roe [b]	334-46 Roe Expansion Males [c]	334-46 Roe Expansion Females [d]	334-46 Estimated Harvest [f]	Subtotal 334-41, 44, 45 and 46 Number [a]	Subtotal Roe Expansion Roe [b]	Subtotal Roe Expansion Males [c]	Subtotal Roe Expansion Females [d]	Subtotal Estimated Harvest [f]	334-47 (Anvik River) Number [a]	334-47 Roe Expansion Roe [b]	334-47 Roe Expansion Females [d]	334-47 Estimated Harvest [f]	Total (Subdistrict 4-A and Anvik) Number [a]	Total Roe Expansion Roe [b]	Total Roe Expansion Males [c]	Total Roe Expansion Females [d]	Total Estimated Harvest [f]
1974	-	-	-	-	-	0	0	0	0	-	-	-	-	-	g	0	0	0	g
1975	-	-	-	-	-	0	0	0	0	-	-	-	-	-	g	0	0	0	g
1976	-	-	-	-	-	0	0	0	0	-	-	-	-	-	g	0	0	0	g
1977	-	-	-	-	-	0	0	0	0	-	-	-	-	-	g	0	0	0	g
1978	-	-	-	-	-	0	16,920	0	16,920	-	-	-	-	-	g	16,920	0	16,920	g
1979	-	-	-	-	-	0	35,117	0	35,117	-	-	-	-	-	g	35,117	0	35,117	g
1980	-	-	-	-	-	0	119,957	0	119,957	-	-	-	-	-	g	119,957	0	119,957	g
1981	-	-	-	-	-	0	160,757	123,266	160,757	-	-	-	-	-	g	160,757	123,266 [n]	160,757	g
1982	-	-	-	-	-	1,032	137,611	95,788	137,611	234,431	-	-	-	-	1,032	137,611	95,788	137,611	234,431
1983	-	-	-	-	-	3,407	130,013	90,740	130,013	224,160	-	-	-	-	3,407	130,013	90,740	130,013	224,160
1984	-	-	-	-	-	51	148,519	98,962	148,519	247,532	-	-	-	-	51	148,519	98,962	148,519	247,532
1985	-	-	-	-	-	5,130	222,149	157,062	222,149	384,341	-	-	-	-	5,130	222,149	157,062	222,149	384,341
1986	-	-	-	-	-	0	236,856	172,222	236,856	409,078	-	-	-	-	0	236,856	172,222	236,856	409,078
1987	-	-	-	-	-	29,314	110,977	51,379	110,977	191,670	-	-	-	-	29,314	110,977	51,379	110,977	191,670
1988	-	-	-	-	-	19,070	230,276	167,594	256,718	443,382	-	-	-	-	19,070	230,276	167,594	256,718 [j]	443,382
1989	-	-	-	-	-	14,397	270,039	170,322	301,383	486,102	-	-	-	-	14,397	270,039	170,322	301,383 [k]	486,102
1990 [m]	10,750	39,732	29,490	44,742	84,982	11,177	95,541	78,127	108,317	197,621	-	-	-	-	11,177	95,541	78,127	108,317	197,621
1991	5,122	45,863	47,563	56,819	109,504	5,289	128,231	127,172	157,794	290,255	-	-	-	-	5,289	128,231	127,172	157,794	290,255
1992	0	43,945	32,502	49,489	81,991	0	99,701	72,158	112,013	184,171	-	-	-	-	0	99,701	72,158	112,013	184,171
1993	0	8,170	5,579	9,499	15,078	0	20,485	14,133	24,063	38,196	-	-	-	-	0	20,485	14,133	24,063	38,196
1994 [n]	0	29,615	28,825	37,119	65,944	0	62,801	52,794	79,000	131,794	0	19,532	22,574	22,574	0	82,333	52,794	101,574	154,368
1995	0	102,080	105,663	124,550	230,213	0	189,252	192,387	227,301	419,688	0	48,477	54,744	54,744	0	237,729	192,387	282,045	474,432
1996	0	109,172	98,926	120,942	219,868	0	181,050	155,921	201,017	356,938	0	76,318	84,663	84,663	0	257,368	155,921	285,680	441,601
1997	0	41,587	29,207	44,247	73,454	0	56,301	40,454	59,935	100,389	0	13,067	13,548	13,548	0	69,368	40,454	73,483	113,937
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999-2003 Average	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated number of unsold males that were caught and not sold while harvesting the females that produced the roe sold. Prior to 1981, it was assumed that all males were sold in the round. Since 1981, all fish sold in the round are assumed to be the estimated percentage of males in the harvest was based on percentage of males observed in the department Stink Creek test fish wheel catches (1981 - 0.434; 1982 - 0.413; 1983-0.420; 1984- 0.400; and 1985 - 0.422). For the years 1986 through 1988, the harvest was based on the average percentage of males observed in the Stink Creek test fishery for the years 1981 through 1985 (average of 0.421). For the year 1989, the estimated percentage of males in the harvest was .38. Since 1990, the estimated number is based on a District 4 sampling program that estimated average percent males in the harvest by statistical area, by period and gear type.

[d] The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumes 1.0 pound of roe per female. Since 1991, the estimated number of females that produce the roe sold is based on a District 4 sample roe weight per female by statistical area, by period and gear type.

[f] Estimated harvest is the number of fish sold in the round plus the estimated number of females and the estimated number of unsold males harvested to produce the roe sold.

[g] Information not available.

[h] Assumes no males were sold in the round.

[j] Roe expansion assumes 0.897 pound of roe per female.

[k] Roe expansion assumes 0.896 pound of roe per female.

[m] In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

[n] In 1994, Statistical Area 334-47 was included in Subdistrict 4-A and it represents the Anvik River Management Area.

[p] No commercial fishing 2001.

Appendix C10.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974–2004.

	334-42				334-43				**Total**				
		Roe Expansion				Roe Expansion				Roe Expansion			
Year	Number [a]	Roe [b]	Females [c]	Harvest [d]	Number [a]	Roe [b]	Females [c]	Harvest [d]	Number [a]	Roe [b]	Females [c]	Males [f]	Harvest [d]
1974	g	0	0	g	-	-	-	-	g	0	0	0	g
1975	g	0	0	g	-	-	-	-	g	0	0	0	g
1976	g	0	0	g	-	-	-	-	g	0	0	0	g
1977	g	0	0	g	-	-	-	-	g	0	0	0	g
1978	g	0	0	g	-	-	-	-	g	0	0	0	g
1979 [h]	g	200	200	g	g	0	0	g	g	200	200	g	g
1980	g	14,385	14,385	g	g	1,482	1,482	g	g	15,867	15,867	g	g
1981	g	23,677	23,677	g	g	2,598	2,598	g	g	26,275	26,275	g	g
1982	1,059	12,550	12,550	13,609	1,556	1,120	1,120	2,676	2,615	13,670	13,670	7,003	23,288
1983	3,265	17,549	17,549	20,814	0	563	563	563	3,265	18,112	18,112	9,851	31,228
1984	659	15,184	15,184	15,843	299	3,139	3,139	3,438	958	18,323	18,323	11,257	30,538
1985	1,785	19,306	19,306	21,091	5,092	5,630	5,630	10,722	6,877	24,936	24,936	11,329	43,142
1986	241	29,169	29,169	29,410	59	3,520	3,520	3,579	300	32,689	32,689	23,468	56,457
1987	593	9,956	9,956	10,549	84	541	541	625	677	10,497	10,497	6,956	18,130
1988	4,592	21,766	24,265 [j]	26,358	389	2,484	2,769 [j]	3,158	4,981	24,250	27,034 [j]	14,677	46,692
1989	2,940	9,915	11,066 [k]	12,855	1,217	3,351	3,740 [k]	4,957	4,157	13,266	14,806 [k]	5,179	24,142
1990	1,091	6,600	7,799	8,890	96	3,582	4,434	4,530	1,187	10,182	12,233	11,509	24,929
1991	1,092	8,282	8,996	10,088	0	719	781	781	1,092	9,001	9,777	8,520	19,389
1992	1,363	9,010	9,616	10,979	1,296	2,098	2,902	4,198	2,659	11,108	12,518	12,048	27,225
1993	0	1,851	2,134	4,445	27	111	140	316	27	1,962	2,274	2,460	4,761
1994	2,844	6,455	g	14,803	767	929	g	2,436	3,611	7,384	g	g	17,239
1995	8,873	39,699	g	73,570	0	3,646	g	6,585	8,873	43,345	g	g	80,155
1996	0	36,927	39,156	67,012	0	895	939	1,627	0	37,822	40,095	28,544	68,639
1997	1,942	4,786	5,199	10,484	120	77	81	250	2,062	4,863	5,280	5,454	12,796
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	153	0	0	153	1,114	0	0	1,114	1,267	0	0	0	1,267
2000	0	0	0	0	0	0	0	0	0	0	0	0	0
2001 [m]	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	62	0	0	62	62	0	0	0	62
2004	0	0	0	0	0	0	0	0	0	0	0	0	0
1994-2003 Average	1,381	8,787	5,544	16,602	206	555	128	1,207	1,588	9,341	5,672	4,250	18,016

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon sold.

[c] The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of female that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

[d] The total estimated harvest is the fish sold in the round plus estimated number of females harvested to produce roe sold plus the estimated number of males caught but not sold.

[f] Estimated number of males caught but not sold. Total males caught but not sold calculated the same as for District 4-A (using sex ratio and sales in the round assumed to be male chum salmon).

[g] Information not available by statistical area.

[h] In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

[j] Roe expansion assumes 0.897 pound of roe per female.

[k] Roe expansion assumes 0.896 pound of roe per female.

[m] No commercial fishing 2001.

Appendix C11.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974–2004.

	334-51			334-52			334-53			**Total**		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	d	0	d	d	0	d	-	-	-	6,831	0	6,831
1975	d	0	d	d	0	d	-	-	-	12,997	0	12,997
1976	d	0	d	d	0	d	-	-	-	774	0	774
1977	d	0	d	d	0	d	-	-	-	1,274	0	1,274
1978	d	605	d	d	0	d	-	-	-	4,892	605	5,497
1979	d	1,009	d	d	0	d	-	-	-	8,608	1,009	9,617
1980	d	0	d	d	0	d	-	-	-	456	0	456
1981 [f]	d	0	d	d	49	d	d	0	d	1,236	49	1,285
1982	d	21	d	d	0	d	d	0	d	213	21	234
1983	0	242	242	37	269	306	5	1,345	1,350	42	1,856	1,898
1984	50	0	50	578	47	625	12	0	12	640	47	687
1985	0	0	0	700	0	700	0	0	0	700	0	700
1986	0	0	0	682	0	682	8	0	8	690	0	690
1987	0	0	0	362	44	406	0	0	0	362	44	406
1988	0	0	0	717	337	1,054	5	26	31	722	363	1,085
1989	0	0	0	112	204	316	1	169	170	113	373	486
1990	0	0	0	0	225	250	5	350	394	5	575	644
1991	0	0	0	0	28	31	4	0	4	4	28	35
1992	0	0	0	30	295	358	72	0	72	102	295	430
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	133	212	368	96	0	96	229	212	464
1995	0	0	0	0	188	209	107	0	107	107	188	316
1996	0	0	0	0	0	0	0	188	209	0	188	209
1997	0	0	0	0	0	0	125	0	125	125	0	125
1998	0	0	0	37	13	51	59	0	59	96	13	110
1999	0	0	0	74	0	74	40	0	40	114	0	114
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001 [g]	0	0	0	0	0	0	0	0	0	0	0	0
2002				0	0	0	6	0	6	6	0	6
2003	NO COMMERCIAL FISHING			0	0	0	0	0	0	0	0	0
2004				3	0	3	22	0	22	25	0	25
1999-2003 Average	0	0	0	15	0	15	9	0	9	24	0	24

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook roe. Since 1990, efforts were made to separate Chinook roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produced the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[f] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) were subdivided to include 2 additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54). In 1990, Subdistrict 5-D (Statistical Area 333-54) was further subdivided into Statistical Areas 334-54 and 334-55.

[g] No commercial fishing in 2001.

Appendix C12.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974–2004.

Year	334-54			334-55			**Total**		
	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981	'	0	'	-	-	-	'	0	'
1982 [d]	[f]	0	[f]	-	-	-	[f]	0	[f]
1983	0	0	0	-	-	-	0	0	0
1984	5	0	5	-	-	-	5	0	5
1985	0	0	0	-	-	-	0	0	0
1986	0	0	0	-	-	-	0	0	0
1987	0	0	0	-	-	-	0	0	0
1988	0	0	0	-	-	-	0	0	0
1989	41	0	41	-	-	-	41	0	41
1990 [g]	6	19	27	0	0	0	6	19	27
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	114	127	0	0	0	0	114	127
1997	12	0	12	0	0	0	12	0	12
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	1	0	1	1	0	1
2000	0	0	0	0	0	0	0	0	0
2001 [h]	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
1999-2003 Average	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.
[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.
[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include 2 additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).
[f] information not available.
[g] n 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into 2 statistical areas, (Statistical Areas 334-54 and 334-55).
[h] No commercial fishing 2001.

Appendix C13.–Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2004.

	334-61			334-62			334-63			**Total**		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	13,318	0	13,318
1975	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	14,782	0	14,782
1976	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	6,617	0	6,617
1977	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	4,317	0	4,317
1978	[d]	1,468	[d]	[d]	6,116	[d]	[d]	652	[d]	34,814	8,236	43,050
1979	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	18,491	3,891	22,382
1980	[d]	0	[d]	[d]	2,272	[d]	[d]	1,010	[d]	35,855	3,282	39,137
1981	[d]	0	[d]	[d]	925	[d]	[d]	1,062	[d]	32,477	1,987	34,464
1982	[d]	0	[d]	[d]	1,027	[d]	[d]	490	[d]	21,597	1,517	23,114
1983	1,923	0	1,923	21,646	18	21,664	740	0	740	24,309	18	24,327
1984	3,769	0	3,769	42,231	152	42,383	10,249	183	10,432	56,249	335	56,584
1985	809	0	809	51,132	142	51,274	14,972	1,398	16,370	66,913	1,540	68,453
1986	4,697	0	4,697	31,647	1,711	33,358	14,139	435	14,574	50,483	2,146	52,629
1987	2,167	0	2,167	6,882	349	7,231	1,561	101	1,662	10,610	450	11,060
1988	7,978	71	8,049	24,911	1,165	26,076	7,240	410	7,650	40,129	1,646	41,775
1989	16,483	61	16,544	18,960	4,277	23,237	6,672	533	7,205	42,115	4,871	46,986
1990	2,862	12	2,877	6,028	1,637	8,011	2,237 [f]	1,410	3,945	11,127 [f]	3,059	14,833
1991	4,742	0	4,742	10,100	2,653	13,304	3,355	2,063	5,846	18,197	4,716	23,892
1992	1,327	0	1,327	3,446	1,684	5,409	256	208	492	5,029	1,892	7,228
1993	1,156	0	1,156	1,603	315	2,009	282	200	540	3,041	515	3,705
1994	5,114	0	5,114	13,805	5,643	21,182	2,289	2,185	5,138	21,208	7,828	31,434
1995	5,894	0	5,894	16,020	6,731	25,112	2,797	2,744	6,422	24,711	9,475	37,428
1996	3,194	0	3,194	12,632	13,139	30,206	6,534	5,193	13,490	22,360	18,332	46,890
1997	3,162	0	3,162	9,168	6,525	16,709	2,556	2,511	5,416	14,886	9,036	25,287
1998	56	0	56	202	109	337	139	31	177	397	140	570
1999	0	0	0	102	0	102	22	24	46	124	24	148
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001 [g]	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	2,711	16	2,731	487	0	487	3,198	16	3,218
2003	0	0	0	3,953	0	3,953	508	0	508	4,461	0	4,461
2004	0	0	0	2,447	0	2,447	4,163	0	4,163	6,610	0	6,610
1999-2003 Average	0	0	0	1,353	3	1,357	203	5	208	1,557	8	1,565

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[f] Does not include 1,233 female summer chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

[g] No commercial fishing in 2001.

Appendix C14.–Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974–2004.

Year	334-41			334-42			334-43			**Total**		
	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	0	0	0	9,213	0	9,213	-	-	-	9,213	0	9,213
1975	[d]	0	[d]	[d]	0	[d]	-	-	-	13,666	0	13,666
1976	462	0	462	1,280	0	1,280	-	-	-	1,742	0	1,742
1977 [f]	[d]	0	[d]	[d]	0	[d]	-	-	-	13,980	0	13,980
1978				[d]	1,721	[d]	-	-	-	10,988	1,721	12,709
1979 [g]				[d]	3,199	[d]	[d]	0	[d]	48,899	3,199	52,098
1980				[d]	1,789	[d]	[d]	2,558	[d]	27,978	4,347	32,325
1981				[d]	1,311	[d]	[d]	0	[d]	12,082	1,311	13,393
1982				958	20	978	2,936	147	3,083	3,894	167	4,061
1983				3,681	1,591	5,272	801	372	1,173	4,482	1,963	6,445
1984				2,961	1,222	4,183	4,664	993	5,657	7,625	2,215	9,840
1985				14,468	891	15,359	9,984	1,634	11,618	24,452	2,525	26,977
1986				2,045	0	2,045	0	0	0	2,045	0	2,045
1987				0	0	0	0	0	0	0	0	0
1988				10,157	703	10,860	5,505	718	6,223	15,662	1,421	17,083
1989				9,819	2,023	11,842	1,957	1,384	3,341	11,776	3,407	15,183
1990				3,406	1,680	5,676	1,583	671	2,490	4,989	2,351	8,166
1991				2,998	490	3,718	739	1,126	2,373	3,737	1,616	6,091
1992				0	0	0	0	0	0	0	0	0
1993				0	0	0	0	0	0	0	0	0
1994				0	0	0	0	0	0	0	0	0
1995				2,924	225	3,249	0	3,901	5,482	2,924	4,126	8,731
1996				2,918	0	2,918	0	0	0	2,918	0	2,918
1997				463	0	463	1,995	0	1,995	2,458	0	2,458
1998				0	0	0	0	0	0	0	0	0
1999				104	0	104	577	0	577	681	0	681
2000				0	0	0	0	0	0	0	0	0
2001 [h]				0	0	0	0	0	0	0	0	0
2002				0	0	0	0	0	0	0	0	0
2003				0	0	0	1315	0	1315	1,315	0	1,315
2004				0	0	0	0	0	0	0	0	0
1999-2003 Average				21	0	21	378	0	378	399	0	399

[a] Harvest reported in numbers of fish sold in the round.
[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period, by statistical area and gear type.
[d] Information not available.
[f] In 1977, was the last year Subdistrict 4-A (Statistical Area 334-41), by regulation, was allowed a late season.
[g] In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.
[h] No commercial fishing in 2001.

Appendix C15.–Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974–2004.

	334-51			334-52			334-53			Unapportioned	Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a,g]	Number [a]	Roe [b]	Harvest [c]
1974	23,551	0	23,551	0	0	0	-	-	-	0	23,551	0	23,551
1975	[d]	0	[d]	[d]	0	[d]	-	-	-	27,212	27,212	0	27,212
1976	5,319	0	5,319	68	0	68	-	-	-	0	5,387	0	5,387
1977	[d]	0	[d]	[d]	0	[d]	-	-	-	25,730	25,730	0	25,730
1978	[d]	3,946	[d]	[d]	1,274	[d]	-	-	-	21,016	21,016	5,220	26,236
1979	[d]	8,097	[d]	[d]	0	[d]	-	-	-	47,459	47,459	8,097	55,556
1980	[d]	605	[d]	[d]	0	[d]	-	-	-	41,771	41,771	605	42,376
1981 [f]	[d]	178	[d]	[d]	6,760	[d]	[d]	17	[d]	86,620	86,620	6,955	93,575
1982	[d]	0	[d]	[d]	23	[d]	[d]	19	[d]	13,593	13,593	42	13,593
1983	3,143	0	3,143	19,771	0	19,771	17,987	0	17,987	0	40,901	0	40,901
1984	1,415	0	1,415	10,329	0	10,329	9,403	0	9,403	0	21,147	0	21,147
1985	565	0	565	9,263	0	9,263	13,332	0	13,332	0	23,160	0	23,160
1986	1,332	0	1,332	11,907	395	12,302	7,471	0	7,471	0	20,710	395	21,105
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	9,684	0	9,684	4,533	0	4,533	0	14,217	0	14,217
1989	372	60	432	9,937	3,327	13,264	4,987	209	5,196	0	15,296	3,596	18,892
1990	0	0	0	5,169	945	6,243	0	0	0	0	5,169	945	6,243
1991	0	0	0	14,968	3,625	19,727	9,173	0	9,173	0	24,141	3,625	28,900
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	2,513	3,159	1,785	13,091	18,397	4,014	389	4,498	0	5,799	15,993	26,054
1996	0	181	208	5,898	8,317	15,670	1,583	0	1,583	0	7,481	8,498	17,461
1997	0	0	0	1,595	1,194	3,069	0	0	0	0	1,595	1,194	3,069
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0
2001 [h]	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0
1999-2003 Average	0	0	0	0	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.
[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, expansion assumed 1.0 pound of roe the roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.
[d] Information not available by statistical area.
[f] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) was subdivided to include 2 additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D Statistical Area (Statistical Area 334-54) and Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.
[g] Includes harvest in Subdistrict 5-D from 1978 through 1982.
[h] No commercial fishing in 2001.

Appendix C16.–Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1974–2004.

	334-54			334-55			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 [d]	[f]	0	[f]	-	-	-	[f]	0	[f]
1982	[f]	0	[f]	-	-	-	[f]	0	[f]
1983	3,092	0	3,092	-	-	-	3,092	0	3,092
1984	2,913	57	2,970	-	-	-	2,913	57	2,970
1985	2,178	0	2,178	-	-	-	2,178	0	2,178
1986	1,343	0	1,343	-	-	-	1,343	0	1,343
1987	0	0	0	-	-	-	0	0	0
1988	2,772	0	2,772	-	-	-	2,772	0	2,772
1989	2,919	393	3,312	-	-	-	2,919	393	3,312
1990 [g]	1,758	113	1,882	851	0	851	2,609	113	2,733
1991	1,846	0	1,846	1,368	0	1,368	3,214	0	3,214
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	3,630	0	3,630	3,630	0	3,630
1995	0	0	0	3,979	2,823	3,979 [h]	3,979	2,823	3,979
1996	890	0	890	3,507	0	3,507	4,397	0	4,397
1997	40	0	40	811	0	811	851	0	851
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
2001 [k]	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
1999-2003 Average	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from fall chum salmon roe.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include 2 additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

[f] Information not available.

[g] In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into 2 statistical areas, (Statistical Areas 334-54 and 334-55).

[h] Estimated harvest equals fish sold in round. The roe came from fish sold in the round, therefore, not included in estimated harvest to avoid duplicate counting.

[k] No commercial fishing in 2001.

Appendix C17.–Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2004.

	334-61			334-62			334-63			**Total**		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	26,884	0	26,884
1975	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	18,692	0	18,692
1976	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	17,948	0	17,948
1977	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	18,673	0	18,673
1978	4,704	1,826	6,530	8,036	1,680	9,716	519	181	700	13,259	3,687	16,946
1979	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	34,185	7,170	41,355
1980	[d]	0	[d]	[d]	53	[d]	[d]	15	[d]	19,452	68	19,520
1981	[d]	0	[d]	[d]	2,784	[d]	[d]	235	[d]	25,989	3,019	29,008
1982	706	0	706	4,586	596	5,182	1,528	0	1,528	6,820	596	7,416
1983	3,526	0	3,526	23,096	3,009	26,105	7,467	92	7,559	34,089	3,101	37,190
1984	5,617	0	5,617	11,809	0	11,809	3,138	56	3,194	20,564	56	20,620
1985	1,462	0	1,462	34,663	0	34,663	6,227	0	6,227	42,352	0	42,352
1986	176	0	176	1,345	182	1,527	371	0	371	1,892	182	2,074
1987	0	0	0	0	0	0	0	0	0	0	0	0
1988	4,500	0	4,500	13,617	1,035	14,652	3,727	771	4,498	21,844	1,806	23,650
1989	14,870	173	15,043	25,650	7,050	32,700	8,570	130	8,700	49,090	7,353	56,443
1990	9,254	0	9,254	28,932	6,617	35,776	4,996 [f]	918	5,945	43,182 [f]	7,535	50,975
1991	3,278	0	3,278	21,834	12,253	35,904	3,083	1,901	5,266	28,195	14,154	44,448
1992	0	0	0	13,713	1,816	15,852	2,008	990	3,170	15,721	2,806	19,022
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	3,239	4,319	1	37	50	1	3,276	4,369
1995	6,170	0	6,170	60,466	8,164	65,051	1,219	1,396	2,896	67,855	9,560	74,117
1996	663	236	934	8,491	4,906	14,332	1,112	1,031	2,308	10,266	6,173	17,574
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001 [g]	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	3,778	0	3,778	317	0	317	4,095	0	4,095
2004	0	0	0	3,450	0	3,450	0	0	0	3,450	0	3,450
1999-2003 Average	0	0	0	756	0	756	63	0	63	819	0	819

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[f] Does not include 884 female fall chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

[g] No commercial fishing in 2001.

Appendix C18.–Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974–2004.

	334-41			334-42			334-43			**Total**		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	0	-	0	0	-	0	-	-	-	0	-	0
1975	0	-	0	0	-	0	-	-	-	0	-	0
1976	0	-	0	0	-	0	-	-	-	0	-	0
1977 [d]	0	-	0	0	-	0	-	-	-	0	-	0
1978				32	-	32	-	-	-	32	-	32
1979 [f]				155	-	155	0	-	0	155	-	155
1980				[g]	-	[g]	[g]	-	[g]	30	-	30
1981				0	-	0	0	-	0	0	-	0
1982				0	-	0	15	-	15	15	-	15
1983				0	-	0	0	-	0	0	-	0
1984				412	-	412	683	-	683	1,095	-	1,095
1985				153	-	153	785	-	785	938	-	938
1986				0	-	0	0	-	0	0	-	0
1987				0	-	0	0	-	0	0	-	0
1988				2	-	2	0	-	0	2	-	2
1989				0	-	0	3	-	3	3	-	3
1990				0	0	0	0	0	0	0	0	0
1991				11	0	11	3	0	3	14	0	14
1992				0	0	0	0	0	0	0	0	0
1993				0	0	0	0	0	0	0	0	0
1994				0	0	0	0	0	0	0	0	0
1995				0	0	0	0	0	0	0	0	0
1996				161	0	161	0	0	0	161	0	161
1997				19	0	19	795	0	795	814	0	814
1998				0	0	0	0	0	0	0	0	0
1999				0	0	0	0	0	0	0	0	0
2000				0	0	0	0	0	0	0	0	0
2001 [h]				0	0	0	0	0	0	0	0	0
2002				0	0	0	0	0	0	0	0	0
2003				0	0	0	367	0	367	367	0	367
2004				0	0	0	0	0	0	0	0	0
1999-2003 Average				0	0	0	73	0	73	73	0	73

[a] Harvest reports in numbers of fish sold in the round.
[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.
[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period.
[d] 1977 was the last year Subdistrict 4-A (Statistical Area 334-41) by regulation was allowed a late season.
[f] In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.
[g] Information not available.
[h] No commercial fishing in 2001.

Appendix C19.–Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 to 2004.

Year	334-61			334-62			334-63			Total		
	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1974	[d]	-	[d]	[d]	-	[d]	[d]	-	[d]	1,479	-	1,479
1975	0	-	0	0	-	0	53	-	53	53	-	53
1976	[d]	-	[d]	[d]	-	[d]	[d]	-	[d]	1,103	-	1,103
1977	252	-	252	766	-	766	266	-	266	1,284	-	1,284
1978	521	-	521	2,450	-	2,450	95	-	95	3,066	-	3,066
1979	465	-	465	2,059	-	2,059	267	-	267	2,791	-	2,791
1980	423	-	423	632	-	632	171	-	171	1,226	-	1,226
1981	535	-	535	1,335	-	1,335	414	-	414	2,284	-	2,284
1982	1,004	-	1,004	6,449	-	6,449	327	-	327	7,780	-	7,780
1983	745	-	745	5,048	-	5,048	375	-	375	6,168	-	6,168
1984	1,608	-	1,608	5,360	-	5,360	720	-	720	7,688	-	7,688
1985	432	-	432	9,628	-	9,628	1,702	-	1,702	11,762	-	11,762
1986	30	-	30	370	-	370	41	-	41	441	-	441
1987	0	-	0	0	-	0	0	-	0	0	-	0
1988	1,240	-	1,240	10,372	-	10,372	2,360	-	2,360	13,972	-	13,972
1989	2,818	-	2,818	10,181	-	10,181	3,085	-	3,085	16,084	-	16,084
1990	3,173	0	3,173	7,096	3,559	9,951	1,280 [f]	483	1,680	11,549	4,042	14,804
1991	0	0	0	4,572	3,737	7,620	1,696	562	2,154	6,268	4,299	9,774
1992	0	0	0	5,731	1,267	6,800	825	413	1,179	6,556	1,680	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	5,398	4,184	120	190	267	120	5,588	4,451
1995	1,475	0	1,475	4,209	2,072	5,156	142	157	269	5,826	2,229	6,900
1996	182	0	182	3,403	4,571	6,557	218	258	403	3,803	4,829	7,142
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001 [g]	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	14,984	0	14,984	135	0	135	15,119	0	15,119
2004	0	0	0	18,649	0	18,649	0	0	0	18,649	0	18,649
1999-2003 Average	0	0	0	2,997	0	2,997	27	0	27	3,024	0	3,024

[a] Harvest reports in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[f] Does not include 438 female coho salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion calculation.

[g] No commercial fishing in 2001.

Appendix C20.–Summary of test fish wheel projects conducted in the Upper Yukon Area, 2002 to 2004.

TEST FISH WHEEL PROJECTS	CONTRACTOR/ Operator	River Mile [a]	Year	Operational Dates		Total Days of Operation	Estimated Total Salmon Captured [b] Chinook	Summer Chum	Fall Chum	Coho	Historical Data / Comments
YUKON RIVER											
Tanana Village Test Fish Wheel	BSFA										
Left Bank	B. Fliris (2002-2004)	690	2002	Jul-1 to	Sep-30	91	3,494	4,289	9,167	1,433	Summer season added in 2002. Also operated
			2003	Jun-14 to	Sep-19	97	3,149	347	13,902	5,003	as Toklat CWT recovery wheel (1996-2000).
			2004	Jun-15 to	Sep-27	104	5,701	3,803	2,611	1,022	
Yukon River (Rapids) Tag Deployment Fish Wheels	USFWS										
Right Bank [c]	S. Zuray (2002-2003)	731	2002	Jul-29 to	Sep-14	47	-	-	24,042	-	
			2003	Jul-28 to	Sep-18	52	-	-	29,224		
			2004	-	-		-	-	-	-	Did not operate in 2004
Left Bank [d]	S. Zuray (2002-2004)	731	2002	Jun-17 to	Sep-19	94	1,679	1,349	36552	-	Left bank wheel uses 24 hr video camera counts
			2003	Jun-13 to	Sep-18	97	1,653	397	22884	-	
			2004	Jun-9 to	Sep-21	104	2,898	946	15,753	-	
										-	
Yukon River (Rampart) Tag Recovery Fish Wheel	USFWS										
Right Bank	P. Evans (2002-2004)	763	2002	Jul-29 to	Sep-15	48	-	-	15,026	-	Project operation 1996-current.
			2003	Jul-28 to	Sep-20	54	-	-	35,178	-	
			2004	Jul-28 to	Sep-28	62	-	-	25,846	-	
Yukon River (Stevens Village) Tag Recovery Fish Wheel	USFWS										
Right Bank	Theodore John (2002)	830	2002	Aug-7 to	Sep-25	49	-	-	6,211	-	Project operation 2002 only.
Yukon River (Beaver) Tag Recovery Fish Wheel	USFWS										
Left Bank	Paul Williams (2001-2002)	932	2002	Aug-7 to	Sep-25	49	-	-	1,372	-	Project operation 2001-2002.
Yukon River (Circle City) Tag Recovery Fish Wheel	USFWS										
Right Bank	Brian Asplund (2001-2002)	1,080	2002	Aug-15 to	Oct-1	47	-	-	3,778	-	Project operation 2001-2002.
TANANA RIVER											
Lower Tanana Tag Deployment Fish Wheel	ADF&G										
Right Bank	C. Boulding (2002-2004)	793	2002	Aug-16 to	Sep-27	42	-	-	3,037	598	Project operation as the fall chum salmon
			2003	Aug-16 to	Sep-27	42	-	-	10,400	2,659	tag deployment fish wheel 1995-current.
			2004	Aug-8 to	Sep-17	40	-	-	5,383	1,134	
Nenana Test and Recovery Fish Wheel	ADF&G										
Right Bank [f]	Paul Kleinschmidt (2002-2004)	859	2002	Jul-1 to	Aug-5	35	1,601	1,074	-	-	Project started in 1988 as CPUE fish wheel.
				Aug-16 to	Oct-4	49	-	-	4,063	7,776	Also operates as a fall chum salmon tag recovery
			2003	Jun-30 to	Aug-5	36	2,789	398	-	-	fish wheel 1995-current.
				Aug-16 to	Oct-2	47	-	-	14,239	28,290	
			2004	Jul-1 to	Aug-7	37	944	2,558	-	-	
				Aug-16 to	Sep-30	45	-	-	5,025	19,259	

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KANTISHNA / TOKLAT RIVERS											
Lower Kantishna River Tag	BSFA/ADF&G										
Deployment Fish Wheel											
Left Bank	D. Bowers (2002-2004)	802	2002	Aug-16 to	Sep-24	39	-	-	4,198	220	Project operation 1999-current.
			2003	Aug-16 to	Sep-27	42	-	-	10,391	2,659	
			2004	Aug-16 to	Sep-23	38	-	-	3,906	191	
								-			
Upper Kantishna River Tag											
Recovery Fish Wheels											
Right Bank	M. Turner (2002-2004)	880	2002	Aug-16 to	Oct-6	51	-	-	266	295	Project operation 2000-current.
			2003	Aug-16 to	Oct-8	53	-	-	583	179	
			2004	Aug-16 to	Oct-9	54	-	-	377	345	
Left Bank	M. Turner (2003-2004)	880	2003	Aug-15 to	Oct-5	51	-	-	255	490	Left bank operation 2003-current.
			2004	Aug-16 to	Oct-5	50	-	-	109	46	
Toklat River Tag	ADF&G										
Recovery Fish Wheels											
Right Bank	ADF&G Crew (2002-2004)	846	2002	Aug-26 to	Sep-28	33	-	-	1,969	768	Operated as a mark-recapture recovery wh
			2003	Aug-15 to	Sep-30	46	-	-	1,280	509	
			2004	Aug-16 to	Sep-29	44	-	-	3,083	197	
Left Bank	ADF&G Crew (2002-2004)	846	2002	Aug-23 to	Sep-26	34	-	-	1,304	184	Project operation 1996-current. Also operat
			2003	Aug-22 to	Sep-29	38	-	-	643	177	as Toklat CWT recovery wheel 1996-2000.
			2004	Aug-15 to	Sep-29	45	-	-	4,522	172	

[a] Estimated river miles from the mouth of the Yukon River.

[b] Unless otherwise noted, fish wheel catch are adjusted to estimate total catch (i.e., less than or greater than 24 hour catches adjusted to reflect a 24 hour catch).

[c] Fishwheels counts adjusted to estimate a 24-hour count.

[d] Video Counts expanded to estimate a 24-hour passage (missing daily counts interpolated for days not fished). Summer and fall chum salmon separated by August 1. Chinook counts terminated August 2.

[f] Estimated summer chum salmon totals include all chum salmon caught through August 5. Estimated fall chum salmon totals include all chum salmon caught beginning August 16.

APPENDIX D

Appendix D1.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area, 1993–2004.

Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Hooper Bay	230	157	1,500	1,127	613	13	173	114	2,150	282	722	1,042	682	688
Scammon Bay	1,199	668	585	1,238	526	378	938	449	732	840	1,128	996	679	817
Coastal District Subtotal	**1,429**	**825**	**2,085**	**2,365**	**1,139**	**391**	**1,111**	**563**	**2,882**	**1,122**	**1,850**	**2,038**	**1,361**	**1,506**
Nunam Iqua	561	606	459	450	970	527	855	684	550	393	925	647	602	681
Alakanuk	2,562	1,045	1,191	662	2,058	1,930	1,236	1,109	973	1,773	1,707	1,317	1,377	1,360
Emmonak	4,372	2,384	1,711	702	3,080	2,396	3,337	2,205	2,473	1,751	2,763	2,768	2,055	2,506
Kotlik	2,913	2,505	2,599	1,832	1,442	2,389	1,420	1,893	3,093	1,686	937	1,148	2,153	1,806
District 1 Subtotal	***10,408***	***6,540***	***5,960***	***3,646***	***7,550***	***7,242***	***6,848***	***5,891***	***7,089***	***5,603***	***6,332***	***5,880***	***6,188***	***6,353***
Mountain Village	3,217	1,511	1,542	1,315	2,081	2,533	2,162	1,715	1,864	1,523	2,174	2,362	1,796	1,888
Pitkas Point	1,001	469	559	762	793	817	632	753	651	566	633	609	680	647
St. Marys	2,042	2,722	2,031	1,766	2,592	2,679	2,150	1,810	3,815	2,045	1,916	2,357	2,358	2,347
Pilot Station	2,661	1,977	1,614	1,811	2,373	1,715	2,715	2,378	2,614	2,530	2,886	2,406	1,898	2,625
Marshall	2,592	2,277	3,291	2,126	1,511	1,711	2,780	3,279	4,498	2,290	2,059	1,990	2,183	2,981
District 2 Subtotal	***11,513***	***8,956***	***9,037***	***7,780***	***9,350***	***9,455***	***10,439***	***9,935***	***13,442***	***8,954***	***9,668***	***9,724***	***8,916***	***10,488***
Russian Mission	3,273	1,793	2,450	2,709	1,459	1,314	2,722	1,860	3,428	1,887	2,057	2,337	1,945	2,391
Holy Cross	3,191	4,040	2,808	3,953	3,472	2,648	4,581	1,249	2,711	1,813	2,395	1,993	3,384	2,550
Shageluk	128	291	161	121	1,380	552	412	805	222	439	550	418	501	486
District 3 Subtotal	***6,592***	***6,124***	***5,419***	***6,783***	***6,311***	***4,514***	***7,715***	***3,914***	***6,361***	***4,139***	***5,002***	***4,748***	***5,830***	***5,426***
Lower Yukon River Total	**28,513**	**21,620**	**20,416**	**18,209**	**23,211**	**21,211**	**25,002**	**19,740**	**26,892**	**18,696**	**21,002**	**20,352**	**20,933**	**22,266**
Anvik	663	424	450	768	951	1,025	776	205	608	708	1,286	1,588	724	717
Grayling	1,045	1,843	1,340	1,036	2,391	2,177	2,476	839	1,077	2,249	1,613	1,869	1,757	1,651
Kaltag	1,260	1,653	1,890	994	1,036	1,870	2,051	1,074	1,506	1,435	1,838	1,656	1,489	1,581
Nulato	1,660	1,735	1,533	1,461	1,576	4,147	1,799	1,083	2,127	1,773	2,531	5,199	2,090	1,863
Koyukuk	853	589	146	402	851	800	506	175	449	323	860	400	558	463
Galena	1,732	1,834	1,336	2,770	2,350	1,668	2,539	788	1,755	1,522	3,112	3,296	1,992	1,943
Ruby/Kokrines	3,263	1,539	1,435	557	2,260	3,891	777	1,577	2,033	954	631	1,620	1,936	1,194
District 4 Yukon River Subtotal (Excluding the Koyukuk River)	***10,476***	***9,617***	***8,130***	***7,988***	***11,415***	***15,578***	***10,924***	***5,741***	***9,555***	***8,964***	***11,871***	***15,628***	***10,546***	***9,411***
Huslia	232	239	932	67	57	23	90	424	377	222	469	285	264	316
Hughes	88	107 [a]	77	54	34	91	105	50	144	67	113	291	73	96
Allakaket	135	338 [a]	321	82	423	85	108	41	76	200	306	65	250	146
Alatna	4	26 [a]	10	2	38	4	10	8	0	3	12	0	16	7
Bettles	1	0	4	0	39	20	1	0	0	0	0	0	13	0
Koyukuk River Subtotal	***460***	***710***	***1,344***	***205***	***591***	***223***	***314***	***523***	***597***	***492***	***900***	***641***	***615***	***565***
District 4 Subtotal	***10,936***	***10,327***	***9,474***	***8,193***	***12,006***	***15,801***	***11,238***	***6,264***	***10,152***	***9,456***	***12,771***	***16,269***	***11,160***	***9,976***

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Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Tanana	3,362	2,999	2,398	2,741	3,596	5,212	3,388	2,895	4,112	2,379	5,332	2,689	3,389	3,621
Rampart [b]	1,956	1,354	1,461	1,751	2,203	885	2,018	847	1,857	852	1,411	287	1,531	1,397
Fairbanks [c]	1,514	1,920	1,447	1,166	955	1,231	851	1,342	1,125	1,767	1,932	1,997	1,344	1,403
Stevens Village	1,754	2,814	2,674	681	2,070	1,232	1,214	466	1,111	1,334	1,121	2,394	1,894	1,049
Birch Creek	0	119	93	0	373	48	24	72	0	67	78	82	127	48
Beaver	1,557	850	1,021	886	1,859	470	473	196	1,368	702	1,156	858	1,017	779
Fort Yukon	6,361	4,727	3,132	4,957	3,145	1,771	2,539	988	2,361	2,348	4,004	4,430	3,546	2,448
Circle	745	1,377	1,145	1,781	1,091	685	524	627	447	1,533	895	565	1,216	805
Central	210	240	171	131	146	170	91	26	84	58	144	83	172	81
Eagle	753	1,234	1,886	1,092	1,534	2,473	2,558	1,087	1,033	1,910	2,081	1,512	1,644	1,734
Other [d]	437	602	1,004	377	763	446	488	205	40	348	862	357	638	389
District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)	***18,649***	***18,236***	***16,432***	***15,563***	***17,735***	***14,623***	***14,168***	***8,751***	***13,538***	***13,298***	***19,016***	***15,254***	***16,518***	***13,754***
Venetie	2,716	524	434	134	314	168	127	103	28	77	125	352	315	92
Chalkyitsik	0	0	0	30	0	11	35	0	0	26	50	60	8	22
Chandalar/Black Rivers Subtotal	***2,716***	***524***	***434***	***164***	***314***	***179***	***162***	***103***	***28***	***103***	***175***	***412***	***323***	***114***
District 5 Subtotal	***21,365***	***18,760***	***16,866***	***15,727***	***18,049***	***14,802***	***14,330***	***8,854***	***13,566***	***13,401***	***19,191***	***15,666***	***16,841***	***13,868***
Manley	238	480	335	134	242	209	136	58	534	336	213	239	280	255
Minto	468	316	535	523	1,208	275	317	0	197	19	317	35	571	170
Nenana	693	759	607	423	1,082	1,187	975	541	1,405	509	1,193	633	812	925
Fairbanks [e]	273	775	285	97	176	230	195	360	313	159	392	449	313	284
Other [f]	0	40	17	0	4	18	1	24	0	44	30	32	16	20
District 6 Tanana River Subtotal	***1,672***	***2,370***	***1,779***	***1,177***	***2,712***	***1,919***	***1,624***	***983***	***2,449***	***1,067***	***2,145***	***1,388***	***1,991***	***1,654***
Upper Yukon River Total	**33,973**	**31,457**	**28,119**	**25,097**	**32,767**	**32,522**	**27,192**	**16,101**	**26,167**	**23,924**	**34,107**	**33,323**	**29,992**	**25,498**
Alaska, Yukon River Total [g]	**62,486**	**53,077**	**48,535**	**43,306**	**55,978**	**53,733**	**52,194**	**35,841**	**53,059**	**42,620**	**55,109**	**53,675**	**50,926**	**47,765**
Alaska, Yukon Area Total	**63,915**	**53,902**	**50,620**	**45,671**	**57,117**	**54,124**	**53,305**	**36,404**	**55,941**	**43,742**	**56,959**	**55,713**	**52,287**	**49,270**

[a] Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed. The 1994 Chinook salmon harvest is estimated based on a 5-year average, 1989-1993.
[b] Rampart area harvest in 2004 as reported from subsistence fishing permits. Board of Fisheries established in 2004 the requirement for fishers to obtain a subsistence fishing permit in the Rampart area.
[c] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.
[d] Other permit holders who fished in District 5 but did not reside in the communities listed.
[e] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.
[f] Other permit holders who fished in District 6 but did not reside in the communities listed.
[g] Does not include the Coastal District.

Appendix D2.–Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area, 1993–2004.

Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Hooper Bay	16,106	10,556	13,374	15,870	12,310	261	10,146	9,301	12,593	9,780	10,658	3,242	10,474	10,496
Scammon Bay	4,692	4,347	3,986	6,365	3,401	1,101	3,315	3,876	1,323	5,016	3,310	5,020	3,840	3,368
Coastal District Subtotal	**20,798**	**14,903**	**17,360**	**22,235**	**15,711**	**1,362**	**13,461**	**13,177**	**13,916**	**14,796**	**13,968**	**8,262**	**14,314**	**13,864**
Nunam Iqua	2,362	1,941	2,979	2,634	2,603	1,872	1,343	3,309	1,942	1,897	2,561	2,698	2,406	2,210
Alakanuk	8,935	5,947	10,538	6,171	7,443	5,643	3,808	6,259	5,992	7,637	5,287	6,555	7,148	5,797
Emmonak	15,568	13,060	11,696	6,097	12,399	9,558	10,310	8,338	8,242	8,458	7,644	8,618	10,562	8,598
Kotlik	7,121	11,197	9,777	12,387	4,803	9,815	4,708	6,173	6,595	6,115	4,209	2,749	9,596	5,560
District 1 Subtotal	***33,986***	***32,145***	***34,990***	***27,289***	***27,248***	***26,888***	***20,169***	***24,079***	***22,771***	***24,107***	***19,701***	***20,620***	***29,712***	***22,165***
Mountain Village	10,505	3,938	10,554	9,285	11,310	9,596	10,059	7,074	8,484	6,657	6,497	10,676	8,937	7,754
Pitkas Point	1,481	1,103	1,665	1,619	747	1,302	849	1,728	862	639	800	717	1,287	976
St. Marys	5,925	10,128	5,950	6,736	8,874	9,047	6,752	8,094	10,026	7,284	4,521	6,994	8,147	7,335
Pilot Station	5,641	5,450	4,427	6,355	4,532	5,042	5,265	5,223	5,329	6,490	4,163	5,779	5,161	5,294
Marshall	1,745	2,288	4,594	4,431	1,508	1,293	1,212	3,212	1,602	2,484	792	1,765	2,823	1,860
District 2 Subtotal	***25,297***	***22,907***	***27,190***	***28,426***	***26,971***	***26,280***	***24,137***	***25,331***	***26,303***	***23,554***	***16,773***	***25,931***	***26,355***	***23,220***
Russian Mission	1,838	801	3,653	3,554	585	702	616	1,318	165	395	171	884	1,859	533
Holy Cross	1,517	1,479	948	1,700	487	269	264	569	460	155	214	276	977	332
Shageluk	4,183	6,212	7,542	6,114	9,244	5,501	4,868	1,800	684	1,956	5,473	1,798	6,923	2,956
District 3 Subtotal	***7,538***	***8,492***	***12,143***	***11,368***	***10,316***	***6,472***	***5,748***	***3,687***	***1,309***	***2,506***	***5,858***	***2,958***	***9,758***	***3,822***
Lower Yukon River Total	**66,821**	**63,544**	**74,323**	**67,083**	**64,535**	**59,640**	**50,054**	**53,097**	**50,383**	**50,167**	**42,332**	**49,509**	**65,825**	**49,207**
Anvik	1,735	907	9	185	6,306	2,139	848	425	94	1,089	844	248	1,909	660
Grayling	1,137	1,418	3,385	587	2,446	4,032	4,126	474	92	1,311	1,072	1,129	2,374	1,415
Kaltag	1,116	3,683	139	31	73	175	625	169	10	234	1,028	213	820	413
Nulato	15	975	228	1,003	115	3,518	1,945	377	208	269	180	198	1,168	596
Koyukuk	230	2,039	315	41	739	1,819	197	204	118	426	1,339	329	991	457
Galena	2,477	1,198	1,954	3,902	4,575	2,333	1,688	820	53	712	289	782	2,792	712
Ruby/Kokrines	1,459	4,586	4,445	2,016	3,286	2,251	1,697	1,233	1,025	1,406	876	2,010	3,317	1,247
District 4 Yukon River Subtotal (Excluding the Koyukuk River)	***8,169***	***14,806***	***10,475***	***7,765***	***17,540***	***16,267***	***11,126***	***3,702***	***1,600***	***5,447***	***5,628***	***4,909***	***13,371***	***5,501***
Huslia	8,343	6,014	4,885	2,372	840	449	1,192	745	833	3,178	6,187	3,844	2,912	2,427
Hughes	827	1,581 [a]	2,448	1,411	1,579	334	577	1,079	551	1,089	1,265	3,823	1,471	912
Allakaket	2,651	4,693 [a]	6,396	4,668	3,916	901	2,245	1,520	1,604	6,242	4,383	2,367	4,115	3,199
Alatna	52	365 [a]	140	209	145	13	99	0	0	15	50	16	174	33
Bettles	34	45	740	0	210	82	100	0	0	0	0	0	215	20
Koyukuk River Subtotal	***11,907***	***12,698***	***14,609***	***8,660***	***6,690***	***1,779***	***4,213***	***3,344***	***2,988***	***10,524***	***11,885***	***10,050***	***8,887***	***6,591***
District 4 Subtotal	***20,076***	***27,504***	***25,084***	***16,425***	***24,230***	***18,046***	***15,339***	***7,046***	***4,588***	***15,971***	***17,513***	***14,959***	***22,258***	***12,091***

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Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Tanana	4,245	7,022	3,660	5,190	2,526	1,966	1,214	2,848	1,407	3,321	3,075	1,490	4,073	2,373
Rampart [b]	1,489	559	1,168	1,188	738	19	60	47	0	14	9	103	734	26
Fairbanks [c]	465	360	722	2,958	424	57	346	275	165	295	89	280	904	234
Stevens Village	653	459	158	530	191	171	26	50	0	12	0	108	302	18
Beaver	134	655	36	572	2	15	91	7	328	77	7	2	256	102
Fort Yukon [d]	3,830	2,043	998	26	134	30	0	0	289	1,832	2,176	1,187	646	859
Circle	83	98	70	271	257	1	60	109	6	5	85	52	139	53
Central	2	8	2	53	25	1	0	1	0	0	0	0	18	0
Eagle	32	38	57	105	17	52	271	121	555	24	104	171	54	215
Other [e]	24	21	232	616	130	2	42	51	0	17	0	3	200	22
District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)	***10,957***	***11,263***	***7,103***	***11,509***	***4,444***	***2,314***	***2,110***	***3,509***	***2,750***	***5,597***	***5,545***	***3,396***	***7,327***	***3,902***
Venetie	129	567	552	0	76	0	166	0	106	13	0	15	239	57
Chalkyitsik	0	0	0	0	0	0	0	132	0	0	0	0	0	26
Chandalar/Black Rivers Subtotal	***129***	***567***	***552***	***0***	***76***	***0***	***166***	***132***	***106***	***13***	***0***	***15***	***239***	***83***
District 5 Subtotal	***11,086***	***11,830***	***7,655***	***11,509***	***4,520***	***2,314***	***2,276***	***3,641***	***2,856***	***5,610***	***5,545***	***3,411***	***7,566***	***3,986***
Manley	1,310	1,405	1,657	1,219	576	211	272	240	338	93	65	296	1,014	202
Minto	367	509	1,320	1,421	1,056	148	173	3	19	10	625	7	891	166
Nenana	5,019	1,352	5,043	4,411	1,899	5,041	1,894	775	19	360	2,193	1,171	3,549	1,048
Fairbanks [f]	97	3,693	3,528	392	271	604	315	90	182	47	31	308	1,698	133
Other [g]	0	67	113	43	22	0	0	3	0	2	0	11	49	1
District 6 Tanana River Subtotal	***6,793***	***7,026***	***11,661***	***7,486***	***3,824***	***6,004***	***2,654***	***1,111***	***558***	***512***	***2,914***	***1,793***	***7,200***	***1,550***
Upper Yukon River Total	**37,955**	**46,360**	**44,400**	**35,420**	**32,574**	**26,364**	**20,269**	**11,798**	**8,002**	**22,093**	**25,972**	**20,163**	**37,024**	**17,627**
Alaska, Yukon River Total [h]	**104,776**	**109,904**	**118,723**	**102,503**	**97,109**	**86,004**	**70,323**	**64,895**	**58,385**	**72,260**	**68,304**	**69,672**	**106,603**	**70,373**
Alaska, Yukon Area Total	**125,574**	**124,807**	**136,083**	**124,738**	**112,820**	**87,366**	**83,784**	**78,072**	**72,301**	**87,056**	**82,272**	**77,934**	**117,163**	**80,697**

[a] Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed. The 1994 summer chum salmon harvest is estimated based on a 5-year-average, 1989-1993.
[b] Rampart area harvest in 2004 as reported from subsistence fishing permits. Board of Fisheries established in 2004 the requirement for fishers to obtain a subsistence fishing permit in the Rampart area.
[c] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.
[d] Includes Birch Creek harvest of 1 summer chum salmon in 1997.
[e] Other permit holders who fished in District 5 but did not reside in the communities listed.
[f] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.
[g] Other permit holders who fished in District 6 but did not reside in the communities listed.
[h] Does not include the Coastal District.

Appendix D3.–Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area, 1993–2004.

Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Hooper Bay	113	284	207	392	0	0	0	78	364	44	40	264	177	105
Scammon Bay	7	63	147	0	0	34	204	11	195	240	106	56	49	151
Coastal District Subtotal	***120***	***347***	***354***	***392***	***0***	***34***	***204***	***89***	***559***	***284***	***146***	***320***	***225***	***256***
Nunam Iqua	158	25	256	21	337	266	115	105	176	284	127	49	181	161
Alakanuk	182	73	631	100	900	665	558	505	1,032	222	348	953	474	533
Emmonak	1,507	3,441	1,614	1,501	1,039	867	1,849	1,165	1,272	1,261	1,257	785	1,692	1,361
Kotlik	5,923	1,348	2,197	2,525	856	1,365	3,980	3,519	957	114	407	280	1,658	1,795
District 1 Subtotal	***7,770***	***4,887***	***4,698***	***4,147***	***3,132***	***3,163***	***6,502***	***5,294***	***3,437***	***1,881***	***2,139***	***2,067***	***4,005***	***3,851***
Mountain Village	1,113	797	1,347	1,366	2,698	2,031	1,968	313	470	478	873	918	1,648	820
Pitkas Point	268	294	99	603	178	233	53	5	34	16	49	0	281	31
St. Marys	440	1,062	542	658	310	416	722	255	227	103	762	104	598	414
Pilot Station	1,017	1,527	575	448	1,106	1,162	1,155	852	1,522	680	823	1,108	964	1,006
Marshall	256	471	754	2,212	388	640	696	0	1,003	341	394	291	893	487
District 2 Subtotal	***3,094***	***4,151***	***3,317***	***5,287***	***4,680***	***4,482***	***4,594***	***1,425***	***3,256***	***1,618***	***2,901***	***2,421***	***4,383***	***2,759***
Russian Mission	172	11	865	587	0	137	100	37	76	164	615	172	320	198
Holy Cross	1,066	665	681	1,814	420	1,095	239	523	624	0	9	76	935	279
Shageluk	211	186	126	305	367	329	76	38	0	0	114	50	263	46
District 3 Subtotal	***1,449***	***862***	***1,672***	***2,706***	***787***	***1,561***	***415***	***598***	***700***	***164***	***738***	***298***	***1,518***	***523***
Lower Yukon River Total	**12,313**	**9,900**	**9,687**	**12,140**	**8,599**	**9,206**	**11,511**	**7,317**	**7,393**	**3,663**	**5,778**	**4,786**	**9,906**	**7,132**
Anvik	420	155	269	457	514	388	126	175	29	401	179	398	357	182
Grayling	2,083	811	1,155	1,759	1,531	648	1,370	284	314	52	441	267	1,181	492
Kaltag	704	630	644	1,049	1,142	499	764	190	607	314	725	687	793	520
Nulato	571	1,109	1,137	2,299	697	367	2,338	0	151	0	1,341	1,246	1,122	766
Koyukuk	2,052	1,049	814	2,458	1,954	1,583	1,544	239	517	255	835	344	1,572	678
Galena	3,255	3,963	3,202	6,620	3,370	1,915	1,932	564	420	349	1,510	1,587	3,814	955
Ruby/Kokrines	1,085	5,553	4,695	561	2,195	2,427	907	64	581	78	2,331	1,064	3,086	792
District 4 Yukon River Subtotal (Excluding the Koyukuk River)	***10,170***	***13,270***	***11,916***	***15,203***	***11,403***	***7,827***	***8,981***	***1,516***	***2,619***	***1,449***	***7,362***	***5,593***	***11,924***	***4,385***
Huslia	258	55	1,035	298	10	0	89	35	683	0	1,786	1,139	280	519
Hughes	169	0 [a]	263	274	51	60	84	157	0	0	497	97	130	148
Allakaket	233	0 [a]	260	961	270	11	20	36	50	100	105	968	300	62
Alatna	2	0 [a]	0	0	0	0	0	15	0	0	0	0	0	3
Bettles	0	0	583	50	0	0	0	0	0	0	0	0	127	0
Koyukuk River Subtotal	***662***	***55***	***2,141***	***1,583***	***331***	***71***	***193***	***243***	***733***	***100***	***2,388***	***2,204***	***836***	***731***
District 4 Subtotal	***10,832***	***13,325***	***14,057***	***16,786***	***11,734***	***7,898***	***9,174***	***1,759***	***3,352***	***1,549***	***9,750***	***7,797***	***12,760***	***5,117***

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Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Tanana	23,103	34,681	14,409	21,420	25,058	24,956	22,305	9,384	9,779	6,255	14,308	23,118	24,105	12,406
Rampart [b]	3,272	1,007	1,403	896	646	100	4,324	0	183	0	365	0	810	974
Fairbanks [c]	930	2,870	2,184	2,727	491	96	681	8	0	0	105	43	1,674	159
Stevens Village	862	45	3,194	991	1,585	1,076	20	10	20	0	857	1,080	1,378	181
Beaver	692	2,069	1,231	9	243	409	16	0	21	1	192	48	792	46
Ft. Yukon [d]	2,380	6,827	9,196	8,144	6,119	3,035	9,702	355	2,209	3,523	7,963	7,302	6,664	4,750
Circle	349	4,581	5,102	5,308	3,707	37	2,722	0	2,588	74	499	1,022	3,747	1,177
Central	0	0	0	132	0	0	0	0	0	0	0	0	26	0
Eagle	2,070	8,263	13,115	14,916	14,488	543	11,292	32	2,714	339	2,871	5,482	10,265	3,450
Other [e]	1,750	0	830	505	421	50	65	1	0	100	0	13	361	33
District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)	***35,408***	***60,343***	***50,664***	***55,048***	***52,758***	***30,302***	***51,127***	***9,790***	***17,514***	***10,292***	***27,160***	***38,108***	***49,823***	***23,177***
Venetie	7,881	4,302	6,085	7,195	1,564	658	2,011	130	3,286	680	770	2,083	3,961	1,375
Chalkyitsik	475	1,751	845	1,230	936	433	442	0	73	4	340	479	1,039	172
Chandalar/Black Rivers Subtotal	***8,356***	***6,053***	***6,930***	***8,425***	***2,500***	***1,091***	***2,453***	***130***	***3,359***	***684***	***1,110***	***2,562***	***5,000***	***1,547***
District 5 Subtotal	***43,764***	***66,396***	***57,594***	***63,473***	***55,258***	***31,393***	***53,580***	***9,920***	***20,873***	***10,976***	***28,270***	***40,670***	***54,823***	***24,724***
Manley	3,215	13,722	20,272	10,662	5,887	4,411	5,172	0	1,230	947	1,303	1,504	10,991	1,730
Minto	301	1,419	4,782	4,381	2,361	505	781	2	251	100	675	0	2,690	362
Nenana	5,929	11,201	15,500	14,207	3,799	6,781	5,619	8	999	1,070	7,802	5,367	10,298	3,100
Fairbanks [f]	56	5,006	6,384	5,736	4,031	960	1,630	0	201	229	1,949	1,024	4,423	802
Other [g]	352	2,249	2,230	1,481	3,472	1,713	2,269	300	855	856	1,257	1,058	2,229	1,107
District 6 Tanana River Subtotal	***9,853***	***33,597***	***49,168***	***36,467***	***19,550***	***14,370***	***15,471***	***310***	***3,536***	***3,202***	***12,986***	***8,953***	***30,630***	***7,101***
Upper Yukon River Total	**64,449**	**113,318**	**120,819**	**116,726**	**86,542**	**53,661**	**78,225**	**11,989**	**27,761**	**15,727**	**51,006**	**57,420**	**98,213**	**36,942**
Alaska, Yukon River Total [h]	**76,762**	**123,218**	**130,506**	**128,866**	**95,141**	**62,867**	**89,736**	**19,306**	**35,154**	**19,390**	**56,784**	**62,206**	**108,120**	**44,074**
Alaska, Yukon Area Total	**76,882**	**123,565**	**130,860**	**129,258**	**95,141**	**62,901**	**89,940**	**19,395**	**35,713**	**19,674**	**56,930**	**62,526**	**108,345**	**44,330**

[a] Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of fall chum salmon was zero.

[b] Rampart area harvest in 2004 as reported from subsistence fishing permits. Board of Fisheries established in 2004 the requirement for fishers to obtain a subsistence fishing permit in the Rampart area.

[c] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[d] Includes Birch Creek harvest of zero fall chum salmon for all years surveyed.

[e] Other permit holders who fished in District 5 but did not reside in the communities listed.

[f] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

[g] Other permits holders who fished in District 6 but did not reside in the communities listed.

[h] Does not include the Coastal District.

Appendix D4.–Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area, 1993–2004.

Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Hooper Bay	0	1	48	92	0	145	68	218	439	125	244	9	57	219
Scammon Bay	40	80	104	0	0	204	0	4	63	123	48	54	78	48
Coastal District Subtotal	***40***	***81***	***152***	***92***	***0***	***349***	***68***	***222***	***502***	***248***	***292***	***63***	***135***	***266***
Nunam Iqua	78	52	419	138	51	229	51	5	32	56	117	79	178	52
Alakanuk	138	94	658	103	882	292	108	84	414	183	193	207	406	196
Emmonak	196	959	485	594	356	696	525	191	342	514	547	296	618	424
Kotlik	1,931	2,167	689	1,610	534	954	1,046	787	486	542	403	593	1,191	653
District 1 Subtotal	***2,343***	***3,272***	***2,251***	***2,445***	***1,823***	***2,171***	***1,730***	***1,067***	***1,274***	***1,295***	***1,260***	***1,175***	***2,392***	***1,325***
Mountain Village	447	968	921	276	1,089	954	665	376	423	361	745	521	842	514
Pitkas Point	349	364	554	691	427	305	302	139	112	47	130	0	468	146
St. Marys	102	614	154	292	329	290	536	117	610	209	276	258	336	350
Pilot Station	477	811	241	1,258	323	413	249	1,708	222	230	371	296	609	556
Marshall	320	1,124	272	958	256	335	1,041	11	73	386	64	425	589	315
District 2 Subtotal	**1,695**	**3,881**	**2,142**	**3,475**	**2,424**	**2,297**	**2,793**	**2,351**	**1,440**	**1,233**	**1,586**	**1,500**	**2,844**	**1,881**
Russian Mission	152	55	891	255	10	233	542	24	0	115	178	151	289	172
Holy Cross	88	171	0	0	20	100	62	70	0	0	498	27	58	126
Shageluk	39	137	0	189	736	67	6	0	0	0	35	106	226	8
District 3 Subtotal	***279***	***363***	***891***	***444***	***766***	***400***	***610***	***94***	***0***	***115***	***711***	***284***	***573***	***306***
Lower Yukon River Total	**4,317**	**7,516**	**5,284**	**6,364**	**5,013**	**4,868**	**5,133**	**3,512**	**2,714**	**2,643**	**3,557**	**2,959**	**5,809**	**3,512**
Anvik	115	95	10	44	24	20	282	0	13	0	12	288	39	61
Grayling	164	36	97	236	1,055	133	201	372	144	30	559	233	311	261
Kaltag	334	245	426	298	60	71	333	110	533	212	463	138	220	330
Nulato	37	27	25	149	444	34	170	60	258	78	928	203	136	299
Koyukuk	70	305	33	476	345	421	295	138	80	249	1,155	166	316	383
Galena	124	803	275	780	1,002	322	123	71	142	169	1,507	1,307	636	402
Ruby/Kokrines	308	1,957	607	376	474	1,459	620	173	871	69	648	1,540	975	476
District 4 Yukon River Subtotal (Excluding the Koyukuk River)	***1,152***	***3,468***	***1,473***	***2,359***	***3,404***	***2,460***	***2,024***	***924***	***2,041***	***807***	***5,272***	***3,875***	***2,633***	***2,214***
Huslia	9	47	307	18	50	128	15	132	83	60	375	764	110	133
Hughes	3	0 [a]	153	51	250	5	10	12	117	100	20	110	92	52
Allakaket	3	0 [a]	0	39	50	0	0	0	25	56	99	17	18	36
Alatna	0	0 [a]	0	0	0	0	0	0	0	0	7	0	0	1
Bettles	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River Subtotal	***15***	***47***	***461***	***108***	***350***	***133***	***25***	***144***	***225***	***216***	***501***	***891***	***220***	***222***
District 4 Subtotal	***1,167***	***3,515***	***1,934***	***2,467***	***3,754***	***2,593***	***2,049***	***1,068***	***2,266***	***1,023***	***5,773***	***4,766***	***2,853***	***2,436***

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Community	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-1998 Average	1999-2003 Average
Tanana	5,576	2,587	2,154	6,110	3,045	2,572	3,989	4,826	6,675	2,032	3,480	1,049	3,294	4,200
Rampart [b]	38	99	0	5	34	20	126	0	0	0	0	0	32	25
Fairbanks [c]	0	25	18	42	26	11	0	2	11	0	120	91	24	27
Stevens Village	0	0	1	2	1	63	0	0	2	0	0	100	13	0
Beaver	135	10	20	7	0	0	0	0	0	17	0	0	7	3
Fort Yukon [d]	5	963	4	157	251 j	39	124	129	972	14	0	19	283	248
Circle	10	30	0	0	210	0	0	0	0	0	244	100	48	49
Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eagle	85	0	1	1	2	132	0	0	0	1	0	14	27	0
Other [e]	0	0	7	0	0	2	2	30	0	0	25	0	2	11
District 5 Yukon River Subtotal (Excluding Chandalar/Black Rivers)	***5,849***	***3,714***	***2,205***	***6,324***	***3,569***	***2,839***	***4,241***	***4,987***	***7,660***	***2,064***	***3,869***	***1,373***	***3,730***	***4,564***
Venetie	135	4	0	264	7	0	0	0	10	12	11	5	55	7
Chalkyitsik	0	456	0	0	7	0	0	0	4	0	7	45	93	2
Chandalar/Black River Subtotal	***135***	***460***	***0***	***264***	***14***	***0***	***0***	***0***	***14***	***12***	***18***	***50***	***148***	***9***
District 5 Subtotal	***5,984***	***4,174***	***2,205***	***6,588***	***3,583***	***2,839***	***4,241***	***4,987***	***7,674***	***2,076***	***3,887***	***1,423***	***3,878***	***4,573***
Manley	1,535	10,410	7,395	2,462	3,236	2,362	3,244	2,180	2,637	1,617	886	1,384	5,173	2,113
Minto	300	2,616	338	1,223	364	31	0	3	0	250	423	5	914	135
Nenana	1,314	9,387	7,142	7,883	5,147	3,519	4,023	1,767	4,443	3,574	5,431	6,494	6,616	3,848
Fairbanks [f]	0	2,103	3,076	2,314	1,230	786	868	0	102	1,024	1,049	1,435	1,902	609
Other [g]	1,155	1,973	851	1,011	1,618	774	1,259	1,200	1,818	3,034	2,574	2,266	1,245	1,977
District 6 Tanana River Subtotal	***4,304***	***26,489***	***18,802***	***14,893***	***11,595***	***7,472***	***9,394***	***5,150***	***9,000***	***9,499***	***10,363***	***11,584***	***15,850***	***8,681***
Upper Yukon Area Total	**11,455**	**34,178**	**22,941**	**23,948**	**18,932**	**12,904**	**15,684**	**11,205**	**18,940**	**12,598**	**20,023**	**17,773**	**22,581**	**15,690**
Alaska, Yukon River Total [h]	**15,772**	**41,694**	**28,225**	**30,312**	**23,945**	**17,772**	**20,817**	**14,717**	**21,654**	**15,241**	**23,580**	**20,732**	**28,390**	***19,202***
Alaska, Yukon Area Total	**15,812**	**41,775**	**28,377**	**30,404**	**23,945**	**18,121**	**20,885**	**14,939**	**22,156**	**15,489**	**23,872**	**20,795**	**28,524**	**19,468**

[a] Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of coho salmon was zero.
[b] Rampart area harvest in 2004 as reported from subsistence fishing permits. Board of Fisheries established in 2004 the requirement for fishers to obtain a subsistence fishing permit in the Rampart area.
[c] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.
[d] Includes Birch Creek harvest of 3 coho salmon in 1997.
[e] Other permit holders who fished in District 5 but did not reside in the communities listed.
[f] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.
[g] Other permits holders who fished in District 6 but did not reside in the communities listed.
[h] Does not include the Coastal District.

Appendix D5.–Subsistence salmon harvests taken under authority of a permit in portions of District 5, Yukon Area, 1974–2004.[a]

Yukon River "Bridge" Area Subsistence Salmon Fishery [b]

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum [c]	Fall Chum [c]	Coho
1974	29	-	-	591	-	1,857	1,271
1975	19	-	-	727	-	778	70
1976	28	-	18	531	-	974	-
1977	38	-	-	467	-	2,567	-
1978	57	-	-	1,333	-	9,735	-
1979	55	-	41	2,194	-	12,374	-
1980	70	-	67	1,350	-	6,488	36
1981	57	-	24	1,095	-	12,034	-
1982	64	-	44	1,935	-	11,328	20
1983	68	-	46	2,672	-	15,059	-
1984	67	-	54	4,676	-	27,869	399
1985	55	-	42	2,618	-	21,832	33
1986	76	-	58	3,827	-	18,690	759
1987	16	-	14	1,818	2,091	7,631	6
1988	24	21	18	1,747	2,097	3,183	606
1989	26	20	13	2,483	574	1,157	309
1990	26	25	16	2,033	3,493	1,109	455
1991	52	46	34	2,529	1,295	3,953	20
1992	45	42	33	2,241	975	2,491	34
1993	49	47	36	3,767	492	2,915	16
1994	50	49	36	3,073	384	2,911	25
1995	59	59	39	3,253	954	2,244	59
1996	47	45	31	1,157	3,475	2,727	42
1997	44	42	28	1,588	683	491	26
1998	48	47	31	1,685	103	156	15
1999	66	64	47	1,653	356	701	2
2000	56	52	33	1,607	324	8	32
2001	65	62	38	1,819	176	0	13
2002	60	58	45	2,285	320	100	0
2003	86	80	62	2,670	89	104	145
2004	69	67	51	2,032	164	43	91
Five Year Average 1999-2003	67	63	45	2,007	253	183	38
Ten Year Average 1994-2003	58	56	39	2,079	686	944	36

Yukon River "Rampart Village" Area Subsistence Salmon Fishery [d]

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
2004	14	11	9	832	249	0	0
Total	14	11	9	832	249	0	0

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Upper Yukon River "Circle-Eagle" Area Subsistence Salmon Fishery [f]

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum [c]	Fall Chum [c]	Coho
1979	75	-	6	4,063	-	30,475	114
1980	48	-	39	3,649	-	18,477	6
1981	71	-	51	4,510	-	38,333	-
1982	60	-	61	3,833	-	15,432	-
1983	53	-	52	2,831	-	23,708	-
1984	58	-	54	2,543	-	21,675	17
1985	59	-	36	2,419	-	19,059	2
1986	40	-	52	4,148	-	20,701	43
1987	51	51	58 [e]	3,602	2,495	27,369	0
1988	58	57	50	2,783	2,134	9,078	101
1989	59	56	42	1,186	68	7,515	1
1990	81	75	54	3,746	1,629	14,992	206
1991	70	69	48	3,219	658	14,898	5
1992	85	79	54	2,984	409	12,009	57
1993	79	79	49	1,910	118	2,419	95
1994	79	76	51	3,093	145	12,844	30
1995	87	87	53	3,628	129	19,047	1
1996	86	84	51	3,458	528	20,861	1
1997	98	93	60	3,148	393	18,616	212
1998	101	95	54	3,562	55	630	132
1999	119	116	71	3,404	364	14,079	0
2000	121	118	47	1,806	233	33	0
2001	98	93	33	1,688	561	5,322	0
2002	94	87	42	3,877	29	418	1
2003	95	85	58	3,406	189	3,374	0
2004	89	83	50	2,304	223	6,517	114
Five Year Average 1999-2003	105	100	50	2,836	275	4,645	0
Ten Year Average 1994-2003	98	93	52	3,107	263	9,522	38

[a] Prior to 1988 the reported harvest was expanded for permits not returned. Beginning in 1988, reported harvest was not expanded.

[b] That portion of the Yukon River drainage from Hess Creek to Dall River.

[c] Summer chum and fall chum salmon undifferentiated from 1974-1986.

[d] That portion of the Yukon River drainage from Garnett Island to Hess Creek. 2004 is the first year of permit requirement in this Yukon River Area.

[e] Some fishermen reporting harvests did not have permits.

[f] That portion of the Yukon River drainage from Twenty-Two Mile Slough, located downstream of the village of Circle, to the United States/Canadian border.

Appendix D6.–Subsistence salmon harvests taken under authority of a permit, Tanana River drainage, 1973–2004.[a]

Subdistrict 6-A Subsistence Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1988 [b]	28	24	18	845	1,389	9,165	3,455
1989 [b, c]	29	28	24 [d]	651	1,918	25,266	5,292
1990 [c]	42	36	26	1,369	2,250	27,957	8,408
1991	45	41	31	420	1,716	17,472	8,486
1992	38	35	26	508	450	5,999	5,028
1993 [c]	42	41	22	331	784	2,617	1,317
1994 [f]	37	37	30	576	3,793	18,076	12,449
1995	41	38	29	456	4,898	23,522	11,344
1996	31	29	23	209	1,338	18,931	5,959
1997	33	32	21	887	542	10,621	3,703
1998	31	31	19	512	519	4,726	1,526
1999	24	24	14	137	525	5,712	3,464
2000	24	24	12	80	240	0	2,441
2001	26	24	14	398	327	1,541	3,319
2002	24	23	20	542	101	1,341	2,246
2003	23	21	13	276	65	2,445	2,514
2004	23	23	12	339	308	2,148	2,004
Five Year Average 1999-2003	24	23	15	287	252	2,208	2,797
Ten Year Average 1994-2003	29	28	20	407	1,235	8,692	4,897

Subdistrict 6-B Subsistence Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest [g]			
				Chinook	Summer Chum	Fall Chum	Coho
1988	75	66	52	3,721	3,167	18,902	18,906
1989 [h]	60	51	37 [d]	455	363	18,506	8,453
1990 [h]	70	58	38	1,234	1,966	16,332	9,155
1991 [h]	87	78	51	1,796	2,373	21,629	11,971
1992 [h]	98	89	57	1,587	7,820	18,782	11,409
1993	99	89	38	1,341	5,976	7,166	2,987
1994	102	94	49	1,337	2,035	13,726	12,480
1995	98	98	59	1,322	6,712	25,364	7,458
1996	105	96	59	968	6,138	17,439	8,934
1997	103	95	55	1,825	3,282	8,729	7,892
1998	94	84	46	1,407	5,485	9,573	5,937
1999	83	79	47	1,487	2,129	9,757	5,930
2000	81	79	33	903	869	210	2,709
2001	87	81	44	1,511	74	1,983	5,646
2002	62	60	25	525	711	2,193	8,032
2003	77	72	40	1,839	2,849	10,537	7,849
2004	60	56	30	1,049	1,485	6,805	9,580
Five Year Average 1999-2003	78	74	38	1,253	1,326	4,936	6,033
Ten Year Average 1994-2003	89	84	46	1,312	3,028	9,951	7,287

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Upper Tanana River Drainage Subsistence Salmon Fishery							
				Reported Harvest			
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Chinook	Summer Chum	Fall Chum	Coho
1988	0	0	0	0	0	0	0
1989	2	2	2	5	0	39	0
1990	1	1	0	0	0	0	0
1991	8	7	6	0	0	288	14
1992	11	11	4	0	0	36	1
1993	10	10	8	0	0	5	0
1994	7	7	3	0	0	202	15
1995	50	46	12	0	0	88	0
1996	42	39	15	0	10	97	0
1997	61	58	26	0	0	200	0
1998	46	46	17	0	0	71	9
1999	29	29	13	0	0	2	0
2000	41	36	16	0	2	100	0
2001	57	50	22	0	0	2	1
2002	32	31	16	0	0	25	0
2003	38	32	17	30	0	4	0
2004	35	30	14	0	0	0	0
Five Year Average 1999-2003	39	36	17	6	0	27	0
Ten Year Average 1994-2003	40	37	16	3	1	79	3

[a] Prior to 1988, salmon harvests were expanded for permits not returned. Beginning in 1988, the reported harvests were not expanded. Dashes in the table indicate the information is not available.

[b] Many Subdistrict 6-A fishermen did not obtain a permit in 1988 and 1989.

[c] Includes salmon given away as part of the department's test fishing project in Manley.

[d] Includes harvests reported by fishermen who did not have permits.

[f] Beginning in 1994, a separate Kantishna River drainage permit was required. The Subdistrict 6-A harvest totals include those from the Kantishna River drainage.

[g] Includes small numbers of salmon harvested and reported on the Tolovana River drainage (Subdistrict 6-B) subsistence pike permit, established in 1993.

[h] Includes salmon given away as part of the department's test fish project in Nenana.

Appendix D7.–Personal use salmon harvests taken under authority of a permit, Tanana River drainage, 1987–2004.

Subdistrict 6-C Personal Use Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	132 [a]	-	60 [b]			3,316	2,465
1988	208	162	120	317	1,182	2,074	1,125
1989	175	160	112	397	991	1,770	731
1990	152	144	102	442	918	1,353	1,120
1991 [c]	-	-	-	-	-	-	-
1992 [c]	-	-	-	-	-	-	-
1993	133	131	79	426	674	163	0
1994 [c]	-	-	-	-	-	-	-
1995	139	138	91	399	780	863	417
1996	129	125	73	215	905	356	198
1997	112	109	61	313	391	284	350
1998	103	101	52	357	84	2	9
1999 [d]	103	103	67	331	382	261	147
2000	70	69	16	75	30	1	0
2001	54	51	24	122	146	10	34
2002	57	55	29	126	175	3	20
2003	67	67	32	204	148	394	549
2004	68	66	35	201	231	230	233
Five Year Average 1999-2003	70	69	34	172	176	134	150
Ten Year Average 1994-2003	93	91	49	238	338	242	192

[a] Includes 60 former subsistence fishermen who were reissued personal use permits to fish for fall chum salmon

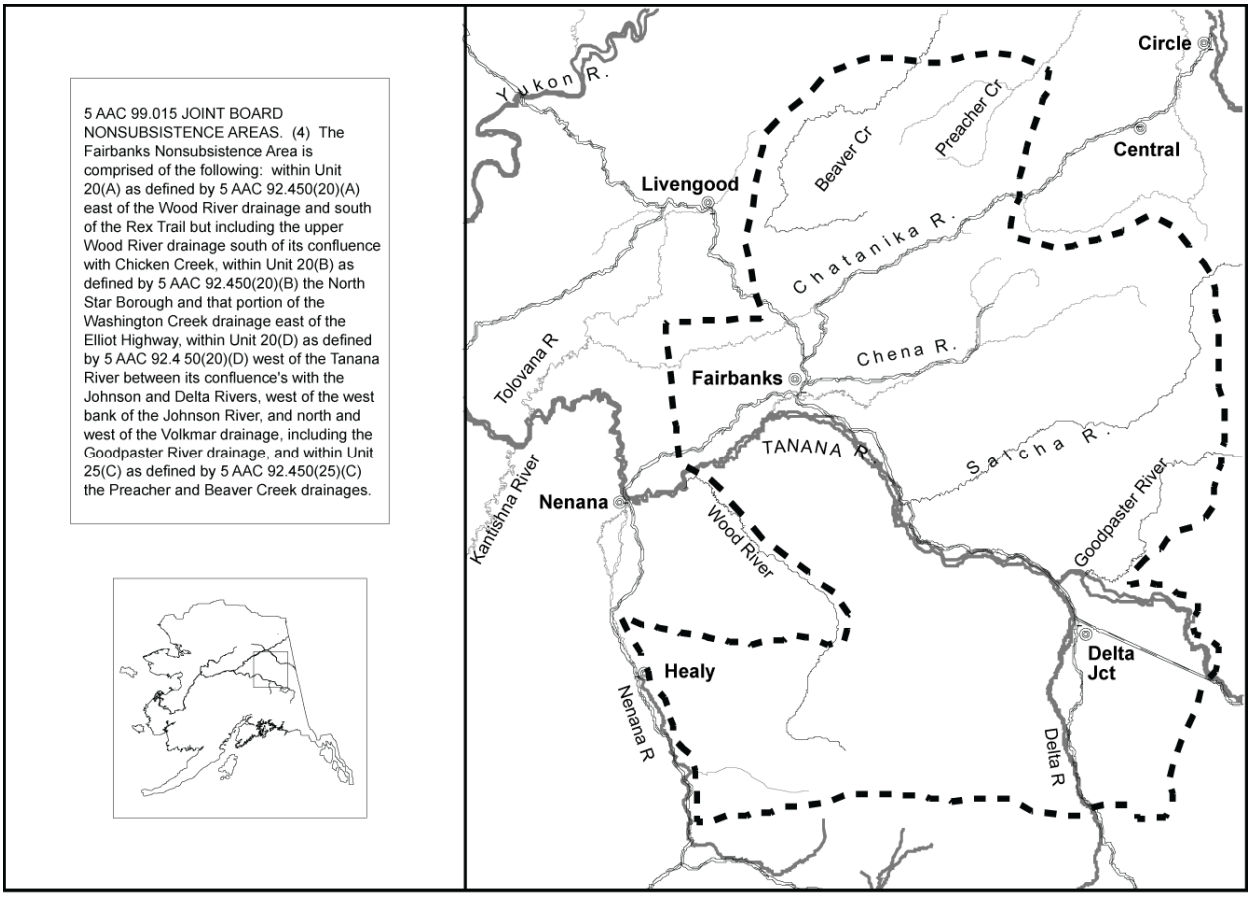
[b] Some fishing families used both subsistence and personal use permits.

[c] From July 1, 1990 through 1992, and in 1994, the regulations did not provide for a personal use fishery in this area.

[d] Does not include 4 whitefish and sucker fishery permit lders, 2 of which fished, that reported a total harvest of 1 fall chum and 6 coho salmon in 1999.

[e] After 1997 the regulations did not provide for a personal use fishery in these areas.

[f] After July 1, 1991 the regulations did not provide for a personal use salmon fishery in this area.



Appendix D8.–Map of the Fairbanks Nonsubsistence Area, 2002–2004.

APPENDIX E

Appendix E1.–Yukon River drainage salmon spawning escapement goals for selected species and streams, 2002–2004.

	2002 and 2003 Goal	2004 Goal
Chinook Salmon Stock	Goal (Type) Year Established	Goal (Type) Year Established
E. Fork Andreafsky River	>1,500 (EO [a]) 1992	960-1,700 (SEG) 2004
W. Fork Andreafsky River	>1,400 (EO [a]) 1992	640-1,600 (SEG) 2004
Anvik River	>1,300 (EO [a]) 1992	1,100 – 1,700 (SEG) 2004
Gisasa River	>600 (EO [a]) 1992	420 – 1,100 (SEG) 2004
Nulato N. and S. combined	None	940 – 1,900 (SEG) 2004
North Fork Nulato River	>800	Discountined 2004
South Fork Nulato River	>500	Discountined 2004
Chena River	2,800 – 5,700 (BEG) 2001	No Change
Salcha River	3,300 – 6,500 (BEG) 2001	No Change
Mainstem Yukon River Canada	33,000 – 43,000 [b]	33,000 – 43,000 [b]
Summer Chum Salmon Stock		
E. Fork Andreafsky River	65,000– 130,000 (BEG) 2001	No Change (weir)
E. Fork Andreafsky River	35,000– 70,000 (BEG) 2001	Discontinued (aerial) [c] 2004
W. Fork Andreafsky River	65,000– 130,000 (BEG) 2001	Discontinued (aerial) [c] 2004
W. Fork Andreafsky River	35,000– 70,000 (BEG) 2001	Discontinued (aerial) [c] 2004
Anvik River	400,000– 800,000 (BEG) 2001	350,000 – 700,000 (sonar) 2004
Fall Chum Salmon Stock		
Yukon Drainage	300,000 – 600,000 (BEG) 2001	No Change
Tanana River	61,000 – 136,000 (BEG) 2001	No Change
Delta River	6,000 – 13,000 (BEG) 2001	No Change
Toklat River	15,000 – 33,000 (BEG) 2001	No Change
Upper Yukon tributaries	152,000 – 312,000 (BEG) 2001	No Change
Chandalar River	74,000 – 152,000 (BEG) 2001	No Change
Sheenjek River	50,000 – 104,000 (BEG) 2001	No Change
Fishing Branch River (YT, Canada)	50,000 – 120,000 [d]	50,000 – 120,000 [d]
Mainstem Yukon River (YT, Canada)	>80,000 [f]	>80,000 [f]
Coho Salmon Stock		
Delta Clearwater	>9,000 (SEG) 1992	5,200 – 17,000 (SEG) 2004

[a] Goals were called escapement objectives (EO) because they were inconsistent with definitions BEG and SEG within the policy.

[b] Escapement goals developed by JTC in March 1987. Additionally, interim goals for rebuilding of 28,000 Chinook salmon have been in place from 1996-2004. Estimated total spawning escapement excluding the Porcupine River (estimated mainstem Yukon River border passage minus Canadian harvests).

[c] Discontinued because of difficulty conducting aerial surveys of summer chum salmon.

[d] Escapement goals developed by JTC in October 1987. Interim goals of 15,000 fall chum salmon for 2003 and 13,000 fall chum salmon for 2004 were established.

[f] Escapement goals developed by JTC in November 1990. Interim goals of 60,000 fall chum salmon for 2002, and 65,000 fall chum salmon for 2003 and 2004 were established. Estimated total spawning escapement excluding the Porcupine River (estimated mainstem Yukon River border passage minus Canadian harvests).

Appendix E2.–Detailed salmon spawning escapement estimates for the Yukon River drainage, 2002–2004.[a]

Data Year 2002

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Andreafsky River						
East Fork (weir count) [q]	6/20-9/16	--	4,123	44,194	--	3,577
East Fork (aerial)	7/27	Fair	1,447	--	--	--
West Fork (aerial)	7/27	Fair	917	--	--	--
	Andreafsky Subtotal		6,487	44,194	0	3,577
Yukon River (Pilot Station)						
Main River (Biosonics Sonar)	6/7-8/31	--	(123,213)	(1,088,463)	(326,858)	(122,56
Anvik River						
Sonar site to Yellow R.	7/25	Fair	249	--	--	--
Yellow R. to McDonald Cr. (index)	7/25	Fair	1,329	--	--	--
Swift River	7/25	Fair	16	--	--	--
Beaver Creek	7/25	Fair	91	--	--	--
Otter Creek	7/25	Fair	28	--	--	--
Bendix Sonar Estimate	6/22-7/24	--	--	459,058	--	--
	Anvik Subtotal		1,713	459,058	--	0
Kaltag River (Tower) [c]	6/24-7/23	--	72	13,583	--	--
Nulato River						
North Fork	7/24	Fair	(687)	--	--	--
South Fork	7/24	Fair	(897)	--	--	--
Nulato River (tower) [k]	6/22-7/23	--	2,696	72,232	--	--
Total Lower Yukon River (downstream of Koyukuk River)			10,968	589,067	0	3,577
Koyukuk River Drainage						
Gisasa River (weir count) [q]	6/22-7/31	--	1,931	32,943	--	--
Gisasa River (aerial)	7/24	Good	(506)	--	--	--
Hogatza River drainage						
Clear Creek (tower) [r]	6/23-8/1	--	--	13,150	--	--
Henshaw Creek (Weir) [u]	7/1-8/2	--	649	25,249	--	--
Henshaw Creek (aerial)	7/28	Fair	(112)	(6,762)	--	--
South Fork Koyukuk River						
Jim River (aerial)	7/28	Incomplete	4	--	--	--
	SF Koyukuk Subtotal		4	0	0	0
Total Koyukuk River			2,584	58,192	0	0
Tozitna River (Dag. to mouth) [r]	7/31	Good	34	1,528	--	--
Tozitna River (tower) [r]	6/18-8/7	--	1,438	18,972	--	--
	Tozitna Subtotal		1,472	1,528	--	--
Total Yukon River (downstream of Tanana River)			15,024	648,787	0	3,577
Tanana River Drainage						
Kantishna River Drainage						
Kantishna River Tagging Estimate	8/16-9/27	--	--	--	(56,665)	--
Toklat Springs						
Aerial Survey	10/21	Fair	--	--	(10,319)	(81)
Floodplain Sloughs [b]	10/14-16	Good	--	--	(10,108)	293
Geiger Creek [b]	10/14	Good	--	--	(2,746)	744
Population Estimate [f]	--	--	--	--	28,519	--
Bearpaw River	7/27	Fair	56	15	--	--
Moose Creek	7/27	Poor	19	--	--	--
	Toklat Subtotal		75	15	28,519	1,037
Total Kantishna River			75	15	28,519	1,037
Tanana River Tagging (upstr. Kantishna River) [p]	8/16-9/27	--	--	--	(109,970)	--
Chatanika River	7/24	Good	(188)	(19)	--	--
Tower estimate [g]	7/2-7/26	--	635	346	--	--

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Appendix E2.–Page 2 of 9.

Data Year 2002

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Nenana River Drainage						
Teklanika River						
Teklanika Springs (vicinity of Comma Lake)	10/21	Poor/Fair	--	--	--	262
Nenana mainstem immediately upstr. Teklanika R. [u]	10/22	Good	--	--	--	328
Seventeen Mile Slough	7/18	Good	51	10	--	--
Seventeen Mile Slough [u]	10/22	Good	--	--	7	1,910
Julius Creek [u]	10/22	Good	--	--	--	15
Wood Creek [u]	10/22	Good	--	--	--	935
Clear Creek [y]	7/18	Good	61	--	--	--
Clear Creek [u]	10/22	Good	--	--	--	160
Glacier Creek [u]	10/22	Good	--	--	--	42
Lost Slough (western floodplain) [u]	10/22	Good	--	--	--	0
June Creek (foot survey)[u]	10/21	Good	--	--	--	95
Lignite Spring (foot survey)[u]	10/21	Good	--	--	--	130
	Nenana Subtotal		112	10	7	3,877
Chena River						
MCD to South Fk (aerial)		Incomplete	(181)	0	--	--
Mark Recapture Estimate [g]		--	6,967	--	--	--
	Chena Subtotal		6,967	--	--	--
Salcha River						
Mainstem River (aerial)	7/17	Fair	(2,416)	(78)	--	--
TAPS to Caribou Cr (aerial/index area)	7/17	Fair	(2,256)	(69)	--	--
Counting Tower Estimate [d,i]	6/29-8/9	--	8,850	18,640	--	--
	Salcha Subtotal		8,850	18,640	--	--
Richardson Clearwater River	11/13	Fair/Late	--	--	0	874
Mainstem Tanana sloughs (aerial)						
Benchmark 735 slough	11/13	Fair/Late	--	--	116	5
Little Delta River mouth vicinity	11/13	Fair/Late	--	--	78	--
Providence (Timber) vicinity	11/13	Fair/Late	--	--	6	--
Whitestone slough	11/13	Fair/Late	--	--	10	0
Rika's Roadhouse vicinity	11/13	Fair/Late	--	--	482	--
Bluff Cabin Island slough	11/13	Fair/Late	--	--	197	--
Clearwater Lake Outlet slough	11/13	Fair/Late	--	--	1,172	15
Onemile slough	11/13	Fair/Late	--	--	1,039	0
Pearse slough and vicinity	11/13	Fair/Late	--	--	634	--
Goodpaster River [w]						
(Eisenmenger Frk. To mouth)	7/31	Good	1,440	300	--	--
South Fork	8/1	--	51	--	--	--
Central Creek	8/1	--	0	--	--	--
Delta River						
Foot Survey (peak count)	11/7	Fair	--	--	(10,752)	54
Population Estimate [j]	--	--	--	--	11,992	--
Blue Creek	11/13	Good/Late	--	--	2	57
Bluff Cabin Slough (BCS) [aa]	11/13, 21	Fair/Late	--	--	3,116	4
Bluff Cabin Slough (BCS) (aerial)	11/13	Fair/Late	--	--	(1,875)	0
Bluff Cabin Creek [z]	11/13	Good/Late	--	--	626	286
Delta Clearwater River Index Area [g,h]	10/31	Good	--	--	300	38,625
Tributaries [x]	--	--	--	--	--	10,442
Clearwater Lake Outlet [g,h]	10/31	Good	--	--	2	5,900
Total Tanana River			18,130	19,311	48,298	60,282
'Rampart-Rapids' tagging estimate [p,q]	7/29-9/14	--	--	--	(196,186)	--
Chandalar River splitbeam sonar [q]	8/8-9/26	--	--	--	89,580	--
Charley River (W.Fork to mouth) [v]	8/13	Incomplete	37	--	--	--
Porcupine River Drainage						
Sheenjek River						
Bendix Sonar Estimate	8/8-9/24	--	--	--	31,642	--
Fishing Branch River						
Weir Passage [m]	8/29-10/15	--	--	--	13,563	--
Total Porcupine River			--	--	45,205	--
Total Alaskan Portion of Drainage [n]			33,191	668,098	183,083	63,859

-continued-

Data Year 2002

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Yukon Territory Streams [m]						
White River						
Kluane River	10/24	--	--	--	7,147	--
Little Salmon River (Index area)	8/15	Good/Excellent	526	--	--	--
Big Salmon River (index area)	8/16	Excellent	1,149	--	--	--
Teslin River Drainage						
Mainstem (index area)	--	--	--	--	64	--
Nisutlin River	8/16	Excellent	280	--	--	--
Wolf River	8/16	Excellent	84	--	--	--
	Teslin Subtotal		364		64	
Whitehorse Fishway	7/31-9/2	--	605	--	--	--
Canadian Mainstem Yukon River	10/25	--	--	--	973	--
Border Passage Estimate [p,s]		--	(43,359)	--	(91,808)	--
Total Yukon Territory (observed)			2,644	0	21,747	0
Total Yukon Territory (estimated from tagging) [t]			(34,058)	--	(85,650)	--
Yukon River Drainage Totals			35,835	668,098	204,830	63,859

[a] Estimates are from aerial surveys (peak count) unless otherwise indicated; carcass counts included. Data in parentheses not included in totals or subtotals.

[b] Foot survey.

[c] Cooperative program with BSFA and 4-H Youth.

[d] Estimate made by BSFA.

[f] Population estimate based upon timing of ground surveys at Toklat Springs and streamlife data.

[g] Estimate made by Division of Sport Fish.

[h] Boat survey.

[i] Population estimate based upon expanded counting tower observations.

[j] Population estimate based upon replicate foot surveys and salmon streamlife data.

[k] Cooperative program with BSFA and Nulato Tribal Council.

[m] Estimates made by Canadian Department of Fisheries and Oceans.

[n] Total for Alaskan portion of drainage does not include Fishing Branch River. Total for Yukon Territory includes Fishing Branch River.

[p] Population estimate based upon mark and recapture.

[q] Estimate made by USFWS.

[r] Estimate made by BLM.

[s] Canadian "border passage" estimate for Yukon Territory streams (excluding the Fishing Branch River). Canadian harvest has not been removed.

[t] Canadian "spawning escapement" estimate for Yukon Territory streams (excluding the Fishing Branch River); from DFO tagging study (border passage estimate minus Canadian harvest).

[u] Estimate made by Bering Sea Fisherman's Association (or YRDFA). Helicopter survey unless otherwise noted.

[v] Estimate made by National Park Service (NPS).

[w] Helicopter survey flown by Northern Ecological Services, Anchorage.

[x] Estimated tributary escapement based on expansion factor derived from the last 5 years of aerial surveys of tributaries. Average tributary proportion estimated to be 20.4% of the total run for the last 5 years.

[y] Also includes Glacier and Julius Creeks.

[z] Combination of aerial and foot survey conducted on same day.

[aa] Combination of 2 different foot surveys; November 13 (4 coho), November 21 (3,116 fall chum salmon).

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Data Year 2003

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Andreafsky River						
East Fork (weir count) [q]	6/18-8/14	--	4,336	22,461	--	8,231
East Fork (aerial)	7/25	Poor	(1,116)	--	--	--
West Fork (aerial)	7/25	Fair	1,578	--	--	--
	Andreafsky Subtotal		5,914	22,461	0	8,231
Yukon River (Pilot Station)						
Main River (Biosonics Sonar)		--	(268,537)	(1,168,518)	(889,778)	(269,081)
Bonasila River [r]	7/29	--	358	2,456	--	--
Stuyahok River [r]	7/29	--	20	20	--	--
Anvik River						
Sonar site to Yellow R.	7/25	Poor	0	--	--	--
Yellow R. to McDonald Cr. (index)	7/25	Poor	973	--	--	--
Swift River	7/25	Poor	13	--	--	--
Beaver Creek	7/25	Poor	81	--	--	--
Otter Creek	7/25	Poor	33	--	--	--
McDonald Creek	7/25	Poor	0	--	--	--
Bendix Sonar Estimate	6/21-7/27	--	--	251,358	--	--
	Anvik Subtotal		1,100	251,358	--	0
Kaltag River (Tower) [c]	6/18-7/30	--	97	3,056	--	--
Nulato River (Tower) [k]	6/20-7/29	--	1,716	17,814	--	--
Total Lower Yukon River (downstream of Koyukuk River)			9,205	297,165	0	8,231
Koyukuk River Drainage						
Gisasa River (weir count) [q]	6/28-8/3	--	1,873	24,379	--	--
Hogatza River drainage						
Clear Creek (Tower) [r]	6/22-8/2	--	5	5,230	--	--
Henshaw Creek (Weir) [u]	6/26-8/5	--	591	17,630	--	--
Total Koyukuk River			2,469	47,239	--	--
Tozitna River (Tower) [r]	6/24-8/6	--	1,818	11,487	--	--
Total Yukon River (downstream of Tanana River)			13,492	355,891	0	8,231
Tanana River Drainage						
Kantishna River Drainage						
Kantishna River Tagging Estimate	8/16-9/24	--	--	--	(87,359)	--
Toklat Springs						
Aerial Survey	10/16	Good	--	--	(10,235)	(25)
Sushana River [b]	10/23	Fair	--	--	(4,581)	106
Main Channel and Floodplain Sloughs [b]	10/23-10/24	Good-Poor	--	--	(10,643)	110
Geiger Creek [b]	10/23	Good	--	--	(3,045)	973
Population Estimate [f]	--	--	--	--	21,492	--
	Toklat Subtotal		0	0	21,492	1,189
Total Kantishna River			0	0	21,492	1,189
Tanana River Tagging (upstr. Kantishna River) [p]	8/16-9/27	--	--	--	(193,418)	--
Chatanika River	7/23	Good	(550)	400	--	--
Tower estimate [g]	6/30-8/13	--	1,088	(44)	--	--

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Data Year 2003

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Nenana River Drainage						
Teklanika River						
Teklanika Springs (vicinity of Comma Lake)	9/21	--	--	--	--	150
Nenana mainstem immediately upstr. Teklanika R. [u]	--	--	--	--	--	658
Seventeen Mile Slough [u]	--	--	--	--	--	4,535
Julius Creek [u]	--	--	--	--	--	1
Wood Creek [u]	--	--	--	--	--	3,055
Clear Creek [u]	--	--	--	--	--	884
Glacier Creek [u]	--	--	--	--	--	62
Lost Slough (western floodplain) [u]	--	--	--	--	--	85
June Creek (foot survey)[u]	--	--	--	--	--	74
Lignite Spring (foot survey)[u]	--	--	--	--	--	67
	Nenana Subtotal		0	0	0	9,571
Chena River						
MCD to 2 miles above S. Fork (aerial)	7/24	Incomp.	(140)	--	--	--
Counting Tower Estimate [g,i]	6/25-7/27	Incomp.	12,500	8,875	--	--
	Chena Subtotal		12,500	8,875	--	--
Salcha River						
Counting Tower Estimate [d,i]	6/25-8/24	Incomp.	14,600	47,808	--	--
Richardson Clearwater River	11/13	Fair/Late	--	--	149	6,232
Mainstem Tanana sloughs (aerial)						
Benchmark 735 Slough	11/3	Fair	--	--	1,073	938
Little Delta River mouth vicinity	11/3	Fair	--	--	264	85
Timber vicinity	11/3	Poor	--	--	127	1
Whitestone Slough	11/3	Fair	--	--	69	2
Rika's Roadhouse to Blue Cr.	11/3	Poor	--	--	4,235	--
Bluff Cabin Island Slough	11/3	Fair	--	--	200	--
Clearwater Lake Outlet Slough	11/3	Fair	--	--	10,950	163
Onemile Slough	11/3	Poor	--	--	2,081	16
Pearse Slough and vicinity	11/3	Fair	--	--	1,860	--
Providence Creek	11/3	Good	--	--	142	612
Goodpaster River						
Eisenmenger Frk. To mouth [w]	7/25	Fair/Good	3,004	0	--	--
Central Creek	7/25	Fair/Good	8	--	--	--
Delta River						
Foot Survey (peak count)	11/10	Good	--	--	(13,415)	243
Population Estimate [j]	--	--	--	--	22,582	--
Blue Creek	11/3	Good	--	--	1,492	345
Bluff Cabin Slough (BCS) [b]	11/14	Fair	--	--	(5407)	18
Bluff Cabin Slough (BCS) (aerial)	11/3	Fair	--	--	10,600	0
			--	--		
Delta Clearwater River Index Area [g,h]	10/21	Fair/Good	--	--	4,500	102,800
Tributaries [x]	--	--	--	--	--	27,791
Clearwater Lake and Outlet [g,h]	10/21	Fair/Good	--	--	2,000	8,800
Total Tanana River			31,200	57,083	83,816	158,806
'Rampart-Rapids' tagging estimate [p,q]	7/21-9/20	--	--	--	(485,102)	--
Chandalar River splitbeam sonar [q]	8/8-9/25	--	--	--	196,985	--
Porcupine River Drainage						
Sheenjek River						
Bendix Sonar Estimate	8/9-9/26	--	--	--	44,047	--
Fishing Branch River						
Weir Passage [m]	8/26-10/5	--	--	--	29,519	--
Total Porcupine River			--	--	73,566	--
Total Alaskan Portion of Drainage [n]			44,692	412,974	324,848	167,037

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Data Year 2003

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Yukon Territory Streams [m]						
White River						
Kluane River	10/20	--	--	--	39,347	--
Chandindu River (Weir)	7/10-7/30	--	85	--	--	--
Pelly River Drainage						
Blind Creek (Weir)	7/31-8/18	--	1,155	--	--	--
Little Salmon River (Index area)	8/15	Good	1,658	--	--	--
Big Salmon River (index area)	8/17	Good	3,075	--	--	--
Teslin River Drainage						
Mainstem (index area)	10/27	--	--	--	390	--
Nisutlin River	8/17	Fair/Good	687	--	--	--
Wolf River	8/17	Good	292	--	--	--
	Teslin Subtotal		979		390	
Whitehorse Fishway	--	--	1,443	--	--	--
Canadian Mainstem Yukon River	10/16	--	--	--	7,982	--
Border Passage Estimate [p,s]		--	(58,082)	--	(142,591)	--
Total Yukon Territory (observed)			8,395	0	77,238	0
Total Yukon Territory (estimated from tagging) [t]			(48,639)	--	(131,618)	--
Yukon River Drainage Totals			53,087	412,974	402,086	167,037

[a] Estimates are from aerial surveys (peak count) unless otherwise indicated; carcass counts included. Data in parentheses not included in totals or subtotals.

[b] Foot survey.

[c] Cooperative program with BSFA and 4H Youth.

[d] Estimate made by BSFA.

[f] Population estimate based upon timing of ground surveys at Toklat Springs and streamlife data.

[g] Estimate made by Division of Sport Fish.

[h] Boat survey.

[l] Population estimate based upon expanded counting tower observations.

[j] Population estimate based upon replicate foot surveys and salmon streamlife data.

[k] Cooperative program with BSFA and Nulato Tribal Council.

[m] Estimates made by Canadian Department of Fisheries and Oceans.

[n] Total for Alaskan portion of drainage does not include Fishing Branch River. Total for Yukon Territory includes Fishing Branch River.

[p] Population estimate based upon mark and recapture.

[q] Estimate made by USFWS.

[r] Estimate made by BLM.

[s] Canadian "border passage" estimate for Yukon Territory streams (excluding the Fishing Branch River). Canadian harvest has not been removed.

[t] Canadian "spawning escapement" estimate for Yukon Territory streams (excluding the Fishing Branch River); from DFO tagging study (border passage estimate minus Canadian harvest).

[u] Estimate made by Bering Sea Fisherman's Association (or YRDFA). Helicopter survey unless otherwise noted.

[w] Helicopter survey flown by Northern Ecological Services, Anchorage.

[x] Estimated tributary escapement based on expansion factor derived from the last 5 years of aerial surveys of tributaries. Average tributary proportion estimated to be 20.4% of the total run for the last 5 years.

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Data Year 2004

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Andreafsky River						
East Fork (weir count) [q]	6/21-9/23	--	8,045	64,883		11,146
East Fork (aerial)	7/19	Good	(2,879)	--	--	--
West Fork (aerial)	7/19	Good	1,317	--	--	--
	Andreafsky Subtotal		9,362	64,883	0	11,146
Yukon River (Pilot Station)						
Main River (Biosonics Sonar)	5/29-8/31	--	(156,606)	(1,357,826)	(594,060)	(188,350)
Anvik River						
Sonar site to Yellow R.	7/20	Good	171	--	--	--
Yellow R. to McDonald Cr. (index)	7/20	Good	3,304	--	--	--
Swift River	7/20	Good	5	--	--	--
Beaver Creek	7/20	Good	81	--	--	--
Otter Creek	7/20	Good	64	--	--	--
McDonald Creek	7/20	Good	54	--	--	--
Bendix Sonar Estimate	--	--	--	365,691	--	--
	Anvik Subtotal		3,679	365,691	--	0
Kaltag River (Tower) [c]		--		5,247	--	--
Nulato River						
North Fork	7/21	Good	856	--	--	--
South Fork	7/21	Good	465	--	--	--
Total Lower Yukon River (downstream of Koyukuk River)			14,362	435,821	0	11,146
Koyukuk River Drainage						
Gisasa River (weir count) [q]	6/24-8/1	--	1,774	37,851	--	--
Aerial	7/21	Good	(731)	--	--	--
Hogatza River drainage						
Clear Creek (weir) [r]	6/21-7/31	--	30	15,661	--	--
Henshaw Creek (weir) [u]	6/21-8/5	--	1,247	86,477	--	--
					--	--
Total Koyukuk River			3,051	139,989	--	--
Tozitna River (weir) [r]	6/22-8/11	--	1,849	22,915	--	--
Total Yukon River (downstream of Tanana River)			19,262	598,725	0	11,146
Tanana River Drainage						
Kantishna River Drainage						
Kantishna River Tagging Estimate	8/16-10/6	--	--	--	(64,950)	--
Toklat Springs						
Aerial Survey	10/12	Good	--	--	(45,313)	(204)
Sushana River [b]	10/24	Fair-Poor	--	--	(4,038)	0
Main Channel and Floodplain Sloughs [b]	10/23-24	Good-Poor	--	--	(19,130)	27
Geiger Creek [b]	10/23	Good	--	--	(6,246)	583
Population Estimate [f]	--	--	--	--	35,480	--
	Toklat Subtotal		0	0	35,480	610
Bearpaw River	10/13	Fair	--	--	107	0
Moose Creek	10/13	Good	--	--	1,999	163
McKinley River	10/13	Fair	--	--	7	0
Birch Creek						
Hult Creek	10/13	Good	--	--	113	26
Total Kantishna River			0	0	37,706	799
Tanana River Tagging (upstr. Kantishna River) [p]	8/16-9/30	--	--	--	(119,898)	--
Chatanika River					--	--
Tower estimate [g]	6/21-7/31	--	2,696	1,533	--	--

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Appendix E2.–Page 8 of 9.

Data Year 2004

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Nenana River Drainage						
Nenana mainstem immediately upstr. Teklanika R. [u]	10/3		--	--	--	450
Seventeen Mile Slough [u]	10/3		--	--	--	3,370
Julius Creek [u]	10/3		--	--	--	280
Wood Creek [u]	10/3		--	--	--	840
Clear Creek [u]	10/3		--	--	--	140
Glacier Creek [u]	10/3		--	--	--	90
Lost Slough (western floodplain) [u]	10/3		--	--	--	220
June Creek (foot survey)[u]	--		--	--	--	85
Lignite Spring (foot survey)[u]	--		--	--	--	91
	Nenana Subtotal		0	0	0	5,566
Chena River						
Counting Tower Estimate [g,i]	6/27-8/1	--	9,591	15,661	--	--
Salcha River						
Counting Tower Estimate [d,i]	6/25-8/20	--	15,887	48,559	--	--
Richardson Clearwater River	11/12	Good	--	--	66	8,626
Mainstem Tanana (aerial)						
Benchmark 735 Slough	11/12	Good-Fair	--	--	800	1,320
Timber vicinity	11/12	Poor-ice	--	--	324	2
Whitestone Slough	11/12	Good-Fair	--	--	145	39
South Bank (Blue Cr. To Delta R.)	11/12	Fair-Good	--	--	14,192	--
Bluff Cabin Island Slough	11/12	Good	--	--	163	0
Clearwater Lake Outlet Slough	11/12	Good	--	--	8,222	305
Onemile Slough	11/12	Good	--	--	4,974	79
Pearse Slough and vicinity	11/12	Fair-Poor	--	--	174	--
Goodpaster River						
(Eisenmenger Frk. To mouth) [w]	7/31	Fair-Good	480	--	--	--
South Fork	7/31	Incomp.	3	--	--	--
Delta River						
Foot Survey (peak count)	11/15; 11/30	Fair	--	--	(17,957)	99
Population Estimate [j]	--	--	--	--	25,073	--
Blue Creek	11/12	Fair	--	--	573	180
Bluff Cabin Slough (BCS) [b]	11/12	Poor	--	--	(5,599)	(71)
Bluff Cabin Slough (BCS) (aerial)	11/12	Good	--	--	10,270	133
Bluff Cabin Creek	11/12	Good	--	--	355	769
Delta Clearwater River Index Area [g,h]	10/27	Good	--	--	600	37,550
Tributaries [x]	--	--	--	--	--	10,551
Clearwater Lake and Outlet [g,h]	10/27	Good	--	--	400	2,925
Total Tanana River			28,657	65,753	104,037	68,943
'Rampart-Rapids' tagging estimate [p,q]	7/27-9/21	--	--	--	(618,579)	--
Chandalar River splitbeam sonar [q]	8/8-9/21	--	--	--	137,088	--
				--	--	--
Porcupine River Drainage						
Sheenjek River						
Sonar Estimate	8/8-9/25	--	--	--	37,877	--
Fishing Branch River						
Weir Passage [m]	8/22-10/10	--	--	--	20,274	--
Total Porcupine River			--	--	58,151	--
Total Alaskan Portion of Drainage [n]			47,919	664,478	279,002	80,089

-continued-

Data Year 2004

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Yukon Territory Streams [m]						
White River						
Kluane River	10/15	--	--	--	18,982	--
Pelly River Drainage						
Blind Creek (Weir)	7/11-8/15	--	792	--	--	--
Little Salmon River (Index area)	8/15	Excellent	1,140	--	--	--
Big Salmon River (index area)	8/18	Fair-Good	762	--	--	--
Teslin River Drainage						
Mainstem (index area)	10/29	--	--	--	167	--
Nisutlin River	8/18	Fair-Good	330	--	--	--
Wolf River	8/18	Fair-Good	226	--	--	--
	Teslin Subtotal		556		167	
Whitehorse Fishway	7/23-9/5	--	1,989	--	--	--
Canadian Mainstem Yukon River	10/15	--	--	--	3,440	--
Border Passage Estimate [p,s]		--	(47,000)	--	(125,000)	--
Total Yukon Territory (observed)			5,239	0	42,863	0
Total Yukon Territory (estimated from tagging) [t]			(36,204)	--	(115,455)	--
Yukon River Drainage Totals			53,158	664,478	321,865	80,089

[a] Estimates are from aerial surveys (peak count) unless otherwise indicated; carcass counts included. Data in parentheses not included in totals or subtotals.

[b] Foot survey.

[c] Cooperative program with BSFA and 4H Youth.

[d] Estimate made by BSFA.

[f] Population estimate based upon timing of ground surveys at Toklat Springs and streamlife data.

[g] Estimate made by Division of Sport Fish.

[h] Boat survey.

[i] Population estimate based upon expanded counting tower observations.

[j] Population estimate based upon replicate foot surveys and salmon streamlife data.

[m] Estimates made by Canadian Department of Fisheries and Oceans.

[n] Total for Alaskan portion of drainage does not include Fishing Branch River. Total for Yukon Territory includes Fishing Branch River. Population estimate based upon mark and recapture.

[q] Estimate made by USFWS.

[r] Estimate made by BLM.

[s] Canadian "border passage" estimate for Yukon Territory streams (excluding the Fishing Branch River). Canadian harvest has not been removed.

[t] Canadian "spawning escapement" estimate for Yukon Territory streams (excluding the Fishing Branch River); from DFO tagging study (border passage estimate minus Canadian harvest).

[u] Estimate made by Bering Sea Fisherman's Association (or YRDFA). Helicopter survey unless otherwise noted.

[w] Helicopter survey flown by Northern Ecological Services, Anchorage.

[x] Estimated tributary escapement based on expansion factor derived from the last 5 years of aerial surveys of tributaries. Average tributary proportion estimated to be 20.4% of the total run for the last 5 years.

Appendix E3.–Pilot Station sonar project estimates, Yukon River drainage, 1995, and 1997–2005.

	Estimated Passage								
Species	2004	2003	2002	2001	2000	1999	1998	1997 [a]	1995
Large Chinook Salmon [b]	110,236	245,037	92,584	85,511	39,233	127,809	71,177	118,121	130,271
Small Chinook Salmon	46,370	23,500	30,629	13,892	5,195	16,914	16,675	77,526	32,674
Total Chinook Salmon	156,606	268,537	123,213	99,403	44,428	144,723	87,852	195,647	162,945
Summer Chum Salmon	1,357,826	1,168,518	1,088,463	441,450	456,271	973,708	826,385	1,415,641	3,556,445
Fall Chum Salmon	594,060	889,778	326,858	376,182	247,935	379,493	372,927	506,621	1,053,245
Total Chum Salmon	1,951,886	2,058,296	1,415,321	817,632	704,206	1,353,201	1,199,312	1,922,262	4,609,690
Coho Salmon [c]	188,350	269,081	122,566	137,769	175,421	62,521	136,906	104,343	101,806
Other Species [d]	880,632	507,534	622,670	354,096	396,723	467,316	344,317	624,236	1,036,459
TOTAL	3,177,474	3,103,448	2,283,770	1,408,900	1,320,778	2,027,761	1,768,387	2,846,488	5,910,900

[a] The Yukon River sonar project operated in training mode in 1996 and there are no passage estimates for that year.
[b] Chinook Salmon >655 mm for 1999- 2005, >700mm for 1995-1998.
[c] This estimate may not include the entire run.
[d] Includes pink salmon, cisco, whitefish, sheefish, burbot, suckers, dolly varden, sockeye salmon, and northern pike.

Appendix E4.–Chinook salmon escapements for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1961–2004.[a]

	Andreafsky River			Anvik River		Nulato River			Gisasa River		Chena River			Salcha River		
	East Fork		West Fork	River	Index Area	North Fork	South Fork	Mainstem			River		Index Area	River		Index Area
Year	Aerial	Tower or Weir	Aerial	Aerial [b]	Aerial [b]	Aerial [c]	Aerial	Tower	Aerial	Weir	Population Estimate	Aerial	Aerial [d]	Population Estimate	Aerial	Aerial
1961	1,003			1,226		376 [g]	167		266 [g]						2,878	
1962	675 [g]		762 [g]									61 [g,h]			937	
1963												137 [g]				
1964	867		705												450	
1965			344 [g]	650 [g]											408	
1966	361		303	638											800	
1967			276 [g]	336 [g]												
1968	380		383	310 [g]											739	
1969	274 [g]		231 [g]	296 [g]											461 [g]	
1970	665		574 [g]	368								6 [g]			1,882	
1971	1,904		1,682									193 [g,h]			158 [g]	
1972	798		582 [g]	1,198								138 [g,h]			1,193	1,034
1973	825		788	613								21 [g]			391	352
1974			285	471 [g]		55 [g]	23 [g]		161			1,016 [h]	959 [h]		1,857	1,620
1975	993		301	730		123	81		385			316 [h]	262 [h]		1,055	950
1976	818		643	1,053		471	177		332			531	496		1,641	1,473
1977	2,008		1,499	1,371		286	201		255			563			1,202	1,052
1978	2,487		1,062	1,324		498	422		45 [g]			1,726			3,499	3,258
1979	1,180		1,134	1,484		1,093	414		484			1,159 [g]			4,789	4,310
1980	958 [g]		1,500	1,330	1,192	954 [g]	369 [g]		951			2,541			6,757	6,126
1981	2,146 [g]		231 [g]	807 [g]	577 [g]		791					600 [g]			1,237	1,121
1982	1,274		851						421			2,073			2,534	2,346
1983				653 [g]	376 [g]	526	480		572			2,553	2,336		1,961	1,803
1984	1,573 [g]		1,993	641 [g]	574 [g]							501	494		1,031	906
1985	1,617		2,248	1,051	720	1,600	1,180		735			2,553	2,262		2,035	1,860
1986	1,954	1,530 [k]	3,158	1,118	918	1,452	1,522		1,346		9,065 [m]	2,031	1,935		3,368	3,031
1987	1,608	2,011 [k]	3,281	1,174	879	1,145	493		731		6,404 [m]	1,312	1,209	4,771 [m]	1,898	1,671
1988	1,020	1,339 [k]	1,448	1,805	1,449	1,061	714		797		3,346 [m]	1,966	1,760	4,562 [m]	2,761	2,553
1989	1,399		1,089	442 [g]	212 [g]						2,666 [m]	1,280	1,185	3,924 [m]	2,333	2,136
1990	2,503		1,545	2,347	1,595	568 [g]	430 [g,n]		884 [g]		5,603 [m]	1,436	1,402	10,728 [m]	3,744	3,429
1991	1,938		2,544	875 [g]	625 [g]	767	1,253		1,690		3,025 [m]	1,277 [g]	1,277 [g]	5,608 [m]	2,212 [g]	1,925
1992	1,030 [g]		2,002 [g]	1,536	931	348	231		910		5,230 [m]	825 [g]	799 [g]	7,862 [m]	1,484 [g]	1,436
1993	5,855		2,765	1,720	1,526	1,844	1,181		1,573		12,241 [k]	2,943	2,660	10,007 [k]	3,636	3,562
1994	300 [g]	7,801 [p,r]	213 [g]		913 [g]	843	952	1,795 [r]	2,775	2,888 [r]	11,877 [k]	1,570	1,570	18,339 [k]	11,823	11,189
1995	1,635	5,841 [p]	1,108	1,996	1,147	968	681	1,412	410	4,023	9,680 [m]	3,575	3,039	13,643 [k]	3,978	3,734
1996		2,955 [p]	624	839	709		100 [n]	756		1,991	7,153 [m]	2,233	2,112	7,570 [m]	4,866	4,800
1997	1,140	3,186 [p]	1,510	3,979	2,690			4,766	144 [g]	3,764	10,811 [m]	3,495	3,303	18,514 [k]	3,457 [g]	3,457
1998	1,027	4,034 [p]	1,249 [g]	709 [g]	648 [g]	507	546	1,556	889 [g]	2,414	4,745 [k]	440 [g]	386 [g]	5,027 [k]	2,055 [g]	1,923 [g]
1999		3,444 [p]	870 [g]		950 [g]			1,953		2,644	6,485 [k]	2,412	2,137	9,198 [k]	3,608	3,570
2000	1,018	1,609 [p]	427	1,721	1,394			908		2,089	4,694 [m]	962 [g]	934 [g]	4,595 [k]	2,562 [g]	2,478 [g]
2001	1,065	1,148 [p, r]	570	1,420	1,172	1116	768	[w]	1298	3,052	9,696 [k]	1,651	1,487	13,328 [k]	3,107	2,990
2002	1,447	4,123 [p]	917	1,713	1,329	687	897	2,696	506	2,025	6,967 [m]	181 [g]	181 [g]	8,850 [k]	2,416	2,256
2003	1,116	4,336 [p]	1,578	1,100	973			1,716 [v]		1,899	8,739 [k]	140 [g]	140 [g]	15,942 [k]		
2004	2,879	8,045 [p]	1,317	3,679	3,304	856	465	[w]	731	1,774	9,591 [k]			15,887 [k]		
Escapement Objective [t]	>1,500		>1,400	>1,300 [u]	>500 [u]	>800	>500		>600				>1,700			>2,500

[a] Aerial survey counts are peak counts only. Survey rating was fair or good unless otherwise noted.
[b] From 1961-1970, river count data are from aerial surveys of various segments of the mainstem Anvik River. From 1972-1979, counting tower operated; mainstem aerial survey counts below the tower were added to tower counts. From 1980-present, aerial survey counts for the river are best available minimal estimates for the entire Anvik River drainage. Index area counts are from the mainstem Anvik River between the Yellow River and McDonald Creek.
[c] Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
[d] Chena River index area for assessing the escapement objective is from Moose Creek Dam to Middle Fork River.
[f] Salcha River index area for assessing the escapement objective is from the TAPS crossing to Caribou Creek.
[g] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
[h] Boat survey.
[j] Data unavailable for index area. Calculated from historic (1972-91) average ration of index area counts to total river counts (0.90:1.0).
[k] Estimate was obtained from tower counts or obtained from expansion of interrupted tower counts.
[m] Mark-recapture population estimate.
[n] Mainstem counts below the confluence of the North and South Forks Nulato River included in the South Fork counts.
[p] Weir counts.
[r] Incomplete count because of late installation and/or early removal of project.
[s] Data are preliminary.
[t] Interim escapement goals. Established March, 1992.
[u] Interim escapement goal for the entire Anvik River drainage is 1,300 salmon. Interim escapement objective for mainstem Anvik River between the Yellow River and McDonald Creek is 500 salmon.
[v] Project season operated from 7/5-7/22.
[w] Project did not operate.

Appendix E5.–Chinook salmon escapements for selected spawning areas in the Canadian portion of the Yukon River drainage, 1961–2004.

								Whitehorse Fishway		Canadian Mainstem		
Year	Tincup Creek [a]	Tatchun Creek [b]	Little Salmon River [a]	Big Salmon River [a,c]	Nisutlin River [a,d]	Ross River [a,f]	Wolf River [a,g]	Count	Percent Hatchery Contribution	Border Passage Estimate	Harvest	Spawning Escapement Estimate [j]
1961								1,068	0			
1962								1,500	0			
1963								483	0			
1964								595	0			
1965								903	0			
1966		7 [k]						563	0			
1967								533	0			
1968			173 [k]	857 [k]	407 [k]	104 [k]		414	0			
1969			120	286	105			334	0			
1970		100		670	615		71 [k]	625	0			
1971		130	275	275	650		750	856	0			
1972		80	126	415	237		13	391	0			
1973		99	27 [k]	75 [k]	36 [k]			224	0			
1974		192		70 [k]	48 [k]			273	0			
1975		175		153 [k]	249		40 [k]	313	0			
1976		52		86 [k]	102			121	0			
1977		150	408	316 [k]	77			277	0			
1978		200	330	524	375			725	0			
1979		150	489 [k]	632	713		183 [k]	1,184	0			
1980		222	286 [k]	1,436	975		377	1,383	0			
1981		133	670	2,411	1,626	949	395	1,555	0			
1982		73	403	758	578	155	104	473	0	36,598	16,808	19,790
1983	100	264	101 [k]	540	701	43 [k,n]	95	905	0	47,741	18,752	28,989
1984	150	153	434	1,044	832	151 [k]	124	1,042	0	43,911	16,295	27,616
1985	210	190	255	801	409	23 [k]	110	508	0	29,881	19,151	10,730
1986	228	155	54 [k]	745	459 [k]	72 [n]	109	557	0	36,479	20,064	16,415
1987	100	159	468	891	183	180 [k]	35	327	0	30,823	17,563	13,260
1988	204	152	368	765	267	242	66	405	16	44,445	21,327	23,118
1989	88	100	862	1,662	695	433 [p]	146	549	19	42,620	17,419	25,201
1990	83	643	665	1,806	652	457 [k]	188	1,407	24	56,679	18,980	37,699 [q]
1991			326	1,040		250	201 [r]	1,266 [h]	51 [h]	41,187	20,444	20,743 [q]
1992	73	106	494	617	241	423	110 [r]	758 [h]	84 [h]	43,185	17,803	25,382 [q]
1993		183	184	572	339	400	168 [r]	668 [h]	73 [h]	45,027	16,469	28,558 [q]
1994	101 [k]	477	726	1,764	389	506	393 [r]	1,577 [h]	54 [h]	46,680	20,770	25,910 [q]
1995	121	397	781	1,314	274	253 [k]	229 [r]	2,103	57	52,353	20,088	32,265 [q]
1996	150	423	1,150	2,565	719	102 [k]	705 [r]	2,958	35	47,955	19,546	28,409 [q]
1997	193	1198 [k]	1,025	1,345	277		322 [r]	2,084	24	53,400	15,717	37,683 [q]
1998	53	405	361	523	145		66	777	95	22,588	5,838	16,750 [q]
1999		252	495	353	330		131	1,118	74	23,716	12,354	11,362 [q]
2000	19 [t]	277 [u]	46	113	20		32	677	69	16,173	4,829	11,344 [q]
2001	39 [t]		1,035	1,020	481		154	988	36	52,207	9,769	42,438 [q]
2002 [s]			526	1,149	280		84	605	39	49,214	9,069	40,145
2003			1,658	3,075	687		292	1,443	70	56,924	9,443	47,486
2004			1,140	762	330		226	1,989	76	48,111	10,946	37,165
Escapement Objective												28,000 [q]

[a] Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted.
[b] All foot surveys except 1978 (boat survey) and 1986 (aerial survey).
[c] For 1968, 1970, and 1971 counts are from mainstem Big Salmon River. For all other years counts are from the mainstem Big Salmon River between Big Salmon Lake and the vicinity of Souch Creek.
[d] One Hundred Mile Creek to Sidney Creek.
[f] Big Timber Creek to Lewis Lake.
[g] Wolf Lake to Red River.
[h] Counts and estimated percentages may be slightly exaggerated. In some or all of these years a number of adipose-clipped fish ascended the fishway, and were counted, more than once. These fish would have been released into the fishway as fry between 1989 and 1994, inclusive.
[j] Estimated total spawning escapement excluding Porcupine River (estimated border escapement minus the Canadian catch).
[k] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
[m] Estimate derived by dividing the annual 5-area (Whitehorse Fishway, Big Salmon, Nisutlin, Wolf, Tatchun) count by the average proportion of the annual 5-area index count to the estimated spawning escapement from the DFO tagging study for years 1983, and 1985-1989.
[n] Information on area surveyed is unavailable.
[p] Counts are for Big Timber Creek to Sheldon Lake.
[q] Interim escapement objective. Stabilization escapement objective for years 1990-1995 is 18,000 salmon. Rebuilding step escapement objective for years 1996-2001 is 28,000 salmon.
[r] Counts are for Wolf Lake to Fish Lake outlet.
[s] Data are preliminary.
[t] Foot survey.
[u] High water delayed project installation, therefore, counts are incomplete.

Appendix E6.–Summer chum salmon escapements for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1973–2004.[a]

	Andreafsky River			Anvik River		Rodo River	Kaltag Creek	Nulato River			Gisasa River		Hogatza River		Tozitna River	Chena River		Salcha River	
	East Fork		West Fork					South Fork	North Fork[c]	Mainstem			Clear & Caribou Cr.	Clear Creek					
Year	Aerial	Sonar, Tower, or Weir Counts	Aerial	Tower & Aerial[b]	Sonar	Aerial	Tower	Aerial	Aerial	Tower	Aerial	Weir	Aerial	Tower	Weir and Aerial	Aerial	Tower	Aerial	Tower
1973	10,149[d]		51,835	249,015												79[d]		290	
1974	3,215[d]		33,578	411,133		16,137		29,016	29,334		22,022				1,823	4,349		3,510	
1975	223,485		235,954	900,967		25,335		51,215	87,280		56,904		22,355		3,512	1,670		7,573	
1976	105,347		118,420	511,475		38,258		9,230[d]	30,771		21,342		20,744		725[d]	685		6,484	
1977	112,722		63,120	358,771		16,118		11,385	58,275		2,204[d]		10,734		761[d]	610		677[d]	
1978	127,050		57,321	307,270		17,845		12,821	41,659		9,280[d]		5,102		2,262	1,609		5,405	
1979	66,471		43,391		280,537			1,506	35,598		10,962		14,221			1,025[d]		3,060	
1980	36,823[d]		114,759		492,676			3,702[d]	11,244[d]		10,388		19,786		580	338		4,140	
1981	81,555	147,312[f]			1,486,182			14,348								3,500		8,500	
1982	7,501[d]	181,352[f]	7,267[d]		444,581						334[d]		4,984[d]		874	1,509		3,756	
1983		110,608[f]			362,912			1,263[d]	19,749		2,356[d]		28,141		1,604	1,097		716[d]	
1984	95,200[d]	70,125[f]	238,565		891,028								184[d]			1,861		9,810	
1985	66,146		52,750		1,080,243	24,576		10,494	19,344		13,232		22,566		1,030	1,005		3,178	
1986	83,931	167,614[g]	99,373		1,189,602			16,848	47,417		12,114				1,778	1,509		8,028	
1987	6,687[d]	45,221[g]	35,535		455,876			4,094	7,163		2,123		5,669[d]			333		3,657	
1988	43,056	68,937[g]	45,432		1,125,449	13,872		15,132	26,951		9,284		6,890		2,983	432		2,889[d]	
1989	21,460[d]				636,906											714[d]		1,574[d]	
1990	11,519[d]		20,426[d]		403,627	1,941[d]		3,196[d,h]	1,419[d]		450[d]		2,177[d]		36	245[d]		450[d]	
1991	31,886		46,657		847,772	3,977		13,150	12,491		7,003		9,947		93	115[d]		154[d]	
1992	11,308[d]		37,808[d]		775,626	4,465		5,322	12,358		9,300		2,986		794	848[d]		3,222	
1993	10,935[d]		9,111[d]		517,409	7,867		5,486	7,698		1,581				970	168	5,400	212	5,809
1994		200,981[j, k]			1,124,689		47,295			148,762[k]	6,827	51,116[k]	8,247[m]			1,137	9,984	4,916	39,450
1995		172,148[j]			1,339,418	12,849	77,193	10,875	29,949	236,890	6,458	136,886		116,735	4,985	185[d]	3,519[k]	934[d]	30,784
1996		108,450[j]			933,240	4,380	51,269	8,490[d,h]		129,694		158,752	27,090[m]	100,912	2,310	2,061	12,810[k]	9,722	74,827[k]
1997		51,139[j]			609,118	2,775[d]	48,018			158,395	686[d]	31,800	1,821[d]	76,454	428[d]	594[d]	9,439[k]	3,968[d]	35,741[k]
1998		67,720[j]			469,547		8,113			50,750		21,142	120[d, r]	212[k]	7[d]	24[d]	5,901	370[d]	17,289
1999[q]		32,587[j]			441,305		5,339			30,456		10,155		11,283		520	9,165	150	23,221
2000	2,094[d]	24,785[j]	18,989[d]		205,460		6,727			24,308		11,320		18,698	480	107	3,515	228	20,516
2001		2,134[k]			224,058		[s]			[t]		17,946		3,674	12,503		4,773		19,671
2002		44,194[j]			462,396		13,583			72,286		33,481		13,150	18,792		1,080	78	20,837
2003		22,461[j]			251,358		3,056			17,814[k]		25,999		6,159	8,487		573		890
2004		64,883[j]			365,556		5,247			[s]		37,851		15,661	25,003		13,041[q]		40,122[q]
E. O.[n]	>109,000		>116,000		>500,000				>53,000[o]				>17,000[p]					>3,500	

[a] Aerial survey counts are peak counts only, survey rating is fair or good unless otherwise noted.
[b] From 1972-1979 counting tower operated; escapement estimate listed is the tower counts plus expanded aerial survey counts below the tower (see Buklis 1982).
[c] Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
[d] Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.
[f] Sonar count.
[g] Tower count.
[h] Mainstem counts below the confluence of the North and South Fords of the Nulato River included in the South Fork counts.
[j] Weir count.
[k] Incomplete count due to late installation and/or early removal of project or high water events.
[m] BLM helicopter survey.
[n] Interim escapement objective.
[o] Interim escapement objective for North Fork Nulato River only.
[p] Consists of Clear and Caribou Creeks interim escapement objectives of 9,000 and 8,000, respectively.
[q] Data are preliminary.
[r] Consists of Clear Creek only.
[s] Project did not operate.
[t] No counts due to incomplete operations.

Appendix E7.–Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Alaskan and Canadian portions of the Yukon River drainage, 1971–2004.[a]

	Alaska							
	Tanana River Drainage					Upper Yukon River Drainage		
Year	Toklat River [b]	Kantishna River Abundance Estimate [c]	Delta River [d]	Bluff Cabin Slough [e]	Upper Tanana River Abundance Estimate [f]	Rampart Rapids Abundance Estimate [g]	Chandalar River [h]	Sheenjek River [j]
1971								
1972			5,384					
1973			10,469					
1974	41,798		5,915					89,966 [x]
1975	92,265		3,734 [y]					173,371 [x]
1976	52,891		6,312 [y]					26,354 [x]
1977	34,887		16,876 [y]					45,544 [x]
1978	37,001		11,136					32,449 [x]
1979	158,336		8,355					91,372 [x]
1980	26,346 [ah]		5,137	3,190 [m]				28,933 [x]
1981	15,623		23,508	6,120 [m]				74,560
1982	3,624		4,235	1,156				31,421
1983	21,869		7,705	12,715				49,392
1984	16,758		12,411	4,017				27,130
1985	22,750		17,276 [y]	2,655 [m]				152,768
1986	17,976		6,703 [y]	3,458			59,313	84,207 [ad]
1987	22,117		21,180	9,395			52,416	153,267 [ad]
1988	13,436		18,024	4,481 [m]			33,619	45,206 [ad]
1989	30,421		21,342 [y]	5,386 [m]			69,161	99,116 [ad]
1990	34,739		8,992 [y]	1,632			78,631	77,750 [ad]
1991	13,347		32,905 [y]	7,198				86,496 [ag]
1992	14,070		8,893 [y]	3,615 [m]				78,808
1993	27,838		19,857	5,550 [m]				42,922
1994	76,057		23,777 [y]	2,277 [m]				150,565
1995	54,513 [ah]		20,587	19,460	268,173		280,999	241,855
1996	18,264		19,758 [y]	7,074 [y]	134,563	654,296	208,170	247,965
1997	14,511		7,705 [y]	5,707 [y]	71,661	369,547	199,874	80,423 [ak]
1998	15,605		7,804 [y]	3,549 [y]	62,384	194,963	75,811	33,000
1999	4,551	27,199	16,534 [y]	7,037 [y]	97,843	189,741	88,662	14,229
2000	8,911	21,450	3,001 [y]	1,595	34,844	[an]	65,894	30,084 [ao]
2001	6,007 [ap]	22,992	8,103 [y]	1,808 [m]	96,556 [aq]	201,766	110,971	53,932
2002	28,519	56,665	11,992 [y]	3,116	109,961	196,186	89,580	31,856
2003	21,492	87,359	22,582 [y]	10,600	193,418	485,102	214,427	44,047
2004	35,480	76,163	25,073 [y]	10,270	123,879	618,597 [ar]	136,703	37,878
Escapement Objective [as]	15,000-33,000		6000-13,000		46,000-103,000 [at]		74,000-152,000	50,000-104,000

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Appendix E7.–Page 2 of 3.

	Canada							
						Canadian Mainstem		
Year	Fishing Branch River [k,m]	Mainstem Yukon River Index [m,p]	Koidern River [m]	Kluane River [m,p]	Teslin River [m,r]	Border Passage Estimate	Harvest	Spawning Escapement Estimate [s]
1971	312,800							
1972	35,125 [t]			198 [v,e]				
1973	15,989 [w]	383		2,500				
1974	32,525 [w]			400				
1975	353,282 [w]	7,671		362 [e]				
1976	36,584			20				
1977	88,400			3,555				
1978	40,800			0 [e]				
1979	119,898			4,640 [e]				
1980	55,268			3,150		39,130	16,218	22,912
1981	57,386 [z]			25,806		66,347	19,281	47,066 [ac]
1982	15,901	1,020 [aa]		5,378		47,049	15,091	31,958
1983	27,200	7,560		8,578 [e]		118,365	27,490	90,875
1984	15,150	2,800 [ab]	1,300	7,200	200	81,900	25,267	56,633 [ac]
1985	56,016 [w]	10,760	1,195	7,538	356	99,775	37,765	62,010
1986	31,723 [w]	825	14	16,686	213	101,826	13,886	87,940
1987	48,956 [w]	6,115	50	12,000		125,121	44,345	80,776
1988	23,597 [w]	1,550	0	6,950	140	69,280	32,494	36,786
1989	43,834 [w]	5,320	40	3,050	210 [v]	55,861	20,111	35,750
1990	35,000 [af]	3,651	1	4,683	739	82,947	31,212	51,735
1991	37,733 [w]	2,426	53	11,675	468	112,303	33,842	78,461
1992	22,517 [w]	4,438	4	3,339	450	67,962	18,880	49,082
1993	28,707 [w]	2,620	0	4,610	555	42,165	12,422	29,743
1994	65,247 [w]	1,429 [v]	20 [v]	10,734	209 [v]	133,712	35,354	98,358
1995	51,971 [w,aj]	4,701	0	16,456	633	198,203	40,111	158,092
1996	77,278 [w]	4,977		14,431	315	143,758	21,329	122,429
1997	26,959 [w]	2,189		3,350	207	94,725	9,286	85,439
1998	13,564 [w]	7,292		7,337	236	48,047	1,742	46,305
1999	12,094 [w]			5,136	19 [v]	72,188 [au]	13,506	58,682
2000	5,053 [w]	933 [v]		1,442	204	57,978 [au]	4,236	53,742
2001	21,669 [w]	2,453		4,884	5	38,769 [au]	4,918	33,851
2002	13,563 [am]	973		7,147	64	104,853 [au]	6,158	98,695
2003	29,519	7,982		39,347	390	153,656 [au]	10,973	142,683
2004	20,274	3,440		18,982	167	163,625 [au]	9,545	154,080
Escapement Objective [av]	50,000-120,000							>80,000

[a] Latest table revision January 10, 2005.

[b] Expanded total abundance estimates for upper Toklat River index area using stream life curve (SLC) developed with 1987-1993 data. Index area includes Geiger Creek, Sushana River, and mainstem floodplain sloughs from approximately 0.25 mile upstream of roadhouse to approximately 1.25 miles downstream of roadhouse.

[c] Fall chum salmon abundance estimate for the Kantishna and Toklat River drainages is based on a mark-recapture program. Tag deployment occurs at a fish wheel located near the mouth of the Kantishna River and recaptures are collected at 3 fish wheels; 2 located 8 miles upstream of the mouth of the Toklat River (1999-2004) and one fish wheel on the Kantishna (2000-2002) and 2 fish wheels in 2003 and 2004.

[d] Estimates are a total spawner abundance, using migratory time density curves and streamlife data.

[e] Foot survey.

-continued -

[f] Fall chum salmon abundance estimate for the upper Tanana River drainages is based on a mark-recapture program. Tag deployment occurs from a fish wheel (2 wheels in 1995) located just upstream of the Kantishna River and recaptures are collected from 1 fish wheel (2 wheels in 1995) located downstream from the village of Nenana.

[g] Fall chum salmon abundance estimate for the upper Yukon River drainage is based on a mark-recapture program. Tag deployment occurs at 2 fish wheels (1 wheel in 2004) located at the "Rapids" and recaptures are collected from a fish wheel (2 wheels from 1996 to 1999) located downstream from the village of Rampart.

[h] Side-scan sonar estimate 1986-1990, split beam sonar estimate 1995-current.

[j] Side-scan sonar estimate beginning in 1981, split beam sonar estimate 2002-2004.

[k] Located within the Canadian portion of the Porcupine River drainage. Total escapement estimated using weir to aerial survey expansion factor of 2.72, unless otherwise indicated.

[m] Aerial survey count unless otherwise indicated.

[n] Tatchun Creek to Fort Selkirk.

[p] Duke River to end of spawning sloughs below Swede Johnston Creek.

[r] Boswell Creek area (5 km below to 5 km above confluence).

[s] Excludes Fishing Branch River escapement (estimated border passage minus Canadian removal).

[t] Weir installed on September 22. Estimate consists of a weir count of 17,190 after September 22, and a tagging passage estimate of 17,935 prior to weir installation.

[v] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.

[w] Weir count.

[x] Total escapement estimate using sonar to aerial survey expansion factor of 2.22.

[y] Population estimate from replicate foot surveys and stream life data (area under the curve method).

[z] Initial aerial survey count was doubled before applying the weir/aerial expansion factor of 2.72 since only half of the spawning area was surveyed.

[aa] Boat survey.

[ab] Total index area not surveyed. Survey included the mainstem Yukon River between Yukon Crossing to 30 km below Fort Selkirk.

[ac] Escapement estimate based on mark-recapture program unavailable. Estimate based on assumed average exploitation rate.

[ad] Expanded estimates for period approximating second week August through middle fourth week September, using Chandalar River run timing data.

[af] Weir was not operated. Although only 7,541 chum salmon were counted on a single survey flown October 26, a population estimate of approximately 27,000 fish was made through date of survey, based upon historic average aerial-to-weir expansion of 28%. Actual population of spawners was reported by DFO as between 30,000-40,000 fish considering aerial survey timing.

[ag] Total abundance estimate are for the period approximating second week August through middle fourth week of September. Comparative escapement estimates prior to 1986 are considered more conservative; approximating the period of end of August through middle week of September.

[ah] Minimal estimate because of late timing of ground surveys with respect to peak of spawning.

[aj] Incomplete count due to late installation and/or early removal of project or high water events.

[ak] Data interpolated due to high water from 29 August to 3 September 1997 during build-up to peak passage.

[am] Data are preliminary.

[an] Project ended early, population estimate through 19 August 2000 was 45,021, on average this represents 0.24 percent of the run.

[ao] Project ended early (September 12) because of low water.

[ap] Minimal estimate because Sushana River was breached by the main channel and uncountable.

[aq] Low number of tags deployed and recovered resulted in an estimate with extremely large confidence interval (95% CI +/- 41,072).

[ar] Preliminary estimate for 2004 was 618,597 fall chum salmon with a high standard error (SE 60,714).

[as] Biological Escapement Goal (BEG) ranges recommended to the Board of Fisheries (2001).

[at] The BEG for the Tanana River as a whole is 61,000 to 136,000. However it includes the Toklat plus the upper Tanana which was broken out for comparison to the Upper Tanana River abundance estimate.

[au] The 1999 to 2004 DFO chum border estimates were revised using stratified "SPAS" analyses.

[av] Escapement Objective (EO) based on US/Canada Treaty obligations, some years stabilization or rebuilding goals are applied.

Appendix E8.–Yukon River fall chum salmon estimated brood year production and return per spawner estimates 1974–2004.

Year	(P) Estimated Annual Totals			Estimated Brood Year Return: Number of Salmon [a]				Estimated Brood Year Return: Percent				(R)	(R/P)
	Escapement	Catch	Return	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Total Brood Year Return[a]	Return/ Spawner
1974	437,485	478,875	916,360	91,751	497,755	68,693	0	0.139	0.756	0.104	0.000	658,199	1.50
1975	1,465,213	473,062	1,938,275	150,451	1,225,440	61,227	123	0.105	0.853	0.043	0.000	1,437,241	0.98
1976	268,841	339,043	607,884	102,062	585,820	136,358	4,313	0.123	0.707	0.165	0.005	828,553	3.08
1977	514,843	447,918	962,761	102,370	1,069,856	175,578	4,186	0.076	0.791	0.130	0.003	1,351,992	2.63
1978	320,487	434,030	754,517	22,112	332,023	90,532	0	0.050	0.747	0.204	0.000	444,667	1.39
1979	780,818	615,377	1,396,195	41,088	769,082	274,310	3,894	0.038	0.707	0.252	0.004	1,088,374	1.39
1980	261,113	488,305	749,418	8,373	362,199	208,962	3,125	0.014	0.622	0.359	0.005	582,658	2.23
1981	551,192	677,257	1,228,449	45,855	955,725	278,386	8,888	0.036	0.742	0.216	0.007	1,288,853	2.34
1982	179,828	373,175	553,003	11,327	400,323	166,754	678	0.020	0.691	0.288	0.001	579,083	3.22
1983	347,157	525,016	872,173	12,569	875,355	223,322	2,304	0.011	0.786	0.201	0.002	1,113,550	3.21
1984	270,042	412,322	682,364	7,089	407,774	173,546	8,493	0.012	0.683	0.291	0.014	596,902	2.21
1985	664,426	515,481	1,179,907	46,605	871,500	270,268	3,194	0.039	0.731	0.227	0.003	1,191,566	1.79
1986	376,374	318,028	694,402	0	428,614	368,513	4,353	0.000	0.535	0.460	0.005	801,479	2.13
1987	651,943	406,143	1,058,086	12,380	617,519	290,767	7,720	0.013	0.665	0.313	0.008	928,386	1.42
1988	325,137	353,242	678,379	41,003	175,236	152,368	10,894 [b]	0.108	0.462	0.401	0.029	379,501	1.17
1989	506,173	541,177	1,047,350	2,744	282,905	345,136 [b]	20,290	0.004	0.435	0.530	0.031	651,075	1.29
1990	369,654	350,100	719,754	710	579,452 [b]	418,448	30,449	0.001	0.563	0.407	0.030	1,029,059	2.78
1991	591,132	439,096	1,030,228	3,663 [b]	1,024,800	369,103	12,167	0.003	0.727	0.262	0.009	1,409,733	2.38
1992	324,253	148,846	473,099	6,763	653,648	197,073	3,907	0.008	0.759	0.229	0.005	861,392	2.66
1993	352,688	91,015	443,703	7,745	451,327	102,420	3,260	0.014	0.799	0.181	0.006	564,752	1.60
1994	769,920	169,225	939,145	4,322	225,243	150,674	1,614 [b]	0.011	0.590	0.395	0.004	381,853	0.50
1995	1,009,155	461,147	1,470,302	2,371	269,004	69,385 [b]	383	0.007	0.789	0.203	0.001	341,142	0.34
1996	800,022	260,923	1,060,945	423	166,812 [b]	136,833	8,197	0.001	0.534	0.438	0.026	312,265	0.39
1997	494,831	170,059	664,890	3,108 [b]	244,669	116,941	3,209	0.008	0.665	0.318	0.009	367,927	0.74
1998	263,121	70,820	333,941	650	266,458	55,829	5,927	0.002	0.810	0.170	0.018	328,864	1.25
1999	292,185	131,176	423,361	28,752	679,204	154,424		0.033	0.785	0.179		865,101 [d]	>2.96
2000	212,376	28,543	240,919	8,136	262,956							393,846 [g]	>1.85
2001	337,559	44,976	382,535	120,440									
2002	392,920	27,427	420,347										
2003	667,377	79,001	746,378										
2004	468,511	75,236	543,747										
Average-04	492,477	320,840	813,317										
	515,834	**All Brood Years (1974-1998)**		29,101	549,542	196,057	6,063	0.0337	0.6859	0.2714	0.0090	780,763	1.79
	382,021	Even Brood Years (1974-1998)		22,814	390,874	178,814	5,851	0.0376	0.6507	0.3007	0.0110	598,806	1.89
	660,798	Odd Brood Years (1974-1998)		35,912	721,432	214,737	5,802	0.0294	0.7241	0.2396	0.0068	977,883	1.68

[a] The estimated number of salmon which returned are based upon annual age composition observed in lower Yukon test nets each year, weighted by test fish CPUE.

[b] Based upon expanded test fish age composition estimates for years in which the test fishery terminated early both in 1994 and 2000 (see footnote "b" Table 5).

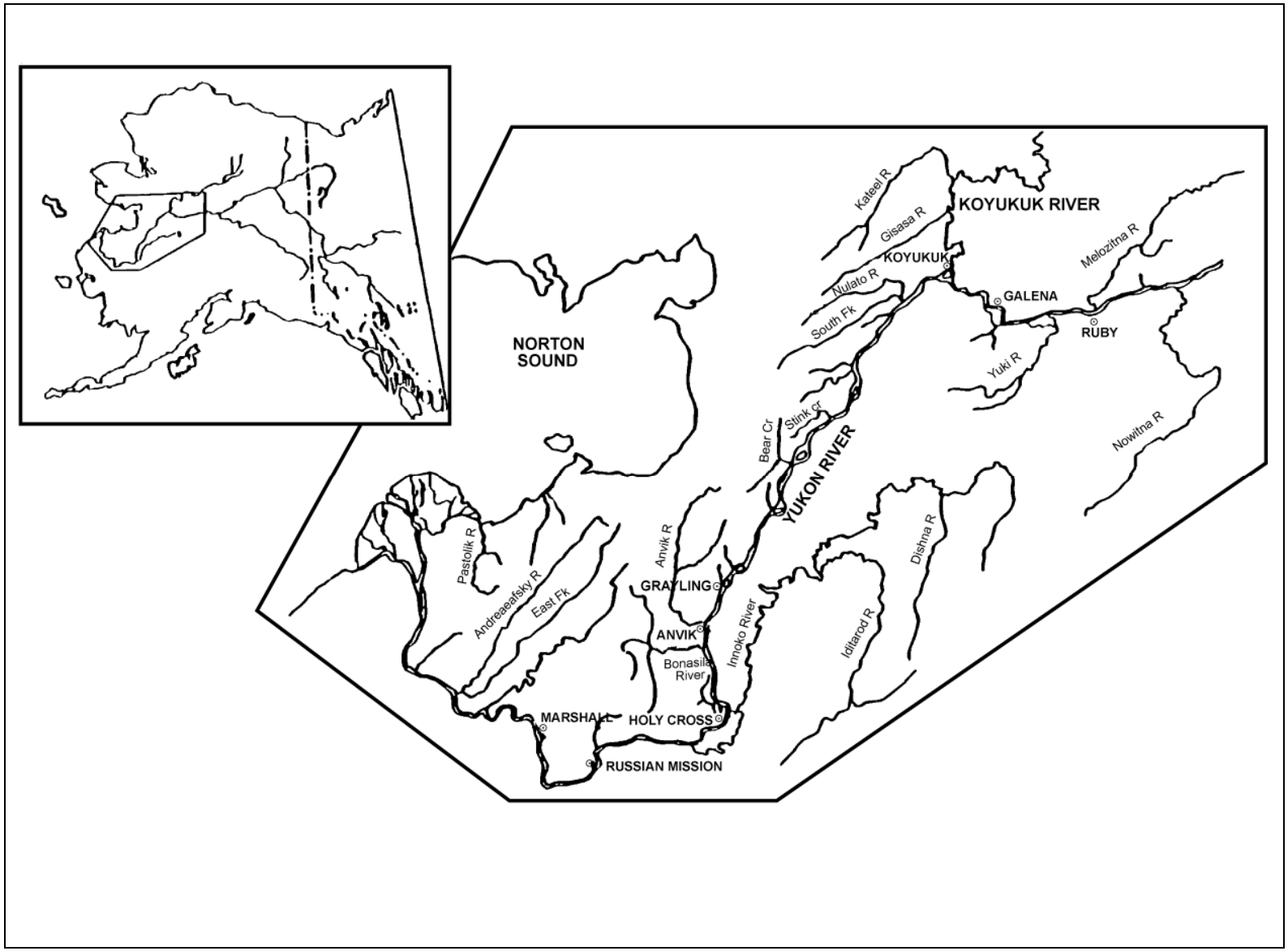
[d] Brood year return for 3, 4, and 5 year fish, indicate that production (R/P) from brood year 1999 was at least 2.96.

[g] Brood year return for 3 and 4 year fish, indicate that production (R/P) from brood year 2000 was at least 1.85.

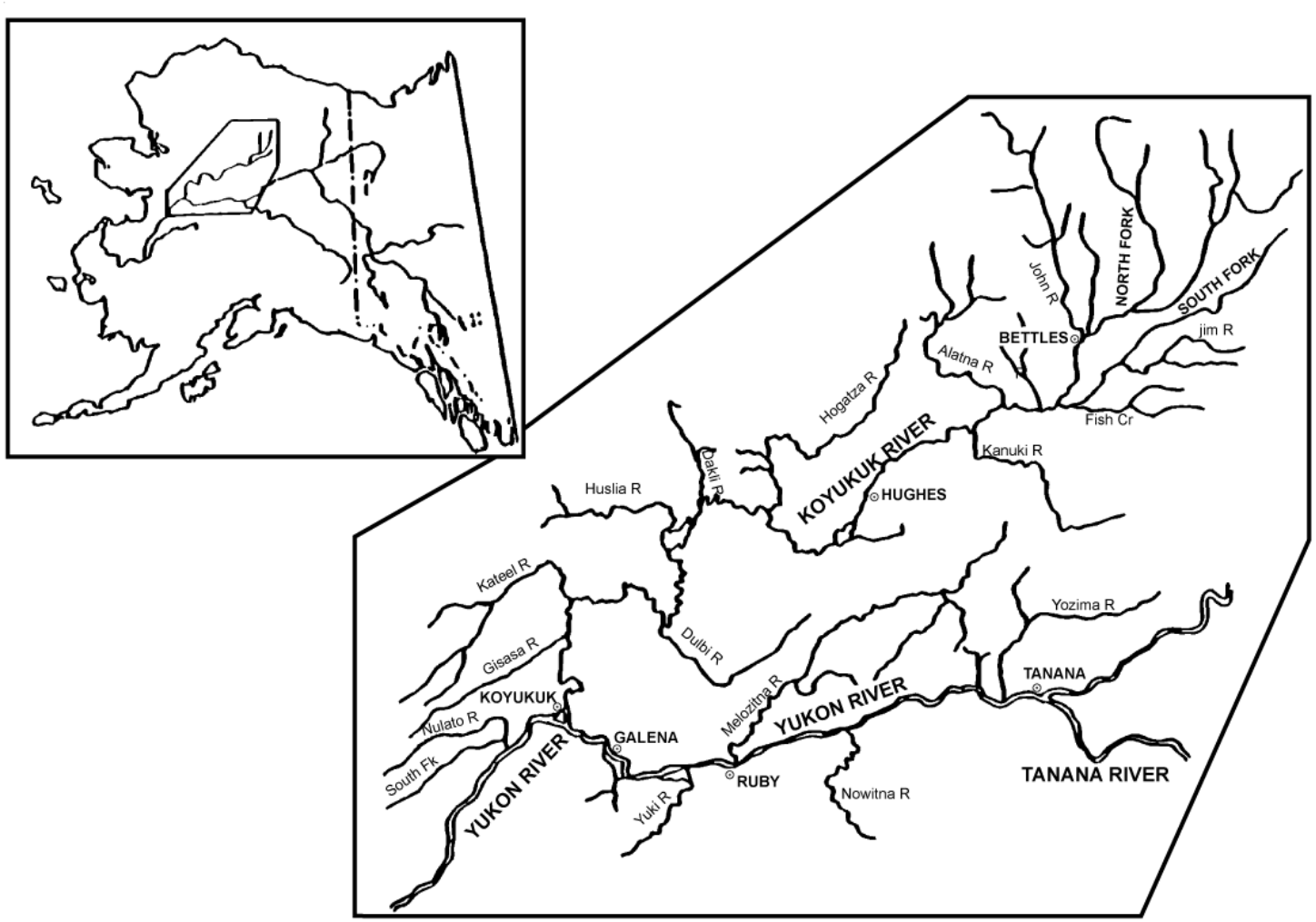
Appendix E9.–Coho salmon escapements for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1972–2004.[a]

	Andreafsky River			Kantishna River		Nenana River						
Year	East Fork	West Fork	Anvik River	Geiger Creek [b]	Barton Creek	Lost Slough	Nenana Mainstem [c]	Wood Creek	Seventeen Mile Slough	Delta Clearwater River [f,g]	Clearwater Lake and Outlet	Richardson Clearwater River
1972										630	417	454 [k]
1973										3,322	551 [f]	375 [f]
1974						1,388			27	3,954 [j]	560	652 [f]
1975						943			956	5,100	1,575 [f, h]	4 [k]
1976			467 [k]	25		118			281	1,920	1,500 [f, h]	80 [k]
1977			81 [k]	60		524 [k]		310 [b]	1,167	4,793	730 [f, h]	327
1978						350		300 [b]	466	4,798	570 [f, h]	
1979						227			1,987	8,970	1,015 [f, h]	372
1980				3		499 [k]		1,603 [b]	592	3,946	1,545 [f, h]	611
1981	1,657 [k]					274		849 [n,r]	1,005	8,563 [p]	459 [k]	550
1982				81				1,436 [n,r]		8,365 [p]		
1983				42		766		1,042 [n]	103	8,019 [p]	253	88
1984				20		2,677		8,826 [n]		11,061	1,368	428
1985				42		1,584		4,470 [n]	2,081	5,358	750	
1986				5	496	794		1,664 [n]	218 [d,h]	10,857	3,577	146 [k]
1987				1,175		2,511		2,387 [n]	3,802	22,300	4,225 [f, h]	
1988	1,913	830	1,203	159	437	348		2,046 [n]		21,600	825 [f, h]	
1989				155	12 [k]			412 [n]	824 [k]	11,000	1,600 [f, h]	483
1990				211		688	1,308		15 [k]	8,325	2,375 [f, h]	
1991				427	467 [k]	564	447		52	23,900	3,150 [f, h]	
1992				77	55 [k]	372			490	3,963	229 [f, h]	500 [f]
1993				138	141	484	419	666 [n,s]	581	10,875	3,525 [f, h]	
1994				410	2,000 [n,s]	944	1,648	1,317 [n,s]	2,909	62,675 [w]	3,425 [f, h]	5,800 [f]
1995	10,901 [n]			142	192 [n,s]	4,169	2,218	500 [n]	2,972 [k]	20,100	3,625 [f, h]	
1996	8,037 [n]			233	0 [n]	2,040	2,171	201	3,668 [d,h]	14,075 [x]	1,125 [f, y]	
1997	9,472 [n]			274		1,524 [aa]	1,446	0 [ab]	1,996 [d,h]	11,525	2,775 [f, h]	
1998	7,193 [n]			157		1,360	2,771	0	1,413 [b,h]	11,100	2,775 [f, h]	
1999	2,963 [n]			29		1,002	745	0	662	10,975		
2000	8,451 [n]			142		55 [k]	68 [k]	0	879	9,225	1,025	2,175
2001	15,896 [n]		262	578		242	859	699	3,753	46,875	4,425	1,531
2002 [t]	3,577 [n]			744		0	328	935	1,910	38,625	5,900	874
2003	8,231 [n]			973		85	658	3055	4,535	102,800	8,800	6232
2004 [t]	11,146 [n]			583		220	450	840	3,370	37,550	2,925	8626
SEG										5,200 to 17,000 [u]		

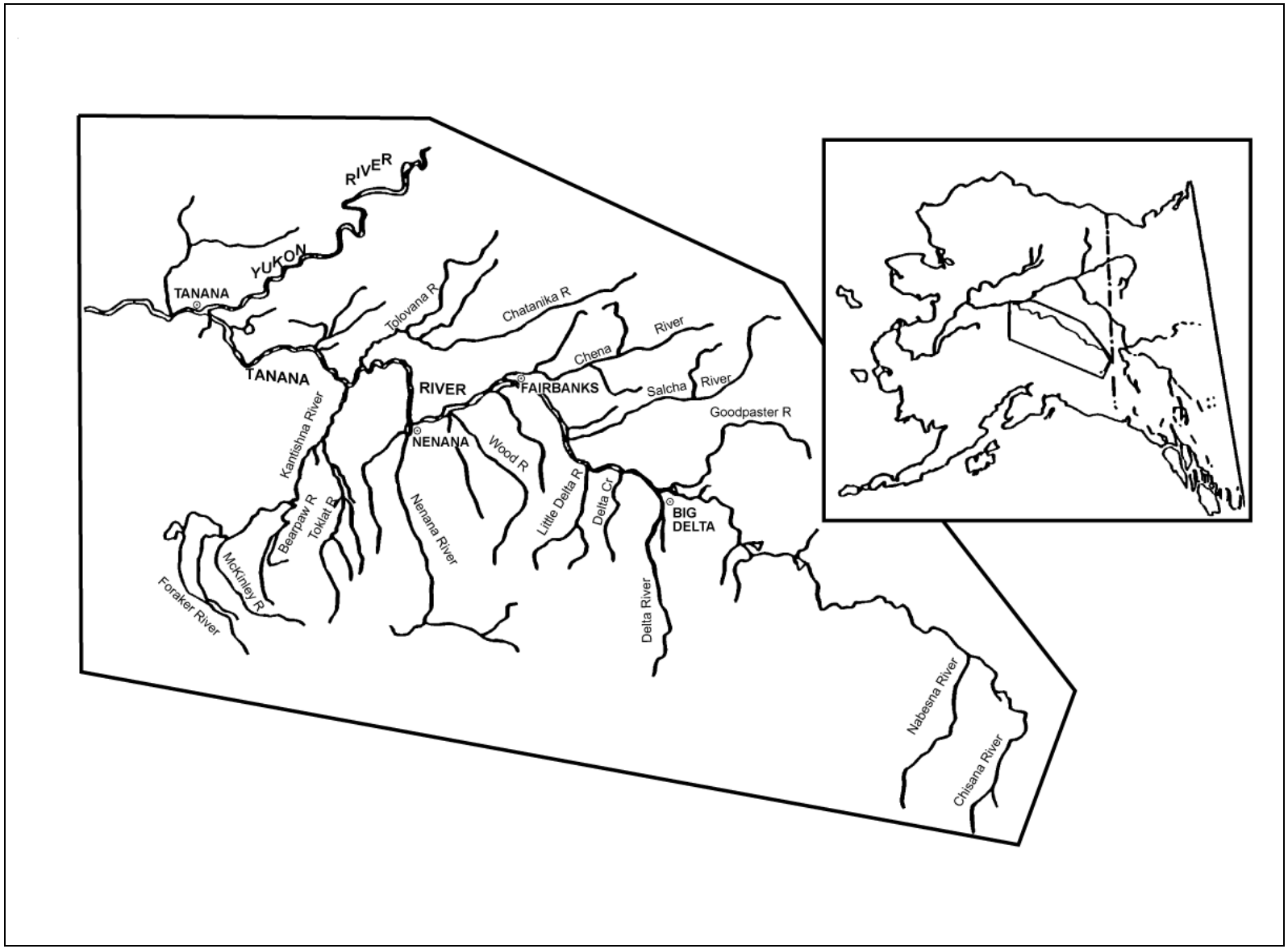
[a] Aerial surveys unless otherwise noted. Only peak counts presented. Survey rating is fair to good, unless otherwise noted.
[b] Foot survey.
[c] Mainstem Nenana River between confluences of Lost Slough and Teklanika River.
[d] Surveyed by F.R.E.D.
[f] Surveyed by Sport Fish division.
[g] Boat survey counts in the lower 17.5 river miles during the period October 21-27, unless otherwise indicated.
[h] Boat survey.
[k] Poor survey.
[n] Weir count.
[p] Expanded estimate based on partial survey counts and historic distribution of spawners from 1977-1980.
[r] Coho weir was operated at the mouth of Clear Creek (Shores Landing).
[s] Incomplete count because of late installation and/or early removal of project.
[t] Data are preliminary.
[u] Sustainable Escapement Goal (SEG) range established in 2001.
[w] An additional 17,565 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.
[x] An additional 3,300 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.
[y] An additional 350 coho salmon were counted in Clearwater Lake Inlet.
[aa] Survey of western floodplain sloughs only.
[ab] Beginning at confluence of Clear Creek, the survey includes counts of Glacier and Wood Creeks up to their headwaters.



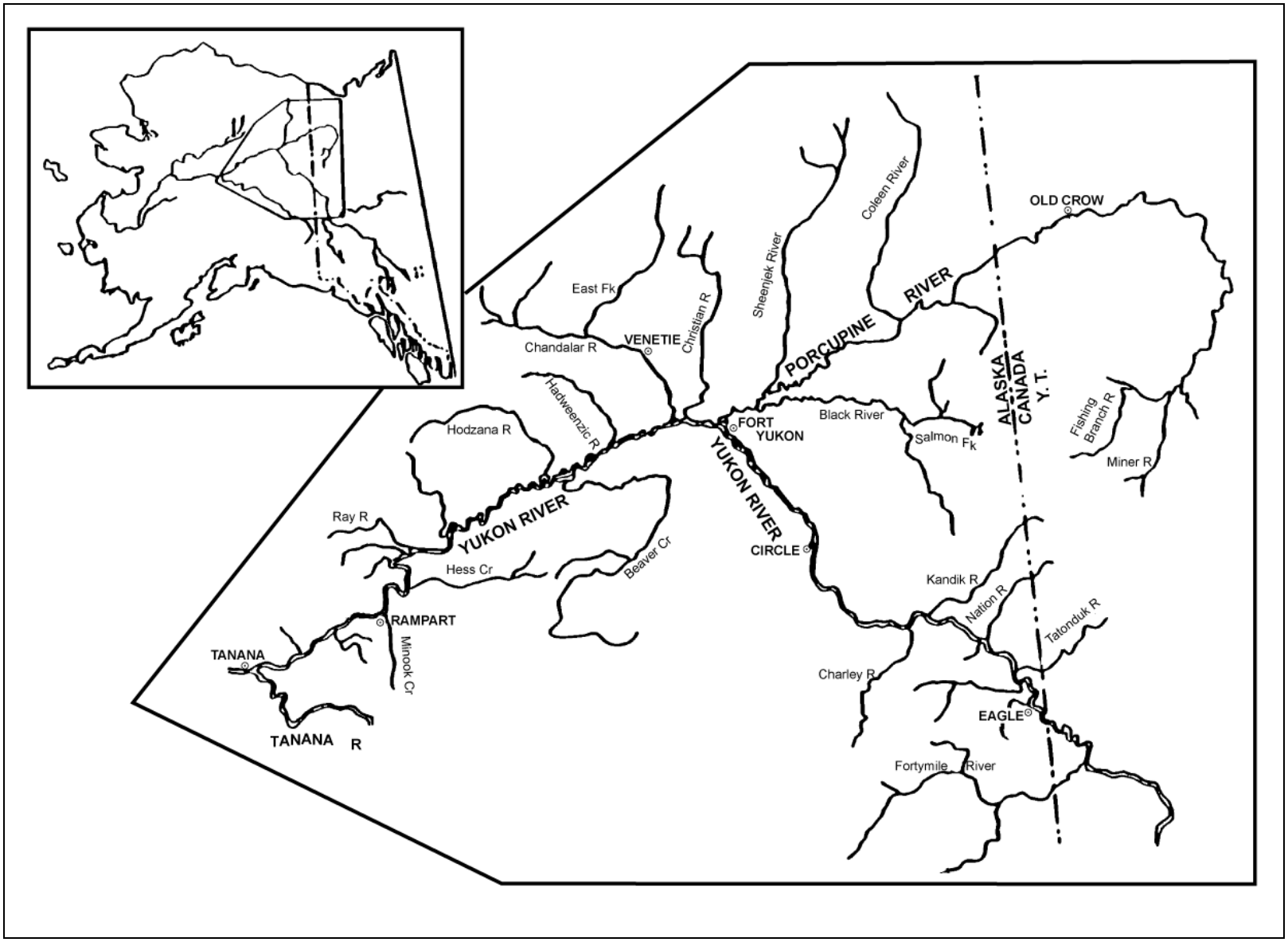
Appendix E10.–The lower Yukon River drainage.



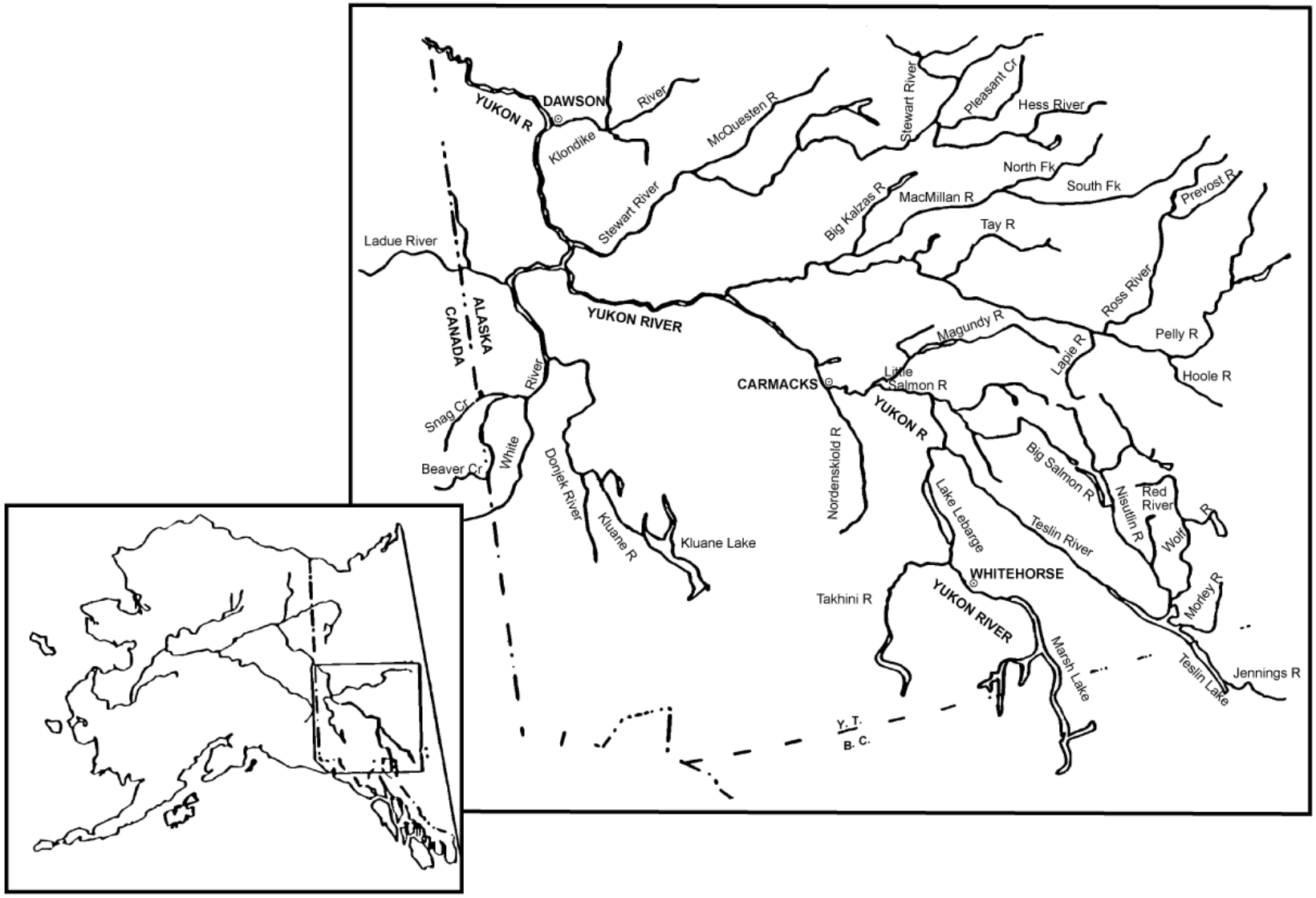
Appendix E11.–The Koyukuk River drainage.



Appendix E12.–The Tanana river drainage.

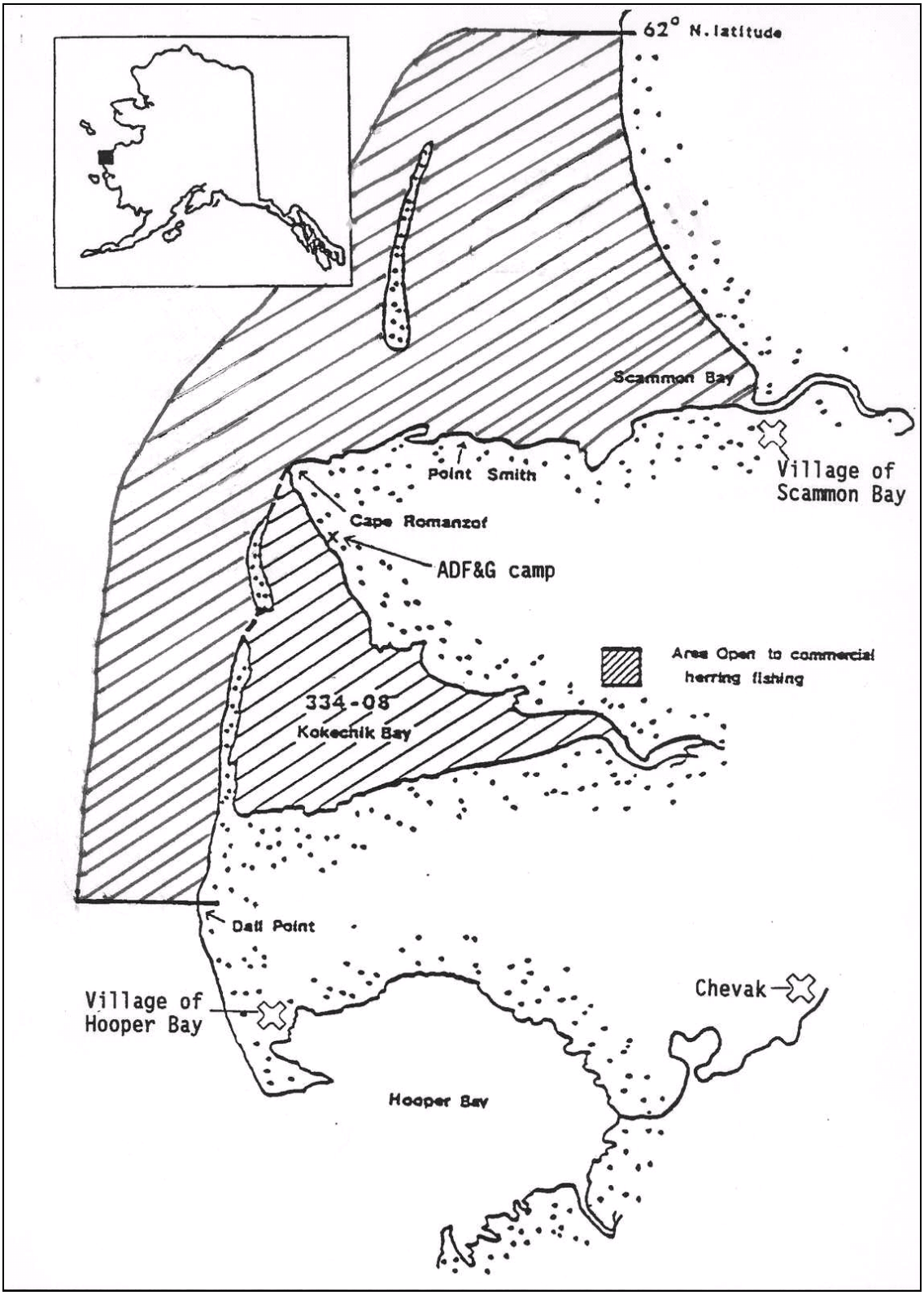


Appendix E13.–The middle Yukon River and Porcupine River drainages.



Appendix E14.–The upper Yukon River drainage.

APPENDIX F



Appendix F1.–Waters open to commercial herring fishing in the Cape Romanz of District.

Appendix F2.–Commercial Pacific herring fishery data, Cape Romanzof District, 1980–2004.

	1980	1981	1982	1983 [a]	1984	1985	1986	1987 [b]	1988	1989	1990	1991	1992
Catch (short tons)	611	720	657	816	1,185	1,299	1,865	1,342	1,119	926	329	526	530
Hours Fished	326	120	180	144	90	60	42	8	11	13	3	5	6
Percent Roe Recovery	9.8	8	9.3	9	8.6	8.3	9.2	8.9	9.1	9.33	8.4	8.8	8
Average Weight of Fish (Grams) [f]			209	226	240	240	253	297	309	310	304	343	354
Estimated Value ($ millions)	0.13	0.21	0.22	0.37	0.31	0.55	1.14	1	1.02	0.49	0.15	0.21	0.16
Number of Buyers	2	4	2	3	3	2	5	9	6	6	4	2	2
Number of Fishermen	69	111	75	63	66	73	97	157	113	115	95	80	73
Number of Boats	54	82	50	57	59	69	90	152	108	110	90	79	73
Number of Boats with Shakers [c]	12	11	10	2	1	2	12	22	-	-	-	-	-
% Effort by Local Fishermen [d]	70	81	85	92	99	91	84	53	63	87	76	96	97
% Harvest by Local Fishermen [d]	40	60	84	88	100	94	70	33	60	82	77	97	96
Biomass Estimate [e]	3,000	4,900	4,900	5,500	6,100	7,000	7,500	7,200	6,600	4,400	4,500	4,500	4,500
Exploitation Rate	20.4	14.7	13.4	14.8	19.4	18.6	24.9	18.6	17.0	21.0	7.3	11.7	11.8

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	5 Yr. Avg 1999-2003	10 Yr. Avg 1994-2003	All Yr. Avg 1980-2004
Catch (short tons)	371	456	541	752	879	727	533	500	137	102	81	25	271	471	917
Hours Fished	13	7	15	34	29.5	35	13.5	13.0	13.5	53.5	63.0	148.0	31	28	78
Percent Roe Recovery	9.6	9.2	10.1	10.6	10.2	9.6	9.2	8.1	7.6	9.8	10.9	12.4	9	10	9
Average Weight of Fish (Grams) [f]	373	382	365	360	359	368	365	377	378	412	428	359	396	380	302
Estimated Value ($ millions)	0.11	0.12	0.33	0.64	0.19	0.13	0.13	0.08	0.01	0.01	0.01	0.01	0.05	0.17	0.46
Number of Buyers	2	2	2	3	3	1	1	2	1	1	1	1	1	2	4
Number of Fishermen	41	55	49	63	65	41	57	46	23	21	11	10	32	43	91
Number of Boats	41	54	49	63	65	41	57	46	23	21	11	10	32	43	83
Number of Boats with Shakers [c]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
% Effort by Local Fishermen [d]	95	95	98	95	95	98	98	98	100	100	100	100	99	98	83
% Harvest by Local Fishermen [d]	91	92	99	96	95	98	99	98	100	100	100	100	99	98	75
Biomass Estimate [e]	4,000	5,000	5,000	6,000	5,000	4,500	3,800	3,500	2,700	3,600	3,685	3,500 [g]	3,457	4,279	5431
Exploitation Rate	9.3	9.1	10.8	12.5	17.6	16.2	14.0	5.1	2.8	3.0	2.2	0.7	5	9	16

[a] Exclusive Use Regulation into effect.
[b] Last year hydraulic shakers were allowed.
[c] Numbers of boats using shakers were estimated.
[d] Local fishermen described as residents of Chevak, Scammon Bay, and Hooper Bay.
[e] Biomass estimate is a qualitative estimate of herring abundance, except for aerial survey biomass estimate in 1987.
[f] Estimated by department from commercial harvest samples.
[g] In 2004 the preseason biomass was estimated as a range of 3000-4000.

Appendix F3.–List of Lower Yukon Area emergency orders pertaining to the Cape Romanzof Herring District, 2002–2004.

EO Number	Effective Date	Action Taken	Comments
3-LY-H-01-02	May 21, 2002	Established a 1.5-hour commercial herring fishing period from 7:30 a.m. Tuesday, May 21, 2002 until 9:00 a.m. Tuesday, May 21, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Test fishing crew began catching herring on May 16. An increase in bird activity indicates an increase in herring within the district. The few fishers on the grounds were allowed fish commercially as a test fishery in order to gain information about herring abundance and roe quality. The preseason harvest projection was 403 to 510 short tons. Due to the efficiency of the fishing fleet, small size of vessels and short fishing time, gear was restricted to no more than 50 fathoms and 1 gillnet per vessel during all periods.
3-LY-H-02-02	May 21, 2002	Established a 4.0-hour commercial herring fishing period from 6:00 p.m. Tuesday, May 21, 2002 until 10:00 p.m. Tuesday, May 21, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested 1.6 st of herring during the first opener, leaving between 401 and 508 st of herring available to be harvested. Very few fishers were present, further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-03-02	May 22, 2002	Established a 4.0-hour commercial herring fishing period from 7:00 a.m. Wednesday, May 22, 2002 until111:00 a.m. Wednesday, May 22, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 5.5 st of herring during the first 2 openings leaving between 396 and 504 st available for harvest. . Very few fishers were present, further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-04-02	May 22, 2002	Established a 4.0-hour commercial herring fishing period from 8:00 p.m. Wednesday May 22, 2002 until midnight Wednesday, May 22, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 12.2 st of herring during the first 3 openers, leaving between 391 and 498 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.

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3-LY-H-05-02	May 23, 2002	Established a 4.0-hour commercial herring fishing period from 8:00 a.m. Thursday, May 23, 2002 until 12:00 noon Thursday, May 23, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 15.3 st of herring during the first 4 openers, leaving between 388 and 495 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-06-02	May 23, 2002	Established a 5.0-hour commercial herring fishing period from 9:00 p.m. Thursday, May 23, 2002 until 2:00 a.m. Friday, May 24, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 19.9 st of herring during the first 5 openers, leaving between 383 and 490 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-07-02	May 24, 2002	Established a 5.0-hour commercial herring fishing period from 9:00 a.m. Friday, May 24, 2002 until 2:00 p.m. Friday, May 24, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 24.8 st of herring during the first 6 openers, leaving between 378 and 485 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-08-02	May 24, 2002	Established a 5.0-hour commercial herring fishing period from 10:00 p.m. Friday, May 24, 2002 until 3:00 a.m. Saturday, May 25, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers did not participate during the seventh commercial fishing period due to inclement weather and the late closer of the pervious fishing period leaving between 378 and 485 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-09-02	May 25, 2002	Established a 5.0-hour commercial herring fishing period from 10:30 a.m. Saturday, May 25, 2002 until 3:30 p.m. Saturday, May 25, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 48.2 st of herring during the first 8 openers, leaving between 355 and 462 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.

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3-LY-H-10-02	May 25, 2002	Established a 4.0-hour commercial herring fishing period from 11:00 p.m. Saturday, May 25, 2002 until 3:00 a.m. Sunday, May 26, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 67.3 st of herring during the first 9 openers, leaving between 336 and 443 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-11-02	May 26, 2002	Established a 4.0-hour commercial herring fishing period from 12:00 midnight Sunday, May 26, 2002 until 4:00 a.m. Monday, May 27, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 83.7 st of herring during the first 10 openers, leaving between 320 and 427 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-12-02	May 27, 2002	Established a 4.0-hour commercial herring fishing period from 12:00 noon Monday, May 27, 2002 until 4:00 p.m. Monday, May 27, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 91.4 st of herring during the first 11 openers, leaving between 312 and 419 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-13-02	May 28, 2002	Established a 4.0-hour commercial herring fishing period from 1:30 a.m. Tuesday, May 28, 2002 until 5:30 a.m. Tuesday, May 28, 2002. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 96.4 st of herring during the first 12 openers, leaving between 307 and 414 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery. The fishery was not reopened after 5:30 a.m. Tuesday, May 28, during the 2002 Cape Romanzof District commercial herring fishing season.
3-LY-H-01-03	May 13, 2003	Established a 4.0-hour commercial herring fishing period from 10:00 a.m. Tuesday, May 13, 2003 until 2:00 p.m. Tuesday, May 13, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Test fishing crew began catching herring on May 13. An increase in bird activity indicates an increase in herring within the district. The few fishers on the grounds were allowed fish commercially as a test fishery in order to gain information about herring abundance and roe quality. The preseason harvest projection was 580 to 729 short tons. Due to the efficiency of the fishing fleet, small size of vessels and short fishing time, gear was restricted to no more than 50 fathoms and 1 gillnet per vessel during all periods.

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3-LY-H-02-03	May 13, 2003	Established a 4.0-hour commercial herring fishing period from 11:00 p.m. Tuesday, May 13, 2003 until 3:00 a.m. Wednesday, May 13, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	No fishers participated in the first commercial opening in 2003 leaving between 580 and 729 st of herring available to be harvested. Very few fishers were present, further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-03-03	May 15, 2003	Established a 4.0-hour commercial herring fishing period from 12:00 midnight Thursday, May 15, 2003 until 4:00 a.m. Thursday, May 15, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	No fishers participated in the second commercial opening in 2003 leaving between 580 and 729 st of herring available to be harvested. Very few fishers were present, further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-04-03	May 15, 2003	Established a 4.0-hour commercial herring fishing period from 11:30 a.m. Thursday, May 15, 2003 until 3:30 p.m. Thursday, May 15, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 1.8 st of herring during the first 3 openers, leaving between 578 and 727 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-05-03	May 15, 2003	Established a 4.0-hour commercial herring fishing period from 11:00 p.m. Thursday, May 15, 2003 until 3:00 a.m. Friday, May 16, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 1.8 st of herring during the first 4 openers, leaving between 578 and 727 st of herring available for harvest before the quota would be reached. No commercial herring fishing occurred during the fourth commercial opening. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-06-03	May 16, 2003	Established a 4.0-hour commercial herring fishing period from 11:00 a.m. Friday, May 16, 2003 until 3:00 p.m. Friday, May 16, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 6.8 st of herring during the first 5 openers, leaving between 573 and 722 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.

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3-LY-H-07-03	May 16, 2003	Established a 5.0-hour commercial herring fishing period from 10:00 p.m. Friday, May 16, 2003 until 3:00 a.m. Saturday, May 17, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 6.8 st of herring during the first 6 openers, leaving between 573 and 722 st of herring available for harvest before the quota would be reached. No commercial herring fishing occurred during the sixth commercial opening. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-08-03	May 17, 2003	Established a 4.0-hour commercial herring fishing period from 12:00 noon Saturday, May 17, 2003 until 4:00 p.m. Saturday, May 17, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 7.7 st of herring during the first 7 openers, leaving between 572 and 721 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-09-03	May 17, 2003	Established a 5.0-hour commercial herring fishing period from 11:00 p.m. Saturday, May 17, 2003 until 4:00 a.m. Sunday, May 18, 2003. Also restricted gear to no more than 50 fathoms and 1 gillnet per vessel.	Fishers harvested approximately 10.1 st of herring during the first 8 openers, leaving between 570 and 719 st of herring available for harvest before the quota would be reached. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-10-03	May 18, 2003	Established a 5.0-hour commercial herring fishing period from 1:00 p.m. Sunday, May 18, 2003 until 6:00 p.m. Sunday, May 18, 2003. Gear restrictions of no more than 50 fathoms and 1 gillnet per vessel were rescinded.	Fishers harvested approximately 16.3 st of herring during the first 9 openers, leaving between 564 and 713 st of herring available for harvest before the quota would be reached. Gear restrictions were rescinded and fishers were allowed to harvest herring with 100 fathoms of gillnet. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-11-03	May 19, 2003	Established a 5.0-hour commercial herring fishing period from 12:00 midnight Monday, May 19, 2003 until 5:00 a.m. Monday, May 19, 2003. Gear restrictions of no more than 50 fathoms and 1 gillnet per vessel were rescinded.	Fishers harvested approximately 41.0 st of herring during the first 10 openers, leaving between 539 and 688 st of herring available for harvest before the quota would be reached. Gear restrictions were rescinded and fishers were allowed to harvest herring with 100 fathoms of gillnet. Further harvest would not adversely impact herring stocks or the subsistence fishery.

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3-LY-H-12-03	May 19, 2003	Established a 5.0-hour commercial herring fishing period from 2:00 p.m. Monday, May 19, 2003 until 7:00 p.m. Monday, May 19, 2003. Gear restrictions of no more than 50 fathoms and 1 gillnet per vessel were rescinded.	Fishers harvested approximately 50.2 st of herring during the first 11 openers, leaving between 530 and 671 st of herring available for harvest before the quota would be reached. Gear restrictions were rescinded and fishers were allowed to harvest herring with 100 fathoms of gillnet. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-13-03	May 20, 2003	Established a 5.0-hour commercial herring fishing period from 1:00 a.m. Tuesday, May 20, 2003 until 6:00 a.m. Tuesday, May 20, 2003. Gear restrictions of no more than 50 fathoms and 1 gillnet per vessel were rescinded.	Fishers harvested approximately 62.7 st of herring during the first 12 openers, leaving between 517 and 658 st of herring available for harvest before the quota would be reached. Gear restrictions were rescinded and fishers were allowed to harvest herring with 100 fathoms of gillnet. Further harvest would not adversely impact herring stocks or the subsistence fishery.
3-LY-H-14-03	May 20, 2003	Established a 5.0-hour commercial herring fishing period from 3:00 p.m. Tuesday, May 20, 2003 until 8:00 p.m. Tuesday, May 20, 2003. Gear restrictions of no more than 50 fathoms and 1 gillnet per vessel were rescinded.	Fishers harvested approximately 69.4 st of herring during the first 13 openers, leaving between 510 and 651 st of herring available for harvest before the quota would be reached. Gear restrictions were rescinded and fishers were allowed to harvest herring with 100 fathoms of gillnet. There were no additional commercial fishing periods scheduled in the Cape Romanzof District in 2003.
3-LY-H-01-04	May 16, 2004	Established a commercial herring fishing period from 9:00 a.m. Sunday, May 16, 2004 until further notice. Gear restrictions of no more than 50 fathoms and 1 gillnet per vessel were rescinded.	Test fishing crew began catching herring on May 16. An increase in bird activity indicates an increase in herring within the district. The preseason harvest projection was 500 to 600 short tons. Due to the efficiency of the fishing fleet, small size of vessels, and short fishing time, gear was restricted to no more than 50 fathoms and 1 gillnet per vessel during all periods.
3-LY-H-02-04	May 22, 2004	Closes the Cape Romanzof District to directed commercial fishing for herring.	The commercial herring fishing season in the Cape Romanzof District closed after a harvest of approximately 26 st. of sac-roe herring. Further harvest would not have adversely impacted herring stocks or the subsistence fishery.

Appendix F4.–Commercial herring harvest and effort data by fishing period, Cape Romanzof District, 2002–2004.

2002			Number				Harvest (st)					
Period	Date	Time of Fishery	Hours Fished	Fishermen	Vessels	Landings	Bait	Roe %	Sac Roe	Sac Roe %	Total	Roe %
1	21-May	0730-900	1.5	5	5	5	-	-	1.6	10.6	1.6	10.6
2	21-May	1800-2200	4.0	13	13	13	-	-	3.9	10.3	3.9	10.3
3	22-May	0700-1100	4.0	17	17	17	-	-	6.8	9.7	6.8	9.7
4	22-May	2000-Midnight	4.0	14	14	14	-	-	3.1	10.6	3.1	10.6
5	23-May	0800-Noon	4.0	12	12	12	-	-	4.6	9.6	4.6	9.6
6	23-24 May	2100-0200	5.0	9	9	11	-	-	4.9	10.0	4.9	10.0
7	24-May	0900-1400	5.0	No Deliveries			-	-	-	-	-	-
8	24-25 May	2200-0300	5.0	17	17	30	-	-	23.4	10.5	23.4	10.5
9	25-May	1030-1530	5.0	18	18	27	-	-	19.1	9.9	19.1	9.9
10	25-26 May	2300-0300	4.0	17	17	19	-	-	16.4	9.4	16.4	9.4
11	26-27 May	Midnight-0400	4.0	17	17	18	-	-	7.5	9.9	7.5	9.9
12	27-May	Noon-1600	4.0	14	14	16	-	-	5.0	8.5	5.0	8.5
13	28-May	0130-0530	4.0	12	12	12	-	-	5.1	8.1	5.1	8.1
Total			53.5	21	21	194	-	-	101.5	9.8	101.4	9.8

2003			Number				Harvest (st)					
Period	Date	Time of Fishery	Hours Fished	Fishermen	Vessels	Landings	Bait	Roe %	Sac Roe	Sac Roe %	Total	Roe %
1	13-May	1000-1400	4.0	No Deliveries			-	-	-	-	-	-
2	13-14 May	2300-0300	4.0	No Deliveries			-	-	-	-	-	-
3	15-May	Midnight-0400	4.0	5	5	5	-	-	1.8	12.3	1.8	12.3
4	15-May	1130-1530	4.0	No Deliveries			-	-	-	-	-	-
5	15-16 May	2300-0300	4.0	5	5	7	-	-	5.0	11.6	5.0	11.6
6	16-May	1100-1500	4.0	No Deliveries			-	-	-	-	-	-
7	16-17 May	2200-0300	5.0	7	7	7	-	-	0.9	9.5	0.9	9.5
8	17-May	1200-1600	4.0	6	6	6	-	-	2.4	10.5	2.4	10.5
9	17-18 May	2300-0400	5.0	9	9	13	-	-	6.2	9.6	6.2	9.6
10	18-May	1300-1800	5.0	9	9	23	-	-	24.7	11.2	24.7	11.2
11	19-May	Midnight-0500	5.0	7	7	18			9.2	11.4	9.2	11.4
12	19-May	1400-1900	5.0	9	9	18			12.5	10.5	12.5	10.5
13	20-May	0100-0600	5.0	6	6	11			6.7	10.6	6.7	10.6
14	20-May	1500-2000	5.0	10	10	17			10.9	10.7	10.9	10.7
Total			63.0	11	11	125	-	-	80.5	10.9	80.5	10.9

2004			Number				Harvest (st)					
Period	Date	Time of Fishery	Hours Fished	Fishermen	Vessels	Landings	Bait	Roe %	Sac Roe	Sac Roe %	Total	Roe %
1	16-May to 22-May	9:00 AM 1:00 PM	148.0 (continuous)	10	10	41	-	-	25.1	12.4	25.1	12.4
Total			148.0	10	10	41	-	-	25.1	12.4	25.1	12.4

Appendix F5.–Pacific herring processors and associated data, Cape Romanzof District, 2002–2004.

Year	Commerical Operation (Processing location/ buying station)	Representative	Product	Processing/Tendering Vessels
2002	NorQuest Seafoods, Inc 4225 23rd Ave. W. Seattle, WA 98119 206-281-7022	Marty Jacques	Sac Roe Herring (Frozen)	M/V Zingaro M/V Shypoke M/V Cape Caution
2003	NorQuest Seafoods, Inc 4225 23rd Ave. W. Seattle, WA 98119 206-281-7022	Marty Jacques	Sac Roe Herring (Frozen)	M/V Shypoke M/V Maverick M/V Lady Jessie
2004	NorQuest Seafoods, Inc 4225 23rd Ave. W. Seattle, WA 98119 206-281-7022	Richard Pollen	Sac Roe Herring (Frozen)	M/V Southern Wind M/V Shypoke M/V Cape Caution

Appendix F6.–CFEC herring gear permits issued by residence, Cape Romanzo District, 2002–2004.[a]

Residence	Gillnet Permits (G34Y)		
	2002	2003	2004
Hooper Bay	43	36	36
Scammon Bay	19	18	19
Chevak	16	14	14
Bethel	1	1	1
Anchorage	1	1	0
Kotlik	1	0	0
Mountain Village	1	0	0
	82	70	70

[a] Counts are for initial issues only and do not include transfers. Counts include interim use permits.

Appendix F7.–Subsistence herring harvest (st) and effort data by community, Cape Romanzof, 1975–2004.[a]

	Scammon Bay		Chevak		Hooper Bay		Totals	
Year	Harvest	Number of Fishermen	Harvest	Number of Fishermen	Harvest	Number of Fishermen	Harvest	Number of Fishermen
1975	-	-	-	-	2.8	34	2.8	34
1976	0.7	4	0.7	9	3.0	28	4.4	41
1977	-	-	0.2	2	2.4	28	2.5	30
1978	0.7	1	-	-	3.9	29	4.5	30
1979	6.0	21	2.3	21	3.1	42	11.4	84
1980	3.1	18	3.6	20	3.7	23	10.4	61
1981	7.7	16	1.8	9	4.0	20	13.5	45
1982	3.9	15	1.9	10	4.7	18	10.5	43
1983	2.5	14	1.5	5	5.2	18	9.2	37
1984	4.3	16	2.6	7	4.2	24	11.1	47
1985	2.4	11	2.2	13	3.4	20	8.0	44
1986	2.8	17	0.7	4	2.5	19	6.0	40
1987	1.4	8	0.5	5	1.1	10	3.0	23
1988	2.0	7	1.5	6	3.6	19	7.2	32
1989	1.1	7	0.1	1	1.8	16	3.0	24
1990	1.7	5	0.6	3	5.6	24	7.9	32
1991	1.7	7	0.4	3	1.1	8	3.2	18
1992	1.2	10	0.4	4	2.5	16	4.1	30
1993	2.7	17	0.1	1	2.4	24	5.1	42
1994	1.4	9	2.0	16	3.1	23	6.5	48
1995	1.1	11	1.2	9	3.8	22	6.1	42
1996	1.0	10	0.5	4	1.7	15	3.1	29
1997	0.9	10	0.2	3	2.2	21	3.2	34
1998	0.7	7	0.1	2	0.9	7	1.7	16
1999	6.0	24	2.3	12	4.2	31	12.5	67
2000	3.9	26	1.0	10	1.3	14	6.2	50
2001	1.5	8	1.0	10	0.1	5	3.1	24
2002	0.6	7	0.2	3	1.1	10	1.9	20
2003	3.0	13	1.0	8	2.0	13	6.0	34
2004	3.5	14	1.2	8	1.3	12	6.0	34
5 Year Average (1999-2003)	3.0	15.6	1.1	8.6	1.7	14.6	5.9	39.0

[a] Subsistence survey results are believed to reflect harvest trends, however, reported catches reflect minimum figures since all fishermen cannot be contacted. Note: Data are updated annually as new information is obtained.

Appendix F8.–Subsistence harvest of herring roe-on-kelp by community, Cape Romanzof District, 1993–2004.[a]

	Scammon Bay		Chevak		Hooper Bay		Totals	
Year	Number of Fishers	Pounds Roe-on-Kelp	Number of Fishers	Pounds Roe-on-Kelp	Number of Fishers	Pounds Roe-on-Kelp	Number of Fishers	Pounds Roe-on-Kelp
1993	9	300			10	213	19	513
1994	7	104	4	135	12	417	23	656
1995	12	298	1	25	13	383	26	706
1996	7	113	2	31	9	480	18	624
1997	6	130	1	25	13	400	20	555
1998	2	420	2	105	3	60	7	585
1999	15	416	5	160	22	549	42	1,125
2000	19	644	3	155	8	220	30	1,019
2001	2	25	3	113	2	50	7	188
2002	2	56	0	0	4	105	6	161
2003	8	185	2	130	7	185	17	500
2004	7	354	1	50	1	5	9	409
5 Year Average (1999-2003)	9	265	3	112	9	222	20	599

Note: Data are updated annually as new information is obtained.

[a] Subsistence survey results are believed to reflect harvest trends, however, reported catches reflect minimum figures since all fishermen cannot be contacted.

Appendix F9.–Aerial survey biomass estimates of Pacific herring, Cape Romanzof District, 2002–2004.

	Flight		Survey	Spawn		Biomass (st) Estimates by Index Area [a]			
Date	No.	Hrs.	Rating [b]	No.	Length (miles)	KOK	SCB	HPB	Total
5/21/2002	1	0.25	4	0	0.00	200.0	300.0	0.0	500.0
5/26/2002	2	0.20	4	0	0.00	50.0	0.0	0.0	50.0
Total 2002		0.45		0	0.00	250.0	300.0	0.0	550.0
5/16/2003	1	0.5	4	0	0	0	0	0	0
Total 2003		0.50		0	0.00	0.0	0.0	0.0	0.0
	No Surveys flown in 2004.								
Total 2004		0.00		0	0.00	0.0	0.0	0.0	0.0

[a] Index Areas: KOK-Kokechik Bay and offshore waters from Cape Romanzof to Hooper Bay SCB-Scammon Bay (Cape Romanzof to Kun River), HPB - Hooper Bay.

[b] Survey Rating.
1=Excellent (calm, no glare).
2=Good (light ripple, uneven lighting, easy to see schools).
3=Fair (light chop, some glare or shadows, relatively easy to see schools).
4=Poor (rough seas, strong glare, difficult to see schools).
5=Unsatisfactory.

Appendix F10.–Percent age composition of herring sampled from commercial harvest, Cape Romanzof District, 1980-2004.[a]

Year	Number Sampled [b]	Age in Years 2	3	4	5	6	7	8	9	10	11	12	13+	Total [c]
1980	374	0.0	2.4	20.1	5.1	38.0	9.9	23.0	0.5	0.3	0.5	0.3	0.0	100.1
1981	315	0.0	0.3	55.9	25.1	1.6	11.7	2.2	3.2	0.0	0.0	0.0	0.0	100.0
1982	604	0.0	0.2	13.7	66.4	13.2	1.2	3.3	1.0	1.0	0.0	0.0	0.0	100.0
1983	913	0.0	0.0	15.8	29.8	45.1	6.7	0.4	1.6	0.4	0.1	0.0	0.0	99.9
1984	543	0.0	0.0	0.6	17.3	35.2	41.3	2.9	1.7	0.6	0.4	0.2	0.0	100.2
1985	583	0.0	0.0	6.5	8.9	34.6	29.3	16.6	3.4	0.5	0.0	0.0	0.0	99.8
1986	570	0.0	0.0	0.0	3.3	3.5	30.2	29.6	29.3	3.2	0.5	0.4	0.0	100.0
1987	407	0.0	0.0	0.0	0.0	5.9	18.4	43.0	27.8	4.4	0.5	0.0	0.0	100.0
1988	414	0.0	0.0	0.0	2.2	7.5	18.4	16.2	24.6	19.1	10.9	1.2	0.0	100.1
1989	702	0.0	0.0	0.0	0.6	3.3	13.0	29.8	11.5	18.5	15.0	7.5	0.9	100.1
1990	287	0.0	0.0	0.0	0.7	9.1	10.8	21.6	23.7	9.8	13.2	7.7	3.5	100.1
1991	591	0.0	0.0	0.0	0.2	1.0	29.1	17.4	15.4	13.4	9.0	8.6	5.9	100.0
1992	401	0.0	0.0	0.0	0.0	1.0	1.0	27.7	17.5	17.5	16.7	7.5	11.1	100.0
1993	819	0.0	0.0	0.0	0.7	3.5	2.6	2.0	29.8	13.4	14.8	16.6	16.6	100.0
1994	452	0.0	0.0	0.0	0.0	4.4	6.6	4.0	6.6	29.0	16.6	14.4	18.4	100.0
1995	453	0.0	0.0	0.0	0.7	1.3	13.7	19.4	5.5	6.8	24.7	10.6	17.2	99.9
1996	588	0.0	0.0	0.0	0.0	2.9	1.0	27.4	20.6	8.3	8.3	15.6	15.9	100.0
1997	530	0.0	0.0	0.0	0.2	3.0	5.8	4.7	42.1	15.3	7.0	7.4	14.6	100.1
1998	560	0.0	0.0	0.0	0.4	0.4	10.9	21.1	3.6	34.6	14.1	4.5	10.6	100.2
1999	537	0.0	0.0	0.0	0.2	2.0	0.2	18.2	21.6	6.0	37.8	7.6	6.4	100.0
2000	575	0.0	0.0	0.0	0.2	0.2	20.4	0.8	22.4	19.3	8.1	20.8	7.7	99.9
2001	147	0.0	0.0	0.0	0.0	0.7	2.7	26.5	2.0	20.4	15.0	5.4	27.3	100.0
2002	554	0.0	0.0	0.0	0.0	0.3	0.7	1.6	21.8	3.8	27.8	14.1	29.9	100.0
2003	294	0.0	0.0	0.0	0.0	1.7	5.8	3.7	7.5	20.7	11.9	17.7	31.0	100.0
2004 [d]	-	-	-	-	-	-	-	-	-	-	-	-	-	-

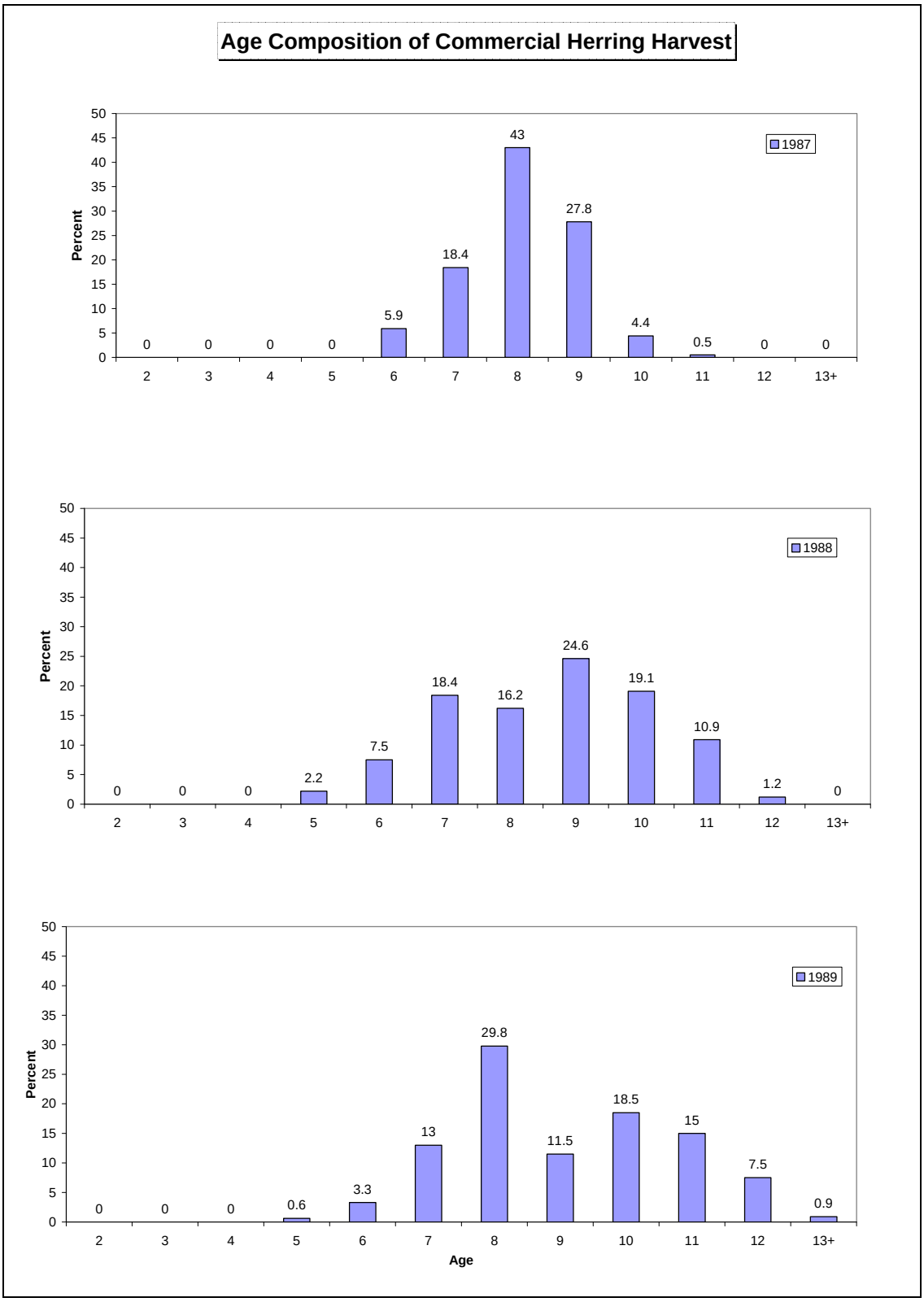
[a] Data from annual Age, Size, and Sex Composition ADF&G Technical Data and Regional Information Reports.

[b] Number sampled are number of fish which could be aged.

[c] Totals may not equal 100% due to rounding errors.

[d] Samples were insufficient for determining age composition of the commercial harvest.

Appendix F11.–Age composition of Pacific herring sampled from the commercial harvest, Cape Romanzof District, 1987-2004.



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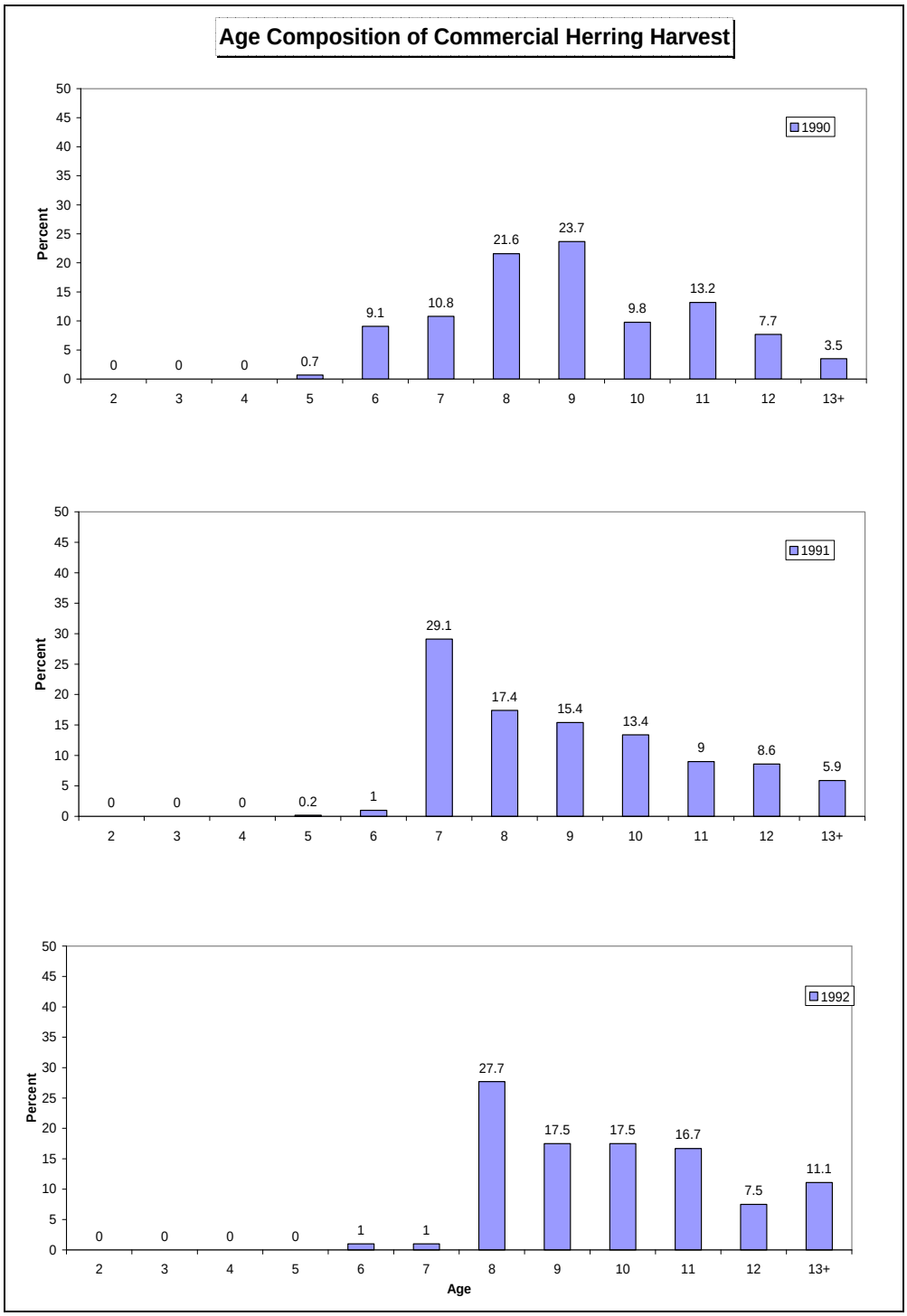

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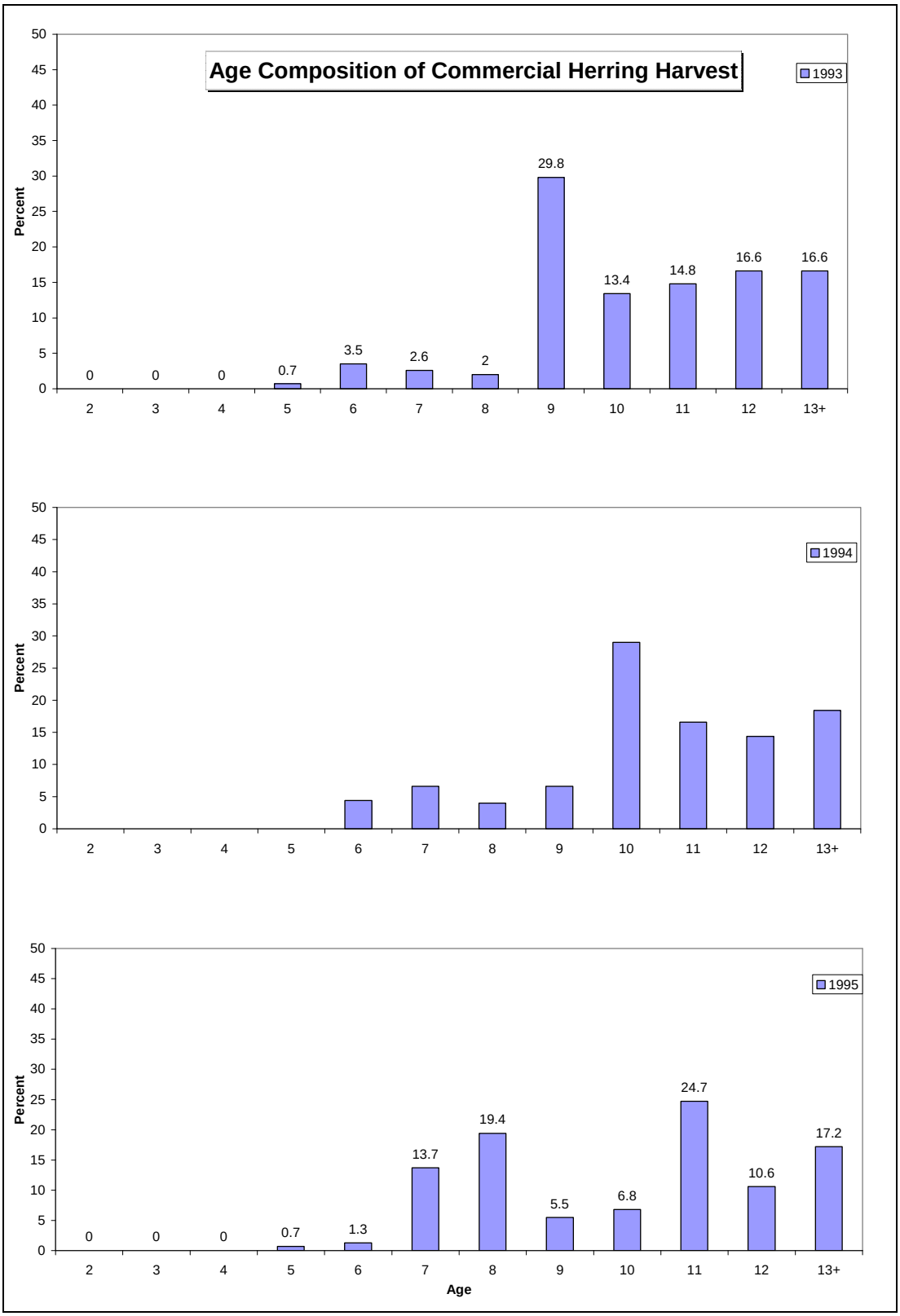

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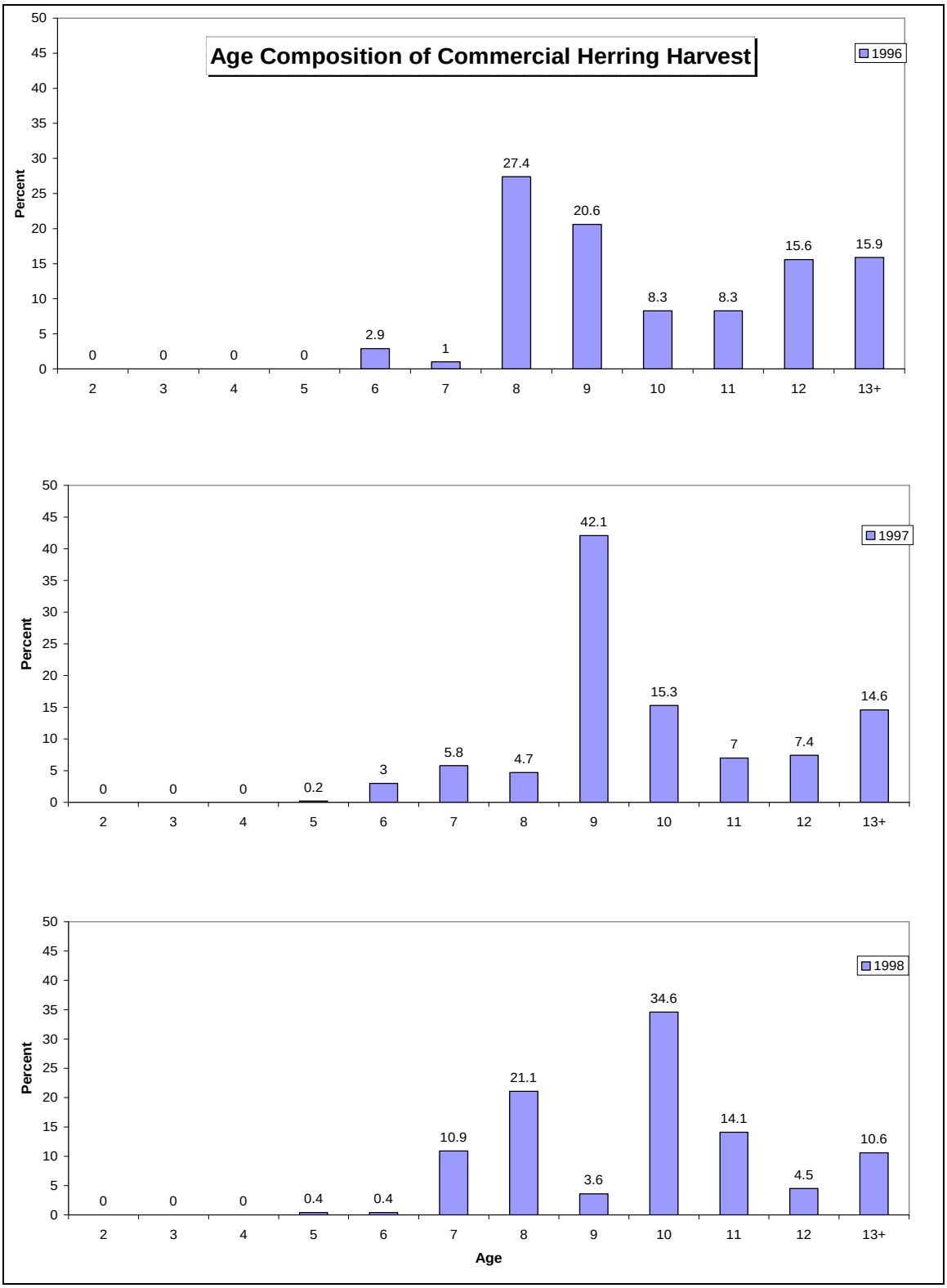

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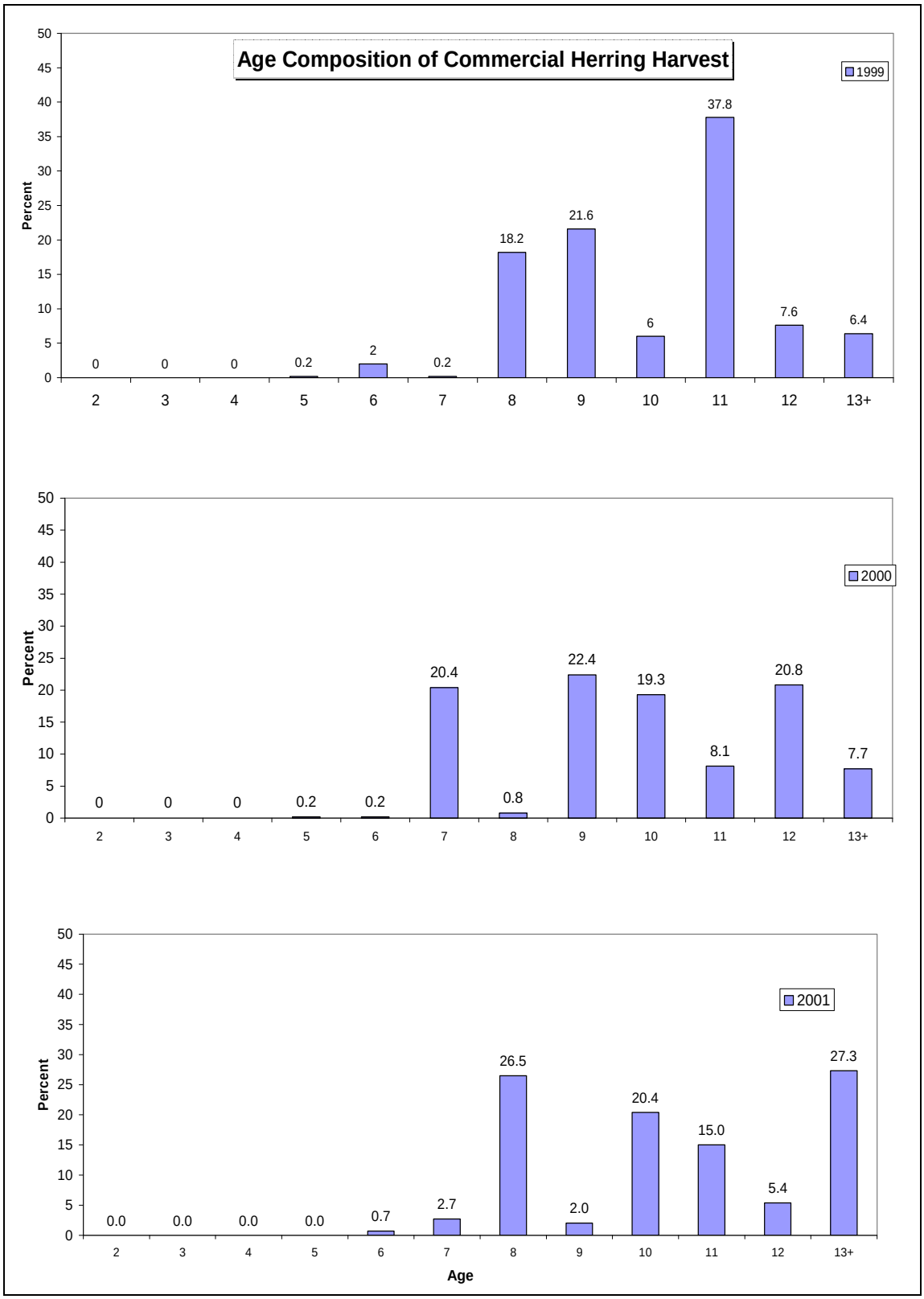
Appendix F11.–Page 5 of 6.



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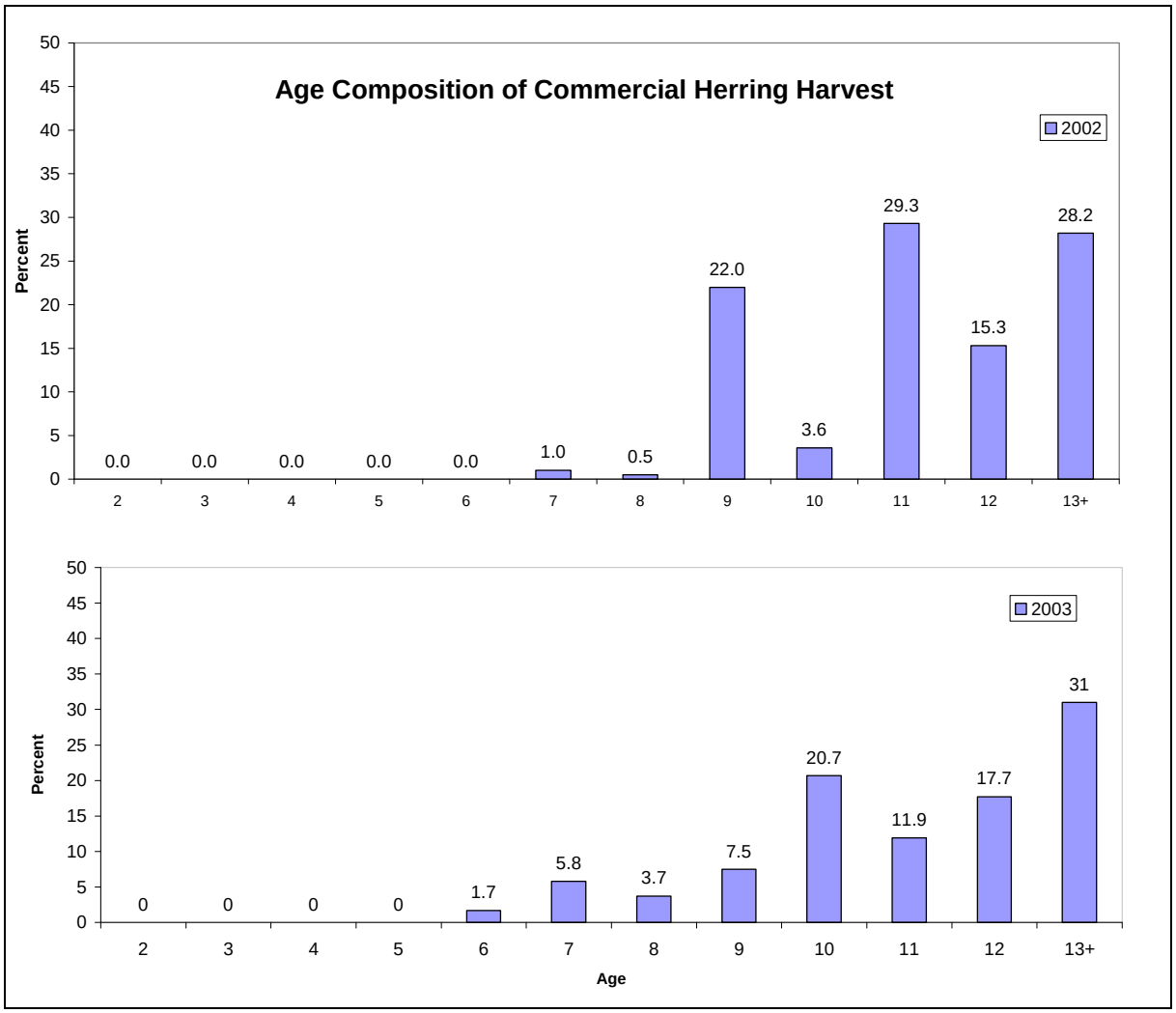


Note: In 2004, Commercial samples were insufficient to proportion the harvest by age class.

Appendix F12.–Percent age composition of herring sampled from variable mesh test gillnet catches, Cape Romanzof District, 1980-2004.[a,b]

		Age in Years												
Year	Number Sampled [c]	2	3	4	5	6	7	8	9	10	11	12	13+	Total [d]
1980	447	0.4	19.2	17.0	2.0	27.3	6.9	25.3	0.4	0.4	0.4	0.4	0.0	99.7
1981	589	0.0	7.8	55.3	13.2	1.5	10.4	4.8	6.3	0.2	0.0	0.3	0.2	100.0
1982	611	0.7	7.5	20.3	39.3	9.5	1.8	7.4	7.2	5.6	0.7	0.0	0.2	100.2
1983	829	0.0	0.6	21.2	25.2	39.8	5.3	1.4	3.9	1.9	0.5	0.1	0.0	99.9
1984	735	0.0	1.5	5.7	26.9	19.3	36.1	4.8	3.5	1.6	0.3	0.3	0.0	100.0
1985	531	0.0	1.7	21.8	6.4	22.8	16.9	26.2	2.8	0.8	0.6	0.0	0.0	100.0
1986	511	0.0	0.0	4.9	18.2	7.0	25.4	20.7	20.4	2.5	0.6	0.2	0.0	99.9
1987	690	0.0	0.0	0.7	6.7	11.7	18.0	31.7	23.2	7.7	0.3	0.0	0.0	100.0
1988	608	0.0	0.3	3.9	7.9	13.8	19.7	11.7	19.2	14.8	7.4	0.7	0.5	99.9
1989	378	0.0	0.5	1.9	17.5	9.0	13.2	17.7	7.4	11.6	13.2	6.9	1.0	99.9
1990	1,011	0.0	1.0	4.7	3.6	24.6	11.2	12.7	17.5	7.7	9.4	5.3	2.3	100.0
1991	1,152	0.0	0.1	3.0	3.9	3.0	29.3	13.9	15.0	13.4	7.3	6.3	4.8	100.0
1992	994	0.0	0.0	6.4	4.6	4.7	2.0	19.4	12.7	20.6	12.9	7.7	8.8	99.8
1993	1,263	0.0	0.7	2.3	16.9	10.5	5.8	3.9	20.0	10.1	13.6	8.4	7.9	100.1
1994	1,246	0.0	0.0	3.1	2.9	23.8	13.6	5.1	4.7	17.1	9.1	9.3	11.2	99.9
1995	1,398	0.0	0.1	5.4	8.4	2.1	24.4	14.7	5.0	5.3	18.5	7.1	9.0	100.0
1996	1,083	0.0	1.1	1.6	11.6	14.9	3.5	30.9	15.0	5.4	4.0	8.0	4.1	100.1
1997	1,312	0.0	0.6	21.6	1.7	11.5	13.0	2.7	28.4	10.0	3.0	2.4	5.4	100.3
1998	1,262	0.0	0.3	1.7	20.0	2.3	18.8	18.2	2.9	21.2	8.4	2.7	3.5	100.0
1999	846	0.0	0.4	1.9	0.9	18.1	0.8	18.9	17.7	6.4	25.5	5.4	3.9	99.9
2000	738	0.0	0.1	15.7	10.1	2.5	23.8	1.9	13.5	11.9	4.4	12.6	3.4	99.9
2001	733	0.0	0.0	14.3	33.2	6.8	3.1	18.7	1.0	8.7	4.1	1.6	8.5	100.0
2002	971	0.0	0.0	2.8	40.2	20.3	6.2	1.5	14.4	1.1	8.5	2.2	2.8	100.0
2003	527	0.0	0.0	1.7	4.7	58.6	19.7	4.2	1.3	4.2	0.2	2.8	2.1	99.5
2004	525	0.0	2.5	9.9	2.5	7.6	46.1	19.0	4.4	0.4	3.4	0.8	3.4	100.0

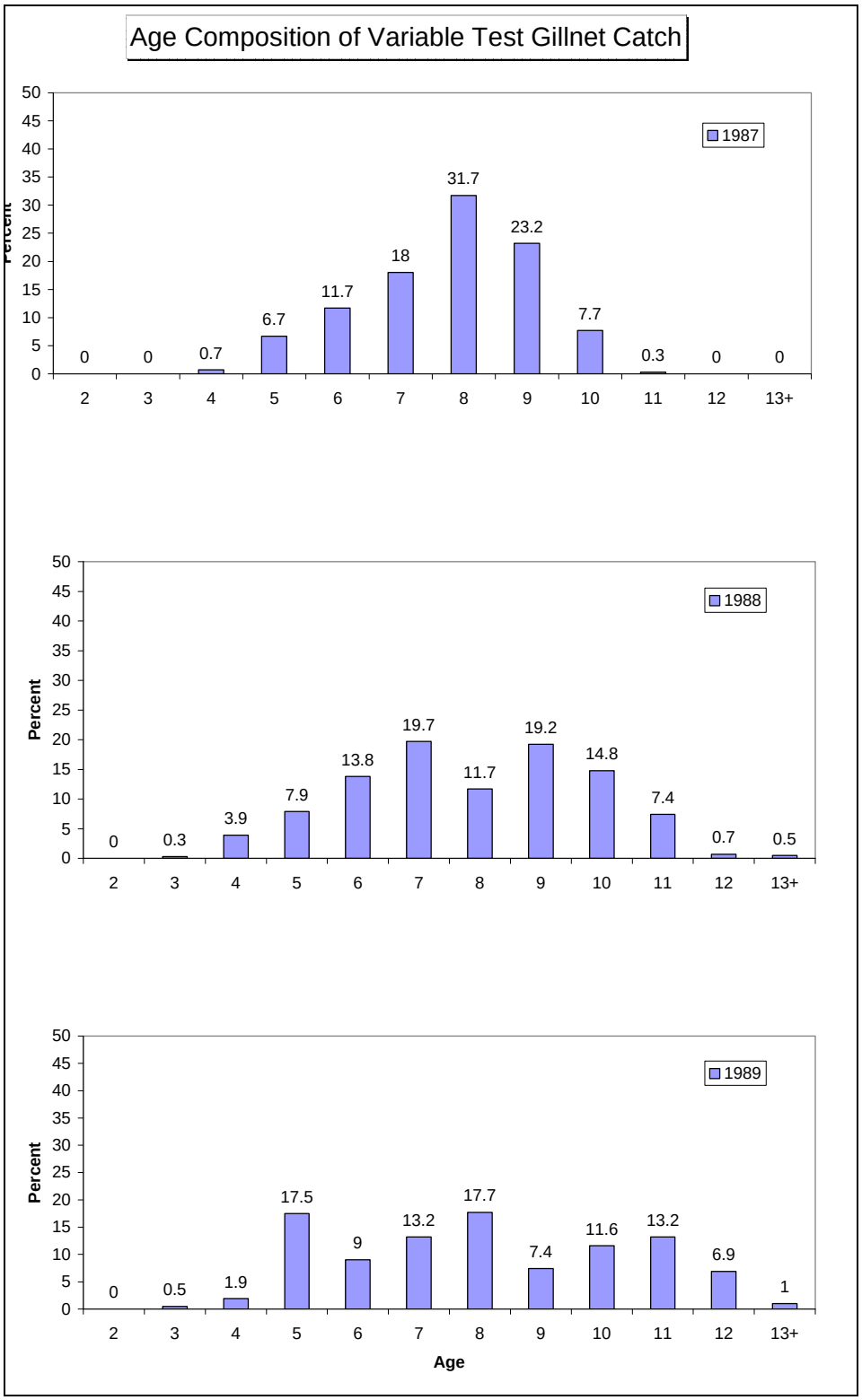
[a] Data from annual Age, Size, and Sex Composition ADF&G Technical Data and Regional Information Reports.

[b] Variable mesh test gill net samples include Kokechik Bay and Scammon Bay fish sampled combined.

[c] Number sampled shown are number of fish which could be aged.

[d] Totals may not equal 100% due to rounding errors.

Appendix F13.–Historical herring spawn deposition weight data from artificial substrate study, Cape Romanzof District, 1992–2004**.**



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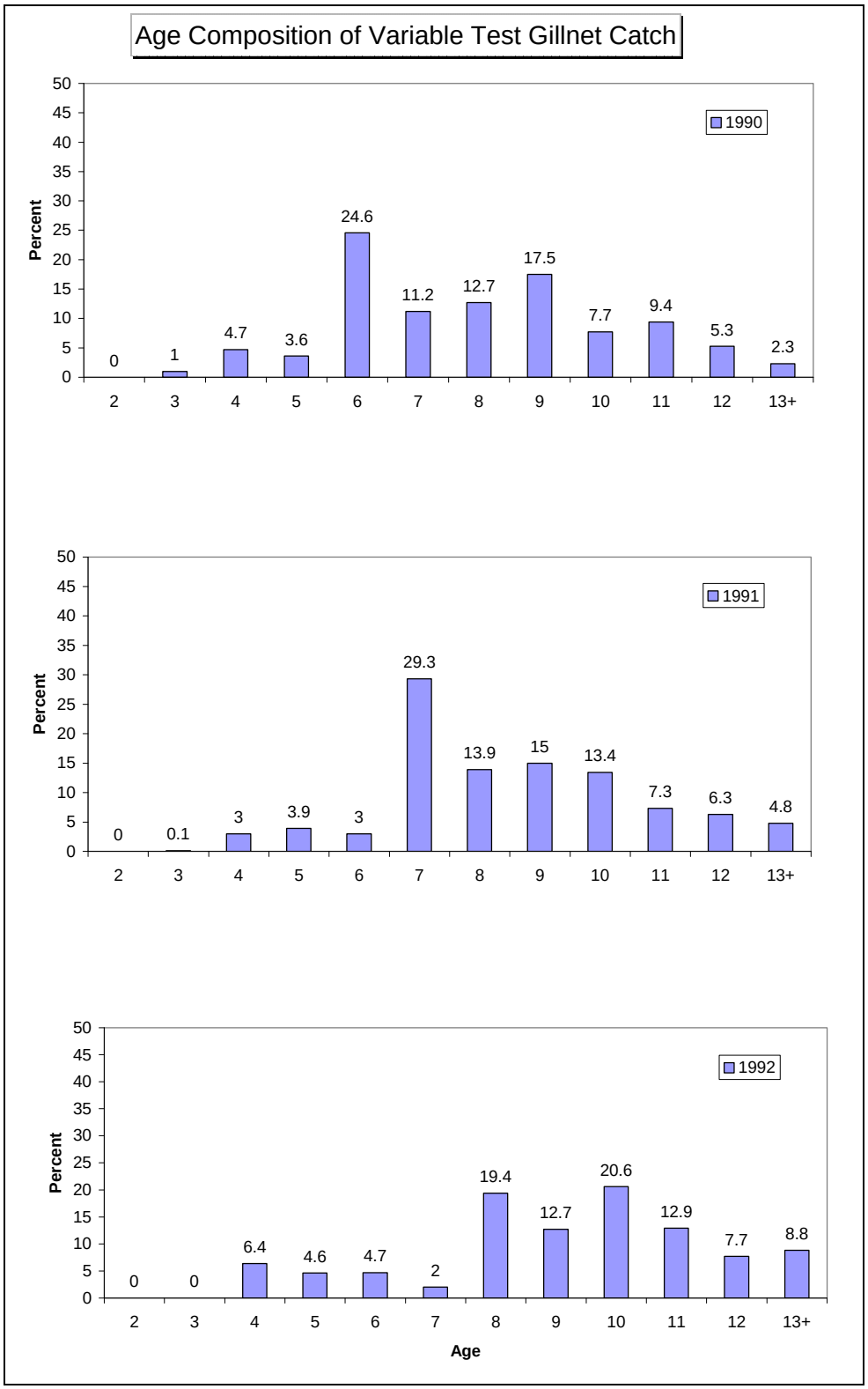
Appendix F13.–Page 2 of 6.



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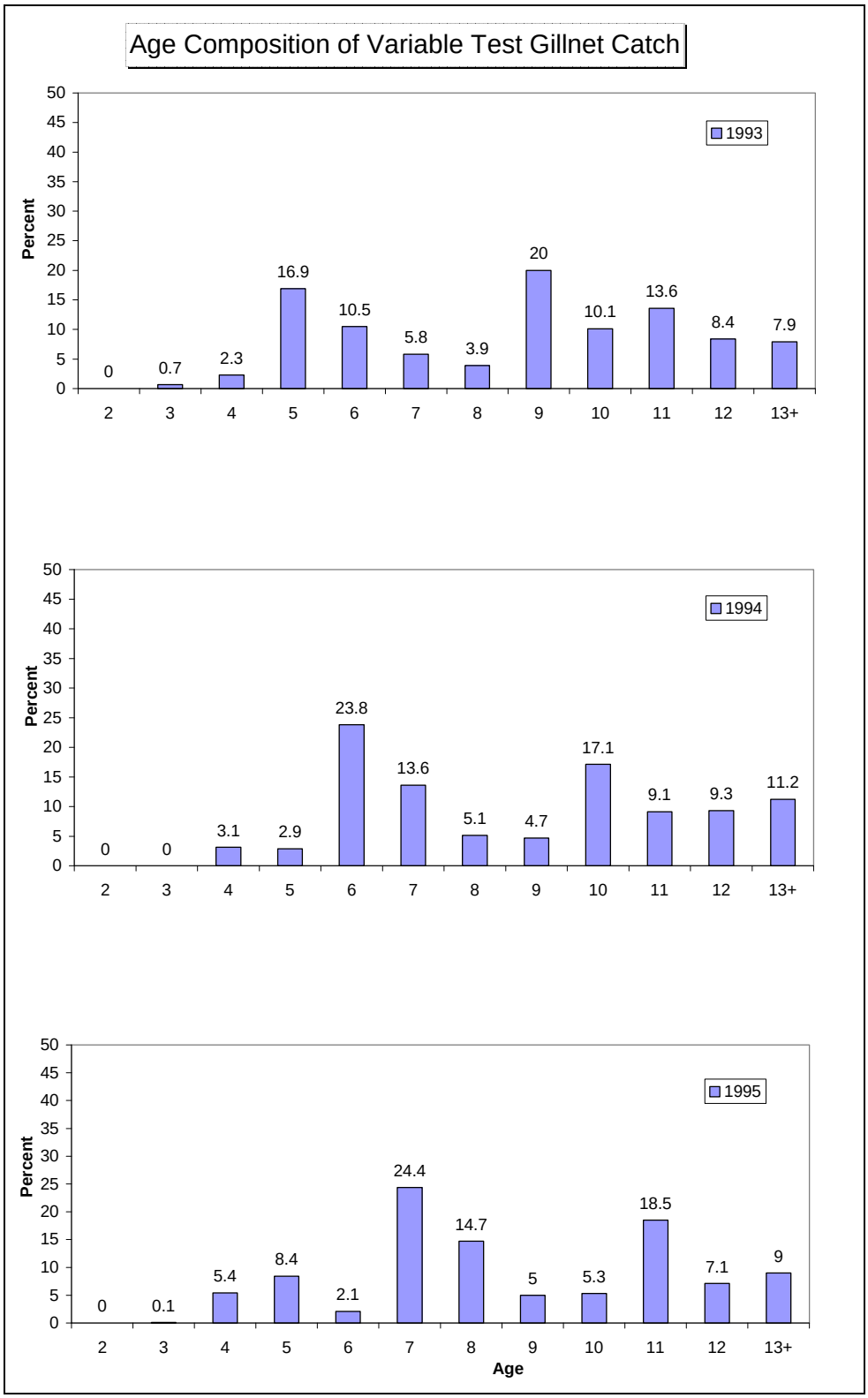
Appendix F13.–Page 3 of 6.



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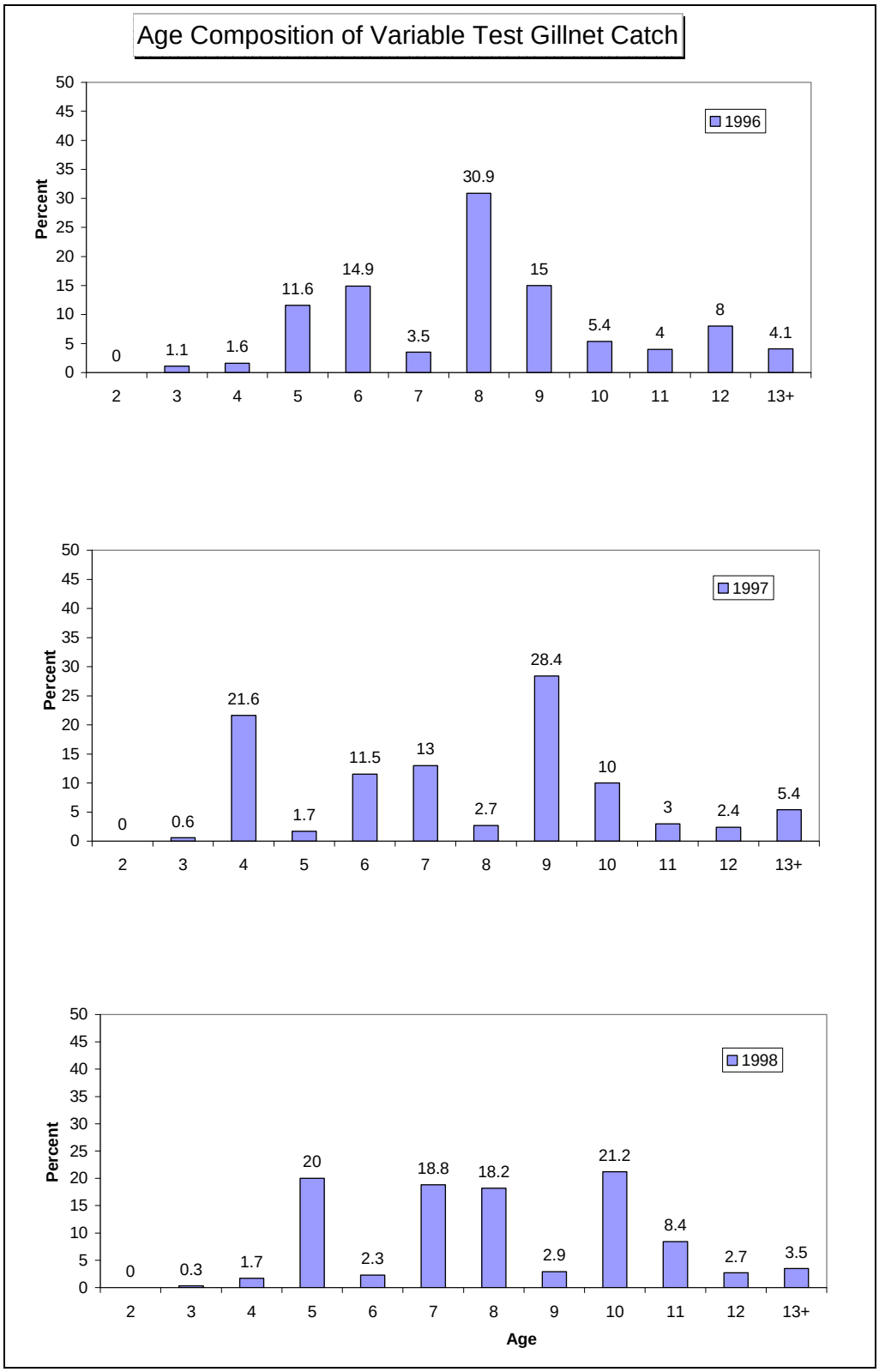
Appendix F13.–Page 4 of 6.



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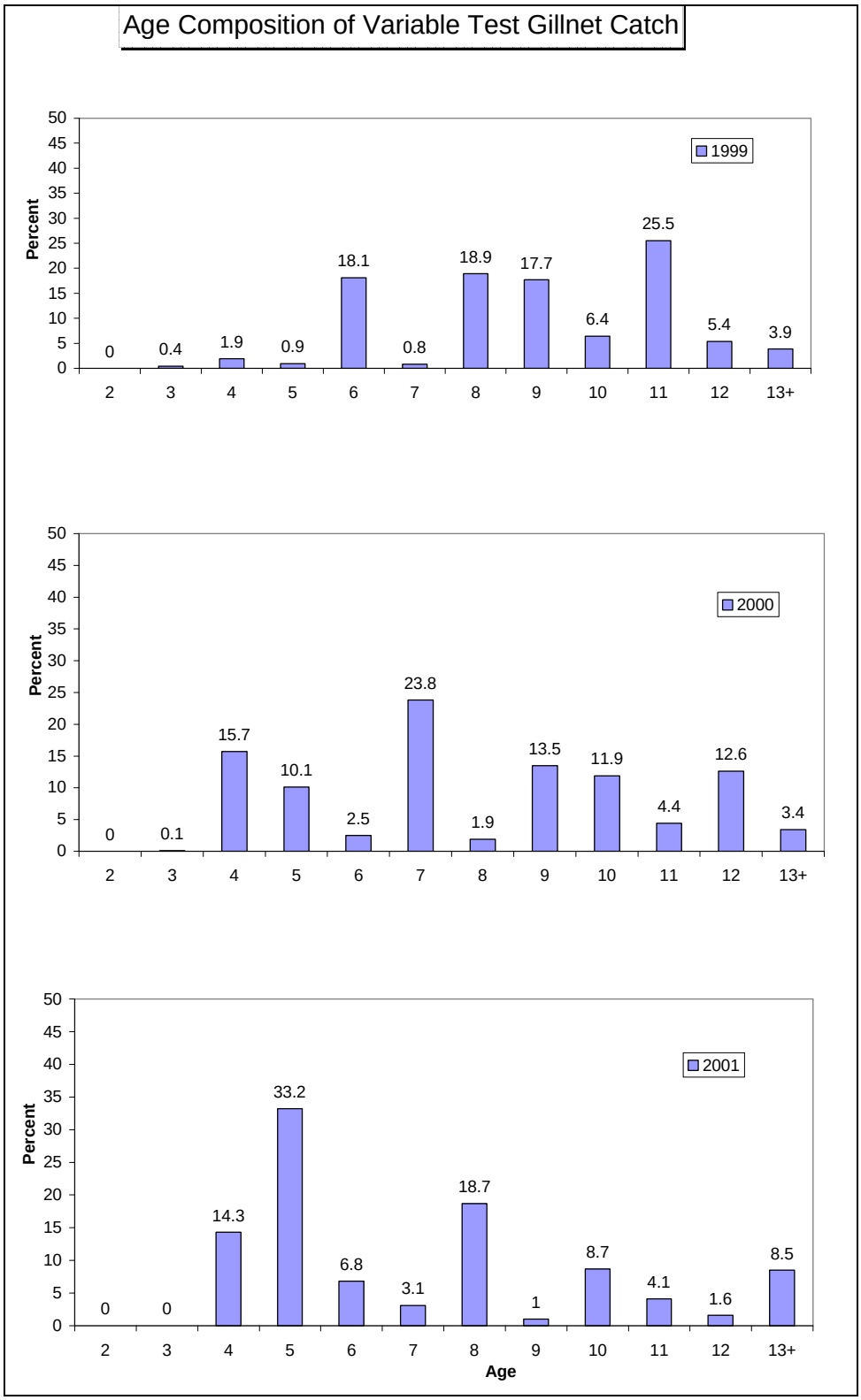
Appendix F13.–Page 5 of 6.



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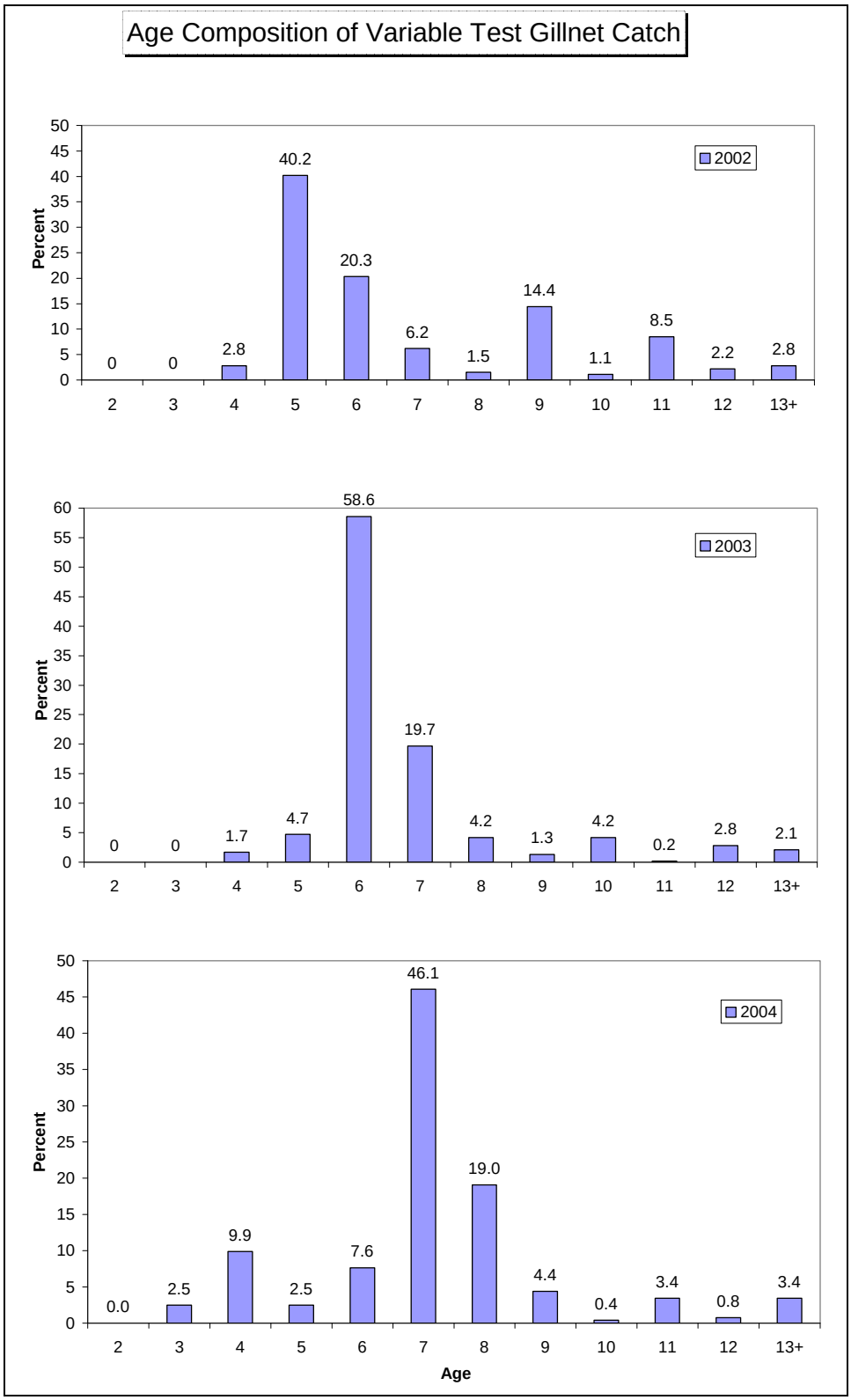
Appendix F13.–Page 6 of 6.



Appendix F14.–Herring spawn weight, cumulative weight, and related data from artificial substrate, Cape Romanzof, 2002–2003.[a]

2002																	
		Platforms 1-25						Platforms 26-40						Combined Sections			
Date	Time	Daily Weight (1g)	Cum. Weight (g)	Daily Prop	Cum. Prop	Platforms Not Visited		Daily Weight (1g)	Cum. Weight (g)	Daily Prop	Cum. Prop	Platforms Not Visited		Daily Weight (g)	Cum. Weight (g)	Daily Proportion	Cum. Proportion
19-May [b]	14:00	0	0	0.000	0.000	18-36 placed		-	-	-	-	-		0	0	0.000	0.000
20-May		0	0	0.000	0.000	37-40 placed		-	-	-	-	-		0	0	0.000	0.000
21-May		0	0	0.000	0.000			-	-	-	-	-		0	0	0.000	0.000
22-May		0	0	0.000	0.000			224	224	0.530	0.530			224	224	0.324	0.324
23-May	17:30	0	0	0.000	0.000	19-21,23,24		0	224	0.000	0.530	31,32		0	224	0.000	0.324
24-May [c]		0	0	0.000	0.000	13-40 u/w		0	224	0.000	0.530			0	224	0.000	0.324
25-May		0	0	0.000	0.000	18		199	423	0.470	1.000			199	423	0.288	0.612
26-May		181	181	0.675	0.675			0	423	0.000	1.000			181	604	0.262	0.874
27-May		56	237	0.209	0.884			0	423	0.000	1.000			56	660	0.081	0.955
28-May	10:00	31	268	0.116	1.000			0	423	0.000	1.000			31	691	0.045	1.000
29-May	10:30	0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
30-May	11:45	0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
31-May	12:00	0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
01-Jun	12:50	0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
02-Jun	12:20	0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
03-Jun		0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
04-Jun	16:00	0	268	0.000	1.000			0	423	0.000	1.000	26		0	691	0.000	1.000
05-Jun		0	268	0.000	1.000	16		0	423	0.000	1.000			0	691	0.000	1.000
06-Jun		0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
07-Jun		0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
08-Jun		0	268	0.000	1.000			0	423	0.000	1.000			0	691	0.000	1.000
Totals		268	268	1.000	1.000			423	423	1.000	1.000			691	691.000	1.000	1.000

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Appendix F14.–Page 2 of 2.

		2003														
		Platforms 1-25					Platforms 26-40					Combined Sections			
Date	Time	Daily Weight (1g)	Cum. Weight (g)	Daily Prop	Cum. Prop	Platforms Not Visited	Daily Weight (1g)	Cum. Weight (g)	Daily Prop	Cum. Prop	Platforms Not Visited	Daily Weight (g)	Cum. Weight (g)	Daily Proportion	Cum. Proportion
12-May [d]		0	0	0.000	0.000	1-20 placed	-	-	-	-	-	0	0	0.000	0.000
13-May	17:30	0	0	0.000	0.000	21-40 placed	-	-	-	-	-	0	0	0.000	0.000
14-May	18:30	0	0	0.000	0.000		0	0	-	-	-	0	0	0.000	0.000
15-May	09:15	0	0	0.000	0.000		0	0	0.000	0.000		0	0	0.000	0.000
16-May	08:30	0	0	0.000	0.000		0	0	0.000	0.000		0	0	0.000	0.000
17-May		0	0	0.000	0.000		0	0	0.000	0.000		0	0	0.000	0.000
18-May		75	75	0.288	0.288		248	248	1.000	1.000		323	323	0.636	0.636
19-May	12:00	0	75	0.000	0.288		0	248	0.000	1.000		0	323	0.000	0.636
20-May	14:20	129	204	0.496	0.785	16 under water	0	248	0.000	1.000		129	452	0.254	0.890
21-May	13:00	54	258	0.208	0.992		0	248	0.000	1.000		54	506	0.106	0.996
22-May	14:00	2	260	0.008	1.000		0	248	0.000	1.000		2	508	0.004	1.000
23-May	15:00	0	260	0.000	1.000		0	248	0.000	1.000		0	508	0.000	1.000
24-May	16:00	0	260	0.000	1.000		0	248	0.000	1.000		0	508	0.000	1.000
25-May		0	260	0.000	1.000		0	248	0.000	1.000		0	508	0.000	1.000
26-May		0	260	0.000	1.000	Removed platforms	0	248	0.000	1.000		0	508	0.000	1.000
		-	-	-	-		-	-	-	-		-	-	-	-
		-	-	-	-		-	-	-	-		-	-	-	-
		-	-	-	-		-	-	-	-		-	-	-	-
		-	-	-	-		-	-	-	-		-	-	-	-
		-	-	-	-		-	-	-	-		-	-	-	-
		-	-	-	-		-	-	-	-		-	-	-	-
Totals		260	260	1.000	1.000		248	248	1.000	1.000		508	691.000	1.000	1.000

[a] Project did not operate in 2004.

[b] First spawn occurred on 5/17 during the early morning high tide. Spawning platforms not yet in place.

[c] No low tide because of storm surge. Platforms 13-40 under water.

[d] First spawn occurred approximately on 5/8 during the early morning high tide. Spawning platforms not yet in place.

Appendix F15.–Historical herring spawn deposition weight data from artificial substrate study, Cape Romanzof District, 1992–2004.

	Herring Spawn Weight in Grams			
Year	Platforms 1-25	Platforms 26-40	Total	Platforms 41-50
1992	1,782	688	2,470	231
1993	1,718	1,736	3,454	292
1994	2,799	1,257	4,056	12
1995	3,111	1,874	4,985	-
1996	3,933	1,666	5,599	-
1997 [a]	-	-	-	-
1998	3,152	234	3,386	-
1999	2,206	2,238	4,444	-
2000	5,374	3,081	8,455	-
2001 [b]	-	-	-	-
2002	268	423	691	-
2003	260	248	508	-
2004	Study discontinued in 2004.			
10-Yr Avg 1994-1996, 1998-2000 2002-2003	2,638	1,378	4,016	12

[a] Due to high winds and heavy wave action in 1997, the project was not successful.

[b] Due to a combination of late spring conditions, persistent ice, constant northerly wind, and atypical spawning behavior in 2001, the project was unsuccessful.

APPENDIX G

Appendix G1.–Estimated or reported subsistence harvest of pink salmon and other miscellaneous fish species by surveyed communities, Yukon Area, 2002–2004.

Data Year 2002

			Estimated Subsistence Harvest with Corresponding Confidence Intervals (CI) (Expanded to Estimate Survey Village Harvest)											Reported Harvest of Miscellaneous Fish Species, (Not Expanded)							
			Pink Salmon		Large Whitefish [a]		Small Whitefish		Pike		Sheefish										
Community	Total Households	Households Contacted	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Total Expanded Misc. Fish Harvest	Burbot	Lamprey	Tomcod	Grayling	Sucker	Arctic Char	Blackfish	Total Not Expanded Misc. Fish Harvest
Hooper Bay	201	62	5,475	3,831	0	0	6,724	2,834	948	613	97	96	13,244	32	0	1,622	0	0	0	14,720	16,374
Scammon Bay	82	25	417	301	397	239	1,319	529	1,370	716	106	111	3,609	9	0	1,930	0	0	0	26,915	28,854
Coastal District	***283***	***87***	***5,892***	***3,842***	***397***	***239***	***8,043***	***2,883***	***2,319***	***943***	***203***	***147***	***16,853***	***41***	***0***	***3,552***	***0***	***0***	***0***	***41,635***	***45,228***
Nunam Iqua [b]	32	24	10	0	289	119	258	88	169	61	540	127	1,266	189	0	0	9	0	9	28,040	28,247
Alakanuk	131	39	130	66	685	355	2,147	2,010	395	210	1,199	638	4,556	264	0	530	2	0	0	101,590	102,386
Emmonak	161	61	39	0	1,074	788	1,773	1,041	1,019	648	2,063	840	5,967	113	0	240	4	0	31	13,422	13,810
Kotlik	90	26	849	983	943	674	3,049	2,641	378	284	2,198	1,922	7,417	123	0	75	0	0	0	134,050	134,248
District 1	***414***	***150***	***1,028***	***985***	***2,991***	***1,102***	***7,227***	***3,480***	***1,960***	***741***	***6,000***	***2,196***	***19,206***	***689***	***0***	***845***	***15***	***0***	***40***	***277,102***	***278,691***
Mountain Village	149	38	745	830	2,510	2,140	1,204	1,061	2,070	1,384	685	363	7,214	573	0	25	0	0	0	34,125	34,723
Pitkas Point	25	19	35	28	514	179	242	104	100	54	340	147	1,230	185	0	0	19	0	2	6,125	6,331
St. Mary's	118	40	7	7	3,272	1,436	884	689	1,155	548	1,055	532	6,373	1,340	0	0	20	0	2	6,700	8,062
Pilot Station	102	37	22	22	4,107	3,372	191	170	731	384	779	496	5,830	17	0	0	0	0	0	6,825	6,842
Marshall	76	23	473	553	2,268	1,412	440	642	3,577	2,319	1,403	896	8,162	195	71	75	40	0	0	53,575	53,956
District 2	***470***	***157***	***1,282***	***998***	***12,672***	***4,477***	***2,961***	***1,432***	***7,632***	***2,783***	***4,262***	***1,219***	***28,809***	***2,310***	***71***	***100***	***79***	***0***	***4***	***107,350***	***109,914***
Russian Mission	63	17	0	0	1,511	1,445	514	701	2,601	2,990	931	760	5,557	26	0	0	24	0	0	22	72
Holy Cross	60	22	0	0	193	94	147	69	133	96	54	69	527	97	100	0	8	6	15	5,258	5,484
Shageluk	33	24	0	0	1,840	718	517	263	352	161	428	176	3,136	38	0	0	0	0	0	0	38
District 3	***156***	***63***	***0***	***0***	***3,544***	***1,616***	***1,177***	***752***	***3,086***	***2,996***	***1,413***	***784***	***9,220***	***161***	***100***	***0***	***32***	***6***	***15***	***5,280***	***5,594***
Anvik	33	30	0	0	201	12	165	12	138	15	121	4	624	0	0	0	87	0	2	0	89
Grayling	46	14	30	0	608	398	255	229	317	35	253	203	1,463	201	0	0	262	300	0	20	783
Kaltag	58	18	0	0	175	218	0	0	100	95	44	41	320	2	450	0	8	0	0	0	460
Nulato	94	27	50	69	674	832	762	850	25	23	75	88	1,586	7	0	0	63	0	18	0	88
Koyukuk	27	21	4	3	23	17	0	0	15	9	56	36	98	141	0	0	17	25	10	1,580	1,773
Galena	168	53	50	0	5,909	4,404	2,826	4,520	327	291	559	327	9,671	35	0	0	0	45	0	0	80
Ruby	67	21	87	0	42	0	391	5	50	5	37	0	607	2,000	0	0	50	0	0	0	2,050
Huslia	81	22	0	0	818	316	1,217	1,087	827	561	741	324	3,603	75	0	0	2	45	10	0	132
Hughes	20	18	0	0	1,206	379	2,465	1,568	38	8	126	9	3,835	3	0	0	0	0	0	0	3
Allakaket	49	13	0	0	963	611	3,340	968	453	225	603	385	5,359	0	0	0	0	0	0	0	0
Alatna	6	5	0	0	110	102	50	0	21	0	36	7	217	9	0	0	210	0	97	0	316
Bettles	22	17	0	0	0	0	0	0	9	5	13	12	22	4	0	0	32	53	0	0	89
District 4	***671***	***259***	***221***	***69***	***10,730***	***4,574***	***11,471***	***5,078***	***2,321***	***679***	***2,663***	***642***	***27,405***	***2,477***	***450***	***0***	***731***	***468***	***137***	***1,600***	***5,863***
Tanana	102	33	0	0	6,417	257	8,563	2,800	123	71	336	24	15,439	0	0	0	0	0	0	0	0
Rampart	16	11	0	0	30	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0
Stevens Village	28	19	0	0	22	16	0	0	8	8	3	3	33	0	0	0	23	0	0	0	23
Birch Creek	8	5	0	0	54	56	0	0	84	56	0	0	138	68	0	0	0	0	0	0	68
Beaver	25	16	0	0	3	3	0	0	73	48	4	4	80	0	0	0	2	0	2	0	4
Fort Yukon	165	45	0	0	1,251	863	901	815	1,250	1,382	1,076	1,361	4,477	0	0	0	0	0	0	0	0
Venetie	40	27	0	0	37	41	0	0	23	25	0	0	60	63	0	0	15	47	0	0	125
Chalkyitsik	40	27	0	0	0	0	0	0	27	22	1	1	29	0	2	0	511	25	0	0	538
District 5	***424***	***183***	***0***	***0***	***7,813***	***903***	***9,464***	***2,916***	***1,589***	***1,386***	***1,420***	***1,361***	***20,285***	***131***	***2***	***0***	***551***	***72***	***2***	***0***	758
Survey Totals	**2,418**	**899**	**8,423**	**4,091**	**38,146**	**6,757**	**40,343**	**7,571**	**18,906**	**4,532**	**15,960**	**3,034**	**121,779**	**5,809**	**623**	**4,497**	**1,408**	**546**	**198**	**432,967**	**446,048**

[a] Large whitefish are considered those 4 pounds or larger and small whitefish are less than 4 pounds.

[b] Formerly known as Sheldon or Sheldons Point.

-continued-

Appendix G1.–Page 2 of 5.
Data Year 2003

			Estimated Subsistence Harvest with Corresponding Confidence Intervals (CI) (Expanded to Estimate Survey Village Harvest)										
			Pink Salmon		Large Whitefish [a]		Small Whitefish		Pike		Sheefish		Total Expanded Misc. Fish Harvest
Community	Total Households	Households Contacted [b]	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	
Hooper Bay	197	62	473	352	898	849	3,607	1,426	759	601	22	16	5,759
Scammon Bay	81	32	997	826	632	419	2,532	2,358	1,504	770	29	24	5,694
Coastal District	***278***	***94***	***1,470***	***897***	***1,530***	***947***	***6,139***	***2,755***	***2,263***	***977***	***51***	***29***	***11,453***
Nunam Iqua [c]	35	22	5	3	208	159	1,033	597	54	59	726	276	2,026
Alakanuk	126	30	0	0	1,576	1,130	3,565	3,079	887	546	1,627	1,117	7,655
Emmonak	159	61	4	4	556	335	2,781	2,773	635	321	1,341	540	5,317
Kotlik	89	31	198	285	99	64	745	606	893	932	1,431	556	3,366
District 1	***409***	***144***	***207***	***285***	***2,439***	***1,191***	***8,124***	***4,230***	***2,469***	***1,128***	***5,125***	***1,387***	***18,364***
Mountain Village	147	47	117	56	1,548	1,089	2,843	1,033	1,753	577	1,313	992	7,574
Pitkas Point	25	17	0	0	395	165	555	618	130	97	168	153	1,248
St. Mary's	112	47	0	0	1,652	1,040	1,926	813	1,528	524	855	338	5,961
Pilot Station	97	44	0	0	477	242	581	238	469	321	333	163	1,860
Marshall	75	25	0	0	134	200	1,265	566	2,630	2,013	546	202	4,575
District 2	***456***	***180***	***117***	***56***	***4,206***	***1,547***	***7,170***	***1,577***	***6,510***	***2,185***	***3,215***	***1,090***	***21,218***
Russian Mission	61	18	0	0	1,059	893	30	52	547	328	261	267	1,897
Holy Cross	55	21	0	0	340	334	488	346	282	157	66	31	1,176
Shageluk	32	26	130	58	2,007	1,148	30	14	625	175	199	76	2,991
District 3	***148***	***65***	***130***	***58***	***3,406***	***1,492***	***548***	***350***	***1,454***	***403***	***526***	***279***	***6,064***
Anvik	32	26	240	192	1,058	125	45	19	1,264	58	248	40	2,855
Grayling	44	14	3	3	170	175	781	618	345	193	409	205	1,708
Kaltag	58	17	0	0	565	621	164	148	163	145	120	92	1,012
Nulato	91	19	0	0	253	271	69	120	476	345	198	222	996
Koyukuk	26	20	0	0	401	203	124	40	84	30	131	35	740
Galena	166	43	0	0	6,233	6,262	19	33	418	453	285	279	6,955
Ruby	62	19	0	0	266	94	1,024	0	52	23	153	95	1,495
Huslia	78	18	0	0	2,031	964	1,739	1,302	5,191	5,762	883	362	9,844
Hughes	20	18	0	0	1,255	754	5,070	116	47	0	566	110	6,938
Allakaket	48	14	0	0	918	189	2,564	603	223	21	895	753	4,600
Alatna	5	4	0	0	100	55	0	0	1	0	80	111	181
Bettles	19	13	0	0	0	0	0	0	0	0	0	0	0
District 4	***649***	***225***	***243***	***192***	***13,250***	***6,427***	***11,599***	***1,580***	***8,264***	***5,795***	***3,968***	***955***	***37,324***
Tanana	97	34	0	0	3,484	346	2,550	286	111	58	856	86	7,001
Rampart	17	14	0	0	2	0	2	0	0	0	0	0	4
Stevens Village	28	21	0	0	400	554	0	0	100	139	10	14	510
Birch Creek	9	8	0	0	160	170	150	170	170	170	150	170	630
Beaver	27	19	0	0	47	39	13	13	31	24	7	7	98
Fort Yukon	164	56	0	0	1,443	1,451	1,532	819	882	651	368	262	4,225
Venetie	36	34	0	0	28	20	0	0	31	27	4	2	63
Chalkyitsik	33	25	0	0	15	18	179	199	56	55	0	0	250
District 5	***411***	***211***	***0***	***0***	***5,579***	***1,601***	***4,426***	***906***	***1,381***	***692***	***1,395***	***324***	***12,781***
Survey Totals	**2,351**	**919**	**2,167**	**964**	**30,410**	**7,128**	**38,006**	**5,604**	**22,341**	**6,421**	**14,280**	**2,052**	**107,204**

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Data Year 2003

Community	Total Households	Households Contacted [b]	Reported Harvest of Miscellaneous Fish Species, (Not Expanded)							Total Not Expanded Misc. Fish Harvest
			Burbot	Lamprey	Tomcod	Grayling	Sucker	Arctic Char	Blackfish	
Hooper Bay	197	62	84	0	2,521	0	0	13	18,092	20,710
Scammon Bay	81	32	100	0	490	0	0	0	16,460	17,050
Coastal District	***278***	***94***	***184***	***0***	***3,011***	***0***	***0***	***13***	***34,552***	**37,760**
Nunam Iqua [c]	35	22	115	1	182	0	0	13	13,412	13,723
Alakanuk	126	30	67	0	70	0	0	0	4,100	4,237
Emmonak	159	61	63	0	775	10	0	0	40,260	41,108
Kotlik	89	31	131	0	570	0	0	12	1,665	2,378
District 1	***409***	***144***	***376***	***1***	***1,597***	***10***	***0***	***25***	***59,437***	**61,446**
Mountain Village	147	47	187	1,227	0	141	5	5	14,185	15,750
Pitkas Point	25	17	47	1,219	0	10	0	0	13,162	14,438
St. Mary's	112	47	204	937	0	73	0	52	24,012	25,278
Pilot Station	97	44	637	2,842	0	523	0	0	13,485	17,487
Marshall	75	25	193	4,722	0	8	0	8	420	5,351
District 2	***456***	***180***	***1,268***	***10,947***	***0***	***755***	***5***	***65***	***65,264***	**78,304**
Russian Mission	61	18	81	930	0	1	0	8	2,100	3,120
Holy Cross	55	21	211	987	0	85	0	0	300	1,583
Shageluk	32	26	87	0	0	0	0	0	0	87
District 3	***148***	***65***	***379***	***1,917***	***0***	***86***	***0***	***8***	***2,400***	**4,790**
Anvik	32	26	21	12,255	0	43	0	0	0	12,319
Grayling	44	14	57	4,766	0	29	0	10	0	4,862
Kaltag	58	17	3	0	0	73	0	31	0	107
Nulato	91	19	9	0	0	264	0	51	0	324
Koyukuk	26	20	16	0	0	0	0	1	0	17
Galena	166	43	279	0	0	32	0	30	50	391
Ruby	62	19	9	0	0	0	1	0	0	10
Huslia	78	18	113	0	0	232	82	100	0	527
Hughes	20	18	7	0	0	94	12	0	0	113
Allakaket	48	14	21	0	0	392	120	0	0	533
Alatna	5	4	0	0	0	20	0	0	0	20
Bettles	19	13	0	0	0	61	0	41	0	102
District 4	***649***	***225***	***535***	***17,021***	***0***	***1,240***	***215***	***264***	***50***	**19,325**
Tanana	97	34	75	0	0	30	3	1	0	109
Rampart	17	14	0	0	0	40	0	0	0	40
Stevens Village	28	21	4	0	0	0	0	0	0	4
Birch Creek	9	8	4	0	0	0	5	0	0	9
Beaver	27	19	164	0	0	42	6	0	0	212
Fort Yukon	164	56	0	0	0	0	0	0	0	0
Venetie	36	34	0	0	0	178	0	0	0	178
Chalkyitsik	33	25	11	0	0	40	0	0	0	51
District 5	***411***	***211***	***258***	***0***	***0***	***330***	***14***	***1***	***0***	**603**
Survey Totals	**2,351**	**919**	**3,000**	**29,886**	**4,608**	**2,421**	**234**	**376**	**161,703**	**202,228**

[a] Large whitefish are considered those 4 pounds or larger and small whitefish are less than 4 pounds.

[b] The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

[c] Formerly known as Sheldon or Sheldons Point.

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Data Year 2004

			Estimated Subsistence Harvest with Corresponding Confidence Intervals (CI) (Expanded to Estimate Survey Village Harvest)										
			Pink Salmon		Large Whitefish [a]		Small Whitefish		Pike		Sheefish		Total Expanded Misc. Fish Harvest
Community	Total Households	Households Contacted [b]	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	
Hooper Bay	193	77	5,418	2,271	232	99	4,498	2,370	1,814	1,130	34	34	11,996
Scammon Bay	82	32	2,508	1,598	791	453	2,406	948	776	364	62	40	6,543
Coastal District	***275***	***109***	***7,926***	***2,777***	***1,023***	***463***	***6,904***	***2,553***	***2,590***	***1,187***	***96***	***52***	***18,539***
Nunam Iqua [c]	32	21	32	36	312	274	1,742	828	43	26	1,081	392	3,210
Alakanuk	124	58	233	83	500	224	1,988	532	714	190	1,269	629	4,704
Emmonak	161	85	32	13	510	256	3,154	1,031	1,056	219	1,684	382	6,436
Kotlik	87	42	318	91	570	190	2,377	1,012	631	263	1,773	593	5,669
District 1	***404***	***206***	***615***	***129***	***1,892***	***477***	***9,261***	***1,748***	***2,444***	***393***	***5,807***	***1,023***	***20,019***
Mountain Village	142	59	891	502	1,698	1,062	1,459	612	2,848	1,272	478	152	7,374
Pitkas Point	25	20	0	0	31	18	426	123	97	24	124	32	678
St. Mary's	108	50	137	139	2,496	1,693	1,213	354	977	253	1,032	392	5,855
Pilot Station	95	46	5	7	816	402	545	355	751	321	1,121	494	3,238
Marshall	72	32	105	43	1,767	871	504	487	1,662	611	573	265	4,611
District 2	***442***	***207***	***1,138***	***523***	***6,808***	***2,217***	***4,147***	***937***	***6,335***	***1,470***	***3,328***	***702***	***21,756***
Russian Mission	61	25	6	6	564	336	287	178	1,204	525	333	168	2,394
Holy Cross	48	29	0	0	218	82	67	54	295	92	58	29	638
Shageluk	29	19	0	0	548	258	265	141	894	467	191	71	1,898
District 3	***138***	***73***	***6***	***6***	***1,330***	***431***	***619***	***233***	***2,393***	***709***	***582***	***185***	***4,930***
Anvik	31	26	0	0	593	10	396	15	117	6	93	5	1,199
Grayling	44	22	0	0	778	596	148	119	186	131	264	114	1,376
Kaltag	57	19	10	0	105	40	38	0	38	13	73	44	264
Nulato	87	28	0	0	187	115	109	74	70	51	272	197	638
Koyukuk	24	21	0	0	961	1	22	7	242	20	461	51	1,686
Galena	160	45	0	0	3,603	1,449	413	364	208	93	436	318	4,660
Ruby	61	21	2	0	917	689	37	41	114	45	142	63	1,212
Huslia	74	19	0	0	669	345	7,999	6,015	2,007	987	850	300	11,525
Hughes	22	16	0	0	473	349	1,105	628	56	44	572	512	2,206
Allakaket	46	17	0	0	460	0	120	192	461	144	545	193	1,586
Alatna	5	4	0	0	0	0	0	0	0	0	0	0	0
Bettles	20	10	0	0	0	0	0	0	0	0	45	59	45
District 4	***631***	***248***	***12***	***0***	***8,746***	***1,785***	***10,387***	***6,064***	***3,499***	***1,014***	***3,753***	***744***	***26,397***
Tanana	90	45	0	0	6,906	2,538	2,544	804	73	53	2,430	607	11,953
Stevens Village	30	14	0	0	40	54	90	107	320	537	6	0	456
Birch Creek	9	4	0	0	30	46	0	0	30	46	15	23	75
Beaver	30	17	0	0	80	111	117	139	272	279	201	277	670
Fort Yukon	161	45	0	0	843	427	1,171	561	283	155	660	324	2,957
Venetie	35	24	0	0	161	0	452	82	115	0	2	0	730
Chalkyitsik	29	18	0	0	0	0	488	422	384	261	16	20	888
District 5	***384***	***167***	***0***	***0***	***8,060***	***2,578***	***4,862***	***1,085***	***1,477***	***680***	***3,330***	***742***	***17,729***
Survey Totals	**2,274**	**1,010**	**9,697**	**2,829**	**27,859**	**3,921**	**36,180**	**6,961**	**18,738**	**2,391**	**16,896**	**1,637**	**109,370**

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Appendix G1.–Page 5 of 5.
Data Year 2004

Community	Total Households	Households Contacted [b]	Reported Harvest of Miscellaneous Fish Species, (Not Expanded)								Total Not Expanded Misc. Fish Harvest
			Burbot	Lamprey	Tomcod	Grayling	Sucker	Arctic Char	Blackfish	Sockeye Salmon [d]	
Hooper Bay	193	77	31	0	1635	0	0	0	7490	18	9,174
Scammon Bay	82	32	82	0	1027	2	0	8	31468	5	32,592
Coastal District	***275***	***109***	***113***	***0***	***2662***	***2***	***0***	***8***	***38958***	***23***	**41,766**
Nunam Iqua [c]	32	21	129	1	356	0	0	11	6,100	8	6,605
Alakanuk	124	58	181	9	100	0	0	11	15,225	19	15,545
Emmonak	161	85	373	0	1,466	3	0	5	52,301	140	54,288
Kotlik	87	42	241	0	405	5	0	5	8,955	18	9,629
District 1	***404***	***206***	***924***	***10***	***2,327***	***8***	***0***	***32***	***82,581***	***185***	**86,067**
Mountain Village	142	59	629	1,768	0	69	4	0	20,370	72	22,912
Pitkas Point	25	20	114	978	0	0	0	0	2,492	5	3,589
St. Mary's	108	50	280	1,615	0	59	0	0	23,490	38	25,482
Pilot Station	95	46	612	2,327	0	0	0	0	15,925	27	18,891
Marshall	72	32	406	4,550	300	5	0	0	23,100	114	28,475
District 2	***442***	***207***	***2,041***	***11,238***	***300***	***133***	***4***	***0***	***85,377***	***256***	**99,349**
Russian Mission	61	25	159	11,790	0	0	0	6	14,700	3	26,658
Holy Cross	48	29	44	90	0	16	0	0	840	48	1,038
Shageluk	29	19	10	0	0	0	0	0	0	0	10
District 3	***138***	***73***	***213***	***11,880***	***0***	***16***	***0***	***6***	***15,540***	***51***	**27,706**
Anvik	31	26	32	7,575	360	40	1	1	0	7	8,016
Grayling	44	22	13	2,915	0	11	2	4	7	10	2,962
Kaltag	57	19	5	0	0	18	0	1	0	16	40
Nulato	87	28	7	300	0	398	0	47	0	13	765
Koyukuk	24	21	0	0	0	0	0	0	0	15	15
Galena	160	45	66	0	0	14	0	4	7,020	32	7,136
Ruby	61	21	8	0	0	3	0	0	0	0	11
Huslia	74	19	27	0	0	4	10	0	350	5	396
Hughes	22	16	6	0	0	12	2	0	0	0	20
Allakaket	46	17	7	0	0	20	12	0	0	57	96
Alatna	5	4	0	0	0	0	0	0	0	0	0
Bettles	20	10	0	0	0	4	0	12	0	0	16
District 4	***631***	***248***	***171***	***10,790***	***360***	***524***	***27***	***69***	***7,377***	***155***	**19,473**
Tanana	90	45	38	1	0	42	38	0	0	100	219
Stevens Village	30	14	0	0	0	1	0	0	0	7	8
Birch Creek	9	4	0	0	0	0	0	0	0	0	0
Beaver	30	17	0	0	0	0	0	0	0	0	0
Fort Yukon	161	45	122	0	0	24	80	0	0	8	234
Venetie	35	24	6	0	0	895	29	1	0	2	933
Chalkyitsik	29	18	0	0	0	0	0	0	0	0	0
District 5	***384***	***167***	***166***	***1***	***0***	***962***	***147***	***1***	***0***	***117***	**1,394**
Survey Totals	**2,274**	**1,010**	**3,628**	**33,919**	**5,649**	**1,645**	**178**	**116**	**229,833**	**787**	**275,755**

[a] Large whitefish are considered those 4 pounds or larger and small whitefish are less than 4 pounds.

[b] The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

[c] Formerly known as Sheldon or Sheldon's point.

[d] 2004 is the first year that sockeye salmon harvest information was included in postseason survey. Due to low sockeye numbers, infrequent harvest, and difficulties with species identification by fishers, the harvest is not estimated.

Appendix G2.–Reported subsistence and personal use fish harvested under the authority of a permit, listed by permit area, Yukon Area, 2002–2004.[a]

Data Year 2002

Permit Fishing Area	Permit Type	Permit Issued	Permit Returned	Percent Returned	Number of Permits Returned that Fished	Reported Harvest: Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling
Subsistence Use															
Yukon River near Haul Road Bridge	SY	60	58	97%	44	2,275	320	100	0	35	4	3	6	0	6
Yukon River near Circle and Eagle	SE	94	79	84%	39	3,639	29	413	1	63	1	5	30	33	89
Tanana River Subdistrict 6A	SA	18	17	94%	15	373	99	1,076	1,883	130	2	29	48	7	0
Tanana River Subdistrict 6B	SB	62	59	95%	24	525	411	1,836	7,253	706	5	8	38	105	0
Tanana River Upstream of Subdistrict 6C	SU	32	31	97%	17	0	0	25	0	1,089	0	11	90	46	42
Kantishna River Subdistrict 6A	SK	6	6	100%	5	169	2	265	363	22	0	3	58	10	1
Tolovana River Pike Subdistrict 6B	ST	32	30	94%	14	0	0	0	0	263	54	6	521	53	0
Whitefish/ Sucker	SW	1	1	100%	1	0	0	0	0	498	0	0	0	0	0
Subsistence Permit Subtotals		*305*	*281*	92%	*159*	*6,981*	*861*	*3,715*	*9,500*	*2,806*	*66*	*65*	*791*	*254*	*138*
Personal Use															
Tanana River Subdistrict 6C	PC	57	55	96%	29	126	175	3	20	0	0	0	0	0	0
Tanana River Whitefish Upstream of Subdistrict 6C	PW	5	4	80%	1	0	0	0	0	50	0	0	0	90	0
Personal Use Permit Subtotals		*62*	*59*	*95%*	*30*	*126*	*175*	*3*	*20*	*50*	*0*	*0*	*0*	*90*	*0*
Permit Totals		**367**	**340**	**93%**	**189**	**7,107**	**1,036**	**3,718**	**9,520**	**2,856**	**66**	**65**	**791**	**344**	**138**

[a] As of April 1, 2003.

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Appendix G2.–Page 2 of 3.

Data Year 2003

Permit Fishing Area	Permit [b] Type	Issued	Returned	Percent Returned	Number of Permits Returned that Fished	Reported Harvest: Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling
Subsistence Use															
Yukon River near Haul Road Bridge	SY	86	80	93%	62	2,670	89	104	145	557	62	32	47	7	0
Yukon River near Circle and Eagle	SE	95	85	89%	58	3,406	189	3,374	0	584	29	2	13	107	1,197
Tanana River Subdistrict 6A	SA	18	16	89%	9	213	65	1,396	1,006	3	2	0	35	3	0
Tanana River Subdistrict 6B	SB	77	72	94%	40	1,839	2,849	10,537	7,849	875	45	37	162	44	5
Tanana River Upstream of Subdistrict 6C	SU	38	32	84%	17	30	0	4	0	1,482	0	14	10	33	5
Kantishna River Subdistrict 6A	SK	5	5	100%	4	63	0	1,049	1,508	37	1	8	23	49	6
Tolovana River Pike Subdistrict 6B	ST	119	105	88%	57	0	0	0	0	334	63	24	966	88	0
Whitefish/ Sucker	SW	2	2	100%	2	0	0	0	0	506	0	0	0	490	3
Subsistence Permit Subtotals		*440*	*397*	90%	*249*	*8,221*	*3,192*	*16,464*	*10,508*	*4,378*	*202*	*117*	*1,256*	*821*	*1,216*
Personal Use															
Tanana River Subdistrict 6C	PC	67	67	100%	32	204	148	394	549	2	1	0	0	0	0
Tanana River Whitefish Upstream of Subdistrict 6C	PW	7	5	71%	3	0	0	0	0	20	0	5	0	135	7
Personal Use Permit Subtotals		*74*	*72*	*97%*	*35*	*204*	*148*	*394*	*549*	*22*	*1*	*5*	*0*	*135*	*7*
Permit Totals		**514**	**469**	**91%**	**284** [c]	**8,425**	**3,340**	**16,858**	**11,057**	**4,400**	**203**	**122**	**1,256**	**956**	**1,223**

[a] As of June 26, 2004.

[b] Includes 34 households that were issued permits for more than 1 area.

[c] Includes 5 households that fished in 2 different permit areas.

Appendix G2.–Page 3 of 3.

Data Year 2004

Permit Fishing Area	Permit [b] Type	Permit [b] Issued	Permit [b] Returned	Percent Returned	Number of Permits Returned that Fished [c]	Reported Harvest: Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling
Subsistence Use															
Koyukuk Middle and South Fork Rivers [d]	SF	1	1	100%	1	0	0	0	0	4	0	0	0	0	4
Yukon River near Rampart [d]	SR	14	11	79%	9	832	249	0	0	0	0	0	0	0	0
Yukon River near Haul Road Bridge	SY	69	67	97%	51	2,032	164	43	91	56	6	15	26	0	0
Yukon River near Circle and Eagle	SE	89	83	93%	50	2,304	223	6,517	114	381	16	18	22	249	938
Tanana River Subdistrict 6A	SA	18	18	100%	8	239	306	1,529	1,419	17	3	0	26	14	0
Tanana River Subdistrict 6B	SB	60	56	93%	30	1,049	1,485	6,805	9,580	933	35	49	58	17	46
Tanana River Upstream of Subdistrict 6C	SU	35	30	86%	14	0	0	0	0	2,346	0	14	26	30	41
Kantishna River Subdistrict 6A	SK	5	5	100%	4	100	2	619	585	0	1	1	55	0	1
Tolovana River Pike Subdistrict 6B	ST	99	90	91%	42	0	0	0	0	110	35	30	393	30	1
Whitefish/ Sucker	SW	1	1	100%	1	0	0	0	0	504	0	0	0	0	1
Subsistence Permit Subtotals		*391*	*362*	93%	*210*	*6,556*	*2,429*	*15,513*	*11,789*	*4,351*	*96*	*127*	*606*	*340*	*1,032*
Personal Use															
Tanana River Subdistrict 6C	PC	68	66	97%	35	201	231	230	233	0	1	0	0	1	0
Tanana River Whitefish Upstream of Subdistrict 6C	PW	3	2	67%	1	0	0	0	0	51	0	0	0	0	0
Personal Use Permit Subtotals		*71*	*68*	*96%*	*36*	*201*	*231*	*230*	*233*	*51*	*1*	*0*	*0*	*1*	*0*
Permit Totals		**462**	**430**	**93%**	**246** [c]	**6,757**	**2,660**	**15,743**	**12,022**	**4,402**	**97**	**127**	**606**	**341**	**1,032**

Note: Preliminary reported subsistence and personal use freshwater finfish harvested under the authority of a permit, listed by permit area, Yukon Area, 2004.

[a] As of November 4, 2005.

[b] Includes 27 households that were "issued" permits for more than 1 area.

[c] Includes 5 households that "fished" in 2 different permit areas.

[d] 2004 is the fist year that fishers in this area were required to have a subsistence permit.

Appendix G3.–Commercial freshwater finfish harvest, Lower Yukon Area, 1978–2004.

	Sheefish		Whitefish		Burbot		Pike	Lamprey		Blackfish
Year	Number	Pounds	Number	Pounds	Number	Pounds	Pounds	Number	Pounds	Pounds
1978	0	0	19	87	0	0	0	0	0	0
1979	5	39	23	55	0	0	0	0	0	0
1980	283	2,265	78	250	0	0	0	0	0	293
1981	299	2,812	779	2,875	0	0	9	0	0	0
1982	754	6,161	1,633	6,214	102	482	0	0	0	0
1983	395	2,692	163	648	0	0	0	0	0	0
1984	94	762	794	2,362	0	0	0	0	0	0
1985	358	3,081	1,514	4,586	0	0	0	0	0	0
1986	0	0	1,533	5,845	0	0	0	- [a]	80	0
1987	0	0	2,144	7,564	0	0	0	0	0	0
1988	0	0	696	2,171	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	180	260	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0
1992	0	0	95	640	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	157	471	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	84,665 [b]	23,960	0
2004	0	0	0	0	0	0	0	0	0	0
1994-2003 Average	0	0	16	47	0	0	0	8,467	2,396	0

[a] Information not available.

[b] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.283). Harvest took place in St. Mary's area.

Appendix G4.–Commercial freshwater finfish harvest, Upper Yukon Area, 1971–2004.[a]

	Healy Lake		Lake Minchumina		Tanana River				Yukon River					
	Whitefish		Whitefish		Burbot		Whitefish		Burbot		Whitefish		Lamprey	
Year	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1971			3,277	9,831	0	0	0	0	0	0	0	0	0	0
1972	2,605	3,950	718	2,154	0	0	0	0	0	0	0	0	0	0
1973	2,187	3,915	1,697	5,037	0	0	0	0	0	0	0	0	0	0
1974	1,885	3,390	854	2,562	0	0	0	0	0	0	0	0	0	0
1975	1,357	2,375	0	0	0	0	0	0	0	0	0	0	0	0
1976	1,440	2,625	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	1,336	2,306	0	0	0	0	0	0	0	0	0	0	0	0
1980	[b]	[b]	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	76	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	72	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	837	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	1	0	0	2,070	0	0
1990	0	0	0	0	1	0	809	0	0	0	985	2,078	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	921	1,400	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	908	1,160	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0 [c]	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	99,988 [d]	25,697
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999-2003 Average	0	0	0	0	0	0	0	0	0	0	0	0	19,998	5,139

[a] Numbers reflect fish harvested with the intent of commercial sale.

[b] Information not available.

[c] Requests for commercial whitefish fishing permits were denied because of the additional pressure placed on non-salmon species during poor salmon runs.

[d] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.257). Harvest took place in Grayling area.

Appendix G5.–Freshwater finfish sales during the commercial salmon fishing season by district, Upper Yukon Area, 1988–2004.

	District 4		District 5				District 6	
	Whitefish		Whitefish		Sheefish		Whitefish	
Year	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1988	170	977	1,432	1,497	94	689	205	208
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	2,635	2,455	1,864	1,379 [a]	0	0	199	499
1993	0	0	59	48	0	0	140	300
1994	1	4	108	215	0	0	209	433
1995	0	0	95	95	0	0	183	387
1996	0	0	22	66	0	0	103	292
1997	0	0	270	301	0	0	4	8
1998	0	0	116	88	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	60	120
2003	40	113	0	0	0	0	129	297
2004	0	0	4	15	0	0	53	112
1999-2003 Average	8	23	0	0	0	0	38	83

[a] The sale of 950 pounds of the total 1,379 pounds of whitefish sold did not include number of fish. Used the average weight (.74 lbs.) to estimate number of fish.

APPENDIX H

Appendix H1.–Commercial freshwater finfish harvest and sales, Colville River, Northern Area, 1964–2004.

	Number of Fish Harvested intended for Commercial Sale [a]					Estimated Commercial Sales Based on Fish Tickets [b]	
	Broad Whitefish	Humpback Whitefish	Least Cisco ("herring")	Arctic Cisco ("kaktok")	Total Harvest	Arctic Cisco	Whitefish Species [c]
1964	2,951 [d]	-	9,000	16,000	27,951	-	-
1965	3,000 [d]	-	-	50,000	53,000	-	-
1966	2,500 [d]	-	-	40,000	42,500	-	-
1967	-	-	-	-	0	-	-
1968	3,130	-	18,180	42,055	63,365	-	-
1969	-	-	-	-	0	-	-
1970	2,080 [d]	-	25,930	19,602	47,612	-	-
1971	3,815	132	22,713	38,016	64,676	-	-
1972	3,850	1,497	13,283	37,333	55,963	-	-
1973	2,161	-	25,188	71,569	98,918	-	-
1974	3,117	2,316	13,813	35,601	54,847	-	-
1975	2,201	1,946	20,778	28,291	53,216	-	-
1976	2,172	1,815	34,620	31,659	70,266	-	-
1977	443	1,431	14,961	31,796	48,631	-	-
1978 [e]	20	1,102	21,589	17,292	40,003	-	-
1979	0	1,831	24,984	8,684	35,499	-	-
1980	0	4,231	31,459	14,657	50,347	-	-
1981	1,035	469	16,584	38,206	56,294	-	-
1982	1,662	201	25,746	15,067	42,676	-	-
1983	0	408	35,322	18,162	53,892	-	-
1984	789	179	13,076	27,686	41,730	-	-
1985	401	191	17,595	23,679	41,866	-	-
1986	0	18	9,444	29,895	39,357	-	-
1987	5	1,989	10,922	24,769	37,685	-	-
1988	429	6,733	23,910	10,287	41,359	-	-
1989	71	6,575	23,303	17,877	47,826	-	-
1990	0	5,694	21,003	19,374	46,071	12,571 [f]	14,249 [f]
1991	0	1,240	5,697	13,805	20,742	1,970 [g]	3,307 [g]
1992	126	5,209	6,962	20,939	33,236	-	10,200 [h]
1993	20	5,339	6,037	31,310	42,706	11,291 [g]	6,170 [g]
1994	-	6,056 [j]	10,176	8,958	25,190	7,434 [g]	4,121 [g]
1995	-	33,794 [k]	-	-	33,794	13,921	6,000
1996	-	6,425 [j]	7,796	21,817	36,038	9,076	4,127
1997	-	1,721 [j]	10,754	9,403	21,878	9,403	4,760
1998	-	4,881 [j]	9,936	7,019	21,836	5,648	7,105
1999	-	6,875 [j]	7,430	8,832	23,137	7,095	6,170
2000	-	3,706 [j]	5,758	2,619	12,083	2,809	6,569
2001	-	6,078 [j]	2,839	1,740	10,657	1,779	7,306
2002	-	4,183 [j]	5,503	3,935	13,621	899	4,093
2003	-	6,463 [j]	4,777	5,627	16,867	0	1,292
2004	-	1,145 [j]	3,061	3,061	7,267	2,412 [h]	476
5 year Average 1999-2003	-	5,461	5,261	4,551	15,273	2,516	5,086
10 Year Average 1994-2003	12	8,018	7,219	6,995	21,510	5,806	5,154

[a] Reported on daily catch form returned to ADF&G. Catch reports were returned to the department following the fishing season. All fish reported on the catch report were harvested with the intent to sell. Dashes indicate information is not available.

[b] Fish tickets were often not generated at the time of sale. Since 1990, the commercial harvest is based on fish ticket information. Dashes indicate information is not available.

[c] Whitefish species include mostly Humpback whitefish and Least cisco with some Broad whitefish. Includes small numbers of Humpback whitefish.

[e] Reported the harvest of 1 Chinook, 2 sockeye, 9 chum, and 118 pink salmon.

[f] Commercial harvest estimate based on one fish ticket average weights of 0.89 pounds (900 Arctic cisco at 800 pounds) and 0.61 pounds (1400 whitefish species at 850 pounds).

[g] Estimated commercial harvest sales based on 1995 to 2001 average weight of .92 pounds for Arctic cisco and .89 pounds for whitefish species (Humpback and Broad whitefish and Least cisco).

[h] Mixed commercial harvest of mostly Arctic cisco along with Humpback and Broad whitefish, and Least cisco. Estimated commercial harvest sales based on 1995 to 2001 combined average of $1.07/lb. for whitefish species and Arctic cisco.

[j] Humpback whitefish harvest includes undetermined amounts of Broad whitefish.

[k] Humpback whitefish harvest includes undetermined amounts of Broad whitefish, Least cisco, and Arctic cisco.

APPENDIX I

Appendix I1.–Yukon Area fishery regulation changes adopted at the 2002–2004 Alaska Board of Fisheries meetings.

To keep Yukon Area salmon fishermen, processors, and other interested individuals informed of current fishing regulations, the Department of Fish and Game (department) is providing this partial summary of regulatory changes recently taken by the Alaska Board of Fisheries (Board).

2002 YUKON AREA FISHERY REGULATION CHANGES

5 AAC 01.240 MARKING AND USE OF SUBSISTENCE TAKEN SALMON. The Board provided the department with emergency order authority to suspend the requirement for Districts 1-3 to mark king salmon taken for subsistence uses when there is no commercial fishing season. If there is no commercial fishing season, king salmon taken for subsistence uses may have the dorsal fin left intact.

5 AAC 01.220. LAWFUL GEAR AND GEAR SPECIFICATIONS, 5 AAC 77.171. LAWFUL GEAR FOR PERSONAL USE FINFISH FISHING. Personal use salmon fishing gear changes included restricting gear type during times of salmon conservation adding dip nets as a gear type to be available during times of salmon conservation. During times when it is necessary for the conservation of a salmon species, gear limitations, such as gillnet mesh size limits and/or live box/live chute requirements on fish wheels, will apply to allow for personal use fishing for a more abundant species.

(b) Notwithstanding (1) – (5) of this section, during times when the commissioner determines it to be necessary for the conservation of chum salmon, the commissioner may, by emergency order, close the Yukon Area Subdistrict 6-C personal use salmon fishing season and immediately reopen the season during which the following gear limitations apply:

(1) a gillnet used to take salmon

(A) must be of 4-inch or less mesh or 8-inch or greater mesh;

(B) of 4-inch or less mesh, may not exceed the length and depth specified by the commissioner; and

(C) of 8-inch or greater mesh, may not exceed the length and depth specified by the commissioner.

(2) fish wheels,

(A) a fish wheel used to take salmon must be equipped with a live box that is constructed so that it contains no less than 45 cubic feet of water volume while it is in operation;

(B) the live box of a fish wheel must be check no less than once every 6 hours while the fish wheel is in operation, and all chum salmon caught in the livebox must be returned to the water alive;

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(C) for the purposes of this paragraph "livebox" is a submerged container that is attached to a fish wheel and that will keep fish caught by the fish wheel alive;

(D) a person may operate a fish wheel without a livebox only if

(i) the fish wheel is equipped with a chute that returns fish captured by the fish wheel to the water alive;

(ii) the person closely attends the fish wheel while it is in operation; and

(iii) the person returns all chum salmon caught to the water alive;

(3) dip nets may be used, however all chum salmon caught must be released to the water alive.

(c) Notwithstanding (1) – (5) of this section, during times when the commissioner determines it to be necessary for the conservation of king salmon, the commissioner may, by emergency order, close the Yukon Area Subdistrict 6-C personal use salmon fishing season and immediately reopen the season during which the following gear limitations apply:

(1) a gillnet used to take salmon

(A) must be of 6-inch or less mesh;

(B) may not exceed the length and depth specified by the commissioner.

(2) fish wheels,

(A) a fish wheel used to take salmon must be equipped with a live box that is constructed so that it contains no less than 45 cubic feet of water volume while it is in operation;

(B) the live box of a fish wheel must be check no less than once every 6 hours while the fish wheel is in operation, and all king salmon caught in the livebox must be returned to the water unharmed;

(C) for the purposes of this paragraph "livebox" is a submerged container that is attached to a fish wheel and that will keep fish caught by the fish wheel alive;

(D) a person may operate a fish wheel without a livebox only if

(i) the fish wheel is equipped with a chute that returns fish captured by the fish wheel to the water alive;

(ii) the person closely attends the fish wheel while it is in operation; and

(iii) the person returns all king salmon caught to the water alive;

(3) dip nets may be used, however all king salmon caught must be released to the water alive

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2003 YUKON AREA FISHERY REGULATION CHANGES

Proposal 463- If adopted the proposal would end the subsistence fishing schedule and revert to pre-2001 subsistence fishing period regulations in the Yukon River when inseason indicators suggest that the run strength is sufficient in abundance to allow a commercial salmon fishery in that district or subdistrict. **This proposal was adopted**.

This regulation was changed AAC 05.360. YUKON RIVER KING SALMON MANAGEMENT PLAN. (e); if inseason run strength indicates a sufficient abundance of king salmon to allow a commercial fishery in that district or subdistrict, subsistence fishing shall revert to the fishing periods as specified in 5 AAC 01.210 **(c) – (h)**.

2004 YUKON AREA FISHERY REGULATION CHANGES

Stock of Concern Action Plan Options

- Stock of Concern Status
  - Chinook Salmon - continue Yield Concern

  Summer Chum Salmon - continue Management Concern

  Fall Chum Salmon - continue Yield Concern

  - Toklat River Stock - remove Management Concern
  - Fishing Branch River Stock - remove Management Concern
- Yukon Area Subdistrict 5-C Subsistence Salmon Fishing Permits:
  The board increased the permit harvest area for subsistence salmon fishing to include all of Subdistrict 5-C as a means to track resource use changes due to the completion of the Rampart road construction project and the increased mobility of fishermen.
- Operation of gear during subsistence salmon fishing closures:
- The board adopted a regulation requiring gillnets greater than 4” mesh size to be removed from the water and fish wheels must stop rotating during subsistence closures. A similar regulation is in place on the Kuskokwim River system and this would make regulations for subsistence closures the same for both rivers.
- Fall Chum Salmon Management Plan:
  The board modified the Yukon River Drainage Fall Chum Salmon Management Plan by:
  - aligning the escapement goal threshold with the lower end of the established BEG range of 300,000 to 600,000
  - this will provide more subsistence fishing opportunity in years with poor runs

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- commercial fishing drainage wide will not be allowed until the run is projected to be 600,000 fish, which will provide for the subsistence priority and bolster escapement on strong runs.
- key elements of the Toklat River Fall Chum Salmon Rebuilding Management Plan were incorporated into the Fall Chum Salmon Plan which included changing management of the Toklat stock from the OEG target to managing for the established BEG range of 15,000-33,000.

- Tanana River Salmon Management Plan:

  An amendment was made to remove the restriction requiring no more than 42 hours of commercial fishing per week after August 15, which provides the department with more flexibility to manage for escapement while accommodating unpredictable market interest.

Proposal 132- If adopted the effect of this proposal would have been to keep subsistence fishing periods in place all season for each district regardless of the abundance of fish. **This proposal failed**.

Proposal 150-This proposal was a modification to the Fall Chum Salmon Management Plan. **No Action** was taken on this proposal because the issue had already been addressed as part of the Fall Chum Salmon Management Plan.

Proposal 151- This proposal sought to replace the Toklat Management Plan Optimal Escapement Goal (OEG) that the Board of Fisheries adopted in 2001 with the BEG of 15,000-33,000 fall chum salmon. **No Action** was taken on this proposal because the issue had already been addressed as part of the Fall Chum Salmon Management Plan.

Proposal 152- This proposal sought to change the language that defines when the subsistence fishing schedule can be relaxed from being related to a commercial surplus to being related to a surplus abundance above a level necessary to provide for escapement and subsistence. **This proposal failed**.

Proposal 153-This proposal sought to develop new management plans for the lower, middle and upper sections of the river that would be the basis of salmon allocation for the entire Yukon River. **This proposal failed**.

Proposal 154- This proposal would have reduced the subsistence salmon fishing schedule in Districts 1, 2, and 3 from two 36-hour periods per week to two 18-hour periods per week. In addition all fishing for salmon, commercial or subsistence would occur within the two 18- hour fishing periods per week. **This proposal failed**.

Proposal 155- The main objective for this proposal was to revise the subsistence fishing schedule in Districts 3 and 4 to provide weekend subsistence fishing opportunity for fishers that work. This proposal would establish a start date for the subsistence salmon fishing schedule in regulation. **The Board voted to allow the department to set a weekend schedule day by emergency order and not to set the start date in regulation**.

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Proposal 156- This proposal sought to increase the subsistence fishing schedule from two 42-hour periods per week to two 48-hour periods per week in Subdistrict 5-A and District 6. **The Board voted to allow the two 48-hour periods per week schedule in Subdistrict 5-A, but to keep District 6 on two 42-hour periods per week**.

Proposal 157- This proposal sought to allow a 24-hour per day 7 day per week subsistence fishing schedule in the Tanana River (District 6) after October 1, provided that abundance of salmon was adequate. **This proposal was adopted with an amendment to change the proposed October 1 date to September 30**.

Proposal 158-This proposal would have allowed Alaska Natives to fish at their discretion throughout the year, regardless of schedules or other management measures in the Yukon Delta. This proposal was beyond the authority of the Board so the board took **no action**.

Proposal 159- This proposal sought to allow the use of gillnets with mesh sizes greater than 3" in the Birch Creek drainage. **This proposal failed**.

Proposal 160-This proposal would have allowed fishers in the Koyukuk River drainage to use mesh sizes of their own discretion to target non-salmon species. In addition, should more than 5 salmon be caught per day fishers would be responsible for pulling the net for 24-hours. **This proposal failed**.

Proposal 161-This proposal would have allowed the use of drift gillnets for subsistence salmon fishing in Subdistricts 4-B and 4-C. **This proposal failed**.

Proposals 162 and 163- These proposals were identical to proposal 161 except that they wanted to limit the area open to drift gillnetting for salmon to the area downstream of the Yuki River within Subdistricts 4-B and 4-C. **Proposal 162 failed** and **no action was taken on proposal 163**.

Proposal 164-This proposal sought to open the waters of the South and Middle Forks of the Koyukuk River to subsistence fishing and to allow the use of 3.5" mesh or smaller along the Dalton Highway corridor, during the period of November 1 to June 30. Subsistence fishing would be closed to the use of gillnets from July1 to October 31. This proposal **was adopted with the amendment to require a subsistence fishing permit** to aid in assessing harvest by fishermen residing outside the immediate area who would not be covered by the post season community harvest survey.

Proposal 165- This proposal would have closed subsistence fishing for salmon ¼ mile above and ½ mile below the mouth of spawning tributaries until the Department could determine that escapement goals had been reached. **This proposal failed**.

Proposal 166-This proposal would have closed all commercial fishing for salmon until 2011. **This proposal failed**.

Proposal 167- This proposal sought to develop community quotas through the use of management planning committees. In addition the proposal asked the Board to "consider" closing commercial fishing for salmon for a period of 7 years. **This proposal failed**.

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Proposal 168- This proposal sought to lower the Guideline Harvest Level for Chinook, summer and fall chum salmon and reallocate the harvest of all 3 species. **This proposal failed**.

Proposal 169-This proposal would have allowed commercial permit holders in Subdistrict 4-A to switch gear from the current set gillnet or fish wheel permits to drift gillnet gear when there is sufficient abundance for directed commercial fishing Chinook salmon and when a conservation concern exists with summer chum salmon. **This proposal was passed with the amendment to allow all commercial permits to use set gillnet gear during such times, but not drift gillnet gear**.

Proposal 170-This proposal would have prohibited directed roe fisheries. **This proposal failed**.

Proposal 171-This proposal would have adopted a 6" maximum mesh size for Districts 1 and 2. **This proposal failed**.

Proposals 172-This proposal sought to limit the maximum depth of fish wheel leads and gillnet gear to 47% of the water depth (presumably at the fishing site). **This proposal failed**.

Proposal 173-This proposal would have allowed catch and release sport fishing for Chinook salmon in the Goodpaster River drainage. **This proposal failed**.

Proposal 174-This proposal would have put the sport fishery on the same fishing schedule as subsistence fishing for salmon with gillnets and fish wheels in the Yukon Area. **This proposal failed**.

Proposal A- This proposal was a Board generated proposal that resulted from an emergency petition to allow commercial fishing for herring throughout the entire Cape Romanzof herring district. **This proposal was adopted.**